



azienda casa emilia - romagna  
provincia di bologna

Piazza della Resistenza 4 - 40122  
Bologna - BO  
tel. 051.292111 fax 051.554335  
Codice Fiscale - Partita IVA e Registro  
Imprese di Bologna n. 00322270372  
sito web: www.acerbologna.it  
posta elettronica: info@acerbologna.it

INTERVENTO

**FONDO COMPLEMENTARE AL PIANO NAZIONALE DI RIPRESA E RESILIENZA  
PROGRAMMA "SICURO, VERDE E SOCIALE: RIQUALIFICAZIONE DELL'EDILIZIA RESIDENZIALE PUBBLICA"**

**PROGETTO DI MANUTENZIONE STRAORDINARIA PER IL RESTAURO E RISANAMENTO  
CONSERVATIVO DI DUE CASAMENTI A CORTE SITI IN  
COMUNE DI BOLOGNA LOCALITA' CIRENAICA.  
VIA LIBIA CIV. 29÷51 PER COMPLESSIVI 70 ALLOGGI  
DI ERP CON RELATIVE PERTINENZE E PARTI COMUNI**

LOTTO **3053/PN\_2**

**PROGETTO ESECUTIVO**

TAV.  <b>TAB_10</b>		OGGETTO  TABULATI DI CALCOLO CIVICO 39 STATO DI PROGETTO			DATA  <b>Settembre 2022</b>	
SCALA					N. DISEGNO	
VERSIONE	DESCRIZIONE	DATA	REDATTO	VERIFICATO		APPROVATO
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<b>Il Progettista Architettonico</b>  Arch. Francesca Tovoli Ing. Nicola Leone  SIDEL Ingegneria Srl Via Isonzo, 13 40055 Villanova di Castenaso (BO)	<b>Il Progettista Strutturale</b>  Ing. Nicola Leone  SIDEL Ingegneria Srl Via Isonzo, 13 40055 Villanova di Castenaso (BO)	<b>Il Progettista Impianti Elettrici</b>  Ing. Nicola Leone  SIDEL Ingegneria Srl Via Isonzo, 13 40055 Villanova di Castenaso (BO)	<b>Il Progettista Impianti Meccanici</b>  Ing. Nicola Leone  SIDEL Ingegneria Srl Via Isonzo, 13 40055 Villanova di Castenaso (BO)
<b>Il Coordinatore della Sicurezza in Fase Progettuale</b>  Ing. Nicola Leone  SIDEL Ingegneria Srl Via Isonzo, 13 40055 Villanova di Castenaso (BO)	<b>Il Coordinatore per la progettazione</b>  Ing. Nicola Leone  SIDEL Ingegneria Srl Via Isonzo, 13 40055 Villanova di Castenaso (BO)	<b>Collaboratori Progettisti:</b> Ing. Marco Venturini Ing. Federica DalmonTE Geom. Alessio Breviglieri Arch. Domenico Conaci Geom. Arianna Danieli P. I. Andrea Gamberini Ing. Cesare Orsini	
<b>Responsabile del Procedimento</b>  Ing. Antonio Frighi  ACER Bologna Piazza della Resistenza, 4 40122 Bologna	<b>Il Dirigente Responsabile del Servizio Tecnico</b>  Ing. Antonio Frighi  ACER Bologna Piazza della Resistenza, 4 40122 Bologna	<b>Il Direttore Generale</b>  Avv. Francesco Nitti  ACER Bologna Piazza della Resistenza, 4 40122 Bologna	<b>Il Presidente</b>  Marco Bertuzzi  ACER Bologna Piazza della Resistenza, 4 40122 Bologna

TABULATI DI CALCOLO  
CIVICO 39  
STATO DI PROGETTO





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# 1 Risultati numerici

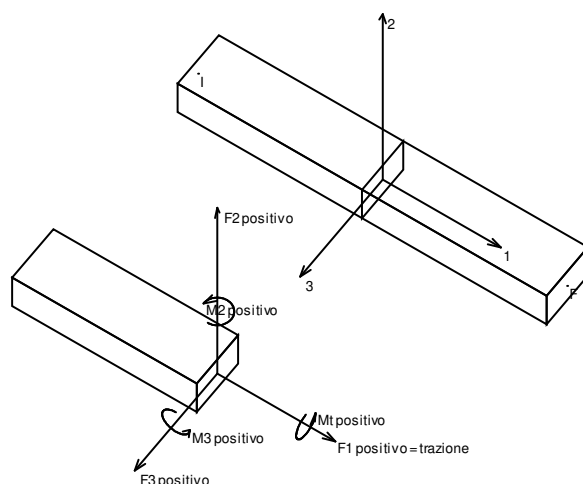
## 1.1 Sollecitazioni

### 1.1.1 Sollecitazioni aste

#### 1.1.1.1 Convenzioni di segno aste

Le abbreviazioni relative alle sollecitazioni sugli elementi aste sono da intendersi:

- F1 (N): sforzo normale nell'asta;
- F2: sforzo di taglio agente nella direzione dell'asse locale 2;
- F3: sforzo di taglio agente nella direzione dell'asse locale 3;
- M1 (Mt): momento attorno all'asse locale 1; equivale al momento torcente;
- M2: momento attorno all'asse locale 2;
- M3: momento attorno all'asse locale 3.



La convenzione sui segni per i parametri di sollecitazione delle aste è la seguente:

presa un'asta con nodo iniziale i e nodo finale f, asse 1 che va da i a f, assi 2 e 3 presi secondo quanto indicato nei paragrafi successivi relativi al sistema locale delle aste sezionando l'asta in un punto e considerando la sezione sinistra del punto in cui si è effettuato il taglio (sezione da cui esce il versore asse 1) i parametri di sollecitazione sono positivi se hanno verso e direzione concordi con il sistema di riferimento locale dell'asta 1, 2, 3 (per i momenti si adotta la regola della mano destra).

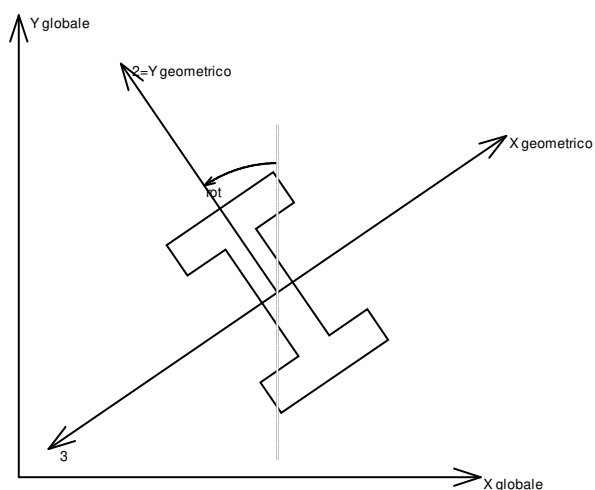
Il sistema è definito diversamente per tre categorie di aste, a seconda che siano originate da:

- aste verticali ad esempio pilastri e colonne;
- aste non verticali non di c.a., ad esempio travi di acciaio o legno;
- aste non verticali in c.a.: travi in c.a. di piano, falda o a quota generica.

Nel seguito si indica con 1, 2 e 3 il sistema locale dell'asta che non sempre coincide con gli assi principali della sezione. Si ricorda che per assi principali si intendono gli assi rispetto a cui si ha il raggio di inerzia minimo e massimo. Gli assi 1, 2 e 3 rispettano la regola della mano destra.

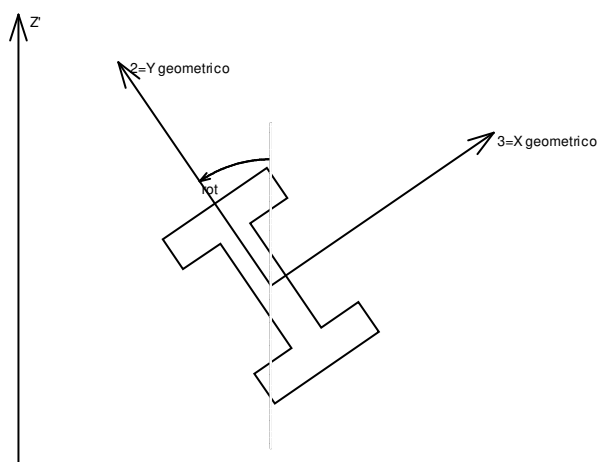


## Sistema locale aste verticali



Nella figura si considera l'asse 1 uscente dal foglio (l'osservatore guarda in direzione opposta a quella dell'asse 1).

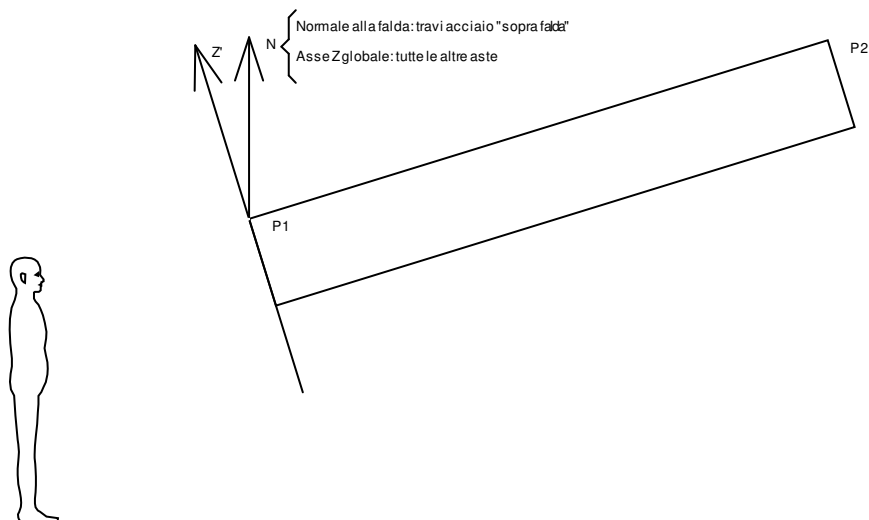
## Sistema locale aste non verticali



Nella figura si considera l'asse 1 entrante nel foglio (l'osservatore guarda in direzione coincidente a quella dell'asse 1).

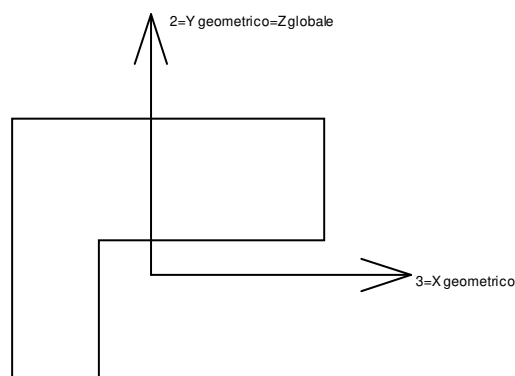
L'asse Z' è illustrato nella figura seguente dove:

- P1 è il punto di inserimento iniziale dell'asta;
- P2 è il punto di inserimento finale dell'asta;
- N è la normale al piano o falda di inserimento;



Z' è quindi l'intersezione tra il piano passante per P1, P2 contenente N e il piano della sezione iniziale dell'asta.

Sistema locale aste derivanti da travi in c.a.



Nella figura si considera l'asse 1 entrante nel foglio (l'osservatore guarda in direzione coincidente a quella dell'asse 1). L'asse 2 è sempre verticale e quindi coincidente con l'asse Z globale nonché con l'asse y geometrico. L'asse 3 coincide con l'asse x geometrico. Si sottolinea il fatto che gli assi 2 e 3 non corrispondono agli assi principali della sezione.

#### 1.1.1.2 Sollecitazioni estreme aste

**Asta:** elemento asta a cui si riferiscono le sollecitazioni.

**Ind.:** indice dell'asta.

**Cont.:** contesto a cui si riferisce la sollecitazione

**N.br.:** nome breve della condizione o combinazione di carico.

**Pos.:** numero della sezione all'interno dell'asta (tra 1 e 31, dove 1 corrisponde alla sezione al nodo iniziale, 16 è la sezione in mezzzeria, 31 corrisponde alla sezione al nodo finale).

**Posizione:** posizione a cui si riferisce la sollecitazione dell'asta.

**X:** componente X della posizione a cui si riferisce la sollecitazione dell'asta. [m]

**Y:** componente Y della posizione a cui si riferisce la sollecitazione dell'asta. [m]

**Z:** componente Z della posizione a cui si riferisce la sollecitazione dell'asta. [m]

**Soll.traslazionale:** componente traslazionale della sollecitazione dell'asta.

**F1:** componente F1 della sollecitazione dell'asta. [kN]

**F2:** componente F2 della sollecitazione dell'asta. [kN]

**F3:** componente F3 della sollecitazione dell'asta. [kN]

**Soll.rotazionale:** componente rotazionale della sollecitazione dell'asta.

**M1:** componente M1 della sollecitazione dell'asta. [kN\*m]

**M2:** componente M2 della sollecitazione dell'asta. [kN\*m]

**M3:** componente M3 della sollecitazione dell'asta. [kN\*m]

#### Sollecitazioni con sforzo normale (N) minimo

Vengono mostrate le sole 5 aste più sollecitate.

Asta	Cont.	Pos.	Posizione			Soll.traslazionale			Soll.rotazionale		
Ind.	N.br.		X	Y	Z	F1	F2	F3	M1	M2	M3



Asta	Cont.	Pos.	Posizione			Soll.traslazionale			Soll.rotazionale		
Ind.	N.br.		X	Y	Z	F1	F2	F3	M1	M2	M3
952	SLV 16	1	-5.09	6.34	15.03	-671.88	-56.61	26.99	0.9561	-1.5741	35.5485
446	SLV 15	31	-6.52	-3.28	-1.59	-389.83	-0.16	-75.76	0.0406	-42.1696	-44.6018
445	SLV 15	31	-6.52	-2.89	-1.59	-334.23	-6.55	-68.15	0.0335	-30.9214	-31.6335
654	SLV 15	31	-6.02	0.65	-1.59	-306.4	-17.99	-13.39	0.0085	10.878	-13.3221
655	SLV 15	31	-6.02	0.26	-1.59	-290.63	-16.05	-16.69	0.0178	8.4591	-11.1212

#### Sollecitazioni con sforzo normale (N) massimo

Vengono mostrate le sole 5 aste più sollecitate.

Asta	Cont.	Pos.	Posizione			Soll.traslazionale			Soll.rotazionale		
Ind.	N.br.		X	Y	Z	F1	F2	F3	M1	M2	M3
952	SLV 1	1	-5.09	6.34	15.03	452.54	41.48	-8.97	-0.9988	0.5235	-24.7127
446	SLV 2	31	-6.52	-3.28	-1.59	212.39	-111.23	65	0.1573	30.8377	1.394
745	SLV X	31	-18.25	-3.28	-1.59	199.03	-17.65	-51.52	-0.0947	-24.4674	15.2971
664	SLV 15	1	-6.02	-2.89	-1.59	184.71	67.38	-68.08	-0.0162	-13.8949	-33.1396
988	SLV X	1	-0.13	-3.31	15.03	176.67	8.96	-9.63	0.0415	1.3591	1.121

#### Sollecitazioni con momento M2 minimo

Vengono mostrate le sole 5 aste più sollecitate.

Asta	Cont.	Pos.	Posizione			Soll.traslazionale			Soll.rotazionale		
Ind.	N.br.		X	Y	Z	F1	F2	F3	M1	M2	M3
838	SLV 2	1	-13.11	-0.33	-1.59	-120.38	-14.63	47.59	0.0513	-127.9963	-3.5194
318	SLV 15	1	-5.41	6.58	-1.59	-35.44	120.43	163.59	4.1434	-98.3462	-53.4729
721	SLV 2	31	-18.5	-2.93	-1.59	-187.69	-116.51	-199.03	1.0847	-97.7714	97.6607
724	SLV 13	31	-14.11	-3.28	-1.59	14.38	-131.7	-87.68	-1.6871	-97.4091	23.418
460	SLV 15	1	-5.16	0.8	-1.59	-260.33	-30.98	237.73	0.1907	-96.4852	-59.5679

#### Sollecitazioni con momento M2 massimo

Vengono mostrate le sole 5 aste più sollecitate.

Asta	Cont.	Pos.	Posizione			Soll.traslazionale			Soll.rotazionale		
Ind.	N.br.		X	Y	Z	F1	F2	F3	M1	M2	M3
718	SLV 2	1	-17.05	-2.93	-1.59	-81.82	28.84	-205.64	-0.457	145.223	32.0311
674	SLV 13	31	-7.72	-2.93	-1.59	-103.37	-16.78	230.56	0.3561	134.5777	33.6948
696	SLV 2	31	-11.36	-3.28	-1.59	-71.15	-71.85	99.87	5.7698	121.9355	-7.0442
460	SLV 15	31	-6.02	0.8	-1.59	-270.88	-106.25	241.47	0.2258	109.5768	0.7264
838	SLV X	1	-13.11	-0.33	-1.59	20.15	-0.06	-45.92	-0.0244	97.881	-0.1329

#### Sollecitazioni con momento M3 minimo

Vengono mostrate le sole 5 aste più sollecitate.

Asta	Cont.	Pos.	Posizione			Soll.traslazionale			Soll.rotazionale		
Ind.	N.br.		X	Y	Z	F1	F2	F3	M1	M2	M3
369	SLV 3	1	-19.87	5.88	-1.59	-58.85	-79.24	-28.66	0.9095	9.767	-170.0863
380	SLV 1	31	-19.37	4.85	-1.59	40.81	39.67	-14.76	-0.1262	-11.6405	-136.592
379	SLV 1	31	-19.37	5.88	-1.59	-21.33	92.28	-128.96	-10.543	-24.2752	-122.1608
293	SLV 4	31	-24.4	5.48	-1.59	-32.51	9.5	-33.41	9.6767	19.6342	-118.7341
461	SLV 14	1	-4.91	5.53	-1.59	-44.4	-179.82	26.83	-0.2008	-4.9625	-117.2875

#### Sollecitazioni con momento M3 massimo

Vengono mostrate le sole 5 aste più sollecitate.

Asta	Cont.	Pos.	Posizione			Soll.traslazionale			Soll.rotazionale		
Ind.	N.br.		X	Y	Z	F1	F2	F3	M1	M2	M3
630	SLV 15	1	-0.47	1.05	-1.59	-123.6	300.09	39.84	-4.1244	5.756	225.5945
617	SLV 14	31	-0.47	1.05	-1.59	-159.93	-282.8	-52.94	4.2963	-36.8054	219.7474
565	SLU 83	31	-15.06	6.23	-1.59	-240.82	-246.01	-0.32	4.3141	29.8908	168.0878
587	SLU 83	31	-9.73	6.23	-1.59	-229.81	-234.38	11.65	3.7735	35.8151	166.8215
575	SLU 83	1	-15.06	6.23	-1.59	-239.34	235.17	-4.88	-3.892	26.01	166.5839

### 1.1.2 Sollecitazioni gusci

#### 1.1.2.1 Convenzioni di segno gusci

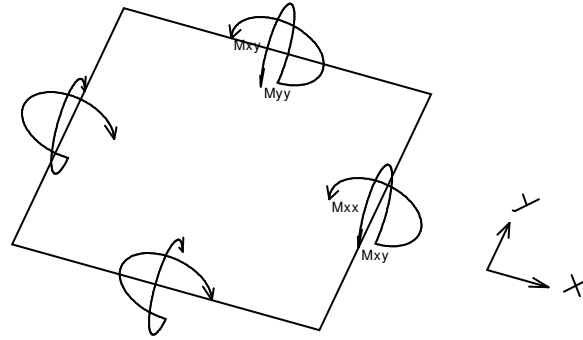
Sono individuate distinte convenzioni di segno in relazione al tipo di elemento strutturale a cui il guscio si riferisce:

- convenzione per gusci non verticali, originati ad esempio da piastre e platee;
- convenzione per gusci verticali, originati ad esempio da pareti e muri.

#### Convenzione di segno per gusci non verticali

Il sistema di riferimento nel quale sono espressi i parametri di sollecitazione è così definito: origine appartenente al piano dell'elemento, asse x e y contenuti nel piano dell'elemento e terzo asse (z) ortogonale al piano dell'elemento a formare una terna destrorsa. In particolare l'asse x ha proiezione in pianta parallela ed equiversa all'asse globale X. Nel caso di piastre orizzontali (caso più comune) gli assi x, y e z locali all'elemento sono paralleli ed equiversi agli assi X, Y e Z globali. Si sottolinea che non ha alcun interesse collocare esattamente nel piano dell'elemento la posizione dell'origine in quanto i parametri di sollecitazione sono invarianti rispetto a tale posizione.

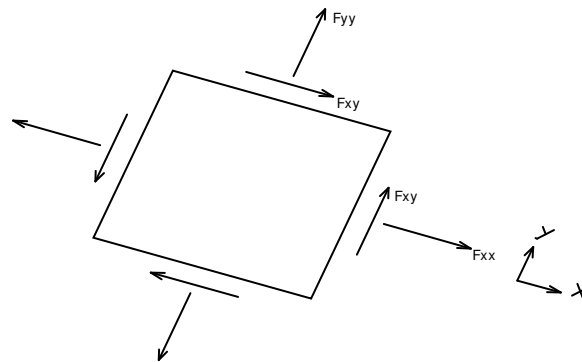
In figura è mostrato un elemento infinitesimo di shell orizzontale con indicato il sistema di riferimento e i parametri di sollecitazione  $M_{xx}$ ,  $M_{yy}$ ,  $M_{xy}$ .



Si definiscono:

- $M_{xx}$ : momento flettente [Forza\*Lunghezza/Lunghezza] agente sul bordo di normale  $x$  (verso positivo indicato dalla freccia in figura che tende le fibre inferiori);
- $M_{yy}$ : momento flettente [Forza\*Lunghezza/Lunghezza] agente sul bordo di normale  $y$  (verso positivo indicato dalla freccia in figura che tende le fibre inferiori);
- $M_{xy}$ : momento torcente [Forza\*Lunghezza/Lunghezza] agente sui bordi (verso positivo indicato dalla freccia in figura).

Per quanto riguarda le sollecitazioni estensionali si faccia riferimento alla figura seguente dove per lo stesso elemento infinitesimo di shell orizzontale con indicato il sistema di riferimento e i parametri di sollecitazione  $F_{xx}$ ,  $F_{yy}$ ,  $F_{xy}$ .



Si definiscono:

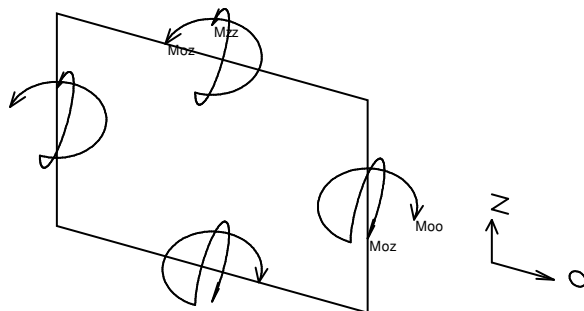
- $F_{xx}$ : sforzo estensionale [Forza/Lunghezza] agente sul bordo di normale  $x$  (verso positivo indicato dalla freccia in figura che mette in trazione l'elemento);
- $F_{yy}$ : sforzo estensionale [Forza/Lunghezza] agente sul bordo di normale all'asse  $y$  (verso positivo indicato dalla freccia in figura che mette in trazione l'elemento);
- $F_{xy}$ : sforzo di taglio [Forza/Lunghezza] agente sui bordi (verso positivo indicato dalla freccia in figura).

Vengono riportati inoltre i tagli fuori dal piano dell'elemento guscio:

- $V_x$ : taglio fuori piano [Forza/Lunghezza] applicato al bordo di normale parallela all'asse  $x$ ;
- $V_y$ : taglio fuori piano [Forza/Lunghezza] applicato al bordo di normale parallela all'asse  $y$ .

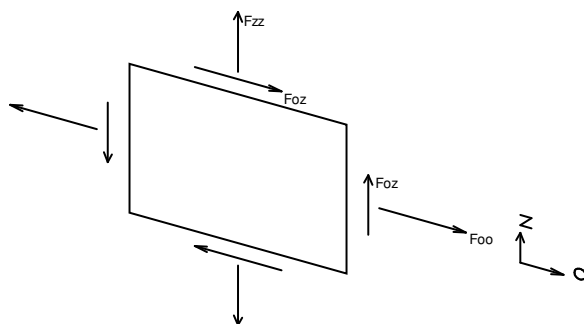
#### Convenzione di segno per gusci verticali

Il sistema di riferimento nel quale sono espressi i parametri di sollecitazione è così definito: origine appartenente al piano dell'elemento, asse  $O$  (ascisse) e  $z$  (ordinate) contenuti nel piano dell'elemento e terzo asse ortogonale al piano dell'elemento a formare una terna destrorsa. In particolare l'asse  $O$  è orizzontale e l'asse  $z$  parallelo ed equiverso con l'asse  $Z$  globale. Si sottolinea che non ha alcun interesse collocare esattamente nel piano dell'elemento la posizione dell'origine in quanto i parametri di sollecitazione sono invarianti rispetto a tale posizione. In figura è mostrato un elemento infinitesimo di shell orizzontale con indicato il sistema di riferimento e i parametri di sollecitazione  $M_{xx}$ ,  $M_{yy}$ ,  $M_{xy}$ .



- Moo: momento flettente distribuito  $[Forza * Lunghezza / Lunghezza]$  applicato al bordo di normale parallela all'asse O (verso positivo indicato dalla freccia in figura che tende le fibre inferiori);
- Mzz: momento flettente distribuito  $[Forza * Lunghezza / Lunghezza]$  applicato al bordo di normale parallela all'asse z (verso positivo indicato dalla freccia in figura che tende le fibre inferiori);
- Moz: momento 'torcente' distribuito  $[Forza * Lunghezza / Lunghezza]$  applicato sui bordi (verso positivo indicato dalla freccia in figura).

Per quanto riguarda le sollecitazioni estensionali si faccia riferimento alla figura seguente dove per lo stesso elemento infinitesimo di shell con indicato il sistema di riferimento i parametri di sollecitazione Foo, Fzz, Foz sono rispettivamente:



- Fzz: sforzo tensionale distribuito  $[Forza / Lunghezza]$  applicato al bordo di normale parallela all'asse z (verso positivo indicato dalla freccia in figura che mette in trazione l'elemento);
- Foo: sforzo tensionale distribuito  $[Forza / Lunghezza]$  applicato al bordo di normale parallela all'asse O (verso positivo indicato dalla freccia in figura che mette in trazione l'elemento);
- Foz: sforzo tagliante distribuito  $[Forza / Lunghezza]$  applicato sui bordi (verso positivo indicato dalla freccia in figura).

Vengono riportati inoltre i tagli fuori dal piano dell'elemento guscio:

- Vo: taglio fuori piano applicato al bordo di normale parallela all'asse O;
- Vz: taglio fuori piano applicato al bordo di normale parallela all'asse z.

#### 1.1.2.2 Sollecitazioni estreme gusci

**Shell:** elemento guscio a cui si riferiscono le sollecitazioni.

**Ind:** indice del guscio.

**Cont.:** contesto a cui si riferiscono le sollecitazioni.

**N.br.:** nome breve della condizione o combinazione di carico.

**Nodo:** nodo su cui si basa il guscio a cui si riferisce la sollecitazione.

**Ind:** indice del nodo.

**Sollecitazione:** valori della sollecitazione.

**M11:** componente M11 della sollecitazione del guscio nel nodo indicato.  $[kN * m / m]$

**M12:** componente M12 della sollecitazione del guscio nel nodo indicato.  $[kN * m / m]$

**M22:** componente M22 della sollecitazione del guscio nel nodo indicato.  $[kN * m / m]$

**F11:** componente F11 della sollecitazione del guscio nel nodo indicato.  $[kN / m]$

**F12:** componente F12 della sollecitazione del guscio nel nodo indicato.  $[kN / m]$

**F22:** componente F22 della sollecitazione del guscio nel nodo indicato.  $[kN / m]$

**V13:** componente V13 della sollecitazione del guscio nel nodo indicato.  $[kN / m]$

**V23:** componente V23 della sollecitazione del guscio nel nodo indicato.  $[kN / m]$

#### Sollecitazioni con momento M11 minimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell Ind	Cont. N.br.	Nodo Ind	Sollecitazione							
			M11	M12	M22	F11	F12	F22	V13	V23
16448	SLU 83	136	-535.11	53.64	503.62	93	-31	64	-1178	1245



Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	M11	M12	M22	F11	F12	F22	V13	V23
16603	SLV 3	632	-209.97	-46.09	28.89	-99	-22	146	-528	-16
16429	SLU 83	218	-199.95	-44.53	36.21	-9	47	-33	925	28
16420	SLU 83	194	-185.7	-35.94	39.26	90	15	-86	797	22
16606	SLV 2	489	-164.96	46.31	2.94	-321	112	-300	-458	48

#### Sollecitazioni con momento M11 massimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	M11	M12	M22	F11	F12	F22	V13	V23
16475	SLU 83	283	264.91	37.28	-17.78	-70	-66	-84	-489	414
16603	SLV X	632	195.12	44.61	-14.79	-222	-46	-29	486	54
16483	SLU 84	273	173.46	27.05	182.97	-808	-161	-438	-293	-1126
16606	SLV 15	489	170.77	-46.17	-32.11	-750	30	-475	459	37
16607	SLV 15	489	168.44	28.9	-12.33	-726	-29	-365	379	37

#### Sollecitazioni con momento M22 minimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	M11	M12	M22	F11	F12	F22	V13	V23
16444	SLV 14	290	-13.38	-25.67	-135.83	20	33	8	29	434
16457	SLU 83	189	2.86	108.15	-130.11	36	-58	-15	-20	-520
16477	SLU 83	280	19.71	18.34	-128.3	-43	6	-55	42	-132
16448	SLU 83	189	30.1	187.83	-128.04	-10	-89	-51	-1179	-922
16445	SLV 14	289	-16.02	-33.98	-128.02	16	32	7	60	506

#### Sollecitazioni con momento M22 massimo

Vengono mostrati i soli 5 gusci più sollecitati.

Verighe modificate e/o guai, più o meno recenti			Sollecitazione							
Shell	Cont.	Nodo	M11	M12	M22	F11	F12	F22	V13	V23
Ind	N.br.	Ind								
16448	SLU 83	136	-535.11	53.64	503.62	93	-31	64	-1178	1245
16447	SLU 83	288	67.61	-38.96	208.3	-60	-12	12	-356	742
16483	SLU 84	273	173.46	27.05	182.97	-808	-161	-438	-293	-1126
16439	SLU 84	296	140.23	-29.62	176.76	-710	143	-385	-238	1114
16440	SLU 84	295	116.33	-7.05	105.91	-92	113	-307	-267	695

#### Sollecitazioni con sforzo F11 minimo

Vengono mostrati i soli 5 gusci più sollecitati.

Verifica Moduli di Sili e Gabbie per i Recettori										
Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	M11	M12	M22	F11	F12	F22	V13	V23
17312	SLV 7	18638	-15.09	-0.45	-3.76	-4582	-16	-460	41	-8
17311	SLV 10	18638	13.98	-0.39	2.88	-4399	120	-449	68	7
17287	SLV 5	18647	7.97	-0.23	2.01	-4234	1103	1136	-42	11
17288	SLV 12	18631	-6.88	-0.24	-1.59	-3924	-1075	1138	-36	-6
16483	SLV 2	237	56.21	0.82	-31.11	-1466	-344	-64	-162	143

#### Sollecitazioni con sforzo F11 massimo

Vengono mostrati i soli 5 gusci più sollecitati.

Verighe in acciaio S235JR, S275JR, S355JR, S460NL, S500ML, S550ML, S690ML			Sollecitazione							
Shell	Cont.	Nodo	M11	M12	M22	F11	F12	F22	V13	V23
Ind	N.br.	Ind								
17311	SLV 7	18638	-15.16	0.42	-3.75	4552	31	107	-74	-9
17312	SLV 10	18638	13.93	0.56	2.9	4413	191	320	-35	6
17287	SLV 12	18647	-6.99	0.21	-1.92	3970	-1458	-1515	37	-10
17288	SLV 5	18631	7.84	0.09	1.62	3873	846	-629	40	6
17314	SLV 10	18901	3.22	-0.61	2.17	1146	-237	-161	-7	4

#### Sollecitazioni con sforzo F22 minimo

Vengono mostrati i soli 5 gusci più sollecitati.

Caratteristiche generali della piastrina			Sollecitazione							
Shell	Cont.	Nodo	M11	M12	M22	F11	F12	F22	V13	V23
Ind	N.br.	Ind								
17257	SLV 1	19319	0.53	0	0.58	90	1	-1702	-7	-2
17287	SLV 12	18647	-6.99	0.21	-1.92	3970	-1458	-1515	37	-10
4769	SLV 14	2938	2.42	-1.17	7.36	336	-43	-1457	-28	78
17282	SLV 8	19159	0.48	-0.13	0.48	-230	-54	-1426	16	1
3399	SLV 16	1310	-0.59	0	0.01	9	0	-1274	-4	0

#### Sollecitazioni con sforzo F22 massimo

Vengono mostrati i soli 5 gusci più sollecitati.

SHELL			Sollecitazione							
Ind	Cont. N.br.	Nodo Ind	M11	M12	M22	F11	F12	F22	V13	V23
17282	SLV 8	19156	-0.06	-0.02	0.17	568	83	1872	16	1
17257	SLV 16	19319	-0.18	0	-0.71	-131	-1	1631	2	2
17287	SLV 5	18899	-3.93	0.79	-1.28	1492	-570	1306	42	6
17288	SLV 12	18631	-6.88	-0.24	-1.59	-3924	-1075	1138	-36	-6
17281	SLV 5	18948	-0.03	-0.42	0.33	699	-494	1065	4	-7

#### 1.1.2.3 Sollecitazioni estreme gusci non verticali

**Shell:** elemento guscio a cui si riferiscono le sollecitazioni.

**Ind:** indice del guscio.

**Cont.:** contesto a cui si riferiscono le sollecitazioni.

**N.br.:** nome breve della condizione o combinazione di carico.

**Nodo:** nodo su cui si basa il guscio a cui si riferisce la sollecitazione.

**Ind:** indice del nodo.

**Sollecitazione:** valori della sollecitazione.





**Mxx:** componente Mxx della sollecitazione del guscio nel nodo indicato. [kN\*m/m]  
**Mxy:** componente Mxy della sollecitazione del guscio nel nodo indicato. [kN\*m/m]  
**Myy:** componente Myy della sollecitazione del guscio nel nodo indicato. [kN\*m/m]  
**Fxx:** componente Fxx della sollecitazione del guscio nel nodo indicato. [kN/m]  
**Fxy:** componente Fxy della sollecitazione del guscio nel nodo indicato. [kN/m]  
**Fyy:** componente Fyy della sollecitazione del guscio nel nodo indicato. [kN/m]  
**Vx:** componente Vo della sollecitazione del guscio nel nodo indicato. [kN/m]  
**Vy:** componente Vz della sollecitazione del guscio nel nodo indicato. [kN/m]

#### Sollecitazioni con momento Mxx minimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Mxx	Mxy	Myy	Fxx	Fxy	Fyy	Vx	Vy
16444	SLV 14	290	-134.22	29.21	-14.99	6	-33	22	-433	42
16457	SLU 83	189	-130.56	-107.87	3.31	-14	58	36	520	-21
16477	SLU 83	280	-128.44	-17.77	19.85	-55	-5	-43	132	41
16445	SLV 14	289	-128.27	33.57	-15.77	7	-32	16	-506	58
16448	SLU 83	189	-127.9	-187.89	29.96	-51	89	-10	922	-1178

#### Sollecitazioni con momento Mxx massimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Mxx	Mxy	Myy	Fxx	Fxy	Fyy	Vx	Vy
16448	SLU 83	136	503.66	-53.25	-535.15	64	31	93	-1245	-1179
16447	SLU 83	288	205.02	44.37	70.9	11	14	-59	-727	-385
16483	SLU 84	273	185.29	-26.54	171.14	-452	176	-793	1138	-244
16439	SLU 84	296	179.25	27.93	137.74	-398	-156	-697	-1124	-189
16440	SLU 84	295	108.16	8.25	114.08	-335	-77	-64	-726	-163

#### Sollecitazioni con momento Myy minimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Mxx	Mxy	Myy	Fxx	Fxy	Fyy	Vx	Vy
16448	SLU 83	136	503.66	-53.25	-535.15	64	31	93	-1245	-1179
16429	SLU 83	218	36.03	45.02	-199.77	-32	-47	-10	-30	925
16420	SLU 83	194	39.29	35.85	-185.73	-86	-14	90	-22	797
16438	SLU 83	241	71.9	33.9	-132.69	11	-24	-51	198	771
16447	SLV 14	287	-59.66	22.76	-107.99	38	-12	-64	-811	559

#### Sollecitazioni con momento Myy massimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Mxx	Mxy	Myy	Fxx	Fxy	Fyy	Vx	Vy
16475	SLU 83	283	-20.29	-26	267.41	-79	66	-76	-433	-473
16483	SLU 84	273	185.29	-26.54	171.14	-452	176	-793	1138	-244
16438	SLU 83	218	71.56	43.2	155.58	-24	-43	-66	132	768
16447	SLU 83	241	100.03	29.53	148.63	5	-5	-109	291	609
16429	SLU 83	194	72.69	41.07	148.33	-85	-35	-27	125	924

#### Sollecitazioni con sforzo Fxx minimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Mxx	Mxy	Myy	Fxx	Fxy	Fyy	Vx	Vy
16483	SLV 2	273	133.13	-19.08	109.32	-723	298	-1403	864	-149
16439	SLV 13	296	129.45	19.98	84.18	-697	-288	-1392	-855	-115
16482	SLV 2	274	70.69	-4.23	81.57	-567	139	-176	528	-112
16440	SLV 13	295	74.74	6.56	67.21	-553	-146	-198	-583	-99
13549	SLU 83	4384	0.24	0.47	0.56	-550	76	-497	4	5

#### Sollecitazioni con sforzo Fxx massimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Mxx	Mxy	Myy	Fxx	Fxy	Fyy	Vx	Vy
16483	SLV X	273	-13.31	2.23	8.1	375	-159	784	-127	-18
16448	SLV 13	136	474.05	-51.53	-437.23	334	-221	42	-1176	-946
5807	SLV 4	4284	0.53	0	2.57	301	2	-634	-10	17
16482	SLV X	274	-7.91	1.63	8.83	282	-76	132	-118	-27
16449	SLV 15	134	8.53	-21.08	-20.06	268	-98	73	-11	-77

#### Sollecitazioni con sforzo Fyy minimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Mxx	Mxy	Myy	Fxx	Fxy	Fyy	Vx	Vy
16483	SLV 2	237	-30.88	-4.59	55.98	-96	403	-1433	-135	-168
16439	SLV 13	250	-30.08	8.43	46.31	-95	-394	-1413	117	-131
31	SLU 83	1084	0.47	-0.51	5.05	12	79	-863	2	26
28	SLU 83	1084	-0.63	0.46	-5.26	50	-43	-822	-3	-26
7139	SLU 83	1267	-0.27	0.14	0.1	29	-5	-779	-2	-1

#### Sollecitazioni con sforzo Fyy massimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Mxx	Mxy	Myy	Fxx	Fxy	Fyy	Vx	Vy
16483	SLV X	237	3.13	2.01	3.65	50	-217	803	15	-14



Shell Ind	Cont. N.br.	Nodo Ind	Sollecitazione							
			Mxx	Mxy	Myy	Fxx	Fxy	Fyy	Vx	Vy
16356	SLV 2	111	2.31	-0.56	-4.74	212	-255	777	-11	55
5808	SLV 10	4283	0.21	0.02	13.53	-50	1	524	3	70
5807	SLV X	3614	0.01	0	0.9	137	-1	465	0	-2
16439	SLV 4	250	-26.82	7.55	57.16	21	104	440	160	-158

#### 1.1.2.4 Sollecitazioni estreme gusci verticali

**Shell:** elemento guscio a cui si riferiscono le sollecitazioni.

**Ind:** indice del guscio.

**Cont.:** contesto a cui si riferiscono le sollecitazioni.

**N.br.:** nome breve della condizione o combinazione di carico.

**Nodo:** nodo su cui si basa il guscio a cui si riferisce la sollecitazione.

**Ind:** indice del nodo.

**Sollecitazione:** valori della sollecitazione.

**Moo:** componente Moo della sollecitazione del guscio nel nodo indicato. [kN\*m/m]

**Moz:** componente Moz della sollecitazione del guscio nel nodo indicato. [kN\*m/m]

**Mzz:** componente Mzz della sollecitazione del guscio nel nodo indicato. [kN\*m/m]

**Foo:** componente Foo della sollecitazione del guscio nel nodo indicato. [kN/m]

**Foz:** componente Foz della sollecitazione del guscio nel nodo indicato. [kN/m]

**Fzz:** componente Fzz della sollecitazione del guscio nel nodo indicato. [kN/m]

**Vo:** componente Vo della sollecitazione del guscio nel nodo indicato. [kN/m]

**Vz:** componente Vz della sollecitazione del guscio nel nodo indicato. [kN/m]

#### Sollecitazioni con momento Moo minimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell Ind	Cont. N.br.	Nodo Ind	Sollecitazione							
			Moo	Moz	Mzz	Foo	Foz	Fzz	Vo	Vz
16606	SLV 13	489	-38.42	29.8	167.05	-535	-55	-822	-65	431
17311	SLV 3	18638	-38.36	0.98	-15.72	2584	45	-9	-187	-39
17312	SLV 3	18638	-38.23	-1.19	-15.8	-2606	25	-287	177	-36
17287	SLV 3	18639	-37.94	2.29	-14.9	-792	262	-242	-184	-10
17288	SLV 3	18639	-37.62	0.75	-14.23	584	221	28	186	-34

#### Sollecitazioni con momento Moo massimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell Ind	Cont. N.br.	Nodo Ind	Sollecitazione							
			Moo	Moz	Mzz	Foo	Foz	Fzz	Vo	Vz
17311	SLV 14	18638	37.18	-0.96	14.86	-2431	106	-333	182	37
17312	SLV 14	18638	37.07	1.29	14.94	2437	151	147	-171	33
17287	SLV 14	18639	36.94	-2.2	14.77	26	14	-61	180	10
17288	SLV 14	18639	36.67	-0.87	14.19	-141	48	-34	-181	34
16603	SLV 1	632	29.55	44.14	-197.01	191	2	-61	13	-494

#### Sollecitazioni con momento Mzz minimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell Ind	Cont. N.br.	Nodo Ind	Sollecitazione							
			Moo	Moz	Mzz	Foo	Foz	Fzz	Vo	Vz
16603	SLV 3	632	28.42	47.31	-209.5	146	23	-99	19	-528
16606	SLV 2	489	8.54	-34.25	-170.55	-285	-110	-336	-16	-460
16607	SLV 2	489	23.24	35.17	-154.91	54	15	-322	22	-344
16647	SLV 14	2939	6.72	-16.66	-115.13	249	-136	-804	50	350
16657	SLV 15	2918	-8.8	25.41	-87.98	108	56	-164	-74	220

#### Sollecitazioni con momento Mzz massimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell Ind	Cont. N.br.	Nodo Ind	Sollecitazione							
			Moo	Moz	Mzz	Foo	Foz	Fzz	Vo	Vz
16603	SLV X	632	-14.33	-45.68	194.66	-29	47	-222	-56	486
16606	SLV 15	489	-37.52	31.7	176.18	-472	-11	-753	-69	455
16607	SLV 15	489	-8.01	-39.95	164.13	-370	52	-721	-60	376
17075	SLV 2	461	-8.59	-6.94	60.13	103	37	-782	-5	-218
16604	SLV X	1278	-6.09	-4.09	47.07	27	-139	197	28	-208

#### Sollecitazioni con sforzo Foo minimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell Ind	Cont. N.br.	Nodo Ind	Sollecitazione							
			Moo	Moz	Mzz	Foo	Foz	Fzz	Vo	Vz
17312	SLV 7	18638	-15.09	-0.45	-3.76	-4582	-16	-460	41	-8
17311	SLV 10	18638	13.98	-0.39	2.88	-4399	120	-449	68	7
17287	SLV 5	18647	7.97	-0.23	2.01	-4234	1103	1136	-42	11
17288	SLV 12	18631	-6.88	-0.24	-1.59	-3924	-1075	1138	-36	-6
17313	SLV 10	18898	3.28	0.68	1.14	-1183	-223	68	8	4

#### Sollecitazioni con sforzo Foo massimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell Ind	Cont. N.br.	Nodo Ind	Sollecitazione							
			Moo	Moz	Mzz	Foo	Foz	Fzz	Vo	Vz
17311	SLV 7	18638	-15.16	0.42	-3.75	4552	31	107	-74	-9
17312	SLV 10	18638	13.93	0.56	2.9	4413	191	320	-35	6
17287	SLV 12	18647	-6.99	0.21	-1.92	3970	-1458	-1515	37	-10
17288	SLV 5	18631	7.84	0.09	1.62	3873	846	-629	40	6
17314	SLV 10	18901	3.22	-0.61	2.17	1146	-237	-161	-7	4



### Sollecitazioni con sforzo Fzz minimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell Ind	Cont. N.br.	Nodo Ind	Sollecitazione							
			Moo	Moz	Mzz	Foo	Foz	Fzz	Vo	Vz
17257	SLV 1	19319	0.53	0	0.58	90	1	-1702	-7	-2
17287	SLV 12	18647	-6.99	0.21	-1.92	3970	-1458	-1515	37	-10
4769	SLV 14	2938	-2.42	-1.17	-7.36	336	43	-1457	-28	-78
16603	SLV 16	1280	0.09	4.81	6.35	-738	844	-1444	-137	444
17282	SLV 8	19159	0.48	-0.13	0.48	-230	-54	-1426	16	1

### Sollecitazioni con sforzo Fzz massimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell Ind	Cont. N.br.	Nodo Ind	Sollecitazione							
			Moo	Moz	Mzz	Foo	Foz	Fzz	Vo	Vz
17282	SLV 8	19156	-0.06	-0.02	0.17	568	83	1872	16	1
17257	SLV 16	19319	-0.18	0	-0.71	-131	-1	1631	2	2
17287	SLV 5	18899	-3.93	0.79	-1.28	1492	-570	1306	42	6
17288	SLV 12	18631	-6.88	-0.24	-1.59	-3924	-1075	1138	-36	-6
17281	SLV 5	18948	-0.03	-0.42	0.33	699	-494	1065	4	-7

## 1.1.3 Sollecitazioni gusci armati

### 1.1.3.1 Convenzioni di segno gusci

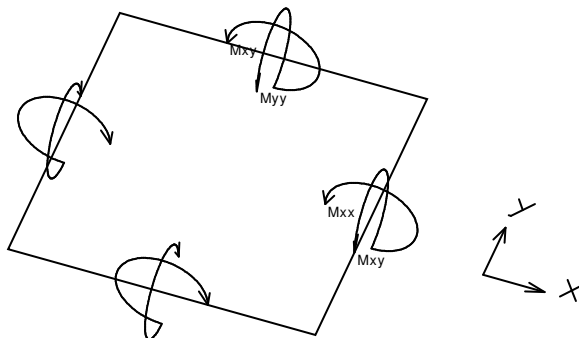
Sono individuate distinte convenzioni di segno in relazione al tipo di elemento strutturale a cui il guscio si riferisce:

- convenzione per gusci non verticali, originati ad esempio da piastre e platee;
- convenzione per gusci verticali, originati ad esempio da pareti e muri.

#### Convenzione di segno per gusci non verticali

Il sistema di riferimento nel quale sono espressi i parametri di sollecitazione è così definito: origine appartenente al piano dell'elemento, asse x e y contenuti nel piano dell'elemento e terzo asse (z) ortogonale al piano dell'elemento a formare una terna destrorsa. In particolare l'asse x ha proiezione in pianta parallela ed equiversa all'asse globale X. Nel caso di piastre orizzontali (caso più comune) gli assi x, y e z locali all'elemento sono paralleli ed equiversi agli assi X, Y e Z globali. Si sottolinea che non ha alcun interesse collocare esattamente nel piano dell'elemento la posizione dell'origine in quanto i parametri di sollecitazione sono invarianti rispetto a tale posizione.

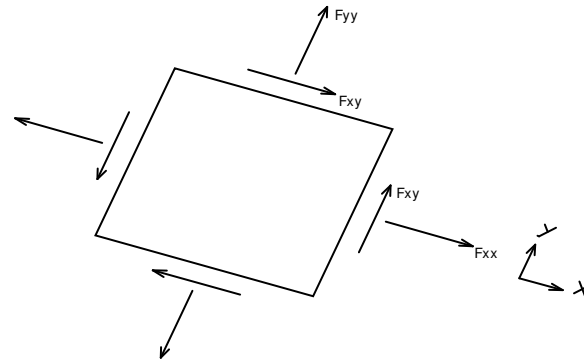
In figura è mostrato un elemento infinitesimo di shell orizzontale con indicato il sistema di riferimento e i parametri di sollecitazione  $M_{xx}$ ,  $M_{yy}$ ,  $M_{xy}$ .



Si definiscono:

- $M_{xx}$ : momento flettente  $[Forza \cdot Lunghezza / Lunghezza]$  agente sul bordo di normale x (verso positivo indicato dalla freccia in figura che tende le fibre inferiori);
- $M_{yy}$ : momento flettente  $[Forza \cdot Lunghezza / Lunghezza]$  agente sul bordo di normale y (verso positivo indicato dalla freccia in figura che tende le fibre inferiori);
- $M_{xy}$ : momento torcente  $[Forza \cdot Lunghezza / Lunghezza]$  agente sui bordi (verso positivo indicato dalla freccia in figura).

Per quanto riguarda le sollecitazioni estensionali si faccia riferimento alla figura seguente dove per lo stesso elemento infinitesimo di shell orizzontale con indicato il sistema di riferimento e i parametri di sollecitazione  $F_{xx}$ ,  $F_{yy}$ ,  $F_{xy}$ .



Si definiscono:

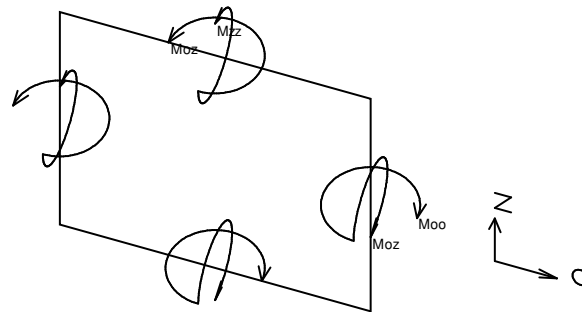
- $F_{xx}$ : sforzo estensionale [Forza/Lunghezza] agente sul bordo di normale  $x$  (verso positivo indicato dalla freccia in figura che mette in trazione l'elemento);
- $F_{yy}$ : sforzo estensionale [Forza/Lunghezza] agente sul bordo di normale all'asse  $y$  (verso positivo indicato dalla freccia in figura che mette in trazione l'elemento);
- $F_{xy}$ : sforzo di taglio [Forza/Lunghezza] agente sui bordi (verso positivo indicato dalla freccia in figura).

Vengono riportati inoltre i tagli fuori dal piano dell'elemento guscio:

- $V_x$ : taglio fuori piano [Forza/Lunghezza] applicato al bordo di normale parallela all'asse  $x$ ;
- $V_y$ : taglio fuori piano [Forza/Lunghezza] applicato al bordo di normale parallela all'asse  $y$ .

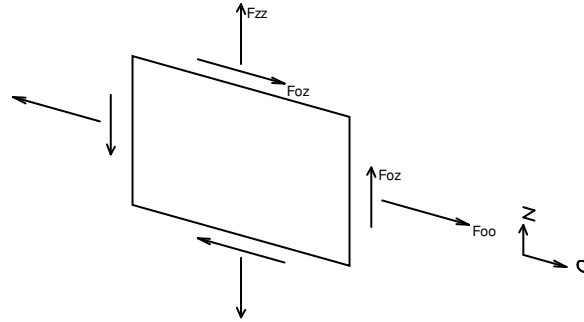
#### Convenzione di segno per gusci verticali

Il sistema di riferimento nel quale sono espressi i parametri di sollecitazione è così definito: origine appartenente al piano dell'elemento, asse  $O$  (ascisse) e  $z$  (ordinate) contenuti nel piano dell'elemento e terzo asse ortogonale al piano dell'elemento a formare una terna destrorsa. In particolare l'asse  $O$  è orizzontale e l'asse  $z$  parallelo ed equiverso con l'asse  $Z$  globale. Si sottolinea che non ha alcun interesse collocare esattamente nel piano dell'elemento la posizione dell'origine in quanto i parametri di sollecitazione sono invarianti rispetto a tale posizione. In figura è mostrato un elemento infinitesimo di shell orizzontale con indicato il sistema di riferimento e i parametri di sollecitazione  $M_{oo}$ ,  $M_{zz}$ ,  $M_{oz}$ .



- $M_{oo}$ : momento flettente distribuito [Forza\*Lunghezza/Lunghezza] applicato al bordo di normale parallela all'asse  $O$  (verso positivo indicato dalla freccia in figura che tende le fibre inferiori);
- $M_{zz}$ : momento flettente distribuito [Forza\*Lunghezza/Lunghezza] applicato al bordo di normale parallela all'asse  $z$  (verso positivo indicato dalla freccia in figura che tende le fibre inferiori);
- $M_{oz}$ : momento 'torcente' distribuito [Forza\*Lunghezza/Lunghezza] applicato sui bordi (verso positivo indicato dalla freccia in figura).

Per quanto riguarda le sollecitazioni estensionali si faccia riferimento alla figura seguente dove per lo stesso elemento infinitesimo di shell con indicato il sistema di riferimento i parametri di sollecitazione  $F_{oo}$ ,  $F_{zz}$ ,  $F_{oz}$  sono rispettivamente:



- $F_{zz}$ : sforzo tensionale distribuito [Forza/Lunghezza] applicato al bordo di normale parallela all'asse  $z$  (verso positivo indicato dalla freccia in figura che mette in trazione l'elemento);
- $F_{oo}$ : sforzo tensionale distribuito [Forza/Lunghezza] applicato al bordo di normale parallela all'asse  $O$  (verso positivo indicato dalla freccia in figura che mette in trazione l'elemento);
- $F_{oz}$ : sforzo tagliante distribuito [Forza/Lunghezza] applicato sui bordi (verso positivo indicato dalla freccia in figura).

Vengono riportati inoltre i tagli fuori dal piano dell'elemento guscio:

- $V_o$ : taglio fuori piano applicato al bordo di normale parallela all'asse  $O$ ;
- $V_z$ : taglio fuori piano applicato al bordo di normale parallela all'asse  $z$ .

### 1.1.4 Sollecitazioni gusci muratura

#### 1.1.4.1 Convenzioni di segno gusci muratura

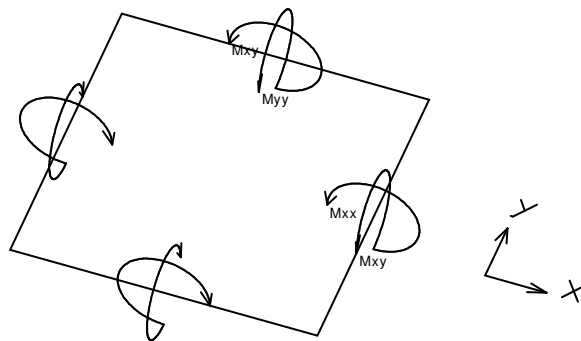
Sono individuate distinte convenzioni di segno in relazione al tipo di elemento strutturale a cui il guscio muratura si riferisce:

- convenzione per gusci non verticali, originati ad esempio da piastre e platee;
- convenzione per gusci verticali, originati ad esempio da pareti e muri.

#### Convenzione di segno per gusci non verticali

Il sistema di riferimento nel quale sono espressi i parametri di sollecitazione è così definito: origine appartenente al piano dell'elemento, asse  $x$  e  $y$  contenuti nel piano dell'elemento e terzo asse ( $z$ ) ortogonale al piano dell'elemento a formare una terna destrorsa. In particolare l'asse  $x$  ha proiezione in pianta parallela ed equivale all'asse globale  $X$ . Nel caso di piastre orizzontali (caso più comune) gli assi  $x$ ,  $y$  e  $z$  locali all'elemento sono paralleli ed equivalenti agli assi  $X$ ,  $Y$  e  $Z$  globali. Si sottolinea che non ha alcun interesse collocare esattamente nel piano dell'elemento la posizione dell'origine in quanto i parametri di sollecitazione sono invarianti rispetto a tale posizione.

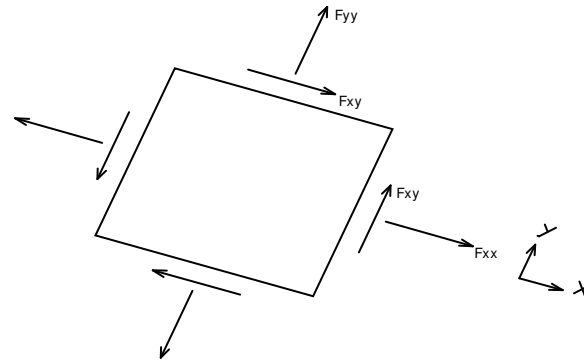
In figura è mostrato un elemento infinitesimo di shell orizzontale con indicato il sistema di riferimento e i parametri di sollecitazione  $M_{xx}$ ,  $M_{yy}$ ,  $M_{xy}$ .



Si definiscono:

- $M_{xx}$ : momento flettente [Forza\*Lunghezza/Lunghezza] agente sul bordo di normale  $x$  (verso positivo indicato dalla freccia in figura che tende le fibre inferiori);
- $M_{yy}$ : momento flettente [Forza\*Lunghezza/Lunghezza] agente sul bordo di normale  $y$  (verso positivo indicato dalla freccia in figura che tende le fibre inferiori);
- $M_{xy}$ : momento torcente [Forza\*Lunghezza/Lunghezza] agente sui bordi (verso positivo indicato dalla freccia in figura).

Per quanto riguarda le sollecitazioni estensionali si faccia riferimento alla figura seguente dove per lo stesso elemento infinitesimo di shell orizzontale con indicato il sistema di riferimento e i parametri di sollecitazione  $F_{xx}$ ,  $F_{yy}$ ,  $F_{xy}$ .

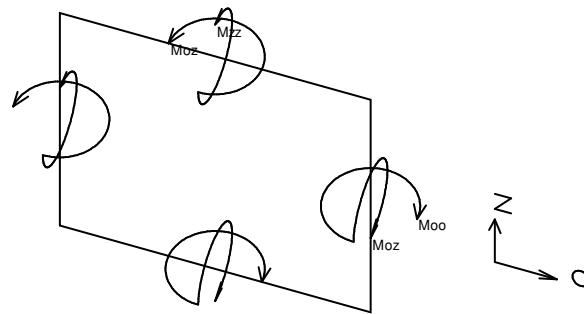


Si definiscono:

- $F_{xx}$ : sforzo tensionale [Forza/Lunghezza] agente sul bordo di normale  $x$  (verso positivo indicato dalla freccia in figura che mette in trazione l'elemento);
- $F_{yy}$ : sforzo tensionale [Forza/Lunghezza] agente sul bordo di normale all'asse  $y$  (verso positivo indicato dalla freccia in figura che mette in trazione l'elemento);
- $F_{xy}$ : sforzo tagliante [Forza/Lunghezza] agente sui bordi (verso positivo indicato dalla freccia in figura).

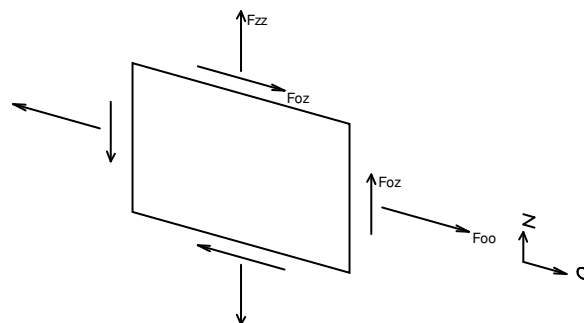
#### Convenzione di segno per gusci verticali

Il sistema di riferimento nel quale sono espressi i parametri di sollecitazione è così definito: origine appartenente al piano dell'elemento, asse  $O$  (ascisse) e  $z$  (ordinate) contenuti nel piano dell'elemento e terzo asse ortogonale al piano dell'elemento a formare una terna destrorsa. In particolare l'asse  $O$  è orizzontale e l'asse  $z$  parallelo ed equiverso con l'asse  $Z$  globale. Si sottolinea che non ha alcun interesse collocare esattamente nel piano dell'elemento la posizione dell'origine in quanto i parametri di sollecitazione sono invarianti rispetto a tale posizione. In figura è mostrato un elemento infinitesimo di shell orizzontale con indicato il sistema di riferimento e i parametri di sollecitazione  $M_{oo}$ ,  $M_{zz}$ ,  $M_{oz}$ .



- $M_{oo}$ : momento flettente distribuito [Forza\*Lunghezza/Lunghezza] applicato al bordo di normale parallela all'asse  $O$  (verso positivo indicato dalla freccia in figura che tende le fibre inferiori);
- $M_{zz}$ : momento flettente distribuito [Forza\*Lunghezza/Lunghezza] applicato al bordo di normale parallela all'asse  $z$  (verso positivo indicato dalla freccia in figura che tende le fibre inferiori);
- $M_{oz}$ : momento 'torcente' distribuito [Forza\*Lunghezza/Lunghezza] applicato sui bordi (verso positivo indicato dalla freccia in figura).

Per quanto riguarda le sollecitazioni estensionali si faccia riferimento alla figura seguente dove per lo stesso elemento infinitesimo di shell con indicato il sistema di riferimento i parametri di sollecitazione  $F_{oo}$ ,  $F_{zz}$ ,  $F_{oz}$  sono rispettivamente:



- $F_{zz}$ : sforzo tensionale distribuito [Forza/Lunghezza] applicato al bordo di normale parallela all'asse  $z$  (verso positivo indicato dalla freccia in figura che mette in trazione l'elemento);



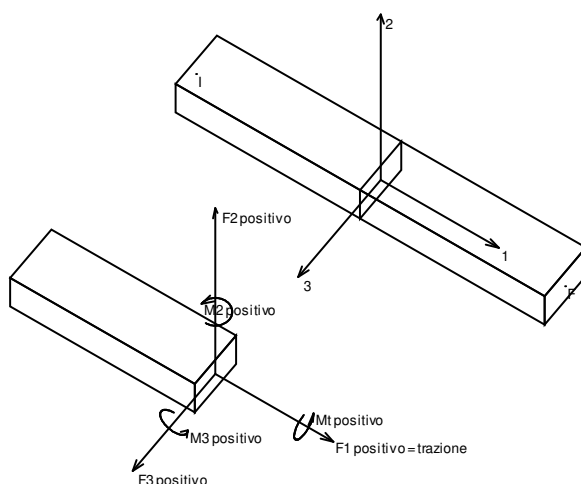
- $F_{oo}$ : sforzo tensionale distribuito [Forza/Lunghezza] applicato al bordo di normale parallela all'asse O (verso positivo indicato dalla freccia in figura che mette in trazione l'elemento);
- $F_{oz}$ : sforzo tagliante distribuito [Forza/Lunghezza] applicato sui bordi (verso positivo indicato dalla freccia in figura).

## 1.1.5 Sollecitazioni aste in muratura

### 1.1.5.1 Convenzioni di segno aste

Le abbreviazioni relative alle sollecitazioni sugli elementi aste sono da intendersi:

- $F_1$  (N): sforzo normale nell'asta;
- $F_2$ : sforzo di taglio agente nella direzione dell'asse locale 2;
- $F_3$ : sforzo di taglio agente nella direzione dell'asse locale 3;
- $M_1$  (Mt): momento attorno all'asse locale 1; equivale al momento torcente;
- $M_2$ : momento attorno all'asse locale 2;
- $M_3$ : momento attorno all'asse locale 3.



La convenzione sui segni per i parametri di sollecitazione delle aste è la seguente:

presa un'asta con nodo iniziale i e nodo finale f, asse 1 che va da i a f, assi 2 e 3 presi secondo quanto indicato nei paragrafi successivi relativi al sistema locale delle aste sezionando l'asta in un punto e considerando la sezione sinistra del punto in cui si è effettuato il taglio (sezione da cui esce il versore asse 1) i parametri di sollecitazione sono positivi se hanno verso e direzione concordi con il sistema di riferimento locale dell'asta 1, 2, 3 (per i momenti si adotta la regola della mano destra).

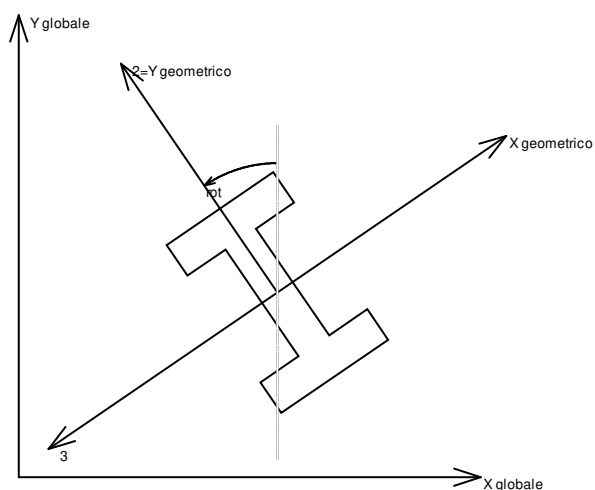
Il sistema è definito diversamente per tre categorie di aste, a seconda che siano originate da:

- aste verticali ad esempio pilastri e colonne;
- aste non verticali non di c.a., ad esempio travi di acciaio o legno;
- aste non verticali in c.a.: travi in c.a. di piano, falda o a quota generica.

Nel seguito si indica con 1, 2 e 3 il sistema locale dell'asta che non sempre coincide con gli assi principali della sezione. Si ricorda che per assi principali si intendono gli assi rispetto a cui si ha il raggio di inerzia minimo e massimo. Gli assi 1, 2 e 3 rispettano la regola della mano destra.

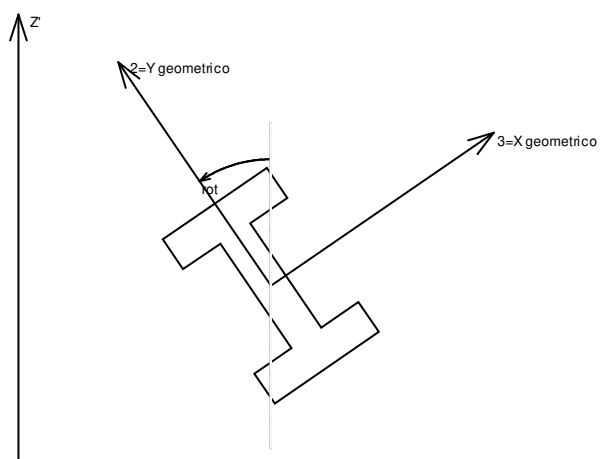


## Sistema locale aste verticali



Nella figura si considera l'asse 1 uscente dal foglio (l'osservatore guarda in direzione opposta a quella dell'asse 1).

## Sistema locale aste non verticali

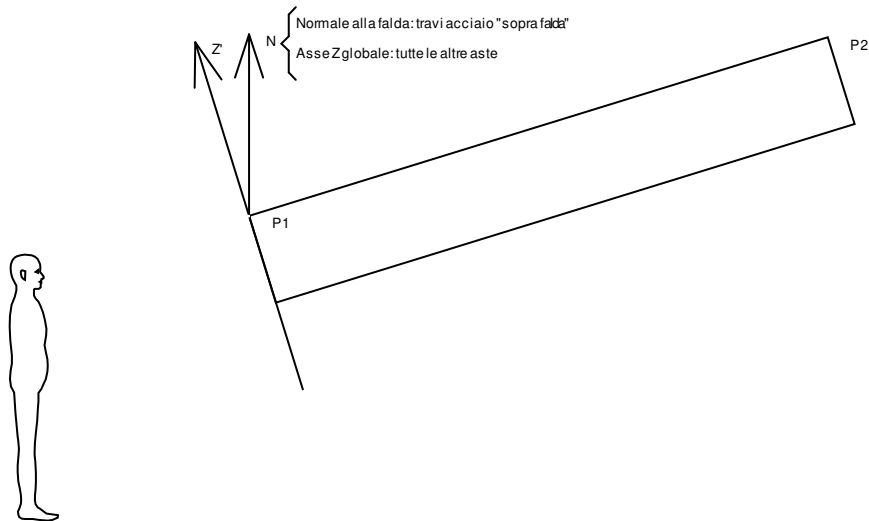


Nella figura si considera l'asse 1 entrante nel foglio (l'osservatore guarda in direzione coincidente a quella dell'asse 1).

L'asse Z' è illustrato nella figura seguente dove:

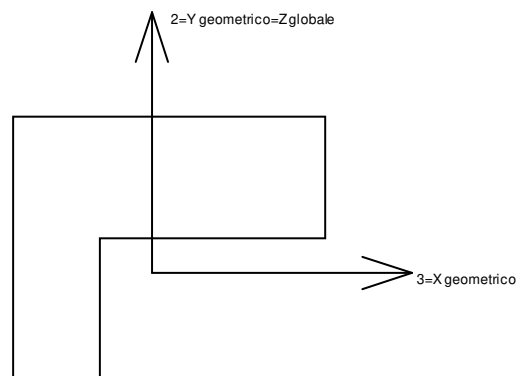
- P1 è il punto di inserimento iniziale dell'asta;
- P2 è il punto di inserimento finale dell'asta;
- N è la normale al piano o falda di inserimento;





Z' è quindi l'intersezione tra il piano passante per P1, P2 contenente N e il piano della sezione iniziale dell'asta.

**Sistema locale aste derivanti da travi in c.a.**



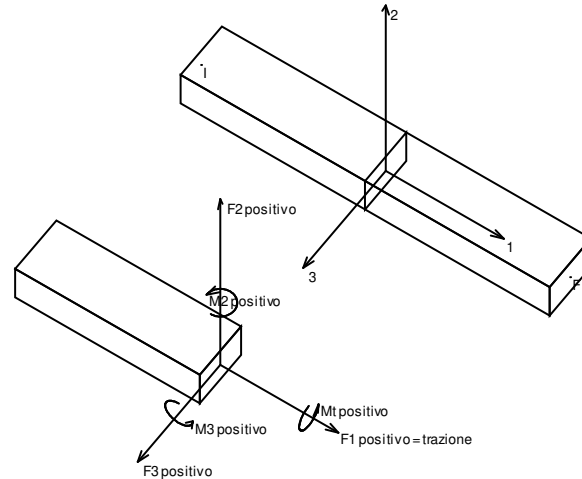
Nella figura si considera l'asse 1 entrante nel foglio (l'osservatore guarda in direzione coincidente a quella dell'asse 1). L'asse 2 è sempre verticale e quindi coincidente con l'asse Z globale nonché con l'asse y geometrico. L'asse 3 coincide con l'asse x geometrico. Si sottolinea il fatto che gli assi 2 e 3 non corrispondono agli assi principali della sezione.

### 1.1.6 Sollecitazioni aste in muratura FRCM

#### 1.1.6.1 Convenzioni di segno aste

Le abbreviazioni relative alle sollecitazioni sugli elementi aste sono da intendersi:

- F1 (N): sforzo normale nell'asta;
- F2: sforzo di taglio agente nella direzione dell'asse locale 2;
- F3: sforzo di taglio agente nella direzione dell'asse locale 3;
- M1 (Mt): momento attorno all'asse locale 1; equivale al momento torcente;
- M2: momento attorno all'asse locale 2;
- M3: momento attorno all'asse locale 3.



La convenzione sui segni per i parametri di sollecitazione delle aste è la seguente:

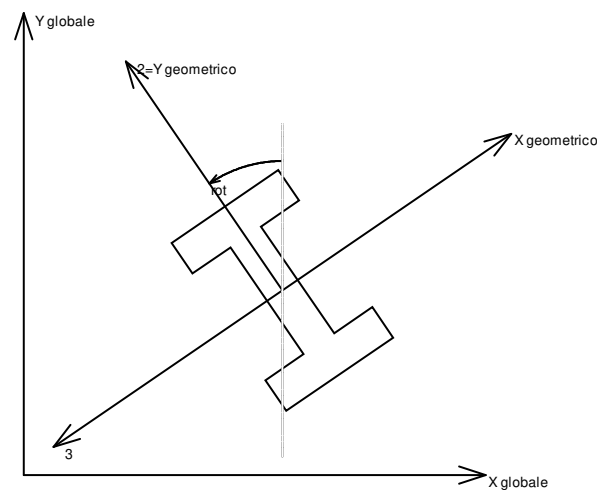
presa un'asta con nodo iniziale  $i$  e nodo finale  $f$ , asse 1 che va da  $i$  a  $f$ , assi 2 e 3 presi secondo quanto indicato nei paragrafi successivi relativi al sistema locale delle aste sezionando l'asta in un punto e considerando la sezione sinistra del punto in cui si è effettuato il taglio (sezione da cui esce il versore asse 1) i parametri di sollecitazione sono positivi se hanno verso e direzione concordi con il sistema di riferimento locale dell'asta 1, 2, 3 (per i momenti si adotta la regola della mano destra).

Il sistema è definito diversamente per tre categorie di aste, a seconda che siano originate da:

- aste verticali ad esempio pilastri e colonne;
- aste non verticali non di c.a., ad esempio travi di acciaio o legno;
- aste non verticali in c.a.: travi in c.a. di piano, falda o a quota generica.

Nel seguito si indica con 1, 2 e 3 il sistema locale dell'asta che non sempre coincide con gli assi principali della sezione. Si ricorda che per assi principali si intendono gli assi rispetto a cui si ha il raggio di inerzia minimo e massimo. Gli assi 1, 2 e 3 rispettano la regola della mano destra.

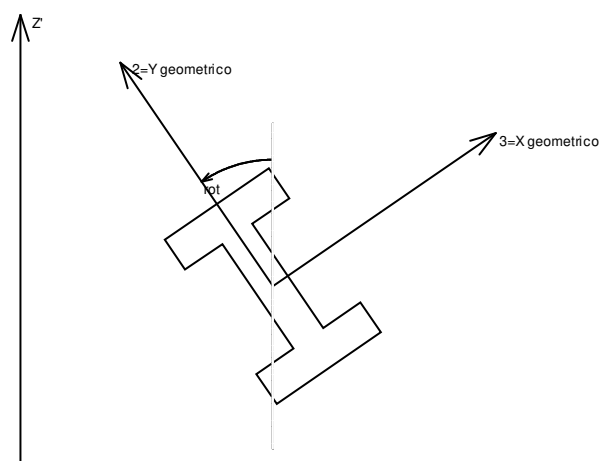
#### Sistema locale aste verticali



Nella figura si considera l'asse 1 uscente dal foglio (l'osservatore guarda in direzione opposta a quella dell'asse 1).



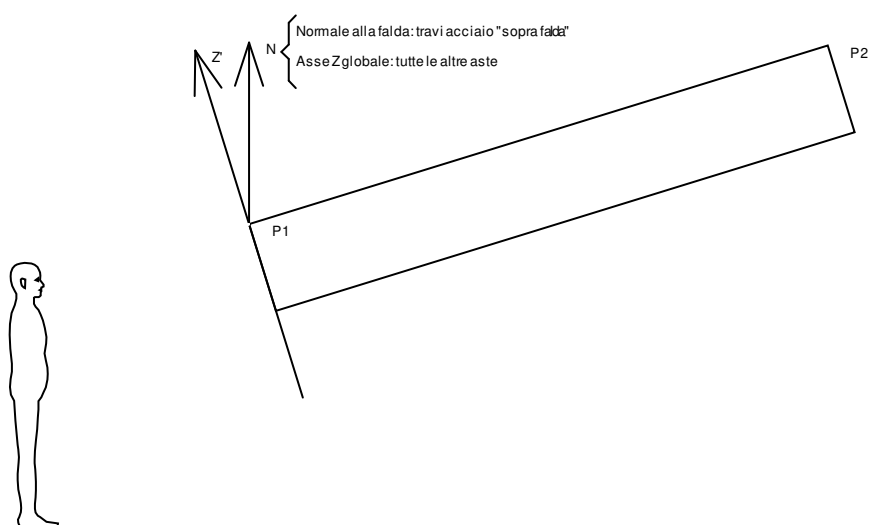
## Sistema locale aste non verticali



Nella figura si considera l'asse 1 entrante nel foglio (l'osservatore guarda in direzione coincidente a quella dell'asse 1).

L'asse  $Z'$  è illustrato nella figura seguente dove:

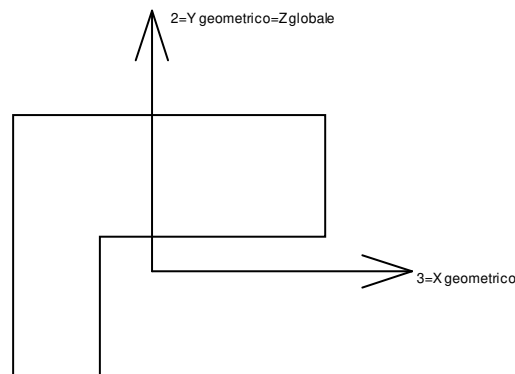
- $P1$  è il punto di inserimento iniziale dell'asta;
- $P2$  è il punto di inserimento finale dell'asta;
- $N$  è la normale al piano o falda di inserimento;



$Z'$  è quindi l'intersezione tra il piano passante per  $P1$ ,  $P2$  contenente  $N$  e il piano della sezione iniziale dell'asta.



## Sistema locale aste derivanti da travi in c.a.



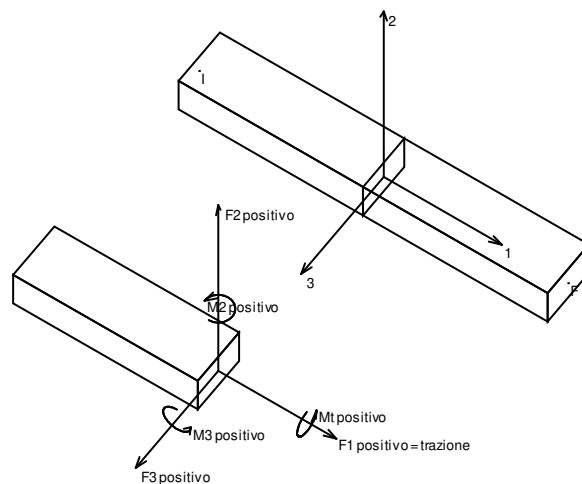
Nella figura si considera l'asse 1 entrante nel foglio (l'osservatore guarda in direzione coincidente a quella dell'asse 1). L'asse 2 è sempre verticale e quindi coincidente con l'asse Z globale nonché con l'asse y geometrico. L'asse 3 coincide con l'asse x geometrico. Si sottolinea il fatto che gli assi 2 e 3 non corrispondono agli assi principali della sezione.

### 1.1.7 Sollecitazioni aste in muratura armata

#### 1.1.7.1 Convenzioni di segno aste

Le abbreviazioni relative alle sollecitazioni sugli elementi aste sono da intendersi:

- F1 (N): sforzo normale nell'asta;
- F2: sforzo di taglio agente nella direzione dell'asse locale 2;
- F3: sforzo di taglio agente nella direzione dell'asse locale 3;
- M1 (Mt): momento attorno all'asse locale 1; equivale al momento torcente;
- M2: momento attorno all'asse locale 2;
- M3: momento attorno all'asse locale 3.



La convenzione sui segni per i parametri di sollecitazione delle aste è la seguente:

presa un'asta con nodo iniziale i e nodo finale f, asse 1 che va da i a f, assi 2 e 3 presi secondo quanto indicato nei paragrafi successivi relativi al sistema locale delle aste sezionando l'asta in un punto e considerando la sezione sinistra del punto in cui si è effettuato il taglio (sezione da cui esce il versore asse 1) i parametri di sollecitazione sono positivi se hanno verso e direzione concordi con il sistema di riferimento locale dell'asta 1, 2, 3 (per i momenti si adotta la regola della mano destra).

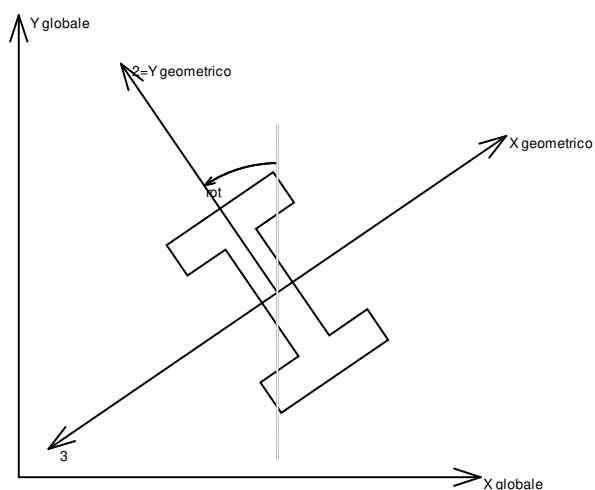
Il sistema è definito diversamente per tre categorie di aste, a seconda che siano originate da:

- aste verticali ad esempio pilastri e colonne;
- aste non verticali non di c.a., ad esempio travi di acciaio o legno;
- aste non verticali in c.a.: travi in c.a. di piano, falda o a quota generica.

Nel seguito si indica con 1, 2 e 3 il sistema locale dell'asta che non sempre coincide con gli assi principali della sezione. Si ricorda che per assi principali si intendono gli assi rispetto a cui si ha il raggio di inerzia minimo e massimo. Gli assi 1, 2 e 3 rispettano la regola della mano destra.

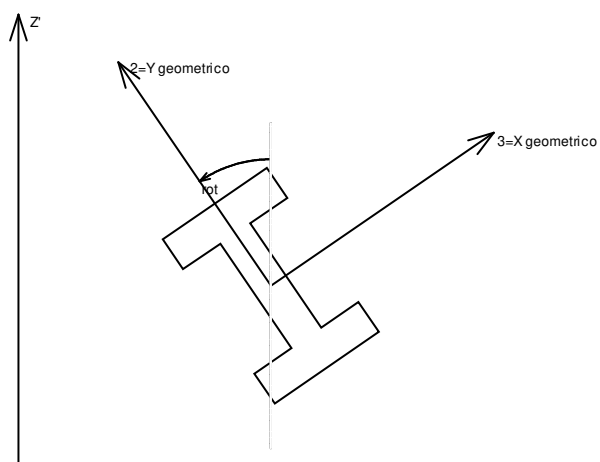


## Sistema locale aste verticali



Nella figura si considera l'asse 1 uscente dal foglio (l'osservatore guarda in direzione opposta a quella dell'asse 1).

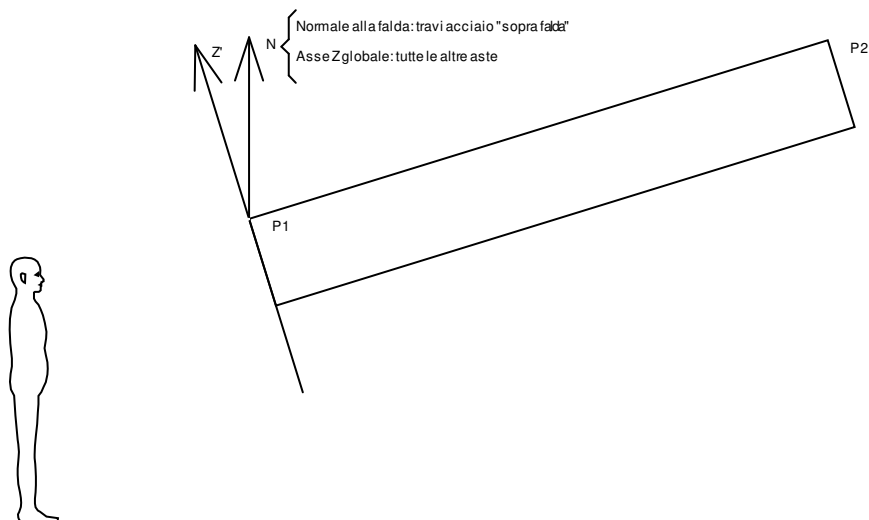
## Sistema locale aste non verticali



Nella figura si considera l'asse 1 entrante nel foglio (l'osservatore guarda in direzione coincidente a quella dell'asse 1).

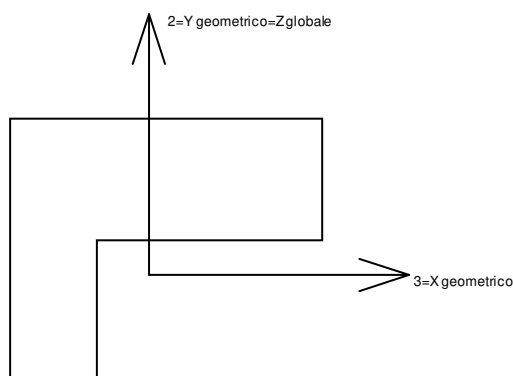
L'asse Z' è illustrato nella figura seguente dove:

- P1 è il punto di inserimento iniziale dell'asta;
- P2 è il punto di inserimento finale dell'asta;
- N è la normale al piano o falda di inserimento;



$Z'$  è quindi l'intersezione tra il piano passante per  $P1, P2$  contenente  $N$  e il piano della sezione iniziale dell'asta.

**Sistema locale aste derivanti da travi in c.a.**



Nella figura si considera l'asse 1 entrante nel foglio (l'osservatore guarda in direzione coincidente a quella dell'asse 1). L'asse 2 è sempre verticale e quindi coincidente con l'asse  $Z$  globale nonché con l'asse  $y$  geometrico. L'asse 3 coincide con l'asse  $x$  geometrico. . Si sottolinea il fatto che gli assi 2 e 3 non corrispondono agli assi principali della sezione.

## 1.2 Reazioni nodali

### 1.2.1 Reazioni nodali estreme

**Nodo:** Nodo sollecitato dalla reazione vincolare.

**Ind.:** indice del nodo.

**Cont.:** Contesto a cui si riferisce la reazione vincolare.

**N.br.:** nome breve della condizione o combinazione di carico.

**Reazione a traslazione:** reazione vincolare traslazionale del nodo.

**x:** componente  $X$  della reazione vincolare del nodo. [kN]

**y:** componente  $Y$  della reazione vincolare del nodo. [kN]

**z:** componente  $Z$  della reazione vincolare del nodo. [kN]

**Reazione a rotazione:** reazione vincolare rotazionale del nodo.

**x:** componente  $X$  della reazione a rotazione del nodo. [kN\*m]

**y:** componente  $Y$  della reazione a rotazione del nodo. [kN\*m]

**z:** componente  $Z$  della reazione a rotazione del nodo. [kN\*m]

#### Reazioni $F_x$ minime

Vengono mostrati i soli 5 nodi più sollecitati.

Nodo Ind.	Cont. N.br.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
18639	SLV 14	-74.63	-88.03	30.76	8.6678	-3.0655	0.9168



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
18638	SLV 16	-65.12	-0.44	34.71	5.8087	-3.2415	-0.0422
686	SLV 16	-43.43	-4.83	174.79	-12.7603	-10.7026	-3.5453
624	SLV 14	-40.2	5.59	217.26	29.6207	-1.54	5.8129
487	SLV 15	-31.75	-3.75	177.23	-6.0715	39.2603	-0.3124

#### Reazioni Fx massime

Vengono mostrati i soli 5 nodi più sollecitati.

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
18639	SLV 3	76.46	120.09	29.09	18.132	3.0615	-0.9581
18638	SLV 1	67.32	-93.91	31.13	6.157	3.4292	0.0389
624	SLV 3	38.52	-2.06	192.56	30.5656	0.3958	-5.8427
686	SLV 1	38.41	0.48	263.04	-19.67	-14.4518	2.812
627	SLV 2	30.23	7.2	146.93	-24.6621	2.6014	4.7061

#### Reazioni Fy minime

Vengono mostrati i soli 5 nodi più sollecitati.

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
18638	SLV 7	14.83	-1105.06	36.44	15.5219	0.7749	0.0136
18639	SLV 12	-14.77	-1100.93	33.56	23.878	-0.6416	0.1798
686	SLV 8	5.5	-26.66	238.61	-18.0564	-13.8499	-0.9332
624	SLV Y	3.69	-22.82	4.13	-0.6188	-0.6453	-0.6102
611	SLV 8	4.31	-19.7	171.06	-10.0437	-11.6272	-0.8603

#### Reazioni Fy massime

Vengono mostrati i soli 5 nodi più sollecitati.

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
18639	SLV 5	16.59	1133	26.29	2.9217	0.6377	-0.2211
18638	SLV 10	-12.64	1010.71	29.4	-3.5562	-0.5873	-0.0169
624	SLV 5	6.95	25.73	196.68	30.9309	0.422	-1.115
686	SLV 9	-10.51	22.31	199.22	-14.3739	-11.3045	0.2
627	SLV 5	11.19	19.64	151.59	-25.6033	2.9004	0.7035

#### Reazioni Fz minime

Vengono mostrati i soli 5 nodi più sollecitati.

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
672	SLV X	-18.42	2.66	-77.92	4.4181	14.1745	-0.7192
686	SLV X	-39.7	5.57	-46.26	3.6601	2.0946	-2.7156
744	SLV X	-10.63	1.55	-43.04	7.8366	6.7351	-1.6657
596	SLV X	-11.35	1.55	-42.99	0.1121	-0.1004	-0.0118
597	SLV X	-11.37	1.52	-39.86	0.1093	-0.097	-0.0123

#### Reazioni Fz massime

Vengono mostrati i soli 5 nodi più sollecitati.

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
686	SLU 84	-3.42	-3.01	322.52	-23.8221	-18.5197	-0.5004
624	SLU 84	-1.09	2.73	302.6	44.4681	-0.8445	-0.037
627	SLU 84	-0.8	0.45	240.67	-41.3278	3.9823	-0.2571
487	SLU 84	-1.09	-0.16	240.09	-8.7586	52.8318	-0.1634
611	SLU 84	-2.1	-2.55	230.65	-13.318	-15.6073	-0.2644

### 1.2.2 Reazioni nodali in combinazioni di carico

**Nodo:** Nodo sollecitato dalla reazione vincolare.

**Ind.:** indice del nodo.

**Cont.:** Contesto a cui si riferisce la reazione vincolare.

**N.br.:** nome breve della condizione o combinazione di carico.

**Reazione a traslazione:** reazione vincolare traslazionale del nodo.

**x:** componente X della reazione vincolare del nodo. [kN]

**y:** componente Y della reazione vincolare del nodo. [kN]

**z:** componente Z della reazione vincolare del nodo. [kN]

**Reazione a rotazione:** reazione vincolare rotazionale del nodo.

**x:** componente X della reazione a rotazione del nodo. [kN\*m]

**y:** componente Y della reazione a rotazione del nodo. [kN\*m]

**z:** componente Z della reazione a rotazione del nodo. [kN\*m]

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
11	SLU 1	-0.01	-0.08	3.25	0	0	0
11	SLU 2	-0.01	-0.08	3.25	0	0	0
11	SLU 3	-0.02	-0.08	3.33	0	0	0
11	SLU 4	-0.02	-0.08	3.33	0	0	0
11	SLU 5	-0.02	-0.08	3.3	0	0	0
11	SLU 6	-0.02	-0.08	3.37	0	0	0
11	SLU 7	-0.02	-0.08	3.37	0	0	0
11	SLU 8	-0.02	-0.08	3.34	0	0	0
11	SLU 9	-0.02	-0.08	3.34	0	0	0
11	SLU 10	-0.02	-0.09	3.67	0	0	0
11	SLU 11	-0.03	-0.08	3.74	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
11	SLU 12	-0.03	-0.08	3.74	0	0	0
11	SLU 13	-0.03	-0.09	3.71	0	0	0
11	SLU 14	-0.03	-0.08	3.79	0	0	0
11	SLU 15	-0.03	-0.08	3.79	0	0	0
11	SLU 16	-0.03	-0.08	3.76	0	0	0
11	SLU 17	-0.03	-0.08	3.76	0	0	0
11	SLU 18	-0.03	-0.08	3.85	0	0	0
11	SLU 19	-0.03	-0.09	3.85	0	0	0
11	SLU 20	-0.03	-0.08	3.89	0	0	0
11	SLU 21	-0.03	-0.08	3.89	0	0	0
11	SLU 22	-0.02	-0.08	3.61	0	0	0
11	SLU 23	-0.02	-0.08	3.61	0	0	0
11	SLU 24	-0.02	-0.08	3.69	0	0	0
11	SLU 25	-0.02	-0.08	3.69	0	0	0
11	SLU 26	-0.02	-0.08	3.66	0	0	0
11	SLU 27	-0.02	-0.08	3.73	0	0	0
11	SLU 28	-0.02	-0.08	3.73	0	0	0
11	SLU 29	-0.02	-0.08	3.7	0	0	0
11	SLU 30	-0.02	-0.08	3.7	0	0	0
11	SLU 31	-0.03	-0.08	4.03	0	0	0
11	SLU 32	-0.03	-0.08	4.1	0	0	0
11	SLU 33	-0.03	-0.08	4.1	0	0	0
11	SLU 34	-0.03	-0.08	4.07	0	0	0
11	SLU 35	-0.03	-0.08	4.15	0	0	0
11	SLU 36	-0.03	-0.08	4.15	0	0	0
11	SLU 37	-0.03	-0.08	4.12	0	0	0
11	SLU 38	-0.03	-0.08	4.12	0	0	0
11	SLU 39	-0.03	-0.08	4.21	0	0	0
11	SLU 40	-0.03	-0.08	4.21	0	0	0
11	SLU 41	-0.04	-0.08	4.25	0	0	0
11	SLU 42	-0.04	-0.08	4.25	0	0	0
11	SLU 43	-0.02	-0.11	4.1	0	0	0
11	SLU 44	-0.02	-0.11	4.1	0	0	0
11	SLU 45	-0.02	-0.11	4.18	0	0	0
11	SLU 46	-0.02	-0.11	4.18	0	0	0
11	SLU 47	-0.02	-0.11	4.15	0	0	0
11	SLU 48	-0.02	-0.11	4.22	0	0	0
11	SLU 49	-0.02	-0.11	4.22	0	0	0
11	SLU 50	-0.02	-0.11	4.19	0	0	0
11	SLU 51	-0.02	-0.11	4.19	0	0	0
11	SLU 52	-0.03	-0.11	4.52	0	0	0
11	SLU 53	-0.03	-0.11	4.6	0	0	0
11	SLU 54	-0.03	-0.11	4.6	0	0	0
11	SLU 55	-0.03	-0.11	4.57	0	0	0
11	SLU 56	-0.03	-0.11	4.64	0	0	0
11	SLU 57	-0.03	-0.11	4.64	0	0	0
11	SLU 58	-0.03	-0.11	4.61	0	0	0
11	SLU 59	-0.03	-0.11	4.61	0	0	0
11	SLU 60	-0.03	-0.11	4.7	0	0	0
11	SLU 61	-0.03	-0.11	4.7	0	0	0
11	SLU 62	-0.04	-0.11	4.75	0	0	0
11	SLU 63	-0.03	-0.11	4.75	0	0	0
11	SLU 64	-0.02	-0.1	4.46	0	0	0
11	SLU 65	-0.02	-0.11	4.46	0	0	0
11	SLU 66	-0.02	-0.1	4.54	0	0	0
11	SLU 67	-0.02	-0.1	4.54	0	0	0
11	SLU 68	-0.02	-0.1	4.51	0	0	0
11	SLU 69	-0.03	-0.1	4.58	0	0	0
11	SLU 70	-0.03	-0.1	4.58	0	0	0
11	SLU 71	-0.03	-0.1	4.55	0	0	0
11	SLU 72	-0.03	-0.1	4.55	0	0	0
11	SLU 73	-0.03	-0.11	4.88	0	0	0
11	SLU 74	-0.03	-0.1	4.96	0	0	0
11	SLU 75	-0.03	-0.11	4.96	0	0	0
11	SLU 76	-0.03	-0.11	4.93	0	0	0
11	SLU 77	-0.04	-0.1	5	0	0	0
11	SLU 78	-0.04	-0.1	5	0	0	0
11	SLU 79	-0.04	-0.1	4.97	0	0	0
11	SLU 80	-0.04	-0.1	4.97	0	0	0
11	SLU 81	-0.04	-0.11	5.06	0	0	0
11	SLU 82	-0.04	-0.11	5.06	0	0	0
11	SLU 83	-0.04	-0.1	5.11	0	0	0
11	SLU 84	-0.04	-0.11	5.11	0	0	0
11	SLE RA 1	-0.02	-0.08	3.35	0	0	0
11	SLE RA 2	-0.02	-0.08	3.35	0	0	0
11	SLE RA 3	-0.02	-0.08	3.4	0	0	0
11	SLE RA 4	-0.02	-0.08	3.4	0	0	0
11	SLE RA 5	-0.02	-0.08	3.38	0	0	0
11	SLE RA 6	-0.02	-0.08	3.43	0	0	0
11	SLE RA 7	-0.02	-0.08	3.43	0	0	0
11	SLE RA 8	-0.02	-0.08	3.41	0	0	0
11	SLE RA 9	-0.02	-0.08	3.41	0	0	0
11	SLE RA 10	-0.02	-0.08	3.63	0	0	0
11	SLE RA 11	-0.02	-0.08	3.68	0	0	0
11	SLE RA 12	-0.02	-0.08	3.68	0	0	0
11	SLE RA 13	-0.02	-0.08	3.66	0	0	0
11	SLE RA 14	-0.03	-0.08	3.71	0	0	0
11	SLE RA 15	-0.03	-0.08	3.71	0	0	0
11	SLE RA 16	-0.03	-0.08	3.69	0	0	0
11	SLE RA 17	-0.03	-0.08	3.69	0	0	0





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
11	SLE RA 18	-0.03	-0.08	3.75	0	0	0
11	SLE RA 19	-0.03	-0.08	3.75	0	0	0
11	SLE RA 20	-0.03	-0.08	3.78	0	0	0
11	SLE RA 21	-0.03	-0.08	3.78	0	0	0
11	SLE FR 1	-0.02	-0.08	3.35	0	0	0
11	SLE FR 2	-0.02	-0.08	3.35	0	0	0
11	SLE FR 3	-0.02	-0.08	3.37	0	0	0
11	SLE FR 4	-0.02	-0.08	3.47	0	0	0
11	SLE FR 5	-0.02	-0.08	3.49	0	0	0
11	SLE FR 6	-0.02	-0.08	3.55	0	0	0
11	SLE QP 1	-0.02	-0.08	3.35	0	0	0
11	SLE QP 2	-0.02	-0.08	3.47	0	0	0
11	SLD 1	0.18	-0.04	3.5	0	0	0
11	SLD 2	0.19	-0.03	3.51	0	0	0
11	SLD 3	0.17	-0.1	3.48	0	0	0
11	SLD 4	0.17	-0.1	3.49	0	0	0
11	SLD 5	0.06	0.04	3.52	0	0	0
11	SLD 6	0.07	0.04	3.52	0	0	0
11	SLD 7	0.01	-0.19	3.44	0	0	0
11	SLD 8	0.02	-0.19	3.45	0	0	0
11	SLD 9	-0.06	0.03	3.5	0	0	0
11	SLD 10	-0.05	0.03	3.51	0	0	0
11	SLD 11	-0.1	-0.2	3.43	0	0	0
11	SLD 12	-0.1	-0.2	3.43	0	0	0
11	SLD 13	-0.21	-0.06	3.46	0	0	0
11	SLD 14	-0.2	-0.06	3.47	0	0	0
11	SLD 15	-0.23	-0.13	3.44	0	0	0
11	SLD 16	-0.22	-0.13	3.45	0	0	0
11	SLV 1	0.44	0.02	3.54	0	0	0
11	SLV 2	0.46	0.03	3.55	0	0	0
11	SLV 3	0.41	-0.13	3.49	0	0	0
11	SLV 4	0.43	-0.13	3.5	0	0	0
11	SLV 5	0.16	0.18	3.57	0	0	0
11	SLV 6	0.18	0.18	3.58	0	0	0
11	SLV 7	0.06	-0.33	3.4	0	0	0
11	SLV 8	0.07	-0.33	3.41	0	0	0
11	SLV 9	-0.11	0.16	3.54	0	0	0
11	SLV 10	-0.1	0.17	3.55	0	0	0
11	SLV 11	-0.22	-0.35	3.37	0	0	0
11	SLV 12	-0.2	-0.34	3.38	0	0	0
11	SLV 13	-0.47	-0.04	3.45	0	0	0
11	SLV 14	-0.45	-0.03	3.46	0	0	0
11	SLV 15	-0.5	-0.19	3.4	0	0	0
11	SLV 16	-0.48	-0.19	3.41	0	0	0
12	SLU 1	-0.03	-0.16	6.45	0	0	0
12	SLU 2	-0.03	-0.16	6.45	0	0	0
12	SLU 3	-0.03	-0.15	6.6	0	0	0
12	SLU 4	-0.03	-0.16	6.6	0	0	0
12	SLU 5	-0.03	-0.16	6.54	0	0	0
12	SLU 6	-0.04	-0.15	6.69	0	0	0
12	SLU 7	-0.04	-0.16	6.69	0	0	0
12	SLU 8	-0.04	-0.15	6.63	0	0	0
12	SLU 9	-0.04	-0.16	6.63	0	0	0
12	SLU 10	-0.05	-0.16	7.27	0	0	0
12	SLU 11	-0.05	-0.16	7.42	0	0	0
12	SLU 12	-0.05	-0.16	7.42	0	0	0
12	SLU 13	-0.05	-0.16	7.36	0	0	0
12	SLU 14	-0.06	-0.16	7.5	0	0	0
12	SLU 15	-0.06	-0.16	7.5	0	0	0
12	SLU 16	-0.06	-0.16	7.45	0	0	0
12	SLU 17	-0.06	-0.16	7.45	0	0	0
12	SLU 18	-0.06	-0.16	7.62	0	0	0
12	SLU 19	-0.06	-0.16	7.62	0	0	0
12	SLU 20	-0.06	-0.16	7.71	0	0	0
12	SLU 21	-0.06	-0.16	7.71	0	0	0
12	SLU 22	-0.04	-0.14	7.17	0	0	0
12	SLU 23	-0.04	-0.15	7.17	0	0	0
12	SLU 24	-0.04	-0.14	7.31	0	0	0
12	SLU 25	-0.04	-0.15	7.31	0	0	0
12	SLU 26	-0.04	-0.15	7.25	0	0	0
12	SLU 27	-0.05	-0.14	7.4	0	0	0
12	SLU 28	-0.05	-0.14	7.4	0	0	0
12	SLU 29	-0.05	-0.14	7.34	0	0	0
12	SLU 30	-0.05	-0.14	7.34	0	0	0
12	SLU 31	-0.06	-0.15	7.98	0	0	0
12	SLU 32	-0.06	-0.14	8.13	0	0	0
12	SLU 33	-0.06	-0.15	8.13	0	0	0
12	SLU 34	-0.06	-0.15	8.07	0	0	0
12	SLU 35	-0.07	-0.14	8.22	0	0	0
12	SLU 36	-0.07	-0.15	8.22	0	0	0
12	SLU 37	-0.07	-0.14	8.16	0	0	0
12	SLU 38	-0.07	-0.15	8.16	0	0	0
12	SLU 39	-0.07	-0.15	8.34	0	0	0
12	SLU 40	-0.07	-0.15	8.34	0	0	0
12	SLU 41	-0.07	-0.15	8.42	0	0	0
12	SLU 42	-0.07	-0.15	8.42	0	0	0
12	SLU 43	-0.03	-0.21	8.15	0	0	0
12	SLU 44	-0.03	-0.21	8.15	0	0	0
12	SLU 45	-0.04	-0.21	8.29	0	0	0
12	SLU 46	-0.04	-0.21	8.29	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
12	SLU 47	-0.04	-0.21	8.23	0	0	0
12	SLU 48	-0.04	-0.2	8.38	0	0	0
12	SLU 49	-0.04	-0.21	8.38	0	0	0
12	SLU 50	-0.04	-0.2	8.32	0	0	0
12	SLU 51	-0.04	-0.21	8.32	0	0	0
12	SLU 52	-0.06	-0.21	8.97	0	0	0
12	SLU 53	-0.06	-0.21	9.11	0	0	0
12	SLU 54	-0.06	-0.21	9.11	0	0	0
12	SLU 55	-0.06	-0.21	9.05	0	0	0
12	SLU 56	-0.06	-0.21	9.2	0	0	0
12	SLU 57	-0.06	-0.21	9.2	0	0	0
12	SLU 58	-0.07	-0.21	9.14	0	0	0
12	SLU 59	-0.06	-0.21	9.14	0	0	0
12	SLU 60	-0.07	-0.21	9.32	0	0	0
12	SLU 61	-0.07	-0.21	9.32	0	0	0
12	SLU 62	-0.07	-0.21	9.4	0	0	0
12	SLU 63	-0.07	-0.21	9.4	0	0	0
12	SLU 64	-0.04	-0.19	8.86	0	0	0
12	SLU 65	-0.04	-0.2	8.86	0	0	0
12	SLU 66	-0.05	-0.19	9	0	0	0
12	SLU 67	-0.05	-0.2	9	0	0	0
12	SLU 68	-0.05	-0.2	8.94	0	0	0
12	SLU 69	-0.05	-0.19	9.09	0	0	0
12	SLU 70	-0.05	-0.19	9.09	0	0	0
12	SLU 71	-0.05	-0.19	9.03	0	0	0
12	SLU 72	-0.05	-0.19	9.03	0	0	0
12	SLU 73	-0.06	-0.2	9.68	0	0	0
12	SLU 74	-0.07	-0.2	9.82	0	0	0
12	SLU 75	-0.07	-0.2	9.82	0	0	0
12	SLU 76	-0.07	-0.2	9.76	0	0	0
12	SLU 77	-0.07	-0.19	9.91	0	0	0
12	SLU 78	-0.07	-0.2	9.91	0	0	0
12	SLU 79	-0.07	-0.19	9.85	0	0	0
12	SLU 80	-0.07	-0.2	9.85	0	0	0
12	SLU 81	-0.07	-0.2	10.03	0	0	0
12	SLU 82	-0.07	-0.2	10.03	0	0	0
12	SLU 83	-0.08	-0.2	10.11	0	0	0
12	SLU 84	-0.08	-0.2	10.11	0	0	0
12	SLE RA 1	-0.03	-0.15	6.66	0	0	0
12	SLE RA 2	-0.03	-0.15	6.66	0	0	0
12	SLE RA 3	-0.03	-0.15	6.75	0	0	0
12	SLE RA 4	-0.03	-0.15	6.75	0	0	0
12	SLE RA 5	-0.03	-0.15	6.72	0	0	0
12	SLE RA 6	-0.04	-0.15	6.81	0	0	0
12	SLE RA 7	-0.04	-0.15	6.81	0	0	0
12	SLE RA 8	-0.04	-0.15	6.77	0	0	0
12	SLE RA 9	-0.04	-0.15	6.77	0	0	0
12	SLE RA 10	-0.05	-0.16	7.2	0	0	0
12	SLE RA 11	-0.05	-0.15	7.3	0	0	0
12	SLE RA 12	-0.05	-0.15	7.3	0	0	0
12	SLE RA 13	-0.05	-0.16	7.26	0	0	0
12	SLE RA 14	-0.05	-0.15	7.36	0	0	0
12	SLE RA 15	-0.05	-0.15	7.36	0	0	0
12	SLE RA 16	-0.05	-0.15	7.32	0	0	0
12	SLE RA 17	-0.05	-0.15	7.32	0	0	0
12	SLE RA 18	-0.05	-0.15	7.44	0	0	0
12	SLE RA 19	-0.05	-0.16	7.44	0	0	0
12	SLE RA 20	-0.06	-0.15	7.5	0	0	0
12	SLE RA 21	-0.06	-0.16	7.5	0	0	0
12	SLE FR 1	-0.03	-0.15	6.66	0	0	0
12	SLE FR 2	-0.03	-0.15	6.66	0	0	0
12	SLE FR 3	-0.03	-0.15	6.68	0	0	0
12	SLE FR 4	-0.04	-0.15	6.89	0	0	0
12	SLE FR 5	-0.04	-0.15	6.91	0	0	0
12	SLE FR 6	-0.04	-0.15	7.05	0	0	0
12	SLE QP 1	-0.03	-0.15	6.66	0	0	0
12	SLE QP 2	-0.04	-0.15	6.89	0	0	0
12	SLD 1	0.36	-0.06	6.86	0	0	0
12	SLD 2	0.37	-0.06	6.87	0	0	0
12	SLD 3	0.33	-0.2	6.82	0	0	0
12	SLD 4	0.35	-0.19	6.83	0	0	0
12	SLD 5	0.12	0.08	6.95	0	0	0
12	SLD 6	0.13	0.08	6.96	0	0	0
12	SLD 7	0.03	-0.37	6.8	0	0	0
12	SLD 8	0.04	-0.37	6.8	0	0	0
12	SLD 9	-0.11	0.06	6.98	0	0	0
12	SLD 10	-0.1	0.06	6.99	0	0	0
12	SLD 11	-0.21	-0.39	6.82	0	0	0
12	SLD 12	-0.19	-0.38	6.83	0	0	0
12	SLD 13	-0.42	-0.12	6.96	0	0	0
12	SLD 14	-0.4	-0.11	6.97	0	0	0
12	SLD 15	-0.45	-0.25	6.91	0	0	0
12	SLD 16	-0.43	-0.24	6.92	0	0	0
12	SLV 1	0.88	0.05	6.83	0	0	0
12	SLV 2	0.92	0.07	6.85	0	0	0
12	SLV 3	0.82	-0.25	6.72	0	0	0
12	SLV 4	0.86	-0.24	6.74	0	0	0
12	SLV 5	0.33	0.36	7.03	0	0	0
12	SLV 6	0.35	0.37	7.05	0	0	0
12	SLV 7	0.12	-0.64	6.67	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
12	SLV 8	0.14	-0.63	6.69	0	0	0
12	SLV 9	-0.22	0.33	7.1	0	0	0
12	SLV 10	-0.19	0.34	7.11	0	0	0
12	SLV 11	-0.43	-0.68	6.74	0	0	0
12	SLV 12	-0.4	-0.67	6.75	0	0	0
12	SLV 13	-0.94	-0.07	7.04	0	0	0
12	SLV 14	-0.9	-0.05	7.06	0	0	0
12	SLV 15	-1	-0.37	6.93	0	0	0
12	SLV 16	-0.96	-0.36	6.96	0	0	0
13	SLU 1	-0.03	-0.15	6.4	0	0	0
13	SLU 2	-0.03	-0.15	6.4	0	0	0
13	SLU 3	-0.03	-0.15	6.55	0	0	0
13	SLU 4	-0.03	-0.15	6.54	0	0	0
13	SLU 5	-0.03	-0.15	6.49	0	0	0
13	SLU 6	-0.04	-0.14	6.63	0	0	0
13	SLU 7	-0.04	-0.15	6.63	0	0	0
13	SLU 8	-0.04	-0.14	6.57	0	0	0
13	SLU 9	-0.04	-0.15	6.57	0	0	0
13	SLU 10	-0.05	-0.15	7.2	0	0	0
13	SLU 11	-0.05	-0.15	7.35	0	0	0
13	SLU 12	-0.05	-0.15	7.35	0	0	0
13	SLU 13	-0.05	-0.15	7.29	0	0	0
13	SLU 14	-0.06	-0.15	7.43	0	0	0
13	SLU 15	-0.06	-0.15	7.43	0	0	0
13	SLU 16	-0.06	-0.15	7.37	0	0	0
13	SLU 17	-0.06	-0.15	7.37	0	0	0
13	SLU 18	-0.06	-0.15	7.55	0	0	0
13	SLU 19	-0.06	-0.15	7.55	0	0	0
13	SLU 20	-0.06	-0.15	7.63	0	0	0
13	SLU 21	-0.06	-0.15	7.63	0	0	0
13	SLU 22	-0.04	-0.13	7.11	0	0	0
13	SLU 23	-0.04	-0.14	7.11	0	0	0
13	SLU 24	-0.04	-0.13	7.25	0	0	0
13	SLU 25	-0.04	-0.14	7.25	0	0	0
13	SLU 26	-0.04	-0.14	7.19	0	0	0
13	SLU 27	-0.05	-0.13	7.33	0	0	0
13	SLU 28	-0.05	-0.13	7.33	0	0	0
13	SLU 29	-0.05	-0.13	7.27	0	0	0
13	SLU 30	-0.05	-0.13	7.27	0	0	0
13	SLU 31	-0.06	-0.14	7.91	0	0	0
13	SLU 32	-0.06	-0.13	8.05	0	0	0
13	SLU 33	-0.06	-0.14	8.05	0	0	0
13	SLU 34	-0.06	-0.14	7.99	0	0	0
13	SLU 35	-0.07	-0.13	8.13	0	0	0
13	SLU 36	-0.07	-0.14	8.13	0	0	0
13	SLU 37	-0.07	-0.13	8.08	0	0	0
13	SLU 38	-0.07	-0.14	8.07	0	0	0
13	SLU 39	-0.07	-0.14	8.25	0	0	0
13	SLU 40	-0.07	-0.14	8.25	0	0	0
13	SLU 41	-0.07	-0.14	8.33	0	0	0
13	SLU 42	-0.07	-0.14	8.33	0	0	0
13	SLU 43	-0.03	-0.2	8.08	0	0	0
13	SLU 44	-0.03	-0.2	8.08	0	0	0
13	SLU 45	-0.04	-0.19	8.23	0	0	0
13	SLU 46	-0.04	-0.2	8.23	0	0	0
13	SLU 47	-0.04	-0.2	8.17	0	0	0
13	SLU 48	-0.04	-0.19	8.31	0	0	0
13	SLU 49	-0.04	-0.2	8.31	0	0	0
13	SLU 50	-0.04	-0.19	8.25	0	0	0
13	SLU 51	-0.04	-0.2	8.25	0	0	0
13	SLU 52	-0.06	-0.2	8.89	0	0	0
13	SLU 53	-0.06	-0.2	9.03	0	0	0
13	SLU 54	-0.06	-0.2	9.03	0	0	0
13	SLU 55	-0.06	-0.2	8.97	0	0	0
13	SLU 56	-0.06	-0.19	9.11	0	0	0
13	SLU 57	-0.06	-0.2	9.11	0	0	0
13	SLU 58	-0.07	-0.19	9.05	0	0	0
13	SLU 59	-0.06	-0.2	9.05	0	0	0
13	SLU 60	-0.07	-0.2	9.23	0	0	0
13	SLU 61	-0.06	-0.2	9.23	0	0	0
13	SLU 62	-0.07	-0.2	9.31	0	0	0
13	SLU 63	-0.07	-0.2	9.31	0	0	0
13	SLU 64	-0.04	-0.18	8.79	0	0	0
13	SLU 65	-0.04	-0.19	8.79	0	0	0
13	SLU 66	-0.05	-0.18	8.93	0	0	0
13	SLU 67	-0.05	-0.18	8.93	0	0	0
13	SLU 68	-0.05	-0.19	8.87	0	0	0
13	SLU 69	-0.05	-0.18	9.01	0	0	0
13	SLU 70	-0.05	-0.18	9.01	0	0	0
13	SLU 71	-0.05	-0.18	8.95	0	0	0
13	SLU 72	-0.05	-0.18	8.95	0	0	0
13	SLU 73	-0.06	-0.19	9.59	0	0	0
13	SLU 74	-0.07	-0.18	9.73	0	0	0
13	SLU 75	-0.07	-0.19	9.73	0	0	0
13	SLU 76	-0.07	-0.19	9.67	0	0	0
13	SLU 77	-0.07	-0.18	9.81	0	0	0
13	SLU 78	-0.07	-0.18	9.81	0	0	0
13	SLU 79	-0.07	-0.18	9.76	0	0	0
13	SLU 80	-0.07	-0.18	9.76	0	0	0
13	SLU 81	-0.07	-0.18	9.93	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
13	SLU 82	-0.07	-0.19	9.93	0	0	0
13	SLU 83	-0.08	-0.18	10.02	0	0	0
13	SLU 84	-0.08	-0.19	10.01	0	0	0
13	SLE RA 1	-0.03	-0.14	6.6	0	0	0
13	SLE RA 2	-0.03	-0.15	6.6	0	0	0
13	SLE RA 3	-0.03	-0.14	6.7	0	0	0
13	SLE RA 4	-0.03	-0.14	6.7	0	0	0
13	SLE RA 5	-0.03	-0.15	6.66	0	0	0
13	SLE RA 6	-0.04	-0.14	6.75	0	0	0
13	SLE RA 7	-0.04	-0.14	6.75	0	0	0
13	SLE RA 8	-0.04	-0.14	6.72	0	0	0
13	SLE RA 9	-0.04	-0.14	6.72	0	0	0
13	SLE RA 10	-0.05	-0.15	7.14	0	0	0
13	SLE RA 11	-0.05	-0.14	7.23	0	0	0
13	SLE RA 12	-0.05	-0.14	7.23	0	0	0
13	SLE RA 13	-0.05	-0.15	7.19	0	0	0
13	SLE RA 14	-0.05	-0.14	7.29	0	0	0
13	SLE RA 15	-0.05	-0.14	7.29	0	0	0
13	SLE RA 16	-0.05	-0.14	7.25	0	0	0
13	SLE RA 17	-0.05	-0.14	7.25	0	0	0
13	SLE RA 18	-0.05	-0.14	7.37	0	0	0
13	SLE RA 19	-0.05	-0.15	7.37	0	0	0
13	SLE RA 20	-0.06	-0.14	7.42	0	0	0
13	SLE RA 21	-0.05	-0.15	7.42	0	0	0
13	SLE FR 1	-0.03	-0.14	6.6	0	0	0
13	SLE FR 2	-0.03	-0.14	6.6	0	0	0
13	SLE FR 3	-0.03	-0.14	6.63	0	0	0
13	SLE FR 4	-0.04	-0.14	6.83	0	0	0
13	SLE FR 5	-0.04	-0.14	6.86	0	0	0
13	SLE FR 6	-0.04	-0.14	6.99	0	0	0
13	SLE QP 1	-0.03	-0.14	6.6	0	0	0
13	SLE QP 2	-0.04	-0.14	6.83	0	0	0
13	SLD 1	0.36	-0.06	6.77	0	0	0
13	SLD 2	0.37	-0.05	6.78	0	0	0
13	SLD 3	0.33	-0.19	6.72	0	0	0
13	SLD 4	0.35	-0.18	6.73	0	0	0
13	SLD 5	0.12	0.08	6.89	0	0	0
13	SLD 6	0.13	0.09	6.9	0	0	0
13	SLD 7	0.03	-0.36	6.72	0	0	0
13	SLD 8	0.04	-0.35	6.72	0	0	0
13	SLD 9	-0.11	0.06	6.94	0	0	0
13	SLD 10	-0.1	0.07	6.95	0	0	0
13	SLD 11	-0.2	-0.37	6.77	0	0	0
13	SLD 12	-0.19	-0.37	6.77	0	0	0
13	SLD 13	-0.42	-0.11	6.94	0	0	0
13	SLD 14	-0.4	-0.1	6.94	0	0	0
13	SLD 15	-0.45	-0.24	6.89	0	0	0
13	SLD 16	-0.43	-0.23	6.89	0	0	0
13	SLV 1	0.88	0.06	6.69	0	0	0
13	SLV 2	0.92	0.08	6.71	0	0	0
13	SLV 3	0.82	-0.24	6.58	0	0	0
13	SLV 4	0.86	-0.22	6.59	0	0	0
13	SLV 5	0.33	0.36	6.97	0	0	0
13	SLV 6	0.35	0.38	6.98	0	0	0
13	SLV 7	0.12	-0.63	6.58	0	0	0
13	SLV 8	0.14	-0.61	6.58	0	0	0
13	SLV 9	-0.22	0.33	7.08	0	0	0
13	SLV 10	-0.19	0.34	7.09	0	0	0
13	SLV 11	-0.43	-0.67	6.69	0	0	0
13	SLV 12	-0.4	-0.65	6.7	0	0	0
13	SLV 13	-0.93	-0.07	7.08	0	0	0
13	SLV 14	-0.89	-0.05	7.09	0	0	0
13	SLV 15	-1	-0.37	6.96	0	0	0
13	SLV 16	-0.96	-0.34	6.97	0	0	0
14	SLU 1	-0.03	-0.14	6.37	0	0	0
14	SLU 2	-0.03	-0.14	6.37	0	0	0
14	SLU 3	-0.03	-0.14	6.51	0	0	0
14	SLU 4	-0.03	-0.14	6.51	0	0	0
14	SLU 5	-0.03	-0.14	6.45	0	0	0
14	SLU 6	-0.04	-0.14	6.59	0	0	0
14	SLU 7	-0.04	-0.14	6.59	0	0	0
14	SLU 8	-0.04	-0.14	6.54	0	0	0
14	SLU 9	-0.04	-0.14	6.53	0	0	0
14	SLU 10	-0.05	-0.14	7.16	0	0	0
14	SLU 11	-0.05	-0.14	7.3	0	0	0
14	SLU 12	-0.05	-0.14	7.3	0	0	0
14	SLU 13	-0.05	-0.14	7.24	0	0	0
14	SLU 14	-0.06	-0.14	7.38	0	0	0
14	SLU 15	-0.06	-0.14	7.38	0	0	0
14	SLU 16	-0.06	-0.14	7.32	0	0	0
14	SLU 17	-0.06	-0.14	7.32	0	0	0
14	SLU 18	-0.06	-0.14	7.5	0	0	0
14	SLU 19	-0.06	-0.14	7.5	0	0	0
14	SLU 20	-0.06	-0.14	7.58	0	0	0
14	SLU 21	-0.06	-0.14	7.58	0	0	0
14	SLU 22	-0.04	-0.13	7.07	0	0	0
14	SLU 23	-0.04	-0.13	7.07	0	0	0
14	SLU 24	-0.04	-0.12	7.21	0	0	0
14	SLU 25	-0.04	-0.13	7.21	0	0	0
14	SLU 26	-0.04	-0.13	7.15	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
14	SLU 27	-0.05	-0.12	7.29	0	0	0
14	SLU 28	-0.05	-0.13	7.29	0	0	0
14	SLU 29	-0.05	-0.12	7.23	0	0	0
14	SLU 30	-0.05	-0.13	7.23	0	0	0
14	SLU 31	-0.06	-0.13	7.85	0	0	0
14	SLU 32	-0.06	-0.12	7.99	0	0	0
14	SLU 33	-0.06	-0.13	7.99	0	0	0
14	SLU 34	-0.06	-0.13	7.93	0	0	0
14	SLU 35	-0.07	-0.12	8.07	0	0	0
14	SLU 36	-0.07	-0.13	8.07	0	0	0
14	SLU 37	-0.07	-0.12	8.02	0	0	0
14	SLU 38	-0.07	-0.13	8.02	0	0	0
14	SLU 39	-0.07	-0.13	8.19	0	0	0
14	SLU 40	-0.07	-0.13	8.19	0	0	0
14	SLU 41	-0.07	-0.13	8.27	0	0	0
14	SLU 42	-0.07	-0.13	8.27	0	0	0
14	SLU 43	-0.03	-0.18	8.05	0	0	0
14	SLU 44	-0.03	-0.19	8.05	0	0	0
14	SLU 45	-0.04	-0.18	8.19	0	0	0
14	SLU 46	-0.04	-0.19	8.19	0	0	0
14	SLU 47	-0.04	-0.19	8.13	0	0	0
14	SLU 48	-0.04	-0.18	8.27	0	0	0
14	SLU 49	-0.04	-0.18	8.27	0	0	0
14	SLU 50	-0.04	-0.18	8.21	0	0	0
14	SLU 51	-0.04	-0.18	8.21	0	0	0
14	SLU 52	-0.06	-0.19	8.83	0	0	0
14	SLU 53	-0.06	-0.18	8.97	0	0	0
14	SLU 54	-0.06	-0.19	8.97	0	0	0
14	SLU 55	-0.06	-0.19	8.91	0	0	0
14	SLU 56	-0.06	-0.18	9.05	0	0	0
14	SLU 57	-0.06	-0.18	9.05	0	0	0
14	SLU 58	-0.07	-0.18	9	0	0	0
14	SLU 59	-0.06	-0.18	8.99	0	0	0
14	SLU 60	-0.07	-0.19	9.17	0	0	0
14	SLU 61	-0.07	-0.19	9.17	0	0	0
14	SLU 62	-0.07	-0.18	9.25	0	0	0
14	SLU 63	-0.07	-0.19	9.25	0	0	0
14	SLU 64	-0.04	-0.17	8.74	0	0	0
14	SLU 65	-0.04	-0.18	8.74	0	0	0
14	SLU 66	-0.05	-0.17	8.88	0	0	0
14	SLU 67	-0.05	-0.17	8.88	0	0	0
14	SLU 68	-0.05	-0.17	8.82	0	0	0
14	SLU 69	-0.05	-0.17	8.96	0	0	0
14	SLU 70	-0.05	-0.17	8.96	0	0	0
14	SLU 71	-0.05	-0.17	8.9	0	0	0
14	SLU 72	-0.05	-0.17	8.9	0	0	0
14	SLU 73	-0.06	-0.18	9.53	0	0	0
14	SLU 74	-0.07	-0.17	9.67	0	0	0
14	SLU 75	-0.07	-0.17	9.67	0	0	0
14	SLU 76	-0.07	-0.17	9.61	0	0	0
14	SLU 77	-0.07	-0.17	9.75	0	0	0
14	SLU 78	-0.07	-0.17	9.75	0	0	0
14	SLU 79	-0.07	-0.17	9.69	0	0	0
14	SLU 80	-0.07	-0.17	9.69	0	0	0
14	SLU 81	-0.07	-0.17	9.87	0	0	0
14	SLU 82	-0.07	-0.17	9.86	0	0	0
14	SLU 83	-0.08	-0.17	9.95	0	0	0
14	SLU 84	-0.08	-0.17	9.95	0	0	0
14	SLE RA 1	-0.03	-0.14	6.57	0	0	0
14	SLE RA 2	-0.03	-0.14	6.57	0	0	0
14	SLE RA 3	-0.03	-0.13	6.66	0	0	0
14	SLE RA 4	-0.03	-0.14	6.66	0	0	0
14	SLE RA 5	-0.03	-0.14	6.63	0	0	0
14	SLE RA 6	-0.04	-0.13	6.72	0	0	0
14	SLE RA 7	-0.04	-0.13	6.72	0	0	0
14	SLE RA 8	-0.04	-0.13	6.68	0	0	0
14	SLE RA 9	-0.04	-0.13	6.68	0	0	0
14	SLE RA 10	-0.05	-0.14	7.1	0	0	0
14	SLE RA 11	-0.05	-0.13	7.19	0	0	0
14	SLE RA 12	-0.05	-0.14	7.19	0	0	0
14	SLE RA 13	-0.05	-0.14	7.15	0	0	0
14	SLE RA 14	-0.05	-0.13	7.24	0	0	0
14	SLE RA 15	-0.05	-0.13	7.24	0	0	0
14	SLE RA 16	-0.05	-0.13	7.2	0	0	0
14	SLE RA 17	-0.05	-0.14	7.2	0	0	0
14	SLE RA 18	-0.05	-0.14	7.32	0	0	0
14	SLE RA 19	-0.05	-0.14	7.32	0	0	0
14	SLE RA 20	-0.06	-0.13	7.37	0	0	0
14	SLE RA 21	-0.06	-0.14	7.37	0	0	0
14	SLE FR 1	-0.03	-0.14	6.57	0	0	0
14	SLE FR 2	-0.03	-0.14	6.57	0	0	0
14	SLE FR 3	-0.03	-0.13	6.59	0	0	0
14	SLE FR 4	-0.04	-0.14	6.8	0	0	0
14	SLE FR 5	-0.04	-0.13	6.82	0	0	0
14	SLE FR 6	-0.04	-0.14	6.95	0	0	0
14	SLE QP 1	-0.03	-0.14	6.57	0	0	0
14	SLE QP 2	-0.04	-0.14	6.8	0	0	0
14	SLD 1	0.36	-0.05	6.7	0	0	0
14	SLD 2	0.37	-0.04	6.7	0	0	0
14	SLD 3	0.33	-0.18	6.64	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
14	SLD 4	0.35	-0.17	6.65	0	0	0
14	SLD 5	0.12	0.09	6.85	0	0	0
14	SLD 6	0.13	0.09	6.86	0	0	0
14	SLD 7	0.03	-0.35	6.66	0	0	0
14	SLD 8	0.04	-0.34	6.67	0	0	0
14	SLD 9	-0.11	0.07	6.93	0	0	0
14	SLD 10	-0.1	0.08	6.93	0	0	0
14	SLD 11	-0.2	-0.36	6.74	0	0	0
14	SLD 12	-0.19	-0.36	6.74	0	0	0
14	SLD 13	-0.42	-0.1	6.95	0	0	0
14	SLD 14	-0.4	-0.09	6.95	0	0	0
14	SLD 15	-0.45	-0.23	6.89	0	0	0
14	SLD 16	-0.43	-0.22	6.89	0	0	0
14	SLV 1	0.88	0.06	6.57	0	0	0
14	SLV 2	0.92	0.09	6.58	0	0	0
14	SLV 3	0.82	-0.23	6.44	0	0	0
14	SLV 4	0.86	-0.21	6.45	0	0	0
14	SLV 5	0.33	0.36	6.92	0	0	0
14	SLV 6	0.35	0.38	6.93	0	0	0
14	SLV 7	0.12	-0.62	6.49	0	0	0
14	SLV 8	0.14	-0.6	6.5	0	0	0
14	SLV 9	-0.22	0.33	7.1	0	0	0
14	SLV 10	-0.19	0.35	7.1	0	0	0
14	SLV 11	-0.43	-0.65	6.66	0	0	0
14	SLV 12	-0.4	-0.63	6.67	0	0	0
14	SLV 13	-0.93	-0.06	7.15	0	0	0
14	SLV 14	-0.89	-0.04	7.15	0	0	0
14	SLV 15	-1	-0.36	7.02	0	0	0
14	SLV 16	-0.96	-0.33	7.02	0	0	0
15	SLU 1	-0.03	-0.13	6.34	0	0	0
15	SLU 2	-0.03	-0.13	6.34	0	0	0
15	SLU 3	-0.03	-0.13	6.48	0	0	0
15	SLU 4	-0.03	-0.13	6.48	0	0	0
15	SLU 5	-0.03	-0.13	6.42	0	0	0
15	SLU 6	-0.04	-0.13	6.55	0	0	0
15	SLU 7	-0.04	-0.13	6.55	0	0	0
15	SLU 8	-0.04	-0.13	6.5	0	0	0
15	SLU 9	-0.04	-0.13	6.5	0	0	0
15	SLU 10	-0.05	-0.13	7.11	0	0	0
15	SLU 11	-0.06	-0.13	7.25	0	0	0
15	SLU 12	-0.05	-0.13	7.25	0	0	0
15	SLU 13	-0.05	-0.13	7.19	0	0	0
15	SLU 14	-0.06	-0.13	7.32	0	0	0
15	SLU 15	-0.06	-0.13	7.32	0	0	0
15	SLU 16	-0.06	-0.13	7.27	0	0	0
15	SLU 17	-0.06	-0.13	7.27	0	0	0
15	SLU 18	-0.06	-0.13	7.44	0	0	0
15	SLU 19	-0.06	-0.13	7.44	0	0	0
15	SLU 20	-0.07	-0.13	7.52	0	0	0
15	SLU 21	-0.06	-0.13	7.52	0	0	0
15	SLU 22	-0.04	-0.12	7.03	0	0	0
15	SLU 23	-0.04	-0.12	7.03	0	0	0
15	SLU 24	-0.04	-0.12	7.16	0	0	0
15	SLU 25	-0.04	-0.12	7.16	0	0	0
15	SLU 26	-0.04	-0.12	7.1	0	0	0
15	SLU 27	-0.05	-0.11	7.24	0	0	0
15	SLU 28	-0.05	-0.12	7.24	0	0	0
15	SLU 29	-0.05	-0.11	7.18	0	0	0
15	SLU 30	-0.05	-0.12	7.18	0	0	0
15	SLU 31	-0.06	-0.12	7.8	0	0	0
15	SLU 32	-0.06	-0.12	7.93	0	0	0
15	SLU 33	-0.06	-0.12	7.93	0	0	0
15	SLU 34	-0.06	-0.12	7.87	0	0	0
15	SLU 35	-0.07	-0.11	8.01	0	0	0
15	SLU 36	-0.07	-0.12	8.01	0	0	0
15	SLU 37	-0.07	-0.11	7.95	0	0	0
15	SLU 38	-0.07	-0.12	7.95	0	0	0
15	SLU 39	-0.07	-0.12	8.13	0	0	0
15	SLU 40	-0.07	-0.12	8.13	0	0	0
15	SLU 41	-0.07	-0.12	8.21	0	0	0
15	SLU 42	-0.07	-0.12	8.21	0	0	0
15	SLU 43	-0.03	-0.17	8.01	0	0	0
15	SLU 44	-0.03	-0.18	8.01	0	0	0
15	SLU 45	-0.04	-0.17	8.14	0	0	0
15	SLU 46	-0.04	-0.17	8.14	0	0	0
15	SLU 47	-0.04	-0.18	8.08	0	0	0
15	SLU 48	-0.04	-0.17	8.22	0	0	0
15	SLU 49	-0.04	-0.17	8.22	0	0	0
15	SLU 50	-0.04	-0.17	8.16	0	0	0
15	SLU 51	-0.04	-0.17	8.16	0	0	0
15	SLU 52	-0.06	-0.18	8.78	0	0	0
15	SLU 53	-0.06	-0.17	8.91	0	0	0
15	SLU 54	-0.06	-0.17	8.91	0	0	0
15	SLU 55	-0.06	-0.18	8.85	0	0	0
15	SLU 56	-0.07	-0.17	8.99	0	0	0
15	SLU 57	-0.06	-0.17	8.99	0	0	0
15	SLU 58	-0.07	-0.17	8.93	0	0	0
15	SLU 59	-0.07	-0.17	8.93	0	0	0
15	SLU 60	-0.07	-0.17	9.11	0	0	0
15	SLU 61	-0.07	-0.18	9.11	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
15	SLU 62	-0.07	-0.17	9.19	0	0	0
15	SLU 63	-0.07	-0.17	9.18	0	0	0
15	SLU 64	-0.04	-0.16	8.69	0	0	0
15	SLU 65	-0.04	-0.16	8.69	0	0	0
15	SLU 66	-0.05	-0.16	8.83	0	0	0
15	SLU 67	-0.05	-0.16	8.83	0	0	0
15	SLU 68	-0.05	-0.16	8.77	0	0	0
15	SLU 69	-0.05	-0.16	8.91	0	0	0
15	SLU 70	-0.05	-0.16	8.91	0	0	0
15	SLU 71	-0.05	-0.16	8.85	0	0	0
15	SLU 72	-0.05	-0.16	8.85	0	0	0
15	SLU 73	-0.06	-0.16	9.46	0	0	0
15	SLU 74	-0.07	-0.16	9.6	0	0	0
15	SLU 75	-0.07	-0.16	9.6	0	0	0
15	SLU 76	-0.07	-0.16	9.54	0	0	0
15	SLU 77	-0.07	-0.16	9.68	0	0	0
15	SLU 78	-0.07	-0.16	9.68	0	0	0
15	SLU 79	-0.07	-0.16	9.62	0	0	0
15	SLU 80	-0.07	-0.16	9.62	0	0	0
15	SLU 81	-0.08	-0.16	9.79	0	0	0
15	SLU 82	-0.07	-0.16	9.79	0	0	0
15	SLU 83	-0.08	-0.16	9.87	0	0	0
15	SLU 84	-0.08	-0.16	9.87	0	0	0
15	SLE RA 1	-0.03	-0.13	6.54	0	0	0
15	SLE RA 2	-0.03	-0.13	6.54	0	0	0
15	SLE RA 3	-0.03	-0.13	6.63	0	0	0
15	SLE RA 4	-0.03	-0.13	6.63	0	0	0
15	SLE RA 5	-0.03	-0.13	6.59	0	0	0
15	SLE RA 6	-0.04	-0.12	6.68	0	0	0
15	SLE RA 7	-0.04	-0.13	6.68	0	0	0
15	SLE RA 8	-0.04	-0.12	6.64	0	0	0
15	SLE RA 9	-0.04	-0.13	6.64	0	0	0
15	SLE RA 10	-0.05	-0.13	7.05	0	0	0
15	SLE RA 11	-0.05	-0.13	7.14	0	0	0
15	SLE RA 12	-0.05	-0.13	7.14	0	0	0
15	SLE RA 13	-0.05	-0.13	7.1	0	0	0
15	SLE RA 14	-0.05	-0.12	7.19	0	0	0
15	SLE RA 15	-0.05	-0.13	7.19	0	0	0
15	SLE RA 16	-0.05	-0.12	7.15	0	0	0
15	SLE RA 17	-0.05	-0.13	7.15	0	0	0
15	SLE RA 18	-0.05	-0.13	7.27	0	0	0
15	SLE RA 19	-0.05	-0.13	7.27	0	0	0
15	SLE RA 20	-0.06	-0.13	7.32	0	0	0
15	SLE RA 21	-0.06	-0.13	7.32	0	0	0
15	SLE FR 1	-0.03	-0.13	6.54	0	0	0
15	SLE FR 2	-0.03	-0.13	6.54	0	0	0
15	SLE FR 3	-0.03	-0.13	6.56	0	0	0
15	SLE FR 4	-0.04	-0.13	6.76	0	0	0
15	SLE FR 5	-0.04	-0.13	6.78	0	0	0
15	SLE FR 6	-0.04	-0.13	6.9	0	0	0
15	SLE QP 1	-0.03	-0.13	6.54	0	0	0
15	SLE QP 2	-0.04	-0.13	6.76	0	0	0
15	SLD 1	0.36	-0.04	6.62	0	0	0
15	SLD 2	0.37	-0.03	6.62	0	0	0
15	SLD 3	0.33	-0.17	6.56	0	0	0
15	SLD 4	0.35	-0.16	6.56	0	0	0
15	SLD 5	0.12	0.09	6.81	0	0	0
15	SLD 6	0.13	0.1	6.81	0	0	0
15	SLD 7	0.03	-0.34	6.6	0	0	0
15	SLD 8	0.04	-0.33	6.6	0	0	0
15	SLD 9	-0.11	0.07	6.91	0	0	0
15	SLD 10	-0.1	0.08	6.91	0	0	0
15	SLD 11	-0.21	-0.35	6.7	0	0	0
15	SLD 12	-0.19	-0.34	6.7	0	0	0
15	SLD 13	-0.42	-0.1	6.95	0	0	0
15	SLD 14	-0.4	-0.08	6.96	0	0	0
15	SLD 15	-0.45	-0.23	6.89	0	0	0
15	SLD 16	-0.43	-0.21	6.89	0	0	0
15	SLV 1	0.88	0.06	6.44	0	0	0
15	SLV 2	0.92	0.1	6.44	0	0	0
15	SLV 3	0.82	-0.23	6.3	0	0	0
15	SLV 4	0.86	-0.19	6.3	0	0	0
15	SLV 5	0.33	0.37	6.88	0	0	0
15	SLV 6	0.35	0.39	6.88	0	0	0
15	SLV 7	0.12	-0.6	6.4	0	0	0
15	SLV 8	0.14	-0.58	6.4	0	0	0
15	SLV 9	-0.22	0.33	7.11	0	0	0
15	SLV 10	-0.19	0.35	7.11	0	0	0
15	SLV 11	-0.43	-0.64	6.63	0	0	0
15	SLV 12	-0.4	-0.62	6.64	0	0	0
15	SLV 13	-0.93	-0.06	7.22	0	0	0
15	SLV 14	-0.89	-0.03	7.22	0	0	0
15	SLV 15	-1	-0.35	7.07	0	0	0
15	SLV 16	-0.96	-0.32	7.08	0	0	0
16	SLU 1	-0.03	-0.12	6.32	0	0	0
16	SLU 2	-0.03	-0.13	6.32	0	0	0
16	SLU 3	-0.03	-0.12	6.45	0	0	0
16	SLU 4	-0.03	-0.12	6.45	0	0	0
16	SLU 5	-0.03	-0.12	6.39	0	0	0
16	SLU 6	-0.04	-0.12	6.53	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
16	SLU 7	-0.04	-0.12	6.53	0	0	0
16	SLU 8	-0.04	-0.12	6.47	0	0	0
16	SLU 9	-0.04	-0.12	6.47	0	0	0
16	SLU 10	-0.05	-0.12	7.07	0	0	0
16	SLU 11	-0.06	-0.12	7.21	0	0	0
16	SLU 12	-0.05	-0.12	7.21	0	0	0
16	SLU 13	-0.06	-0.12	7.15	0	0	0
16	SLU 14	-0.06	-0.12	7.28	0	0	0
16	SLU 15	-0.06	-0.12	7.28	0	0	0
16	SLU 16	-0.06	-0.12	7.22	0	0	0
16	SLU 17	-0.06	-0.12	7.22	0	0	0
16	SLU 18	-0.06	-0.12	7.4	0	0	0
16	SLU 19	-0.06	-0.12	7.4	0	0	0
16	SLU 20	-0.07	-0.12	7.47	0	0	0
16	SLU 21	-0.07	-0.12	7.47	0	0	0
16	SLU 22	-0.04	-0.11	7	0	0	0
16	SLU 23	-0.04	-0.11	7	0	0	0
16	SLU 24	-0.04	-0.11	7.13	0	0	0
16	SLU 25	-0.04	-0.11	7.13	0	0	0
16	SLU 26	-0.04	-0.11	7.07	0	0	0
16	SLU 27	-0.05	-0.11	7.21	0	0	0
16	SLU 28	-0.05	-0.11	7.21	0	0	0
16	SLU 29	-0.05	-0.11	7.15	0	0	0
16	SLU 30	-0.05	-0.11	7.15	0	0	0
16	SLU 31	-0.06	-0.11	7.75	0	0	0
16	SLU 32	-0.06	-0.11	7.89	0	0	0
16	SLU 33	-0.06	-0.11	7.89	0	0	0
16	SLU 34	-0.06	-0.11	7.83	0	0	0
16	SLU 35	-0.07	-0.1	7.96	0	0	0
16	SLU 36	-0.07	-0.11	7.96	0	0	0
16	SLU 37	-0.07	-0.1	7.91	0	0	0
16	SLU 38	-0.07	-0.11	7.9	0	0	0
16	SLU 39	-0.07	-0.11	8.08	0	0	0
16	SLU 40	-0.07	-0.11	8.08	0	0	0
16	SLU 41	-0.07	-0.11	8.15	0	0	0
16	SLU 42	-0.07	-0.11	8.15	0	0	0
16	SLU 43	-0.03	-0.16	7.98	0	0	0
16	SLU 44	-0.03	-0.17	7.98	0	0	0
16	SLU 45	-0.04	-0.16	8.11	0	0	0
16	SLU 46	-0.04	-0.16	8.11	0	0	0
16	SLU 47	-0.04	-0.17	8.05	0	0	0
16	SLU 48	-0.04	-0.16	8.19	0	0	0
16	SLU 49	-0.04	-0.16	8.19	0	0	0
16	SLU 50	-0.04	-0.16	8.13	0	0	0
16	SLU 51	-0.04	-0.16	8.13	0	0	0
16	SLU 52	-0.06	-0.17	8.74	0	0	0
16	SLU 53	-0.06	-0.16	8.87	0	0	0
16	SLU 54	-0.06	-0.16	8.87	0	0	0
16	SLU 55	-0.06	-0.16	8.81	0	0	0
16	SLU 56	-0.07	-0.16	8.94	0	0	0
16	SLU 57	-0.07	-0.16	8.94	0	0	0
16	SLU 58	-0.07	-0.16	8.89	0	0	0
16	SLU 59	-0.07	-0.16	8.89	0	0	0
16	SLU 60	-0.07	-0.16	9.06	0	0	0
16	SLU 61	-0.07	-0.16	9.06	0	0	0
16	SLU 62	-0.07	-0.16	9.14	0	0	0
16	SLU 63	-0.07	-0.16	9.14	0	0	0
16	SLU 64	-0.04	-0.15	8.66	0	0	0
16	SLU 65	-0.04	-0.15	8.66	0	0	0
16	SLU 66	-0.05	-0.15	8.79	0	0	0
16	SLU 67	-0.05	-0.15	8.79	0	0	0
16	SLU 68	-0.05	-0.15	8.73	0	0	0
16	SLU 69	-0.05	-0.15	8.87	0	0	0
16	SLU 70	-0.05	-0.15	8.87	0	0	0
16	SLU 71	-0.05	-0.15	8.81	0	0	0
16	SLU 72	-0.05	-0.15	8.81	0	0	0
16	SLU 73	-0.07	-0.15	9.42	0	0	0
16	SLU 74	-0.07	-0.15	9.55	0	0	0
16	SLU 75	-0.07	-0.15	9.55	0	0	0
16	SLU 76	-0.07	-0.15	9.49	0	0	0
16	SLU 77	-0.07	-0.15	9.63	0	0	0
16	SLU 78	-0.07	-0.15	9.62	0	0	0
16	SLU 79	-0.08	-0.15	9.57	0	0	0
16	SLU 80	-0.07	-0.15	9.57	0	0	0
16	SLU 81	-0.08	-0.15	9.74	0	0	0
16	SLU 82	-0.08	-0.15	9.74	0	0	0
16	SLU 83	-0.08	-0.15	9.82	0	0	0
16	SLU 84	-0.08	-0.15	9.82	0	0	0
16	SLE RA 1	-0.03	-0.12	6.51	0	0	0
16	SLE RA 2	-0.03	-0.12	6.51	0	0	0
16	SLE RA 3	-0.03	-0.12	6.6	0	0	0
16	SLE RA 4	-0.03	-0.12	6.6	0	0	0
16	SLE RA 5	-0.03	-0.12	6.56	0	0	0
16	SLE RA 6	-0.04	-0.12	6.65	0	0	0
16	SLE RA 7	-0.04	-0.12	6.65	0	0	0
16	SLE RA 8	-0.04	-0.12	6.61	0	0	0
16	SLE RA 9	-0.04	-0.12	6.61	0	0	0
16	SLE RA 10	-0.05	-0.12	7.02	0	0	0
16	SLE RA 11	-0.05	-0.12	7.11	0	0	0
16	SLE RA 12	-0.05	-0.12	7.11	0	0	0





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
16	SLE RA 13	-0.05	-0.12	7.07	0	0	0
16	SLE RA 14	-0.05	-0.12	7.16	0	0	0
16	SLE RA 15	-0.05	-0.12	7.16	0	0	0
16	SLE RA 16	-0.05	-0.12	7.12	0	0	0
16	SLE RA 17	-0.05	-0.12	7.12	0	0	0
16	SLE RA 18	-0.05	-0.12	7.23	0	0	0
16	SLE RA 19	-0.05	-0.12	7.23	0	0	0
16	SLE RA 20	-0.06	-0.12	7.28	0	0	0
16	SLE RA 21	-0.06	-0.12	7.28	0	0	0
16	SLE FR 1	-0.03	-0.12	6.51	0	0	0
16	SLE FR 2	-0.03	-0.12	6.51	0	0	0
16	SLE FR 3	-0.03	-0.12	6.53	0	0	0
16	SLE FR 4	-0.04	-0.12	6.73	0	0	0
16	SLE FR 5	-0.04	-0.12	6.75	0	0	0
16	SLE FR 6	-0.04	-0.12	6.87	0	0	0
16	SLE QP 1	-0.03	-0.12	6.51	0	0	0
16	SLE QP 2	-0.04	-0.12	6.73	0	0	0
16	SLD 1	0.36	-0.04	6.56	0	0	0
16	SLD 2	0.37	-0.02	6.55	0	0	0
16	SLD 3	0.33	-0.16	6.49	0	0	0
16	SLD 4	0.35	-0.15	6.48	0	0	0
16	SLD 5	0.12	0.1	6.78	0	0	0
16	SLD 6	0.13	0.11	6.78	0	0	0
16	SLD 7	0.03	-0.33	6.55	0	0	0
16	SLD 8	0.04	-0.32	6.55	0	0	0
16	SLD 9	-0.12	0.08	6.91	0	0	0
16	SLD 10	-0.1	0.09	6.91	0	0	0
16	SLD 11	-0.21	-0.35	6.67	0	0	0
16	SLD 12	-0.19	-0.33	6.67	0	0	0
16	SLD 13	-0.42	-0.09	6.97	0	0	0
16	SLD 14	-0.41	-0.07	6.97	0	0	0
16	SLD 15	-0.45	-0.22	6.9	0	0	0
16	SLD 16	-0.43	-0.2	6.9	0	0	0
16	SLV 1	0.88	0.07	6.32	0	0	0
16	SLV 2	0.92	0.11	6.32	0	0	0
16	SLV 3	0.82	-0.22	6.16	0	0	0
16	SLV 4	0.86	-0.18	6.16	0	0	0
16	SLV 5	0.33	0.37	6.85	0	0	0
16	SLV 6	0.35	0.4	6.85	0	0	0
16	SLV 7	0.12	-0.59	6.32	0	0	0
16	SLV 8	0.14	-0.57	6.31	0	0	0
16	SLV 9	-0.22	0.33	7.14	0	0	0
16	SLV 10	-0.19	0.36	7.14	0	0	0
16	SLV 11	-0.43	-0.63	6.61	0	0	0
16	SLV 12	-0.4	-0.61	6.61	0	0	0
16	SLV 13	-0.94	-0.06	7.3	0	0	0
16	SLV 14	-0.9	-0.02	7.3	0	0	0
16	SLV 15	-1	-0.35	7.14	0	0	0
16	SLV 16	-0.96	-0.31	7.14	0	0	0
17	SLU 1	-0.01	-0.06	3.14	0	0	0
17	SLU 2	-0.01	-0.06	3.14	0	0	0
17	SLU 3	-0.02	-0.06	3.21	0	0	0
17	SLU 4	-0.02	-0.06	3.21	0	0	0
17	SLU 5	-0.02	-0.06	3.18	0	0	0
17	SLU 6	-0.02	-0.06	3.24	0	0	0
17	SLU 7	-0.02	-0.06	3.24	0	0	0
17	SLU 8	-0.02	-0.06	3.21	0	0	0
17	SLU 9	-0.02	-0.06	3.21	0	0	0
17	SLU 10	-0.03	-0.06	3.51	0	0	0
17	SLU 11	-0.03	-0.06	3.58	0	0	0
17	SLU 12	-0.03	-0.06	3.58	0	0	0
17	SLU 13	-0.03	-0.06	3.55	0	0	0
17	SLU 14	-0.03	-0.05	3.61	0	0	0
17	SLU 15	-0.03	-0.06	3.61	0	0	0
17	SLU 16	-0.03	-0.05	3.59	0	0	0
17	SLU 17	-0.03	-0.06	3.58	0	0	0
17	SLU 18	-0.03	-0.06	3.67	0	0	0
17	SLU 19	-0.03	-0.06	3.67	0	0	0
17	SLU 20	-0.03	-0.06	3.71	0	0	0
17	SLU 21	-0.03	-0.06	3.71	0	0	0
17	SLU 22	-0.02	-0.05	3.48	0	0	0
17	SLU 23	-0.02	-0.05	3.48	0	0	0
17	SLU 24	-0.02	-0.05	3.54	0	0	0
17	SLU 25	-0.02	-0.05	3.54	0	0	0
17	SLU 26	-0.02	-0.05	3.51	0	0	0
17	SLU 27	-0.02	-0.05	3.58	0	0	0
17	SLU 28	-0.02	-0.05	3.58	0	0	0
17	SLU 29	-0.02	-0.05	3.55	0	0	0
17	SLU 30	-0.02	-0.05	3.55	0	0	0
17	SLU 31	-0.03	-0.05	3.85	0	0	0
17	SLU 32	-0.03	-0.05	3.91	0	0	0
17	SLU 33	-0.03	-0.05	3.91	0	0	0
17	SLU 34	-0.03	-0.05	3.88	0	0	0
17	SLU 35	-0.03	-0.05	3.95	0	0	0
17	SLU 36	-0.03	-0.05	3.95	0	0	0
17	SLU 37	-0.04	-0.05	3.92	0	0	0
17	SLU 38	-0.03	-0.05	3.92	0	0	0
17	SLU 39	-0.04	-0.05	4.01	0	0	0
17	SLU 40	-0.04	-0.05	4.01	0	0	0
17	SLU 41	-0.04	-0.05	4.04	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
17	SLU 42	-0.04	-0.05	4.04	0	0	0
17	SLU 43	-0.02	-0.08	3.97	0	0	0
17	SLU 44	-0.02	-0.08	3.97	0	0	0
17	SLU 45	-0.02	-0.08	4.03	0	0	0
17	SLU 46	-0.02	-0.08	4.03	0	0	0
17	SLU 47	-0.02	-0.08	4.01	0	0	0
17	SLU 48	-0.02	-0.08	4.07	0	0	0
17	SLU 49	-0.02	-0.08	4.07	0	0	0
17	SLU 50	-0.02	-0.08	4.04	0	0	0
17	SLU 51	-0.02	-0.08	4.04	0	0	0
17	SLU 52	-0.03	-0.08	4.34	0	0	0
17	SLU 53	-0.03	-0.08	4.41	0	0	0
17	SLU 54	-0.03	-0.08	4.4	0	0	0
17	SLU 55	-0.03	-0.08	4.38	0	0	0
17	SLU 56	-0.03	-0.07	4.44	0	0	0
17	SLU 57	-0.03	-0.08	4.44	0	0	0
17	SLU 58	-0.03	-0.07	4.41	0	0	0
17	SLU 59	-0.03	-0.08	4.41	0	0	0
17	SLU 60	-0.03	-0.08	4.5	0	0	0
17	SLU 61	-0.03	-0.08	4.5	0	0	0
17	SLU 62	-0.04	-0.07	4.54	0	0	0
17	SLU 63	-0.04	-0.08	4.53	0	0	0
17	SLU 64	-0.02	-0.07	4.31	0	0	0
17	SLU 65	-0.02	-0.07	4.31	0	0	0
17	SLU 66	-0.02	-0.07	4.37	0	0	0
17	SLU 67	-0.02	-0.07	4.37	0	0	0
17	SLU 68	-0.02	-0.07	4.34	0	0	0
17	SLU 69	-0.03	-0.07	4.41	0	0	0
17	SLU 70	-0.03	-0.07	4.41	0	0	0
17	SLU 71	-0.03	-0.07	4.38	0	0	0
17	SLU 72	-0.03	-0.07	4.38	0	0	0
17	SLU 73	-0.03	-0.07	4.68	0	0	0
17	SLU 74	-0.04	-0.07	4.74	0	0	0
17	SLU 75	-0.04	-0.07	4.74	0	0	0
17	SLU 76	-0.04	-0.07	4.71	0	0	0
17	SLU 77	-0.04	-0.07	4.78	0	0	0
17	SLU 78	-0.04	-0.07	4.78	0	0	0
17	SLU 79	-0.04	-0.07	4.75	0	0	0
17	SLU 80	-0.04	-0.07	4.75	0	0	0
17	SLU 81	-0.04	-0.07	4.84	0	0	0
17	SLU 82	-0.04	-0.07	4.84	0	0	0
17	SLU 83	-0.04	-0.07	4.87	0	0	0
17	SLU 84	-0.04	-0.07	4.87	0	0	0
17	SLE RA 1	-0.02	-0.06	3.24	0	0	0
17	SLE RA 2	-0.02	-0.06	3.24	0	0	0
17	SLE RA 3	-0.02	-0.05	3.28	0	0	0
17	SLE RA 4	-0.02	-0.06	3.28	0	0	0
17	SLE RA 5	-0.02	-0.06	3.26	0	0	0
17	SLE RA 6	-0.02	-0.05	3.31	0	0	0
17	SLE RA 7	-0.02	-0.05	3.31	0	0	0
17	SLE RA 8	-0.02	-0.05	3.29	0	0	0
17	SLE RA 9	-0.02	-0.05	3.29	0	0	0
17	SLE RA 10	-0.02	-0.06	3.49	0	0	0
17	SLE RA 11	-0.02	-0.05	3.53	0	0	0
17	SLE RA 12	-0.02	-0.05	3.53	0	0	0
17	SLE RA 13	-0.02	-0.06	3.51	0	0	0
17	SLE RA 14	-0.03	-0.05	3.55	0	0	0
17	SLE RA 15	-0.03	-0.05	3.55	0	0	0
17	SLE RA 16	-0.03	-0.05	3.53	0	0	0
17	SLE RA 17	-0.03	-0.05	3.53	0	0	0
17	SLE RA 18	-0.03	-0.05	3.59	0	0	0
17	SLE RA 19	-0.03	-0.05	3.59	0	0	0
17	SLE RA 20	-0.03	-0.05	3.62	0	0	0
17	SLE RA 21	-0.03	-0.05	3.62	0	0	0
17	SLE FR 1	-0.02	-0.06	3.24	0	0	0
17	SLE FR 2	-0.02	-0.06	3.24	0	0	0
17	SLE FR 3	-0.02	-0.06	3.25	0	0	0
17	SLE FR 4	-0.02	-0.06	3.34	0	0	0
17	SLE FR 5	-0.02	-0.05	3.35	0	0	0
17	SLE FR 6	-0.02	-0.05	3.42	0	0	0
17	SLE QP 1	-0.02	-0.06	3.24	0	0	0
17	SLE QP 2	-0.02	-0.06	3.34	0	0	0
17	SLD 1	0.18	-0.01	3.24	0	0	0
17	SLD 2	0.19	0	3.24	0	0	0
17	SLD 3	0.16	-0.08	3.2	0	0	0
17	SLD 4	0.17	-0.07	3.2	0	0	0
17	SLD 5	0.06	0.05	3.37	0	0	0
17	SLD 6	0.06	0.06	3.37	0	0	0
17	SLD 7	0.01	-0.16	3.24	0	0	0
17	SLD 8	0.02	-0.15	3.24	0	0	0
17	SLD 9	-0.06	0.04	3.45	0	0	0
17	SLD 10	-0.05	0.05	3.45	0	0	0
17	SLD 11	-0.1	-0.17	3.32	0	0	0
17	SLD 12	-0.1	-0.16	3.32	0	0	0
17	SLD 13	-0.21	-0.04	3.49	0	0	0
17	SLD 14	-0.2	-0.03	3.49	0	0	0
17	SLD 15	-0.23	-0.11	3.45	0	0	0
17	SLD 16	-0.22	-0.1	3.45	0	0	0
17	SLV 1	0.44	0.04	3.1	0	0	0
17	SLV 2	0.46	0.06	3.09	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
17	SLV 3	0.41	-0.11	3.01	0	0	0
17	SLV 4	0.43	-0.08	3	0	0	0
17	SLV 5	0.16	0.19	3.41	0	0	0
17	SLV 6	0.18	0.2	3.4	0	0	0
17	SLV 7	0.06	-0.29	3.11	0	0	0
17	SLV 8	0.07	-0.28	3.1	0	0	0
17	SLV 9	-0.11	0.17	3.58	0	0	0
17	SLV 10	-0.1	0.18	3.58	0	0	0
17	SLV 11	-0.22	-0.31	3.29	0	0	0
17	SLV 12	-0.2	-0.3	3.28	0	0	0
17	SLV 13	-0.47	-0.03	3.69	0	0	0
17	SLV 14	-0.45	0	3.68	0	0	0
17	SLV 15	-0.5	-0.17	3.6	0	0	0
17	SLV 16	-0.48	-0.15	3.59	0	0	0
18	SLU 1	-0.04	-0.16	6.41	0	0	0
18	SLU 2	-0.04	-0.17	6.41	0	0	0
18	SLU 3	-0.04	-0.16	6.55	0	0	0
18	SLU 4	-0.04	-0.17	6.56	0	0	0
18	SLU 5	-0.04	-0.17	6.5	0	0	0
18	SLU 6	-0.05	-0.16	6.65	0	0	0
18	SLU 7	-0.05	-0.16	6.65	0	0	0
18	SLU 8	-0.05	-0.16	6.59	0	0	0
18	SLU 9	-0.05	-0.16	6.59	0	0	0
18	SLU 10	-0.06	-0.17	7.24	0	0	0
18	SLU 11	-0.06	-0.17	7.38	0	0	0
18	SLU 12	-0.06	-0.17	7.39	0	0	0
18	SLU 13	-0.06	-0.17	7.33	0	0	0
18	SLU 14	-0.07	-0.16	7.48	0	0	0
18	SLU 15	-0.07	-0.17	7.48	0	0	0
18	SLU 16	-0.07	-0.16	7.42	0	0	0
18	SLU 17	-0.07	-0.17	7.42	0	0	0
18	SLU 18	-0.07	-0.17	7.59	0	0	0
18	SLU 19	-0.07	-0.17	7.59	0	0	0
18	SLU 20	-0.08	-0.17	7.68	0	0	0
18	SLU 21	-0.08	-0.17	7.69	0	0	0
18	SLU 22	-0.05	-0.15	7.13	0	0	0
18	SLU 23	-0.05	-0.16	7.13	0	0	0
18	SLU 24	-0.05	-0.15	7.27	0	0	0
18	SLU 25	-0.05	-0.15	7.27	0	0	0
18	SLU 26	-0.05	-0.16	7.22	0	0	0
18	SLU 27	-0.06	-0.15	7.36	0	0	0
18	SLU 28	-0.06	-0.15	7.36	0	0	0
18	SLU 29	-0.06	-0.15	7.31	0	0	0
18	SLU 30	-0.06	-0.15	7.31	0	0	0
18	SLU 31	-0.07	-0.16	7.96	0	0	0
18	SLU 32	-0.07	-0.15	8.1	0	0	0
18	SLU 33	-0.07	-0.16	8.1	0	0	0
18	SLU 34	-0.07	-0.16	8.05	0	0	0
18	SLU 35	-0.08	-0.15	8.19	0	0	0
18	SLU 36	-0.08	-0.16	8.19	0	0	0
18	SLU 37	-0.08	-0.15	8.14	0	0	0
18	SLU 38	-0.08	-0.16	8.14	0	0	0
18	SLU 39	-0.08	-0.16	8.31	0	0	0
18	SLU 40	-0.08	-0.16	8.31	0	0	0
18	SLU 41	-0.09	-0.16	8.4	0	0	0
18	SLU 42	-0.08	-0.16	8.4	0	0	0
18	SLU 43	-0.05	-0.22	8.08	0	0	0
18	SLU 44	-0.05	-0.22	8.09	0	0	0
18	SLU 45	-0.05	-0.22	8.23	0	0	0
18	SLU 46	-0.05	-0.22	8.23	0	0	0
18	SLU 47	-0.05	-0.22	8.18	0	0	0
18	SLU 48	-0.05	-0.22	8.32	0	0	0
18	SLU 49	-0.05	-0.22	8.32	0	0	0
18	SLU 50	-0.06	-0.22	8.27	0	0	0
18	SLU 51	-0.05	-0.22	8.27	0	0	0
18	SLU 52	-0.07	-0.22	8.92	0	0	0
18	SLU 53	-0.07	-0.22	9.06	0	0	0
18	SLU 54	-0.07	-0.22	9.06	0	0	0
18	SLU 55	-0.07	-0.22	9.01	0	0	0
18	SLU 56	-0.08	-0.22	9.15	0	0	0
18	SLU 57	-0.08	-0.22	9.15	0	0	0
18	SLU 58	-0.08	-0.22	9.1	0	0	0
18	SLU 59	-0.08	-0.22	9.1	0	0	0
18	SLU 60	-0.08	-0.22	9.27	0	0	0
18	SLU 61	-0.08	-0.22	9.27	0	0	0
18	SLU 62	-0.08	-0.22	9.36	0	0	0
18	SLU 63	-0.08	-0.22	9.36	0	0	0
18	SLU 64	-0.06	-0.21	8.8	0	0	0
18	SLU 65	-0.05	-0.21	8.8	0	0	0
18	SLU 66	-0.06	-0.2	8.95	0	0	0
18	SLU 67	-0.06	-0.21	8.95	0	0	0
18	SLU 68	-0.06	-0.21	8.89	0	0	0
18	SLU 69	-0.06	-0.2	9.04	0	0	0
18	SLU 70	-0.06	-0.21	9.04	0	0	0
18	SLU 71	-0.06	-0.2	8.98	0	0	0
18	SLU 72	-0.06	-0.21	8.98	0	0	0
18	SLU 73	-0.08	-0.21	9.63	0	0	0
18	SLU 74	-0.08	-0.21	9.78	0	0	0
18	SLU 75	-0.08	-0.21	9.78	0	0	0
18	SLU 76	-0.08	-0.21	9.72	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
18	SLU 77	-0.09	-0.21	9.87	0	0	0
18	SLU 78	-0.09	-0.21	9.87	0	0	0
18	SLU 79	-0.09	-0.21	9.81	0	0	0
18	SLU 80	-0.09	-0.21	9.81	0	0	0
18	SLU 81	-0.09	-0.21	9.99	0	0	0
18	SLU 82	-0.09	-0.21	9.99	0	0	0
18	SLU 83	-0.09	-0.21	10.08	0	0	0
18	SLU 84	-0.09	-0.21	10.08	0	0	0
18	SLE RA 1	-0.04	-0.16	6.61	0	0	0
18	SLE RA 2	-0.04	-0.16	6.61	0	0	0
18	SLE RA 3	-0.04	-0.16	6.71	0	0	0
18	SLE RA 4	-0.04	-0.16	6.71	0	0	0
18	SLE RA 5	-0.04	-0.16	6.67	0	0	0
18	SLE RA 6	-0.05	-0.16	6.77	0	0	0
18	SLE RA 7	-0.05	-0.16	6.77	0	0	0
18	SLE RA 8	-0.05	-0.16	6.73	0	0	0
18	SLE RA 9	-0.05	-0.16	6.73	0	0	0
18	SLE RA 10	-0.06	-0.17	7.17	0	0	0
18	SLE RA 11	-0.06	-0.16	7.26	0	0	0
18	SLE RA 12	-0.06	-0.16	7.26	0	0	0
18	SLE RA 13	-0.06	-0.16	7.23	0	0	0
18	SLE RA 14	-0.06	-0.16	7.32	0	0	0
18	SLE RA 15	-0.06	-0.16	7.33	0	0	0
18	SLE RA 16	-0.06	-0.16	7.29	0	0	0
18	SLE RA 17	-0.06	-0.16	7.29	0	0	0
18	SLE RA 18	-0.06	-0.16	7.4	0	0	0
18	SLE RA 19	-0.06	-0.17	7.4	0	0	0
18	SLE RA 20	-0.07	-0.16	7.46	0	0	0
18	SLE RA 21	-0.07	-0.16	7.46	0	0	0
18	SLE FR 1	-0.04	-0.16	6.61	0	0	0
18	SLE FR 2	-0.04	-0.16	6.61	0	0	0
18	SLE FR 3	-0.04	-0.16	6.64	0	0	0
18	SLE FR 4	-0.05	-0.16	6.85	0	0	0
18	SLE FR 5	-0.05	-0.16	6.87	0	0	0
18	SLE FR 6	-0.05	-0.16	7.01	0	0	0
18	SLE QP 1	-0.04	-0.16	6.61	0	0	0
18	SLE QP 2	-0.05	-0.16	6.85	0	0	0
18	SLD 1	0.35	-0.07	6.89	0	0	0
18	SLD 2	0.36	-0.07	6.9	0	0	0
18	SLD 3	0.32	-0.2	6.87	0	0	0
18	SLD 4	0.33	-0.2	6.88	0	0	0
18	SLD 5	0.11	0.07	6.89	0	0	0
18	SLD 6	0.12	0.07	6.9	0	0	0
18	SLD 7	0.02	-0.38	6.83	0	0	0
18	SLD 8	0.03	-0.38	6.83	0	0	0
18	SLD 9	-0.12	0.05	6.87	0	0	0
18	SLD 10	-0.11	0.06	6.87	0	0	0
18	SLD 11	-0.21	-0.4	6.8	0	0	0
18	SLD 12	-0.21	-0.39	6.81	0	0	0
18	SLD 13	-0.43	-0.12	6.82	0	0	0
18	SLD 14	-0.41	-0.12	6.83	0	0	0
18	SLD 15	-0.46	-0.26	6.8	0	0	0
18	SLD 16	-0.44	-0.25	6.81	0	0	0
18	SLV 1	0.88	0.05	6.95	0	0	0
18	SLV 2	0.91	0.06	6.97	0	0	0
18	SLV 3	0.81	-0.26	6.91	0	0	0
18	SLV 4	0.84	-0.25	6.93	0	0	0
18	SLV 5	0.32	0.36	6.95	0	0	0
18	SLV 6	0.34	0.37	6.96	0	0	0
18	SLV 7	0.11	-0.66	6.79	0	0	0
18	SLV 8	0.13	-0.65	6.81	0	0	0
18	SLV 9	-0.22	0.33	6.89	0	0	0
18	SLV 10	-0.2	0.33	6.91	0	0	0
18	SLV 11	-0.44	-0.69	6.74	0	0	0
18	SLV 12	-0.42	-0.69	6.75	0	0	0
18	SLV 13	-0.94	-0.07	6.77	0	0	0
18	SLV 14	-0.91	-0.06	6.79	0	0	0
18	SLV 15	-1	-0.38	6.73	0	0	0
18	SLV 16	-0.97	-0.37	6.75	0	0	0
20	SLU 1	-0.08	-0.31	12.76	0	0	0
20	SLU 2	-0.07	-0.32	12.76	0	0	0
20	SLU 3	-0.08	-0.31	13.05	0	0	0
20	SLU 4	-0.08	-0.31	13.05	0	0	0
20	SLU 5	-0.08	-0.32	12.94	0	0	0
20	SLU 6	-0.09	-0.31	13.22	0	0	0
20	SLU 7	-0.09	-0.31	13.22	0	0	0
20	SLU 8	-0.09	-0.31	13.11	0	0	0
20	SLU 9	-0.09	-0.31	13.11	0	0	0
20	SLU 10	-0.12	-0.32	14.39	0	0	0
20	SLU 11	-0.13	-0.31	14.68	0	0	0
20	SLU 12	-0.13	-0.32	14.68	0	0	0
20	SLU 13	-0.13	-0.32	14.57	0	0	0
20	SLU 14	-0.14	-0.31	14.86	0	0	0
20	SLU 15	-0.14	-0.32	14.86	0	0	0
20	SLU 16	-0.14	-0.31	14.74	0	0	0
20	SLU 17	-0.14	-0.32	14.74	0	0	0
20	SLU 18	-0.14	-0.32	15.09	0	0	0
20	SLU 19	-0.14	-0.32	15.09	0	0	0
20	SLU 20	-0.15	-0.32	15.27	0	0	0
20	SLU 21	-0.15	-0.32	15.27	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
20	SLU 22	-0.09	-0.29	14.18	0	0	0
20	SLU 23	-0.09	-0.3	14.18	0	0	0
20	SLU 24	-0.1	-0.29	14.47	0	0	0
20	SLU 25	-0.1	-0.29	14.47	0	0	0
20	SLU 26	-0.1	-0.29	14.36	0	0	0
20	SLU 27	-0.11	-0.28	14.65	0	0	0
20	SLU 28	-0.11	-0.29	14.65	0	0	0
20	SLU 29	-0.11	-0.28	14.53	0	0	0
20	SLU 30	-0.11	-0.29	14.53	0	0	0
20	SLU 31	-0.14	-0.3	15.82	0	0	0
20	SLU 32	-0.15	-0.29	16.1	0	0	0
20	SLU 33	-0.15	-0.29	16.1	0	0	0
20	SLU 34	-0.15	-0.3	15.99	0	0	0
20	SLU 35	-0.16	-0.29	16.28	0	0	0
20	SLU 36	-0.16	-0.29	16.28	0	0	0
20	SLU 37	-0.16	-0.29	16.17	0	0	0
20	SLU 38	-0.16	-0.29	16.17	0	0	0
20	SLU 39	-0.16	-0.29	16.52	0	0	0
20	SLU 40	-0.16	-0.3	16.52	0	0	0
20	SLU 41	-0.17	-0.29	16.69	0	0	0
20	SLU 42	-0.17	-0.3	16.69	0	0	0
20	SLU 43	-0.09	-0.41	16.1	0	0	0
20	SLU 44	-0.09	-0.42	16.1	0	0	0
20	SLU 45	-0.1	-0.41	16.39	0	0	0
20	SLU 46	-0.1	-0.42	16.39	0	0	0
20	SLU 47	-0.1	-0.42	16.28	0	0	0
20	SLU 48	-0.11	-0.41	16.56	0	0	0
20	SLU 49	-0.11	-0.41	16.56	0	0	0
20	SLU 50	-0.11	-0.41	16.45	0	0	0
20	SLU 51	-0.11	-0.41	16.45	0	0	0
20	SLU 52	-0.14	-0.42	17.73	0	0	0
20	SLU 53	-0.15	-0.41	18.02	0	0	0
20	SLU 54	-0.15	-0.42	18.02	0	0	0
20	SLU 55	-0.15	-0.42	17.91	0	0	0
20	SLU 56	-0.16	-0.41	18.19	0	0	0
20	SLU 57	-0.15	-0.42	18.2	0	0	0
20	SLU 58	-0.16	-0.41	18.08	0	0	0
20	SLU 59	-0.16	-0.42	18.08	0	0	0
20	SLU 60	-0.16	-0.42	18.43	0	0	0
20	SLU 61	-0.16	-0.42	18.43	0	0	0
20	SLU 62	-0.17	-0.42	18.61	0	0	0
20	SLU 63	-0.17	-0.42	18.61	0	0	0
20	SLU 64	-0.11	-0.39	17.52	0	0	0
20	SLU 65	-0.11	-0.4	17.52	0	0	0
20	SLU 66	-0.12	-0.39	17.81	0	0	0
20	SLU 67	-0.12	-0.39	17.81	0	0	0
20	SLU 68	-0.12	-0.4	17.7	0	0	0
20	SLU 69	-0.13	-0.38	17.99	0	0	0
20	SLU 70	-0.13	-0.39	17.99	0	0	0
20	SLU 71	-0.13	-0.39	17.87	0	0	0
20	SLU 72	-0.13	-0.39	17.87	0	0	0
20	SLU 73	-0.16	-0.4	19.16	0	0	0
20	SLU 74	-0.17	-0.39	19.44	0	0	0
20	SLU 75	-0.16	-0.4	19.44	0	0	0
20	SLU 76	-0.17	-0.4	19.33	0	0	0
20	SLU 77	-0.17	-0.39	19.62	0	0	0
20	SLU 78	-0.17	-0.39	19.62	0	0	0
20	SLU 79	-0.18	-0.39	19.51	0	0	0
20	SLU 80	-0.18	-0.39	19.51	0	0	0
20	SLU 81	-0.18	-0.39	19.86	0	0	0
20	SLU 82	-0.18	-0.4	19.86	0	0	0
20	SLU 83	-0.19	-0.39	20.03	0	0	0
20	SLU 84	-0.19	-0.4	20.03	0	0	0
20	SLE RA 1	-0.08	-0.3	13.17	0	0	0
20	SLE RA 2	-0.08	-0.31	13.17	0	0	0
20	SLE RA 3	-0.09	-0.3	13.36	0	0	0
20	SLE RA 4	-0.09	-0.31	13.36	0	0	0
20	SLE RA 5	-0.09	-0.31	13.28	0	0	0
20	SLE RA 6	-0.09	-0.3	13.47	0	0	0
20	SLE RA 7	-0.09	-0.3	13.47	0	0	0
20	SLE RA 8	-0.09	-0.3	13.4	0	0	0
20	SLE RA 9	-0.09	-0.3	13.4	0	0	0
20	SLE RA 10	-0.11	-0.31	14.26	0	0	0
20	SLE RA 11	-0.12	-0.31	14.45	0	0	0
20	SLE RA 12	-0.12	-0.31	14.45	0	0	0
20	SLE RA 13	-0.12	-0.31	14.37	0	0	0
20	SLE RA 14	-0.12	-0.3	14.56	0	0	0
20	SLE RA 15	-0.12	-0.31	14.56	0	0	0
20	SLE RA 16	-0.12	-0.3	14.49	0	0	0
20	SLE RA 17	-0.12	-0.31	14.49	0	0	0
20	SLE RA 18	-0.12	-0.31	14.72	0	0	0
20	SLE RA 19	-0.12	-0.31	14.72	0	0	0
20	SLE RA 20	-0.13	-0.31	14.84	0	0	0
20	SLE RA 21	-0.13	-0.31	14.84	0	0	0
20	SLE FR 1	-0.08	-0.3	13.17	0	0	0
20	SLE FR 2	-0.08	-0.31	13.17	0	0	0
20	SLE FR 3	-0.08	-0.3	13.21	0	0	0
20	SLE FR 4	-0.09	-0.31	13.63	0	0	0
20	SLE FR 5	-0.1	-0.31	13.68	0	0	0
20	SLE FR 6	-0.1	-0.31	13.94	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
20	SLE QP 1	-0.08	-0.3	13.17	0	0	0
20	SLE QP 2	-0.09	-0.31	13.63	0	0	0
20	SLD 1	0.7	-0.13	13.56	0	0	0
20	SLD 2	0.72	-0.11	13.58	0	0	0
20	SLD 3	0.64	-0.39	13.52	0	0	0
20	SLD 4	0.67	-0.38	13.54	0	0	0
20	SLD 5	0.22	0.15	13.67	0	0	0
20	SLD 6	0.24	0.16	13.68	0	0	0
20	SLD 7	0.04	-0.74	13.54	0	0	0
20	SLD 8	0.05	-0.73	13.55	0	0	0
20	SLD 9	-0.24	0.12	13.72	0	0	0
20	SLD 10	-0.23	0.13	13.73	0	0	0
20	SLD 11	-0.43	-0.77	13.59	0	0	0
20	SLD 12	-0.41	-0.76	13.6	0	0	0
20	SLD 13	-0.86	-0.23	13.73	0	0	0
20	SLD 14	-0.83	-0.22	13.74	0	0	0
20	SLD 15	-0.91	-0.5	13.69	0	0	0
20	SLD 16	-0.88	-0.48	13.7	0	0	0
20	SLV 1	1.75	0.1	13.47	0	0	0
20	SLV 2	1.82	0.13	13.5	0	0	0
20	SLV 3	1.63	-0.5	13.38	0	0	0
20	SLV 4	1.69	-0.47	13.41	0	0	0
20	SLV 5	0.64	0.73	13.72	0	0	0
20	SLV 6	0.69	0.75	13.74	0	0	0
20	SLV 7	0.21	-1.29	13.41	0	0	0
20	SLV 8	0.26	-1.27	13.44	0	0	0
20	SLV 9	-0.45	0.66	13.83	0	0	0
20	SLV 10	-0.4	0.68	13.85	0	0	0
20	SLV 11	-0.88	-1.36	13.53	0	0	0
20	SLV 12	-0.83	-1.34	13.55	0	0	0
20	SLV 13	-1.88	-0.14	13.85	0	0	0
20	SLV 14	-1.81	-0.11	13.88	0	0	0
20	SLV 15	-2.01	-0.75	13.76	0	0	0
20	SLV 16	-1.94	-0.71	13.79	0	0	0
21	SLU 1	-0.08	-0.3	13.05	0	-2.4468	-0.057
21	SLU 2	-0.08	-0.31	13.05	0	-2.4469	-0.0584
21	SLU 3	-0.09	-0.3	13.34	0	-2.5012	-0.0565
21	SLU 4	-0.09	-0.31	13.34	0	-2.5012	-0.0573
21	SLU 5	-0.09	-0.31	13.22	0	-2.4796	-0.0579
21	SLU 6	-0.1	-0.3	13.51	0	-2.5339	-0.056
21	SLU 7	-0.1	-0.3	13.51	0	-2.5339	-0.0569
21	SLU 8	-0.1	-0.3	13.4	0	-2.5122	-0.0561
21	SLU 9	-0.1	-0.3	13.4	0	-2.5122	-0.0569
21	SLU 10	-0.12	-0.31	14.7	0	-2.756	-0.0589
21	SLU 11	-0.13	-0.3	14.99	0	-2.8103	-0.057
21	SLU 12	-0.13	-0.31	14.99	0	-2.8103	-0.0578
21	SLU 13	-0.13	-0.31	14.87	0	-2.7887	-0.0584
21	SLU 14	-0.14	-0.3	15.16	0	-2.8429	-0.0565
21	SLU 15	-0.14	-0.31	15.16	0	-2.843	-0.0574
21	SLU 16	-0.14	-0.3	15.05	0	-2.8213	-0.0565
21	SLU 17	-0.14	-0.31	15.05	0	-2.8213	-0.0574
21	SLU 18	-0.15	-0.31	15.4	0	-2.8884	-0.0576
21	SLU 19	-0.15	-0.31	15.4	0	-2.8884	-0.0585
21	SLU 20	-0.16	-0.3	15.58	0	-2.921	-0.0572
21	SLU 21	-0.15	-0.31	15.58	0	-2.9211	-0.058
21	SLU 22	-0.1	-0.28	14.5	0	-2.7185	-0.0522
21	SLU 23	-0.1	-0.29	14.5	0	-2.7186	-0.0536
21	SLU 24	-0.11	-0.28	14.79	0	-2.7728	-0.0517
21	SLU 25	-0.11	-0.28	14.79	0	-2.7729	-0.0526
21	SLU 26	-0.11	-0.28	14.67	0	-2.7512	-0.0532
21	SLU 27	-0.12	-0.27	14.96	0	-2.8055	-0.0513
21	SLU 28	-0.12	-0.28	14.96	0	-2.8056	-0.0521
21	SLU 29	-0.12	-0.27	14.85	0	-2.7838	-0.0513
21	SLU 30	-0.12	-0.28	14.85	0	-2.7839	-0.0522
21	SLU 31	-0.14	-0.29	16.15	0	-3.0276	-0.0541
21	SLU 32	-0.15	-0.28	16.44	0	-3.0819	-0.0522
21	SLU 33	-0.15	-0.28	16.44	0	-3.082	-0.053
21	SLU 34	-0.15	-0.29	16.32	0	-3.0603	-0.0536
21	SLU 35	-0.16	-0.28	16.61	0	-3.1146	-0.0517
21	SLU 36	-0.16	-0.28	16.61	0	-3.1147	-0.0526
21	SLU 37	-0.17	-0.28	16.5	0	-3.0929	-0.0518
21	SLU 38	-0.16	-0.28	16.5	0	-3.093	-0.0526
21	SLU 39	-0.17	-0.28	16.85	0	-3.16	-0.0529
21	SLU 40	-0.17	-0.29	16.85	0	-3.1601	-0.0537
21	SLU 41	-0.18	-0.28	17.03	0	-3.1927	-0.0524
21	SLU 42	-0.17	-0.28	17.03	0	-3.1928	-0.0533
21	SLU 43	-0.09	-0.4	16.47	0	-3.0877	-0.0757
21	SLU 44	-0.09	-0.41	16.47	0	-3.0878	-0.0771
21	SLU 45	-0.1	-0.4	16.76	0	-3.1421	-0.0752
21	SLU 46	-0.1	-0.41	16.76	0	-3.1421	-0.0761
21	SLU 47	-0.1	-0.41	16.64	0	-3.1205	-0.0767
21	SLU 48	-0.11	-0.4	16.93	0	-3.1748	-0.0748
21	SLU 49	-0.11	-0.4	16.93	0	-3.1748	-0.0756
21	SLU 50	-0.11	-0.4	16.82	0	-3.1531	-0.0748
21	SLU 51	-0.11	-0.4	16.82	0	-3.1531	-0.0757
21	SLU 52	-0.14	-0.41	18.12	0	-3.3969	-0.0776
21	SLU 53	-0.15	-0.4	18.41	0	-3.4512	-0.0757
21	SLU 54	-0.15	-0.41	18.41	0	-3.4512	-0.0765
21	SLU 55	-0.15	-0.41	18.29	0	-3.4296	-0.0771
21	SLU 56	-0.16	-0.4	18.58	0	-3.4838	-0.0752



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
21	SLU 57	-0.16	-0.41	18.58	0	-3.4839	-0.0761
21	SLU 58	-0.16	-0.4	18.46	0	-3.4622	-0.0753
21	SLU 59	-0.16	-0.41	18.47	0	-3.4622	-0.0761
21	SLU 60	-0.16	-0.41	18.82	0	-3.5293	-0.0764
21	SLU 61	-0.16	-0.41	18.82	0	-3.5293	-0.0772
21	SLU 62	-0.17	-0.4	19	0	-3.5619	-0.0759
21	SLU 63	-0.17	-0.41	19	0	-3.562	-0.0768
21	SLU 64	-0.11	-0.38	17.92	0	-3.3594	-0.0709
21	SLU 65	-0.11	-0.39	17.92	0	-3.3595	-0.0723
21	SLU 66	-0.12	-0.38	18.21	0	-3.4137	-0.0704
21	SLU 67	-0.12	-0.38	18.21	0	-3.4138	-0.0713
21	SLU 68	-0.12	-0.38	18.09	0	-3.3921	-0.0719
21	SLU 69	-0.13	-0.37	18.38	0	-3.4464	-0.07
21	SLU 70	-0.13	-0.38	18.38	0	-3.4465	-0.0709
21	SLU 71	-0.13	-0.37	18.27	0	-3.4247	-0.07
21	SLU 72	-0.13	-0.38	18.27	0	-3.4248	-0.0709
21	SLU 73	-0.16	-0.39	19.57	0	-3.6686	-0.0728
21	SLU 74	-0.17	-0.38	19.86	0	-3.7228	-0.0709
21	SLU 75	-0.17	-0.38	19.86	0	-3.7229	-0.0718
21	SLU 76	-0.17	-0.39	19.74	0	-3.7012	-0.0724
21	SLU 77	-0.18	-0.38	20.03	0	-3.7555	-0.0705
21	SLU 78	-0.18	-0.38	20.03	0	-3.7556	-0.0713
21	SLU 79	-0.18	-0.38	19.91	0	-3.7338	-0.0705
21	SLU 80	-0.18	-0.38	19.91	0	-3.7339	-0.0714
21	SLU 81	-0.18	-0.38	20.27	0	-3.8009	-0.0716
21	SLU 82	-0.18	-0.39	20.27	0	-3.801	-0.0724
21	SLU 83	-0.19	-0.38	20.45	0	-3.8336	-0.0711
21	SLU 84	-0.19	-0.38	20.45	0	-3.8337	-0.072
21	SLE RA 1	-0.08	-0.3	13.46	0	-2.5244	-0.0556
21	SLE RA 2	-0.08	-0.3	13.46	0	-2.5245	-0.0566
21	SLE RA 3	-0.09	-0.29	13.66	0	-2.5607	-0.0553
21	SLE RA 4	-0.09	-0.3	13.66	0	-2.5607	-0.0559
21	SLE RA 5	-0.09	-0.3	13.58	0	-2.5463	-0.0563
21	SLE RA 6	-0.1	-0.29	13.77	0	-2.5825	-0.055
21	SLE RA 7	-0.1	-0.3	13.77	0	-2.5825	-0.0556
21	SLE RA 8	-0.1	-0.29	13.7	0	-2.568	-0.055
21	SLE RA 9	-0.1	-0.3	13.7	0	-2.568	-0.0556
21	SLE RA 10	-0.11	-0.3	14.56	0	-2.7305	-0.0569
21	SLE RA 11	-0.12	-0.3	14.76	0	-2.7667	-0.0556
21	SLE RA 12	-0.12	-0.3	14.76	0	-2.7668	-0.0562
21	SLE RA 13	-0.12	-0.3	14.68	0	-2.7523	-0.0566
21	SLE RA 14	-0.13	-0.29	14.87	0	-2.7885	-0.0553
21	SLE RA 15	-0.13	-0.3	14.87	0	-2.7886	-0.0559
21	SLE RA 16	-0.13	-0.3	14.79	0	-2.7741	-0.0553
21	SLE RA 17	-0.13	-0.3	14.8	0	-2.7741	-0.0559
21	SLE RA 18	-0.13	-0.3	15.03	0	-2.8188	-0.056
21	SLE RA 19	-0.13	-0.3	15.03	0	-2.8188	-0.0566
21	SLE RA 20	-0.14	-0.3	15.15	0	-2.8406	-0.0557
21	SLE RA 21	-0.13	-0.3	15.15	0	-2.8406	-0.0563
21	SLE FR 1	-0.08	-0.3	13.46	0	-2.5244	-0.0556
21	SLE FR 2	-0.08	-0.3	13.46	0	-2.5244	-0.0558
21	SLE FR 3	-0.09	-0.3	13.51	0	-2.5331	-0.0555
21	SLE FR 4	-0.1	-0.3	13.93	0	-2.6127	-0.0559
21	SLE FR 5	-0.1	-0.3	13.98	0	-2.6214	-0.0556
21	SLE FR 6	-0.11	-0.3	14.25	0	-2.6716	-0.0558
21	SLE QP 1	-0.08	-0.3	13.46	0	-2.5244	-0.0556
21	SLE QP 2	-0.1	-0.3	13.93	0	-2.6127	-0.0557
21	SLD 1	0.72	-0.12	13.8	0	-2.5874	-0.0219
21	SLD 2	0.75	-0.1	13.81	0	-2.5892	-0.0182
21	SLD 3	0.66	-0.39	13.75	0	-2.5784	-0.0729
21	SLD 4	0.69	-0.37	13.76	0	-2.5802	-0.0691
21	SLD 5	0.23	0.17	13.97	0	-2.6185	0.031
21	SLD 6	0.25	0.18	13.97	0	-2.6196	0.0335
21	SLD 7	0.04	-0.74	13.81	0	-2.5885	-0.1388
21	SLD 8	0.06	-0.73	13.81	0	-2.5896	-0.1364
21	SLD 9	-0.25	0.13	14.06	0	-2.6358	0.0249
21	SLD 10	-0.23	0.15	14.06	0	-2.637	0.0274
21	SLD 11	-0.44	-0.77	13.9	0	-2.6058	-0.1449
21	SLD 12	-0.42	-0.76	13.9	0	-2.607	-0.1425
21	SLD 13	-0.88	-0.23	14.11	0	-2.6453	-0.0423
21	SLD 14	-0.85	-0.21	14.12	0	-2.6471	-0.0386
21	SLD 15	-0.94	-0.5	14.06	0	-2.6363	-0.0933
21	SLD 16	-0.91	-0.48	14.07	0	-2.6381	-0.0896
21	SLV 1	1.81	0.11	13.62	0	-2.5532	0.0214
21	SLV 2	1.87	0.16	13.64	0	-2.5573	0.03
21	SLV 3	1.67	-0.5	13.51	0	-2.5326	-0.0939
21	SLV 4	1.74	-0.45	13.53	0	-2.5367	-0.0853
21	SLV 5	0.66	0.75	14	0	-2.6254	0.1409
21	SLV 6	0.71	0.78	14.02	0	-2.6281	0.1464
21	SLV 7	0.22	-1.3	13.64	0	-2.5567	-0.2436
21	SLV 8	0.26	-1.27	13.65	0	-2.5594	-0.238
21	SLV 9	-0.46	0.68	14.22	0	-2.6661	0.1266
21	SLV 10	-0.42	0.7	14.23	0	-2.6687	0.1322
21	SLV 11	-0.9	-1.38	13.85	0	-2.5974	-0.2579
21	SLV 12	-0.86	-1.35	13.87	0	-2.6001	-0.2523
21	SLV 13	-1.93	-0.14	14.34	0	-2.6887	-0.0262
21	SLV 14	-1.87	-0.09	14.36	0	-2.6928	-0.0175
21	SLV 15	-2.07	-0.75	14.23	0	-2.6681	-0.1415
21	SLV 16	-2	-0.71	14.25	0	-2.6722	-0.1329
21	CRTP Ux+	0	0	0	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
21	CRTFP Ux-	0	0	0	0	0	0
21	CRTFP Uy+	0	0	0	0	0	0
21	CRTFP Uy-	0	0	0	0	0	0
23	SLU 1	-0.08	-0.29	13.33	0	-1.6667	-0.0368
23	SLU 2	-0.08	-0.3	13.33	0	-1.6667	-0.0377
23	SLU 3	-0.09	-0.29	13.63	0	-1.7032	-0.0365
23	SLU 4	-0.09	-0.3	13.63	0	-1.7032	-0.037
23	SLU 5	-0.09	-0.3	13.51	0	-1.6883	-0.0374
23	SLU 6	-0.1	-0.29	13.8	0	-1.7248	-0.0361
23	SLU 7	-0.1	-0.29	13.8	0	-1.7248	-0.0367
23	SLU 8	-0.1	-0.29	13.68	0	-1.7099	-0.0362
23	SLU 9	-0.1	-0.29	13.68	0	-1.7099	-0.0367
23	SLU 10	-0.13	-0.3	15	0	-1.8744	-0.0378
23	SLU 11	-0.14	-0.29	15.29	0	-1.9109	-0.0366
23	SLU 12	-0.14	-0.3	15.29	0	-1.9109	-0.0371
23	SLU 13	-0.14	-0.3	15.17	0	-1.896	-0.0375
23	SLU 14	-0.15	-0.29	15.46	0	-1.9325	-0.0362
23	SLU 15	-0.15	-0.29	15.46	0	-1.9325	-0.0368
23	SLU 16	-0.15	-0.29	15.34	0	-1.9176	-0.0363
23	SLU 17	-0.15	-0.29	15.34	0	-1.9176	-0.0368
23	SLU 18	-0.15	-0.3	15.71	0	-1.9634	-0.037
23	SLU 19	-0.15	-0.3	15.71	0	-1.9634	-0.0375
23	SLU 20	-0.16	-0.29	15.88	0	-1.985	-0.0366
23	SLU 21	-0.16	-0.3	15.88	0	-1.985	-0.0372
23	SLU 22	-0.1	-0.27	14.81	0	-1.8508	-0.0334
23	SLU 23	-0.1	-0.27	14.81	0	-1.8509	-0.0343
23	SLU 24	-0.11	-0.26	15.1	0	-1.8873	-0.0331
23	SLU 25	-0.11	-0.27	15.1	0	-1.8873	-0.0336
23	SLU 26	-0.11	-0.27	14.98	0	-1.8724	-0.034
23	SLU 27	-0.12	-0.26	15.27	0	-1.9089	-0.0327
23	SLU 28	-0.12	-0.27	15.27	0	-1.9089	-0.0333
23	SLU 29	-0.12	-0.26	15.15	0	-1.894	-0.0328
23	SLU 30	-0.12	-0.27	15.15	0	-1.894	-0.0333
23	SLU 31	-0.15	-0.28	16.47	0	-2.0585	-0.0344
23	SLU 32	-0.16	-0.27	16.76	0	-2.095	-0.0332
23	SLU 33	-0.16	-0.27	16.76	0	-2.095	-0.0337
23	SLU 34	-0.16	-0.27	16.64	0	-2.0801	-0.0341
23	SLU 35	-0.17	-0.26	16.93	0	-2.1166	-0.0328
23	SLU 36	-0.17	-0.27	16.93	0	-2.1166	-0.0334
23	SLU 37	-0.17	-0.26	16.81	0	-2.1017	-0.0329
23	SLU 38	-0.17	-0.27	16.81	0	-2.1017	-0.0334
23	SLU 39	-0.17	-0.27	17.18	0	-2.1475	-0.0336
23	SLU 40	-0.17	-0.27	17.18	0	-2.1475	-0.0341
23	SLU 41	-0.18	-0.27	17.35	0	-2.1691	-0.0332
23	SLU 42	-0.18	-0.27	17.35	0	-2.1691	-0.0338
23	SLU 43	-0.1	-0.39	16.83	0	-2.1036	-0.0491
23	SLU 44	-0.1	-0.4	16.83	0	-2.1036	-0.05
23	SLU 45	-0.11	-0.39	17.12	0	-2.1401	-0.0487
23	SLU 46	-0.11	-0.39	17.12	0	-2.1401	-0.0492
23	SLU 47	-0.11	-0.4	17	0	-2.1252	-0.0496
23	SLU 48	-0.12	-0.39	17.29	0	-2.1617	-0.0484
23	SLU 49	-0.12	-0.39	17.29	0	-2.1617	-0.0489
23	SLU 50	-0.12	-0.39	17.17	0	-2.1468	-0.0484
23	SLU 51	-0.12	-0.39	17.17	0	-2.1468	-0.0489
23	SLU 52	-0.15	-0.4	18.49	0	-2.3113	-0.0501
23	SLU 53	-0.16	-0.39	18.78	0	-2.3478	-0.0488
23	SLU 54	-0.15	-0.39	18.78	0	-2.3478	-0.0493
23	SLU 55	-0.16	-0.4	18.66	0	-2.3329	-0.0497
23	SLU 56	-0.17	-0.39	18.95	0	-2.3694	-0.0484
23	SLU 57	-0.16	-0.39	18.95	0	-2.3694	-0.049
23	SLU 58	-0.17	-0.39	18.84	0	-2.3545	-0.0485
23	SLU 59	-0.17	-0.39	18.84	0	-2.3545	-0.049
23	SLU 60	-0.17	-0.39	19.2	0	-2.4003	-0.0492
23	SLU 61	-0.17	-0.4	19.2	0	-2.4003	-0.0497
23	SLU 62	-0.18	-0.39	19.38	0	-2.4219	-0.0489
23	SLU 63	-0.18	-0.4	19.38	0	-2.4219	-0.0494
23	SLU 64	-0.12	-0.37	18.3	0	-2.2877	-0.0456
23	SLU 65	-0.12	-0.37	18.3	0	-2.2878	-0.0466
23	SLU 66	-0.13	-0.36	18.59	0	-2.3242	-0.0453
23	SLU 67	-0.13	-0.37	18.59	0	-2.3242	-0.0458
23	SLU 68	-0.13	-0.37	18.47	0	-2.3093	-0.0462
23	SLU 69	-0.14	-0.36	18.77	0	-2.3458	-0.0449
23	SLU 70	-0.14	-0.36	18.77	0	-2.3458	-0.0455
23	SLU 71	-0.14	-0.36	18.65	0	-2.3309	-0.045
23	SLU 72	-0.14	-0.36	18.65	0	-2.3309	-0.0455
23	SLU 73	-0.17	-0.37	19.96	0	-2.4954	-0.0467
23	SLU 74	-0.18	-0.36	20.26	0	-2.5319	-0.0454
23	SLU 75	-0.18	-0.37	20.26	0	-2.5319	-0.0459
23	SLU 76	-0.18	-0.37	20.14	0	-2.517	-0.0463
23	SLU 77	-0.19	-0.36	20.43	0	-2.5535	-0.045
23	SLU 78	-0.19	-0.36	20.43	0	-2.5535	-0.0456
23	SLU 79	-0.19	-0.36	20.31	0	-2.5386	-0.0451
23	SLU 80	-0.19	-0.36	20.31	0	-2.5386	-0.0456
23	SLU 81	-0.19	-0.37	20.68	0	-2.5844	-0.0458
23	SLU 82	-0.19	-0.37	20.68	0	-2.5844	-0.0463
23	SLU 83	-0.2	-0.36	20.85	0	-2.606	-0.0455
23	SLU 84	-0.2	-0.37	20.85	0	-2.606	-0.046
23	SLE RA 1	-0.09	-0.29	13.75	0	-1.7193	-0.0359
23	SLE RA 2	-0.09	-0.29	13.75	0	-1.7193	-0.0365
23	SLE RA 3	-0.09	-0.28	13.95	0	-1.7437	-0.0356





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
23	SLE RA 4	-0.09	-0.29	13.95	0	-1.7437	-0.036
23	SLE RA 5	-0.09	-0.29	13.87	0	-1.7337	-0.0362
23	SLE RA 6	-0.1	-0.28	14.06	0	-1.7581	-0.0354
23	SLE RA 7	-0.1	-0.29	14.06	0	-1.7581	-0.0358
23	SLE RA 8	-0.1	-0.28	13.98	0	-1.7481	-0.0354
23	SLE RA 9	-0.1	-0.29	13.98	0	-1.7481	-0.0358
23	SLE RA 10	-0.12	-0.29	14.86	0	-1.8578	-0.0365
23	SLE RA 11	-0.13	-0.29	15.06	0	-1.8821	-0.0357
23	SLE RA 12	-0.12	-0.29	15.06	0	-1.8821	-0.036
23	SLE RA 13	-0.13	-0.29	14.98	0	-1.8722	-0.0363
23	SLE RA 14	-0.13	-0.28	15.17	0	-1.8965	-0.0355
23	SLE RA 15	-0.13	-0.29	15.17	0	-1.8965	-0.0358
23	SLE RA 16	-0.13	-0.28	15.09	0	-1.8866	-0.0355
23	SLE RA 17	-0.13	-0.29	15.09	0	-1.8866	-0.0358
23	SLE RA 18	-0.13	-0.29	15.34	0	-1.9171	-0.036
23	SLE RA 19	-0.13	-0.29	15.34	0	-1.9171	-0.0363
23	SLE RA 20	-0.14	-0.29	15.45	0	-1.9315	-0.0357
23	SLE RA 21	-0.14	-0.29	15.45	0	-1.9315	-0.0361
23	SLE FR 1	-0.09	-0.29	13.75	0	-1.7193	-0.0359
23	SLE FR 2	-0.09	-0.29	13.75	0	-1.7193	-0.036
23	SLE FR 3	-0.09	-0.29	13.8	0	-1.7251	-0.0358
23	SLE FR 4	-0.1	-0.29	14.23	0	-1.7787	-0.036
23	SLE FR 5	-0.1	-0.29	14.28	0	-1.7844	-0.0358
23	SLE FR 6	-0.11	-0.29	14.55	0	-1.8182	-0.0359
23	SLE QP 1	-0.09	-0.29	13.75	0	-1.7193	-0.0359
23	SLE QP 2	-0.1	-0.29	14.23	0	-1.7787	-0.0359
23	SLD 1	0.74	-0.11	14.01	0	-1.7517	-0.0132
23	SLD 2	0.77	-0.08	14.02	0	-1.7523	-0.0099
23	SLD 3	0.68	-0.38	13.95	0	-1.7439	-0.0477
23	SLD 4	0.71	-0.36	13.96	0	-1.7444	-0.0444
23	SLD 5	0.23	0.18	14.26	0	-1.7824	0.0227
23	SLD 6	0.25	0.2	14.26	0	-1.7828	0.0249
23	SLD 7	0.04	-0.74	14.05	0	-1.7562	-0.0924
23	SLD 8	0.06	-0.72	14.05	0	-1.7566	-0.0902
23	SLD 9	-0.26	0.15	14.41	0	-1.8008	0.0184
23	SLD 10	-0.24	0.16	14.41	0	-1.8012	0.0206
23	SLD 11	-0.46	-0.77	14.2	0	-1.7745	-0.0967
23	SLD 12	-0.44	-0.76	14.2	0	-1.7749	-0.0945
23	SLD 13	-0.91	-0.22	14.5	0	-1.8129	-0.0274
23	SLD 14	-0.88	-0.19	14.51	0	-1.8135	-0.0241
23	SLD 15	-0.97	-0.5	14.44	0	-1.805	-0.0619
23	SLD 16	-0.94	-0.47	14.44	0	-1.8056	-0.0586
23	SLV 1	1.86	0.13	13.72	0	-1.7154	0.0159
23	SLV 2	1.93	0.19	13.73	0	-1.7168	0.0236
23	SLV 3	1.72	-0.5	13.58	0	-1.6974	-0.0623
23	SLV 4	1.79	-0.44	13.59	0	-1.6988	-0.0546
23	SLV 5	0.68	0.77	14.29	0	-1.7867	0.0968
23	SLV 6	0.73	0.81	14.3	0	-1.7876	0.1018
23	SLV 7	0.23	-1.31	13.81	0	-1.7268	-0.1637
23	SLV 8	0.27	-1.27	13.82	0	-1.7277	-0.1587
23	SLV 9	-0.47	0.7	14.64	0	-1.8297	0.0869
23	SLV 10	-0.43	0.74	14.64	0	-1.8306	0.0919
23	SLV 11	-0.93	-1.39	14.16	0	-1.7697	-0.1736
23	SLV 12	-0.88	-1.35	14.16	0	-1.7706	-0.1686
23	SLV 13	-1.99	-0.14	14.87	0	-1.8586	-0.0172
23	SLV 14	-1.92	-0.08	14.88	0	-1.8599	-0.0095
23	SLV 15	-2.13	-0.76	14.72	0	-1.8406	-0.0954
23	SLV 16	-2.06	-0.7	14.74	0	-1.8419	-0.0876
23	CRTFP Ux+	0	0	0	0	0	0
23	CRTFP Ux-	0	0	0	0	0	0
25	SLU 1	-0.07	-0.25	11.77	0	-0.7357	-0.0154
25	SLU 2	-0.07	-0.25	11.77	0	-0.7357	-0.0157
25	SLU 3	-0.08	-0.24	12.03	0	-0.7516	-0.0152
25	SLU 4	-0.08	-0.25	12.02	0	-0.7515	-0.0154
25	SLU 5	-0.08	-0.25	11.92	0	-0.7449	-0.0156
25	SLU 6	-0.09	-0.24	12.17	0	-0.7608	-0.015
25	SLU 7	-0.09	-0.24	12.17	0	-0.7608	-0.0153
25	SLU 8	-0.09	-0.24	12.07	0	-0.7542	-0.015
25	SLU 9	-0.09	-0.24	12.07	0	-0.7541	-0.0153
25	SLU 10	-0.11	-0.25	13.22	0	-0.826	-0.0157
25	SLU 11	-0.12	-0.24	13.47	0	-0.8419	-0.0151
25	SLU 12	-0.12	-0.25	13.47	0	-0.8419	-0.0154
25	SLU 13	-0.12	-0.25	13.36	0	-0.8353	-0.0155
25	SLU 14	-0.13	-0.24	13.62	0	-0.8512	-0.015
25	SLU 15	-0.13	-0.24	13.62	0	-0.8511	-0.0152
25	SLU 16	-0.13	-0.24	13.51	0	-0.8445	-0.015
25	SLU 17	-0.13	-0.24	13.51	0	-0.8445	-0.0152
25	SLU 18	-0.13	-0.24	13.84	0	-0.8648	-0.0153
25	SLU 19	-0.13	-0.25	13.84	0	-0.8648	-0.0155
25	SLU 20	-0.14	-0.24	13.98	0	-0.874	-0.0151
25	SLU 21	-0.14	-0.25	13.98	0	-0.874	-0.0154
25	SLU 22	-0.09	-0.22	13.06	0	-0.8166	-0.0138
25	SLU 23	-0.09	-0.23	13.06	0	-0.8165	-0.0142
25	SLU 24	-0.1	-0.22	13.32	0	-0.8324	-0.0136
25	SLU 25	-0.1	-0.22	13.32	0	-0.8324	-0.0138
25	SLU 26	-0.1	-0.22	13.21	0	-0.8257	-0.014
25	SLU 27	-0.11	-0.22	13.47	0	-0.8416	-0.0135
25	SLU 28	-0.11	-0.22	13.47	0	-0.8416	-0.0137
25	SLU 29	-0.11	-0.22	13.36	0	-0.835	-0.0135
25	SLU 30	-0.11	-0.22	13.36	0	-0.835	-0.0137



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
25	SLU 31	-0.13	-0.23	14.51	0	-0.9069	-0.0141
25	SLU 32	-0.14	-0.22	14.76	0	-0.9228	-0.0136
25	SLU 33	-0.14	-0.22	14.76	0	-0.9228	-0.0138
25	SLU 34	-0.14	-0.22	14.66	0	-0.9161	-0.014
25	SLU 35	-0.15	-0.21	14.91	0	-0.932	-0.0134
25	SLU 36	-0.15	-0.22	14.91	0	-0.932	-0.0136
25	SLU 37	-0.15	-0.21	14.81	0	-0.9254	-0.0134
25	SLU 38	-0.15	-0.22	14.81	0	-0.9254	-0.0136
25	SLU 39	-0.15	-0.22	15.13	0	-0.9456	-0.0137
25	SLU 40	-0.15	-0.22	15.13	0	-0.9456	-0.0139
25	SLU 41	-0.16	-0.22	15.28	0	-0.9549	-0.0136
25	SLU 42	-0.16	-0.22	15.28	0	-0.9549	-0.0138
25	SLU 43	-0.09	-0.33	14.86	0	-0.9287	-0.0205
25	SLU 44	-0.09	-0.33	14.86	0	-0.9287	-0.0209
25	SLU 45	-0.1	-0.33	15.11	0	-0.9446	-0.0203
25	SLU 46	-0.09	-0.33	15.11	0	-0.9445	-0.0206
25	SLU 47	-0.1	-0.33	15.01	0	-0.9379	-0.0207
25	SLU 48	-0.1	-0.32	15.26	0	-0.9538	-0.0202
25	SLU 49	-0.1	-0.33	15.26	0	-0.9538	-0.0204
25	SLU 50	-0.11	-0.32	15.15	0	-0.9472	-0.0202
25	SLU 51	-0.1	-0.33	15.15	0	-0.9471	-0.0204
25	SLU 52	-0.13	-0.33	16.3	0	-1.019	-0.0208
25	SLU 53	-0.14	-0.32	16.56	0	-1.0349	-0.0203
25	SLU 54	-0.14	-0.33	16.56	0	-1.0349	-0.0205
25	SLU 55	-0.14	-0.33	16.45	0	-1.0283	-0.0207
25	SLU 56	-0.15	-0.32	16.71	0	-1.0442	-0.0201
25	SLU 57	-0.15	-0.33	16.71	0	-1.0441	-0.0204
25	SLU 58	-0.15	-0.32	16.6	0	-1.0375	-0.0201
25	SLU 59	-0.15	-0.33	16.6	0	-1.0375	-0.0204
25	SLU 60	-0.15	-0.33	16.92	0	-1.0578	-0.0204
25	SLU 61	-0.15	-0.33	16.92	0	-1.0578	-0.0207
25	SLU 62	-0.16	-0.32	17.07	0	-1.067	-0.0203
25	SLU 63	-0.16	-0.33	17.07	0	-1.067	-0.0205
25	SLU 64	-0.11	-0.3	16.15	0	-1.0095	-0.0189
25	SLU 65	-0.1	-0.31	16.15	0	-1.0095	-0.0193
25	SLU 66	-0.11	-0.3	16.41	0	-1.0254	-0.0188
25	SLU 67	-0.11	-0.3	16.41	0	-1.0254	-0.019
25	SLU 68	-0.11	-0.31	16.3	0	-1.0187	-0.0192
25	SLU 69	-0.12	-0.3	16.55	0	-1.0346	-0.0186
25	SLU 70	-0.12	-0.3	16.55	0	-1.0346	-0.0188
25	SLU 71	-0.12	-0.3	16.45	0	-1.028	-0.0186
25	SLU 72	-0.12	-0.3	16.45	0	-1.028	-0.0189
25	SLU 73	-0.15	-0.31	17.6	0	-1.0999	-0.0193
25	SLU 74	-0.16	-0.3	17.85	0	-1.1158	-0.0187
25	SLU 75	-0.16	-0.3	17.85	0	-1.1158	-0.0189
25	SLU 76	-0.16	-0.31	17.75	0	-1.1091	-0.0191
25	SLU 77	-0.17	-0.3	18	0	-1.125	-0.0186
25	SLU 78	-0.17	-0.3	18	0	-1.125	-0.0188
25	SLU 79	-0.17	-0.3	17.89	0	-1.1184	-0.0186
25	SLU 80	-0.17	-0.3	17.89	0	-1.1183	-0.0188
25	SLU 81	-0.17	-0.3	18.22	0	-1.1386	-0.0189
25	SLU 82	-0.17	-0.31	18.22	0	-1.1386	-0.0191
25	SLU 83	-0.18	-0.3	18.37	0	-1.1479	-0.0187
25	SLU 84	-0.18	-0.3	18.37	0	-1.1479	-0.0189
25	SLE RA 1	-0.08	-0.24	12.14	0	-0.7588	-0.0149
25	SLE RA 2	-0.08	-0.24	12.14	0	-0.7588	-0.0152
25	SLE RA 3	-0.08	-0.24	12.31	0	-0.7694	-0.0148
25	SLE RA 4	-0.08	-0.24	12.31	0	-0.7694	-0.015
25	SLE RA 5	-0.08	-0.24	12.24	0	-0.7649	-0.0151
25	SLE RA 6	-0.09	-0.24	12.41	0	-0.7755	-0.0147
25	SLE RA 7	-0.09	-0.24	12.41	0	-0.7755	-0.0148
25	SLE RA 8	-0.09	-0.24	12.34	0	-0.7711	-0.0147
25	SLE RA 9	-0.09	-0.24	12.34	0	-0.7711	-0.0149
25	SLE RA 10	-0.11	-0.24	13.1	0	-0.819	-0.0151
25	SLE RA 11	-0.11	-0.24	13.27	0	-0.8296	-0.0148
25	SLE RA 12	-0.11	-0.24	13.27	0	-0.8296	-0.0149
25	SLE RA 13	-0.11	-0.24	13.2	0	-0.8252	-0.015
25	SLE RA 14	-0.12	-0.23	13.37	0	-0.8358	-0.0147
25	SLE RA 15	-0.12	-0.24	13.37	0	-0.8358	-0.0148
25	SLE RA 16	-0.12	-0.23	13.3	0	-0.8314	-0.0147
25	SLE RA 17	-0.12	-0.24	13.3	0	-0.8313	-0.0148
25	SLE RA 18	-0.12	-0.24	13.52	0	-0.8449	-0.0149
25	SLE RA 19	-0.12	-0.24	13.52	0	-0.8449	-0.015
25	SLE RA 20	-0.12	-0.24	13.62	0	-0.851	-0.0148
25	SLE RA 21	-0.12	-0.24	13.62	0	-0.851	-0.0149
25	SLE FR 1	-0.08	-0.24	12.14	0	-0.7588	-0.0149
25	SLE FR 2	-0.08	-0.24	12.14	0	-0.7588	-0.015
25	SLE FR 3	-0.08	-0.24	12.18	0	-0.7613	-0.0149
25	SLE FR 4	-0.09	-0.24	12.55	0	-0.7846	-0.015
25	SLE FR 5	-0.09	-0.24	12.59	0	-0.7871	-0.0149
25	SLE FR 6	-0.1	-0.24	12.83	0	-0.8018	-0.0149
25	SLE QP 1	-0.08	-0.24	12.14	0	-0.7588	-0.0149
25	SLE QP 2	-0.09	-0.24	12.55	0	-0.7846	-0.0149
25	SLD 1	0.65	-0.08	12.29	0	-0.7684	-0.005
25	SLD 2	0.68	-0.05	12.29	0	-0.7684	-0.0032
25	SLD 3	0.6	-0.32	12.22	0	-0.7639	-0.0202
25	SLD 4	0.63	-0.29	12.22	0	-0.7639	-0.0184
25	SLD 5	0.21	0.17	12.58	0	-0.7865	0.0107
25	SLD 6	0.23	0.19	12.58	0	-0.7865	0.0119
25	SLD 7	0.03	-0.64	12.35	0	-0.7717	-0.0398



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
25	SLD 8	0.05	-0.62	12.35	0	-0.7717	-0.0386
25	SLD 9	-0.23	0.14	12.76	0	-0.7976	0.0088
25	SLD 10	-0.21	0.16	12.76	0	-0.7975	0.01
25	SLD 11	-0.4	-0.67	12.52	0	-0.7828	-0.0417
25	SLD 12	-0.39	-0.65	12.52	0	-0.7828	-0.0405
25	SLD 13	-0.81	-0.18	12.89	0	-0.8053	-0.0114
25	SLD 14	-0.78	-0.15	12.88	0	-0.8053	-0.0096
25	SLD 15	-0.86	-0.43	12.81	0	-0.8009	-0.0266
25	SLD 16	-0.83	-0.4	12.81	0	-0.8009	-0.0248
25	SLV 1	1.65	0.12	11.94	0	-0.7465	0.0076
25	SLV 2	1.71	0.19	11.94	0	-0.7464	0.0118
25	SLV 3	1.53	-0.43	11.78	0	-0.7364	-0.0267
25	SLV 4	1.59	-0.36	11.78	0	-0.7363	-0.0225
25	SLV 5	0.61	0.69	12.62	0	-0.7885	0.0431
25	SLV 6	0.64	0.73	12.62	0	-0.7885	0.0459
25	SLV 7	0.2	-1.14	12.08	0	-0.7548	-0.0712
25	SLV 8	0.24	-1.1	12.08	0	-0.7548	-0.0685
25	SLV 9	-0.42	0.62	13.03	0	-0.8144	0.0387
25	SLV 10	-0.38	0.66	13.03	0	-0.8144	0.0414
25	SLV 11	-0.82	-1.21	12.49	0	-0.7808	-0.0757
25	SLV 12	-0.78	-1.17	12.49	0	-0.7807	-0.073
25	SLV 13	-1.77	-0.12	13.33	0	-0.8329	-0.0073
25	SLV 14	-1.71	-0.05	13.33	0	-0.8329	-0.0031
25	SLV 15	-1.89	-0.67	13.17	0	-0.8228	-0.0417
25	SLV 16	-1.83	-0.6	13.16	0	-0.8228	-0.0374
25	CRTFP Ux+	0	0	0	0	0	0
25	CRTFP Ux-	0	0	0	0	0	0
27	SLU 1	-0.07	-0.22	11.18	0	0	0
27	SLU 2	-0.07	-0.23	11.18	0	0	0
27	SLU 3	-0.08	-0.22	11.42	0	0	0
27	SLU 4	-0.08	-0.22	11.42	0	0	0
27	SLU 5	-0.08	-0.22	11.32	0	0	0
27	SLU 6	-0.09	-0.21	11.55	0	0	0
27	SLU 7	-0.09	-0.22	11.55	0	0	0
27	SLU 8	-0.09	-0.21	11.45	0	0	0
27	SLU 9	-0.09	-0.22	11.45	0	0	0
27	SLU 10	-0.11	-0.22	12.53	0	0	0
27	SLU 11	-0.12	-0.21	12.77	0	0	0
27	SLU 12	-0.12	-0.22	12.77	0	0	0
27	SLU 13	-0.12	-0.22	12.67	0	0	0
27	SLU 14	-0.13	-0.21	12.91	0	0	0
27	SLU 15	-0.13	-0.22	12.91	0	0	0
27	SLU 16	-0.13	-0.21	12.81	0	0	0
27	SLU 17	-0.13	-0.22	12.81	0	0	0
27	SLU 18	-0.13	-0.22	13.12	0	0	0
27	SLU 19	-0.13	-0.22	13.12	0	0	0
27	SLU 20	-0.14	-0.21	13.25	0	0	0
27	SLU 21	-0.14	-0.22	13.25	0	0	0
27	SLU 22	-0.09	-0.2	12.4	0	0	0
27	SLU 23	-0.09	-0.2	12.4	0	0	0
27	SLU 24	-0.09	-0.19	12.64	0	0	0
27	SLU 25	-0.09	-0.2	12.64	0	0	0
27	SLU 26	-0.09	-0.2	12.54	0	0	0
27	SLU 27	-0.1	-0.19	12.78	0	0	0
27	SLU 28	-0.1	-0.19	12.78	0	0	0
27	SLU 29	-0.1	-0.19	12.68	0	0	0
27	SLU 30	-0.1	-0.19	12.67	0	0	0
27	SLU 31	-0.13	-0.2	13.76	0	0	0
27	SLU 32	-0.14	-0.19	14	0	0	0
27	SLU 33	-0.14	-0.19	13.99	0	0	0
27	SLU 34	-0.14	-0.2	13.89	0	0	0
27	SLU 35	-0.14	-0.19	14.13	0	0	0
27	SLU 36	-0.14	-0.19	14.13	0	0	0
27	SLU 37	-0.15	-0.19	14.03	0	0	0
27	SLU 38	-0.15	-0.19	14.03	0	0	0
27	SLU 39	-0.15	-0.19	14.34	0	0	0
27	SLU 40	-0.15	-0.2	14.34	0	0	0
27	SLU 41	-0.16	-0.19	14.47	0	0	0
27	SLU 42	-0.15	-0.19	14.47	0	0	0
27	SLU 43	-0.08	-0.29	14.12	0	0	0
27	SLU 44	-0.08	-0.3	14.12	0	0	0
27	SLU 45	-0.09	-0.29	14.35	0	0	0
27	SLU 46	-0.09	-0.3	14.35	0	0	0
27	SLU 47	-0.09	-0.3	14.25	0	0	0
27	SLU 48	-0.1	-0.29	14.49	0	0	0
27	SLU 49	-0.1	-0.29	14.49	0	0	0
27	SLU 50	-0.1	-0.29	14.39	0	0	0
27	SLU 51	-0.1	-0.29	14.39	0	0	0
27	SLU 52	-0.12	-0.3	15.47	0	0	0
27	SLU 53	-0.13	-0.29	15.71	0	0	0
27	SLU 54	-0.13	-0.29	15.71	0	0	0
27	SLU 55	-0.13	-0.3	15.61	0	0	0
27	SLU 56	-0.14	-0.29	15.84	0	0	0
27	SLU 57	-0.14	-0.29	15.84	0	0	0
27	SLU 58	-0.14	-0.29	15.74	0	0	0
27	SLU 59	-0.14	-0.29	15.74	0	0	0
27	SLU 60	-0.14	-0.29	16.05	0	0	0
27	SLU 61	-0.14	-0.29	16.05	0	0	0
27	SLU 62	-0.15	-0.29	16.19	0	0	0
27	SLU 63	-0.15	-0.29	16.19	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
27	SLU 64	-0.1	-0.27	15.34	0	0	0
27	SLU 65	-0.1	-0.28	15.34	0	0	0
27	SLU 66	-0.11	-0.27	15.58	0	0	0
27	SLU 67	-0.11	-0.27	15.58	0	0	0
27	SLU 68	-0.11	-0.27	15.47	0	0	0
27	SLU 69	-0.12	-0.26	15.71	0	0	0
27	SLU 70	-0.12	-0.27	15.71	0	0	0
27	SLU 71	-0.12	-0.26	15.61	0	0	0
27	SLU 72	-0.12	-0.27	15.61	0	0	0
27	SLU 73	-0.14	-0.27	16.69	0	0	0
27	SLU 74	-0.15	-0.26	16.93	0	0	0
27	SLU 75	-0.15	-0.27	16.93	0	0	0
27	SLU 76	-0.15	-0.27	16.83	0	0	0
27	SLU 77	-0.16	-0.26	17.07	0	0	0
27	SLU 78	-0.16	-0.27	17.07	0	0	0
27	SLU 79	-0.16	-0.26	16.96	0	0	0
27	SLU 80	-0.16	-0.27	16.96	0	0	0
27	SLU 81	-0.16	-0.27	17.27	0	0	0
27	SLU 82	-0.16	-0.27	17.27	0	0	0
27	SLU 83	-0.17	-0.26	17.41	0	0	0
27	SLU 84	-0.17	-0.27	17.41	0	0	0
27	SLE RA 1	-0.07	-0.21	11.53	0	0	0
27	SLE RA 2	-0.07	-0.22	11.53	0	0	0
27	SLE RA 3	-0.08	-0.21	11.69	0	0	0
27	SLE RA 4	-0.08	-0.21	11.69	0	0	0
27	SLE RA 5	-0.08	-0.21	11.62	0	0	0
27	SLE RA 6	-0.09	-0.21	11.78	0	0	0
27	SLE RA 7	-0.08	-0.21	11.78	0	0	0
27	SLE RA 8	-0.09	-0.21	11.71	0	0	0
27	SLE RA 9	-0.09	-0.21	11.71	0	0	0
27	SLE RA 10	-0.1	-0.22	12.43	0	0	0
27	SLE RA 11	-0.11	-0.21	12.59	0	0	0
27	SLE RA 12	-0.11	-0.21	12.59	0	0	0
27	SLE RA 13	-0.11	-0.21	12.52	0	0	0
27	SLE RA 14	-0.11	-0.21	12.68	0	0	0
27	SLE RA 15	-0.11	-0.21	12.68	0	0	0
27	SLE RA 16	-0.11	-0.21	12.61	0	0	0
27	SLE RA 17	-0.11	-0.21	12.61	0	0	0
27	SLE RA 18	-0.11	-0.21	12.82	0	0	0
27	SLE RA 19	-0.11	-0.21	12.82	0	0	0
27	SLE RA 20	-0.12	-0.21	12.91	0	0	0
27	SLE RA 21	-0.12	-0.21	12.91	0	0	0
27	SLE FR 1	-0.07	-0.21	11.53	0	0	0
27	SLE FR 2	-0.07	-0.21	11.53	0	0	0
27	SLE FR 3	-0.08	-0.21	11.57	0	0	0
27	SLE FR 4	-0.09	-0.21	11.92	0	0	0
27	SLE FR 5	-0.09	-0.21	11.95	0	0	0
27	SLE FR 6	-0.09	-0.21	12.18	0	0	0
27	SLE QP 1	-0.07	-0.21	11.53	0	0	0
27	SLE QP 2	-0.09	-0.21	11.92	0	0	0
27	SLD 1	0.62	-0.06	11.6	0	0	0
27	SLD 2	0.65	-0.03	11.6	0	0	0
27	SLD 3	0.57	-0.29	11.52	0	0	0
27	SLD 4	0.6	-0.26	11.52	0	0	0
27	SLD 5	0.2	0.17	11.95	0	0	0
27	SLD 6	0.21	0.2	11.95	0	0	0
27	SLD 7	0.03	-0.59	11.67	0	0	0
27	SLD 8	0.05	-0.57	11.67	0	0	0
27	SLD 9	-0.22	0.14	12.17	0	0	0
27	SLD 10	-0.2	0.17	12.16	0	0	0
27	SLD 11	-0.39	-0.62	11.89	0	0	0
27	SLD 12	-0.37	-0.6	11.88	0	0	0
27	SLD 13	-0.77	-0.16	12.32	0	0	0
27	SLD 14	-0.75	-0.13	12.31	0	0	0
27	SLD 15	-0.82	-0.39	12.24	0	0	0
27	SLD 16	-0.8	-0.36	12.23	0	0	0
27	SLV 1	1.58	0.13	11.18	0	0	0
27	SLV 2	1.63	0.2	11.17	0	0	0
27	SLV 3	1.46	-0.39	10.99	0	0	0
27	SLV 4	1.52	-0.32	10.98	0	0	0
27	SLV 5	0.58	0.66	11.99	0	0	0
27	SLV 6	0.62	0.71	11.98	0	0	0
27	SLV 7	0.19	-1.07	11.35	0	0	0
27	SLV 8	0.23	-1.02	11.35	0	0	0
27	SLV 9	-0.4	0.59	12.49	0	0	0
27	SLV 10	-0.36	0.64	12.48	0	0	0
27	SLV 11	-0.79	-1.14	11.85	0	0	0
27	SLV 12	-0.75	-1.09	11.85	0	0	0
27	SLV 13	-1.69	-0.11	12.86	0	0	0
27	SLV 14	-1.63	-0.03	12.85	0	0	0
27	SLV 15	-1.81	-0.63	12.66	0	0	0
27	SLV 16	-1.75	-0.55	12.65	0	0	0
28	SLU 1	-0.03	-0.1	5.55	0	0	0
28	SLU 2	-0.03	-0.11	5.55	0	0	0
28	SLU 3	-0.04	-0.1	5.67	0	0	0
28	SLU 4	-0.04	-0.1	5.67	0	0	0
28	SLU 5	-0.04	-0.1	5.61	0	0	0
28	SLU 6	-0.04	-0.1	5.73	0	0	0
28	SLU 7	-0.04	-0.1	5.73	0	0	0
28	SLU 8	-0.04	-0.1	5.68	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
28	SLU 9	-0.04	-0.1	5.68	0	0	0
28	SLU 10	-0.05	-0.1	6.21	0	0	0
28	SLU 11	-0.06	-0.1	6.33	0	0	0
28	SLU 12	-0.06	-0.1	6.33	0	0	0
28	SLU 13	-0.06	-0.1	6.28	0	0	0
28	SLU 14	-0.06	-0.1	6.39	0	0	0
28	SLU 15	-0.06	-0.1	6.39	0	0	0
28	SLU 16	-0.06	-0.1	6.34	0	0	0
28	SLU 17	-0.06	-0.1	6.34	0	0	0
28	SLU 18	-0.06	-0.1	6.5	0	0	0
28	SLU 19	-0.06	-0.1	6.5	0	0	0
28	SLU 20	-0.07	-0.1	6.56	0	0	0
28	SLU 21	-0.07	-0.1	6.56	0	0	0
28	SLU 22	-0.04	-0.09	6.15	0	0	0
28	SLU 23	-0.04	-0.09	6.15	0	0	0
28	SLU 24	-0.05	-0.09	6.27	0	0	0
28	SLU 25	-0.05	-0.09	6.27	0	0	0
28	SLU 26	-0.05	-0.09	6.22	0	0	0
28	SLU 27	-0.05	-0.09	6.33	0	0	0
28	SLU 28	-0.05	-0.09	6.33	0	0	0
28	SLU 29	-0.05	-0.09	6.28	0	0	0
28	SLU 30	-0.05	-0.09	6.28	0	0	0
28	SLU 31	-0.06	-0.09	6.81	0	0	0
28	SLU 32	-0.07	-0.09	6.93	0	0	0
28	SLU 33	-0.07	-0.09	6.93	0	0	0
28	SLU 34	-0.07	-0.09	6.88	0	0	0
28	SLU 35	-0.07	-0.09	7	0	0	0
28	SLU 36	-0.07	-0.09	7	0	0	0
28	SLU 37	-0.07	-0.09	6.95	0	0	0
28	SLU 38	-0.07	-0.09	6.95	0	0	0
28	SLU 39	-0.07	-0.09	7.1	0	0	0
28	SLU 40	-0.07	-0.09	7.1	0	0	0
28	SLU 41	-0.08	-0.09	7.16	0	0	0
28	SLU 42	-0.08	-0.09	7.16	0	0	0
28	SLU 43	-0.04	-0.14	7.01	0	0	0
28	SLU 44	-0.04	-0.14	7.01	0	0	0
28	SLU 45	-0.05	-0.14	7.12	0	0	0
28	SLU 46	-0.05	-0.14	7.12	0	0	0
28	SLU 47	-0.05	-0.14	7.07	0	0	0
28	SLU 48	-0.05	-0.14	7.19	0	0	0
28	SLU 49	-0.05	-0.14	7.19	0	0	0
28	SLU 50	-0.05	-0.14	7.14	0	0	0
28	SLU 51	-0.05	-0.14	7.14	0	0	0
28	SLU 52	-0.06	-0.14	7.67	0	0	0
28	SLU 53	-0.07	-0.14	7.79	0	0	0
28	SLU 54	-0.07	-0.14	7.79	0	0	0
28	SLU 55	-0.07	-0.14	7.73	0	0	0
28	SLU 56	-0.07	-0.13	7.85	0	0	0
28	SLU 57	-0.07	-0.14	7.85	0	0	0
28	SLU 58	-0.07	-0.13	7.8	0	0	0
28	SLU 59	-0.07	-0.14	7.8	0	0	0
28	SLU 60	-0.07	-0.14	7.95	0	0	0
28	SLU 61	-0.07	-0.14	7.95	0	0	0
28	SLU 62	-0.08	-0.13	8.02	0	0	0
28	SLU 63	-0.08	-0.14	8.02	0	0	0
28	SLU 64	-0.05	-0.13	7.61	0	0	0
28	SLU 65	-0.05	-0.13	7.61	0	0	0
28	SLU 66	-0.05	-0.12	7.73	0	0	0
28	SLU 67	-0.05	-0.13	7.73	0	0	0
28	SLU 68	-0.05	-0.13	7.68	0	0	0
28	SLU 69	-0.06	-0.12	7.79	0	0	0
28	SLU 70	-0.06	-0.12	7.79	0	0	0
28	SLU 71	-0.06	-0.12	7.74	0	0	0
28	SLU 72	-0.06	-0.12	7.74	0	0	0
28	SLU 73	-0.07	-0.13	8.27	0	0	0
28	SLU 74	-0.08	-0.12	8.39	0	0	0
28	SLU 75	-0.08	-0.12	8.39	0	0	0
28	SLU 76	-0.08	-0.13	8.34	0	0	0
28	SLU 77	-0.08	-0.12	8.45	0	0	0
28	SLU 78	-0.08	-0.12	8.45	0	0	0
28	SLU 79	-0.08	-0.12	8.4	0	0	0
28	SLU 80	-0.08	-0.12	8.4	0	0	0
28	SLU 81	-0.08	-0.12	8.56	0	0	0
28	SLU 82	-0.08	-0.12	8.56	0	0	0
28	SLU 83	-0.08	-0.12	8.62	0	0	0
28	SLU 84	-0.08	-0.12	8.62	0	0	0
28	SLE RA 1	-0.04	-0.1	5.72	0	0	0
28	SLE RA 2	-0.04	-0.1	5.72	0	0	0
28	SLE RA 3	-0.04	-0.1	5.8	0	0	0
28	SLE RA 4	-0.04	-0.1	5.8	0	0	0
28	SLE RA 5	-0.04	-0.1	5.76	0	0	0
28	SLE RA 6	-0.04	-0.1	5.84	0	0	0
28	SLE RA 7	-0.04	-0.1	5.84	0	0	0
28	SLE RA 8	-0.04	-0.1	5.81	0	0	0
28	SLE RA 9	-0.04	-0.1	5.81	0	0	0
28	SLE RA 10	-0.05	-0.1	6.16	0	0	0
28	SLE RA 11	-0.05	-0.1	6.24	0	0	0
28	SLE RA 12	-0.05	-0.1	6.24	0	0	0
28	SLE RA 13	-0.05	-0.1	6.21	0	0	0
28	SLE RA 14	-0.06	-0.1	6.28	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
28	SLE RA 15	-0.06	-0.1	6.28	0	0	0
28	SLE RA 16	-0.06	-0.1	6.25	0	0	0
28	SLE RA 17	-0.06	-0.1	6.25	0	0	0
28	SLE RA 18	-0.06	-0.1	6.35	0	0	0
28	SLE RA 19	-0.06	-0.1	6.35	0	0	0
28	SLE RA 20	-0.06	-0.1	6.4	0	0	0
28	SLE RA 21	-0.06	-0.1	6.4	0	0	0
28	SLE FR 1	-0.04	-0.1	5.72	0	0	0
28	SLE FR 2	-0.04	-0.1	5.72	0	0	0
28	SLE FR 3	-0.04	-0.1	5.74	0	0	0
28	SLE FR 4	-0.04	-0.1	5.91	0	0	0
28	SLE FR 5	-0.04	-0.1	5.93	0	0	0
28	SLE FR 6	-0.05	-0.1	6.04	0	0	0
28	SLE QP 1	-0.04	-0.1	5.72	0	0	0
28	SLE QP 2	-0.04	-0.1	5.91	0	0	0
28	SLD 1	0.31	-0.03	5.72	0	0	0
28	SLD 2	0.33	-0.01	5.72	0	0	0
28	SLD 3	0.29	-0.14	5.67	0	0	0
28	SLD 4	0.3	-0.12	5.67	0	0	0
28	SLD 5	0.1	0.09	5.93	0	0	0
28	SLD 6	0.11	0.1	5.93	0	0	0
28	SLD 7	0.02	-0.29	5.76	0	0	0
28	SLD 8	0.02	-0.27	5.76	0	0	0
28	SLD 9	-0.11	0.08	6.06	0	0	0
28	SLD 10	-0.1	0.09	6.06	0	0	0
28	SLD 11	-0.19	-0.3	5.89	0	0	0
28	SLD 12	-0.19	-0.29	5.89	0	0	0
28	SLD 13	-0.39	-0.08	6.15	0	0	0
28	SLD 14	-0.37	-0.06	6.15	0	0	0
28	SLD 15	-0.41	-0.19	6.1	0	0	0
28	SLD 16	-0.4	-0.17	6.1	0	0	0
28	SLV 1	0.79	0.07	5.47	0	0	0
28	SLV 2	0.82	0.11	5.46	0	0	0
28	SLV 3	0.73	-0.19	5.35	0	0	0
28	SLV 4	0.76	-0.15	5.34	0	0	0
28	SLV 5	0.29	0.33	5.95	0	0	0
28	SLV 6	0.31	0.36	5.95	0	0	0
28	SLV 7	0.1	-0.52	5.57	0	0	0
28	SLV 8	0.11	-0.5	5.57	0	0	0
28	SLV 9	-0.2	0.3	6.26	0	0	0
28	SLV 10	-0.18	0.33	6.25	0	0	0
28	SLV 11	-0.39	-0.56	5.88	0	0	0
28	SLV 12	-0.38	-0.53	5.87	0	0	0
28	SLV 13	-0.85	-0.05	6.48	0	0	0
28	SLV 14	-0.82	-0.01	6.47	0	0	0
28	SLV 15	-0.9	-0.31	6.37	0	0	0
28	SLV 16	-0.88	-0.27	6.36	0	0	0
29	SLU 1	-0.07	-0.19	9.25	0	0	0
29	SLU 2	-0.07	-0.19	9.25	0	0	0
29	SLU 3	-0.08	-0.18	9.45	0	0	0
29	SLU 4	-0.08	-0.19	9.45	0	0	0
29	SLU 5	-0.08	-0.19	9.36	0	0	0
29	SLU 6	-0.08	-0.18	9.56	0	0	0
29	SLU 7	-0.08	-0.18	9.56	0	0	0
29	SLU 8	-0.08	-0.18	9.48	0	0	0
29	SLU 9	-0.08	-0.18	9.48	0	0	0
29	SLU 10	-0.1	-0.19	10.38	0	0	0
29	SLU 11	-0.11	-0.18	10.58	0	0	0
29	SLU 12	-0.11	-0.18	10.58	0	0	0
29	SLU 13	-0.11	-0.19	10.49	0	0	0
29	SLU 14	-0.12	-0.18	10.69	0	0	0
29	SLU 15	-0.12	-0.18	10.69	0	0	0
29	SLU 16	-0.12	-0.18	10.61	0	0	0
29	SLU 17	-0.12	-0.18	10.61	0	0	0
29	SLU 18	-0.12	-0.18	10.86	0	0	0
29	SLU 19	-0.12	-0.19	10.86	0	0	0
29	SLU 20	-0.13	-0.18	10.98	0	0	0
29	SLU 21	-0.13	-0.18	10.98	0	0	0
29	SLU 22	-0.08	-0.16	10.27	0	0	0
29	SLU 23	-0.08	-0.17	10.27	0	0	0
29	SLU 24	-0.09	-0.16	10.47	0	0	0
29	SLU 25	-0.09	-0.16	10.47	0	0	0
29	SLU 26	-0.09	-0.17	10.39	0	0	0
29	SLU 27	-0.1	-0.16	10.58	0	0	0
29	SLU 28	-0.1	-0.16	10.58	0	0	0
29	SLU 29	-0.1	-0.16	10.5	0	0	0
29	SLU 30	-0.1	-0.16	10.5	0	0	0
29	SLU 31	-0.12	-0.17	11.4	0	0	0
29	SLU 32	-0.13	-0.16	11.6	0	0	0
29	SLU 33	-0.13	-0.16	11.6	0	0	0
29	SLU 34	-0.13	-0.17	11.52	0	0	0
29	SLU 35	-0.13	-0.16	11.71	0	0	0
29	SLU 36	-0.13	-0.16	11.71	0	0	0
29	SLU 37	-0.13	-0.16	11.63	0	0	0
29	SLU 38	-0.13	-0.16	11.63	0	0	0
29	SLU 39	-0.14	-0.16	11.89	0	0	0
29	SLU 40	-0.14	-0.16	11.89	0	0	0
29	SLU 41	-0.14	-0.16	12	0	0	0
29	SLU 42	-0.14	-0.16	12	0	0	0
29	SLU 43	-0.08	-0.25	11.67	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
29	SLU 44	-0.08	-0.25	11.67	0	0	0
29	SLU 45	-0.09	-0.25	11.87	0	0	0
29	SLU 46	-0.09	-0.25	11.87	0	0	0
29	SLU 47	-0.09	-0.25	11.79	0	0	0
29	SLU 48	-0.1	-0.24	11.98	0	0	0
29	SLU 49	-0.1	-0.25	11.98	0	0	0
29	SLU 50	-0.1	-0.24	11.9	0	0	0
29	SLU 51	-0.1	-0.25	11.9	0	0	0
29	SLU 52	-0.12	-0.25	12.8	0	0	0
29	SLU 53	-0.13	-0.24	13	0	0	0
29	SLU 54	-0.13	-0.25	13	0	0	0
29	SLU 55	-0.13	-0.25	12.92	0	0	0
29	SLU 56	-0.13	-0.24	13.11	0	0	0
29	SLU 57	-0.13	-0.24	13.11	0	0	0
29	SLU 58	-0.13	-0.24	13.03	0	0	0
29	SLU 59	-0.13	-0.24	13.03	0	0	0
29	SLU 60	-0.14	-0.25	13.29	0	0	0
29	SLU 61	-0.14	-0.25	13.29	0	0	0
29	SLU 62	-0.14	-0.24	13.4	0	0	0
29	SLU 63	-0.14	-0.25	13.4	0	0	0
29	SLU 64	-0.1	-0.23	12.69	0	0	0
29	SLU 65	-0.1	-0.23	12.69	0	0	0
29	SLU 66	-0.11	-0.23	12.89	0	0	0
29	SLU 67	-0.11	-0.23	12.89	0	0	0
29	SLU 68	-0.11	-0.23	12.81	0	0	0
29	SLU 69	-0.11	-0.22	13.01	0	0	0
29	SLU 70	-0.11	-0.23	13.01	0	0	0
29	SLU 71	-0.11	-0.22	12.92	0	0	0
29	SLU 72	-0.11	-0.23	12.92	0	0	0
29	SLU 73	-0.14	-0.23	13.82	0	0	0
29	SLU 74	-0.14	-0.22	14.02	0	0	0
29	SLU 75	-0.14	-0.23	14.02	0	0	0
29	SLU 76	-0.14	-0.23	13.94	0	0	0
29	SLU 77	-0.15	-0.22	14.14	0	0	0
29	SLU 78	-0.15	-0.22	14.14	0	0	0
29	SLU 79	-0.15	-0.22	14.05	0	0	0
29	SLU 80	-0.15	-0.22	14.05	0	0	0
29	SLU 81	-0.15	-0.22	14.31	0	0	0
29	SLU 82	-0.15	-0.23	14.31	0	0	0
29	SLU 83	-0.16	-0.22	14.42	0	0	0
29	SLU 84	-0.16	-0.23	14.42	0	0	0
29	SLE RA 1	-0.07	-0.18	9.54	0	0	0
29	SLE RA 2	-0.07	-0.18	9.54	0	0	0
29	SLE RA 3	-0.08	-0.18	9.67	0	0	0
29	SLE RA 4	-0.08	-0.18	9.67	0	0	0
29	SLE RA 5	-0.08	-0.18	9.62	0	0	0
29	SLE RA 6	-0.08	-0.18	9.75	0	0	0
29	SLE RA 7	-0.08	-0.18	9.75	0	0	0
29	SLE RA 8	-0.08	-0.18	9.69	0	0	0
29	SLE RA 9	-0.08	-0.18	9.69	0	0	0
29	SLE RA 10	-0.1	-0.18	10.29	0	0	0
29	SLE RA 11	-0.1	-0.18	10.43	0	0	0
29	SLE RA 12	-0.1	-0.18	10.43	0	0	0
29	SLE RA 13	-0.1	-0.18	10.37	0	0	0
29	SLE RA 14	-0.11	-0.18	10.5	0	0	0
29	SLE RA 15	-0.11	-0.18	10.5	0	0	0
29	SLE RA 16	-0.11	-0.18	10.45	0	0	0
29	SLE RA 17	-0.11	-0.18	10.45	0	0	0
29	SLE RA 18	-0.11	-0.18	10.62	0	0	0
29	SLE RA 19	-0.11	-0.18	10.62	0	0	0
29	SLE RA 20	-0.11	-0.18	10.69	0	0	0
29	SLE RA 21	-0.11	-0.18	10.69	0	0	0
29	SLE FR 1	-0.07	-0.18	9.54	0	0	0
29	SLE FR 2	-0.07	-0.18	9.54	0	0	0
29	SLE FR 3	-0.08	-0.18	9.57	0	0	0
29	SLE FR 4	-0.08	-0.18	9.86	0	0	0
29	SLE FR 5	-0.09	-0.18	9.89	0	0	0
29	SLE FR 6	-0.09	-0.18	10.08	0	0	0
29	SLE QP 1	-0.07	-0.18	9.54	0	0	0
29	SLE QP 2	-0.08	-0.18	9.86	0	0	0
29	SLD 1	0.51	-0.05	9.6	0	0	0
29	SLD 2	0.53	-0.03	9.6	0	0	0
29	SLD 3	0.47	-0.25	9.56	0	0	0
29	SLD 4	0.49	-0.22	9.55	0	0	0
29	SLD 5	0.16	0.15	9.86	0	0	0
29	SLD 6	0.17	0.16	9.85	0	0	0
29	SLD 7	0.01	-0.5	9.7	0	0	0
29	SLD 8	0.03	-0.48	9.7	0	0	0
29	SLD 9	-0.19	0.12	10.03	0	0	0
29	SLD 10	-0.18	0.14	10.02	0	0	0
29	SLD 11	-0.34	-0.52	9.87	0	0	0
29	SLD 12	-0.33	-0.5	9.87	0	0	0
29	SLD 13	-0.66	-0.14	10.17	0	0	0
29	SLD 14	-0.64	-0.11	10.17	0	0	0
29	SLD 15	-0.7	-0.33	10.13	0	0	0
29	SLD 16	-0.68	-0.3	10.12	0	0	0
29	SLV 1	1.32	0.1	9.25	0	0	0
29	SLV 2	1.35	0.17	9.24	0	0	0
29	SLV 3	1.22	-0.33	9.14	0	0	0
29	SLV 4	1.26	-0.27	9.13	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
29	SLV 5	0.48	0.56	9.84	0	0	0
29	SLV 6	0.51	0.6	9.84	0	0	0
29	SLV 7	0.15	-0.9	9.49	0	0	0
29	SLV 8	0.17	-0.86	9.48	0	0	0
29	SLV 9	-0.34	0.5	10.25	0	0	0
29	SLV 10	-0.32	0.54	10.24	0	0	0
29	SLV 11	-0.67	-0.96	9.89	0	0	0
29	SLV 12	-0.65	-0.92	9.88	0	0	0
29	SLV 13	-1.42	-0.09	10.59	0	0	0
29	SLV 14	-1.38	-0.03	10.58	0	0	0
29	SLV 15	-1.52	-0.53	10.48	0	0	0
29	SLV 16	-1.48	-0.46	10.47	0	0	0
30	SLU 1	-0.04	-0.09	4.84	0	0	0
30	SLU 2	-0.04	-0.09	4.84	0	0	0
30	SLU 3	-0.04	-0.09	4.94	0	0	0
30	SLU 4	-0.04	-0.09	4.94	0	0	0
30	SLU 5	-0.04	-0.09	4.9	0	0	0
30	SLU 6	-0.04	-0.09	5	0	0	0
30	SLU 7	-0.04	-0.09	5	0	0	0
30	SLU 8	-0.04	-0.09	4.96	0	0	0
30	SLU 9	-0.04	-0.09	4.95	0	0	0
30	SLU 10	-0.06	-0.09	5.42	0	0	0
30	SLU 11	-0.06	-0.09	5.52	0	0	0
30	SLU 12	-0.06	-0.09	5.52	0	0	0
30	SLU 13	-0.06	-0.09	5.48	0	0	0
30	SLU 14	-0.06	-0.09	5.58	0	0	0
30	SLU 15	-0.06	-0.09	5.58	0	0	0
30	SLU 16	-0.06	-0.09	5.54	0	0	0
30	SLU 17	-0.06	-0.09	5.54	0	0	0
30	SLU 18	-0.06	-0.09	5.67	0	0	0
30	SLU 19	-0.06	-0.09	5.67	0	0	0
30	SLU 20	-0.07	-0.09	5.73	0	0	0
30	SLU 21	-0.07	-0.09	5.73	0	0	0
30	SLU 22	-0.04	-0.08	5.37	0	0	0
30	SLU 23	-0.04	-0.08	5.37	0	0	0
30	SLU 24	-0.05	-0.08	5.47	0	0	0
30	SLU 25	-0.05	-0.08	5.47	0	0	0
30	SLU 26	-0.05	-0.08	5.43	0	0	0
30	SLU 27	-0.05	-0.08	5.53	0	0	0
30	SLU 28	-0.05	-0.08	5.53	0	0	0
30	SLU 29	-0.05	-0.08	5.49	0	0	0
30	SLU 30	-0.05	-0.08	5.49	0	0	0
30	SLU 31	-0.06	-0.08	5.96	0	0	0
30	SLU 32	-0.07	-0.08	6.06	0	0	0
30	SLU 33	-0.07	-0.08	6.06	0	0	0
30	SLU 34	-0.07	-0.08	6.01	0	0	0
30	SLU 35	-0.07	-0.08	6.12	0	0	0
30	SLU 36	-0.07	-0.08	6.12	0	0	0
30	SLU 37	-0.07	-0.08	6.07	0	0	0
30	SLU 38	-0.07	-0.08	6.07	0	0	0
30	SLU 39	-0.07	-0.08	6.21	0	0	0
30	SLU 40	-0.07	-0.08	6.21	0	0	0
30	SLU 41	-0.08	-0.08	6.26	0	0	0
30	SLU 42	-0.08	-0.08	6.26	0	0	0
30	SLU 43	-0.04	-0.12	6.11	0	0	0
30	SLU 44	-0.04	-0.13	6.11	0	0	0
30	SLU 45	-0.05	-0.12	6.21	0	0	0
30	SLU 46	-0.05	-0.12	6.21	0	0	0
30	SLU 47	-0.05	-0.12	6.17	0	0	0
30	SLU 48	-0.05	-0.12	6.27	0	0	0
30	SLU 49	-0.05	-0.12	6.27	0	0	0
30	SLU 50	-0.05	-0.12	6.22	0	0	0
30	SLU 51	-0.05	-0.12	6.22	0	0	0
30	SLU 52	-0.06	-0.12	6.69	0	0	0
30	SLU 53	-0.07	-0.12	6.79	0	0	0
30	SLU 54	-0.07	-0.12	6.79	0	0	0
30	SLU 55	-0.07	-0.12	6.75	0	0	0
30	SLU 56	-0.07	-0.12	6.85	0	0	0
30	SLU 57	-0.07	-0.12	6.85	0	0	0
30	SLU 58	-0.07	-0.12	6.81	0	0	0
30	SLU 59	-0.07	-0.12	6.81	0	0	0
30	SLU 60	-0.07	-0.12	6.94	0	0	0
30	SLU 61	-0.07	-0.12	6.94	0	0	0
30	SLU 62	-0.08	-0.12	7	0	0	0
30	SLU 63	-0.08	-0.12	7	0	0	0
30	SLU 64	-0.05	-0.11	6.64	0	0	0
30	SLU 65	-0.05	-0.11	6.64	0	0	0
30	SLU 66	-0.06	-0.11	6.74	0	0	0
30	SLU 67	-0.06	-0.11	6.74	0	0	0
30	SLU 68	-0.06	-0.11	6.7	0	0	0
30	SLU 69	-0.06	-0.11	6.8	0	0	0
30	SLU 70	-0.06	-0.11	6.8	0	0	0
30	SLU 71	-0.06	-0.11	6.76	0	0	0
30	SLU 72	-0.06	-0.11	6.76	0	0	0
30	SLU 73	-0.07	-0.11	7.22	0	0	0
30	SLU 74	-0.07	-0.11	7.33	0	0	0
30	SLU 75	-0.07	-0.11	7.33	0	0	0
30	SLU 76	-0.08	-0.11	7.28	0	0	0
30	SLU 77	-0.08	-0.11	7.39	0	0	0
30	SLU 78	-0.08	-0.11	7.38	0	0	0





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
30	SLU 79	-0.08	-0.11	7.34	0	0	0
30	SLU 80	-0.08	-0.11	7.34	0	0	0
30	SLU 81	-0.08	-0.11	7.48	0	0	0
30	SLU 82	-0.08	-0.11	7.48	0	0	0
30	SLU 83	-0.08	-0.11	7.53	0	0	0
30	SLU 84	-0.08	-0.11	7.53	0	0	0
30	SLE RA 1	-0.04	-0.09	4.99	0	0	0
30	SLE RA 2	-0.04	-0.09	4.99	0	0	0
30	SLE RA 3	-0.04	-0.09	5.06	0	0	0
30	SLE RA 4	-0.04	-0.09	5.06	0	0	0
30	SLE RA 5	-0.04	-0.09	5.03	0	0	0
30	SLE RA 6	-0.04	-0.09	5.1	0	0	0
30	SLE RA 7	-0.04	-0.09	5.1	0	0	0
30	SLE RA 8	-0.04	-0.09	5.07	0	0	0
30	SLE RA 9	-0.04	-0.09	5.07	0	0	0
30	SLE RA 10	-0.05	-0.09	5.38	0	0	0
30	SLE RA 11	-0.05	-0.09	5.45	0	0	0
30	SLE RA 12	-0.05	-0.09	5.45	0	0	0
30	SLE RA 13	-0.05	-0.09	5.42	0	0	0
30	SLE RA 14	-0.06	-0.09	5.49	0	0	0
30	SLE RA 15	-0.06	-0.09	5.49	0	0	0
30	SLE RA 16	-0.06	-0.09	5.46	0	0	0
30	SLE RA 17	-0.06	-0.09	5.46	0	0	0
30	SLE RA 18	-0.06	-0.09	5.55	0	0	0
30	SLE RA 19	-0.06	-0.09	5.55	0	0	0
30	SLE RA 20	-0.06	-0.09	5.59	0	0	0
30	SLE RA 21	-0.06	-0.09	5.59	0	0	0
30	SLE FR 1	-0.04	-0.09	4.99	0	0	0
30	SLE FR 2	-0.04	-0.09	4.99	0	0	0
30	SLE FR 3	-0.04	-0.09	5.01	0	0	0
30	SLE FR 4	-0.04	-0.09	5.16	0	0	0
30	SLE FR 5	-0.05	-0.09	5.17	0	0	0
30	SLE FR 6	-0.05	-0.09	5.27	0	0	0
30	SLE QP 1	-0.04	-0.09	4.99	0	0	0
30	SLE QP 2	-0.04	-0.09	5.16	0	0	0
30	SLD 1	0.27	-0.02	4.99	0	0	0
30	SLD 2	0.28	-0.01	4.99	0	0	0
30	SLD 3	0.25	-0.12	4.96	0	0	0
30	SLD 4	0.26	-0.11	4.96	0	0	0
30	SLD 5	0.08	0.08	5.16	0	0	0
30	SLD 6	0.09	0.09	5.16	0	0	0
30	SLD 7	0.01	-0.25	5.05	0	0	0
30	SLD 8	0.01	-0.24	5.05	0	0	0
30	SLD 9	-0.1	0.07	5.27	0	0	0
30	SLD 10	-0.1	0.08	5.27	0	0	0
30	SLD 11	-0.18	-0.27	5.16	0	0	0
30	SLD 12	-0.17	-0.26	5.16	0	0	0
30	SLD 13	-0.35	-0.07	5.36	0	0	0
30	SLD 14	-0.34	-0.05	5.36	0	0	0
30	SLD 15	-0.37	-0.17	5.33	0	0	0
30	SLD 16	-0.36	-0.15	5.32	0	0	0
30	SLV 1	0.69	0.06	4.77	0	0	0
30	SLV 2	0.72	0.1	4.76	0	0	0
30	SLV 3	0.64	-0.17	4.7	0	0	0
30	SLV 4	0.66	-0.13	4.69	0	0	0
30	SLV 5	0.25	0.3	5.16	0	0	0
30	SLV 6	0.27	0.32	5.15	0	0	0
30	SLV 7	0.08	-0.47	4.91	0	0	0
30	SLV 8	0.09	-0.44	4.9	0	0	0
30	SLV 9	-0.18	0.26	5.41	0	0	0
30	SLV 10	-0.17	0.29	5.41	0	0	0
30	SLV 11	-0.35	-0.5	5.17	0	0	0
30	SLV 12	-0.34	-0.47	5.16	0	0	0
30	SLV 13	-0.75	-0.05	5.63	0	0	0
30	SLV 14	-0.73	-0.01	5.62	0	0	0
30	SLV 15	-0.8	-0.28	5.55	0	0	0
30	SLV 16	-0.78	-0.24	5.55	0	0	0
31	SLU 1	-0.08	-0.21	10.02	0	0	0
31	SLU 2	-0.08	-0.22	10.02	0	0	0
31	SLU 3	-0.08	-0.21	10.24	0	0	0
31	SLU 4	-0.08	-0.21	10.24	0	0	0
31	SLU 5	-0.08	-0.22	10.15	0	0	0
31	SLU 6	-0.09	-0.21	10.37	0	0	0
31	SLU 7	-0.09	-0.21	10.37	0	0	0
31	SLU 8	-0.09	-0.21	10.28	0	0	0
31	SLU 9	-0.09	-0.21	10.28	0	0	0
31	SLU 10	-0.11	-0.22	11.26	0	0	0
31	SLU 11	-0.12	-0.21	11.48	0	0	0
31	SLU 12	-0.12	-0.21	11.48	0	0	0
31	SLU 13	-0.12	-0.21	11.39	0	0	0
31	SLU 14	-0.13	-0.21	11.61	0	0	0
31	SLU 15	-0.13	-0.21	11.61	0	0	0
31	SLU 16	-0.13	-0.21	11.52	0	0	0
31	SLU 17	-0.13	-0.21	11.52	0	0	0
31	SLU 18	-0.13	-0.21	11.8	0	0	0
31	SLU 19	-0.13	-0.21	11.8	0	0	0
31	SLU 20	-0.14	-0.21	11.92	0	0	0
31	SLU 21	-0.14	-0.21	11.92	0	0	0
31	SLU 22	-0.09	-0.19	11.14	0	0	0
31	SLU 23	-0.09	-0.2	11.14	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
31	SLU 24	-0.1	-0.19	11.36	0	0	0
31	SLU 25	-0.1	-0.19	11.36	0	0	0
31	SLU 26	-0.1	-0.19	11.27	0	0	0
31	SLU 27	-0.11	-0.19	11.48	0	0	0
31	SLU 28	-0.11	-0.19	11.48	0	0	0
31	SLU 29	-0.11	-0.19	11.39	0	0	0
31	SLU 30	-0.11	-0.19	11.39	0	0	0
31	SLU 31	-0.13	-0.19	12.38	0	0	0
31	SLU 32	-0.14	-0.19	12.6	0	0	0
31	SLU 33	-0.14	-0.19	12.6	0	0	0
31	SLU 34	-0.14	-0.19	12.51	0	0	0
31	SLU 35	-0.15	-0.18	12.72	0	0	0
31	SLU 36	-0.15	-0.19	12.73	0	0	0
31	SLU 37	-0.15	-0.19	12.63	0	0	0
31	SLU 38	-0.15	-0.19	12.64	0	0	0
31	SLU 39	-0.15	-0.19	12.91	0	0	0
31	SLU 40	-0.15	-0.19	12.91	0	0	0
31	SLU 41	-0.16	-0.19	13.04	0	0	0
31	SLU 42	-0.16	-0.19	13.04	0	0	0
31	SLU 43	-0.09	-0.28	12.65	0	0	0
31	SLU 44	-0.09	-0.29	12.65	0	0	0
31	SLU 45	-0.1	-0.28	12.86	0	0	0
31	SLU 46	-0.1	-0.28	12.86	0	0	0
31	SLU 47	-0.1	-0.29	12.77	0	0	0
31	SLU 48	-0.11	-0.28	12.99	0	0	0
31	SLU 49	-0.11	-0.28	12.99	0	0	0
31	SLU 50	-0.11	-0.28	12.9	0	0	0
31	SLU 51	-0.11	-0.28	12.9	0	0	0
31	SLU 52	-0.13	-0.29	13.89	0	0	0
31	SLU 53	-0.14	-0.28	14.11	0	0	0
31	SLU 54	-0.14	-0.28	14.11	0	0	0
31	SLU 55	-0.14	-0.29	14.02	0	0	0
31	SLU 56	-0.15	-0.28	14.23	0	0	0
31	SLU 57	-0.15	-0.28	14.23	0	0	0
31	SLU 58	-0.15	-0.28	14.14	0	0	0
31	SLU 59	-0.15	-0.28	14.14	0	0	0
31	SLU 60	-0.15	-0.28	14.42	0	0	0
31	SLU 61	-0.15	-0.29	14.42	0	0	0
31	SLU 62	-0.16	-0.28	14.55	0	0	0
31	SLU 63	-0.16	-0.28	14.55	0	0	0
31	SLU 64	-0.11	-0.26	13.76	0	0	0
31	SLU 65	-0.11	-0.27	13.76	0	0	0
31	SLU 66	-0.12	-0.26	13.98	0	0	0
31	SLU 67	-0.12	-0.26	13.98	0	0	0
31	SLU 68	-0.12	-0.26	13.89	0	0	0
31	SLU 69	-0.12	-0.26	14.11	0	0	0
31	SLU 70	-0.12	-0.26	14.11	0	0	0
31	SLU 71	-0.13	-0.26	14.02	0	0	0
31	SLU 72	-0.12	-0.26	14.02	0	0	0
31	SLU 73	-0.15	-0.27	15	0	0	0
31	SLU 74	-0.16	-0.26	15.22	0	0	0
31	SLU 75	-0.16	-0.26	15.22	0	0	0
31	SLU 76	-0.16	-0.26	15.13	0	0	0
31	SLU 77	-0.16	-0.26	15.35	0	0	0
31	SLU 78	-0.16	-0.26	15.35	0	0	0
31	SLU 79	-0.16	-0.26	15.26	0	0	0
31	SLU 80	-0.16	-0.26	15.26	0	0	0
31	SLU 81	-0.17	-0.26	15.54	0	0	0
31	SLU 82	-0.16	-0.26	15.54	0	0	0
31	SLU 83	-0.17	-0.26	15.66	0	0	0
31	SLU 84	-0.17	-0.26	15.66	0	0	0
31	SLE RA 1	-0.08	-0.21	10.34	0	0	0
31	SLE RA 2	-0.08	-0.21	10.34	0	0	0
31	SLE RA 3	-0.09	-0.2	10.49	0	0	0
31	SLE RA 4	-0.09	-0.21	10.49	0	0	0
31	SLE RA 5	-0.09	-0.21	10.43	0	0	0
31	SLE RA 6	-0.09	-0.2	10.57	0	0	0
31	SLE RA 7	-0.09	-0.21	10.57	0	0	0
31	SLE RA 8	-0.09	-0.2	10.51	0	0	0
31	SLE RA 9	-0.09	-0.21	10.51	0	0	0
31	SLE RA 10	-0.11	-0.21	11.17	0	0	0
31	SLE RA 11	-0.11	-0.2	11.31	0	0	0
31	SLE RA 12	-0.11	-0.21	11.31	0	0	0
31	SLE RA 13	-0.11	-0.21	11.25	0	0	0
31	SLE RA 14	-0.12	-0.2	11.4	0	0	0
31	SLE RA 15	-0.12	-0.2	11.4	0	0	0
31	SLE RA 16	-0.12	-0.2	11.34	0	0	0
31	SLE RA 17	-0.12	-0.2	11.34	0	0	0
31	SLE RA 18	-0.12	-0.21	11.52	0	0	0
31	SLE RA 19	-0.12	-0.21	11.52	0	0	0
31	SLE RA 20	-0.12	-0.2	11.61	0	0	0
31	SLE RA 21	-0.12	-0.21	11.61	0	0	0
31	SLE FR 1	-0.08	-0.21	10.34	0	0	0
31	SLE FR 2	-0.08	-0.21	10.34	0	0	0
31	SLE FR 3	-0.08	-0.21	10.37	0	0	0
31	SLE FR 4	-0.09	-0.21	10.7	0	0	0
31	SLE FR 5	-0.09	-0.21	10.73	0	0	0
31	SLE FR 6	-0.1	-0.21	10.93	0	0	0
31	SLE QP 1	-0.08	-0.21	10.34	0	0	0
31	SLE QP 2	-0.09	-0.21	10.7	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
31	SLD 1	0.55	-0.07	10.47	0	0	0
31	SLD 2	0.57	-0.04	10.46	0	0	0
31	SLD 3	0.51	-0.28	10.43	0	0	0
31	SLD 4	0.53	-0.25	10.43	0	0	0
31	SLD 5	0.17	0.15	10.68	0	0	0
31	SLD 6	0.18	0.17	10.68	0	0	0
31	SLD 7	0.01	-0.55	10.57	0	0	0
31	SLD 8	0.03	-0.53	10.56	0	0	0
31	SLD 9	-0.21	0.12	10.83	0	0	0
31	SLD 10	-0.2	0.14	10.83	0	0	0
31	SLD 11	-0.36	-0.58	10.71	0	0	0
31	SLD 12	-0.35	-0.56	10.71	0	0	0
31	SLD 13	-0.71	-0.16	10.96	0	0	0
31	SLD 14	-0.69	-0.13	10.96	0	0	0
31	SLD 15	-0.76	-0.37	10.93	0	0	0
31	SLD 16	-0.74	-0.34	10.93	0	0	0
31	SLV 1	1.42	0.11	10.16	0	0	0
31	SLV 2	1.46	0.17	10.15	0	0	0
31	SLV 3	1.31	-0.37	10.08	0	0	0
31	SLV 4	1.35	-0.31	10.07	0	0	0
31	SLV 5	0.52	0.6	10.65	0	0	0
31	SLV 6	0.54	0.64	10.65	0	0	0
31	SLV 7	0.16	-0.99	10.39	0	0	0
31	SLV 8	0.19	-0.95	10.39	0	0	0
31	SLV 9	-0.37	0.54	11	0	0	0
31	SLV 10	-0.34	0.58	11	0	0	0
31	SLV 11	-0.73	-1.05	10.74	0	0	0
31	SLV 12	-0.7	-1.01	10.74	0	0	0
31	SLV 13	-1.54	-0.1	11.32	0	0	0
31	SLV 14	-1.5	-0.04	11.31	0	0	0
31	SLV 15	-1.64	-0.58	11.24	0	0	0
31	SLV 16	-1.6	-0.52	11.23	0	0	0
32	SLU 1	-0.05	-0.16	6.3	0	0	0
32	SLU 2	-0.05	-0.17	6.3	0	0	0
32	SLU 3	-0.05	-0.16	6.45	0	0	0
32	SLU 4	-0.05	-0.17	6.45	0	0	0
32	SLU 5	-0.05	-0.17	6.39	0	0	0
32	SLU 6	-0.06	-0.16	6.54	0	0	0
32	SLU 7	-0.06	-0.16	6.54	0	0	0
32	SLU 8	-0.06	-0.16	6.48	0	0	0
32	SLU 9	-0.06	-0.16	6.48	0	0	0
32	SLU 10	-0.07	-0.17	7.12	0	0	0
32	SLU 11	-0.07	-0.17	7.27	0	0	0
32	SLU 12	-0.07	-0.17	7.27	0	0	0
32	SLU 13	-0.08	-0.17	7.21	0	0	0
32	SLU 14	-0.08	-0.16	7.36	0	0	0
32	SLU 15	-0.08	-0.17	7.36	0	0	0
32	SLU 16	-0.08	-0.16	7.3	0	0	0
32	SLU 17	-0.08	-0.17	7.3	0	0	0
32	SLU 18	-0.08	-0.17	7.47	0	0	0
32	SLU 19	-0.08	-0.17	7.48	0	0	0
32	SLU 20	-0.09	-0.17	7.57	0	0	0
32	SLU 21	-0.09	-0.17	7.57	0	0	0
32	SLU 22	-0.06	-0.15	7.01	0	0	0
32	SLU 23	-0.06	-0.16	7.02	0	0	0
32	SLU 24	-0.06	-0.15	7.16	0	0	0
32	SLU 25	-0.06	-0.15	7.16	0	0	0
32	SLU 26	-0.06	-0.16	7.11	0	0	0
32	SLU 27	-0.07	-0.15	7.25	0	0	0
32	SLU 28	-0.07	-0.15	7.25	0	0	0
32	SLU 29	-0.07	-0.15	7.2	0	0	0
32	SLU 30	-0.07	-0.15	7.2	0	0	0
32	SLU 31	-0.08	-0.16	7.84	0	0	0
32	SLU 32	-0.09	-0.15	7.98	0	0	0
32	SLU 33	-0.08	-0.16	7.98	0	0	0
32	SLU 34	-0.09	-0.16	7.93	0	0	0
32	SLU 35	-0.09	-0.15	8.07	0	0	0
32	SLU 36	-0.09	-0.16	8.07	0	0	0
32	SLU 37	-0.09	-0.15	8.02	0	0	0
32	SLU 38	-0.09	-0.16	8.02	0	0	0
32	SLU 39	-0.09	-0.16	8.19	0	0	0
32	SLU 40	-0.09	-0.16	8.19	0	0	0
32	SLU 41	-0.1	-0.16	8.28	0	0	0
32	SLU 42	-0.1	-0.16	8.28	0	0	0
32	SLU 43	-0.06	-0.22	7.95	0	0	0
32	SLU 44	-0.06	-0.22	7.95	0	0	0
32	SLU 45	-0.06	-0.22	8.09	0	0	0
32	SLU 46	-0.06	-0.22	8.09	0	0	0
32	SLU 47	-0.06	-0.22	8.04	0	0	0
32	SLU 48	-0.07	-0.21	8.18	0	0	0
32	SLU 49	-0.07	-0.22	8.18	0	0	0
32	SLU 50	-0.07	-0.21	8.13	0	0	0
32	SLU 51	-0.07	-0.22	8.13	0	0	0
32	SLU 52	-0.08	-0.22	8.77	0	0	0
32	SLU 53	-0.09	-0.22	8.91	0	0	0
32	SLU 54	-0.09	-0.22	8.91	0	0	0
32	SLU 55	-0.09	-0.22	8.86	0	0	0
32	SLU 56	-0.09	-0.22	9	0	0	0
32	SLU 57	-0.09	-0.22	9	0	0	0
32	SLU 58	-0.09	-0.22	8.95	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
32	SLU 59	-0.09	-0.22	8.95	0	0	0
32	SLU 60	-0.09	-0.22	9.12	0	0	0
32	SLU 61	-0.09	-0.22	9.12	0	0	0
32	SLU 62	-0.1	-0.22	9.21	0	0	0
32	SLU 63	-0.1	-0.22	9.21	0	0	0
32	SLU 64	-0.07	-0.21	8.66	0	0	0
32	SLU 65	-0.07	-0.21	8.66	0	0	0
32	SLU 66	-0.07	-0.2	8.8	0	0	0
32	SLU 67	-0.07	-0.21	8.81	0	0	0
32	SLU 68	-0.07	-0.21	8.75	0	0	0
32	SLU 69	-0.08	-0.2	8.89	0	0	0
32	SLU 70	-0.08	-0.21	8.9	0	0	0
32	SLU 71	-0.08	-0.2	8.84	0	0	0
32	SLU 72	-0.08	-0.21	8.84	0	0	0
32	SLU 73	-0.09	-0.21	9.48	0	0	0
32	SLU 74	-0.1	-0.21	9.63	0	0	0
32	SLU 75	-0.1	-0.21	9.63	0	0	0
32	SLU 76	-0.1	-0.21	9.57	0	0	0
32	SLU 77	-0.1	-0.21	9.72	0	0	0
32	SLU 78	-0.1	-0.21	9.72	0	0	0
32	SLU 79	-0.1	-0.21	9.66	0	0	0
32	SLU 80	-0.1	-0.21	9.66	0	0	0
32	SLU 81	-0.1	-0.21	9.83	0	0	0
32	SLU 82	-0.1	-0.21	9.83	0	0	0
32	SLU 83	-0.11	-0.21	9.92	0	0	0
32	SLU 84	-0.11	-0.21	9.93	0	0	0
32	SLE RA 1	-0.05	-0.16	6.5	0	0	0
32	SLE RA 2	-0.05	-0.16	6.51	0	0	0
32	SLE RA 3	-0.05	-0.16	6.6	0	0	0
32	SLE RA 4	-0.05	-0.16	6.6	0	0	0
32	SLE RA 5	-0.05	-0.16	6.57	0	0	0
32	SLE RA 6	-0.06	-0.16	6.66	0	0	0
32	SLE RA 7	-0.06	-0.16	6.66	0	0	0
32	SLE RA 8	-0.06	-0.16	6.62	0	0	0
32	SLE RA 9	-0.06	-0.16	6.63	0	0	0
32	SLE RA 10	-0.07	-0.16	7.05	0	0	0
32	SLE RA 11	-0.07	-0.16	7.15	0	0	0
32	SLE RA 12	-0.07	-0.16	7.15	0	0	0
32	SLE RA 13	-0.07	-0.16	7.11	0	0	0
32	SLE RA 14	-0.07	-0.16	7.21	0	0	0
32	SLE RA 15	-0.07	-0.16	7.21	0	0	0
32	SLE RA 16	-0.07	-0.16	7.17	0	0	0
32	SLE RA 17	-0.07	-0.16	7.17	0	0	0
32	SLE RA 18	-0.07	-0.16	7.29	0	0	0
32	SLE RA 19	-0.07	-0.16	7.29	0	0	0
32	SLE RA 20	-0.08	-0.16	7.35	0	0	0
32	SLE RA 21	-0.08	-0.16	7.35	0	0	0
32	SLE FR 1	-0.05	-0.16	6.5	0	0	0
32	SLE FR 2	-0.05	-0.16	6.5	0	0	0
32	SLE FR 3	-0.05	-0.16	6.53	0	0	0
32	SLE FR 4	-0.06	-0.16	6.74	0	0	0
32	SLE FR 5	-0.06	-0.16	6.76	0	0	0
32	SLE FR 6	-0.06	-0.16	6.9	0	0	0
32	SLE QP 1	-0.05	-0.16	6.5	0	0	0
32	SLE QP 2	-0.06	-0.16	6.74	0	0	0
32	SLD 1	0.34	-0.07	6.76	0	0	0
32	SLD 2	0.35	-0.07	6.77	0	0	0
32	SLD 3	0.31	-0.2	6.79	0	0	0
32	SLD 4	0.32	-0.2	6.79	0	0	0
32	SLD 5	0.1	0.07	6.7	0	0	0
32	SLD 6	0.11	0.07	6.7	0	0	0
32	SLD 7	0.01	-0.38	6.8	0	0	0
32	SLD 8	0.02	-0.38	6.8	0	0	0
32	SLD 9	-0.13	0.05	6.68	0	0	0
32	SLD 10	-0.12	0.06	6.68	0	0	0
32	SLD 11	-0.22	-0.39	6.77	0	0	0
32	SLD 12	-0.22	-0.39	6.78	0	0	0
32	SLD 13	-0.43	-0.12	6.68	0	0	0
32	SLD 14	-0.42	-0.12	6.69	0	0	0
32	SLD 15	-0.46	-0.26	6.71	0	0	0
32	SLD 16	-0.45	-0.25	6.72	0	0	0
32	SLV 1	0.87	0.05	6.79	0	0	0
32	SLV 2	0.89	0.06	6.8	0	0	0
32	SLV 3	0.8	-0.26	6.85	0	0	0
32	SLV 4	0.83	-0.25	6.87	0	0	0
32	SLV 5	0.32	0.36	6.65	0	0	0
32	SLV 6	0.33	0.37	6.66	0	0	0
32	SLV 7	0.1	-0.65	6.87	0	0	0
32	SLV 8	0.11	-0.65	6.88	0	0	0
32	SLV 9	-0.23	0.33	6.6	0	0	0
32	SLV 10	-0.21	0.33	6.61	0	0	0
32	SLV 11	-0.44	-0.69	6.81	0	0	0
32	SLV 12	-0.43	-0.68	6.82	0	0	0
32	SLV 13	-0.94	-0.07	6.61	0	0	0
32	SLV 14	-0.91	-0.06	6.63	0	0	0
32	SLV 15	-1	-0.38	6.68	0	0	0
32	SLV 16	-0.98	-0.37	6.69	0	0	0
33	SLU 1	-0.09	-0.31	12.56	0	0	0
33	SLU 2	-0.09	-0.32	12.56	0	0	0
33	SLU 3	-0.1	-0.31	12.84	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
33	SLU 4	-0.1	-0.31	12.84	0	0	0
33	SLU 5	-0.1	-0.32	12.73	0	0	0
33	SLU 6	-0.11	-0.31	13.02	0	0	0
33	SLU 7	-0.11	-0.31	13.02	0	0	0
33	SLU 8	-0.11	-0.31	12.91	0	0	0
33	SLU 9	-0.11	-0.31	12.91	0	0	0
33	SLU 10	-0.14	-0.32	14.18	0	0	0
33	SLU 11	-0.15	-0.31	14.46	0	0	0
33	SLU 12	-0.15	-0.32	14.46	0	0	0
33	SLU 13	-0.15	-0.32	14.35	0	0	0
33	SLU 14	-0.16	-0.31	14.64	0	0	0
33	SLU 15	-0.16	-0.32	14.64	0	0	0
33	SLU 16	-0.16	-0.31	14.53	0	0	0
33	SLU 17	-0.16	-0.32	14.53	0	0	0
33	SLU 18	-0.16	-0.32	14.87	0	0	0
33	SLU 19	-0.16	-0.32	14.87	0	0	0
33	SLU 20	-0.17	-0.32	15.05	0	0	0
33	SLU 21	-0.17	-0.32	15.05	0	0	0
33	SLU 22	-0.11	-0.29	13.97	0	0	0
33	SLU 23	-0.11	-0.3	13.98	0	0	0
33	SLU 24	-0.12	-0.29	14.26	0	0	0
33	SLU 25	-0.12	-0.29	14.26	0	0	0
33	SLU 26	-0.12	-0.29	14.15	0	0	0
33	SLU 27	-0.13	-0.28	14.43	0	0	0
33	SLU 28	-0.13	-0.29	14.44	0	0	0
33	SLU 29	-0.13	-0.28	14.32	0	0	0
33	SLU 30	-0.13	-0.29	14.33	0	0	0
33	SLU 31	-0.16	-0.3	15.6	0	0	0
33	SLU 32	-0.17	-0.29	15.88	0	0	0
33	SLU 33	-0.17	-0.3	15.88	0	0	0
33	SLU 34	-0.17	-0.3	15.77	0	0	0
33	SLU 35	-0.18	-0.29	16.05	0	0	0
33	SLU 36	-0.18	-0.29	16.06	0	0	0
33	SLU 37	-0.18	-0.29	15.94	0	0	0
33	SLU 38	-0.18	-0.29	15.95	0	0	0
33	SLU 39	-0.18	-0.29	16.29	0	0	0
33	SLU 40	-0.18	-0.3	16.29	0	0	0
33	SLU 41	-0.19	-0.29	16.46	0	0	0
33	SLU 42	-0.19	-0.3	16.46	0	0	0
33	SLU 43	-0.11	-0.41	15.84	0	0	0
33	SLU 44	-0.11	-0.42	15.84	0	0	0
33	SLU 45	-0.12	-0.41	16.12	0	0	0
33	SLU 46	-0.12	-0.42	16.12	0	0	0
33	SLU 47	-0.12	-0.42	16.02	0	0	0
33	SLU 48	-0.13	-0.41	16.3	0	0	0
33	SLU 49	-0.13	-0.41	16.3	0	0	0
33	SLU 50	-0.13	-0.41	16.19	0	0	0
33	SLU 51	-0.13	-0.41	16.19	0	0	0
33	SLU 52	-0.16	-0.43	17.46	0	0	0
33	SLU 53	-0.17	-0.42	17.74	0	0	0
33	SLU 54	-0.17	-0.42	17.74	0	0	0
33	SLU 55	-0.17	-0.42	17.64	0	0	0
33	SLU 56	-0.18	-0.41	17.92	0	0	0
33	SLU 57	-0.18	-0.42	17.92	0	0	0
33	SLU 58	-0.18	-0.41	17.81	0	0	0
33	SLU 59	-0.18	-0.42	17.81	0	0	0
33	SLU 60	-0.18	-0.42	18.15	0	0	0
33	SLU 61	-0.18	-0.42	18.15	0	0	0
33	SLU 62	-0.19	-0.42	18.33	0	0	0
33	SLU 63	-0.19	-0.42	18.33	0	0	0
33	SLU 64	-0.14	-0.39	17.25	0	0	0
33	SLU 65	-0.13	-0.4	17.26	0	0	0
33	SLU 66	-0.14	-0.39	17.54	0	0	0
33	SLU 67	-0.14	-0.39	17.54	0	0	0
33	SLU 68	-0.14	-0.4	17.43	0	0	0
33	SLU 69	-0.15	-0.39	17.72	0	0	0
33	SLU 70	-0.15	-0.39	17.72	0	0	0
33	SLU 71	-0.15	-0.39	17.61	0	0	0
33	SLU 72	-0.15	-0.39	17.61	0	0	0
33	SLU 73	-0.18	-0.4	18.88	0	0	0
33	SLU 74	-0.19	-0.39	19.16	0	0	0
33	SLU 75	-0.19	-0.4	19.16	0	0	0
33	SLU 76	-0.19	-0.4	19.05	0	0	0
33	SLU 77	-0.2	-0.39	19.33	0	0	0
33	SLU 78	-0.2	-0.39	19.34	0	0	0
33	SLU 79	-0.2	-0.39	19.23	0	0	0
33	SLU 80	-0.2	-0.39	19.23	0	0	0
33	SLU 81	-0.2	-0.4	19.57	0	0	0
33	SLU 82	-0.2	-0.4	19.57	0	0	0
33	SLU 83	-0.21	-0.39	19.74	0	0	0
33	SLU 84	-0.21	-0.4	19.75	0	0	0
33	SLE RA 1	-0.1	-0.31	12.96	0	0	0
33	SLE RA 2	-0.1	-0.31	12.96	0	0	0
33	SLE RA 3	-0.11	-0.3	13.15	0	0	0
33	SLE RA 4	-0.11	-0.31	13.15	0	0	0
33	SLE RA 5	-0.11	-0.31	13.08	0	0	0
33	SLE RA 6	-0.11	-0.3	13.27	0	0	0
33	SLE RA 7	-0.11	-0.31	13.27	0	0	0
33	SLE RA 8	-0.11	-0.3	13.2	0	0	0
33	SLE RA 9	-0.11	-0.31	13.2	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
33	SLE RA 10	-0.13	-0.31	14.04	0	0	0
33	SLE RA 11	-0.14	-0.31	14.23	0	0	0
33	SLE RA 12	-0.14	-0.31	14.23	0	0	0
33	SLE RA 13	-0.14	-0.31	14.16	0	0	0
33	SLE RA 14	-0.14	-0.31	14.35	0	0	0
33	SLE RA 15	-0.14	-0.31	14.35	0	0	0
33	SLE RA 16	-0.14	-0.31	14.28	0	0	0
33	SLE RA 17	-0.14	-0.31	14.28	0	0	0
33	SLE RA 18	-0.15	-0.31	14.5	0	0	0
33	SLE RA 19	-0.14	-0.31	14.5	0	0	0
33	SLE RA 20	-0.15	-0.31	14.62	0	0	0
33	SLE RA 21	-0.15	-0.31	14.62	0	0	0
33	SLE FR 1	-0.1	-0.31	12.96	0	0	0
33	SLE FR 2	-0.1	-0.31	12.96	0	0	0
33	SLE FR 3	-0.1	-0.3	13.01	0	0	0
33	SLE FR 4	-0.11	-0.31	13.42	0	0	0
33	SLE FR 5	-0.12	-0.31	13.47	0	0	0
33	SLE FR 6	-0.12	-0.31	13.73	0	0	0
33	SLE QP 1	-0.1	-0.31	12.96	0	0	0
33	SLE QP 2	-0.11	-0.31	13.42	0	0	0
33	SLD 1	0.68	-0.13	13.33	0	0	0
33	SLD 2	0.7	-0.11	13.34	0	0	0
33	SLD 3	0.62	-0.39	13.36	0	0	0
33	SLD 4	0.64	-0.38	13.37	0	0	0
33	SLD 5	0.21	0.15	13.33	0	0	0
33	SLD 6	0.22	0.16	13.34	0	0	0
33	SLD 7	0.02	-0.74	13.46	0	0	0
33	SLD 8	0.03	-0.73	13.47	0	0	0
33	SLD 9	-0.26	0.12	13.38	0	0	0
33	SLD 10	-0.24	0.13	13.38	0	0	0
33	SLD 11	-0.45	-0.77	13.51	0	0	0
33	SLD 12	-0.43	-0.76	13.51	0	0	0
33	SLD 13	-0.87	-0.23	13.47	0	0	0
33	SLD 14	-0.85	-0.22	13.48	0	0	0
33	SLD 15	-0.93	-0.5	13.51	0	0	0
33	SLD 16	-0.91	-0.49	13.52	0	0	0
33	SLV 1	1.74	0.1	13.2	0	0	0
33	SLV 2	1.79	0.13	13.22	0	0	0
33	SLV 3	1.61	-0.5	13.28	0	0	0
33	SLV 4	1.66	-0.47	13.31	0	0	0
33	SLV 5	0.63	0.73	13.22	0	0	0
33	SLV 6	0.67	0.75	13.23	0	0	0
33	SLV 7	0.19	-1.29	13.51	0	0	0
33	SLV 8	0.23	-1.27	13.52	0	0	0
33	SLV 9	-0.45	0.66	13.32	0	0	0
33	SLV 10	-0.42	0.68	13.34	0	0	0
33	SLV 11	-0.89	-1.36	13.61	0	0	0
33	SLV 12	-0.86	-1.34	13.63	0	0	0
33	SLV 13	-1.88	-0.14	13.54	0	0	0
33	SLV 14	-1.83	-0.11	13.56	0	0	0
33	SLV 15	-2.01	-0.75	13.63	0	0	0
33	SLV 16	-1.97	-0.72	13.65	0	0	0
34	SLU 1	-0.1	-0.3	12.82	0	0	0
34	SLU 2	-0.1	-0.31	12.82	0	0	0
34	SLU 3	-0.11	-0.3	13.11	0	0	0
34	SLU 4	-0.11	-0.31	13.11	0	0	0
34	SLU 5	-0.11	-0.31	13	0	0	0
34	SLU 6	-0.12	-0.3	13.28	0	0	0
34	SLU 7	-0.12	-0.3	13.29	0	0	0
34	SLU 8	-0.12	-0.3	13.17	0	0	0
34	SLU 9	-0.12	-0.3	13.17	0	0	0
34	SLU 10	-0.15	-0.31	14.46	0	0	0
34	SLU 11	-0.16	-0.3	14.74	0	0	0
34	SLU 12	-0.16	-0.31	14.75	0	0	0
34	SLU 13	-0.16	-0.31	14.63	0	0	0
34	SLU 14	-0.17	-0.3	14.92	0	0	0
34	SLU 15	-0.17	-0.31	14.92	0	0	0
34	SLU 16	-0.17	-0.3	14.81	0	0	0
34	SLU 17	-0.17	-0.31	14.81	0	0	0
34	SLU 18	-0.17	-0.31	15.16	0	0	0
34	SLU 19	-0.17	-0.31	15.16	0	0	0
34	SLU 20	-0.18	-0.31	15.33	0	0	0
34	SLU 21	-0.18	-0.31	15.33	0	0	0
34	SLU 22	-0.12	-0.28	14.26	0	0	0
34	SLU 23	-0.12	-0.29	14.27	0	0	0
34	SLU 24	-0.13	-0.28	14.55	0	0	0
34	SLU 25	-0.13	-0.28	14.55	0	0	0
34	SLU 26	-0.13	-0.28	14.44	0	0	0
34	SLU 27	-0.14	-0.27	14.73	0	0	0
34	SLU 28	-0.14	-0.28	14.73	0	0	0
34	SLU 29	-0.14	-0.27	14.61	0	0	0
34	SLU 30	-0.14	-0.28	14.62	0	0	0
34	SLU 31	-0.17	-0.29	15.9	0	0	0
34	SLU 32	-0.18	-0.28	16.19	0	0	0
34	SLU 33	-0.18	-0.28	16.19	0	0	0
34	SLU 34	-0.18	-0.29	16.08	0	0	0
34	SLU 35	-0.19	-0.28	16.36	0	0	0
34	SLU 36	-0.19	-0.28	16.36	0	0	0
34	SLU 37	-0.19	-0.28	16.25	0	0	0
34	SLU 38	-0.19	-0.28	16.25	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
34	SLU 39	-0.19	-0.28	16.6	0	0	0
34	SLU 40	-0.19	-0.29	16.6	0	0	0
34	SLU 41	-0.2	-0.28	16.77	0	0	0
34	SLU 42	-0.2	-0.28	16.78	0	0	0
34	SLU 43	-0.12	-0.4	16.17	0	0	0
34	SLU 44	-0.12	-0.41	16.18	0	0	0
34	SLU 45	-0.13	-0.4	16.46	0	0	0
34	SLU 46	-0.13	-0.41	16.46	0	0	0
34	SLU 47	-0.13	-0.41	16.35	0	0	0
34	SLU 48	-0.14	-0.4	16.64	0	0	0
34	SLU 49	-0.14	-0.4	16.64	0	0	0
34	SLU 50	-0.14	-0.4	16.52	0	0	0
34	SLU 51	-0.14	-0.4	16.53	0	0	0
34	SLU 52	-0.17	-0.41	17.81	0	0	0
34	SLU 53	-0.18	-0.4	18.1	0	0	0
34	SLU 54	-0.18	-0.41	18.1	0	0	0
34	SLU 55	-0.18	-0.41	17.99	0	0	0
34	SLU 56	-0.19	-0.4	18.27	0	0	0
34	SLU 57	-0.19	-0.41	18.27	0	0	0
34	SLU 58	-0.19	-0.4	18.16	0	0	0
34	SLU 59	-0.19	-0.41	18.16	0	0	0
34	SLU 60	-0.19	-0.41	18.51	0	0	0
34	SLU 61	-0.19	-0.41	18.51	0	0	0
34	SLU 62	-0.2	-0.41	18.68	0	0	0
34	SLU 63	-0.2	-0.41	18.69	0	0	0
34	SLU 64	-0.14	-0.38	17.62	0	0	0
34	SLU 65	-0.14	-0.39	17.62	0	0	0
34	SLU 66	-0.15	-0.38	17.9	0	0	0
34	SLU 67	-0.15	-0.38	17.91	0	0	0
34	SLU 68	-0.15	-0.38	17.79	0	0	0
34	SLU 69	-0.16	-0.37	18.08	0	0	0
34	SLU 70	-0.16	-0.38	18.08	0	0	0
34	SLU 71	-0.16	-0.37	17.97	0	0	0
34	SLU 72	-0.16	-0.38	17.97	0	0	0
34	SLU 73	-0.19	-0.39	19.25	0	0	0
34	SLU 74	-0.2	-0.38	19.54	0	0	0
34	SLU 75	-0.2	-0.38	19.54	0	0	0
34	SLU 76	-0.2	-0.39	19.43	0	0	0
34	SLU 77	-0.21	-0.38	19.71	0	0	0
34	SLU 78	-0.21	-0.38	19.72	0	0	0
34	SLU 79	-0.21	-0.38	19.6	0	0	0
34	SLU 80	-0.21	-0.38	19.6	0	0	0
34	SLU 81	-0.21	-0.38	19.95	0	0	0
34	SLU 82	-0.21	-0.39	19.95	0	0	0
34	SLU 83	-0.22	-0.38	20.13	0	0	0
34	SLU 84	-0.22	-0.38	20.13	0	0	0
34	SLE RA 1	-0.1	-0.3	13.23	0	0	0
34	SLE RA 2	-0.1	-0.3	13.24	0	0	0
34	SLE RA 3	-0.11	-0.3	13.43	0	0	0
34	SLE RA 4	-0.11	-0.3	13.43	0	0	0
34	SLE RA 5	-0.11	-0.3	13.35	0	0	0
34	SLE RA 6	-0.12	-0.29	13.54	0	0	0
34	SLE RA 7	-0.12	-0.3	13.54	0	0	0
34	SLE RA 8	-0.12	-0.29	13.47	0	0	0
34	SLE RA 9	-0.12	-0.3	13.47	0	0	0
34	SLE RA 10	-0.14	-0.3	14.33	0	0	0
34	SLE RA 11	-0.14	-0.3	14.52	0	0	0
34	SLE RA 12	-0.14	-0.3	14.52	0	0	0
34	SLE RA 13	-0.14	-0.3	14.44	0	0	0
34	SLE RA 14	-0.15	-0.3	14.63	0	0	0
34	SLE RA 15	-0.15	-0.3	14.63	0	0	0
34	SLE RA 16	-0.15	-0.3	14.56	0	0	0
34	SLE RA 17	-0.15	-0.3	14.56	0	0	0
34	SLE RA 18	-0.15	-0.3	14.79	0	0	0
34	SLE RA 19	-0.15	-0.3	14.79	0	0	0
34	SLE RA 20	-0.16	-0.3	14.91	0	0	0
34	SLE RA 21	-0.16	-0.3	14.91	0	0	0
34	SLE FR 1	-0.1	-0.3	13.23	0	0	0
34	SLE FR 2	-0.1	-0.3	13.23	0	0	0
34	SLE FR 3	-0.11	-0.3	13.28	0	0	0
34	SLE FR 4	-0.12	-0.3	13.7	0	0	0
34	SLE FR 5	-0.12	-0.3	13.75	0	0	0
34	SLE FR 6	-0.13	-0.3	14.01	0	0	0
34	SLE QP 1	-0.1	-0.3	13.23	0	0	0
34	SLE QP 2	-0.12	-0.3	13.7	0	0	0
34	SLD 1	0.7	-0.12	13.57	0	0	0
34	SLD 2	0.72	-0.1	13.58	0	0	0
34	SLD 3	0.64	-0.39	13.54	0	0	0
34	SLD 4	0.66	-0.37	13.55	0	0	0
34	SLD 5	0.21	0.17	13.7	0	0	0
34	SLD 6	0.23	0.18	13.71	0	0	0
34	SLD 7	0.02	-0.74	13.61	0	0	0
34	SLD 8	0.03	-0.73	13.62	0	0	0
34	SLD 9	-0.27	0.13	13.79	0	0	0
34	SLD 10	-0.25	0.15	13.79	0	0	0
34	SLD 11	-0.46	-0.77	13.7	0	0	0
34	SLD 12	-0.45	-0.76	13.7	0	0	0
34	SLD 13	-0.9	-0.23	13.85	0	0	0
34	SLD 14	-0.88	-0.21	13.86	0	0	0
34	SLD 15	-0.96	-0.5	13.83	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
34	SLD 16	-0.94	-0.48	13.83	0	0	0
34	SLV 1	1.79	0.11	13.39	0	0	0
34	SLV 2	1.84	0.16	13.41	0	0	0
34	SLV 3	1.66	-0.5	13.33	0	0	0
34	SLV 4	1.71	-0.46	13.35	0	0	0
34	SLV 5	0.65	0.75	13.7	0	0	0
34	SLV 6	0.69	0.78	13.71	0	0	0
34	SLV 7	0.2	-1.3	13.49	0	0	0
34	SLV 8	0.23	-1.27	13.5	0	0	0
34	SLV 9	-0.47	0.68	13.9	0	0	0
34	SLV 10	-0.43	0.71	13.91	0	0	0
34	SLV 11	-0.92	-1.38	13.69	0	0	0
34	SLV 12	-0.89	-1.35	13.7	0	0	0
34	SLV 13	-1.94	-0.14	14.06	0	0	0
34	SLV 14	-1.89	-0.09	14.07	0	0	0
34	SLV 15	-2.08	-0.76	14	0	0	0
34	SLV 16	-2.03	-0.71	14.01	0	0	0
35	SLU 1	-0.1	-0.29	12.85	0	0	0
35	SLU 2	-0.1	-0.3	12.85	0	0	0
35	SLU 3	-0.11	-0.29	13.13	0	0	0
35	SLU 4	-0.11	-0.29	13.13	0	0	0
35	SLU 5	-0.11	-0.29	13.02	0	0	0
35	SLU 6	-0.12	-0.28	13.3	0	0	0
35	SLU 7	-0.12	-0.29	13.3	0	0	0
35	SLU 8	-0.12	-0.28	13.19	0	0	0
35	SLU 9	-0.12	-0.29	13.19	0	0	0
35	SLU 10	-0.15	-0.3	14.47	0	0	0
35	SLU 11	-0.16	-0.29	14.75	0	0	0
35	SLU 12	-0.16	-0.29	14.75	0	0	0
35	SLU 13	-0.16	-0.29	14.64	0	0	0
35	SLU 14	-0.17	-0.28	14.92	0	0	0
35	SLU 15	-0.17	-0.29	14.92	0	0	0
35	SLU 16	-0.17	-0.28	14.8	0	0	0
35	SLU 17	-0.17	-0.29	14.81	0	0	0
35	SLU 18	-0.17	-0.29	15.16	0	0	0
35	SLU 19	-0.17	-0.29	15.16	0	0	0
35	SLU 20	-0.18	-0.29	15.33	0	0	0
35	SLU 21	-0.18	-0.29	15.33	0	0	0
35	SLU 22	-0.12	-0.26	14.29	0	0	0
35	SLU 23	-0.12	-0.27	14.29	0	0	0
35	SLU 24	-0.13	-0.26	14.57	0	0	0
35	SLU 25	-0.13	-0.26	14.57	0	0	0
35	SLU 26	-0.13	-0.27	14.46	0	0	0
35	SLU 27	-0.14	-0.26	14.74	0	0	0
35	SLU 28	-0.14	-0.26	14.74	0	0	0
35	SLU 29	-0.14	-0.26	14.63	0	0	0
35	SLU 30	-0.14	-0.26	14.63	0	0	0
35	SLU 31	-0.17	-0.27	15.91	0	0	0
35	SLU 32	-0.18	-0.26	16.19	0	0	0
35	SLU 33	-0.18	-0.26	16.19	0	0	0
35	SLU 34	-0.18	-0.27	16.08	0	0	0
35	SLU 35	-0.19	-0.26	16.36	0	0	0
35	SLU 36	-0.19	-0.26	16.36	0	0	0
35	SLU 37	-0.19	-0.26	16.25	0	0	0
35	SLU 38	-0.19	-0.26	16.25	0	0	0
35	SLU 39	-0.2	-0.26	16.6	0	0	0
35	SLU 40	-0.19	-0.27	16.6	0	0	0
35	SLU 41	-0.21	-0.26	16.77	0	0	0
35	SLU 42	-0.2	-0.26	16.77	0	0	0
35	SLU 43	-0.12	-0.39	16.21	0	0	0
35	SLU 44	-0.12	-0.39	16.21	0	0	0
35	SLU 45	-0.13	-0.38	16.49	0	0	0
35	SLU 46	-0.13	-0.39	16.49	0	0	0
35	SLU 47	-0.13	-0.39	16.38	0	0	0
35	SLU 48	-0.14	-0.38	16.66	0	0	0
35	SLU 49	-0.14	-0.38	16.66	0	0	0
35	SLU 50	-0.14	-0.38	16.55	0	0	0
35	SLU 51	-0.14	-0.38	16.55	0	0	0
35	SLU 52	-0.17	-0.39	17.83	0	0	0
35	SLU 53	-0.18	-0.38	18.11	0	0	0
35	SLU 54	-0.18	-0.39	18.11	0	0	0
35	SLU 55	-0.18	-0.39	18	0	0	0
35	SLU 56	-0.19	-0.38	18.28	0	0	0
35	SLU 57	-0.19	-0.38	18.28	0	0	0
35	SLU 58	-0.2	-0.38	18.16	0	0	0
35	SLU 59	-0.19	-0.38	18.17	0	0	0
35	SLU 60	-0.2	-0.39	18.52	0	0	0
35	SLU 61	-0.2	-0.39	18.52	0	0	0
35	SLU 62	-0.21	-0.38	18.69	0	0	0
35	SLU 63	-0.21	-0.39	18.69	0	0	0
35	SLU 64	-0.15	-0.36	17.65	0	0	0
35	SLU 65	-0.15	-0.37	17.65	0	0	0
35	SLU 66	-0.16	-0.36	17.93	0	0	0
35	SLU 67	-0.16	-0.36	17.93	0	0	0
35	SLU 68	-0.16	-0.36	17.82	0	0	0
35	SLU 69	-0.17	-0.35	18.1	0	0	0
35	SLU 70	-0.17	-0.36	18.1	0	0	0
35	SLU 71	-0.17	-0.35	17.99	0	0	0
35	SLU 72	-0.17	-0.36	17.99	0	0	0
35	SLU 73	-0.2	-0.37	19.27	0	0	0





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
35	SLU 74	-0.21	-0.36	19.55	0	0	0
35	SLU 75	-0.21	-0.36	19.55	0	0	0
35	SLU 76	-0.21	-0.36	19.44	0	0	0
35	SLU 77	-0.22	-0.35	19.72	0	0	0
35	SLU 78	-0.22	-0.36	19.72	0	0	0
35	SLU 79	-0.22	-0.35	19.61	0	0	0
35	SLU 80	-0.22	-0.36	19.61	0	0	0
35	SLU 81	-0.22	-0.36	19.96	0	0	0
35	SLU 82	-0.22	-0.36	19.96	0	0	0
35	SLU 83	-0.23	-0.36	20.13	0	0	0
35	SLU 84	-0.23	-0.36	20.13	0	0	0
35	SLE RA 1	-0.11	-0.28	13.26	0	0	0
35	SLE RA 2	-0.11	-0.29	13.26	0	0	0
35	SLE RA 3	-0.11	-0.28	13.45	0	0	0
35	SLE RA 4	-0.11	-0.28	13.45	0	0	0
35	SLE RA 5	-0.11	-0.28	13.37	0	0	0
35	SLE RA 6	-0.12	-0.28	13.56	0	0	0
35	SLE RA 7	-0.12	-0.28	13.56	0	0	0
35	SLE RA 8	-0.12	-0.28	13.49	0	0	0
35	SLE RA 9	-0.12	-0.28	13.49	0	0	0
35	SLE RA 10	-0.14	-0.29	14.34	0	0	0
35	SLE RA 11	-0.15	-0.28	14.53	0	0	0
35	SLE RA 12	-0.15	-0.28	14.53	0	0	0
35	SLE RA 13	-0.15	-0.28	14.45	0	0	0
35	SLE RA 14	-0.15	-0.28	14.64	0	0	0
35	SLE RA 15	-0.15	-0.28	14.64	0	0	0
35	SLE RA 16	-0.15	-0.28	14.56	0	0	0
35	SLE RA 17	-0.15	-0.28	14.56	0	0	0
35	SLE RA 18	-0.16	-0.28	14.8	0	0	0
35	SLE RA 19	-0.16	-0.28	14.8	0	0	0
35	SLE RA 20	-0.16	-0.28	14.91	0	0	0
35	SLE RA 21	-0.16	-0.28	14.91	0	0	0
35	SLE FR 1	-0.11	-0.28	13.26	0	0	0
35	SLE FR 2	-0.11	-0.28	13.26	0	0	0
35	SLE FR 3	-0.11	-0.28	13.3	0	0	0
35	SLE FR 4	-0.12	-0.28	13.72	0	0	0
35	SLE FR 5	-0.12	-0.28	13.77	0	0	0
35	SLE FR 6	-0.13	-0.28	14.03	0	0	0
35	SLE QP 1	-0.11	-0.28	13.26	0	0	0
35	SLE QP 2	-0.12	-0.28	13.72	0	0	0
35	SLD 1	0.71	-0.1	13.5	0	0	0
35	SLD 2	0.73	-0.08	13.51	0	0	0
35	SLD 3	0.65	-0.38	13.48	0	0	0
35	SLD 4	0.67	-0.35	13.48	0	0	0
35	SLD 5	0.21	0.18	13.7	0	0	0
35	SLD 6	0.23	0.2	13.7	0	0	0
35	SLD 7	0.01	-0.73	13.6	0	0	0
35	SLD 8	0.03	-0.71	13.61	0	0	0
35	SLD 9	-0.27	0.15	13.84	0	0	0
35	SLD 10	-0.26	0.16	13.84	0	0	0
35	SLD 11	-0.47	-0.76	13.74	0	0	0
35	SLD 12	-0.46	-0.74	13.74	0	0	0
35	SLD 13	-0.91	-0.22	13.96	0	0	0
35	SLD 14	-0.89	-0.19	13.97	0	0	0
35	SLD 15	-0.97	-0.49	13.94	0	0	0
35	SLD 16	-0.95	-0.46	13.94	0	0	0
35	SLV 1	1.82	0.13	13.21	0	0	0
35	SLV 2	1.86	0.19	13.22	0	0	0
35	SLV 3	1.68	-0.49	13.15	0	0	0
35	SLV 4	1.73	-0.43	13.15	0	0	0
35	SLV 5	0.66	0.77	13.67	0	0	0
35	SLV 6	0.69	0.81	13.67	0	0	0
35	SLV 7	0.2	-1.29	13.45	0	0	0
35	SLV 8	0.23	-1.25	13.45	0	0	0
35	SLV 9	-0.47	0.69	13.99	0	0	0
35	SLV 10	-0.44	0.73	13.99	0	0	0
35	SLV 11	-0.94	-1.37	13.77	0	0	0
35	SLV 12	-0.91	-1.33	13.77	0	0	0
35	SLV 13	-1.97	-0.14	14.29	0	0	0
35	SLV 14	-1.92	-0.07	14.29	0	0	0
35	SLV 15	-2.11	-0.75	14.23	0	0	0
35	SLV 16	-2.06	-0.69	14.23	0	0	0
36	SLU 1	-0.07	-0.17	8.29	0	0	0
36	SLU 2	-0.07	-0.17	8.29	0	0	0
36	SLU 3	-0.08	-0.17	8.46	0	0	0
36	SLU 4	-0.08	-0.17	8.46	0	0	0
36	SLU 5	-0.08	-0.17	8.39	0	0	0
36	SLU 6	-0.09	-0.17	8.57	0	0	0
36	SLU 7	-0.09	-0.17	8.57	0	0	0
36	SLU 8	-0.09	-0.17	8.49	0	0	0
36	SLU 9	-0.09	-0.17	8.49	0	0	0
36	SLU 10	-0.11	-0.17	9.31	0	0	0
36	SLU 11	-0.11	-0.17	9.49	0	0	0
36	SLU 12	-0.11	-0.17	9.49	0	0	0
36	SLU 13	-0.11	-0.17	9.41	0	0	0
36	SLU 14	-0.12	-0.16	9.59	0	0	0
36	SLU 15	-0.12	-0.17	9.59	0	0	0
36	SLU 16	-0.12	-0.16	9.52	0	0	0
36	SLU 17	-0.12	-0.17	9.52	0	0	0
36	SLU 18	-0.12	-0.17	9.75	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
36	SLU 19	-0.12	-0.17	9.75	0	0	0
36	SLU 20	-0.13	-0.17	9.85	0	0	0
36	SLU 21	-0.13	-0.17	9.85	0	0	0
36	SLU 22	-0.09	-0.15	9.21	0	0	0
36	SLU 23	-0.09	-0.15	9.22	0	0	0
36	SLU 24	-0.09	-0.15	9.39	0	0	0
36	SLU 25	-0.09	-0.15	9.39	0	0	0
36	SLU 26	-0.09	-0.15	9.32	0	0	0
36	SLU 27	-0.1	-0.15	9.5	0	0	0
36	SLU 28	-0.1	-0.15	9.5	0	0	0
36	SLU 29	-0.1	-0.15	9.42	0	0	0
36	SLU 30	-0.1	-0.15	9.42	0	0	0
36	SLU 31	-0.12	-0.15	10.24	0	0	0
36	SLU 32	-0.13	-0.15	10.42	0	0	0
36	SLU 33	-0.13	-0.15	10.42	0	0	0
36	SLU 34	-0.13	-0.15	10.34	0	0	0
36	SLU 35	-0.13	-0.14	10.52	0	0	0
36	SLU 36	-0.13	-0.15	10.52	0	0	0
36	SLU 37	-0.13	-0.14	10.45	0	0	0
36	SLU 38	-0.13	-0.15	10.45	0	0	0
36	SLU 39	-0.14	-0.15	10.68	0	0	0
36	SLU 40	-0.13	-0.15	10.68	0	0	0
36	SLU 41	-0.14	-0.15	10.78	0	0	0
36	SLU 42	-0.14	-0.15	10.78	0	0	0
36	SLU 43	-0.09	-0.23	10.45	0	0	0
36	SLU 44	-0.09	-0.23	10.45	0	0	0
36	SLU 45	-0.1	-0.23	10.63	0	0	0
36	SLU 46	-0.1	-0.23	10.63	0	0	0
36	SLU 47	-0.1	-0.23	10.56	0	0	0
36	SLU 48	-0.1	-0.22	10.74	0	0	0
36	SLU 49	-0.1	-0.23	10.74	0	0	0
36	SLU 50	-0.1	-0.22	10.66	0	0	0
36	SLU 51	-0.1	-0.23	10.66	0	0	0
36	SLU 52	-0.12	-0.23	11.48	0	0	0
36	SLU 53	-0.13	-0.22	11.65	0	0	0
36	SLU 54	-0.13	-0.23	11.66	0	0	0
36	SLU 55	-0.13	-0.23	11.58	0	0	0
36	SLU 56	-0.14	-0.22	11.76	0	0	0
36	SLU 57	-0.14	-0.22	11.76	0	0	0
36	SLU 58	-0.14	-0.22	11.68	0	0	0
36	SLU 59	-0.14	-0.22	11.69	0	0	0
36	SLU 60	-0.14	-0.22	11.91	0	0	0
36	SLU 61	-0.14	-0.23	11.92	0	0	0
36	SLU 62	-0.14	-0.22	12.02	0	0	0
36	SLU 63	-0.14	-0.23	12.02	0	0	0
36	SLU 64	-0.1	-0.21	11.38	0	0	0
36	SLU 65	-0.1	-0.21	11.38	0	0	0
36	SLU 66	-0.11	-0.21	11.56	0	0	0
36	SLU 67	-0.11	-0.21	11.56	0	0	0
36	SLU 68	-0.11	-0.21	11.49	0	0	0
36	SLU 69	-0.12	-0.2	11.67	0	0	0
36	SLU 70	-0.12	-0.21	11.67	0	0	0
36	SLU 71	-0.12	-0.2	11.59	0	0	0
36	SLU 72	-0.12	-0.21	11.59	0	0	0
36	SLU 73	-0.14	-0.21	12.41	0	0	0
36	SLU 74	-0.14	-0.2	12.58	0	0	0
36	SLU 75	-0.14	-0.21	12.58	0	0	0
36	SLU 76	-0.14	-0.21	12.51	0	0	0
36	SLU 77	-0.15	-0.2	12.69	0	0	0
36	SLU 78	-0.15	-0.2	12.69	0	0	0
36	SLU 79	-0.15	-0.2	12.61	0	0	0
36	SLU 80	-0.15	-0.2	12.61	0	0	0
36	SLU 81	-0.15	-0.21	12.84	0	0	0
36	SLU 82	-0.15	-0.21	12.84	0	0	0
36	SLU 83	-0.16	-0.2	12.95	0	0	0
36	SLU 84	-0.16	-0.21	12.95	0	0	0
36	SLE RA 1	-0.08	-0.16	8.55	0	0	0
36	SLE RA 2	-0.08	-0.17	8.55	0	0	0
36	SLE RA 3	-0.08	-0.16	8.67	0	0	0
36	SLE RA 4	-0.08	-0.16	8.67	0	0	0
36	SLE RA 5	-0.08	-0.17	8.62	0	0	0
36	SLE RA 6	-0.09	-0.16	8.74	0	0	0
36	SLE RA 7	-0.09	-0.16	8.74	0	0	0
36	SLE RA 8	-0.09	-0.16	8.69	0	0	0
36	SLE RA 9	-0.09	-0.16	8.69	0	0	0
36	SLE RA 10	-0.1	-0.17	9.23	0	0	0
36	SLE RA 11	-0.1	-0.16	9.35	0	0	0
36	SLE RA 12	-0.1	-0.16	9.35	0	0	0
36	SLE RA 13	-0.1	-0.16	9.3	0	0	0
36	SLE RA 14	-0.11	-0.16	9.42	0	0	0
36	SLE RA 15	-0.11	-0.16	9.42	0	0	0
36	SLE RA 16	-0.11	-0.16	9.37	0	0	0
36	SLE RA 17	-0.11	-0.16	9.37	0	0	0
36	SLE RA 18	-0.11	-0.16	9.53	0	0	0
36	SLE RA 19	-0.11	-0.16	9.53	0	0	0
36	SLE RA 20	-0.11	-0.16	9.6	0	0	0
36	SLE RA 21	-0.11	-0.16	9.6	0	0	0
36	SLE FR 1	-0.08	-0.16	8.55	0	0	0
36	SLE FR 2	-0.08	-0.16	8.55	0	0	0
36	SLE FR 3	-0.08	-0.16	8.58	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
36	SLE FR 4	-0.09	-0.16	8.84	0	0	0
36	SLE FR 5	-0.09	-0.16	8.87	0	0	0
36	SLE FR 6	-0.09	-0.16	9.04	0	0	0
36	SLE QP 1	-0.08	-0.16	8.55	0	0	0
36	SLE QP 2	-0.09	-0.16	8.84	0	0	0
36	SLD 1	0.46	-0.05	8.58	0	0	0
36	SLD 2	0.47	-0.02	8.58	0	0	0
36	SLD 3	0.42	-0.23	8.62	0	0	0
36	SLD 4	0.43	-0.2	8.61	0	0	0
36	SLD 5	0.14	0.13	8.71	0	0	0
36	SLD 6	0.14	0.15	8.71	0	0	0
36	SLD 7	0	-0.45	8.83	0	0	0
36	SLD 8	0.01	-0.44	8.83	0	0	0
36	SLD 9	-0.18	0.11	8.86	0	0	0
36	SLD 10	-0.18	0.13	8.86	0	0	0
36	SLD 11	-0.32	-0.48	8.98	0	0	0
36	SLD 12	-0.31	-0.46	8.97	0	0	0
36	SLD 13	-0.6	-0.13	9.07	0	0	0
36	SLD 14	-0.59	-0.1	9.07	0	0	0
36	SLD 15	-0.64	-0.3	9.11	0	0	0
36	SLD 16	-0.63	-0.28	9.11	0	0	0
36	SLV 1	1.19	0.1	8.23	0	0	0
36	SLV 2	1.22	0.15	8.22	0	0	0
36	SLV 3	1.1	-0.3	8.31	0	0	0
36	SLV 4	1.13	-0.24	8.3	0	0	0
36	SLV 5	0.43	0.51	8.54	0	0	0
36	SLV 6	0.45	0.55	8.53	0	0	0
36	SLV 7	0.12	-0.82	8.81	0	0	0
36	SLV 8	0.14	-0.78	8.8	0	0	0
36	SLV 9	-0.31	0.45	8.88	0	0	0
36	SLV 10	-0.3	0.49	8.88	0	0	0
36	SLV 11	-0.62	-0.87	9.16	0	0	0
36	SLV 12	-0.6	-0.84	9.15	0	0	0
36	SLV 13	-1.3	-0.08	9.38	0	0	0
36	SLV 14	-1.27	-0.02	9.38	0	0	0
36	SLV 15	-1.39	-0.48	9.47	0	0	0
36	SLV 16	-1.36	-0.42	9.46	0	0	0
37	SLU 1	-0.04	-0.09	4.75	0	0	0
37	SLU 2	-0.04	-0.09	4.75	0	0	0
37	SLU 3	-0.05	-0.09	4.85	0	0	0
37	SLU 4	-0.05	-0.09	4.85	0	0	0
37	SLU 5	-0.05	-0.09	4.81	0	0	0
37	SLU 6	-0.05	-0.09	4.91	0	0	0
37	SLU 7	-0.05	-0.09	4.91	0	0	0
37	SLU 8	-0.05	-0.09	4.87	0	0	0
37	SLU 9	-0.05	-0.09	4.87	0	0	0
37	SLU 10	-0.06	-0.09	5.33	0	0	0
37	SLU 11	-0.06	-0.09	5.43	0	0	0
37	SLU 12	-0.06	-0.09	5.43	0	0	0
37	SLU 13	-0.07	-0.09	5.39	0	0	0
37	SLU 14	-0.07	-0.09	5.49	0	0	0
37	SLU 15	-0.07	-0.09	5.49	0	0	0
37	SLU 16	-0.07	-0.09	5.45	0	0	0
37	SLU 17	-0.07	-0.09	5.45	0	0	0
37	SLU 18	-0.07	-0.09	5.58	0	0	0
37	SLU 19	-0.07	-0.09	5.58	0	0	0
37	SLU 20	-0.07	-0.09	5.64	0	0	0
37	SLU 21	-0.07	-0.09	5.64	0	0	0
37	SLU 22	-0.05	-0.08	5.28	0	0	0
37	SLU 23	-0.05	-0.08	5.28	0	0	0
37	SLU 24	-0.05	-0.08	5.38	0	0	0
37	SLU 25	-0.05	-0.08	5.38	0	0	0
37	SLU 26	-0.05	-0.08	5.34	0	0	0
37	SLU 27	-0.06	-0.08	5.44	0	0	0
37	SLU 28	-0.06	-0.08	5.44	0	0	0
37	SLU 29	-0.06	-0.08	5.4	0	0	0
37	SLU 30	-0.06	-0.08	5.4	0	0	0
37	SLU 31	-0.07	-0.08	5.86	0	0	0
37	SLU 32	-0.07	-0.08	5.96	0	0	0
37	SLU 33	-0.07	-0.08	5.96	0	0	0
37	SLU 34	-0.07	-0.08	5.92	0	0	0
37	SLU 35	-0.08	-0.08	6.02	0	0	0
37	SLU 36	-0.08	-0.08	6.02	0	0	0
37	SLU 37	-0.08	-0.08	5.98	0	0	0
37	SLU 38	-0.08	-0.08	5.98	0	0	0
37	SLU 39	-0.08	-0.08	6.11	0	0	0
37	SLU 40	-0.08	-0.08	6.11	0	0	0
37	SLU 41	-0.08	-0.08	6.17	0	0	0
37	SLU 42	-0.08	-0.08	6.17	0	0	0
37	SLU 43	-0.05	-0.12	5.99	0	0	0
37	SLU 44	-0.05	-0.13	6	0	0	0
37	SLU 45	-0.06	-0.12	6.1	0	0	0
37	SLU 46	-0.06	-0.12	6.1	0	0	0
37	SLU 47	-0.06	-0.12	6.05	0	0	0
37	SLU 48	-0.06	-0.12	6.15	0	0	0
37	SLU 49	-0.06	-0.12	6.15	0	0	0
37	SLU 50	-0.06	-0.12	6.11	0	0	0
37	SLU 51	-0.06	-0.12	6.11	0	0	0
37	SLU 52	-0.07	-0.12	6.57	0	0	0
37	SLU 53	-0.07	-0.12	6.68	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
37	SLU 54	-0.07	-0.12	6.68	0	0	0
37	SLU 55	-0.07	-0.12	6.63	0	0	0
37	SLU 56	-0.08	-0.12	6.73	0	0	0
37	SLU 57	-0.08	-0.12	6.73	0	0	0
37	SLU 58	-0.08	-0.12	6.69	0	0	0
37	SLU 59	-0.08	-0.12	6.69	0	0	0
37	SLU 60	-0.08	-0.12	6.82	0	0	0
37	SLU 61	-0.08	-0.12	6.82	0	0	0
37	SLU 62	-0.08	-0.12	6.88	0	0	0
37	SLU 63	-0.08	-0.12	6.88	0	0	0
37	SLU 64	-0.06	-0.11	6.53	0	0	0
37	SLU 65	-0.06	-0.11	6.53	0	0	0
37	SLU 66	-0.06	-0.11	6.63	0	0	0
37	SLU 67	-0.06	-0.11	6.63	0	0	0
37	SLU 68	-0.06	-0.11	6.58	0	0	0
37	SLU 69	-0.07	-0.11	6.69	0	0	0
37	SLU 70	-0.07	-0.11	6.69	0	0	0
37	SLU 71	-0.07	-0.11	6.64	0	0	0
37	SLU 72	-0.07	-0.11	6.64	0	0	0
37	SLU 73	-0.08	-0.11	7.11	0	0	0
37	SLU 74	-0.08	-0.11	7.21	0	0	0
37	SLU 75	-0.08	-0.11	7.21	0	0	0
37	SLU 76	-0.08	-0.11	7.16	0	0	0
37	SLU 77	-0.09	-0.11	7.26	0	0	0
37	SLU 78	-0.09	-0.11	7.27	0	0	0
37	SLU 79	-0.09	-0.11	7.22	0	0	0
37	SLU 80	-0.09	-0.11	7.22	0	0	0
37	SLU 81	-0.09	-0.11	7.35	0	0	0
37	SLU 82	-0.09	-0.11	7.35	0	0	0
37	SLU 83	-0.09	-0.11	7.41	0	0	0
37	SLU 84	-0.09	-0.11	7.41	0	0	0
37	SLE RA 1	-0.04	-0.09	4.9	0	0	0
37	SLE RA 2	-0.04	-0.09	4.9	0	0	0
37	SLE RA 3	-0.05	-0.09	4.97	0	0	0
37	SLE RA 4	-0.05	-0.09	4.97	0	0	0
37	SLE RA 5	-0.05	-0.09	4.94	0	0	0
37	SLE RA 6	-0.05	-0.09	5.01	0	0	0
37	SLE RA 7	-0.05	-0.09	5.01	0	0	0
37	SLE RA 8	-0.05	-0.09	4.98	0	0	0
37	SLE RA 9	-0.05	-0.09	4.98	0	0	0
37	SLE RA 10	-0.06	-0.09	5.29	0	0	0
37	SLE RA 11	-0.06	-0.09	5.36	0	0	0
37	SLE RA 12	-0.06	-0.09	5.36	0	0	0
37	SLE RA 13	-0.06	-0.09	5.33	0	0	0
37	SLE RA 14	-0.06	-0.09	5.4	0	0	0
37	SLE RA 15	-0.06	-0.09	5.4	0	0	0
37	SLE RA 16	-0.06	-0.09	5.37	0	0	0
37	SLE RA 17	-0.06	-0.09	5.37	0	0	0
37	SLE RA 18	-0.06	-0.09	5.46	0	0	0
37	SLE RA 19	-0.06	-0.09	5.46	0	0	0
37	SLE RA 20	-0.07	-0.09	5.49	0	0	0
37	SLE RA 21	-0.07	-0.09	5.49	0	0	0
37	SLE FR 1	-0.04	-0.09	4.9	0	0	0
37	SLE FR 2	-0.04	-0.09	4.9	0	0	0
37	SLE FR 3	-0.05	-0.09	4.92	0	0	0
37	SLE FR 4	-0.05	-0.09	5.07	0	0	0
37	SLE FR 5	-0.05	-0.09	5.08	0	0	0
37	SLE FR 6	-0.05	-0.09	5.18	0	0	0
37	SLE QP 1	-0.04	-0.09	4.9	0	0	0
37	SLE QP 2	-0.05	-0.09	5.07	0	0	0
37	SLD 1	0.27	-0.02	4.91	0	0	0
37	SLD 2	0.27	-0.01	4.91	0	0	0
37	SLD 3	0.24	-0.12	4.88	0	0	0
37	SLD 4	0.25	-0.11	4.88	0	0	0
37	SLD 5	0.08	0.08	5.06	0	0	0
37	SLD 6	0.08	0.09	5.06	0	0	0
37	SLD 7	0	-0.25	4.97	0	0	0
37	SLD 8	0.01	-0.24	4.97	0	0	0
37	SLD 9	-0.11	0.07	5.17	0	0	0
37	SLD 10	-0.1	0.08	5.16	0	0	0
37	SLD 11	-0.18	-0.27	5.08	0	0	0
37	SLD 12	-0.18	-0.26	5.08	0	0	0
37	SLD 13	-0.35	-0.07	5.26	0	0	0
37	SLD 14	-0.34	-0.05	5.25	0	0	0
37	SLD 15	-0.37	-0.17	5.23	0	0	0
37	SLD 16	-0.37	-0.15	5.23	0	0	0
37	SLV 1	0.69	0.06	4.69	0	0	0
37	SLV 2	0.71	0.1	4.69	0	0	0
37	SLV 3	0.64	-0.17	4.63	0	0	0
37	SLV 4	0.65	-0.13	4.63	0	0	0
37	SLV 5	0.25	0.29	5.05	0	0	0
37	SLV 6	0.26	0.32	5.05	0	0	0
37	SLV 7	0.07	-0.47	4.85	0	0	0
37	SLV 8	0.08	-0.44	4.84	0	0	0
37	SLV 9	-0.18	0.26	5.3	0	0	0
37	SLV 10	-0.17	0.29	5.29	0	0	0
37	SLV 11	-0.36	-0.5	5.09	0	0	0
37	SLV 12	-0.35	-0.47	5.09	0	0	0
37	SLV 13	-0.75	-0.05	5.51	0	0	0
37	SLV 14	-0.74	-0.01	5.5	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
37	SLV 15	-0.81	-0.28	5.45	0	0	0
37	SLV 16	-0.79	-0.24	5.44	0	0	0
38	SLU 1	-0.06	-0.14	6.75	0	0	0
38	SLU 2	-0.06	-0.15	6.76	0	0	0
38	SLU 3	-0.06	-0.14	6.9	0	0	0
38	SLU 4	-0.06	-0.14	6.9	0	0	0
38	SLU 5	-0.06	-0.15	6.84	0	0	0
38	SLU 6	-0.07	-0.14	6.99	0	0	0
38	SLU 7	-0.07	-0.14	6.99	0	0	0
38	SLU 8	-0.07	-0.14	6.93	0	0	0
38	SLU 9	-0.07	-0.14	6.93	0	0	0
38	SLU 10	-0.09	-0.15	7.6	0	0	0
38	SLU 11	-0.09	-0.14	7.74	0	0	0
38	SLU 12	-0.09	-0.14	7.75	0	0	0
38	SLU 13	-0.09	-0.15	7.69	0	0	0
38	SLU 14	-0.1	-0.14	7.83	0	0	0
38	SLU 15	-0.1	-0.14	7.83	0	0	0
38	SLU 16	-0.1	-0.14	7.77	0	0	0
38	SLU 17	-0.1	-0.14	7.77	0	0	0
38	SLU 18	-0.1	-0.14	7.96	0	0	0
38	SLU 19	-0.1	-0.15	7.96	0	0	0
38	SLU 20	-0.1	-0.14	8.05	0	0	0
38	SLU 21	-0.1	-0.14	8.05	0	0	0
38	SLU 22	-0.07	-0.13	7.51	0	0	0
38	SLU 23	-0.07	-0.13	7.52	0	0	0
38	SLU 24	-0.08	-0.13	7.66	0	0	0
38	SLU 25	-0.08	-0.13	7.66	0	0	0
38	SLU 26	-0.08	-0.13	7.6	0	0	0
38	SLU 27	-0.08	-0.13	7.75	0	0	0
38	SLU 28	-0.08	-0.13	7.75	0	0	0
38	SLU 29	-0.08	-0.13	7.69	0	0	0
38	SLU 30	-0.08	-0.13	7.69	0	0	0
38	SLU 31	-0.1	-0.13	8.36	0	0	0
38	SLU 32	-0.1	-0.13	8.5	0	0	0
38	SLU 33	-0.1	-0.13	8.51	0	0	0
38	SLU 34	-0.1	-0.13	8.45	0	0	0
38	SLU 35	-0.11	-0.13	8.59	0	0	0
38	SLU 36	-0.11	-0.13	8.59	0	0	0
38	SLU 37	-0.11	-0.13	8.53	0	0	0
38	SLU 38	-0.11	-0.13	8.53	0	0	0
38	SLU 39	-0.11	-0.13	8.72	0	0	0
38	SLU 40	-0.11	-0.13	8.72	0	0	0
38	SLU 41	-0.12	-0.13	8.81	0	0	0
38	SLU 42	-0.12	-0.13	8.81	0	0	0
38	SLU 43	-0.07	-0.19	8.52	0	0	0
38	SLU 44	-0.07	-0.2	8.52	0	0	0
38	SLU 45	-0.08	-0.19	8.67	0	0	0
38	SLU 46	-0.08	-0.19	8.67	0	0	0
38	SLU 47	-0.08	-0.19	8.61	0	0	0
38	SLU 48	-0.08	-0.19	8.76	0	0	0
38	SLU 49	-0.08	-0.19	8.76	0	0	0
38	SLU 50	-0.08	-0.19	8.69	0	0	0
38	SLU 51	-0.08	-0.19	8.7	0	0	0
38	SLU 52	-0.1	-0.2	9.36	0	0	0
38	SLU 53	-0.11	-0.19	9.51	0	0	0
38	SLU 54	-0.11	-0.19	9.51	0	0	0
38	SLU 55	-0.11	-0.19	9.45	0	0	0
38	SLU 56	-0.11	-0.19	9.6	0	0	0
38	SLU 57	-0.11	-0.19	9.6	0	0	0
38	SLU 58	-0.11	-0.19	9.54	0	0	0
38	SLU 59	-0.11	-0.19	9.54	0	0	0
38	SLU 60	-0.11	-0.19	9.72	0	0	0
38	SLU 61	-0.11	-0.19	9.72	0	0	0
38	SLU 62	-0.12	-0.19	9.81	0	0	0
38	SLU 63	-0.12	-0.19	9.81	0	0	0
38	SLU 64	-0.08	-0.18	9.28	0	0	0
38	SLU 65	-0.08	-0.18	9.28	0	0	0
38	SLU 66	-0.09	-0.18	9.43	0	0	0
38	SLU 67	-0.09	-0.18	9.43	0	0	0
38	SLU 68	-0.09	-0.18	9.37	0	0	0
38	SLU 69	-0.1	-0.17	9.51	0	0	0
38	SLU 70	-0.1	-0.18	9.52	0	0	0
38	SLU 71	-0.1	-0.17	9.45	0	0	0
38	SLU 72	-0.1	-0.18	9.46	0	0	0
38	SLU 73	-0.11	-0.18	10.12	0	0	0
38	SLU 74	-0.12	-0.18	10.27	0	0	0
38	SLU 75	-0.12	-0.18	10.27	0	0	0
38	SLU 76	-0.12	-0.18	10.21	0	0	0
38	SLU 77	-0.12	-0.17	10.36	0	0	0
38	SLU 78	-0.12	-0.18	10.36	0	0	0
38	SLU 79	-0.12	-0.17	10.3	0	0	0
38	SLU 80	-0.12	-0.18	10.3	0	0	0
38	SLU 81	-0.12	-0.18	10.48	0	0	0
38	SLU 82	-0.12	-0.18	10.48	0	0	0
38	SLU 83	-0.13	-0.17	10.57	0	0	0
38	SLU 84	-0.13	-0.18	10.57	0	0	0
38	SLE RA 1	-0.06	-0.14	6.97	0	0	0
38	SLE RA 2	-0.06	-0.14	6.97	0	0	0
38	SLE RA 3	-0.07	-0.14	7.07	0	0	0
38	SLE RA 4	-0.07	-0.14	7.07	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
38	SLE RA 5	-0.07	-0.14	7.03	0	0	0
38	SLE RA 6	-0.07	-0.14	7.13	0	0	0
38	SLE RA 7	-0.07	-0.14	7.13	0	0	0
38	SLE RA 8	-0.07	-0.14	7.09	0	0	0
38	SLE RA 9	-0.07	-0.14	7.09	0	0	0
38	SLE RA 10	-0.08	-0.14	7.53	0	0	0
38	SLE RA 11	-0.08	-0.14	7.63	0	0	0
38	SLE RA 12	-0.08	-0.14	7.63	0	0	0
38	SLE RA 13	-0.08	-0.14	7.59	0	0	0
38	SLE RA 14	-0.09	-0.14	7.69	0	0	0
38	SLE RA 15	-0.09	-0.14	7.69	0	0	0
38	SLE RA 16	-0.09	-0.14	7.65	0	0	0
38	SLE RA 17	-0.09	-0.14	7.65	0	0	0
38	SLE RA 18	-0.09	-0.14	7.77	0	0	0
38	SLE RA 19	-0.09	-0.14	7.77	0	0	0
38	SLE RA 20	-0.09	-0.14	7.83	0	0	0
38	SLE RA 21	-0.09	-0.14	7.83	0	0	0
38	SLE FR 1	-0.06	-0.14	6.97	0	0	0
38	SLE FR 2	-0.06	-0.14	6.97	0	0	0
38	SLE FR 3	-0.06	-0.14	6.99	0	0	0
38	SLE FR 4	-0.07	-0.14	7.21	0	0	0
38	SLE FR 5	-0.07	-0.14	7.24	0	0	0
38	SLE FR 6	-0.08	-0.14	7.37	0	0	0
38	SLE QP 1	-0.06	-0.14	6.97	0	0	0
38	SLE QP 2	-0.07	-0.14	7.21	0	0	0
38	SLD 1	0.37	-0.05	7.03	0	0	0
38	SLD 2	0.38	-0.03	7.03	0	0	0
38	SLD 3	0.34	-0.19	7.06	0	0	0
38	SLD 4	0.35	-0.17	7.06	0	0	0
38	SLD 5	0.11	0.1	7.12	0	0	0
38	SLD 6	0.12	0.12	7.12	0	0	0
38	SLD 7	0	-0.38	7.2	0	0	0
38	SLD 8	0.01	-0.36	7.2	0	0	0
38	SLD 9	-0.15	0.09	7.22	0	0	0
38	SLD 10	-0.14	0.1	7.22	0	0	0
38	SLD 11	-0.26	-0.4	7.3	0	0	0
38	SLD 12	-0.25	-0.38	7.3	0	0	0
38	SLD 13	-0.49	-0.11	7.37	0	0	0
38	SLD 14	-0.48	-0.09	7.37	0	0	0
38	SLD 15	-0.52	-0.25	7.39	0	0	0
38	SLD 16	-0.51	-0.23	7.39	0	0	0
38	SLV 1	0.97	0.07	6.79	0	0	0
38	SLV 2	0.99	0.12	6.79	0	0	0
38	SLV 3	0.89	-0.25	6.85	0	0	0
38	SLV 4	0.92	-0.21	6.85	0	0	0
38	SLV 5	0.35	0.41	7	0	0	0
38	SLV 6	0.37	0.44	7	0	0	0
38	SLV 7	0.1	-0.68	7.19	0	0	0
38	SLV 8	0.11	-0.65	7.19	0	0	0
38	SLV 9	-0.26	0.37	7.24	0	0	0
38	SLV 10	-0.24	0.4	7.23	0	0	0
38	SLV 11	-0.51	-0.72	7.43	0	0	0
38	SLV 12	-0.49	-0.69	7.43	0	0	0
38	SLV 13	-1.06	-0.07	7.58	0	0	0
38	SLV 14	-1.03	-0.03	7.57	0	0	0
38	SLV 15	-1.13	-0.4	7.64	0	0	0
38	SLV 16	-1.11	-0.35	7.63	0	0	0
39	SLU 1	-0.04	-0.11	4.91	0	0	0
39	SLU 2	-0.04	-0.11	4.91	0	0	0
39	SLU 3	-0.05	-0.11	5.02	0	0	0
39	SLU 4	-0.05	-0.11	5.02	0	0	0
39	SLU 5	-0.05	-0.11	4.98	0	0	0
39	SLU 6	-0.05	-0.11	5.08	0	0	0
39	SLU 7	-0.05	-0.11	5.08	0	0	0
39	SLU 8	-0.05	-0.11	5.04	0	0	0
39	SLU 9	-0.05	-0.11	5.04	0	0	0
39	SLU 10	-0.06	-0.11	5.53	0	0	0
39	SLU 11	-0.07	-0.11	5.64	0	0	0
39	SLU 12	-0.07	-0.11	5.64	0	0	0
39	SLU 13	-0.07	-0.11	5.59	0	0	0
39	SLU 14	-0.07	-0.11	5.7	0	0	0
39	SLU 15	-0.07	-0.11	5.7	0	0	0
39	SLU 16	-0.07	-0.11	5.66	0	0	0
39	SLU 17	-0.07	-0.11	5.66	0	0	0
39	SLU 18	-0.07	-0.11	5.79	0	0	0
39	SLU 19	-0.07	-0.11	5.79	0	0	0
39	SLU 20	-0.08	-0.11	5.86	0	0	0
39	SLU 21	-0.08	-0.11	5.86	0	0	0
39	SLU 22	-0.05	-0.1	5.47	0	0	0
39	SLU 23	-0.05	-0.1	5.47	0	0	0
39	SLU 24	-0.06	-0.1	5.57	0	0	0
39	SLU 25	-0.06	-0.1	5.57	0	0	0
39	SLU 26	-0.06	-0.1	5.53	0	0	0
39	SLU 27	-0.06	-0.1	5.64	0	0	0
39	SLU 28	-0.06	-0.1	5.64	0	0	0
39	SLU 29	-0.06	-0.1	5.59	0	0	0
39	SLU 30	-0.06	-0.1	5.6	0	0	0
39	SLU 31	-0.07	-0.1	6.08	0	0	0
39	SLU 32	-0.08	-0.1	6.19	0	0	0
39	SLU 33	-0.08	-0.1	6.19	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
39	SLU 34	-0.08	-0.1	6.15	0	0	0
39	SLU 35	-0.08	-0.1	6.26	0	0	0
39	SLU 36	-0.08	-0.1	6.26	0	0	0
39	SLU 37	-0.08	-0.1	6.21	0	0	0
39	SLU 38	-0.08	-0.1	6.21	0	0	0
39	SLU 39	-0.08	-0.1	6.35	0	0	0
39	SLU 40	-0.08	-0.1	6.35	0	0	0
39	SLU 41	-0.08	-0.1	6.41	0	0	0
39	SLU 42	-0.08	-0.1	6.41	0	0	0
39	SLU 43	-0.05	-0.15	6.19	0	0	0
39	SLU 44	-0.05	-0.15	6.2	0	0	0
39	SLU 45	-0.06	-0.14	6.3	0	0	0
39	SLU 46	-0.06	-0.15	6.3	0	0	0
39	SLU 47	-0.06	-0.15	6.26	0	0	0
39	SLU 48	-0.06	-0.14	6.37	0	0	0
39	SLU 49	-0.06	-0.14	6.37	0	0	0
39	SLU 50	-0.06	-0.14	6.32	0	0	0
39	SLU 51	-0.06	-0.14	6.32	0	0	0
39	SLU 52	-0.07	-0.15	6.81	0	0	0
39	SLU 53	-0.08	-0.14	6.92	0	0	0
39	SLU 54	-0.08	-0.15	6.92	0	0	0
39	SLU 55	-0.08	-0.15	6.88	0	0	0
39	SLU 56	-0.08	-0.14	6.99	0	0	0
39	SLU 57	-0.08	-0.14	6.99	0	0	0
39	SLU 58	-0.08	-0.14	6.94	0	0	0
39	SLU 59	-0.08	-0.14	6.94	0	0	0
39	SLU 60	-0.08	-0.14	7.08	0	0	0
39	SLU 61	-0.08	-0.15	7.08	0	0	0
39	SLU 62	-0.09	-0.14	7.14	0	0	0
39	SLU 63	-0.09	-0.15	7.14	0	0	0
39	SLU 64	-0.06	-0.13	6.75	0	0	0
39	SLU 65	-0.06	-0.14	6.75	0	0	0
39	SLU 66	-0.07	-0.13	6.86	0	0	0
39	SLU 67	-0.07	-0.13	6.86	0	0	0
39	SLU 68	-0.07	-0.14	6.81	0	0	0
39	SLU 69	-0.07	-0.13	6.92	0	0	0
39	SLU 70	-0.07	-0.13	6.92	0	0	0
39	SLU 71	-0.07	-0.13	6.88	0	0	0
39	SLU 72	-0.07	-0.13	6.88	0	0	0
39	SLU 73	-0.08	-0.14	7.37	0	0	0
39	SLU 74	-0.09	-0.13	7.47	0	0	0
39	SLU 75	-0.09	-0.13	7.48	0	0	0
39	SLU 76	-0.09	-0.14	7.43	0	0	0
39	SLU 77	-0.09	-0.13	7.54	0	0	0
39	SLU 78	-0.09	-0.13	7.54	0	0	0
39	SLU 79	-0.09	-0.13	7.5	0	0	0
39	SLU 80	-0.09	-0.13	7.5	0	0	0
39	SLU 81	-0.09	-0.13	7.63	0	0	0
39	SLU 82	-0.09	-0.14	7.63	0	0	0
39	SLU 83	-0.09	-0.13	7.7	0	0	0
39	SLU 84	-0.09	-0.13	7.7	0	0	0
39	SLE RA 1	-0.05	-0.11	5.07	0	0	0
39	SLE RA 2	-0.05	-0.11	5.07	0	0	0
39	SLE RA 3	-0.05	-0.1	5.14	0	0	0
39	SLE RA 4	-0.05	-0.11	5.14	0	0	0
39	SLE RA 5	-0.05	-0.11	5.11	0	0	0
39	SLE RA 6	-0.05	-0.1	5.18	0	0	0
39	SLE RA 7	-0.05	-0.11	5.19	0	0	0
39	SLE RA 8	-0.05	-0.1	5.16	0	0	0
39	SLE RA 9	-0.05	-0.11	5.16	0	0	0
39	SLE RA 10	-0.06	-0.11	5.48	0	0	0
39	SLE RA 11	-0.06	-0.1	5.55	0	0	0
39	SLE RA 12	-0.06	-0.11	5.55	0	0	0
39	SLE RA 13	-0.06	-0.11	5.53	0	0	0
39	SLE RA 14	-0.06	-0.1	5.6	0	0	0
39	SLE RA 15	-0.06	-0.11	5.6	0	0	0
39	SLE RA 16	-0.06	-0.1	5.57	0	0	0
39	SLE RA 17	-0.06	-0.11	5.57	0	0	0
39	SLE RA 18	-0.06	-0.11	5.66	0	0	0
39	SLE RA 19	-0.06	-0.11	5.66	0	0	0
39	SLE RA 20	-0.07	-0.1	5.7	0	0	0
39	SLE RA 21	-0.07	-0.11	5.7	0	0	0
39	SLE FR 1	-0.05	-0.11	5.07	0	0	0
39	SLE FR 2	-0.05	-0.11	5.07	0	0	0
39	SLE FR 3	-0.05	-0.11	5.09	0	0	0
39	SLE FR 4	-0.05	-0.11	5.25	0	0	0
39	SLE FR 5	-0.05	-0.11	5.26	0	0	0
39	SLE FR 6	-0.06	-0.11	5.36	0	0	0
39	SLE QP 1	-0.05	-0.11	5.07	0	0	0
39	SLE QP 2	-0.05	-0.11	5.25	0	0	0
39	SLD 1	0.27	-0.04	5.14	0	0	0
39	SLD 2	0.28	-0.03	5.13	0	0	0
39	SLD 3	0.25	-0.14	5.15	0	0	0
39	SLD 4	0.25	-0.13	5.15	0	0	0
39	SLD 5	0.08	0.07	5.18	0	0	0
39	SLD 6	0.08	0.08	5.18	0	0	0
39	SLD 7	0	-0.28	5.25	0	0	0
39	SLD 8	0.01	-0.27	5.25	0	0	0
39	SLD 9	-0.11	0.06	5.25	0	0	0
39	SLD 10	-0.1	0.07	5.25	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
39	SLD 11	-0.19	-0.29	5.31	0	0	0
39	SLD 12	-0.18	-0.28	5.31	0	0	0
39	SLD 13	-0.36	-0.08	5.34	0	0	0
39	SLD 14	-0.35	-0.07	5.34	0	0	0
39	SLD 15	-0.38	-0.19	5.36	0	0	0
39	SLD 16	-0.37	-0.17	5.36	0	0	0
39	SLV 1	0.7	0.05	4.99	0	0	0
39	SLV 2	0.72	0.08	4.99	0	0	0
39	SLV 3	0.65	-0.19	5.03	0	0	0
39	SLV 4	0.66	-0.16	5.03	0	0	0
39	SLV 5	0.25	0.3	5.1	0	0	0
39	SLV 6	0.26	0.32	5.1	0	0	0
39	SLV 7	0.07	-0.5	5.25	0	0	0
39	SLV 8	0.08	-0.48	5.24	0	0	0
39	SLV 9	-0.19	0.27	5.25	0	0	0
39	SLV 10	-0.18	0.28	5.25	0	0	0
39	SLV 11	-0.37	-0.53	5.39	0	0	0
39	SLV 12	-0.36	-0.51	5.39	0	0	0
39	SLV 13	-0.77	-0.05	5.46	0	0	0
39	SLV 14	-0.75	-0.02	5.46	0	0	0
39	SLV 15	-0.82	-0.29	5.51	0	0	0
39	SLV 16	-0.81	-0.26	5.5	0	0	0
41	SLU 1	-0.06	-0.16	6.2	0	0	0
41	SLU 2	-0.06	-0.17	6.21	0	0	0
41	SLU 3	-0.06	-0.16	6.35	0	0	0
41	SLU 4	-0.06	-0.17	6.35	0	0	0
41	SLU 5	-0.06	-0.17	6.3	0	0	0
41	SLU 6	-0.07	-0.16	6.44	0	0	0
41	SLU 7	-0.07	-0.16	6.44	0	0	0
41	SLU 8	-0.07	-0.16	6.38	0	0	0
41	SLU 9	-0.07	-0.16	6.39	0	0	0
41	SLU 10	-0.08	-0.17	7.02	0	0	0
41	SLU 11	-0.08	-0.17	7.16	0	0	0
41	SLU 12	-0.08	-0.17	7.16	0	0	0
41	SLU 13	-0.09	-0.17	7.11	0	0	0
41	SLU 14	-0.09	-0.16	7.25	0	0	0
41	SLU 15	-0.09	-0.17	7.25	0	0	0
41	SLU 16	-0.09	-0.16	7.2	0	0	0
41	SLU 17	-0.09	-0.17	7.2	0	0	0
41	SLU 18	-0.09	-0.17	7.37	0	0	0
41	SLU 19	-0.09	-0.17	7.37	0	0	0
41	SLU 20	-0.1	-0.17	7.46	0	0	0
41	SLU 21	-0.1	-0.17	7.46	0	0	0
41	SLU 22	-0.07	-0.15	6.91	0	0	0
41	SLU 23	-0.07	-0.16	6.92	0	0	0
41	SLU 24	-0.07	-0.15	7.06	0	0	0
41	SLU 25	-0.07	-0.15	7.06	0	0	0
41	SLU 26	-0.07	-0.16	7.01	0	0	0
41	SLU 27	-0.08	-0.15	7.15	0	0	0
41	SLU 28	-0.08	-0.15	7.15	0	0	0
41	SLU 29	-0.08	-0.15	7.1	0	0	0
41	SLU 30	-0.08	-0.15	7.1	0	0	0
41	SLU 31	-0.09	-0.16	7.73	0	0	0
41	SLU 32	-0.1	-0.15	7.87	0	0	0
41	SLU 33	-0.1	-0.16	7.87	0	0	0
41	SLU 34	-0.1	-0.16	7.82	0	0	0
41	SLU 35	-0.1	-0.15	7.96	0	0	0
41	SLU 36	-0.1	-0.16	7.97	0	0	0
41	SLU 37	-0.1	-0.15	7.91	0	0	0
41	SLU 38	-0.1	-0.16	7.91	0	0	0
41	SLU 39	-0.1	-0.16	8.08	0	0	0
41	SLU 40	-0.1	-0.16	8.08	0	0	0
41	SLU 41	-0.11	-0.16	8.17	0	0	0
41	SLU 42	-0.11	-0.16	8.17	0	0	0
41	SLU 43	-0.07	-0.22	7.82	0	0	0
41	SLU 44	-0.07	-0.22	7.82	0	0	0
41	SLU 45	-0.07	-0.22	7.96	0	0	0
41	SLU 46	-0.07	-0.22	7.97	0	0	0
41	SLU 47	-0.07	-0.22	7.91	0	0	0
41	SLU 48	-0.08	-0.21	8.06	0	0	0
41	SLU 49	-0.08	-0.22	8.06	0	0	0
41	SLU 50	-0.08	-0.21	8	0	0	0
41	SLU 51	-0.08	-0.22	8	0	0	0
41	SLU 52	-0.09	-0.22	8.64	0	0	0
41	SLU 53	-0.1	-0.22	8.78	0	0	0
41	SLU 54	-0.1	-0.22	8.78	0	0	0
41	SLU 55	-0.1	-0.22	8.73	0	0	0
41	SLU 56	-0.1	-0.22	8.87	0	0	0
41	SLU 57	-0.1	-0.22	8.87	0	0	0
41	SLU 58	-0.1	-0.22	8.82	0	0	0
41	SLU 59	-0.1	-0.22	8.82	0	0	0
41	SLU 60	-0.1	-0.22	8.98	0	0	0
41	SLU 61	-0.1	-0.22	8.99	0	0	0
41	SLU 62	-0.11	-0.22	9.08	0	0	0
41	SLU 63	-0.11	-0.22	9.08	0	0	0
41	SLU 64	-0.08	-0.21	8.53	0	0	0
41	SLU 65	-0.08	-0.21	8.53	0	0	0
41	SLU 66	-0.08	-0.2	8.67	0	0	0
41	SLU 67	-0.08	-0.21	8.68	0	0	0
41	SLU 68	-0.08	-0.21	8.62	0	0	0





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
41	SLU 69	-0.09	-0.2	8.77	0	0	0
41	SLU 70	-0.09	-0.21	8.77	0	0	0
41	SLU 71	-0.09	-0.2	8.71	0	0	0
41	SLU 72	-0.09	-0.21	8.71	0	0	0
41	SLU 73	-0.1	-0.21	9.35	0	0	0
41	SLU 74	-0.11	-0.21	9.49	0	0	0
41	SLU 75	-0.11	-0.21	9.49	0	0	0
41	SLU 76	-0.11	-0.21	9.44	0	0	0
41	SLU 77	-0.11	-0.21	9.58	0	0	0
41	SLU 78	-0.11	-0.21	9.58	0	0	0
41	SLU 79	-0.11	-0.21	9.53	0	0	0
41	SLU 80	-0.11	-0.21	9.53	0	0	0
41	SLU 81	-0.11	-0.21	9.69	0	0	0
41	SLU 82	-0.11	-0.21	9.7	0	0	0
41	SLU 83	-0.12	-0.21	9.79	0	0	0
41	SLU 84	-0.12	-0.21	9.79	0	0	0
41	SLE RA 1	-0.06	-0.16	6.41	0	0	0
41	SLE RA 2	-0.06	-0.16	6.41	0	0	0
41	SLE RA 3	-0.06	-0.16	6.5	0	0	0
41	SLE RA 4	-0.06	-0.16	6.5	0	0	0
41	SLE RA 5	-0.06	-0.16	6.47	0	0	0
41	SLE RA 6	-0.07	-0.16	6.56	0	0	0
41	SLE RA 7	-0.07	-0.16	6.56	0	0	0
41	SLE RA 8	-0.07	-0.16	6.53	0	0	0
41	SLE RA 9	-0.07	-0.16	6.53	0	0	0
41	SLE RA 10	-0.08	-0.17	6.95	0	0	0
41	SLE RA 11	-0.08	-0.16	7.05	0	0	0
41	SLE RA 12	-0.08	-0.16	7.05	0	0	0
41	SLE RA 13	-0.08	-0.16	7.01	0	0	0
41	SLE RA 14	-0.08	-0.16	7.11	0	0	0
41	SLE RA 15	-0.08	-0.16	7.11	0	0	0
41	SLE RA 16	-0.08	-0.16	7.07	0	0	0
41	SLE RA 17	-0.08	-0.16	7.07	0	0	0
41	SLE RA 18	-0.08	-0.16	7.18	0	0	0
41	SLE RA 19	-0.08	-0.16	7.18	0	0	0
41	SLE RA 20	-0.09	-0.16	7.24	0	0	0
41	SLE RA 21	-0.09	-0.16	7.24	0	0	0
41	SLE FR 1	-0.06	-0.16	6.41	0	0	0
41	SLE FR 2	-0.06	-0.16	6.41	0	0	0
41	SLE FR 3	-0.06	-0.16	6.43	0	0	0
41	SLE FR 4	-0.07	-0.16	6.64	0	0	0
41	SLE FR 5	-0.07	-0.16	6.66	0	0	0
41	SLE FR 6	-0.07	-0.16	6.79	0	0	0
41	SLE QP 1	-0.06	-0.16	6.41	0	0	0
41	SLE QP 2	-0.07	-0.16	6.64	0	0	0
41	SLD 1	0.33	-0.07	6.65	0	0	0
41	SLD 2	0.34	-0.07	6.65	0	0	0
41	SLD 3	0.3	-0.2	6.7	0	0	0
41	SLD 4	0.31	-0.2	6.71	0	0	0
41	SLD 5	0.1	0.07	6.55	0	0	0
41	SLD 6	0.1	0.07	6.56	0	0	0
41	SLD 7	0	-0.38	6.74	0	0	0
41	SLD 8	0	-0.38	6.75	0	0	0
41	SLD 9	-0.13	0.05	6.53	0	0	0
41	SLD 10	-0.13	0.06	6.53	0	0	0
41	SLD 11	-0.23	-0.39	6.72	0	0	0
41	SLD 12	-0.23	-0.39	6.72	0	0	0
41	SLD 13	-0.44	-0.12	6.57	0	0	0
41	SLD 14	-0.43	-0.12	6.57	0	0	0
41	SLD 15	-0.47	-0.26	6.63	0	0	0
41	SLD 16	-0.46	-0.25	6.63	0	0	0
41	SLV 1	0.86	0.05	6.66	0	0	0
41	SLV 2	0.88	0.06	6.67	0	0	0
41	SLV 3	0.79	-0.26	6.79	0	0	0
41	SLV 4	0.81	-0.25	6.8	0	0	0
41	SLV 5	0.31	0.36	6.45	0	0	0
41	SLV 6	0.32	0.37	6.45	0	0	0
41	SLV 7	0.09	-0.65	6.88	0	0	0
41	SLV 8	0.1	-0.65	6.88	0	0	0
41	SLV 9	-0.23	0.33	6.39	0	0	0
41	SLV 10	-0.22	0.33	6.4	0	0	0
41	SLV 11	-0.45	-0.69	6.83	0	0	0
41	SLV 12	-0.44	-0.68	6.83	0	0	0
41	SLV 13	-0.94	-0.07	6.48	0	0	0
41	SLV 14	-0.92	-0.07	6.49	0	0	0
41	SLV 15	-1.01	-0.38	6.61	0	0	0
41	SLV 16	-0.99	-0.37	6.62	0	0	0
42	SLU 1	-0.11	-0.3	11.75	0	0	0
42	SLU 2	-0.11	-0.31	11.76	0	0	0
42	SLU 3	-0.12	-0.3	12.02	0	0	0
42	SLU 4	-0.12	-0.3	12.02	0	0	0
42	SLU 5	-0.12	-0.3	11.92	0	0	0
42	SLU 6	-0.12	-0.29	12.19	0	0	0
42	SLU 7	-0.12	-0.3	12.19	0	0	0
42	SLU 8	-0.13	-0.29	12.09	0	0	0
42	SLU 9	-0.13	-0.3	12.09	0	0	0
42	SLU 10	-0.15	-0.31	13.28	0	0	0
42	SLU 11	-0.16	-0.3	13.55	0	0	0
42	SLU 12	-0.16	-0.3	13.55	0	0	0
42	SLU 13	-0.16	-0.31	13.45	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
42	SLU 14	-0.17	-0.3	13.72	0	0	0
42	SLU 15	-0.17	-0.3	13.72	0	0	0
42	SLU 16	-0.17	-0.3	13.61	0	0	0
42	SLU 17	-0.17	-0.3	13.62	0	0	0
42	SLU 18	-0.17	-0.3	13.93	0	0	0
42	SLU 19	-0.17	-0.31	13.94	0	0	0
42	SLU 20	-0.18	-0.3	14.1	0	0	0
42	SLU 21	-0.18	-0.31	14.1	0	0	0
42	SLU 22	-0.13	-0.28	13.09	0	0	0
42	SLU 23	-0.13	-0.28	13.1	0	0	0
42	SLU 24	-0.14	-0.27	13.36	0	0	0
42	SLU 25	-0.14	-0.28	13.37	0	0	0
42	SLU 26	-0.14	-0.28	13.27	0	0	0
42	SLU 27	-0.14	-0.27	13.53	0	0	0
42	SLU 28	-0.14	-0.28	13.53	0	0	0
42	SLU 29	-0.15	-0.27	13.43	0	0	0
42	SLU 30	-0.15	-0.28	13.43	0	0	0
42	SLU 31	-0.17	-0.29	14.63	0	0	0
42	SLU 32	-0.18	-0.28	14.89	0	0	0
42	SLU 33	-0.18	-0.28	14.89	0	0	0
42	SLU 34	-0.18	-0.28	14.79	0	0	0
42	SLU 35	-0.19	-0.28	15.06	0	0	0
42	SLU 36	-0.19	-0.28	15.06	0	0	0
42	SLU 37	-0.19	-0.28	14.96	0	0	0
42	SLU 38	-0.19	-0.28	14.96	0	0	0
42	SLU 39	-0.19	-0.28	15.28	0	0	0
42	SLU 40	-0.19	-0.29	15.28	0	0	0
42	SLU 41	-0.2	-0.28	15.44	0	0	0
42	SLU 42	-0.2	-0.28	15.45	0	0	0
42	SLU 43	-0.13	-0.39	14.82	0	0	0
42	SLU 44	-0.13	-0.4	14.82	0	0	0
42	SLU 45	-0.14	-0.39	15.09	0	0	0
42	SLU 46	-0.14	-0.4	15.09	0	0	0
42	SLU 47	-0.14	-0.4	14.99	0	0	0
42	SLU 48	-0.15	-0.39	15.25	0	0	0
42	SLU 49	-0.15	-0.4	15.26	0	0	0
42	SLU 50	-0.15	-0.39	15.15	0	0	0
42	SLU 51	-0.15	-0.4	15.15	0	0	0
42	SLU 52	-0.18	-0.41	16.35	0	0	0
42	SLU 53	-0.19	-0.4	16.61	0	0	0
42	SLU 54	-0.19	-0.4	16.62	0	0	0
42	SLU 55	-0.19	-0.4	16.52	0	0	0
42	SLU 56	-0.2	-0.39	16.78	0	0	0
42	SLU 57	-0.2	-0.4	16.78	0	0	0
42	SLU 58	-0.2	-0.39	16.68	0	0	0
42	SLU 59	-0.2	-0.4	16.68	0	0	0
42	SLU 60	-0.2	-0.4	17	0	0	0
42	SLU 61	-0.2	-0.4	17	0	0	0
42	SLU 62	-0.21	-0.4	17.17	0	0	0
42	SLU 63	-0.21	-0.4	17.17	0	0	0
42	SLU 64	-0.15	-0.37	16.16	0	0	0
42	SLU 65	-0.15	-0.38	16.16	0	0	0
42	SLU 66	-0.16	-0.37	16.43	0	0	0
42	SLU 67	-0.16	-0.37	16.43	0	0	0
42	SLU 68	-0.16	-0.38	16.33	0	0	0
42	SLU 69	-0.17	-0.37	16.6	0	0	0
42	SLU 70	-0.17	-0.37	16.6	0	0	0
42	SLU 71	-0.17	-0.37	16.49	0	0	0
42	SLU 72	-0.17	-0.37	16.5	0	0	0
42	SLU 73	-0.2	-0.38	17.69	0	0	0
42	SLU 74	-0.21	-0.37	17.96	0	0	0
42	SLU 75	-0.21	-0.38	17.96	0	0	0
42	SLU 76	-0.21	-0.38	17.86	0	0	0
42	SLU 77	-0.22	-0.37	18.12	0	0	0
42	SLU 78	-0.22	-0.38	18.13	0	0	0
42	SLU 79	-0.22	-0.37	18.02	0	0	0
42	SLU 80	-0.22	-0.38	18.02	0	0	0
42	SLU 81	-0.22	-0.38	18.34	0	0	0
42	SLU 82	-0.22	-0.38	18.34	0	0	0
42	SLU 83	-0.23	-0.38	18.51	0	0	0
42	SLU 84	-0.23	-0.38	18.51	0	0	0
42	SLE RA 1	-0.11	-0.29	12.13	0	0	0
42	SLE RA 2	-0.11	-0.3	12.14	0	0	0
42	SLE RA 3	-0.12	-0.29	12.31	0	0	0
42	SLE RA 4	-0.12	-0.29	12.32	0	0	0
42	SLE RA 5	-0.12	-0.29	12.25	0	0	0
42	SLE RA 6	-0.12	-0.29	12.43	0	0	0
42	SLE RA 7	-0.12	-0.29	12.43	0	0	0
42	SLE RA 8	-0.12	-0.29	12.36	0	0	0
42	SLE RA 9	-0.12	-0.29	12.36	0	0	0
42	SLE RA 10	-0.14	-0.3	13.16	0	0	0
42	SLE RA 11	-0.15	-0.29	13.33	0	0	0
42	SLE RA 12	-0.15	-0.3	13.33	0	0	0
42	SLE RA 13	-0.15	-0.3	13.27	0	0	0
42	SLE RA 14	-0.16	-0.29	13.44	0	0	0
42	SLE RA 15	-0.16	-0.29	13.45	0	0	0
42	SLE RA 16	-0.16	-0.29	13.38	0	0	0
42	SLE RA 17	-0.16	-0.29	13.38	0	0	0
42	SLE RA 18	-0.16	-0.29	13.59	0	0	0
42	SLE RA 19	-0.16	-0.3	13.59	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
42	SLE RA 20	-0.16	-0.29	13.7	0	0	0
42	SLE RA 21	-0.16	-0.3	13.7	0	0	0
42	SLE FR 1	-0.11	-0.29	12.13	0	0	0
42	SLE FR 2	-0.11	-0.29	12.13	0	0	0
42	SLE FR 3	-0.11	-0.29	12.18	0	0	0
42	SLE FR 4	-0.13	-0.29	12.57	0	0	0
42	SLE FR 5	-0.13	-0.29	12.62	0	0	0
42	SLE FR 6	-0.13	-0.29	12.86	0	0	0
42	SLE QP 1	-0.11	-0.29	12.13	0	0	0
42	SLE QP 2	-0.13	-0.29	12.57	0	0	0
42	SLD 1	0.63	-0.12	12.46	0	0	0
42	SLD 2	0.64	-0.11	12.46	0	0	0
42	SLD 3	0.57	-0.38	12.55	0	0	0
42	SLD 4	0.59	-0.36	12.55	0	0	0
42	SLD 5	0.18	0.14	12.4	0	0	0
42	SLD 6	0.19	0.15	12.4	0	0	0
42	SLD 7	0	-0.71	12.7	0	0	0
42	SLD 8	0.01	-0.7	12.71	0	0	0
42	SLD 9	-0.26	0.11	12.44	0	0	0
42	SLD 10	-0.25	0.12	12.44	0	0	0
42	SLD 11	-0.44	-0.74	12.74	0	0	0
42	SLD 12	-0.43	-0.73	12.74	0	0	0
42	SLD 13	-0.84	-0.22	12.59	0	0	0
42	SLD 14	-0.83	-0.21	12.59	0	0	0
42	SLD 15	-0.9	-0.48	12.68	0	0	0
42	SLD 16	-0.88	-0.46	12.68	0	0	0
42	SLV 1	1.64	0.1	12.31	0	0	0
42	SLV 2	1.67	0.13	12.32	0	0	0
42	SLV 3	1.51	-0.48	12.52	0	0	0
42	SLV 4	1.54	-0.45	12.53	0	0	0
42	SLV 5	0.59	0.69	12.18	0	0	0
42	SLV 6	0.62	0.71	12.19	0	0	0
42	SLV 7	0.16	-1.23	12.87	0	0	0
42	SLV 8	0.19	-1.21	12.87	0	0	0
42	SLV 9	-0.44	0.62	12.27	0	0	0
42	SLV 10	-0.42	0.64	12.28	0	0	0
42	SLV 11	-0.87	-1.3	12.96	0	0	0
42	SLV 12	-0.85	-1.28	12.96	0	0	0
42	SLV 13	-1.8	-0.14	12.61	0	0	0
42	SLV 14	-1.76	-0.11	12.62	0	0	0
42	SLV 15	-1.93	-0.71	12.82	0	0	0
42	SLV 16	-1.89	-0.68	12.83	0	0	0
43	SLU 1	-0.1	-0.27	10.94	0	0	0
43	SLU 2	-0.1	-0.27	10.94	0	0	0
43	SLU 3	-0.11	-0.26	11.19	0	0	0
43	SLU 4	-0.11	-0.27	11.19	0	0	0
43	SLU 5	-0.11	-0.27	11.1	0	0	0
43	SLU 6	-0.12	-0.26	11.34	0	0	0
43	SLU 7	-0.12	-0.27	11.34	0	0	0
43	SLU 8	-0.12	-0.26	11.24	0	0	0
43	SLU 9	-0.12	-0.27	11.25	0	0	0
43	SLU 10	-0.15	-0.27	12.35	0	0	0
43	SLU 11	-0.15	-0.27	12.6	0	0	0
43	SLU 12	-0.15	-0.27	12.6	0	0	0
43	SLU 13	-0.15	-0.27	12.5	0	0	0
43	SLU 14	-0.16	-0.26	12.75	0	0	0
43	SLU 15	-0.16	-0.27	12.75	0	0	0
43	SLU 16	-0.16	-0.26	12.65	0	0	0
43	SLU 17	-0.16	-0.27	12.66	0	0	0
43	SLU 18	-0.16	-0.27	12.95	0	0	0
43	SLU 19	-0.16	-0.27	12.95	0	0	0
43	SLU 20	-0.17	-0.27	13.1	0	0	0
43	SLU 21	-0.17	-0.27	13.11	0	0	0
43	SLU 22	-0.12	-0.24	12.19	0	0	0
43	SLU 23	-0.12	-0.25	12.19	0	0	0
43	SLU 24	-0.13	-0.24	12.43	0	0	0
43	SLU 25	-0.13	-0.25	12.44	0	0	0
43	SLU 26	-0.13	-0.25	12.34	0	0	0
43	SLU 27	-0.14	-0.24	12.59	0	0	0
43	SLU 28	-0.14	-0.24	12.59	0	0	0
43	SLU 29	-0.14	-0.24	12.49	0	0	0
43	SLU 30	-0.14	-0.24	12.49	0	0	0
43	SLU 31	-0.16	-0.25	13.6	0	0	0
43	SLU 32	-0.17	-0.24	13.84	0	0	0
43	SLU 33	-0.17	-0.25	13.85	0	0	0
43	SLU 34	-0.17	-0.25	13.75	0	0	0
43	SLU 35	-0.18	-0.24	14	0	0	0
43	SLU 36	-0.18	-0.25	14	0	0	0
43	SLU 37	-0.18	-0.24	13.9	0	0	0
43	SLU 38	-0.18	-0.25	13.9	0	0	0
43	SLU 39	-0.18	-0.25	14.2	0	0	0
43	SLU 40	-0.18	-0.25	14.2	0	0	0
43	SLU 41	-0.19	-0.25	14.35	0	0	0
43	SLU 42	-0.19	-0.25	14.35	0	0	0
43	SLU 43	-0.12	-0.35	13.79	0	0	0
43	SLU 44	-0.12	-0.36	13.8	0	0	0
43	SLU 45	-0.13	-0.35	14.04	0	0	0
43	SLU 46	-0.13	-0.36	14.04	0	0	0
43	SLU 47	-0.13	-0.36	13.95	0	0	0
43	SLU 48	-0.14	-0.35	14.19	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
43	SLU 49	-0.14	-0.35	14.2	0	0	0
43	SLU 50	-0.14	-0.35	14.1	0	0	0
43	SLU 51	-0.14	-0.35	14.1	0	0	0
43	SLU 52	-0.17	-0.36	15.21	0	0	0
43	SLU 53	-0.18	-0.35	15.45	0	0	0
43	SLU 54	-0.18	-0.36	15.45	0	0	0
43	SLU 55	-0.18	-0.36	15.36	0	0	0
43	SLU 56	-0.19	-0.35	15.6	0	0	0
43	SLU 57	-0.19	-0.36	15.61	0	0	0
43	SLU 58	-0.19	-0.35	15.51	0	0	0
43	SLU 59	-0.19	-0.36	15.51	0	0	0
43	SLU 60	-0.19	-0.36	15.81	0	0	0
43	SLU 61	-0.19	-0.36	15.81	0	0	0
43	SLU 62	-0.2	-0.35	15.96	0	0	0
43	SLU 63	-0.2	-0.36	15.96	0	0	0
43	SLU 64	-0.14	-0.33	15.04	0	0	0
43	SLU 65	-0.14	-0.34	15.04	0	0	0
43	SLU 66	-0.15	-0.33	15.29	0	0	0
43	SLU 67	-0.15	-0.33	15.29	0	0	0
43	SLU 68	-0.15	-0.34	15.2	0	0	0
43	SLU 69	-0.16	-0.33	15.44	0	0	0
43	SLU 70	-0.16	-0.33	15.44	0	0	0
43	SLU 71	-0.16	-0.33	15.35	0	0	0
43	SLU 72	-0.16	-0.33	15.35	0	0	0
43	SLU 73	-0.19	-0.34	16.45	0	0	0
43	SLU 74	-0.2	-0.33	16.7	0	0	0
43	SLU 75	-0.2	-0.34	16.7	0	0	0
43	SLU 76	-0.2	-0.34	16.61	0	0	0
43	SLU 77	-0.21	-0.33	16.85	0	0	0
43	SLU 78	-0.21	-0.33	16.85	0	0	0
43	SLU 79	-0.21	-0.33	16.75	0	0	0
43	SLU 80	-0.21	-0.33	16.76	0	0	0
43	SLU 81	-0.21	-0.33	17.05	0	0	0
43	SLU 82	-0.21	-0.34	17.06	0	0	0
43	SLU 83	-0.22	-0.33	17.21	0	0	0
43	SLU 84	-0.22	-0.34	17.21	0	0	0
43	SLE RA 1	-0.11	-0.26	11.3	0	0	0
43	SLE RA 2	-0.11	-0.26	11.3	0	0	0
43	SLE RA 3	-0.11	-0.26	11.46	0	0	0
43	SLE RA 4	-0.11	-0.26	11.46	0	0	0
43	SLE RA 5	-0.11	-0.26	11.4	0	0	0
43	SLE RA 6	-0.12	-0.26	11.56	0	0	0
43	SLE RA 7	-0.12	-0.26	11.56	0	0	0
43	SLE RA 8	-0.12	-0.26	11.5	0	0	0
43	SLE RA 9	-0.12	-0.26	11.5	0	0	0
43	SLE RA 10	-0.14	-0.27	12.24	0	0	0
43	SLE RA 11	-0.14	-0.26	12.4	0	0	0
43	SLE RA 12	-0.14	-0.26	12.4	0	0	0
43	SLE RA 13	-0.14	-0.26	12.34	0	0	0
43	SLE RA 14	-0.15	-0.26	12.5	0	0	0
43	SLE RA 15	-0.15	-0.26	12.5	0	0	0
43	SLE RA 16	-0.15	-0.26	12.44	0	0	0
43	SLE RA 17	-0.15	-0.26	12.44	0	0	0
43	SLE RA 18	-0.15	-0.26	12.64	0	0	0
43	SLE RA 19	-0.15	-0.26	12.64	0	0	0
43	SLE RA 20	-0.15	-0.26	12.74	0	0	0
43	SLE RA 21	-0.15	-0.26	12.74	0	0	0
43	SLE FR 1	-0.11	-0.26	11.3	0	0	0
43	SLE FR 2	-0.11	-0.26	11.3	0	0	0
43	SLE FR 3	-0.11	-0.26	11.34	0	0	0
43	SLE FR 4	-0.12	-0.26	11.7	0	0	0
43	SLE FR 5	-0.12	-0.26	11.74	0	0	0
43	SLE FR 6	-0.13	-0.26	11.97	0	0	0
43	SLE QP 1	-0.11	-0.26	11.3	0	0	0
43	SLE QP 2	-0.12	-0.26	11.7	0	0	0
43	SLD 1	0.59	-0.1	11.55	0	0	0
43	SLD 2	0.61	-0.09	11.56	0	0	0
43	SLD 3	0.54	-0.34	11.63	0	0	0
43	SLD 4	0.55	-0.32	11.63	0	0	0
43	SLD 5	0.17	0.14	11.54	0	0	0
43	SLD 6	0.18	0.15	11.54	0	0	0
43	SLD 7	0	-0.65	11.79	0	0	0
43	SLD 8	0	-0.64	11.79	0	0	0
43	SLD 9	-0.24	0.11	11.61	0	0	0
43	SLD 10	-0.23	0.13	11.61	0	0	0
43	SLD 11	-0.42	-0.67	11.85	0	0	0
43	SLD 12	-0.41	-0.66	11.85	0	0	0
43	SLD 13	-0.79	-0.2	11.77	0	0	0
43	SLD 14	-0.78	-0.18	11.77	0	0	0
43	SLD 15	-0.84	-0.43	11.84	0	0	0
43	SLD 16	-0.83	-0.42	11.84	0	0	0
43	SLV 1	1.55	0.1	11.36	0	0	0
43	SLV 2	1.57	0.14	11.37	0	0	0
43	SLV 3	1.42	-0.44	11.53	0	0	0
43	SLV 4	1.45	-0.4	11.53	0	0	0
43	SLV 5	0.56	0.65	11.35	0	0	0
43	SLV 6	0.58	0.68	11.35	0	0	0
43	SLV 7	0.15	-1.13	11.9	0	0	0
43	SLV 8	0.17	-1.11	11.9	0	0	0
43	SLV 9	-0.41	0.59	11.5	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
43	SLV 10	-0.39	0.61	11.5	0	0	0
43	SLV 11	-0.82	-1.2	12.05	0	0	0
43	SLV 12	-0.8	-1.17	12.05	0	0	0
43	SLV 13	-1.69	-0.12	11.86	0	0	0
43	SLV 14	-1.66	-0.08	11.87	0	0	0
43	SLV 15	-1.81	-0.66	12.03	0	0	0
43	SLV 16	-1.78	-0.62	12.03	0	0	0
44	SLU 1	-0.09	-0.23	9.64	0	0	0
44	SLU 2	-0.09	-0.23	9.65	0	0	0
44	SLU 3	-0.1	-0.22	9.86	0	0	0
44	SLU 4	-0.1	-0.23	9.86	0	0	0
44	SLU 5	-0.1	-0.23	9.78	0	0	0
44	SLU 6	-0.11	-0.22	9.99	0	0	0
44	SLU 7	-0.11	-0.22	9.99	0	0	0
44	SLU 8	-0.11	-0.22	9.91	0	0	0
44	SLU 9	-0.11	-0.22	9.91	0	0	0
44	SLU 10	-0.13	-0.23	10.88	0	0	0
44	SLU 11	-0.14	-0.22	11.09	0	0	0
44	SLU 12	-0.14	-0.23	11.09	0	0	0
44	SLU 13	-0.14	-0.23	11.01	0	0	0
44	SLU 14	-0.15	-0.22	11.22	0	0	0
44	SLU 15	-0.15	-0.23	11.23	0	0	0
44	SLU 16	-0.15	-0.22	11.14	0	0	0
44	SLU 17	-0.15	-0.23	11.14	0	0	0
44	SLU 18	-0.15	-0.23	11.4	0	0	0
44	SLU 19	-0.15	-0.23	11.41	0	0	0
44	SLU 20	-0.16	-0.22	11.54	0	0	0
44	SLU 21	-0.16	-0.23	11.54	0	0	0
44	SLU 22	-0.11	-0.2	10.74	0	0	0
44	SLU 23	-0.11	-0.21	10.75	0	0	0
44	SLU 24	-0.12	-0.2	10.96	0	0	0
44	SLU 25	-0.12	-0.21	10.96	0	0	0
44	SLU 26	-0.12	-0.21	10.88	0	0	0
44	SLU 27	-0.12	-0.2	11.09	0	0	0
44	SLU 28	-0.12	-0.2	11.09	0	0	0
44	SLU 29	-0.12	-0.2	11.01	0	0	0
44	SLU 30	-0.12	-0.2	11.01	0	0	0
44	SLU 31	-0.15	-0.21	11.98	0	0	0
44	SLU 32	-0.16	-0.2	12.19	0	0	0
44	SLU 33	-0.16	-0.21	12.19	0	0	0
44	SLU 34	-0.16	-0.21	12.11	0	0	0
44	SLU 35	-0.16	-0.2	12.32	0	0	0
44	SLU 36	-0.16	-0.2	12.32	0	0	0
44	SLU 37	-0.16	-0.2	12.24	0	0	0
44	SLU 38	-0.16	-0.2	12.24	0	0	0
44	SLU 39	-0.17	-0.21	12.5	0	0	0
44	SLU 40	-0.17	-0.21	12.5	0	0	0
44	SLU 41	-0.17	-0.2	12.63	0	0	0
44	SLU 42	-0.17	-0.21	12.64	0	0	0
44	SLU 43	-0.11	-0.3	12.16	0	0	0
44	SLU 44	-0.11	-0.31	12.16	0	0	0
44	SLU 45	-0.12	-0.3	12.38	0	0	0
44	SLU 46	-0.12	-0.3	12.38	0	0	0
44	SLU 47	-0.12	-0.3	12.3	0	0	0
44	SLU 48	-0.13	-0.3	12.51	0	0	0
44	SLU 49	-0.13	-0.3	12.51	0	0	0
44	SLU 50	-0.13	-0.3	12.42	0	0	0
44	SLU 51	-0.13	-0.3	12.43	0	0	0
44	SLU 52	-0.15	-0.31	13.4	0	0	0
44	SLU 53	-0.16	-0.3	13.61	0	0	0
44	SLU 54	-0.16	-0.3	13.61	0	0	0
44	SLU 55	-0.16	-0.3	13.53	0	0	0
44	SLU 56	-0.17	-0.3	13.74	0	0	0
44	SLU 57	-0.17	-0.3	13.74	0	0	0
44	SLU 58	-0.17	-0.3	13.66	0	0	0
44	SLU 59	-0.17	-0.3	13.66	0	0	0
44	SLU 60	-0.17	-0.3	13.92	0	0	0
44	SLU 61	-0.17	-0.3	13.92	0	0	0
44	SLU 62	-0.18	-0.3	14.05	0	0	0
44	SLU 63	-0.18	-0.3	14.05	0	0	0
44	SLU 64	-0.13	-0.28	13.26	0	0	0
44	SLU 65	-0.13	-0.28	13.26	0	0	0
44	SLU 66	-0.14	-0.28	13.48	0	0	0
44	SLU 67	-0.14	-0.28	13.48	0	0	0
44	SLU 68	-0.14	-0.28	13.39	0	0	0
44	SLU 69	-0.15	-0.28	13.61	0	0	0
44	SLU 70	-0.15	-0.28	13.61	0	0	0
44	SLU 71	-0.15	-0.28	13.52	0	0	0
44	SLU 72	-0.15	-0.28	13.53	0	0	0
44	SLU 73	-0.17	-0.29	14.49	0	0	0
44	SLU 74	-0.18	-0.28	14.71	0	0	0
44	SLU 75	-0.18	-0.28	14.71	0	0	0
44	SLU 76	-0.18	-0.28	14.63	0	0	0
44	SLU 77	-0.19	-0.28	14.84	0	0	0
44	SLU 78	-0.19	-0.28	14.84	0	0	0
44	SLU 79	-0.19	-0.28	14.75	0	0	0
44	SLU 80	-0.19	-0.28	14.76	0	0	0
44	SLU 81	-0.19	-0.28	15.02	0	0	0
44	SLU 82	-0.19	-0.28	15.02	0	0	0
44	SLU 83	-0.2	-0.28	15.15	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
44	SLU 84	-0.2	-0.28	15.15	0	0	0
44	SLE RA 1	-0.1	-0.22	9.96	0	0	0
44	SLE RA 2	-0.1	-0.22	9.96	0	0	0
44	SLE RA 3	-0.1	-0.22	10.1	0	0	0
44	SLE RA 4	-0.1	-0.22	10.1	0	0	0
44	SLE RA 5	-0.1	-0.22	10.05	0	0	0
44	SLE RA 6	-0.11	-0.22	10.19	0	0	0
44	SLE RA 7	-0.11	-0.22	10.19	0	0	0
44	SLE RA 8	-0.11	-0.22	10.13	0	0	0
44	SLE RA 9	-0.11	-0.22	10.14	0	0	0
44	SLE RA 10	-0.12	-0.22	10.78	0	0	0
44	SLE RA 11	-0.13	-0.22	10.92	0	0	0
44	SLE RA 12	-0.13	-0.22	10.92	0	0	0
44	SLE RA 13	-0.13	-0.22	10.87	0	0	0
44	SLE RA 14	-0.13	-0.22	11.01	0	0	0
44	SLE RA 15	-0.13	-0.22	11.01	0	0	0
44	SLE RA 16	-0.13	-0.22	10.95	0	0	0
44	SLE RA 17	-0.13	-0.22	10.96	0	0	0
44	SLE RA 18	-0.13	-0.22	11.13	0	0	0
44	SLE RA 19	-0.13	-0.22	11.13	0	0	0
44	SLE RA 20	-0.14	-0.22	11.22	0	0	0
44	SLE RA 21	-0.14	-0.22	11.22	0	0	0
44	SLE FR 1	-0.1	-0.22	9.96	0	0	0
44	SLE FR 2	-0.1	-0.22	9.96	0	0	0
44	SLE FR 3	-0.1	-0.22	9.99	0	0	0
44	SLE FR 4	-0.11	-0.22	10.31	0	0	0
44	SLE FR 5	-0.11	-0.22	10.35	0	0	0
44	SLE FR 6	-0.12	-0.22	10.54	0	0	0
44	SLE QP 1	-0.1	-0.22	9.96	0	0	0
44	SLE QP 2	-0.11	-0.22	10.31	0	0	0
44	SLD 1	0.53	-0.08	10.14	0	0	0
44	SLD 2	0.54	-0.06	10.14	0	0	0
44	SLD 3	0.48	-0.29	10.2	0	0	0
44	SLD 4	0.49	-0.27	10.2	0	0	0
44	SLD 5	0.15	0.14	10.17	0	0	0
44	SLD 6	0.16	0.15	10.17	0	0	0
44	SLD 7	0	-0.56	10.37	0	0	0
44	SLD 8	0	-0.55	10.37	0	0	0
44	SLD 9	-0.22	0.11	10.25	0	0	0
44	SLD 10	-0.21	0.12	10.25	0	0	0
44	SLD 11	-0.38	-0.59	10.45	0	0	0
44	SLD 12	-0.37	-0.57	10.45	0	0	0
44	SLD 13	-0.71	-0.17	10.43	0	0	0
44	SLD 14	-0.7	-0.15	10.43	0	0	0
44	SLD 15	-0.75	-0.38	10.48	0	0	0
44	SLD 16	-0.74	-0.36	10.48	0	0	0
44	SLV 1	1.38	0.09	9.91	0	0	0
44	SLV 2	1.4	0.14	9.9	0	0	0
44	SLV 3	1.27	-0.38	10.04	0	0	0
44	SLV 4	1.29	-0.33	10.04	0	0	0
44	SLV 5	0.5	0.59	9.98	0	0	0
44	SLV 6	0.51	0.61	9.98	0	0	0
44	SLV 7	0.14	-0.99	10.43	0	0	0
44	SLV 8	0.15	-0.96	10.43	0	0	0
44	SLV 9	-0.37	0.53	10.19	0	0	0
44	SLV 10	-0.35	0.55	10.19	0	0	0
44	SLV 11	-0.73	-1.05	10.64	0	0	0
44	SLV 12	-0.71	-1.02	10.64	0	0	0
44	SLV 13	-1.51	-0.1	10.58	0	0	0
44	SLV 14	-1.49	-0.06	10.58	0	0	0
44	SLV 15	-1.62	-0.58	10.72	0	0	0
44	SLV 16	-1.59	-0.53	10.72	0	0	0
45	SLU 1	-0.07	-0.15	6.62	0	0	0
45	SLU 2	-0.07	-0.15	6.62	0	0	0
45	SLU 3	-0.07	-0.15	6.76	0	0	0
45	SLU 4	-0.07	-0.15	6.77	0	0	0
45	SLU 5	-0.07	-0.15	6.71	0	0	0
45	SLU 6	-0.08	-0.15	6.85	0	0	0
45	SLU 7	-0.08	-0.15	6.85	0	0	0
45	SLU 8	-0.08	-0.15	6.79	0	0	0
45	SLU 9	-0.08	-0.15	6.8	0	0	0
45	SLU 10	-0.09	-0.15	7.46	0	0	0
45	SLU 11	-0.1	-0.15	7.6	0	0	0
45	SLU 12	-0.1	-0.15	7.6	0	0	0
45	SLU 13	-0.1	-0.15	7.55	0	0	0
45	SLU 14	-0.1	-0.15	7.69	0	0	0
45	SLU 15	-0.1	-0.15	7.69	0	0	0
45	SLU 16	-0.1	-0.15	7.63	0	0	0
45	SLU 17	-0.1	-0.15	7.64	0	0	0
45	SLU 18	-0.11	-0.15	7.82	0	0	0
45	SLU 19	-0.11	-0.15	7.82	0	0	0
45	SLU 20	-0.11	-0.15	7.9	0	0	0
45	SLU 21	-0.11	-0.15	7.91	0	0	0
45	SLU 22	-0.08	-0.13	7.37	0	0	0
45	SLU 23	-0.08	-0.14	7.37	0	0	0
45	SLU 24	-0.08	-0.13	7.52	0	0	0
45	SLU 25	-0.08	-0.14	7.52	0	0	0
45	SLU 26	-0.08	-0.14	7.46	0	0	0
45	SLU 27	-0.09	-0.13	7.61	0	0	0
45	SLU 28	-0.09	-0.13	7.61	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
45	SLU 29	-0.09	-0.13	7.55	0	0	0
45	SLU 30	-0.09	-0.13	7.55	0	0	0
45	SLU 31	-0.11	-0.14	8.21	0	0	0
45	SLU 32	-0.11	-0.13	8.36	0	0	0
45	SLU 33	-0.11	-0.14	8.36	0	0	0
45	SLU 34	-0.11	-0.14	8.3	0	0	0
45	SLU 35	-0.12	-0.13	8.45	0	0	0
45	SLU 36	-0.12	-0.13	8.45	0	0	0
45	SLU 37	-0.12	-0.13	8.39	0	0	0
45	SLU 38	-0.12	-0.13	8.39	0	0	0
45	SLU 39	-0.12	-0.13	8.57	0	0	0
45	SLU 40	-0.12	-0.14	8.57	0	0	0
45	SLU 41	-0.12	-0.13	8.66	0	0	0
45	SLU 42	-0.12	-0.14	8.66	0	0	0
45	SLU 43	-0.08	-0.2	8.34	0	0	0
45	SLU 44	-0.08	-0.2	8.35	0	0	0
45	SLU 45	-0.09	-0.2	8.49	0	0	0
45	SLU 46	-0.09	-0.2	8.49	0	0	0
45	SLU 47	-0.09	-0.2	8.43	0	0	0
45	SLU 48	-0.09	-0.2	8.58	0	0	0
45	SLU 49	-0.09	-0.2	8.58	0	0	0
45	SLU 50	-0.09	-0.2	8.52	0	0	0
45	SLU 51	-0.09	-0.2	8.52	0	0	0
45	SLU 52	-0.11	-0.2	9.18	0	0	0
45	SLU 53	-0.11	-0.2	9.33	0	0	0
45	SLU 54	-0.11	-0.2	9.33	0	0	0
45	SLU 55	-0.11	-0.2	9.27	0	0	0
45	SLU 56	-0.12	-0.2	9.42	0	0	0
45	SLU 57	-0.12	-0.2	9.42	0	0	0
45	SLU 58	-0.12	-0.2	9.36	0	0	0
45	SLU 59	-0.12	-0.2	9.36	0	0	0
45	SLU 60	-0.12	-0.2	9.54	0	0	0
45	SLU 61	-0.12	-0.2	9.54	0	0	0
45	SLU 62	-0.13	-0.2	9.63	0	0	0
45	SLU 63	-0.13	-0.2	9.63	0	0	0
45	SLU 64	-0.09	-0.18	9.1	0	0	0
45	SLU 65	-0.09	-0.19	9.1	0	0	0
45	SLU 66	-0.1	-0.18	9.24	0	0	0
45	SLU 67	-0.1	-0.19	9.25	0	0	0
45	SLU 68	-0.1	-0.19	9.19	0	0	0
45	SLU 69	-0.1	-0.18	9.33	0	0	0
45	SLU 70	-0.1	-0.18	9.33	0	0	0
45	SLU 71	-0.1	-0.18	9.28	0	0	0
45	SLU 72	-0.1	-0.18	9.28	0	0	0
45	SLU 73	-0.12	-0.19	9.94	0	0	0
45	SLU 74	-0.13	-0.18	10.08	0	0	0
45	SLU 75	-0.13	-0.19	10.09	0	0	0
45	SLU 76	-0.13	-0.19	10.03	0	0	0
45	SLU 77	-0.13	-0.18	10.17	0	0	0
45	SLU 78	-0.13	-0.18	10.17	0	0	0
45	SLU 79	-0.13	-0.18	10.11	0	0	0
45	SLU 80	-0.13	-0.18	10.12	0	0	0
45	SLU 81	-0.13	-0.18	10.3	0	0	0
45	SLU 82	-0.13	-0.19	10.3	0	0	0
45	SLU 83	-0.14	-0.18	10.39	0	0	0
45	SLU 84	-0.14	-0.19	10.39	0	0	0
45	SLE RA 1	-0.07	-0.15	6.83	0	0	0
45	SLE RA 2	-0.07	-0.15	6.83	0	0	0
45	SLE RA 3	-0.07	-0.14	6.93	0	0	0
45	SLE RA 4	-0.07	-0.15	6.93	0	0	0
45	SLE RA 5	-0.07	-0.15	6.89	0	0	0
45	SLE RA 6	-0.08	-0.14	6.99	0	0	0
45	SLE RA 7	-0.08	-0.14	6.99	0	0	0
45	SLE RA 8	-0.08	-0.14	6.95	0	0	0
45	SLE RA 9	-0.08	-0.14	6.95	0	0	0
45	SLE RA 10	-0.09	-0.15	7.39	0	0	0
45	SLE RA 11	-0.09	-0.14	7.49	0	0	0
45	SLE RA 12	-0.09	-0.15	7.49	0	0	0
45	SLE RA 13	-0.09	-0.15	7.45	0	0	0
45	SLE RA 14	-0.09	-0.14	7.55	0	0	0
45	SLE RA 15	-0.09	-0.14	7.55	0	0	0
45	SLE RA 16	-0.09	-0.14	7.51	0	0	0
45	SLE RA 17	-0.09	-0.14	7.51	0	0	0
45	SLE RA 18	-0.1	-0.15	7.63	0	0	0
45	SLE RA 19	-0.1	-0.15	7.63	0	0	0
45	SLE RA 20	-0.1	-0.14	7.69	0	0	0
45	SLE RA 21	-0.1	-0.15	7.69	0	0	0
45	SLE FR 1	-0.07	-0.15	6.83	0	0	0
45	SLE FR 2	-0.07	-0.15	6.83	0	0	0
45	SLE FR 3	-0.07	-0.14	6.86	0	0	0
45	SLE FR 4	-0.08	-0.15	7.07	0	0	0
45	SLE FR 5	-0.08	-0.14	7.1	0	0	0
45	SLE FR 6	-0.08	-0.15	7.23	0	0	0
45	SLE QP 1	-0.07	-0.15	6.83	0	0	0
45	SLE QP 2	-0.08	-0.15	7.07	0	0	0
45	SLD 1	0.36	-0.05	6.92	0	0	0
45	SLD 2	0.37	-0.04	6.92	0	0	0
45	SLD 3	0.33	-0.19	6.97	0	0	0
45	SLD 4	0.34	-0.18	6.96	0	0	0
45	SLD 5	0.1	0.1	6.96	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
45	SLD 6	0.11	0.11	6.96	0	0	0
45	SLD 7	-0.01	-0.38	7.1	0	0	0
45	SLD 8	0	-0.37	7.1	0	0	0
45	SLD 9	-0.15	0.08	7.04	0	0	0
45	SLD 10	-0.15	0.09	7.04	0	0	0
45	SLD 11	-0.26	-0.4	7.18	0	0	0
45	SLD 12	-0.26	-0.39	7.18	0	0	0
45	SLD 13	-0.49	-0.11	7.18	0	0	0
45	SLD 14	-0.48	-0.1	7.18	0	0	0
45	SLD 15	-0.52	-0.25	7.22	0	0	0
45	SLD 16	-0.52	-0.24	7.22	0	0	0
45	SLV 1	0.95	0.07	6.73	0	0	0
45	SLV 2	0.97	0.11	6.72	0	0	0
45	SLV 3	0.88	-0.26	6.82	0	0	0
45	SLV 4	0.89	-0.22	6.82	0	0	0
45	SLV 5	0.34	0.41	6.82	0	0	0
45	SLV 6	0.35	0.43	6.82	0	0	0
45	SLV 7	0.09	-0.68	7.14	0	0	0
45	SLV 8	0.1	-0.65	7.14	0	0	0
45	SLV 9	-0.26	0.36	7	0	0	0
45	SLV 10	-0.25	0.39	7	0	0	0
45	SLV 11	-0.51	-0.72	7.32	0	0	0
45	SLV 12	-0.5	-0.7	7.32	0	0	0
45	SLV 13	-1.05	-0.07	7.33	0	0	0
45	SLV 14	-1.03	-0.03	7.32	0	0	0
45	SLV 15	-1.12	-0.4	7.42	0	0	0
45	SLV 16	-1.11	-0.36	7.42	0	0	0
46	SLU 1	-0.08	-0.17	8.11	0	0	0
46	SLU 2	-0.08	-0.17	8.11	0	0	0
46	SLU 3	-0.09	-0.17	8.29	0	0	0
46	SLU 4	-0.09	-0.17	8.29	0	0	0
46	SLU 5	-0.09	-0.17	8.22	0	0	0
46	SLU 6	-0.09	-0.17	8.39	0	0	0
46	SLU 7	-0.1	-0.17	8.39	0	0	0
46	SLU 8	-0.1	-0.17	8.32	0	0	0
46	SLU 9	-0.1	-0.17	8.32	0	0	0
46	SLU 10	-0.12	-0.17	9.13	0	0	0
46	SLU 11	-0.12	-0.17	9.3	0	0	0
46	SLU 12	-0.12	-0.17	9.3	0	0	0
46	SLU 13	-0.12	-0.17	9.23	0	0	0
46	SLU 14	-0.13	-0.16	9.41	0	0	0
46	SLU 15	-0.13	-0.17	9.41	0	0	0
46	SLU 16	-0.13	-0.16	9.33	0	0	0
46	SLU 17	-0.13	-0.17	9.33	0	0	0
46	SLU 18	-0.13	-0.17	9.56	0	0	0
46	SLU 19	-0.13	-0.17	9.56	0	0	0
46	SLU 20	-0.14	-0.16	9.66	0	0	0
46	SLU 21	-0.14	-0.17	9.66	0	0	0
46	SLU 22	-0.1	-0.15	9.03	0	0	0
46	SLU 23	-0.1	-0.15	9.03	0	0	0
46	SLU 24	-0.1	-0.15	9.21	0	0	0
46	SLU 25	-0.1	-0.15	9.21	0	0	0
46	SLU 26	-0.1	-0.15	9.14	0	0	0
46	SLU 27	-0.11	-0.15	9.31	0	0	0
46	SLU 28	-0.11	-0.15	9.32	0	0	0
46	SLU 29	-0.11	-0.15	9.24	0	0	0
46	SLU 30	-0.11	-0.15	9.24	0	0	0
46	SLU 31	-0.13	-0.15	10.05	0	0	0
46	SLU 32	-0.14	-0.15	10.22	0	0	0
46	SLU 33	-0.14	-0.15	10.22	0	0	0
46	SLU 34	-0.14	-0.15	10.15	0	0	0
46	SLU 35	-0.14	-0.14	10.33	0	0	0
46	SLU 36	-0.14	-0.15	10.33	0	0	0
46	SLU 37	-0.14	-0.14	10.26	0	0	0
46	SLU 38	-0.14	-0.15	10.26	0	0	0
46	SLU 39	-0.15	-0.15	10.48	0	0	0
46	SLU 40	-0.15	-0.15	10.48	0	0	0
46	SLU 41	-0.15	-0.15	10.58	0	0	0
46	SLU 42	-0.15	-0.15	10.59	0	0	0
46	SLU 43	-0.1	-0.23	10.23	0	0	0
46	SLU 44	-0.1	-0.23	10.23	0	0	0
46	SLU 45	-0.11	-0.22	10.4	0	0	0
46	SLU 46	-0.11	-0.23	10.41	0	0	0
46	SLU 47	-0.11	-0.23	10.33	0	0	0
46	SLU 48	-0.11	-0.22	10.51	0	0	0
46	SLU 49	-0.11	-0.22	10.51	0	0	0
46	SLU 50	-0.11	-0.22	10.44	0	0	0
46	SLU 51	-0.12	-0.23	10.44	0	0	0
46	SLU 52	-0.14	-0.23	11.24	0	0	0
46	SLU 53	-0.14	-0.22	11.42	0	0	0
46	SLU 54	-0.14	-0.23	11.42	0	0	0
46	SLU 55	-0.14	-0.23	11.35	0	0	0
46	SLU 56	-0.15	-0.22	11.52	0	0	0
46	SLU 57	-0.15	-0.22	11.52	0	0	0
46	SLU 58	-0.15	-0.22	11.45	0	0	0
46	SLU 59	-0.15	-0.22	11.45	0	0	0
46	SLU 60	-0.15	-0.22	11.67	0	0	0
46	SLU 61	-0.15	-0.23	11.68	0	0	0
46	SLU 62	-0.16	-0.22	11.78	0	0	0
46	SLU 63	-0.16	-0.22	11.78	0	0	0





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
46	SLU 64	-0.12	-0.21	11.15	0	0	0
46	SLU 65	-0.12	-0.21	11.15	0	0	0
46	SLU 66	-0.12	-0.21	11.33	0	0	0
46	SLU 67	-0.12	-0.21	11.33	0	0	0
46	SLU 68	-0.12	-0.21	11.26	0	0	0
46	SLU 69	-0.13	-0.2	11.43	0	0	0
46	SLU 70	-0.13	-0.21	11.43	0	0	0
46	SLU 71	-0.13	-0.2	11.36	0	0	0
46	SLU 72	-0.13	-0.21	11.36	0	0	0
46	SLU 73	-0.15	-0.21	12.16	0	0	0
46	SLU 74	-0.16	-0.2	12.34	0	0	0
46	SLU 75	-0.16	-0.21	12.34	0	0	0
46	SLU 76	-0.16	-0.21	12.27	0	0	0
46	SLU 77	-0.16	-0.2	12.44	0	0	0
46	SLU 78	-0.16	-0.2	12.45	0	0	0
46	SLU 79	-0.16	-0.2	12.37	0	0	0
46	SLU 80	-0.16	-0.2	12.37	0	0	0
46	SLU 81	-0.17	-0.21	12.6	0	0	0
46	SLU 82	-0.17	-0.21	12.6	0	0	0
46	SLU 83	-0.17	-0.2	12.7	0	0	0
46	SLU 84	-0.17	-0.21	12.7	0	0	0
46	SLE RA 1	-0.09	-0.16	8.37	0	0	0
46	SLE RA 2	-0.09	-0.17	8.38	0	0	0
46	SLE RA 3	-0.09	-0.16	8.49	0	0	0
46	SLE RA 4	-0.09	-0.16	8.49	0	0	0
46	SLE RA 5	-0.09	-0.17	8.45	0	0	0
46	SLE RA 6	-0.09	-0.16	8.56	0	0	0
46	SLE RA 7	-0.09	-0.16	8.56	0	0	0
46	SLE RA 8	-0.1	-0.16	8.51	0	0	0
46	SLE RA 9	-0.1	-0.16	8.51	0	0	0
46	SLE RA 10	-0.11	-0.17	9.05	0	0	0
46	SLE RA 11	-0.11	-0.16	9.17	0	0	0
46	SLE RA 12	-0.11	-0.16	9.17	0	0	0
46	SLE RA 13	-0.11	-0.16	9.12	0	0	0
46	SLE RA 14	-0.12	-0.16	9.24	0	0	0
46	SLE RA 15	-0.12	-0.16	9.24	0	0	0
46	SLE RA 16	-0.12	-0.16	9.19	0	0	0
46	SLE RA 17	-0.12	-0.16	9.19	0	0	0
46	SLE RA 18	-0.12	-0.16	9.34	0	0	0
46	SLE RA 19	-0.12	-0.16	9.34	0	0	0
46	SLE RA 20	-0.12	-0.16	9.41	0	0	0
46	SLE RA 21	-0.12	-0.16	9.41	0	0	0
46	SLE FR 1	-0.09	-0.16	8.37	0	0	0
46	SLE FR 2	-0.09	-0.16	8.37	0	0	0
46	SLE FR 3	-0.09	-0.16	8.4	0	0	0
46	SLE FR 4	-0.1	-0.16	8.66	0	0	0
46	SLE FR 5	-0.1	-0.16	8.69	0	0	0
46	SLE FR 6	-0.1	-0.16	8.86	0	0	0
46	SLE QP 1	-0.09	-0.16	8.37	0	0	0
46	SLE QP 2	-0.1	-0.16	8.66	0	0	0
46	SLD 1	0.45	-0.05	8.41	0	0	0
46	SLD 2	0.46	-0.02	8.4	0	0	0
46	SLD 3	0.41	-0.23	8.46	0	0	0
46	SLD 4	0.42	-0.2	8.45	0	0	0
46	SLD 5	0.13	0.13	8.52	0	0	0
46	SLD 6	0.13	0.15	8.51	0	0	0
46	SLD 7	-0.01	-0.45	8.67	0	0	0
46	SLD 8	0	-0.44	8.67	0	0	0
46	SLD 9	-0.19	0.11	8.66	0	0	0
46	SLD 10	-0.18	0.13	8.65	0	0	0
46	SLD 11	-0.33	-0.48	8.81	0	0	0
46	SLD 12	-0.32	-0.46	8.81	0	0	0
46	SLD 13	-0.61	-0.13	8.87	0	0	0
46	SLD 14	-0.6	-0.1	8.87	0	0	0
46	SLD 15	-0.65	-0.3	8.92	0	0	0
46	SLD 16	-0.64	-0.28	8.92	0	0	0
46	SLV 1	1.18	0.09	8.07	0	0	0
46	SLV 2	1.2	0.15	8.06	0	0	0
46	SLV 3	1.09	-0.3	8.18	0	0	0
46	SLV 4	1.11	-0.24	8.17	0	0	0
46	SLV 5	0.43	0.51	8.32	0	0	0
46	SLV 6	0.44	0.54	8.31	0	0	0
46	SLV 7	0.11	-0.82	8.69	0	0	0
46	SLV 8	0.13	-0.78	8.68	0	0	0
46	SLV 9	-0.32	0.45	8.65	0	0	0
46	SLV 10	-0.31	0.49	8.64	0	0	0
46	SLV 11	-0.63	-0.87	9.01	0	0	0
46	SLV 12	-0.62	-0.83	9.01	0	0	0
46	SLV 13	-1.3	-0.08	9.16	0	0	0
46	SLV 14	-1.28	-0.02	9.15	0	0	0
46	SLV 15	-1.39	-0.48	9.27	0	0	0
46	SLV 16	-1.37	-0.42	9.26	0	0	0
47	SLU 1	-0.05	-0.09	4.66	0	0	0
47	SLU 2	-0.05	-0.09	4.66	0	0	0
47	SLU 3	-0.05	-0.09	4.76	0	0	0
47	SLU 4	-0.05	-0.09	4.76	0	0	0
47	SLU 5	-0.05	-0.09	4.72	0	0	0
47	SLU 6	-0.06	-0.09	4.82	0	0	0
47	SLU 7	-0.06	-0.09	4.82	0	0	0
47	SLU 8	-0.06	-0.09	4.78	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
47	SLU 9	-0.06	-0.09	4.78	0	0	0
47	SLU 10	-0.07	-0.09	5.24	0	0	0
47	SLU 11	-0.07	-0.09	5.34	0	0	0
47	SLU 12	-0.07	-0.09	5.34	0	0	0
47	SLU 13	-0.07	-0.09	5.29	0	0	0
47	SLU 14	-0.08	-0.09	5.39	0	0	0
47	SLU 15	-0.08	-0.09	5.39	0	0	0
47	SLU 16	-0.08	-0.09	5.35	0	0	0
47	SLU 17	-0.08	-0.09	5.35	0	0	0
47	SLU 18	-0.08	-0.09	5.48	0	0	0
47	SLU 19	-0.08	-0.09	5.48	0	0	0
47	SLU 20	-0.08	-0.09	5.54	0	0	0
47	SLU 21	-0.08	-0.09	5.54	0	0	0
47	SLU 22	-0.06	-0.08	5.19	0	0	0
47	SLU 23	-0.06	-0.08	5.19	0	0	0
47	SLU 24	-0.06	-0.08	5.29	0	0	0
47	SLU 25	-0.06	-0.08	5.29	0	0	0
47	SLU 26	-0.06	-0.08	5.25	0	0	0
47	SLU 27	-0.06	-0.08	5.35	0	0	0
47	SLU 28	-0.06	-0.08	5.35	0	0	0
47	SLU 29	-0.06	-0.08	5.31	0	0	0
47	SLU 30	-0.06	-0.08	5.31	0	0	0
47	SLU 31	-0.08	-0.08	5.77	0	0	0
47	SLU 32	-0.08	-0.08	5.86	0	0	0
47	SLU 33	-0.08	-0.08	5.87	0	0	0
47	SLU 34	-0.08	-0.08	5.82	0	0	0
47	SLU 35	-0.08	-0.08	5.92	0	0	0
47	SLU 36	-0.08	-0.08	5.92	0	0	0
47	SLU 37	-0.08	-0.08	5.88	0	0	0
47	SLU 38	-0.08	-0.08	5.88	0	0	0
47	SLU 39	-0.08	-0.08	6.01	0	0	0
47	SLU 40	-0.08	-0.08	6.01	0	0	0
47	SLU 41	-0.09	-0.08	6.07	0	0	0
47	SLU 42	-0.09	-0.08	6.07	0	0	0
47	SLU 43	-0.06	-0.12	5.88	0	0	0
47	SLU 44	-0.06	-0.13	5.88	0	0	0
47	SLU 45	-0.06	-0.12	5.98	0	0	0
47	SLU 46	-0.06	-0.12	5.98	0	0	0
47	SLU 47	-0.06	-0.12	5.94	0	0	0
47	SLU 48	-0.07	-0.12	6.04	0	0	0
47	SLU 49	-0.07	-0.12	6.04	0	0	0
47	SLU 50	-0.07	-0.12	5.99	0	0	0
47	SLU 51	-0.07	-0.12	5.99	0	0	0
47	SLU 52	-0.08	-0.12	6.45	0	0	0
47	SLU 53	-0.08	-0.12	6.55	0	0	0
47	SLU 54	-0.08	-0.12	6.55	0	0	0
47	SLU 55	-0.08	-0.12	6.51	0	0	0
47	SLU 56	-0.09	-0.12	6.61	0	0	0
47	SLU 57	-0.09	-0.12	6.61	0	0	0
47	SLU 58	-0.09	-0.12	6.57	0	0	0
47	SLU 59	-0.09	-0.12	6.57	0	0	0
47	SLU 60	-0.09	-0.12	6.7	0	0	0
47	SLU 61	-0.09	-0.12	6.7	0	0	0
47	SLU 62	-0.09	-0.12	6.76	0	0	0
47	SLU 63	-0.09	-0.12	6.76	0	0	0
47	SLU 64	-0.07	-0.11	6.41	0	0	0
47	SLU 65	-0.07	-0.11	6.41	0	0	0
47	SLU 66	-0.07	-0.11	6.51	0	0	0
47	SLU 67	-0.07	-0.11	6.51	0	0	0
47	SLU 68	-0.07	-0.11	6.47	0	0	0
47	SLU 69	-0.08	-0.11	6.56	0	0	0
47	SLU 70	-0.08	-0.11	6.57	0	0	0
47	SLU 71	-0.08	-0.11	6.52	0	0	0
47	SLU 72	-0.08	-0.11	6.52	0	0	0
47	SLU 73	-0.09	-0.11	6.98	0	0	0
47	SLU 74	-0.09	-0.11	7.08	0	0	0
47	SLU 75	-0.09	-0.11	7.08	0	0	0
47	SLU 76	-0.09	-0.11	7.04	0	0	0
47	SLU 77	-0.1	-0.11	7.14	0	0	0
47	SLU 78	-0.1	-0.11	7.14	0	0	0
47	SLU 79	-0.1	-0.11	7.1	0	0	0
47	SLU 80	-0.1	-0.11	7.1	0	0	0
47	SLU 81	-0.1	-0.11	7.23	0	0	0
47	SLU 82	-0.1	-0.11	7.23	0	0	0
47	SLU 83	-0.1	-0.11	7.29	0	0	0
47	SLU 84	-0.1	-0.11	7.29	0	0	0
47	SLE RA 1	-0.05	-0.09	4.81	0	0	0
47	SLE RA 2	-0.05	-0.09	4.81	0	0	0
47	SLE RA 3	-0.05	-0.09	4.88	0	0	0
47	SLE RA 4	-0.05	-0.09	4.88	0	0	0
47	SLE RA 5	-0.05	-0.09	4.85	0	0	0
47	SLE RA 6	-0.06	-0.09	4.92	0	0	0
47	SLE RA 7	-0.06	-0.09	4.92	0	0	0
47	SLE RA 8	-0.06	-0.09	4.89	0	0	0
47	SLE RA 9	-0.06	-0.09	4.89	0	0	0
47	SLE RA 10	-0.06	-0.09	5.2	0	0	0
47	SLE RA 11	-0.07	-0.09	5.26	0	0	0
47	SLE RA 12	-0.07	-0.09	5.26	0	0	0
47	SLE RA 13	-0.07	-0.09	5.23	0	0	0
47	SLE RA 14	-0.07	-0.09	5.3	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
47	SLE RA 15	-0.07	-0.09	5.3	0	0	0
47	SLE RA 16	-0.07	-0.09	5.27	0	0	0
47	SLE RA 17	-0.07	-0.09	5.27	0	0	0
47	SLE RA 18	-0.07	-0.09	5.36	0	0	0
47	SLE RA 19	-0.07	-0.09	5.36	0	0	0
47	SLE RA 20	-0.07	-0.09	5.4	0	0	0
47	SLE RA 21	-0.07	-0.09	5.4	0	0	0
47	SLE FR 1	-0.05	-0.09	4.81	0	0	0
47	SLE FR 2	-0.05	-0.09	4.81	0	0	0
47	SLE FR 3	-0.05	-0.09	4.83	0	0	0
47	SLE FR 4	-0.06	-0.09	4.98	0	0	0
47	SLE FR 5	-0.06	-0.09	4.99	0	0	0
47	SLE FR 6	-0.06	-0.09	5.09	0	0	0
47	SLE QP 1	-0.05	-0.09	4.81	0	0	0
47	SLE QP 2	-0.06	-0.09	4.98	0	0	0
47	SLD 1	0.26	-0.02	4.8	0	0	0
47	SLD 2	0.27	-0.01	4.79	0	0	0
47	SLD 3	0.24	-0.12	4.83	0	0	0
47	SLD 4	0.24	-0.11	4.82	0	0	0
47	SLD 5	0.07	0.08	4.88	0	0	0
47	SLD 6	0.08	0.09	4.88	0	0	0
47	SLD 7	0	-0.26	4.98	0	0	0
47	SLD 8	0	-0.24	4.97	0	0	0
47	SLD 9	-0.11	0.07	4.98	0	0	0
47	SLD 10	-0.11	0.08	4.98	0	0	0
47	SLD 11	-0.19	-0.27	5.07	0	0	0
47	SLD 12	-0.19	-0.26	5.07	0	0	0
47	SLD 13	-0.35	-0.07	5.13	0	0	0
47	SLD 14	-0.35	-0.05	5.13	0	0	0
47	SLD 15	-0.38	-0.17	5.16	0	0	0
47	SLD 16	-0.37	-0.15	5.15	0	0	0
47	SLV 1	0.69	0.06	4.56	0	0	0
47	SLV 2	0.7	0.1	4.55	0	0	0
47	SLV 3	0.63	-0.17	4.63	0	0	0
47	SLV 4	0.64	-0.13	4.62	0	0	0
47	SLV 5	0.25	0.29	4.75	0	0	0
47	SLV 6	0.25	0.32	4.75	0	0	0
47	SLV 7	0.07	-0.47	4.97	0	0	0
47	SLV 8	0.07	-0.44	4.97	0	0	0
47	SLV 9	-0.18	0.26	4.98	0	0	0
47	SLV 10	-0.18	0.29	4.98	0	0	0
47	SLV 11	-0.37	-0.5	5.21	0	0	0
47	SLV 12	-0.36	-0.47	5.2	0	0	0
47	SLV 13	-0.75	-0.05	5.34	0	0	0
47	SLV 14	-0.74	-0.01	5.33	0	0	0
47	SLV 15	-0.81	-0.27	5.4	0	0	0
47	SLV 16	-0.8	-0.23	5.39	0	0	0
48	SLU 1	-0.07	-0.14	6.56	0	0	0
48	SLU 2	-0.07	-0.15	6.57	0	0	0
48	SLU 3	-0.07	-0.14	6.71	0	0	0
48	SLU 4	-0.07	-0.14	6.71	0	0	0
48	SLU 5	-0.07	-0.14	6.65	0	0	0
48	SLU 6	-0.08	-0.14	6.8	0	0	0
48	SLU 7	-0.08	-0.14	6.8	0	0	0
48	SLU 8	-0.08	-0.14	6.74	0	0	0
48	SLU 9	-0.08	-0.14	6.74	0	0	0
48	SLU 10	-0.09	-0.15	7.39	0	0	0
48	SLU 11	-0.1	-0.14	7.54	0	0	0
48	SLU 12	-0.1	-0.14	7.54	0	0	0
48	SLU 13	-0.1	-0.14	7.48	0	0	0
48	SLU 14	-0.1	-0.14	7.62	0	0	0
48	SLU 15	-0.1	-0.14	7.62	0	0	0
48	SLU 16	-0.1	-0.14	7.56	0	0	0
48	SLU 17	-0.1	-0.14	7.57	0	0	0
48	SLU 18	-0.11	-0.14	7.75	0	0	0
48	SLU 19	-0.11	-0.14	7.75	0	0	0
48	SLU 20	-0.11	-0.14	7.83	0	0	0
48	SLU 21	-0.11	-0.14	7.83	0	0	0
48	SLU 22	-0.08	-0.13	7.31	0	0	0
48	SLU 23	-0.08	-0.13	7.31	0	0	0
48	SLU 24	-0.08	-0.13	7.46	0	0	0
48	SLU 25	-0.08	-0.13	7.46	0	0	0
48	SLU 26	-0.08	-0.13	7.4	0	0	0
48	SLU 27	-0.09	-0.12	7.54	0	0	0
48	SLU 28	-0.09	-0.13	7.54	0	0	0
48	SLU 29	-0.09	-0.12	7.49	0	0	0
48	SLU 30	-0.09	-0.13	7.49	0	0	0
48	SLU 31	-0.11	-0.13	8.14	0	0	0
48	SLU 32	-0.11	-0.13	8.28	0	0	0
48	SLU 33	-0.11	-0.13	8.29	0	0	0
48	SLU 34	-0.11	-0.13	8.23	0	0	0
48	SLU 35	-0.12	-0.12	8.37	0	0	0
48	SLU 36	-0.12	-0.13	8.37	0	0	0
48	SLU 37	-0.12	-0.12	8.31	0	0	0
48	SLU 38	-0.12	-0.13	8.31	0	0	0
48	SLU 39	-0.12	-0.13	8.49	0	0	0
48	SLU 40	-0.12	-0.13	8.49	0	0	0
48	SLU 41	-0.12	-0.13	8.58	0	0	0
48	SLU 42	-0.12	-0.13	8.58	0	0	0
48	SLU 43	-0.08	-0.19	8.28	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
48	SLU 44	-0.08	-0.19	8.28	0	0	0
48	SLU 45	-0.09	-0.19	8.42	0	0	0
48	SLU 46	-0.09	-0.19	8.42	0	0	0
48	SLU 47	-0.09	-0.19	8.37	0	0	0
48	SLU 48	-0.09	-0.19	8.51	0	0	0
48	SLU 49	-0.09	-0.19	8.51	0	0	0
48	SLU 50	-0.09	-0.19	8.45	0	0	0
48	SLU 51	-0.09	-0.19	8.45	0	0	0
48	SLU 52	-0.11	-0.19	9.11	0	0	0
48	SLU 53	-0.11	-0.19	9.25	0	0	0
48	SLU 54	-0.11	-0.19	9.25	0	0	0
48	SLU 55	-0.12	-0.19	9.19	0	0	0
48	SLU 56	-0.12	-0.19	9.34	0	0	0
48	SLU 57	-0.12	-0.19	9.34	0	0	0
48	SLU 58	-0.12	-0.19	9.28	0	0	0
48	SLU 59	-0.12	-0.19	9.28	0	0	0
48	SLU 60	-0.12	-0.19	9.46	0	0	0
48	SLU 61	-0.12	-0.19	9.46	0	0	0
48	SLU 62	-0.13	-0.19	9.55	0	0	0
48	SLU 63	-0.13	-0.19	9.55	0	0	0
48	SLU 64	-0.09	-0.18	9.03	0	0	0
48	SLU 65	-0.09	-0.18	9.03	0	0	0
48	SLU 66	-0.1	-0.17	9.17	0	0	0
48	SLU 67	-0.1	-0.18	9.17	0	0	0
48	SLU 68	-0.1	-0.18	9.11	0	0	0
48	SLU 69	-0.1	-0.17	9.26	0	0	0
48	SLU 70	-0.1	-0.17	9.26	0	0	0
48	SLU 71	-0.1	-0.17	9.2	0	0	0
48	SLU 72	-0.1	-0.17	9.2	0	0	0
48	SLU 73	-0.12	-0.18	9.85	0	0	0
48	SLU 74	-0.13	-0.17	10	0	0	0
48	SLU 75	-0.13	-0.18	10	0	0	0
48	SLU 76	-0.13	-0.18	9.94	0	0	0
48	SLU 77	-0.13	-0.17	10.08	0	0	0
48	SLU 78	-0.13	-0.17	10.08	0	0	0
48	SLU 79	-0.13	-0.17	10.03	0	0	0
48	SLU 80	-0.13	-0.17	10.03	0	0	0
48	SLU 81	-0.13	-0.17	10.21	0	0	0
48	SLU 82	-0.13	-0.18	10.21	0	0	0
48	SLU 83	-0.14	-0.17	10.29	0	0	0
48	SLU 84	-0.14	-0.18	10.29	0	0	0
48	SLE RA 1	-0.07	-0.14	6.78	0	0	0
48	SLE RA 2	-0.07	-0.14	6.78	0	0	0
48	SLE RA 3	-0.07	-0.14	6.87	0	0	0
48	SLE RA 4	-0.07	-0.14	6.88	0	0	0
48	SLE RA 5	-0.07	-0.14	6.84	0	0	0
48	SLE RA 6	-0.08	-0.14	6.93	0	0	0
48	SLE RA 7	-0.08	-0.14	6.93	0	0	0
48	SLE RA 8	-0.08	-0.14	6.89	0	0	0
48	SLE RA 9	-0.08	-0.14	6.89	0	0	0
48	SLE RA 10	-0.09	-0.14	7.33	0	0	0
48	SLE RA 11	-0.09	-0.14	7.43	0	0	0
48	SLE RA 12	-0.09	-0.14	7.43	0	0	0
48	SLE RA 13	-0.09	-0.14	7.39	0	0	0
48	SLE RA 14	-0.09	-0.14	7.48	0	0	0
48	SLE RA 15	-0.09	-0.14	7.48	0	0	0
48	SLE RA 16	-0.1	-0.14	7.44	0	0	0
48	SLE RA 17	-0.1	-0.14	7.45	0	0	0
48	SLE RA 18	-0.1	-0.14	7.57	0	0	0
48	SLE RA 19	-0.1	-0.14	7.57	0	0	0
48	SLE RA 20	-0.1	-0.14	7.62	0	0	0
48	SLE RA 21	-0.1	-0.14	7.62	0	0	0
48	SLE FR 1	-0.07	-0.14	6.78	0	0	0
48	SLE FR 2	-0.07	-0.14	6.78	0	0	0
48	SLE FR 3	-0.07	-0.14	6.8	0	0	0
48	SLE FR 4	-0.08	-0.14	7.01	0	0	0
48	SLE FR 5	-0.08	-0.14	7.04	0	0	0
48	SLE FR 6	-0.08	-0.14	7.17	0	0	0
48	SLE QP 1	-0.07	-0.14	6.78	0	0	0
48	SLE QP 2	-0.08	-0.14	7.01	0	0	0
48	SLD 1	0.36	-0.05	6.84	0	0	0
48	SLD 2	0.37	-0.03	6.84	0	0	0
48	SLD 3	0.33	-0.19	6.88	0	0	0
48	SLD 4	0.34	-0.17	6.88	0	0	0
48	SLD 5	0.1	0.1	6.9	0	0	0
48	SLD 6	0.11	0.11	6.9	0	0	0
48	SLD 7	-0.01	-0.37	7.03	0	0	0
48	SLD 8	0	-0.36	7.03	0	0	0
48	SLD 9	-0.15	0.08	7	0	0	0
48	SLD 10	-0.15	0.1	6.99	0	0	0
48	SLD 11	-0.26	-0.39	7.13	0	0	0
48	SLD 12	-0.26	-0.38	7.13	0	0	0
48	SLD 13	-0.49	-0.11	7.15	0	0	0
48	SLD 14	-0.48	-0.09	7.15	0	0	0
48	SLD 15	-0.52	-0.25	7.19	0	0	0
48	SLD 16	-0.52	-0.23	7.19	0	0	0
48	SLV 1	0.95	0.07	6.6	0	0	0
48	SLV 2	0.97	0.11	6.6	0	0	0
48	SLV 3	0.88	-0.25	6.7	0	0	0
48	SLV 4	0.89	-0.21	6.69	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
48	SLV 5	0.34	0.41	6.75	0	0	0
48	SLV 6	0.35	0.43	6.75	0	0	0
48	SLV 7	0.09	-0.67	7.06	0	0	0
48	SLV 8	0.1	-0.64	7.06	0	0	0
48	SLV 9	-0.26	0.36	6.97	0	0	0
48	SLV 10	-0.25	0.39	6.97	0	0	0
48	SLV 11	-0.51	-0.71	7.28	0	0	0
48	SLV 12	-0.5	-0.68	7.28	0	0	0
48	SLV 13	-1.05	-0.07	7.34	0	0	0
48	SLV 14	-1.03	-0.03	7.33	0	0	0
48	SLV 15	-1.12	-0.39	7.43	0	0	0
48	SLV 16	-1.11	-0.35	7.42	0	0	0
49	SLU 1	-0.06	-0.16	6.1	0	0	0
49	SLU 2	-0.07	-0.17	6.11	0	0	0
49	SLU 3	-0.07	-0.16	6.25	0	0	0
49	SLU 4	-0.07	-0.17	6.25	0	0	0
49	SLU 5	-0.07	-0.17	6.2	0	0	0
49	SLU 6	-0.07	-0.16	6.34	0	0	0
49	SLU 7	-0.07	-0.16	6.34	0	0	0
49	SLU 8	-0.07	-0.16	6.29	0	0	0
49	SLU 9	-0.08	-0.16	6.29	0	0	0
49	SLU 10	-0.09	-0.17	6.92	0	0	0
49	SLU 11	-0.09	-0.17	7.05	0	0	0
49	SLU 12	-0.1	-0.17	7.06	0	0	0
49	SLU 13	-0.1	-0.17	7.01	0	0	0
49	SLU 14	-0.1	-0.16	7.15	0	0	0
49	SLU 15	-0.1	-0.17	7.15	0	0	0
49	SLU 16	-0.1	-0.16	7.09	0	0	0
49	SLU 17	-0.1	-0.17	7.1	0	0	0
49	SLU 18	-0.1	-0.17	7.26	0	0	0
49	SLU 19	-0.1	-0.17	7.26	0	0	0
49	SLU 20	-0.11	-0.17	7.35	0	0	0
49	SLU 21	-0.11	-0.17	7.35	0	0	0
49	SLU 22	-0.08	-0.15	6.81	0	0	0
49	SLU 23	-0.08	-0.16	6.81	0	0	0
49	SLU 24	-0.08	-0.15	6.95	0	0	0
49	SLU 25	-0.08	-0.15	6.96	0	0	0
49	SLU 26	-0.08	-0.16	6.91	0	0	0
49	SLU 27	-0.09	-0.15	7.04	0	0	0
49	SLU 28	-0.09	-0.15	7.05	0	0	0
49	SLU 29	-0.09	-0.15	6.99	0	0	0
49	SLU 30	-0.09	-0.15	6.99	0	0	0
49	SLU 31	-0.1	-0.16	7.62	0	0	0
49	SLU 32	-0.11	-0.15	7.76	0	0	0
49	SLU 33	-0.11	-0.16	7.76	0	0	0
49	SLU 34	-0.11	-0.16	7.71	0	0	0
49	SLU 35	-0.11	-0.15	7.85	0	0	0
49	SLU 36	-0.11	-0.16	7.85	0	0	0
49	SLU 37	-0.11	-0.15	7.8	0	0	0
49	SLU 38	-0.11	-0.16	7.8	0	0	0
49	SLU 39	-0.11	-0.16	7.96	0	0	0
49	SLU 40	-0.11	-0.16	7.97	0	0	0
49	SLU 41	-0.12	-0.16	8.06	0	0	0
49	SLU 42	-0.12	-0.16	8.06	0	0	0
49	SLU 43	-0.08	-0.22	7.69	0	0	0
49	SLU 44	-0.08	-0.22	7.7	0	0	0
49	SLU 45	-0.09	-0.22	7.83	0	0	0
49	SLU 46	-0.09	-0.22	7.84	0	0	0
49	SLU 47	-0.09	-0.22	7.79	0	0	0
49	SLU 48	-0.09	-0.22	7.93	0	0	0
49	SLU 49	-0.09	-0.22	7.93	0	0	0
49	SLU 50	-0.09	-0.22	7.87	0	0	0
49	SLU 51	-0.09	-0.22	7.88	0	0	0
49	SLU 52	-0.11	-0.22	8.5	0	0	0
49	SLU 53	-0.11	-0.22	8.64	0	0	0
49	SLU 54	-0.11	-0.22	8.65	0	0	0
49	SLU 55	-0.11	-0.22	8.59	0	0	0
49	SLU 56	-0.12	-0.22	8.73	0	0	0
49	SLU 57	-0.12	-0.22	8.74	0	0	0
49	SLU 58	-0.12	-0.22	8.68	0	0	0
49	SLU 59	-0.12	-0.22	8.68	0	0	0
49	SLU 60	-0.12	-0.22	8.85	0	0	0
49	SLU 61	-0.12	-0.22	8.85	0	0	0
49	SLU 62	-0.12	-0.22	8.94	0	0	0
49	SLU 63	-0.12	-0.22	8.94	0	0	0
49	SLU 64	-0.09	-0.21	8.4	0	0	0
49	SLU 65	-0.09	-0.21	8.4	0	0	0
49	SLU 66	-0.1	-0.2	8.54	0	0	0
49	SLU 67	-0.1	-0.21	8.54	0	0	0
49	SLU 68	-0.1	-0.21	8.49	0	0	0
49	SLU 69	-0.1	-0.2	8.63	0	0	0
49	SLU 70	-0.1	-0.21	8.64	0	0	0
49	SLU 71	-0.1	-0.2	8.58	0	0	0
49	SLU 72	-0.1	-0.21	8.58	0	0	0
49	SLU 73	-0.12	-0.21	9.21	0	0	0
49	SLU 74	-0.12	-0.21	9.35	0	0	0
49	SLU 75	-0.12	-0.21	9.35	0	0	0
49	SLU 76	-0.12	-0.21	9.3	0	0	0
49	SLU 77	-0.13	-0.21	9.44	0	0	0
49	SLU 78	-0.13	-0.21	9.44	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
49	SLU 79	-0.13	-0.21	9.39	0	0	0
49	SLU 80	-0.13	-0.21	9.39	0	0	0
49	SLU 81	-0.13	-0.21	9.55	0	0	0
49	SLU 82	-0.13	-0.21	9.56	0	0	0
49	SLU 83	-0.13	-0.21	9.64	0	0	0
49	SLU 84	-0.13	-0.21	9.65	0	0	0
49	SLE RA 1	-0.07	-0.16	6.31	0	0	0
49	SLE RA 2	-0.07	-0.16	6.31	0	0	0
49	SLE RA 3	-0.07	-0.16	6.4	0	0	0
49	SLE RA 4	-0.07	-0.16	6.4	0	0	0
49	SLE RA 5	-0.07	-0.16	6.37	0	0	0
49	SLE RA 6	-0.07	-0.16	6.46	0	0	0
49	SLE RA 7	-0.07	-0.16	6.46	0	0	0
49	SLE RA 8	-0.07	-0.16	6.43	0	0	0
49	SLE RA 9	-0.07	-0.16	6.43	0	0	0
49	SLE RA 10	-0.09	-0.17	6.85	0	0	0
49	SLE RA 11	-0.09	-0.16	6.94	0	0	0
49	SLE RA 12	-0.09	-0.16	6.94	0	0	0
49	SLE RA 13	-0.09	-0.16	6.91	0	0	0
49	SLE RA 14	-0.09	-0.16	7	0	0	0
49	SLE RA 15	-0.09	-0.16	7	0	0	0
49	SLE RA 16	-0.09	-0.16	6.97	0	0	0
49	SLE RA 17	-0.09	-0.16	6.97	0	0	0
49	SLE RA 18	-0.09	-0.16	7.07	0	0	0
49	SLE RA 19	-0.09	-0.17	7.08	0	0	0
49	SLE RA 20	-0.1	-0.16	7.14	0	0	0
49	SLE RA 21	-0.1	-0.16	7.14	0	0	0
49	SLE FR 1	-0.07	-0.16	6.31	0	0	0
49	SLE FR 2	-0.07	-0.16	6.31	0	0	0
49	SLE FR 3	-0.07	-0.16	6.33	0	0	0
49	SLE FR 4	-0.08	-0.16	6.54	0	0	0
49	SLE FR 5	-0.08	-0.16	6.56	0	0	0
49	SLE FR 6	-0.08	-0.16	6.69	0	0	0
49	SLE QP 1	-0.07	-0.16	6.31	0	0	0
49	SLE QP 2	-0.08	-0.16	6.54	0	0	0
49	SLD 1	0.32	-0.07	6.53	0	0	0
49	SLD 2	0.33	-0.07	6.53	0	0	0
49	SLD 3	0.29	-0.2	6.62	0	0	0
49	SLD 4	0.3	-0.2	6.62	0	0	0
49	SLD 5	0.09	0.07	6.4	0	0	0
49	SLD 6	0.09	0.07	6.4	0	0	0
49	SLD 7	-0.01	-0.38	6.69	0	0	0
49	SLD 8	-0.01	-0.38	6.7	0	0	0
49	SLD 9	-0.14	0.05	6.38	0	0	0
49	SLD 10	-0.14	0.06	6.38	0	0	0
49	SLD 11	-0.24	-0.4	6.67	0	0	0
49	SLD 12	-0.24	-0.39	6.67	0	0	0
49	SLD 13	-0.45	-0.12	6.45	0	0	0
49	SLD 14	-0.44	-0.12	6.45	0	0	0
49	SLD 15	-0.48	-0.26	6.54	0	0	0
49	SLD 16	-0.47	-0.25	6.54	0	0	0
49	SLV 1	0.85	0.05	6.53	0	0	0
49	SLV 2	0.86	0.06	6.53	0	0	0
49	SLV 3	0.78	-0.26	6.73	0	0	0
49	SLV 4	0.79	-0.25	6.73	0	0	0
49	SLV 5	0.31	0.36	6.23	0	0	0
49	SLV 6	0.31	0.37	6.23	0	0	0
49	SLV 7	0.08	-0.65	6.9	0	0	0
49	SLV 8	0.08	-0.65	6.9	0	0	0
49	SLV 9	-0.23	0.33	6.18	0	0	0
49	SLV 10	-0.23	0.33	6.18	0	0	0
49	SLV 11	-0.46	-0.69	6.84	0	0	0
49	SLV 12	-0.46	-0.69	6.84	0	0	0
49	SLV 13	-0.94	-0.07	6.34	0	0	0
49	SLV 14	-0.94	-0.07	6.35	0	0	0
49	SLV 15	-1.01	-0.38	6.54	0	0	0
49	SLV 16	-1	-0.37	6.54	0	0	0
50	SLU 1	-0.12	-0.29	11.14	0	0	0
50	SLU 2	-0.12	-0.29	11.14	0	0	0
50	SLU 3	-0.13	-0.29	11.4	0	0	0
50	SLU 4	-0.13	-0.29	11.4	0	0	0
50	SLU 5	-0.13	-0.29	11.31	0	0	0
50	SLU 6	-0.14	-0.28	11.56	0	0	0
50	SLU 7	-0.14	-0.29	11.56	0	0	0
50	SLU 8	-0.14	-0.28	11.46	0	0	0
50	SLU 9	-0.14	-0.29	11.47	0	0	0
50	SLU 10	-0.17	-0.3	12.61	0	0	0
50	SLU 11	-0.17	-0.29	12.86	0	0	0
50	SLU 12	-0.18	-0.29	12.86	0	0	0
50	SLU 13	-0.18	-0.3	12.77	0	0	0
50	SLU 14	-0.18	-0.29	13.02	0	0	0
50	SLU 15	-0.18	-0.29	13.02	0	0	0
50	SLU 16	-0.18	-0.29	12.92	0	0	0
50	SLU 17	-0.19	-0.29	12.93	0	0	0
50	SLU 18	-0.19	-0.29	13.23	0	0	0
50	SLU 19	-0.19	-0.3	13.23	0	0	0
50	SLU 20	-0.2	-0.29	13.39	0	0	0
50	SLU 21	-0.2	-0.29	13.39	0	0	0
50	SLU 22	-0.14	-0.27	12.43	0	0	0
50	SLU 23	-0.14	-0.27	12.43	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
50	SLU 24	-0.15	-0.26	12.68	0	0	0
50	SLU 25	-0.15	-0.27	12.69	0	0	0
50	SLU 26	-0.15	-0.27	12.6	0	0	0
50	SLU 27	-0.16	-0.26	12.85	0	0	0
50	SLU 28	-0.16	-0.27	12.85	0	0	0
50	SLU 29	-0.16	-0.26	12.75	0	0	0
50	SLU 30	-0.16	-0.27	12.76	0	0	0
50	SLU 31	-0.19	-0.28	13.89	0	0	0
50	SLU 32	-0.2	-0.27	14.15	0	0	0
50	SLU 33	-0.2	-0.27	14.15	0	0	0
50	SLU 34	-0.2	-0.27	14.06	0	0	0
50	SLU 35	-0.2	-0.27	14.31	0	0	0
50	SLU 36	-0.2	-0.27	14.31	0	0	0
50	SLU 37	-0.21	-0.27	14.21	0	0	0
50	SLU 38	-0.21	-0.27	14.22	0	0	0
50	SLU 39	-0.21	-0.27	14.51	0	0	0
50	SLU 40	-0.21	-0.28	14.52	0	0	0
50	SLU 41	-0.22	-0.27	14.68	0	0	0
50	SLU 42	-0.22	-0.27	14.68	0	0	0
50	SLU 43	-0.15	-0.38	14.04	0	0	0
50	SLU 44	-0.15	-0.39	14.04	0	0	0
50	SLU 45	-0.16	-0.38	14.3	0	0	0
50	SLU 46	-0.16	-0.38	14.3	0	0	0
50	SLU 47	-0.16	-0.39	14.21	0	0	0
50	SLU 48	-0.17	-0.38	14.46	0	0	0
50	SLU 49	-0.17	-0.38	14.46	0	0	0
50	SLU 50	-0.17	-0.38	14.36	0	0	0
50	SLU 51	-0.17	-0.38	14.37	0	0	0
50	SLU 52	-0.2	-0.39	15.51	0	0	0
50	SLU 53	-0.2	-0.38	15.76	0	0	0
50	SLU 54	-0.2	-0.39	15.76	0	0	0
50	SLU 55	-0.2	-0.39	15.67	0	0	0
50	SLU 56	-0.21	-0.38	15.92	0	0	0
50	SLU 57	-0.21	-0.38	15.92	0	0	0
50	SLU 58	-0.21	-0.38	15.82	0	0	0
50	SLU 59	-0.21	-0.38	15.83	0	0	0
50	SLU 60	-0.22	-0.39	16.13	0	0	0
50	SLU 61	-0.22	-0.39	16.13	0	0	0
50	SLU 62	-0.22	-0.38	16.29	0	0	0
50	SLU 63	-0.22	-0.39	16.29	0	0	0
50	SLU 64	-0.17	-0.36	15.33	0	0	0
50	SLU 65	-0.17	-0.37	15.33	0	0	0
50	SLU 66	-0.18	-0.36	15.58	0	0	0
50	SLU 67	-0.18	-0.36	15.59	0	0	0
50	SLU 68	-0.18	-0.36	15.5	0	0	0
50	SLU 69	-0.19	-0.36	15.75	0	0	0
50	SLU 70	-0.19	-0.36	15.75	0	0	0
50	SLU 71	-0.19	-0.36	15.65	0	0	0
50	SLU 72	-0.19	-0.36	15.66	0	0	0
50	SLU 73	-0.22	-0.37	16.79	0	0	0
50	SLU 74	-0.22	-0.36	17.05	0	0	0
50	SLU 75	-0.22	-0.37	17.05	0	0	0
50	SLU 76	-0.23	-0.37	16.96	0	0	0
50	SLU 77	-0.23	-0.36	17.21	0	0	0
50	SLU 78	-0.23	-0.36	17.21	0	0	0
50	SLU 79	-0.23	-0.36	17.11	0	0	0
50	SLU 80	-0.23	-0.36	17.12	0	0	0
50	SLU 81	-0.24	-0.36	17.41	0	0	0
50	SLU 82	-0.24	-0.37	17.42	0	0	0
50	SLU 83	-0.24	-0.36	17.58	0	0	0
50	SLU 84	-0.25	-0.37	17.58	0	0	0
50	SLE RA 1	-0.13	-0.28	11.51	0	0	0
50	SLE RA 2	-0.13	-0.29	11.51	0	0	0
50	SLE RA 3	-0.13	-0.28	11.68	0	0	0
50	SLE RA 4	-0.13	-0.28	11.68	0	0	0
50	SLE RA 5	-0.13	-0.28	11.62	0	0	0
50	SLE RA 6	-0.14	-0.28	11.79	0	0	0
50	SLE RA 7	-0.14	-0.28	11.79	0	0	0
50	SLE RA 8	-0.14	-0.28	11.72	0	0	0
50	SLE RA 9	-0.14	-0.28	11.73	0	0	0
50	SLE RA 10	-0.16	-0.29	12.48	0	0	0
50	SLE RA 11	-0.16	-0.28	12.65	0	0	0
50	SLE RA 12	-0.16	-0.28	12.66	0	0	0
50	SLE RA 13	-0.16	-0.29	12.59	0	0	0
50	SLE RA 14	-0.17	-0.28	12.76	0	0	0
50	SLE RA 15	-0.17	-0.28	12.76	0	0	0
50	SLE RA 16	-0.17	-0.28	12.7	0	0	0
50	SLE RA 17	-0.17	-0.28	12.7	0	0	0
50	SLE RA 18	-0.17	-0.28	12.9	0	0	0
50	SLE RA 19	-0.17	-0.29	12.9	0	0	0
50	SLE RA 20	-0.18	-0.28	13.01	0	0	0
50	SLE RA 21	-0.18	-0.29	13.01	0	0	0
50	SLE FR 1	-0.13	-0.28	11.51	0	0	0
50	SLE FR 2	-0.13	-0.28	11.51	0	0	0
50	SLE FR 3	-0.13	-0.28	11.55	0	0	0
50	SLE FR 4	-0.14	-0.28	11.92	0	0	0
50	SLE FR 5	-0.14	-0.28	11.97	0	0	0
50	SLE FR 6	-0.15	-0.28	12.2	0	0	0
50	SLE QP 1	-0.13	-0.28	11.51	0	0	0
50	SLE QP 2	-0.14	-0.28	11.92	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
50	SLD 1	0.59	-0.12	11.79	0	0	0
50	SLD 2	0.6	-0.1	11.79	0	0	0
50	SLD 3	0.54	-0.36	11.94	0	0	0
50	SLD 4	0.54	-0.35	11.94	0	0	0
50	SLD 5	0.16	0.14	11.67	0	0	0
50	SLD 6	0.17	0.15	11.67	0	0	0
50	SLD 7	-0.02	-0.68	12.15	0	0	0
50	SLD 8	-0.02	-0.67	12.15	0	0	0
50	SLD 9	-0.26	0.11	11.7	0	0	0
50	SLD 10	-0.26	0.12	11.7	0	0	0
50	SLD 11	-0.45	-0.71	12.18	0	0	0
50	SLD 12	-0.44	-0.7	12.18	0	0	0
50	SLD 13	-0.82	-0.21	11.91	0	0	0
50	SLD 14	-0.81	-0.2	11.91	0	0	0
50	SLD 15	-0.88	-0.46	12.05	0	0	0
50	SLD 16	-0.87	-0.45	12.06	0	0	0
50	SLV 1	1.57	0.09	11.62	0	0	0
50	SLV 2	1.59	0.12	11.63	0	0	0
50	SLV 3	1.44	-0.46	11.95	0	0	0
50	SLV 4	1.46	-0.43	11.95	0	0	0
50	SLV 5	0.57	0.67	11.34	0	0	0
50	SLV 6	0.58	0.69	11.34	0	0	0
50	SLV 7	0.14	-1.18	12.42	0	0	0
50	SLV 8	0.15	-1.16	12.42	0	0	0
50	SLV 9	-0.43	0.6	11.42	0	0	0
50	SLV 10	-0.42	0.62	11.42	0	0	0
50	SLV 11	-0.85	-1.25	12.51	0	0	0
50	SLV 12	-0.84	-1.23	12.51	0	0	0
50	SLV 13	-1.74	-0.13	11.9	0	0	0
50	SLV 14	-1.72	-0.1	11.9	0	0	0
50	SLV 15	-1.87	-0.69	12.22	0	0	0
50	SLV 16	-1.85	-0.66	12.22	0	0	0
51	SLU 1	-0.11	-0.24	9.85	0	0	0
51	SLU 2	-0.11	-0.25	9.85	0	0	0
51	SLU 3	-0.11	-0.24	10.07	0	0	0
51	SLU 4	-0.12	-0.25	10.07	0	0	0
51	SLU 5	-0.12	-0.25	9.99	0	0	0
51	SLU 6	-0.12	-0.24	10.21	0	0	0
51	SLU 7	-0.12	-0.24	10.22	0	0	0
51	SLU 8	-0.12	-0.24	10.13	0	0	0
51	SLU 9	-0.12	-0.24	10.13	0	0	0
51	SLU 10	-0.15	-0.25	11.13	0	0	0
51	SLU 11	-0.16	-0.24	11.35	0	0	0
51	SLU 12	-0.16	-0.25	11.36	0	0	0
51	SLU 13	-0.16	-0.25	11.27	0	0	0
51	SLU 14	-0.16	-0.24	11.49	0	0	0
51	SLU 15	-0.17	-0.25	11.5	0	0	0
51	SLU 16	-0.17	-0.24	11.41	0	0	0
51	SLU 17	-0.17	-0.25	11.41	0	0	0
51	SLU 18	-0.17	-0.25	11.68	0	0	0
51	SLU 19	-0.17	-0.25	11.68	0	0	0
51	SLU 20	-0.18	-0.25	11.82	0	0	0
51	SLU 21	-0.18	-0.25	11.82	0	0	0
51	SLU 22	-0.13	-0.22	10.98	0	0	0
51	SLU 23	-0.13	-0.23	10.99	0	0	0
51	SLU 24	-0.13	-0.22	11.21	0	0	0
51	SLU 25	-0.13	-0.23	11.21	0	0	0
51	SLU 26	-0.13	-0.23	11.13	0	0	0
51	SLU 27	-0.14	-0.22	11.35	0	0	0
51	SLU 28	-0.14	-0.22	11.35	0	0	0
51	SLU 29	-0.14	-0.22	11.26	0	0	0
51	SLU 30	-0.14	-0.22	11.27	0	0	0
51	SLU 31	-0.17	-0.23	12.27	0	0	0
51	SLU 32	-0.18	-0.22	12.49	0	0	0
51	SLU 33	-0.18	-0.23	12.49	0	0	0
51	SLU 34	-0.18	-0.23	12.41	0	0	0
51	SLU 35	-0.18	-0.22	12.63	0	0	0
51	SLU 36	-0.18	-0.23	12.63	0	0	0
51	SLU 37	-0.18	-0.22	12.55	0	0	0
51	SLU 38	-0.18	-0.23	12.55	0	0	0
51	SLU 39	-0.19	-0.23	12.81	0	0	0
51	SLU 40	-0.19	-0.23	12.82	0	0	0
51	SLU 41	-0.19	-0.23	12.95	0	0	0
51	SLU 42	-0.19	-0.23	12.96	0	0	0
51	SLU 43	-0.13	-0.32	12.41	0	0	0
51	SLU 44	-0.13	-0.33	12.41	0	0	0
51	SLU 45	-0.14	-0.32	12.63	0	0	0
51	SLU 46	-0.14	-0.33	12.64	0	0	0
51	SLU 47	-0.14	-0.33	12.55	0	0	0
51	SLU 48	-0.15	-0.32	12.78	0	0	0
51	SLU 49	-0.15	-0.32	12.78	0	0	0
51	SLU 50	-0.15	-0.32	12.69	0	0	0
51	SLU 51	-0.15	-0.32	12.69	0	0	0
51	SLU 52	-0.18	-0.33	13.7	0	0	0
51	SLU 53	-0.18	-0.32	13.92	0	0	0
51	SLU 54	-0.18	-0.33	13.92	0	0	0
51	SLU 55	-0.18	-0.33	13.84	0	0	0
51	SLU 56	-0.19	-0.32	14.06	0	0	0
51	SLU 57	-0.19	-0.33	14.06	0	0	0
51	SLU 58	-0.19	-0.32	13.97	0	0	0





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
51	SLU 59	-0.19	-0.33	13.97	0	0	0
51	SLU 60	-0.19	-0.33	14.24	0	0	0
51	SLU 61	-0.19	-0.33	14.24	0	0	0
51	SLU 62	-0.2	-0.33	14.38	0	0	0
51	SLU 63	-0.2	-0.33	14.38	0	0	0
51	SLU 64	-0.15	-0.3	13.55	0	0	0
51	SLU 65	-0.15	-0.31	13.55	0	0	0
51	SLU 66	-0.16	-0.3	13.77	0	0	0
51	SLU 67	-0.16	-0.31	13.78	0	0	0
51	SLU 68	-0.16	-0.31	13.69	0	0	0
51	SLU 69	-0.17	-0.3	13.91	0	0	0
51	SLU 70	-0.17	-0.3	13.92	0	0	0
51	SLU 71	-0.17	-0.3	13.83	0	0	0
51	SLU 72	-0.17	-0.3	13.83	0	0	0
51	SLU 73	-0.19	-0.31	14.83	0	0	0
51	SLU 74	-0.2	-0.3	15.05	0	0	0
51	SLU 75	-0.2	-0.31	15.06	0	0	0
51	SLU 76	-0.2	-0.31	14.97	0	0	0
51	SLU 77	-0.21	-0.3	15.19	0	0	0
51	SLU 78	-0.21	-0.31	15.2	0	0	0
51	SLU 79	-0.21	-0.3	15.11	0	0	0
51	SLU 80	-0.21	-0.31	15.11	0	0	0
51	SLU 81	-0.21	-0.31	15.38	0	0	0
51	SLU 82	-0.21	-0.31	15.38	0	0	0
51	SLU 83	-0.22	-0.31	15.52	0	0	0
51	SLU 84	-0.22	-0.31	15.52	0	0	0
51	SLE RA 1	-0.11	-0.24	10.17	0	0	0
51	SLE RA 2	-0.11	-0.24	10.17	0	0	0
51	SLE RA 3	-0.12	-0.24	10.32	0	0	0
51	SLE RA 4	-0.12	-0.24	10.32	0	0	0
51	SLE RA 5	-0.12	-0.24	10.27	0	0	0
51	SLE RA 6	-0.12	-0.24	10.41	0	0	0
51	SLE RA 7	-0.12	-0.24	10.42	0	0	0
51	SLE RA 8	-0.12	-0.24	10.36	0	0	0
51	SLE RA 9	-0.12	-0.24	10.36	0	0	0
51	SLE RA 10	-0.14	-0.24	11.03	0	0	0
51	SLE RA 11	-0.15	-0.24	11.18	0	0	0
51	SLE RA 12	-0.15	-0.24	11.18	0	0	0
51	SLE RA 13	-0.15	-0.24	11.12	0	0	0
51	SLE RA 14	-0.15	-0.24	11.27	0	0	0
51	SLE RA 15	-0.15	-0.24	11.27	0	0	0
51	SLE RA 16	-0.15	-0.24	11.21	0	0	0
51	SLE RA 17	-0.15	-0.24	11.21	0	0	0
51	SLE RA 18	-0.15	-0.24	11.39	0	0	0
51	SLE RA 19	-0.15	-0.24	11.39	0	0	0
51	SLE RA 20	-0.16	-0.24	11.48	0	0	0
51	SLE RA 21	-0.16	-0.24	11.49	0	0	0
51	SLE FR 1	-0.11	-0.24	10.17	0	0	0
51	SLE FR 2	-0.11	-0.24	10.17	0	0	0
51	SLE FR 3	-0.11	-0.24	10.21	0	0	0
51	SLE FR 4	-0.12	-0.24	10.54	0	0	0
51	SLE FR 5	-0.13	-0.24	10.57	0	0	0
51	SLE FR 6	-0.13	-0.24	10.78	0	0	0
51	SLE QP 1	-0.11	-0.24	10.17	0	0	0
51	SLE QP 2	-0.12	-0.24	10.54	0	0	0
51	SLD 1	0.53	-0.09	10.39	0	0	0
51	SLD 2	0.54	-0.08	10.39	0	0	0
51	SLD 3	0.48	-0.31	10.51	0	0	0
51	SLD 4	0.49	-0.3	10.51	0	0	0
51	SLD 5	0.15	0.13	10.32	0	0	0
51	SLD 6	0.15	0.14	10.32	0	0	0
51	SLD 7	-0.02	-0.59	10.7	0	0	0
51	SLD 8	-0.02	-0.58	10.7	0	0	0
51	SLD 9	-0.23	0.1	10.37	0	0	0
51	SLD 10	-0.23	0.11	10.37	0	0	0
51	SLD 11	-0.4	-0.62	10.76	0	0	0
51	SLD 12	-0.39	-0.61	10.76	0	0	0
51	SLD 13	-0.73	-0.18	10.57	0	0	0
51	SLD 14	-0.73	-0.17	10.56	0	0	0
51	SLD 15	-0.78	-0.4	10.68	0	0	0
51	SLD 16	-0.78	-0.38	10.68	0	0	0
51	SLV 1	1.4	0.09	10.21	0	0	0
51	SLV 2	1.42	0.12	10.2	0	0	0
51	SLV 3	1.29	-0.4	10.47	0	0	0
51	SLV 4	1.3	-0.37	10.47	0	0	0
51	SLV 5	0.5	0.6	10.04	0	0	0
51	SLV 6	0.51	0.62	10.04	0	0	0
51	SLV 7	0.12	-1.04	10.91	0	0	0
51	SLV 8	0.13	-1.02	10.91	0	0	0
51	SLV 9	-0.38	0.54	10.16	0	0	0
51	SLV 10	-0.37	0.56	10.16	0	0	0
51	SLV 11	-0.76	-1.1	11.03	0	0	0
51	SLV 12	-0.75	-1.08	11.03	0	0	0
51	SLV 13	-1.55	-0.11	10.61	0	0	0
51	SLV 14	-1.54	-0.08	10.61	0	0	0
51	SLV 15	-1.67	-0.6	10.87	0	0	0
51	SLV 16	-1.65	-0.57	10.87	0	0	0
52	SLU 1	-0.1	-0.21	8.63	0	0	0
52	SLU 2	-0.1	-0.21	8.63	0	0	0
52	SLU 3	-0.1	-0.2	8.83	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
52	SLU 4	-0.1	-0.21	8.83	0	0	0
52	SLU 5	-0.1	-0.21	8.75	0	0	0
52	SLU 6	-0.11	-0.2	8.95	0	0	0
52	SLU 7	-0.11	-0.21	8.95	0	0	0
52	SLU 8	-0.11	-0.2	8.87	0	0	0
52	SLU 9	-0.11	-0.21	8.87	0	0	0
52	SLU 10	-0.13	-0.21	9.75	0	0	0
52	SLU 11	-0.14	-0.21	9.94	0	0	0
52	SLU 12	-0.14	-0.21	9.94	0	0	0
52	SLU 13	-0.14	-0.21	9.87	0	0	0
52	SLU 14	-0.15	-0.2	10.06	0	0	0
52	SLU 15	-0.15	-0.21	10.06	0	0	0
52	SLU 16	-0.15	-0.2	9.99	0	0	0
52	SLU 17	-0.15	-0.21	9.99	0	0	0
52	SLU 18	-0.15	-0.21	10.22	0	0	0
52	SLU 19	-0.15	-0.21	10.22	0	0	0
52	SLU 20	-0.16	-0.21	10.34	0	0	0
52	SLU 21	-0.16	-0.21	10.35	0	0	0
52	SLU 22	-0.11	-0.19	9.63	0	0	0
52	SLU 23	-0.11	-0.19	9.63	0	0	0
52	SLU 24	-0.12	-0.19	9.82	0	0	0
52	SLU 25	-0.12	-0.19	9.83	0	0	0
52	SLU 26	-0.12	-0.19	9.75	0	0	0
52	SLU 27	-0.13	-0.18	9.94	0	0	0
52	SLU 28	-0.13	-0.19	9.95	0	0	0
52	SLU 29	-0.13	-0.18	9.87	0	0	0
52	SLU 30	-0.13	-0.19	9.87	0	0	0
52	SLU 31	-0.15	-0.19	10.75	0	0	0
52	SLU 32	-0.16	-0.19	10.94	0	0	0
52	SLU 33	-0.16	-0.19	10.94	0	0	0
52	SLU 34	-0.16	-0.19	10.87	0	0	0
52	SLU 35	-0.16	-0.19	11.06	0	0	0
52	SLU 36	-0.16	-0.19	11.06	0	0	0
52	SLU 37	-0.16	-0.19	10.98	0	0	0
52	SLU 38	-0.16	-0.19	10.99	0	0	0
52	SLU 39	-0.17	-0.19	11.22	0	0	0
52	SLU 40	-0.17	-0.19	11.22	0	0	0
52	SLU 41	-0.17	-0.19	11.34	0	0	0
52	SLU 42	-0.17	-0.19	11.34	0	0	0
52	SLU 43	-0.12	-0.27	10.88	0	0	0
52	SLU 44	-0.12	-0.28	10.88	0	0	0
52	SLU 45	-0.13	-0.27	11.07	0	0	0
52	SLU 46	-0.13	-0.28	11.08	0	0	0
52	SLU 47	-0.13	-0.28	11	0	0	0
52	SLU 48	-0.13	-0.27	11.19	0	0	0
52	SLU 49	-0.13	-0.27	11.2	0	0	0
52	SLU 50	-0.13	-0.27	11.12	0	0	0
52	SLU 51	-0.13	-0.27	11.12	0	0	0
52	SLU 52	-0.16	-0.28	12	0	0	0
52	SLU 53	-0.16	-0.27	12.19	0	0	0
52	SLU 54	-0.16	-0.28	12.19	0	0	0
52	SLU 55	-0.16	-0.28	12.12	0	0	0
52	SLU 56	-0.17	-0.27	12.31	0	0	0
52	SLU 57	-0.17	-0.27	12.31	0	0	0
52	SLU 58	-0.17	-0.27	12.23	0	0	0
52	SLU 59	-0.17	-0.28	12.24	0	0	0
52	SLU 60	-0.17	-0.28	12.47	0	0	0
52	SLU 61	-0.17	-0.28	12.47	0	0	0
52	SLU 62	-0.18	-0.27	12.59	0	0	0
52	SLU 63	-0.18	-0.28	12.59	0	0	0
52	SLU 64	-0.14	-0.26	11.87	0	0	0
52	SLU 65	-0.14	-0.26	11.88	0	0	0
52	SLU 66	-0.14	-0.25	12.07	0	0	0
52	SLU 67	-0.14	-0.26	12.07	0	0	0
52	SLU 68	-0.14	-0.26	12	0	0	0
52	SLU 69	-0.15	-0.25	12.19	0	0	0
52	SLU 70	-0.15	-0.26	12.19	0	0	0
52	SLU 71	-0.15	-0.25	12.12	0	0	0
52	SLU 72	-0.15	-0.26	12.12	0	0	0
52	SLU 73	-0.17	-0.26	12.99	0	0	0
52	SLU 74	-0.18	-0.26	13.18	0	0	0
52	SLU 75	-0.18	-0.26	13.19	0	0	0
52	SLU 76	-0.18	-0.26	13.11	0	0	0
52	SLU 77	-0.19	-0.25	13.31	0	0	0
52	SLU 78	-0.19	-0.26	13.31	0	0	0
52	SLU 79	-0.19	-0.25	13.23	0	0	0
52	SLU 80	-0.19	-0.26	13.23	0	0	0
52	SLU 81	-0.19	-0.26	13.47	0	0	0
52	SLU 82	-0.19	-0.26	13.47	0	0	0
52	SLU 83	-0.2	-0.26	13.59	0	0	0
52	SLU 84	-0.2	-0.26	13.59	0	0	0
52	SLE RA 1	-0.1	-0.2	8.91	0	0	0
52	SLE RA 2	-0.1	-0.2	8.92	0	0	0
52	SLE RA 3	-0.1	-0.2	9.05	0	0	0
52	SLE RA 4	-0.11	-0.2	9.05	0	0	0
52	SLE RA 5	-0.11	-0.2	9	0	0	0
52	SLE RA 6	-0.11	-0.2	9.13	0	0	0
52	SLE RA 7	-0.11	-0.2	9.13	0	0	0
52	SLE RA 8	-0.11	-0.2	9.08	0	0	0
52	SLE RA 9	-0.11	-0.2	9.08	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
52	SLE RA 10	-0.13	-0.21	9.66	0	0	0
52	SLE RA 11	-0.13	-0.2	9.79	0	0	0
52	SLE RA 12	-0.13	-0.2	9.79	0	0	0
52	SLE RA 13	-0.13	-0.2	9.74	0	0	0
52	SLE RA 14	-0.13	-0.2	9.87	0	0	0
52	SLE RA 15	-0.13	-0.2	9.87	0	0	0
52	SLE RA 16	-0.13	-0.2	9.82	0	0	0
52	SLE RA 17	-0.14	-0.2	9.82	0	0	0
52	SLE RA 18	-0.14	-0.2	9.98	0	0	0
52	SLE RA 19	-0.14	-0.2	9.98	0	0	0
52	SLE RA 20	-0.14	-0.2	10.06	0	0	0
52	SLE RA 21	-0.14	-0.2	10.06	0	0	0
52	SLE FR 1	-0.1	-0.2	8.91	0	0	0
52	SLE FR 2	-0.1	-0.2	8.92	0	0	0
52	SLE FR 3	-0.1	-0.2	8.95	0	0	0
52	SLE FR 4	-0.11	-0.2	9.23	0	0	0
52	SLE FR 5	-0.11	-0.2	9.27	0	0	0
52	SLE FR 6	-0.12	-0.2	9.45	0	0	0
52	SLE QP 1	-0.1	-0.2	8.91	0	0	0
52	SLE QP 2	-0.11	-0.2	9.23	0	0	0
52	SLD 1	0.47	-0.08	9.07	0	0	0
52	SLD 2	0.47	-0.06	9.07	0	0	0
52	SLD 3	0.42	-0.27	9.17	0	0	0
52	SLD 4	0.43	-0.25	9.16	0	0	0
52	SLD 5	0.13	0.12	9.04	0	0	0
52	SLD 6	0.13	0.13	9.04	0	0	0
52	SLD 7	-0.02	-0.51	9.35	0	0	0
52	SLD 8	-0.01	-0.5	9.35	0	0	0
52	SLD 9	-0.21	0.1	9.11	0	0	0
52	SLD 10	-0.2	0.11	9.11	0	0	0
52	SLD 11	-0.35	-0.54	9.42	0	0	0
52	SLD 12	-0.35	-0.52	9.42	0	0	0
52	SLD 13	-0.65	-0.15	9.3	0	0	0
52	SLD 14	-0.65	-0.14	9.3	0	0	0
52	SLD 15	-0.7	-0.34	9.4	0	0	0
52	SLD 16	-0.69	-0.33	9.39	0	0	0
52	SLV 1	1.24	0.08	8.86	0	0	0
52	SLV 2	1.26	0.12	8.86	0	0	0
52	SLV 3	1.14	-0.35	9.07	0	0	0
52	SLV 4	1.15	-0.31	9.07	0	0	0
52	SLV 5	0.45	0.53	8.8	0	0	0
52	SLV 6	0.45	0.56	8.8	0	0	0
52	SLV 7	0.11	-0.91	9.51	0	0	0
52	SLV 8	0.12	-0.88	9.5	0	0	0
52	SLV 9	-0.34	0.48	8.96	0	0	0
52	SLV 10	-0.33	0.5	8.96	0	0	0
52	SLV 11	-0.68	-0.96	9.67	0	0	0
52	SLV 12	-0.67	-0.93	9.66	0	0	0
52	SLV 13	-1.38	-0.1	9.4	0	0	0
52	SLV 14	-1.36	-0.06	9.39	0	0	0
52	SLV 15	-1.48	-0.53	9.61	0	0	0
52	SLV 16	-1.47	-0.49	9.6	0	0	0
53	SLU 1	-0.09	-0.17	7.52	0	0	0
53	SLU 2	-0.09	-0.18	7.52	0	0	0
53	SLU 3	-0.09	-0.17	7.69	0	0	0
53	SLU 4	-0.09	-0.17	7.69	0	0	0
53	SLU 5	-0.09	-0.18	7.62	0	0	0
53	SLU 6	-0.1	-0.17	7.79	0	0	0
53	SLU 7	-0.1	-0.17	7.79	0	0	0
53	SLU 8	-0.1	-0.17	7.72	0	0	0
53	SLU 9	-0.1	-0.17	7.73	0	0	0
53	SLU 10	-0.12	-0.18	8.49	0	0	0
53	SLU 11	-0.12	-0.17	8.65	0	0	0
53	SLU 12	-0.12	-0.17	8.65	0	0	0
53	SLU 13	-0.12	-0.18	8.59	0	0	0
53	SLU 14	-0.13	-0.17	8.75	0	0	0
53	SLU 15	-0.13	-0.17	8.76	0	0	0
53	SLU 16	-0.13	-0.17	8.69	0	0	0
53	SLU 17	-0.13	-0.17	8.69	0	0	0
53	SLU 18	-0.13	-0.17	8.9	0	0	0
53	SLU 19	-0.13	-0.18	8.9	0	0	0
53	SLU 20	-0.14	-0.17	9	0	0	0
53	SLU 21	-0.14	-0.17	9	0	0	0
53	SLU 22	-0.1	-0.16	8.39	0	0	0
53	SLU 23	-0.1	-0.16	8.39	0	0	0
53	SLU 24	-0.11	-0.15	8.56	0	0	0
53	SLU 25	-0.11	-0.16	8.56	0	0	0
53	SLU 26	-0.11	-0.16	8.49	0	0	0
53	SLU 27	-0.11	-0.15	8.66	0	0	0
53	SLU 28	-0.11	-0.16	8.66	0	0	0
53	SLU 29	-0.11	-0.15	8.59	0	0	0
53	SLU 30	-0.11	-0.16	8.59	0	0	0
53	SLU 31	-0.13	-0.16	9.35	0	0	0
53	SLU 32	-0.14	-0.15	9.52	0	0	0
53	SLU 33	-0.14	-0.16	9.52	0	0	0
53	SLU 34	-0.14	-0.16	9.46	0	0	0
53	SLU 35	-0.14	-0.15	9.62	0	0	0
53	SLU 36	-0.14	-0.16	9.62	0	0	0
53	SLU 37	-0.15	-0.15	9.56	0	0	0
53	SLU 38	-0.15	-0.16	9.56	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
53	SLU 39	-0.15	-0.16	9.76	0	0	0
53	SLU 40	-0.15	-0.16	9.77	0	0	0
53	SLU 41	-0.15	-0.15	9.87	0	0	0
53	SLU 42	-0.15	-0.16	9.87	0	0	0
53	SLU 43	-0.11	-0.23	9.48	0	0	0
53	SLU 44	-0.11	-0.24	9.48	0	0	0
53	SLU 45	-0.11	-0.23	9.64	0	0	0
53	SLU 46	-0.11	-0.23	9.65	0	0	0
53	SLU 47	-0.11	-0.23	9.58	0	0	0
53	SLU 48	-0.12	-0.23	9.75	0	0	0
53	SLU 49	-0.12	-0.23	9.75	0	0	0
53	SLU 50	-0.12	-0.23	9.68	0	0	0
53	SLU 51	-0.12	-0.23	9.68	0	0	0
53	SLU 52	-0.14	-0.24	10.44	0	0	0
53	SLU 53	-0.14	-0.23	10.61	0	0	0
53	SLU 54	-0.14	-0.23	10.61	0	0	0
53	SLU 55	-0.15	-0.23	10.55	0	0	0
53	SLU 56	-0.15	-0.23	10.71	0	0	0
53	SLU 57	-0.15	-0.23	10.71	0	0	0
53	SLU 58	-0.15	-0.23	10.65	0	0	0
53	SLU 59	-0.15	-0.23	10.65	0	0	0
53	SLU 60	-0.15	-0.23	10.85	0	0	0
53	SLU 61	-0.15	-0.23	10.85	0	0	0
53	SLU 62	-0.16	-0.23	10.96	0	0	0
53	SLU 63	-0.16	-0.23	10.96	0	0	0
53	SLU 64	-0.12	-0.21	10.34	0	0	0
53	SLU 65	-0.12	-0.22	10.35	0	0	0
53	SLU 66	-0.13	-0.21	10.51	0	0	0
53	SLU 67	-0.13	-0.21	10.51	0	0	0
53	SLU 68	-0.13	-0.22	10.45	0	0	0
53	SLU 69	-0.13	-0.21	10.62	0	0	0
53	SLU 70	-0.13	-0.21	10.62	0	0	0
53	SLU 71	-0.13	-0.21	10.55	0	0	0
53	SLU 72	-0.13	-0.21	10.55	0	0	0
53	SLU 73	-0.15	-0.22	11.31	0	0	0
53	SLU 74	-0.16	-0.21	11.48	0	0	0
53	SLU 75	-0.16	-0.21	11.48	0	0	0
53	SLU 76	-0.16	-0.22	11.41	0	0	0
53	SLU 77	-0.17	-0.21	11.58	0	0	0
53	SLU 78	-0.17	-0.21	11.58	0	0	0
53	SLU 79	-0.17	-0.21	11.51	0	0	0
53	SLU 80	-0.17	-0.21	11.52	0	0	0
53	SLU 81	-0.17	-0.21	11.72	0	0	0
53	SLU 82	-0.17	-0.22	11.72	0	0	0
53	SLU 83	-0.17	-0.21	11.82	0	0	0
53	SLU 84	-0.17	-0.21	11.83	0	0	0
53	SLE RA 1	-0.09	-0.17	7.77	0	0	0
53	SLE RA 2	-0.09	-0.17	7.77	0	0	0
53	SLE RA 3	-0.09	-0.17	7.88	0	0	0
53	SLE RA 4	-0.09	-0.17	7.88	0	0	0
53	SLE RA 5	-0.09	-0.17	7.84	0	0	0
53	SLE RA 6	-0.1	-0.17	7.95	0	0	0
53	SLE RA 7	-0.1	-0.17	7.95	0	0	0
53	SLE RA 8	-0.1	-0.17	7.9	0	0	0
53	SLE RA 9	-0.1	-0.17	7.9	0	0	0
53	SLE RA 10	-0.11	-0.17	8.41	0	0	0
53	SLE RA 11	-0.12	-0.17	8.52	0	0	0
53	SLE RA 12	-0.12	-0.17	8.52	0	0	0
53	SLE RA 13	-0.12	-0.17	8.48	0	0	0
53	SLE RA 14	-0.12	-0.17	8.59	0	0	0
53	SLE RA 15	-0.12	-0.17	8.59	0	0	0
53	SLE RA 16	-0.12	-0.17	8.55	0	0	0
53	SLE RA 17	-0.12	-0.17	8.55	0	0	0
53	SLE RA 18	-0.12	-0.17	8.68	0	0	0
53	SLE RA 19	-0.12	-0.17	8.69	0	0	0
53	SLE RA 20	-0.12	-0.17	8.75	0	0	0
53	SLE RA 21	-0.12	-0.17	8.75	0	0	0
53	SLE FR 1	-0.09	-0.17	7.77	0	0	0
53	SLE FR 2	-0.09	-0.17	7.77	0	0	0
53	SLE FR 3	-0.09	-0.17	7.79	0	0	0
53	SLE FR 4	-0.1	-0.17	8.04	0	0	0
53	SLE FR 5	-0.1	-0.17	8.07	0	0	0
53	SLE FR 6	-0.1	-0.17	8.22	0	0	0
53	SLE QP 1	-0.09	-0.17	7.77	0	0	0
53	SLE QP 2	-0.1	-0.17	8.04	0	0	0
53	SLD 1	0.41	-0.06	7.87	0	0	0
53	SLD 2	0.42	-0.04	7.87	0	0	0
53	SLD 3	0.37	-0.23	7.95	0	0	0
53	SLD 4	0.38	-0.21	7.94	0	0	0
53	SLD 5	0.11	0.11	7.87	0	0	0
53	SLD 6	0.12	0.12	7.87	0	0	0
53	SLD 7	-0.02	-0.44	8.13	0	0	0
53	SLD 8	-0.01	-0.43	8.13	0	0	0
53	SLD 9	-0.18	0.09	7.95	0	0	0
53	SLD 10	-0.18	0.1	7.95	0	0	0
53	SLD 11	-0.31	-0.46	8.21	0	0	0
53	SLD 12	-0.31	-0.45	8.21	0	0	0
53	SLD 13	-0.57	-0.13	8.14	0	0	0
53	SLD 14	-0.57	-0.11	8.14	0	0	0
53	SLD 15	-0.61	-0.29	8.22	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
53	SLD 16	-0.61	-0.28	8.21	0	0	0
53	SLV 1	1.09	0.08	7.64	0	0	0
53	SLV 2	1.1	0.12	7.64	0	0	0
53	SLV 3	1	-0.3	7.82	0	0	0
53	SLV 4	1.01	-0.26	7.81	0	0	0
53	SLV 5	0.39	0.47	7.66	0	0	0
53	SLV 6	0.4	0.5	7.66	0	0	0
53	SLV 7	0.1	-0.78	8.24	0	0	0
53	SLV 8	0.1	-0.76	8.23	0	0	0
53	SLV 9	-0.3	0.42	7.85	0	0	0
53	SLV 10	-0.29	0.45	7.84	0	0	0
53	SLV 11	-0.6	-0.83	8.43	0	0	0
53	SLV 12	-0.59	-0.81	8.42	0	0	0
53	SLV 13	-1.21	-0.08	8.27	0	0	0
53	SLV 14	-1.2	-0.04	8.27	0	0	0
53	SLV 15	-1.3	-0.46	8.45	0	0	0
53	SLV 16	-1.29	-0.42	8.44	0	0	0
54	SLU 1	-0.08	-0.16	7.11	0	0	0
54	SLU 2	-0.08	-0.16	7.11	0	0	0
54	SLU 3	-0.09	-0.16	7.27	0	0	0
54	SLU 4	-0.09	-0.16	7.27	0	0	0
54	SLU 5	-0.09	-0.16	7.21	0	0	0
54	SLU 6	-0.09	-0.15	7.36	0	0	0
54	SLU 7	-0.09	-0.16	7.37	0	0	0
54	SLU 8	-0.09	-0.15	7.3	0	0	0
54	SLU 9	-0.09	-0.16	7.3	0	0	0
54	SLU 10	-0.11	-0.16	8.02	0	0	0
54	SLU 11	-0.12	-0.15	8.17	0	0	0
54	SLU 12	-0.12	-0.16	8.18	0	0	0
54	SLU 13	-0.12	-0.16	8.11	0	0	0
54	SLU 14	-0.12	-0.15	8.27	0	0	0
54	SLU 15	-0.12	-0.16	8.27	0	0	0
54	SLU 16	-0.12	-0.15	8.21	0	0	0
54	SLU 17	-0.13	-0.16	8.21	0	0	0
54	SLU 18	-0.13	-0.16	8.4	0	0	0
54	SLU 19	-0.13	-0.16	8.41	0	0	0
54	SLU 20	-0.13	-0.15	8.5	0	0	0
54	SLU 21	-0.13	-0.16	8.5	0	0	0
54	SLU 22	-0.1	-0.14	7.93	0	0	0
54	SLU 23	-0.1	-0.14	7.93	0	0	0
54	SLU 24	-0.1	-0.14	8.09	0	0	0
54	SLU 25	-0.1	-0.14	8.09	0	0	0
54	SLU 26	-0.1	-0.14	8.03	0	0	0
54	SLU 27	-0.11	-0.14	8.18	0	0	0
54	SLU 28	-0.11	-0.14	8.19	0	0	0
54	SLU 29	-0.11	-0.14	8.12	0	0	0
54	SLU 30	-0.11	-0.14	8.12	0	0	0
54	SLU 31	-0.13	-0.14	8.84	0	0	0
54	SLU 32	-0.13	-0.14	8.99	0	0	0
54	SLU 33	-0.13	-0.14	9	0	0	0
54	SLU 34	-0.13	-0.14	8.93	0	0	0
54	SLU 35	-0.14	-0.14	9.09	0	0	0
54	SLU 36	-0.14	-0.14	9.09	0	0	0
54	SLU 37	-0.14	-0.14	9.03	0	0	0
54	SLU 38	-0.14	-0.14	9.03	0	0	0
54	SLU 39	-0.14	-0.14	9.22	0	0	0
54	SLU 40	-0.14	-0.14	9.23	0	0	0
54	SLU 41	-0.15	-0.14	9.32	0	0	0
54	SLU 42	-0.15	-0.14	9.32	0	0	0
54	SLU 43	-0.1	-0.21	8.96	0	0	0
54	SLU 44	-0.1	-0.21	8.96	0	0	0
54	SLU 45	-0.11	-0.21	9.12	0	0	0
54	SLU 46	-0.11	-0.21	9.12	0	0	0
54	SLU 47	-0.11	-0.21	9.06	0	0	0
54	SLU 48	-0.11	-0.21	9.22	0	0	0
54	SLU 49	-0.11	-0.21	9.22	0	0	0
54	SLU 50	-0.11	-0.21	9.15	0	0	0
54	SLU 51	-0.11	-0.21	9.15	0	0	0
54	SLU 52	-0.13	-0.21	9.87	0	0	0
54	SLU 53	-0.14	-0.21	10.03	0	0	0
54	SLU 54	-0.14	-0.21	10.03	0	0	0
54	SLU 55	-0.14	-0.21	9.97	0	0	0
54	SLU 56	-0.14	-0.21	10.12	0	0	0
54	SLU 57	-0.14	-0.21	10.12	0	0	0
54	SLU 58	-0.14	-0.21	10.06	0	0	0
54	SLU 59	-0.14	-0.21	10.06	0	0	0
54	SLU 60	-0.15	-0.21	10.26	0	0	0
54	SLU 61	-0.15	-0.21	10.26	0	0	0
54	SLU 62	-0.15	-0.21	10.35	0	0	0
54	SLU 63	-0.15	-0.21	10.35	0	0	0
54	SLU 64	-0.11	-0.19	9.78	0	0	0
54	SLU 65	-0.12	-0.2	9.79	0	0	0
54	SLU 66	-0.12	-0.19	9.94	0	0	0
54	SLU 67	-0.12	-0.19	9.94	0	0	0
54	SLU 68	-0.12	-0.2	9.88	0	0	0
54	SLU 69	-0.13	-0.19	10.04	0	0	0
54	SLU 70	-0.13	-0.19	10.04	0	0	0
54	SLU 71	-0.13	-0.19	9.97	0	0	0
54	SLU 72	-0.13	-0.19	9.98	0	0	0
54	SLU 73	-0.15	-0.2	10.69	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
54	SLU 74	-0.15	-0.19	10.85	0	0	0
54	SLU 75	-0.15	-0.19	10.85	0	0	0
54	SLU 76	-0.15	-0.2	10.79	0	0	0
54	SLU 77	-0.16	-0.19	10.94	0	0	0
54	SLU 78	-0.16	-0.19	10.94	0	0	0
54	SLU 79	-0.16	-0.19	10.88	0	0	0
54	SLU 80	-0.16	-0.19	10.88	0	0	0
54	SLU 81	-0.16	-0.19	11.08	0	0	0
54	SLU 82	-0.16	-0.2	11.08	0	0	0
54	SLU 83	-0.17	-0.19	11.17	0	0	0
54	SLU 84	-0.17	-0.19	11.17	0	0	0
54	SLE RA 1	-0.09	-0.15	7.34	0	0	0
54	SLE RA 2	-0.09	-0.16	7.35	0	0	0
54	SLE RA 3	-0.09	-0.15	7.45	0	0	0
54	SLE RA 4	-0.09	-0.15	7.45	0	0	0
54	SLE RA 5	-0.09	-0.15	7.41	0	0	0
54	SLE RA 6	-0.09	-0.15	7.51	0	0	0
54	SLE RA 7	-0.09	-0.15	7.51	0	0	0
54	SLE RA 8	-0.09	-0.15	7.47	0	0	0
54	SLE RA 9	-0.09	-0.15	7.47	0	0	0
54	SLE RA 10	-0.11	-0.15	7.95	0	0	0
54	SLE RA 11	-0.11	-0.15	8.05	0	0	0
54	SLE RA 12	-0.11	-0.15	8.05	0	0	0
54	SLE RA 13	-0.11	-0.15	8.01	0	0	0
54	SLE RA 14	-0.11	-0.15	8.12	0	0	0
54	SLE RA 15	-0.11	-0.15	8.12	0	0	0
54	SLE RA 16	-0.11	-0.15	8.08	0	0	0
54	SLE RA 17	-0.11	-0.15	8.08	0	0	0
54	SLE RA 18	-0.12	-0.15	8.21	0	0	0
54	SLE RA 19	-0.12	-0.15	8.21	0	0	0
54	SLE RA 20	-0.12	-0.15	8.27	0	0	0
54	SLE RA 21	-0.12	-0.15	8.27	0	0	0
54	SLE FR 1	-0.09	-0.15	7.34	0	0	0
54	SLE FR 2	-0.09	-0.15	7.34	0	0	0
54	SLE FR 3	-0.09	-0.15	7.37	0	0	0
54	SLE FR 4	-0.09	-0.15	7.6	0	0	0
54	SLE FR 5	-0.1	-0.15	7.63	0	0	0
54	SLE FR 6	-0.1	-0.15	7.78	0	0	0
54	SLE QP 1	-0.09	-0.15	7.34	0	0	0
54	SLE QP 2	-0.09	-0.15	7.6	0	0	0
54	SLD 1	0.39	-0.05	7.41	0	0	0
54	SLD 2	0.4	-0.03	7.41	0	0	0
54	SLD 3	0.35	-0.21	7.48	0	0	0
54	SLD 4	0.36	-0.19	7.47	0	0	0
54	SLD 5	0.11	0.11	7.44	0	0	0
54	SLD 6	0.11	0.13	7.44	0	0	0
54	SLD 7	-0.02	-0.41	7.67	0	0	0
54	SLD 8	-0.01	-0.4	7.67	0	0	0
54	SLD 9	-0.17	0.09	7.54	0	0	0
54	SLD 10	-0.17	0.11	7.54	0	0	0
54	SLD 11	-0.3	-0.43	7.76	0	0	0
54	SLD 12	-0.3	-0.42	7.76	0	0	0
54	SLD 13	-0.55	-0.12	7.73	0	0	0
54	SLD 14	-0.54	-0.1	7.73	0	0	0
54	SLD 15	-0.58	-0.27	7.8	0	0	0
54	SLD 16	-0.58	-0.25	7.8	0	0	0
54	SLV 1	1.04	0.08	7.15	0	0	0
54	SLV 2	1.05	0.13	7.15	0	0	0
54	SLV 3	0.96	-0.28	7.31	0	0	0
54	SLV 4	0.97	-0.23	7.3	0	0	0
54	SLV 5	0.37	0.45	7.24	0	0	0
54	SLV 6	0.38	0.48	7.23	0	0	0
54	SLV 7	0.09	-0.74	7.75	0	0	0
54	SLV 8	0.1	-0.71	7.74	0	0	0
54	SLV 9	-0.28	0.4	7.46	0	0	0
54	SLV 10	-0.28	0.43	7.46	0	0	0
54	SLV 11	-0.57	-0.78	7.97	0	0	0
54	SLV 12	-0.56	-0.75	7.97	0	0	0
54	SLV 13	-1.15	-0.08	7.91	0	0	0
54	SLV 14	-1.14	-0.03	7.9	0	0	0
54	SLV 15	-1.24	-0.43	8.06	0	0	0
54	SLV 16	-1.23	-0.38	8.05	0	0	0
55	SLU 1	-0.09	-0.17	8.16	0	0	0
55	SLU 2	-0.09	-0.18	8.16	0	0	0
55	SLU 3	-0.1	-0.17	8.34	0	0	0
55	SLU 4	-0.1	-0.17	8.34	0	0	0
55	SLU 5	-0.1	-0.18	8.27	0	0	0
55	SLU 6	-0.11	-0.17	8.44	0	0	0
55	SLU 7	-0.11	-0.17	8.45	0	0	0
55	SLU 8	-0.11	-0.17	8.37	0	0	0
55	SLU 9	-0.11	-0.17	8.37	0	0	0
55	SLU 10	-0.13	-0.18	9.19	0	0	0
55	SLU 11	-0.14	-0.17	9.37	0	0	0
55	SLU 12	-0.14	-0.17	9.37	0	0	0
55	SLU 13	-0.14	-0.17	9.3	0	0	0
55	SLU 14	-0.14	-0.17	9.47	0	0	0
55	SLU 15	-0.14	-0.17	9.48	0	0	0
55	SLU 16	-0.14	-0.17	9.4	0	0	0
55	SLU 17	-0.14	-0.17	9.4	0	0	0
55	SLU 18	-0.15	-0.17	9.63	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
55	SLU 19	-0.15	-0.17	9.63	0	0	0
55	SLU 20	-0.15	-0.17	9.74	0	0	0
55	SLU 21	-0.15	-0.17	9.74	0	0	0
55	SLU 22	-0.11	-0.15	9.1	0	0	0
55	SLU 23	-0.11	-0.16	9.1	0	0	0
55	SLU 24	-0.12	-0.15	9.28	0	0	0
55	SLU 25	-0.12	-0.15	9.28	0	0	0
55	SLU 26	-0.12	-0.16	9.21	0	0	0
55	SLU 27	-0.12	-0.15	9.38	0	0	0
55	SLU 28	-0.12	-0.15	9.39	0	0	0
55	SLU 29	-0.12	-0.15	9.31	0	0	0
55	SLU 30	-0.12	-0.15	9.31	0	0	0
55	SLU 31	-0.15	-0.16	10.13	0	0	0
55	SLU 32	-0.15	-0.15	10.31	0	0	0
55	SLU 33	-0.15	-0.15	10.31	0	0	0
55	SLU 34	-0.15	-0.15	10.24	0	0	0
55	SLU 35	-0.16	-0.15	10.42	0	0	0
55	SLU 36	-0.16	-0.15	10.42	0	0	0
55	SLU 37	-0.16	-0.15	10.34	0	0	0
55	SLU 38	-0.16	-0.15	10.34	0	0	0
55	SLU 39	-0.16	-0.15	10.57	0	0	0
55	SLU 40	-0.16	-0.15	10.57	0	0	0
55	SLU 41	-0.17	-0.15	10.68	0	0	0
55	SLU 42	-0.17	-0.15	10.68	0	0	0
55	SLU 43	-0.12	-0.23	10.28	0	0	0
55	SLU 44	-0.12	-0.24	10.28	0	0	0
55	SLU 45	-0.12	-0.23	10.46	0	0	0
55	SLU 46	-0.12	-0.23	10.46	0	0	0
55	SLU 47	-0.12	-0.23	10.39	0	0	0
55	SLU 48	-0.13	-0.23	10.57	0	0	0
55	SLU 49	-0.13	-0.23	10.57	0	0	0
55	SLU 50	-0.13	-0.23	10.5	0	0	0
55	SLU 51	-0.13	-0.23	10.5	0	0	0
55	SLU 52	-0.15	-0.23	11.32	0	0	0
55	SLU 53	-0.16	-0.23	11.49	0	0	0
55	SLU 54	-0.16	-0.23	11.49	0	0	0
55	SLU 55	-0.16	-0.23	11.42	0	0	0
55	SLU 56	-0.17	-0.23	11.6	0	0	0
55	SLU 57	-0.17	-0.23	11.6	0	0	0
55	SLU 58	-0.17	-0.23	11.53	0	0	0
55	SLU 59	-0.17	-0.23	11.53	0	0	0
55	SLU 60	-0.17	-0.23	11.75	0	0	0
55	SLU 61	-0.17	-0.23	11.76	0	0	0
55	SLU 62	-0.18	-0.23	11.86	0	0	0
55	SLU 63	-0.18	-0.23	11.86	0	0	0
55	SLU 64	-0.13	-0.21	11.22	0	0	0
55	SLU 65	-0.13	-0.22	11.22	0	0	0
55	SLU 66	-0.14	-0.21	11.4	0	0	0
55	SLU 67	-0.14	-0.21	11.4	0	0	0
55	SLU 68	-0.14	-0.21	11.33	0	0	0
55	SLU 69	-0.15	-0.21	11.51	0	0	0
55	SLU 70	-0.15	-0.21	11.51	0	0	0
55	SLU 71	-0.15	-0.21	11.44	0	0	0
55	SLU 72	-0.15	-0.21	11.44	0	0	0
55	SLU 73	-0.17	-0.22	12.26	0	0	0
55	SLU 74	-0.18	-0.21	12.43	0	0	0
55	SLU 75	-0.18	-0.21	12.43	0	0	0
55	SLU 76	-0.18	-0.21	12.36	0	0	0
55	SLU 77	-0.18	-0.21	12.54	0	0	0
55	SLU 78	-0.18	-0.21	12.54	0	0	0
55	SLU 79	-0.18	-0.21	12.47	0	0	0
55	SLU 80	-0.18	-0.21	12.47	0	0	0
55	SLU 81	-0.18	-0.21	12.69	0	0	0
55	SLU 82	-0.18	-0.21	12.7	0	0	0
55	SLU 83	-0.19	-0.21	12.8	0	0	0
55	SLU 84	-0.19	-0.21	12.8	0	0	0
55	SLE RA 1	-0.1	-0.17	8.43	0	0	0
55	SLE RA 2	-0.1	-0.17	8.43	0	0	0
55	SLE RA 3	-0.1	-0.17	8.55	0	0	0
55	SLE RA 4	-0.1	-0.17	8.55	0	0	0
55	SLE RA 5	-0.1	-0.17	8.5	0	0	0
55	SLE RA 6	-0.11	-0.17	8.62	0	0	0
55	SLE RA 7	-0.11	-0.17	8.62	0	0	0
55	SLE RA 8	-0.11	-0.17	8.57	0	0	0
55	SLE RA 9	-0.11	-0.17	8.57	0	0	0
55	SLE RA 10	-0.12	-0.17	9.11	0	0	0
55	SLE RA 11	-0.13	-0.17	9.23	0	0	0
55	SLE RA 12	-0.13	-0.17	9.23	0	0	0
55	SLE RA 13	-0.13	-0.17	9.19	0	0	0
55	SLE RA 14	-0.13	-0.16	9.3	0	0	0
55	SLE RA 15	-0.13	-0.17	9.31	0	0	0
55	SLE RA 16	-0.13	-0.16	9.26	0	0	0
55	SLE RA 17	-0.13	-0.17	9.26	0	0	0
55	SLE RA 18	-0.13	-0.17	9.41	0	0	0
55	SLE RA 19	-0.13	-0.17	9.41	0	0	0
55	SLE RA 20	-0.14	-0.16	9.48	0	0	0
55	SLE RA 21	-0.14	-0.17	9.48	0	0	0
55	SLE FR 1	-0.1	-0.17	8.43	0	0	0
55	SLE FR 2	-0.1	-0.17	8.43	0	0	0
55	SLE FR 3	-0.1	-0.17	8.45	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
55	SLE FR 4	-0.11	-0.17	8.72	0	0	0
55	SLE FR 5	-0.11	-0.17	8.75	0	0	0
55	SLE FR 6	-0.12	-0.17	8.92	0	0	0
55	SLE QP 1	-0.1	-0.17	8.43	0	0	0
55	SLE QP 2	-0.11	-0.17	8.72	0	0	0
55	SLD 1	0.45	-0.05	8.46	0	0	0
55	SLD 2	0.46	-0.03	8.46	0	0	0
55	SLD 3	0.41	-0.23	8.53	0	0	0
55	SLD 4	0.41	-0.21	8.53	0	0	0
55	SLD 5	0.12	0.14	8.53	0	0	0
55	SLD 6	0.13	0.15	8.53	0	0	0
55	SLD 7	-0.02	-0.46	8.77	0	0	0
55	SLD 8	-0.02	-0.45	8.77	0	0	0
55	SLD 9	-0.2	0.11	8.67	0	0	0
55	SLD 10	-0.2	0.13	8.67	0	0	0
55	SLD 11	-0.34	-0.49	8.91	0	0	0
55	SLD 12	-0.34	-0.47	8.91	0	0	0
55	SLD 13	-0.63	-0.13	8.91	0	0	0
55	SLD 14	-0.63	-0.1	8.91	0	0	0
55	SLD 15	-0.67	-0.31	8.98	0	0	0
55	SLD 16	-0.67	-0.28	8.98	0	0	0
55	SLV 1	1.2	0.1	8.11	0	0	0
55	SLV 2	1.21	0.16	8.1	0	0	0
55	SLV 3	1.11	-0.31	8.28	0	0	0
55	SLV 4	1.12	-0.25	8.27	0	0	0
55	SLV 5	0.43	0.52	8.29	0	0	0
55	SLV 6	0.44	0.56	8.28	0	0	0
55	SLV 7	0.1	-0.84	8.84	0	0	0
55	SLV 8	0.11	-0.8	8.83	0	0	0
55	SLV 9	-0.33	0.46	8.61	0	0	0
55	SLV 10	-0.32	0.5	8.6	0	0	0
55	SLV 11	-0.66	-0.89	9.16	0	0	0
55	SLV 12	-0.65	-0.85	9.15	0	0	0
55	SLV 13	-1.33	-0.09	9.17	0	0	0
55	SLV 14	-1.32	-0.02	9.16	0	0	0
55	SLV 15	-1.43	-0.49	9.34	0	0	0
55	SLV 16	-1.42	-0.43	9.33	0	0	0
56	SLU 1	-0.05	-0.09	4.57	0	0	0
56	SLU 2	-0.05	-0.09	4.57	0	0	0
56	SLU 3	-0.06	-0.09	4.67	0	0	0
56	SLU 4	-0.06	-0.09	4.67	0	0	0
56	SLU 5	-0.06	-0.09	4.63	0	0	0
56	SLU 6	-0.06	-0.09	4.73	0	0	0
56	SLU 7	-0.06	-0.09	4.73	0	0	0
56	SLU 8	-0.06	-0.09	4.69	0	0	0
56	SLU 9	-0.06	-0.09	4.69	0	0	0
56	SLU 10	-0.07	-0.09	5.14	0	0	0
56	SLU 11	-0.08	-0.09	5.24	0	0	0
56	SLU 12	-0.08	-0.09	5.24	0	0	0
56	SLU 13	-0.08	-0.09	5.2	0	0	0
56	SLU 14	-0.08	-0.09	5.3	0	0	0
56	SLU 15	-0.08	-0.09	5.3	0	0	0
56	SLU 16	-0.08	-0.09	5.26	0	0	0
56	SLU 17	-0.08	-0.09	5.26	0	0	0
56	SLU 18	-0.08	-0.09	5.39	0	0	0
56	SLU 19	-0.08	-0.09	5.39	0	0	0
56	SLU 20	-0.09	-0.09	5.44	0	0	0
56	SLU 21	-0.09	-0.09	5.44	0	0	0
56	SLU 22	-0.06	-0.08	5.1	0	0	0
56	SLU 23	-0.06	-0.08	5.1	0	0	0
56	SLU 24	-0.07	-0.08	5.2	0	0	0
56	SLU 25	-0.07	-0.08	5.2	0	0	0
56	SLU 26	-0.07	-0.08	5.16	0	0	0
56	SLU 27	-0.07	-0.08	5.25	0	0	0
56	SLU 28	-0.07	-0.08	5.25	0	0	0
56	SLU 29	-0.07	-0.08	5.21	0	0	0
56	SLU 30	-0.07	-0.08	5.21	0	0	0
56	SLU 31	-0.08	-0.08	5.67	0	0	0
56	SLU 32	-0.09	-0.08	5.77	0	0	0
56	SLU 33	-0.09	-0.08	5.77	0	0	0
56	SLU 34	-0.09	-0.08	5.73	0	0	0
56	SLU 35	-0.09	-0.08	5.82	0	0	0
56	SLU 36	-0.09	-0.08	5.82	0	0	0
56	SLU 37	-0.09	-0.08	5.78	0	0	0
56	SLU 38	-0.09	-0.08	5.78	0	0	0
56	SLU 39	-0.09	-0.08	5.91	0	0	0
56	SLU 40	-0.09	-0.08	5.91	0	0	0
56	SLU 41	-0.1	-0.08	5.97	0	0	0
56	SLU 42	-0.1	-0.08	5.97	0	0	0
56	SLU 43	-0.07	-0.12	5.76	0	0	0
56	SLU 44	-0.07	-0.13	5.76	0	0	0
56	SLU 45	-0.07	-0.12	5.86	0	0	0
56	SLU 46	-0.07	-0.12	5.86	0	0	0
56	SLU 47	-0.07	-0.12	5.82	0	0	0
56	SLU 48	-0.07	-0.12	5.92	0	0	0
56	SLU 49	-0.07	-0.12	5.92	0	0	0
56	SLU 50	-0.07	-0.12	5.88	0	0	0
56	SLU 51	-0.07	-0.12	5.88	0	0	0
56	SLU 52	-0.09	-0.12	6.33	0	0	0
56	SLU 53	-0.09	-0.12	6.43	0	0	0





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
56	SLU 54	-0.09	-0.12	6.43	0	0	0
56	SLU 55	-0.09	-0.12	6.39	0	0	0
56	SLU 56	-0.09	-0.12	6.49	0	0	0
56	SLU 57	-0.09	-0.12	6.49	0	0	0
56	SLU 58	-0.09	-0.12	6.45	0	0	0
56	SLU 59	-0.09	-0.12	6.45	0	0	0
56	SLU 60	-0.1	-0.12	6.58	0	0	0
56	SLU 61	-0.1	-0.12	6.58	0	0	0
56	SLU 62	-0.1	-0.12	6.63	0	0	0
56	SLU 63	-0.1	-0.12	6.64	0	0	0
56	SLU 64	-0.08	-0.11	6.29	0	0	0
56	SLU 65	-0.08	-0.11	6.29	0	0	0
56	SLU 66	-0.08	-0.11	6.39	0	0	0
56	SLU 67	-0.08	-0.11	6.39	0	0	0
56	SLU 68	-0.08	-0.11	6.35	0	0	0
56	SLU 69	-0.08	-0.11	6.44	0	0	0
56	SLU 70	-0.08	-0.11	6.44	0	0	0
56	SLU 71	-0.08	-0.11	6.4	0	0	0
56	SLU 72	-0.08	-0.11	6.4	0	0	0
56	SLU 73	-0.1	-0.11	6.86	0	0	0
56	SLU 74	-0.1	-0.11	6.96	0	0	0
56	SLU 75	-0.1	-0.11	6.96	0	0	0
56	SLU 76	-0.1	-0.11	6.92	0	0	0
56	SLU 77	-0.1	-0.11	7.01	0	0	0
56	SLU 78	-0.1	-0.11	7.02	0	0	0
56	SLU 79	-0.1	-0.11	6.97	0	0	0
56	SLU 80	-0.1	-0.11	6.97	0	0	0
56	SLU 81	-0.1	-0.11	7.1	0	0	0
56	SLU 82	-0.1	-0.11	7.1	0	0	0
56	SLU 83	-0.11	-0.11	7.16	0	0	0
56	SLU 84	-0.11	-0.11	7.16	0	0	0
56	SLE RA 1	-0.06	-0.09	4.72	0	0	0
56	SLE RA 2	-0.06	-0.09	4.72	0	0	0
56	SLE RA 3	-0.06	-0.09	4.79	0	0	0
56	SLE RA 4	-0.06	-0.09	4.79	0	0	0
56	SLE RA 5	-0.06	-0.09	4.76	0	0	0
56	SLE RA 6	-0.06	-0.09	4.83	0	0	0
56	SLE RA 7	-0.06	-0.09	4.83	0	0	0
56	SLE RA 8	-0.06	-0.09	4.8	0	0	0
56	SLE RA 9	-0.06	-0.09	4.8	0	0	0
56	SLE RA 10	-0.07	-0.09	5.1	0	0	0
56	SLE RA 11	-0.07	-0.09	5.17	0	0	0
56	SLE RA 12	-0.07	-0.09	5.17	0	0	0
56	SLE RA 13	-0.07	-0.09	5.14	0	0	0
56	SLE RA 14	-0.07	-0.09	5.21	0	0	0
56	SLE RA 15	-0.07	-0.09	5.21	0	0	0
56	SLE RA 16	-0.07	-0.09	5.18	0	0	0
56	SLE RA 17	-0.07	-0.09	5.18	0	0	0
56	SLE RA 18	-0.08	-0.09	5.26	0	0	0
56	SLE RA 19	-0.08	-0.09	5.26	0	0	0
56	SLE RA 20	-0.08	-0.09	5.3	0	0	0
56	SLE RA 21	-0.08	-0.09	5.3	0	0	0
56	SLE FR 1	-0.06	-0.09	4.72	0	0	0
56	SLE FR 2	-0.06	-0.09	4.72	0	0	0
56	SLE FR 3	-0.06	-0.09	4.74	0	0	0
56	SLE FR 4	-0.06	-0.09	4.88	0	0	0
56	SLE FR 5	-0.06	-0.09	4.9	0	0	0
56	SLE FR 6	-0.07	-0.09	4.99	0	0	0
56	SLE QP 1	-0.06	-0.09	4.72	0	0	0
56	SLE QP 2	-0.06	-0.09	4.88	0	0	0
56	SLD 1	0.26	-0.02	4.71	0	0	0
56	SLD 2	0.26	-0.01	4.7	0	0	0
56	SLD 3	0.23	-0.12	4.75	0	0	0
56	SLD 4	0.23	-0.11	4.74	0	0	0
56	SLD 5	0.07	0.08	4.77	0	0	0
56	SLD 6	0.07	0.09	4.77	0	0	0
56	SLD 7	-0.01	-0.26	4.9	0	0	0
56	SLD 8	-0.01	-0.24	4.9	0	0	0
56	SLD 9	-0.11	0.07	4.87	0	0	0
56	SLD 10	-0.11	0.08	4.87	0	0	0
56	SLD 11	-0.19	-0.27	5	0	0	0
56	SLD 12	-0.19	-0.26	4.99	0	0	0
56	SLD 13	-0.36	-0.07	5.02	0	0	0
56	SLD 14	-0.36	-0.05	5.02	0	0	0
56	SLD 15	-0.38	-0.17	5.06	0	0	0
56	SLD 16	-0.38	-0.15	5.06	0	0	0
56	SLV 1	0.68	0.06	4.47	0	0	0
56	SLV 2	0.69	0.1	4.46	0	0	0
56	SLV 3	0.63	-0.17	4.56	0	0	0
56	SLV 4	0.63	-0.13	4.55	0	0	0
56	SLV 5	0.24	0.29	4.63	0	0	0
56	SLV 6	0.25	0.32	4.62	0	0	0
56	SLV 7	0.06	-0.47	4.92	0	0	0
56	SLV 8	0.06	-0.44	4.92	0	0	0
56	SLV 9	-0.19	0.26	4.85	0	0	0
56	SLV 10	-0.18	0.29	4.84	0	0	0
56	SLV 11	-0.37	-0.5	5.15	0	0	0
56	SLV 12	-0.37	-0.47	5.14	0	0	0
56	SLV 13	-0.76	-0.05	5.21	0	0	0
56	SLV 14	-0.75	-0.01	5.2	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
56	SLV 15	-0.81	-0.27	5.3	0	0	0
56	SLV 16	-0.81	-0.23	5.29	0	0	0
57	SLU 1	-0.06	-0.13	4.63	0	0	0
57	SLU 2	-0.06	-0.13	4.63	0	0	0
57	SLU 3	-0.06	-0.13	4.74	0	0	0
57	SLU 4	-0.06	-0.13	4.74	0	0	0
57	SLU 5	-0.06	-0.13	4.7	0	0	0
57	SLU 6	-0.06	-0.13	4.81	0	0	0
57	SLU 7	-0.07	-0.13	4.81	0	0	0
57	SLU 8	-0.07	-0.13	4.77	0	0	0
57	SLU 9	-0.07	-0.13	4.77	0	0	0
57	SLU 10	-0.08	-0.13	5.25	0	0	0
57	SLU 11	-0.08	-0.13	5.36	0	0	0
57	SLU 12	-0.08	-0.13	5.36	0	0	0
57	SLU 13	-0.08	-0.13	5.32	0	0	0
57	SLU 14	-0.09	-0.13	5.43	0	0	0
57	SLU 15	-0.09	-0.13	5.43	0	0	0
57	SLU 16	-0.09	-0.13	5.39	0	0	0
57	SLU 17	-0.09	-0.13	5.39	0	0	0
57	SLU 18	-0.09	-0.13	5.51	0	0	0
57	SLU 19	-0.09	-0.13	5.51	0	0	0
57	SLU 20	-0.09	-0.13	5.58	0	0	0
57	SLU 21	-0.09	-0.13	5.59	0	0	0
57	SLU 22	-0.07	-0.12	5.17	0	0	0
57	SLU 23	-0.07	-0.12	5.18	0	0	0
57	SLU 24	-0.07	-0.12	5.28	0	0	0
57	SLU 25	-0.07	-0.12	5.28	0	0	0
57	SLU 26	-0.07	-0.12	5.25	0	0	0
57	SLU 27	-0.07	-0.12	5.35	0	0	0
57	SLU 28	-0.07	-0.12	5.35	0	0	0
57	SLU 29	-0.07	-0.12	5.31	0	0	0
57	SLU 30	-0.07	-0.12	5.32	0	0	0
57	SLU 31	-0.09	-0.12	5.79	0	0	0
57	SLU 32	-0.09	-0.12	5.9	0	0	0
57	SLU 33	-0.09	-0.12	5.9	0	0	0
57	SLU 34	-0.09	-0.12	5.87	0	0	0
57	SLU 35	-0.09	-0.12	5.97	0	0	0
57	SLU 36	-0.09	-0.12	5.97	0	0	0
57	SLU 37	-0.09	-0.12	5.93	0	0	0
57	SLU 38	-0.09	-0.12	5.93	0	0	0
57	SLU 39	-0.1	-0.12	6.06	0	0	0
57	SLU 40	-0.1	-0.12	6.06	0	0	0
57	SLU 41	-0.1	-0.12	6.13	0	0	0
57	SLU 42	-0.1	-0.12	6.13	0	0	0
57	SLU 43	-0.07	-0.17	5.83	0	0	0
57	SLU 44	-0.07	-0.17	5.84	0	0	0
57	SLU 45	-0.08	-0.17	5.94	0	0	0
57	SLU 46	-0.08	-0.17	5.94	0	0	0
57	SLU 47	-0.08	-0.17	5.91	0	0	0
57	SLU 48	-0.08	-0.17	6.01	0	0	0
57	SLU 49	-0.08	-0.17	6.01	0	0	0
57	SLU 50	-0.08	-0.17	5.97	0	0	0
57	SLU 51	-0.08	-0.17	5.98	0	0	0
57	SLU 52	-0.09	-0.17	6.45	0	0	0
57	SLU 53	-0.1	-0.17	6.56	0	0	0
57	SLU 54	-0.1	-0.17	6.56	0	0	0
57	SLU 55	-0.1	-0.17	6.52	0	0	0
57	SLU 56	-0.1	-0.17	6.63	0	0	0
57	SLU 57	-0.1	-0.17	6.63	0	0	0
57	SLU 58	-0.1	-0.17	6.59	0	0	0
57	SLU 59	-0.1	-0.17	6.59	0	0	0
57	SLU 60	-0.1	-0.17	6.72	0	0	0
57	SLU 61	-0.1	-0.17	6.72	0	0	0
57	SLU 62	-0.1	-0.17	6.79	0	0	0
57	SLU 63	-0.1	-0.17	6.79	0	0	0
57	SLU 64	-0.08	-0.16	6.38	0	0	0
57	SLU 65	-0.08	-0.16	6.38	0	0	0
57	SLU 66	-0.08	-0.16	6.48	0	0	0
57	SLU 67	-0.08	-0.16	6.49	0	0	0
57	SLU 68	-0.08	-0.16	6.45	0	0	0
57	SLU 69	-0.09	-0.16	6.56	0	0	0
57	SLU 70	-0.09	-0.16	6.56	0	0	0
57	SLU 71	-0.09	-0.16	6.52	0	0	0
57	SLU 72	-0.09	-0.16	6.52	0	0	0
57	SLU 73	-0.1	-0.16	7	0	0	0
57	SLU 74	-0.1	-0.16	7.1	0	0	0
57	SLU 75	-0.1	-0.16	7.11	0	0	0
57	SLU 76	-0.11	-0.16	7.07	0	0	0
57	SLU 77	-0.11	-0.16	7.17	0	0	0
57	SLU 78	-0.11	-0.16	7.18	0	0	0
57	SLU 79	-0.11	-0.16	7.13	0	0	0
57	SLU 80	-0.11	-0.16	7.14	0	0	0
57	SLU 81	-0.11	-0.16	7.26	0	0	0
57	SLU 82	-0.11	-0.16	7.26	0	0	0
57	SLU 83	-0.11	-0.16	7.33	0	0	0
57	SLU 84	-0.11	-0.16	7.33	0	0	0
57	SLE RA 1	-0.06	-0.12	4.78	0	0	0
57	SLE RA 2	-0.06	-0.13	4.79	0	0	0
57	SLE RA 3	-0.06	-0.12	4.86	0	0	0
57	SLE RA 4	-0.06	-0.12	4.86	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
57	SLE RA 5	-0.06	-0.13	4.83	0	0	0
57	SLE RA 6	-0.06	-0.12	4.9	0	0	0
57	SLE RA 7	-0.07	-0.12	4.91	0	0	0
57	SLE RA 8	-0.07	-0.12	4.88	0	0	0
57	SLE RA 9	-0.07	-0.12	4.88	0	0	0
57	SLE RA 10	-0.07	-0.13	5.2	0	0	0
57	SLE RA 11	-0.08	-0.13	5.27	0	0	0
57	SLE RA 12	-0.08	-0.13	5.27	0	0	0
57	SLE RA 13	-0.08	-0.13	5.25	0	0	0
57	SLE RA 14	-0.08	-0.12	5.32	0	0	0
57	SLE RA 15	-0.08	-0.13	5.32	0	0	0
57	SLE RA 16	-0.08	-0.12	5.29	0	0	0
57	SLE RA 17	-0.08	-0.13	5.29	0	0	0
57	SLE RA 18	-0.08	-0.13	5.37	0	0	0
57	SLE RA 19	-0.08	-0.13	5.38	0	0	0
57	SLE RA 20	-0.08	-0.13	5.42	0	0	0
57	SLE RA 21	-0.08	-0.13	5.42	0	0	0
57	SLE FR 1	-0.06	-0.12	4.78	0	0	0
57	SLE FR 2	-0.06	-0.12	4.79	0	0	0
57	SLE FR 3	-0.06	-0.12	4.8	0	0	0
57	SLE FR 4	-0.07	-0.13	4.96	0	0	0
57	SLE FR 5	-0.07	-0.12	4.98	0	0	0
57	SLE FR 6	-0.07	-0.13	5.08	0	0	0
57	SLE QP 1	-0.06	-0.12	4.78	0	0	0
57	SLE QP 2	-0.07	-0.12	4.96	0	0	0
57	SLD 1	0.24	-0.05	4.95	0	0	0
57	SLD 2	0.24	-0.05	4.95	0	0	0
57	SLD 3	0.22	-0.16	5.04	0	0	0
57	SLD 4	0.22	-0.16	5.04	0	0	0
57	SLD 5	0.06	0.05	4.82	0	0	0
57	SLD 6	0.06	0.06	4.82	0	0	0
57	SLD 7	-0.02	-0.29	5.13	0	0	0
57	SLD 8	-0.02	-0.29	5.12	0	0	0
57	SLD 9	-0.11	0.04	4.8	0	0	0
57	SLD 10	-0.11	0.04	4.8	0	0	0
57	SLD 11	-0.19	-0.31	5.1	0	0	0
57	SLD 12	-0.19	-0.3	5.1	0	0	0
57	SLD 13	-0.35	-0.09	4.88	0	0	0
57	SLD 14	-0.35	-0.09	4.88	0	0	0
57	SLD 15	-0.37	-0.2	4.97	0	0	0
57	SLD 16	-0.37	-0.2	4.97	0	0	0
57	SLV 1	0.65	0.04	4.94	0	0	0
57	SLV 2	0.65	0.04	4.94	0	0	0
57	SLV 3	0.6	-0.2	5.15	0	0	0
57	SLV 4	0.6	-0.19	5.15	0	0	0
57	SLV 5	0.23	0.28	4.64	0	0	0
57	SLV 6	0.23	0.28	4.64	0	0	0
57	SLV 7	0.05	-0.5	5.33	0	0	0
57	SLV 8	0.05	-0.5	5.33	0	0	0
57	SLV 9	-0.18	0.25	4.59	0	0	0
57	SLV 10	-0.18	0.26	4.59	0	0	0
57	SLV 11	-0.37	-0.53	5.28	0	0	0
57	SLV 12	-0.37	-0.53	5.28	0	0	0
57	SLV 13	-0.73	-0.06	4.78	0	0	0
57	SLV 14	-0.73	-0.05	4.78	0	0	0
57	SLV 15	-0.79	-0.29	4.99	0	0	0
57	SLV 16	-0.79	-0.29	4.98	0	0	0
58	SLU 1	-0.1	-0.22	8.25	0	0	0
58	SLU 2	-0.1	-0.22	8.26	0	0	0
58	SLU 3	-0.11	-0.22	8.45	0	0	0
58	SLU 4	-0.11	-0.22	8.45	0	0	0
58	SLU 5	-0.11	-0.22	8.38	0	0	0
58	SLU 6	-0.12	-0.21	8.57	0	0	0
58	SLU 7	-0.12	-0.22	8.57	0	0	0
58	SLU 8	-0.12	-0.21	8.5	0	0	0
58	SLU 9	-0.12	-0.22	8.5	0	0	0
58	SLU 10	-0.14	-0.22	9.35	0	0	0
58	SLU 11	-0.15	-0.22	9.54	0	0	0
58	SLU 12	-0.15	-0.22	9.54	0	0	0
58	SLU 13	-0.15	-0.22	9.48	0	0	0
58	SLU 14	-0.15	-0.22	9.66	0	0	0
58	SLU 15	-0.15	-0.22	9.67	0	0	0
58	SLU 16	-0.15	-0.22	9.59	0	0	0
58	SLU 17	-0.15	-0.22	9.6	0	0	0
58	SLU 18	-0.16	-0.22	9.82	0	0	0
58	SLU 19	-0.16	-0.22	9.82	0	0	0
58	SLU 20	-0.16	-0.22	9.94	0	0	0
58	SLU 21	-0.16	-0.22	9.94	0	0	0
58	SLU 22	-0.12	-0.2	9.22	0	0	0
58	SLU 23	-0.12	-0.21	9.23	0	0	0
58	SLU 24	-0.13	-0.2	9.41	0	0	0
58	SLU 25	-0.13	-0.2	9.42	0	0	0
58	SLU 26	-0.13	-0.2	9.35	0	0	0
58	SLU 27	-0.13	-0.2	9.54	0	0	0
58	SLU 28	-0.13	-0.2	9.54	0	0	0
58	SLU 29	-0.13	-0.2	9.47	0	0	0
58	SLU 30	-0.13	-0.2	9.47	0	0	0
58	SLU 31	-0.16	-0.21	10.32	0	0	0
58	SLU 32	-0.16	-0.2	10.51	0	0	0
58	SLU 33	-0.16	-0.2	10.51	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
58	SLU 34	-0.16	-0.21	10.44	0	0	0
58	SLU 35	-0.17	-0.2	10.63	0	0	0
58	SLU 36	-0.17	-0.2	10.63	0	0	0
58	SLU 37	-0.17	-0.2	10.56	0	0	0
58	SLU 38	-0.17	-0.2	10.56	0	0	0
58	SLU 39	-0.17	-0.2	10.78	0	0	0
58	SLU 40	-0.17	-0.21	10.79	0	0	0
58	SLU 41	-0.18	-0.2	10.91	0	0	0
58	SLU 42	-0.18	-0.21	10.91	0	0	0
58	SLU 43	-0.13	-0.29	10.4	0	0	0
58	SLU 44	-0.13	-0.29	10.4	0	0	0
58	SLU 45	-0.13	-0.29	10.59	0	0	0
58	SLU 46	-0.14	-0.29	10.6	0	0	0
58	SLU 47	-0.14	-0.29	10.53	0	0	0
58	SLU 48	-0.14	-0.28	10.71	0	0	0
58	SLU 49	-0.14	-0.29	10.72	0	0	0
58	SLU 50	-0.14	-0.28	10.64	0	0	0
58	SLU 51	-0.14	-0.29	10.65	0	0	0
58	SLU 52	-0.17	-0.3	11.5	0	0	0
58	SLU 53	-0.17	-0.29	11.68	0	0	0
58	SLU 54	-0.17	-0.29	11.69	0	0	0
58	SLU 55	-0.17	-0.29	11.62	0	0	0
58	SLU 56	-0.18	-0.29	11.81	0	0	0
58	SLU 57	-0.18	-0.29	11.81	0	0	0
58	SLU 58	-0.18	-0.29	11.74	0	0	0
58	SLU 59	-0.18	-0.29	11.74	0	0	0
58	SLU 60	-0.18	-0.29	11.96	0	0	0
58	SLU 61	-0.18	-0.29	11.96	0	0	0
58	SLU 62	-0.19	-0.29	12.08	0	0	0
58	SLU 63	-0.19	-0.29	12.09	0	0	0
58	SLU 64	-0.14	-0.27	11.37	0	0	0
58	SLU 65	-0.15	-0.28	11.37	0	0	0
58	SLU 66	-0.15	-0.27	11.56	0	0	0
58	SLU 67	-0.15	-0.27	11.56	0	0	0
58	SLU 68	-0.15	-0.27	11.49	0	0	0
58	SLU 69	-0.16	-0.27	11.68	0	0	0
58	SLU 70	-0.16	-0.27	11.69	0	0	0
58	SLU 71	-0.16	-0.27	11.61	0	0	0
58	SLU 72	-0.16	-0.27	11.62	0	0	0
58	SLU 73	-0.18	-0.28	12.46	0	0	0
58	SLU 74	-0.19	-0.27	12.65	0	0	0
58	SLU 75	-0.19	-0.28	12.66	0	0	0
58	SLU 76	-0.19	-0.28	12.59	0	0	0
58	SLU 77	-0.19	-0.27	12.77	0	0	0
58	SLU 78	-0.2	-0.27	12.78	0	0	0
58	SLU 79	-0.2	-0.27	12.7	0	0	0
58	SLU 80	-0.2	-0.27	12.71	0	0	0
58	SLU 81	-0.2	-0.27	12.93	0	0	0
58	SLU 82	-0.2	-0.28	12.93	0	0	0
58	SLU 83	-0.2	-0.27	13.05	0	0	0
58	SLU 84	-0.2	-0.28	13.05	0	0	0
58	SLE RA 1	-0.11	-0.21	8.53	0	0	0
58	SLE RA 2	-0.11	-0.22	8.53	0	0	0
58	SLE RA 3	-0.11	-0.21	8.66	0	0	0
58	SLE RA 4	-0.11	-0.21	8.66	0	0	0
58	SLE RA 5	-0.11	-0.21	8.62	0	0	0
58	SLE RA 6	-0.12	-0.21	8.74	0	0	0
58	SLE RA 7	-0.12	-0.21	8.74	0	0	0
58	SLE RA 8	-0.12	-0.21	8.69	0	0	0
58	SLE RA 9	-0.12	-0.21	8.7	0	0	0
58	SLE RA 10	-0.13	-0.22	9.26	0	0	0
58	SLE RA 11	-0.14	-0.21	9.39	0	0	0
58	SLE RA 12	-0.14	-0.21	9.39	0	0	0
58	SLE RA 13	-0.14	-0.22	9.34	0	0	0
58	SLE RA 14	-0.14	-0.21	9.47	0	0	0
58	SLE RA 15	-0.14	-0.21	9.47	0	0	0
58	SLE RA 16	-0.14	-0.21	9.42	0	0	0
58	SLE RA 17	-0.14	-0.21	9.43	0	0	0
58	SLE RA 18	-0.14	-0.21	9.57	0	0	0
58	SLE RA 19	-0.14	-0.22	9.57	0	0	0
58	SLE RA 20	-0.15	-0.21	9.65	0	0	0
58	SLE RA 21	-0.15	-0.22	9.66	0	0	0
58	SLE FR 1	-0.11	-0.21	8.53	0	0	0
58	SLE FR 2	-0.11	-0.21	8.53	0	0	0
58	SLE FR 3	-0.11	-0.21	8.56	0	0	0
58	SLE FR 4	-0.12	-0.21	8.84	0	0	0
58	SLE FR 5	-0.12	-0.21	8.88	0	0	0
58	SLE FR 6	-0.13	-0.21	9.05	0	0	0
58	SLE QP 1	-0.11	-0.21	8.53	0	0	0
58	SLE QP 2	-0.12	-0.21	8.84	0	0	0
58	SLD 1	0.44	-0.09	8.72	0	0	0
58	SLD 2	0.44	-0.08	8.72	0	0	0
58	SLD 3	0.39	-0.27	8.87	0	0	0
58	SLD 4	0.39	-0.26	8.87	0	0	0
58	SLD 5	0.11	0.1	8.58	0	0	0
58	SLD 6	0.11	0.11	8.58	0	0	0
58	SLD 7	-0.03	-0.51	9.08	0	0	0
58	SLD 8	-0.03	-0.51	9.08	0	0	0
58	SLD 9	-0.21	0.08	8.61	0	0	0
58	SLD 10	-0.21	0.09	8.6	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
58	SLD 11	-0.35	-0.54	9.11	0	0	0
58	SLD 12	-0.35	-0.53	9.11	0	0	0
58	SLD 13	-0.63	-0.16	8.81	0	0	0
58	SLD 14	-0.63	-0.15	8.81	0	0	0
58	SLD 15	-0.67	-0.35	8.96	0	0	0
58	SLD 16	-0.67	-0.34	8.96	0	0	0
58	SLV 1	1.18	0.07	8.57	0	0	0
58	SLV 2	1.18	0.09	8.57	0	0	0
58	SLV 3	1.08	-0.35	8.91	0	0	0
58	SLV 4	1.08	-0.33	8.91	0	0	0
58	SLV 5	0.42	0.5	8.25	0	0	0
58	SLV 6	0.42	0.52	8.24	0	0	0
58	SLV 7	0.09	-0.89	9.38	0	0	0
58	SLV 8	0.09	-0.88	9.38	0	0	0
58	SLV 9	-0.33	0.45	8.31	0	0	0
58	SLV 10	-0.33	0.47	8.3	0	0	0
58	SLV 11	-0.66	-0.94	9.44	0	0	0
58	SLV 12	-0.66	-0.93	9.44	0	0	0
58	SLV 13	-1.32	-0.1	8.78	0	0	0
58	SLV 14	-1.31	-0.08	8.77	0	0	0
58	SLV 15	-1.41	-0.52	9.12	0	0	0
58	SLV 16	-1.41	-0.5	9.11	0	0	0
59	SLU 1	-0.09	-0.18	7.2	0	0	0
59	SLU 2	-0.09	-0.19	7.21	0	0	0
59	SLU 3	-0.1	-0.18	7.37	0	0	0
59	SLU 4	-0.1	-0.18	7.37	0	0	0
59	SLU 5	-0.1	-0.19	7.31	0	0	0
59	SLU 6	-0.1	-0.18	7.47	0	0	0
59	SLU 7	-0.1	-0.18	7.48	0	0	0
59	SLU 8	-0.1	-0.18	7.41	0	0	0
59	SLU 9	-0.1	-0.18	7.42	0	0	0
59	SLU 10	-0.12	-0.19	8.16	0	0	0
59	SLU 11	-0.13	-0.18	8.32	0	0	0
59	SLU 12	-0.13	-0.19	8.32	0	0	0
59	SLU 13	-0.13	-0.19	8.26	0	0	0
59	SLU 14	-0.14	-0.18	8.42	0	0	0
59	SLU 15	-0.14	-0.18	8.43	0	0	0
59	SLU 16	-0.14	-0.18	8.36	0	0	0
59	SLU 17	-0.14	-0.18	8.36	0	0	0
59	SLU 18	-0.14	-0.18	8.56	0	0	0
59	SLU 19	-0.14	-0.19	8.56	0	0	0
59	SLU 20	-0.14	-0.18	8.66	0	0	0
59	SLU 21	-0.14	-0.19	8.66	0	0	0
59	SLU 22	-0.11	-0.17	8.05	0	0	0
59	SLU 23	-0.11	-0.17	8.05	0	0	0
59	SLU 24	-0.11	-0.17	8.21	0	0	0
59	SLU 25	-0.11	-0.17	8.22	0	0	0
59	SLU 26	-0.11	-0.17	8.16	0	0	0
59	SLU 27	-0.12	-0.16	8.32	0	0	0
59	SLU 28	-0.12	-0.17	8.32	0	0	0
59	SLU 29	-0.12	-0.16	8.26	0	0	0
59	SLU 30	-0.12	-0.17	8.26	0	0	0
59	SLU 31	-0.14	-0.17	9	0	0	0
59	SLU 32	-0.14	-0.17	9.16	0	0	0
59	SLU 33	-0.14	-0.17	9.16	0	0	0
59	SLU 34	-0.14	-0.17	9.1	0	0	0
59	SLU 35	-0.15	-0.17	9.27	0	0	0
59	SLU 36	-0.15	-0.17	9.27	0	0	0
59	SLU 37	-0.15	-0.17	9.2	0	0	0
59	SLU 38	-0.15	-0.17	9.21	0	0	0
59	SLU 39	-0.15	-0.17	9.4	0	0	0
59	SLU 40	-0.15	-0.17	9.4	0	0	0
59	SLU 41	-0.16	-0.17	9.51	0	0	0
59	SLU 42	-0.16	-0.17	9.51	0	0	0
59	SLU 43	-0.11	-0.24	9.07	0	0	0
59	SLU 44	-0.11	-0.25	9.08	0	0	0
59	SLU 45	-0.12	-0.24	9.24	0	0	0
59	SLU 46	-0.12	-0.24	9.24	0	0	0
59	SLU 47	-0.12	-0.25	9.18	0	0	0
59	SLU 48	-0.13	-0.24	9.35	0	0	0
59	SLU 49	-0.13	-0.24	9.35	0	0	0
59	SLU 50	-0.13	-0.24	9.28	0	0	0
59	SLU 51	-0.13	-0.24	9.29	0	0	0
59	SLU 52	-0.15	-0.25	10.03	0	0	0
59	SLU 53	-0.15	-0.24	10.19	0	0	0
59	SLU 54	-0.15	-0.25	10.19	0	0	0
59	SLU 55	-0.15	-0.25	10.13	0	0	0
59	SLU 56	-0.16	-0.24	10.29	0	0	0
59	SLU 57	-0.16	-0.24	10.3	0	0	0
59	SLU 58	-0.16	-0.24	10.23	0	0	0
59	SLU 59	-0.16	-0.24	10.23	0	0	0
59	SLU 60	-0.16	-0.24	10.43	0	0	0
59	SLU 61	-0.16	-0.25	10.43	0	0	0
59	SLU 62	-0.17	-0.24	10.53	0	0	0
59	SLU 63	-0.17	-0.25	10.54	0	0	0
59	SLU 64	-0.13	-0.23	9.92	0	0	0
59	SLU 65	-0.13	-0.23	9.92	0	0	0
59	SLU 66	-0.13	-0.23	10.09	0	0	0
59	SLU 67	-0.13	-0.23	10.09	0	0	0
59	SLU 68	-0.13	-0.23	10.03	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
59	SLU 69	-0.14	-0.22	10.19	0	0	0
59	SLU 70	-0.14	-0.23	10.19	0	0	0
59	SLU 71	-0.14	-0.22	10.13	0	0	0
59	SLU 72	-0.14	-0.23	10.13	0	0	0
59	SLU 73	-0.16	-0.23	10.87	0	0	0
59	SLU 74	-0.17	-0.23	11.03	0	0	0
59	SLU 75	-0.17	-0.23	11.04	0	0	0
59	SLU 76	-0.17	-0.23	10.98	0	0	0
59	SLU 77	-0.17	-0.23	11.14	0	0	0
59	SLU 78	-0.17	-0.23	11.14	0	0	0
59	SLU 79	-0.17	-0.23	11.08	0	0	0
59	SLU 80	-0.17	-0.23	11.08	0	0	0
59	SLU 81	-0.17	-0.23	11.27	0	0	0
59	SLU 82	-0.17	-0.23	11.27	0	0	0
59	SLU 83	-0.18	-0.23	11.38	0	0	0
59	SLU 84	-0.18	-0.23	11.38	0	0	0
59	SLE RA 1	-0.1	-0.18	7.44	0	0	0
59	SLE RA 2	-0.1	-0.18	7.45	0	0	0
59	SLE RA 3	-0.1	-0.18	7.56	0	0	0
59	SLE RA 4	-0.1	-0.18	7.56	0	0	0
59	SLE RA 5	-0.1	-0.18	7.52	0	0	0
59	SLE RA 6	-0.1	-0.18	7.63	0	0	0
59	SLE RA 7	-0.1	-0.18	7.63	0	0	0
59	SLE RA 8	-0.1	-0.18	7.58	0	0	0
59	SLE RA 9	-0.1	-0.18	7.59	0	0	0
59	SLE RA 10	-0.12	-0.18	8.08	0	0	0
59	SLE RA 11	-0.12	-0.18	8.19	0	0	0
59	SLE RA 12	-0.12	-0.18	8.19	0	0	0
59	SLE RA 13	-0.12	-0.18	8.15	0	0	0
59	SLE RA 14	-0.12	-0.18	8.26	0	0	0
59	SLE RA 15	-0.12	-0.18	8.26	0	0	0
59	SLE RA 16	-0.12	-0.18	8.22	0	0	0
59	SLE RA 17	-0.12	-0.18	8.22	0	0	0
59	SLE RA 18	-0.13	-0.18	8.35	0	0	0
59	SLE RA 19	-0.13	-0.18	8.35	0	0	0
59	SLE RA 20	-0.13	-0.18	8.42	0	0	0
59	SLE RA 21	-0.13	-0.18	8.42	0	0	0
59	SLE FR 1	-0.1	-0.18	7.44	0	0	0
59	SLE FR 2	-0.1	-0.18	7.44	0	0	0
59	SLE FR 3	-0.1	-0.18	7.47	0	0	0
59	SLE FR 4	-0.1	-0.18	7.72	0	0	0
59	SLE FR 5	-0.11	-0.18	7.74	0	0	0
59	SLE FR 6	-0.11	-0.18	7.9	0	0	0
59	SLE QP 1	-0.1	-0.18	7.44	0	0	0
59	SLE QP 2	-0.1	-0.18	7.71	0	0	0
59	SLD 1	0.38	-0.07	7.6	0	0	0
59	SLD 2	0.38	-0.06	7.6	0	0	0
59	SLD 3	0.35	-0.23	7.72	0	0	0
59	SLD 4	0.35	-0.22	7.72	0	0	0
59	SLD 5	0.1	0.1	7.5	0	0	0
59	SLD 6	0.1	0.1	7.49	0	0	0
59	SLD 7	-0.03	-0.44	7.9	0	0	0
59	SLD 8	-0.03	-0.43	7.9	0	0	0
59	SLD 9	-0.18	0.08	7.53	0	0	0
59	SLD 10	-0.18	0.08	7.53	0	0	0
59	SLD 11	-0.31	-0.46	7.94	0	0	0
59	SLD 12	-0.31	-0.45	7.93	0	0	0
59	SLD 13	-0.55	-0.14	7.71	0	0	0
59	SLD 14	-0.55	-0.12	7.71	0	0	0
59	SLD 15	-0.59	-0.3	7.83	0	0	0
59	SLD 16	-0.59	-0.29	7.83	0	0	0
59	SLV 1	1.04	0.07	7.45	0	0	0
59	SLV 2	1.04	0.09	7.44	0	0	0
59	SLV 3	0.95	-0.3	7.72	0	0	0
59	SLV 4	0.95	-0.27	7.72	0	0	0
59	SLV 5	0.37	0.44	7.22	0	0	0
59	SLV 6	0.37	0.46	7.21	0	0	0
59	SLV 7	0.08	-0.77	8.14	0	0	0
59	SLV 8	0.08	-0.76	8.13	0	0	0
59	SLV 9	-0.29	0.4	7.3	0	0	0
59	SLV 10	-0.29	0.42	7.29	0	0	0
59	SLV 11	-0.58	-0.82	8.22	0	0	0
59	SLV 12	-0.58	-0.8	8.21	0	0	0
59	SLV 13	-1.16	-0.08	7.71	0	0	0
59	SLV 14	-1.16	-0.06	7.71	0	0	0
59	SLV 15	-1.25	-0.45	7.99	0	0	0
59	SLV 16	-1.24	-0.42	7.98	0	0	0
60	SLU 1	-0.09	-0.17	6.77	0	0	0
60	SLU 2	-0.09	-0.17	6.78	0	0	0
60	SLU 3	-0.09	-0.16	6.93	0	0	0
60	SLU 4	-0.09	-0.17	6.93	0	0	0
60	SLU 5	-0.09	-0.17	6.87	0	0	0
60	SLU 6	-0.1	-0.16	7.02	0	0	0
60	SLU 7	-0.1	-0.16	7.03	0	0	0
60	SLU 8	-0.1	-0.16	6.97	0	0	0
60	SLU 9	-0.1	-0.16	6.97	0	0	0
60	SLU 10	-0.12	-0.17	7.66	0	0	0
60	SLU 11	-0.12	-0.16	7.81	0	0	0
60	SLU 12	-0.12	-0.17	7.81	0	0	0
60	SLU 13	-0.12	-0.17	7.76	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
60	SLU 14	-0.13	-0.16	7.91	0	0	0
60	SLU 15	-0.13	-0.17	7.91	0	0	0
60	SLU 16	-0.13	-0.16	7.85	0	0	0
60	SLU 17	-0.13	-0.17	7.85	0	0	0
60	SLU 18	-0.13	-0.17	8.04	0	0	0
60	SLU 19	-0.13	-0.17	8.04	0	0	0
60	SLU 20	-0.14	-0.16	8.13	0	0	0
60	SLU 21	-0.14	-0.17	8.13	0	0	0
60	SLU 22	-0.1	-0.15	7.56	0	0	0
60	SLU 23	-0.1	-0.15	7.57	0	0	0
60	SLU 24	-0.11	-0.15	7.72	0	0	0
60	SLU 25	-0.11	-0.15	7.72	0	0	0
60	SLU 26	-0.11	-0.15	7.67	0	0	0
60	SLU 27	-0.11	-0.15	7.82	0	0	0
60	SLU 28	-0.11	-0.15	7.82	0	0	0
60	SLU 29	-0.11	-0.15	7.76	0	0	0
60	SLU 30	-0.11	-0.15	7.76	0	0	0
60	SLU 31	-0.13	-0.16	8.45	0	0	0
60	SLU 32	-0.14	-0.15	8.6	0	0	0
60	SLU 33	-0.14	-0.15	8.61	0	0	0
60	SLU 34	-0.14	-0.15	8.55	0	0	0
60	SLU 35	-0.14	-0.15	8.7	0	0	0
60	SLU 36	-0.14	-0.15	8.7	0	0	0
60	SLU 37	-0.14	-0.15	8.64	0	0	0
60	SLU 38	-0.14	-0.15	8.65	0	0	0
60	SLU 39	-0.14	-0.15	8.83	0	0	0
60	SLU 40	-0.14	-0.15	8.83	0	0	0
60	SLU 41	-0.15	-0.15	8.93	0	0	0
60	SLU 42	-0.15	-0.15	8.93	0	0	0
60	SLU 43	-0.11	-0.22	8.53	0	0	0
60	SLU 44	-0.11	-0.22	8.54	0	0	0
60	SLU 45	-0.11	-0.22	8.69	0	0	0
60	SLU 46	-0.11	-0.22	8.69	0	0	0
60	SLU 47	-0.11	-0.22	8.63	0	0	0
60	SLU 48	-0.12	-0.22	8.78	0	0	0
60	SLU 49	-0.12	-0.22	8.79	0	0	0
60	SLU 50	-0.12	-0.22	8.72	0	0	0
60	SLU 51	-0.12	-0.22	8.73	0	0	0
60	SLU 52	-0.14	-0.22	9.42	0	0	0
60	SLU 53	-0.14	-0.22	9.57	0	0	0
60	SLU 54	-0.14	-0.22	9.57	0	0	0
60	SLU 55	-0.14	-0.22	9.52	0	0	0
60	SLU 56	-0.15	-0.22	9.67	0	0	0
60	SLU 57	-0.15	-0.22	9.67	0	0	0
60	SLU 58	-0.15	-0.22	9.61	0	0	0
60	SLU 59	-0.15	-0.22	9.61	0	0	0
60	SLU 60	-0.15	-0.22	9.79	0	0	0
60	SLU 61	-0.15	-0.22	9.8	0	0	0
60	SLU 62	-0.16	-0.22	9.89	0	0	0
60	SLU 63	-0.16	-0.22	9.89	0	0	0
60	SLU 64	-0.12	-0.2	9.32	0	0	0
60	SLU 65	-0.12	-0.21	9.33	0	0	0
60	SLU 66	-0.13	-0.2	9.48	0	0	0
60	SLU 67	-0.13	-0.21	9.48	0	0	0
60	SLU 68	-0.13	-0.21	9.43	0	0	0
60	SLU 69	-0.13	-0.2	9.58	0	0	0
60	SLU 70	-0.13	-0.2	9.58	0	0	0
60	SLU 71	-0.13	-0.2	9.52	0	0	0
60	SLU 72	-0.13	-0.2	9.52	0	0	0
60	SLU 73	-0.15	-0.21	10.21	0	0	0
60	SLU 74	-0.16	-0.2	10.36	0	0	0
60	SLU 75	-0.16	-0.21	10.37	0	0	0
60	SLU 76	-0.16	-0.21	10.31	0	0	0
60	SLU 77	-0.16	-0.2	10.46	0	0	0
60	SLU 78	-0.16	-0.21	10.46	0	0	0
60	SLU 79	-0.16	-0.2	10.4	0	0	0
60	SLU 80	-0.16	-0.21	10.41	0	0	0
60	SLU 81	-0.16	-0.21	10.59	0	0	0
60	SLU 82	-0.16	-0.21	10.59	0	0	0
60	SLU 83	-0.17	-0.2	10.68	0	0	0
60	SLU 84	-0.17	-0.21	10.69	0	0	0
60	SLE RA 1	-0.09	-0.16	7	0	0	0
60	SLE RA 2	-0.09	-0.16	7	0	0	0
60	SLE RA 3	-0.09	-0.16	7.1	0	0	0
60	SLE RA 4	-0.09	-0.16	7.1	0	0	0
60	SLE RA 5	-0.09	-0.16	7.07	0	0	0
60	SLE RA 6	-0.1	-0.16	7.17	0	0	0
60	SLE RA 7	-0.1	-0.16	7.17	0	0	0
60	SLE RA 8	-0.1	-0.16	7.13	0	0	0
60	SLE RA 9	-0.1	-0.16	7.13	0	0	0
60	SLE RA 10	-0.11	-0.16	7.59	0	0	0
60	SLE RA 11	-0.11	-0.16	7.69	0	0	0
60	SLE RA 12	-0.11	-0.16	7.69	0	0	0
60	SLE RA 13	-0.11	-0.16	7.66	0	0	0
60	SLE RA 14	-0.12	-0.16	7.76	0	0	0
60	SLE RA 15	-0.12	-0.16	7.76	0	0	0
60	SLE RA 16	-0.12	-0.16	7.72	0	0	0
60	SLE RA 17	-0.12	-0.16	7.72	0	0	0
60	SLE RA 18	-0.12	-0.16	7.84	0	0	0
60	SLE RA 19	-0.12	-0.16	7.84	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
60	SLE RA 20	-0.12	-0.16	7.91	0	0	0
60	SLE RA 21	-0.12	-0.16	7.91	0	0	0
60	SLE FR 1	-0.09	-0.16	7	0	0	0
60	SLE FR 2	-0.09	-0.16	7	0	0	0
60	SLE FR 3	-0.09	-0.16	7.02	0	0	0
60	SLE FR 4	-0.1	-0.16	7.25	0	0	0
60	SLE FR 5	-0.1	-0.16	7.28	0	0	0
60	SLE FR 6	-0.1	-0.16	7.42	0	0	0
60	SLE QP 1	-0.09	-0.16	7	0	0	0
60	SLE QP 2	-0.1	-0.16	7.25	0	0	0
60	SLD 1	0.36	-0.06	7.12	0	0	0
60	SLD 2	0.36	-0.05	7.12	0	0	0
60	SLD 3	0.33	-0.21	7.22	0	0	0
60	SLD 4	0.33	-0.2	7.22	0	0	0
60	SLD 5	0.09	0.1	7.05	0	0	0
60	SLD 6	0.1	0.11	7.05	0	0	0
60	SLD 7	-0.03	-0.41	7.4	0	0	0
60	SLD 8	-0.03	-0.4	7.4	0	0	0
60	SLD 9	-0.17	0.08	7.1	0	0	0
60	SLD 10	-0.17	0.09	7.1	0	0	0
60	SLD 11	-0.29	-0.43	7.45	0	0	0
60	SLD 12	-0.29	-0.42	7.45	0	0	0
60	SLD 13	-0.53	-0.12	7.28	0	0	0
60	SLD 14	-0.53	-0.11	7.28	0	0	0
60	SLD 15	-0.56	-0.27	7.39	0	0	0
60	SLD 16	-0.56	-0.26	7.38	0	0	0
60	SLV 1	0.98	0.07	6.94	0	0	0
60	SLV 2	0.99	0.1	6.94	0	0	0
60	SLV 3	0.9	-0.28	7.18	0	0	0
60	SLV 4	0.9	-0.25	7.18	0	0	0
60	SLV 5	0.35	0.42	6.8	0	0	0
60	SLV 6	0.35	0.44	6.79	0	0	0
60	SLV 7	0.08	-0.72	7.59	0	0	0
60	SLV 8	0.08	-0.7	7.59	0	0	0
60	SLV 9	-0.27	0.38	6.91	0	0	0
60	SLV 10	-0.27	0.4	6.91	0	0	0
60	SLV 11	-0.55	-0.77	7.71	0	0	0
60	SLV 12	-0.55	-0.75	7.7	0	0	0
60	SLV 13	-1.1	-0.08	7.32	0	0	0
60	SLV 14	-1.1	-0.05	7.32	0	0	0
60	SLV 15	-1.18	-0.42	7.56	0	0	0
60	SLV 16	-1.18	-0.39	7.56	0	0	0
61	SLU 1	-0.08	-0.15	6.35	0	0	0
61	SLU 2	-0.08	-0.15	6.35	0	0	0
61	SLU 3	-0.09	-0.15	6.49	0	0	0
61	SLU 4	-0.09	-0.15	6.49	0	0	0
61	SLU 5	-0.09	-0.15	6.44	0	0	0
61	SLU 6	-0.09	-0.15	6.58	0	0	0
61	SLU 7	-0.09	-0.15	6.58	0	0	0
61	SLU 8	-0.09	-0.15	6.52	0	0	0
61	SLU 9	-0.09	-0.15	6.53	0	0	0
61	SLU 10	-0.11	-0.15	7.17	0	0	0
61	SLU 11	-0.12	-0.15	7.31	0	0	0
61	SLU 12	-0.12	-0.15	7.32	0	0	0
61	SLU 13	-0.12	-0.15	7.26	0	0	0
61	SLU 14	-0.12	-0.15	7.4	0	0	0
61	SLU 15	-0.12	-0.15	7.4	0	0	0
61	SLU 16	-0.12	-0.15	7.35	0	0	0
61	SLU 17	-0.12	-0.15	7.35	0	0	0
61	SLU 18	-0.12	-0.15	7.52	0	0	0
61	SLU 19	-0.12	-0.15	7.52	0	0	0
61	SLU 20	-0.13	-0.15	7.61	0	0	0
61	SLU 21	-0.13	-0.15	7.61	0	0	0
61	SLU 22	-0.09	-0.13	7.09	0	0	0
61	SLU 23	-0.09	-0.14	7.09	0	0	0
61	SLU 24	-0.1	-0.13	7.23	0	0	0
61	SLU 25	-0.1	-0.14	7.23	0	0	0
61	SLU 26	-0.1	-0.14	7.18	0	0	0
61	SLU 27	-0.1	-0.13	7.32	0	0	0
61	SLU 28	-0.11	-0.13	7.32	0	0	0
61	SLU 29	-0.11	-0.13	7.27	0	0	0
61	SLU 30	-0.11	-0.13	7.27	0	0	0
61	SLU 31	-0.12	-0.14	7.92	0	0	0
61	SLU 32	-0.13	-0.13	8.06	0	0	0
61	SLU 33	-0.13	-0.14	8.06	0	0	0
61	SLU 34	-0.13	-0.14	8	0	0	0
61	SLU 35	-0.13	-0.13	8.15	0	0	0
61	SLU 36	-0.13	-0.13	8.15	0	0	0
61	SLU 37	-0.13	-0.13	8.09	0	0	0
61	SLU 38	-0.13	-0.13	8.09	0	0	0
61	SLU 39	-0.14	-0.13	8.26	0	0	0
61	SLU 40	-0.14	-0.14	8.27	0	0	0
61	SLU 41	-0.14	-0.13	8.35	0	0	0
61	SLU 42	-0.14	-0.14	8.36	0	0	0
61	SLU 43	-0.1	-0.2	7.99	0	0	0
61	SLU 44	-0.1	-0.2	8	0	0	0
61	SLU 45	-0.11	-0.2	8.14	0	0	0
61	SLU 46	-0.11	-0.2	8.14	0	0	0
61	SLU 47	-0.11	-0.2	8.09	0	0	0
61	SLU 48	-0.11	-0.2	8.23	0	0	0





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
61	SLU 49	-0.11	-0.2	8.23	0	0	0
61	SLU 50	-0.11	-0.2	8.17	0	0	0
61	SLU 51	-0.11	-0.2	8.17	0	0	0
61	SLU 52	-0.13	-0.2	8.82	0	0	0
61	SLU 53	-0.14	-0.2	8.96	0	0	0
61	SLU 54	-0.14	-0.2	8.96	0	0	0
61	SLU 55	-0.14	-0.2	8.91	0	0	0
61	SLU 56	-0.14	-0.2	9.05	0	0	0
61	SLU 57	-0.14	-0.2	9.05	0	0	0
61	SLU 58	-0.14	-0.2	9	0	0	0
61	SLU 59	-0.14	-0.2	9	0	0	0
61	SLU 60	-0.14	-0.2	9.17	0	0	0
61	SLU 61	-0.14	-0.2	9.17	0	0	0
61	SLU 62	-0.15	-0.2	9.26	0	0	0
61	SLU 63	-0.15	-0.2	9.26	0	0	0
61	SLU 64	-0.11	-0.18	8.74	0	0	0
61	SLU 65	-0.11	-0.19	8.74	0	0	0
61	SLU 66	-0.12	-0.18	8.88	0	0	0
61	SLU 67	-0.12	-0.18	8.88	0	0	0
61	SLU 68	-0.12	-0.19	8.83	0	0	0
61	SLU 69	-0.12	-0.18	8.97	0	0	0
61	SLU 70	-0.13	-0.18	8.97	0	0	0
61	SLU 71	-0.13	-0.18	8.92	0	0	0
61	SLU 72	-0.13	-0.18	8.92	0	0	0
61	SLU 73	-0.14	-0.19	9.56	0	0	0
61	SLU 74	-0.15	-0.18	9.7	0	0	0
61	SLU 75	-0.15	-0.18	9.71	0	0	0
61	SLU 76	-0.15	-0.19	9.65	0	0	0
61	SLU 77	-0.15	-0.18	9.79	0	0	0
61	SLU 78	-0.15	-0.18	9.8	0	0	0
61	SLU 79	-0.15	-0.18	9.74	0	0	0
61	SLU 80	-0.15	-0.18	9.74	0	0	0
61	SLU 81	-0.16	-0.18	9.91	0	0	0
61	SLU 82	-0.16	-0.19	9.92	0	0	0
61	SLU 83	-0.16	-0.18	10	0	0	0
61	SLU 84	-0.16	-0.18	10	0	0	0
61	SLE RA 1	-0.08	-0.14	6.56	0	0	0
61	SLE RA 2	-0.09	-0.15	6.56	0	0	0
61	SLE RA 3	-0.09	-0.14	6.65	0	0	0
61	SLE RA 4	-0.09	-0.15	6.66	0	0	0
61	SLE RA 5	-0.09	-0.15	6.62	0	0	0
61	SLE RA 6	-0.09	-0.14	6.71	0	0	0
61	SLE RA 7	-0.09	-0.14	6.71	0	0	0
61	SLE RA 8	-0.09	-0.14	6.68	0	0	0
61	SLE RA 9	-0.09	-0.14	6.68	0	0	0
61	SLE RA 10	-0.1	-0.15	7.11	0	0	0
61	SLE RA 11	-0.11	-0.14	7.2	0	0	0
61	SLE RA 12	-0.11	-0.15	7.2	0	0	0
61	SLE RA 13	-0.11	-0.15	7.17	0	0	0
61	SLE RA 14	-0.11	-0.14	7.26	0	0	0
61	SLE RA 15	-0.11	-0.14	7.26	0	0	0
61	SLE RA 16	-0.11	-0.14	7.23	0	0	0
61	SLE RA 17	-0.11	-0.14	7.23	0	0	0
61	SLE RA 18	-0.11	-0.14	7.34	0	0	0
61	SLE RA 19	-0.11	-0.15	7.34	0	0	0
61	SLE RA 20	-0.12	-0.14	7.4	0	0	0
61	SLE RA 21	-0.12	-0.15	7.4	0	0	0
61	SLE FR 1	-0.08	-0.14	6.56	0	0	0
61	SLE FR 2	-0.09	-0.15	6.56	0	0	0
61	SLE FR 3	-0.09	-0.14	6.58	0	0	0
61	SLE FR 4	-0.09	-0.15	6.79	0	0	0
61	SLE FR 5	-0.09	-0.14	6.82	0	0	0
61	SLE FR 6	-0.1	-0.14	6.95	0	0	0
61	SLE QP 1	-0.08	-0.14	6.56	0	0	0
61	SLE QP 2	-0.09	-0.15	6.79	0	0	0
61	SLD 1	0.35	-0.05	6.64	0	0	0
61	SLD 2	0.35	-0.04	6.64	0	0	0
61	SLD 3	0.31	-0.19	6.73	0	0	0
61	SLD 4	0.31	-0.18	6.73	0	0	0
61	SLD 5	0.09	0.1	6.61	0	0	0
61	SLD 6	0.09	0.11	6.61	0	0	0
61	SLD 7	-0.02	-0.38	6.91	0	0	0
61	SLD 8	-0.02	-0.37	6.91	0	0	0
61	SLD 9	-0.16	0.08	6.67	0	0	0
61	SLD 10	-0.16	0.09	6.67	0	0	0
61	SLD 11	-0.28	-0.4	6.98	0	0	0
61	SLD 12	-0.28	-0.39	6.98	0	0	0
61	SLD 13	-0.5	-0.11	6.85	0	0	0
61	SLD 14	-0.5	-0.1	6.85	0	0	0
61	SLD 15	-0.53	-0.25	6.95	0	0	0
61	SLD 16	-0.53	-0.24	6.94	0	0	0
61	SLV 1	0.93	0.07	6.45	0	0	0
61	SLV 2	0.93	0.1	6.44	0	0	0
61	SLV 3	0.85	-0.25	6.65	0	0	0
61	SLV 4	0.85	-0.22	6.65	0	0	0
61	SLV 5	0.33	0.4	6.38	0	0	0
61	SLV 6	0.33	0.42	6.37	0	0	0
61	SLV 7	0.07	-0.67	7.07	0	0	0
61	SLV 8	0.07	-0.65	7.06	0	0	0
61	SLV 9	-0.26	0.36	6.52	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
61	SLV 10	-0.26	0.38	6.52	0	0	0
61	SLV 11	-0.52	-0.71	7.21	0	0	0
61	SLV 12	-0.52	-0.69	7.21	0	0	0
61	SLV 13	-1.04	-0.07	6.94	0	0	0
61	SLV 14	-1.04	-0.04	6.93	0	0	0
61	SLV 15	-1.12	-0.39	7.15	0	0	0
61	SLV 16	-1.12	-0.36	7.14	0	0	0
62	SLU 1	-0.08	-0.14	6.13	0	0	0
62	SLU 2	-0.08	-0.14	6.13	0	0	0
62	SLU 3	-0.08	-0.14	6.27	0	0	0
62	SLU 4	-0.08	-0.14	6.27	0	0	0
62	SLU 5	-0.09	-0.14	6.22	0	0	0
62	SLU 6	-0.09	-0.14	6.35	0	0	0
62	SLU 7	-0.09	-0.14	6.36	0	0	0
62	SLU 8	-0.09	-0.14	6.3	0	0	0
62	SLU 9	-0.09	-0.14	6.3	0	0	0
62	SLU 10	-0.11	-0.14	6.92	0	0	0
62	SLU 11	-0.11	-0.14	7.06	0	0	0
62	SLU 12	-0.11	-0.14	7.06	0	0	0
62	SLU 13	-0.11	-0.14	7.01	0	0	0
62	SLU 14	-0.12	-0.13	7.14	0	0	0
62	SLU 15	-0.12	-0.14	7.15	0	0	0
62	SLU 16	-0.12	-0.13	7.09	0	0	0
62	SLU 17	-0.12	-0.14	7.09	0	0	0
62	SLU 18	-0.12	-0.14	7.26	0	0	0
62	SLU 19	-0.12	-0.14	7.26	0	0	0
62	SLU 20	-0.12	-0.14	7.34	0	0	0
62	SLU 21	-0.12	-0.14	7.35	0	0	0
62	SLU 22	-0.09	-0.12	6.85	0	0	0
62	SLU 23	-0.09	-0.13	6.85	0	0	0
62	SLU 24	-0.1	-0.12	6.99	0	0	0
62	SLU 25	-0.1	-0.12	6.99	0	0	0
62	SLU 26	-0.1	-0.13	6.94	0	0	0
62	SLU 27	-0.1	-0.12	7.07	0	0	0
62	SLU 28	-0.1	-0.12	7.07	0	0	0
62	SLU 29	-0.1	-0.12	7.02	0	0	0
62	SLU 30	-0.1	-0.12	7.02	0	0	0
62	SLU 31	-0.12	-0.13	7.64	0	0	0
62	SLU 32	-0.12	-0.12	7.78	0	0	0
62	SLU 33	-0.13	-0.12	7.78	0	0	0
62	SLU 34	-0.13	-0.13	7.73	0	0	0
62	SLU 35	-0.13	-0.12	7.86	0	0	0
62	SLU 36	-0.13	-0.12	7.86	0	0	0
62	SLU 37	-0.13	-0.12	7.81	0	0	0
62	SLU 38	-0.13	-0.12	7.81	0	0	0
62	SLU 39	-0.13	-0.12	7.98	0	0	0
62	SLU 40	-0.13	-0.12	7.98	0	0	0
62	SLU 41	-0.14	-0.12	8.06	0	0	0
62	SLU 42	-0.14	-0.12	8.06	0	0	0
62	SLU 43	-0.1	-0.18	7.72	0	0	0
62	SLU 44	-0.1	-0.19	7.73	0	0	0
62	SLU 45	-0.1	-0.18	7.86	0	0	0
62	SLU 46	-0.1	-0.19	7.86	0	0	0
62	SLU 47	-0.1	-0.19	7.81	0	0	0
62	SLU 48	-0.11	-0.18	7.95	0	0	0
62	SLU 49	-0.11	-0.18	7.95	0	0	0
62	SLU 50	-0.11	-0.18	7.89	0	0	0
62	SLU 51	-0.11	-0.18	7.9	0	0	0
62	SLU 52	-0.13	-0.19	8.52	0	0	0
62	SLU 53	-0.13	-0.18	8.65	0	0	0
62	SLU 54	-0.13	-0.18	8.65	0	0	0
62	SLU 55	-0.13	-0.19	8.6	0	0	0
62	SLU 56	-0.14	-0.18	8.74	0	0	0
62	SLU 57	-0.14	-0.18	8.74	0	0	0
62	SLU 58	-0.14	-0.18	8.68	0	0	0
62	SLU 59	-0.14	-0.18	8.69	0	0	0
62	SLU 60	-0.14	-0.18	8.85	0	0	0
62	SLU 61	-0.14	-0.19	8.85	0	0	0
62	SLU 62	-0.14	-0.18	8.94	0	0	0
62	SLU 63	-0.14	-0.18	8.94	0	0	0
62	SLU 64	-0.11	-0.17	8.44	0	0	0
62	SLU 65	-0.11	-0.17	8.45	0	0	0
62	SLU 66	-0.12	-0.17	8.58	0	0	0
62	SLU 67	-0.12	-0.17	8.58	0	0	0
62	SLU 68	-0.12	-0.17	8.53	0	0	0
62	SLU 69	-0.12	-0.17	8.66	0	0	0
62	SLU 70	-0.12	-0.17	8.67	0	0	0
62	SLU 71	-0.12	-0.17	8.61	0	0	0
62	SLU 72	-0.12	-0.17	8.61	0	0	0
62	SLU 73	-0.14	-0.17	9.24	0	0	0
62	SLU 74	-0.14	-0.17	9.37	0	0	0
62	SLU 75	-0.14	-0.17	9.37	0	0	0
62	SLU 76	-0.15	-0.17	9.32	0	0	0
62	SLU 77	-0.15	-0.17	9.45	0	0	0
62	SLU 78	-0.15	-0.17	9.46	0	0	0
62	SLU 79	-0.15	-0.17	9.4	0	0	0
62	SLU 80	-0.15	-0.17	9.4	0	0	0
62	SLU 81	-0.15	-0.17	9.57	0	0	0
62	SLU 82	-0.15	-0.17	9.57	0	0	0
62	SLU 83	-0.16	-0.17	9.65	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
62	SLU 84	-0.16	-0.17	9.66	0	0	0
62	SLE RA 1	-0.08	-0.13	6.34	0	0	0
62	SLE RA 2	-0.08	-0.14	6.34	0	0	0
62	SLE RA 3	-0.09	-0.13	6.43	0	0	0
62	SLE RA 4	-0.09	-0.13	6.43	0	0	0
62	SLE RA 5	-0.09	-0.14	6.39	0	0	0
62	SLE RA 6	-0.09	-0.13	6.48	0	0	0
62	SLE RA 7	-0.09	-0.13	6.49	0	0	0
62	SLE RA 8	-0.09	-0.13	6.45	0	0	0
62	SLE RA 9	-0.09	-0.13	6.45	0	0	0
62	SLE RA 10	-0.1	-0.14	6.87	0	0	0
62	SLE RA 11	-0.1	-0.13	6.96	0	0	0
62	SLE RA 12	-0.1	-0.13	6.96	0	0	0
62	SLE RA 13	-0.11	-0.13	6.92	0	0	0
62	SLE RA 14	-0.11	-0.13	7.01	0	0	0
62	SLE RA 15	-0.11	-0.13	7.01	0	0	0
62	SLE RA 16	-0.11	-0.13	6.98	0	0	0
62	SLE RA 17	-0.11	-0.13	6.98	0	0	0
62	SLE RA 18	-0.11	-0.13	7.09	0	0	0
62	SLE RA 19	-0.11	-0.13	7.09	0	0	0
62	SLE RA 20	-0.11	-0.13	7.14	0	0	0
62	SLE RA 21	-0.11	-0.13	7.15	0	0	0
62	SLE FR 1	-0.08	-0.13	6.34	0	0	0
62	SLE FR 2	-0.08	-0.13	6.34	0	0	0
62	SLE FR 3	-0.08	-0.13	6.36	0	0	0
62	SLE FR 4	-0.09	-0.13	6.56	0	0	0
62	SLE FR 5	-0.09	-0.13	6.58	0	0	0
62	SLE FR 6	-0.1	-0.13	6.71	0	0	0
62	SLE QP 1	-0.08	-0.13	6.34	0	0	0
62	SLE QP 2	-0.09	-0.13	6.56	0	0	0
62	SLD 1	0.34	-0.04	6.39	0	0	0
62	SLD 2	0.34	-0.03	6.39	0	0	0
62	SLD 3	0.3	-0.18	6.47	0	0	0
62	SLD 4	0.3	-0.16	6.47	0	0	0
62	SLD 5	0.09	0.1	6.39	0	0	0
62	SLD 6	0.09	0.11	6.39	0	0	0
62	SLD 7	-0.02	-0.36	6.66	0	0	0
62	SLD 8	-0.02	-0.35	6.66	0	0	0
62	SLD 9	-0.16	0.08	6.47	0	0	0
62	SLD 10	-0.16	0.09	6.46	0	0	0
62	SLD 11	-0.27	-0.38	6.74	0	0	0
62	SLD 12	-0.27	-0.37	6.74	0	0	0
62	SLD 13	-0.49	-0.1	6.66	0	0	0
62	SLD 14	-0.48	-0.09	6.65	0	0	0
62	SLD 15	-0.52	-0.24	6.74	0	0	0
62	SLD 16	-0.52	-0.22	6.73	0	0	0
62	SLV 1	0.91	0.07	6.16	0	0	0
62	SLV 2	0.91	0.11	6.16	0	0	0
62	SLV 3	0.83	-0.24	6.35	0	0	0
62	SLV 4	0.83	-0.2	6.34	0	0	0
62	SLV 5	0.32	0.39	6.16	0	0	0
62	SLV 6	0.33	0.42	6.16	0	0	0
62	SLV 7	0.07	-0.65	6.78	0	0	0
62	SLV 8	0.07	-0.62	6.78	0	0	0
62	SLV 9	-0.25	0.35	6.35	0	0	0
62	SLV 10	-0.25	0.38	6.34	0	0	0
62	SLV 11	-0.51	-0.69	6.97	0	0	0
62	SLV 12	-0.51	-0.66	6.96	0	0	0
62	SLV 13	-1.01	-0.07	6.78	0	0	0
62	SLV 14	-1.01	-0.03	6.78	0	0	0
62	SLV 15	-1.09	-0.38	6.97	0	0	0
62	SLV 16	-1.09	-0.34	6.96	0	0	0
63	SLU 1	-0.09	-0.15	6.83	0	0	0
63	SLU 2	-0.09	-0.15	6.83	0	0	0
63	SLU 3	-0.09	-0.15	6.98	0	0	0
63	SLU 4	-0.09	-0.15	6.98	0	0	0
63	SLU 5	-0.1	-0.15	6.92	0	0	0
63	SLU 6	-0.1	-0.14	7.07	0	0	0
63	SLU 7	-0.1	-0.15	7.07	0	0	0
63	SLU 8	-0.1	-0.14	7.01	0	0	0
63	SLU 9	-0.1	-0.15	7.01	0	0	0
63	SLU 10	-0.12	-0.15	7.7	0	0	0
63	SLU 11	-0.13	-0.14	7.85	0	0	0
63	SLU 12	-0.13	-0.15	7.85	0	0	0
63	SLU 13	-0.13	-0.15	7.8	0	0	0
63	SLU 14	-0.13	-0.14	7.94	0	0	0
63	SLU 15	-0.13	-0.14	7.95	0	0	0
63	SLU 16	-0.13	-0.14	7.88	0	0	0
63	SLU 17	-0.13	-0.14	7.89	0	0	0
63	SLU 18	-0.13	-0.15	8.07	0	0	0
63	SLU 19	-0.13	-0.15	8.08	0	0	0
63	SLU 20	-0.14	-0.14	8.17	0	0	0
63	SLU 21	-0.14	-0.15	8.17	0	0	0
63	SLU 22	-0.1	-0.13	7.63	0	0	0
63	SLU 23	-0.1	-0.13	7.63	0	0	0
63	SLU 24	-0.11	-0.13	7.78	0	0	0
63	SLU 25	-0.11	-0.13	7.78	0	0	0
63	SLU 26	-0.11	-0.13	7.72	0	0	0
63	SLU 27	-0.11	-0.13	7.87	0	0	0
63	SLU 28	-0.11	-0.13	7.87	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
63	SLU 29	-0.11	-0.13	7.81	0	0	0
63	SLU 30	-0.12	-0.13	7.81	0	0	0
63	SLU 31	-0.14	-0.13	8.5	0	0	0
63	SLU 32	-0.14	-0.13	8.65	0	0	0
63	SLU 33	-0.14	-0.13	8.65	0	0	0
63	SLU 34	-0.14	-0.13	8.59	0	0	0
63	SLU 35	-0.15	-0.13	8.74	0	0	0
63	SLU 36	-0.15	-0.13	8.74	0	0	0
63	SLU 37	-0.15	-0.13	8.68	0	0	0
63	SLU 38	-0.15	-0.13	8.68	0	0	0
63	SLU 39	-0.15	-0.13	8.87	0	0	0
63	SLU 40	-0.15	-0.13	8.87	0	0	0
63	SLU 41	-0.15	-0.13	8.96	0	0	0
63	SLU 42	-0.15	-0.13	8.97	0	0	0
63	SLU 43	-0.11	-0.2	8.6	0	0	0
63	SLU 44	-0.11	-0.2	8.61	0	0	0
63	SLU 45	-0.12	-0.2	8.75	0	0	0
63	SLU 46	-0.12	-0.2	8.76	0	0	0
63	SLU 47	-0.12	-0.2	8.7	0	0	0
63	SLU 48	-0.12	-0.19	8.85	0	0	0
63	SLU 49	-0.12	-0.2	8.85	0	0	0
63	SLU 50	-0.12	-0.19	8.79	0	0	0
63	SLU 51	-0.12	-0.2	8.79	0	0	0
63	SLU 52	-0.14	-0.2	9.48	0	0	0
63	SLU 53	-0.15	-0.19	9.63	0	0	0
63	SLU 54	-0.15	-0.2	9.63	0	0	0
63	SLU 55	-0.15	-0.2	9.57	0	0	0
63	SLU 56	-0.15	-0.19	9.72	0	0	0
63	SLU 57	-0.15	-0.19	9.72	0	0	0
63	SLU 58	-0.15	-0.19	9.66	0	0	0
63	SLU 59	-0.15	-0.2	9.66	0	0	0
63	SLU 60	-0.16	-0.2	9.85	0	0	0
63	SLU 61	-0.16	-0.2	9.85	0	0	0
63	SLU 62	-0.16	-0.19	9.94	0	0	0
63	SLU 63	-0.16	-0.2	9.94	0	0	0
63	SLU 64	-0.12	-0.18	9.4	0	0	0
63	SLU 65	-0.13	-0.18	9.4	0	0	0
63	SLU 66	-0.13	-0.18	9.55	0	0	0
63	SLU 67	-0.13	-0.18	9.55	0	0	0
63	SLU 68	-0.13	-0.18	9.5	0	0	0
63	SLU 69	-0.14	-0.18	9.64	0	0	0
63	SLU 70	-0.14	-0.18	9.65	0	0	0
63	SLU 71	-0.14	-0.18	9.58	0	0	0
63	SLU 72	-0.14	-0.18	9.59	0	0	0
63	SLU 73	-0.16	-0.18	10.28	0	0	0
63	SLU 74	-0.16	-0.18	10.43	0	0	0
63	SLU 75	-0.16	-0.18	10.43	0	0	0
63	SLU 76	-0.16	-0.18	10.37	0	0	0
63	SLU 77	-0.17	-0.18	10.52	0	0	0
63	SLU 78	-0.17	-0.18	10.52	0	0	0
63	SLU 79	-0.17	-0.18	10.46	0	0	0
63	SLU 80	-0.17	-0.18	10.46	0	0	0
63	SLU 81	-0.17	-0.18	10.65	0	0	0
63	SLU 82	-0.17	-0.18	10.65	0	0	0
63	SLU 83	-0.18	-0.18	10.74	0	0	0
63	SLU 84	-0.18	-0.18	10.74	0	0	0
63	SLE RA 1	-0.09	-0.14	7.06	0	0	0
63	SLE RA 2	-0.09	-0.15	7.06	0	0	0
63	SLE RA 3	-0.1	-0.14	7.16	0	0	0
63	SLE RA 4	-0.1	-0.14	7.16	0	0	0
63	SLE RA 5	-0.1	-0.14	7.12	0	0	0
63	SLE RA 6	-0.1	-0.14	7.22	0	0	0
63	SLE RA 7	-0.1	-0.14	7.22	0	0	0
63	SLE RA 8	-0.1	-0.14	7.18	0	0	0
63	SLE RA 9	-0.1	-0.14	7.18	0	0	0
63	SLE RA 10	-0.11	-0.14	7.64	0	0	0
63	SLE RA 11	-0.12	-0.14	7.74	0	0	0
63	SLE RA 12	-0.12	-0.14	7.74	0	0	0
63	SLE RA 13	-0.12	-0.14	7.7	0	0	0
63	SLE RA 14	-0.12	-0.14	7.8	0	0	0
63	SLE RA 15	-0.12	-0.14	7.8	0	0	0
63	SLE RA 16	-0.12	-0.14	7.76	0	0	0
63	SLE RA 17	-0.12	-0.14	7.76	0	0	0
63	SLE RA 18	-0.12	-0.14	7.89	0	0	0
63	SLE RA 19	-0.12	-0.14	7.89	0	0	0
63	SLE RA 20	-0.13	-0.14	7.95	0	0	0
63	SLE RA 21	-0.13	-0.14	7.95	0	0	0
63	SLE FR 1	-0.09	-0.14	7.06	0	0	0
63	SLE FR 2	-0.09	-0.14	7.06	0	0	0
63	SLE FR 3	-0.09	-0.14	7.08	0	0	0
63	SLE FR 4	-0.1	-0.14	7.31	0	0	0
63	SLE FR 5	-0.1	-0.14	7.33	0	0	0
63	SLE FR 6	-0.11	-0.14	7.47	0	0	0
63	SLE QP 1	-0.09	-0.14	7.06	0	0	0
63	SLE QP 2	-0.1	-0.14	7.31	0	0	0
63	SLD 1	0.38	-0.04	7.08	0	0	0
63	SLD 2	0.38	-0.02	7.08	0	0	0
63	SLD 3	0.34	-0.2	7.17	0	0	0
63	SLD 4	0.34	-0.18	7.16	0	0	0
63	SLD 5	0.1	0.12	7.11	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
63	SLD 6	0.1	0.13	7.11	0	0	0
63	SLD 7	-0.03	-0.4	7.39	0	0	0
63	SLD 8	-0.03	-0.38	7.39	0	0	0
63	SLD 9	-0.18	0.1	7.22	0	0	0
63	SLD 10	-0.18	0.11	7.22	0	0	0
63	SLD 11	-0.3	-0.42	7.5	0	0	0
63	SLD 12	-0.3	-0.4	7.5	0	0	0
63	SLD 13	-0.55	-0.11	7.45	0	0	0
63	SLD 14	-0.54	-0.09	7.44	0	0	0
63	SLD 15	-0.58	-0.26	7.53	0	0	0
63	SLD 16	-0.58	-0.24	7.53	0	0	0
63	SLV 1	1.02	0.08	6.78	0	0	0
63	SLV 2	1.02	0.13	6.77	0	0	0
63	SLV 3	0.93	-0.26	6.98	0	0	0
63	SLV 4	0.94	-0.21	6.97	0	0	0
63	SLV 5	0.36	0.44	6.86	0	0	0
63	SLV 6	0.37	0.48	6.85	0	0	0
63	SLV 7	0.08	-0.71	7.5	0	0	0
63	SLV 8	0.08	-0.68	7.5	0	0	0
63	SLV 9	-0.28	0.4	7.11	0	0	0
63	SLV 10	-0.28	0.43	7.11	0	0	0
63	SLV 11	-0.57	-0.76	7.76	0	0	0
63	SLV 12	-0.57	-0.73	7.75	0	0	0
63	SLV 13	-1.14	-0.07	7.64	0	0	0
63	SLV 14	-1.14	-0.02	7.63	0	0	0
63	SLV 15	-1.23	-0.42	7.84	0	0	0
63	SLV 16	-1.22	-0.37	7.83	0	0	0
64	SLU 1	-0.05	-0.08	3.76	0	0	0
64	SLU 2	-0.05	-0.08	3.76	0	0	0
64	SLU 3	-0.05	-0.08	3.84	0	0	0
64	SLU 4	-0.05	-0.08	3.85	0	0	0
64	SLU 5	-0.05	-0.08	3.81	0	0	0
64	SLU 6	-0.06	-0.07	3.89	0	0	0
64	SLU 7	-0.06	-0.08	3.89	0	0	0
64	SLU 8	-0.06	-0.08	3.86	0	0	0
64	SLU 9	-0.06	-0.08	3.86	0	0	0
64	SLU 10	-0.07	-0.08	4.24	0	0	0
64	SLU 11	-0.07	-0.07	4.32	0	0	0
64	SLU 12	-0.07	-0.08	4.32	0	0	0
64	SLU 13	-0.07	-0.08	4.29	0	0	0
64	SLU 14	-0.07	-0.07	4.37	0	0	0
64	SLU 15	-0.07	-0.07	4.37	0	0	0
64	SLU 16	-0.07	-0.07	4.34	0	0	0
64	SLU 17	-0.07	-0.07	4.34	0	0	0
64	SLU 18	-0.07	-0.08	4.44	0	0	0
64	SLU 19	-0.07	-0.08	4.44	0	0	0
64	SLU 20	-0.08	-0.07	4.49	0	0	0
64	SLU 21	-0.08	-0.08	4.49	0	0	0
64	SLU 22	-0.06	-0.07	4.2	0	0	0
64	SLU 23	-0.06	-0.07	4.2	0	0	0
64	SLU 24	-0.06	-0.07	4.28	0	0	0
64	SLU 25	-0.06	-0.07	4.28	0	0	0
64	SLU 26	-0.06	-0.07	4.25	0	0	0
64	SLU 27	-0.06	-0.07	4.33	0	0	0
64	SLU 28	-0.06	-0.07	4.33	0	0	0
64	SLU 29	-0.06	-0.07	4.3	0	0	0
64	SLU 30	-0.06	-0.07	4.3	0	0	0
64	SLU 31	-0.08	-0.07	4.68	0	0	0
64	SLU 32	-0.08	-0.07	4.76	0	0	0
64	SLU 33	-0.08	-0.07	4.76	0	0	0
64	SLU 34	-0.08	-0.07	4.73	0	0	0
64	SLU 35	-0.08	-0.06	4.81	0	0	0
64	SLU 36	-0.08	-0.07	4.81	0	0	0
64	SLU 37	-0.08	-0.06	4.77	0	0	0
64	SLU 38	-0.08	-0.07	4.78	0	0	0
64	SLU 39	-0.08	-0.07	4.88	0	0	0
64	SLU 40	-0.08	-0.07	4.88	0	0	0
64	SLU 41	-0.09	-0.06	4.93	0	0	0
64	SLU 42	-0.09	-0.07	4.93	0	0	0
64	SLU 43	-0.06	-0.1	4.74	0	0	0
64	SLU 44	-0.06	-0.11	4.74	0	0	0
64	SLU 45	-0.06	-0.1	4.82	0	0	0
64	SLU 46	-0.07	-0.1	4.82	0	0	0
64	SLU 47	-0.07	-0.1	4.79	0	0	0
64	SLU 48	-0.07	-0.1	4.87	0	0	0
64	SLU 49	-0.07	-0.1	4.87	0	0	0
64	SLU 50	-0.07	-0.1	4.84	0	0	0
64	SLU 51	-0.07	-0.1	4.84	0	0	0
64	SLU 52	-0.08	-0.1	5.22	0	0	0
64	SLU 53	-0.08	-0.1	5.3	0	0	0
64	SLU 54	-0.08	-0.1	5.3	0	0	0
64	SLU 55	-0.08	-0.1	5.27	0	0	0
64	SLU 56	-0.09	-0.1	5.35	0	0	0
64	SLU 57	-0.09	-0.1	5.35	0	0	0
64	SLU 58	-0.09	-0.1	5.31	0	0	0
64	SLU 59	-0.09	-0.1	5.31	0	0	0
64	SLU 60	-0.09	-0.1	5.42	0	0	0
64	SLU 61	-0.09	-0.1	5.42	0	0	0
64	SLU 62	-0.09	-0.1	5.47	0	0	0
64	SLU 63	-0.09	-0.1	5.47	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
64	SLU 64	-0.07	-0.09	5.18	0	0	0
64	SLU 65	-0.07	-0.1	5.18	0	0	0
64	SLU 66	-0.07	-0.09	5.26	0	0	0
64	SLU 67	-0.07	-0.09	5.26	0	0	0
64	SLU 68	-0.07	-0.09	5.23	0	0	0
64	SLU 69	-0.08	-0.09	5.31	0	0	0
64	SLU 70	-0.08	-0.09	5.31	0	0	0
64	SLU 71	-0.08	-0.09	5.28	0	0	0
64	SLU 72	-0.08	-0.09	5.28	0	0	0
64	SLU 73	-0.09	-0.09	5.66	0	0	0
64	SLU 74	-0.09	-0.09	5.74	0	0	0
64	SLU 75	-0.09	-0.09	5.74	0	0	0
64	SLU 76	-0.09	-0.09	5.71	0	0	0
64	SLU 77	-0.09	-0.09	5.79	0	0	0
64	SLU 78	-0.09	-0.09	5.79	0	0	0
64	SLU 79	-0.09	-0.09	5.75	0	0	0
64	SLU 80	-0.09	-0.09	5.75	0	0	0
64	SLU 81	-0.09	-0.09	5.86	0	0	0
64	SLU 82	-0.09	-0.09	5.86	0	0	0
64	SLU 83	-0.1	-0.09	5.91	0	0	0
64	SLU 84	-0.1	-0.09	5.91	0	0	0
64	SLE RA 1	-0.05	-0.07	3.89	0	0	0
64	SLE RA 2	-0.05	-0.08	3.89	0	0	0
64	SLE RA 3	-0.05	-0.07	3.94	0	0	0
64	SLE RA 4	-0.05	-0.07	3.94	0	0	0
64	SLE RA 5	-0.05	-0.08	3.92	0	0	0
64	SLE RA 6	-0.06	-0.07	3.98	0	0	0
64	SLE RA 7	-0.06	-0.07	3.98	0	0	0
64	SLE RA 8	-0.06	-0.07	3.95	0	0	0
64	SLE RA 9	-0.06	-0.07	3.95	0	0	0
64	SLE RA 10	-0.06	-0.07	4.21	0	0	0
64	SLE RA 11	-0.07	-0.07	4.26	0	0	0
64	SLE RA 12	-0.07	-0.07	4.26	0	0	0
64	SLE RA 13	-0.07	-0.07	4.24	0	0	0
64	SLE RA 14	-0.07	-0.07	4.29	0	0	0
64	SLE RA 15	-0.07	-0.07	4.29	0	0	0
64	SLE RA 16	-0.07	-0.07	4.27	0	0	0
64	SLE RA 17	-0.07	-0.07	4.27	0	0	0
64	SLE RA 18	-0.07	-0.07	4.34	0	0	0
64	SLE RA 19	-0.07	-0.07	4.34	0	0	0
64	SLE RA 20	-0.07	-0.07	4.37	0	0	0
64	SLE RA 21	-0.07	-0.07	4.37	0	0	0
64	SLE FR 1	-0.05	-0.07	3.89	0	0	0
64	SLE FR 2	-0.05	-0.07	3.89	0	0	0
64	SLE FR 3	-0.05	-0.07	3.9	0	0	0
64	SLE FR 4	-0.06	-0.07	4.02	0	0	0
64	SLE FR 5	-0.06	-0.07	4.04	0	0	0
64	SLE FR 6	-0.06	-0.07	4.11	0	0	0
64	SLE QP 1	-0.05	-0.07	3.89	0	0	0
64	SLE QP 2	-0.06	-0.07	4.02	0	0	0
64	SLD 1	0.21	-0.02	3.88	0	0	0
64	SLD 2	0.21	-0.01	3.87	0	0	0
64	SLD 3	0.19	-0.1	3.92	0	0	0
64	SLD 4	0.19	-0.09	3.92	0	0	0
64	SLD 5	0.06	0.07	3.91	0	0	0
64	SLD 6	0.06	0.08	3.91	0	0	0
64	SLD 7	-0.01	-0.21	4.06	0	0	0
64	SLD 8	-0.01	-0.2	4.06	0	0	0
64	SLD 9	-0.1	0.06	3.99	0	0	0
64	SLD 10	-0.1	0.07	3.99	0	0	0
64	SLD 11	-0.17	-0.23	4.14	0	0	0
64	SLD 12	-0.17	-0.22	4.13	0	0	0
64	SLD 13	-0.3	-0.06	4.13	0	0	0
64	SLD 14	-0.3	-0.04	4.13	0	0	0
64	SLD 15	-0.32	-0.14	4.17	0	0	0
64	SLD 16	-0.32	-0.13	4.17	0	0	0
64	SLV 1	0.57	0.05	3.68	0	0	0
64	SLV 2	0.57	0.08	3.67	0	0	0
64	SLV 3	0.52	-0.14	3.78	0	0	0
64	SLV 4	0.52	-0.11	3.77	0	0	0
64	SLV 5	0.2	0.25	3.77	0	0	0
64	SLV 6	0.2	0.27	3.77	0	0	0
64	SLV 7	0.04	-0.39	4.1	0	0	0
64	SLV 8	0.04	-0.37	4.1	0	0	0
64	SLV 9	-0.16	0.22	3.95	0	0	0
64	SLV 10	-0.16	0.24	3.94	0	0	0
64	SLV 11	-0.32	-0.42	4.28	0	0	0
64	SLV 12	-0.32	-0.4	4.28	0	0	0
64	SLV 13	-0.64	-0.04	4.27	0	0	0
64	SLV 14	-0.64	-0.01	4.27	0	0	0
64	SLV 15	-0.68	-0.23	4.37	0	0	0
64	SLV 16	-0.68	-0.2	4.37	0	0	0
65	SLU 1	-0.02	-0.04	1.61	0	0	0
65	SLU 2	-0.02	-0.05	1.62	0	0	0
65	SLU 3	-0.02	-0.04	1.65	0	0	0
65	SLU 4	-0.02	-0.05	1.65	0	0	0
65	SLU 5	-0.02	-0.05	1.64	0	0	0
65	SLU 6	-0.02	-0.04	1.68	0	0	0
65	SLU 7	-0.02	-0.04	1.68	0	0	0
65	SLU 8	-0.02	-0.04	1.66	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
65	SLU 9	-0.02	-0.04	1.66	0	0	0
65	SLU 10	-0.03	-0.05	1.83	0	0	0
65	SLU 11	-0.03	-0.05	1.87	0	0	0
65	SLU 12	-0.03	-0.05	1.87	0	0	0
65	SLU 13	-0.03	-0.05	1.86	0	0	0
65	SLU 14	-0.03	-0.04	1.89	0	0	0
65	SLU 15	-0.03	-0.05	1.89	0	0	0
65	SLU 16	-0.03	-0.04	1.88	0	0	0
65	SLU 17	-0.03	-0.05	1.88	0	0	0
65	SLU 18	-0.03	-0.05	1.92	0	0	0
65	SLU 19	-0.03	-0.05	1.92	0	0	0
65	SLU 20	-0.03	-0.05	1.95	0	0	0
65	SLU 21	-0.03	-0.05	1.95	0	0	0
65	SLU 22	-0.02	-0.04	1.8	0	0	0
65	SLU 23	-0.02	-0.04	1.81	0	0	0
65	SLU 24	-0.03	-0.04	1.84	0	0	0
65	SLU 25	-0.03	-0.04	1.84	0	0	0
65	SLU 26	-0.03	-0.04	1.83	0	0	0
65	SLU 27	-0.03	-0.04	1.87	0	0	0
65	SLU 28	-0.03	-0.04	1.87	0	0	0
65	SLU 29	-0.03	-0.04	1.85	0	0	0
65	SLU 30	-0.03	-0.04	1.86	0	0	0
65	SLU 31	-0.03	-0.04	2.02	0	0	0
65	SLU 32	-0.03	-0.04	2.06	0	0	0
65	SLU 33	-0.03	-0.04	2.06	0	0	0
65	SLU 34	-0.03	-0.04	2.05	0	0	0
65	SLU 35	-0.03	-0.04	2.08	0	0	0
65	SLU 36	-0.03	-0.04	2.09	0	0	0
65	SLU 37	-0.03	-0.04	2.07	0	0	0
65	SLU 38	-0.03	-0.04	2.07	0	0	0
65	SLU 39	-0.04	-0.04	2.11	0	0	0
65	SLU 40	-0.04	-0.04	2.12	0	0	0
65	SLU 41	-0.04	-0.04	2.14	0	0	0
65	SLU 42	-0.04	-0.04	2.14	0	0	0
65	SLU 43	-0.03	-0.06	2.03	0	0	0
65	SLU 44	-0.03	-0.06	2.03	0	0	0
65	SLU 45	-0.03	-0.06	2.07	0	0	0
65	SLU 46	-0.03	-0.06	2.07	0	0	0
65	SLU 47	-0.03	-0.06	2.06	0	0	0
65	SLU 48	-0.03	-0.06	2.1	0	0	0
65	SLU 49	-0.03	-0.06	2.1	0	0	0
65	SLU 50	-0.03	-0.06	2.08	0	0	0
65	SLU 51	-0.03	-0.06	2.08	0	0	0
65	SLU 52	-0.03	-0.06	2.25	0	0	0
65	SLU 53	-0.04	-0.06	2.29	0	0	0
65	SLU 54	-0.04	-0.06	2.29	0	0	0
65	SLU 55	-0.04	-0.06	2.28	0	0	0
65	SLU 56	-0.04	-0.06	2.31	0	0	0
65	SLU 57	-0.04	-0.06	2.31	0	0	0
65	SLU 58	-0.04	-0.06	2.3	0	0	0
65	SLU 59	-0.04	-0.06	2.3	0	0	0
65	SLU 60	-0.04	-0.06	2.34	0	0	0
65	SLU 61	-0.04	-0.06	2.34	0	0	0
65	SLU 62	-0.04	-0.06	2.37	0	0	0
65	SLU 63	-0.04	-0.06	2.37	0	0	0
65	SLU 64	-0.03	-0.06	2.22	0	0	0
65	SLU 65	-0.03	-0.06	2.23	0	0	0
65	SLU 66	-0.03	-0.06	2.26	0	0	0
65	SLU 67	-0.03	-0.06	2.26	0	0	0
65	SLU 68	-0.03	-0.06	2.25	0	0	0
65	SLU 69	-0.03	-0.06	2.29	0	0	0
65	SLU 70	-0.03	-0.06	2.29	0	0	0
65	SLU 71	-0.03	-0.06	2.27	0	0	0
65	SLU 72	-0.03	-0.06	2.27	0	0	0
65	SLU 73	-0.04	-0.06	2.44	0	0	0
65	SLU 74	-0.04	-0.06	2.48	0	0	0
65	SLU 75	-0.04	-0.06	2.48	0	0	0
65	SLU 76	-0.04	-0.06	2.47	0	0	0
65	SLU 77	-0.04	-0.06	2.5	0	0	0
65	SLU 78	-0.04	-0.06	2.5	0	0	0
65	SLU 79	-0.04	-0.06	2.49	0	0	0
65	SLU 80	-0.04	-0.06	2.49	0	0	0
65	SLU 81	-0.04	-0.06	2.53	0	0	0
65	SLU 82	-0.04	-0.06	2.53	0	0	0
65	SLU 83	-0.04	-0.06	2.56	0	0	0
65	SLU 84	-0.04	-0.06	2.56	0	0	0
65	SLE RA 1	-0.02	-0.04	1.67	0	0	0
65	SLE RA 2	-0.02	-0.04	1.67	0	0	0
65	SLE RA 3	-0.02	-0.04	1.69	0	0	0
65	SLE RA 4	-0.02	-0.04	1.69	0	0	0
65	SLE RA 5	-0.02	-0.04	1.69	0	0	0
65	SLE RA 6	-0.02	-0.04	1.71	0	0	0
65	SLE RA 7	-0.02	-0.04	1.71	0	0	0
65	SLE RA 8	-0.02	-0.04	1.7	0	0	0
65	SLE RA 9	-0.02	-0.04	1.7	0	0	0
65	SLE RA 10	-0.03	-0.05	1.81	0	0	0
65	SLE RA 11	-0.03	-0.04	1.84	0	0	0
65	SLE RA 12	-0.03	-0.04	1.84	0	0	0
65	SLE RA 13	-0.03	-0.04	1.83	0	0	0
65	SLE RA 14	-0.03	-0.04	1.86	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
65	SLE RA 15	-0.03	-0.04	1.86	0	0	0
65	SLE RA 16	-0.03	-0.04	1.85	0	0	0
65	SLE RA 17	-0.03	-0.04	1.85	0	0	0
65	SLE RA 18	-0.03	-0.04	1.87	0	0	0
65	SLE RA 19	-0.03	-0.04	1.88	0	0	0
65	SLE RA 20	-0.03	-0.04	1.89	0	0	0
65	SLE RA 21	-0.03	-0.04	1.89	0	0	0
65	SLE FR 1	-0.02	-0.04	1.67	0	0	0
65	SLE FR 2	-0.02	-0.04	1.67	0	0	0
65	SLE FR 3	-0.02	-0.04	1.68	0	0	0
65	SLE FR 4	-0.02	-0.04	1.73	0	0	0
65	SLE FR 5	-0.02	-0.04	1.74	0	0	0
65	SLE FR 6	-0.03	-0.04	1.77	0	0	0
65	SLE QP 1	-0.02	-0.04	1.67	0	0	0
65	SLE QP 2	-0.02	-0.04	1.73	0	0	0
65	SLD 1	0.08	-0.02	1.73	0	0	0
65	SLD 2	0.08	-0.02	1.72	0	0	0
65	SLD 3	0.08	-0.06	1.76	0	0	0
65	SLD 4	0.08	-0.05	1.76	0	0	0
65	SLD 5	0.02	0.02	1.67	0	0	0
65	SLD 6	0.02	0.02	1.67	0	0	0
65	SLD 7	-0.01	-0.1	1.8	0	0	0
65	SLD 8	-0.01	-0.1	1.8	0	0	0
65	SLD 9	-0.04	0.01	1.67	0	0	0
65	SLD 10	-0.04	0.02	1.67	0	0	0
65	SLD 11	-0.07	-0.11	1.79	0	0	0
65	SLD 12	-0.07	-0.11	1.79	0	0	0
65	SLD 13	-0.12	-0.03	1.7	0	0	0
65	SLD 14	-0.12	-0.03	1.7	0	0	0
65	SLD 15	-0.13	-0.07	1.74	0	0	0
65	SLD 16	-0.13	-0.07	1.74	0	0	0
65	SLV 1	0.23	0.01	1.72	0	0	0
65	SLV 2	0.23	0.02	1.72	0	0	0
65	SLV 3	0.21	-0.07	1.8	0	0	0
65	SLV 4	0.21	-0.07	1.8	0	0	0
65	SLV 5	0.08	0.1	1.6	0	0	0
65	SLV 6	0.08	0.1	1.6	0	0	0
65	SLV 7	0.02	-0.18	1.88	0	0	0
65	SLV 8	0.02	-0.18	1.88	0	0	0
65	SLV 9	-0.06	0.09	1.58	0	0	0
65	SLV 10	-0.06	0.09	1.58	0	0	0
65	SLV 11	-0.13	-0.19	1.86	0	0	0
65	SLV 12	-0.13	-0.19	1.86	0	0	0
65	SLV 13	-0.26	-0.02	1.66	0	0	0
65	SLV 14	-0.26	-0.02	1.66	0	0	0
65	SLV 15	-0.28	-0.1	1.74	0	0	0
65	SLV 16	-0.28	-0.1	1.74	0	0	0
66	SLU 1	-0.04	-0.08	2.87	0	0	0
66	SLU 2	-0.04	-0.08	2.87	0	0	0
66	SLU 3	-0.04	-0.08	2.94	0	0	0
66	SLU 4	-0.04	-0.08	2.94	0	0	0
66	SLU 5	-0.04	-0.08	2.92	0	0	0
66	SLU 6	-0.04	-0.08	2.98	0	0	0
66	SLU 7	-0.04	-0.08	2.98	0	0	0
66	SLU 8	-0.04	-0.08	2.96	0	0	0
66	SLU 9	-0.04	-0.08	2.96	0	0	0
66	SLU 10	-0.05	-0.08	3.26	0	0	0
66	SLU 11	-0.05	-0.08	3.32	0	0	0
66	SLU 12	-0.05	-0.08	3.32	0	0	0
66	SLU 13	-0.05	-0.08	3.3	0	0	0
66	SLU 14	-0.06	-0.08	3.36	0	0	0
66	SLU 15	-0.06	-0.08	3.37	0	0	0
66	SLU 16	-0.06	-0.08	3.34	0	0	0
66	SLU 17	-0.06	-0.08	3.34	0	0	0
66	SLU 18	-0.06	-0.08	3.42	0	0	0
66	SLU 19	-0.06	-0.08	3.42	0	0	0
66	SLU 20	-0.06	-0.08	3.46	0	0	0
66	SLU 21	-0.06	-0.08	3.46	0	0	0
66	SLU 22	-0.04	-0.07	3.21	0	0	0
66	SLU 23	-0.04	-0.07	3.21	0	0	0
66	SLU 24	-0.05	-0.07	3.28	0	0	0
66	SLU 25	-0.05	-0.07	3.28	0	0	0
66	SLU 26	-0.05	-0.07	3.26	0	0	0
66	SLU 27	-0.05	-0.07	3.32	0	0	0
66	SLU 28	-0.05	-0.07	3.32	0	0	0
66	SLU 29	-0.05	-0.07	3.3	0	0	0
66	SLU 30	-0.05	-0.07	3.3	0	0	0
66	SLU 31	-0.06	-0.07	3.59	0	0	0
66	SLU 32	-0.06	-0.07	3.66	0	0	0
66	SLU 33	-0.06	-0.07	3.66	0	0	0
66	SLU 34	-0.06	-0.07	3.64	0	0	0
66	SLU 35	-0.06	-0.07	3.7	0	0	0
66	SLU 36	-0.06	-0.07	3.7	0	0	0
66	SLU 37	-0.06	-0.07	3.68	0	0	0
66	SLU 38	-0.06	-0.07	3.68	0	0	0
66	SLU 39	-0.06	-0.07	3.76	0	0	0
66	SLU 40	-0.06	-0.07	3.76	0	0	0
66	SLU 41	-0.07	-0.07	3.8	0	0	0
66	SLU 42	-0.07	-0.07	3.8	0	0	0
66	SLU 43	-0.05	-0.1	3.62	0	0	0





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
66	SLU 44	-0.05	-0.1	3.62	0	0	0
66	SLU 45	-0.05	-0.1	3.68	0	0	0
66	SLU 46	-0.05	-0.1	3.68	0	0	0
66	SLU 47	-0.05	-0.1	3.66	0	0	0
66	SLU 48	-0.05	-0.1	3.73	0	0	0
66	SLU 49	-0.05	-0.1	3.73	0	0	0
66	SLU 50	-0.05	-0.1	3.7	0	0	0
66	SLU 51	-0.05	-0.1	3.7	0	0	0
66	SLU 52	-0.06	-0.1	4	0	0	0
66	SLU 53	-0.06	-0.1	4.07	0	0	0
66	SLU 54	-0.06	-0.1	4.07	0	0	0
66	SLU 55	-0.06	-0.1	4.04	0	0	0
66	SLU 56	-0.07	-0.1	4.11	0	0	0
66	SLU 57	-0.07	-0.1	4.11	0	0	0
66	SLU 58	-0.07	-0.1	4.08	0	0	0
66	SLU 59	-0.07	-0.1	4.09	0	0	0
66	SLU 60	-0.07	-0.1	4.16	0	0	0
66	SLU 61	-0.07	-0.1	4.16	0	0	0
66	SLU 62	-0.07	-0.1	4.21	0	0	0
66	SLU 63	-0.07	-0.1	4.21	0	0	0
66	SLU 64	-0.05	-0.1	3.96	0	0	0
66	SLU 65	-0.05	-0.1	3.96	0	0	0
66	SLU 66	-0.06	-0.09	4.02	0	0	0
66	SLU 67	-0.06	-0.1	4.02	0	0	0
66	SLU 68	-0.06	-0.1	4	0	0	0
66	SLU 69	-0.06	-0.09	4.07	0	0	0
66	SLU 70	-0.06	-0.1	4.07	0	0	0
66	SLU 71	-0.06	-0.09	4.04	0	0	0
66	SLU 72	-0.06	-0.1	4.04	0	0	0
66	SLU 73	-0.07	-0.1	4.34	0	0	0
66	SLU 74	-0.07	-0.1	4.4	0	0	0
66	SLU 75	-0.07	-0.1	4.41	0	0	0
66	SLU 76	-0.07	-0.1	4.38	0	0	0
66	SLU 77	-0.07	-0.1	4.45	0	0	0
66	SLU 78	-0.07	-0.1	4.45	0	0	0
66	SLU 79	-0.07	-0.1	4.42	0	0	0
66	SLU 80	-0.07	-0.1	4.43	0	0	0
66	SLU 81	-0.07	-0.1	4.5	0	0	0
66	SLU 82	-0.07	-0.1	4.5	0	0	0
66	SLU 83	-0.08	-0.1	4.54	0	0	0
66	SLU 84	-0.08	-0.1	4.55	0	0	0
66	SLE RA 1	-0.04	-0.07	2.97	0	0	0
66	SLE RA 2	-0.04	-0.08	2.97	0	0	0
66	SLE RA 3	-0.04	-0.07	3.01	0	0	0
66	SLE RA 4	-0.04	-0.07	3.01	0	0	0
66	SLE RA 5	-0.04	-0.08	3	0	0	0
66	SLE RA 6	-0.04	-0.07	3.04	0	0	0
66	SLE RA 7	-0.04	-0.07	3.04	0	0	0
66	SLE RA 8	-0.04	-0.07	3.03	0	0	0
66	SLE RA 9	-0.04	-0.07	3.03	0	0	0
66	SLE RA 10	-0.05	-0.08	3.22	0	0	0
66	SLE RA 11	-0.05	-0.07	3.27	0	0	0
66	SLE RA 12	-0.05	-0.08	3.27	0	0	0
66	SLE RA 13	-0.05	-0.08	3.25	0	0	0
66	SLE RA 14	-0.05	-0.07	3.3	0	0	0
66	SLE RA 15	-0.05	-0.08	3.3	0	0	0
66	SLE RA 16	-0.05	-0.07	3.28	0	0	0
66	SLE RA 17	-0.05	-0.08	3.28	0	0	0
66	SLE RA 18	-0.05	-0.08	3.33	0	0	0
66	SLE RA 19	-0.05	-0.08	3.33	0	0	0
66	SLE RA 20	-0.05	-0.07	3.36	0	0	0
66	SLE RA 21	-0.05	-0.08	3.36	0	0	0
66	SLE FR 1	-0.04	-0.07	2.97	0	0	0
66	SLE FR 2	-0.04	-0.07	2.97	0	0	0
66	SLE FR 3	-0.04	-0.07	2.98	0	0	0
66	SLE FR 4	-0.04	-0.07	3.08	0	0	0
66	SLE FR 5	-0.04	-0.07	3.09	0	0	0
66	SLE FR 6	-0.05	-0.07	3.15	0	0	0
66	SLE QP 1	-0.04	-0.07	2.97	0	0	0
66	SLE QP 2	-0.04	-0.07	3.08	0	0	0
66	SLD 1	0.15	-0.03	3.03	0	0	0
66	SLD 2	0.15	-0.03	3.03	0	0	0
66	SLD 3	0.14	-0.1	3.09	0	0	0
66	SLD 4	0.13	-0.09	3.09	0	0	0
66	SLD 5	0.04	0.04	2.97	0	0	0
66	SLD 6	0.04	0.04	2.97	0	0	0
66	SLD 7	-0.01	-0.18	3.17	0	0	0
66	SLD 8	-0.01	-0.18	3.17	0	0	0
66	SLD 9	-0.07	0.03	2.98	0	0	0
66	SLD 10	-0.07	0.03	2.98	0	0	0
66	SLD 11	-0.13	-0.19	3.18	0	0	0
66	SLD 12	-0.13	-0.19	3.18	0	0	0
66	SLD 13	-0.22	-0.06	3.06	0	0	0
66	SLD 14	-0.22	-0.05	3.06	0	0	0
66	SLD 15	-0.24	-0.12	3.12	0	0	0
66	SLD 16	-0.24	-0.12	3.12	0	0	0
66	SLV 1	0.41	0.03	2.97	0	0	0
66	SLV 2	0.41	0.03	2.97	0	0	0
66	SLV 3	0.38	-0.12	3.11	0	0	0
66	SLV 4	0.37	-0.11	3.11	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
66	SLV 5	0.15	0.18	2.84	0	0	0
66	SLV 6	0.15	0.18	2.84	0	0	0
66	SLV 7	0.03	-0.31	3.3	0	0	0
66	SLV 8	0.03	-0.31	3.29	0	0	0
66	SLV 9	-0.12	0.16	2.86	0	0	0
66	SLV 10	-0.12	0.16	2.86	0	0	0
66	SLV 11	-0.23	-0.33	3.32	0	0	0
66	SLV 12	-0.23	-0.33	3.32	0	0	0
66	SLV 13	-0.46	-0.03	3.05	0	0	0
66	SLV 14	-0.46	-0.03	3.04	0	0	0
66	SLV 15	-0.5	-0.18	3.19	0	0	0
66	SLV 16	-0.5	-0.17	3.18	0	0	0
67	SLU 1	-0.03	-0.06	2.52	0	0	0
67	SLU 2	-0.03	-0.07	2.52	0	0	0
67	SLU 3	-0.04	-0.06	2.58	0	0	0
67	SLU 4	-0.04	-0.06	2.58	0	0	0
67	SLU 5	-0.04	-0.07	2.56	0	0	0
67	SLU 6	-0.04	-0.06	2.62	0	0	0
67	SLU 7	-0.04	-0.06	2.62	0	0	0
67	SLU 8	-0.04	-0.06	2.59	0	0	0
67	SLU 9	-0.04	-0.06	2.6	0	0	0
67	SLU 10	-0.05	-0.07	2.86	0	0	0
67	SLU 11	-0.05	-0.06	2.91	0	0	0
67	SLU 12	-0.05	-0.07	2.91	0	0	0
67	SLU 13	-0.05	-0.07	2.89	0	0	0
67	SLU 14	-0.05	-0.06	2.95	0	0	0
67	SLU 15	-0.05	-0.06	2.95	0	0	0
67	SLU 16	-0.05	-0.06	2.93	0	0	0
67	SLU 17	-0.05	-0.07	2.93	0	0	0
67	SLU 18	-0.05	-0.07	3	0	0	0
67	SLU 19	-0.05	-0.07	3	0	0	0
67	SLU 20	-0.05	-0.06	3.03	0	0	0
67	SLU 21	-0.05	-0.07	3.03	0	0	0
67	SLU 22	-0.04	-0.06	2.82	0	0	0
67	SLU 23	-0.04	-0.06	2.82	0	0	0
67	SLU 24	-0.04	-0.06	2.88	0	0	0
67	SLU 25	-0.04	-0.06	2.88	0	0	0
67	SLU 26	-0.04	-0.06	2.86	0	0	0
67	SLU 27	-0.04	-0.06	2.91	0	0	0
67	SLU 28	-0.04	-0.06	2.92	0	0	0
67	SLU 29	-0.04	-0.06	2.89	0	0	0
67	SLU 30	-0.04	-0.06	2.89	0	0	0
67	SLU 31	-0.05	-0.06	3.15	0	0	0
67	SLU 32	-0.05	-0.06	3.21	0	0	0
67	SLU 33	-0.05	-0.06	3.21	0	0	0
67	SLU 34	-0.05	-0.06	3.19	0	0	0
67	SLU 35	-0.06	-0.06	3.25	0	0	0
67	SLU 36	-0.06	-0.06	3.25	0	0	0
67	SLU 37	-0.06	-0.06	3.23	0	0	0
67	SLU 38	-0.06	-0.06	3.23	0	0	0
67	SLU 39	-0.06	-0.06	3.29	0	0	0
67	SLU 40	-0.06	-0.06	3.3	0	0	0
67	SLU 41	-0.06	-0.06	3.33	0	0	0
67	SLU 42	-0.06	-0.06	3.33	0	0	0
67	SLU 43	-0.04	-0.09	3.17	0	0	0
67	SLU 44	-0.04	-0.09	3.18	0	0	0
67	SLU 45	-0.04	-0.09	3.23	0	0	0
67	SLU 46	-0.05	-0.09	3.23	0	0	0
67	SLU 47	-0.05	-0.09	3.21	0	0	0
67	SLU 48	-0.05	-0.08	3.27	0	0	0
67	SLU 49	-0.05	-0.09	3.27	0	0	0
67	SLU 50	-0.05	-0.08	3.25	0	0	0
67	SLU 51	-0.05	-0.09	3.25	0	0	0
67	SLU 52	-0.05	-0.09	3.51	0	0	0
67	SLU 53	-0.06	-0.09	3.57	0	0	0
67	SLU 54	-0.06	-0.09	3.57	0	0	0
67	SLU 55	-0.06	-0.09	3.55	0	0	0
67	SLU 56	-0.06	-0.09	3.6	0	0	0
67	SLU 57	-0.06	-0.09	3.6	0	0	0
67	SLU 58	-0.06	-0.09	3.58	0	0	0
67	SLU 59	-0.06	-0.09	3.58	0	0	0
67	SLU 60	-0.06	-0.09	3.65	0	0	0
67	SLU 61	-0.06	-0.09	3.65	0	0	0
67	SLU 62	-0.06	-0.09	3.69	0	0	0
67	SLU 63	-0.06	-0.09	3.69	0	0	0
67	SLU 64	-0.05	-0.08	3.47	0	0	0
67	SLU 65	-0.05	-0.08	3.47	0	0	0
67	SLU 66	-0.05	-0.08	3.53	0	0	0
67	SLU 67	-0.05	-0.08	3.53	0	0	0
67	SLU 68	-0.05	-0.08	3.51	0	0	0
67	SLU 69	-0.05	-0.08	3.57	0	0	0
67	SLU 70	-0.05	-0.08	3.57	0	0	0
67	SLU 71	-0.05	-0.08	3.55	0	0	0
67	SLU 72	-0.05	-0.08	3.55	0	0	0
67	SLU 73	-0.06	-0.08	3.81	0	0	0
67	SLU 74	-0.06	-0.08	3.86	0	0	0
67	SLU 75	-0.06	-0.08	3.87	0	0	0
67	SLU 76	-0.06	-0.08	3.84	0	0	0
67	SLU 77	-0.06	-0.08	3.9	0	0	0
67	SLU 78	-0.06	-0.08	3.9	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
67	SLU 79	-0.06	-0.08	3.88	0	0	0
67	SLU 80	-0.06	-0.08	3.88	0	0	0
67	SLU 81	-0.06	-0.08	3.95	0	0	0
67	SLU 82	-0.06	-0.08	3.95	0	0	0
67	SLU 83	-0.07	-0.08	3.99	0	0	0
67	SLU 84	-0.07	-0.08	3.99	0	0	0
67	SLE RA 1	-0.04	-0.06	2.61	0	0	0
67	SLE RA 2	-0.04	-0.06	2.61	0	0	0
67	SLE RA 3	-0.04	-0.06	2.64	0	0	0
67	SLE RA 4	-0.04	-0.06	2.65	0	0	0
67	SLE RA 5	-0.04	-0.06	2.63	0	0	0
67	SLE RA 6	-0.04	-0.06	2.67	0	0	0
67	SLE RA 7	-0.04	-0.06	2.67	0	0	0
67	SLE RA 8	-0.04	-0.06	2.65	0	0	0
67	SLE RA 9	-0.04	-0.06	2.66	0	0	0
67	SLE RA 10	-0.04	-0.06	2.83	0	0	0
67	SLE RA 11	-0.04	-0.06	2.87	0	0	0
67	SLE RA 12	-0.05	-0.06	2.87	0	0	0
67	SLE RA 13	-0.05	-0.06	2.85	0	0	0
67	SLE RA 14	-0.05	-0.06	2.89	0	0	0
67	SLE RA 15	-0.05	-0.06	2.89	0	0	0
67	SLE RA 16	-0.05	-0.06	2.88	0	0	0
67	SLE RA 17	-0.05	-0.06	2.88	0	0	0
67	SLE RA 18	-0.05	-0.06	2.92	0	0	0
67	SLE RA 19	-0.05	-0.06	2.92	0	0	0
67	SLE RA 20	-0.05	-0.06	2.95	0	0	0
67	SLE RA 21	-0.05	-0.06	2.95	0	0	0
67	SLE FR 1	-0.04	-0.06	2.61	0	0	0
67	SLE FR 2	-0.04	-0.06	2.61	0	0	0
67	SLE FR 3	-0.04	-0.06	2.62	0	0	0
67	SLE FR 4	-0.04	-0.06	2.7	0	0	0
67	SLE FR 5	-0.04	-0.06	2.71	0	0	0
67	SLE FR 6	-0.04	-0.06	2.76	0	0	0
67	SLE QP 1	-0.04	-0.06	2.61	0	0	0
67	SLE QP 2	-0.04	-0.06	2.7	0	0	0
67	SLD 1	0.13	-0.03	2.66	0	0	0
67	SLD 2	0.13	-0.02	2.66	0	0	0
67	SLD 3	0.12	-0.08	2.71	0	0	0
67	SLD 4	0.12	-0.08	2.71	0	0	0
67	SLD 5	0.03	0.03	2.61	0	0	0
67	SLD 6	0.03	0.04	2.61	0	0	0
67	SLD 7	-0.01	-0.16	2.78	0	0	0
67	SLD 8	-0.01	-0.15	2.78	0	0	0
67	SLD 9	-0.07	0.03	2.62	0	0	0
67	SLD 10	-0.07	0.03	2.62	0	0	0
67	SLD 11	-0.11	-0.16	2.79	0	0	0
67	SLD 12	-0.11	-0.16	2.79	0	0	0
67	SLD 13	-0.2	-0.05	2.7	0	0	0
67	SLD 14	-0.2	-0.04	2.69	0	0	0
67	SLD 15	-0.21	-0.1	2.75	0	0	0
67	SLD 16	-0.21	-0.1	2.74	0	0	0
67	SLV 1	0.36	0.02	2.6	0	0	0
67	SLV 2	0.36	0.03	2.6	0	0	0
67	SLV 3	0.33	-0.11	2.71	0	0	0
67	SLV 4	0.33	-0.1	2.71	0	0	0
67	SLV 5	0.13	0.16	2.5	0	0	0
67	SLV 6	0.13	0.16	2.5	0	0	0
67	SLV 7	0.03	-0.27	2.88	0	0	0
67	SLV 8	0.02	-0.27	2.87	0	0	0
67	SLV 9	-0.1	0.14	2.53	0	0	0
67	SLV 10	-0.1	0.15	2.52	0	0	0
67	SLV 11	-0.21	-0.29	2.9	0	0	0
67	SLV 12	-0.21	-0.28	2.9	0	0	0
67	SLV 13	-0.41	-0.03	2.69	0	0	0
67	SLV 14	-0.41	-0.02	2.69	0	0	0
67	SLV 15	-0.44	-0.16	2.8	0	0	0
67	SLV 16	-0.44	-0.15	2.8	0	0	0
68	SLU 1	-0.03	-0.06	2.5	0	0	0
68	SLU 2	-0.03	-0.06	2.5	0	0	0
68	SLU 3	-0.04	-0.06	2.55	0	0	0
68	SLU 4	-0.04	-0.06	2.55	0	0	0
68	SLU 5	-0.04	-0.06	2.53	0	0	0
68	SLU 6	-0.04	-0.06	2.59	0	0	0
68	SLU 7	-0.04	-0.06	2.59	0	0	0
68	SLU 8	-0.04	-0.06	2.57	0	0	0
68	SLU 9	-0.04	-0.06	2.57	0	0	0
68	SLU 10	-0.05	-0.06	2.83	0	0	0
68	SLU 11	-0.05	-0.06	2.88	0	0	0
68	SLU 12	-0.05	-0.06	2.88	0	0	0
68	SLU 13	-0.05	-0.06	2.86	0	0	0
68	SLU 14	-0.05	-0.06	2.92	0	0	0
68	SLU 15	-0.05	-0.06	2.92	0	0	0
68	SLU 16	-0.05	-0.06	2.9	0	0	0
68	SLU 17	-0.05	-0.06	2.9	0	0	0
68	SLU 18	-0.05	-0.06	2.96	0	0	0
68	SLU 19	-0.05	-0.06	2.96	0	0	0
68	SLU 20	-0.05	-0.06	3	0	0	0
68	SLU 21	-0.05	-0.06	3	0	0	0
68	SLU 22	-0.04	-0.06	2.79	0	0	0
68	SLU 23	-0.04	-0.06	2.79	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
68	SLU 24	-0.04	-0.06	2.85	0	0	0
68	SLU 25	-0.04	-0.06	2.85	0	0	0
68	SLU 26	-0.04	-0.06	2.83	0	0	0
68	SLU 27	-0.04	-0.05	2.88	0	0	0
68	SLU 28	-0.04	-0.06	2.88	0	0	0
68	SLU 29	-0.04	-0.05	2.86	0	0	0
68	SLU 30	-0.04	-0.06	2.86	0	0	0
68	SLU 31	-0.05	-0.06	3.12	0	0	0
68	SLU 32	-0.05	-0.06	3.18	0	0	0
68	SLU 33	-0.05	-0.06	3.18	0	0	0
68	SLU 34	-0.05	-0.06	3.16	0	0	0
68	SLU 35	-0.06	-0.06	3.21	0	0	0
68	SLU 36	-0.06	-0.06	3.21	0	0	0
68	SLU 37	-0.06	-0.06	3.19	0	0	0
68	SLU 38	-0.06	-0.06	3.19	0	0	0
68	SLU 39	-0.06	-0.06	3.26	0	0	0
68	SLU 40	-0.06	-0.06	3.26	0	0	0
68	SLU 41	-0.06	-0.06	3.29	0	0	0
68	SLU 42	-0.06	-0.06	3.3	0	0	0
68	SLU 43	-0.04	-0.08	3.14	0	0	0
68	SLU 44	-0.04	-0.08	3.14	0	0	0
68	SLU 45	-0.04	-0.08	3.2	0	0	0
68	SLU 46	-0.05	-0.08	3.2	0	0	0
68	SLU 47	-0.05	-0.08	3.18	0	0	0
68	SLU 48	-0.05	-0.08	3.24	0	0	0
68	SLU 49	-0.05	-0.08	3.24	0	0	0
68	SLU 50	-0.05	-0.08	3.21	0	0	0
68	SLU 51	-0.05	-0.08	3.22	0	0	0
68	SLU 52	-0.05	-0.08	3.47	0	0	0
68	SLU 53	-0.06	-0.08	3.53	0	0	0
68	SLU 54	-0.06	-0.08	3.53	0	0	0
68	SLU 55	-0.06	-0.08	3.51	0	0	0
68	SLU 56	-0.06	-0.08	3.56	0	0	0
68	SLU 57	-0.06	-0.08	3.57	0	0	0
68	SLU 58	-0.06	-0.08	3.54	0	0	0
68	SLU 59	-0.06	-0.08	3.54	0	0	0
68	SLU 60	-0.06	-0.08	3.61	0	0	0
68	SLU 61	-0.06	-0.08	3.61	0	0	0
68	SLU 62	-0.06	-0.08	3.65	0	0	0
68	SLU 63	-0.06	-0.08	3.65	0	0	0
68	SLU 64	-0.05	-0.08	3.44	0	0	0
68	SLU 65	-0.05	-0.08	3.44	0	0	0
68	SLU 66	-0.05	-0.08	3.5	0	0	0
68	SLU 67	-0.05	-0.08	3.5	0	0	0
68	SLU 68	-0.05	-0.08	3.48	0	0	0
68	SLU 69	-0.05	-0.08	3.53	0	0	0
68	SLU 70	-0.05	-0.08	3.53	0	0	0
68	SLU 71	-0.05	-0.08	3.51	0	0	0
68	SLU 72	-0.05	-0.08	3.51	0	0	0
68	SLU 73	-0.06	-0.08	3.77	0	0	0
68	SLU 74	-0.06	-0.08	3.82	0	0	0
68	SLU 75	-0.06	-0.08	3.82	0	0	0
68	SLU 76	-0.06	-0.08	3.8	0	0	0
68	SLU 77	-0.06	-0.08	3.86	0	0	0
68	SLU 78	-0.06	-0.08	3.86	0	0	0
68	SLU 79	-0.06	-0.08	3.84	0	0	0
68	SLU 80	-0.06	-0.08	3.84	0	0	0
68	SLU 81	-0.06	-0.08	3.91	0	0	0
68	SLU 82	-0.06	-0.08	3.91	0	0	0
68	SLU 83	-0.07	-0.08	3.94	0	0	0
68	SLU 84	-0.07	-0.08	3.94	0	0	0
68	SLE RA 1	-0.04	-0.06	2.58	0	0	0
68	SLE RA 2	-0.04	-0.06	2.58	0	0	0
68	SLE RA 3	-0.04	-0.06	2.62	0	0	0
68	SLE RA 4	-0.04	-0.06	2.62	0	0	0
68	SLE RA 5	-0.04	-0.06	2.6	0	0	0
68	SLE RA 6	-0.04	-0.06	2.64	0	0	0
68	SLE RA 7	-0.04	-0.06	2.64	0	0	0
68	SLE RA 8	-0.04	-0.06	2.63	0	0	0
68	SLE RA 9	-0.04	-0.06	2.63	0	0	0
68	SLE RA 10	-0.04	-0.06	2.8	0	0	0
68	SLE RA 11	-0.04	-0.06	2.84	0	0	0
68	SLE RA 12	-0.04	-0.06	2.84	0	0	0
68	SLE RA 13	-0.05	-0.06	2.82	0	0	0
68	SLE RA 14	-0.05	-0.06	2.86	0	0	0
68	SLE RA 15	-0.05	-0.06	2.86	0	0	0
68	SLE RA 16	-0.05	-0.06	2.85	0	0	0
68	SLE RA 17	-0.05	-0.06	2.85	0	0	0
68	SLE RA 18	-0.05	-0.06	2.89	0	0	0
68	SLE RA 19	-0.05	-0.06	2.89	0	0	0
68	SLE RA 20	-0.05	-0.06	2.92	0	0	0
68	SLE RA 21	-0.05	-0.06	2.92	0	0	0
68	SLE FR 1	-0.04	-0.06	2.58	0	0	0
68	SLE FR 2	-0.04	-0.06	2.58	0	0	0
68	SLE FR 3	-0.04	-0.06	2.59	0	0	0
68	SLE FR 4	-0.04	-0.06	2.67	0	0	0
68	SLE FR 5	-0.04	-0.06	2.68	0	0	0
68	SLE FR 6	-0.04	-0.06	2.74	0	0	0
68	SLE QP 1	-0.04	-0.06	2.58	0	0	0
68	SLE QP 2	-0.04	-0.06	2.67	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
68	SLD 1	0.13	-0.02	2.62	0	0	0
68	SLD 2	0.13	-0.02	2.62	0	0	0
68	SLD 3	0.12	-0.08	2.67	0	0	0
68	SLD 4	0.12	-0.07	2.67	0	0	0
68	SLD 5	0.03	0.04	2.59	0	0	0
68	SLD 6	0.03	0.04	2.59	0	0	0
68	SLD 7	-0.01	-0.15	2.74	0	0	0
68	SLD 8	-0.01	-0.15	2.74	0	0	0
68	SLD 9	-0.07	0.03	2.61	0	0	0
68	SLD 10	-0.07	0.03	2.6	0	0	0
68	SLD 11	-0.11	-0.16	2.76	0	0	0
68	SLD 12	-0.11	-0.16	2.76	0	0	0
68	SLD 13	-0.2	-0.05	2.68	0	0	0
68	SLD 14	-0.2	-0.04	2.68	0	0	0
68	SLD 15	-0.21	-0.1	2.73	0	0	0
68	SLD 16	-0.21	-0.1	2.72	0	0	0
68	SLV 1	0.36	0.03	2.55	0	0	0
68	SLV 2	0.36	0.04	2.55	0	0	0
68	SLV 3	0.33	-0.1	2.66	0	0	0
68	SLV 4	0.33	-0.09	2.66	0	0	0
68	SLV 5	0.13	0.16	2.48	0	0	0
68	SLV 6	0.13	0.16	2.48	0	0	0
68	SLV 7	0.03	-0.27	2.83	0	0	0
68	SLV 8	0.02	-0.26	2.83	0	0	0
68	SLV 9	-0.1	0.14	2.52	0	0	0
68	SLV 10	-0.1	0.15	2.52	0	0	0
68	SLV 11	-0.21	-0.28	2.87	0	0	0
68	SLV 12	-0.21	-0.28	2.87	0	0	0
68	SLV 13	-0.41	-0.03	2.69	0	0	0
68	SLV 14	-0.41	-0.02	2.69	0	0	0
68	SLV 15	-0.44	-0.16	2.79	0	0	0
68	SLV 16	-0.44	-0.15	2.79	0	0	0
69	SLU 1	-0.03	-0.06	2.47	0	0	0
69	SLU 2	-0.03	-0.06	2.47	0	0	0
69	SLU 3	-0.04	-0.06	2.53	0	0	0
69	SLU 4	-0.04	-0.06	2.53	0	0	0
69	SLU 5	-0.04	-0.06	2.51	0	0	0
69	SLU 6	-0.04	-0.06	2.56	0	0	0
69	SLU 7	-0.04	-0.06	2.56	0	0	0
69	SLU 8	-0.04	-0.06	2.54	0	0	0
69	SLU 9	-0.04	-0.06	2.54	0	0	0
69	SLU 10	-0.05	-0.06	2.79	0	0	0
69	SLU 11	-0.05	-0.06	2.85	0	0	0
69	SLU 12	-0.05	-0.06	2.85	0	0	0
69	SLU 13	-0.05	-0.06	2.83	0	0	0
69	SLU 14	-0.05	-0.06	2.88	0	0	0
69	SLU 15	-0.05	-0.06	2.89	0	0	0
69	SLU 16	-0.05	-0.06	2.86	0	0	0
69	SLU 17	-0.05	-0.06	2.86	0	0	0
69	SLU 18	-0.05	-0.06	2.93	0	0	0
69	SLU 19	-0.05	-0.06	2.93	0	0	0
69	SLU 20	-0.05	-0.06	2.97	0	0	0
69	SLU 21	-0.05	-0.06	2.97	0	0	0
69	SLU 22	-0.04	-0.05	2.76	0	0	0
69	SLU 23	-0.04	-0.05	2.76	0	0	0
69	SLU 24	-0.04	-0.05	2.82	0	0	0
69	SLU 25	-0.04	-0.05	2.82	0	0	0
69	SLU 26	-0.04	-0.05	2.8	0	0	0
69	SLU 27	-0.04	-0.05	2.85	0	0	0
69	SLU 28	-0.04	-0.05	2.85	0	0	0
69	SLU 29	-0.04	-0.05	2.83	0	0	0
69	SLU 30	-0.04	-0.05	2.83	0	0	0
69	SLU 31	-0.05	-0.05	3.09	0	0	0
69	SLU 32	-0.05	-0.05	3.14	0	0	0
69	SLU 33	-0.05	-0.05	3.14	0	0	0
69	SLU 34	-0.05	-0.05	3.12	0	0	0
69	SLU 35	-0.06	-0.05	3.18	0	0	0
69	SLU 36	-0.06	-0.05	3.18	0	0	0
69	SLU 37	-0.06	-0.05	3.15	0	0	0
69	SLU 38	-0.06	-0.05	3.16	0	0	0
69	SLU 39	-0.06	-0.05	3.22	0	0	0
69	SLU 40	-0.06	-0.05	3.22	0	0	0
69	SLU 41	-0.06	-0.05	3.26	0	0	0
69	SLU 42	-0.06	-0.05	3.26	0	0	0
69	SLU 43	-0.04	-0.08	3.11	0	0	0
69	SLU 44	-0.04	-0.08	3.11	0	0	0
69	SLU 45	-0.04	-0.08	3.17	0	0	0
69	SLU 46	-0.04	-0.08	3.17	0	0	0
69	SLU 47	-0.05	-0.08	3.15	0	0	0
69	SLU 48	-0.05	-0.08	3.2	0	0	0
69	SLU 49	-0.05	-0.08	3.2	0	0	0
69	SLU 50	-0.05	-0.08	3.18	0	0	0
69	SLU 51	-0.05	-0.08	3.18	0	0	0
69	SLU 52	-0.05	-0.08	3.44	0	0	0
69	SLU 53	-0.06	-0.08	3.49	0	0	0
69	SLU 54	-0.06	-0.08	3.49	0	0	0
69	SLU 55	-0.06	-0.08	3.47	0	0	0
69	SLU 56	-0.06	-0.08	3.53	0	0	0
69	SLU 57	-0.06	-0.08	3.53	0	0	0
69	SLU 58	-0.06	-0.08	3.5	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
69	SLU 59	-0.06	-0.08	3.5	0	0	0
69	SLU 60	-0.06	-0.08	3.57	0	0	0
69	SLU 61	-0.06	-0.08	3.57	0	0	0
69	SLU 62	-0.06	-0.08	3.61	0	0	0
69	SLU 63	-0.06	-0.08	3.61	0	0	0
69	SLU 64	-0.05	-0.07	3.4	0	0	0
69	SLU 65	-0.05	-0.07	3.4	0	0	0
69	SLU 66	-0.05	-0.07	3.46	0	0	0
69	SLU 67	-0.05	-0.07	3.46	0	0	0
69	SLU 68	-0.05	-0.07	3.44	0	0	0
69	SLU 69	-0.05	-0.07	3.49	0	0	0
69	SLU 70	-0.05	-0.07	3.5	0	0	0
69	SLU 71	-0.05	-0.07	3.47	0	0	0
69	SLU 72	-0.05	-0.07	3.47	0	0	0
69	SLU 73	-0.06	-0.07	3.73	0	0	0
69	SLU 74	-0.06	-0.07	3.78	0	0	0
69	SLU 75	-0.06	-0.07	3.78	0	0	0
69	SLU 76	-0.06	-0.07	3.76	0	0	0
69	SLU 77	-0.06	-0.07	3.82	0	0	0
69	SLU 78	-0.06	-0.07	3.82	0	0	0
69	SLU 79	-0.06	-0.07	3.8	0	0	0
69	SLU 80	-0.06	-0.07	3.8	0	0	0
69	SLU 81	-0.06	-0.07	3.86	0	0	0
69	SLU 82	-0.06	-0.07	3.86	0	0	0
69	SLU 83	-0.07	-0.07	3.9	0	0	0
69	SLU 84	-0.07	-0.07	3.9	0	0	0
69	SLE RA 1	-0.04	-0.06	2.55	0	0	0
69	SLE RA 2	-0.04	-0.06	2.55	0	0	0
69	SLE RA 3	-0.04	-0.06	2.59	0	0	0
69	SLE RA 4	-0.04	-0.06	2.59	0	0	0
69	SLE RA 5	-0.04	-0.06	2.58	0	0	0
69	SLE RA 6	-0.04	-0.06	2.61	0	0	0
69	SLE RA 7	-0.04	-0.06	2.61	0	0	0
69	SLE RA 8	-0.04	-0.06	2.6	0	0	0
69	SLE RA 9	-0.04	-0.06	2.6	0	0	0
69	SLE RA 10	-0.04	-0.06	2.77	0	0	0
69	SLE RA 11	-0.04	-0.06	2.81	0	0	0
69	SLE RA 12	-0.04	-0.06	2.81	0	0	0
69	SLE RA 13	-0.05	-0.06	2.79	0	0	0
69	SLE RA 14	-0.05	-0.06	2.83	0	0	0
69	SLE RA 15	-0.05	-0.06	2.83	0	0	0
69	SLE RA 16	-0.05	-0.06	2.82	0	0	0
69	SLE RA 17	-0.05	-0.06	2.82	0	0	0
69	SLE RA 18	-0.05	-0.06	2.86	0	0	0
69	SLE RA 19	-0.05	-0.06	2.86	0	0	0
69	SLE RA 20	-0.05	-0.06	2.88	0	0	0
69	SLE RA 21	-0.05	-0.06	2.88	0	0	0
69	SLE FR 1	-0.04	-0.06	2.55	0	0	0
69	SLE FR 2	-0.04	-0.06	2.55	0	0	0
69	SLE FR 3	-0.04	-0.06	2.56	0	0	0
69	SLE FR 4	-0.04	-0.06	2.65	0	0	0
69	SLE FR 5	-0.04	-0.06	2.65	0	0	0
69	SLE FR 6	-0.04	-0.06	2.71	0	0	0
69	SLE QP 1	-0.04	-0.06	2.55	0	0	0
69	SLE QP 2	-0.04	-0.06	2.65	0	0	0
69	SLD 1	0.13	-0.02	2.58	0	0	0
69	SLD 2	0.13	-0.01	2.58	0	0	0
69	SLD 3	0.12	-0.08	2.63	0	0	0
69	SLD 4	0.12	-0.07	2.63	0	0	0
69	SLD 5	0.03	0.04	2.56	0	0	0
69	SLD 6	0.03	0.04	2.56	0	0	0
69	SLD 7	-0.01	-0.15	2.7	0	0	0
69	SLD 8	-0.01	-0.14	2.7	0	0	0
69	SLD 9	-0.07	0.03	2.59	0	0	0
69	SLD 10	-0.07	0.03	2.59	0	0	0
69	SLD 11	-0.11	-0.16	2.73	0	0	0
69	SLD 12	-0.11	-0.15	2.73	0	0	0
69	SLD 13	-0.2	-0.04	2.66	0	0	0
69	SLD 14	-0.2	-0.04	2.66	0	0	0
69	SLD 15	-0.21	-0.1	2.71	0	0	0
69	SLD 16	-0.21	-0.09	2.71	0	0	0
69	SLV 1	0.36	0.03	2.51	0	0	0
69	SLV 2	0.36	0.04	2.5	0	0	0
69	SLV 3	0.33	-0.1	2.6	0	0	0
69	SLV 4	0.33	-0.09	2.6	0	0	0
69	SLV 5	0.13	0.16	2.46	0	0	0
69	SLV 6	0.13	0.17	2.46	0	0	0
69	SLV 7	0.03	-0.26	2.78	0	0	0
69	SLV 8	0.02	-0.26	2.78	0	0	0
69	SLV 9	-0.1	0.14	2.51	0	0	0
69	SLV 10	-0.1	0.15	2.51	0	0	0
69	SLV 11	-0.21	-0.28	2.84	0	0	0
69	SLV 12	-0.21	-0.27	2.83	0	0	0
69	SLV 13	-0.41	-0.03	2.69	0	0	0
69	SLV 14	-0.41	-0.01	2.69	0	0	0
69	SLV 15	-0.44	-0.15	2.79	0	0	0
69	SLV 16	-0.44	-0.14	2.79	0	0	0
70	SLU 1	-0.03	-0.06	2.44	0	0	0
70	SLU 2	-0.03	-0.06	2.45	0	0	0
70	SLU 3	-0.04	-0.06	2.5	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
70	SLU 4	-0.04	-0.06	2.5	0	0	0
70	SLU 5	-0.04	-0.06	2.48	0	0	0
70	SLU 6	-0.04	-0.05	2.53	0	0	0
70	SLU 7	-0.04	-0.06	2.54	0	0	0
70	SLU 8	-0.04	-0.05	2.51	0	0	0
70	SLU 9	-0.04	-0.06	2.51	0	0	0
70	SLU 10	-0.05	-0.06	2.76	0	0	0
70	SLU 11	-0.05	-0.05	2.82	0	0	0
70	SLU 12	-0.05	-0.06	2.82	0	0	0
70	SLU 13	-0.05	-0.06	2.8	0	0	0
70	SLU 14	-0.05	-0.05	2.85	0	0	0
70	SLU 15	-0.05	-0.06	2.85	0	0	0
70	SLU 16	-0.05	-0.05	2.83	0	0	0
70	SLU 17	-0.05	-0.06	2.83	0	0	0
70	SLU 18	-0.05	-0.06	2.9	0	0	0
70	SLU 19	-0.05	-0.06	2.9	0	0	0
70	SLU 20	-0.05	-0.05	2.93	0	0	0
70	SLU 21	-0.05	-0.06	2.93	0	0	0
70	SLU 22	-0.04	-0.05	2.73	0	0	0
70	SLU 23	-0.04	-0.05	2.74	0	0	0
70	SLU 24	-0.04	-0.05	2.79	0	0	0
70	SLU 25	-0.04	-0.05	2.79	0	0	0
70	SLU 26	-0.04	-0.05	2.77	0	0	0
70	SLU 27	-0.04	-0.05	2.82	0	0	0
70	SLU 28	-0.04	-0.05	2.82	0	0	0
70	SLU 29	-0.04	-0.05	2.8	0	0	0
70	SLU 30	-0.04	-0.05	2.8	0	0	0
70	SLU 31	-0.05	-0.05	3.05	0	0	0
70	SLU 32	-0.05	-0.05	3.11	0	0	0
70	SLU 33	-0.05	-0.05	3.11	0	0	0
70	SLU 34	-0.05	-0.05	3.09	0	0	0
70	SLU 35	-0.06	-0.05	3.14	0	0	0
70	SLU 36	-0.06	-0.05	3.14	0	0	0
70	SLU 37	-0.06	-0.05	3.12	0	0	0
70	SLU 38	-0.06	-0.05	3.12	0	0	0
70	SLU 39	-0.06	-0.05	3.19	0	0	0
70	SLU 40	-0.06	-0.05	3.19	0	0	0
70	SLU 41	-0.06	-0.05	3.22	0	0	0
70	SLU 42	-0.06	-0.05	3.22	0	0	0
70	SLU 43	-0.04	-0.07	3.08	0	0	0
70	SLU 44	-0.04	-0.08	3.08	0	0	0
70	SLU 45	-0.04	-0.07	3.13	0	0	0
70	SLU 46	-0.04	-0.07	3.14	0	0	0
70	SLU 47	-0.04	-0.08	3.11	0	0	0
70	SLU 48	-0.05	-0.07	3.17	0	0	0
70	SLU 49	-0.05	-0.07	3.17	0	0	0
70	SLU 50	-0.05	-0.07	3.15	0	0	0
70	SLU 51	-0.05	-0.07	3.15	0	0	0
70	SLU 52	-0.05	-0.08	3.4	0	0	0
70	SLU 53	-0.06	-0.07	3.45	0	0	0
70	SLU 54	-0.06	-0.07	3.45	0	0	0
70	SLU 55	-0.06	-0.08	3.43	0	0	0
70	SLU 56	-0.06	-0.07	3.49	0	0	0
70	SLU 57	-0.06	-0.07	3.49	0	0	0
70	SLU 58	-0.06	-0.07	3.46	0	0	0
70	SLU 59	-0.06	-0.07	3.47	0	0	0
70	SLU 60	-0.06	-0.07	3.53	0	0	0
70	SLU 61	-0.06	-0.07	3.53	0	0	0
70	SLU 62	-0.06	-0.07	3.57	0	0	0
70	SLU 63	-0.06	-0.07	3.57	0	0	0
70	SLU 64	-0.05	-0.07	3.37	0	0	0
70	SLU 65	-0.05	-0.07	3.37	0	0	0
70	SLU 66	-0.05	-0.07	3.42	0	0	0
70	SLU 67	-0.05	-0.07	3.42	0	0	0
70	SLU 68	-0.05	-0.07	3.4	0	0	0
70	SLU 69	-0.05	-0.07	3.46	0	0	0
70	SLU 70	-0.05	-0.07	3.46	0	0	0
70	SLU 71	-0.05	-0.07	3.44	0	0	0
70	SLU 72	-0.05	-0.07	3.44	0	0	0
70	SLU 73	-0.06	-0.07	3.69	0	0	0
70	SLU 74	-0.06	-0.07	3.74	0	0	0
70	SLU 75	-0.06	-0.07	3.74	0	0	0
70	SLU 76	-0.06	-0.07	3.72	0	0	0
70	SLU 77	-0.06	-0.07	3.77	0	0	0
70	SLU 78	-0.06	-0.07	3.78	0	0	0
70	SLU 79	-0.06	-0.07	3.75	0	0	0
70	SLU 80	-0.06	-0.07	3.75	0	0	0
70	SLU 81	-0.06	-0.07	3.82	0	0	0
70	SLU 82	-0.06	-0.07	3.82	0	0	0
70	SLU 83	-0.07	-0.07	3.86	0	0	0
70	SLU 84	-0.07	-0.07	3.86	0	0	0
70	SLE RA 1	-0.04	-0.05	2.53	0	0	0
70	SLE RA 2	-0.04	-0.06	2.53	0	0	0
70	SLE RA 3	-0.04	-0.05	2.56	0	0	0
70	SLE RA 4	-0.04	-0.05	2.56	0	0	0
70	SLE RA 5	-0.04	-0.05	2.55	0	0	0
70	SLE RA 6	-0.04	-0.05	2.59	0	0	0
70	SLE RA 7	-0.04	-0.05	2.59	0	0	0
70	SLE RA 8	-0.04	-0.05	2.57	0	0	0
70	SLE RA 9	-0.04	-0.05	2.57	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
70	SLE RA 10	-0.04	-0.05	2.74	0	0	0
70	SLE RA 11	-0.04	-0.05	2.78	0	0	0
70	SLE RA 12	-0.04	-0.05	2.78	0	0	0
70	SLE RA 13	-0.04	-0.05	2.76	0	0	0
70	SLE RA 14	-0.05	-0.05	2.8	0	0	0
70	SLE RA 15	-0.05	-0.05	2.8	0	0	0
70	SLE RA 16	-0.05	-0.05	2.78	0	0	0
70	SLE RA 17	-0.05	-0.05	2.78	0	0	0
70	SLE RA 18	-0.05	-0.05	2.83	0	0	0
70	SLE RA 19	-0.05	-0.05	2.83	0	0	0
70	SLE RA 20	-0.05	-0.05	2.85	0	0	0
70	SLE RA 21	-0.05	-0.05	2.85	0	0	0
70	SLE FR 1	-0.04	-0.05	2.53	0	0	0
70	SLE FR 2	-0.04	-0.05	2.53	0	0	0
70	SLE FR 3	-0.04	-0.05	2.54	0	0	0
70	SLE FR 4	-0.04	-0.05	2.62	0	0	0
70	SLE FR 5	-0.04	-0.05	2.63	0	0	0
70	SLE FR 6	-0.04	-0.05	2.68	0	0	0
70	SLE QP 1	-0.04	-0.05	2.53	0	0	0
70	SLE QP 2	-0.04	-0.05	2.62	0	0	0
70	SLD 1	0.13	-0.02	2.55	0	0	0
70	SLD 2	0.13	-0.01	2.55	0	0	0
70	SLD 3	0.12	-0.07	2.59	0	0	0
70	SLD 4	0.12	-0.07	2.59	0	0	0
70	SLD 5	0.03	0.04	2.54	0	0	0
70	SLD 6	0.03	0.04	2.54	0	0	0
70	SLD 7	-0.01	-0.15	2.67	0	0	0
70	SLD 8	-0.01	-0.14	2.67	0	0	0
70	SLD 9	-0.07	0.03	2.57	0	0	0
70	SLD 10	-0.07	0.04	2.57	0	0	0
70	SLD 11	-0.11	-0.15	2.7	0	0	0
70	SLD 12	-0.11	-0.15	2.7	0	0	0
70	SLD 13	-0.2	-0.04	2.65	0	0	0
70	SLD 14	-0.2	-0.03	2.65	0	0	0
70	SLD 15	-0.21	-0.1	2.69	0	0	0
70	SLD 16	-0.21	-0.09	2.69	0	0	0
70	SLV 1	0.36	0.03	2.45	0	0	0
70	SLV 2	0.36	0.04	2.45	0	0	0
70	SLV 3	0.33	-0.1	2.54	0	0	0
70	SLV 4	0.33	-0.08	2.54	0	0	0
70	SLV 5	0.13	0.16	2.43	0	0	0
70	SLV 6	0.13	0.17	2.43	0	0	0
70	SLV 7	0.03	-0.26	2.73	0	0	0
70	SLV 8	0.02	-0.25	2.73	0	0	0
70	SLV 9	-0.1	0.14	2.51	0	0	0
70	SLV 10	-0.1	0.15	2.5	0	0	0
70	SLV 11	-0.21	-0.28	2.8	0	0	0
70	SLV 12	-0.21	-0.27	2.8	0	0	0
70	SLV 13	-0.41	-0.03	2.7	0	0	0
70	SLV 14	-0.41	-0.01	2.69	0	0	0
70	SLV 15	-0.44	-0.15	2.78	0	0	0
70	SLV 16	-0.44	-0.14	2.78	0	0	0
71	SLU 1	-0.04	-0.06	2.73	0	0	0
71	SLU 2	-0.04	-0.06	2.73	0	0	0
71	SLU 3	-0.04	-0.06	2.79	0	0	0
71	SLU 4	-0.04	-0.06	2.79	0	0	0
71	SLU 5	-0.04	-0.06	2.77	0	0	0
71	SLU 6	-0.04	-0.06	2.83	0	0	0
71	SLU 7	-0.04	-0.06	2.83	0	0	0
71	SLU 8	-0.04	-0.06	2.81	0	0	0
71	SLU 9	-0.04	-0.06	2.81	0	0	0
71	SLU 10	-0.05	-0.06	3.09	0	0	0
71	SLU 11	-0.05	-0.06	3.15	0	0	0
71	SLU 12	-0.05	-0.06	3.15	0	0	0
71	SLU 13	-0.05	-0.06	3.12	0	0	0
71	SLU 14	-0.06	-0.06	3.18	0	0	0
71	SLU 15	-0.06	-0.06	3.18	0	0	0
71	SLU 16	-0.06	-0.06	3.16	0	0	0
71	SLU 17	-0.06	-0.06	3.16	0	0	0
71	SLU 18	-0.06	-0.06	3.23	0	0	0
71	SLU 19	-0.06	-0.06	3.24	0	0	0
71	SLU 20	-0.06	-0.06	3.27	0	0	0
71	SLU 21	-0.06	-0.06	3.27	0	0	0
71	SLU 22	-0.04	-0.05	3.05	0	0	0
71	SLU 23	-0.04	-0.05	3.06	0	0	0
71	SLU 24	-0.05	-0.05	3.12	0	0	0
71	SLU 25	-0.05	-0.05	3.12	0	0	0
71	SLU 26	-0.05	-0.05	3.09	0	0	0
71	SLU 27	-0.05	-0.05	3.15	0	0	0
71	SLU 28	-0.05	-0.05	3.15	0	0	0
71	SLU 29	-0.05	-0.05	3.13	0	0	0
71	SLU 30	-0.05	-0.05	3.13	0	0	0
71	SLU 31	-0.06	-0.05	3.41	0	0	0
71	SLU 32	-0.06	-0.05	3.47	0	0	0
71	SLU 33	-0.06	-0.05	3.47	0	0	0
71	SLU 34	-0.06	-0.05	3.45	0	0	0
71	SLU 35	-0.06	-0.05	3.5	0	0	0
71	SLU 36	-0.06	-0.05	3.51	0	0	0
71	SLU 37	-0.06	-0.05	3.48	0	0	0
71	SLU 38	-0.06	-0.05	3.48	0	0	0





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
71	SLU 39	-0.06	-0.05	3.56	0	0	0
71	SLU 40	-0.06	-0.05	3.56	0	0	0
71	SLU 41	-0.07	-0.05	3.59	0	0	0
71	SLU 42	-0.07	-0.05	3.6	0	0	0
71	SLU 43	-0.05	-0.08	3.44	0	0	0
71	SLU 44	-0.05	-0.08	3.44	0	0	0
71	SLU 45	-0.05	-0.08	3.5	0	0	0
71	SLU 46	-0.05	-0.08	3.5	0	0	0
71	SLU 47	-0.05	-0.08	3.48	0	0	0
71	SLU 48	-0.05	-0.08	3.54	0	0	0
71	SLU 49	-0.05	-0.08	3.54	0	0	0
71	SLU 50	-0.05	-0.08	3.52	0	0	0
71	SLU 51	-0.05	-0.08	3.52	0	0	0
71	SLU 52	-0.06	-0.08	3.79	0	0	0
71	SLU 53	-0.06	-0.08	3.85	0	0	0
71	SLU 54	-0.06	-0.08	3.86	0	0	0
71	SLU 55	-0.06	-0.08	3.83	0	0	0
71	SLU 56	-0.07	-0.08	3.89	0	0	0
71	SLU 57	-0.07	-0.08	3.89	0	0	0
71	SLU 58	-0.07	-0.08	3.87	0	0	0
71	SLU 59	-0.07	-0.08	3.87	0	0	0
71	SLU 60	-0.07	-0.08	3.94	0	0	0
71	SLU 61	-0.07	-0.08	3.94	0	0	0
71	SLU 62	-0.07	-0.08	3.98	0	0	0
71	SLU 63	-0.07	-0.08	3.98	0	0	0
71	SLU 64	-0.05	-0.07	3.76	0	0	0
71	SLU 65	-0.05	-0.07	3.77	0	0	0
71	SLU 66	-0.06	-0.07	3.82	0	0	0
71	SLU 67	-0.06	-0.07	3.83	0	0	0
71	SLU 68	-0.06	-0.07	3.8	0	0	0
71	SLU 69	-0.06	-0.07	3.86	0	0	0
71	SLU 70	-0.06	-0.07	3.86	0	0	0
71	SLU 71	-0.06	-0.07	3.84	0	0	0
71	SLU 72	-0.06	-0.07	3.84	0	0	0
71	SLU 73	-0.07	-0.07	4.12	0	0	0
71	SLU 74	-0.07	-0.07	4.18	0	0	0
71	SLU 75	-0.07	-0.07	4.18	0	0	0
71	SLU 76	-0.07	-0.07	4.15	0	0	0
71	SLU 77	-0.07	-0.07	4.21	0	0	0
71	SLU 78	-0.07	-0.07	4.21	0	0	0
71	SLU 79	-0.07	-0.07	4.19	0	0	0
71	SLU 80	-0.07	-0.07	4.19	0	0	0
71	SLU 81	-0.07	-0.07	4.27	0	0	0
71	SLU 82	-0.07	-0.07	4.27	0	0	0
71	SLU 83	-0.07	-0.07	4.3	0	0	0
71	SLU 84	-0.07	-0.07	4.3	0	0	0
71	SLE RA 1	-0.04	-0.06	2.82	0	0	0
71	SLE RA 2	-0.04	-0.06	2.83	0	0	0
71	SLE RA 3	-0.04	-0.06	2.87	0	0	0
71	SLE RA 4	-0.04	-0.06	2.87	0	0	0
71	SLE RA 5	-0.04	-0.06	2.85	0	0	0
71	SLE RA 6	-0.04	-0.06	2.89	0	0	0
71	SLE RA 7	-0.04	-0.06	2.89	0	0	0
71	SLE RA 8	-0.04	-0.06	2.87	0	0	0
71	SLE RA 9	-0.04	-0.06	2.87	0	0	0
71	SLE RA 10	-0.05	-0.06	3.06	0	0	0
71	SLE RA 11	-0.05	-0.06	3.1	0	0	0
71	SLE RA 12	-0.05	-0.06	3.1	0	0	0
71	SLE RA 13	-0.05	-0.06	3.08	0	0	0
71	SLE RA 14	-0.05	-0.06	3.12	0	0	0
71	SLE RA 15	-0.05	-0.06	3.13	0	0	0
71	SLE RA 16	-0.05	-0.06	3.11	0	0	0
71	SLE RA 17	-0.05	-0.06	3.11	0	0	0
71	SLE RA 18	-0.05	-0.06	3.16	0	0	0
71	SLE RA 19	-0.05	-0.06	3.16	0	0	0
71	SLE RA 20	-0.05	-0.06	3.18	0	0	0
71	SLE RA 21	-0.05	-0.06	3.18	0	0	0
71	SLE FR 1	-0.04	-0.06	2.82	0	0	0
71	SLE FR 2	-0.04	-0.06	2.82	0	0	0
71	SLE FR 3	-0.04	-0.06	2.83	0	0	0
71	SLE FR 4	-0.04	-0.06	2.92	0	0	0
71	SLE FR 5	-0.04	-0.06	2.93	0	0	0
71	SLE FR 6	-0.05	-0.06	2.99	0	0	0
71	SLE QP 1	-0.04	-0.06	2.82	0	0	0
71	SLE QP 2	-0.04	-0.06	2.92	0	0	0
71	SLD 1	0.15	-0.02	2.83	0	0	0
71	SLD 2	0.15	-0.01	2.83	0	0	0
71	SLD 3	0.14	-0.08	2.87	0	0	0
71	SLD 4	0.14	-0.07	2.87	0	0	0
71	SLD 5	0.04	0.05	2.84	0	0	0
71	SLD 6	0.04	0.05	2.83	0	0	0
71	SLD 7	-0.01	-0.16	2.97	0	0	0
71	SLD 8	-0.01	-0.15	2.97	0	0	0
71	SLD 9	-0.07	0.04	2.88	0	0	0
71	SLD 10	-0.07	0.04	2.88	0	0	0
71	SLD 11	-0.13	-0.17	3.02	0	0	0
71	SLD 12	-0.13	-0.16	3.01	0	0	0
71	SLD 13	-0.22	-0.04	2.98	0	0	0
71	SLD 14	-0.22	-0.04	2.97	0	0	0
71	SLD 15	-0.24	-0.11	3.02	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
71	SLD 16	-0.24	-0.1	3.02	0	0	0
71	SLV 1	0.41	0.03	2.71	0	0	0
71	SLV 2	0.41	0.05	2.71	0	0	0
71	SLV 3	0.38	-0.11	2.81	0	0	0
71	SLV 4	0.38	-0.09	2.8	0	0	0
71	SLV 5	0.15	0.18	2.72	0	0	0
71	SLV 6	0.15	0.19	2.72	0	0	0
71	SLV 7	0.03	-0.29	3.03	0	0	0
71	SLV 8	0.03	-0.28	3.03	0	0	0
71	SLV 9	-0.12	0.16	2.82	0	0	0
71	SLV 10	-0.12	0.17	2.82	0	0	0
71	SLV 11	-0.23	-0.31	3.13	0	0	0
71	SLV 12	-0.23	-0.29	3.13	0	0	0
71	SLV 13	-0.46	-0.03	3.05	0	0	0
71	SLV 14	-0.46	-0.01	3.04	0	0	0
71	SLV 15	-0.5	-0.17	3.14	0	0	0
71	SLV 16	-0.5	-0.15	3.14	0	0	0
72	SLU 1	-0.02	-0.03	1.5	0	0	0
72	SLU 2	-0.02	-0.03	1.5	0	0	0
72	SLU 3	-0.02	-0.03	1.53	0	0	0
72	SLU 4	-0.02	-0.03	1.54	0	0	0
72	SLU 5	-0.02	-0.03	1.52	0	0	0
72	SLU 6	-0.02	-0.03	1.55	0	0	0
72	SLU 7	-0.02	-0.03	1.56	0	0	0
72	SLU 8	-0.02	-0.03	1.54	0	0	0
72	SLU 9	-0.02	-0.03	1.54	0	0	0
72	SLU 10	-0.03	-0.03	1.69	0	0	0
72	SLU 11	-0.03	-0.03	1.73	0	0	0
72	SLU 12	-0.03	-0.03	1.73	0	0	0
72	SLU 13	-0.03	-0.03	1.71	0	0	0
72	SLU 14	-0.03	-0.03	1.75	0	0	0
72	SLU 15	-0.03	-0.03	1.75	0	0	0
72	SLU 16	-0.03	-0.03	1.73	0	0	0
72	SLU 17	-0.03	-0.03	1.73	0	0	0
72	SLU 18	-0.03	-0.03	1.77	0	0	0
72	SLU 19	-0.03	-0.03	1.78	0	0	0
72	SLU 20	-0.03	-0.03	1.79	0	0	0
72	SLU 21	-0.03	-0.03	1.8	0	0	0
72	SLU 22	-0.02	-0.03	1.68	0	0	0
72	SLU 23	-0.02	-0.03	1.68	0	0	0
72	SLU 24	-0.03	-0.03	1.71	0	0	0
72	SLU 25	-0.03	-0.03	1.71	0	0	0
72	SLU 26	-0.03	-0.03	1.7	0	0	0
72	SLU 27	-0.03	-0.03	1.73	0	0	0
72	SLU 28	-0.03	-0.03	1.73	0	0	0
72	SLU 29	-0.03	-0.03	1.72	0	0	0
72	SLU 30	-0.03	-0.03	1.72	0	0	0
72	SLU 31	-0.03	-0.03	1.87	0	0	0
72	SLU 32	-0.03	-0.03	1.9	0	0	0
72	SLU 33	-0.03	-0.03	1.9	0	0	0
72	SLU 34	-0.03	-0.03	1.89	0	0	0
72	SLU 35	-0.03	-0.03	1.92	0	0	0
72	SLU 36	-0.03	-0.03	1.92	0	0	0
72	SLU 37	-0.03	-0.03	1.91	0	0	0
72	SLU 38	-0.03	-0.03	1.91	0	0	0
72	SLU 39	-0.03	-0.03	1.95	0	0	0
72	SLU 40	-0.04	-0.03	1.95	0	0	0
72	SLU 41	-0.04	-0.03	1.97	0	0	0
72	SLU 42	-0.04	-0.03	1.97	0	0	0
72	SLU 43	-0.03	-0.04	1.89	0	0	0
72	SLU 44	-0.03	-0.04	1.89	0	0	0
72	SLU 45	-0.03	-0.04	1.92	0	0	0
72	SLU 46	-0.03	-0.04	1.93	0	0	0
72	SLU 47	-0.03	-0.04	1.91	0	0	0
72	SLU 48	-0.03	-0.04	1.94	0	0	0
72	SLU 49	-0.03	-0.04	1.94	0	0	0
72	SLU 50	-0.03	-0.04	1.93	0	0	0
72	SLU 51	-0.03	-0.04	1.93	0	0	0
72	SLU 52	-0.03	-0.04	2.08	0	0	0
72	SLU 53	-0.04	-0.04	2.12	0	0	0
72	SLU 54	-0.04	-0.04	2.12	0	0	0
72	SLU 55	-0.04	-0.04	2.1	0	0	0
72	SLU 56	-0.04	-0.04	2.14	0	0	0
72	SLU 57	-0.04	-0.04	2.14	0	0	0
72	SLU 58	-0.04	-0.04	2.12	0	0	0
72	SLU 59	-0.04	-0.04	2.12	0	0	0
72	SLU 60	-0.04	-0.04	2.16	0	0	0
72	SLU 61	-0.04	-0.04	2.17	0	0	0
72	SLU 62	-0.04	-0.04	2.18	0	0	0
72	SLU 63	-0.04	-0.04	2.19	0	0	0
72	SLU 64	-0.03	-0.04	2.07	0	0	0
72	SLU 65	-0.03	-0.04	2.07	0	0	0
72	SLU 66	-0.03	-0.04	2.1	0	0	0
72	SLU 67	-0.03	-0.04	2.1	0	0	0
72	SLU 68	-0.03	-0.04	2.09	0	0	0
72	SLU 69	-0.03	-0.04	2.12	0	0	0
72	SLU 70	-0.03	-0.04	2.12	0	0	0
72	SLU 71	-0.03	-0.04	2.11	0	0	0
72	SLU 72	-0.03	-0.04	2.11	0	0	0
72	SLU 73	-0.04	-0.04	2.26	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
72	SLU 74	-0.04	-0.04	2.29	0	0	0
72	SLU 75	-0.04	-0.04	2.29	0	0	0
72	SLU 76	-0.04	-0.04	2.28	0	0	0
72	SLU 77	-0.04	-0.04	2.31	0	0	0
72	SLU 78	-0.04	-0.04	2.31	0	0	0
72	SLU 79	-0.04	-0.04	2.3	0	0	0
72	SLU 80	-0.04	-0.04	2.3	0	0	0
72	SLU 81	-0.04	-0.04	2.34	0	0	0
72	SLU 82	-0.04	-0.04	2.34	0	0	0
72	SLU 83	-0.04	-0.04	2.36	0	0	0
72	SLU 84	-0.04	-0.04	2.36	0	0	0
72	SLE RA 1	-0.02	-0.03	1.55	0	0	0
72	SLE RA 2	-0.02	-0.03	1.55	0	0	0
72	SLE RA 3	-0.02	-0.03	1.57	0	0	0
72	SLE RA 4	-0.02	-0.03	1.57	0	0	0
72	SLE RA 5	-0.02	-0.03	1.57	0	0	0
72	SLE RA 6	-0.02	-0.03	1.59	0	0	0
72	SLE RA 7	-0.02	-0.03	1.59	0	0	0
72	SLE RA 8	-0.02	-0.03	1.58	0	0	0
72	SLE RA 9	-0.02	-0.03	1.58	0	0	0
72	SLE RA 10	-0.03	-0.03	1.68	0	0	0
72	SLE RA 11	-0.03	-0.03	1.7	0	0	0
72	SLE RA 12	-0.03	-0.03	1.7	0	0	0
72	SLE RA 13	-0.03	-0.03	1.69	0	0	0
72	SLE RA 14	-0.03	-0.03	1.72	0	0	0
72	SLE RA 15	-0.03	-0.03	1.72	0	0	0
72	SLE RA 16	-0.03	-0.03	1.71	0	0	0
72	SLE RA 17	-0.03	-0.03	1.71	0	0	0
72	SLE RA 18	-0.03	-0.03	1.73	0	0	0
72	SLE RA 19	-0.03	-0.03	1.73	0	0	0
72	SLE RA 20	-0.03	-0.03	1.75	0	0	0
72	SLE RA 21	-0.03	-0.03	1.75	0	0	0
72	SLE FR 1	-0.02	-0.03	1.55	0	0	0
72	SLE FR 2	-0.02	-0.03	1.55	0	0	0
72	SLE FR 3	-0.02	-0.03	1.56	0	0	0
72	SLE FR 4	-0.02	-0.03	1.61	0	0	0
72	SLE FR 5	-0.02	-0.03	1.61	0	0	0
72	SLE FR 6	-0.03	-0.03	1.64	0	0	0
72	SLE QP 1	-0.02	-0.03	1.55	0	0	0
72	SLE QP 2	-0.02	-0.03	1.61	0	0	0
72	SLD 1	0.08	-0.01	1.55	0	0	0
72	SLD 2	0.08	0	1.55	0	0	0
72	SLD 3	0.08	-0.04	1.57	0	0	0
72	SLD 4	0.08	-0.04	1.57	0	0	0
72	SLD 5	0.02	0.03	1.56	0	0	0
72	SLD 6	0.02	0.03	1.56	0	0	0
72	SLD 7	-0.01	-0.09	1.63	0	0	0
72	SLD 8	-0.01	-0.08	1.63	0	0	0
72	SLD 9	-0.04	0.02	1.59	0	0	0
72	SLD 10	-0.04	0.03	1.59	0	0	0
72	SLD 11	-0.07	-0.09	1.66	0	0	0
72	SLD 12	-0.07	-0.09	1.66	0	0	0
72	SLD 13	-0.12	-0.02	1.65	0	0	0
72	SLD 14	-0.12	-0.02	1.65	0	0	0
72	SLD 15	-0.13	-0.06	1.67	0	0	0
72	SLD 16	-0.13	-0.05	1.67	0	0	0
72	SLV 1	0.23	0.02	1.47	0	0	0
72	SLV 2	0.23	0.03	1.46	0	0	0
72	SLV 3	0.21	-0.06	1.52	0	0	0
72	SLV 4	0.21	-0.04	1.51	0	0	0
72	SLV 5	0.08	0.1	1.49	0	0	0
72	SLV 6	0.08	0.11	1.49	0	0	0
72	SLV 7	0.02	-0.16	1.65	0	0	0
72	SLV 8	0.02	-0.15	1.65	0	0	0
72	SLV 9	-0.06	0.09	1.56	0	0	0
72	SLV 10	-0.06	0.1	1.56	0	0	0
72	SLV 11	-0.13	-0.17	1.72	0	0	0
72	SLV 12	-0.13	-0.16	1.72	0	0	0
72	SLV 13	-0.26	-0.02	1.7	0	0	0
72	SLV 14	-0.26	0	1.7	0	0	0
72	SLV 15	-0.28	-0.09	1.75	0	0	0
72	SLV 16	-0.28	-0.08	1.75	0	0	0
137	SLU 1	0	-0.07	3	0	0	0
137	SLU 2	0	-0.07	3	0	0	0
137	SLU 3	-0.01	-0.07	3.07	0	0	0
137	SLU 4	0	-0.07	3.07	0	0	0
137	SLU 5	0	-0.07	3.04	0	0	0
137	SLU 6	-0.01	-0.07	3.12	0	0	0
137	SLU 7	0	-0.07	3.11	0	0	0
137	SLU 8	-0.01	-0.07	3.1	0	0	0
137	SLU 9	0	-0.07	3.09	0	0	0
137	SLU 10	0	-0.08	3.35	0	0	0
137	SLU 11	0	-0.08	3.42	0	0	0
137	SLU 12	0	-0.08	3.42	0	0	0
137	SLU 13	0	-0.08	3.4	0	0	0
137	SLU 14	0	-0.08	3.47	0	0	0
137	SLU 15	0	-0.08	3.47	0	0	0
137	SLU 16	0	-0.08	3.45	0	0	0
137	SLU 17	0	-0.08	3.45	0	0	0
137	SLU 18	0	-0.08	3.51	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
137	SLU 19	0	-0.08	3.5	0	0	0
137	SLU 20	0	-0.08	3.55	0	0	0
137	SLU 21	0	-0.08	3.55	0	0	0
137	SLU 22	-0.01	-0.07	3.32	0	0	0
137	SLU 23	0	-0.08	3.31	0	0	0
137	SLU 24	-0.01	-0.07	3.38	0	0	0
137	SLU 25	0	-0.08	3.38	0	0	0
137	SLU 26	0	-0.08	3.36	0	0	0
137	SLU 27	-0.01	-0.07	3.43	0	0	0
137	SLU 28	0	-0.08	3.43	0	0	0
137	SLU 29	-0.01	-0.07	3.41	0	0	0
137	SLU 30	0	-0.08	3.41	0	0	0
137	SLU 31	0	-0.08	3.66	0	0	0
137	SLU 32	0	-0.08	3.74	0	0	0
137	SLU 33	0	-0.08	3.73	0	0	0
137	SLU 34	0	-0.08	3.71	0	0	0
137	SLU 35	0	-0.08	3.78	0	0	0
137	SLU 36	0	-0.08	3.78	0	0	0
137	SLU 37	0	-0.08	3.76	0	0	0
137	SLU 38	0	-0.08	3.76	0	0	0
137	SLU 39	0	-0.08	3.82	0	0	0
137	SLU 40	0	-0.08	3.82	0	0	0
137	SLU 41	0	-0.08	3.87	0	0	0
137	SLU 42	0	-0.08	3.86	0	0	0
137	SLU 43	-0.01	-0.09	3.8	0	0	0
137	SLU 44	0	-0.09	3.79	0	0	0
137	SLU 45	-0.01	-0.09	3.86	0	0	0
137	SLU 46	-0.01	-0.09	3.86	0	0	0
137	SLU 47	0	-0.09	3.84	0	0	0
137	SLU 48	-0.01	-0.09	3.91	0	0	0
137	SLU 49	-0.01	-0.09	3.91	0	0	0
137	SLU 50	-0.01	-0.09	3.89	0	0	0
137	SLU 51	-0.01	-0.09	3.89	0	0	0
137	SLU 52	0	-0.1	4.14	0	0	0
137	SLU 53	-0.01	-0.1	4.22	0	0	0
137	SLU 54	0	-0.1	4.21	0	0	0
137	SLU 55	0	-0.1	4.19	0	0	0
137	SLU 56	-0.01	-0.1	4.26	0	0	0
137	SLU 57	0	-0.1	4.26	0	0	0
137	SLU 58	-0.01	-0.1	4.24	0	0	0
137	SLU 59	0	-0.1	4.24	0	0	0
137	SLU 60	0	-0.1	4.3	0	0	0
137	SLU 61	0	-0.1	4.3	0	0	0
137	SLU 62	0	-0.1	4.35	0	0	0
137	SLU 63	0	-0.1	4.34	0	0	0
137	SLU 64	-0.01	-0.09	4.11	0	0	0
137	SLU 65	-0.01	-0.1	4.1	0	0	0
137	SLU 66	-0.01	-0.09	4.18	0	0	0
137	SLU 67	-0.01	-0.1	4.17	0	0	0
137	SLU 68	-0.01	-0.1	4.15	0	0	0
137	SLU 69	-0.01	-0.09	4.22	0	0	0
137	SLU 70	-0.01	-0.1	4.22	0	0	0
137	SLU 71	-0.01	-0.09	4.2	0	0	0
137	SLU 72	-0.01	-0.1	4.2	0	0	0
137	SLU 73	0	-0.1	4.46	0	0	0
137	SLU 74	-0.01	-0.1	4.53	0	0	0
137	SLU 75	0	-0.1	4.53	0	0	0
137	SLU 76	0	-0.1	4.5	0	0	0
137	SLU 77	-0.01	-0.1	4.58	0	0	0
137	SLU 78	0	-0.1	4.57	0	0	0
137	SLU 79	-0.01	-0.1	4.56	0	0	0
137	SLU 80	0	-0.1	4.55	0	0	0
137	SLU 81	0	-0.1	4.61	0	0	0
137	SLU 82	0	-0.1	4.61	0	0	0
137	SLU 83	-0.01	-0.1	4.66	0	0	0
137	SLU 84	0	-0.1	4.66	0	0	0
137	SLE RA 1	-0.01	-0.07	3.09	0	0	0
137	SLE RA 2	0	-0.07	3.09	0	0	0
137	SLE RA 3	-0.01	-0.07	3.14	0	0	0
137	SLE RA 4	0	-0.07	3.13	0	0	0
137	SLE RA 5	0	-0.07	3.12	0	0	0
137	SLE RA 6	-0.01	-0.07	3.17	0	0	0
137	SLE RA 7	0	-0.07	3.17	0	0	0
137	SLE RA 8	-0.01	-0.07	3.15	0	0	0
137	SLE RA 9	0	-0.07	3.15	0	0	0
137	SLE RA 10	0	-0.08	3.32	0	0	0
137	SLE RA 11	0	-0.07	3.37	0	0	0
137	SLE RA 12	0	-0.08	3.37	0	0	0
137	SLE RA 13	0	-0.08	3.36	0	0	0
137	SLE RA 14	0	-0.08	3.4	0	0	0
137	SLE RA 15	0	-0.08	3.4	0	0	0
137	SLE RA 16	0	-0.08	3.39	0	0	0
137	SLE RA 17	0	-0.08	3.39	0	0	0
137	SLE RA 18	0	-0.08	3.43	0	0	0
137	SLE RA 19	0	-0.08	3.43	0	0	0
137	SLE RA 20	0	-0.08	3.46	0	0	0
137	SLE RA 21	0	-0.08	3.46	0	0	0
137	SLE FR 1	-0.01	-0.07	3.09	0	0	0
137	SLE FR 2	0	-0.07	3.09	0	0	0
137	SLE FR 3	-0.01	-0.07	3.1	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
137	SLE FR 4	0	-0.07	3.19	0	0	0
137	SLE FR 5	0	-0.07	3.21	0	0	0
137	SLE FR 6	0	-0.07	3.26	0	0	0
137	SLE QP 1	-0.01	-0.07	3.09	0	0	0
137	SLE QP 2	0	-0.07	3.19	0	0	0
137	SLD 1	0.23	-0.07	3.5	0	0	0
137	SLD 2	0.25	-0.09	3.48	0	0	0
137	SLD 3	0.24	-0.14	3.37	0	0	0
137	SLD 4	0.27	-0.15	3.36	0	0	0
137	SLD 5	0.04	0.03	3.47	0	0	0
137	SLD 6	0.05	0.02	3.46	0	0	0
137	SLD 7	0.09	-0.19	3.07	0	0	0
137	SLD 8	0.1	-0.2	3.06	0	0	0
137	SLD 9	-0.11	0.05	3.33	0	0	0
137	SLD 10	-0.1	0.05	3.32	0	0	0
137	SLD 11	-0.06	-0.17	2.93	0	0	0
137	SLD 12	-0.05	-0.17	2.92	0	0	0
137	SLD 13	-0.28	0.01	3.03	0	0	0
137	SLD 14	-0.25	0	3.01	0	0	0
137	SLD 15	-0.26	-0.06	2.91	0	0	0
137	SLD 16	-0.24	-0.07	2.89	0	0	0
137	SLV 1	0.54	-0.08	3.9	0	0	0
137	SLV 2	0.6	-0.11	3.85	0	0	0
137	SLV 3	0.57	-0.23	3.62	0	0	0
137	SLV 4	0.63	-0.26	3.58	0	0	0
137	SLV 5	0.09	0.16	3.83	0	0	0
137	SLV 6	0.13	0.14	3.8	0	0	0
137	SLV 7	0.21	-0.34	2.92	0	0	0
137	SLV 8	0.25	-0.36	2.89	0	0	0
137	SLV 9	-0.26	0.22	3.5	0	0	0
137	SLV 10	-0.22	0.2	3.47	0	0	0
137	SLV 11	-0.14	-0.28	2.59	0	0	0
137	SLV 12	-0.1	-0.3	2.56	0	0	0
137	SLV 13	-0.64	0.12	2.81	0	0	0
137	SLV 14	-0.58	0.09	2.76	0	0	0
137	SLV 15	-0.61	-0.03	2.53	0	0	0
137	SLV 16	-0.55	-0.06	2.49	0	0	0
138	SLU 1	-0.01	-0.12	6.11	0	0	0
138	SLU 2	-0.01	-0.13	6.09	0	0	0
138	SLU 3	-0.01	-0.13	6.24	0	0	0
138	SLU 4	-0.01	-0.13	6.23	0	0	0
138	SLU 5	-0.01	-0.13	6.19	0	0	0
138	SLU 6	-0.01	-0.13	6.34	0	0	0
138	SLU 7	-0.01	-0.13	6.33	0	0	0
138	SLU 8	-0.01	-0.13	6.3	0	0	0
138	SLU 9	-0.01	-0.13	6.29	0	0	0
138	SLU 10	0	-0.14	6.81	0	0	0
138	SLU 11	-0.01	-0.13	6.96	0	0	0
138	SLU 12	-0.01	-0.14	6.95	0	0	0
138	SLU 13	0	-0.14	6.91	0	0	0
138	SLU 14	-0.01	-0.14	7.06	0	0	0
138	SLU 15	-0.01	-0.14	7.05	0	0	0
138	SLU 16	-0.01	-0.14	7.02	0	0	0
138	SLU 17	-0.01	-0.14	7.01	0	0	0
138	SLU 18	-0.01	-0.14	7.13	0	0	0
138	SLU 19	0	-0.14	7.13	0	0	0
138	SLU 20	-0.01	-0.14	7.23	0	0	0
138	SLU 21	0	-0.14	7.22	0	0	0
138	SLU 22	-0.01	-0.13	6.74	0	0	0
138	SLU 23	-0.01	-0.13	6.73	0	0	0
138	SLU 24	-0.01	-0.13	6.87	0	0	0
138	SLU 25	-0.01	-0.13	6.87	0	0	0
138	SLU 26	-0.01	-0.14	6.82	0	0	0
138	SLU 27	-0.01	-0.13	6.97	0	0	0
138	SLU 28	-0.01	-0.13	6.96	0	0	0
138	SLU 29	-0.01	-0.13	6.93	0	0	0
138	SLU 30	-0.01	-0.13	6.92	0	0	0
138	SLU 31	-0.01	-0.14	7.45	0	0	0
138	SLU 32	-0.01	-0.14	7.59	0	0	0
138	SLU 33	-0.01	-0.14	7.59	0	0	0
138	SLU 34	-0.01	-0.14	7.54	0	0	0
138	SLU 35	-0.01	-0.14	7.69	0	0	0
138	SLU 36	-0.01	-0.14	7.68	0	0	0
138	SLU 37	-0.01	-0.14	7.65	0	0	0
138	SLU 38	-0.01	-0.14	7.64	0	0	0
138	SLU 39	-0.01	-0.14	7.77	0	0	0
138	SLU 40	-0.01	-0.14	7.76	0	0	0
138	SLU 41	-0.01	-0.14	7.86	0	0	0
138	SLU 42	-0.01	-0.14	7.86	0	0	0
138	SLU 43	-0.01	-0.16	7.72	0	0	0
138	SLU 44	-0.01	-0.17	7.71	0	0	0
138	SLU 45	-0.01	-0.16	7.86	0	0	0
138	SLU 46	-0.01	-0.17	7.85	0	0	0
138	SLU 47	-0.01	-0.17	7.8	0	0	0
138	SLU 48	-0.01	-0.16	7.95	0	0	0
138	SLU 49	-0.01	-0.17	7.94	0	0	0
138	SLU 50	-0.01	-0.16	7.91	0	0	0
138	SLU 51	-0.01	-0.17	7.9	0	0	0
138	SLU 52	-0.01	-0.17	8.43	0	0	0
138	SLU 53	-0.01	-0.17	8.58	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
138	SLU 54	-0.01	-0.17	8.57	0	0	0
138	SLU 55	-0.01	-0.18	8.52	0	0	0
138	SLU 56	-0.01	-0.17	8.67	0	0	0
138	SLU 57	-0.01	-0.18	8.66	0	0	0
138	SLU 58	-0.01	-0.17	8.63	0	0	0
138	SLU 59	-0.01	-0.18	8.62	0	0	0
138	SLU 60	-0.01	-0.17	8.75	0	0	0
138	SLU 61	-0.01	-0.18	8.74	0	0	0
138	SLU 62	-0.01	-0.17	8.84	0	0	0
138	SLU 63	-0.01	-0.18	8.84	0	0	0
138	SLU 64	-0.01	-0.16	8.35	0	0	0
138	SLU 65	-0.01	-0.17	8.34	0	0	0
138	SLU 66	-0.01	-0.17	8.49	0	0	0
138	SLU 67	-0.01	-0.17	8.48	0	0	0
138	SLU 68	-0.01	-0.17	8.44	0	0	0
138	SLU 69	-0.01	-0.17	8.58	0	0	0
138	SLU 70	-0.01	-0.17	8.58	0	0	0
138	SLU 71	-0.01	-0.17	8.54	0	0	0
138	SLU 72	-0.01	-0.17	8.54	0	0	0
138	SLU 73	-0.01	-0.18	9.06	0	0	0
138	SLU 74	-0.01	-0.17	9.21	0	0	0
138	SLU 75	-0.01	-0.18	9.2	0	0	0
138	SLU 76	-0.01	-0.18	9.16	0	0	0
138	SLU 77	-0.01	-0.17	9.3	0	0	0
138	SLU 78	-0.01	-0.18	9.3	0	0	0
138	SLU 79	-0.01	-0.18	9.26	0	0	0
138	SLU 80	-0.01	-0.18	9.26	0	0	0
138	SLU 81	-0.01	-0.17	9.38	0	0	0
138	SLU 82	-0.01	-0.18	9.38	0	0	0
138	SLU 83	-0.01	-0.18	9.48	0	0	0
138	SLU 84	-0.01	-0.18	9.47	0	0	0
138	SLE RA 1	-0.01	-0.13	6.29	0	0	0
138	SLE RA 2	-0.01	-0.13	6.28	0	0	0
138	SLE RA 3	-0.01	-0.13	6.38	0	0	0
138	SLE RA 4	-0.01	-0.13	6.37	0	0	0
138	SLE RA 5	-0.01	-0.13	6.34	0	0	0
138	SLE RA 6	-0.01	-0.13	6.44	0	0	0
138	SLE RA 7	-0.01	-0.13	6.44	0	0	0
138	SLE RA 8	-0.01	-0.13	6.41	0	0	0
138	SLE RA 9	-0.01	-0.13	6.41	0	0	0
138	SLE RA 10	-0.01	-0.13	6.76	0	0	0
138	SLE RA 11	-0.01	-0.13	6.86	0	0	0
138	SLE RA 12	-0.01	-0.13	6.85	0	0	0
138	SLE RA 13	-0.01	-0.14	6.82	0	0	0
138	SLE RA 14	-0.01	-0.13	6.92	0	0	0
138	SLE RA 15	-0.01	-0.14	6.92	0	0	0
138	SLE RA 16	-0.01	-0.13	6.89	0	0	0
138	SLE RA 17	-0.01	-0.14	6.89	0	0	0
138	SLE RA 18	-0.01	-0.13	6.97	0	0	0
138	SLE RA 19	-0.01	-0.14	6.97	0	0	0
138	SLE RA 20	-0.01	-0.13	7.04	0	0	0
138	SLE RA 21	-0.01	-0.14	7.03	0	0	0
138	SLE FR 1	-0.01	-0.13	6.29	0	0	0
138	SLE FR 2	-0.01	-0.13	6.29	0	0	0
138	SLE FR 3	-0.01	-0.13	6.31	0	0	0
138	SLE FR 4	-0.01	-0.13	6.49	0	0	0
138	SLE FR 5	-0.01	-0.13	6.52	0	0	0
138	SLE FR 6	-0.01	-0.13	6.63	0	0	0
138	SLE QP 1	-0.01	-0.13	6.29	0	0	0
138	SLE QP 2	-0.01	-0.13	6.49	0	0	0
138	SLD 1	0.46	-0.12	7.05	0	0	0
138	SLD 2	0.52	-0.15	7.01	0	0	0
138	SLD 3	0.49	-0.26	6.8	0	0	0
138	SLD 4	0.55	-0.28	6.77	0	0	0
138	SLD 5	0.08	0.08	7.03	0	0	0
138	SLD 6	0.11	0.07	7.01	0	0	0
138	SLD 7	0.18	-0.37	6.22	0	0	0
138	SLD 8	0.21	-0.38	6.2	0	0	0
138	SLD 9	-0.23	0.13	6.78	0	0	0
138	SLD 10	-0.2	0.11	6.76	0	0	0
138	SLD 11	-0.13	-0.32	5.97	0	0	0
138	SLD 12	-0.1	-0.34	5.95	0	0	0
138	SLD 13	-0.57	0.03	6.22	0	0	0
138	SLD 14	-0.51	0	6.18	0	0	0
138	SLD 15	-0.54	-0.11	5.97	0	0	0
138	SLD 16	-0.48	-0.13	5.94	0	0	0
138	SLV 1	1.1	-0.12	7.78	0	0	0
138	SLV 2	1.23	-0.18	7.7	0	0	0
138	SLV 3	1.17	-0.43	7.23	0	0	0
138	SLV 4	1.3	-0.49	7.15	0	0	0
138	SLV 5	0.19	0.35	7.73	0	0	0
138	SLV 6	0.27	0.32	7.67	0	0	0
138	SLV 7	0.43	-0.68	5.9	0	0	0
138	SLV 8	0.51	-0.71	5.84	0	0	0
138	SLV 9	-0.53	0.46	7.14	0	0	0
138	SLV 10	-0.45	0.42	7.09	0	0	0
138	SLV 11	-0.29	-0.57	5.31	0	0	0
138	SLV 12	-0.21	-0.61	5.26	0	0	0
138	SLV 13	-1.32	0.23	5.83	0	0	0
138	SLV 14	-1.19	0.17	5.75	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
138	SLV 15	-1.24	-0.08	5.29	0	0	0
138	SLV 16	-1.12	-0.13	5.2	0	0	0
139	SLU 1	-0.01	-0.11	6.01	0	0	0
139	SLU 2	-0.01	-0.11	6	0	0	0
139	SLU 3	-0.01	-0.11	6.14	0	0	0
139	SLU 4	-0.01	-0.11	6.13	0	0	0
139	SLU 5	-0.01	-0.11	6.09	0	0	0
139	SLU 6	-0.01	-0.11	6.24	0	0	0
139	SLU 7	-0.01	-0.11	6.23	0	0	0
139	SLU 8	-0.01	-0.11	6.2	0	0	0
139	SLU 9	-0.01	-0.11	6.19	0	0	0
139	SLU 10	0	-0.12	6.71	0	0	0
139	SLU 11	-0.01	-0.11	6.85	0	0	0
139	SLU 12	-0.01	-0.12	6.84	0	0	0
139	SLU 13	-0.01	-0.12	6.8	0	0	0
139	SLU 14	-0.01	-0.11	6.95	0	0	0
139	SLU 15	-0.01	-0.12	6.94	0	0	0
139	SLU 16	-0.01	-0.11	6.91	0	0	0
139	SLU 17	-0.01	-0.12	6.9	0	0	0
139	SLU 18	-0.01	-0.11	7.02	0	0	0
139	SLU 19	-0.01	-0.12	7.02	0	0	0
139	SLU 20	-0.01	-0.12	7.12	0	0	0
139	SLU 21	-0.01	-0.12	7.11	0	0	0
139	SLU 22	-0.01	-0.11	6.63	0	0	0
139	SLU 23	-0.01	-0.11	6.62	0	0	0
139	SLU 24	-0.01	-0.11	6.76	0	0	0
139	SLU 25	-0.01	-0.11	6.76	0	0	0
139	SLU 26	-0.01	-0.11	6.71	0	0	0
139	SLU 27	-0.01	-0.11	6.86	0	0	0
139	SLU 28	-0.01	-0.11	6.85	0	0	0
139	SLU 29	-0.01	-0.11	6.82	0	0	0
139	SLU 30	-0.01	-0.11	6.81	0	0	0
139	SLU 31	-0.01	-0.12	7.33	0	0	0
139	SLU 32	-0.01	-0.11	7.47	0	0	0
139	SLU 33	-0.01	-0.12	7.47	0	0	0
139	SLU 34	-0.01	-0.12	7.42	0	0	0
139	SLU 35	-0.01	-0.11	7.57	0	0	0
139	SLU 36	-0.01	-0.12	7.56	0	0	0
139	SLU 37	-0.01	-0.12	7.53	0	0	0
139	SLU 38	-0.01	-0.12	7.52	0	0	0
139	SLU 39	-0.01	-0.11	7.64	0	0	0
139	SLU 40	-0.01	-0.12	7.64	0	0	0
139	SLU 41	-0.01	-0.12	7.74	0	0	0
139	SLU 42	-0.01	-0.12	7.73	0	0	0
139	SLU 43	-0.01	-0.14	7.6	0	0	0
139	SLU 44	-0.01	-0.14	7.59	0	0	0
139	SLU 45	-0.01	-0.14	7.73	0	0	0
139	SLU 46	-0.01	-0.14	7.72	0	0	0
139	SLU 47	-0.01	-0.14	7.68	0	0	0
139	SLU 48	-0.01	-0.14	7.82	0	0	0
139	SLU 49	-0.01	-0.14	7.82	0	0	0
139	SLU 50	-0.01	-0.14	7.78	0	0	0
139	SLU 51	-0.01	-0.14	7.78	0	0	0
139	SLU 52	-0.01	-0.15	8.3	0	0	0
139	SLU 53	-0.01	-0.14	8.44	0	0	0
139	SLU 54	-0.01	-0.15	8.43	0	0	0
139	SLU 55	-0.01	-0.15	8.39	0	0	0
139	SLU 56	-0.01	-0.15	8.53	0	0	0
139	SLU 57	-0.01	-0.15	8.53	0	0	0
139	SLU 58	-0.01	-0.15	8.5	0	0	0
139	SLU 59	-0.01	-0.15	8.49	0	0	0
139	SLU 60	-0.01	-0.15	8.61	0	0	0
139	SLU 61	-0.01	-0.15	8.6	0	0	0
139	SLU 62	-0.01	-0.15	8.71	0	0	0
139	SLU 63	-0.01	-0.15	8.7	0	0	0
139	SLU 64	-0.01	-0.14	8.22	0	0	0
139	SLU 65	-0.01	-0.14	8.21	0	0	0
139	SLU 66	-0.01	-0.14	8.35	0	0	0
139	SLU 67	-0.01	-0.14	8.35	0	0	0
139	SLU 68	-0.01	-0.15	8.3	0	0	0
139	SLU 69	-0.01	-0.14	8.45	0	0	0
139	SLU 70	-0.01	-0.14	8.44	0	0	0
139	SLU 71	-0.01	-0.14	8.41	0	0	0
139	SLU 72	-0.01	-0.14	8.4	0	0	0
139	SLU 73	-0.01	-0.15	8.92	0	0	0
139	SLU 74	-0.01	-0.14	9.06	0	0	0
139	SLU 75	-0.01	-0.15	9.06	0	0	0
139	SLU 76	-0.01	-0.15	9.01	0	0	0
139	SLU 77	-0.01	-0.15	9.16	0	0	0
139	SLU 78	-0.01	-0.15	9.15	0	0	0
139	SLU 79	-0.01	-0.15	9.12	0	0	0
139	SLU 80	-0.01	-0.15	9.11	0	0	0
139	SLU 81	-0.01	-0.15	9.23	0	0	0
139	SLU 82	-0.01	-0.15	9.23	0	0	0
139	SLU 83	-0.01	-0.15	9.33	0	0	0
139	SLU 84	-0.01	-0.15	9.32	0	0	0
139	SLE RA 1	-0.01	-0.11	6.19	0	0	0
139	SLE RA 2	-0.01	-0.11	6.18	0	0	0
139	SLE RA 3	-0.01	-0.11	6.27	0	0	0
139	SLE RA 4	-0.01	-0.11	6.27	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
139	SLE RA 5	-0.01	-0.11	6.24	0	0	0
139	SLE RA 6	-0.01	-0.11	6.34	0	0	0
139	SLE RA 7	-0.01	-0.11	6.33	0	0	0
139	SLE RA 8	-0.01	-0.11	6.31	0	0	0
139	SLE RA 9	-0.01	-0.11	6.31	0	0	0
139	SLE RA 10	-0.01	-0.11	6.65	0	0	0
139	SLE RA 11	-0.01	-0.11	6.75	0	0	0
139	SLE RA 12	-0.01	-0.11	6.74	0	0	0
139	SLE RA 13	-0.01	-0.11	6.71	0	0	0
139	SLE RA 14	-0.01	-0.11	6.81	0	0	0
139	SLE RA 15	-0.01	-0.11	6.81	0	0	0
139	SLE RA 16	-0.01	-0.11	6.78	0	0	0
139	SLE RA 17	-0.01	-0.11	6.78	0	0	0
139	SLE RA 18	-0.01	-0.11	6.86	0	0	0
139	SLE RA 19	-0.01	-0.11	6.86	0	0	0
139	SLE RA 20	-0.01	-0.11	6.92	0	0	0
139	SLE RA 21	-0.01	-0.11	6.92	0	0	0
139	SLE FR 1	-0.01	-0.11	6.19	0	0	0
139	SLE FR 2	-0.01	-0.11	6.18	0	0	0
139	SLE FR 3	-0.01	-0.11	6.21	0	0	0
139	SLE FR 4	-0.01	-0.11	6.39	0	0	0
139	SLE FR 5	-0.01	-0.11	6.41	0	0	0
139	SLE FR 6	-0.01	-0.11	6.52	0	0	0
139	SLE QP 1	-0.01	-0.11	6.19	0	0	0
139	SLE QP 2	-0.01	-0.11	6.39	0	0	0
139	SLD 1	0.46	-0.09	6.87	0	0	0
139	SLD 2	0.51	-0.12	6.84	0	0	0
139	SLD 3	0.49	-0.23	6.64	0	0	0
139	SLD 4	0.54	-0.25	6.6	0	0	0
139	SLD 5	0.08	0.11	6.9	0	0	0
139	SLD 6	0.11	0.09	6.88	0	0	0
139	SLD 7	0.18	-0.35	6.11	0	0	0
139	SLD 8	0.21	-0.36	6.09	0	0	0
139	SLD 9	-0.23	0.15	6.69	0	0	0
139	SLD 10	-0.2	0.13	6.67	0	0	0
139	SLD 11	-0.13	-0.31	5.9	0	0	0
139	SLD 12	-0.1	-0.32	5.88	0	0	0
139	SLD 13	-0.56	0.04	6.17	0	0	0
139	SLD 14	-0.51	0.01	6.14	0	0	0
139	SLD 15	-0.53	-0.1	5.94	0	0	0
139	SLD 16	-0.48	-0.12	5.9	0	0	0
139	SLV 1	1.09	-0.08	7.51	0	0	0
139	SLV 2	1.21	-0.13	7.44	0	0	0
139	SLV 3	1.16	-0.39	6.98	0	0	0
139	SLV 4	1.28	-0.44	6.91	0	0	0
139	SLV 5	0.19	0.38	7.55	0	0	0
139	SLV 6	0.27	0.34	7.5	0	0	0
139	SLV 7	0.43	-0.65	5.77	0	0	0
139	SLV 8	0.51	-0.68	5.72	0	0	0
139	SLV 9	-0.53	0.47	7.06	0	0	0
139	SLV 10	-0.45	0.43	7.01	0	0	0
139	SLV 11	-0.29	-0.56	5.28	0	0	0
139	SLV 12	-0.21	-0.59	5.23	0	0	0
139	SLV 13	-1.3	0.22	5.87	0	0	0
139	SLV 14	-1.18	0.17	5.8	0	0	0
139	SLV 15	-1.23	-0.08	5.34	0	0	0
139	SLV 16	-1.11	-0.13	5.26	0	0	0
140	SLU 1	-0.01	-0.09	5.78	0	0.2896	0.0044
140	SLU 2	-0.01	-0.09	5.77	0	0.289	0.0047
140	SLU 3	-0.01	-0.09	5.91	0	0.296	0.0045
140	SLU 4	-0.01	-0.09	5.91	0	0.2957	0.0046
140	SLU 5	-0.01	-0.1	5.86	0	0.2936	0.0048
140	SLU 6	-0.01	-0.09	6	0	0.3006	0.0045
140	SLU 7	-0.01	-0.09	6	0	0.3002	0.0047
140	SLU 8	-0.01	-0.09	5.96	0	0.2987	0.0046
140	SLU 9	-0.01	-0.09	5.96	0	0.2983	0.0047
140	SLU 10	-0.01	-0.1	6.46	0	0.3234	0.0049
140	SLU 11	-0.01	-0.09	6.6	0	0.3304	0.0047
140	SLU 12	-0.01	-0.1	6.59	0	0.33	0.0048
140	SLU 13	-0.01	-0.1	6.55	0	0.3279	0.005
140	SLU 14	-0.01	-0.09	6.69	0	0.3349	0.0047
140	SLU 15	-0.01	-0.1	6.68	0	0.3346	0.0049
140	SLU 16	-0.01	-0.1	6.65	0	0.333	0.0048
140	SLU 17	-0.01	-0.1	6.64	0	0.3327	0.0049
140	SLU 18	-0.01	-0.09	6.76	0	0.3386	0.0047
140	SLU 19	-0.01	-0.1	6.76	0	0.3383	0.0049
140	SLU 20	-0.01	-0.1	6.85	0	0.3432	0.0048
140	SLU 21	-0.01	-0.1	6.85	0	0.3428	0.005
140	SLU 22	-0.01	-0.09	6.38	0	0.3195	0.0044
140	SLU 23	-0.01	-0.09	6.37	0	0.3189	0.0046
140	SLU 24	-0.01	-0.09	6.51	0	0.3259	0.0044
140	SLU 25	-0.01	-0.09	6.5	0	0.3256	0.0046
140	SLU 26	-0.01	-0.09	6.46	0	0.3235	0.0047
140	SLU 27	-0.01	-0.09	6.6	0	0.3305	0.0045
140	SLU 28	-0.01	-0.09	6.59	0	0.3301	0.0046
140	SLU 29	-0.01	-0.09	6.56	0	0.3286	0.0045
140	SLU 30	-0.01	-0.09	6.56	0	0.3282	0.0047
140	SLU 31	-0.01	-0.1	7.06	0	0.3533	0.0048
140	SLU 32	-0.01	-0.09	7.19	0	0.3603	0.0046
140	SLU 33	-0.01	-0.1	7.19	0	0.3599	0.0048





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
140	SLU 34	-0.01	-0.1	7.15	0	0.3578	0.0049
140	SLU 35	-0.01	-0.09	7.29	0	0.3648	0.0047
140	SLU 36	-0.01	-0.1	7.28	0	0.3645	0.0048
140	SLU 37	-0.01	-0.09	7.25	0	0.3629	0.0047
140	SLU 38	-0.01	-0.1	7.24	0	0.3626	0.0049
140	SLU 39	-0.01	-0.09	7.36	0	0.3685	0.0047
140	SLU 40	-0.01	-0.1	7.35	0	0.3682	0.0048
140	SLU 41	-0.01	-0.09	7.45	0	0.3731	0.0047
140	SLU 42	-0.01	-0.1	7.44	0	0.3727	0.0049
140	SLU 43	-0.01	-0.12	7.31	0	0.3662	0.0058
140	SLU 44	-0.01	-0.12	7.3	0	0.3657	0.0061
140	SLU 45	-0.01	-0.12	7.44	0	0.3727	0.0058
140	SLU 46	-0.01	-0.12	7.44	0	0.3723	0.006
140	SLU 47	-0.01	-0.12	7.39	0	0.3702	0.0061
140	SLU 48	-0.01	-0.12	7.53	0	0.3772	0.0059
140	SLU 49	-0.01	-0.12	7.53	0	0.3769	0.006
140	SLU 50	-0.01	-0.12	7.49	0	0.3753	0.0059
140	SLU 51	-0.01	-0.12	7.49	0	0.375	0.0061
140	SLU 52	-0.01	-0.13	7.99	0	0.4	0.0063
140	SLU 53	-0.01	-0.12	8.13	0	0.407	0.006
140	SLU 54	-0.01	-0.12	8.12	0	0.4067	0.0062
140	SLU 55	-0.01	-0.13	8.08	0	0.4045	0.0063
140	SLU 56	-0.01	-0.12	8.22	0	0.4115	0.0061
140	SLU 57	-0.01	-0.12	8.21	0	0.4112	0.0062
140	SLU 58	-0.01	-0.12	8.18	0	0.4096	0.0061
140	SLU 59	-0.01	-0.13	8.17	0	0.4093	0.0063
140	SLU 60	-0.01	-0.12	8.29	0	0.4153	0.0061
140	SLU 61	-0.01	-0.12	8.29	0	0.4149	0.0062
140	SLU 62	-0.01	-0.12	8.38	0	0.4198	0.0061
140	SLU 63	-0.01	-0.13	8.38	0	0.4195	0.0063
140	SLU 64	-0.01	-0.11	7.91	0	0.3961	0.0057
140	SLU 65	-0.01	-0.12	7.9	0	0.3956	0.006
140	SLU 66	-0.01	-0.11	8.04	0	0.4026	0.0057
140	SLU 67	-0.01	-0.12	8.03	0	0.4022	0.0059
140	SLU 68	-0.01	-0.12	7.99	0	0.4001	0.0061
140	SLU 69	-0.01	-0.12	8.13	0	0.4071	0.0058
140	SLU 70	-0.01	-0.12	8.12	0	0.4068	0.006
140	SLU 71	-0.01	-0.12	8.09	0	0.4052	0.0058
140	SLU 72	-0.01	-0.12	8.09	0	0.4049	0.006
140	SLU 73	-0.01	-0.12	8.59	0	0.4299	0.0062
140	SLU 74	-0.01	-0.12	8.72	0	0.4369	0.0059
140	SLU 75	-0.01	-0.12	8.72	0	0.4366	0.0061
140	SLU 76	-0.01	-0.13	8.68	0	0.4344	0.0063
140	SLU 77	-0.01	-0.12	8.82	0	0.4414	0.006
140	SLU 78	-0.01	-0.12	8.81	0	0.4411	0.0062
140	SLU 79	-0.01	-0.12	8.78	0	0.4395	0.0061
140	SLU 80	-0.01	-0.12	8.77	0	0.4392	0.0062
140	SLU 81	-0.01	-0.12	8.89	0	0.4452	0.006
140	SLU 82	-0.01	-0.12	8.88	0	0.4448	0.0062
140	SLU 83	-0.01	-0.12	8.98	0	0.4497	0.0061
140	SLU 84	-0.01	-0.12	8.97	0	0.4494	0.0062
140	SLE RA 1	-0.01	-0.09	5.95	0	0.2981	0.0044
140	SLE RA 2	-0.01	-0.09	5.95	0	0.2978	0.0046
140	SLE RA 3	-0.01	-0.09	6.04	0	0.3024	0.0044
140	SLE RA 4	-0.01	-0.09	6.04	0	0.3022	0.0045
140	SLE RA 5	-0.01	-0.09	6.01	0	0.3008	0.0046
140	SLE RA 6	-0.01	-0.09	6.1	0	0.3054	0.0045
140	SLE RA 7	-0.01	-0.09	6.1	0	0.3052	0.0046
140	SLE RA 8	-0.01	-0.09	6.07	0	0.3042	0.0045
140	SLE RA 9	-0.01	-0.09	6.07	0	0.304	0.0046
140	SLE RA 10	-0.01	-0.09	6.4	0	0.3207	0.0047
140	SLE RA 11	-0.01	-0.09	6.5	0	0.3253	0.0046
140	SLE RA 12	-0.01	-0.09	6.49	0	0.3251	0.0047
140	SLE RA 13	-0.01	-0.1	6.46	0	0.3237	0.0048
140	SLE RA 14	-0.01	-0.09	6.56	0	0.3283	0.0046
140	SLE RA 15	-0.01	-0.09	6.55	0	0.3281	0.0047
140	SLE RA 16	-0.01	-0.09	6.53	0	0.3271	0.0046
140	SLE RA 17	-0.01	-0.09	6.53	0	0.3268	0.0047
140	SLE RA 18	-0.01	-0.09	6.61	0	0.3308	0.0046
140	SLE RA 19	-0.01	-0.09	6.6	0	0.3306	0.0047
140	SLE RA 20	-0.01	-0.09	6.67	0	0.3338	0.0046
140	SLE RA 21	-0.01	-0.1	6.66	0	0.3336	0.0048
140	SLE FR 1	-0.01	-0.09	5.95	0	0.2981	0.0044
140	SLE FR 2	-0.01	-0.09	5.95	0	0.2981	0.0044
140	SLE FR 3	-0.01	-0.09	5.98	0	0.2993	0.0044
140	SLE FR 4	-0.01	-0.09	6.15	0	0.3079	0.0045
140	SLE FR 5	-0.01	-0.09	6.17	0	0.3091	0.0045
140	SLE FR 6	-0.01	-0.09	6.28	0	0.3145	0.0045
140	SLE QP 1	-0.01	-0.09	5.95	0	0.2981	0.0044
140	SLE QP 2	-0.01	-0.09	6.15	0	0.3079	0.0045
140	SLD 1	0.44	-0.07	6.57	0	0.3288	0.0035
140	SLD 2	0.5	-0.09	6.54	0	0.3273	0.0044
140	SLD 3	0.47	-0.2	6.34	0	0.3175	0.0101
140	SLD 4	0.52	-0.22	6.31	0	0.316	0.0111
140	SLD 5	0.07	0.12	6.62	0	0.3316	-0.0061
140	SLD 6	0.11	0.11	6.6	0	0.3306	-0.0054
140	SLD 7	0.17	-0.32	5.87	0	0.294	0.016
140	SLD 8	0.2	-0.33	5.85	0	0.293	0.0167
140	SLD 9	-0.22	0.15	6.45	0	0.3229	-0.0077
140	SLD 10	-0.19	0.14	6.43	0	0.3219	-0.0071



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
140	SLD 11	-0.13	-0.29	5.7	0	0.2853	0.0143
140	SLD 12	-0.09	-0.3	5.68	0	0.2843	0.015
140	SLD 13	-0.54	0.04	5.99	0	0.2998	-0.0021
140	SLD 14	-0.49	0.02	5.96	0	0.2984	-0.0012
140	SLD 15	-0.52	-0.09	5.76	0	0.2886	0.0045
140	SLD 16	-0.46	-0.11	5.73	0	0.2871	0.0055
140	SLV 1	1.05	-0.05	7.12	0	0.3563	0.0024
140	SLV 2	1.17	-0.09	7.05	0	0.3529	0.0047
140	SLV 3	1.12	-0.35	6.61	0	0.3307	0.0174
140	SLV 4	1.24	-0.39	6.54	0	0.3273	0.0197
140	SLV 5	0.18	0.39	7.22	0	0.3617	-0.0193
140	SLV 6	0.26	0.36	7.18	0	0.3596	-0.0178
140	SLV 7	0.41	-0.61	5.52	0	0.2766	0.0307
140	SLV 8	0.49	-0.64	5.48	0	0.2744	0.0322
140	SLV 9	-0.51	0.46	6.82	0	0.3414	-0.0232
140	SLV 10	-0.43	0.43	6.77	0	0.3392	-0.0218
140	SLV 11	-0.28	-0.53	5.12	0	0.2563	0.0268
140	SLV 12	-0.2	-0.56	5.08	0	0.2541	0.0282
140	SLV 13	-1.26	0.21	5.76	0	0.2885	-0.0107
140	SLV 14	-1.14	0.17	5.69	0	0.2851	-0.0085
140	SLV 15	-1.19	-0.09	5.25	0	0.263	0.0043
140	SLV 16	-1.07	-0.13	5.18	0	0.2596	0.0065
140	CRTFP Ux+	0	0	0	0	0	0
140	CRTFP Ux-	0	0	0	0	0	0
141	SLU 1	-0.01	-0.08	6.02	0	0.4017	0.0051
141	SLU 2	-0.01	-0.08	6.01	0	0.401	0.0055
141	SLU 3	-0.01	-0.08	6.15	0	0.4107	0.0051
141	SLU 4	-0.01	-0.08	6.14	0	0.4102	0.0054
141	SLU 5	-0.01	-0.08	6.1	0	0.4073	0.0056
141	SLU 6	-0.01	-0.08	6.25	0	0.417	0.0052
141	SLU 7	-0.01	-0.08	6.24	0	0.4165	0.0054
141	SLU 8	-0.01	-0.08	6.21	0	0.4143	0.0053
141	SLU 9	-0.01	-0.08	6.2	0	0.4139	0.0055
141	SLU 10	-0.01	-0.09	6.72	0	0.4488	0.0057
141	SLU 11	-0.01	-0.08	6.87	0	0.4585	0.0053
141	SLU 12	-0.01	-0.08	6.86	0	0.458	0.0055
141	SLU 13	-0.01	-0.09	6.82	0	0.4551	0.0058
141	SLU 14	-0.01	-0.08	6.96	0	0.4648	0.0054
141	SLU 15	-0.01	-0.08	6.96	0	0.4643	0.0056
141	SLU 16	-0.01	-0.08	6.92	0	0.4621	0.0055
141	SLU 17	-0.01	-0.09	6.92	0	0.4617	0.0057
141	SLU 18	-0.01	-0.08	7.04	0	0.47	0.0054
141	SLU 19	-0.01	-0.08	7.03	0	0.4696	0.0056
141	SLU 20	-0.01	-0.08	7.13	0	0.4763	0.0055
141	SLU 21	-0.01	-0.09	7.13	0	0.4759	0.0057
141	SLU 22	-0.01	-0.07	6.64	0	0.4431	0.0049
141	SLU 23	-0.01	-0.08	6.63	0	0.4424	0.0053
141	SLU 24	-0.01	-0.07	6.77	0	0.4521	0.0049
141	SLU 25	-0.01	-0.08	6.76	0	0.4516	0.0051
141	SLU 26	-0.01	-0.08	6.72	0	0.4487	0.0054
141	SLU 27	-0.01	-0.07	6.87	0	0.4584	0.005
141	SLU 28	-0.01	-0.08	6.86	0	0.458	0.0052
141	SLU 29	-0.01	-0.08	6.83	0	0.4558	0.0051
141	SLU 30	-0.01	-0.08	6.82	0	0.4553	0.0053
141	SLU 31	-0.01	-0.08	7.34	0	0.4902	0.0055
141	SLU 32	-0.01	-0.08	7.49	0	0.4999	0.0051
141	SLU 33	-0.01	-0.08	7.48	0	0.4995	0.0053
141	SLU 34	-0.01	-0.08	7.44	0	0.4965	0.0055
141	SLU 35	-0.01	-0.08	7.58	0	0.5062	0.0052
141	SLU 36	-0.01	-0.08	7.58	0	0.5058	0.0054
141	SLU 37	-0.01	-0.08	7.54	0	0.5036	0.0052
141	SLU 38	-0.01	-0.08	7.54	0	0.5031	0.0055
141	SLU 39	-0.01	-0.08	7.66	0	0.5114	0.0052
141	SLU 40	-0.01	-0.08	7.65	0	0.511	0.0054
141	SLU 41	-0.01	-0.08	7.76	0	0.5178	0.0052
141	SLU 42	-0.01	-0.08	7.75	0	0.5173	0.0055
141	SLU 43	-0.01	-0.1	7.61	0	0.508	0.0067
141	SLU 44	-0.01	-0.11	7.6	0	0.5073	0.0071
141	SLU 45	-0.01	-0.1	7.74	0	0.517	0.0067
141	SLU 46	-0.01	-0.1	7.74	0	0.5165	0.007
141	SLU 47	-0.01	-0.11	7.69	0	0.5136	0.0072
141	SLU 48	-0.01	-0.1	7.84	0	0.5233	0.0068
141	SLU 49	-0.01	-0.11	7.83	0	0.5228	0.0071
141	SLU 50	-0.01	-0.1	7.8	0	0.5206	0.0069
141	SLU 51	-0.01	-0.11	7.79	0	0.5202	0.0071
141	SLU 52	-0.01	-0.11	8.31	0	0.5551	0.0073
141	SLU 53	-0.01	-0.1	8.46	0	0.5648	0.0069
141	SLU 54	-0.01	-0.11	8.45	0	0.5643	0.0072
141	SLU 55	-0.01	-0.11	8.41	0	0.5614	0.0074
141	SLU 56	-0.01	-0.1	8.55	0	0.5711	0.007
141	SLU 57	-0.01	-0.11	8.55	0	0.5707	0.0072
141	SLU 58	-0.01	-0.11	8.51	0	0.5685	0.0071
141	SLU 59	-0.01	-0.11	8.51	0	0.568	0.0073
141	SLU 60	-0.01	-0.1	8.63	0	0.5763	0.007
141	SLU 61	-0.01	-0.11	8.63	0	0.5759	0.0072
141	SLU 62	-0.01	-0.11	8.73	0	0.5826	0.0071
141	SLU 63	-0.01	-0.11	8.72	0	0.5822	0.0073
141	SLU 64	-0.01	-0.1	8.23	0	0.5494	0.0065
141	SLU 65	-0.01	-0.1	8.22	0	0.5487	0.0069
141	SLU 66	-0.01	-0.1	8.36	0	0.5584	0.0065



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
141	SLU 67	-0.01	-0.1	8.36	0	0.558	0.0068
141	SLU 68	-0.01	-0.1	8.31	0	0.555	0.007
141	SLU 69	-0.02	-0.1	8.46	0	0.5647	0.0066
141	SLU 70	-0.01	-0.1	8.45	0	0.5643	0.0068
141	SLU 71	-0.02	-0.1	8.42	0	0.5621	0.0067
141	SLU 72	-0.01	-0.1	8.41	0	0.5616	0.0069
141	SLU 73	-0.01	-0.11	8.93	0	0.5965	0.0071
141	SLU 74	-0.01	-0.1	9.08	-0.0001	0.6062	0.0067
141	SLU 75	-0.01	-0.1	9.07	-0.0001	0.6058	0.0069
141	SLU 76	-0.01	-0.11	9.03	0	0.6028	0.0071
141	SLU 77	-0.01	-0.1	9.17	-0.0001	0.6125	0.0068
141	SLU 78	-0.01	-0.1	9.17	-0.0001	0.6121	0.007
141	SLU 79	-0.01	-0.1	9.13	-0.0001	0.6099	0.0068
141	SLU 80	-0.01	-0.11	9.13	-0.0001	0.6094	0.0071
141	SLU 81	-0.01	-0.1	9.25	-0.0001	0.6178	0.0068
141	SLU 82	-0.01	-0.1	9.25	-0.0001	0.6173	0.007
141	SLU 83	-0.01	-0.1	9.35	-0.0001	0.6241	0.0068
141	SLU 84	-0.01	-0.11	9.34	-0.0001	0.6236	0.0071
141	SLE RA 1	-0.01	-0.08	6.19	0	0.4135	0.0051
141	SLE RA 2	-0.01	-0.08	6.19	0	0.4131	0.0053
141	SLE RA 3	-0.01	-0.08	6.28	0	0.4195	0.0051
141	SLE RA 4	-0.01	-0.08	6.28	0	0.4192	0.0052
141	SLE RA 5	-0.01	-0.08	6.25	0	0.4173	0.0054
141	SLE RA 6	-0.01	-0.08	6.35	0	0.4237	0.0051
141	SLE RA 7	-0.01	-0.08	6.34	0	0.4234	0.0053
141	SLE RA 8	-0.01	-0.08	6.32	0	0.422	0.0052
141	SLE RA 9	-0.01	-0.08	6.32	0	0.4217	0.0053
141	SLE RA 10	-0.01	-0.08	6.66	0	0.4449	0.0054
141	SLE RA 11	-0.01	-0.08	6.76	0	0.4514	0.0052
141	SLE RA 12	-0.01	-0.08	6.76	0	0.4511	0.0053
141	SLE RA 13	-0.01	-0.08	6.73	0	0.4491	0.0055
141	SLE RA 14	-0.01	-0.08	6.82	0	0.4556	0.0052
141	SLE RA 15	-0.01	-0.08	6.82	0	0.4553	0.0054
141	SLE RA 16	-0.01	-0.08	6.8	0	0.4538	0.0053
141	SLE RA 17	-0.01	-0.08	6.79	0	0.4535	0.0054
141	SLE RA 18	-0.01	-0.08	6.88	0	0.4591	0.0052
141	SLE RA 19	-0.01	-0.08	6.87	0	0.4588	0.0054
141	SLE RA 20	-0.01	-0.08	6.94	0	0.4633	0.0053
141	SLE RA 21	-0.01	-0.08	6.93	0	0.463	0.0054
141	SLE FR 1	-0.01	-0.08	6.19	0	0.4135	0.0051
141	SLE FR 2	-0.01	-0.08	6.19	0	0.4134	0.0051
141	SLE FR 3	-0.01	-0.08	6.22	0	0.4152	0.0051
141	SLE FR 4	-0.01	-0.08	6.4	0	0.4271	0.0052
141	SLE FR 5	-0.01	-0.08	6.42	0	0.4289	0.0051
141	SLE FR 6	-0.01	-0.08	6.54	0	0.4363	0.0051
141	SLE QP 1	-0.01	-0.08	6.19	0	0.4135	0.0051
141	SLE QP 2	-0.01	-0.08	6.4	0	0.4272	0.0051
141	SLD 1	0.46	-0.05	6.77	0	0.4522	0.0032
141	SLD 2	0.52	-0.07	6.75	0	0.4503	0.0045
141	SLD 3	0.49	-0.19	6.54	0	0.4367	0.0125
141	SLD 4	0.55	-0.21	6.51	0	0.4348	0.0137
141	SLD 5	0.08	0.15	6.87	0	0.4586	-0.0098
141	SLD 6	0.11	0.13	6.85	0	0.4574	-0.009
141	SLD 7	0.18	-0.32	6.09	0	0.4069	0.0212
141	SLD 8	0.21	-0.33	6.08	0	0.4056	0.022
141	SLD 9	-0.23	0.18	6.72	0	0.4488	-0.0118
141	SLD 10	-0.2	0.16	6.7	0	0.4476	-0.011
141	SLD 11	-0.13	-0.29	5.95	0	0.3971	0.0192
141	SLD 12	-0.1	-0.3	5.93	0	0.3958	0.02
141	SLD 13	-0.57	0.05	6.28	0	0.4196	-0.0035
141	SLD 14	-0.51	0.03	6.26	0	0.4177	-0.0023
141	SLD 15	-0.54	-0.09	6.05	0	0.4041	0.0058
141	SLD 16	-0.48	-0.1	6.02	0	0.4022	0.007
141	SLV 1	1.1	-0.02	7.27	0	0.4852	0.0011
141	SLV 2	1.22	-0.06	7.2	0	0.4808	0.0039
141	SLV 3	1.17	-0.33	6.74	0	0.4501	0.0221
141	SLV 4	1.29	-0.37	6.68	0	0.4457	0.0249
141	SLV 5	0.19	0.43	7.47	0	0.4986	-0.0285
141	SLV 6	0.27	0.4	7.43	0	0.4958	-0.0266
141	SLV 7	0.43	-0.62	5.71	0	0.3815	0.0416
141	SLV 8	0.51	-0.65	5.67	0	0.3787	0.0434
141	SLV 9	-0.53	0.5	7.13	0	0.4757	-0.0332
141	SLV 10	-0.45	0.47	7.08	0	0.4729	-0.0314
141	SLV 11	-0.29	-0.55	5.37	0	0.3586	0.0369
141	SLV 12	-0.21	-0.58	5.33	0	0.3558	0.0387
141	SLV 13	-1.31	0.22	6.12	0	0.4088	-0.0147
141	SLV 14	-1.19	0.18	6.06	0	0.4044	-0.0119
141	SLV 15	-1.24	-0.09	5.6	0	0.3736	0.0063
141	SLV 16	-1.12	-0.14	5.53	0	0.3692	0.0091
141	CRTFP Ux+	0	0	0	0	0	0
141	CRTFP Ux-	0	0	0	0	0	0
141	CRTFP Uy+	0	0	0	0	0	0
141	CRTFP Uy-	0	0	0	0	0	0
142	SLU 1	-0.01	-0.06	6.03	0	0.5035	0.0052
142	SLU 2	-0.01	-0.07	6.02	0	0.5026	0.0056
142	SLU 3	-0.01	-0.06	6.17	0	0.5148	0.0051
142	SLU 4	-0.01	-0.06	6.16	0	0.5142	0.0054
142	SLU 5	-0.01	-0.07	6.12	0	0.5105	0.0057
142	SLU 6	-0.01	-0.06	6.26	0	0.5227	0.0052
142	SLU 7	-0.01	-0.07	6.26	0	0.5221	0.0055



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
142	SLU 8	-0.01	-0.06	6.22	0	0.5194	0.0053
142	SLU 9	-0.01	-0.07	6.22	0	0.5188	0.0056
142	SLU 10	-0.01	-0.07	6.74	0	0.5628	0.0057
142	SLU 11	-0.01	-0.06	6.89	0	0.575	0.0052
142	SLU 12	-0.01	-0.07	6.88	0	0.5745	0.0055
142	SLU 13	-0.01	-0.07	6.84	0	0.5708	0.0058
142	SLU 14	-0.01	-0.06	6.99	0	0.5829	0.0053
142	SLU 15	-0.01	-0.07	6.98	0	0.5824	0.0056
142	SLU 16	-0.01	-0.06	6.95	0	0.5796	0.0054
142	SLU 17	-0.01	-0.07	6.94	0	0.5791	0.0057
142	SLU 18	-0.01	-0.06	7.06	0	0.5896	0.0053
142	SLU 19	-0.01	-0.07	7.06	0	0.589	0.0056
142	SLU 20	-0.01	-0.06	7.16	0	0.5975	0.0054
142	SLU 21	-0.01	-0.07	7.15	0	0.597	0.0056
142	SLU 22	-0.01	-0.06	6.66	0	0.5554	0.0047
142	SLU 23	-0.01	-0.06	6.64	0	0.5545	0.0052
142	SLU 24	-0.01	-0.06	6.79	0	0.5667	0.0047
142	SLU 25	-0.01	-0.06	6.78	0	0.5661	0.005
142	SLU 26	-0.01	-0.06	6.74	0	0.5625	0.0053
142	SLU 27	-0.01	-0.06	6.89	0	0.5746	0.0048
142	SLU 28	-0.01	-0.06	6.88	0	0.5741	0.0051
142	SLU 29	-0.01	-0.06	6.85	0	0.5713	0.0049
142	SLU 30	-0.01	-0.06	6.84	0	0.5708	0.0052
142	SLU 31	-0.01	-0.06	7.37	0	0.6148	0.0053
142	SLU 32	-0.01	-0.06	7.51	0	0.6269	0.0048
142	SLU 33	-0.01	-0.06	7.51	0	0.6264	0.0051
142	SLU 34	-0.01	-0.06	7.46	0	0.6227	0.0054
142	SLU 35	-0.01	-0.06	7.61	0	0.6349	0.0049
142	SLU 36	-0.01	-0.06	7.6	0	0.6343	0.0051
142	SLU 37	-0.01	-0.06	7.57	0	0.6315	0.005
142	SLU 38	-0.01	-0.06	7.56	0	0.631	0.0052
142	SLU 39	-0.01	-0.06	7.69	0	0.6415	0.0048
142	SLU 40	-0.01	-0.06	7.68	0	0.6409	0.0051
142	SLU 41	-0.01	-0.06	7.78	0	0.6494	0.0049
142	SLU 42	-0.01	-0.06	7.78	0	0.6489	0.0052
142	SLU 43	-0.01	-0.08	7.63	0	0.6368	0.0069
142	SLU 44	-0.01	-0.09	7.62	0	0.6358	0.0073
142	SLU 45	-0.01	-0.08	7.76	0	0.648	0.0068
142	SLU 46	-0.01	-0.09	7.76	0	0.6475	0.0071
142	SLU 47	-0.01	-0.09	7.71	0	0.6438	0.0074
142	SLU 48	-0.01	-0.08	7.86	0	0.6559	0.0069
142	SLU 49	-0.01	-0.09	7.85	0	0.6554	0.0072
142	SLU 50	-0.01	-0.08	7.82	0	0.6526	0.007
142	SLU 51	-0.01	-0.09	7.81	0	0.6521	0.0073
142	SLU 52	-0.01	-0.09	8.34	0	0.6961	0.0074
142	SLU 53	-0.01	-0.08	8.49	0	0.7082	0.0069
142	SLU 54	-0.01	-0.09	8.48	0	0.7077	0.0072
142	SLU 55	-0.01	-0.09	8.44	0	0.704	0.0075
142	SLU 56	-0.01	-0.08	8.58	0	0.7162	0.007
142	SLU 57	-0.01	-0.09	8.58	0	0.7156	0.0073
142	SLU 58	-0.01	-0.09	8.54	0	0.7129	0.0071
142	SLU 59	-0.01	-0.09	8.54	0	0.7123	0.0074
142	SLU 60	-0.01	-0.08	8.66	0	0.7228	0.007
142	SLU 61	-0.01	-0.09	8.65	0	0.7223	0.0073
142	SLU 62	-0.01	-0.08	8.76	0	0.7307	0.0071
142	SLU 63	-0.01	-0.09	8.75	0	0.7302	0.0073
142	SLU 64	-0.01	-0.08	8.25	0	0.6887	0.0064
142	SLU 65	-0.01	-0.08	8.24	0	0.6878	0.0069
142	SLU 66	-0.01	-0.08	8.39	0	0.6999	0.0064
142	SLU 67	-0.01	-0.08	8.38	0	0.6994	0.0067
142	SLU 68	-0.01	-0.08	8.34	0	0.6957	0.007
142	SLU 69	-0.01	-0.08	8.48	0	0.7079	0.0065
142	SLU 70	-0.01	-0.08	8.48	0	0.7073	0.0068
142	SLU 71	-0.01	-0.08	8.44	0	0.7045	0.0066
142	SLU 72	-0.01	-0.08	8.44	0	0.704	0.0069
142	SLU 73	-0.01	-0.08	8.96	0	0.748	0.007
142	SLU 74	-0.01	-0.08	9.11	-0.0001	0.7602	0.0065
142	SLU 75	-0.01	-0.08	9.1	-0.0001	0.7596	0.0068
142	SLU 76	-0.01	-0.08	9.06	-0.0001	0.7559	0.0071
142	SLU 77	-0.01	-0.08	9.2	-0.0001	0.7681	0.0066
142	SLU 78	-0.01	-0.08	9.2	-0.0001	0.7676	0.0068
142	SLU 79	-0.01	-0.08	9.16	-0.0001	0.7648	0.0067
142	SLU 80	-0.01	-0.08	9.16	-0.0001	0.7642	0.0069
142	SLU 81	-0.01	-0.08	9.28	-0.0001	0.7747	0.0065
142	SLU 82	-0.01	-0.08	9.28	-0.0001	0.7742	0.0068
142	SLU 83	-0.01	-0.08	9.38	-0.0001	0.7827	0.0066
142	SLU 84	-0.01	-0.08	9.37	-0.0001	0.7821	0.0069
142	SLE RA 1	-0.01	-0.06	6.21	0	0.5183	0.005
142	SLE RA 2	-0.01	-0.06	6.2	0	0.5177	0.0054
142	SLE RA 3	-0.01	-0.06	6.3	0	0.5258	0.005
142	SLE RA 4	-0.01	-0.06	6.3	0	0.5255	0.0052
142	SLE RA 5	-0.01	-0.06	6.27	0	0.523	0.0054
142	SLE RA 6	-0.01	-0.06	6.36	0	0.5311	0.0051
142	SLE RA 7	-0.01	-0.06	6.36	0	0.5308	0.0053
142	SLE RA 8	-0.01	-0.06	6.34	0	0.5289	0.0051
142	SLE RA 9	-0.01	-0.06	6.33	0	0.5286	0.0053
142	SLE RA 10	-0.01	-0.06	6.68	0	0.5579	0.0054
142	SLE RA 11	-0.01	-0.06	6.78	0	0.566	0.0051
142	SLE RA 12	-0.01	-0.06	6.78	0	0.5656	0.0053
142	SLE RA 13	-0.01	-0.07	6.75	0	0.5632	0.0055



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
142	SLE RA 14	-0.01	-0.06	6.85	0	0.5713	0.0051
142	SLE RA 15	-0.01	-0.06	6.84	0	0.5709	0.0053
142	SLE RA 16	-0.01	-0.06	6.82	0	0.5691	0.0052
142	SLE RA 17	-0.01	-0.06	6.81	0	0.5687	0.0054
142	SLE RA 18	-0.01	-0.06	6.9	0	0.5757	0.0051
142	SLE RA 19	-0.01	-0.06	6.89	0	0.5753	0.0053
142	SLE RA 20	-0.01	-0.06	6.96	0	0.581	0.0052
142	SLE RA 21	-0.01	-0.06	6.96	0	0.5806	0.0054
142	SLE FR 1	-0.01	-0.06	6.21	0	0.5183	0.005
142	SLE FR 2	-0.01	-0.06	6.21	0	0.5182	0.0051
142	SLE FR 3	-0.01	-0.06	6.24	0	0.5205	0.0051
142	SLE FR 4	-0.01	-0.06	6.42	0	0.5354	0.0051
142	SLE FR 5	-0.01	-0.06	6.44	0	0.5377	0.0051
142	SLE FR 6	-0.01	-0.06	6.55	0	0.547	0.0051
142	SLE QP 1	-0.01	-0.06	6.21	0	0.5183	0.005
142	SLE QP 2	-0.01	-0.06	6.42	0	0.5356	0.0051
142	SLD 1	0.46	-0.03	6.74	0	0.5622	0.0021
142	SLD 2	0.52	-0.04	6.71	0	0.56	0.0035
142	SLD 3	0.5	-0.17	6.5	0	0.5428	0.0139
142	SLD 4	0.55	-0.18	6.48	0	0.5406	0.0152
142	SLD 5	0.08	0.17	6.87	0	0.5732	-0.0139
142	SLD 6	0.11	0.16	6.85	0	0.5718	-0.013
142	SLD 7	0.18	-0.3	6.1	0	0.5088	0.0253
142	SLD 8	0.21	-0.31	6.08	0	0.5074	0.0262
142	SLD 9	-0.23	0.19	6.75	0	0.5637	-0.016
142	SLD 10	-0.2	0.18	6.74	0	0.5623	-0.0151
142	SLD 11	-0.13	-0.28	5.98	0	0.4993	0.0231
142	SLD 12	-0.1	-0.29	5.97	0	0.4979	0.024
142	SLD 13	-0.57	0.06	6.36	0	0.5305	-0.0051
142	SLD 14	-0.52	0.04	6.33	0	0.5283	-0.0037
142	SLD 15	-0.54	-0.08	6.12	0	0.5111	0.0067
142	SLD 16	-0.49	-0.1	6.1	0	0.5089	0.008
142	SLV 1	1.1	0.02	7.15	0	0.5971	-0.0013
142	SLV 2	1.23	-0.02	7.09	0	0.592	0.0018
142	SLV 3	1.17	-0.3	6.63	0	0.5534	0.0252
142	SLV 4	1.3	-0.34	6.57	0	0.5482	0.0283
142	SLV 5	0.19	0.45	7.44	0	0.6213	-0.0377
142	SLV 6	0.27	0.43	7.4	0	0.618	-0.0357
142	SLV 7	0.43	-0.61	5.7	0	0.4754	0.0509
142	SLV 8	0.51	-0.63	5.66	0	0.4721	0.0529
142	SLV 9	-0.53	0.51	7.18	0	0.599	-0.0427
142	SLV 10	-0.45	0.49	7.14	0	0.5957	-0.0407
142	SLV 11	-0.3	-0.55	5.43	0	0.4532	0.0458
142	SLV 12	-0.21	-0.57	5.39	0	0.4498	0.0478
142	SLV 13	-1.32	0.22	6.27	0	0.5229	-0.0182
142	SLV 14	-1.19	0.18	6.2	0	0.5177	-0.0151
142	SLV 15	-1.25	-0.1	5.74	0	0.4791	0.0084
142	SLV 16	-1.12	-0.14	5.68	0	0.474	0.0115
142	CRTFP Ux+	0	0	0	0	0	0
142	CRTFP Ux-	0	0	0	0	0	0
142	CRTFP Uy+	0	0	0	0	0	0
142	CRTFP Uy-	0	0	0	0	0	0
143	SLU 1	-0.01	-0.05	6.05	0	0.6059	0.0047
143	SLU 2	-0.01	-0.05	6.04	0	0.6048	0.0052
143	SLU 3	-0.01	-0.05	6.19	0	0.6195	0.0046
143	SLU 4	-0.01	-0.05	6.18	0	0.6188	0.0049
143	SLU 5	-0.01	-0.05	6.13	0	0.6144	0.0053
143	SLU 6	-0.01	-0.05	6.28	0	0.6291	0.0047
143	SLU 7	-0.01	-0.05	6.27	0	0.6284	0.005
143	SLU 8	-0.01	-0.05	6.24	0	0.6251	0.0048
143	SLU 9	-0.01	-0.05	6.23	0	0.6244	0.0052
143	SLU 10	-0.01	-0.05	6.77	0	0.6777	0.0052
143	SLU 11	-0.01	-0.05	6.91	0	0.6924	0.0046
143	SLU 12	-0.01	-0.05	6.91	0	0.6917	0.0049
143	SLU 13	-0.01	-0.05	6.86	0	0.6873	0.0052
143	SLU 14	-0.01	-0.05	7.01	0	0.702	0.0046
143	SLU 15	-0.01	-0.05	7	0	0.7013	0.0049
143	SLU 16	-0.01	-0.05	6.97	0	0.698	0.0048
143	SLU 17	-0.01	-0.05	6.96	0	0.6973	0.0051
143	SLU 18	-0.01	-0.05	7.09	0	0.7101	0.0046
143	SLU 19	-0.01	-0.05	7.08	0	0.7094	0.0049
143	SLU 20	-0.01	-0.05	7.19	0	0.7196	0.0047
143	SLU 21	-0.01	-0.05	7.18	0	0.719	0.005
143	SLU 22	-0.01	-0.04	6.67	0	0.6684	0.004
143	SLU 23	-0.01	-0.05	6.66	0	0.6673	0.0045
143	SLU 24	-0.01	-0.04	6.81	0	0.682	0.0039
143	SLU 25	-0.01	-0.04	6.8	0	0.6814	0.0042
143	SLU 26	-0.01	-0.05	6.76	0	0.6769	0.0046
143	SLU 27	-0.01	-0.04	6.91	0	0.6916	0.004
143	SLU 28	-0.01	-0.04	6.9	0	0.6909	0.0043
143	SLU 29	-0.01	-0.04	6.87	0	0.6876	0.0041
143	SLU 30	-0.01	-0.04	6.86	0	0.6869	0.0044
143	SLU 31	-0.01	-0.04	7.39	0	0.7403	0.0044
143	SLU 32	-0.01	-0.04	7.54	0	0.7549	0.0038
143	SLU 33	-0.01	-0.04	7.53	0	0.7543	0.0042
143	SLU 34	-0.01	-0.05	7.49	0	0.7498	0.0045
143	SLU 35	-0.01	-0.04	7.63	0	0.7645	0.0039
143	SLU 36	-0.01	-0.04	7.63	0	0.7639	0.0042
143	SLU 37	-0.01	-0.04	7.59	0	0.7605	0.004
143	SLU 38	-0.01	-0.04	7.59	0	0.7599	0.0044



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
143	SLU 39	-0.01	-0.04	7.71	0	0.7726	0.0039
143	SLU 40	-0.01	-0.04	7.71	0	0.7719	0.0042
143	SLU 41	-0.01	-0.04	7.81	0	0.7822	0.0039
143	SLU 42	-0.01	-0.04	7.8	0	0.7815	0.0043
143	SLU 43	-0.01	-0.06	7.65	0	0.7662	0.0063
143	SLU 44	-0.01	-0.07	7.64	0	0.7651	0.0069
143	SLU 45	-0.01	-0.06	7.79	0	0.7798	0.0063
143	SLU 46	-0.01	-0.07	7.78	0	0.7791	0.0066
143	SLU 47	-0.01	-0.07	7.74	0	0.7747	0.007
143	SLU 48	-0.01	-0.06	7.88	0	0.7894	0.0063
143	SLU 49	-0.01	-0.07	7.88	0	0.7887	0.0067
143	SLU 50	-0.01	-0.06	7.84	0	0.7854	0.0065
143	SLU 51	-0.01	-0.07	7.84	0	0.7847	0.0068
143	SLU 52	-0.01	-0.07	8.37	0	0.838	0.0068
143	SLU 53	-0.01	-0.06	8.51	0	0.8527	0.0062
143	SLU 54	-0.01	-0.07	8.51	0	0.8521	0.0065
143	SLU 55	-0.01	-0.07	8.46	0	0.8476	0.0069
143	SLU 56	-0.01	-0.06	8.61	0	0.8623	0.0063
143	SLU 57	-0.01	-0.07	8.6	0	0.8617	0.0066
143	SLU 58	-0.01	-0.06	8.57	0	0.8583	0.0064
143	SLU 59	-0.01	-0.07	8.56	0	0.8577	0.0067
143	SLU 60	-0.01	-0.06	8.69	0	0.8704	0.0063
143	SLU 61	-0.01	-0.07	8.68	0	0.8697	0.0066
143	SLU 62	-0.01	-0.06	8.79	0	0.88	0.0063
143	SLU 63	-0.01	-0.07	8.78	0	0.8793	0.0067
143	SLU 64	-0.01	-0.06	8.28	0	0.8287	0.0056
143	SLU 65	-0.01	-0.06	8.26	0	0.8277	0.0062
143	SLU 66	-0.01	-0.06	8.41	0	0.8423	0.0055
143	SLU 67	-0.01	-0.06	8.4	0	0.8417	0.0059
143	SLU 68	-0.01	-0.06	8.36	0	0.8372	0.0062
143	SLU 69	-0.01	-0.06	8.51	0	0.8519	0.0056
143	SLU 70	-0.01	-0.06	8.5	0	0.8513	0.0059
143	SLU 71	-0.01	-0.06	8.47	0	0.8479	0.0057
143	SLU 72	-0.01	-0.06	8.46	0	0.8473	0.0061
143	SLU 73	-0.01	-0.06	8.99	0	0.9006	0.0061
143	SLU 74	-0.01	-0.05	9.14	-0.0001	0.9153	0.0055
143	SLU 75	-0.01	-0.06	9.13	-0.0001	0.9146	0.0058
143	SLU 76	-0.01	-0.06	9.09	-0.0001	0.9102	0.0062
143	SLU 77	-0.01	-0.06	9.23	-0.0001	0.9248	0.0055
143	SLU 78	-0.01	-0.06	9.23	-0.0001	0.9242	0.0059
143	SLU 79	-0.01	-0.06	9.19	-0.0001	0.9208	0.0057
143	SLU 80	-0.01	-0.06	9.19	-0.0001	0.9202	0.006
143	SLU 81	-0.01	-0.06	9.32	-0.0001	0.9329	0.0055
143	SLU 82	-0.01	-0.06	9.31	-0.0001	0.9323	0.0059
143	SLU 83	-0.01	-0.06	9.41	-0.0001	0.9425	0.0056
143	SLU 84	-0.01	-0.06	9.4	-0.0001	0.9419	0.0059
143	SLE RA 1	-0.01	-0.04	6.23	0	0.6237	0.0045
143	SLE RA 2	-0.01	-0.05	6.22	0	0.623	0.0048
143	SLE RA 3	-0.01	-0.04	6.32	0	0.6328	0.0044
143	SLE RA 4	-0.01	-0.05	6.31	0	0.6324	0.0047
143	SLE RA 5	-0.01	-0.05	6.29	0	0.6294	0.0049
143	SLE RA 6	-0.01	-0.04	6.38	0	0.6392	0.0045
143	SLE RA 7	-0.01	-0.05	6.38	0	0.6388	0.0047
143	SLE RA 8	-0.01	-0.05	6.36	0	0.6365	0.0046
143	SLE RA 9	-0.01	-0.05	6.35	0	0.6361	0.0048
143	SLE RA 10	-0.01	-0.05	6.71	0	0.6716	0.0048
143	SLE RA 11	-0.01	-0.04	6.8	0	0.6814	0.0044
143	SLE RA 12	-0.01	-0.05	6.8	0	0.681	0.0046
143	SLE RA 13	-0.01	-0.05	6.77	0	0.678	0.0049
143	SLE RA 14	-0.01	-0.04	6.87	0	0.6878	0.0044
143	SLE RA 15	-0.01	-0.05	6.86	0	0.6874	0.0047
143	SLE RA 16	-0.01	-0.05	6.84	0	0.6851	0.0045
143	SLE RA 17	-0.01	-0.05	6.84	0	0.6847	0.0047
143	SLE RA 18	-0.01	-0.04	6.92	0	0.6932	0.0044
143	SLE RA 19	-0.01	-0.05	6.92	0	0.6928	0.0046
143	SLE RA 20	-0.01	-0.04	6.99	0	0.6996	0.0045
143	SLE RA 21	-0.01	-0.05	6.98	0	0.6992	0.0047
143	SLE FR 1	-0.01	-0.04	6.23	0	0.6237	0.0045
143	SLE FR 2	-0.01	-0.05	6.23	0	0.6236	0.0046
143	SLE FR 3	-0.01	-0.04	6.25	0	0.6263	0.0045
143	SLE FR 4	-0.01	-0.05	6.43	0	0.6444	0.0045
143	SLE FR 5	-0.01	-0.04	6.46	0	0.6471	0.0045
143	SLE FR 6	-0.01	-0.04	6.58	0	0.6585	0.0045
143	SLE QP 1	-0.01	-0.04	6.23	0	0.6237	0.0045
143	SLE QP 2	-0.01	-0.04	6.44	0	0.6446	0.0045
143	SLD 1	0.47	0	6.7	0	0.6711	0.0002
143	SLD 2	0.52	-0.02	6.68	0	0.6687	0.0016
143	SLD 3	0.5	-0.14	6.47	0	0.648	0.0144
143	SLD 4	0.55	-0.16	6.45	0	0.6456	0.0158
143	SLD 5	0.08	0.19	6.87	0	0.6881	-0.0186
143	SLD 6	0.11	0.18	6.85	0	0.6865	-0.0177
143	SLD 7	0.18	-0.29	6.1	0	0.6109	0.0288
143	SLD 8	0.21	-0.3	6.08	0	0.6093	0.0297
143	SLD 9	-0.23	0.21	6.79	0	0.6798	-0.0207
143	SLD 10	-0.2	0.2	6.77	0	0.6782	-0.0198
143	SLD 11	-0.13	-0.27	6.02	0	0.6027	0.0266
143	SLD 12	-0.1	-0.28	6	0	0.6011	0.0275
143	SLD 13	-0.57	0.07	6.43	0	0.6436	-0.0069
143	SLD 14	-0.52	0.05	6.4	0	0.6412	-0.0055
143	SLD 15	-0.54	-0.07	6.2	0	0.6205	0.0073



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
143	SLD 16	-0.49	-0.09	6.17	0	0.618	0.0087
143	SLV 1	1.1	0.05	7.05	0	0.7059	-0.0049
143	SLV 2	1.23	0.02	6.99	0	0.7002	-0.0017
143	SLV 3	1.17	-0.27	6.53	0	0.6535	0.0273
143	SLV 4	1.3	-0.3	6.47	0	0.6478	0.0305
143	SLV 5	0.19	0.48	7.42	0	0.7434	-0.0477
143	SLV 6	0.28	0.46	7.39	0	0.7398	-0.0456
143	SLV 7	0.43	-0.59	5.68	0	0.5687	0.0595
143	SLV 8	0.51	-0.62	5.64	0	0.5651	0.0616
143	SLV 9	-0.53	0.53	7.23	0	0.7241	-0.0527
143	SLV 10	-0.45	0.51	7.19	0	0.7204	-0.0506
143	SLV 11	-0.3	-0.54	5.49	0	0.5494	0.0545
143	SLV 12	-0.21	-0.57	5.45	0	0.5457	0.0566
143	SLV 13	-1.32	0.22	6.4	0	0.6414	-0.0216
143	SLV 14	-1.19	0.18	6.35	0	0.6357	-0.0183
143	SLV 15	-1.25	-0.11	5.88	0	0.589	0.0106
143	SLV 16	-1.12	-0.14	5.82	0	0.5833	0.0138
143	CRTFP Ux+	0	0	0	0	0	0
143	CRTFP Ux-	0	0	0	0	0	0
143	CRTFP Uy+	0	0	0	0	0	0
143	CRTFP Uy-	0	0	0	0	0	0
144	SLU 1	-0.01	-0.03	6.07	0	0.7088	0.0038
144	SLU 2	-0.01	-0.04	6.06	0	0.7076	0.0044
144	SLU 3	-0.01	-0.03	6.2	0	0.7248	0.0036
144	SLU 4	-0.01	-0.03	6.2	0	0.724	0.004
144	SLU 5	-0.01	-0.04	6.15	0	0.7188	0.0044
144	SLU 6	-0.01	-0.03	6.3	0	0.7361	0.0037
144	SLU 7	-0.01	-0.03	6.29	0	0.7353	0.0041
144	SLU 8	-0.01	-0.03	6.26	0	0.7314	0.0039
144	SLU 9	-0.01	-0.04	6.25	0	0.7306	0.0042
144	SLU 10	-0.01	-0.04	6.79	0	0.7935	0.0041
144	SLU 11	-0.01	-0.03	6.94	0	0.8107	0.0034
144	SLU 12	-0.01	-0.03	6.93	0	0.8099	0.0037
144	SLU 13	-0.01	-0.04	6.89	0	0.8047	0.0042
144	SLU 14	-0.01	-0.03	7.03	0	0.8219	0.0034
144	SLU 15	-0.01	-0.03	7.03	0	0.8212	0.0038
144	SLU 16	-0.01	-0.03	6.99	0	0.8172	0.0036
144	SLU 17	-0.01	-0.03	6.99	0	0.8165	0.004
144	SLU 18	-0.01	-0.03	7.12	0	0.8315	0.0034
144	SLU 19	-0.01	-0.03	7.11	0	0.8308	0.0038
144	SLU 20	-0.01	-0.03	7.21	0	0.8428	0.0034
144	SLU 21	-0.01	-0.03	7.21	0	0.842	0.0038
144	SLU 22	-0.01	-0.02	6.69	0	0.7821	0.0027
144	SLU 23	-0.01	-0.03	6.68	0	0.7809	0.0033
144	SLU 24	-0.01	-0.02	6.83	0	0.7981	0.0026
144	SLU 25	-0.01	-0.03	6.82	0	0.7973	0.0029
144	SLU 26	-0.01	-0.03	6.78	0	0.7921	0.0034
144	SLU 27	-0.01	-0.02	6.93	0	0.8093	0.0026
144	SLU 28	-0.01	-0.03	6.92	0	0.8086	0.003
144	SLU 29	-0.01	-0.02	6.89	0	0.8046	0.0028
144	SLU 30	-0.01	-0.03	6.88	0	0.8039	0.0032
144	SLU 31	-0.01	-0.03	7.42	0	0.8668	0.0031
144	SLU 32	-0.01	-0.02	7.57	0	0.884	0.0023
144	SLU 33	-0.01	-0.02	7.56	0	0.8832	0.0027
144	SLU 34	-0.01	-0.03	7.51	0	0.878	0.0031
144	SLU 35	-0.01	-0.02	7.66	0	0.8952	0.0023
144	SLU 36	-0.01	-0.02	7.66	0	0.8945	0.0027
144	SLU 37	-0.01	-0.02	7.62	0	0.8905	0.0025
144	SLU 38	-0.01	-0.02	7.62	0	0.8898	0.0029
144	SLU 39	-0.01	-0.02	7.74	0	0.9048	0.0023
144	SLU 40	-0.01	-0.02	7.74	0	0.9041	0.0027
144	SLU 41	-0.01	-0.02	7.84	0	0.9161	0.0024
144	SLU 42	-0.01	-0.02	7.83	0	0.9153	0.0027
144	SLU 43	-0.01	-0.05	7.67	0	0.8964	0.0053
144	SLU 44	-0.01	-0.05	7.66	0	0.8951	0.0059
144	SLU 45	-0.01	-0.04	7.81	0	0.9123	0.0051
144	SLU 46	-0.01	-0.05	7.8	0	0.9116	0.0055
144	SLU 47	-0.01	-0.05	7.76	0	0.9064	0.0059
144	SLU 48	-0.01	-0.04	7.9	0	0.9236	0.0052
144	SLU 49	-0.01	-0.05	7.9	0	0.9228	0.0056
144	SLU 50	-0.01	-0.05	7.86	0	0.9189	0.0054
144	SLU 51	-0.01	-0.05	7.86	0	0.9181	0.0057
144	SLU 52	-0.01	-0.05	8.4	0	0.981	0.0056
144	SLU 53	-0.01	-0.04	8.54	0	0.9982	0.0049
144	SLU 54	-0.01	-0.04	8.54	0	0.9975	0.0052
144	SLU 55	-0.01	-0.05	8.49	0	0.9923	0.0057
144	SLU 56	-0.01	-0.04	8.64	0	1.0095	0.0049
144	SLU 57	-0.01	-0.05	8.63	0	1.0087	0.0053
144	SLU 58	-0.01	-0.04	8.6	0	1.0048	0.0051
144	SLU 59	-0.01	-0.05	8.59	0	1.004	0.0055
144	SLU 60	-0.01	-0.04	8.72	0	1.0191	0.0049
144	SLU 61	-0.01	-0.05	8.72	0	1.0183	0.0053
144	SLU 62	-0.01	-0.04	8.82	0	1.0303	0.0049
144	SLU 63	-0.01	-0.05	8.81	0	1.0296	0.0053
144	SLU 64	-0.01	-0.04	8.3	0	0.9696	0.0042
144	SLU 65	-0.01	-0.04	8.29	0	0.9684	0.0048
144	SLU 66	-0.02	-0.03	8.44	0	0.9856	0.0041
144	SLU 67	-0.01	-0.04	8.43	0	0.9849	0.0044
144	SLU 68	-0.01	-0.04	8.38	0	0.9797	0.0049
144	SLU 69	-0.02	-0.04	8.53	0	0.9969	0.0041



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
144	SLU 70	-0.01	-0.04	8.53	0	0.9961	0.0045
144	SLU 71	-0.02	-0.04	8.49	0	0.9922	0.0043
144	SLU 72	-0.01	-0.04	8.49	0	0.9914	0.0047
144	SLU 73	-0.01	-0.04	9.02	0	1.0543	0.0046
144	SLU 74	-0.01	-0.03	9.17	-0.0001	1.0715	0.0038
144	SLU 75	-0.01	-0.04	9.16	-0.0001	1.0707	0.0042
144	SLU 76	-0.01	-0.04	9.12	-0.0001	1.0655	0.0046
144	SLU 77	-0.01	-0.03	9.27	-0.0001	1.0828	0.0038
144	SLU 78	-0.01	-0.04	9.26	-0.0001	1.082	0.0042
144	SLU 79	-0.01	-0.03	9.23	-0.0001	1.0781	0.004
144	SLU 80	-0.01	-0.04	9.22	-0.0001	1.0773	0.0044
144	SLU 81	-0.01	-0.03	9.35	-0.0001	1.0923	0.0038
144	SLU 82	-0.01	-0.04	9.34	-0.0001	1.0916	0.0042
144	SLU 83	-0.01	-0.03	9.45	-0.0001	1.1036	0.0039
144	SLU 84	-0.01	-0.04	9.44	-0.0001	1.1028	0.0042
144	SLE RA 1	-0.01	-0.03	6.25	0	0.7298	0.0035
144	SLE RA 2	-0.01	-0.03	6.24	0	0.7289	0.0039
144	SLE RA 3	-0.01	-0.03	6.34	0	0.7404	0.0034
144	SLE RA 4	-0.01	-0.03	6.33	0	0.7399	0.0036
144	SLE RA 5	-0.01	-0.03	6.3	0	0.7364	0.0039
144	SLE RA 6	-0.01	-0.03	6.4	0	0.7479	0.0034
144	SLE RA 7	-0.01	-0.03	6.4	0	0.7474	0.0037
144	SLE RA 8	-0.01	-0.03	6.37	0	0.7448	0.0035
144	SLE RA 9	-0.01	-0.03	6.37	0	0.7443	0.0038
144	SLE RA 10	-0.01	-0.03	6.73	0	0.7862	0.0037
144	SLE RA 11	-0.01	-0.03	6.83	0	0.7977	0.0032
144	SLE RA 12	-0.01	-0.03	6.82	0	0.7972	0.0034
144	SLE RA 13	-0.01	-0.03	6.79	0	0.7937	0.0037
144	SLE RA 14	-0.01	-0.03	6.89	0	0.8052	0.0032
144	SLE RA 15	-0.01	-0.03	6.89	0	0.8047	0.0035
144	SLE RA 16	-0.01	-0.03	6.86	0	0.802	0.0033
144	SLE RA 17	-0.01	-0.03	6.86	0	0.8015	0.0036
144	SLE RA 18	-0.01	-0.03	6.95	0	0.8116	0.0032
144	SLE RA 19	-0.01	-0.03	6.94	0	0.8111	0.0035
144	SLE RA 20	-0.01	-0.03	7.01	0	0.8191	0.0032
144	SLE RA 21	-0.01	-0.03	7.01	0	0.8186	0.0035
144	SLE FR 1	-0.01	-0.03	6.25	0	0.7298	0.0035
144	SLE FR 2	-0.01	-0.03	6.24	0	0.7296	0.0035
144	SLE FR 3	-0.01	-0.03	6.27	0	0.7328	0.0035
144	SLE FR 4	-0.01	-0.03	6.45	0	0.7541	0.0035
144	SLE FR 5	-0.01	-0.03	6.48	0	0.7573	0.0034
144	SLE FR 6	-0.01	-0.03	6.6	0	0.7707	0.0033
144	SLE QP 1	-0.01	-0.03	6.25	0	0.7298	0.0035
144	SLE QP 2	-0.01	-0.03	6.46	0	0.7543	0.0034
144	SLD 1	0.5	0.02	6.67	0	0.7795	-0.0023
144	SLD 2	0.55	0.01	6.65	0	0.7769	-0.0009
144	SLD 3	0.46	-0.12	6.44	0	0.7525	0.0144
144	SLD 4	0.52	-0.14	6.42	0	0.7499	0.0158
144	SLD 5	0.18	0.2	6.88	0	0.8033	-0.0239
144	SLD 6	0.21	0.2	6.86	0	0.8016	-0.023
144	SLD 7	0.08	-0.27	6.1	0	0.7133	0.0318
144	SLD 8	0.11	-0.28	6.09	0	0.7116	0.0327
144	SLD 9	-0.13	0.22	6.82	0	0.7971	-0.0259
144	SLD 10	-0.1	0.21	6.81	0	0.7954	-0.025
144	SLD 11	-0.23	-0.25	6.05	0	0.707	0.0298
144	SLD 12	-0.2	-0.26	6.04	0	0.7053	0.0307
144	SLD 13	-0.54	0.08	6.49	0	0.7587	-0.009
144	SLD 14	-0.49	0.07	6.47	0	0.7561	-0.0077
144	SLD 15	-0.57	-0.07	6.26	0	0.7317	0.0077
144	SLD 16	-0.52	-0.08	6.24	0	0.7291	0.009
144	SLV 1	1.17	0.08	6.95	0	0.8123	-0.0092
144	SLV 2	1.3	0.05	6.9	0	0.8062	-0.006
144	SLV 3	1.1	-0.24	6.43	0	0.7511	0.0286
144	SLV 4	1.23	-0.27	6.38	0	0.7451	0.0318
144	SLV 5	0.43	0.5	7.41	0	0.8655	-0.0583
144	SLV 6	0.51	0.48	7.37	0	0.8616	-0.0562
144	SLV 7	0.19	-0.58	5.66	0	0.6616	0.0677
144	SLV 8	0.28	-0.6	5.63	0	0.6577	0.0698
144	SLV 9	-0.3	0.54	7.28	0	0.8509	-0.063
144	SLV 10	-0.22	0.52	7.25	0	0.847	-0.061
144	SLV 11	-0.53	-0.54	5.54	0	0.647	0.063
144	SLV 12	-0.45	-0.56	5.5	0	0.6431	0.0651
144	SLV 13	-1.25	0.21	6.54	0	0.7635	-0.025
144	SLV 14	-1.12	0.19	6.48	0	0.7575	-0.0218
144	SLV 15	-1.32	-0.11	6.01	0	0.7024	0.0128
144	SLV 16	-1.19	-0.14	5.96	0	0.6963	0.016
144	CRTFP Uy+	0	0	0	0	0	0
144	CRTFP Uy-	0	0	0	0	0	0
145	SLU 1	-0.01	-0.02	6.09	0	0.8125	0.0023
145	SLU 2	-0.01	-0.02	6.07	0	0.8111	0.003
145	SLU 3	-0.01	-0.02	6.22	0	0.8309	0.0021
145	SLU 4	-0.01	-0.02	6.22	0	0.8301	0.0025
145	SLU 5	-0.01	-0.02	6.17	0	0.8241	0.003
145	SLU 6	-0.01	-0.02	6.32	0	0.8439	0.0021
145	SLU 7	-0.01	-0.02	6.31	0	0.843	0.0025
145	SLU 8	-0.01	-0.02	6.28	0	0.8385	0.0024
145	SLU 9	-0.01	-0.02	6.27	0	0.8376	0.0028
145	SLU 10	-0.01	-0.02	6.82	0	0.9103	0.0025
145	SLU 11	-0.01	-0.01	6.97	0	0.93	0.0016
145	SLU 12	-0.01	-0.02	6.96	0	0.9292	0.002





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
145	SLU 13	-0.01	-0.02	6.91	0	0.9232	0.0025
145	SLU 14	-0.01	-0.01	7.06	0	0.943	0.0016
145	SLU 15	-0.01	-0.02	7.06	0	0.9422	0.002
145	SLU 16	-0.01	-0.01	7.02	0	0.9376	0.0019
145	SLU 17	-0.01	-0.02	7.02	0	0.9367	0.0023
145	SLU 18	-0.01	-0.01	7.15	0	0.9542	0.0016
145	SLU 19	-0.01	-0.02	7.14	0	0.9533	0.002
145	SLU 20	-0.01	-0.01	7.24	0	0.9671	0.0016
145	SLU 21	-0.01	-0.02	7.24	0	0.9663	0.002
145	SLU 22	-0.01	-0.01	6.72	0	0.8967	0.0008
145	SLU 23	-0.01	-0.01	6.7	0	0.8953	0.0015
145	SLU 24	-0.01	0	6.85	0	0.9151	0.0006
145	SLU 25	-0.01	-0.01	6.85	0	0.9142	0.001
145	SLU 26	-0.01	-0.01	6.8	0	0.9083	0.0015
145	SLU 27	-0.01	0	6.95	0	0.9281	0.0006
145	SLU 28	-0.01	-0.01	6.94	0	0.9272	0.001
145	SLU 29	-0.01	-0.01	6.91	0	0.9226	0.0009
145	SLU 30	-0.01	-0.01	6.9	0	0.9218	0.0013
145	SLU 31	-0.01	-0.01	7.45	0	0.9944	0.001
145	SLU 32	-0.01	0	7.6	0	1.0142	0.0001
145	SLU 33	-0.01	0	7.59	0	1.0134	0.0005
145	SLU 34	-0.01	-0.01	7.54	0	1.0074	0.001
145	SLU 35	-0.01	0	7.69	0	1.0272	0.0001
145	SLU 36	-0.01	0	7.69	0	1.0263	0.0005
145	SLU 37	-0.01	0	7.65	0	1.0218	0.0004
145	SLU 38	-0.01	-0.01	7.65	0	1.0209	0.0008
145	SLU 39	-0.01	0	7.78	0	1.0383	0.0001
145	SLU 40	-0.01	0	7.77	0	1.0375	0.0005
145	SLU 41	-0.01	0	7.87	0	1.0513	0.0001
145	SLU 42	-0.01	0	7.87	0	1.0505	0.0005
145	SLU 43	-0.02	-0.03	7.69	0	1.0274	0.0035
145	SLU 44	-0.01	-0.03	7.68	0	1.026	0.0042
145	SLU 45	-0.02	-0.02	7.83	0	1.0458	0.0033
145	SLU 46	-0.01	-0.03	7.83	0	1.045	0.0037
145	SLU 47	-0.01	-0.03	7.78	0	1.039	0.0042
145	SLU 48	-0.02	-0.02	7.93	0	1.0588	0.0033
145	SLU 49	-0.01	-0.03	7.92	0	1.0579	0.0037
145	SLU 50	-0.02	-0.03	7.89	0	1.0534	0.0036
145	SLU 51	-0.01	-0.03	7.88	0	1.0525	0.004
145	SLU 52	-0.01	-0.03	8.43	0	1.1252	0.0037
145	SLU 53	-0.01	-0.02	8.57	0	1.1449	0.0028
145	SLU 54	-0.01	-0.02	8.57	0	1.1441	0.0032
145	SLU 55	-0.01	-0.03	8.52	0	1.1381	0.0037
145	SLU 56	-0.01	-0.02	8.67	0	1.1579	0.0028
145	SLU 57	-0.01	-0.02	8.67	0	1.1571	0.0032
145	SLU 58	-0.01	-0.02	8.63	0	1.1525	0.0031
145	SLU 59	-0.01	-0.03	8.62	0	1.1516	0.0035
145	SLU 60	-0.01	-0.02	8.76	0	1.1691	0.0028
145	SLU 61	-0.01	-0.02	8.75	0	1.1682	0.0032
145	SLU 62	-0.01	-0.02	8.85	0	1.182	0.0028
145	SLU 63	-0.01	-0.02	8.85	0	1.1812	0.0032
145	SLU 64	-0.02	-0.02	8.32	0	1.1116	0.002
145	SLU 65	-0.01	-0.02	8.31	0	1.1102	0.0027
145	SLU 66	-0.02	-0.01	8.46	0	1.13	0.0018
145	SLU 67	-0.01	-0.02	8.46	0	1.1291	0.0022
145	SLU 68	-0.01	-0.02	8.41	0	1.1232	0.0027
145	SLU 69	-0.02	-0.01	8.56	0	1.143	0.0018
145	SLU 70	-0.01	-0.02	8.55	0	1.1421	0.0022
145	SLU 71	-0.02	-0.02	8.52	0	1.1375	0.0021
145	SLU 72	-0.01	-0.02	8.51	0	1.1367	0.0025
145	SLU 73	-0.01	-0.02	9.06	-0.0001	1.2093	0.0022
145	SLU 74	-0.01	-0.01	9.2	-0.0001	1.2291	0.0013
145	SLU 75	-0.01	-0.01	9.2	-0.0001	1.2283	0.0017
145	SLU 76	-0.01	-0.02	9.15	-0.0001	1.2223	0.0022
145	SLU 77	-0.01	-0.01	9.3	-0.0001	1.2421	0.0013
145	SLU 78	-0.01	-0.01	9.3	-0.0001	1.2412	0.0017
145	SLU 79	-0.01	-0.01	9.26	-0.0001	1.2367	0.0016
145	SLU 80	-0.01	-0.01	9.26	-0.0001	1.2358	0.002
145	SLU 81	-0.01	-0.01	9.39	-0.0001	1.2532	0.0013
145	SLU 82	-0.01	-0.01	9.38	-0.0001	1.2524	0.0017
145	SLU 83	-0.01	-0.01	9.48	-0.0001	1.2662	0.0013
145	SLU 84	-0.01	-0.01	9.48	-0.0001	1.2654	0.0017
145	SLE RA 1	-0.01	-0.01	6.27	0	0.8366	0.0019
145	SLE RA 2	-0.01	-0.02	6.26	0	0.8356	0.0023
145	SLE RA 3	-0.01	-0.01	6.36	0	0.8488	0.0017
145	SLE RA 4	-0.01	-0.02	6.35	0	0.8483	0.002
145	SLE RA 5	-0.01	-0.02	6.32	0	0.8443	0.0024
145	SLE RA 6	-0.01	-0.01	6.42	0	0.8575	0.0017
145	SLE RA 7	-0.01	-0.02	6.42	0	0.8569	0.002
145	SLE RA 8	-0.01	-0.01	6.39	0	0.8539	0.0019
145	SLE RA 9	-0.01	-0.02	6.39	0	0.8533	0.0022
145	SLE RA 10	-0.01	-0.02	6.75	0	0.9017	0.002
145	SLE RA 11	-0.01	-0.01	6.85	0	0.9149	0.0014
145	SLE RA 12	-0.01	-0.01	6.85	0	0.9144	0.0017
145	SLE RA 13	-0.01	-0.02	6.82	0	0.9104	0.002
145	SLE RA 14	-0.01	-0.01	6.92	0	0.9236	0.0014
145	SLE RA 15	-0.01	-0.01	6.91	0	0.923	0.0017
145	SLE RA 16	-0.01	-0.01	6.89	0	0.92	0.0016
145	SLE RA 17	-0.01	-0.01	6.89	0	0.9194	0.0019
145	SLE RA 18	-0.01	-0.01	6.97	0	0.931	0.0014



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
145	SLE RA 19	-0.01	-0.01	6.97	0	0.9304	0.0017
145	SLE RA 20	-0.01	-0.01	7.04	0	0.9396	0.0014
145	SLE RA 21	-0.01	-0.01	7.03	0	0.9391	0.0017
145	SLE FR 1	-0.01	-0.01	6.27	0	0.8366	0.0019
145	SLE FR 2	-0.01	-0.01	6.26	0	0.8364	0.002
145	SLE FR 3	-0.01	-0.01	6.29	0	0.84	0.0019
145	SLE FR 4	-0.01	-0.01	6.48	0	0.8647	0.0018
145	SLE FR 5	-0.01	-0.01	6.5	0	0.8684	0.0017
145	SLE FR 6	-0.01	-0.01	6.62	0	0.8838	0.0016
145	SLE QP 1	-0.01	-0.01	6.27	0	0.8366	0.0019
145	SLE QP 2	-0.01	-0.01	6.48	0	0.8649	0.0017
145	SLD 1	0.49	0.04	6.65	0	0.8885	-0.0054
145	SLD 2	0.55	0.03	6.63	0	0.8858	-0.0041
145	SLD 3	0.46	-0.1	6.42	0	0.8575	0.0139
145	SLD 4	0.52	-0.11	6.4	0	0.8549	0.0151
145	SLD 5	0.18	0.22	6.89	0	0.9194	-0.0298
145	SLD 6	0.21	0.22	6.87	0	0.9176	-0.029
145	SLD 7	0.08	-0.26	6.11	0	0.8162	0.0343
145	SLD 8	0.11	-0.26	6.1	0	0.8145	0.0352
145	SLD 9	-0.13	0.24	6.85	0	0.9153	-0.0317
145	SLD 10	-0.1	0.23	6.84	0	0.9136	-0.0309
145	SLD 11	-0.24	-0.24	6.08	0	0.8122	0.0325
145	SLD 12	-0.2	-0.25	6.07	0	0.8104	0.0333
145	SLD 13	-0.54	0.09	6.55	0	0.875	-0.0116
145	SLD 14	-0.49	0.08	6.53	0	0.8723	-0.0104
145	SLD 15	-0.57	-0.06	6.32	0	0.844	0.0076
145	SLD 16	-0.52	-0.07	6.3	0	0.8413	0.0089
145	SLV 1	1.17	0.11	6.88	0	0.9189	-0.0142
145	SLV 2	1.3	0.08	6.84	0	0.9127	-0.0113
145	SLV 3	1.1	-0.22	6.36	0	0.8489	0.0293
145	SLV 4	1.23	-0.24	6.31	0	0.8426	0.0323
145	SLV 5	0.43	0.52	7.4	0	0.9885	-0.0696
145	SLV 6	0.51	0.51	7.37	0	0.9844	-0.0677
145	SLV 7	0.19	-0.57	5.65	0	0.7549	0.0756
145	SLV 8	0.27	-0.58	5.62	0	0.7509	0.0775
145	SLV 9	-0.3	0.55	7.33	0	0.9789	-0.074
145	SLV 10	-0.22	0.54	7.3	0	0.9749	-0.0721
145	SLV 11	-0.53	-0.53	5.58	0	0.7454	0.0712
145	SLV 12	-0.45	-0.55	5.55	0	0.7414	0.0731
145	SLV 13	-1.25	0.22	6.64	0	0.8872	-0.0288
145	SLV 14	-1.12	0.19	6.6	0	0.881	-0.0259
145	SLV 15	-1.32	-0.11	6.12	0	0.8171	0.0148
145	SLV 16	-1.19	-0.13	6.07	0	0.8109	0.0177
145	CRTFP Uy+	0	0	0	0	0	0
145	CRTFP Uy-	0	0	0	0	0	0
146	SLU 1	-0.07	0	26.61	7.6636	-1.9983	0.0216
146	SLU 2	-0.05	-0.03	26.57	7.6538	-1.9954	0.0149
146	SLU 3	-0.07	0.01	27.21	7.8377	-2.0437	0.0229
146	SLU 4	-0.06	-0.01	27.19	7.8318	-2.0419	0.0189
146	SLU 5	-0.05	-0.03	26.99	7.7752	-2.0271	0.0156
146	SLU 6	-0.07	0.01	27.63	7.9592	-2.0755	0.0236
146	SLU 7	-0.06	-0.01	27.61	7.9532	-2.0737	0.0196
146	SLU 8	-0.07	0	27.45	7.9065	-2.0619	0.023
146	SLU 9	-0.06	-0.02	27.43	7.9006	-2.0601	0.019
146	SLU 10	-0.06	0	29.84	8.599	-2.2417	0.02
146	SLU 11	-0.08	0.03	30.49	8.783	-2.2901	0.028
146	SLU 12	-0.07	0.02	30.46	8.7771	-2.2883	0.024
146	SLU 13	-0.06	0	30.26	8.7205	-2.2735	0.0208
146	SLU 14	-0.08	0.03	30.91	8.9044	-2.3218	0.0287
146	SLU 15	-0.07	0.02	30.88	8.8985	-2.3201	0.0247
146	SLU 16	-0.08	0.02	30.73	8.8518	-2.3082	0.0282
146	SLU 17	-0.07	0.01	30.7	8.8458	-2.3065	0.0242
146	SLU 18	-0.08	0.03	31.28	9.014	-2.3502	0.0289
146	SLU 19	-0.07	0.02	31.26	9.0081	-2.3485	0.0249
146	SLU 20	-0.08	0.04	31.71	9.1354	-2.382	0.0296
146	SLU 21	-0.07	0.02	31.68	9.1295	-2.3802	0.0256
146	SLU 22	-0.07	0.06	29.38	8.4637	-2.2065	0.0268
146	SLU 23	-0.05	0.03	29.33	8.4538	-2.2035	0.0202
146	SLU 24	-0.07	0.07	29.98	8.6378	-2.2519	0.0281
146	SLU 25	-0.06	0.05	29.95	8.6318	-2.2501	0.0241
146	SLU 26	-0.06	0.03	29.76	8.5752	-2.2353	0.0209
146	SLU 27	-0.07	0.07	30.4	8.7592	-2.2837	0.0289
146	SLU 28	-0.06	0.05	30.38	8.7533	-2.2819	0.0249
146	SLU 29	-0.07	0.06	30.22	8.7065	-2.27	0.0283
146	SLU 30	-0.06	0.04	30.2	8.7006	-2.2683	0.0243
146	SLU 31	-0.06	0.06	32.61	9.399	-2.4499	0.0253
146	SLU 32	-0.08	0.09	33.25	9.583	-2.4982	0.0333
146	SLU 33	-0.07	0.08	33.23	9.5771	-2.4965	0.0293
146	SLU 34	-0.06	0.06	33.03	9.5205	-2.4817	0.026
146	SLU 35	-0.08	0.09	33.68	9.7045	-2.53	0.034
146	SLU 36	-0.07	0.08	33.65	9.6985	-2.5283	0.03
146	SLU 37	-0.08	0.09	33.5	9.6518	-2.5164	0.0334
146	SLU 38	-0.07	0.07	33.47	9.6459	-2.5146	0.0294
146	SLU 39	-0.08	0.1	34.05	9.814	-2.5584	0.0342
146	SLU 40	-0.07	0.08	34.03	9.8081	-2.5566	0.0302
146	SLU 41	-0.08	0.1	34.48	9.9355	-2.5902	0.0349
146	SLU 42	-0.07	0.08	34.45	9.9295	-2.5884	0.0309
146	SLU 43	-0.09	-0.03	33.64	9.6884	-2.5264	0.0262
146	SLU 44	-0.07	-0.05	33.6	9.6786	-2.5235	0.0196
146	SLU 45	-0.09	-0.02	34.24	9.8625	-2.5718	0.0275



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
146	SLU 46	-0.08	-0.03	34.22	9.8566	-2.57	0.0235
146	SLU 47	-0.07	-0.05	34.02	9.8	-2.5552	0.0203
146	SLU 48	-0.09	-0.02	34.67	9.984	-2.6036	0.0283
146	SLU 49	-0.08	-0.03	34.64	9.978	-2.6018	0.0243
146	SLU 50	-0.09	-0.03	34.49	9.9313	-2.59	0.0277
146	SLU 51	-0.08	-0.04	34.46	9.9254	-2.5882	0.0237
146	SLU 52	-0.08	-0.02	36.87	10.6238	-2.7698	0.0247
146	SLU 53	-0.1	0.01	37.52	10.8078	-2.8182	0.0327
146	SLU 54	-0.09	0	37.49	10.8019	-2.8164	0.0287
146	SLU 55	-0.08	-0.02	37.3	10.7453	-2.8016	0.0254
146	SLU 56	-0.1	0.01	37.94	10.9292	-2.8499	0.0334
146	SLU 57	-0.09	0	37.92	10.9233	-2.8482	0.0294
146	SLU 58	-0.1	0	37.76	10.8766	-2.8363	0.0328
146	SLU 59	-0.09	-0.01	37.74	10.8706	-2.8346	0.0289
146	SLU 60	-0.1	0.01	38.32	11.0388	-2.8783	0.0336
146	SLU 61	-0.09	0	38.29	11.0329	-2.8766	0.0296
146	SLU 62	-0.1	0.01	38.74	11.1602	-2.9101	0.0343
146	SLU 63	-0.09	0	38.72	11.1543	-2.9084	0.0303
146	SLU 64	-0.09	0.03	36.41	10.4885	-2.7346	0.0315
146	SLU 65	-0.07	0.01	36.37	10.4786	-2.7316	0.0248
146	SLU 66	-0.09	0.04	37.01	10.6626	-2.78	0.0328
146	SLU 67	-0.08	0.03	36.99	10.6566	-2.7782	0.0288
146	SLU 68	-0.08	0.01	36.79	10.6	-2.7634	0.0256
146	SLU 69	-0.09	0.04	37.44	10.784	-2.8118	0.0335
146	SLU 70	-0.08	0.03	37.41	10.7781	-2.81	0.0295
146	SLU 71	-0.09	0.04	37.26	10.7313	-2.7981	0.033
146	SLU 72	-0.08	0.02	37.23	10.7254	-2.7964	0.029
146	SLU 73	-0.08	0.04	39.64	11.4238	-2.978	0.03
146	SLU 74	-0.1	0.07	40.29	11.6078	-3.0263	0.0379
146	SLU 75	-0.09	0.06	40.26	11.6019	-3.0246	0.0339
146	SLU 76	-0.08	0.04	40.07	11.5453	-3.0098	0.0307
146	SLU 77	-0.1	0.07	40.71	11.7293	-3.0581	0.0387
146	SLU 78	-0.09	0.06	40.69	11.7233	-3.0564	0.0347
146	SLU 79	-0.1	0.06	40.53	11.6766	-3.0445	0.0381
146	SLU 80	-0.09	0.05	40.51	11.6707	-3.0427	0.0341
146	SLU 81	-0.1	0.07	41.09	11.8388	-3.0865	0.0388
146	SLU 82	-0.09	0.06	41.06	11.8329	-3.0847	0.0348
146	SLU 83	-0.1	0.07	41.51	11.9603	-3.1183	0.0396
146	SLU 84	-0.09	0.06	41.49	11.9543	-3.1165	0.0356
146	SLE RA 1	-0.07	0.01	27.4	7.8922	-2.0578	0.0231
146	SLE RA 2	-0.06	0	27.37	7.8856	-2.0558	0.0186
146	SLE RA 3	-0.07	0.02	27.8	8.0083	-2.088	0.0239
146	SLE RA 4	-0.06	0.01	27.78	8.0043	-2.0869	0.0213
146	SLE RA 5	-0.06	0	27.65	7.9666	-2.077	0.0191
146	SLE RA 6	-0.07	0.02	28.08	8.0892	-2.1092	0.0244
146	SLE RA 7	-0.06	0.01	28.07	8.0853	-2.1081	0.0218
146	SLE RA 8	-0.07	0.01	27.96	8.0541	-2.1001	0.0241
146	SLE RA 9	-0.06	0	27.95	8.0502	-2.099	0.0214
146	SLE RA 10	-0.06	0.02	29.55	8.5158	-2.22	0.0221
146	SLE RA 11	-0.07	0.04	29.98	8.6385	-2.2523	0.0274
146	SLE RA 12	-0.07	0.03	29.97	8.6345	-2.2511	0.0247
146	SLE RA 13	-0.06	0.02	29.84	8.5968	-2.2412	0.0225
146	SLE RA 14	-0.08	0.04	30.27	8.7194	-2.2735	0.0278
146	SLE RA 15	-0.07	0.03	30.25	8.7155	-2.2723	0.0252
146	SLE RA 16	-0.08	0.03	30.15	8.6843	-2.2644	0.0275
146	SLE RA 17	-0.07	0.02	30.13	8.6803	-2.2632	0.0248
146	SLE RA 18	-0.08	0.04	30.52	8.7925	-2.2924	0.028
146	SLE RA 19	-0.07	0.03	30.5	8.7885	-2.2912	0.0253
146	SLE RA 20	-0.08	0.04	30.8	8.8734	-2.3136	0.0285
146	SLE RA 21	-0.07	0.03	30.78	8.8695	-2.3124	0.0258
146	SLE FR 1	-0.07	0.01	27.4	7.8922	-2.0578	0.0231
146	SLE FR 2	-0.07	0.01	27.39	7.8909	-2.0574	0.0222
146	SLE FR 3	-0.07	0.01	27.51	7.9246	-2.0662	0.0233
146	SLE FR 4	-0.07	0.02	28.33	8.161	-2.1278	0.0237
146	SLE FR 5	-0.07	0.02	28.45	8.1947	-2.1366	0.0247
146	SLE FR 6	-0.07	0.03	28.96	8.3423	-2.1751	0.0255
146	SLE QP 1	-0.07	0.01	27.4	7.8922	-2.0578	0.0231
146	SLE QP 2	-0.07	0.02	28.33	8.1623	-2.1282	0.0245
146	SLD 1	2.33	0.27	28.62	8.2115	-2.1456	-0.6682
146	SLD 2	2.58	0.24	28.56	8.1976	-2.1417	-0.7479
146	SLD 3	2.18	-0.41	27.69	7.985	-2.0787	-0.7421
146	SLD 4	2.43	-0.44	27.63	7.9712	-2.0748	-0.8218
146	SLD 5	0.82	1.13	29.83	8.5229	-2.2355	-0.0569
146	SLD 6	0.98	1.11	29.79	8.5138	-2.233	-0.1093
146	SLD 7	0.34	-1.13	26.75	7.7682	-2.0126	-0.3034
146	SLD 8	0.51	-1.15	26.71	7.7591	-2.01	-0.3557
146	SLD 9	-0.65	1.19	29.96	8.5655	-2.2463	0.4048
146	SLD 10	-0.49	1.17	29.92	8.5564	-2.2437	0.3525
146	SLD 11	-1.13	-1.07	26.87	7.8108	-2.0233	0.1583
146	SLD 12	-0.96	-1.09	26.83	7.8017	-2.0208	0.106
146	SLD 13	-2.57	0.48	29.03	8.3534	-2.1815	0.8709
146	SLD 14	-2.33	0.45	28.97	8.3395	-2.1776	0.7912
146	SLD 15	-2.72	-0.2	28.11	8.127	-2.1146	0.7969
146	SLD 16	-2.47	-0.23	28.05	8.1131	-2.1107	0.7173
146	SLV 1	5.54	0.58	28.97	8.2689	-2.1664	-1.5984
146	SLV 2	6.12	0.51	28.83	8.2366	-2.1574	-1.784
146	SLV 3	5.21	-0.95	26.87	7.756	-2.0149	-1.7679
146	SLV 4	5.78	-1.02	26.73	7.7237	-2.0059	-1.9534
146	SLV 5	2.02	2.53	31.72	8.9778	-2.371	-0.1733
146	SLV 6	2.39	2.48	31.63	8.957	-2.3652	-0.2931



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
146	SLV 7	0.91	-2.58	24.74	7.268	-1.866	-0.7381
146	SLV 8	1.28	-2.63	24.65	7.2472	-1.8601	-0.8579
146	SLV 9	-1.42	2.67	32.01	9.0774	-2.3962	0.907
146	SLV 10	-1.05	2.63	31.92	9.0566	-2.3903	0.7872
146	SLV 11	-2.53	-2.44	25.03	7.3676	-1.8911	0.3422
146	SLV 12	-2.16	-2.49	24.94	7.3468	-1.8853	0.2223
146	SLV 13	-5.93	1.07	29.93	8.6009	-2.2504	2.0025
146	SLV 14	-5.35	0.99	29.79	8.5686	-2.2414	1.817
146	SLV 15	-6.26	-0.47	27.84	8.088	-2.0989	1.833
146	SLV 16	-5.68	-0.54	27.7	8.0557	-2.0899	1.6475
146	CRTFP Ux+	0	0	0	0	0	0
146	CRTFP Ux-	0	0	0	0	0	0
146	CRTFP Uy+	0	0	0	0	0	0
146	CRTFP Uy-	0	0	0	0	0	0
147	SLU 1	-0.09	0.01	33.95	10.7666	-0.6162	0.0315
147	SLU 2	-0.07	-0.02	33.9	10.7529	-0.6153	0.0239
147	SLU 3	-0.09	0.02	34.72	11.0112	-0.6302	0.0325
147	SLU 4	-0.08	0	34.69	11.003	-0.6296	0.0279
147	SLU 5	-0.07	-0.02	34.44	10.923	-0.625	0.0249
147	SLU 6	-0.09	0.02	35.26	11.1813	-0.64	0.0336
147	SLU 7	-0.08	0	35.23	11.1731	-0.6394	0.029
147	SLU 8	-0.09	0.01	35.03	11.1068	-0.6357	0.0336
147	SLU 9	-0.08	-0.01	35	11.0986	-0.6352	0.029
147	SLU 10	-0.08	0.02	38.09	12.0827	-0.6915	0.0293
147	SLU 11	-0.1	0.06	38.91	12.341	-0.7064	0.038
147	SLU 12	-0.09	0.05	38.88	12.3328	-0.7059	0.0334
147	SLU 13	-0.08	0.02	38.63	12.2528	-0.7013	0.0304
147	SLU 14	-0.11	0.07	39.45	12.5111	-0.7162	0.039
147	SLU 15	-0.09	0.05	39.42	12.5029	-0.7157	0.0344
147	SLU 16	-0.11	0.05	39.22	12.4366	-0.7119	0.039
147	SLU 17	-0.09	0.04	39.19	12.4284	-0.7114	0.0345
147	SLU 18	-0.11	0.07	39.93	12.6663	-0.7251	0.0393
147	SLU 19	-0.09	0.05	39.9	12.6581	-0.7245	0.0347
147	SLU 20	-0.11	0.07	40.47	12.8364	-0.7348	0.0403
147	SLU 21	-0.1	0.05	40.44	12.8282	-0.7343	0.0358
147	SLU 22	-0.09	0.09	37.49	11.8905	-0.6804	0.0336
147	SLU 23	-0.07	0.06	37.44	11.8768	-0.6795	0.026
147	SLU 24	-0.09	0.1	38.26	12.1351	-0.6944	0.0347
147	SLU 25	-0.08	0.08	38.23	12.1269	-0.6939	0.0301
147	SLU 26	-0.07	0.06	37.98	12.0469	-0.6893	0.0271
147	SLU 27	-0.1	0.1	38.8	12.3052	-0.7042	0.0357
147	SLU 28	-0.08	0.08	38.77	12.297	-0.7037	0.0311
147	SLU 29	-0.1	0.09	38.57	12.2308	-0.7	0.0357
147	SLU 30	-0.08	0.07	38.54	12.2225	-0.6994	0.0312
147	SLU 31	-0.08	0.1	41.62	13.2066	-0.7558	0.0315
147	SLU 32	-0.11	0.15	42.45	13.4649	-0.7707	0.0401
147	SLU 33	-0.09	0.13	42.42	13.4567	-0.7701	0.0355
147	SLU 34	-0.09	0.1	42.16	13.3767	-0.7655	0.0325
147	SLU 35	-0.11	0.15	42.99	13.635	-0.7804	0.0412
147	SLU 36	-0.1	0.13	42.96	13.6268	-0.7799	0.0366
147	SLU 37	-0.11	0.13	42.75	13.5606	-0.7762	0.0412
147	SLU 38	-0.1	0.12	42.72	13.5523	-0.7757	0.0366
147	SLU 39	-0.11	0.15	43.47	13.7902	-0.7893	0.0414
147	SLU 40	-0.1	0.13	43.44	13.782	-0.7888	0.0369
147	SLU 41	-0.11	0.15	44.01	13.9604	-0.7991	0.0425
147	SLU 42	-0.1	0.13	43.98	13.9521	-0.7986	0.0379
147	SLU 43	-0.11	-0.02	42.92	13.6112	-0.779	0.0402
147	SLU 44	-0.09	-0.05	42.87	13.5975	-0.7781	0.0326
147	SLU 45	-0.12	0	43.69	13.8558	-0.793	0.0412
147	SLU 46	-0.1	-0.02	43.66	13.8476	-0.7925	0.0366
147	SLU 47	-0.1	-0.05	43.41	13.7676	-0.7879	0.0336
147	SLU 48	-0.12	0	44.23	14.0259	-0.8028	0.0423
147	SLU 49	-0.11	-0.02	44.2	14.0177	-0.8022	0.0377
147	SLU 50	-0.12	-0.02	44	13.9515	-0.7985	0.0423
147	SLU 51	-0.11	-0.03	43.97	13.9432	-0.798	0.0377
147	SLU 52	-0.11	0	47.06	14.9273	-0.8543	0.038
147	SLU 53	-0.13	0.04	47.88	15.1856	-0.8692	0.0467
147	SLU 54	-0.12	0.02	47.85	15.1774	-0.8687	0.0421
147	SLU 55	-0.11	0	47.6	15.0974	-0.8641	0.0391
147	SLU 56	-0.13	0.04	48.42	15.3557	-0.879	0.0477
147	SLU 57	-0.12	0.02	48.39	15.3475	-0.8785	0.0431
147	SLU 58	-0.13	0.03	48.19	15.2813	-0.8748	0.0477
147	SLU 59	-0.12	0.01	48.16	15.273	-0.8742	0.0432
147	SLU 60	-0.13	0.05	48.91	15.5109	-0.8879	0.048
147	SLU 61	-0.12	0.03	48.87	15.5027	-0.8873	0.0434
147	SLU 62	-0.14	0.05	49.45	15.6811	-0.8977	0.049
147	SLU 63	-0.12	0.03	49.41	15.6728	-0.8971	0.0445
147	SLU 64	-0.12	0.06	46.46	14.7352	-0.8432	0.0424
147	SLU 65	-0.1	0.03	46.41	14.7215	-0.8423	0.0347
147	SLU 66	-0.12	0.08	47.23	14.9798	-0.8572	0.0434
147	SLU 67	-0.11	0.06	47.2	14.9715	-0.8567	0.0388
147	SLU 68	-0.1	0.03	46.95	14.8916	-0.8521	0.0358
147	SLU 69	-0.12	0.08	47.77	15.1499	-0.867	0.0444
147	SLU 70	-0.11	0.06	47.74	15.1417	-0.8665	0.0399
147	SLU 71	-0.12	0.06	47.54	15.0754	-0.8628	0.0445
147	SLU 72	-0.11	0.05	47.51	15.0672	-0.8622	0.0399
147	SLU 73	-0.11	0.08	50.6	16.0513	-0.9186	0.0402
147	SLU 74	-0.13	0.12	51.42	16.3096	-0.9335	0.0488
147	SLU 75	-0.12	0.1	51.39	16.3013	-0.933	0.0443
147	SLU 76	-0.11	0.08	51.14	16.2214	-0.9283	0.0412



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
147	SLU 77	-0.13	0.12	51.96	16.4797	-0.9433	0.0499
147	SLU 78	-0.12	0.1	51.93	16.4715	-0.9427	0.0453
147	SLU 79	-0.13	0.11	51.73	16.4052	-0.9399	0.0499
147	SLU 80	-0.12	0.09	51.7	16.397	-0.9385	0.0453
147	SLU 81	-0.13	0.13	52.44	16.6349	-0.9521	0.0501
147	SLU 82	-0.12	0.11	52.41	16.6267	-0.9516	0.0456
147	SLU 83	-0.14	0.13	52.98	16.805	-0.9619	0.0512
147	SLU 84	-0.13	0.11	52.95	16.7968	-0.9614	0.0466
147	SLE RA 1	-0.09	0.03	34.96	11.0877	-0.6345	0.0321
147	SLE RA 2	-0.08	0.01	34.93	11.0786	-0.6339	0.027
147	SLE RA 3	-0.09	0.04	35.47	11.2508	-0.6439	0.0328
147	SLE RA 4	-0.08	0.03	35.45	11.2453	-0.6435	0.0297
147	SLE RA 5	-0.08	0.01	35.29	11.192	-0.6404	0.0277
147	SLE RA 6	-0.09	0.04	35.83	11.3642	-0.6504	0.0335
147	SLE RA 7	-0.08	0.03	35.81	11.3587	-0.65	0.0304
147	SLE RA 8	-0.09	0.03	35.68	11.3145	-0.6475	0.0335
147	SLE RA 9	-0.08	0.02	35.66	11.3091	-0.6472	0.0305
147	SLE RA 10	-0.08	0.04	37.72	11.9651	-0.6847	0.0307
147	SLE RA 11	-0.1	0.07	38.27	12.1373	-0.6947	0.0364
147	SLE RA 12	-0.09	0.06	38.25	12.1318	-0.6943	0.0334
147	SLE RA 13	-0.09	0.04	38.08	12.0785	-0.6913	0.0314
147	SLE RA 14	-0.1	0.07	38.63	12.2507	-0.7012	0.0371
147	SLE RA 15	-0.09	0.06	38.61	12.2453	-0.7008	0.0341
147	SLE RA 16	-0.1	0.06	38.47	12.2011	-0.6984	0.0371
147	SLE RA 17	-0.09	0.05	38.45	12.1956	-0.698	0.0341
147	SLE RA 18	-0.1	0.07	38.95	12.3542	-0.7071	0.0373
147	SLE RA 19	-0.09	0.06	38.93	12.3487	-0.7068	0.0343
147	SLE RA 20	-0.1	0.07	39.31	12.4676	-0.7136	0.038
147	SLE RA 21	-0.1	0.06	39.29	12.4621	-0.7133	0.0349
147	SLE FR 1	-0.09	0.03	34.96	11.0877	-0.6345	0.0321
147	SLE FR 2	-0.09	0.03	34.95	11.0859	-0.6344	0.0311
147	SLE FR 3	-0.09	0.03	35.1	11.1331	-0.6371	0.0324
147	SLE FR 4	-0.09	0.04	36.15	11.4658	-0.6562	0.0326
147	SLE FR 5	-0.09	0.04	36.3	11.513	-0.6589	0.0339
147	SLE FR 6	-0.1	0.05	36.95	11.721	-0.6708	0.0347
147	SLE QP 1	-0.09	0.03	34.96	11.0877	-0.6345	0.0321
147	SLE QP 2	-0.09	0.04	36.16	11.4677	-0.6563	0.0337
147	SLD 1	2.86	0.36	36.44	11.5331	-0.6595	-0.9987
147	SLD 2	3.18	0.32	36.38	11.5186	-0.659	-1.1125
147	SLD 3	3.05	-0.53	35.28	11.2125	-0.6385	-1.0689
147	SLD 4	3.37	-0.56	35.22	11.198	-0.6379	-1.1826
147	SLD 5	0.45	1.48	38.02	11.9761	-0.6893	-0.1494
147	SLD 6	0.66	1.46	37.98	11.9666	-0.6889	-0.2242
147	SLD 7	1.08	-1.46	34.14	10.9075	-0.6191	-0.3831
147	SLD 8	1.29	-1.48	34.1	10.8979	-0.6188	-0.4579
147	SLD 9	-1.47	1.57	38.21	12.0374	-0.6938	0.5252
147	SLD 10	-1.26	1.55	38.18	12.0278	-0.6934	0.4505
147	SLD 11	-0.85	-1.37	34.33	10.9687	-0.6237	0.2915
147	SLD 12	-0.64	-1.4	34.3	10.9592	-0.6233	0.2167
147	SLD 13	-3.56	0.65	37.09	11.7373	-0.6747	1.25
147	SLD 14	-3.23	0.61	37.04	11.7228	-0.6741	1.1362
147	SLD 15	-3.37	-0.24	35.93	11.4167	-0.6536	1.1798
147	SLD 16	-3.04	-0.27	35.87	11.4022	-0.6531	1.0661
147	SLV 1	6.82	0.75	36.77	11.609	-0.663	-2.3829
147	SLV 2	7.57	0.66	36.64	11.5752	-0.6618	-2.6479
147	SLV 3	7.25	-1.25	34.14	10.8826	-0.6154	-2.546
147	SLV 4	8.01	-1.33	34	10.8488	-0.6141	-2.8109
147	SLV 5	1.19	3.3	40.36	12.6176	-0.7308	-0.3982
147	SLV 6	1.67	3.25	40.28	12.5957	-0.73	-0.5694
147	SLV 7	2.64	-3.36	31.58	10.1963	-0.5719	-0.9417
147	SLV 8	3.13	-3.42	31.49	10.1745	-0.5711	-1.1128
147	SLV 9	-3.32	3.5	40.82	12.7608	-0.7414	1.1801
147	SLV 10	-2.83	3.45	40.74	12.739	-0.7406	1.009
147	SLV 11	-1.86	-3.16	32.04	10.3396	-0.5826	0.6367
147	SLV 12	-1.37	-3.22	31.95	10.3177	-0.5818	0.4656
147	SLV 13	-8.19	1.42	38.31	12.0865	-0.6985	2.8782
147	SLV 14	-7.44	1.34	38.17	12.0527	-0.6972	2.6133
147	SLV 15	-7.76	-0.58	35.67	11.3602	-0.6508	2.7152
147	SLV 16	-7	-0.66	35.54	11.3263	-0.6495	2.4503
147	CRTFP Ux+	0	0	0	0	0	0
147	CRTFP Ux-	0	0	0	0	0	0
147	CRTFP Uy+	0	0	0	0	0	0
147	CRTFP Uy-	0	0	0	0	0	0
148	SLU 1	-0.1	0.02	37.41	11.5933	0.0186	0.0341
148	SLU 2	-0.07	-0.01	37.36	11.5789	0.0185	0.0262
148	SLU 3	-0.1	0.04	38.26	11.8568	0.019	0.035
148	SLU 4	-0.09	0.02	38.23	11.8482	0.019	0.0303
148	SLU 5	-0.08	-0.01	37.95	11.7614	0.0189	0.0274
148	SLU 6	-0.1	0.04	38.85	12.0394	0.0193	0.0362
148	SLU 7	-0.09	0.02	38.82	12.0307	0.0193	0.0314
148	SLU 8	-0.1	0.03	38.6	11.9584	0.0193	0.0365
148	SLU 9	-0.09	0.01	38.56	11.9497	0.0192	0.0317
148	SLU 10	-0.09	0.05	41.98	13.0134	0.0206	0.0319
148	SLU 11	-0.11	0.1	42.89	13.2914	0.0211	0.0407
148	SLU 12	-0.1	0.07	42.85	13.2827	0.021	0.0359
148	SLU 13	-0.09	0.05	42.57	13.1959	0.0209	0.0331
148	SLU 14	-0.12	0.1	43.48	13.4739	0.0214	0.0419
148	SLU 15	-0.1	0.08	43.45	13.4652	0.0214	0.0371
148	SLU 16	-0.12	0.08	43.22	13.3929	0.0214	0.0422
148	SLU 17	-0.11	0.06	43.19	13.3842	0.0213	0.0374



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
148	SLU 18	-0.12	0.1	44.02	13.6426	0.0216	0.0423
148	SLU 19	-0.11	0.08	43.98	13.634	0.0215	0.0375
148	SLU 20	-0.12	0.11	44.61	13.8252	0.0219	0.0434
148	SLU 21	-0.11	0.09	44.58	13.8165	0.0219	0.0387
148	SLU 22	-0.1	0.11	41.31	12.8043	0.0204	0.0347
148	SLU 23	-0.08	0.08	41.26	12.7899	0.0203	0.0268
148	SLU 24	-0.1	0.13	42.16	13.0678	0.0208	0.0356
148	SLU 25	-0.09	0.11	42.13	13.0592	0.0208	0.0308
148	SLU 26	-0.08	0.08	41.85	12.9724	0.0207	0.028
148	SLU 27	-0.1	0.13	42.76	13.2504	0.0212	0.0368
148	SLU 28	-0.09	0.11	42.72	13.2417	0.0211	0.032
148	SLU 29	-0.1	0.12	42.5	13.1694	0.0211	0.037
148	SLU 30	-0.09	0.1	42.47	13.1607	0.0211	0.0323
148	SLU 31	-0.09	0.14	45.88	14.2244	0.0224	0.0325
148	SLU 32	-0.12	0.19	46.79	14.5023	0.0229	0.0413
148	SLU 33	-0.1	0.16	46.75	14.4937	0.0228	0.0365
148	SLU 34	-0.09	0.14	46.47	14.4069	0.0228	0.0337
148	SLU 35	-0.12	0.19	47.38	14.6849	0.0232	0.0424
148	SLU 36	-0.11	0.17	47.35	14.6762	0.0232	0.0377
148	SLU 37	-0.12	0.17	47.12	14.6039	0.0232	0.0427
148	SLU 38	-0.11	0.15	47.09	14.5952	0.0231	0.038
148	SLU 39	-0.12	0.2	47.92	14.8536	0.0234	0.0429
148	SLU 40	-0.11	0.17	47.88	14.845	0.0233	0.0381
148	SLU 41	-0.12	0.2	48.51	15.0361	0.0237	0.044
148	SLU 42	-0.11	0.18	48.48	15.0275	0.0237	0.0393
148	SLU 43	-0.13	0	47.29	14.6561	0.0236	0.0442
148	SLU 44	-0.1	-0.04	47.24	14.6417	0.0235	0.0363
148	SLU 45	-0.13	0.01	48.15	14.9196	0.024	0.0451
148	SLU 46	-0.11	-0.01	48.11	14.911	0.0239	0.0403
148	SLU 47	-0.11	-0.04	47.83	14.8242	0.0238	0.0374
148	SLU 48	-0.13	0.01	48.74	15.1022	0.0243	0.0462
148	SLU 49	-0.12	-0.01	48.71	15.0935	0.0243	0.0415
148	SLU 50	-0.13	0	48.48	15.0212	0.0243	0.0465
148	SLU 51	-0.12	-0.02	48.45	15.0125	0.0242	0.0418
148	SLU 52	-0.12	0.02	51.87	16.0762	0.0256	0.042
148	SLU 53	-0.14	0.07	52.77	16.3542	0.026	0.0507
148	SLU 54	-0.13	0.05	52.74	16.3455	0.026	0.046
148	SLU 55	-0.12	0.02	52.46	16.2587	0.0259	0.0431
148	SLU 56	-0.15	0.07	53.36	16.5367	0.0264	0.0519
148	SLU 57	-0.13	0.05	53.33	16.528	0.0263	0.0472
148	SLU 58	-0.15	0.06	53.11	16.4557	0.0263	0.0522
148	SLU 59	-0.13	0.04	53.07	16.447	0.0263	0.0474
148	SLU 60	-0.15	0.08	53.9	16.7054	0.0265	0.0523
148	SLU 61	-0.13	0.06	53.87	16.6968	0.0265	0.0476
148	SLU 62	-0.15	0.08	54.49	16.888	0.0269	0.0535
148	SLU 63	-0.14	0.06	54.46	16.8793	0.0268	0.0487
148	SLU 64	-0.13	0.09	51.2	15.8671	0.0254	0.0448
148	SLU 65	-0.1	0.05	51.14	15.8527	0.0253	0.0369
148	SLU 66	-0.13	0.1	52.05	16.1306	0.0258	0.0456
148	SLU 67	-0.12	0.08	52.01	16.122	0.0257	0.0409
148	SLU 68	-0.11	0.06	51.74	16.0352	0.0256	0.038
148	SLU 69	-0.13	0.1	52.64	16.3132	0.0261	0.0468
148	SLU 70	-0.12	0.08	52.61	16.3045	0.0261	0.042
148	SLU 71	-0.13	0.09	52.38	16.2322	0.0261	0.0471
148	SLU 72	-0.12	0.07	52.35	16.2235	0.026	0.0423
148	SLU 73	-0.12	0.11	55.77	17.2872	0.0274	0.0425
148	SLU 74	-0.14	0.16	56.67	17.5651	0.0279	0.0513
148	SLU 75	-0.13	0.14	56.64	17.5565	0.0278	0.0466
148	SLU 76	-0.12	0.11	56.36	17.4697	0.0277	0.0437
148	SLU 77	-0.15	0.16	57.27	17.7477	0.0282	0.0525
148	SLU 78	-0.13	0.14	57.23	17.739	0.0281	0.0477
148	SLU 79	-0.15	0.15	57.01	17.6667	0.0281	0.0528
148	SLU 80	-0.14	0.13	56.97	17.658	0.0281	0.048
148	SLU 81	-0.15	0.17	57.8	17.9164	0.0283	0.0529
148	SLU 82	-0.14	0.15	57.77	17.9078	0.0283	0.0481
148	SLU 83	-0.15	0.17	58.4	18.0989	0.0287	0.0541
148	SLU 84	-0.14	0.15	58.36	18.0903	0.0286	0.0493
148	SLE RA 1	-0.1	0.05	38.52	11.9393	0.0191	0.0343
148	SLE RA 2	-0.08	0.02	38.49	11.9297	0.0191	0.029
148	SLE RA 3	-0.1	0.06	39.09	12.115	0.0194	0.0349
148	SLE RA 4	-0.09	0.04	39.07	12.1092	0.0194	0.0317
148	SLE RA 5	-0.08	0.03	38.88	12.0514	0.0193	0.0298
148	SLE RA 6	-0.1	0.06	39.49	12.2367	0.0196	0.0357
148	SLE RA 7	-0.09	0.05	39.47	12.2309	0.0196	0.0325
148	SLE RA 8	-0.1	0.05	39.32	12.1827	0.0196	0.0359
148	SLE RA 9	-0.09	0.04	39.29	12.1769	0.0195	0.0327
148	SLE RA 10	-0.09	0.06	41.57	12.886	0.0205	0.0328
148	SLE RA 11	-0.11	0.1	42.17	13.0713	0.0208	0.0387
148	SLE RA 12	-0.1	0.08	42.15	13.0656	0.0207	0.0355
148	SLE RA 13	-0.09	0.06	41.97	13.0077	0.0207	0.0336
148	SLE RA 14	-0.11	0.1	42.57	13.193	0.021	0.0395
148	SLE RA 15	-0.1	0.08	42.55	13.1873	0.021	0.0363
148	SLE RA 16	-0.11	0.09	42.4	13.139	0.021	0.0396
148	SLE RA 17	-0.1	0.08	42.38	13.1333	0.0209	0.0365
148	SLE RA 18	-0.11	0.1	42.93	13.3055	0.0211	0.0397
148	SLE RA 19	-0.1	0.09	42.91	13.2997	0.0211	0.0366
148	SLE RA 20	-0.11	0.1	43.32	13.4272	0.0213	0.0405
148	SLE RA 21	-0.11	0.09	43.3	13.4214	0.0213	0.0373
148	SLE FR 1	-0.1	0.05	38.52	11.9393	0.0191	0.0343
148	SLE FR 2	-0.09	0.04	38.52	11.9374	0.0191	0.0333



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
148	SLE FR 3	-0.1	0.05	38.68	11.988	0.0192	0.0346
148	SLE FR 4	-0.1	0.06	39.84	12.3472	0.0197	0.0349
148	SLE FR 5	-0.1	0.06	40	12.3978	0.0198	0.0362
148	SLE FR 6	-0.1	0.08	40.73	12.6224	0.0201	0.037
148	SLE QP 1	-0.1	0.05	38.52	11.9393	0.0191	0.0343
148	SLE QP 2	-0.1	0.06	39.85	12.3492	0.0197	0.0359
148	SLD 1	3.42	0.4	40.08	12.4059	0.0223	-1.1251
148	SLD 2	3.79	0.37	40.04	12.3978	0.0215	-1.252
148	SLD 3	3.21	-0.59	38.8	12.0584	0.0214	-1.1988
148	SLD 4	3.58	-0.62	38.76	12.0503	0.0206	-1.3257
148	SLD 5	1.21	1.67	41.86	12.8946	0.0219	-0.178
148	SLD 6	1.45	1.65	41.83	12.8893	0.0214	-0.2613
148	SLD 7	0.51	-1.63	37.6	11.7364	0.0191	-0.4236
148	SLD 8	0.75	-1.65	37.58	11.7311	0.0186	-0.507
148	SLD 9	-0.95	1.78	42.11	12.9673	0.0208	0.5788
148	SLD 10	-0.71	1.76	42.09	12.962	0.0203	0.4954
148	SLD 11	-1.65	-1.52	37.86	11.809	0.0181	0.3332
148	SLD 12	-1.41	-1.55	37.83	11.8037	0.0176	0.2498
148	SLD 13	-3.78	0.75	40.93	12.648	0.0188	1.3975
148	SLD 14	-3.42	0.72	40.89	12.6399	0.018	1.2706
148	SLD 15	-3.99	-0.24	39.65	12.3005	0.018	1.3238
148	SLD 16	-3.63	-0.27	39.61	12.2924	0.0172	1.197
148	SLV 1	8.15	0.82	40.35	12.4691	0.0256	-2.6814
148	SLV 2	9	0.74	40.26	12.4503	0.0238	-2.9769
148	SLV 3	7.66	-1.42	37.45	11.6818	0.0238	-2.8532
148	SLV 4	8.5	-1.5	37.36	11.663	0.0219	-3.1487
148	SLV 5	2.97	3.71	44.4	13.5826	0.0246	-0.4676
148	SLV 6	3.52	3.66	44.34	13.5704	0.0234	-0.6584
148	SLV 7	1.34	-3.77	34.75	10.958	0.0184	-1.0403
148	SLV 8	1.88	-3.82	34.7	10.9459	0.0172	-1.2312
148	SLV 9	-2.09	3.95	44.99	13.7524	0.0222	1.303
148	SLV 10	-1.54	3.9	44.94	13.7403	0.021	1.1122
148	SLV 11	-3.72	-3.53	35.35	11.1279	0.016	0.7303
148	SLV 12	-3.17	-3.58	35.29	11.1158	0.0148	0.5394
148	SLV 13	-8.71	1.63	42.33	13.0354	0.0175	3.2206
148	SLV 14	-7.86	1.55	42.24	13.0166	0.0157	2.9251
148	SLV 15	-9.2	-0.62	39.43	12.248	0.0156	3.0488
148	SLV 16	-8.35	-0.69	39.34	12.2292	0.0138	2.7533
148	CRTFP Ux+	0	0	0	0	0	0
148	CRTFP Ux-	0	0	0	0	0	0
148	CRTFP Uy+	0	0	0	0	0	0
148	CRTFP Uy-	0	0	0	0	0	0
149	SLU 1	-0.09	0.03	36.87	11.2502	0.0112	0.0324
149	SLU 2	-0.07	0	36.82	11.2367	0.0111	0.0245
149	SLU 3	-0.09	0.05	37.71	11.5063	0.0114	0.0333
149	SLU 4	-0.08	0.02	37.68	11.4981	0.0113	0.0285
149	SLU 5	-0.07	0	37.4	11.4131	0.0113	0.0257
149	SLU 6	-0.1	0.05	38.29	11.6827	0.0116	0.0344
149	SLU 7	-0.08	0.03	38.26	11.6746	0.0116	0.0297
149	SLU 8	-0.1	0.04	38.04	11.6031	0.0116	0.0347
149	SLU 9	-0.09	0.01	38.01	11.595	0.0116	0.03
149	SLU 10	-0.09	0.06	41.38	12.6312	0.0123	0.0307
149	SLU 11	-0.11	0.11	42.28	12.9007	0.0126	0.0394
149	SLU 12	-0.1	0.09	42.25	12.8926	0.0125	0.0347
149	SLU 13	-0.09	0.06	41.97	12.8076	0.0125	0.0318
149	SLU 14	-0.12	0.11	42.86	13.0772	0.0128	0.0406
149	SLU 15	-0.1	0.09	42.83	13.0691	0.0128	0.0358
149	SLU 16	-0.12	0.1	42.6	12.9976	0.0128	0.0409
149	SLU 17	-0.1	0.08	42.57	12.9895	0.0128	0.0361
149	SLU 18	-0.12	0.12	43.39	13.2423	0.0129	0.0412
149	SLU 19	-0.1	0.1	43.36	13.2342	0.0128	0.0365
149	SLU 20	-0.12	0.12	43.98	13.4188	0.0131	0.0424
149	SLU 21	-0.11	0.1	43.95	13.4107	0.0131	0.0376
149	SLU 22	-0.09	0.12	40.72	12.4273	0.0121	0.0328
149	SLU 23	-0.07	0.09	40.67	12.4137	0.0121	0.0249
149	SLU 24	-0.1	0.14	41.56	12.6833	0.0124	0.0336
149	SLU 25	-0.08	0.11	41.53	12.6752	0.0123	0.0289
149	SLU 26	-0.07	0.09	41.25	12.5902	0.0123	0.026
149	SLU 27	-0.1	0.14	42.14	12.8597	0.0126	0.0348
149	SLU 28	-0.09	0.12	42.11	12.8516	0.0125	0.0301
149	SLU 29	-0.1	0.13	41.89	12.7802	0.0126	0.0351
149	SLU 30	-0.09	0.1	41.86	12.772	0.0125	0.0304
149	SLU 31	-0.09	0.15	45.23	13.8082	0.0133	0.031
149	SLU 32	-0.11	0.2	46.13	14.0778	0.0136	0.0398
149	SLU 33	-0.1	0.18	46.1	14.0696	0.0135	0.035
149	SLU 34	-0.09	0.15	45.82	13.9846	0.0135	0.0322
149	SLU 35	-0.12	0.2	46.71	14.2542	0.0138	0.0409
149	SLU 36	-0.1	0.18	46.68	14.2461	0.0137	0.0362
149	SLU 37	-0.12	0.19	46.45	14.1746	0.0138	0.0412
149	SLU 38	-0.1	0.17	46.42	14.1665	0.0137	0.0365
149	SLU 39	-0.12	0.21	47.24	14.4194	0.0139	0.0416
149	SLU 40	-0.1	0.19	47.21	14.4113	0.0138	0.0368
149	SLU 41	-0.12	0.21	47.83	14.5958	0.0141	0.0427
149	SLU 42	-0.11	0.19	47.8	14.5877	0.014	0.038
149	SLU 43	-0.12	0.01	46.61	14.2218	0.0142	0.042
149	SLU 44	-0.1	-0.03	46.56	14.2082	0.0141	0.0341
149	SLU 45	-0.12	0.02	47.45	14.4778	0.0144	0.0429
149	SLU 46	-0.11	0	47.42	14.4697	0.0144	0.0381
149	SLU 47	-0.1	-0.02	47.14	14.3847	0.0143	0.0353
149	SLU 48	-0.13	0.03	48.04	14.6542	0.0146	0.044



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
149	SLU 49	-0.11	0.01	48	14.6461	0.0146	0.0393
149	SLU 50	-0.13	0.01	47.78	14.5747	0.0146	0.0443
149	SLU 51	-0.11	-0.01	47.75	14.5665	0.0146	0.0396
149	SLU 52	-0.11	0.04	51.13	15.6027	0.0153	0.0403
149	SLU 53	-0.14	0.09	52.02	15.8723	0.0156	0.049
149	SLU 54	-0.13	0.07	51.99	15.8641	0.0156	0.0443
149	SLU 55	-0.12	0.04	51.71	15.7791	0.0155	0.0414
149	SLU 56	-0.14	0.09	52.6	16.0487	0.0158	0.0502
149	SLU 57	-0.13	0.07	52.57	16.0406	0.0158	0.0454
149	SLU 58	-0.14	0.08	52.34	15.9691	0.0158	0.0505
149	SLU 59	-0.13	0.06	52.31	15.961	0.0158	0.0457
149	SLU 60	-0.14	0.1	53.13	16.2139	0.0159	0.0508
149	SLU 61	-0.13	0.08	53.1	16.2057	0.0158	0.0461
149	SLU 62	-0.15	0.1	53.72	16.3903	0.0161	0.052
149	SLU 63	-0.13	0.08	53.69	16.3822	0.0161	0.0472
149	SLU 64	-0.12	0.1	50.46	15.3988	0.0151	0.0424
149	SLU 65	-0.1	0.06	50.41	15.3853	0.0151	0.0345
149	SLU 66	-0.12	0.11	51.3	15.6548	0.0154	0.0432
149	SLU 67	-0.11	0.09	51.27	15.6467	0.0153	0.0385
149	SLU 68	-0.1	0.07	50.99	15.5617	0.0153	0.0357
149	SLU 69	-0.13	0.12	51.89	15.8313	0.0156	0.0444
149	SLU 70	-0.11	0.1	51.86	15.8231	0.0156	0.0397
149	SLU 71	-0.13	0.1	51.63	15.7517	0.0156	0.0447
149	SLU 72	-0.11	0.08	51.6	15.7436	0.0156	0.04
149	SLU 73	-0.12	0.13	54.98	16.7797	0.0163	0.0406
149	SLU 74	-0.14	0.18	55.87	17.0493	0.0166	0.0494
149	SLU 75	-0.13	0.16	55.84	17.0412	0.0165	0.0446
149	SLU 76	-0.12	0.13	55.56	16.9562	0.0165	0.0418
149	SLU 77	-0.14	0.18	56.45	17.2257	0.0168	0.0505
149	SLU 78	-0.13	0.16	56.42	17.2176	0.0168	0.0458
149	SLU 79	-0.14	0.17	56.19	17.1462	0.0168	0.0509
149	SLU 80	-0.13	0.15	56.16	17.138	0.0168	0.0461
149	SLU 81	-0.15	0.19	56.98	17.3909	0.0169	0.0512
149	SLU 82	-0.13	0.17	56.95	17.3828	0.0168	0.0464
149	SLU 83	-0.15	0.19	57.57	17.5673	0.0171	0.0523
149	SLU 84	-0.14	0.17	57.54	17.5592	0.017	0.0476
149	SLE RA 1	-0.09	0.06	37.97	11.5865	0.0114	0.0325
149	SLE RA 2	-0.08	0.03	37.94	11.5775	0.0114	0.0273
149	SLE RA 3	-0.09	0.07	38.53	11.7572	0.0116	0.0331
149	SLE RA 4	-0.09	0.05	38.51	11.7518	0.0116	0.0299
149	SLE RA 5	-0.08	0.03	38.33	11.6951	0.0115	0.028
149	SLE RA 6	-0.1	0.07	38.92	11.8749	0.0117	0.0339
149	SLE RA 7	-0.09	0.05	38.9	11.8694	0.0117	0.0307
149	SLE RA 8	-0.1	0.06	38.75	11.8218	0.0117	0.0341
149	SLE RA 9	-0.09	0.05	38.73	11.8164	0.0117	0.0309
149	SLE RA 10	-0.09	0.08	40.98	12.5072	0.0122	0.0314
149	SLE RA 11	-0.11	0.11	41.57	12.6869	0.0124	0.0372
149	SLE RA 12	-0.1	0.09	41.55	12.6815	0.0124	0.034
149	SLE RA 13	-0.09	0.08	41.37	12.6248	0.0123	0.0321
149	SLE RA 14	-0.11	0.11	41.96	12.8045	0.0125	0.038
149	SLE RA 15	-0.1	0.1	41.94	12.7991	0.0125	0.0348
149	SLE RA 16	-0.11	0.1	41.79	12.7514	0.0125	0.0382
149	SLE RA 17	-0.1	0.09	41.77	12.746	0.0125	0.035
149	SLE RA 18	-0.11	0.12	42.32	12.9146	0.0126	0.0384
149	SLE RA 19	-0.1	0.1	42.3	12.9092	0.0126	0.0352
149	SLE RA 20	-0.11	0.12	42.71	13.0322	0.0127	0.0391
149	SLE RA 21	-0.1	0.1	42.69	13.0268	0.0127	0.036
149	SLE FR 1	-0.09	0.06	37.97	11.5865	0.0114	0.0325
149	SLE FR 2	-0.09	0.05	37.96	11.5847	0.0114	0.0315
149	SLE FR 3	-0.09	0.06	38.13	11.6336	0.0115	0.0328
149	SLE FR 4	-0.09	0.07	39.27	11.9832	0.0118	0.0332
149	SLE FR 5	-0.1	0.07	39.43	12.032	0.0118	0.0346
149	SLE FR 6	-0.1	0.09	40.14	12.2506	0.012	0.0355
149	SLE QP 1	-0.09	0.06	37.97	11.5865	0.0114	0.0325
149	SLE QP 2	-0.1	0.07	39.28	11.985	0.0118	0.0343
149	SLD 1	3.43	0.4	39.44	12.0272	0.0138	-1.1263
149	SLD 2	3.79	0.38	39.43	12.028	0.013	-1.2531
149	SLD 3	3.22	-0.59	38.19	11.6898	0.0132	-1.2
149	SLD 4	3.58	-0.61	38.18	11.6905	0.0124	-1.3268
149	SLD 5	1.21	1.68	41.23	12.5093	0.0135	-0.1796
149	SLD 6	1.45	1.67	41.22	12.5098	0.0129	-0.2629
149	SLD 7	0.51	-1.62	37.05	11.3845	0.0114	-0.425
149	SLD 8	0.75	-1.64	37.05	11.385	0.0109	-0.5084
149	SLD 9	-0.95	1.79	41.51	12.5849	0.0127	0.5769
149	SLD 10	-0.71	1.77	41.5	12.5854	0.0121	0.4936
149	SLD 11	-1.65	-1.52	37.33	11.4602	0.0106	0.3315
149	SLD 12	-1.41	-1.53	37.32	11.4606	0.0101	0.2481
149	SLD 13	-3.78	0.76	40.37	12.2794	0.0112	1.3954
149	SLD 14	-3.41	0.74	40.36	12.2801	0.0104	1.2685
149	SLD 15	-3.99	-0.23	39.12	11.9419	0.0106	1.3217
149	SLD 16	-3.62	-0.26	39.11	11.9427	0.0098	1.1949
149	SLV 1	8.15	0.81	39.62	12.0716	0.0164	-2.6821
149	SLV 2	9	0.75	39.6	12.0733	0.0145	-2.9774
149	SLV 3	7.66	-1.44	36.78	11.3069	0.015	-2.8538
149	SLV 4	8.51	-1.49	36.76	11.3086	0.0131	-3.1492
149	SLV 5	2.98	3.71	43.69	13.1704	0.0156	-0.4691
149	SLV 6	3.52	3.67	43.67	13.1715	0.0144	-0.6599
149	SLV 7	1.34	-3.77	34.23	10.6215	0.011	-1.0415
149	SLV 8	1.89	-3.81	34.21	10.6226	0.0098	-1.2323
149	SLV 9	-2.08	3.96	44.34	13.3473	0.0138	1.3008





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
149	SLV 10	-1.54	3.92	44.32	13.3485	0.0126	1.1101
149	SLV 11	-3.72	-3.52	34.88	10.7984	0.0092	0.7284
149	SLV 12	-3.17	-3.56	34.86	10.7995	0.008	0.5377
149	SLV 13	-8.7	1.64	41.79	12.6613	0.0104	3.2177
149	SLV 14	-7.86	1.58	41.77	12.663	0.0085	2.9224
149	SLV 15	-9.19	-0.61	38.95	11.8966	0.009	3.046
149	SLV 16	-8.35	-0.66	38.93	11.8983	0.0071	2.7507
149	CRTFP Ux+	0	0	0	0	0	0
149	CRTFP Ux-	0	0	0	0	0	0
149	CRTFP Uy+	0	0	0	0	0	0
149	CRTFP Uy-	0	0	0	0	0	0
150	SLU 1	-0.09	0.03	36.63	11.143	0.002	0.0301
150	SLU 2	-0.06	0	36.58	11.1301	0.002	0.0222
150	SLU 3	-0.09	0.05	37.47	11.397	0.002	0.0309
150	SLU 4	-0.08	0.02	37.44	11.3892	0.002	0.0262
150	SLU 5	-0.07	0	37.16	11.3042	0.002	0.0234
150	SLU 6	-0.09	0.05	38.05	11.5711	0.0021	0.0321
150	SLU 7	-0.08	0.03	38.02	11.5634	0.0021	0.0273
150	SLU 8	-0.09	0.04	37.79	11.4913	0.0022	0.0324
150	SLU 9	-0.08	0.01	37.76	11.4835	0.0021	0.0277
150	SLU 10	-0.08	0.06	41.13	12.5136	0.0021	0.0288
150	SLU 11	-0.11	0.11	42.01	12.7805	0.0022	0.0375
150	SLU 12	-0.09	0.09	41.98	12.7728	0.0021	0.0328
150	SLU 13	-0.09	0.06	41.7	12.6878	0.0022	0.03
150	SLU 14	-0.11	0.11	42.59	12.9547	0.0022	0.0387
150	SLU 15	-0.1	0.09	42.56	12.9469	0.0022	0.0339
150	SLU 16	-0.11	0.1	42.33	12.8748	0.0023	0.039
150	SLU 17	-0.1	0.08	42.3	12.8671	0.0023	0.0343
150	SLU 18	-0.11	0.12	43.12	13.1194	0.0022	0.0395
150	SLU 19	-0.1	0.1	43.09	13.1117	0.0022	0.0348
150	SLU 20	-0.12	0.13	43.7	13.2936	0.0023	0.0407
150	SLU 21	-0.1	0.1	43.67	13.2859	0.0022	0.0359
150	SLU 22	-0.09	0.12	40.47	12.3119	0.002	0.0302
150	SLU 23	-0.06	0.09	40.42	12.299	0.0019	0.0223
150	SLU 24	-0.09	0.13	41.3	12.5659	0.002	0.031
150	SLU 25	-0.08	0.11	41.27	12.5582	0.002	0.0263
150	SLU 26	-0.07	0.09	41	12.4731	0.002	0.0235
150	SLU 27	-0.09	0.14	41.88	12.7401	0.0021	0.0322
150	SLU 28	-0.08	0.12	41.85	12.7323	0.0021	0.0275
150	SLU 29	-0.09	0.12	41.62	12.6602	0.0022	0.0325
150	SLU 30	-0.08	0.1	41.59	12.6525	0.0021	0.0278
150	SLU 31	-0.08	0.15	44.96	13.6825	0.0021	0.0289
150	SLU 32	-0.11	0.2	45.84	13.9494	0.0021	0.0376
150	SLU 33	-0.09	0.18	45.81	13.9417	0.0021	0.0329
150	SLU 34	-0.09	0.15	45.54	13.8567	0.0021	0.0301
150	SLU 35	-0.11	0.2	46.42	14.1236	0.0022	0.0388
150	SLU 36	-0.1	0.18	46.39	14.1159	0.0022	0.034
150	SLU 37	-0.11	0.19	46.16	14.0437	0.0023	0.0391
150	SLU 38	-0.1	0.17	46.14	14.036	0.0022	0.0344
150	SLU 39	-0.11	0.21	46.95	14.2884	0.0022	0.0396
150	SLU 40	-0.1	0.19	46.93	14.2806	0.0021	0.0349
150	SLU 41	-0.12	0.21	47.53	14.4625	0.0023	0.0408
150	SLU 42	-0.1	0.19	47.5	14.4548	0.0022	0.036
150	SLU 43	-0.11	0.01	46.31	14.0851	0.0026	0.0391
150	SLU 44	-0.09	-0.03	46.26	14.0722	0.0026	0.0312
150	SLU 45	-0.11	0.02	47.15	14.3391	0.0027	0.0399
150	SLU 46	-0.1	0	47.12	14.3314	0.0026	0.0352
150	SLU 47	-0.09	-0.02	46.84	14.2463	0.0027	0.0324
150	SLU 48	-0.12	0.03	47.72	14.5133	0.0027	0.0411
150	SLU 49	-0.1	0.01	47.69	14.5055	0.0027	0.0363
150	SLU 50	-0.12	0.01	47.47	14.4334	0.0028	0.0414
150	SLU 51	-0.11	-0.01	47.44	14.4257	0.0028	0.0367
150	SLU 52	-0.11	0.04	50.8	15.4557	0.0027	0.0378
150	SLU 53	-0.13	0.09	51.69	15.7226	0.0028	0.0465
150	SLU 54	-0.12	0.07	51.66	15.7149	0.0027	0.0418
150	SLU 55	-0.11	0.04	51.38	15.6299	0.0028	0.039
150	SLU 56	-0.14	0.09	52.27	15.8968	0.0029	0.0477
150	SLU 57	-0.12	0.07	52.24	15.889	0.0028	0.0429
150	SLU 58	-0.14	0.08	52.01	15.8169	0.0029	0.048
150	SLU 59	-0.12	0.06	51.98	15.8092	0.0029	0.0433
150	SLU 60	-0.14	0.1	52.8	16.0616	0.0028	0.0485
150	SLU 61	-0.13	0.08	52.77	16.0538	0.0028	0.0438
150	SLU 62	-0.14	0.1	53.38	16.2357	0.0029	0.0497
150	SLU 63	-0.13	0.08	53.35	16.228	0.0029	0.0449
150	SLU 64	-0.11	0.1	50.14	15.254	0.0026	0.0392
150	SLU 65	-0.09	0.06	50.09	15.2411	0.0026	0.0313
150	SLU 66	-0.12	0.11	50.98	15.508	0.0026	0.04
150	SLU 67	-0.1	0.09	50.95	15.5003	0.0026	0.0353
150	SLU 68	-0.09	0.07	50.67	15.4153	0.0026	0.0325
150	SLU 69	-0.12	0.12	51.56	15.6822	0.0027	0.0412
150	SLU 70	-0.1	0.1	51.53	15.6744	0.0027	0.0365
150	SLU 71	-0.12	0.1	51.3	15.6023	0.0028	0.0415
150	SLU 72	-0.11	0.08	51.27	15.5946	0.0027	0.0368
150	SLU 73	-0.11	0.13	54.64	16.6246	0.0027	0.0379
150	SLU 74	-0.13	0.18	55.52	16.8916	0.0028	0.0466
150	SLU 75	-0.12	0.16	55.49	16.8838	0.0027	0.0419
150	SLU 76	-0.11	0.13	55.21	16.7988	0.0028	0.0391
150	SLU 77	-0.14	0.18	56.1	17.0657	0.0028	0.0478
150	SLU 78	-0.12	0.16	56.07	17.058	0.0028	0.043
150	SLU 79	-0.14	0.17	55.84	16.9859	0.0029	0.0481



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
150	SLU 80	-0.12	0.15	55.81	16.9781	0.0029	0.0434
150	SLU 81	-0.14	0.19	56.63	17.2305	0.0028	0.0486
150	SLU 82	-0.13	0.17	56.6	17.2227	0.0028	0.0439
150	SLU 83	-0.14	0.19	57.21	17.4046	0.0029	0.0498
150	SLU 84	-0.13	0.17	57.18	17.3969	0.0028	0.045
150	SLE RA 1	-0.09	0.06	37.73	11.4769	0.002	0.0302
150	SLE RA 2	-0.07	0.03	37.7	11.4683	0.002	0.0249
150	SLE RA 3	-0.09	0.07	38.29	11.6463	0.002	0.0307
150	SLE RA 4	-0.08	0.05	38.27	11.6411	0.002	0.0275
150	SLE RA 5	-0.07	0.03	38.08	11.5844	0.002	0.0257
150	SLE RA 6	-0.09	0.07	38.67	11.7624	0.0021	0.0315
150	SLE RA 7	-0.08	0.05	38.65	11.7572	0.0021	0.0283
150	SLE RA 8	-0.09	0.06	38.5	11.7092	0.0021	0.0317
150	SLE RA 9	-0.08	0.05	38.48	11.704	0.0021	0.0285
150	SLE RA 10	-0.08	0.08	40.72	12.3907	0.0021	0.0293
150	SLE RA 11	-0.1	0.11	41.31	12.5686	0.0021	0.0351
150	SLE RA 12	-0.09	0.1	41.29	12.5635	0.0021	0.0319
150	SLE RA 13	-0.09	0.08	41.11	12.5068	0.0021	0.03
150	SLE RA 14	-0.1	0.11	41.7	12.6848	0.0022	0.0358
150	SLE RA 15	-0.09	0.1	41.68	12.6796	0.0021	0.0327
150	SLE RA 16	-0.1	0.1	41.53	12.6315	0.0022	0.0361
150	SLE RA 17	-0.09	0.09	41.51	12.6264	0.0022	0.0329
150	SLE RA 18	-0.1	0.12	42.05	12.7946	0.0021	0.0364
150	SLE RA 19	-0.1	0.1	42.03	12.7894	0.0021	0.0333
150	SLE RA 20	-0.11	0.12	42.44	12.9107	0.0022	0.0372
150	SLE RA 21	-0.1	0.11	42.42	12.9055	0.0022	0.034
150	SLE FR 1	-0.09	0.06	37.73	11.4769	0.002	0.0302
150	SLE FR 2	-0.08	0.05	37.72	11.4752	0.002	0.0291
150	SLE FR 3	-0.09	0.06	37.88	11.5234	0.002	0.0305
150	SLE FR 4	-0.09	0.07	39.02	11.8705	0.002	0.031
150	SLE FR 5	-0.09	0.07	39.18	11.9187	0.0021	0.0323
150	SLE FR 6	-0.1	0.09	39.89	12.1358	0.0021	0.0333
150	SLE QP 1	-0.09	0.06	37.73	11.4769	0.002	0.0302
150	SLE QP 2	-0.09	0.07	39.03	11.8722	0.0021	0.032
150	SLD 1	3.43	0.4	39.14	11.9022	0.0039	-1.2008
150	SLD 2	3.79	0.39	39.15	11.9116	0.0031	-1.3275
150	SLD 3	3.22	-0.59	37.9	11.5693	0.0035	-1.1273
150	SLD 4	3.58	-0.61	37.92	11.5787	0.0027	-1.254
150	SLD 5	1.22	1.68	40.93	12.3845	0.0033	-0.4267
150	SLD 6	1.46	1.67	40.94	12.3907	0.0028	-0.51
150	SLD 7	0.52	-1.63	36.81	11.2747	0.0021	-0.1816
150	SLD 8	0.76	-1.64	36.82	11.2809	0.0016	-0.2649
150	SLD 9	-0.94	1.79	41.23	12.4635	0.0025	0.3289
150	SLD 10	-0.7	1.78	41.24	12.4697	0.002	0.2457
150	SLD 11	-1.64	-1.53	37.11	11.3538	0.0013	0.574
150	SLD 12	-1.4	-1.53	37.12	11.36	0.0008	0.4908
150	SLD 13	-3.77	0.75	40.14	12.1658	0.0014	1.318
150	SLD 14	-3.4	0.74	40.16	12.1752	0.0006	1.1914
150	SLD 15	-3.98	-0.24	38.9	11.8329	0.001	1.3916
150	SLD 16	-3.61	-0.25	38.92	11.8423	0.0002	1.2649
150	SLV 1	8.15	0.81	39.24	11.9303	0.0063	-2.8529
150	SLV 2	9	0.77	39.28	11.9522	0.0045	-3.1478
150	SLV 3	7.66	-1.44	36.43	11.1758	0.0055	-2.6814
150	SLV 4	8.51	-1.48	36.48	11.1977	0.0037	-2.9764
150	SLV 5	2.98	3.71	43.33	13.0302	0.0049	-1.0425
150	SLV 6	3.52	3.69	43.36	13.0444	0.0037	-1.233
150	SLV 7	1.34	-3.79	33.99	10.5151	0.0022	-0.4709
150	SLV 8	1.89	-3.81	34.02	10.5293	0.001	-0.6614
150	SLV 9	-2.07	3.96	44.03	13.2152	0.0031	0.7255
150	SLV 10	-1.53	3.94	44.06	13.2293	0.0019	0.535
150	SLV 11	-3.71	-3.54	34.69	10.7001	0.0004	1.2971
150	SLV 12	-3.16	-3.56	34.72	10.7143	-0.0008	1.1066
150	SLV 13	-8.69	1.63	41.58	12.5468	0.0005	3.0404
150	SLV 14	-7.85	1.59	41.62	12.5687	-0.0014	2.7455
150	SLV 15	-9.18	-0.63	38.77	11.7922	-0.0004	3.2119
150	SLV 16	-8.34	-0.66	38.82	11.8142	-0.0022	2.9169
150	CRTFP Ux+	0	0	0	0	0	0
150	CRTFP Ux-	0	0	0	0	0	0
150	CRTFP Uy+	0	0	0	0	0	0
150	CRTFP Uy-	0	0	0	0	0	0
151	SLU 1	-0.08	0.02	36.72	11.2849	-0.0066	0.0273
151	SLU 2	-0.06	-0.01	36.67	11.2724	-0.0067	0.0194
151	SLU 3	-0.08	0.03	37.56	11.5427	-0.0068	0.028
151	SLU 4	-0.07	0.01	37.53	11.5352	-0.0068	0.0233
151	SLU 5	-0.06	-0.01	37.25	11.4483	-0.0067	0.0205
151	SLU 6	-0.08	0.04	38.14	11.7186	-0.0069	0.0291
151	SLU 7	-0.07	0.02	38.11	11.7111	-0.0069	0.0244
151	SLU 8	-0.09	0.02	37.88	11.6368	-0.0067	0.0295
151	SLU 9	-0.07	0	37.85	11.6292	-0.0068	0.0248
151	SLU 10	-0.08	0.05	41.23	12.6757	-0.0075	0.0264
151	SLU 11	-0.1	0.1	42.11	12.946	-0.0077	0.035
151	SLU 12	-0.09	0.08	42.09	12.9385	-0.0077	0.0303
151	SLU 13	-0.08	0.05	41.81	12.8516	-0.0076	0.0275
151	SLU 14	-0.1	0.1	42.69	13.1219	-0.0077	0.0361
151	SLU 15	-0.09	0.08	42.66	13.1144	-0.0078	0.0314
151	SLU 16	-0.11	0.09	42.43	13.0401	-0.0076	0.0365
151	SLU 17	-0.09	0.07	42.4	13.0326	-0.0076	0.0317
151	SLU 18	-0.11	0.11	43.23	13.2897	-0.0079	0.0372
151	SLU 19	-0.09	0.09	43.2	13.2821	-0.0079	0.0325
151	SLU 20	-0.11	0.11	43.8	13.4656	-0.0079	0.0383



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
151	SLU 21	-0.1	0.09	43.78	13.4581	-0.0079	0.0336
151	SLU 22	-0.08	0.11	40.57	12.4728	-0.0076	0.0271
151	SLU 23	-0.06	0.07	40.52	12.4603	-0.0076	0.0192
151	SLU 24	-0.08	0.12	41.41	12.7306	-0.0078	0.0278
151	SLU 25	-0.07	0.1	41.38	12.723	-0.0078	0.0231
151	SLU 26	-0.06	0.08	41.1	12.6362	-0.0077	0.0203
151	SLU 27	-0.08	0.12	41.99	12.9065	-0.0078	0.0289
151	SLU 28	-0.07	0.1	41.96	12.899	-0.0078	0.0242
151	SLU 29	-0.09	0.11	41.73	12.8246	-0.0077	0.0293
151	SLU 30	-0.07	0.09	41.7	12.8171	-0.0077	0.0246
151	SLU 31	-0.08	0.14	45.08	13.8636	-0.0085	0.0262
151	SLU 32	-0.1	0.19	45.96	14.1339	-0.0086	0.0348
151	SLU 33	-0.09	0.17	45.94	14.1264	-0.0086	0.0301
151	SLU 34	-0.08	0.14	45.66	14.0395	-0.0085	0.0273
151	SLU 35	-0.1	0.19	46.54	14.3098	-0.0087	0.0359
151	SLU 36	-0.09	0.17	46.51	14.3023	-0.0087	0.0312
151	SLU 37	-0.11	0.18	46.28	14.2279	-0.0086	0.0363
151	SLU 38	-0.09	0.16	46.25	14.2204	-0.0086	0.0315
151	SLU 39	-0.11	0.2	47.08	14.4775	-0.0088	0.037
151	SLU 40	-0.09	0.18	47.05	14.47	-0.0088	0.0323
151	SLU 41	-0.11	0.2	47.66	14.6534	-0.0089	0.0381
151	SLU 42	-0.1	0.18	47.63	14.6459	-0.0089	0.0334
151	SLU 43	-0.1	0	46.42	14.2631	-0.0083	0.0355
151	SLU 44	-0.08	-0.04	46.37	14.2506	-0.0083	0.0276
151	SLU 45	-0.11	0.01	47.25	14.5209	-0.0085	0.0363
151	SLU 46	-0.09	-0.01	47.23	14.5134	-0.0085	0.0315
151	SLU 47	-0.08	-0.04	46.95	14.4265	-0.0084	0.0287
151	SLU 48	-0.11	0.01	47.83	14.6968	-0.0085	0.0374
151	SLU 49	-0.1	-0.01	47.8	14.6893	-0.0085	0.0327
151	SLU 50	-0.11	0	47.57	14.615	-0.0084	0.0377
151	SLU 51	-0.1	-0.02	47.54	14.6075	-0.0084	0.033
151	SLU 52	-0.1	0.03	50.92	15.6539	-0.0092	0.0346
151	SLU 53	-0.13	0.07	51.81	15.9242	-0.0093	0.0432
151	SLU 54	-0.11	0.05	51.78	15.9167	-0.0093	0.0385
151	SLU 55	-0.1	0.03	51.5	15.8298	-0.0093	0.0357
151	SLU 56	-0.13	0.08	52.39	16.1001	-0.0094	0.0444
151	SLU 57	-0.12	0.06	52.36	16.0926	-0.0094	0.0396
151	SLU 58	-0.13	0.06	52.13	16.0183	-0.0093	0.0447
151	SLU 59	-0.12	0.04	52.1	16.0108	-0.0093	0.04
151	SLU 60	-0.13	0.09	52.92	16.2679	-0.0095	0.0455
151	SLU 61	-0.12	0.07	52.89	16.2604	-0.0095	0.0408
151	SLU 62	-0.14	0.09	53.5	16.4438	-0.0096	0.0466
151	SLU 63	-0.12	0.07	53.47	16.4363	-0.0096	0.0419
151	SLU 64	-0.1	0.08	50.27	15.451	-0.0092	0.0353
151	SLU 65	-0.08	0.05	50.22	15.4385	-0.0093	0.0274
151	SLU 66	-0.1	0.1	51.11	15.7088	-0.0094	0.0361
151	SLU 67	-0.09	0.08	51.08	15.7012	-0.0094	0.0313
151	SLU 68	-0.08	0.05	50.8	15.6144	-0.0093	0.0285
151	SLU 69	-0.11	0.1	51.68	15.8847	-0.0095	0.0372
151	SLU 70	-0.09	0.08	51.66	15.8772	-0.0095	0.0325
151	SLU 71	-0.11	0.09	51.42	15.8028	-0.0094	0.0375
151	SLU 72	-0.1	0.07	51.39	15.7953	-0.0094	0.0328
151	SLU 73	-0.1	0.11	54.77	16.8418	-0.0101	0.0344
151	SLU 74	-0.13	0.16	55.66	17.1121	-0.0103	0.043
151	SLU 75	-0.11	0.14	55.63	17.1046	-0.0103	0.0383
151	SLU 76	-0.1	0.12	55.35	17.0177	-0.0102	0.0355
151	SLU 77	-0.13	0.16	56.24	17.288	-0.0103	0.0442
151	SLU 78	-0.11	0.14	56.21	17.2805	-0.0104	0.0394
151	SLU 79	-0.13	0.15	55.98	17.2061	-0.0102	0.0445
151	SLU 80	-0.12	0.13	55.95	17.1986	-0.0102	0.0398
151	SLU 81	-0.13	0.17	56.77	17.4557	-0.0105	0.0453
151	SLU 82	-0.12	0.15	56.75	17.4482	-0.0105	0.0405
151	SLU 83	-0.13	0.18	57.35	17.6316	-0.0105	0.0464
151	SLU 84	-0.12	0.16	57.32	17.6241	-0.0106	0.0417
151	SLE RA 1	-0.08	0.04	37.82	11.6243	-0.0069	0.0272
151	SLE RA 2	-0.06	0.02	37.79	11.616	-0.0069	0.0219
151	SLE RA 3	-0.08	0.05	38.38	11.7962	-0.007	0.0277
151	SLE RA 4	-0.07	0.04	38.36	11.7911	-0.007	0.0246
151	SLE RA 5	-0.07	0.02	38.17	11.7332	-0.007	0.0227
151	SLE RA 6	-0.08	0.06	38.76	11.9134	-0.0071	0.0284
151	SLE RA 7	-0.07	0.04	38.75	11.9084	-0.0071	0.0253
151	SLE RA 8	-0.08	0.05	38.59	11.8589	-0.007	0.0287
151	SLE RA 9	-0.07	0.03	38.57	11.8539	-0.007	0.0255
151	SLE RA 10	-0.08	0.06	40.83	12.5515	-0.0075	0.0266
151	SLE RA 11	-0.09	0.1	41.42	12.7317	-0.0076	0.0324
151	SLE RA 12	-0.09	0.08	41.4	12.7267	-0.0076	0.0292
151	SLE RA 13	-0.08	0.07	41.21	12.6688	-0.0075	0.0273
151	SLE RA 14	-0.1	0.1	41.8	12.849	-0.0076	0.0331
151	SLE RA 15	-0.09	0.08	41.78	12.844	-0.0076	0.03
151	SLE RA 16	-0.1	0.09	41.63	12.7944	-0.0076	0.0333
151	SLE RA 17	-0.09	0.08	41.61	12.7894	-0.0076	0.0302
151	SLE RA 18	-0.1	0.11	42.16	12.9608	-0.0077	0.0338
151	SLE RA 19	-0.09	0.09	42.14	12.9558	-0.0077	0.0307
151	SLE RA 20	-0.1	0.11	42.54	13.0781	-0.0078	0.0346
151	SLE RA 21	-0.09	0.09	42.52	13.0731	-0.0078	0.0314
151	SLE FR 1	-0.08	0.04	37.82	11.6243	-0.0069	0.0272
151	SLE FR 2	-0.08	0.04	37.81	11.6226	-0.0069	0.0261
151	SLE FR 3	-0.08	0.05	37.97	11.6712	-0.0069	0.0275
151	SLE FR 4	-0.08	0.06	39.12	12.0236	-0.0071	0.0281
151	SLE FR 5	-0.09	0.06	39.28	12.0722	-0.0072	0.0295



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
151	SLE FR 6	-0.09	0.08	39.99	12.2925	-0.0073	0.0305
151	SLE QP 1	-0.08	0.04	37.82	11.6243	-0.0069	0.0272
151	SLE QP 2	-0.08	0.06	39.12	12.0252	-0.0071	0.0292
151	SLD 1	3.43	0.4	39.17	12.041	-0.0052	-1.2014
151	SLD 2	3.79	0.39	39.22	12.0588	-0.006	-1.3278
151	SLD 3	3.22	-0.6	37.94	11.7066	-0.005	-1.128
151	SLD 4	3.59	-0.6	37.99	11.7244	-0.0058	-1.2545
151	SLD 5	1.22	1.68	41	12.5341	-0.0067	-0.4287
151	SLD 6	1.46	1.68	41.03	12.5458	-0.0072	-0.5118
151	SLD 7	0.52	-1.65	36.89	11.4192	-0.0061	-0.1841
151	SLD 8	0.76	-1.65	36.92	11.4309	-0.0066	-0.2672
151	SLD 9	-0.93	1.78	41.32	12.6196	-0.0077	0.3256
151	SLD 10	-0.69	1.78	41.35	12.6313	-0.0082	0.2425
151	SLD 11	-1.63	-1.55	37.22	11.5047	-0.007	0.5701
151	SLD 12	-1.39	-1.55	37.25	11.5164	-0.0075	0.487
151	SLD 13	-3.75	0.73	40.26	12.3261	-0.0085	1.3128
151	SLD 14	-3.39	0.73	40.31	12.3439	-0.0093	1.1864
151	SLD 15	-3.96	-0.27	39.03	11.9917	-0.0083	1.3862
151	SLD 16	-3.6	-0.27	39.07	12.0095	-0.0091	1.2598
151	SLV 1	8.15	0.81	39.19	12.0502	-0.0026	-2.8504
151	SLV 2	8.99	0.8	39.3	12.0917	-0.0045	-3.1448
151	SLV 3	7.66	-1.45	36.4	11.2921	-0.0022	-2.6793
151	SLV 4	8.5	-1.46	36.51	11.3336	-0.004	-2.9737
151	SLV 5	2.98	3.71	43.36	13.1754	-0.0062	-1.0432
151	SLV 6	3.52	3.71	43.43	13.2021	-0.0074	-1.2334
151	SLV 7	1.35	-3.82	34.05	10.6483	-0.0046	-0.4729
151	SLV 8	1.89	-3.82	34.12	10.6751	-0.0058	-0.6631
151	SLV 9	-2.06	3.95	44.12	13.3754	-0.0085	0.7215
151	SLV 10	-1.52	3.94	44.19	13.4021	-0.0097	0.5313
151	SLV 11	-3.69	-3.58	34.82	10.8484	-0.0069	1.2918
151	SLV 12	-3.15	-3.59	34.89	10.8751	-0.0081	1.1016
151	SLV 13	-8.67	1.59	41.74	12.7169	-0.0103	3.0321
151	SLV 14	-7.83	1.58	41.85	12.7584	-0.0121	2.7376
151	SLV 15	-9.16	-0.67	38.94	11.9588	-0.0098	3.2032
151	SLV 16	-8.32	-0.68	39.06	12.0003	-0.0116	2.9087
151	CRTFP Ux+	0	0	0	0	0	0
151	CRTFP Ux-	0	0	0	0	0	0
151	CRTFP Uy+	0	0	0	0	0	0
151	CRTFP Uy-	0	0	0	0	0	0
152	SLU 1	-0.07	0	37.07	11.644	-0.0126	0.0238
152	SLU 2	-0.05	-0.04	37.03	11.6316	-0.0126	0.0159
152	SLU 3	-0.07	0.01	37.92	11.9104	-0.0129	0.0245
152	SLU 4	-0.06	-0.01	37.89	11.903	-0.0129	0.0198
152	SLU 5	-0.05	-0.03	37.61	11.8128	-0.0128	0.017
152	SLU 6	-0.08	0.01	38.5	12.0917	-0.013	0.0256
152	SLU 7	-0.06	-0.01	38.47	12.0843	-0.0131	0.0209
152	SLU 8	-0.08	0	38.24	12.0064	-0.0129	0.0259
152	SLU 9	-0.06	-0.02	38.21	11.999	-0.0129	0.0212
152	SLU 10	-0.07	0.02	41.62	13.0806	-0.0141	0.0233
152	SLU 11	-0.09	0.07	42.52	13.3595	-0.0144	0.0318
152	SLU 12	-0.08	0.05	42.49	13.3521	-0.0144	0.0271
152	SLU 13	-0.07	0.02	42.21	13.2619	-0.0142	0.0244
152	SLU 14	-0.1	0.07	43.1	13.5407	-0.0145	0.0329
152	SLU 15	-0.08	0.05	43.07	13.5333	-0.0145	0.0282
152	SLU 16	-0.1	0.06	42.83	13.4555	-0.0144	0.0333
152	SLU 17	-0.08	0.04	42.81	13.4481	-0.0144	0.0286
152	SLU 18	-0.1	0.08	43.64	13.714	-0.0147	0.0343
152	SLU 19	-0.09	0.06	43.61	13.7066	-0.0147	0.0296
152	SLU 20	-0.1	0.08	44.22	13.8953	-0.0148	0.0354
152	SLU 21	-0.09	0.06	44.19	13.8878	-0.0149	0.0307
152	SLU 22	-0.07	0.08	40.97	12.8738	-0.0141	0.0232
152	SLU 23	-0.05	0.05	40.92	12.8614	-0.0142	0.0154
152	SLU 24	-0.07	0.1	41.82	13.1402	-0.0144	0.0239
152	SLU 25	-0.06	0.08	41.79	13.1328	-0.0145	0.0192
152	SLU 26	-0.05	0.05	41.51	13.0426	-0.0143	0.0165
152	SLU 27	-0.07	0.1	42.4	13.3215	-0.0146	0.025
152	SLU 28	-0.06	0.08	42.37	13.3141	-0.0146	0.0203
152	SLU 29	-0.08	0.09	42.13	13.2362	-0.0145	0.0254
152	SLU 30	-0.06	0.07	42.11	13.2288	-0.0145	0.0207
152	SLU 31	-0.07	0.11	45.52	14.3104	-0.0156	0.0227
152	SLU 32	-0.09	0.15	46.41	14.5893	-0.0159	0.0313
152	SLU 33	-0.08	0.13	46.39	14.5819	-0.0159	0.0266
152	SLU 34	-0.07	0.11	46.1	14.4917	-0.0158	0.0238
152	SLU 35	-0.1	0.16	47	14.7705	-0.0161	0.0324
152	SLU 36	-0.08	0.14	46.97	14.7631	-0.0161	0.0277
152	SLU 37	-0.1	0.14	46.73	14.6853	-0.0159	0.0327
152	SLU 38	-0.08	0.12	46.7	14.6778	-0.0159	0.028
152	SLU 39	-0.1	0.17	47.54	14.9438	-0.0162	0.0337
152	SLU 40	-0.09	0.15	47.51	14.9364	-0.0163	0.029
152	SLU 41	-0.1	0.17	48.12	15.125	-0.0164	0.0348
152	SLU 42	-0.09	0.15	48.09	15.1176	-0.0164	0.0301
152	SLU 43	-0.09	-0.03	46.86	14.7155	-0.0158	0.0311
152	SLU 44	-0.07	0.07	46.81	14.7032	-0.0159	0.0233
152	SLU 45	-0.09	-0.02	47.71	14.982	-0.0161	0.0318
152	SLU 46	-0.08	-0.04	47.68	14.9746	-0.0162	0.0271
152	SLU 47	-0.07	0.07	47.39	14.8844	-0.016	0.0244
152	SLU 48	-0.1	-0.02	48.29	15.1632	-0.0163	0.0329
152	SLU 49	-0.08	-0.04	48.26	15.1558	-0.0163	0.0282
152	SLU 50	-0.1	-0.03	48.02	15.078	-0.0161	0.0333
152	SLU 51	-0.08	-0.05	47.99	15.0706	-0.0162	0.0286



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
152	SLU 52	-0.09	-0.01	51.41	16.1522	-0.0173	0.0306
152	SLU 53	-0.12	0.04	52.3	16.431	-0.0176	0.0392
152	SLU 54	-0.1	0.02	52.28	16.4236	-0.0176	0.0345
152	SLU 55	-0.09	-0.01	51.99	16.3334	-0.0175	0.0317
152	SLU 56	-0.12	0.04	52.89	16.6123	-0.0178	0.0403
152	SLU 57	-0.11	0.02	52.86	16.6048	-0.0178	0.0356
152	SLU 58	-0.12	0.03	52.62	16.527	-0.0176	0.0406
152	SLU 59	-0.11	0.01	52.59	16.5196	-0.0176	0.0359
152	SLU 60	-0.12	0.05	53.43	16.7856	-0.0179	0.0416
152	SLU 61	-0.11	0.03	53.4	16.7782	-0.0179	0.0369
152	SLU 62	-0.13	0.05	54.01	16.9668	-0.0181	0.0427
152	SLU 63	-0.11	0.03	53.98	16.9594	-0.0181	0.038
152	SLU 64	-0.09	0.05	50.76	15.9453	-0.0174	0.0305
152	SLU 65	-0.07	0.02	50.71	15.9329	-0.0174	0.0227
152	SLU 66	-0.09	0.07	51.6	16.2118	-0.0177	0.0313
152	SLU 67	-0.08	0.05	51.58	16.2044	-0.0177	0.0266
152	SLU 68	-0.07	0.02	51.29	16.1142	-0.0176	0.0238
152	SLU 69	-0.1	0.07	52.18	16.393	-0.0178	0.0323
152	SLU 70	-0.08	0.05	52.16	16.3856	-0.0179	0.0276
152	SLU 71	-0.1	0.06	51.92	16.3078	-0.0177	0.0327
152	SLU 72	-0.08	0.04	51.89	16.3004	-0.0177	0.028
152	SLU 73	-0.09	0.08	55.31	17.382	-0.0189	0.0301
152	SLU 74	-0.11	0.12	56.2	17.6608	-0.0192	0.0386
152	SLU 75	-0.1	0.1	56.17	17.6534	-0.0192	0.0339
152	SLU 76	-0.09	0.08	55.89	17.5632	-0.019	0.0311
152	SLU 77	-0.12	0.13	56.78	17.8421	-0.0193	0.0397
152	SLU 78	-0.1	0.11	56.75	17.8346	-0.0193	0.035
152	SLU 79	-0.12	0.11	56.52	17.7568	-0.0192	0.0401
152	SLU 80	-0.1	0.09	56.49	17.7494	-0.0192	0.0354
152	SLU 81	-0.12	0.14	57.32	18.0154	-0.0195	0.0411
152	SLU 82	-0.11	0.12	57.3	18.0079	-0.0195	0.0364
152	SLU 83	-0.12	0.14	57.91	18.1966	-0.0196	0.0421
152	SLU 84	-0.11	0.12	57.88	18.1892	-0.0197	0.0374
152	SLE RA 1	-0.07	0.02	38.19	11.9953	-0.013	0.0236
152	SLE RA 2	-0.06	0	38.16	11.9871	-0.0131	0.0184
152	SLE RA 3	-0.07	0.03	38.75	12.173	-0.0132	0.0241
152	SLE RA 4	-0.06	0.02	38.73	12.168	-0.0132	0.021
152	SLE RA 5	-0.06	0	38.54	12.1079	-0.0132	0.0191
152	SLE RA 6	-0.07	0.03	39.14	12.2938	-0.0133	0.0248
152	SLE RA 7	-0.06	0.02	39.12	12.2889	-0.0134	0.0217
152	SLE RA 8	-0.07	0.02	38.96	12.237	-0.0132	0.0251
152	SLE RA 9	-0.07	0.01	38.94	12.232	-0.0133	0.0219
152	SLE RA 10	-0.07	0.04	41.22	12.9531	-0.014	0.0233
152	SLE RA 11	-0.09	0.07	41.82	13.139	-0.0142	0.029
152	SLE RA 12	-0.08	0.06	41.8	13.1341	-0.0142	0.0259
152	SLE RA 13	-0.07	0.04	41.61	13.0739	-0.0141	0.024
152	SLE RA 14	-0.09	0.07	42.2	13.2598	-0.0143	0.0297
152	SLE RA 15	-0.08	0.06	42.19	13.2549	-0.0143	0.0266
152	SLE RA 16	-0.09	0.06	42.03	13.203	-0.0142	0.03
152	SLE RA 17	-0.08	0.05	42.01	13.1981	-0.0142	0.0268
152	SLE RA 18	-0.09	0.08	42.56	13.3754	-0.0144	0.0306
152	SLE RA 19	-0.08	0.06	42.55	13.3704	-0.0144	0.0275
152	SLE RA 20	-0.09	0.08	42.95	13.4962	-0.0145	0.0313
152	SLE RA 21	-0.08	0.07	42.93	13.4913	-0.0145	0.0282
152	SLE FR 1	-0.07	0.02	38.19	11.9953	-0.013	0.0236
152	SLE FR 2	-0.07	0.02	38.18	11.9937	-0.013	0.0226
152	SLE FR 3	-0.07	0.02	38.34	12.0437	-0.0131	0.0239
152	SLE FR 4	-0.07	0.03	39.49	12.4077	-0.0135	0.0247
152	SLE FR 5	-0.08	0.04	39.65	12.4577	-0.0135	0.026
152	SLE FR 6	-0.08	0.05	40.38	12.6854	-0.0137	0.0271
152	SLE QP 1	-0.07	0.02	38.19	11.9953	-0.013	0.0236
152	SLE QP 2	-0.08	0.04	39.5	12.4094	-0.0134	0.0257
152	SLD 1	3.43	0.38	39.47	12.4047	-0.0108	-1.2017
152	SLD 2	3.79	0.39	39.54	12.4302	-0.0115	-1.3278
152	SLD 3	3.22	-0.62	38.23	12.0636	-0.0105	-1.1285
152	SLD 4	3.59	-0.61	38.31	12.0892	-0.0112	-1.2547
152	SLD 5	1.23	1.66	41.35	12.9206	-0.0129	-0.4309
152	SLD 6	1.47	1.66	41.4	12.9374	-0.0134	-0.5138
152	SLD 7	0.53	-1.68	37.23	11.7838	-0.012	-0.1871
152	SLD 8	0.77	-1.67	37.28	11.8006	-0.0125	-0.27
152	SLD 9	-0.92	1.75	41.72	13.0181	-0.0144	0.3215
152	SLD 10	-0.68	1.76	41.77	13.0349	-0.0149	0.2386
152	SLD 11	-1.62	-1.59	37.6	11.8813	-0.0135	0.5652
152	SLD 12	-1.38	-1.58	37.65	11.8981	-0.0139	0.4823
152	SLD 13	-3.74	0.69	40.69	12.7295	-0.0157	1.3061
152	SLD 14	-3.38	0.7	40.76	12.7551	-0.0164	1.18
152	SLD 15	-3.95	-0.31	39.46	12.3885	-0.0154	1.3793
152	SLD 16	-3.59	-0.3	39.53	12.414	-0.0161	1.2531
152	SLV 1	8.14	0.8	39.38	12.3863	-0.0072	-2.8464
152	SLV 2	8.98	0.82	39.56	12.4458	-0.0089	-3.1401
152	SLV 3	7.65	-1.47	36.59	11.6132	-0.0066	-2.6758
152	SLV 4	8.49	-1.45	36.76	11.6728	-0.0082	-2.9696
152	SLV 5	2.98	3.7	43.68	13.5646	-0.0123	-1.0438
152	SLV 6	3.52	3.71	43.79	13.6031	-0.0134	-1.2335
152	SLV 7	1.36	-3.86	34.35	10.9877	-0.0101	-0.4753
152	SLV 8	1.9	-3.84	34.46	11.0262	-0.0112	-0.665
152	SLV 9	-2.05	3.92	44.54	13.7925	-0.0157	0.7164
152	SLV 10	-1.51	3.93	44.65	13.831	-0.0168	0.5267
152	SLV 11	-3.68	-3.64	35.21	11.2156	-0.0135	1.285
152	SLV 12	-3.13	-3.62	35.32	11.2541	-0.0146	1.0952



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
152	SLV 13	-8.64	1.52	42.24	13.1459	-0.0186	3.021
152	SLV 14	-7.8	1.55	42.41	13.2055	-0.0203	2.7273
152	SLV 15	-9.13	-0.74	39.44	12.3729	-0.018	3.1916
152	SLV 16	-8.29	-0.72	39.62	12.4324	-0.0197	2.8978
152	CRTFP Ux+	0	0	0	0	0	0
152	CRTFP Ux-	0	0	0	0	0	0
152	CRTFP Uy+	0	0	0	0	0	0
152	CRTFP Uy-	0	0	0	0	0	0
154	SLU 1	-0.05	-0.03	33.43	10.8031	0.6125	0.0186
154	SLU 2	-0.03	-0.06	33.39	10.7921	0.6117	0.0122
154	SLU 3	-0.06	-0.02	34.2	11.0506	0.6265	0.019
154	SLU 4	-0.04	-0.04	34.18	11.0439	0.6261	0.0151
154	SLU 5	-0.04	-0.06	33.92	10.9601	0.6214	0.0131
154	SLU 6	-0.06	-0.02	34.72	11.2186	0.6361	0.0199
154	SLU 7	-0.05	-0.04	34.7	11.2119	0.6357	0.016
154	SLU 8	-0.06	-0.03	34.48	11.1391	0.6318	0.0204
154	SLU 9	-0.05	-0.05	34.46	11.1325	0.6313	0.0166
154	SLU 10	-0.05	-0.02	37.54	12.1354	0.6878	0.0181
154	SLU 11	-0.08	0.02	38.34	12.3938	0.7026	0.0249
154	SLU 12	-0.06	0.01	38.32	12.3872	0.7021	0.0211
154	SLU 13	-0.06	-0.02	38.06	12.3034	0.6974	0.0191
154	SLU 14	-0.08	0.02	38.86	12.5618	0.7122	0.0258
154	SLU 15	-0.07	0.01	38.84	12.5552	0.7118	0.022
154	SLU 16	-0.08	0.01	38.62	12.4824	0.7078	0.0264
154	SLU 17	-0.07	0	38.6	12.4758	0.7074	0.0225
154	SLU 18	-0.08	0.03	39.35	12.7221	0.7212	0.0271
154	SLU 19	-0.07	0.02	39.33	12.7154	0.7207	0.0233
154	SLU 20	-0.09	0.03	39.87	12.8901	0.7308	0.028
154	SLU 21	-0.07	0.02	39.85	12.8835	0.7303	0.0242
154	SLU 22	-0.05	0.04	36.95	11.9468	0.6769	0.0164
154	SLU 23	-0.03	0.01	36.91	11.9357	0.6761	0.01
154	SLU 24	-0.05	0.05	37.72	12.1942	0.6909	0.0168
154	SLU 25	-0.04	0.03	37.7	12.1876	0.6905	0.0129
154	SLU 26	-0.03	0.01	37.44	12.1037	0.6858	0.0109
154	SLU 27	-0.06	0.05	38.24	12.3622	0.7005	0.0177
154	SLU 28	-0.04	0.03	38.22	12.3556	0.7001	0.0138
154	SLU 29	-0.06	0.04	38	12.2828	0.6962	0.0182
154	SLU 30	-0.05	0.02	37.98	12.2762	0.6957	0.0144
154	SLU 31	-0.05	0.06	41.06	13.279	0.7522	0.016
154	SLU 32	-0.07	0.1	41.86	13.5375	0.767	0.0227
154	SLU 33	-0.06	0.08	41.84	13.5309	0.7665	0.0189
154	SLU 34	-0.05	0.06	41.58	13.447	0.7618	0.0169
154	SLU 35	-0.08	0.1	42.38	13.7055	0.7766	0.0237
154	SLU 36	-0.06	0.08	42.36	13.6989	0.7762	0.0198
154	SLU 37	-0.08	0.09	42.14	13.626	0.7722	0.0242
154	SLU 38	-0.07	0.07	42.12	13.6194	0.7718	0.0203
154	SLU 39	-0.08	0.11	42.87	13.8657	0.7856	0.0249
154	SLU 40	-0.07	0.09	42.85	13.8591	0.7851	0.0211
154	SLU 41	-0.08	0.11	43.39	14.0337	0.7952	0.0258
154	SLU 42	-0.07	0.09	43.37	14.0271	0.7947	0.022
154	SLU 43	-0.07	-0.07	42.26	13.6519	0.7742	0.0249
154	SLU 44	-0.05	-0.1	42.22	13.6409	0.7734	0.0185
154	SLU 45	-0.07	-0.06	43.02	13.8994	0.7882	0.0253
154	SLU 46	-0.06	-0.08	43	13.8928	0.7877	0.0214
154	SLU 47	-0.05	-0.1	42.74	13.8089	0.783	0.0194
154	SLU 48	-0.08	-0.06	43.55	14.0674	0.7978	0.0262
154	SLU 49	-0.06	-0.08	43.52	14.0608	0.7974	0.0223
154	SLU 50	-0.08	-0.07	43.31	13.9879	0.7934	0.0267
154	SLU 51	-0.06	-0.09	43.28	13.9813	0.793	0.0229
154	SLU 52	-0.07	-0.05	46.36	14.9842	0.8495	0.0245
154	SLU 53	-0.09	-0.01	47.16	15.2427	0.8643	0.0313
154	SLU 54	-0.08	-0.03	47.14	15.236	0.8638	0.0274
154	SLU 55	-0.07	-0.05	46.88	15.1522	0.8591	0.0254
154	SLU 56	-0.1	-0.01	47.69	15.4107	0.8739	0.0322
154	SLU 57	-0.08	-0.03	47.66	15.404	0.8734	0.0283
154	SLU 58	-0.1	-0.02	47.45	15.3312	0.8695	0.0327
154	SLU 59	-0.08	-0.04	47.42	15.3246	0.869	0.0289
154	SLU 60	-0.1	0	48.17	15.5709	0.8829	0.0334
154	SLU 61	-0.09	-0.02	48.15	15.5643	0.8824	0.0296
154	SLU 62	-0.1	0	48.7	15.7389	0.8925	0.0344
154	SLU 63	-0.09	-0.02	48.67	15.7323	0.892	0.0305
154	SLU 64	-0.07	0	45.78	14.7956	0.8386	0.0227
154	SLU 65	-0.05	-0.03	45.74	14.7846	0.8378	0.0163
154	SLU 66	-0.07	0.01	46.54	15.043	0.8526	0.0231
154	SLU 67	-0.06	0	46.52	15.0364	0.8521	0.0192
154	SLU 68	-0.05	-0.03	46.26	14.9526	0.8474	0.0172
154	SLU 69	-0.07	0.01	47.07	15.211	0.8622	0.024
154	SLU 70	-0.06	0	47.04	15.2044	0.8618	0.0201
154	SLU 71	-0.07	0	46.83	15.1316	0.8578	0.0245
154	SLU 72	-0.06	-0.01	46.8	15.125	0.8574	0.0207
154	SLU 73	-0.07	0.02	49.88	16.1278	0.9139	0.0223
154	SLU 74	-0.09	0.06	50.68	16.3863	0.9287	0.0291
154	SLU 75	-0.08	0.04	50.66	16.3797	0.9282	0.0252
154	SLU 76	-0.07	0.02	50.4	16.2958	0.9235	0.0232
154	SLU 77	-0.09	0.06	51.21	16.5543	0.9383	0.03
154	SLU 78	-0.08	0.04	51.18	16.5477	0.9378	0.0261
154	SLU 79	-0.09	0.05	50.97	16.4749	0.9339	0.0305
154	SLU 80	-0.08	0.03	50.94	16.4682	0.9334	0.0267
154	SLU 81	-0.1	0.07	51.69	16.7146	0.9473	0.0313
154	SLU 82	-0.09	0.05	51.67	16.7079	0.9468	0.0274



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
154	SLU 83	-0.1	0.07	52.22	16.8826	0.9569	0.0322
154	SLU 84	-0.09	0.05	52.19	16.8759	0.9564	0.0283
154	SLE RA 1	-0.05	-0.01	34.44	11.1299	0.6309	0.018
154	SLE RA 2	-0.04	-0.03	34.41	11.1225	0.6304	0.0137
154	SLE RA 3	-0.05	-0.01	34.95	11.2948	0.6403	0.0182
154	SLE RA 4	-0.05	-0.02	34.93	11.2904	0.6399	0.0156
154	SLE RA 5	-0.04	-0.03	34.76	11.2345	0.6368	0.0143
154	SLE RA 6	-0.06	-0.01	35.3	11.4068	0.6467	0.0188
154	SLE RA 7	-0.05	-0.02	35.28	11.4024	0.6464	0.0162
154	SLE RA 8	-0.06	-0.01	35.14	11.3539	0.6437	0.0192
154	SLE RA 9	-0.05	-0.02	35.12	11.3495	0.6434	0.0166
154	SLE RA 10	-0.05	0	37.17	12.018	0.6811	0.0177
154	SLE RA 11	-0.07	0.03	37.71	12.1904	0.691	0.0222
154	SLE RA 12	-0.06	0.01	37.69	12.1859	0.6907	0.0196
154	SLE RA 13	-0.06	0	37.52	12.13	0.6875	0.0183
154	SLE RA 14	-0.07	0.03	38.06	12.3024	0.6974	0.0228
154	SLE RA 15	-0.06	0.01	38.04	12.2979	0.6971	0.0202
154	SLE RA 16	-0.07	0.02	37.9	12.2494	0.6945	0.0232
154	SLE RA 17	-0.06	0.01	37.88	12.245	0.6941	0.0206
154	SLE RA 18	-0.07	0.03	38.38	12.4092	0.7034	0.0236
154	SLE RA 19	-0.06	0.02	38.37	12.4048	0.7031	0.0211
154	SLE RA 20	-0.07	0.03	38.73	12.5212	0.7098	0.0243
154	SLE RA 21	-0.07	0.02	38.72	12.5168	0.7095	0.0217
154	SLE FR 1	-0.05	-0.01	34.44	11.1299	0.6309	0.018
154	SLE FR 2	-0.05	-0.02	34.44	11.1284	0.6308	0.0171
154	SLE FR 3	-0.05	-0.01	34.58	11.1747	0.6335	0.0182
154	SLE FR 4	-0.06	0	35.62	11.5122	0.6525	0.0188
154	SLE FR 5	-0.06	0	35.76	11.5585	0.6552	0.0199
154	SLE FR 6	-0.06	0.01	36.41	11.7695	0.6671	0.0208
154	SLE QP 1	-0.05	-0.01	34.44	11.1299	0.6309	0.018
154	SLE QP 2	-0.06	0	35.62	11.5137	0.6526	0.0197
154	SLD 1	3.06	0.3	35.5	11.4831	0.653	-1.0704
154	SLD 2	3.38	0.32	35.59	11.5115	0.6541	-1.1829
154	SLD 3	2.87	-0.59	34.4	11.1714	0.6325	-1.0054
154	SLD 4	3.19	-0.57	34.48	11.1998	0.6337	-1.118
154	SLD 5	1.1	1.44	37.25	11.9722	0.6835	-0.3857
154	SLD 6	1.31	1.45	37.31	11.9909	0.6843	-0.4597
154	SLD 7	0.48	-1.53	33.56	10.9331	0.6154	-0.1693
154	SLD 8	0.69	-1.52	33.62	10.9518	0.6162	-0.2432
154	SLD 9	-0.81	1.52	37.63	12.0756	0.6891	0.2826
154	SLD 10	-0.6	1.53	37.68	12.0942	0.6899	0.2086
154	SLD 11	-1.43	-1.45	33.94	11.0364	0.621	0.499
154	SLD 12	-1.22	-1.44	34	11.0551	0.6218	0.4251
154	SLD 13	-3.31	0.57	36.76	11.8276	0.6716	1.1573
154	SLD 14	-2.99	0.59	36.85	11.8559	0.6728	1.0448
154	SLD 15	-3.5	-0.32	35.66	11.5158	0.6512	1.2222
154	SLD 16	-3.18	-0.3	35.74	11.5442	0.6523	1.1097
154	SLV 1	7.24	0.68	35.31	11.4311	0.6527	-2.5309
154	SLV 2	7.98	0.72	35.51	11.4972	0.6554	-2.793
154	SLV 3	6.8	-1.34	32.8	10.7245	0.6064	-2.3796
154	SLV 4	7.55	-1.3	33	10.7906	0.6091	-2.6416
154	SLV 5	2.66	3.26	39.3	12.5492	0.7224	-0.9297
154	SLV 6	3.14	3.29	39.43	12.5919	0.7242	-1.099
154	SLV 7	1.21	-3.48	30.94	10.1937	0.5681	-0.4253
154	SLV 8	1.7	-3.45	31.07	10.2364	0.5698	-0.5945
154	SLV 9	-1.81	3.45	40.18	12.7909	0.7355	0.6338
154	SLV 10	-1.33	3.48	40.31	12.8336	0.7372	0.4646
154	SLV 11	-3.26	-3.29	31.82	10.4354	0.5811	1.1383
154	SLV 12	-2.77	-3.26	31.95	10.4781	0.5829	0.9691
154	SLV 13	-7.67	1.3	38.25	12.2367	0.6962	2.681
154	SLV 14	-6.92	1.34	38.45	12.3028	0.6989	2.4189
154	SLV 15	-8.1	-0.72	35.74	11.5301	0.6499	2.8323
154	SLV 16	-7.35	-0.68	35.94	11.5962	0.6526	2.5703
154	CRTFP Ux+	0	0	0	0	0	0
154	CRTFP Ux-	0	0	0	0	0	0
154	CRTFP Uy+	0	0	0	0	0	0
154	CRTFP Uy-	0	0	0	0	0	0
155	SLU 1	-0.1	-0.08	53.26	11.0035	11.4355	0.0296
155	SLU 2	-0.07	-0.12	53.2	10.9916	11.4206	0.0327
155	SLU 3	-0.1	-0.06	54.48	11.2554	11.6973	0.0265
155	SLU 4	-0.09	-0.09	54.44	11.2482	11.6883	0.0283
155	SLU 5	-0.07	-0.12	54.03	11.1632	11.6005	0.0334
155	SLU 6	-0.11	-0.06	55.31	11.427	11.8772	0.0272
155	SLU 7	-0.09	-0.09	55.28	11.4198	11.8683	0.029
155	SLU 8	-0.11	-0.08	54.93	11.3467	11.7954	0.031
155	SLU 9	-0.09	-0.11	54.89	11.3395	11.7864	0.0328
155	SLU 10	-0.11	-0.05	59.78	12.3559	12.8407	0.0242
155	SLU 11	-0.14	0.01	61.06	12.6197	13.1174	0.018
155	SLU 12	-0.12	-0.02	61.02	12.6126	13.1085	0.0199
155	SLU 13	-0.11	-0.05	60.61	12.5275	13.0207	0.0249
155	SLU 14	-0.15	0.01	61.89	12.7913	13.2973	0.0187
155	SLU 15	-0.13	-0.02	61.86	12.7842	13.2884	0.0206
155	SLU 16	-0.15	-0.01	61.51	12.711	13.2155	0.0225
155	SLU 17	-0.13	-0.04	61.47	12.7039	13.2066	0.0244
155	SLU 18	-0.15	0.02	62.66	12.9526	13.4642	0.0175
155	SLU 19	-0.13	-0.01	62.62	12.9454	13.4553	0.0193
155	SLU 20	-0.16	0.02	63.5	13.1241	13.6442	0.0182
155	SLU 21	-0.14	-0.01	63.46	13.117	13.6352	0.02
155	SLU 22	-0.1	0.03	58.86	12.1667	12.6375	0.0044
155	SLU 23	-0.07	-0.01	58.8	12.1548	12.6226	0.0075



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
155	SLU 24	-0.1	0.05	60.08	12.4185	12.8993	0.0013
155	SLU 25	-0.08	0.02	60.04	12.4114	12.8904	0.0032
155	SLU 26	-0.07	-0.01	59.63	12.3264	12.8026	0.0082
155	SLU 27	-0.11	0.05	60.91	12.5901	13.0792	0.002
155	SLU 28	-0.09	0.02	60.87	12.583	13.0703	0.0039
155	SLU 29	-0.11	0.03	60.53	12.5099	12.9974	0.0058
155	SLU 30	-0.09	0.01	60.49	12.5027	12.9885	0.0077
155	SLU 31	-0.1	0.06	65.38	13.5191	14.0428	-0.001
155	SLU 32	-0.14	0.12	66.66	13.7829	14.3194	-0.0071
155	SLU 33	-0.12	0.09	66.62	13.7757	14.3105	-0.0053
155	SLU 34	-0.11	0.06	66.21	13.6907	14.2227	-0.0003
155	SLU 35	-0.14	0.12	67.49	13.9545	14.4994	-0.0064
155	SLU 36	-0.13	0.09	67.45	13.9473	14.4904	-0.0046
155	SLU 37	-0.15	0.1	67.11	13.8742	14.4175	-0.0027
155	SLU 38	-0.13	0.07	67.07	13.8671	14.4086	-0.0008
155	SLU 39	-0.15	0.13	68.26	14.1157	14.6663	-0.0077
155	SLU 40	-0.13	0.1	68.22	14.1086	14.6574	-0.0058
155	SLU 41	-0.16	0.13	69.1	14.2873	14.8462	-0.007
155	SLU 42	-0.14	0.1	69.06	14.2802	14.8373	-0.0051
155	SLU 43	-0.13	-0.14	67.32	13.9057	14.454	0.0471
155	SLU 44	-0.1	-0.19	67.26	13.8938	14.4391	0.0502
155	SLU 45	-0.13	-0.12	68.54	14.1576	14.7158	0.044
155	SLU 46	-0.12	-0.15	68.5	14.1505	14.7068	0.0459
155	SLU 47	-0.1	-0.19	68.09	14.0654	14.6191	0.0509
155	SLU 48	-0.14	-0.12	69.37	14.3292	14.8957	0.0447
155	SLU 49	-0.12	-0.15	69.33	14.3221	14.8868	0.0466
155	SLU 50	-0.14	-0.14	68.99	14.2489	14.8139	0.0485
155	SLU 51	-0.12	-0.17	68.95	14.2418	14.8049	0.0503
155	SLU 52	-0.14	-0.12	73.84	15.2582	15.8592	0.0417
155	SLU 53	-0.17	-0.06	75.12	15.522	16.1359	0.0355
155	SLU 54	-0.15	-0.08	75.08	15.5148	16.127	0.0374
155	SLU 55	-0.14	-0.12	74.67	15.4298	16.0392	0.0424
155	SLU 56	-0.18	-0.05	75.95	15.6935	16.3158	0.0362
155	SLU 57	-0.16	-0.08	75.91	15.6864	16.3069	0.0381
155	SLU 58	-0.18	-0.07	75.57	15.6133	16.234	0.04
155	SLU 59	-0.16	-0.1	75.53	15.6061	16.2251	0.0419
155	SLU 60	-0.18	-0.04	76.72	15.8548	16.4828	0.035
155	SLU 61	-0.16	-0.07	76.68	15.8477	16.4738	0.0368
155	SLU 62	-0.19	-0.04	77.56	16.0264	16.6627	0.0357
155	SLU 63	-0.17	-0.07	77.52	16.0193	16.6538	0.0375
155	SLU 64	-0.13	-0.03	72.92	15.0689	15.6561	0.0219
155	SLU 65	-0.1	-0.08	72.86	15.057	15.6412	0.025
155	SLU 66	-0.13	-0.01	74.14	15.3208	15.9178	0.0188
155	SLU 67	-0.11	-0.04	74.1	15.3136	15.9089	0.0207
155	SLU 68	-0.1	-0.08	73.69	15.2286	15.8211	0.0257
155	SLU 69	-0.14	-0.01	74.97	15.4924	16.0978	0.0195
155	SLU 70	-0.12	-0.04	74.93	15.4852	16.0888	0.0214
155	SLU 71	-0.14	-0.03	74.59	15.4121	16.0159	0.0233
155	SLU 72	-0.12	-0.06	74.55	15.405	16.007	0.0252
155	SLU 73	-0.14	-0.01	79.44	16.4214	17.0613	0.0165
155	SLU 74	-0.17	0.05	80.72	16.6851	17.338	0.0104
155	SLU 75	-0.15	0.03	80.68	16.678	17.329	0.0122
155	SLU 76	-0.14	-0.01	80.27	16.593	17.2412	0.0172
155	SLU 77	-0.17	0.06	81.55	16.8567	17.5179	0.0111
155	SLU 78	-0.16	0.03	81.51	16.8496	17.509	0.0129
155	SLU 79	-0.18	0.04	81.17	16.7764	17.436	0.0149
155	SLU 80	-0.16	0.01	81.13	16.7693	17.4271	0.0167
155	SLU 81	-0.18	0.07	82.32	17.018	17.6848	0.0098
155	SLU 82	-0.16	0.04	82.28	17.0108	17.6759	0.0117
155	SLU 83	-0.19	0.07	83.16	17.1896	17.8647	0.0105
155	SLU 84	-0.17	0.04	83.12	17.1824	17.8558	0.0124
155	SLE RA 1	-0.1	-0.05	54.86	11.3358	11.7789	0.0224
155	SLE RA 2	-0.08	-0.08	54.82	11.3279	11.769	0.0245
155	SLE RA 3	-0.1	-0.04	55.67	11.5037	11.9534	0.0203
155	SLE RA 4	-0.09	-0.05	55.65	11.499	11.9475	0.0216
155	SLE RA 5	-0.08	-0.08	55.38	11.4423	11.889	0.0249
155	SLE RA 6	-0.11	-0.04	56.23	11.6181	12.0734	0.0208
155	SLE RA 7	-0.09	-0.05	56.2	11.6134	12.0674	0.022
155	SLE RA 8	-0.11	-0.05	55.98	11.5646	12.0188	0.0233
155	SLE RA 9	-0.09	-0.07	55.95	11.5599	12.0129	0.0246
155	SLE RA 10	-0.1	-0.03	59.21	12.2375	12.7158	0.0188
155	SLE RA 11	-0.13	0.01	60.06	12.4133	12.9002	0.0147
155	SLE RA 12	-0.11	-0.01	60.03	12.4085	12.8942	0.0159
155	SLE RA 13	-0.11	-0.03	59.76	12.3519	12.8357	0.0193
155	SLE RA 14	-0.13	0.01	60.62	12.5277	13.0202	0.0152
155	SLE RA 15	-0.12	-0.01	60.59	12.5229	13.0142	0.0164
155	SLE RA 16	-0.13	0	60.36	12.4742	12.9656	0.0177
155	SLE RA 17	-0.12	-0.02	60.34	12.4694	12.9596	0.0189
155	SLE RA 18	-0.14	0.02	61.13	12.6352	13.1314	0.0143
155	SLE RA 19	-0.12	0	61.1	12.6304	13.1255	0.0156
155	SLE RA 20	-0.14	0.02	61.69	12.7496	13.2514	0.0148
155	SLE RA 21	-0.13	0	61.66	12.7448	13.2454	0.016
155	SLE FR 1	-0.1	-0.05	54.86	11.3358	11.7789	0.0224
155	SLE FR 2	-0.1	-0.05	54.85	11.3342	11.7769	0.0228
155	SLE FR 3	-0.1	-0.05	55.09	11.3816	11.8269	0.0226
155	SLE FR 4	-0.11	-0.03	56.73	11.7241	12.1827	0.0204
155	SLE FR 5	-0.11	-0.03	56.97	11.7714	12.2327	0.0202
155	SLE FR 6	-0.12	-0.01	58	11.9855	12.4552	0.0184
155	SLE QP 1	-0.1	-0.05	54.86	11.3358	11.7789	0.0224
155	SLE QP 2	-0.11	-0.03	56.74	11.7256	12.1847	0.02





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
155	SLD 1	4.77	0.44	56.45	11.6754	12.184	-1.1411
155	SLD 2	5.28	0.48	56.6	11.7062	12.2108	-1.2567
155	SLD 3	4.48	-0.95	54.61	11.3397	11.7824	-0.8407
155	SLD 4	4.99	-0.91	54.77	11.3705	11.8091	-0.9562
155	SLD 5	1.7	2.22	59.41	12.2142	12.7889	-0.7634
155	SLD 6	2.04	2.25	59.51	12.2344	12.8065	-0.8394
155	SLD 7	0.73	-2.43	53.3	11.0952	11.45	0.2381
155	SLD 8	1.07	-2.4	53.4	11.1155	11.4676	0.1622
155	SLD 9	-1.29	2.34	60.09	12.3358	12.9018	-0.1222
155	SLD 10	-0.96	2.37	60.19	12.356	12.9194	-0.1982
155	SLD 11	-2.26	-2.3	53.98	11.2169	11.5629	0.8793
155	SLD 12	-1.93	-2.28	54.08	11.2371	11.5804	0.8034
155	SLD 13	-5.21	0.86	58.72	12.0808	12.5603	0.9962
155	SLD 14	-4.7	0.9	58.87	12.1116	12.587	0.8807
155	SLD 15	-5.5	-0.54	56.89	11.7451	12.1586	1.2967
155	SLD 16	-4.99	-0.5	57.04	11.7759	12.1853	1.1811
155	SLV 1	11.32	1.02	55.98	11.596	12.1687	-2.6861
155	SLV 2	12.5	1.11	56.34	11.6678	12.2309	-2.9552
155	SLV 3	10.64	-2.14	51.83	10.8352	11.2585	-2.0054
155	SLV 4	11.82	-2.04	52.19	10.907	11.3207	-2.2745
155	SLV 5	4.14	5.06	62.75	12.8283	13.5496	-1.7777
155	SLV 6	4.91	5.11	62.98	12.8746	13.5898	-1.9515
155	SLV 7	1.88	-5.46	48.91	10.2922	10.5156	0.4913
155	SLV 8	2.64	-5.4	49.14	10.3385	10.5558	0.3175
155	SLV 9	-2.87	5.35	64.35	13.1127	13.8136	-0.2776
155	SLV 10	-2.1	5.41	64.58	13.1591	13.8538	-0.4513
155	SLV 11	-5.13	-5.17	50.5	10.5767	10.7796	1.9915
155	SLV 12	-4.36	-5.11	50.74	10.623	10.8198	1.8177
155	SLV 13	-12.04	1.99	61.3	12.5443	13.0487	2.3145
155	SLV 14	-10.86	2.08	61.66	12.616	13.1109	2.0454
155	SLV 15	-12.72	-1.17	57.14	11.7835	12.1385	2.9952
155	SLV 16	-11.54	-1.07	57.5	11.8552	12.2007	2.7261
155	CRTFP Ux+	0	0	0	0	0	0
155	CRTFP Ux-	0	0	0	0	0	0
155	CRTFP Uy+	0	0	0	0	0	0
155	CRTFP Uy-	0	0	0	0	0	0
157	SLU 1	-0.01	-0.03	5.83	0	-0.7779	-0.0036
157	SLU 2	-0.01	-0.03	5.83	0	-0.7769	-0.0042
157	SLU 3	-0.01	-0.03	5.97	0	-0.7955	-0.0035
157	SLU 4	-0.01	-0.03	5.96	0	-0.795	-0.0038
157	SLU 5	-0.01	-0.03	5.92	0	-0.7891	-0.0043
157	SLU 6	-0.02	-0.03	6.06	0	-0.8077	-0.0035
157	SLU 7	-0.01	-0.03	6.05	0	-0.8071	-0.0039
157	SLU 8	-0.02	-0.03	6.02	0	-0.8022	-0.0037
157	SLU 9	-0.01	-0.03	6.01	0	-0.8016	-0.0041
157	SLU 10	-0.02	-0.03	6.54	0	-0.8719	-0.0036
157	SLU 11	-0.02	-0.02	6.68	0	-0.8905	-0.0029
157	SLU 12	-0.02	-0.02	6.67	0	-0.8899	-0.0032
157	SLU 13	-0.02	-0.03	6.63	0	-0.884	-0.0036
157	SLU 14	-0.02	-0.02	6.77	0	-0.9026	-0.0029
157	SLU 15	-0.02	-0.02	6.77	0	-0.9021	-0.0032
157	SLU 16	-0.02	-0.02	6.73	0	-0.8971	-0.0031
157	SLU 17	-0.02	-0.03	6.72	0	-0.8965	-0.0034
157	SLU 18	-0.02	-0.02	6.85	0	-0.9135	-0.0027
157	SLU 19	-0.02	-0.02	6.85	0	-0.9129	-0.0031
157	SLU 20	-0.02	-0.02	6.94	0	-0.9257	-0.0028
157	SLU 21	-0.02	-0.02	6.94	0	-0.9251	-0.0031
157	SLU 22	-0.01	-0.02	6.44	0	-0.8593	-0.0024
157	SLU 23	-0.01	-0.02	6.44	0	-0.8583	-0.003
157	SLU 24	-0.02	-0.02	6.58	0	-0.877	-0.0023
157	SLU 25	-0.01	-0.02	6.57	0	-0.8764	-0.0026
157	SLU 26	-0.01	-0.02	6.53	0	-0.8705	-0.003
157	SLU 27	-0.02	-0.02	6.67	0	-0.8891	-0.0023
157	SLU 28	-0.01	-0.02	6.66	0	-0.8885	-0.0027
157	SLU 29	-0.02	-0.02	6.63	0	-0.8836	-0.0025
157	SLU 30	-0.01	-0.02	6.62	0	-0.883	-0.0029
157	SLU 31	-0.02	-0.02	7.15	0	-0.9533	-0.0023
157	SLU 32	-0.02	-0.01	7.29	0	-0.9719	-0.0016
157	SLU 33	-0.02	-0.01	7.29	0	-0.9713	-0.002
157	SLU 34	-0.02	-0.02	7.24	0	-0.9654	-0.0024
157	SLU 35	-0.02	-0.01	7.38	0	-0.9841	-0.0017
157	SLU 36	-0.02	-0.02	7.38	0	-0.9835	-0.002
157	SLU 37	-0.02	-0.01	7.34	0	-0.9785	-0.0019
157	SLU 38	-0.02	-0.02	7.33	0	-0.978	-0.0022
157	SLU 39	-0.02	-0.01	7.46	0	-0.9949	-0.0015
157	SLU 40	-0.02	-0.01	7.46	0	-0.9944	-0.0018
157	SLU 41	-0.02	-0.01	7.55	0	-1.0071	-0.0015
157	SLU 42	-0.02	-0.01	7.55	0	-1.0065	-0.0019
157	SLU 43	-0.02	-0.04	7.37	0	-0.9833	-0.0052
157	SLU 44	-0.01	-0.04	7.37	0	-0.9824	-0.0057
157	SLU 45	-0.02	-0.04	7.51	0	-1.001	-0.005
157	SLU 46	-0.02	-0.04	7.5	0	-1.0004	-0.0054
157	SLU 47	-0.02	-0.04	7.46	0	-0.9945	-0.0058
157	SLU 48	-0.02	-0.04	7.6	0	-1.0131	-0.0051
157	SLU 49	-0.02	-0.04	7.59	0	-1.0126	-0.0054
157	SLU 50	-0.02	-0.04	7.56	0	-1.0076	-0.0053
157	SLU 51	-0.02	-0.04	7.55	0	-1.007	-0.0056
157	SLU 52	-0.02	-0.04	8.08	0	-1.0773	-0.0051
157	SLU 53	-0.02	-0.03	8.22	0	-1.0959	-0.0044
157	SLU 54	-0.02	-0.04	8.22	0	-1.0954	-0.0047



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
157	SLU 55	-0.02	-0.04	8.17	0	-1.0895	-0.0051
157	SLU 56	-0.02	-0.03	8.31	0	-1.1081	-0.0044
157	SLU 57	-0.02	-0.04	8.31	0	-1.1075	-0.0048
157	SLU 58	-0.02	-0.03	8.27	0	-1.1026	-0.0046
157	SLU 59	-0.02	-0.04	8.26	0	-1.102	-0.005
157	SLU 60	-0.03	-0.03	8.39	0	-1.119	-0.0042
157	SLU 61	-0.02	-0.03	8.39	0	-1.1184	-0.0046
157	SLU 62	-0.03	-0.03	8.48	0	-1.1311	-0.0043
157	SLU 63	-0.02	-0.03	8.48	0	-1.1305	-0.0046
157	SLU 64	-0.02	-0.03	7.99	0	-1.0647	-0.0039
157	SLU 65	-0.02	-0.03	7.98	0	-1.0638	-0.0045
157	SLU 66	-0.02	-0.03	8.12	0	-1.0824	-0.0038
157	SLU 67	-0.02	-0.03	8.11	0	-1.0818	-0.0041
157	SLU 68	-0.02	-0.03	8.07	0	-1.0759	-0.0046
157	SLU 69	-0.02	-0.03	8.21	0	-1.0946	-0.0038
157	SLU 70	-0.02	-0.03	8.2	0	-1.094	-0.0042
157	SLU 71	-0.02	-0.03	8.17	0	-1.089	-0.004
157	SLU 72	-0.02	-0.03	8.16	0	-1.0885	-0.0044
157	SLU 73	-0.02	-0.03	8.69	0	-1.1587	-0.0039
157	SLU 74	-0.02	-0.02	8.83	0	-1.1774	-0.0031
157	SLU 75	-0.02	-0.03	8.83	0	-1.1768	-0.0035
157	SLU 76	-0.02	-0.03	8.78	0	-1.1709	-0.0039
157	SLU 77	-0.02	-0.02	8.92	0	-1.1895	-0.0032
157	SLU 78	-0.02	-0.03	8.92	0	-1.1889	-0.0035
157	SLU 79	-0.02	-0.03	8.88	0	-1.184	-0.0034
157	SLU 80	-0.02	-0.03	8.88	0	-1.1834	-0.0037
157	SLU 81	-0.03	-0.02	9	0	-1.2004	-0.003
157	SLU 82	-0.02	-0.03	9	0	-1.1998	-0.0034
157	SLU 83	-0.03	-0.02	9.09	0	-1.2125	-0.0031
157	SLU 84	-0.02	-0.03	9.09	0	-1.212	-0.0034
157	SLE RA 1	-0.01	-0.02	6.01	0	-0.8011	-0.0033
157	SLE RA 2	-0.01	-0.03	6	0	-0.8005	-0.0037
157	SLE RA 3	-0.01	-0.02	6.1	0	-0.8129	-0.0032
157	SLE RA 4	-0.01	-0.03	6.09	0	-0.8125	-0.0034
157	SLE RA 5	-0.01	-0.03	6.06	0	-0.8086	-0.0037
157	SLE RA 6	-0.02	-0.02	6.16	0	-0.821	-0.0032
157	SLE RA 7	-0.01	-0.03	6.15	0	-0.8206	-0.0035
157	SLE RA 8	-0.02	-0.03	6.13	0	-0.8173	-0.0034
157	SLE RA 9	-0.01	-0.03	6.13	0	-0.8169	-0.0036
157	SLE RA 10	-0.02	-0.02	6.48	0	-0.8638	-0.0032
157	SLE RA 11	-0.02	-0.02	6.57	0	-0.8762	-0.0028
157	SLE RA 12	-0.02	-0.02	6.57	0	-0.8758	-0.003
157	SLE RA 13	-0.02	-0.02	6.54	0	-0.8719	-0.0033
157	SLE RA 14	-0.02	-0.02	6.63	0	-0.8843	-0.0028
157	SLE RA 15	-0.02	-0.02	6.63	0	-0.8839	-0.003
157	SLE RA 16	-0.02	-0.02	6.6	0	-0.8806	-0.0029
157	SLE RA 17	-0.02	-0.02	6.6	0	-0.8802	-0.0032
157	SLE RA 18	-0.02	-0.02	6.69	0	-0.8916	-0.0027
157	SLE RA 19	-0.02	-0.02	6.68	0	-0.8912	-0.0029
157	SLE RA 20	-0.02	-0.02	6.75	0	-0.8997	-0.0027
157	SLE RA 21	-0.02	-0.02	6.74	0	-0.8993	-0.0029
157	SLE FR 1	-0.01	-0.02	6.01	0	-0.8011	-0.0033
157	SLE FR 2	-0.01	-0.03	6.01	0	-0.801	-0.0034
157	SLE FR 3	-0.01	-0.02	6.03	0	-0.8044	-0.0033
157	SLE FR 4	-0.02	-0.02	6.21	0	-0.8281	-0.0032
157	SLE FR 5	-0.02	-0.02	6.24	0	-0.8315	-0.0031
157	SLE FR 6	-0.02	-0.02	6.35	0	-0.8464	-0.003
157	SLE QP 1	-0.01	-0.02	6.01	0	-0.8011	-0.0033
157	SLE QP 2	-0.02	-0.02	6.21	0	-0.8283	-0.0031
157	SLD 1	0.47	0.07	6.11	0	-0.8152	0.0098
157	SLD 2	0.53	0.08	6.14	0	-0.8183	0.011
157	SLD 3	0.5	-0.07	5.9	0	-0.7871	-0.0094
157	SLD 4	0.56	-0.06	5.93	0	-0.7902	-0.0082
157	SLD 5	0.07	0.22	6.5	0	-0.8664	0.0297
157	SLD 6	0.11	0.23	6.51	0	-0.8684	0.0305
157	SLD 7	0.18	-0.26	5.8	0	-0.7728	-0.0344
157	SLD 8	0.21	-0.25	5.81	0	-0.7748	-0.0336
157	SLD 9	-0.24	0.21	6.61	0	-0.8818	0.0274
157	SLD 10	-0.21	0.21	6.63	0	-0.8838	0.0282
157	SLD 11	-0.14	-0.28	5.91	0	-0.7881	-0.0367
157	SLD 12	-0.11	-0.27	5.93	0	-0.7901	-0.0359
157	SLD 13	-0.59	0.01	6.5	0	-0.8663	0.002
157	SLD 14	-0.53	0.02	6.52	0	-0.8694	0.0032
157	SLD 15	-0.56	-0.13	6.29	0	-0.8382	-0.0172
157	SLD 16	-0.5	-0.12	6.31	0	-0.8413	-0.016
157	SLV 1	1.13	0.2	5.98	0	-0.7968	0.0264
157	SLV 2	1.25	0.22	6.03	0	-0.8039	0.0292
157	SLV 3	1.2	-0.13	5.5	0	-0.7331	-0.0171
157	SLV 4	1.33	-0.11	5.55	0	-0.7402	-0.0143
157	SLV 5	0.19	0.53	6.86	0	-0.9142	0.0712
157	SLV 6	0.28	0.55	6.89	0	-0.9187	0.0731
157	SLV 7	0.44	-0.55	5.26	0	-0.7019	-0.0738
157	SLV 8	0.52	-0.54	5.3	0	-0.7065	-0.072
157	SLV 9	-0.55	0.49	7.13	0	-0.95	0.0658
157	SLV 10	-0.47	0.51	7.16	0	-0.9546	0.0676
157	SLV 11	-0.31	-0.59	5.53	0	-0.7378	-0.0793
157	SLV 12	-0.23	-0.58	5.57	0	-0.7424	-0.0775
157	SLV 13	-1.36	0.06	6.87	0	-0.9163	0.0081
157	SLV 14	-1.23	0.08	6.93	0	-0.9234	0.0109
157	SLV 15	-1.29	-0.27	6.4	0	-0.8527	-0.0354



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
157	SLV 16	-1.16	-0.24	6.45	0	-0.8598	-0.0326
157	CRTFP Ux+	0	0	0	0	0	0
157	CRTFP Ux-	0	0	0	0	0	0
157	CRTFP Uy+	0	0	0	0	0	0
157	CRTFP Uy-	0	0	0	0	0	0
159	SLU 1	-0.01	-0.04	5.87	0	-0.6846	-0.0042
159	SLU 2	-0.01	-0.04	5.86	0	-0.6837	-0.0047
159	SLU 3	-0.01	-0.04	6	0	-0.7001	-0.0041
159	SLU 4	-0.01	-0.04	6	0	-0.6996	-0.0044
159	SLU 5	-0.01	-0.04	5.95	0	-0.6944	-0.0048
159	SLU 6	-0.01	-0.04	6.09	0	-0.7107	-0.0042
159	SLU 7	-0.01	-0.04	6.09	0	-0.7102	-0.0045
159	SLU 8	-0.01	-0.04	6.05	0	-0.7059	-0.0044
159	SLU 9	-0.01	-0.04	6.05	0	-0.7054	-0.0046
159	SLU 10	-0.01	-0.04	6.57	0	-0.7668	-0.0043
159	SLU 11	-0.02	-0.03	6.71	0	-0.7831	-0.0037
159	SLU 12	-0.02	-0.03	6.71	0	-0.7826	-0.004
159	SLU 13	-0.02	-0.04	6.66	0	-0.7775	-0.0043
159	SLU 14	-0.02	-0.03	6.8	0	-0.7938	-0.0038
159	SLU 15	-0.02	-0.03	6.8	0	-0.7933	-0.0041
159	SLU 16	-0.02	-0.03	6.76	0	-0.7889	-0.0039
159	SLU 17	-0.02	-0.04	6.76	0	-0.7884	-0.0042
159	SLU 18	-0.02	-0.03	6.88	0	-0.8032	-0.0036
159	SLU 19	-0.02	-0.03	6.88	0	-0.8027	-0.0039
159	SLU 20	-0.02	-0.03	6.98	0	-0.8139	-0.0037
159	SLU 21	-0.02	-0.03	6.97	0	-0.8134	-0.004
159	SLU 22	-0.01	-0.03	6.48	0	-0.7561	-0.0033
159	SLU 23	-0.01	-0.03	6.47	0	-0.7553	-0.0038
159	SLU 24	-0.01	-0.03	6.61	0	-0.7716	-0.0032
159	SLU 25	-0.01	-0.03	6.61	0	-0.7711	-0.0035
159	SLU 26	-0.01	-0.03	6.57	0	-0.7659	-0.0038
159	SLU 27	-0.02	-0.03	6.71	0	-0.7823	-0.0032
159	SLU 28	-0.01	-0.03	6.7	0	-0.7818	-0.0035
159	SLU 29	-0.02	-0.03	6.66	0	-0.7774	-0.0034
159	SLU 30	-0.01	-0.03	6.66	0	-0.7769	-0.0037
159	SLU 31	-0.02	-0.03	7.19	0	-0.8384	-0.0033
159	SLU 32	-0.02	-0.02	7.33	0	-0.8547	-0.0028
159	SLU 33	-0.02	-0.03	7.32	0	-0.8542	-0.003
159	SLU 34	-0.02	-0.03	7.28	0	-0.849	-0.0034
159	SLU 35	-0.02	-0.02	7.42	0	-0.8653	-0.0028
159	SLU 36	-0.02	-0.03	7.41	0	-0.8648	-0.0031
159	SLU 37	-0.02	-0.03	7.38	0	-0.8605	-0.003
159	SLU 38	-0.02	-0.03	7.37	0	-0.86	-0.0033
159	SLU 39	-0.02	-0.02	7.5	0	-0.8748	-0.0027
159	SLU 40	-0.02	-0.03	7.49	0	-0.8743	-0.003
159	SLU 41	-0.02	-0.02	7.59	0	-0.8854	-0.0027
159	SLU 42	-0.02	-0.03	7.59	0	-0.8849	-0.003
159	SLU 43	-0.02	-0.05	7.42	0	-0.8654	-0.0058
159	SLU 44	-0.01	-0.05	7.41	0	-0.8646	-0.0063
159	SLU 45	-0.02	-0.05	7.55	0	-0.8809	-0.0057
159	SLU 46	-0.02	-0.05	7.55	0	-0.8804	-0.006
159	SLU 47	-0.01	-0.05	7.5	0	-0.8752	-0.0064
159	SLU 48	-0.02	-0.05	7.64	0	-0.8916	-0.0058
159	SLU 49	-0.02	-0.05	7.64	0	-0.8911	-0.0061
159	SLU 50	-0.02	-0.05	7.6	0	-0.8867	-0.0059
159	SLU 51	-0.02	-0.05	7.6	0	-0.8862	-0.0062
159	SLU 52	-0.02	-0.05	8.12	0	-0.9476	-0.0059
159	SLU 53	-0.02	-0.05	8.26	0	-0.964	-0.0053
159	SLU 54	-0.02	-0.05	8.26	0	-0.9635	-0.0056
159	SLU 55	-0.02	-0.05	8.21	0	-0.9583	-0.0059
159	SLU 56	-0.02	-0.05	8.35	0	-0.9746	-0.0054
159	SLU 57	-0.02	-0.05	8.35	0	-0.9741	-0.0057
159	SLU 58	-0.02	-0.05	8.31	0	-0.9698	-0.0055
159	SLU 59	-0.02	-0.05	8.31	0	-0.9693	-0.0058
159	SLU 60	-0.02	-0.04	8.43	0	-0.9841	-0.0052
159	SLU 61	-0.02	-0.05	8.43	0	-0.9836	-0.0055
159	SLU 62	-0.03	-0.05	8.53	0	-0.9947	-0.0053
159	SLU 63	-0.02	-0.05	8.52	0	-0.9942	-0.0056
159	SLU 64	-0.02	-0.04	8.03	0	-0.9369	-0.0049
159	SLU 65	-0.01	-0.05	8.02	0	-0.9361	-0.0054
159	SLU 66	-0.02	-0.04	8.16	0	-0.9525	-0.0048
159	SLU 67	-0.02	-0.04	8.16	0	-0.952	-0.0051
159	SLU 68	-0.01	-0.05	8.12	0	-0.9468	-0.0054
159	SLU 69	-0.02	-0.04	8.26	0	-0.9631	-0.0048
159	SLU 70	-0.02	-0.04	8.25	0	-0.9626	-0.0051
159	SLU 71	-0.02	-0.04	8.21	0	-0.9582	-0.005
159	SLU 72	-0.02	-0.05	8.21	0	-0.9578	-0.0053
159	SLU 73	-0.02	-0.04	8.74	0	-1.0192	-0.0049
159	SLU 74	-0.02	-0.04	8.88	0	-1.0355	-0.0043
159	SLU 75	-0.02	-0.04	8.87	0	-1.035	-0.0046
159	SLU 76	-0.02	-0.04	8.83	0	-1.0298	-0.005
159	SLU 77	-0.02	-0.04	8.97	0	-1.0462	-0.0044
159	SLU 78	-0.02	-0.04	8.96	0	-1.0457	-0.0047
159	SLU 79	-0.02	-0.04	8.93	0	-1.0413	-0.0046
159	SLU 80	-0.02	-0.04	8.92	0	-1.0408	-0.0049
159	SLU 81	-0.02	-0.04	9.05	0	-1.0556	-0.0043
159	SLU 82	-0.02	-0.04	9.04	0	-1.0551	-0.0045
159	SLU 83	-0.03	-0.04	9.14	0	-1.0663	-0.0043
159	SLU 84	-0.02	-0.04	9.14	0	-1.0658	-0.0046
159	SLE RA 1	-0.01	-0.03	6.04	0	-0.705	-0.004



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
159	SLE RA 2	-0.01	-0.04	6.04	0	-0.7045	-0.0043
159	SLE RA 3	-0.01	-0.03	6.13	0	-0.7153	-0.0039
159	SLE RA 4	-0.01	-0.04	6.13	0	-0.715	-0.0041
159	SLE RA 5	-0.01	-0.04	6.1	0	-0.7116	-0.0043
159	SLE RA 6	-0.01	-0.03	6.19	0	-0.7224	-0.0039
159	SLE RA 7	-0.01	-0.04	6.19	0	-0.7221	-0.0041
159	SLE RA 8	-0.01	-0.03	6.16	0	-0.7192	-0.004
159	SLE RA 9	-0.01	-0.04	6.16	0	-0.7189	-0.0042
159	SLE RA 10	-0.01	-0.03	6.51	0	-0.7598	-0.004
159	SLE RA 11	-0.02	-0.03	6.61	0	-0.7707	-0.0036
159	SLE RA 12	-0.02	-0.03	6.6	0	-0.7704	-0.0038
159	SLE RA 13	-0.02	-0.03	6.57	0	-0.7669	-0.004
159	SLE RA 14	-0.02	-0.03	6.67	0	-0.7778	-0.0036
159	SLE RA 15	-0.02	-0.03	6.66	0	-0.7775	-0.0038
159	SLE RA 16	-0.02	-0.03	6.64	0	-0.7746	-0.0038
159	SLE RA 17	-0.02	-0.03	6.64	0	-0.7743	-0.0039
159	SLE RA 18	-0.02	-0.03	6.72	0	-0.7841	-0.0035
159	SLE RA 19	-0.02	-0.03	6.72	0	-0.7838	-0.0037
159	SLE RA 20	-0.02	-0.03	6.78	0	-0.7912	-0.0036
159	SLE RA 21	-0.02	-0.03	6.78	0	-0.7909	-0.0038
159	SLE FR 1	-0.01	-0.03	6.04	0	-0.705	-0.004
159	SLE FR 2	-0.01	-0.03	6.04	0	-0.7049	-0.004
159	SLE FR 3	-0.01	-0.03	6.07	0	-0.7078	-0.004
159	SLE FR 4	-0.01	-0.03	6.25	0	-0.7286	-0.0039
159	SLE FR 5	-0.02	-0.03	6.27	0	-0.7316	-0.0038
159	SLE FR 6	-0.02	-0.03	6.38	0	-0.7446	-0.0037
159	SLE QP 1	-0.01	-0.03	6.04	0	-0.705	-0.004
159	SLE QP 2	-0.02	-0.03	6.25	0	-0.7287	-0.0038
159	SLD 1	0.47	0.07	6.11	0	-0.7126	0.008
159	SLD 2	0.53	0.08	6.13	0	-0.7156	0.0093
159	SLD 3	0.5	-0.07	5.9	0	-0.688	-0.0087
159	SLD 4	0.56	-0.06	5.92	0	-0.6909	-0.0074
159	SLD 5	0.07	0.21	6.52	0	-0.7608	0.0248
159	SLD 6	0.11	0.22	6.54	0	-0.7627	0.0257
159	SLD 7	0.18	-0.26	5.82	0	-0.6786	-0.0308
159	SLD 8	0.21	-0.26	5.83	0	-0.6805	-0.0299
159	SLD 9	-0.24	0.19	6.66	0	-0.777	0.0223
159	SLD 10	-0.21	0.2	6.68	0	-0.7789	0.0232
159	SLD 11	-0.14	-0.29	5.96	0	-0.6948	-0.0333
159	SLD 12	-0.1	-0.28	5.97	0	-0.6967	-0.0324
159	SLD 13	-0.59	0	6.57	0	-0.7666	-0.0003
159	SLD 14	-0.53	0.01	6.6	0	-0.7695	0.001
159	SLD 15	-0.56	-0.15	6.36	0	-0.7419	-0.017
159	SLD 16	-0.5	-0.13	6.38	0	-0.7448	-0.0156
159	SLV 1	1.13	0.2	5.92	0	-0.6902	0.0232
159	SLV 2	1.26	0.23	5.97	0	-0.697	0.0263
159	SLV 3	1.2	-0.13	5.44	0	-0.6343	-0.0146
159	SLV 4	1.33	-0.1	5.5	0	-0.6411	-0.0115
159	SLV 5	0.2	0.52	6.86	0	-0.8007	0.061
159	SLV 6	0.28	0.54	6.9	0	-0.8052	0.063
159	SLV 7	0.44	-0.56	5.27	0	-0.6145	-0.0649
159	SLV 8	0.52	-0.54	5.3	0	-0.6189	-0.0629
159	SLV 9	-0.55	0.47	7.19	0	-0.8386	0.0552
159	SLV 10	-0.47	0.49	7.23	0	-0.843	0.0572
159	SLV 11	-0.31	-0.61	5.59	0	-0.6523	-0.0707
159	SLV 12	-0.23	-0.59	5.63	0	-0.6567	-0.0687
159	SLV 13	-1.36	0.03	7	0	-0.8163	0.0038
159	SLV 14	-1.23	0.06	7.06	0	-0.8232	0.0069
159	SLV 15	-1.29	-0.29	6.52	0	-0.7605	-0.0339
159	SLV 16	-1.16	-0.26	6.58	0	-0.7673	-0.0308
159	CRTFP Ux+	0	0	0	0	0	0
159	CRTFP Ux-	0	0	0	0	0	0
159	CRTFP Uy+	0	0	0	0	0	0
159	CRTFP Uy-	0	0	0	0	0	0
161	SLU 1	-0.01	-0.05	5.88	0	-0.5882	-0.0045
161	SLU 2	-0.01	-0.05	5.87	0	-0.5875	-0.0049
161	SLU 3	-0.01	-0.04	6.01	0	-0.6015	-0.0045
161	SLU 4	-0.01	-0.05	6.01	0	-0.601	-0.0047
161	SLU 5	-0.01	-0.05	5.97	0	-0.5966	-0.005
161	SLU 6	-0.01	-0.05	6.11	0	-0.6106	-0.0046
161	SLU 7	-0.01	-0.05	6.1	0	-0.6102	-0.0048
161	SLU 8	-0.01	-0.05	6.06	0	-0.6064	-0.0047
161	SLU 9	-0.01	-0.05	6.06	0	-0.606	-0.0049
161	SLU 10	-0.01	-0.05	6.58	0	-0.6584	-0.0047
161	SLU 11	-0.02	-0.04	6.72	0	-0.6724	-0.0042
161	SLU 12	-0.02	-0.04	6.72	0	-0.672	-0.0045
161	SLU 13	-0.02	-0.05	6.68	0	-0.6675	-0.0048
161	SLU 14	-0.02	-0.04	6.82	0	-0.6815	-0.0043
161	SLU 15	-0.02	-0.05	6.81	0	-0.6811	-0.0046
161	SLU 16	-0.02	-0.04	6.77	0	-0.6773	-0.0044
161	SLU 17	-0.02	-0.05	6.77	0	-0.6769	-0.0047
161	SLU 18	-0.02	-0.04	6.9	0	-0.6895	-0.0042
161	SLU 19	-0.02	-0.04	6.89	0	-0.6891	-0.0044
161	SLU 20	-0.02	-0.04	6.99	0	-0.6986	-0.0043
161	SLU 21	-0.02	-0.05	6.98	0	-0.6982	-0.0045
161	SLU 22	-0.01	-0.04	6.5	0	-0.6496	-0.0038
161	SLU 23	-0.01	-0.04	6.49	0	-0.6489	-0.0042
161	SLU 24	-0.01	-0.04	6.63	0	-0.6628	-0.0038
161	SLU 25	-0.01	-0.04	6.62	0	-0.6624	-0.004
161	SLU 26	-0.01	-0.04	6.58	0	-0.658	-0.0043



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
161	SLU 27	-0.01	-0.04	6.72	0	-0.672	-0.0039
161	SLU 28	-0.01	-0.04	6.72	0	-0.6715	-0.0041
161	SLU 29	-0.01	-0.04	6.68	0	-0.6678	-0.004
161	SLU 30	-0.01	-0.04	6.67	0	-0.6674	-0.0042
161	SLU 31	-0.02	-0.04	7.2	0	-0.7198	-0.004
161	SLU 32	-0.02	-0.04	7.34	0	-0.7338	-0.0035
161	SLU 33	-0.02	-0.04	7.33	0	-0.7333	-0.0038
161	SLU 34	-0.02	-0.04	7.29	0	-0.7289	-0.0041
161	SLU 35	-0.02	-0.04	7.43	0	-0.7429	-0.0036
161	SLU 36	-0.02	-0.04	7.42	0	-0.7425	-0.0039
161	SLU 37	-0.02	-0.04	7.39	0	-0.7387	-0.0037
161	SLU 38	-0.02	-0.04	7.38	0	-0.7383	-0.004
161	SLU 39	-0.02	-0.03	7.51	0	-0.7509	-0.0035
161	SLU 40	-0.02	-0.04	7.5	0	-0.7505	-0.0037
161	SLU 41	-0.02	-0.04	7.6	0	-0.76	-0.0036
161	SLU 42	-0.02	-0.04	7.6	0	-0.7596	-0.0038
161	SLU 43	-0.02	-0.06	7.44	0	-0.7436	-0.0061
161	SLU 44	-0.01	-0.07	7.43	0	-0.7429	-0.0065
161	SLU 45	-0.02	-0.06	7.57	0	-0.7569	-0.0061
161	SLU 46	-0.02	-0.06	7.56	0	-0.7565	-0.0063
161	SLU 47	-0.01	-0.07	7.52	0	-0.752	-0.0066
161	SLU 48	-0.02	-0.06	7.66	0	-0.766	-0.0062
161	SLU 49	-0.02	-0.06	7.66	0	-0.7656	-0.0064
161	SLU 50	-0.02	-0.06	7.62	0	-0.7618	-0.0063
161	SLU 51	-0.02	-0.07	7.61	0	-0.7614	-0.0065
161	SLU 52	-0.02	-0.06	8.14	0	-0.8138	-0.0063
161	SLU 53	-0.02	-0.06	8.28	0	-0.8278	-0.0058
161	SLU 54	-0.02	-0.06	8.27	0	-0.8274	-0.0061
161	SLU 55	-0.02	-0.06	8.23	0	-0.8229	-0.0064
161	SLU 56	-0.02	-0.06	8.37	0	-0.8369	-0.0059
161	SLU 57	-0.02	-0.06	8.37	0	-0.8365	-0.0062
161	SLU 58	-0.02	-0.06	8.33	0	-0.8328	-0.006
161	SLU 59	-0.02	-0.06	8.32	0	-0.8323	-0.0063
161	SLU 60	-0.02	-0.06	8.45	0	-0.8449	-0.0058
161	SLU 61	-0.02	-0.06	8.45	0	-0.8445	-0.006
161	SLU 62	-0.02	-0.06	8.54	0	-0.854	-0.0059
161	SLU 63	-0.02	-0.06	8.54	0	-0.8536	-0.0061
161	SLU 64	-0.02	-0.05	8.05	0	-0.805	-0.0054
161	SLU 65	-0.01	-0.06	8.04	0	-0.8043	-0.0058
161	SLU 66	-0.02	-0.05	8.18	0	-0.8182	-0.0054
161	SLU 67	-0.02	-0.06	8.18	0	-0.8178	-0.0056
161	SLU 68	-0.01	-0.06	8.13	0	-0.8134	-0.0059
161	SLU 69	-0.02	-0.05	8.27	0	-0.8274	-0.0055
161	SLU 70	-0.02	-0.06	8.27	0	-0.827	-0.0057
161	SLU 71	-0.02	-0.06	8.23	0	-0.8232	-0.0056
161	SLU 72	-0.02	-0.06	8.23	0	-0.8228	-0.0058
161	SLU 73	-0.02	-0.06	8.75	0	-0.8752	-0.0056
161	SLU 74	-0.02	-0.05	8.89	0	-0.8892	-0.0051
161	SLU 75	-0.02	-0.05	8.89	0	-0.8888	-0.0054
161	SLU 76	-0.02	-0.06	8.84	0	-0.8843	-0.0057
161	SLU 77	-0.02	-0.05	8.98	0	-0.8983	-0.0052
161	SLU 78	-0.02	-0.05	8.98	0	-0.8979	-0.0055
161	SLU 79	-0.02	-0.05	8.94	0	-0.8941	-0.0053
161	SLU 80	-0.02	-0.06	8.94	0	-0.8937	-0.0056
161	SLU 81	-0.02	-0.05	9.06	0	-0.9063	-0.0051
161	SLU 82	-0.02	-0.05	9.06	0	-0.9059	-0.0053
161	SLU 83	-0.03	-0.05	9.15	0	-0.9154	-0.0052
161	SLU 84	-0.02	-0.05	9.15	0	-0.915	-0.0054
161	SLE RA 1	-0.01	-0.04	6.06	0	-0.6057	-0.0043
161	SLE RA 2	-0.01	-0.05	6.05	0	-0.6053	-0.0046
161	SLE RA 3	-0.01	-0.04	6.15	0	-0.6146	-0.0043
161	SLE RA 4	-0.01	-0.04	6.14	0	-0.6143	-0.0045
161	SLE RA 5	-0.01	-0.05	6.11	0	-0.6113	-0.0047
161	SLE RA 6	-0.01	-0.04	6.21	0	-0.6206	-0.0044
161	SLE RA 7	-0.01	-0.05	6.2	0	-0.6204	-0.0045
161	SLE RA 8	-0.01	-0.04	6.18	0	-0.6179	-0.0044
161	SLE RA 9	-0.01	-0.05	6.18	0	-0.6176	-0.0046
161	SLE RA 10	-0.01	-0.04	6.53	0	-0.6525	-0.0044
161	SLE RA 11	-0.02	-0.04	6.62	0	-0.6619	-0.0041
161	SLE RA 12	-0.02	-0.04	6.62	0	-0.6616	-0.0043
161	SLE RA 13	-0.01	-0.04	6.59	0	-0.6586	-0.0045
161	SLE RA 14	-0.02	-0.04	6.68	0	-0.6679	-0.0042
161	SLE RA 15	-0.02	-0.04	6.68	0	-0.6677	-0.0044
161	SLE RA 16	-0.02	-0.04	6.65	0	-0.6652	-0.0043
161	SLE RA 17	-0.02	-0.04	6.65	0	-0.6649	-0.0044
161	SLE RA 18	-0.02	-0.04	6.73	0	-0.6733	-0.0041
161	SLE RA 19	-0.02	-0.04	6.73	0	-0.673	-0.0043
161	SLE RA 20	-0.02	-0.04	6.79	0	-0.6793	-0.0042
161	SLE RA 21	-0.02	-0.04	6.79	0	-0.6791	-0.0043
161	SLE FR 1	-0.01	-0.04	6.06	0	-0.6057	-0.0043
161	SLE FR 2	-0.01	-0.04	6.06	0	-0.6056	-0.0044
161	SLE FR 3	-0.01	-0.04	6.08	0	-0.6082	-0.0044
161	SLE FR 4	-0.01	-0.04	6.26	0	-0.6259	-0.0043
161	SLE FR 5	-0.02	-0.04	6.28	0	-0.6284	-0.0043
161	SLE FR 6	-0.02	-0.04	6.39	0	-0.6395	-0.0042
161	SLE QP 1	-0.01	-0.04	6.06	0	-0.6057	-0.0043
161	SLE QP 2	-0.01	-0.04	6.26	0	-0.626	-0.0043
161	SLD 1	0.47	0.06	6.08	0	-0.6077	0.0063
161	SLD 2	0.53	0.08	6.1	0	-0.6105	0.0077
161	SLD 3	0.5	-0.08	5.87	0	-0.5865	-0.0079



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
161	SLD 4	0.56	-0.06	5.89	0	-0.5892	-0.0065
161	SLD 5	0.07	0.2	6.52	0	-0.6522	0.0201
161	SLD 6	0.11	0.21	6.54	0	-0.654	0.021
161	SLD 7	0.18	-0.27	5.81	0	-0.5815	-0.0271
161	SLD 8	0.21	-0.26	5.83	0	-0.5833	-0.0262
161	SLD 9	-0.24	0.18	6.69	0	-0.6687	0.0176
161	SLD 10	-0.21	0.19	6.7	0	-0.6705	0.0185
161	SLD 11	-0.14	-0.3	5.98	0	-0.598	-0.0296
161	SLD 12	-0.1	-0.29	6	0	-0.5998	-0.0287
161	SLD 13	-0.59	-0.02	6.63	0	-0.6627	-0.0021
161	SLD 14	-0.53	-0.01	6.65	0	-0.6655	-0.0007
161	SLD 15	-0.56	-0.16	6.42	0	-0.6415	-0.0162
161	SLD 16	-0.5	-0.15	6.44	0	-0.6442	-0.0148
161	SLV 1	1.13	0.2	5.82	0	-0.5825	0.0199
161	SLV 2	1.25	0.23	5.89	0	-0.5889	0.0231
161	SLV 3	1.2	-0.12	5.34	0	-0.5344	-0.0121
161	SLV 4	1.33	-0.09	5.41	0	-0.5408	-0.0089
161	SLV 5	0.2	0.51	6.85	0	-0.6847	0.0511
161	SLV 6	0.28	0.53	6.89	0	-0.6889	0.0531
161	SLV 7	0.44	-0.56	5.24	0	-0.5245	-0.0558
161	SLV 8	0.52	-0.54	5.29	0	-0.5286	-0.0537
161	SLV 9	-0.55	0.45	7.23	0	-0.7233	0.0452
161	SLV 10	-0.47	0.47	7.27	0	-0.7275	0.0473
161	SLV 11	-0.31	-0.62	5.63	0	-0.5631	-0.0617
161	SLV 12	-0.23	-0.6	5.67	0	-0.5672	-0.0596
161	SLV 13	-1.36	0	7.11	0	-0.7112	0.0004
161	SLV 14	-1.23	0.04	7.18	0	-0.7176	0.0036
161	SLV 15	-1.28	-0.32	6.63	0	-0.6631	-0.0317
161	SLV 16	-1.16	-0.28	6.69	0	-0.6695	-0.0285
161	CRTFP Ux+	0	0	0	0	0	0
161	CRTFP Ux-	0	0	0	0	0	0
161	CRTFP Uy+	0	0	0	0	0	0
161	CRTFP Uy-	0	0	0	0	0	0
163	SLU 1	-0.01	-0.05	5.88	0	-0.4901	-0.0046
163	SLU 2	-0.01	-0.06	5.87	0	-0.4895	-0.0049
163	SLU 3	-0.01	-0.05	6.01	0	-0.5011	-0.0045
163	SLU 4	-0.01	-0.06	6.01	0	-0.5008	-0.0047
163	SLU 5	-0.01	-0.06	5.96	0	-0.4971	-0.005
163	SLU 6	-0.01	-0.06	6.1	0	-0.5087	-0.0046
163	SLU 7	-0.01	-0.06	6.1	0	-0.5083	-0.0048
163	SLU 8	-0.01	-0.06	6.06	0	-0.5052	-0.0047
163	SLU 9	-0.01	-0.06	6.06	0	-0.5049	-0.0049
163	SLU 10	-0.01	-0.06	6.58	0	-0.5482	-0.0048
163	SLU 11	-0.02	-0.05	6.72	0	-0.5598	-0.0045
163	SLU 12	-0.02	-0.06	6.71	0	-0.5595	-0.0046
163	SLU 13	-0.02	-0.06	6.67	0	-0.5558	-0.0049
163	SLU 14	-0.02	-0.05	6.81	0	-0.5674	-0.0045
163	SLU 15	-0.02	-0.06	6.8	0	-0.5671	-0.0047
163	SLU 16	-0.02	-0.06	6.77	0	-0.5639	-0.0046
163	SLU 17	-0.02	-0.06	6.76	0	-0.5636	-0.0048
163	SLU 18	-0.02	-0.05	6.89	0	-0.574	-0.0044
163	SLU 19	-0.02	-0.06	6.88	0	-0.5736	-0.0046
163	SLU 20	-0.02	-0.05	6.98	0	-0.5815	-0.0045
163	SLU 21	-0.02	-0.06	6.97	0	-0.5812	-0.0047
163	SLU 22	-0.01	-0.05	6.49	0	-0.5411	-0.0041
163	SLU 23	-0.01	-0.05	6.49	0	-0.5406	-0.0044
163	SLU 24	-0.01	-0.05	6.63	0	-0.5522	-0.0041
163	SLU 25	-0.01	-0.05	6.62	0	-0.5518	-0.0043
163	SLU 26	-0.01	-0.05	6.58	0	-0.5481	-0.0045
163	SLU 27	-0.01	-0.05	6.72	0	-0.5597	-0.0041
163	SLU 28	-0.01	-0.05	6.71	0	-0.5594	-0.0043
163	SLU 29	-0.01	-0.05	6.68	0	-0.5563	-0.0042
163	SLU 30	-0.01	-0.05	6.67	0	-0.5559	-0.0044
163	SLU 31	-0.02	-0.05	7.19	0	-0.5993	-0.0043
163	SLU 32	-0.02	-0.05	7.33	0	-0.6109	-0.004
163	SLU 33	-0.02	-0.05	7.33	0	-0.6105	-0.0042
163	SLU 34	-0.02	-0.05	7.28	0	-0.6069	-0.0044
163	SLU 35	-0.02	-0.05	7.42	0	-0.6185	-0.0041
163	SLU 36	-0.02	-0.05	7.42	0	-0.6181	-0.0042
163	SLU 37	-0.02	-0.05	7.38	0	-0.615	-0.0041
163	SLU 38	-0.02	-0.05	7.38	0	-0.6147	-0.0043
163	SLU 39	-0.02	-0.05	7.5	0	-0.625	-0.0039
163	SLU 40	-0.02	-0.05	7.5	0	-0.6247	-0.0041
163	SLU 41	-0.02	-0.05	7.59	0	-0.6326	-0.004
163	SLU 42	-0.02	-0.05	7.59	0	-0.6323	-0.0042
163	SLU 43	-0.02	-0.07	7.43	0	-0.6196	-0.0061
163	SLU 44	-0.01	-0.08	7.43	0	-0.619	-0.0064
163	SLU 45	-0.02	-0.07	7.57	0	-0.6306	-0.0061
163	SLU 46	-0.02	-0.08	7.56	0	-0.6303	-0.0063
163	SLU 47	-0.01	-0.08	7.52	0	-0.6266	-0.0065
163	SLU 48	-0.02	-0.07	7.66	0	-0.6382	-0.0062
163	SLU 49	-0.02	-0.08	7.65	0	-0.6378	-0.0064
163	SLU 50	-0.02	-0.08	7.62	0	-0.6347	-0.0063
163	SLU 51	-0.02	-0.08	7.61	0	-0.6344	-0.0064
163	SLU 52	-0.02	-0.08	8.13	0	-0.6777	-0.0063
163	SLU 53	-0.02	-0.07	8.27	0	-0.6893	-0.006
163	SLU 54	-0.02	-0.07	8.27	0	-0.689	-0.0062
163	SLU 55	-0.02	-0.08	8.22	0	-0.6853	-0.0064
163	SLU 56	-0.02	-0.07	8.36	0	-0.6969	-0.0061
163	SLU 57	-0.02	-0.08	8.36	0	-0.6966	-0.0063



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
163	SLU 58	-0.02	-0.07	8.32	0	-0.6935	-0.0062
163	SLU 59	-0.02	-0.08	8.32	0	-0.6931	-0.0064
163	SLU 60	-0.02	-0.07	8.44	0	-0.7035	-0.006
163	SLU 61	-0.02	-0.07	8.44	0	-0.7031	-0.0062
163	SLU 62	-0.02	-0.07	8.53	0	-0.711	-0.006
163	SLU 63	-0.02	-0.07	8.53	0	-0.7107	-0.0062
163	SLU 64	-0.02	-0.07	8.05	0	-0.6706	-0.0056
163	SLU 65	-0.01	-0.07	8.04	0	-0.6701	-0.0059
163	SLU 66	-0.02	-0.07	8.18	0	-0.6817	-0.0056
163	SLU 67	-0.02	-0.07	8.18	0	-0.6813	-0.0058
163	SLU 68	-0.01	-0.07	8.13	0	-0.6777	-0.006
163	SLU 69	-0.02	-0.07	8.27	0	-0.6892	-0.0057
163	SLU 70	-0.02	-0.07	8.27	0	-0.6889	-0.0059
163	SLU 71	-0.02	-0.07	8.23	0	-0.6858	-0.0058
163	SLU 72	-0.02	-0.07	8.23	0	-0.6855	-0.006
163	SLU 73	-0.02	-0.07	8.75	0	-0.7288	-0.0058
163	SLU 74	-0.02	-0.07	8.88	0	-0.7404	-0.0055
163	SLU 75	-0.02	-0.07	8.88	0	-0.7401	-0.0057
163	SLU 76	-0.02	-0.07	8.84	0	-0.7364	-0.0059
163	SLU 77	-0.02	-0.07	8.98	0	-0.748	-0.0056
163	SLU 78	-0.02	-0.07	8.97	0	-0.7476	-0.0058
163	SLU 79	-0.02	-0.07	8.93	0	-0.7445	-0.0057
163	SLU 80	-0.02	-0.07	8.93	0	-0.7442	-0.0059
163	SLU 81	-0.02	-0.07	9.05	0	-0.7545	-0.0055
163	SLU 82	-0.02	-0.07	9.05	0	-0.7542	-0.0057
163	SLU 83	-0.03	-0.07	9.15	0	-0.7621	-0.0056
163	SLU 84	-0.02	-0.07	9.14	0	-0.7618	-0.0058
163	SLE RA 1	-0.01	-0.05	6.06	0	-0.5047	-0.0044
163	SLE RA 2	-0.01	-0.06	6.05	0	-0.5043	-0.0046
163	SLE RA 3	-0.01	-0.05	6.14	0	-0.512	-0.0044
163	SLE RA 4	-0.01	-0.05	6.14	0	-0.5118	-0.0045
163	SLE RA 5	-0.01	-0.06	6.11	0	-0.5093	-0.0047
163	SLE RA 6	-0.01	-0.05	6.2	0	-0.5171	-0.0045
163	SLE RA 7	-0.01	-0.06	6.2	0	-0.5168	-0.0046
163	SLE RA 8	-0.01	-0.05	6.18	0	-0.5148	-0.0045
163	SLE RA 9	-0.01	-0.06	6.17	0	-0.5145	-0.0047
163	SLE RA 10	-0.01	-0.05	6.52	0	-0.5434	-0.0046
163	SLE RA 11	-0.02	-0.05	6.61	0	-0.5512	-0.0044
163	SLE RA 12	-0.02	-0.05	6.61	0	-0.5509	-0.0045
163	SLE RA 13	-0.01	-0.06	6.58	0	-0.5485	-0.0046
163	SLE RA 14	-0.02	-0.05	6.67	0	-0.5562	-0.0044
163	SLE RA 15	-0.02	-0.05	6.67	0	-0.556	-0.0045
163	SLE RA 16	-0.02	-0.05	6.65	0	-0.5539	-0.0045
163	SLE RA 17	-0.02	-0.06	6.64	0	-0.5537	-0.0046
163	SLE RA 18	-0.02	-0.05	6.73	0	-0.5606	-0.0043
163	SLE RA 19	-0.02	-0.05	6.72	0	-0.5604	-0.0045
163	SLE RA 20	-0.02	-0.05	6.79	0	-0.5656	-0.0044
163	SLE RA 21	-0.02	-0.05	6.78	0	-0.5654	-0.0045
163	SLE FR 1	-0.01	-0.05	6.06	0	-0.5047	-0.0044
163	SLE FR 2	-0.01	-0.05	6.05	0	-0.5046	-0.0045
163	SLE FR 3	-0.01	-0.05	6.08	0	-0.5067	-0.0044
163	SLE FR 4	-0.01	-0.05	6.26	0	-0.5214	-0.0044
163	SLE FR 5	-0.01	-0.05	6.28	0	-0.5235	-0.0044
163	SLE FR 6	-0.02	-0.05	6.39	0	-0.5326	-0.0044
163	SLE QP 1	-0.01	-0.05	6.06	0	-0.5047	-0.0044
163	SLE QP 2	-0.01	-0.05	6.26	0	-0.5214	-0.0044
163	SLD 1	0.47	0.06	6.03	0	-0.5023	0.0048
163	SLD 2	0.53	0.07	6.06	0	-0.5047	0.0061
163	SLD 3	0.5	-0.08	5.81	0	-0.4845	-0.0069
163	SLD 4	0.56	-0.07	5.84	0	-0.487	-0.0056
163	SLD 5	0.07	0.19	6.51	0	-0.5422	0.0158
163	SLD 6	0.11	0.2	6.53	0	-0.5438	0.0167
163	SLD 7	0.18	-0.28	5.8	0	-0.483	-0.0231
163	SLD 8	0.21	-0.27	5.82	0	-0.4846	-0.0222
163	SLD 9	-0.24	0.16	6.7	0	-0.5583	0.0134
163	SLD 10	-0.21	0.17	6.72	0	-0.5599	0.0143
163	SLD 11	-0.14	-0.31	5.99	0	-0.4991	-0.0255
163	SLD 12	-0.1	-0.3	6.01	0	-0.5007	-0.0246
163	SLD 13	-0.59	-0.04	6.67	0	-0.5559	-0.0032
163	SLD 14	-0.53	-0.02	6.7	0	-0.5584	-0.0019
163	SLD 15	-0.56	-0.18	6.46	0	-0.5381	-0.0149
163	SLD 16	-0.5	-0.16	6.49	0	-0.5406	-0.0136
163	SLV 1	1.12	0.2	5.71	0	-0.476	0.0166
163	SLV 2	1.25	0.24	5.78	0	-0.4817	0.0197
163	SLV 3	1.2	-0.12	5.23	0	-0.4357	-0.0098
163	SLV 4	1.32	-0.08	5.3	0	-0.4414	-0.0067
163	SLV 5	0.2	0.5	6.81	0	-0.5678	0.0414
163	SLV 6	0.28	0.52	6.86	0	-0.5715	0.0434
163	SLV 7	0.44	-0.56	5.2	0	-0.4337	-0.0466
163	SLV 8	0.52	-0.54	5.25	0	-0.4374	-0.0446
163	SLV 9	-0.55	0.43	7.27	0	-0.6055	0.0358
163	SLV 10	-0.46	0.45	7.31	0	-0.6092	0.0378
163	SLV 11	-0.31	-0.63	5.66	0	-0.4713	-0.0522
163	SLV 12	-0.22	-0.6	5.7	0	-0.475	-0.0502
163	SLV 13	-1.35	-0.03	7.22	0	-0.6014	-0.0021
163	SLV 14	-1.22	0.01	7.29	0	-0.6072	0.001
163	SLV 15	-1.28	-0.34	6.73	0	-0.5612	-0.0285
163	SLV 16	-1.15	-0.31	6.8	0	-0.5669	-0.0254
163	CRTFP Ux+	0	0	0	0	0	0
163	CRTFP Ux-	0	0	0	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
163	CRTFP Uy+	0	0	0	0	0	0
163	CRTFP Uy-	0	0	0	0	0	0
165	SLU 1	-0.01	-0.06	5.87	0	-0.3912	-0.0043
165	SLU 2	-0.01	-0.07	5.86	0	-0.3907	-0.0045
165	SLU 3	-0.01	-0.06	6	0	-0.4	-0.0043
165	SLU 4	-0.01	-0.07	6	0	-0.3997	-0.0044
165	SLU 5	-0.01	-0.07	5.95	0	-0.3968	-0.0046
165	SLU 6	-0.01	-0.07	6.09	0	-0.406	-0.0044
165	SLU 7	-0.01	-0.07	6.09	0	-0.4057	-0.0045
165	SLU 8	-0.01	-0.07	6.05	0	-0.4032	-0.0044
165	SLU 9	-0.01	-0.07	6.04	0	-0.403	-0.0046
165	SLU 10	-0.01	-0.07	6.56	0	-0.4373	-0.0045
165	SLU 11	-0.02	-0.06	6.7	0	-0.4466	-0.0043
165	SLU 12	-0.02	-0.07	6.69	0	-0.4463	-0.0044
165	SLU 13	-0.01	-0.07	6.65	0	-0.4434	-0.0046
165	SLU 14	-0.02	-0.07	6.79	0	-0.4526	-0.0044
165	SLU 15	-0.02	-0.07	6.78	0	-0.4523	-0.0045
165	SLU 16	-0.02	-0.07	6.75	0	-0.4498	-0.0044
165	SLU 17	-0.02	-0.07	6.74	0	-0.4496	-0.0046
165	SLU 18	-0.02	-0.06	6.87	0	-0.4578	-0.0043
165	SLU 19	-0.02	-0.07	6.86	0	-0.4575	-0.0044
165	SLU 20	-0.02	-0.07	6.96	0	-0.4638	-0.0044
165	SLU 21	-0.02	-0.07	6.95	0	-0.4635	-0.0045
165	SLU 22	-0.01	-0.06	6.48	0	-0.4319	-0.004
165	SLU 23	-0.01	-0.06	6.47	0	-0.4315	-0.0042
165	SLU 24	-0.01	-0.06	6.61	0	-0.4407	-0.004
165	SLU 25	-0.01	-0.06	6.61	0	-0.4404	-0.0041
165	SLU 26	-0.01	-0.06	6.56	0	-0.4375	-0.0043
165	SLU 27	-0.01	-0.06	6.7	0	-0.4467	-0.0041
165	SLU 28	-0.01	-0.06	6.7	0	-0.4464	-0.0042
165	SLU 29	-0.01	-0.06	6.66	0	-0.444	-0.0041
165	SLU 30	-0.01	-0.06	6.66	0	-0.4437	-0.0043
165	SLU 31	-0.01	-0.06	7.17	0	-0.4781	-0.0042
165	SLU 32	-0.02	-0.06	7.31	0	-0.4873	-0.004
165	SLU 33	-0.02	-0.06	7.31	0	-0.487	-0.0041
165	SLU 34	-0.02	-0.06	7.26	0	-0.4841	-0.0043
165	SLU 35	-0.02	-0.06	7.4	0	-0.4933	-0.0041
165	SLU 36	-0.02	-0.06	7.4	0	-0.4931	-0.0042
165	SLU 37	-0.02	-0.06	7.36	0	-0.4906	-0.0041
165	SLU 38	-0.02	-0.06	7.35	0	-0.4903	-0.0043
165	SLU 39	-0.02	-0.06	7.48	0	-0.4985	-0.004
165	SLU 40	-0.02	-0.06	7.47	0	-0.4982	-0.0041
165	SLU 41	-0.02	-0.06	7.57	0	-0.5045	-0.0041
165	SLU 42	-0.02	-0.06	7.56	0	-0.5043	-0.0042
165	SLU 43	-0.02	-0.08	7.42	0	-0.4946	-0.0056
165	SLU 44	-0.01	-0.09	7.41	0	-0.4941	-0.0059
165	SLU 45	-0.02	-0.08	7.55	0	-0.5034	-0.0057
165	SLU 46	-0.01	-0.09	7.55	0	-0.5031	-0.0058
165	SLU 47	-0.01	-0.09	7.5	0	-0.5002	-0.006
165	SLU 48	-0.02	-0.09	7.64	0	-0.5094	-0.0057
165	SLU 49	-0.02	-0.09	7.64	0	-0.5091	-0.0059
165	SLU 50	-0.02	-0.09	7.6	0	-0.5066	-0.0058
165	SLU 51	-0.02	-0.09	7.6	0	-0.5064	-0.0059
165	SLU 52	-0.02	-0.09	8.11	0	-0.5407	-0.0059
165	SLU 53	-0.02	-0.09	8.25	0	-0.55	-0.0057
165	SLU 54	-0.02	-0.09	8.25	0	-0.5497	-0.0058
165	SLU 55	-0.02	-0.09	8.2	0	-0.5468	-0.006
165	SLU 56	-0.02	-0.09	8.34	0	-0.556	-0.0057
165	SLU 57	-0.02	-0.09	8.34	0	-0.5557	-0.0059
165	SLU 58	-0.02	-0.09	8.3	0	-0.5532	-0.0058
165	SLU 59	-0.02	-0.09	8.29	0	-0.553	-0.006
165	SLU 60	-0.02	-0.08	8.42	0	-0.5612	-0.0057
165	SLU 61	-0.02	-0.09	8.41	0	-0.5609	-0.0058
165	SLU 62	-0.02	-0.09	8.51	0	-0.5672	-0.0057
165	SLU 63	-0.02	-0.09	8.5	0	-0.5669	-0.0059
165	SLU 64	-0.02	-0.08	8.03	0	-0.5353	-0.0053
165	SLU 65	-0.01	-0.08	8.02	0	-0.5349	-0.0056
165	SLU 66	-0.02	-0.08	8.16	0	-0.5441	-0.0054
165	SLU 67	-0.02	-0.08	8.16	0	-0.5438	-0.0055
165	SLU 68	-0.01	-0.09	8.11	0	-0.5409	-0.0057
165	SLU 69	-0.02	-0.08	8.25	0	-0.5501	-0.0054
165	SLU 70	-0.02	-0.08	8.25	0	-0.5498	-0.0056
165	SLU 71	-0.02	-0.08	8.21	0	-0.5474	-0.0055
165	SLU 72	-0.02	-0.08	8.21	0	-0.5471	-0.0056
165	SLU 73	-0.02	-0.08	8.72	0	-0.5815	-0.0056
165	SLU 74	-0.02	-0.08	8.86	0	-0.5907	-0.0054
165	SLU 75	-0.02	-0.08	8.86	0	-0.5904	-0.0055
165	SLU 76	-0.02	-0.09	8.81	0	-0.5875	-0.0057
165	SLU 77	-0.02	-0.08	8.95	0	-0.5967	-0.0054
165	SLU 78	-0.02	-0.08	8.95	0	-0.5964	-0.0056
165	SLU 79	-0.02	-0.08	8.91	0	-0.594	-0.0055
165	SLU 80	-0.02	-0.08	8.91	0	-0.5937	-0.0057
165	SLU 81	-0.02	-0.08	9.03	0	-0.6019	-0.0054
165	SLU 82	-0.02	-0.08	9.02	0	-0.6016	-0.0055
165	SLU 83	-0.02	-0.08	9.12	0	-0.6079	-0.0054
165	SLU 84	-0.02	-0.08	9.11	0	-0.6076	-0.0056
165	SLE RA 1	-0.01	-0.06	6.04	0	-0.4028	-0.0042
165	SLE RA 2	-0.01	-0.07	6.04	0	-0.4025	-0.0043
165	SLE RA 3	-0.01	-0.06	6.13	0	-0.4087	-0.0042
165	SLE RA 4	-0.01	-0.06	6.13	0	-0.4085	-0.0043





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
165	SLE RA 5	-0.01	-0.07	6.1	0	-0.4065	-0.0044
165	SLE RA 6	-0.01	-0.06	6.19	0	-0.4127	-0.0042
165	SLE RA 7	-0.01	-0.07	6.19	0	-0.4125	-0.0043
165	SLE RA 8	-0.01	-0.06	6.16	0	-0.4109	-0.0043
165	SLE RA 9	-0.01	-0.07	6.16	0	-0.4107	-0.0044
165	SLE RA 10	-0.01	-0.07	6.5	0	-0.4336	-0.0043
165	SLE RA 11	-0.02	-0.06	6.6	0	-0.4397	-0.0042
165	SLE RA 12	-0.02	-0.06	6.59	0	-0.4396	-0.0043
165	SLE RA 13	-0.01	-0.07	6.56	0	-0.4376	-0.0044
165	SLE RA 14	-0.02	-0.06	6.66	0	-0.4438	-0.0042
165	SLE RA 15	-0.02	-0.07	6.65	0	-0.4436	-0.0043
165	SLE RA 16	-0.02	-0.06	6.63	0	-0.4419	-0.0043
165	SLE RA 17	-0.02	-0.07	6.63	0	-0.4418	-0.0044
165	SLE RA 18	-0.02	-0.06	6.71	0	-0.4472	-0.0042
165	SLE RA 19	-0.02	-0.06	6.71	0	-0.447	-0.0043
165	SLE RA 20	-0.02	-0.06	6.77	0	-0.4512	-0.0042
165	SLE RA 21	-0.02	-0.07	6.77	0	-0.451	-0.0043
165	SLE FR 1	-0.01	-0.06	6.04	0	-0.4028	-0.0042
165	SLE FR 2	-0.01	-0.06	6.04	0	-0.4028	-0.0042
165	SLE FR 3	-0.01	-0.06	6.07	0	-0.4044	-0.0042
165	SLE FR 4	-0.01	-0.06	6.24	0	-0.4161	-0.0042
165	SLE FR 5	-0.01	-0.06	6.27	0	-0.4177	-0.0042
165	SLE FR 6	-0.02	-0.06	6.38	0	-0.425	-0.0042
165	SLE QP 1	-0.01	-0.06	6.04	0	-0.4028	-0.0042
165	SLE QP 2	-0.01	-0.06	6.24	0	-0.4161	-0.0042
165	SLD 1	0.5	0.05	5.96	0	-0.3976	0.0034
165	SLD 2	0.55	0.07	5.99	0	-0.3997	0.0046
165	SLD 3	0.47	-0.09	5.75	0	-0.3833	-0.0058
165	SLD 4	0.52	-0.07	5.78	0	-0.3854	-0.0046
165	SLD 5	0.18	0.18	6.48	0	-0.4318	0.0119
165	SLD 6	0.21	0.19	6.5	0	-0.4332	0.0126
165	SLD 7	0.07	-0.28	5.76	0	-0.3842	-0.0189
165	SLD 8	0.11	-0.27	5.78	0	-0.3856	-0.0181
165	SLD 9	-0.14	0.15	6.7	0	-0.4466	0.0097
165	SLD 10	-0.1	0.16	6.72	0	-0.448	0.0105
165	SLD 11	-0.24	-0.32	5.99	0	-0.399	-0.021
165	SLD 12	-0.21	-0.3	6.01	0	-0.4004	-0.0202
165	SLD 13	-0.55	-0.06	6.7	0	-0.4469	-0.0038
165	SLD 14	-0.5	-0.04	6.73	0	-0.449	-0.0026
165	SLD 15	-0.58	-0.19	6.49	0	-0.4326	-0.013
165	SLD 16	-0.53	-0.18	6.52	0	-0.4347	-0.0118
165	SLV 1	1.19	0.2	5.58	0	-0.3722	0.0132
165	SLV 2	1.32	0.24	5.66	0	-0.3771	0.016
165	SLV 3	1.12	-0.11	5.1	0	-0.3398	-0.0076
165	SLV 4	1.24	-0.07	5.17	0	-0.3447	-0.0048
165	SLV 5	0.43	0.48	6.77	0	-0.4512	0.0322
165	SLV 6	0.52	0.51	6.82	0	-0.4544	0.034
165	SLV 7	0.19	-0.56	5.15	0	-0.3433	-0.0373
165	SLV 8	0.28	-0.53	5.2	0	-0.3464	-0.0355
165	SLV 9	-0.31	0.41	7.29	0	-0.4858	0.0272
165	SLV 10	-0.22	0.43	7.33	0	-0.489	0.029
165	SLV 11	-0.54	-0.64	5.67	0	-0.3779	-0.0424
165	SLV 12	-0.46	-0.61	5.72	0	-0.3811	-0.0406
165	SLV 13	-1.27	-0.05	7.31	0	-0.4876	-0.0035
165	SLV 14	-1.15	-0.01	7.39	0	-0.4925	-0.0007
165	SLV 15	-1.34	-0.37	6.83	0	-0.4552	-0.0244
165	SLV 16	-1.22	-0.32	6.9	0	-0.4601	-0.0216
165	CRTFP Ux+	0	0	0	0	0	0
165	CRTFP Ux-	0	0	0	0	0	0
165	CRTFP Uy+	0	0	0	0	0	0
165	CRTFP Uy-	0	0	0	0	0	0
167	SLU 1	-0.01	-0.07	5.77	0	-0.2887	-0.0036
167	SLU 2	-0.01	-0.08	5.77	0	-0.2883	-0.0038
167	SLU 3	-0.01	-0.07	5.9	0	-0.2951	-0.0036
167	SLU 4	-0.01	-0.07	5.9	0	-0.2949	-0.0037
167	SLU 5	-0.01	-0.08	5.86	0	-0.2928	-0.0039
167	SLU 6	-0.01	-0.07	5.99	0	-0.2996	-0.0037
167	SLU 7	-0.01	-0.08	5.99	0	-0.2994	-0.0038
167	SLU 8	-0.01	-0.07	5.95	0	-0.2975	-0.0037
167	SLU 9	-0.01	-0.08	5.95	0	-0.2973	-0.0038
167	SLU 10	-0.01	-0.08	6.45	0	-0.3226	-0.0039
167	SLU 11	-0.02	-0.07	6.59	0	-0.3294	-0.0037
167	SLU 12	-0.02	-0.08	6.58	0	-0.3292	-0.0038
167	SLU 13	-0.01	-0.08	6.54	0	-0.327	-0.0039
167	SLU 14	-0.02	-0.08	6.68	0	-0.3338	-0.0038
167	SLU 15	-0.02	-0.08	6.67	0	-0.3336	-0.0039
167	SLU 16	-0.02	-0.08	6.64	0	-0.3318	-0.0038
167	SLU 17	-0.02	-0.08	6.63	0	-0.3316	-0.0039
167	SLU 18	-0.02	-0.07	6.75	0	-0.3376	-0.0037
167	SLU 19	-0.02	-0.08	6.75	0	-0.3374	-0.0038
167	SLU 20	-0.02	-0.08	6.84	0	-0.342	-0.0038
167	SLU 21	-0.02	-0.08	6.84	0	-0.3418	-0.0039
167	SLU 22	-0.01	-0.07	6.37	0	-0.3187	-0.0035
167	SLU 23	-0.01	-0.07	6.37	0	-0.3184	-0.0036
167	SLU 24	-0.01	-0.07	6.5	0	-0.3252	-0.0035
167	SLU 25	-0.01	-0.07	6.5	0	-0.325	-0.0036
167	SLU 26	-0.01	-0.07	6.46	0	-0.3228	-0.0037
167	SLU 27	-0.01	-0.07	6.59	0	-0.3296	-0.0035
167	SLU 28	-0.01	-0.07	6.59	0	-0.3294	-0.0036
167	SLU 29	-0.01	-0.07	6.55	0	-0.3276	-0.0036



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
167	SLU 30	-0.01	-0.07	6.55	0	-0.3274	-0.0037
167	SLU 31	-0.01	-0.07	7.05	0	-0.3526	-0.0037
167	SLU 32	-0.02	-0.07	7.19	0	-0.3594	-0.0036
167	SLU 33	-0.02	-0.07	7.18	0	-0.3592	-0.0037
167	SLU 34	-0.01	-0.08	7.14	0	-0.3571	-0.0038
167	SLU 35	-0.02	-0.07	7.28	0	-0.3638	-0.0036
167	SLU 36	-0.02	-0.07	7.27	0	-0.3636	-0.0037
167	SLU 37	-0.02	-0.07	7.24	0	-0.3618	-0.0037
167	SLU 38	-0.02	-0.08	7.23	0	-0.3616	-0.0038
167	SLU 39	-0.02	-0.07	7.35	0	-0.3676	-0.0036
167	SLU 40	-0.02	-0.07	7.35	0	-0.3674	-0.0037
167	SLU 41	-0.02	-0.07	7.44	0	-0.372	-0.0036
167	SLU 42	-0.02	-0.07	7.44	0	-0.3718	-0.0037
167	SLU 43	-0.02	-0.1	7.3	0	-0.365	-0.0048
167	SLU 44	-0.01	-0.1	7.29	0	-0.3646	-0.0049
167	SLU 45	-0.02	-0.1	7.43	0	-0.3714	-0.0048
167	SLU 46	-0.01	-0.1	7.42	0	-0.3712	-0.0049
167	SLU 47	-0.01	-0.1	7.38	0	-0.3691	-0.005
167	SLU 48	-0.02	-0.1	7.52	0	-0.3759	-0.0048
167	SLU 49	-0.01	-0.1	7.51	0	-0.3757	-0.0049
167	SLU 50	-0.02	-0.1	7.48	0	-0.3738	-0.0049
167	SLU 51	-0.01	-0.1	7.47	0	-0.3736	-0.005
167	SLU 52	-0.02	-0.1	7.98	0	-0.3989	-0.005
167	SLU 53	-0.02	-0.1	8.11	0	-0.4056	-0.0048
167	SLU 54	-0.02	-0.1	8.11	0	-0.4055	-0.005
167	SLU 55	-0.02	-0.1	8.07	0	-0.4033	-0.0051
167	SLU 56	-0.02	-0.1	8.2	0	-0.4101	-0.0049
167	SLU 57	-0.02	-0.1	8.2	0	-0.4099	-0.005
167	SLU 58	-0.02	-0.1	8.16	0	-0.4081	-0.005
167	SLU 59	-0.02	-0.1	8.16	0	-0.4079	-0.0051
167	SLU 60	-0.02	-0.1	8.28	0	-0.4138	-0.0049
167	SLU 61	-0.02	-0.1	8.27	0	-0.4137	-0.005
167	SLU 62	-0.02	-0.1	8.37	0	-0.4183	-0.0049
167	SLU 63	-0.02	-0.1	8.36	0	-0.4181	-0.005
167	SLU 64	-0.02	-0.09	7.9	0	-0.395	-0.0046
167	SLU 65	-0.01	-0.1	7.89	0	-0.3947	-0.0048
167	SLU 66	-0.02	-0.09	8.03	0	-0.4015	-0.0046
167	SLU 67	-0.01	-0.09	8.03	0	-0.4013	-0.0047
167	SLU 68	-0.01	-0.1	7.98	0	-0.3991	-0.0048
167	SLU 69	-0.02	-0.09	8.12	0	-0.4059	-0.0047
167	SLU 70	-0.02	-0.1	8.11	0	-0.4057	-0.0048
167	SLU 71	-0.02	-0.09	8.08	0	-0.4039	-0.0047
167	SLU 72	-0.02	-0.1	8.07	0	-0.4037	-0.0048
167	SLU 73	-0.02	-0.1	8.58	0	-0.4289	-0.0048
167	SLU 74	-0.02	-0.09	8.71	0	-0.4357	-0.0047
167	SLU 75	-0.02	-0.1	8.71	0	-0.4355	-0.0048
167	SLU 76	-0.02	-0.1	8.67	0	-0.4333	-0.0049
167	SLU 77	-0.02	-0.1	8.8	0	-0.4401	-0.0048
167	SLU 78	-0.02	-0.1	8.8	0	-0.4399	-0.0049
167	SLU 79	-0.02	-0.1	8.76	0	-0.4381	-0.0048
167	SLU 80	-0.02	-0.1	8.76	0	-0.4379	-0.0049
167	SLU 81	-0.02	-0.09	8.88	0	-0.4439	-0.0047
167	SLU 82	-0.02	-0.1	8.87	0	-0.4437	-0.0048
167	SLU 83	-0.02	-0.1	8.97	0	-0.4483	-0.0048
167	SLU 84	-0.02	-0.1	8.96	0	-0.4481	-0.0049
167	SLE RA 1	-0.01	-0.07	5.94	0	-0.2972	-0.0036
167	SLE RA 2	-0.01	-0.07	5.94	0	-0.297	-0.0037
167	SLE RA 3	-0.01	-0.07	6.03	0	-0.3016	-0.0036
167	SLE RA 4	-0.01	-0.07	6.03	0	-0.3014	-0.0037
167	SLE RA 5	-0.01	-0.07	6	0	-0.3	-0.0037
167	SLE RA 6	-0.01	-0.07	6.09	0	-0.3045	-0.0036
167	SLE RA 7	-0.01	-0.07	6.09	0	-0.3044	-0.0037
167	SLE RA 8	-0.01	-0.07	6.06	0	-0.3032	-0.0037
167	SLE RA 9	-0.01	-0.07	6.06	0	-0.303	-0.0037
167	SLE RA 10	-0.01	-0.07	6.4	0	-0.3198	-0.0037
167	SLE RA 11	-0.02	-0.07	6.49	0	-0.3244	-0.0036
167	SLE RA 12	-0.01	-0.07	6.48	0	-0.3242	-0.0037
167	SLE RA 13	-0.01	-0.08	6.46	0	-0.3228	-0.0038
167	SLE RA 14	-0.02	-0.07	6.55	0	-0.3273	-0.0037
167	SLE RA 15	-0.02	-0.07	6.54	0	-0.3272	-0.0037
167	SLE RA 16	-0.02	-0.07	6.52	0	-0.326	-0.0037
167	SLE RA 17	-0.02	-0.08	6.52	0	-0.3259	-0.0038
167	SLE RA 18	-0.02	-0.07	6.6	0	-0.3298	-0.0036
167	SLE RA 19	-0.02	-0.07	6.59	0	-0.3297	-0.0037
167	SLE RA 20	-0.02	-0.07	6.66	0	-0.3328	-0.0037
167	SLE RA 21	-0.02	-0.07	6.65	0	-0.3327	-0.0037
167	SLE FR 1	-0.01	-0.07	5.94	0	-0.2972	-0.0036
167	SLE FR 2	-0.01	-0.07	5.94	0	-0.2972	-0.0036
167	SLE FR 3	-0.01	-0.07	5.97	0	-0.2984	-0.0036
167	SLE FR 4	-0.01	-0.07	6.14	0	-0.307	-0.0036
167	SLE FR 5	-0.01	-0.07	6.16	0	-0.3082	-0.0036
167	SLE FR 6	-0.01	-0.07	6.27	0	-0.3135	-0.0036
167	SLE QP 1	-0.01	-0.07	5.94	0	-0.2972	-0.0036
167	SLE QP 2	-0.01	-0.07	6.14	0	-0.307	-0.0036
167	SLD 1	0.49	0.04	5.82	0	-0.2909	0.0022
167	SLD 2	0.54	0.06	5.85	0	-0.2925	0.0032
167	SLD 3	0.46	-0.09	5.6	0	-0.2802	-0.0045
167	SLD 4	0.51	-0.07	5.64	0	-0.2819	-0.0035
167	SLD 5	0.17	0.16	6.36	0	-0.318	0.0082
167	SLD 6	0.21	0.18	6.38	0	-0.3191	0.0088



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
167	SLD 7	0.07	-0.28	5.65	0	-0.2825	-0.0142
167	SLD 8	0.11	-0.27	5.67	0	-0.2836	-0.0136
167	SLD 9	-0.14	0.13	6.61	0	-0.3304	0.0064
167	SLD 10	-0.1	0.14	6.63	0	-0.3315	0.0071
167	SLD 11	-0.24	-0.32	5.9	0	-0.2949	-0.016
167	SLD 12	-0.2	-0.31	5.92	0	-0.296	-0.0153
167	SLD 13	-0.54	-0.07	6.64	0	-0.3322	-0.0037
167	SLD 14	-0.49	-0.05	6.68	0	-0.3338	-0.0027
167	SLD 15	-0.57	-0.21	6.43	0	-0.3215	-0.0104
167	SLD 16	-0.52	-0.19	6.46	0	-0.3232	-0.0094
167	SLV 1	1.17	0.19	5.38	0	-0.2688	0.0097
167	SLV 2	1.29	0.24	5.45	0	-0.2726	0.012
167	SLV 3	1.1	-0.11	4.89	0	-0.2447	-0.0055
167	SLV 4	1.22	-0.06	4.97	0	-0.2485	-0.0032
167	SLV 5	0.42	0.46	6.63	0	-0.3315	-0.0231
167	SLV 6	0.51	0.49	6.68	0	-0.334	0.0246
167	SLV 7	0.19	-0.55	5.02	0	-0.251	-0.0276
167	SLV 8	0.27	-0.52	5.07	0	-0.2535	-0.0261
167	SLV 9	-0.3	0.38	7.21	0	-0.3605	0.019
167	SLV 10	-0.22	0.41	7.26	0	-0.363	0.0204
167	SLV 11	-0.53	-0.63	5.6	0	-0.2801	-0.0317
167	SLV 12	-0.45	-0.6	5.65	0	-0.2826	-0.0302
167	SLV 13	-1.25	-0.08	7.31	0	-0.3655	-0.004
167	SLV 14	-1.12	-0.03	7.39	0	-0.3694	-0.0017
167	SLV 15	-1.32	-0.38	6.83	0	-0.3414	-0.0192
167	SLV 16	-1.19	-0.34	6.91	0	-0.3453	-0.0169
167	CRTFP Ux+	0	0	0	0	0	0
167	CRTFP Ux-	0	0	0	0	0	0
169	SLU 1	-0.01	-0.08	5.64	0	0	0
169	SLU 2	-0.01	-0.08	5.63	0	0	0
169	SLU 3	-0.01	-0.08	5.76	0	0	0
169	SLU 4	-0.01	-0.08	5.76	0	0	0
169	SLU 5	-0.01	-0.08	5.72	0	0	0
169	SLU 6	-0.01	-0.08	5.85	0	0	0
169	SLU 7	-0.01	-0.08	5.84	0	0	0
169	SLU 8	-0.01	-0.08	5.81	0	0	0
169	SLU 9	-0.01	-0.08	5.8	0	0	0
169	SLU 10	-0.01	-0.08	6.29	0	0	0
169	SLU 11	-0.02	-0.08	6.43	0	0	0
169	SLU 12	-0.02	-0.08	6.42	0	0	0
169	SLU 13	-0.01	-0.09	6.38	0	0	0
169	SLU 14	-0.02	-0.08	6.51	0	0	0
169	SLU 15	-0.02	-0.09	6.51	0	0	0
169	SLU 16	-0.02	-0.08	6.47	0	0	0
169	SLU 17	-0.02	-0.09	6.47	0	0	0
169	SLU 18	-0.02	-0.08	6.59	0	0	0
169	SLU 19	-0.02	-0.08	6.58	0	0	0
169	SLU 20	-0.02	-0.08	6.67	0	0	0
169	SLU 21	-0.02	-0.09	6.67	0	0	0
169	SLU 22	-0.01	-0.08	6.22	0	0	0
169	SLU 23	-0.01	-0.08	6.22	0	0	0
169	SLU 24	-0.01	-0.08	6.35	0	0	0
169	SLU 25	-0.01	-0.08	6.34	0	0	0
169	SLU 26	-0.01	-0.08	6.3	0	0	0
169	SLU 27	-0.01	-0.08	6.43	0	0	0
169	SLU 28	-0.01	-0.08	6.43	0	0	0
169	SLU 29	-0.01	-0.08	6.4	0	0	0
169	SLU 30	-0.01	-0.08	6.39	0	0	0
169	SLU 31	-0.01	-0.08	6.88	0	0	0
169	SLU 32	-0.02	-0.08	7.01	0	0	0
169	SLU 33	-0.02	-0.08	7.01	0	0	0
169	SLU 34	-0.01	-0.08	6.97	0	0	0
169	SLU 35	-0.02	-0.08	7.1	0	0	0
169	SLU 36	-0.02	-0.08	7.1	0	0	0
169	SLU 37	-0.02	-0.08	7.06	0	0	0
169	SLU 38	-0.02	-0.08	7.06	0	0	0
169	SLU 39	-0.02	-0.08	7.17	0	0	0
169	SLU 40	-0.02	-0.08	7.17	0	0	0
169	SLU 41	-0.02	-0.08	7.26	0	0	0
169	SLU 42	-0.02	-0.08	7.26	0	0	0
169	SLU 43	-0.02	-0.1	7.12	0	0	0
169	SLU 44	-0.01	-0.11	7.12	0	0	0
169	SLU 45	-0.02	-0.1	7.25	0	0	0
169	SLU 46	-0.01	-0.11	7.25	0	0	0
169	SLU 47	-0.01	-0.11	7.2	0	0	0
169	SLU 48	-0.02	-0.11	7.34	0	0	0
169	SLU 49	-0.01	-0.11	7.33	0	0	0
169	SLU 50	-0.02	-0.11	7.3	0	0	0
169	SLU 51	-0.01	-0.11	7.29	0	0	0
169	SLU 52	-0.02	-0.11	7.78	0	0	0
169	SLU 53	-0.02	-0.11	7.92	0	0	0
169	SLU 54	-0.02	-0.11	7.91	0	0	0
169	SLU 55	-0.02	-0.11	7.87	0	0	0
169	SLU 56	-0.02	-0.11	8	0	0	0
169	SLU 57	-0.02	-0.11	8	0	0	0
169	SLU 58	-0.02	-0.11	7.96	0	0	0
169	SLU 59	-0.02	-0.11	7.96	0	0	0
169	SLU 60	-0.02	-0.11	8.08	0	0	0
169	SLU 61	-0.02	-0.11	8.07	0	0	0
169	SLU 62	-0.02	-0.11	8.16	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
169	SLU 63	-0.02	-0.11	8.16	0	0	0
169	SLU 64	-0.02	-0.1	7.71	0	0	0
169	SLU 65	-0.01	-0.1	7.71	0	0	0
169	SLU 66	-0.02	-0.1	7.84	0	0	0
169	SLU 67	-0.01	-0.1	7.83	0	0	0
169	SLU 68	-0.01	-0.11	7.79	0	0	0
169	SLU 69	-0.02	-0.1	7.92	0	0	0
169	SLU 70	-0.01	-0.11	7.92	0	0	0
169	SLU 71	-0.02	-0.1	7.88	0	0	0
169	SLU 72	-0.01	-0.11	7.88	0	0	0
169	SLU 73	-0.02	-0.11	8.37	0	0	0
169	SLU 74	-0.02	-0.1	8.5	0	0	0
169	SLU 75	-0.02	-0.11	8.5	0	0	0
169	SLU 76	-0.02	-0.11	8.46	0	0	0
169	SLU 77	-0.02	-0.11	8.59	0	0	0
169	SLU 78	-0.02	-0.11	8.59	0	0	0
169	SLU 79	-0.02	-0.11	8.55	0	0	0
169	SLU 80	-0.02	-0.11	8.55	0	0	0
169	SLU 81	-0.02	-0.11	8.66	0	0	0
169	SLU 82	-0.02	-0.11	8.66	0	0	0
169	SLU 83	-0.02	-0.11	8.75	0	0	0
169	SLU 84	-0.02	-0.11	8.75	0	0	0
169	SLE RA 1	-0.01	-0.08	5.8	0	0	0
169	SLE RA 2	-0.01	-0.08	5.8	0	0	0
169	SLE RA 3	-0.01	-0.08	5.89	0	0	0
169	SLE RA 4	-0.01	-0.08	5.88	0	0	0
169	SLE RA 5	-0.01	-0.08	5.86	0	0	0
169	SLE RA 6	-0.01	-0.08	5.94	0	0	0
169	SLE RA 7	-0.01	-0.08	5.94	0	0	0
169	SLE RA 8	-0.01	-0.08	5.92	0	0	0
169	SLE RA 9	-0.01	-0.08	5.92	0	0	0
169	SLE RA 10	-0.01	-0.08	6.24	0	0	0
169	SLE RA 11	-0.02	-0.08	6.33	0	0	0
169	SLE RA 12	-0.01	-0.08	6.33	0	0	0
169	SLE RA 13	-0.01	-0.08	6.3	0	0	0
169	SLE RA 14	-0.02	-0.08	6.39	0	0	0
169	SLE RA 15	-0.01	-0.08	6.39	0	0	0
169	SLE RA 16	-0.02	-0.08	6.36	0	0	0
169	SLE RA 17	-0.01	-0.08	6.36	0	0	0
169	SLE RA 18	-0.02	-0.08	6.44	0	0	0
169	SLE RA 19	-0.02	-0.08	6.43	0	0	0
169	SLE RA 20	-0.02	-0.08	6.49	0	0	0
169	SLE RA 21	-0.02	-0.08	6.49	0	0	0
169	SLE FR 1	-0.01	-0.08	5.8	0	0	0
169	SLE FR 2	-0.01	-0.08	5.8	0	0	0
169	SLE FR 3	-0.01	-0.08	5.83	0	0	0
169	SLE FR 4	-0.01	-0.08	5.99	0	0	0
169	SLE FR 5	-0.01	-0.08	6.02	0	0	0
169	SLE FR 6	-0.01	-0.08	6.12	0	0	0
169	SLE QP 1	-0.01	-0.08	5.8	0	0	0
169	SLE QP 2	-0.01	-0.08	5.99	0	0	0
169	SLD 1	0.48	0.04	5.63	0	0	0
169	SLD 2	0.53	0.06	5.67	0	0	0
169	SLD 3	0.45	-0.09	5.42	0	0	0
169	SLD 4	0.5	-0.07	5.46	0	0	0
169	SLD 5	0.17	0.15	6.2	0	0	0
169	SLD 6	0.2	0.16	6.22	0	0	0
169	SLD 7	0.07	-0.28	5.5	0	0	0
169	SLD 8	0.11	-0.27	5.52	0	0	0
169	SLD 9	-0.13	0.11	6.47	0	0	0
169	SLD 10	-0.1	0.13	6.49	0	0	0
169	SLD 11	-0.23	-0.32	5.77	0	0	0
169	SLD 12	-0.2	-0.31	5.79	0	0	0
169	SLD 13	-0.53	-0.09	6.53	0	0	0
169	SLD 14	-0.47	-0.07	6.56	0	0	0
169	SLD 15	-0.56	-0.22	6.32	0	0	0
169	SLD 16	-0.5	-0.2	6.35	0	0	0
169	SLV 1	1.13	0.19	5.14	0	0	0
169	SLV 2	1.25	0.24	5.22	0	0	0
169	SLV 3	1.06	-0.1	4.67	0	0	0
169	SLV 4	1.19	-0.06	4.75	0	0	0
169	SLV 5	0.41	0.44	6.45	0	0	0
169	SLV 6	0.49	0.47	6.5	0	0	0
169	SLV 7	0.19	-0.54	4.86	0	0	0
169	SLV 8	0.26	-0.51	4.91	0	0	0
169	SLV 9	-0.29	0.35	7.08	0	0	0
169	SLV 10	-0.21	0.38	7.13	0	0	0
169	SLV 11	-0.52	-0.63	5.49	0	0	0
169	SLV 12	-0.44	-0.6	5.54	0	0	0
169	SLV 13	-1.21	-0.1	7.24	0	0	0
169	SLV 14	-1.09	-0.05	7.32	0	0	0
169	SLV 15	-1.28	-0.4	6.76	0	0	0
169	SLV 16	-1.16	-0.35	6.84	0	0	0
170	SLU 1	-0.01	-0.09	5.95	0	0	0
170	SLU 2	-0.01	-0.1	5.94	0	0	0
170	SLU 3	-0.01	-0.1	6.08	0	0	0
170	SLU 4	-0.01	-0.1	6.08	0	0	0
170	SLU 5	-0.01	-0.1	6.04	0	0	0
170	SLU 6	-0.01	-0.1	6.17	0	0	0
170	SLU 7	-0.01	-0.1	6.17	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
170	SLU 8	-0.01	-0.1	6.13	0	0	0
170	SLU 9	-0.01	-0.1	6.13	0	0	0
170	SLU 10	-0.01	-0.1	6.64	0	0	0
170	SLU 11	-0.02	-0.1	6.78	0	0	0
170	SLU 12	-0.02	-0.1	6.78	0	0	0
170	SLU 13	-0.02	-0.1	6.74	0	0	0
170	SLU 14	-0.02	-0.1	6.87	0	0	0
170	SLU 15	-0.02	-0.1	6.87	0	0	0
170	SLU 16	-0.02	-0.1	6.83	0	0	0
170	SLU 17	-0.02	-0.1	6.83	0	0	0
170	SLU 18	-0.02	-0.1	6.95	0	0	0
170	SLU 19	-0.02	-0.1	6.95	0	0	0
170	SLU 20	-0.02	-0.1	7.04	0	0	0
170	SLU 21	-0.02	-0.1	7.04	0	0	0
170	SLU 22	-0.01	-0.09	6.57	0	0	0
170	SLU 23	-0.01	-0.1	6.56	0	0	0
170	SLU 24	-0.01	-0.09	6.7	0	0	0
170	SLU 25	-0.01	-0.1	6.7	0	0	0
170	SLU 26	-0.01	-0.1	6.66	0	0	0
170	SLU 27	-0.01	-0.1	6.8	0	0	0
170	SLU 28	-0.01	-0.1	6.79	0	0	0
170	SLU 29	-0.01	-0.1	6.75	0	0	0
170	SLU 30	-0.01	-0.1	6.75	0	0	0
170	SLU 31	-0.02	-0.1	7.26	0	0	0
170	SLU 32	-0.02	-0.1	7.4	0	0	0
170	SLU 33	-0.02	-0.1	7.4	0	0	0
170	SLU 34	-0.02	-0.1	7.36	0	0	0
170	SLU 35	-0.02	-0.1	7.5	0	0	0
170	SLU 36	-0.02	-0.1	7.49	0	0	0
170	SLU 37	-0.02	-0.1	7.45	0	0	0
170	SLU 38	-0.02	-0.1	7.45	0	0	0
170	SLU 39	-0.02	-0.1	7.57	0	0	0
170	SLU 40	-0.02	-0.1	7.57	0	0	0
170	SLU 41	-0.02	-0.1	7.66	0	0	0
170	SLU 42	-0.02	-0.1	7.66	0	0	0
170	SLU 43	-0.02	-0.12	7.52	0	0	0
170	SLU 44	-0.01	-0.13	7.52	0	0	0
170	SLU 45	-0.02	-0.12	7.66	0	0	0
170	SLU 46	-0.02	-0.13	7.65	0	0	0
170	SLU 47	-0.01	-0.13	7.61	0	0	0
170	SLU 48	-0.02	-0.13	7.75	0	0	0
170	SLU 49	-0.02	-0.13	7.74	0	0	0
170	SLU 50	-0.02	-0.13	7.71	0	0	0
170	SLU 51	-0.02	-0.13	7.7	0	0	0
170	SLU 52	-0.02	-0.13	8.22	0	0	0
170	SLU 53	-0.02	-0.13	8.36	0	0	0
170	SLU 54	-0.02	-0.13	8.35	0	0	0
170	SLU 55	-0.02	-0.13	8.31	0	0	0
170	SLU 56	-0.02	-0.13	8.45	0	0	0
170	SLU 57	-0.02	-0.13	8.44	0	0	0
170	SLU 58	-0.02	-0.13	8.41	0	0	0
170	SLU 59	-0.02	-0.13	8.4	0	0	0
170	SLU 60	-0.02	-0.13	8.52	0	0	0
170	SLU 61	-0.02	-0.13	8.52	0	0	0
170	SLU 62	-0.02	-0.13	8.61	0	0	0
170	SLU 63	-0.02	-0.13	8.61	0	0	0
170	SLU 64	-0.02	-0.12	8.14	0	0	0
170	SLU 65	-0.01	-0.13	8.14	0	0	0
170	SLU 66	-0.02	-0.12	8.28	0	0	0
170	SLU 67	-0.02	-0.13	8.27	0	0	0
170	SLU 68	-0.01	-0.13	8.23	0	0	0
170	SLU 69	-0.02	-0.13	8.37	0	0	0
170	SLU 70	-0.02	-0.13	8.36	0	0	0
170	SLU 71	-0.02	-0.13	8.33	0	0	0
170	SLU 72	-0.02	-0.13	8.32	0	0	0
170	SLU 73	-0.02	-0.13	8.84	0	0	0
170	SLU 74	-0.02	-0.13	8.98	0	0	0
170	SLU 75	-0.02	-0.13	8.97	0	0	0
170	SLU 76	-0.02	-0.13	8.93	0	0	0
170	SLU 77	-0.02	-0.13	9.07	0	0	0
170	SLU 78	-0.02	-0.13	9.06	0	0	0
170	SLU 79	-0.02	-0.13	9.03	0	0	0
170	SLU 80	-0.02	-0.13	9.02	0	0	0
170	SLU 81	-0.02	-0.13	9.14	0	0	0
170	SLU 82	-0.02	-0.13	9.14	0	0	0
170	SLU 83	-0.03	-0.13	9.23	0	0	0
170	SLU 84	-0.02	-0.13	9.23	0	0	0
170	SLE RA 1	-0.01	-0.09	6.13	0	0	0
170	SLE RA 2	-0.01	-0.1	6.12	0	0	0
170	SLE RA 3	-0.01	-0.1	6.22	0	0	0
170	SLE RA 4	-0.01	-0.1	6.21	0	0	0
170	SLE RA 5	-0.01	-0.1	6.18	0	0	0
170	SLE RA 6	-0.01	-0.1	6.28	0	0	0
170	SLE RA 7	-0.01	-0.1	6.27	0	0	0
170	SLE RA 8	-0.01	-0.1	6.25	0	0	0
170	SLE RA 9	-0.01	-0.1	6.25	0	0	0
170	SLE RA 10	-0.01	-0.1	6.59	0	0	0
170	SLE RA 11	-0.02	-0.1	6.68	0	0	0
170	SLE RA 12	-0.02	-0.1	6.68	0	0	0
170	SLE RA 13	-0.01	-0.1	6.65	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
170	SLE RA 14	-0.02	-0.1	6.74	0	0	0
170	SLE RA 15	-0.02	-0.1	6.74	0	0	0
170	SLE RA 16	-0.02	-0.1	6.72	0	0	0
170	SLE RA 17	-0.02	-0.1	6.71	0	0	0
170	SLE RA 18	-0.02	-0.1	6.79	0	0	0
170	SLE RA 19	-0.02	-0.1	6.79	0	0	0
170	SLE RA 20	-0.02	-0.1	6.86	0	0	0
170	SLE RA 21	-0.02	-0.1	6.85	0	0	0
170	SLE FR 1	-0.01	-0.09	6.13	0	0	0
170	SLE FR 2	-0.01	-0.09	6.13	0	0	0
170	SLE FR 3	-0.01	-0.09	6.15	0	0	0
170	SLE FR 4	-0.01	-0.1	6.33	0	0	0
170	SLE FR 5	-0.01	-0.1	6.35	0	0	0
170	SLE FR 6	-0.02	-0.1	6.46	0	0	0
170	SLE QP 1	-0.01	-0.09	6.13	0	0	0
170	SLE QP 2	-0.01	-0.1	6.33	0	0	0
170	SLD 1	0.5	0.03	5.89	0	0	0
170	SLD 2	0.55	0.06	5.93	0	0	0
170	SLD 3	0.47	-0.1	5.67	0	0	0
170	SLD 4	0.52	-0.08	5.71	0	0	0
170	SLD 5	0.18	0.14	6.53	0	0	0
170	SLD 6	0.21	0.16	6.56	0	0	0
170	SLD 7	0.07	-0.31	5.78	0	0	0
170	SLD 8	0.11	-0.29	5.81	0	0	0
170	SLD 9	-0.14	0.1	6.85	0	0	0
170	SLD 10	-0.1	0.12	6.87	0	0	0
170	SLD 11	-0.24	-0.35	6.1	0	0	0
170	SLD 12	-0.21	-0.33	6.12	0	0	0
170	SLD 13	-0.55	-0.11	6.95	0	0	0
170	SLD 14	-0.5	-0.09	6.99	0	0	0
170	SLD 15	-0.58	-0.25	6.72	0	0	0
170	SLD 16	-0.53	-0.22	6.76	0	0	0
170	SLV 1	1.19	0.2	5.31	0	0	0
170	SLV 2	1.32	0.26	5.4	0	0	0
170	SLV 3	1.12	-0.11	4.8	0	0	0
170	SLV 4	1.25	-0.05	4.89	0	0	0
170	SLV 5	0.43	0.45	6.78	0	0	0
170	SLV 6	0.52	0.48	6.84	0	0	0
170	SLV 7	0.19	-0.57	5.08	0	0	0
170	SLV 8	0.28	-0.53	5.14	0	0	0
170	SLV 9	-0.31	0.34	7.52	0	0	0
170	SLV 10	-0.22	0.38	7.58	0	0	0
170	SLV 11	-0.54	-0.67	5.82	0	0	0
170	SLV 12	-0.46	-0.64	5.88	0	0	0
170	SLV 13	-1.27	-0.14	7.77	0	0	0
170	SLV 14	-1.15	-0.08	7.86	0	0	0
170	SLV 15	-1.35	-0.45	7.26	0	0	0
170	SLV 16	-1.22	-0.39	7.35	0	0	0
171	SLU 1	-0.01	-0.05	3.06	0	0	0
171	SLU 2	0	-0.06	3.06	0	0	0
171	SLU 3	-0.01	-0.06	3.13	0	0	0
171	SLU 4	-0.01	-0.06	3.13	0	0	0
171	SLU 5	-0.01	-0.06	3.11	0	0	0
171	SLU 6	-0.01	-0.06	3.18	0	0	0
171	SLU 7	-0.01	-0.06	3.18	0	0	0
171	SLU 8	-0.01	-0.06	3.16	0	0	0
171	SLU 9	-0.01	-0.06	3.15	0	0	0
171	SLU 10	-0.01	-0.06	3.42	0	0	0
171	SLU 11	-0.01	-0.06	3.49	0	0	0
171	SLU 12	-0.01	-0.06	3.49	0	0	0
171	SLU 13	-0.01	-0.06	3.47	0	0	0
171	SLU 14	-0.01	-0.06	3.54	0	0	0
171	SLU 15	-0.01	-0.06	3.54	0	0	0
171	SLU 16	-0.01	-0.06	3.52	0	0	0
171	SLU 17	-0.01	-0.06	3.51	0	0	0
171	SLU 18	-0.01	-0.06	3.58	0	0	0
171	SLU 19	-0.01	-0.06	3.57	0	0	0
171	SLU 20	-0.01	-0.06	3.62	0	0	0
171	SLU 21	-0.01	-0.06	3.62	0	0	0
171	SLU 22	-0.01	-0.06	3.38	0	0	0
171	SLU 23	-0.01	-0.06	3.38	0	0	0
171	SLU 24	-0.01	-0.06	3.45	0	0	0
171	SLU 25	-0.01	-0.06	3.45	0	0	0
171	SLU 26	-0.01	-0.06	3.43	0	0	0
171	SLU 27	-0.01	-0.06	3.5	0	0	0
171	SLU 28	-0.01	-0.06	3.5	0	0	0
171	SLU 29	-0.01	-0.06	3.48	0	0	0
171	SLU 30	-0.01	-0.06	3.47	0	0	0
171	SLU 31	-0.01	-0.06	3.74	0	0	0
171	SLU 32	-0.01	-0.06	3.81	0	0	0
171	SLU 33	-0.01	-0.06	3.81	0	0	0
171	SLU 34	-0.01	-0.06	3.79	0	0	0
171	SLU 35	-0.01	-0.06	3.86	0	0	0
171	SLU 36	-0.01	-0.06	3.86	0	0	0
171	SLU 37	-0.01	-0.06	3.84	0	0	0
171	SLU 38	-0.01	-0.06	3.83	0	0	0
171	SLU 39	-0.01	-0.06	3.9	0	0	0
171	SLU 40	-0.01	-0.06	3.89	0	0	0
171	SLU 41	-0.01	-0.06	3.94	0	0	0
171	SLU 42	-0.01	-0.06	3.94	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
171	SLU 43	-0.01	-0.07	3.87	0	0	0
171	SLU 44	-0.01	-0.07	3.87	0	0	0
171	SLU 45	-0.01	-0.07	3.94	0	0	0
171	SLU 46	-0.01	-0.07	3.94	0	0	0
171	SLU 47	-0.01	-0.07	3.91	0	0	0
171	SLU 48	-0.01	-0.07	3.99	0	0	0
171	SLU 49	-0.01	-0.07	3.98	0	0	0
171	SLU 50	-0.01	-0.07	3.97	0	0	0
171	SLU 51	-0.01	-0.07	3.96	0	0	0
171	SLU 52	-0.01	-0.08	4.23	0	0	0
171	SLU 53	-0.01	-0.07	4.3	0	0	0
171	SLU 54	-0.01	-0.08	4.3	0	0	0
171	SLU 55	-0.01	-0.08	4.27	0	0	0
171	SLU 56	-0.01	-0.08	4.35	0	0	0
171	SLU 57	-0.01	-0.08	4.34	0	0	0
171	SLU 58	-0.01	-0.08	4.32	0	0	0
171	SLU 59	-0.01	-0.08	4.32	0	0	0
171	SLU 60	-0.01	-0.08	4.38	0	0	0
171	SLU 61	-0.01	-0.08	4.38	0	0	0
171	SLU 62	-0.01	-0.08	4.43	0	0	0
171	SLU 63	-0.01	-0.08	4.43	0	0	0
171	SLU 64	-0.01	-0.07	4.19	0	0	0
171	SLU 65	-0.01	-0.07	4.19	0	0	0
171	SLU 66	-0.01	-0.07	4.26	0	0	0
171	SLU 67	-0.01	-0.07	4.26	0	0	0
171	SLU 68	-0.01	-0.07	4.23	0	0	0
171	SLU 69	-0.01	-0.07	4.31	0	0	0
171	SLU 70	-0.01	-0.07	4.3	0	0	0
171	SLU 71	-0.01	-0.07	4.29	0	0	0
171	SLU 72	-0.01	-0.07	4.28	0	0	0
171	SLU 73	-0.01	-0.08	4.55	0	0	0
171	SLU 74	-0.01	-0.08	4.62	0	0	0
171	SLU 75	-0.01	-0.08	4.62	0	0	0
171	SLU 76	-0.01	-0.08	4.59	0	0	0
171	SLU 77	-0.01	-0.08	4.67	0	0	0
171	SLU 78	-0.01	-0.08	4.66	0	0	0
171	SLU 79	-0.01	-0.08	4.64	0	0	0
171	SLU 80	-0.01	-0.08	4.64	0	0	0
171	SLU 81	-0.01	-0.08	4.7	0	0	0
171	SLU 82	-0.01	-0.08	4.7	0	0	0
171	SLU 83	-0.01	-0.08	4.75	0	0	0
171	SLU 84	-0.01	-0.08	4.75	0	0	0
171	SLE RA 1	-0.01	-0.05	3.15	0	0	0
171	SLE RA 2	-0.01	-0.06	3.15	0	0	0
171	SLE RA 3	-0.01	-0.06	3.2	0	0	0
171	SLE RA 4	-0.01	-0.06	3.2	0	0	0
171	SLE RA 5	-0.01	-0.06	3.18	0	0	0
171	SLE RA 6	-0.01	-0.06	3.23	0	0	0
171	SLE RA 7	-0.01	-0.06	3.23	0	0	0
171	SLE RA 8	-0.01	-0.06	3.22	0	0	0
171	SLE RA 9	-0.01	-0.06	3.22	0	0	0
171	SLE RA 10	-0.01	-0.06	3.39	0	0	0
171	SLE RA 11	-0.01	-0.06	3.44	0	0	0
171	SLE RA 12	-0.01	-0.06	3.44	0	0	0
171	SLE RA 13	-0.01	-0.06	3.42	0	0	0
171	SLE RA 14	-0.01	-0.06	3.47	0	0	0
171	SLE RA 15	-0.01	-0.06	3.47	0	0	0
171	SLE RA 16	-0.01	-0.06	3.46	0	0	0
171	SLE RA 17	-0.01	-0.06	3.45	0	0	0
171	SLE RA 18	-0.01	-0.06	3.5	0	0	0
171	SLE RA 19	-0.01	-0.06	3.49	0	0	0
171	SLE RA 20	-0.01	-0.06	3.53	0	0	0
171	SLE RA 21	-0.01	-0.06	3.53	0	0	0
171	SLE FR 1	-0.01	-0.05	3.15	0	0	0
171	SLE FR 2	-0.01	-0.06	3.15	0	0	0
171	SLE FR 3	-0.01	-0.06	3.17	0	0	0
171	SLE FR 4	-0.01	-0.06	3.26	0	0	0
171	SLE FR 5	-0.01	-0.06	3.27	0	0	0
171	SLE FR 6	-0.01	-0.06	3.32	0	0	0
171	SLE QP 1	-0.01	-0.05	3.15	0	0	0
171	SLE QP 2	-0.01	-0.06	3.26	0	0	0
171	SLD 1	0.26	0.01	3.01	0	0	0
171	SLD 2	0.28	0.03	3.03	0	0	0
171	SLD 3	0.24	-0.05	2.89	0	0	0
171	SLD 4	0.27	-0.04	2.91	0	0	0
171	SLD 5	0.09	0.07	3.36	0	0	0
171	SLD 6	0.11	0.08	3.37	0	0	0
171	SLD 7	0.04	-0.16	2.96	0	0	0
171	SLD 8	0.06	-0.15	2.98	0	0	0
171	SLD 9	-0.07	0.04	3.53	0	0	0
171	SLD 10	-0.05	0.05	3.55	0	0	0
171	SLD 11	-0.12	-0.19	3.14	0	0	0
171	SLD 12	-0.1	-0.18	3.16	0	0	0
171	SLD 13	-0.28	-0.07	3.6	0	0	0
171	SLD 14	-0.25	-0.06	3.62	0	0	0
171	SLD 15	-0.3	-0.14	3.48	0	0	0
171	SLD 16	-0.27	-0.13	3.51	0	0	0
171	SLV 1	0.61	0.1	2.67	0	0	0
171	SLV 2	0.67	0.14	2.72	0	0	0
171	SLV 3	0.57	-0.05	2.4	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
171	SLV 4	0.64	-0.02	2.45	0	0	0
171	SLV 5	0.22	0.22	3.48	0	0	0
171	SLV 6	0.26	0.24	3.51	0	0	0
171	SLV 7	0.1	-0.29	2.59	0	0	0
171	SLV 8	0.14	-0.27	2.62	0	0	0
171	SLV 9	-0.16	0.16	3.89	0	0	0
171	SLV 10	-0.11	0.18	3.92	0	0	0
171	SLV 11	-0.28	-0.35	3.01	0	0	0
171	SLV 12	-0.24	-0.33	3.04	0	0	0
171	SLV 13	-0.65	-0.09	4.06	0	0	0
171	SLV 14	-0.59	-0.06	4.11	0	0	0
171	SLV 15	-0.69	-0.25	3.8	0	0	0
171	SLV 16	-0.62	-0.22	3.84	0	0	0
181	SLU 1	-0.06	-0.24	11.44	0	0	0
181	SLU 2	-0.05	-0.26	11.42	0	0	0
181	SLU 3	-0.06	-0.25	11.69	0	0	0
181	SLU 4	-0.05	-0.25	11.68	0	0	0
181	SLU 5	-0.05	-0.26	11.6	0	0	0
181	SLU 6	-0.06	-0.25	11.87	0	0	0
181	SLU 7	-0.06	-0.26	11.86	0	0	0
181	SLU 8	-0.06	-0.25	11.79	0	0	0
181	SLU 9	-0.06	-0.26	11.78	0	0	0
181	SLU 10	-0.05	-0.27	12.76	0	0	0
181	SLU 11	-0.06	-0.26	13.04	0	0	0
181	SLU 12	-0.05	-0.27	13.03	0	0	0
181	SLU 13	-0.05	-0.28	12.94	0	0	0
181	SLU 14	-0.06	-0.27	13.22	0	0	0
181	SLU 15	-0.06	-0.27	13.2	0	0	0
181	SLU 16	-0.06	-0.27	13.14	0	0	0
181	SLU 17	-0.05	-0.27	13.13	0	0	0
181	SLU 18	-0.06	-0.27	13.36	0	0	0
181	SLU 19	-0.05	-0.27	13.35	0	0	0
181	SLU 20	-0.06	-0.27	13.54	0	0	0
181	SLU 21	-0.05	-0.28	13.53	0	0	0
181	SLU 22	-0.06	-0.25	12.63	0	0	0
181	SLU 23	-0.06	-0.26	12.61	0	0	0
181	SLU 24	-0.06	-0.25	12.88	0	0	0
181	SLU 25	-0.06	-0.26	12.87	0	0	0
181	SLU 26	-0.06	-0.27	12.79	0	0	0
181	SLU 27	-0.07	-0.26	13.06	0	0	0
181	SLU 28	-0.06	-0.26	13.05	0	0	0
181	SLU 29	-0.07	-0.26	12.98	0	0	0
181	SLU 30	-0.06	-0.26	12.97	0	0	0
181	SLU 31	-0.06	-0.28	13.96	0	0	0
181	SLU 32	-0.06	-0.27	14.23	0	0	0
181	SLU 33	-0.06	-0.28	14.22	0	0	0
181	SLU 34	-0.06	-0.28	14.13	0	0	0
181	SLU 35	-0.07	-0.27	14.41	0	0	0
181	SLU 36	-0.06	-0.28	14.4	0	0	0
181	SLU 37	-0.06	-0.27	14.33	0	0	0
181	SLU 38	-0.06	-0.28	14.32	0	0	0
181	SLU 39	-0.06	-0.27	14.55	0	0	0
181	SLU 40	-0.06	-0.28	14.54	0	0	0
181	SLU 41	-0.06	-0.28	14.73	0	0	0
181	SLU 42	-0.06	-0.28	14.72	0	0	0
181	SLU 43	-0.07	-0.32	14.46	0	0	0
181	SLU 44	-0.07	-0.33	14.44	0	0	0
181	SLU 45	-0.07	-0.32	14.71	0	0	0
181	SLU 46	-0.07	-0.33	14.7	0	0	0
181	SLU 47	-0.07	-0.33	14.62	0	0	0
181	SLU 48	-0.07	-0.32	14.89	0	0	0
181	SLU 49	-0.07	-0.33	14.88	0	0	0
181	SLU 50	-0.07	-0.32	14.82	0	0	0
181	SLU 51	-0.07	-0.33	14.8	0	0	0
181	SLU 52	-0.07	-0.34	15.79	0	0	0
181	SLU 53	-0.07	-0.33	16.06	0	0	0
181	SLU 54	-0.07	-0.34	16.05	0	0	0
181	SLU 55	-0.07	-0.35	15.96	0	0	0
181	SLU 56	-0.07	-0.34	16.24	0	0	0
181	SLU 57	-0.07	-0.35	16.23	0	0	0
181	SLU 58	-0.07	-0.34	16.16	0	0	0
181	SLU 59	-0.07	-0.35	16.15	0	0	0
181	SLU 60	-0.07	-0.34	16.38	0	0	0
181	SLU 61	-0.07	-0.35	16.37	0	0	0
181	SLU 62	-0.07	-0.34	16.56	0	0	0
181	SLU 63	-0.07	-0.35	16.55	0	0	0
181	SLU 64	-0.08	-0.32	15.65	0	0	0
181	SLU 65	-0.07	-0.33	15.63	0	0	0
181	SLU 66	-0.08	-0.33	15.91	0	0	0
181	SLU 67	-0.08	-0.33	15.89	0	0	0
181	SLU 68	-0.07	-0.34	15.81	0	0	0
181	SLU 69	-0.08	-0.33	16.08	0	0	0
181	SLU 70	-0.08	-0.34	16.07	0	0	0
181	SLU 71	-0.08	-0.33	16.01	0	0	0
181	SLU 72	-0.08	-0.34	15.99	0	0	0
181	SLU 73	-0.07	-0.35	16.98	0	0	0
181	SLU 74	-0.08	-0.34	17.25	0	0	0
181	SLU 75	-0.08	-0.35	17.24	0	0	0
181	SLU 76	-0.07	-0.35	17.16	0	0	0
181	SLU 77	-0.08	-0.34	17.43	0	0	0





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
181	SLU 78	-0.08	-0.35	17.42	0	0	0
181	SLU 79	-0.08	-0.34	17.35	0	0	0
181	SLU 80	-0.08	-0.35	17.34	0	0	0
181	SLU 81	-0.08	-0.34	17.58	0	0	0
181	SLU 82	-0.07	-0.35	17.56	0	0	0
181	SLU 83	-0.08	-0.35	17.75	0	0	0
181	SLU 84	-0.07	-0.35	17.74	0	0	0
181	SLE RA 1	-0.06	-0.25	11.78	0	0	0
181	SLE RA 2	-0.05	-0.25	11.76	0	0	0
181	SLE RA 3	-0.06	-0.25	11.95	0	0	0
181	SLE RA 4	-0.06	-0.25	11.94	0	0	0
181	SLE RA 5	-0.06	-0.26	11.88	0	0	0
181	SLE RA 6	-0.06	-0.25	12.07	0	0	0
181	SLE RA 7	-0.06	-0.26	12.06	0	0	0
181	SLE RA 8	-0.06	-0.25	12.01	0	0	0
181	SLE RA 9	-0.06	-0.26	12.01	0	0	0
181	SLE RA 10	-0.05	-0.26	12.66	0	0	0
181	SLE RA 11	-0.06	-0.26	12.84	0	0	0
181	SLE RA 12	-0.06	-0.26	12.84	0	0	0
181	SLE RA 13	-0.05	-0.27	12.78	0	0	0
181	SLE RA 14	-0.06	-0.26	12.96	0	0	0
181	SLE RA 15	-0.06	-0.27	12.96	0	0	0
181	SLE RA 16	-0.06	-0.26	12.91	0	0	0
181	SLE RA 17	-0.06	-0.27	12.9	0	0	0
181	SLE RA 18	-0.06	-0.26	13.06	0	0	0
181	SLE RA 19	-0.06	-0.27	13.05	0	0	0
181	SLE RA 20	-0.06	-0.26	13.18	0	0	0
181	SLE RA 21	-0.06	-0.27	13.17	0	0	0
181	SLE FR 1	-0.06	-0.25	11.78	0	0	0
181	SLE FR 2	-0.06	-0.25	11.77	0	0	0
181	SLE FR 3	-0.06	-0.25	11.82	0	0	0
181	SLE FR 4	-0.06	-0.25	12.16	0	0	0
181	SLE FR 5	-0.06	-0.25	12.21	0	0	0
181	SLE FR 6	-0.06	-0.25	12.42	0	0	0
181	SLE QP 1	-0.06	-0.25	11.78	0	0	0
181	SLE QP 2	-0.06	-0.25	12.16	0	0	0
181	SLD 1	0.84	-0.24	13.13	0	0	0
181	SLD 2	0.94	-0.29	13.07	0	0	0
181	SLD 3	0.9	-0.51	12.73	0	0	0
181	SLD 4	1	-0.55	12.66	0	0	0
181	SLD 5	0.1	0.16	13.07	0	0	0
181	SLD 6	0.17	0.13	13.03	0	0	0
181	SLD 7	0.3	-0.72	11.73	0	0	0
181	SLD 8	0.37	-0.75	11.69	0	0	0
181	SLD 9	-0.48	0.25	12.63	0	0	0
181	SLD 10	-0.42	0.22	12.59	0	0	0
181	SLD 11	-0.29	-0.63	11.29	0	0	0
181	SLD 12	-0.22	-0.66	11.25	0	0	0
181	SLD 13	-1.12	0.05	11.66	0	0	0
181	SLD 14	-1.02	0.01	11.6	0	0	0
181	SLD 15	-1.06	-0.21	11.26	0	0	0
181	SLD 16	-0.96	-0.26	11.2	0	0	0
181	SLV 1	2.05	-0.24	14.41	0	0	0
181	SLV 2	2.29	-0.35	14.26	0	0	0
181	SLV 3	2.19	-0.84	13.5	0	0	0
181	SLV 4	2.42	-0.95	13.35	0	0	0
181	SLV 5	0.33	0.68	14.24	0	0	0
181	SLV 6	0.48	0.61	14.15	0	0	0
181	SLV 7	0.78	-1.32	11.21	0	0	0
181	SLV 8	0.93	-1.39	11.11	0	0	0
181	SLV 9	-1.05	0.89	13.21	0	0	0
181	SLV 10	-0.9	0.82	13.12	0	0	0
181	SLV 11	-0.59	-1.11	10.18	0	0	0
181	SLV 12	-0.44	-1.18	10.08	0	0	0
181	SLV 13	-2.54	0.45	10.97	0	0	0
181	SLV 14	-2.31	0.34	10.82	0	0	0
181	SLV 15	-2.4	-0.15	10.06	0	0	0
181	SLV 16	-2.17	-0.26	9.91	0	0	0
182	SLU 1	-0.06	-0.21	11.08	0	0	0
182	SLU 2	-0.05	-0.22	11.06	0	0	0
182	SLU 3	-0.06	-0.21	11.32	0	0	0
182	SLU 4	-0.05	-0.22	11.31	0	0	0
182	SLU 5	-0.05	-0.22	11.23	0	0	0
182	SLU 6	-0.06	-0.21	11.5	0	0	0
182	SLU 7	-0.05	-0.22	11.49	0	0	0
182	SLU 8	-0.06	-0.21	11.42	0	0	0
182	SLU 9	-0.05	-0.22	11.41	0	0	0
182	SLU 10	-0.05	-0.23	12.37	0	0	0
182	SLU 11	-0.06	-0.22	12.63	0	0	0
182	SLU 12	-0.05	-0.23	12.62	0	0	0
182	SLU 13	-0.05	-0.23	12.54	0	0	0
182	SLU 14	-0.06	-0.23	12.8	0	0	0
182	SLU 15	-0.05	-0.23	12.79	0	0	0
182	SLU 16	-0.06	-0.23	12.73	0	0	0
182	SLU 17	-0.05	-0.23	12.72	0	0	0
182	SLU 18	-0.05	-0.23	12.95	0	0	0
182	SLU 19	-0.05	-0.23	12.93	0	0	0
182	SLU 20	-0.06	-0.23	13.12	0	0	0
182	SLU 21	-0.05	-0.23	13.11	0	0	0
182	SLU 22	-0.06	-0.21	12.23	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
182	SLU 23	-0.06	-0.22	12.21	0	0	0
182	SLU 24	-0.06	-0.21	12.47	0	0	0
182	SLU 25	-0.06	-0.22	12.46	0	0	0
182	SLU 26	-0.06	-0.22	12.38	0	0	0
182	SLU 27	-0.06	-0.22	12.65	0	0	0
182	SLU 28	-0.06	-0.22	12.64	0	0	0
182	SLU 29	-0.06	-0.22	12.57	0	0	0
182	SLU 30	-0.06	-0.22	12.56	0	0	0
182	SLU 31	-0.06	-0.23	13.52	0	0	0
182	SLU 32	-0.06	-0.22	13.78	0	0	0
182	SLU 33	-0.06	-0.23	13.77	0	0	0
182	SLU 34	-0.06	-0.24	13.69	0	0	0
182	SLU 35	-0.06	-0.23	13.95	0	0	0
182	SLU 36	-0.06	-0.23	13.94	0	0	0
182	SLU 37	-0.06	-0.23	13.88	0	0	0
182	SLU 38	-0.06	-0.23	13.87	0	0	0
182	SLU 39	-0.06	-0.23	14.1	0	0	0
182	SLU 40	-0.06	-0.23	14.08	0	0	0
182	SLU 41	-0.06	-0.23	14.27	0	0	0
182	SLU 42	-0.06	-0.24	14.26	0	0	0
182	SLU 43	-0.07	-0.27	14.01	0	0	0
182	SLU 44	-0.06	-0.28	13.99	0	0	0
182	SLU 45	-0.07	-0.27	14.25	0	0	0
182	SLU 46	-0.07	-0.28	14.24	0	0	0
182	SLU 47	-0.07	-0.28	14.16	0	0	0
182	SLU 48	-0.07	-0.28	14.43	0	0	0
182	SLU 49	-0.07	-0.28	14.41	0	0	0
182	SLU 50	-0.07	-0.28	14.35	0	0	0
182	SLU 51	-0.07	-0.28	14.34	0	0	0
182	SLU 52	-0.06	-0.29	15.3	0	0	0
182	SLU 53	-0.07	-0.28	15.56	0	0	0
182	SLU 54	-0.07	-0.29	15.55	0	0	0
182	SLU 55	-0.06	-0.3	15.47	0	0	0
182	SLU 56	-0.07	-0.29	15.73	0	0	0
182	SLU 57	-0.07	-0.29	15.72	0	0	0
182	SLU 58	-0.07	-0.29	15.66	0	0	0
182	SLU 59	-0.07	-0.3	15.65	0	0	0
182	SLU 60	-0.07	-0.29	15.87	0	0	0
182	SLU 61	-0.07	-0.29	15.86	0	0	0
182	SLU 62	-0.07	-0.29	16.05	0	0	0
182	SLU 63	-0.07	-0.3	16.04	0	0	0
182	SLU 64	-0.08	-0.27	15.16	0	0	0
182	SLU 65	-0.07	-0.28	15.14	0	0	0
182	SLU 66	-0.08	-0.27	15.4	0	0	0
182	SLU 67	-0.07	-0.28	15.39	0	0	0
182	SLU 68	-0.07	-0.29	15.31	0	0	0
182	SLU 69	-0.08	-0.28	15.58	0	0	0
182	SLU 70	-0.08	-0.28	15.56	0	0	0
182	SLU 71	-0.08	-0.28	15.5	0	0	0
182	SLU 72	-0.07	-0.28	15.49	0	0	0
182	SLU 73	-0.07	-0.29	16.45	0	0	0
182	SLU 74	-0.08	-0.29	16.71	0	0	0
182	SLU 75	-0.07	-0.29	16.7	0	0	0
182	SLU 76	-0.07	-0.3	16.62	0	0	0
182	SLU 77	-0.08	-0.29	16.88	0	0	0
182	SLU 78	-0.07	-0.3	16.87	0	0	0
182	SLU 79	-0.08	-0.29	16.81	0	0	0
182	SLU 80	-0.07	-0.3	16.8	0	0	0
182	SLU 81	-0.08	-0.29	17.03	0	0	0
182	SLU 82	-0.07	-0.3	17.01	0	0	0
182	SLU 83	-0.08	-0.29	17.2	0	0	0
182	SLU 84	-0.07	-0.3	17.19	0	0	0
182	SLE RA 1	-0.06	-0.21	11.41	0	0	0
182	SLE RA 2	-0.05	-0.22	11.39	0	0	0
182	SLE RA 3	-0.06	-0.21	11.57	0	0	0
182	SLE RA 4	-0.06	-0.21	11.56	0	0	0
182	SLE RA 5	-0.05	-0.22	11.51	0	0	0
182	SLE RA 6	-0.06	-0.21	11.69	0	0	0
182	SLE RA 7	-0.06	-0.22	11.68	0	0	0
182	SLE RA 8	-0.06	-0.21	11.64	0	0	0
182	SLE RA 9	-0.06	-0.22	11.63	0	0	0
182	SLE RA 10	-0.05	-0.22	12.27	0	0	0
182	SLE RA 11	-0.06	-0.22	12.44	0	0	0
182	SLE RA 12	-0.06	-0.22	12.44	0	0	0
182	SLE RA 13	-0.05	-0.23	12.38	0	0	0
182	SLE RA 14	-0.06	-0.22	12.56	0	0	0
182	SLE RA 15	-0.06	-0.22	12.55	0	0	0
182	SLE RA 16	-0.06	-0.22	12.51	0	0	0
182	SLE RA 17	-0.06	-0.23	12.5	0	0	0
182	SLE RA 18	-0.06	-0.22	12.65	0	0	0
182	SLE RA 19	-0.05	-0.22	12.64	0	0	0
182	SLE RA 20	-0.06	-0.22	12.77	0	0	0
182	SLE RA 21	-0.06	-0.23	12.76	0	0	0
182	SLE FR 1	-0.06	-0.21	11.41	0	0	0
182	SLE FR 2	-0.06	-0.21	11.4	0	0	0
182	SLE FR 3	-0.06	-0.21	11.45	0	0	0
182	SLE FR 4	-0.06	-0.21	11.78	0	0	0
182	SLE FR 5	-0.06	-0.21	11.83	0	0	0
182	SLE FR 6	-0.06	-0.21	12.03	0	0	0
182	SLE QP 1	-0.06	-0.21	11.41	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
182	SLE QP 2	-0.06	-0.21	11.78	0	0	0
182	SLD 1	0.83	-0.19	12.62	0	0	0
182	SLD 2	0.93	-0.23	12.56	0	0	0
182	SLD 3	0.89	-0.45	12.23	0	0	0
182	SLD 4	0.98	-0.49	12.17	0	0	0
182	SLD 5	0.1	0.2	12.63	0	0	0
182	SLD 6	0.17	0.17	12.59	0	0	0
182	SLD 7	0.3	-0.67	11.34	0	0	0
182	SLD 8	0.36	-0.7	11.3	0	0	0
182	SLD 9	-0.47	0.28	12.26	0	0	0
182	SLD 10	-0.41	0.25	12.22	0	0	0
182	SLD 11	-0.28	-0.6	10.97	0	0	0
182	SLD 12	-0.22	-0.62	10.93	0	0	0
182	SLD 13	-1.1	0.07	11.39	0	0	0
182	SLD 14	-1	0.03	11.33	0	0	0
182	SLD 15	-1.04	-0.19	11	0	0	0
182	SLD 16	-0.94	-0.24	10.94	0	0	0
182	SLV 1	2.02	-0.17	13.72	0	0	0
182	SLV 2	2.24	-0.27	13.59	0	0	0
182	SLV 3	2.15	-0.76	12.85	0	0	0
182	SLV 4	2.38	-0.86	12.71	0	0	0
182	SLV 5	0.32	0.72	13.71	0	0	0
182	SLV 6	0.47	0.65	13.63	0	0	0
182	SLV 7	0.77	-1.26	10.8	0	0	0
182	SLV 8	0.92	-1.32	10.71	0	0	0
182	SLV 9	-1.03	0.9	12.85	0	0	0
182	SLV 10	-0.88	0.83	12.76	0	0	0
182	SLV 11	-0.58	-1.08	9.93	0	0	0
182	SLV 12	-0.44	-1.14	9.85	0	0	0
182	SLV 13	-2.49	0.43	10.85	0	0	0
182	SLV 14	-2.26	0.33	10.71	0	0	0
182	SLV 15	-2.36	-0.16	9.97	0	0	0
182	SLV 16	-2.13	-0.26	9.84	0	0	0
183	SLU 1	-0.06	-0.18	11.34	0	0	0
183	SLU 2	-0.05	-0.2	11.33	0	0	0
183	SLU 3	-0.06	-0.19	11.6	0	0	0
183	SLU 4	-0.05	-0.19	11.59	0	0	0
183	SLU 5	-0.05	-0.2	11.5	0	0	0
183	SLU 6	-0.06	-0.19	11.77	0	0	0
183	SLU 7	-0.06	-0.2	11.76	0	0	0
183	SLU 8	-0.06	-0.19	11.7	0	0	0
183	SLU 9	-0.06	-0.2	11.69	0	0	0
183	SLU 10	-0.05	-0.2	12.67	0	0	0
183	SLU 11	-0.06	-0.19	12.94	0	0	0
183	SLU 12	-0.05	-0.2	12.93	0	0	0
183	SLU 13	-0.05	-0.21	12.84	0	0	0
183	SLU 14	-0.06	-0.2	13.12	0	0	0
183	SLU 15	-0.06	-0.2	13.1	0	0	0
183	SLU 16	-0.06	-0.2	13.04	0	0	0
183	SLU 17	-0.05	-0.21	13.03	0	0	0
183	SLU 18	-0.06	-0.2	13.26	0	0	0
183	SLU 19	-0.05	-0.2	13.25	0	0	0
183	SLU 20	-0.06	-0.2	13.44	0	0	0
183	SLU 21	-0.05	-0.21	13.43	0	0	0
183	SLU 22	-0.06	-0.18	12.52	0	0	0
183	SLU 23	-0.06	-0.19	12.5	0	0	0
183	SLU 24	-0.06	-0.18	12.77	0	0	0
183	SLU 25	-0.06	-0.19	12.76	0	0	0
183	SLU 26	-0.06	-0.2	12.68	0	0	0
183	SLU 27	-0.07	-0.19	12.95	0	0	0
183	SLU 28	-0.06	-0.19	12.94	0	0	0
183	SLU 29	-0.07	-0.19	12.87	0	0	0
183	SLU 30	-0.06	-0.19	12.86	0	0	0
183	SLU 31	-0.06	-0.2	13.84	0	0	0
183	SLU 32	-0.06	-0.19	14.11	0	0	0
183	SLU 33	-0.06	-0.2	14.1	0	0	0
183	SLU 34	-0.06	-0.2	14.02	0	0	0
183	SLU 35	-0.07	-0.19	14.29	0	0	0
183	SLU 36	-0.06	-0.2	14.28	0	0	0
183	SLU 37	-0.06	-0.2	14.22	0	0	0
183	SLU 38	-0.06	-0.2	14.2	0	0	0
183	SLU 39	-0.06	-0.19	14.44	0	0	0
183	SLU 40	-0.06	-0.2	14.43	0	0	0
183	SLU 41	-0.06	-0.2	14.61	0	0	0
183	SLU 42	-0.06	-0.2	14.6	0	0	0
183	SLU 43	-0.07	-0.24	14.34	0	0	0
183	SLU 44	-0.07	-0.25	14.33	0	0	0
183	SLU 45	-0.07	-0.24	14.6	0	0	0
183	SLU 46	-0.07	-0.25	14.59	0	0	0
183	SLU 47	-0.07	-0.25	14.5	0	0	0
183	SLU 48	-0.07	-0.24	14.77	0	0	0
183	SLU 49	-0.07	-0.25	14.76	0	0	0
183	SLU 50	-0.07	-0.25	14.7	0	0	0
183	SLU 51	-0.07	-0.25	14.69	0	0	0
183	SLU 52	-0.07	-0.26	15.67	0	0	0
183	SLU 53	-0.07	-0.25	15.94	0	0	0
183	SLU 54	-0.07	-0.26	15.93	0	0	0
183	SLU 55	-0.07	-0.26	15.85	0	0	0
183	SLU 56	-0.07	-0.25	16.12	0	0	0
183	SLU 57	-0.07	-0.26	16.11	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
183	SLU 58	-0.07	-0.25	16.04	0	0	0
183	SLU 59	-0.07	-0.26	16.03	0	0	0
183	SLU 60	-0.07	-0.25	16.26	0	0	0
183	SLU 61	-0.07	-0.26	16.25	0	0	0
183	SLU 62	-0.07	-0.26	16.44	0	0	0
183	SLU 63	-0.07	-0.26	16.43	0	0	0
183	SLU 64	-0.08	-0.24	15.52	0	0	0
183	SLU 65	-0.07	-0.25	15.5	0	0	0
183	SLU 66	-0.08	-0.24	15.77	0	0	0
183	SLU 67	-0.08	-0.25	15.76	0	0	0
183	SLU 68	-0.07	-0.25	15.68	0	0	0
183	SLU 69	-0.08	-0.24	15.95	0	0	0
183	SLU 70	-0.08	-0.25	15.94	0	0	0
183	SLU 71	-0.08	-0.24	15.87	0	0	0
183	SLU 72	-0.08	-0.25	15.86	0	0	0
183	SLU 73	-0.07	-0.26	16.84	0	0	0
183	SLU 74	-0.08	-0.25	17.11	0	0	0
183	SLU 75	-0.08	-0.25	17.1	0	0	0
183	SLU 76	-0.07	-0.26	17.02	0	0	0
183	SLU 77	-0.08	-0.25	17.29	0	0	0
183	SLU 78	-0.08	-0.26	17.28	0	0	0
183	SLU 79	-0.08	-0.25	17.22	0	0	0
183	SLU 80	-0.08	-0.26	17.2	0	0	0
183	SLU 81	-0.08	-0.25	17.44	0	0	0
183	SLU 82	-0.07	-0.26	17.43	0	0	0
183	SLU 83	-0.08	-0.25	17.61	0	0	0
183	SLU 84	-0.07	-0.26	17.6	0	0	0
183	SLE RA 1	-0.06	-0.18	11.68	0	0	0
183	SLE RA 2	-0.05	-0.19	11.67	0	0	0
183	SLE RA 3	-0.06	-0.18	11.85	0	0	0
183	SLE RA 4	-0.06	-0.19	11.84	0	0	0
183	SLE RA 5	-0.06	-0.19	11.79	0	0	0
183	SLE RA 6	-0.06	-0.19	11.97	0	0	0
183	SLE RA 7	-0.06	-0.19	11.96	0	0	0
183	SLE RA 8	-0.06	-0.19	11.92	0	0	0
183	SLE RA 9	-0.06	-0.19	11.91	0	0	0
183	SLE RA 10	-0.05	-0.2	12.56	0	0	0
183	SLE RA 11	-0.06	-0.19	12.74	0	0	0
183	SLE RA 12	-0.06	-0.19	12.74	0	0	0
183	SLE RA 13	-0.05	-0.2	12.68	0	0	0
183	SLE RA 14	-0.06	-0.19	12.86	0	0	0
183	SLE RA 15	-0.06	-0.2	12.85	0	0	0
183	SLE RA 16	-0.06	-0.19	12.81	0	0	0
183	SLE RA 17	-0.06	-0.2	12.8	0	0	0
183	SLE RA 18	-0.06	-0.19	12.96	0	0	0
183	SLE RA 19	-0.06	-0.2	12.95	0	0	0
183	SLE RA 20	-0.06	-0.19	13.08	0	0	0
183	SLE RA 21	-0.06	-0.2	13.07	0	0	0
183	SLE FR 1	-0.06	-0.18	11.68	0	0	0
183	SLE FR 2	-0.06	-0.19	11.68	0	0	0
183	SLE FR 3	-0.06	-0.18	11.73	0	0	0
183	SLE FR 4	-0.06	-0.19	12.06	0	0	0
183	SLE FR 5	-0.06	-0.19	12.11	0	0	0
183	SLE FR 6	-0.06	-0.19	12.32	0	0	0
183	SLE QP 1	-0.06	-0.18	11.68	0	0	0
183	SLE QP 2	-0.06	-0.19	12.06	0	0	0
183	SLD 1	0.86	-0.15	12.81	0	0	0
183	SLD 2	0.96	-0.19	12.76	0	0	0
183	SLD 3	0.92	-0.42	12.42	0	0	0
183	SLD 4	1.02	-0.46	12.37	0	0	0
183	SLD 5	0.11	0.25	12.89	0	0	0
183	SLD 6	0.17	0.22	12.86	0	0	0
183	SLD 7	0.31	-0.66	11.58	0	0	0
183	SLD 8	0.37	-0.69	11.55	0	0	0
183	SLD 9	-0.49	0.32	12.58	0	0	0
183	SLD 10	-0.42	0.29	12.54	0	0	0
183	SLD 11	-0.29	-0.59	11.27	0	0	0
183	SLD 12	-0.22	-0.62	11.23	0	0	0
183	SLD 13	-1.14	0.09	11.76	0	0	0
183	SLD 14	-1.03	0.05	11.71	0	0	0
183	SLD 15	-1.08	-0.19	11.37	0	0	0
183	SLD 16	-0.97	-0.23	11.31	0	0	0
183	SLV 1	2.09	-0.1	13.8	0	0	0
183	SLV 2	2.32	-0.2	13.68	0	0	0
183	SLV 3	2.22	-0.72	12.91	0	0	0
183	SLV 4	2.46	-0.81	12.79	0	0	0
183	SLV 5	0.33	0.79	13.96	0	0	0
183	SLV 6	0.49	0.73	13.87	0	0	0
183	SLV 7	0.8	-1.27	10.99	0	0	0
183	SLV 8	0.95	-1.33	10.91	0	0	0
183	SLV 9	-1.07	0.95	13.22	0	0	0
183	SLV 10	-0.91	0.89	13.14	0	0	0
183	SLV 11	-0.6	-1.1	10.25	0	0	0
183	SLV 12	-0.45	-1.16	10.17	0	0	0
183	SLV 13	-2.58	0.44	11.34	0	0	0
183	SLV 14	-2.34	0.35	11.21	0	0	0
183	SLV 15	-2.44	-0.18	10.45	0	0	0
183	SLV 16	-2.2	-0.27	10.32	0	0	0
184	SLU 1	-0.06	-0.16	11.48	0	0	0
184	SLU 2	-0.05	-0.17	11.46	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
184	SLU 3	-0.06	-0.16	11.73	0	0	0
184	SLU 4	-0.05	-0.16	11.72	0	0	0
184	SLU 5	-0.05	-0.17	11.64	0	0	0
184	SLU 6	-0.06	-0.16	11.91	0	0	0
184	SLU 7	-0.06	-0.17	11.9	0	0	0
184	SLU 8	-0.06	-0.16	11.84	0	0	0
184	SLU 9	-0.06	-0.17	11.82	0	0	0
184	SLU 10	-0.05	-0.17	12.82	0	0	0
184	SLU 11	-0.06	-0.16	13.1	0	0	0
184	SLU 12	-0.05	-0.17	13.08	0	0	0
184	SLU 13	-0.05	-0.18	13	0	0	0
184	SLU 14	-0.06	-0.16	13.28	0	0	0
184	SLU 15	-0.06	-0.17	13.26	0	0	0
184	SLU 16	-0.06	-0.17	13.2	0	0	0
184	SLU 17	-0.05	-0.17	13.19	0	0	0
184	SLU 18	-0.06	-0.16	13.43	0	0	0
184	SLU 19	-0.05	-0.17	13.41	0	0	0
184	SLU 20	-0.06	-0.17	13.6	0	0	0
184	SLU 21	-0.05	-0.17	13.59	0	0	0
184	SLU 22	-0.06	-0.15	12.66	0	0	0
184	SLU 23	-0.06	-0.16	12.64	0	0	0
184	SLU 24	-0.06	-0.15	12.92	0	0	0
184	SLU 25	-0.06	-0.16	12.91	0	0	0
184	SLU 26	-0.06	-0.16	12.82	0	0	0
184	SLU 27	-0.07	-0.15	13.1	0	0	0
184	SLU 28	-0.06	-0.16	13.09	0	0	0
184	SLU 29	-0.07	-0.15	13.02	0	0	0
184	SLU 30	-0.06	-0.16	13.01	0	0	0
184	SLU 31	-0.06	-0.17	14.01	0	0	0
184	SLU 32	-0.06	-0.16	14.28	0	0	0
184	SLU 33	-0.06	-0.16	14.27	0	0	0
184	SLU 34	-0.06	-0.17	14.19	0	0	0
184	SLU 35	-0.07	-0.16	14.46	0	0	0
184	SLU 36	-0.06	-0.17	14.45	0	0	0
184	SLU 37	-0.06	-0.16	14.39	0	0	0
184	SLU 38	-0.06	-0.17	14.37	0	0	0
184	SLU 39	-0.06	-0.16	14.61	0	0	0
184	SLU 40	-0.06	-0.16	14.6	0	0	0
184	SLU 41	-0.06	-0.16	14.79	0	0	0
184	SLU 42	-0.06	-0.17	14.78	0	0	0
184	SLU 43	-0.07	-0.21	14.51	0	0	0
184	SLU 44	-0.07	-0.22	14.49	0	0	0
184	SLU 45	-0.07	-0.21	14.77	0	0	0
184	SLU 46	-0.07	-0.21	14.76	0	0	0
184	SLU 47	-0.07	-0.22	14.67	0	0	0
184	SLU 48	-0.07	-0.21	14.95	0	0	0
184	SLU 49	-0.07	-0.22	14.94	0	0	0
184	SLU 50	-0.07	-0.21	14.87	0	0	0
184	SLU 51	-0.07	-0.22	14.86	0	0	0
184	SLU 52	-0.07	-0.22	15.86	0	0	0
184	SLU 53	-0.07	-0.21	16.13	0	0	0
184	SLU 54	-0.07	-0.22	16.12	0	0	0
184	SLU 55	-0.07	-0.22	16.04	0	0	0
184	SLU 56	-0.07	-0.21	16.31	0	0	0
184	SLU 57	-0.07	-0.22	16.3	0	0	0
184	SLU 58	-0.07	-0.22	16.24	0	0	0
184	SLU 59	-0.07	-0.22	16.22	0	0	0
184	SLU 60	-0.07	-0.21	16.46	0	0	0
184	SLU 61	-0.07	-0.22	16.45	0	0	0
184	SLU 62	-0.07	-0.22	16.64	0	0	0
184	SLU 63	-0.07	-0.22	16.63	0	0	0
184	SLU 64	-0.08	-0.2	15.7	0	0	0
184	SLU 65	-0.07	-0.21	15.68	0	0	0
184	SLU 66	-0.08	-0.2	15.95	0	0	0
184	SLU 67	-0.08	-0.21	15.94	0	0	0
184	SLU 68	-0.07	-0.21	15.86	0	0	0
184	SLU 69	-0.08	-0.2	16.13	0	0	0
184	SLU 70	-0.08	-0.21	16.12	0	0	0
184	SLU 71	-0.08	-0.2	16.06	0	0	0
184	SLU 72	-0.08	-0.21	16.05	0	0	0
184	SLU 73	-0.07	-0.22	17.04	0	0	0
184	SLU 74	-0.08	-0.21	17.32	0	0	0
184	SLU 75	-0.08	-0.21	17.31	0	0	0
184	SLU 76	-0.07	-0.22	17.22	0	0	0
184	SLU 77	-0.08	-0.21	17.5	0	0	0
184	SLU 78	-0.08	-0.21	17.49	0	0	0
184	SLU 79	-0.08	-0.21	17.42	0	0	0
184	SLU 80	-0.08	-0.22	17.41	0	0	0
184	SLU 81	-0.08	-0.21	17.65	0	0	0
184	SLU 82	-0.07	-0.21	17.64	0	0	0
184	SLU 83	-0.08	-0.21	17.83	0	0	0
184	SLU 84	-0.07	-0.22	17.82	0	0	0
184	SLE RA 1	-0.06	-0.15	11.82	0	0	0
184	SLE RA 2	-0.05	-0.16	11.8	0	0	0
184	SLE RA 3	-0.06	-0.15	11.99	0	0	0
184	SLE RA 4	-0.06	-0.16	11.98	0	0	0
184	SLE RA 5	-0.06	-0.16	11.92	0	0	0
184	SLE RA 6	-0.06	-0.16	12.11	0	0	0
184	SLE RA 7	-0.06	-0.16	12.1	0	0	0
184	SLE RA 8	-0.06	-0.16	12.05	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
184	SLE RA 9	-0.06	-0.16	12.05	0	0	0
184	SLE RA 10	-0.05	-0.17	12.71	0	0	0
184	SLE RA 11	-0.06	-0.16	12.9	0	0	0
184	SLE RA 12	-0.06	-0.16	12.89	0	0	0
184	SLE RA 13	-0.05	-0.17	12.83	0	0	0
184	SLE RA 14	-0.06	-0.16	13.01	0	0	0
184	SLE RA 15	-0.06	-0.16	13.01	0	0	0
184	SLE RA 16	-0.06	-0.16	12.96	0	0	0
184	SLE RA 17	-0.06	-0.17	12.96	0	0	0
184	SLE RA 18	-0.06	-0.16	13.11	0	0	0
184	SLE RA 19	-0.06	-0.16	13.11	0	0	0
184	SLE RA 20	-0.06	-0.16	13.23	0	0	0
184	SLE RA 21	-0.06	-0.17	13.23	0	0	0
184	SLE FR 1	-0.06	-0.15	11.82	0	0	0
184	SLE FR 2	-0.06	-0.16	11.81	0	0	0
184	SLE FR 3	-0.06	-0.16	11.86	0	0	0
184	SLE FR 4	-0.06	-0.16	12.2	0	0	0
184	SLE FR 5	-0.06	-0.16	12.25	0	0	0
184	SLE FR 6	-0.06	-0.16	12.46	0	0	0
184	SLE QP 1	-0.06	-0.15	11.82	0	0	0
184	SLE QP 2	-0.06	-0.16	12.21	0	0	0
184	SLD 1	0.87	-0.1	12.86	0	0	0
184	SLD 2	0.98	-0.14	12.8	0	0	0
184	SLD 3	0.94	-0.38	12.46	0	0	0
184	SLD 4	1.04	-0.42	12.41	0	0	0
184	SLD 5	0.11	0.29	13.01	0	0	0
184	SLD 6	0.18	0.27	12.98	0	0	0
184	SLD 7	0.31	-0.64	11.69	0	0	0
184	SLD 8	0.38	-0.67	11.66	0	0	0
184	SLD 9	-0.5	0.35	12.75	0	0	0
184	SLD 10	-0.43	0.33	12.72	0	0	0
184	SLD 11	-0.3	-0.58	11.43	0	0	0
184	SLD 12	-0.23	-0.6	11.4	0	0	0
184	SLD 13	-1.16	0.1	12	0	0	0
184	SLD 14	-1.05	0.07	11.95	0	0	0
184	SLD 15	-1.1	-0.17	11.61	0	0	0
184	SLD 16	-0.99	-0.21	11.55	0	0	0
184	SLV 1	2.13	-0.04	13.71	0	0	0
184	SLV 2	2.37	-0.12	13.59	0	0	0
184	SLV 3	2.27	-0.67	12.82	0	0	0
184	SLV 4	2.51	-0.76	12.7	0	0	0
184	SLV 5	0.34	0.85	14.04	0	0	0
184	SLV 6	0.5	0.8	13.96	0	0	0
184	SLV 7	0.81	-1.26	11.05	0	0	0
184	SLV 8	0.97	-1.31	10.97	0	0	0
184	SLV 9	-1.08	1	13.44	0	0	0
184	SLV 10	-0.93	0.94	13.36	0	0	0
184	SLV 11	-0.61	-1.11	10.45	0	0	0
184	SLV 12	-0.46	-1.17	10.37	0	0	0
184	SLV 13	-2.63	0.44	11.71	0	0	0
184	SLV 14	-2.38	0.36	11.59	0	0	0
184	SLV 15	-2.48	-0.19	10.82	0	0	0
184	SLV 16	-2.24	-0.27	10.7	0	0	0
185	SLU 1	-0.06	-0.13	11.53	0	0	0
185	SLU 2	-0.05	-0.14	11.51	0	0	0
185	SLU 3	-0.06	-0.13	11.78	0	0	0
185	SLU 4	-0.05	-0.13	11.77	0	0	0
185	SLU 5	-0.05	-0.14	11.69	0	0	0
185	SLU 6	-0.06	-0.13	11.96	0	0	0
185	SLU 7	-0.06	-0.13	11.95	0	0	0
185	SLU 8	-0.06	-0.13	11.89	0	0	0
185	SLU 9	-0.05	-0.14	11.88	0	0	0
185	SLU 10	-0.05	-0.14	12.89	0	0	0
185	SLU 11	-0.06	-0.13	13.16	0	0	0
185	SLU 12	-0.05	-0.13	13.15	0	0	0
185	SLU 13	-0.05	-0.14	13.07	0	0	0
185	SLU 14	-0.06	-0.13	13.34	0	0	0
185	SLU 15	-0.05	-0.14	13.33	0	0	0
185	SLU 16	-0.06	-0.13	13.27	0	0	0
185	SLU 17	-0.05	-0.14	13.25	0	0	0
185	SLU 18	-0.06	-0.13	13.49	0	0	0
185	SLU 19	-0.05	-0.14	13.48	0	0	0
185	SLU 20	-0.06	-0.13	13.68	0	0	0
185	SLU 21	-0.05	-0.14	13.66	0	0	0
185	SLU 22	-0.06	-0.12	12.72	0	0	0
185	SLU 23	-0.06	-0.13	12.7	0	0	0
185	SLU 24	-0.06	-0.12	12.97	0	0	0
185	SLU 25	-0.06	-0.12	12.96	0	0	0
185	SLU 26	-0.06	-0.13	12.88	0	0	0
185	SLU 27	-0.07	-0.12	13.16	0	0	0
185	SLU 28	-0.06	-0.12	13.14	0	0	0
185	SLU 29	-0.06	-0.12	13.08	0	0	0
185	SLU 30	-0.06	-0.13	13.07	0	0	0
185	SLU 31	-0.06	-0.13	14.08	0	0	0
185	SLU 32	-0.06	-0.12	14.35	0	0	0
185	SLU 33	-0.06	-0.12	14.34	0	0	0
185	SLU 34	-0.06	-0.13	14.26	0	0	0
185	SLU 35	-0.06	-0.12	14.53	0	0	0
185	SLU 36	-0.06	-0.13	14.52	0	0	0
185	SLU 37	-0.06	-0.12	14.46	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
185	SLU 38	-0.06	-0.13	14.45	0	0	0
185	SLU 39	-0.06	-0.12	14.69	0	0	0
185	SLU 40	-0.06	-0.13	14.67	0	0	0
185	SLU 41	-0.06	-0.12	14.87	0	0	0
185	SLU 42	-0.06	-0.13	14.86	0	0	0
185	SLU 43	-0.07	-0.17	14.58	0	0	0
185	SLU 44	-0.07	-0.18	14.56	0	0	0
185	SLU 45	-0.07	-0.17	14.83	0	0	0
185	SLU 46	-0.07	-0.17	14.82	0	0	0
185	SLU 47	-0.07	-0.18	14.74	0	0	0
185	SLU 48	-0.07	-0.17	15.01	0	0	0
185	SLU 49	-0.07	-0.18	15	0	0	0
185	SLU 50	-0.07	-0.17	14.94	0	0	0
185	SLU 51	-0.07	-0.18	14.93	0	0	0
185	SLU 52	-0.06	-0.18	15.93	0	0	0
185	SLU 53	-0.07	-0.17	16.21	0	0	0
185	SLU 54	-0.07	-0.18	16.2	0	0	0
185	SLU 55	-0.07	-0.18	16.12	0	0	0
185	SLU 56	-0.07	-0.17	16.39	0	0	0
185	SLU 57	-0.07	-0.18	16.38	0	0	0
185	SLU 58	-0.07	-0.17	16.32	0	0	0
185	SLU 59	-0.07	-0.18	16.3	0	0	0
185	SLU 60	-0.07	-0.17	16.54	0	0	0
185	SLU 61	-0.07	-0.18	16.53	0	0	0
185	SLU 62	-0.07	-0.17	16.72	0	0	0
185	SLU 63	-0.07	-0.18	16.71	0	0	0
185	SLU 64	-0.08	-0.16	15.77	0	0	0
185	SLU 65	-0.07	-0.17	15.75	0	0	0
185	SLU 66	-0.08	-0.16	16.02	0	0	0
185	SLU 67	-0.08	-0.16	16.01	0	0	0
185	SLU 68	-0.07	-0.17	15.93	0	0	0
185	SLU 69	-0.08	-0.16	16.2	0	0	0
185	SLU 70	-0.08	-0.17	16.19	0	0	0
185	SLU 71	-0.08	-0.16	16.13	0	0	0
185	SLU 72	-0.08	-0.17	16.12	0	0	0
185	SLU 73	-0.07	-0.17	17.13	0	0	0
185	SLU 74	-0.08	-0.16	17.4	0	0	0
185	SLU 75	-0.07	-0.17	17.39	0	0	0
185	SLU 76	-0.07	-0.17	17.31	0	0	0
185	SLU 77	-0.08	-0.16	17.58	0	0	0
185	SLU 78	-0.08	-0.17	17.57	0	0	0
185	SLU 79	-0.08	-0.16	17.51	0	0	0
185	SLU 80	-0.07	-0.17	17.5	0	0	0
185	SLU 81	-0.08	-0.16	17.74	0	0	0
185	SLU 82	-0.07	-0.17	17.72	0	0	0
185	SLU 83	-0.08	-0.16	17.92	0	0	0
185	SLU 84	-0.07	-0.17	17.9	0	0	0
185	SLE RA 1	-0.06	-0.12	11.87	0	0	0
185	SLE RA 2	-0.05	-0.13	11.85	0	0	0
185	SLE RA 3	-0.06	-0.12	12.04	0	0	0
185	SLE RA 4	-0.06	-0.13	12.03	0	0	0
185	SLE RA 5	-0.05	-0.13	11.97	0	0	0
185	SLE RA 6	-0.06	-0.12	12.16	0	0	0
185	SLE RA 7	-0.06	-0.13	12.15	0	0	0
185	SLE RA 8	-0.06	-0.13	12.11	0	0	0
185	SLE RA 9	-0.06	-0.13	12.1	0	0	0
185	SLE RA 10	-0.05	-0.13	12.77	0	0	0
185	SLE RA 11	-0.06	-0.12	12.96	0	0	0
185	SLE RA 12	-0.06	-0.13	12.95	0	0	0
185	SLE RA 13	-0.05	-0.13	12.89	0	0	0
185	SLE RA 14	-0.06	-0.13	13.08	0	0	0
185	SLE RA 15	-0.06	-0.13	13.07	0	0	0
185	SLE RA 16	-0.06	-0.13	13.03	0	0	0
185	SLE RA 17	-0.06	-0.13	13.02	0	0	0
185	SLE RA 18	-0.06	-0.13	13.18	0	0	0
185	SLE RA 19	-0.06	-0.13	13.17	0	0	0
185	SLE RA 20	-0.06	-0.13	13.3	0	0	0
185	SLE RA 21	-0.06	-0.13	13.29	0	0	0
185	SLE FR 1	-0.06	-0.12	11.87	0	0	0
185	SLE FR 2	-0.06	-0.12	11.86	0	0	0
185	SLE FR 3	-0.06	-0.12	11.91	0	0	0
185	SLE FR 4	-0.06	-0.13	12.26	0	0	0
185	SLE FR 5	-0.06	-0.12	12.31	0	0	0
185	SLE FR 6	-0.06	-0.12	12.52	0	0	0
185	SLE QP 1	-0.06	-0.12	11.87	0	0	0
185	SLE QP 2	-0.06	-0.12	12.26	0	0	0
185	SLD 1	0.88	-0.05	12.81	0	0	0
185	SLD 2	0.98	-0.09	12.76	0	0	0
185	SLD 3	0.94	-0.34	12.41	0	0	0
185	SLD 4	1.05	-0.37	12.36	0	0	0
185	SLD 5	0.11	0.33	13.03	0	0	0
185	SLD 6	0.18	0.31	13	0	0	0
185	SLD 7	0.32	-0.61	11.71	0	0	0
185	SLD 8	0.38	-0.63	11.68	0	0	0
185	SLD 9	-0.5	0.39	12.84	0	0	0
185	SLD 10	-0.43	0.36	12.81	0	0	0
185	SLD 11	-0.3	-0.56	11.52	0	0	0
185	SLD 12	-0.23	-0.58	11.49	0	0	0
185	SLD 13	-1.16	0.12	12.16	0	0	0
185	SLD 14	-1.06	0.09	12.11	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
185	SLD 15	-1.1	-0.16	11.76	0	0	0
185	SLD 16	-1	-0.19	11.71	0	0	0
185	SLV 1	2.14	0.03	13.52	0	0	0
185	SLV 2	2.38	-0.05	13.41	0	0	0
185	SLV 3	2.28	-0.61	12.63	0	0	0
185	SLV 4	2.52	-0.69	12.51	0	0	0
185	SLV 5	0.34	0.91	14.02	0	0	0
185	SLV 6	0.5	0.86	13.95	0	0	0
185	SLV 7	0.82	-1.23	11.03	0	0	0
185	SLV 8	0.97	-1.28	10.96	0	0	0
185	SLV 9	-1.09	1.03	13.56	0	0	0
185	SLV 10	-0.93	0.98	13.49	0	0	0
185	SLV 11	-0.62	-1.11	10.58	0	0	0
185	SLV 12	-0.46	-1.16	10.5	0	0	0
185	SLV 13	-2.64	0.44	12.01	0	0	0
185	SLV 14	-2.4	0.36	11.89	0	0	0
185	SLV 15	-2.5	-0.2	11.11	0	0	0
185	SLV 16	-2.26	-0.28	11	0	0	0
186	SLU 1	-0.06	-0.1	11.58	0	0	0
186	SLU 2	-0.05	-0.11	11.56	0	0	0
186	SLU 3	-0.06	-0.09	11.84	0	0	0
186	SLU 4	-0.05	-0.1	11.83	0	0	0
186	SLU 5	-0.05	-0.11	11.74	0	0	0
186	SLU 6	-0.06	-0.1	12.02	0	0	0
186	SLU 7	-0.05	-0.1	12.01	0	0	0
186	SLU 8	-0.06	-0.1	11.94	0	0	0
186	SLU 9	-0.05	-0.1	11.93	0	0	0
186	SLU 10	-0.05	-0.11	12.95	0	0	0
186	SLU 11	-0.06	-0.09	13.23	0	0	0
186	SLU 12	-0.05	-0.1	13.22	0	0	0
186	SLU 13	-0.05	-0.11	13.14	0	0	0
186	SLU 14	-0.06	-0.09	13.41	0	0	0
186	SLU 15	-0.05	-0.1	13.4	0	0	0
186	SLU 16	-0.06	-0.1	13.34	0	0	0
186	SLU 17	-0.05	-0.1	13.33	0	0	0
186	SLU 18	-0.06	-0.09	13.57	0	0	0
186	SLU 19	-0.05	-0.1	13.56	0	0	0
186	SLU 20	-0.06	-0.1	13.75	0	0	0
186	SLU 21	-0.05	-0.1	13.74	0	0	0
186	SLU 22	-0.06	-0.08	12.78	0	0	0
186	SLU 23	-0.06	-0.09	12.76	0	0	0
186	SLU 24	-0.06	-0.08	13.04	0	0	0
186	SLU 25	-0.06	-0.09	13.03	0	0	0
186	SLU 26	-0.06	-0.09	12.94	0	0	0
186	SLU 27	-0.06	-0.08	13.22	0	0	0
186	SLU 28	-0.06	-0.09	13.21	0	0	0
186	SLU 29	-0.06	-0.08	13.14	0	0	0
186	SLU 30	-0.06	-0.09	13.13	0	0	0
186	SLU 31	-0.06	-0.09	14.15	0	0	0
186	SLU 32	-0.06	-0.08	14.43	0	0	0
186	SLU 33	-0.06	-0.08	14.42	0	0	0
186	SLU 34	-0.06	-0.09	14.33	0	0	0
186	SLU 35	-0.06	-0.08	14.61	0	0	0
186	SLU 36	-0.06	-0.09	14.6	0	0	0
186	SLU 37	-0.06	-0.08	14.54	0	0	0
186	SLU 38	-0.06	-0.09	14.52	0	0	0
186	SLU 39	-0.06	-0.08	14.77	0	0	0
186	SLU 40	-0.06	-0.09	14.76	0	0	0
186	SLU 41	-0.06	-0.08	14.95	0	0	0
186	SLU 42	-0.06	-0.09	14.94	0	0	0
186	SLU 43	-0.07	-0.13	14.64	0	0	0
186	SLU 44	-0.06	-0.14	14.62	0	0	0
186	SLU 45	-0.07	-0.13	14.9	0	0	0
186	SLU 46	-0.07	-0.13	14.89	0	0	0
186	SLU 47	-0.07	-0.14	14.81	0	0	0
186	SLU 48	-0.07	-0.13	15.08	0	0	0
186	SLU 49	-0.07	-0.14	15.07	0	0	0
186	SLU 50	-0.07	-0.13	15.01	0	0	0
186	SLU 51	-0.07	-0.14	15	0	0	0
186	SLU 52	-0.06	-0.14	16.02	0	0	0
186	SLU 53	-0.07	-0.13	16.3	0	0	0
186	SLU 54	-0.07	-0.13	16.28	0	0	0
186	SLU 55	-0.07	-0.14	16.2	0	0	0
186	SLU 56	-0.07	-0.13	16.48	0	0	0
186	SLU 57	-0.07	-0.13	16.47	0	0	0
186	SLU 58	-0.07	-0.13	16.4	0	0	0
186	SLU 59	-0.07	-0.14	16.39	0	0	0
186	SLU 60	-0.07	-0.13	16.63	0	0	0
186	SLU 61	-0.07	-0.13	16.62	0	0	0
186	SLU 62	-0.07	-0.13	16.82	0	0	0
186	SLU 63	-0.07	-0.14	16.8	0	0	0
186	SLU 64	-0.08	-0.11	15.84	0	0	0
186	SLU 65	-0.07	-0.13	15.82	0	0	0
186	SLU 66	-0.08	-0.11	16.1	0	0	0
186	SLU 67	-0.07	-0.12	16.09	0	0	0
186	SLU 68	-0.07	-0.13	16	0	0	0
186	SLU 69	-0.08	-0.11	16.28	0	0	0
186	SLU 70	-0.08	-0.12	16.27	0	0	0
186	SLU 71	-0.08	-0.12	16.2	0	0	0
186	SLU 72	-0.08	-0.12	16.19	0	0	0





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
186	SLU 73	-0.07	-0.12	17.22	0	0	0
186	SLU 74	-0.08	-0.11	17.49	0	0	0
186	SLU 75	-0.07	-0.12	17.48	0	0	0
186	SLU 76	-0.07	-0.13	17.4	0	0	0
186	SLU 77	-0.08	-0.11	17.68	0	0	0
186	SLU 78	-0.08	-0.12	17.66	0	0	0
186	SLU 79	-0.08	-0.12	17.6	0	0	0
186	SLU 80	-0.07	-0.12	17.59	0	0	0
186	SLU 81	-0.08	-0.11	17.83	0	0	0
186	SLU 82	-0.07	-0.12	17.82	0	0	0
186	SLU 83	-0.08	-0.11	18.01	0	0	0
186	SLU 84	-0.07	-0.12	18	0	0	0
186	SLE RA 1	-0.06	-0.09	11.92	0	0	0
186	SLE RA 2	-0.05	-0.1	11.91	0	0	0
186	SLE RA 3	-0.06	-0.09	12.09	0	0	0
186	SLE RA 4	-0.06	-0.09	12.09	0	0	0
186	SLE RA 5	-0.05	-0.1	12.03	0	0	0
186	SLE RA 6	-0.06	-0.09	12.22	0	0	0
186	SLE RA 7	-0.06	-0.1	12.21	0	0	0
186	SLE RA 8	-0.06	-0.09	12.16	0	0	0
186	SLE RA 9	-0.06	-0.1	12.16	0	0	0
186	SLE RA 10	-0.05	-0.1	12.84	0	0	0
186	SLE RA 11	-0.06	-0.09	13.02	0	0	0
186	SLE RA 12	-0.06	-0.09	13.02	0	0	0
186	SLE RA 13	-0.05	-0.1	12.96	0	0	0
186	SLE RA 14	-0.06	-0.09	13.15	0	0	0
186	SLE RA 15	-0.06	-0.09	13.14	0	0	0
186	SLE RA 16	-0.06	-0.09	13.09	0	0	0
186	SLE RA 17	-0.06	-0.1	13.09	0	0	0
186	SLE RA 18	-0.06	-0.09	13.25	0	0	0
186	SLE RA 19	-0.06	-0.09	13.24	0	0	0
186	SLE RA 20	-0.06	-0.09	13.37	0	0	0
186	SLE RA 21	-0.06	-0.1	13.36	0	0	0
186	SLE FR 1	-0.06	-0.09	11.92	0	0	0
186	SLE FR 2	-0.06	-0.09	11.92	0	0	0
186	SLE FR 3	-0.06	-0.09	11.97	0	0	0
186	SLE FR 4	-0.06	-0.09	12.32	0	0	0
186	SLE FR 5	-0.06	-0.09	12.37	0	0	0
186	SLE FR 6	-0.06	-0.09	12.58	0	0	0
186	SLE QP 1	-0.06	-0.09	11.92	0	0	0
186	SLE QP 2	-0.06	-0.09	12.32	0	0	0
186	SLD 1	0.88	-0.01	12.76	0	0	0
186	SLD 2	0.99	-0.03	12.72	0	0	0
186	SLD 3	0.94	-0.29	12.37	0	0	0
186	SLD 4	1.05	-0.32	12.32	0	0	0
186	SLD 5	0.11	0.37	13.06	0	0	0
186	SLD 6	0.18	0.35	13.03	0	0	0
186	SLD 7	0.32	-0.58	11.74	0	0	0
186	SLD 8	0.38	-0.6	11.71	0	0	0
186	SLD 9	-0.5	0.42	12.93	0	0	0
186	SLD 10	-0.43	0.4	12.9	0	0	0
186	SLD 11	-0.3	-0.54	11.61	0	0	0
186	SLD 12	-0.23	-0.56	11.58	0	0	0
186	SLD 13	-1.16	0.14	12.32	0	0	0
186	SLD 14	-1.06	0.11	12.27	0	0	0
186	SLD 15	-1.1	-0.15	11.92	0	0	0
186	SLD 16	-1	-0.18	11.88	0	0	0
186	SLV 1	2.14	0.1	13.34	0	0	0
186	SLV 2	2.39	0.03	13.24	0	0	0
186	SLV 3	2.28	-0.55	12.45	0	0	0
186	SLV 4	2.53	-0.62	12.34	0	0	0
186	SLV 5	0.34	0.96	14.01	0	0	0
186	SLV 6	0.5	0.92	13.94	0	0	0
186	SLV 7	0.82	-1.2	11.01	0	0	0
186	SLV 8	0.97	-1.24	10.95	0	0	0
186	SLV 9	-1.09	1.06	13.69	0	0	0
186	SLV 10	-0.93	1.02	13.63	0	0	0
186	SLV 11	-0.62	-1.1	10.7	0	0	0
186	SLV 12	-0.46	-1.14	10.63	0	0	0
186	SLV 13	-2.64	0.44	12.29	0	0	0
186	SLV 14	-2.4	0.37	12.19	0	0	0
186	SLV 15	-2.5	-0.21	11.4	0	0	0
186	SLV 16	-2.26	-0.28	11.29	0	0	0
187	SLU 1	-0.06	-0.06	11.63	0	0	0
187	SLU 2	-0.05	-0.08	11.61	0	0	0
187	SLU 3	-0.06	-0.06	11.89	0	0	0
187	SLU 4	-0.05	-0.07	11.88	0	0	0
187	SLU 5	-0.05	-0.08	11.8	0	0	0
187	SLU 6	-0.06	-0.06	12.08	0	0	0
187	SLU 7	-0.05	-0.07	12.07	0	0	0
187	SLU 8	-0.06	-0.07	12	0	0	0
187	SLU 9	-0.05	-0.07	11.99	0	0	0
187	SLU 10	-0.05	-0.07	13.02	0	0	0
187	SLU 11	-0.06	-0.06	13.3	0	0	0
187	SLU 12	-0.05	-0.06	13.29	0	0	0
187	SLU 13	-0.05	-0.07	13.21	0	0	0
187	SLU 14	-0.06	-0.06	13.49	0	0	0
187	SLU 15	-0.05	-0.07	13.48	0	0	0
187	SLU 16	-0.06	-0.06	13.41	0	0	0
187	SLU 17	-0.05	-0.07	13.4	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
187	SLU 18	-0.06	-0.06	13.65	0	0	0
187	SLU 19	-0.05	-0.06	13.64	0	0	0
187	SLU 20	-0.06	-0.06	13.83	0	0	0
187	SLU 21	-0.05	-0.07	13.82	0	0	0
187	SLU 22	-0.06	-0.05	12.84	0	0	0
187	SLU 23	-0.06	-0.06	12.82	0	0	0
187	SLU 24	-0.06	-0.04	13.1	0	0	0
187	SLU 25	-0.06	-0.05	13.09	0	0	0
187	SLU 26	-0.06	-0.06	13	0	0	0
187	SLU 27	-0.06	-0.04	13.28	0	0	0
187	SLU 28	-0.06	-0.05	13.27	0	0	0
187	SLU 29	-0.06	-0.05	13.21	0	0	0
187	SLU 30	-0.06	-0.05	13.19	0	0	0
187	SLU 31	-0.06	-0.05	14.23	0	0	0
187	SLU 32	-0.06	-0.04	14.51	0	0	0
187	SLU 33	-0.06	-0.05	14.5	0	0	0
187	SLU 34	-0.06	-0.05	14.41	0	0	0
187	SLU 35	-0.06	-0.04	14.69	0	0	0
187	SLU 36	-0.06	-0.05	14.68	0	0	0
187	SLU 37	-0.06	-0.04	14.62	0	0	0
187	SLU 38	-0.06	-0.05	14.6	0	0	0
187	SLU 39	-0.06	-0.04	14.85	0	0	0
187	SLU 40	-0.06	-0.05	14.84	0	0	0
187	SLU 41	-0.06	-0.04	15.04	0	0	0
187	SLU 42	-0.06	-0.05	15.03	0	0	0
187	SLU 43	-0.07	-0.09	14.71	0	0	0
187	SLU 44	-0.06	-0.1	14.69	0	0	0
187	SLU 45	-0.07	-0.09	14.97	0	0	0
187	SLU 46	-0.07	-0.09	14.96	0	0	0
187	SLU 47	-0.07	-0.1	14.87	0	0	0
187	SLU 48	-0.07	-0.09	15.15	0	0	0
187	SLU 49	-0.07	-0.1	15.14	0	0	0
187	SLU 50	-0.07	-0.09	15.08	0	0	0
187	SLU 51	-0.07	-0.1	15.06	0	0	0
187	SLU 52	-0.06	-0.1	16.1	0	0	0
187	SLU 53	-0.07	-0.08	16.38	0	0	0
187	SLU 54	-0.07	-0.09	16.37	0	0	0
187	SLU 55	-0.07	-0.1	16.28	0	0	0
187	SLU 56	-0.07	-0.08	16.56	0	0	0
187	SLU 57	-0.07	-0.09	16.55	0	0	0
187	SLU 58	-0.07	-0.09	16.49	0	0	0
187	SLU 59	-0.07	-0.09	16.48	0	0	0
187	SLU 60	-0.07	-0.08	16.72	0	0	0
187	SLU 61	-0.07	-0.09	16.71	0	0	0
187	SLU 62	-0.07	-0.09	16.91	0	0	0
187	SLU 63	-0.07	-0.09	16.9	0	0	0
187	SLU 64	-0.08	-0.07	15.91	0	0	0
187	SLU 65	-0.07	-0.08	15.89	0	0	0
187	SLU 66	-0.08	-0.07	16.17	0	0	0
187	SLU 67	-0.07	-0.08	16.16	0	0	0
187	SLU 68	-0.07	-0.08	16.08	0	0	0
187	SLU 69	-0.08	-0.07	16.36	0	0	0
187	SLU 70	-0.08	-0.08	16.35	0	0	0
187	SLU 71	-0.08	-0.07	16.28	0	0	0
187	SLU 72	-0.07	-0.08	16.27	0	0	0
187	SLU 73	-0.07	-0.08	17.31	0	0	0
187	SLU 74	-0.08	-0.07	17.59	0	0	0
187	SLU 75	-0.07	-0.07	17.57	0	0	0
187	SLU 76	-0.07	-0.08	17.49	0	0	0
187	SLU 77	-0.08	-0.07	17.77	0	0	0
187	SLU 78	-0.08	-0.07	17.76	0	0	0
187	SLU 79	-0.08	-0.07	17.69	0	0	0
187	SLU 80	-0.07	-0.08	17.68	0	0	0
187	SLU 81	-0.08	-0.07	17.93	0	0	0
187	SLU 82	-0.07	-0.07	17.92	0	0	0
187	SLU 83	-0.08	-0.07	18.11	0	0	0
187	SLU 84	-0.07	-0.07	18.1	0	0	0
187	SLE RA 1	-0.06	-0.06	11.98	0	0	0
187	SLE RA 2	-0.05	-0.07	11.96	0	0	0
187	SLE RA 3	-0.06	-0.06	12.15	0	0	0
187	SLE RA 4	-0.06	-0.06	12.14	0	0	0
187	SLE RA 5	-0.05	-0.07	12.09	0	0	0
187	SLE RA 6	-0.06	-0.06	12.27	0	0	0
187	SLE RA 7	-0.06	-0.06	12.27	0	0	0
187	SLE RA 8	-0.06	-0.06	12.22	0	0	0
187	SLE RA 9	-0.06	-0.06	12.21	0	0	0
187	SLE RA 10	-0.05	-0.06	12.9	0	0	0
187	SLE RA 11	-0.06	-0.05	13.09	0	0	0
187	SLE RA 12	-0.06	-0.06	13.08	0	0	0
187	SLE RA 13	-0.05	-0.06	13.03	0	0	0
187	SLE RA 14	-0.06	-0.06	13.21	0	0	0
187	SLE RA 15	-0.06	-0.06	13.21	0	0	0
187	SLE RA 16	-0.06	-0.06	13.16	0	0	0
187	SLE RA 17	-0.06	-0.06	13.15	0	0	0
187	SLE RA 18	-0.06	-0.06	13.32	0	0	0
187	SLE RA 19	-0.06	-0.06	13.31	0	0	0
187	SLE RA 20	-0.06	-0.06	13.44	0	0	0
187	SLE RA 21	-0.06	-0.06	13.43	0	0	0
187	SLE FR 1	-0.06	-0.06	11.98	0	0	0
187	SLE FR 2	-0.06	-0.06	11.97	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
187	SLE FR 3	-0.06	-0.06	12.02	0	0	0
187	SLE FR 4	-0.06	-0.06	12.38	0	0	0
187	SLE FR 5	-0.06	-0.06	12.43	0	0	0
187	SLE FR 6	-0.06	-0.06	12.65	0	0	0
187	SLE QP 1	-0.06	-0.06	11.98	0	0	0
187	SLE QP 2	-0.06	-0.06	12.38	0	0	0
187	SLD 1	0.88	0.04	12.73	0	0	0
187	SLD 2	0.98	0.02	12.69	0	0	0
187	SLD 3	0.94	-0.25	12.33	0	0	0
187	SLD 4	1.04	-0.27	12.29	0	0	0
187	SLD 5	0.11	0.41	13.1	0	0	0
187	SLD 6	0.18	0.4	13.07	0	0	0
187	SLD 7	0.32	-0.55	11.77	0	0	0
187	SLD 8	0.38	-0.56	11.74	0	0	0
187	SLD 9	-0.5	0.45	13.01	0	0	0
187	SLD 10	-0.43	0.43	12.99	0	0	0
187	SLD 11	-0.3	-0.51	11.69	0	0	0
187	SLD 12	-0.23	-0.53	11.66	0	0	0
187	SLD 13	-1.16	0.16	12.46	0	0	0
187	SLD 14	-1.06	0.13	12.42	0	0	0
187	SLD 15	-1.1	-0.13	12.07	0	0	0
187	SLD 16	-1	-0.16	12.03	0	0	0
187	SLV 1	2.14	0.16	13.19	0	0	0
187	SLV 2	2.38	0.1	13.1	0	0	0
187	SLV 3	2.28	-0.49	12.29	0	0	0
187	SLV 4	2.52	-0.55	12.2	0	0	0
187	SLV 5	0.34	1.01	14	0	0	0
187	SLV 6	0.5	0.97	13.94	0	0	0
187	SLV 7	0.82	-1.17	11	0	0	0
187	SLV 8	0.97	-1.2	10.94	0	0	0
187	SLV 9	-1.09	1.09	13.82	0	0	0
187	SLV 10	-0.93	1.05	13.76	0	0	0
187	SLV 11	-0.62	-1.09	10.81	0	0	0
187	SLV 12	-0.46	-1.12	10.75	0	0	0
187	SLV 13	-2.64	0.43	12.56	0	0	0
187	SLV 14	-2.39	0.38	12.47	0	0	0
187	SLV 15	-2.49	-0.22	11.66	0	0	0
187	SLV 16	-2.25	-0.28	11.57	0	0	0
188	SLU 1	-0.06	-0.04	11.66	0	0	0
188	SLU 2	-0.05	-0.05	11.64	0	0	0
188	SLU 3	-0.06	-0.03	11.92	0	0	0
188	SLU 4	-0.05	-0.04	11.91	0	0	0
188	SLU 5	-0.05	-0.05	11.83	0	0	0
188	SLU 6	-0.06	-0.03	12.11	0	0	0
188	SLU 7	-0.05	-0.04	12.1	0	0	0
188	SLU 8	-0.06	-0.04	12.03	0	0	0
188	SLU 9	-0.05	-0.04	12.02	0	0	0
188	SLU 10	-0.05	-0.04	13.07	0	0	0
188	SLU 11	-0.06	-0.02	13.35	0	0	0
188	SLU 12	-0.05	-0.03	13.34	0	0	0
188	SLU 13	-0.05	-0.04	13.25	0	0	0
188	SLU 14	-0.06	-0.02	13.53	0	0	0
188	SLU 15	-0.05	-0.03	13.52	0	0	0
188	SLU 16	-0.06	-0.03	13.45	0	0	0
188	SLU 17	-0.05	-0.03	13.44	0	0	0
188	SLU 18	-0.06	-0.02	13.69	0	0	0
188	SLU 19	-0.05	-0.03	13.68	0	0	0
188	SLU 20	-0.06	-0.03	13.88	0	0	0
188	SLU 21	-0.05	-0.03	13.87	0	0	0
188	SLU 22	-0.06	-0.01	12.87	0	0	0
188	SLU 23	-0.06	-0.02	12.85	0	0	0
188	SLU 24	-0.06	-0.01	13.13	0	0	0
188	SLU 25	-0.06	-0.02	13.12	0	0	0
188	SLU 26	-0.06	-0.02	13.04	0	0	0
188	SLU 27	-0.06	-0.01	13.32	0	0	0
188	SLU 28	-0.06	-0.02	13.31	0	0	0
188	SLU 29	-0.06	-0.01	13.24	0	0	0
188	SLU 30	-0.06	-0.02	13.23	0	0	0
188	SLU 31	-0.06	-0.02	14.28	0	0	0
188	SLU 32	-0.06	0	14.56	0	0	0
188	SLU 33	-0.06	-0.01	14.55	0	0	0
188	SLU 34	-0.06	-0.02	14.46	0	0	0
188	SLU 35	-0.06	0	14.74	0	0	0
188	SLU 36	-0.06	-0.01	14.73	0	0	0
188	SLU 37	-0.06	-0.01	14.67	0	0	0
188	SLU 38	-0.06	-0.01	14.66	0	0	0
188	SLU 39	-0.06	0	14.91	0	0	0
188	SLU 40	-0.06	-0.01	14.9	0	0	0
188	SLU 41	-0.06	0	15.09	0	0	0
188	SLU 42	-0.06	-0.01	15.08	0	0	0
188	SLU 43	-0.07	-0.05	14.74	0	0	0
188	SLU 44	-0.06	-0.06	14.72	0	0	0
188	SLU 45	-0.07	-0.05	15	0	0	0
188	SLU 46	-0.07	-0.06	14.99	0	0	0
188	SLU 47	-0.07	-0.06	14.91	0	0	0
188	SLU 48	-0.07	-0.05	15.19	0	0	0
188	SLU 49	-0.07	-0.06	15.18	0	0	0
188	SLU 50	-0.07	-0.05	15.11	0	0	0
188	SLU 51	-0.07	-0.06	15.1	0	0	0
188	SLU 52	-0.06	-0.06	16.15	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
188	SLU 53	-0.07	-0.04	16.43	0	0	0
188	SLU 54	-0.07	-0.05	16.42	0	0	0
188	SLU 55	-0.07	-0.06	16.33	0	0	0
188	SLU 56	-0.07	-0.04	16.62	0	0	0
188	SLU 57	-0.07	-0.05	16.6	0	0	0
188	SLU 58	-0.07	-0.05	16.54	0	0	0
188	SLU 59	-0.07	-0.05	16.53	0	0	0
188	SLU 60	-0.07	-0.04	16.78	0	0	0
188	SLU 61	-0.07	-0.05	16.77	0	0	0
188	SLU 62	-0.07	-0.04	16.96	0	0	0
188	SLU 63	-0.07	-0.05	16.95	0	0	0
188	SLU 64	-0.08	-0.03	15.95	0	0	0
188	SLU 65	-0.07	-0.04	15.93	0	0	0
188	SLU 66	-0.08	-0.03	16.22	0	0	0
188	SLU 67	-0.07	-0.03	16.21	0	0	0
188	SLU 68	-0.07	-0.04	16.12	0	0	0
188	SLU 69	-0.08	-0.03	16.4	0	0	0
188	SLU 70	-0.08	-0.03	16.39	0	0	0
188	SLU 71	-0.08	-0.03	16.32	0	0	0
188	SLU 72	-0.07	-0.04	16.31	0	0	0
188	SLU 73	-0.07	-0.03	17.36	0	0	0
188	SLU 74	-0.08	-0.02	17.64	0	0	0
188	SLU 75	-0.07	-0.03	17.63	0	0	0
188	SLU 76	-0.07	-0.03	17.55	0	0	0
188	SLU 77	-0.08	-0.02	17.83	0	0	0
188	SLU 78	-0.08	-0.03	17.82	0	0	0
188	SLU 79	-0.08	-0.02	17.75	0	0	0
188	SLU 80	-0.08	-0.03	17.74	0	0	0
188	SLU 81	-0.08	-0.02	17.99	0	0	0
188	SLU 82	-0.07	-0.03	17.98	0	0	0
188	SLU 83	-0.08	-0.02	18.17	0	0	0
188	SLU 84	-0.07	-0.03	18.16	0	0	0
188	SLE RA 1	-0.06	-0.03	12.01	0	0	0
188	SLE RA 2	-0.05	-0.04	11.99	0	0	0
188	SLE RA 3	-0.06	-0.03	12.18	0	0	0
188	SLE RA 4	-0.06	-0.03	12.17	0	0	0
188	SLE RA 5	-0.05	-0.04	12.12	0	0	0
188	SLE RA 6	-0.06	-0.03	12.3	0	0	0
188	SLE RA 7	-0.06	-0.03	12.3	0	0	0
188	SLE RA 8	-0.06	-0.03	12.25	0	0	0
188	SLE RA 9	-0.06	-0.03	12.25	0	0	0
188	SLE RA 10	-0.05	-0.03	12.94	0	0	0
188	SLE RA 11	-0.06	-0.02	13.13	0	0	0
188	SLE RA 12	-0.06	-0.03	13.12	0	0	0
188	SLE RA 13	-0.05	-0.03	13.07	0	0	0
188	SLE RA 14	-0.06	-0.02	13.25	0	0	0
188	SLE RA 15	-0.06	-0.03	13.25	0	0	0
188	SLE RA 16	-0.06	-0.02	13.2	0	0	0
188	SLE RA 17	-0.06	-0.03	13.2	0	0	0
188	SLE RA 18	-0.06	-0.02	13.36	0	0	0
188	SLE RA 19	-0.06	-0.03	13.35	0	0	0
188	SLE RA 20	-0.06	-0.02	13.49	0	0	0
188	SLE RA 21	-0.06	-0.03	13.48	0	0	0
188	SLE FR 1	-0.06	-0.03	12.01	0	0	0
188	SLE FR 2	-0.06	-0.03	12	0	0	0
188	SLE FR 3	-0.06	-0.03	12.05	0	0	0
188	SLE FR 4	-0.06	-0.03	12.41	0	0	0
188	SLE FR 5	-0.06	-0.03	12.46	0	0	0
188	SLE FR 6	-0.06	-0.03	12.68	0	0	0
188	SLE QP 1	-0.06	-0.03	12.01	0	0	0
188	SLE QP 2	-0.06	-0.03	12.41	0	0	0
188	SLD 1	0.87	0.08	12.7	0	0	0
188	SLD 2	0.98	0.06	12.67	0	0	0
188	SLD 3	0.93	-0.21	12.3	0	0	0
188	SLD 4	1.04	-0.23	12.27	0	0	0
188	SLD 5	0.11	0.45	13.11	0	0	0
188	SLD 6	0.18	0.43	13.09	0	0	0
188	SLD 7	0.31	-0.52	11.78	0	0	0
188	SLD 8	0.38	-0.53	11.76	0	0	0
188	SLD 9	-0.5	0.47	13.07	0	0	0
188	SLD 10	-0.43	0.46	13.04	0	0	0
188	SLD 11	-0.3	-0.49	11.74	0	0	0
188	SLD 12	-0.23	-0.5	11.71	0	0	0
188	SLD 13	-1.15	0.17	12.56	0	0	0
188	SLD 14	-1.05	0.16	12.52	0	0	0
188	SLD 15	-1.09	-0.11	12.16	0	0	0
188	SLD 16	-0.99	-0.13	12.12	0	0	0
188	SLV 1	2.12	0.21	13.08	0	0	0
188	SLV 2	2.36	0.17	12.99	0	0	0
188	SLV 3	2.26	-0.44	12.17	0	0	0
188	SLV 4	2.5	-0.49	12.09	0	0	0
188	SLV 5	0.34	1.04	13.99	0	0	0
188	SLV 6	0.5	1.02	13.94	0	0	0
188	SLV 7	0.81	-1.13	10.99	0	0	0
188	SLV 8	0.96	-1.16	10.93	0	0	0
188	SLV 9	-1.08	1.11	13.89	0	0	0
188	SLV 10	-0.92	1.08	13.84	0	0	0
188	SLV 11	-0.61	-1.07	10.88	0	0	0
188	SLV 12	-0.46	-1.1	10.83	0	0	0
188	SLV 13	-2.62	0.43	12.73	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
188	SLV 14	-2.38	0.39	12.65	0	0	0
188	SLV 15	-2.48	-0.22	11.83	0	0	0
188	SLV 16	-2.24	-0.27	11.75	0	0	0
190	SLU 1	-0.03	-0.14	5.83	0	0	0
190	SLU 2	-0.03	-0.15	5.82	0	0	0
190	SLU 3	-0.03	-0.14	5.96	0	0	0
190	SLU 4	-0.03	-0.15	5.95	0	0	0
190	SLU 5	-0.03	-0.15	5.91	0	0	0
190	SLU 6	-0.03	-0.14	6.05	0	0	0
190	SLU 7	-0.03	-0.15	6.04	0	0	0
190	SLU 8	-0.03	-0.14	6.01	0	0	0
190	SLU 9	-0.03	-0.15	6	0	0	0
190	SLU 10	-0.03	-0.16	6.5	0	0	0
190	SLU 11	-0.03	-0.15	6.64	0	0	0
190	SLU 12	-0.03	-0.16	6.64	0	0	0
190	SLU 13	-0.03	-0.16	6.59	0	0	0
190	SLU 14	-0.03	-0.15	6.73	0	0	0
190	SLU 15	-0.03	-0.16	6.73	0	0	0
190	SLU 16	-0.03	-0.15	6.69	0	0	0
190	SLU 17	-0.03	-0.16	6.69	0	0	0
190	SLU 18	-0.03	-0.15	6.8	0	0	0
190	SLU 19	-0.03	-0.16	6.8	0	0	0
190	SLU 20	-0.03	-0.16	6.9	0	0	0
190	SLU 21	-0.03	-0.16	6.89	0	0	0
190	SLU 22	-0.03	-0.15	6.44	0	0	0
190	SLU 23	-0.03	-0.15	6.43	0	0	0
190	SLU 24	-0.03	-0.15	6.57	0	0	0
190	SLU 25	-0.03	-0.15	6.56	0	0	0
190	SLU 26	-0.03	-0.15	6.52	0	0	0
190	SLU 27	-0.03	-0.15	6.66	0	0	0
190	SLU 28	-0.03	-0.15	6.65	0	0	0
190	SLU 29	-0.03	-0.15	6.62	0	0	0
190	SLU 30	-0.03	-0.15	6.61	0	0	0
190	SLU 31	-0.03	-0.16	7.11	0	0	0
190	SLU 32	-0.03	-0.16	7.25	0	0	0
190	SLU 33	-0.03	-0.16	7.24	0	0	0
190	SLU 34	-0.03	-0.16	7.2	0	0	0
190	SLU 35	-0.03	-0.16	7.34	0	0	0
190	SLU 36	-0.03	-0.16	7.33	0	0	0
190	SLU 37	-0.03	-0.16	7.3	0	0	0
190	SLU 38	-0.03	-0.16	7.3	0	0	0
190	SLU 39	-0.03	-0.16	7.41	0	0	0
190	SLU 40	-0.03	-0.16	7.41	0	0	0
190	SLU 41	-0.03	-0.16	7.5	0	0	0
190	SLU 42	-0.03	-0.16	7.5	0	0	0
190	SLU 43	-0.04	-0.18	7.37	0	0	0
190	SLU 44	-0.03	-0.19	7.36	0	0	0
190	SLU 45	-0.04	-0.18	7.5	0	0	0
190	SLU 46	-0.04	-0.19	7.49	0	0	0
190	SLU 47	-0.03	-0.19	7.45	0	0	0
190	SLU 48	-0.04	-0.18	7.59	0	0	0
190	SLU 49	-0.04	-0.19	7.58	0	0	0
190	SLU 50	-0.04	-0.18	7.55	0	0	0
190	SLU 51	-0.04	-0.19	7.54	0	0	0
190	SLU 52	-0.03	-0.2	8.04	0	0	0
190	SLU 53	-0.04	-0.19	8.18	0	0	0
190	SLU 54	-0.03	-0.2	8.17	0	0	0
190	SLU 55	-0.03	-0.2	8.13	0	0	0
190	SLU 56	-0.04	-0.19	8.27	0	0	0
190	SLU 57	-0.04	-0.2	8.26	0	0	0
190	SLU 58	-0.04	-0.19	8.23	0	0	0
190	SLU 59	-0.03	-0.2	8.23	0	0	0
190	SLU 60	-0.04	-0.19	8.34	0	0	0
190	SLU 61	-0.03	-0.2	8.34	0	0	0
190	SLU 62	-0.04	-0.2	8.43	0	0	0
190	SLU 63	-0.03	-0.2	8.43	0	0	0
190	SLU 64	-0.04	-0.19	7.97	0	0	0
190	SLU 65	-0.04	-0.19	7.96	0	0	0
190	SLU 66	-0.04	-0.19	8.1	0	0	0
190	SLU 67	-0.04	-0.19	8.1	0	0	0
190	SLU 68	-0.04	-0.19	8.05	0	0	0
190	SLU 69	-0.04	-0.19	8.19	0	0	0
190	SLU 70	-0.04	-0.19	8.19	0	0	0
190	SLU 71	-0.04	-0.19	8.16	0	0	0
190	SLU 72	-0.04	-0.19	8.15	0	0	0
190	SLU 73	-0.04	-0.2	8.65	0	0	0
190	SLU 74	-0.04	-0.2	8.79	0	0	0
190	SLU 75	-0.04	-0.2	8.78	0	0	0
190	SLU 76	-0.04	-0.2	8.74	0	0	0
190	SLU 77	-0.04	-0.2	8.88	0	0	0
190	SLU 78	-0.04	-0.2	8.87	0	0	0
190	SLU 79	-0.04	-0.2	8.84	0	0	0
190	SLU 80	-0.04	-0.2	8.83	0	0	0
190	SLU 81	-0.04	-0.2	8.95	0	0	0
190	SLU 82	-0.04	-0.2	8.95	0	0	0
190	SLU 83	-0.04	-0.2	9.04	0	0	0
190	SLU 84	-0.04	-0.21	9.04	0	0	0
190	SLE RA 1	-0.03	-0.14	6	0	0	0
190	SLE RA 2	-0.03	-0.15	5.99	0	0	0
190	SLE RA 3	-0.03	-0.14	6.09	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
190	SLE RA 4	-0.03	-0.15	6.08	0	0	0
190	SLE RA 5	-0.03	-0.15	6.05	0	0	0
190	SLE RA 6	-0.03	-0.14	6.15	0	0	0
190	SLE RA 7	-0.03	-0.15	6.14	0	0	0
190	SLE RA 8	-0.03	-0.14	6.12	0	0	0
190	SLE RA 9	-0.03	-0.15	6.12	0	0	0
190	SLE RA 10	-0.03	-0.15	6.45	0	0	0
190	SLE RA 11	-0.03	-0.15	6.54	0	0	0
190	SLE RA 12	-0.03	-0.15	6.54	0	0	0
190	SLE RA 13	-0.03	-0.15	6.51	0	0	0
190	SLE RA 14	-0.03	-0.15	6.6	0	0	0
190	SLE RA 15	-0.03	-0.15	6.6	0	0	0
190	SLE RA 16	-0.03	-0.15	6.58	0	0	0
190	SLE RA 17	-0.03	-0.15	6.57	0	0	0
190	SLE RA 18	-0.03	-0.15	6.65	0	0	0
190	SLE RA 19	-0.03	-0.15	6.65	0	0	0
190	SLE RA 20	-0.03	-0.15	6.71	0	0	0
190	SLE RA 21	-0.03	-0.15	6.71	0	0	0
190	SLE FR 1	-0.03	-0.14	6	0	0	0
190	SLE FR 2	-0.03	-0.14	6	0	0	0
190	SLE FR 3	-0.03	-0.14	6.02	0	0	0
190	SLE FR 4	-0.03	-0.15	6.19	0	0	0
190	SLE FR 5	-0.03	-0.14	6.22	0	0	0
190	SLE FR 6	-0.03	-0.15	6.33	0	0	0
190	SLE QP 1	-0.03	-0.14	6	0	0	0
190	SLE QP 2	-0.03	-0.14	6.2	0	0	0
190	SLD 1	0.42	-0.15	6.74	0	0	0
190	SLD 2	0.47	-0.18	6.71	0	0	0
190	SLD 3	0.45	-0.28	6.53	0	0	0
190	SLD 4	0.5	-0.31	6.5	0	0	0
190	SLD 5	0.05	0.06	6.68	0	0	0
190	SLD 6	0.09	0.04	6.66	0	0	0
190	SLD 7	0.15	-0.38	5.99	0	0	0
190	SLD 8	0.18	-0.4	5.97	0	0	0
190	SLD 9	-0.24	0.11	6.42	0	0	0
190	SLD 10	-0.21	0.09	6.4	0	0	0
190	SLD 11	-0.14	-0.33	5.74	0	0	0
190	SLD 12	-0.11	-0.35	5.71	0	0	0
190	SLD 13	-0.56	0.02	5.89	0	0	0
190	SLD 14	-0.51	-0.01	5.86	0	0	0
190	SLD 15	-0.53	-0.11	5.69	0	0	0
190	SLD 16	-0.48	-0.14	5.65	0	0	0
190	SLV 1	1.03	-0.16	7.46	0	0	0
190	SLV 2	1.15	-0.22	7.38	0	0	0
190	SLV 3	1.1	-0.46	6.99	0	0	0
190	SLV 4	1.22	-0.52	6.91	0	0	0
190	SLV 5	0.16	0.32	7.3	0	0	0
190	SLV 6	0.24	0.28	7.25	0	0	0
190	SLV 7	0.39	-0.68	5.74	0	0	0
190	SLV 8	0.47	-0.72	5.69	0	0	0
190	SLV 9	-0.53	0.43	6.7	0	0	0
190	SLV 10	-0.45	0.39	6.65	0	0	0
190	SLV 11	-0.3	-0.57	5.14	0	0	0
190	SLV 12	-0.22	-0.6	5.09	0	0	0
190	SLV 13	-1.28	0.23	5.48	0	0	0
190	SLV 14	-1.16	0.17	5.4	0	0	0
190	SLV 15	-1.21	-0.07	5.01	0	0	0
190	SLV 16	-1.09	-0.13	4.93	0	0	0
191	SLU 1	-0.03	0	5.86	0	0.8801	0.0006
191	SLU 2	-0.02	-0.01	5.85	0	0.8787	0.0013
191	SLU 3	-0.03	0	5.99	0	0.9001	0.0003
191	SLU 4	-0.03	0	5.99	0	0.8993	0.0007
191	SLU 5	-0.02	-0.01	5.94	0	0.8928	0.0013
191	SLU 6	-0.03	0	6.09	0	0.9142	0.0003
191	SLU 7	-0.03	0	6.08	0	0.9134	0.0007
191	SLU 8	-0.03	0	6.05	0	0.9082	0.0006
191	SLU 9	-0.03	-0.01	6.04	0	0.9074	0.001
191	SLU 10	-0.02	0	6.57	0	0.9871	0.0006
191	SLU 11	-0.03	0	6.71	0	1.0085	-0.0005
191	SLU 12	-0.03	0	6.71	0	1.0076	0
191	SLU 13	-0.02	0	6.66	0	1.0012	0.0006
191	SLU 14	-0.03	0	6.81	0	1.0225	-0.0005
191	SLU 15	-0.03	0	6.8	0	1.0217	0
191	SLU 16	-0.03	0	6.77	0	1.0166	-0.0002
191	SLU 17	-0.03	0	6.76	0	1.0157	0.0003
191	SLU 18	-0.03	0	6.89	0	1.0349	-0.0005
191	SLU 19	-0.03	0	6.88	0	1.0341	0
191	SLU 20	-0.03	0	6.98	0	1.0489	-0.0005
191	SLU 21	-0.03	0	6.98	0	1.0481	0
191	SLU 22	-0.03	0.01	6.47	0	0.9718	-0.0014
191	SLU 23	-0.03	0	6.46	0	0.9705	-0.0006
191	SLU 24	-0.03	0.01	6.6	0	0.9918	-0.0017
191	SLU 25	-0.03	0.01	6.6	0	0.991	-0.0012
191	SLU 26	-0.03	0	6.55	0	0.9845	-0.0006
191	SLU 27	-0.03	0.01	6.7	0	1.0059	-0.0017
191	SLU 28	-0.03	0.01	6.69	0	1.0051	-0.0012
191	SLU 29	-0.03	0.01	6.66	0	0.9999	-0.0014
191	SLU 30	-0.03	0.01	6.65	0	0.9991	-0.0009
191	SLU 31	-0.03	0.01	7.18	0	1.0788	-0.0013
191	SLU 32	-0.03	0.02	7.32	0	1.1002	-0.0024



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
191	SLU 33	-0.03	0.01	7.32	0	1.0994	-0.002
191	SLU 34	-0.03	0.01	7.28	0	1.0929	-0.0013
191	SLU 35	-0.03	0.02	7.42	0	1.1142	-0.0024
191	SLU 36	-0.03	0.01	7.41	0	1.1134	-0.002
191	SLU 37	-0.03	0.01	7.38	0	1.1083	-0.0021
191	SLU 38	-0.03	0.01	7.37	0	1.1075	-0.0017
191	SLU 39	-0.03	0.02	7.5	0	1.1266	-0.0024
191	SLU 40	-0.03	0.01	7.49	0	1.1258	-0.002
191	SLU 41	-0.03	0.02	7.59	0	1.1407	-0.0024
191	SLU 42	-0.03	0.01	7.59	0	1.1399	-0.002
191	SLU 43	-0.04	-0.01	7.41	0	1.1127	0.0014
191	SLU 44	-0.03	-0.01	7.4	0	1.1113	0.0022
191	SLU 45	-0.04	-0.01	7.54	0	1.1327	0.0011
191	SLU 46	-0.03	-0.01	7.53	0	1.1319	0.0016
191	SLU 47	-0.03	-0.01	7.49	0	1.1254	0.0022
191	SLU 48	-0.04	-0.01	7.63	0	1.1467	0.0011
191	SLU 49	-0.03	-0.01	7.63	0	1.1459	0.0016
191	SLU 50	-0.04	-0.01	7.59	0	1.1408	0.0014
191	SLU 51	-0.03	-0.01	7.59	0	1.14	0.0019
191	SLU 52	-0.03	-0.01	8.12	0	1.2197	0.0015
191	SLU 53	-0.04	0	8.26	0	1.241	0.0004
191	SLU 54	-0.03	-0.01	8.26	0	1.2402	0.0009
191	SLU 55	-0.03	-0.01	8.21	0	1.2337	0.0015
191	SLU 56	-0.04	0	8.36	0	1.2551	0.0004
191	SLU 57	-0.03	-0.01	8.35	0	1.2543	0.0009
191	SLU 58	-0.04	0	8.32	0	1.2491	0.0007
191	SLU 59	-0.03	-0.01	8.31	0	1.2483	0.0012
191	SLU 60	-0.04	0	8.44	0	1.2675	0.0004
191	SLU 61	-0.03	-0.01	8.43	0	1.2667	0.0008
191	SLU 62	-0.04	0	8.53	0	1.2815	0.0004
191	SLU 63	-0.03	-0.01	8.53	0	1.2807	0.0008
191	SLU 64	-0.04	0	8.02	0	1.2044	-0.0006
191	SLU 65	-0.03	0	8.01	0	1.2031	0.0002
191	SLU 66	-0.04	0.01	8.15	0	1.2244	-0.0009
191	SLU 67	-0.04	0	8.15	0	1.2236	-0.0004
191	SLU 68	-0.04	0	8.1	0	1.2171	0.0002
191	SLU 69	-0.04	0.01	8.24	0	1.2385	-0.0009
191	SLU 70	-0.04	0	8.24	0	1.2377	-0.0004
191	SLU 71	-0.04	0	8.2	0	1.2325	-0.0006
191	SLU 72	-0.04	0	8.2	0	1.2317	-0.0001
191	SLU 73	-0.03	0	8.73	0	1.3114	-0.0005
191	SLU 74	-0.04	0.01	8.87	0	1.3328	-0.0016
191	SLU 75	-0.04	0.01	8.87	0	1.332	-0.0011
191	SLU 76	-0.04	0	8.82	0	1.3255	-0.0005
191	SLU 77	-0.04	0.01	8.97	0	1.3468	-0.0016
191	SLU 78	-0.04	0.01	8.96	0	1.346	-0.0011
191	SLU 79	-0.04	0.01	8.93	0	1.3409	-0.0013
191	SLU 80	-0.04	0.01	8.92	0	1.3401	-0.0008
191	SLU 81	-0.04	0.01	9.05	0	1.3592	-0.0016
191	SLU 82	-0.04	0.01	9.04	0	1.3584	-0.0011
191	SLU 83	-0.04	0.01	9.14	0	1.3732	-0.0016
191	SLU 84	-0.04	0.01	9.14	0	1.3724	-0.0011
191	SLE RA 1	-0.03	0	6.03	0	0.9063	0
191	SLE RA 2	-0.03	0	6.03	0	0.9054	0.0005
191	SLE RA 3	-0.03	0	6.12	0	0.9196	-0.0002
191	SLE RA 4	-0.03	0	6.12	0	0.9191	0.0001
191	SLE RA 5	-0.03	0	6.09	0	0.9148	0.0005
191	SLE RA 6	-0.03	0	6.18	0	0.929	-0.0002
191	SLE RA 7	-0.03	0	6.18	0	0.9285	0.0001
191	SLE RA 8	-0.03	0	6.16	0	0.925	0
191	SLE RA 9	-0.03	0	6.15	0	0.9245	0.0003
191	SLE RA 10	-0.03	0	6.51	0	0.9776	0
191	SLE RA 11	-0.03	0	6.6	0	0.9919	-0.0007
191	SLE RA 12	-0.03	0	6.6	0	0.9913	-0.0004
191	SLE RA 13	-0.03	0	6.57	0	0.987	0
191	SLE RA 14	-0.03	0	6.67	0	1.0012	-0.0007
191	SLE RA 15	-0.03	0	6.66	0	1.0007	-0.0004
191	SLE RA 16	-0.03	0	6.64	0	0.9973	-0.0005
191	SLE RA 17	-0.03	0	6.64	0	0.9967	-0.0002
191	SLE RA 18	-0.03	0	6.72	0	1.0095	-0.0007
191	SLE RA 19	-0.03	0	6.72	0	1.009	-0.0004
191	SLE RA 20	-0.03	0	6.78	0	1.0189	-0.0007
191	SLE RA 21	-0.03	0	6.78	0	1.0183	-0.0004
191	SLE FR 1	-0.03	0	6.03	0	0.9063	0
191	SLE FR 2	-0.03	0	6.03	0	0.9061	0.0001
191	SLE FR 3	-0.03	0	6.06	0	0.9101	0
191	SLE FR 4	-0.03	0	6.24	0	0.9371	-0.0001
191	SLE FR 5	-0.03	0	6.26	0	0.941	-0.0002
191	SLE FR 6	-0.03	0	6.38	0	0.9579	-0.0003
191	SLE QP 1	-0.03	0	6.03	0	0.9063	0
191	SLE QP 2	-0.03	0	6.24	0	0.9373	-0.0002
191	SLD 1	0.44	0.06	6.3	0	0.9468	-0.0084
191	SLD 2	0.49	0.05	6.29	0	0.9445	-0.0073
191	SLD 3	0.47	-0.09	6.1	0	0.9167	0.0135
191	SLD 4	0.52	-0.1	6.09	0	0.9144	0.0146
191	SLD 5	0.06	0.24	6.56	0	0.9861	-0.036
191	SLD 6	0.09	0.24	6.55	0	0.9846	-0.0353
191	SLD 7	0.16	-0.25	5.9	0	0.8859	0.0369
191	SLD 8	0.19	-0.25	5.89	0	0.8844	0.0376
191	SLD 9	-0.25	0.25	6.59	0	0.9901	-0.038



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
191	SLD 10	-0.21	0.25	6.58	0	0.9886	-0.0373
191	SLD 11	-0.15	-0.23	5.92	0	0.8899	0.0349
191	SLD 12	-0.11	-0.24	5.91	0	0.8884	0.0356
191	SLD 13	-0.57	0.1	6.39	0	0.9601	-0.015
191	SLD 14	-0.52	0.09	6.38	0	0.9578	-0.0139
191	SLD 15	-0.54	-0.05	6.19	0	0.9301	0.0069
191	SLD 16	-0.49	-0.05	6.18	0	0.9277	0.008
191	SLV 1	1.06	0.12	6.38	0	0.9584	-0.0186
191	SLV 2	1.18	0.11	6.34	0	0.953	-0.0161
191	SLV 3	1.13	-0.21	5.93	0	0.8904	0.031
191	SLV 4	1.25	-0.22	5.89	0	0.885	0.0335
191	SLV 5	0.17	0.54	6.97	0	1.0478	-0.0813
191	SLV 6	0.25	0.53	6.95	0	1.0443	-0.0797
191	SLV 7	0.4	-0.56	5.46	0	0.8209	0.0839
191	SLV 8	0.48	-0.57	5.44	0	0.8174	0.0855
191	SLV 9	-0.54	0.57	7.04	0	1.0571	-0.0859
191	SLV 10	-0.46	0.56	7.01	0	1.0536	-0.0843
191	SLV 11	-0.31	-0.53	5.53	0	0.8302	0.0793
191	SLV 12	-0.23	-0.54	5.5	0	0.8268	0.0809
191	SLV 13	-1.3	0.23	6.59	0	0.9896	-0.0339
191	SLV 14	-1.19	0.21	6.55	0	0.9842	-0.0314
191	SLV 15	-1.24	-0.1	6.13	0	0.9215	0.0157
191	SLV 16	-1.12	-0.12	6.1	0	0.9161	0.0182
191	CRTFP Uy+	0	0	0	0	0	0
191	CRTFP Uy-	0	0	0	0	0	0
193	SLU 1	-0.04	-0.05	40.36	0.9465	11.2522	0.0065
193	SLU 2	-0.01	-0.08	40.31	0.9455	11.2384	0.0159
193	SLU 3	-0.04	-0.03	41.28	0.9683	11.5106	0.0026
193	SLU 4	-0.02	-0.06	41.25	0.9677	11.5023	0.0083
193	SLU 5	-0.02	-0.08	40.94	0.9603	11.4153	0.0156
193	SLU 6	-0.04	-0.03	41.91	0.983	11.6875	0.0023
193	SLU 7	-0.03	-0.05	41.89	0.9824	11.6792	0.008
193	SLU 8	-0.04	-0.05	41.62	0.9761	11.606	0.0059
193	SLU 9	-0.03	-0.07	41.59	0.9755	11.5977	0.0116
193	SLU 10	-0.04	-0.03	45.31	1.0635	12.6442	0
193	SLU 11	-0.06	0.02	46.28	1.0862	12.9164	-0.0133
193	SLU 12	-0.05	0	46.26	1.0856	12.9081	-0.0077
193	SLU 13	-0.04	-0.03	45.94	1.0782	12.8211	-0.0003
193	SLU 14	-0.07	0.02	46.92	1.1009	13.0933	-0.0136
193	SLU 15	-0.05	0	46.89	1.1003	13.085	-0.008
193	SLU 16	-0.07	0.01	46.62	1.094	13.0118	-0.01
193	SLU 17	-0.05	-0.01	46.59	1.0934	13.0035	-0.0044
193	SLU 18	-0.07	0.03	47.5	1.115	13.2605	-0.0163
193	SLU 19	-0.06	0.01	47.48	1.1144	13.2522	-0.0106
193	SLU 20	-0.07	0.03	48.14	1.1298	13.4374	-0.0166
193	SLU 21	-0.06	0.01	48.11	1.1292	13.4291	-0.0109
193	SLU 22	-0.03	0.04	44.61	1.0469	12.4405	-0.019
193	SLU 23	-0.01	0	44.57	1.0459	12.4267	-0.0096
193	SLU 24	-0.03	0.05	45.54	1.0686	12.6989	-0.0229
193	SLU 25	-0.02	0.03	45.51	1.068	12.6906	-0.0173
193	SLU 26	-0.01	0	45.2	1.0607	12.6036	-0.0099
193	SLU 27	-0.04	0.05	46.17	1.0834	12.8758	-0.0232
193	SLU 28	-0.02	0.03	46.14	1.0828	12.8675	-0.0176
193	SLU 29	-0.04	0.04	45.88	1.0764	12.7943	-0.0196
193	SLU 30	-0.02	0.02	45.85	1.0758	12.786	-0.014
193	SLU 31	-0.03	0.06	49.57	1.1638	13.8325	-0.0256
193	SLU 32	-0.06	0.11	50.54	1.1865	14.1047	-0.0389
193	SLU 33	-0.04	0.09	50.51	1.1859	14.0964	-0.0332
193	SLU 34	-0.03	0.06	50.2	1.1786	14.0094	-0.0259
193	SLU 35	-0.06	0.11	51.17	1.2013	14.2816	-0.0392
193	SLU 36	-0.05	0.09	51.14	1.2007	14.2733	-0.0335
193	SLU 37	-0.06	0.1	50.88	1.1944	14.2001	-0.0356
193	SLU 38	-0.05	0.07	50.85	1.1938	14.1918	-0.0299
193	SLU 39	-0.07	0.12	51.76	1.2153	14.4488	-0.0418
193	SLU 40	-0.05	0.1	51.73	1.2147	14.4405	-0.0362
193	SLU 41	-0.07	0.12	52.39	1.2301	14.6257	-0.0421
193	SLU 42	-0.05	0.1	52.36	1.2295	14.6174	-0.0365
193	SLU 43	-0.05	-0.09	51.01	1.1961	14.2205	0.0173
193	SLU 44	-0.03	-0.13	50.96	1.1951	14.2066	0.0266
193	SLU 45	-0.05	-0.08	51.93	1.2178	14.4789	0.0134
193	SLU 46	-0.04	-0.1	51.9	1.2172	14.4706	0.019
193	SLU 47	-0.03	-0.13	51.59	1.2099	14.3835	0.0263
193	SLU 48	-0.05	-0.08	52.56	1.2326	14.6557	0.0131
193	SLU 49	-0.04	-0.1	52.53	1.232	14.6474	0.0187
193	SLU 50	-0.06	-0.09	52.27	1.2256	14.5742	0.0167
193	SLU 51	-0.04	-0.11	52.24	1.225	14.5659	0.0223
193	SLU 52	-0.05	-0.07	55.96	1.313	15.6124	0.0107
193	SLU 53	-0.08	-0.02	56.93	1.3357	15.8847	-0.0026
193	SLU 54	-0.06	-0.04	56.9	1.3351	15.8764	0.003
193	SLU 55	-0.05	-0.07	56.59	1.3278	15.7893	0.0104
193	SLU 56	-0.08	-0.02	57.56	1.3505	16.0615	-0.0029
193	SLU 57	-0.06	-0.04	57.54	1.3499	16.0532	0.0027
193	SLU 58	-0.08	-0.04	57.27	1.3435	15.98	0.0007
193	SLU 59	-0.07	-0.06	57.24	1.3429	15.9717	0.0063
193	SLU 60	-0.08	-0.01	58.15	1.3645	16.2287	-0.0055
193	SLU 61	-0.07	-0.03	58.12	1.3639	16.2205	0.0001
193	SLU 62	-0.09	-0.01	58.78	1.3793	16.4056	-0.0058
193	SLU 63	-0.07	-0.03	58.76	1.3787	16.3973	-0.0002
193	SLU 64	-0.04	0	55.26	1.2964	15.4088	-0.0083
193	SLU 65	-0.02	-0.04	55.22	1.2954	15.3949	0.0011





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
193	SLU 66	-0.05	0.01	56.19	1.3182	15.6671	-0.0122
193	SLU 67	-0.03	-0.01	56.16	1.3176	15.6589	-0.0066
193	SLU 68	-0.02	-0.04	55.85	1.3102	15.5718	0.0008
193	SLU 69	-0.05	0.01	56.82	1.3329	15.844	-0.0125
193	SLU 70	-0.03	-0.01	56.79	1.3323	15.8357	-0.0069
193	SLU 71	-0.05	0	56.53	1.326	15.7625	-0.0089
193	SLU 72	-0.04	-0.02	56.5	1.3254	15.7542	-0.0033
193	SLU 73	-0.04	0.02	60.22	1.4134	16.8007	-0.0149
193	SLU 74	-0.07	0.06	61.19	1.4361	17.0729	-0.0282
193	SLU 75	-0.06	0.04	61.16	1.4355	17.0647	-0.0225
193	SLU 76	-0.05	0.02	60.85	1.4281	16.9776	-0.0152
193	SLU 77	-0.07	0.06	61.82	1.4509	17.2498	-0.0284
193	SLU 78	-0.06	0.04	61.79	1.4503	17.2415	-0.0228
193	SLU 79	-0.07	0.05	61.53	1.4439	17.1683	-0.0248
193	SLU 80	-0.06	0.03	61.5	1.4433	17.16	-0.0192
193	SLU 81	-0.08	0.07	62.41	1.4649	17.417	-0.0311
193	SLU 82	-0.06	0.05	62.38	1.4643	17.4087	-0.0255
193	SLU 83	-0.08	0.07	63.04	1.4797	17.5939	-0.0314
193	SLU 84	-0.07	0.05	63.01	1.4791	17.5856	-0.0258
193	SLE RA 1	-0.04	-0.02	41.57	0.9752	11.5917	-0.0008
193	SLE RA 2	-0.02	-0.05	41.54	0.9745	11.5825	0.0055
193	SLE RA 3	-0.04	-0.01	42.19	0.9897	11.764	-0.0034
193	SLE RA 4	-0.03	-0.03	42.17	0.9893	11.7585	0.0004
193	SLE RA 5	-0.02	-0.05	41.96	0.9844	11.7004	0.0053
193	SLE RA 6	-0.04	-0.01	42.61	0.9995	11.8819	-0.0036
193	SLE RA 7	-0.03	-0.03	42.59	0.9991	11.8764	0.0002
193	SLE RA 8	-0.04	-0.02	42.42	0.9949	11.8276	-0.0012
193	SLE RA 9	-0.03	-0.04	42.4	0.9945	11.822	0.0026
193	SLE RA 10	-0.04	-0.01	44.88	1.0532	12.5197	-0.0052
193	SLE RA 11	-0.05	0.02	45.52	1.0683	12.7012	-0.014
193	SLE RA 12	-0.04	0.01	45.51	1.0679	12.6957	-0.0103
193	SLE RA 13	-0.04	-0.01	45.3	1.063	12.6376	-0.0053
193	SLE RA 14	-0.05	0.02	45.95	1.0781	12.8191	-0.0142
193	SLE RA 15	-0.04	0.01	45.93	1.0777	12.8136	-0.0104
193	SLE RA 16	-0.06	0.01	45.75	1.0735	12.7648	-0.0118
193	SLE RA 17	-0.05	0	45.73	1.0731	12.7592	-0.008
193	SLE RA 18	-0.06	0.03	46.34	1.0875	12.9306	-0.016
193	SLE RA 19	-0.05	0.02	46.32	1.0871	12.9251	-0.0122
193	SLE RA 20	-0.06	0.03	46.76	1.0974	13.0485	-0.0162
193	SLE RA 21	-0.05	0.02	46.74	1.097	13.043	-0.0124
193	SLE FR 1	-0.04	-0.02	41.57	0.9752	11.5917	-0.0008
193	SLE FR 2	-0.03	-0.03	41.57	0.9751	11.5899	0.0005
193	SLE FR 3	-0.04	-0.02	41.74	0.9791	11.6389	-0.0008
193	SLE FR 4	-0.04	-0.01	43	1.0088	11.9915	-0.0041
193	SLE FR 5	-0.04	-0.01	43.17	1.0128	12.0406	-0.0054
193	SLE FR 6	-0.05	0	43.96	1.0314	12.2612	-0.0084
193	SLE QP 1	-0.04	-0.02	41.57	0.9752	11.5917	-0.0008
193	SLE QP 2	-0.04	-0.01	43	1.0089	11.9934	-0.0053
193	SLD 1	3.69	0.36	42.85	1.0078	12.0298	-0.2449
193	SLD 2	4.07	0.38	42.96	1.0101	12.0529	-0.2599
193	SLD 3	3.47	-0.72	41.54	0.98	11.6602	0.0595
193	SLD 4	3.85	-0.69	41.65	0.9824	11.6832	0.0445
193	SLD 5	1.35	1.73	44.93	1.0502	12.5608	-0.5363
193	SLD 6	1.6	1.75	45	1.0518	12.5759	-0.5461
193	SLD 7	0.61	-1.86	40.55	0.9577	11.3287	0.4785
193	SLD 8	0.86	-1.84	40.63	0.9593	11.3439	0.4687
193	SLD 9	-0.94	1.83	45.38	1.0585	12.6429	-0.4793
193	SLD 10	-0.69	1.85	45.45	1.0601	12.658	-0.4892
193	SLD 11	-1.68	-1.76	41.01	0.966	11.4108	0.5355
193	SLD 12	-1.43	-1.75	41.08	0.9676	11.426	0.5256
193	SLD 13	-3.94	0.68	44.36	1.0354	12.3035	-0.0552
193	SLD 14	-3.55	0.71	44.47	1.0378	12.3266	-0.0702
193	SLD 15	-4.16	-0.4	43.04	1.0077	11.9339	0.2493
193	SLD 16	-3.77	-0.37	43.15	1.01	11.9569	0.2343
193	SLV 1	8.69	0.81	42.6	1.0053	12.0654	-0.5542
193	SLV 2	9.58	0.87	42.86	1.0107	12.119	-0.5891
193	SLV 3	8.17	-1.63	39.63	0.9423	11.2278	0.135
193	SLV 4	9.07	-1.57	39.88	0.9478	11.2814	0.1
193	SLV 5	3.21	3.93	47.35	1.1023	13.2761	-1.2091
193	SLV 6	3.78	3.97	47.52	1.1058	13.3107	-1.2317
193	SLV 7	1.48	-4.21	37.43	0.8926	10.4841	1.088
193	SLV 8	2.06	-4.17	37.6	0.8961	10.5187	1.0654
193	SLV 9	-2.14	4.15	48.41	1.1217	13.4681	-1.0761
193	SLV 10	-1.57	4.19	48.57	1.1252	13.5027	-1.0987
193	SLV 11	-3.87	-3.98	38.49	0.912	10.676	1.2211
193	SLV 12	-3.29	-3.94	38.66	0.9155	10.7107	1.1985
193	SLV 13	-9.15	1.56	46.12	1.07	12.7053	-0.1107
193	SLV 14	-8.26	1.62	46.38	1.0755	12.759	-0.1457
193	SLV 15	-9.67	-0.88	43.15	1.0071	11.8677	0.5785
193	SLV 16	-8.78	-0.82	43.4	1.0125	11.9214	0.5435
193	CRTFP Ux+	0	0	0	0	0	0
193	CRTFP Ux-	0	0	0	0	0	0
193	CRTFP Uy+	0	0	0	0	0	0
193	CRTFP Uy-	0	0	0	0	0	0
195	SLU 1	-0.01	-0.05	11.22	0	0	0
195	SLU 2	0	-0.06	11.21	0	0	0
195	SLU 3	-0.01	-0.05	11.48	0	0	0
195	SLU 4	-0.01	-0.06	11.47	0	0	0
195	SLU 5	0	-0.06	11.38	0	0	0
195	SLU 6	-0.01	-0.05	11.65	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
195	SLU 7	-0.01	-0.06	11.64	0	0	0
195	SLU 8	-0.01	-0.06	11.57	0	0	0
195	SLU 9	-0.01	-0.06	11.56	0	0	0
195	SLU 10	-0.01	-0.05	12.58	0	0	0
195	SLU 11	-0.02	-0.04	12.85	0	0	0
195	SLU 12	-0.01	-0.05	12.84	0	0	0
195	SLU 13	-0.01	-0.05	12.76	0	0	0
195	SLU 14	-0.02	-0.04	13.03	0	0	0
195	SLU 15	-0.01	-0.05	13.02	0	0	0
195	SLU 16	-0.02	-0.05	12.94	0	0	0
195	SLU 17	-0.01	-0.05	12.94	0	0	0
195	SLU 18	-0.02	-0.04	13.18	0	0	0
195	SLU 19	-0.01	-0.05	13.18	0	0	0
195	SLU 20	-0.02	-0.04	13.36	0	0	0
195	SLU 21	-0.02	-0.05	13.35	0	0	0
195	SLU 22	-0.01	-0.04	12.4	0	0	0
195	SLU 23	0	-0.04	12.39	0	0	0
195	SLU 24	-0.01	-0.03	12.66	0	0	0
195	SLU 25	0	-0.04	12.65	0	0	0
195	SLU 26	0	-0.05	12.56	0	0	0
195	SLU 27	-0.01	-0.03	12.83	0	0	0
195	SLU 28	0	-0.04	12.83	0	0	0
195	SLU 29	-0.01	-0.04	12.75	0	0	0
195	SLU 30	0	-0.04	12.74	0	0	0
195	SLU 31	-0.01	-0.03	13.76	0	0	0
195	SLU 32	-0.01	-0.02	14.03	0	0	0
195	SLU 33	-0.01	-0.03	14.02	0	0	0
195	SLU 34	-0.01	-0.04	13.94	0	0	0
195	SLU 35	-0.02	-0.02	14.21	0	0	0
195	SLU 36	-0.01	-0.03	14.2	0	0	0
195	SLU 37	-0.02	-0.03	14.12	0	0	0
195	SLU 38	-0.01	-0.03	14.12	0	0	0
195	SLU 39	-0.02	-0.02	14.36	0	0	0
195	SLU 40	-0.01	-0.03	14.36	0	0	0
195	SLU 41	-0.02	-0.02	14.54	0	0	0
195	SLU 42	-0.01	-0.03	14.53	0	0	0
195	SLU 43	-0.01	-0.08	14.18	0	0	0
195	SLU 44	-0.01	-0.09	14.17	0	0	0
195	SLU 45	-0.01	-0.08	14.44	0	0	0
195	SLU 46	-0.01	-0.08	14.43	0	0	0
195	SLU 47	-0.01	-0.09	14.35	0	0	0
195	SLU 48	-0.01	-0.08	14.61	0	0	0
195	SLU 49	-0.01	-0.08	14.61	0	0	0
195	SLU 50	-0.01	-0.08	14.53	0	0	0
195	SLU 51	-0.01	-0.08	14.53	0	0	0
195	SLU 52	-0.01	-0.08	15.55	0	0	0
195	SLU 53	-0.02	-0.07	15.81	0	0	0
195	SLU 54	-0.02	-0.07	15.81	0	0	0
195	SLU 55	-0.01	-0.08	15.72	0	0	0
195	SLU 56	-0.02	-0.07	15.99	0	0	0
195	SLU 57	-0.02	-0.07	15.98	0	0	0
195	SLU 58	-0.02	-0.07	15.91	0	0	0
195	SLU 59	-0.02	-0.07	15.9	0	0	0
195	SLU 60	-0.02	-0.06	16.15	0	0	0
195	SLU 61	-0.02	-0.07	16.14	0	0	0
195	SLU 62	-0.02	-0.06	16.32	0	0	0
195	SLU 63	-0.02	-0.07	16.31	0	0	0
195	SLU 64	-0.01	-0.06	15.36	0	0	0
195	SLU 65	0	-0.07	15.35	0	0	0
195	SLU 66	-0.01	-0.06	15.62	0	0	0
195	SLU 67	-0.01	-0.06	15.61	0	0	0
195	SLU 68	0	-0.07	15.53	0	0	0
195	SLU 69	-0.01	-0.06	15.79	0	0	0
195	SLU 70	-0.01	-0.06	15.79	0	0	0
195	SLU 71	-0.01	-0.06	15.71	0	0	0
195	SLU 72	-0.01	-0.07	15.71	0	0	0
195	SLU 73	-0.01	-0.06	16.73	0	0	0
195	SLU 74	-0.02	-0.05	16.99	0	0	0
195	SLU 75	-0.01	-0.05	16.99	0	0	0
195	SLU 76	-0.01	-0.06	16.9	0	0	0
195	SLU 77	-0.02	-0.05	17.17	0	0	0
195	SLU 78	-0.01	-0.05	17.16	0	0	0
195	SLU 79	-0.02	-0.05	17.09	0	0	0
195	SLU 80	-0.01	-0.06	17.08	0	0	0
195	SLU 81	-0.02	-0.04	17.33	0	0	0
195	SLU 82	-0.02	-0.05	17.32	0	0	0
195	SLU 83	-0.02	-0.05	17.5	0	0	0
195	SLU 84	-0.02	-0.05	17.49	0	0	0
195	SLE RA 1	-0.01	-0.05	11.56	0	0	0
195	SLE RA 2	0	-0.06	11.55	0	0	0
195	SLE RA 3	-0.01	-0.05	11.73	0	0	0
195	SLE RA 4	-0.01	-0.05	11.72	0	0	0
195	SLE RA 5	0	-0.06	11.67	0	0	0
195	SLE RA 6	-0.01	-0.05	11.85	0	0	0
195	SLE RA 7	-0.01	-0.05	11.84	0	0	0
195	SLE RA 8	-0.01	-0.05	11.79	0	0	0
195	SLE RA 9	-0.01	-0.05	11.79	0	0	0
195	SLE RA 10	-0.01	-0.05	12.47	0	0	0
195	SLE RA 11	-0.01	-0.04	12.65	0	0	0
195	SLE RA 12	-0.01	-0.04	12.64	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
195	SLE RA 13	-0.01	-0.05	12.58	0	0	0
195	SLE RA 14	-0.01	-0.04	12.76	0	0	0
195	SLE RA 15	-0.01	-0.05	12.76	0	0	0
195	SLE RA 16	-0.01	-0.04	12.71	0	0	0
195	SLE RA 17	-0.01	-0.05	12.7	0	0	0
195	SLE RA 18	-0.01	-0.04	12.87	0	0	0
195	SLE RA 19	-0.01	-0.04	12.86	0	0	0
195	SLE RA 20	-0.02	-0.04	12.98	0	0	0
195	SLE RA 21	-0.01	-0.04	12.98	0	0	0
195	SLE FR 1	-0.01	-0.05	11.56	0	0	0
195	SLE FR 2	-0.01	-0.05	11.56	0	0	0
195	SLE FR 3	-0.01	-0.05	11.61	0	0	0
195	SLE FR 4	-0.01	-0.05	11.95	0	0	0
195	SLE FR 5	-0.01	-0.05	12	0	0	0
195	SLE FR 6	-0.01	-0.04	12.21	0	0	0
195	SLE QP 1	-0.01	-0.05	11.56	0	0	0
195	SLE QP 2	-0.01	-0.05	11.95	0	0	0
195	SLD 1	1.01	0.15	11.78	0	0	0
195	SLD 2	1.11	0.17	11.82	0	0	0
195	SLD 3	0.95	-0.14	11.42	0	0	0
195	SLD 4	1.05	-0.12	11.46	0	0	0
195	SLD 5	0.37	0.45	12.44	0	0	0
195	SLD 6	0.44	0.46	12.47	0	0	0
195	SLD 7	0.17	-0.52	11.24	0	0	0
195	SLD 8	0.24	-0.5	11.26	0	0	0
195	SLD 9	-0.26	0.41	12.64	0	0	0
195	SLD 10	-0.19	0.42	12.67	0	0	0
195	SLD 11	-0.46	-0.55	11.43	0	0	0
195	SLD 12	-0.39	-0.54	11.46	0	0	0
195	SLD 13	-1.07	0.03	12.44	0	0	0
195	SLD 14	-0.97	0.05	12.48	0	0	0
195	SLD 15	-1.14	-0.26	12.08	0	0	0
195	SLD 16	-1.03	-0.24	12.12	0	0	0
195	SLV 1	2.38	0.4	11.54	0	0	0
195	SLV 2	2.62	0.44	11.64	0	0	0
195	SLV 3	2.24	-0.26	10.72	0	0	0
195	SLV 4	2.48	-0.21	10.82	0	0	0
195	SLV 5	0.88	1.07	13.06	0	0	0
195	SLV 6	1.04	1.1	13.12	0	0	0
195	SLV 7	0.41	-1.11	10.32	0	0	0
195	SLV 8	0.56	-1.08	10.38	0	0	0
195	SLV 9	-0.59	0.99	13.52	0	0	0
195	SLV 10	-0.43	1.01	13.58	0	0	0
195	SLV 11	-1.06	-1.19	10.78	0	0	0
195	SLV 12	-0.9	-1.16	10.85	0	0	0
195	SLV 13	-2.5	0.12	13.09	0	0	0
195	SLV 14	-2.26	0.16	13.18	0	0	0
195	SLV 15	-2.64	-0.53	12.26	0	0	0
195	SLV 16	-2.4	-0.49	12.36	0	0	0
196	SLU 1	-0.01	-0.07	11.31	0	0	0
196	SLU 2	0	-0.08	11.3	0	0	0
196	SLU 3	-0.01	-0.07	11.57	0	0	0
196	SLU 4	0	-0.08	11.56	0	0	0
196	SLU 5	0	-0.08	11.48	0	0	0
196	SLU 6	-0.01	-0.07	11.74	0	0	0
196	SLU 7	0	-0.08	11.74	0	0	0
196	SLU 8	-0.01	-0.08	11.66	0	0	0
196	SLU 9	0	-0.08	11.66	0	0	0
196	SLU 10	-0.01	-0.07	12.68	0	0	0
196	SLU 11	-0.01	-0.06	12.94	0	0	0
196	SLU 12	-0.01	-0.07	12.94	0	0	0
196	SLU 13	-0.01	-0.08	12.85	0	0	0
196	SLU 14	-0.02	-0.07	13.12	0	0	0
196	SLU 15	-0.01	-0.07	13.11	0	0	0
196	SLU 16	-0.02	-0.07	13.04	0	0	0
196	SLU 17	-0.01	-0.07	13.03	0	0	0
196	SLU 18	-0.02	-0.06	13.28	0	0	0
196	SLU 19	-0.01	-0.07	13.27	0	0	0
196	SLU 20	-0.02	-0.06	13.45	0	0	0
196	SLU 21	-0.01	-0.07	13.44	0	0	0
196	SLU 22	-0.01	-0.06	12.5	0	0	0
196	SLU 23	0	-0.07	12.49	0	0	0
196	SLU 24	-0.01	-0.06	12.76	0	0	0
196	SLU 25	0	-0.06	12.75	0	0	0
196	SLU 26	0	-0.07	12.66	0	0	0
196	SLU 27	-0.01	-0.06	12.93	0	0	0
196	SLU 28	0	-0.06	12.92	0	0	0
196	SLU 29	-0.01	-0.06	12.85	0	0	0
196	SLU 30	0	-0.06	12.84	0	0	0
196	SLU 31	-0.01	-0.06	13.86	0	0	0
196	SLU 32	-0.01	-0.05	14.13	0	0	0
196	SLU 33	-0.01	-0.05	14.12	0	0	0
196	SLU 34	-0.01	-0.06	14.04	0	0	0
196	SLU 35	-0.01	-0.05	14.31	0	0	0
196	SLU 36	-0.01	-0.05	14.3	0	0	0
196	SLU 37	-0.01	-0.05	14.23	0	0	0
196	SLU 38	-0.01	-0.06	14.22	0	0	0
196	SLU 39	-0.02	-0.05	14.46	0	0	0
196	SLU 40	-0.01	-0.05	14.46	0	0	0
196	SLU 41	-0.02	-0.05	14.64	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
196	SLU 42	-0.01	-0.05	14.63	0	0	0
196	SLU 43	-0.01	-0.1	14.3	0	0	0
196	SLU 44	0	-0.11	14.29	0	0	0
196	SLU 45	-0.01	-0.1	14.56	0	0	0
196	SLU 46	-0.01	-0.1	14.55	0	0	0
196	SLU 47	0	-0.11	14.46	0	0	0
196	SLU 48	-0.01	-0.1	14.73	0	0	0
196	SLU 49	-0.01	-0.11	14.72	0	0	0
196	SLU 50	-0.01	-0.1	14.65	0	0	0
196	SLU 51	-0.01	-0.11	14.64	0	0	0
196	SLU 52	-0.01	-0.1	15.66	0	0	0
196	SLU 53	-0.02	-0.09	15.93	0	0	0
196	SLU 54	-0.01	-0.1	15.92	0	0	0
196	SLU 55	-0.01	-0.1	15.84	0	0	0
196	SLU 56	-0.02	-0.09	16.11	0	0	0
196	SLU 57	-0.01	-0.1	16.1	0	0	0
196	SLU 58	-0.02	-0.1	16.02	0	0	0
196	SLU 59	-0.01	-0.1	16.02	0	0	0
196	SLU 60	-0.02	-0.09	16.26	0	0	0
196	SLU 61	-0.02	-0.1	16.26	0	0	0
196	SLU 62	-0.02	-0.09	16.44	0	0	0
196	SLU 63	-0.02	-0.1	16.43	0	0	0
196	SLU 64	-0.01	-0.08	15.49	0	0	0
196	SLU 65	0	-0.09	15.47	0	0	0
196	SLU 66	-0.01	-0.08	15.74	0	0	0
196	SLU 67	0	-0.09	15.74	0	0	0
196	SLU 68	0	-0.09	15.65	0	0	0
196	SLU 69	-0.01	-0.08	15.92	0	0	0
196	SLU 70	-0.01	-0.09	15.91	0	0	0
196	SLU 71	-0.01	-0.09	15.84	0	0	0
196	SLU 72	-0.01	-0.09	15.83	0	0	0
196	SLU 73	-0.01	-0.09	16.85	0	0	0
196	SLU 74	-0.02	-0.08	17.12	0	0	0
196	SLU 75	-0.01	-0.08	17.11	0	0	0
196	SLU 76	-0.01	-0.09	17.02	0	0	0
196	SLU 77	-0.02	-0.08	17.29	0	0	0
196	SLU 78	-0.01	-0.08	17.29	0	0	0
196	SLU 79	-0.02	-0.08	17.21	0	0	0
196	SLU 80	-0.01	-0.08	17.2	0	0	0
196	SLU 81	-0.02	-0.07	17.45	0	0	0
196	SLU 82	-0.01	-0.08	17.44	0	0	0
196	SLU 83	-0.02	-0.07	17.63	0	0	0
196	SLU 84	-0.02	-0.08	17.62	0	0	0
196	SLE RA 1	-0.01	-0.07	11.65	0	0	0
196	SLE RA 2	0	-0.07	11.64	0	0	0
196	SLE RA 3	-0.01	-0.07	11.82	0	0	0
196	SLE RA 4	0	-0.07	11.82	0	0	0
196	SLE RA 5	0	-0.07	11.76	0	0	0
196	SLE RA 6	-0.01	-0.07	11.94	0	0	0
196	SLE RA 7	0	-0.07	11.93	0	0	0
196	SLE RA 8	-0.01	-0.07	11.89	0	0	0
196	SLE RA 9	-0.01	-0.07	11.88	0	0	0
196	SLE RA 10	-0.01	-0.07	12.56	0	0	0
196	SLE RA 11	-0.01	-0.06	12.74	0	0	0
196	SLE RA 12	-0.01	-0.07	12.73	0	0	0
196	SLE RA 13	-0.01	-0.07	12.68	0	0	0
196	SLE RA 14	-0.01	-0.06	12.86	0	0	0
196	SLE RA 15	-0.01	-0.07	12.85	0	0	0
196	SLE RA 16	-0.01	-0.06	12.8	0	0	0
196	SLE RA 17	-0.01	-0.07	12.8	0	0	0
196	SLE RA 18	-0.01	-0.06	12.96	0	0	0
196	SLE RA 19	-0.01	-0.06	12.96	0	0	0
196	SLE RA 20	-0.01	-0.06	13.08	0	0	0
196	SLE RA 21	-0.01	-0.07	13.07	0	0	0
196	SLE FR 1	-0.01	-0.07	11.65	0	0	0
196	SLE FR 2	-0.01	-0.07	11.65	0	0	0
196	SLE FR 3	-0.01	-0.07	11.7	0	0	0
196	SLE FR 4	-0.01	-0.07	12.04	0	0	0
196	SLE FR 5	-0.01	-0.07	12.09	0	0	0
196	SLE FR 6	-0.01	-0.06	12.31	0	0	0
196	SLE QP 1	-0.01	-0.07	11.65	0	0	0
196	SLE QP 2	-0.01	-0.07	12.04	0	0	0
196	SLD 1	1.02	0.14	11.8	0	0	0
196	SLD 2	1.12	0.16	11.85	0	0	0
196	SLD 3	0.96	-0.15	11.44	0	0	0
196	SLD 4	1.06	-0.13	11.48	0	0	0
196	SLD 5	0.37	0.43	12.51	0	0	0
196	SLD 6	0.44	0.44	12.54	0	0	0
196	SLD 7	0.17	-0.53	11.3	0	0	0
196	SLD 8	0.24	-0.52	11.33	0	0	0
196	SLD 9	-0.26	0.38	12.76	0	0	0
196	SLD 10	-0.19	0.4	12.79	0	0	0
196	SLD 11	-0.46	-0.57	11.54	0	0	0
196	SLD 12	-0.39	-0.56	11.57	0	0	0
196	SLD 13	-1.08	-0.01	12.61	0	0	0
196	SLD 14	-0.97	0.02	12.65	0	0	0
196	SLD 15	-1.14	-0.29	12.24	0	0	0
196	SLD 16	-1.03	-0.27	12.29	0	0	0
196	SLV 1	2.39	0.4	11.46	0	0	0
196	SLV 2	2.64	0.45	11.57	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
196	SLV 3	2.25	-0.25	10.64	0	0	0
196	SLV 4	2.49	-0.2	10.74	0	0	0
196	SLV 5	0.88	1.05	13.1	0	0	0
196	SLV 6	1.04	1.09	13.17	0	0	0
196	SLV 7	0.41	-1.12	10.35	0	0	0
196	SLV 8	0.57	-1.08	10.42	0	0	0
196	SLV 9	-0.59	0.95	13.67	0	0	0
196	SLV 10	-0.43	0.98	13.73	0	0	0
196	SLV 11	-1.06	-1.22	10.92	0	0	0
196	SLV 12	-0.9	-1.18	10.99	0	0	0
196	SLV 13	-2.51	0.06	13.34	0	0	0
196	SLV 14	-2.27	0.12	13.45	0	0	0
196	SLV 15	-2.65	-0.59	12.52	0	0	0
196	SLV 16	-2.41	-0.53	12.63	0	0	0
197	SLU 1	-0.01	-0.09	11.36	0	0	0
197	SLU 2	0	-0.1	11.34	0	0	0
197	SLU 3	-0.01	-0.09	11.61	0	0	0
197	SLU 4	0	-0.1	11.61	0	0	0
197	SLU 5	0	-0.1	11.52	0	0	0
197	SLU 6	-0.01	-0.09	11.79	0	0	0
197	SLU 7	0	-0.1	11.78	0	0	0
197	SLU 8	-0.01	-0.1	11.71	0	0	0
197	SLU 9	0	-0.1	11.7	0	0	0
197	SLU 10	-0.01	-0.1	12.72	0	0	0
197	SLU 11	-0.01	-0.09	12.98	0	0	0
197	SLU 12	-0.01	-0.09	12.98	0	0	0
197	SLU 13	-0.01	-0.1	12.89	0	0	0
197	SLU 14	-0.01	-0.09	13.16	0	0	0
197	SLU 15	-0.01	-0.09	13.15	0	0	0
197	SLU 16	-0.01	-0.09	13.08	0	0	0
197	SLU 17	-0.01	-0.1	13.07	0	0	0
197	SLU 18	-0.02	-0.09	13.31	0	0	0
197	SLU 19	-0.01	-0.09	13.31	0	0	0
197	SLU 20	-0.02	-0.09	13.49	0	0	0
197	SLU 21	-0.01	-0.09	13.48	0	0	0
197	SLU 22	0	-0.08	12.55	0	0	0
197	SLU 23	0	-0.09	12.53	0	0	0
197	SLU 24	0	-0.08	12.8	0	0	0
197	SLU 25	0	-0.08	12.8	0	0	0
197	SLU 26	0	-0.09	12.71	0	0	0
197	SLU 27	0	-0.08	12.98	0	0	0
197	SLU 28	0	-0.08	12.97	0	0	0
197	SLU 29	-0.01	-0.08	12.9	0	0	0
197	SLU 30	0	-0.09	12.89	0	0	0
197	SLU 31	0	-0.08	13.9	0	0	0
197	SLU 32	-0.01	-0.07	14.17	0	0	0
197	SLU 33	-0.01	-0.08	14.17	0	0	0
197	SLU 34	-0.01	-0.08	14.08	0	0	0
197	SLU 35	-0.01	-0.07	14.35	0	0	0
197	SLU 36	-0.01	-0.08	14.34	0	0	0
197	SLU 37	-0.01	-0.08	14.27	0	0	0
197	SLU 38	-0.01	-0.08	14.26	0	0	0
197	SLU 39	-0.01	-0.07	14.5	0	0	0
197	SLU 40	-0.01	-0.08	14.5	0	0	0
197	SLU 41	-0.01	-0.07	14.68	0	0	0
197	SLU 42	-0.01	-0.08	14.67	0	0	0
197	SLU 43	-0.01	-0.12	14.36	0	0	0
197	SLU 44	0	-0.13	14.34	0	0	0
197	SLU 45	-0.01	-0.12	14.61	0	0	0
197	SLU 46	0	-0.13	14.6	0	0	0
197	SLU 47	0	-0.13	14.52	0	0	0
197	SLU 48	-0.01	-0.13	14.79	0	0	0
197	SLU 49	-0.01	-0.13	14.78	0	0	0
197	SLU 50	-0.01	-0.13	14.71	0	0	0
197	SLU 51	-0.01	-0.13	14.7	0	0	0
197	SLU 52	-0.01	-0.13	15.71	0	0	0
197	SLU 53	-0.02	-0.12	15.98	0	0	0
197	SLU 54	-0.01	-0.12	15.98	0	0	0
197	SLU 55	-0.01	-0.13	15.89	0	0	0
197	SLU 56	-0.02	-0.12	16.16	0	0	0
197	SLU 57	-0.01	-0.13	16.15	0	0	0
197	SLU 58	-0.02	-0.12	16.08	0	0	0
197	SLU 59	-0.01	-0.13	16.07	0	0	0
197	SLU 60	-0.02	-0.12	16.31	0	0	0
197	SLU 61	-0.01	-0.12	16.31	0	0	0
197	SLU 62	-0.02	-0.12	16.49	0	0	0
197	SLU 63	-0.02	-0.12	16.48	0	0	0
197	SLU 64	-0.01	-0.11	15.54	0	0	0
197	SLU 65	0	-0.12	15.53	0	0	0
197	SLU 66	-0.01	-0.11	15.8	0	0	0
197	SLU 67	0	-0.11	15.79	0	0	0
197	SLU 68	0	-0.12	15.71	0	0	0
197	SLU 69	-0.01	-0.11	15.98	0	0	0
197	SLU 70	0	-0.12	15.97	0	0	0
197	SLU 71	-0.01	-0.11	15.9	0	0	0
197	SLU 72	0	-0.12	15.89	0	0	0
197	SLU 73	-0.01	-0.11	16.9	0	0	0
197	SLU 74	-0.01	-0.1	17.17	0	0	0
197	SLU 75	-0.01	-0.11	17.16	0	0	0
197	SLU 76	-0.01	-0.12	17.08	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
197	SLU 77	-0.01	-0.11	17.35	0	0	0
197	SLU 78	-0.01	-0.11	17.34	0	0	0
197	SLU 79	-0.01	-0.11	17.27	0	0	0
197	SLU 80	-0.01	-0.11	17.26	0	0	0
197	SLU 81	-0.02	-0.1	17.5	0	0	0
197	SLU 82	-0.01	-0.11	17.5	0	0	0
197	SLU 83	-0.02	-0.11	17.68	0	0	0
197	SLU 84	-0.01	-0.11	17.67	0	0	0
197	SLE RA 1	-0.01	-0.09	11.7	0	0	0
197	SLE RA 2	0	-0.09	11.69	0	0	0
197	SLE RA 3	-0.01	-0.09	11.87	0	0	0
197	SLE RA 4	0	-0.09	11.86	0	0	0
197	SLE RA 5	0	-0.09	11.81	0	0	0
197	SLE RA 6	-0.01	-0.09	11.98	0	0	0
197	SLE RA 7	0	-0.09	11.98	0	0	0
197	SLE RA 8	-0.01	-0.09	11.93	0	0	0
197	SLE RA 9	0	-0.09	11.92	0	0	0
197	SLE RA 10	-0.01	-0.09	12.6	0	0	0
197	SLE RA 11	-0.01	-0.08	12.78	0	0	0
197	SLE RA 12	-0.01	-0.09	12.78	0	0	0
197	SLE RA 13	-0.01	-0.09	12.72	0	0	0
197	SLE RA 14	-0.01	-0.09	12.9	0	0	0
197	SLE RA 15	-0.01	-0.09	12.89	0	0	0
197	SLE RA 16	-0.01	-0.09	12.84	0	0	0
197	SLE RA 17	-0.01	-0.09	12.84	0	0	0
197	SLE RA 18	-0.01	-0.08	13	0	0	0
197	SLE RA 19	-0.01	-0.09	13	0	0	0
197	SLE RA 20	-0.01	-0.08	13.12	0	0	0
197	SLE RA 21	-0.01	-0.09	13.11	0	0	0
197	SLE FR 1	-0.01	-0.09	11.7	0	0	0
197	SLE FR 2	0	-0.09	11.69	0	0	0
197	SLE FR 3	-0.01	-0.09	11.74	0	0	0
197	SLE FR 4	-0.01	-0.09	12.09	0	0	0
197	SLE FR 5	-0.01	-0.09	12.13	0	0	0
197	SLE FR 6	-0.01	-0.09	12.35	0	0	0
197	SLE QP 1	-0.01	-0.09	11.7	0	0	0
197	SLE QP 2	-0.01	-0.09	12.09	0	0	0
197	SLD 1	1.02	0.13	11.76	0	0	0
197	SLD 2	1.13	0.15	11.81	0	0	0
197	SLD 3	0.96	-0.16	11.4	0	0	0
197	SLD 4	1.07	-0.13	11.45	0	0	0
197	SLD 5	0.38	0.41	12.53	0	0	0
197	SLD 6	0.44	0.42	12.57	0	0	0
197	SLD 7	0.17	-0.55	11.32	0	0	0
197	SLD 8	0.24	-0.53	11.35	0	0	0
197	SLD 9	-0.26	0.35	12.82	0	0	0
197	SLD 10	-0.19	0.37	12.86	0	0	0
197	SLD 11	-0.46	-0.6	11.61	0	0	0
197	SLD 12	-0.39	-0.58	11.64	0	0	0
197	SLD 13	-1.08	-0.04	12.73	0	0	0
197	SLD 14	-0.97	-0.02	12.78	0	0	0
197	SLD 15	-1.14	-0.33	12.36	0	0	0
197	SLD 16	-1.04	-0.3	12.42	0	0	0
197	SLV 1	2.4	0.4	11.31	0	0	0
197	SLV 2	2.65	0.47	11.43	0	0	0
197	SLV 3	2.26	-0.24	10.48	0	0	0
197	SLV 4	2.5	-0.18	10.6	0	0	0
197	SLV 5	0.89	1.03	13.09	0	0	0
197	SLV 6	1.05	1.07	13.16	0	0	0
197	SLV 7	0.41	-1.12	10.33	0	0	0
197	SLV 8	0.57	-1.08	10.41	0	0	0
197	SLV 9	-0.59	0.91	13.77	0	0	0
197	SLV 10	-0.43	0.95	13.84	0	0	0
197	SLV 11	-1.06	-1.24	11.01	0	0	0
197	SLV 12	-0.9	-1.2	11.09	0	0	0
197	SLV 13	-2.52	0	13.58	0	0	0
197	SLV 14	-2.27	0.07	13.69	0	0	0
197	SLV 15	-2.66	-0.64	12.75	0	0	0
197	SLV 16	-2.41	-0.58	12.87	0	0	0
198	SLU 1	0	-0.11	11.37	0	0	0
198	SLU 2	0	-0.12	11.35	0	0	0
198	SLU 3	0	-0.11	11.62	0	0	0
198	SLU 4	0	-0.12	11.61	0	0	0
198	SLU 5	0	-0.12	11.53	0	0	0
198	SLU 6	-0.01	-0.11	11.8	0	0	0
198	SLU 7	0	-0.12	11.79	0	0	0
198	SLU 8	-0.01	-0.12	11.71	0	0	0
198	SLU 9	0	-0.12	11.71	0	0	0
198	SLU 10	-0.01	-0.12	12.72	0	0	0
198	SLU 11	-0.01	-0.11	12.98	0	0	0
198	SLU 12	-0.01	-0.11	12.98	0	0	0
198	SLU 13	-0.01	-0.12	12.89	0	0	0
198	SLU 14	-0.01	-0.11	13.16	0	0	0
198	SLU 15	-0.01	-0.12	13.15	0	0	0
198	SLU 16	-0.01	-0.11	13.08	0	0	0
198	SLU 17	-0.01	-0.12	13.07	0	0	0
198	SLU 18	-0.01	-0.11	13.31	0	0	0
198	SLU 19	-0.01	-0.11	13.3	0	0	0
198	SLU 20	-0.02	-0.11	13.49	0	0	0
198	SLU 21	-0.01	-0.11	13.48	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
198	SLU 22	0	-0.1	12.55	0	0	0
198	SLU 23	0	-0.11	12.54	0	0	0
198	SLU 24	0	-0.1	12.81	0	0	0
198	SLU 25	0	-0.1	12.8	0	0	0
198	SLU 26	0	-0.11	12.72	0	0	0
198	SLU 27	0	-0.1	12.98	0	0	0
198	SLU 28	0	-0.11	12.98	0	0	0
198	SLU 29	0	-0.1	12.9	0	0	0
198	SLU 30	0	-0.11	12.9	0	0	0
198	SLU 31	0	-0.11	13.9	0	0	0
198	SLU 32	-0.01	-0.1	14.17	0	0	0
198	SLU 33	-0.01	-0.1	14.17	0	0	0
198	SLU 34	0	-0.11	14.08	0	0	0
198	SLU 35	-0.01	-0.1	14.35	0	0	0
198	SLU 36	-0.01	-0.1	14.34	0	0	0
198	SLU 37	-0.01	-0.1	14.27	0	0	0
198	SLU 38	-0.01	-0.11	14.26	0	0	0
198	SLU 39	-0.01	-0.1	14.5	0	0	0
198	SLU 40	-0.01	-0.1	14.49	0	0	0
198	SLU 41	-0.01	-0.1	14.67	0	0	0
198	SLU 42	-0.01	-0.1	14.67	0	0	0
198	SLU 43	-0.01	-0.15	14.37	0	0	0
198	SLU 44	0	-0.16	14.36	0	0	0
198	SLU 45	-0.01	-0.15	14.62	0	0	0
198	SLU 46	0	-0.15	14.62	0	0	0
198	SLU 47	0	-0.16	14.53	0	0	0
198	SLU 48	-0.01	-0.15	14.8	0	0	0
198	SLU 49	0	-0.16	14.79	0	0	0
198	SLU 50	-0.01	-0.15	14.72	0	0	0
198	SLU 51	0	-0.16	14.71	0	0	0
198	SLU 52	-0.01	-0.15	15.72	0	0	0
198	SLU 53	-0.01	-0.15	15.99	0	0	0
198	SLU 54	-0.01	-0.15	15.98	0	0	0
198	SLU 55	-0.01	-0.16	15.89	0	0	0
198	SLU 56	-0.01	-0.15	16.16	0	0	0
198	SLU 57	-0.01	-0.15	16.15	0	0	0
198	SLU 58	-0.02	-0.15	16.08	0	0	0
198	SLU 59	-0.01	-0.16	16.07	0	0	0
198	SLU 60	-0.02	-0.15	16.31	0	0	0
198	SLU 61	-0.01	-0.15	16.31	0	0	0
198	SLU 62	-0.02	-0.15	16.49	0	0	0
198	SLU 63	-0.01	-0.15	16.48	0	0	0
198	SLU 64	0	-0.14	15.56	0	0	0
198	SLU 65	0	-0.15	15.54	0	0	0
198	SLU 66	0	-0.14	15.81	0	0	0
198	SLU 67	0	-0.14	15.81	0	0	0
198	SLU 68	0	-0.15	15.72	0	0	0
198	SLU 69	-0.01	-0.14	15.99	0	0	0
198	SLU 70	0	-0.14	15.98	0	0	0
198	SLU 71	-0.01	-0.14	15.91	0	0	0
198	SLU 72	0	-0.15	15.9	0	0	0
198	SLU 73	-0.01	-0.14	16.91	0	0	0
198	SLU 74	-0.01	-0.13	17.17	0	0	0
198	SLU 75	-0.01	-0.14	17.17	0	0	0
198	SLU 76	-0.01	-0.14	17.08	0	0	0
198	SLU 77	-0.01	-0.14	17.35	0	0	0
198	SLU 78	-0.01	-0.14	17.34	0	0	0
198	SLU 79	-0.01	-0.14	17.27	0	0	0
198	SLU 80	-0.01	-0.14	17.26	0	0	0
198	SLU 81	-0.01	-0.13	17.5	0	0	0
198	SLU 82	-0.01	-0.14	17.5	0	0	0
198	SLU 83	-0.02	-0.14	17.68	0	0	0
198	SLU 84	-0.01	-0.14	17.67	0	0	0
198	SLE RA 1	0	-0.11	11.7	0	0	0
198	SLE RA 2	0	-0.11	11.7	0	0	0
198	SLE RA 3	0	-0.11	11.88	0	0	0
198	SLE RA 4	0	-0.11	11.87	0	0	0
198	SLE RA 5	0	-0.11	11.81	0	0	0
198	SLE RA 6	0	-0.11	11.99	0	0	0
198	SLE RA 7	0	-0.11	11.99	0	0	0
198	SLE RA 8	0	-0.11	11.94	0	0	0
198	SLE RA 9	0	-0.11	11.93	0	0	0
198	SLE RA 10	0	-0.11	12.61	0	0	0
198	SLE RA 11	-0.01	-0.11	12.78	0	0	0
198	SLE RA 12	-0.01	-0.11	12.78	0	0	0
198	SLE RA 13	0	-0.11	12.72	0	0	0
198	SLE RA 14	-0.01	-0.11	12.9	0	0	0
198	SLE RA 15	-0.01	-0.11	12.9	0	0	0
198	SLE RA 16	-0.01	-0.11	12.85	0	0	0
198	SLE RA 17	-0.01	-0.11	12.84	0	0	0
198	SLE RA 18	-0.01	-0.11	13	0	0	0
198	SLE RA 19	-0.01	-0.11	13	0	0	0
198	SLE RA 20	-0.01	-0.11	13.12	0	0	0
198	SLE RA 21	-0.01	-0.11	13.11	0	0	0
198	SLE FR 1	0	-0.11	11.7	0	0	0
198	SLE FR 2	0	-0.11	11.7	0	0	0
198	SLE FR 3	0	-0.11	11.75	0	0	0
198	SLE FR 4	0	-0.11	12.09	0	0	0
198	SLE FR 5	-0.01	-0.11	12.14	0	0	0
198	SLE FR 6	-0.01	-0.11	12.35	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
198	SLE QP 1	0	-0.11	11.7	0	0	0
198	SLE QP 2	-0.01	-0.11	12.09	0	0	0
198	SLD 1	1.02	0.12	11.68	0	0	0
198	SLD 2	1.13	0.15	11.73	0	0	0
198	SLD 3	0.96	-0.17	11.31	0	0	0
198	SLD 4	1.07	-0.13	11.37	0	0	0
198	SLD 5	0.38	0.38	12.51	0	0	0
198	SLD 6	0.45	0.4	12.55	0	0	0
198	SLD 7	0.17	-0.56	11.3	0	0	0
198	SLD 8	0.24	-0.54	11.33	0	0	0
198	SLD 9	-0.25	0.32	12.86	0	0	0
198	SLD 10	-0.18	0.34	12.89	0	0	0
198	SLD 11	-0.46	-0.62	11.64	0	0	0
198	SLD 12	-0.39	-0.6	11.68	0	0	0
198	SLD 13	-1.08	-0.08	12.82	0	0	0
198	SLD 14	-0.97	-0.05	12.88	0	0	0
198	SLD 15	-1.14	-0.36	12.46	0	0	0
198	SLD 16	-1.03	-0.33	12.51	0	0	0
198	SLV 1	2.4	0.4	11.1	0	0	0
198	SLV 2	2.64	0.48	11.23	0	0	0
198	SLV 3	2.26	-0.24	10.28	0	0	0
198	SLV 4	2.5	-0.16	10.4	0	0	0
198	SLV 5	0.89	1	13.03	0	0	0
198	SLV 6	1.05	1.05	13.11	0	0	0
198	SLV 7	0.41	-1.13	10.27	0	0	0
198	SLV 8	0.57	-1.08	10.35	0	0	0
198	SLV 9	-0.59	0.87	13.84	0	0	0
198	SLV 10	-0.43	0.91	13.92	0	0	0
198	SLV 11	-1.06	-1.27	11.08	0	0	0
198	SLV 12	-0.9	-1.22	11.16	0	0	0
198	SLV 13	-2.51	-0.05	13.78	0	0	0
198	SLV 14	-2.27	0.02	13.91	0	0	0
198	SLV 15	-2.66	-0.69	12.96	0	0	0
198	SLV 16	-2.41	-0.62	13.08	0	0	0
199	SLU 1	0	-0.13	11.35	0	0	0
199	SLU 2	0	-0.14	11.34	0	0	0
199	SLU 3	0	-0.13	11.6	0	0	0
199	SLU 4	0	-0.14	11.59	0	0	0
199	SLU 5	0	-0.14	11.51	0	0	0
199	SLU 6	0	-0.13	11.78	0	0	0
199	SLU 7	0	-0.14	11.77	0	0	0
199	SLU 8	0	-0.14	11.69	0	0	0
199	SLU 9	0	-0.14	11.69	0	0	0
199	SLU 10	0	-0.14	12.69	0	0	0
199	SLU 11	-0.01	-0.13	12.95	0	0	0
199	SLU 12	-0.01	-0.14	12.95	0	0	0
199	SLU 13	0	-0.14	12.86	0	0	0
199	SLU 14	-0.01	-0.13	13.13	0	0	0
199	SLU 15	-0.01	-0.14	13.12	0	0	0
199	SLU 16	-0.01	-0.14	13.05	0	0	0
199	SLU 17	-0.01	-0.14	13.04	0	0	0
199	SLU 18	-0.01	-0.13	13.28	0	0	0
199	SLU 19	-0.01	-0.14	13.27	0	0	0
199	SLU 20	-0.01	-0.13	13.45	0	0	0
199	SLU 21	-0.01	-0.14	13.44	0	0	0
199	SLU 22	0	-0.12	12.53	0	0	0
199	SLU 23	0.01	-0.13	12.52	0	0	0
199	SLU 24	0	-0.12	12.79	0	0	0
199	SLU 25	0	-0.13	12.78	0	0	0
199	SLU 26	0.01	-0.13	12.7	0	0	0
199	SLU 27	0	-0.12	12.96	0	0	0
199	SLU 28	0	-0.13	12.95	0	0	0
199	SLU 29	0	-0.13	12.88	0	0	0
199	SLU 30	0	-0.13	12.87	0	0	0
199	SLU 31	0	-0.13	13.87	0	0	0
199	SLU 32	-0.01	-0.12	14.14	0	0	0
199	SLU 33	0	-0.13	14.13	0	0	0
199	SLU 34	0	-0.13	14.05	0	0	0
199	SLU 35	-0.01	-0.12	14.31	0	0	0
199	SLU 36	-0.01	-0.13	14.31	0	0	0
199	SLU 37	-0.01	-0.13	14.23	0	0	0
199	SLU 38	-0.01	-0.13	14.23	0	0	0
199	SLU 39	-0.01	-0.12	14.46	0	0	0
199	SLU 40	-0.01	-0.13	14.46	0	0	0
199	SLU 41	-0.01	-0.12	14.64	0	0	0
199	SLU 42	-0.01	-0.13	14.63	0	0	0
199	SLU 43	0	-0.17	14.34	0	0	0
199	SLU 44	0	-0.18	14.33	0	0	0
199	SLU 45	0	-0.17	14.6	0	0	0
199	SLU 46	0	-0.18	14.59	0	0	0
199	SLU 47	0	-0.18	14.51	0	0	0
199	SLU 48	-0.01	-0.18	14.77	0	0	0
199	SLU 49	0	-0.18	14.77	0	0	0
199	SLU 50	-0.01	-0.18	14.69	0	0	0
199	SLU 51	0	-0.18	14.69	0	0	0
199	SLU 52	-0.01	-0.18	15.68	0	0	0
199	SLU 53	-0.01	-0.17	15.95	0	0	0
199	SLU 54	-0.01	-0.18	15.94	0	0	0
199	SLU 55	-0.01	-0.18	15.86	0	0	0
199	SLU 56	-0.01	-0.18	16.12	0	0	0





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
199	SLU 57	-0.01	-0.18	16.12	0	0	0
199	SLU 58	-0.01	-0.18	16.04	0	0	0
199	SLU 59	-0.01	-0.18	16.04	0	0	0
199	SLU 60	-0.01	-0.17	16.27	0	0	0
199	SLU 61	-0.01	-0.18	16.27	0	0	0
199	SLU 62	-0.02	-0.18	16.45	0	0	0
199	SLU 63	-0.01	-0.18	16.44	0	0	0
199	SLU 64	0	-0.16	15.53	0	0	0
199	SLU 65	0	-0.17	15.52	0	0	0
199	SLU 66	0	-0.16	15.78	0	0	0
199	SLU 67	0	-0.17	15.78	0	0	0
199	SLU 68	0	-0.17	15.69	0	0	0
199	SLU 69	0	-0.17	15.96	0	0	0
199	SLU 70	0	-0.17	15.95	0	0	0
199	SLU 71	0	-0.17	15.88	0	0	0
199	SLU 72	0	-0.17	15.87	0	0	0
199	SLU 73	0	-0.17	16.87	0	0	0
199	SLU 74	-0.01	-0.16	17.14	0	0	0
199	SLU 75	-0.01	-0.17	17.13	0	0	0
199	SLU 76	0	-0.17	17.04	0	0	0
199	SLU 77	-0.01	-0.17	17.31	0	0	0
199	SLU 78	-0.01	-0.17	17.3	0	0	0
199	SLU 79	-0.01	-0.17	17.23	0	0	0
199	SLU 80	-0.01	-0.17	17.22	0	0	0
199	SLU 81	-0.01	-0.16	17.46	0	0	0
199	SLU 82	-0.01	-0.17	17.45	0	0	0
199	SLU 83	-0.01	-0.17	17.63	0	0	0
199	SLU 84	-0.01	-0.17	17.63	0	0	0
199	SLE RA 1	0	-0.13	11.69	0	0	0
199	SLE RA 2	0	-0.13	11.68	0	0	0
199	SLE RA 3	0	-0.13	11.86	0	0	0
199	SLE RA 4	0	-0.13	11.85	0	0	0
199	SLE RA 5	0	-0.13	11.79	0	0	0
199	SLE RA 6	0	-0.13	11.97	0	0	0
199	SLE RA 7	0	-0.13	11.97	0	0	0
199	SLE RA 8	0	-0.13	11.92	0	0	0
199	SLE RA 9	0	-0.13	11.91	0	0	0
199	SLE RA 10	0	-0.13	12.58	0	0	0
199	SLE RA 11	-0.01	-0.13	12.76	0	0	0
199	SLE RA 12	0	-0.13	12.75	0	0	0
199	SLE RA 13	0	-0.13	12.7	0	0	0
199	SLE RA 14	-0.01	-0.13	12.87	0	0	0
199	SLE RA 15	-0.01	-0.13	12.87	0	0	0
199	SLE RA 16	-0.01	-0.13	12.82	0	0	0
199	SLE RA 17	-0.01	-0.13	12.81	0	0	0
199	SLE RA 18	-0.01	-0.13	12.97	0	0	0
199	SLE RA 19	-0.01	-0.13	12.97	0	0	0
199	SLE RA 20	-0.01	-0.13	13.09	0	0	0
199	SLE RA 21	-0.01	-0.13	13.08	0	0	0
199	SLE FR 1	0	-0.13	11.69	0	0	0
199	SLE FR 2	0	-0.13	11.68	0	0	0
199	SLE FR 3	0	-0.13	11.73	0	0	0
199	SLE FR 4	0	-0.13	12.07	0	0	0
199	SLE FR 5	0	-0.13	12.12	0	0	0
199	SLE FR 6	-0.01	-0.13	12.33	0	0	0
199	SLE QP 1	0	-0.13	11.69	0	0	0
199	SLE QP 2	0	-0.13	12.07	0	0	0
199	SLD 1	1.02	0.1	11.56	0	0	0
199	SLD 2	1.12	0.14	11.62	0	0	0
199	SLD 3	0.96	-0.18	11.2	0	0	0
199	SLD 4	1.06	-0.14	11.25	0	0	0
199	SLD 5	0.38	0.36	12.46	0	0	0
199	SLD 6	0.44	0.38	12.5	0	0	0
199	SLD 7	0.17	-0.57	11.24	0	0	0
199	SLD 8	0.24	-0.55	11.28	0	0	0
199	SLD 9	-0.25	0.29	12.86	0	0	0
199	SLD 10	-0.18	0.32	12.9	0	0	0
199	SLD 11	-0.45	-0.64	11.64	0	0	0
199	SLD 12	-0.38	-0.61	11.68	0	0	0
199	SLD 13	-1.07	-0.12	12.89	0	0	0
199	SLD 14	-0.97	-0.08	12.95	0	0	0
199	SLD 15	-1.13	-0.4	12.52	0	0	0
199	SLD 16	-1.03	-0.36	12.58	0	0	0
199	SLV 1	2.39	0.4	10.86	0	0	0
199	SLV 2	2.63	0.49	11	0	0	0
199	SLV 3	2.24	-0.23	10.03	0	0	0
199	SLV 4	2.49	-0.14	10.17	0	0	0
199	SLV 5	0.88	0.97	12.94	0	0	0
199	SLV 6	1.04	1.03	13.03	0	0	0
199	SLV 7	0.41	-1.13	10.18	0	0	0
199	SLV 8	0.57	-1.07	10.27	0	0	0
199	SLV 9	-0.58	0.82	13.88	0	0	0
199	SLV 10	-0.42	0.87	13.97	0	0	0
199	SLV 11	-1.05	-1.28	11.11	0	0	0
199	SLV 12	-0.89	-1.23	11.2	0	0	0
199	SLV 13	-2.5	-0.11	13.97	0	0	0
199	SLV 14	-2.25	-0.03	14.11	0	0	0
199	SLV 15	-2.64	-0.74	13.14	0	0	0
199	SLV 16	-2.39	-0.66	13.28	0	0	0
199	CRTFP Ux+	0	0	0	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
199	CRTFP Ux-	0	0	0	0	0	0
200	SLU 1	0	-0.14	11.02	0	0	0
200	SLU 2	0	-0.15	11.01	0	0	0
200	SLU 3	0	-0.15	11.27	0	0	0
200	SLU 4	0	-0.15	11.26	0	0	0
200	SLU 5	0	-0.15	11.18	0	0	0
200	SLU 6	0	-0.15	11.43	0	0	0
200	SLU 7	0	-0.15	11.43	0	0	0
200	SLU 8	0	-0.15	11.36	0	0	0
200	SLU 9	0	-0.15	11.35	0	0	0
200	SLU 10	0	-0.15	12.31	0	0	0
200	SLU 11	-0.01	-0.15	12.57	0	0	0
200	SLU 12	-0.01	-0.15	12.57	0	0	0
200	SLU 13	0	-0.16	12.48	0	0	0
200	SLU 14	-0.01	-0.15	12.74	0	0	0
200	SLU 15	-0.01	-0.16	12.73	0	0	0
200	SLU 16	-0.01	-0.15	12.66	0	0	0
200	SLU 17	-0.01	-0.16	12.66	0	0	0
200	SLU 18	-0.01	-0.15	12.88	0	0	0
200	SLU 19	-0.01	-0.15	12.88	0	0	0
200	SLU 20	-0.01	-0.15	13.05	0	0	0
200	SLU 21	-0.01	-0.16	13.05	0	0	0
200	SLU 22	0	-0.14	12.17	0	0	0
200	SLU 23	0.01	-0.15	12.16	0	0	0
200	SLU 24	0	-0.14	12.42	0	0	0
200	SLU 25	0	-0.14	12.41	0	0	0
200	SLU 26	0.01	-0.15	12.33	0	0	0
200	SLU 27	0	-0.14	12.59	0	0	0
200	SLU 28	0	-0.15	12.58	0	0	0
200	SLU 29	0	-0.14	12.51	0	0	0
200	SLU 30	0	-0.15	12.5	0	0	0
200	SLU 31	0	-0.15	13.47	0	0	0
200	SLU 32	-0.01	-0.14	13.72	0	0	0
200	SLU 33	0	-0.15	13.72	0	0	0
200	SLU 34	0	-0.15	13.63	0	0	0
200	SLU 35	-0.01	-0.15	13.89	0	0	0
200	SLU 36	0	-0.15	13.89	0	0	0
200	SLU 37	-0.01	-0.15	13.81	0	0	0
200	SLU 38	0	-0.15	13.81	0	0	0
200	SLU 39	-0.01	-0.14	14.04	0	0	0
200	SLU 40	-0.01	-0.15	14.03	0	0	0
200	SLU 41	-0.01	-0.15	14.2	0	0	0
200	SLU 42	-0.01	-0.15	14.2	0	0	0
200	SLU 43	0	-0.19	13.93	0	0	0
200	SLU 44	0	-0.2	13.92	0	0	0
200	SLU 45	0	-0.19	14.18	0	0	0
200	SLU 46	0	-0.2	14.17	0	0	0
200	SLU 47	0	-0.2	14.09	0	0	0
200	SLU 48	0	-0.19	14.35	0	0	0
200	SLU 49	0	-0.2	14.34	0	0	0
200	SLU 50	0	-0.2	14.27	0	0	0
200	SLU 51	0	-0.2	14.26	0	0	0
200	SLU 52	0	-0.2	15.22	0	0	0
200	SLU 53	-0.01	-0.19	15.48	0	0	0
200	SLU 54	-0.01	-0.2	15.48	0	0	0
200	SLU 55	0	-0.2	15.39	0	0	0
200	SLU 56	-0.01	-0.2	15.65	0	0	0
200	SLU 57	-0.01	-0.2	15.64	0	0	0
200	SLU 58	-0.01	-0.2	15.57	0	0	0
200	SLU 59	-0.01	-0.2	15.57	0	0	0
200	SLU 60	-0.01	-0.19	15.79	0	0	0
200	SLU 61	-0.01	-0.2	15.79	0	0	0
200	SLU 62	-0.01	-0.2	15.96	0	0	0
200	SLU 63	-0.01	-0.2	15.96	0	0	0
200	SLU 64	0	-0.18	15.08	0	0	0
200	SLU 65	0.01	-0.19	15.07	0	0	0
200	SLU 66	0	-0.19	15.33	0	0	0
200	SLU 67	0	-0.19	15.32	0	0	0
200	SLU 68	0	-0.19	15.24	0	0	0
200	SLU 69	0	-0.19	15.5	0	0	0
200	SLU 70	0	-0.19	15.49	0	0	0
200	SLU 71	0	-0.19	15.42	0	0	0
200	SLU 72	0	-0.19	15.41	0	0	0
200	SLU 73	0	-0.19	16.38	0	0	0
200	SLU 74	-0.01	-0.19	16.63	0	0	0
200	SLU 75	0	-0.19	16.63	0	0	0
200	SLU 76	0	-0.2	16.55	0	0	0
200	SLU 77	-0.01	-0.19	16.8	0	0	0
200	SLU 78	0	-0.19	16.8	0	0	0
200	SLU 79	-0.01	-0.19	16.72	0	0	0
200	SLU 80	-0.01	-0.2	16.72	0	0	0
200	SLU 81	-0.01	-0.19	16.95	0	0	0
200	SLU 82	-0.01	-0.19	16.94	0	0	0
200	SLU 83	-0.01	-0.19	17.12	0	0	0
200	SLU 84	-0.01	-0.2	17.11	0	0	0
200	SLE RA 1	0	-0.14	11.35	0	0	0
200	SLE RA 2	0	-0.15	11.34	0	0	0
200	SLE RA 3	0	-0.14	11.51	0	0	0
200	SLE RA 4	0	-0.15	11.51	0	0	0
200	SLE RA 5	0	-0.15	11.45	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
200	SLE RA 6	0	-0.15	11.63	0	0	0
200	SLE RA 7	0	-0.15	11.62	0	0	0
200	SLE RA 8	0	-0.15	11.57	0	0	0
200	SLE RA 9	0	-0.15	11.57	0	0	0
200	SLE RA 10	0	-0.15	12.21	0	0	0
200	SLE RA 11	-0.01	-0.15	12.38	0	0	0
200	SLE RA 12	0	-0.15	12.38	0	0	0
200	SLE RA 13	0	-0.15	12.32	0	0	0
200	SLE RA 14	-0.01	-0.15	12.5	0	0	0
200	SLE RA 15	0	-0.15	12.49	0	0	0
200	SLE RA 16	-0.01	-0.15	12.44	0	0	0
200	SLE RA 17	0	-0.15	12.44	0	0	0
200	SLE RA 18	-0.01	-0.15	12.59	0	0	0
200	SLE RA 19	-0.01	-0.15	12.59	0	0	0
200	SLE RA 20	-0.01	-0.15	12.7	0	0	0
200	SLE RA 21	-0.01	-0.15	12.7	0	0	0
200	SLE FR 1	0	-0.14	11.35	0	0	0
200	SLE FR 2	0	-0.14	11.35	0	0	0
200	SLE FR 3	0	-0.14	11.39	0	0	0
200	SLE FR 4	0	-0.14	11.72	0	0	0
200	SLE FR 5	0	-0.14	11.77	0	0	0
200	SLE FR 6	0	-0.14	11.97	0	0	0
200	SLE QP 1	0	-0.14	11.35	0	0	0
200	SLE QP 2	0	-0.14	11.72	0	0	0
200	SLD 1	0.98	0.09	11.13	0	0	0
200	SLD 2	1.08	0.13	11.19	0	0	0
200	SLD 3	0.92	-0.18	10.78	0	0	0
200	SLD 4	1.03	-0.14	10.84	0	0	0
200	SLD 5	0.36	0.32	12.08	0	0	0
200	SLD 6	0.43	0.35	12.12	0	0	0
200	SLD 7	0.17	-0.57	10.88	0	0	0
200	SLD 8	0.23	-0.54	10.92	0	0	0
200	SLD 9	-0.24	0.25	12.52	0	0	0
200	SLD 10	-0.17	0.28	12.56	0	0	0
200	SLD 11	-0.44	-0.64	11.33	0	0	0
200	SLD 12	-0.37	-0.61	11.37	0	0	0
200	SLD 13	-1.03	-0.15	12.61	0	0	0
200	SLD 14	-0.93	-0.11	12.67	0	0	0
200	SLD 15	-1.09	-0.41	12.25	0	0	0
200	SLD 16	-0.99	-0.37	12.31	0	0	0
200	SLV 1	2.3	0.39	10.33	0	0	0
200	SLV 2	2.54	0.48	10.47	0	0	0
200	SLV 3	2.17	-0.22	9.52	0	0	0
200	SLV 4	2.4	-0.13	9.66	0	0	0
200	SLV 5	0.85	0.91	12.51	0	0	0
200	SLV 6	1.01	0.97	12.6	0	0	0
200	SLV 7	0.4	-1.1	9.81	0	0	0
200	SLV 8	0.55	-1.04	9.9	0	0	0
200	SLV 9	-0.56	0.75	13.54	0	0	0
200	SLV 10	-0.41	0.81	13.64	0	0	0
200	SLV 11	-1.01	-1.26	10.84	0	0	0
200	SLV 12	-0.86	-1.2	10.93	0	0	0
200	SLV 13	-2.41	-0.16	13.78	0	0	0
200	SLV 14	-2.17	-0.07	13.92	0	0	0
200	SLV 15	-2.54	-0.77	12.97	0	0	0
200	SLV 16	-2.31	-0.67	13.11	0	0	0
200	CRTFP Ux+	0	0	0	0	0	0
200	CRTFP Ux-	0	0	0	0	0	0
201	SLU 1	0	-0.17	11.24	0	0	0
201	SLU 2	0.01	-0.17	11.23	0	0	0
201	SLU 3	0	-0.17	11.49	0	0	0
201	SLU 4	0	-0.17	11.49	0	0	0
201	SLU 5	0	-0.18	11.4	0	0	0
201	SLU 6	0	-0.17	11.67	0	0	0
201	SLU 7	0	-0.17	11.66	0	0	0
201	SLU 8	0	-0.17	11.59	0	0	0
201	SLU 9	0	-0.18	11.58	0	0	0
201	SLU 10	0	-0.18	12.56	0	0	0
201	SLU 11	-0.01	-0.17	12.82	0	0	0
201	SLU 12	0	-0.18	12.81	0	0	0
201	SLU 13	0	-0.18	12.73	0	0	0
201	SLU 14	-0.01	-0.18	12.99	0	0	0
201	SLU 15	-0.01	-0.18	12.99	0	0	0
201	SLU 16	-0.01	-0.18	12.91	0	0	0
201	SLU 17	-0.01	-0.18	12.91	0	0	0
201	SLU 18	-0.01	-0.17	13.14	0	0	0
201	SLU 19	-0.01	-0.18	13.13	0	0	0
201	SLU 20	-0.01	-0.18	13.31	0	0	0
201	SLU 21	-0.01	-0.18	13.3	0	0	0
201	SLU 22	0	-0.16	12.42	0	0	0
201	SLU 23	0.01	-0.17	12.41	0	0	0
201	SLU 24	0	-0.16	12.67	0	0	0
201	SLU 25	0	-0.17	12.66	0	0	0
201	SLU 26	0.01	-0.17	12.58	0	0	0
201	SLU 27	0	-0.17	12.84	0	0	0
201	SLU 28	0	-0.17	12.84	0	0	0
201	SLU 29	0	-0.17	12.76	0	0	0
201	SLU 30	0	-0.17	12.76	0	0	0
201	SLU 31	0	-0.17	13.73	0	0	0
201	SLU 32	-0.01	-0.17	14	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
201	SLU 33	0	-0.17	13.99	0	0	0
201	SLU 34	0	-0.18	13.91	0	0	0
201	SLU 35	-0.01	-0.17	14.17	0	0	0
201	SLU 36	0	-0.18	14.16	0	0	0
201	SLU 37	-0.01	-0.17	14.09	0	0	0
201	SLU 38	0	-0.18	14.08	0	0	0
201	SLU 39	-0.01	-0.17	14.31	0	0	0
201	SLU 40	0	-0.17	14.31	0	0	0
201	SLU 41	-0.01	-0.17	14.48	0	0	0
201	SLU 42	-0.01	-0.18	14.48	0	0	0
201	SLU 43	0	-0.22	14.21	0	0	0
201	SLU 44	0	-0.22	14.2	0	0	0
201	SLU 45	0	-0.22	14.46	0	0	0
201	SLU 46	0	-0.22	14.46	0	0	0
201	SLU 47	0	-0.23	14.37	0	0	0
201	SLU 48	0	-0.22	14.64	0	0	0
201	SLU 49	0	-0.23	14.63	0	0	0
201	SLU 50	0	-0.22	14.56	0	0	0
201	SLU 51	0	-0.23	14.55	0	0	0
201	SLU 52	0	-0.23	15.53	0	0	0
201	SLU 53	-0.01	-0.22	15.79	0	0	0
201	SLU 54	-0.01	-0.23	15.78	0	0	0
201	SLU 55	0	-0.23	15.7	0	0	0
201	SLU 56	-0.01	-0.23	15.96	0	0	0
201	SLU 57	-0.01	-0.23	15.95	0	0	0
201	SLU 58	-0.01	-0.23	15.88	0	0	0
201	SLU 59	-0.01	-0.23	15.88	0	0	0
201	SLU 60	-0.01	-0.23	16.11	0	0	0
201	SLU 61	-0.01	-0.23	16.1	0	0	0
201	SLU 62	-0.01	-0.23	16.28	0	0	0
201	SLU 63	-0.01	-0.23	16.27	0	0	0
201	SLU 64	0	-0.21	15.39	0	0	0
201	SLU 65	0.01	-0.22	15.38	0	0	0
201	SLU 66	0	-0.22	15.64	0	0	0
201	SLU 67	0	-0.22	15.63	0	0	0
201	SLU 68	0.01	-0.22	15.55	0	0	0
201	SLU 69	0	-0.22	15.81	0	0	0
201	SLU 70	0	-0.22	15.81	0	0	0
201	SLU 71	0	-0.22	15.73	0	0	0
201	SLU 72	0	-0.22	15.73	0	0	0
201	SLU 73	0	-0.23	16.7	0	0	0
201	SLU 74	-0.01	-0.22	16.97	0	0	0
201	SLU 75	0	-0.22	16.96	0	0	0
201	SLU 76	0	-0.23	16.88	0	0	0
201	SLU 77	-0.01	-0.22	17.14	0	0	0
201	SLU 78	0	-0.23	17.13	0	0	0
201	SLU 79	-0.01	-0.23	17.06	0	0	0
201	SLU 80	0	-0.23	17.05	0	0	0
201	SLU 81	-0.01	-0.22	17.28	0	0	0
201	SLU 82	-0.01	-0.23	17.28	0	0	0
201	SLU 83	-0.01	-0.22	17.45	0	0	0
201	SLU 84	-0.01	-0.23	17.45	0	0	0
201	SLE RA 1	0	-0.17	11.58	0	0	0
201	SLE RA 2	0	-0.17	11.57	0	0	0
201	SLE RA 3	0	-0.17	11.75	0	0	0
201	SLE RA 4	0	-0.17	11.74	0	0	0
201	SLE RA 5	0	-0.17	11.69	0	0	0
201	SLE RA 6	0	-0.17	11.86	0	0	0
201	SLE RA 7	0	-0.17	11.86	0	0	0
201	SLE RA 8	0	-0.17	11.81	0	0	0
201	SLE RA 9	0	-0.17	11.8	0	0	0
201	SLE RA 10	0	-0.17	12.46	0	0	0
201	SLE RA 11	-0.01	-0.17	12.63	0	0	0
201	SLE RA 12	0	-0.17	12.63	0	0	0
201	SLE RA 13	0	-0.18	12.57	0	0	0
201	SLE RA 14	-0.01	-0.17	12.74	0	0	0
201	SLE RA 15	0	-0.17	12.74	0	0	0
201	SLE RA 16	-0.01	-0.17	12.69	0	0	0
201	SLE RA 17	0	-0.18	12.69	0	0	0
201	SLE RA 18	-0.01	-0.17	12.84	0	0	0
201	SLE RA 19	0	-0.17	12.84	0	0	0
201	SLE RA 20	-0.01	-0.17	12.96	0	0	0
201	SLE RA 21	0	-0.18	12.95	0	0	0
201	SLE FR 1	0	-0.17	11.58	0	0	0
201	SLE FR 2	0	-0.17	11.58	0	0	0
201	SLE FR 3	0	-0.17	11.62	0	0	0
201	SLE FR 4	0	-0.17	11.96	0	0	0
201	SLE FR 5	0	-0.17	12	0	0	0
201	SLE FR 6	0	-0.17	12.21	0	0	0
201	SLE QP 1	0	-0.17	11.58	0	0	0
201	SLE QP 2	0	-0.17	11.96	0	0	0
201	SLD 1	0.99	0.08	11.26	0	0	0
201	SLD 2	1.1	0.12	11.33	0	0	0
201	SLD 3	0.93	-0.19	10.9	0	0	0
201	SLD 4	1.04	-0.15	10.96	0	0	0
201	SLD 5	0.37	0.3	12.3	0	0	0
201	SLD 6	0.44	0.33	12.34	0	0	0
201	SLD 7	0.17	-0.59	11.07	0	0	0
201	SLD 8	0.24	-0.56	11.11	0	0	0
201	SLD 9	-0.24	0.22	12.8	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
201	SLD 10	-0.18	0.25	12.85	0	0	0
201	SLD 11	-0.44	-0.67	11.57	0	0	0
201	SLD 12	-0.37	-0.64	11.62	0	0	0
201	SLD 13	-1.04	-0.19	12.95	0	0	0
201	SLD 14	-0.94	-0.14	13.02	0	0	0
201	SLD 15	-1.1	-0.45	12.58	0	0	0
201	SLD 16	-1	-0.41	12.65	0	0	0
201	SLV 1	2.33	0.39	10.32	0	0	0
201	SLV 2	2.57	0.49	10.48	0	0	0
201	SLV 3	2.19	-0.22	9.49	0	0	0
201	SLV 4	2.43	-0.11	9.64	0	0	0
201	SLV 5	0.86	0.9	12.71	0	0	0
201	SLV 6	1.02	0.97	12.81	0	0	0
201	SLV 7	0.41	-1.12	9.92	0	0	0
201	SLV 8	0.56	-1.05	10.02	0	0	0
201	SLV 9	-0.56	0.72	13.89	0	0	0
201	SLV 10	-0.41	0.78	13.99	0	0	0
201	SLV 11	-1.02	-1.3	11.11	0	0	0
201	SLV 12	-0.87	-1.23	11.21	0	0	0
201	SLV 13	-2.43	-0.22	14.27	0	0	0
201	SLV 14	-2.19	-0.12	14.43	0	0	0
201	SLV 15	-2.57	-0.83	13.44	0	0	0
201	SLV 16	-2.33	-0.72	13.59	0	0	0
201	CRTFP Ux+	0	0	0	0	0	0
201	CRTFP Ux-	0	0	0	0	0	0
202	SLU 1	0	-0.19	11.28	0	0	0
202	SLU 2	0.01	-0.19	11.27	0	0	0
202	SLU 3	0	-0.19	11.53	0	0	0
202	SLU 4	0	-0.19	11.52	0	0	0
202	SLU 5	0	-0.2	11.44	0	0	0
202	SLU 6	0	-0.19	11.7	0	0	0
202	SLU 7	0	-0.2	11.7	0	0	0
202	SLU 8	0	-0.19	11.62	0	0	0
202	SLU 9	0	-0.2	11.62	0	0	0
202	SLU 10	0	-0.2	12.59	0	0	0
202	SLU 11	-0.01	-0.2	12.86	0	0	0
202	SLU 12	0	-0.2	12.85	0	0	0
202	SLU 13	0	-0.2	12.77	0	0	0
202	SLU 14	-0.01	-0.2	13.03	0	0	0
202	SLU 15	0	-0.2	13.02	0	0	0
202	SLU 16	-0.01	-0.2	12.95	0	0	0
202	SLU 17	-0.01	-0.21	12.94	0	0	0
202	SLU 18	-0.01	-0.2	13.17	0	0	0
202	SLU 19	-0.01	-0.2	13.16	0	0	0
202	SLU 20	-0.01	-0.2	13.34	0	0	0
202	SLU 21	-0.01	-0.21	13.34	0	0	0
202	SLU 22	0	-0.19	12.46	0	0	0
202	SLU 23	0.01	-0.19	12.45	0	0	0
202	SLU 24	0	-0.19	12.71	0	0	0
202	SLU 25	0.01	-0.19	12.71	0	0	0
202	SLU 26	0.01	-0.19	12.62	0	0	0
202	SLU 27	0	-0.19	12.88	0	0	0
202	SLU 28	0	-0.19	12.88	0	0	0
202	SLU 29	0	-0.19	12.8	0	0	0
202	SLU 30	0	-0.2	12.8	0	0	0
202	SLU 31	0	-0.2	13.77	0	0	0
202	SLU 32	-0.01	-0.2	14.04	0	0	0
202	SLU 33	0	-0.2	14.03	0	0	0
202	SLU 34	0	-0.2	13.95	0	0	0
202	SLU 35	-0.01	-0.2	14.21	0	0	0
202	SLU 36	0	-0.2	14.2	0	0	0
202	SLU 37	-0.01	-0.2	14.13	0	0	0
202	SLU 38	0	-0.2	14.12	0	0	0
202	SLU 39	-0.01	-0.2	14.35	0	0	0
202	SLU 40	0	-0.2	14.35	0	0	0
202	SLU 41	-0.01	-0.2	14.53	0	0	0
202	SLU 42	0	-0.2	14.52	0	0	0
202	SLU 43	0	-0.24	14.26	0	0	0
202	SLU 44	0	-0.25	14.24	0	0	0
202	SLU 45	0	-0.24	14.51	0	0	0
202	SLU 46	0	-0.25	14.5	0	0	0
202	SLU 47	0	-0.25	14.42	0	0	0
202	SLU 48	0	-0.25	14.68	0	0	0
202	SLU 49	0	-0.25	14.67	0	0	0
202	SLU 50	0	-0.25	14.6	0	0	0
202	SLU 51	0	-0.25	14.59	0	0	0
202	SLU 52	0	-0.26	15.57	0	0	0
202	SLU 53	-0.01	-0.25	15.83	0	0	0
202	SLU 54	-0.01	-0.26	15.83	0	0	0
202	SLU 55	0	-0.26	15.74	0	0	0
202	SLU 56	-0.01	-0.26	16.01	0	0	0
202	SLU 57	-0.01	-0.26	16	0	0	0
202	SLU 58	-0.01	-0.26	15.93	0	0	0
202	SLU 59	-0.01	-0.26	15.92	0	0	0
202	SLU 60	-0.01	-0.25	16.15	0	0	0
202	SLU 61	-0.01	-0.26	16.14	0	0	0
202	SLU 62	-0.01	-0.26	16.32	0	0	0
202	SLU 63	-0.01	-0.26	16.31	0	0	0
202	SLU 64	0	-0.24	15.44	0	0	0
202	SLU 65	0.01	-0.25	15.43	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
202	SLU 66	0	-0.24	15.69	0	0	0
202	SLU 67	0	-0.25	15.68	0	0	0
202	SLU 68	0.01	-0.25	15.6	0	0	0
202	SLU 69	0	-0.25	15.86	0	0	0
202	SLU 70	0	-0.25	15.86	0	0	0
202	SLU 71	0	-0.25	15.78	0	0	0
202	SLU 72	0	-0.25	15.78	0	0	0
202	SLU 73	0	-0.26	16.75	0	0	0
202	SLU 74	-0.01	-0.25	17.02	0	0	0
202	SLU 75	0	-0.26	17.01	0	0	0
202	SLU 76	0	-0.26	16.93	0	0	0
202	SLU 77	-0.01	-0.26	17.19	0	0	0
202	SLU 78	0	-0.26	17.18	0	0	0
202	SLU 79	-0.01	-0.26	17.11	0	0	0
202	SLU 80	0	-0.26	17.1	0	0	0
202	SLU 81	-0.01	-0.25	17.33	0	0	0
202	SLU 82	-0.01	-0.26	17.32	0	0	0
202	SLU 83	-0.01	-0.26	17.5	0	0	0
202	SLU 84	-0.01	-0.26	17.5	0	0	0
202	SLE RA 1	0	-0.19	11.61	0	0	0
202	SLE RA 2	0	-0.19	11.61	0	0	0
202	SLE RA 3	0	-0.19	11.78	0	0	0
202	SLE RA 4	0	-0.19	11.78	0	0	0
202	SLE RA 5	0	-0.19	11.72	0	0	0
202	SLE RA 6	0	-0.19	11.9	0	0	0
202	SLE RA 7	0	-0.19	11.89	0	0	0
202	SLE RA 8	0	-0.19	11.85	0	0	0
202	SLE RA 9	0	-0.19	11.84	0	0	0
202	SLE RA 10	0	-0.2	12.49	0	0	0
202	SLE RA 11	0	-0.19	12.67	0	0	0
202	SLE RA 12	0	-0.2	12.66	0	0	0
202	SLE RA 13	0	-0.2	12.61	0	0	0
202	SLE RA 14	-0.01	-0.2	12.78	0	0	0
202	SLE RA 15	0	-0.2	12.78	0	0	0
202	SLE RA 16	-0.01	-0.2	12.73	0	0	0
202	SLE RA 17	0	-0.2	12.72	0	0	0
202	SLE RA 18	-0.01	-0.19	12.88	0	0	0
202	SLE RA 19	0	-0.2	12.87	0	0	0
202	SLE RA 20	-0.01	-0.2	12.99	0	0	0
202	SLE RA 21	0	-0.2	12.99	0	0	0
202	SLE FR 1	0	-0.19	11.61	0	0	0
202	SLE FR 2	0	-0.19	11.61	0	0	0
202	SLE FR 3	0	-0.19	11.66	0	0	0
202	SLE FR 4	0	-0.19	11.99	0	0	0
202	SLE FR 5	0	-0.19	12.04	0	0	0
202	SLE FR 6	0	-0.19	12.25	0	0	0
202	SLE QP 1	0	-0.19	11.61	0	0	0
202	SLE QP 2	0	-0.19	11.99	0	0	0
202	SLD 1	0.99	0.06	11.21	0	0	0
202	SLD 2	1.09	0.11	11.28	0	0	0
202	SLD 3	0.93	-0.2	10.83	0	0	0
202	SLD 4	1.03	-0.15	10.9	0	0	0
202	SLD 5	0.37	0.28	12.31	0	0	0
202	SLD 6	0.43	0.31	12.36	0	0	0
202	SLD 7	0.17	-0.6	11.07	0	0	0
202	SLD 8	0.24	-0.57	11.11	0	0	0
202	SLD 9	-0.24	0.19	12.87	0	0	0
202	SLD 10	-0.17	0.22	12.92	0	0	0
202	SLD 11	-0.44	-0.69	11.63	0	0	0
202	SLD 12	-0.37	-0.65	11.68	0	0	0
202	SLD 13	-1.03	-0.22	13.08	0	0	0
202	SLD 14	-0.93	-0.18	13.15	0	0	0
202	SLD 15	-1.09	-0.49	12.71	0	0	0
202	SLD 16	-0.99	-0.44	12.78	0	0	0
202	SLV 1	2.31	0.39	10.14	0	0	0
202	SLV 2	2.55	0.5	10.3	0	0	0
202	SLV 3	2.17	-0.21	9.29	0	0	0
202	SLV 4	2.41	-0.1	9.46	0	0	0
202	SLV 5	0.86	0.87	12.69	0	0	0
202	SLV 6	1.01	0.94	12.8	0	0	0
202	SLV 7	0.4	-1.12	9.87	0	0	0
202	SLV 8	0.56	-1.04	9.98	0	0	0
202	SLV 9	-0.56	0.67	14.01	0	0	0
202	SLV 10	-0.41	0.74	14.12	0	0	0
202	SLV 11	-1.01	-1.32	11.19	0	0	0
202	SLV 12	-0.86	-1.25	11.29	0	0	0
202	SLV 13	-2.41	-0.28	14.53	0	0	0
202	SLV 14	-2.18	-0.17	14.69	0	0	0
202	SLV 15	-2.55	-0.88	13.68	0	0	0
202	SLV 16	-2.31	-0.76	13.85	0	0	0
202	CRITFP Ux+	0	0	0	0	0	0
202	CRITFP Ux-	0	0	0	0	0	0
203	SLU 1	0	-0.1	5.61	0	0	0
203	SLU 2	0	-0.11	5.6	0	0	0
203	SLU 3	0	-0.1	5.73	0	0	0
203	SLU 4	0	-0.11	5.73	0	0	0
203	SLU 5	0	-0.11	5.69	0	0	0
203	SLU 6	0	-0.11	5.82	0	0	0
203	SLU 7	0	-0.11	5.82	0	0	0
203	SLU 8	0	-0.11	5.78	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
203	SLU 9	0	-0.11	5.78	0	0	0
203	SLU 10	0	-0.11	6.26	0	0	0
203	SLU 11	0	-0.11	6.39	0	0	0
203	SLU 12	0	-0.11	6.39	0	0	0
203	SLU 13	0	-0.11	6.35	0	0	0
203	SLU 14	0	-0.11	6.48	0	0	0
203	SLU 15	0	-0.11	6.47	0	0	0
203	SLU 16	0	-0.11	6.44	0	0	0
203	SLU 17	0	-0.11	6.43	0	0	0
203	SLU 18	-0.01	-0.11	6.55	0	0	0
203	SLU 19	0	-0.11	6.54	0	0	0
203	SLU 20	-0.01	-0.11	6.63	0	0	0
203	SLU 21	0	-0.11	6.63	0	0	0
203	SLU 22	0	-0.1	6.2	0	0	0
203	SLU 23	0	-0.11	6.19	0	0	0
203	SLU 24	0	-0.11	6.32	0	0	0
203	SLU 25	0	-0.11	6.32	0	0	0
203	SLU 26	0	-0.11	6.28	0	0	0
203	SLU 27	0	-0.11	6.41	0	0	0
203	SLU 28	0	-0.11	6.4	0	0	0
203	SLU 29	0	-0.11	6.37	0	0	0
203	SLU 30	0	-0.11	6.36	0	0	0
203	SLU 31	0	-0.11	6.85	0	0	0
203	SLU 32	0	-0.11	6.98	0	0	0
203	SLU 33	0	-0.11	6.98	0	0	0
203	SLU 34	0	-0.11	6.93	0	0	0
203	SLU 35	0	-0.11	7.06	0	0	0
203	SLU 36	0	-0.11	7.06	0	0	0
203	SLU 37	0	-0.11	7.03	0	0	0
203	SLU 38	0	-0.11	7.02	0	0	0
203	SLU 39	0	-0.11	7.13	0	0	0
203	SLU 40	0	-0.11	7.13	0	0	0
203	SLU 41	0	-0.11	7.22	0	0	0
203	SLU 42	0	-0.12	7.22	0	0	0
203	SLU 43	0	-0.13	7.09	0	0	0
203	SLU 44	0	-0.14	7.08	0	0	0
203	SLU 45	0	-0.13	7.21	0	0	0
203	SLU 46	0	-0.14	7.21	0	0	0
203	SLU 47	0	-0.14	7.17	0	0	0
203	SLU 48	0	-0.14	7.3	0	0	0
203	SLU 49	0	-0.14	7.3	0	0	0
203	SLU 50	0	-0.14	7.26	0	0	0
203	SLU 51	0	-0.14	7.26	0	0	0
203	SLU 52	0	-0.14	7.74	0	0	0
203	SLU 53	0	-0.14	7.87	0	0	0
203	SLU 54	0	-0.14	7.87	0	0	0
203	SLU 55	0	-0.14	7.83	0	0	0
203	SLU 56	0	-0.14	7.96	0	0	0
203	SLU 57	0	-0.14	7.95	0	0	0
203	SLU 58	0	-0.14	7.92	0	0	0
203	SLU 59	0	-0.14	7.91	0	0	0
203	SLU 60	-0.01	-0.14	8.03	0	0	0
203	SLU 61	0	-0.14	8.02	0	0	0
203	SLU 62	-0.01	-0.14	8.11	0	0	0
203	SLU 63	0	-0.15	8.11	0	0	0
203	SLU 64	0	-0.13	7.68	0	0	0
203	SLU 65	0	-0.14	7.67	0	0	0
203	SLU 66	0	-0.14	7.8	0	0	0
203	SLU 67	0	-0.14	7.8	0	0	0
203	SLU 68	0	-0.14	7.76	0	0	0
203	SLU 69	0	-0.14	7.89	0	0	0
203	SLU 70	0	-0.14	7.89	0	0	0
203	SLU 71	0	-0.14	7.85	0	0	0
203	SLU 72	0	-0.14	7.85	0	0	0
203	SLU 73	0	-0.14	8.33	0	0	0
203	SLU 74	0	-0.14	8.46	0	0	0
203	SLU 75	0	-0.14	8.46	0	0	0
203	SLU 76	0	-0.14	8.41	0	0	0
203	SLU 77	0	-0.14	8.55	0	0	0
203	SLU 78	0	-0.14	8.54	0	0	0
203	SLU 79	0	-0.14	8.51	0	0	0
203	SLU 80	0	-0.15	8.5	0	0	0
203	SLU 81	0	-0.14	8.62	0	0	0
203	SLU 82	0	-0.14	8.61	0	0	0
203	SLU 83	0	-0.14	8.7	0	0	0
203	SLU 84	0	-0.15	8.7	0	0	0
203	SLE RA 1	0	-0.1	5.78	0	0	0
203	SLE RA 2	0	-0.1	5.77	0	0	0
203	SLE RA 3	0	-0.1	5.86	0	0	0
203	SLE RA 4	0	-0.11	5.86	0	0	0
203	SLE RA 5	0	-0.11	5.83	0	0	0
203	SLE RA 6	0	-0.11	5.92	0	0	0
203	SLE RA 7	0	-0.11	5.91	0	0	0
203	SLE RA 8	0	-0.11	5.89	0	0	0
203	SLE RA 9	0	-0.11	5.89	0	0	0
203	SLE RA 10	0	-0.11	6.21	0	0	0
203	SLE RA 11	0	-0.11	6.3	0	0	0
203	SLE RA 12	0	-0.11	6.3	0	0	0
203	SLE RA 13	0	-0.11	6.27	0	0	0
203	SLE RA 14	0	-0.11	6.35	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
203	SLE RA 15	0	-0.11	6.35	0	0	0
203	SLE RA 16	0	-0.11	6.33	0	0	0
203	SLE RA 17	0	-0.11	6.33	0	0	0
203	SLE RA 18	0	-0.11	6.4	0	0	0
203	SLE RA 19	0	-0.11	6.4	0	0	0
203	SLE RA 20	0	-0.11	6.46	0	0	0
203	SLE RA 21	0	-0.11	6.46	0	0	0
203	SLE FR 1	0	-0.1	5.78	0	0	0
203	SLE FR 2	0	-0.1	5.77	0	0	0
203	SLE FR 3	0	-0.1	5.8	0	0	0
203	SLE FR 4	0	-0.1	5.96	0	0	0
203	SLE FR 5	0	-0.11	5.99	0	0	0
203	SLE FR 6	0	-0.11	6.09	0	0	0
203	SLE QP 1	0	-0.1	5.78	0	0	0
203	SLE QP 2	0	-0.1	5.96	0	0	0
203	SLD 1	0.48	0.03	5.53	0	0	0
203	SLD 2	0.53	0.05	5.56	0	0	0
203	SLD 3	0.46	-0.1	5.34	0	0	0
203	SLD 4	0.51	-0.08	5.38	0	0	0
203	SLD 5	0.18	0.12	6.11	0	0	0
203	SLD 6	0.21	0.14	6.13	0	0	0
203	SLD 7	0.08	-0.3	5.49	0	0	0
203	SLD 8	0.12	-0.29	5.51	0	0	0
203	SLD 9	-0.12	0.08	6.42	0	0	0
203	SLD 10	-0.09	0.09	6.44	0	0	0
203	SLD 11	-0.21	-0.35	5.79	0	0	0
203	SLD 12	-0.18	-0.33	5.82	0	0	0
203	SLD 13	-0.51	-0.13	6.55	0	0	0
203	SLD 14	-0.46	-0.11	6.59	0	0	0
203	SLD 15	-0.54	-0.26	6.36	0	0	0
203	SLD 16	-0.49	-0.23	6.4	0	0	0
203	SLV 1	1.13	0.19	4.94	0	0	0
203	SLV 2	1.25	0.25	5.02	0	0	0
203	SLV 3	1.07	-0.1	4.51	0	0	0
203	SLV 4	1.18	-0.04	4.6	0	0	0
203	SLV 5	0.42	0.42	6.29	0	0	0
203	SLV 6	0.5	0.45	6.34	0	0	0
203	SLV 7	0.2	-0.55	4.87	0	0	0
203	SLV 8	0.27	-0.51	4.92	0	0	0
203	SLV 9	-0.27	0.31	7	0	0	0
203	SLV 10	-0.2	0.34	7.06	0	0	0
203	SLV 11	-0.5	-0.66	5.58	0	0	0
203	SLV 12	-0.42	-0.62	5.64	0	0	0
203	SLV 13	-1.19	-0.17	7.33	0	0	0
203	SLV 14	-1.07	-0.11	7.41	0	0	0
203	SLV 15	-1.25	-0.46	6.9	0	0	0
203	SLV 16	-1.14	-0.4	6.99	0	0	0
204	SLU 1	-0.09	-0.23	10.35	0	0	0
204	SLU 2	-0.08	-0.24	10.33	0	0	0
204	SLU 3	-0.09	-0.23	10.58	0	0	0
204	SLU 4	-0.09	-0.24	10.57	0	0	0
204	SLU 5	-0.08	-0.24	10.49	0	0	0
204	SLU 6	-0.09	-0.24	10.74	0	0	0
204	SLU 7	-0.09	-0.24	10.73	0	0	0
204	SLU 8	-0.09	-0.24	10.67	0	0	0
204	SLU 9	-0.09	-0.24	10.66	0	0	0
204	SLU 10	-0.09	-0.26	11.55	0	0	0
204	SLU 11	-0.09	-0.25	11.8	0	0	0
204	SLU 12	-0.09	-0.25	11.79	0	0	0
204	SLU 13	-0.09	-0.26	11.71	0	0	0
204	SLU 14	-0.1	-0.25	11.96	0	0	0
204	SLU 15	-0.09	-0.26	11.95	0	0	0
204	SLU 16	-0.1	-0.25	11.89	0	0	0
204	SLU 17	-0.09	-0.26	11.88	0	0	0
204	SLU 18	-0.09	-0.25	12.09	0	0	0
204	SLU 19	-0.09	-0.26	12.08	0	0	0
204	SLU 20	-0.1	-0.25	12.25	0	0	0
204	SLU 21	-0.09	-0.26	12.24	0	0	0
204	SLU 22	-0.1	-0.24	11.43	0	0	0
204	SLU 23	-0.09	-0.25	11.42	0	0	0
204	SLU 24	-0.1	-0.24	11.66	0	0	0
204	SLU 25	-0.1	-0.24	11.65	0	0	0
204	SLU 26	-0.09	-0.25	11.58	0	0	0
204	SLU 27	-0.1	-0.24	11.82	0	0	0
204	SLU 28	-0.1	-0.25	11.81	0	0	0
204	SLU 29	-0.1	-0.24	11.75	0	0	0
204	SLU 30	-0.1	-0.25	11.74	0	0	0
204	SLU 31	-0.1	-0.26	12.63	0	0	0
204	SLU 32	-0.11	-0.25	12.88	0	0	0
204	SLU 33	-0.1	-0.26	12.87	0	0	0
204	SLU 34	-0.1	-0.26	12.79	0	0	0
204	SLU 35	-0.11	-0.26	13.04	0	0	0
204	SLU 36	-0.1	-0.26	13.03	0	0	0
204	SLU 37	-0.11	-0.26	12.97	0	0	0
204	SLU 38	-0.1	-0.26	12.96	0	0	0
204	SLU 39	-0.1	-0.26	13.17	0	0	0
204	SLU 40	-0.1	-0.26	13.16	0	0	0
204	SLU 41	-0.11	-0.26	13.33	0	0	0
204	SLU 42	-0.1	-0.27	13.32	0	0	0
204	SLU 43	-0.11	-0.3	13.08	0	0	0





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
204	SLU 44	-0.11	-0.31	13.07	0	0	0
204	SLU 45	-0.11	-0.3	13.31	0	0	0
204	SLU 46	-0.11	-0.31	13.3	0	0	0
204	SLU 47	-0.11	-0.31	13.23	0	0	0
204	SLU 48	-0.12	-0.3	13.47	0	0	0
204	SLU 49	-0.11	-0.31	13.46	0	0	0
204	SLU 50	-0.11	-0.3	13.4	0	0	0
204	SLU 51	-0.11	-0.31	13.39	0	0	0
204	SLU 52	-0.11	-0.32	14.28	0	0	0
204	SLU 53	-0.12	-0.31	14.53	0	0	0
204	SLU 54	-0.11	-0.32	14.52	0	0	0
204	SLU 55	-0.11	-0.33	14.44	0	0	0
204	SLU 56	-0.12	-0.32	14.69	0	0	0
204	SLU 57	-0.12	-0.32	14.68	0	0	0
204	SLU 58	-0.12	-0.32	14.62	0	0	0
204	SLU 59	-0.11	-0.33	14.61	0	0	0
204	SLU 60	-0.12	-0.32	14.82	0	0	0
204	SLU 61	-0.11	-0.32	14.81	0	0	0
204	SLU 62	-0.12	-0.32	14.98	0	0	0
204	SLU 63	-0.11	-0.33	14.97	0	0	0
204	SLU 64	-0.12	-0.3	14.17	0	0	0
204	SLU 65	-0.12	-0.31	14.15	0	0	0
204	SLU 66	-0.12	-0.31	14.4	0	0	0
204	SLU 67	-0.12	-0.31	14.39	0	0	0
204	SLU 68	-0.12	-0.32	14.31	0	0	0
204	SLU 69	-0.13	-0.31	14.56	0	0	0
204	SLU 70	-0.12	-0.32	14.55	0	0	0
204	SLU 71	-0.13	-0.31	14.49	0	0	0
204	SLU 72	-0.12	-0.32	14.48	0	0	0
204	SLU 73	-0.12	-0.33	15.37	0	0	0
204	SLU 74	-0.13	-0.32	15.61	0	0	0
204	SLU 75	-0.12	-0.33	15.6	0	0	0
204	SLU 76	-0.12	-0.33	15.53	0	0	0
204	SLU 77	-0.13	-0.32	15.77	0	0	0
204	SLU 78	-0.13	-0.33	15.76	0	0	0
204	SLU 79	-0.13	-0.32	15.7	0	0	0
204	SLU 80	-0.13	-0.33	15.69	0	0	0
204	SLU 81	-0.13	-0.32	15.91	0	0	0
204	SLU 82	-0.12	-0.33	15.9	0	0	0
204	SLU 83	-0.13	-0.33	16.07	0	0	0
204	SLU 84	-0.13	-0.33	16.06	0	0	0
204	SLE RA 1	-0.09	-0.23	10.66	0	0	0
204	SLE RA 2	-0.09	-0.24	10.65	0	0	0
204	SLE RA 3	-0.09	-0.23	10.81	0	0	0
204	SLE RA 4	-0.09	-0.24	10.81	0	0	0
204	SLE RA 5	-0.09	-0.24	10.76	0	0	0
204	SLE RA 6	-0.09	-0.24	10.92	0	0	0
204	SLE RA 7	-0.09	-0.24	10.91	0	0	0
204	SLE RA 8	-0.09	-0.24	10.87	0	0	0
204	SLE RA 9	-0.09	-0.24	10.87	0	0	0
204	SLE RA 10	-0.09	-0.25	11.46	0	0	0
204	SLE RA 11	-0.1	-0.24	11.62	0	0	0
204	SLE RA 12	-0.09	-0.25	11.62	0	0	0
204	SLE RA 13	-0.09	-0.25	11.57	0	0	0
204	SLE RA 14	-0.1	-0.25	11.73	0	0	0
204	SLE RA 15	-0.09	-0.25	11.72	0	0	0
204	SLE RA 16	-0.1	-0.25	11.68	0	0	0
204	SLE RA 17	-0.09	-0.25	11.68	0	0	0
204	SLE RA 18	-0.1	-0.25	11.82	0	0	0
204	SLE RA 19	-0.09	-0.25	11.81	0	0	0
204	SLE RA 20	-0.1	-0.25	11.93	0	0	0
204	SLE RA 21	-0.09	-0.25	11.92	0	0	0
204	SLE FR 1	-0.09	-0.23	10.66	0	0	0
204	SLE FR 2	-0.09	-0.23	10.66	0	0	0
204	SLE FR 3	-0.09	-0.23	10.7	0	0	0
204	SLE FR 4	-0.09	-0.24	11	0	0	0
204	SLE FR 5	-0.09	-0.24	11.05	0	0	0
204	SLE FR 6	-0.09	-0.24	11.24	0	0	0
204	SLE QP 1	-0.09	-0.23	10.66	0	0	0
204	SLE QP 2	-0.09	-0.24	11.01	0	0	0
204	SLD 1	0.74	-0.23	11.81	0	0	0
204	SLD 2	0.83	-0.27	11.75	0	0	0
204	SLD 3	0.79	-0.48	11.49	0	0	0
204	SLD 4	0.88	-0.52	11.44	0	0	0
204	SLD 5	0.06	0.15	11.73	0	0	0
204	SLD 6	0.12	0.12	11.7	0	0	0
204	SLD 7	0.24	-0.68	10.69	0	0	0
204	SLD 8	0.3	-0.71	10.65	0	0	0
204	SLD 9	-0.49	0.24	11.36	0	0	0
204	SLD 10	-0.43	0.21	11.33	0	0	0
204	SLD 11	-0.3	-0.6	10.32	0	0	0
204	SLD 12	-0.24	-0.62	10.28	0	0	0
204	SLD 13	-1.07	0.05	10.57	0	0	0
204	SLD 14	-0.98	0	10.52	0	0	0
204	SLD 15	-1.01	-0.2	10.26	0	0	0
204	SLD 16	-0.92	-0.24	10.21	0	0	0
204	SLV 1	1.85	-0.22	12.87	0	0	0
204	SLV 2	2.06	-0.33	12.74	0	0	0
204	SLV 3	1.98	-0.79	12.16	0	0	0
204	SLV 4	2.19	-0.89	12.03	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
204	SLV 5	0.26	0.64	12.66	0	0	0
204	SLV 6	0.4	0.57	12.58	0	0	0
204	SLV 7	0.69	-1.24	10.3	0	0	0
204	SLV 8	0.82	-1.31	10.22	0	0	0
204	SLV 9	-1.01	0.84	11.8	0	0	0
204	SLV 10	-0.87	0.77	11.71	0	0	0
204	SLV 11	-0.58	-1.05	9.43	0	0	0
204	SLV 12	-0.45	-1.11	9.35	0	0	0
204	SLV 13	-2.38	0.42	9.98	0	0	0
204	SLV 14	-2.17	0.32	9.85	0	0	0
204	SLV 15	-2.25	-0.14	9.27	0	0	0
204	SLV 16	-2.04	-0.25	9.14	0	0	0
205	SLU 1	-0.09	-0.21	10.64	0	0	0
205	SLU 2	-0.09	-0.22	10.63	0	0	0
205	SLU 3	-0.1	-0.21	10.88	0	0	0
205	SLU 4	-0.09	-0.22	10.87	0	0	0
205	SLU 5	-0.09	-0.23	10.79	0	0	0
205	SLU 6	-0.1	-0.22	11.04	0	0	0
205	SLU 7	-0.09	-0.22	11.03	0	0	0
205	SLU 8	-0.1	-0.22	10.97	0	0	0
205	SLU 9	-0.09	-0.22	10.96	0	0	0
205	SLU 10	-0.09	-0.23	11.88	0	0	0
205	SLU 11	-0.1	-0.22	12.13	0	0	0
205	SLU 12	-0.09	-0.23	12.12	0	0	0
205	SLU 13	-0.09	-0.24	12.05	0	0	0
205	SLU 14	-0.1	-0.23	12.3	0	0	0
205	SLU 15	-0.1	-0.23	12.29	0	0	0
205	SLU 16	-0.1	-0.23	12.23	0	0	0
205	SLU 17	-0.1	-0.24	12.22	0	0	0
205	SLU 18	-0.1	-0.23	12.43	0	0	0
205	SLU 19	-0.09	-0.23	12.42	0	0	0
205	SLU 20	-0.1	-0.23	12.6	0	0	0
205	SLU 21	-0.1	-0.24	12.59	0	0	0
205	SLU 22	-0.1	-0.21	11.75	0	0	0
205	SLU 23	-0.1	-0.22	11.74	0	0	0
205	SLU 24	-0.11	-0.21	11.99	0	0	0
205	SLU 25	-0.1	-0.22	11.98	0	0	0
205	SLU 26	-0.1	-0.23	11.9	0	0	0
205	SLU 27	-0.11	-0.22	12.15	0	0	0
205	SLU 28	-0.1	-0.22	12.14	0	0	0
205	SLU 29	-0.11	-0.22	12.08	0	0	0
205	SLU 30	-0.1	-0.23	12.07	0	0	0
205	SLU 31	-0.1	-0.24	12.99	0	0	0
205	SLU 32	-0.11	-0.23	13.24	0	0	0
205	SLU 33	-0.11	-0.23	13.23	0	0	0
205	SLU 34	-0.1	-0.24	13.16	0	0	0
205	SLU 35	-0.11	-0.23	13.41	0	0	0
205	SLU 36	-0.11	-0.24	13.4	0	0	0
205	SLU 37	-0.11	-0.23	13.34	0	0	0
205	SLU 38	-0.11	-0.24	13.33	0	0	0
205	SLU 39	-0.11	-0.23	13.54	0	0	0
205	SLU 40	-0.1	-0.24	13.53	0	0	0
205	SLU 41	-0.11	-0.23	13.71	0	0	0
205	SLU 42	-0.11	-0.24	13.7	0	0	0
205	SLU 43	-0.12	-0.27	13.45	0	0	0
205	SLU 44	-0.11	-0.28	13.44	0	0	0
205	SLU 45	-0.12	-0.28	13.69	0	0	0
205	SLU 46	-0.12	-0.28	13.68	0	0	0
205	SLU 47	-0.11	-0.29	13.6	0	0	0
205	SLU 48	-0.12	-0.28	13.86	0	0	0
205	SLU 49	-0.12	-0.29	13.85	0	0	0
205	SLU 50	-0.12	-0.28	13.78	0	0	0
205	SLU 51	-0.12	-0.29	13.77	0	0	0
205	SLU 52	-0.11	-0.3	14.69	0	0	0
205	SLU 53	-0.12	-0.29	14.95	0	0	0
205	SLU 54	-0.12	-0.29	14.94	0	0	0
205	SLU 55	-0.12	-0.3	14.86	0	0	0
205	SLU 56	-0.12	-0.29	15.11	0	0	0
205	SLU 57	-0.12	-0.3	15.1	0	0	0
205	SLU 58	-0.12	-0.29	15.04	0	0	0
205	SLU 59	-0.12	-0.3	15.03	0	0	0
205	SLU 60	-0.12	-0.29	15.25	0	0	0
205	SLU 61	-0.12	-0.3	15.24	0	0	0
205	SLU 62	-0.12	-0.29	15.41	0	0	0
205	SLU 63	-0.12	-0.3	15.4	0	0	0
205	SLU 64	-0.13	-0.28	14.56	0	0	0
205	SLU 65	-0.12	-0.29	14.55	0	0	0
205	SLU 66	-0.13	-0.28	14.8	0	0	0
205	SLU 67	-0.13	-0.28	14.79	0	0	0
205	SLU 68	-0.12	-0.29	14.71	0	0	0
205	SLU 69	-0.13	-0.28	14.97	0	0	0
205	SLU 70	-0.13	-0.29	14.96	0	0	0
205	SLU 71	-0.13	-0.28	14.89	0	0	0
205	SLU 72	-0.13	-0.29	14.88	0	0	0
205	SLU 73	-0.12	-0.3	15.8	0	0	0
205	SLU 74	-0.13	-0.29	16.05	0	0	0
205	SLU 75	-0.13	-0.3	16.05	0	0	0
205	SLU 76	-0.13	-0.3	15.97	0	0	0
205	SLU 77	-0.13	-0.29	16.22	0	0	0
205	SLU 78	-0.13	-0.3	16.21	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
205	SLU 79	-0.13	-0.29	16.15	0	0	0
205	SLU 80	-0.13	-0.3	16.14	0	0	0
205	SLU 81	-0.13	-0.29	16.36	0	0	0
205	SLU 82	-0.13	-0.3	16.35	0	0	0
205	SLU 83	-0.13	-0.3	16.52	0	0	0
205	SLU 84	-0.13	-0.3	16.51	0	0	0
205	SLE RA 1	-0.1	-0.21	10.96	0	0	0
205	SLE RA 2	-0.09	-0.22	10.95	0	0	0
205	SLE RA 3	-0.1	-0.21	11.12	0	0	0
205	SLE RA 4	-0.09	-0.22	11.11	0	0	0
205	SLE RA 5	-0.09	-0.22	11.06	0	0	0
205	SLE RA 6	-0.1	-0.21	11.23	0	0	0
205	SLE RA 7	-0.1	-0.22	11.22	0	0	0
205	SLE RA 8	-0.1	-0.22	11.18	0	0	0
205	SLE RA 9	-0.1	-0.22	11.17	0	0	0
205	SLE RA 10	-0.09	-0.23	11.78	0	0	0
205	SLE RA 11	-0.1	-0.22	11.95	0	0	0
205	SLE RA 12	-0.1	-0.23	11.95	0	0	0
205	SLE RA 13	-0.09	-0.23	11.89	0	0	0
205	SLE RA 14	-0.1	-0.22	12.06	0	0	0
205	SLE RA 15	-0.1	-0.23	12.06	0	0	0
205	SLE RA 16	-0.1	-0.22	12.02	0	0	0
205	SLE RA 17	-0.1	-0.23	12.01	0	0	0
205	SLE RA 18	-0.1	-0.22	12.15	0	0	0
205	SLE RA 19	-0.1	-0.23	12.15	0	0	0
205	SLE RA 20	-0.1	-0.22	12.26	0	0	0
205	SLE RA 21	-0.1	-0.23	12.26	0	0	0
205	SLE FR 1	-0.1	-0.21	10.96	0	0	0
205	SLE FR 2	-0.09	-0.21	10.96	0	0	0
205	SLE FR 3	-0.1	-0.21	11	0	0	0
205	SLE FR 4	-0.1	-0.22	11.32	0	0	0
205	SLE FR 5	-0.1	-0.22	11.36	0	0	0
205	SLE FR 6	-0.1	-0.22	11.56	0	0	0
205	SLE QP 1	-0.1	-0.21	10.96	0	0	0
205	SLE QP 2	-0.1	-0.21	11.32	0	0	0
205	SLD 1	0.77	-0.19	12.05	0	0	0
205	SLD 2	0.87	-0.23	12	0	0	0
205	SLD 3	0.83	-0.45	11.73	0	0	0
205	SLD 4	0.93	-0.5	11.68	0	0	0
205	SLD 5	0.06	0.2	12.03	0	0	0
205	SLD 6	0.12	0.17	12	0	0	0
205	SLD 7	0.25	-0.68	10.97	0	0	0
205	SLD 8	0.31	-0.71	10.93	0	0	0
205	SLD 9	-0.51	0.28	11.7	0	0	0
205	SLD 10	-0.45	0.25	11.67	0	0	0
205	SLD 11	-0.32	-0.6	10.64	0	0	0
205	SLD 12	-0.25	-0.63	10.6	0	0	0
205	SLD 13	-1.12	0.07	10.96	0	0	0
205	SLD 14	-1.03	0.02	10.9	0	0	0
205	SLD 15	-1.06	-0.2	10.64	0	0	0
205	SLD 16	-0.97	-0.24	10.58	0	0	0
205	SLV 1	1.94	-0.17	13.02	0	0	0
205	SLV 2	2.16	-0.27	12.9	0	0	0
205	SLV 3	2.08	-0.76	12.3	0	0	0
205	SLV 4	2.3	-0.86	12.17	0	0	0
205	SLV 5	0.27	0.72	12.95	0	0	0
205	SLV 6	0.42	0.65	12.87	0	0	0
205	SLV 7	0.72	-1.26	10.53	0	0	0
205	SLV 8	0.86	-1.33	10.45	0	0	0
205	SLV 9	-1.06	0.9	12.18	0	0	0
205	SLV 10	-0.91	0.83	12.1	0	0	0
205	SLV 11	-0.61	-1.08	9.77	0	0	0
205	SLV 12	-0.47	-1.15	9.69	0	0	0
205	SLV 13	-2.49	0.44	10.46	0	0	0
205	SLV 14	-2.27	0.33	10.34	0	0	0
205	SLV 15	-2.35	-0.16	9.74	0	0	0
205	SLV 16	-2.14	-0.26	9.61	0	0	0
206	SLU 1	-0.09	-0.19	10.93	0	0	0
206	SLU 2	-0.09	-0.2	10.91	0	0	0
206	SLU 3	-0.1	-0.19	11.17	0	0	0
206	SLU 4	-0.09	-0.2	11.16	0	0	0
206	SLU 5	-0.09	-0.2	11.08	0	0	0
206	SLU 6	-0.1	-0.19	11.34	0	0	0
206	SLU 7	-0.09	-0.2	11.33	0	0	0
206	SLU 8	-0.1	-0.2	11.27	0	0	0
206	SLU 9	-0.09	-0.2	11.26	0	0	0
206	SLU 10	-0.09	-0.21	12.2	0	0	0
206	SLU 11	-0.1	-0.2	12.46	0	0	0
206	SLU 12	-0.1	-0.21	12.45	0	0	0
206	SLU 13	-0.09	-0.21	12.37	0	0	0
206	SLU 14	-0.1	-0.2	12.63	0	0	0
206	SLU 15	-0.1	-0.21	12.62	0	0	0
206	SLU 16	-0.1	-0.2	12.56	0	0	0
206	SLU 17	-0.1	-0.21	12.55	0	0	0
206	SLU 18	-0.1	-0.2	12.77	0	0	0
206	SLU 19	-0.1	-0.21	12.76	0	0	0
206	SLU 20	-0.1	-0.21	12.94	0	0	0
206	SLU 21	-0.1	-0.21	12.93	0	0	0
206	SLU 22	-0.11	-0.19	12.06	0	0	0
206	SLU 23	-0.1	-0.2	12.05	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
206	SLU 24	-0.11	-0.19	12.31	0	0	0
206	SLU 25	-0.1	-0.2	12.3	0	0	0
206	SLU 26	-0.1	-0.2	12.22	0	0	0
206	SLU 27	-0.11	-0.19	12.48	0	0	0
206	SLU 28	-0.11	-0.2	12.47	0	0	0
206	SLU 29	-0.11	-0.19	12.4	0	0	0
206	SLU 30	-0.1	-0.2	12.39	0	0	0
206	SLU 31	-0.1	-0.21	13.34	0	0	0
206	SLU 32	-0.11	-0.2	13.6	0	0	0
206	SLU 33	-0.11	-0.21	13.59	0	0	0
206	SLU 34	-0.1	-0.21	13.51	0	0	0
206	SLU 35	-0.11	-0.2	13.77	0	0	0
206	SLU 36	-0.11	-0.21	13.76	0	0	0
206	SLU 37	-0.11	-0.2	13.69	0	0	0
206	SLU 38	-0.11	-0.21	13.68	0	0	0
206	SLU 39	-0.11	-0.2	13.91	0	0	0
206	SLU 40	-0.11	-0.21	13.9	0	0	0
206	SLU 41	-0.11	-0.2	14.08	0	0	0
206	SLU 42	-0.11	-0.21	14.07	0	0	0
206	SLU 43	-0.12	-0.25	13.82	0	0	0
206	SLU 44	-0.11	-0.26	13.8	0	0	0
206	SLU 45	-0.12	-0.25	14.06	0	0	0
206	SLU 46	-0.12	-0.26	14.05	0	0	0
206	SLU 47	-0.11	-0.26	13.97	0	0	0
206	SLU 48	-0.12	-0.25	14.23	0	0	0
206	SLU 49	-0.12	-0.26	14.22	0	0	0
206	SLU 50	-0.12	-0.25	14.16	0	0	0
206	SLU 51	-0.12	-0.26	14.15	0	0	0
206	SLU 52	-0.12	-0.27	15.09	0	0	0
206	SLU 53	-0.12	-0.26	15.35	0	0	0
206	SLU 54	-0.12	-0.26	15.34	0	0	0
206	SLU 55	-0.12	-0.27	15.26	0	0	0
206	SLU 56	-0.13	-0.26	15.52	0	0	0
206	SLU 57	-0.12	-0.27	15.51	0	0	0
206	SLU 58	-0.13	-0.26	15.45	0	0	0
206	SLU 59	-0.12	-0.27	15.44	0	0	0
206	SLU 60	-0.12	-0.26	15.66	0	0	0
206	SLU 61	-0.12	-0.27	15.65	0	0	0
206	SLU 62	-0.12	-0.26	15.83	0	0	0
206	SLU 63	-0.12	-0.27	15.82	0	0	0
206	SLU 64	-0.13	-0.25	14.95	0	0	0
206	SLU 65	-0.12	-0.26	14.94	0	0	0
206	SLU 66	-0.13	-0.25	15.2	0	0	0
206	SLU 67	-0.13	-0.25	15.19	0	0	0
206	SLU 68	-0.12	-0.26	15.11	0	0	0
206	SLU 69	-0.13	-0.25	15.36	0	0	0
206	SLU 70	-0.13	-0.26	15.36	0	0	0
206	SLU 71	-0.13	-0.25	15.29	0	0	0
206	SLU 72	-0.13	-0.26	15.28	0	0	0
206	SLU 73	-0.13	-0.27	16.23	0	0	0
206	SLU 74	-0.14	-0.26	16.49	0	0	0
206	SLU 75	-0.13	-0.26	16.48	0	0	0
206	SLU 76	-0.13	-0.27	16.4	0	0	0
206	SLU 77	-0.14	-0.26	16.66	0	0	0
206	SLU 78	-0.13	-0.27	16.65	0	0	0
206	SLU 79	-0.14	-0.26	16.58	0	0	0
206	SLU 80	-0.13	-0.27	16.57	0	0	0
206	SLU 81	-0.13	-0.26	16.8	0	0	0
206	SLU 82	-0.13	-0.27	16.79	0	0	0
206	SLU 83	-0.14	-0.26	16.97	0	0	0
206	SLU 84	-0.13	-0.27	16.96	0	0	0
206	SLE RA 1	-0.1	-0.19	11.25	0	0	0
206	SLE RA 2	-0.09	-0.2	11.24	0	0	0
206	SLE RA 3	-0.1	-0.19	11.41	0	0	0
206	SLE RA 4	-0.1	-0.19	11.41	0	0	0
206	SLE RA 5	-0.09	-0.2	11.35	0	0	0
206	SLE RA 6	-0.1	-0.19	11.53	0	0	0
206	SLE RA 7	-0.1	-0.2	11.52	0	0	0
206	SLE RA 8	-0.1	-0.19	11.48	0	0	0
206	SLE RA 9	-0.1	-0.2	11.47	0	0	0
206	SLE RA 10	-0.1	-0.2	12.1	0	0	0
206	SLE RA 11	-0.1	-0.2	12.28	0	0	0
206	SLE RA 12	-0.1	-0.2	12.27	0	0	0
206	SLE RA 13	-0.1	-0.2	12.22	0	0	0
206	SLE RA 14	-0.1	-0.2	12.39	0	0	0
206	SLE RA 15	-0.1	-0.2	12.38	0	0	0
206	SLE RA 16	-0.1	-0.2	12.34	0	0	0
206	SLE RA 17	-0.1	-0.2	12.33	0	0	0
206	SLE RA 18	-0.1	-0.2	12.48	0	0	0
206	SLE RA 19	-0.1	-0.2	12.48	0	0	0
206	SLE RA 20	-0.1	-0.2	12.6	0	0	0
206	SLE RA 21	-0.1	-0.2	12.59	0	0	0
206	SLE FR 1	-0.1	-0.19	11.25	0	0	0
206	SLE FR 2	-0.1	-0.19	11.25	0	0	0
206	SLE FR 3	-0.1	-0.19	11.3	0	0	0
206	SLE FR 4	-0.1	-0.19	11.62	0	0	0
206	SLE FR 5	-0.1	-0.19	11.67	0	0	0
206	SLE FR 6	-0.1	-0.19	11.87	0	0	0
206	SLE QP 1	-0.1	-0.19	11.25	0	0	0
206	SLE QP 2	-0.1	-0.19	11.62	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
206	SLD 1	0.81	-0.15	12.28	0	0	0
206	SLD 2	0.91	-0.19	12.22	0	0	0
206	SLD 3	0.87	-0.43	11.95	0	0	0
206	SLD 4	0.97	-0.47	11.9	0	0	0
206	SLD 5	0.07	0.25	12.32	0	0	0
206	SLD 6	0.13	0.22	12.29	0	0	0
206	SLD 7	0.27	-0.67	11.23	0	0	0
206	SLD 8	0.33	-0.7	11.2	0	0	0
206	SLD 9	-0.53	0.32	12.04	0	0	0
206	SLD 10	-0.46	0.29	12.01	0	0	0
206	SLD 11	-0.33	-0.6	10.95	0	0	0
206	SLD 12	-0.26	-0.63	10.92	0	0	0
206	SLD 13	-1.17	0.09	11.35	0	0	0
206	SLD 14	-1.07	0.05	11.29	0	0	0
206	SLD 15	-1.11	-0.19	11.02	0	0	0
206	SLD 16	-1.01	-0.23	10.97	0	0	0
206	SLV 1	2.03	-0.11	13.14	0	0	0
206	SLV 2	2.26	-0.21	13.02	0	0	0
206	SLV 3	2.17	-0.74	12.4	0	0	0
206	SLV 4	2.4	-0.83	12.28	0	0	0
206	SLV 5	0.29	0.8	13.22	0	0	0
206	SLV 6	0.44	0.73	13.14	0	0	0
206	SLV 7	0.75	-1.29	10.75	0	0	0
206	SLV 8	0.9	-1.35	10.67	0	0	0
206	SLV 9	-1.1	0.96	12.57	0	0	0
206	SLV 10	-0.95	0.9	12.49	0	0	0
206	SLV 11	-0.63	-1.12	10.1	0	0	0
206	SLV 12	-0.49	-1.18	10.02	0	0	0
206	SLV 13	-2.6	0.45	10.96	0	0	0
206	SLV 14	-2.37	0.35	10.84	0	0	0
206	SLV 15	-2.46	-0.18	10.22	0	0	0
206	SLV 16	-2.23	-0.27	10.1	0	0	0
207	SLU 1	-0.09	-0.16	11.05	0	0	0
207	SLU 2	-0.09	-0.17	11.03	0	0	0
207	SLU 3	-0.1	-0.16	11.29	0	0	0
207	SLU 4	-0.09	-0.17	11.28	0	0	0
207	SLU 5	-0.09	-0.18	11.2	0	0	0
207	SLU 6	-0.1	-0.16	11.47	0	0	0
207	SLU 7	-0.09	-0.17	11.46	0	0	0
207	SLU 8	-0.1	-0.17	11.39	0	0	0
207	SLU 9	-0.09	-0.17	11.38	0	0	0
207	SLU 10	-0.09	-0.18	12.34	0	0	0
207	SLU 11	-0.1	-0.17	12.61	0	0	0
207	SLU 12	-0.1	-0.18	12.6	0	0	0
207	SLU 13	-0.09	-0.18	12.52	0	0	0
207	SLU 14	-0.1	-0.17	12.78	0	0	0
207	SLU 15	-0.1	-0.18	12.77	0	0	0
207	SLU 16	-0.1	-0.17	12.7	0	0	0
207	SLU 17	-0.1	-0.18	12.69	0	0	0
207	SLU 18	-0.1	-0.17	12.92	0	0	0
207	SLU 19	-0.09	-0.18	12.91	0	0	0
207	SLU 20	-0.1	-0.17	13.09	0	0	0
207	SLU 21	-0.1	-0.18	13.08	0	0	0
207	SLU 22	-0.1	-0.16	12.19	0	0	0
207	SLU 23	-0.1	-0.17	12.18	0	0	0
207	SLU 24	-0.11	-0.16	12.44	0	0	0
207	SLU 25	-0.1	-0.16	12.43	0	0	0
207	SLU 26	-0.1	-0.17	12.35	0	0	0
207	SLU 27	-0.11	-0.16	12.61	0	0	0
207	SLU 28	-0.1	-0.17	12.6	0	0	0
207	SLU 29	-0.11	-0.16	12.54	0	0	0
207	SLU 30	-0.1	-0.17	12.53	0	0	0
207	SLU 31	-0.1	-0.17	13.49	0	0	0
207	SLU 32	-0.11	-0.16	13.75	0	0	0
207	SLU 33	-0.11	-0.17	13.74	0	0	0
207	SLU 34	-0.1	-0.18	13.66	0	0	0
207	SLU 35	-0.11	-0.16	13.92	0	0	0
207	SLU 36	-0.11	-0.17	13.91	0	0	0
207	SLU 37	-0.11	-0.17	13.85	0	0	0
207	SLU 38	-0.11	-0.17	13.84	0	0	0
207	SLU 39	-0.11	-0.16	14.07	0	0	0
207	SLU 40	-0.11	-0.17	14.06	0	0	0
207	SLU 41	-0.11	-0.17	14.24	0	0	0
207	SLU 42	-0.11	-0.17	14.23	0	0	0
207	SLU 43	-0.12	-0.21	13.97	0	0	0
207	SLU 44	-0.11	-0.22	13.95	0	0	0
207	SLU 45	-0.12	-0.21	14.22	0	0	0
207	SLU 46	-0.12	-0.22	14.21	0	0	0
207	SLU 47	-0.11	-0.23	14.13	0	0	0
207	SLU 48	-0.12	-0.22	14.39	0	0	0
207	SLU 49	-0.12	-0.22	14.38	0	0	0
207	SLU 50	-0.12	-0.22	14.31	0	0	0
207	SLU 51	-0.12	-0.22	14.3	0	0	0
207	SLU 52	-0.11	-0.23	15.27	0	0	0
207	SLU 53	-0.12	-0.22	15.53	0	0	0
207	SLU 54	-0.12	-0.23	15.52	0	0	0
207	SLU 55	-0.12	-0.23	15.44	0	0	0
207	SLU 56	-0.13	-0.22	15.7	0	0	0
207	SLU 57	-0.12	-0.23	15.69	0	0	0
207	SLU 58	-0.12	-0.22	15.63	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
207	SLU 59	-0.12	-0.23	15.62	0	0	0
207	SLU 60	-0.12	-0.22	15.84	0	0	0
207	SLU 61	-0.12	-0.23	15.83	0	0	0
207	SLU 62	-0.12	-0.22	16.02	0	0	0
207	SLU 63	-0.12	-0.23	16.01	0	0	0
207	SLU 64	-0.13	-0.21	15.12	0	0	0
207	SLU 65	-0.12	-0.22	15.1	0	0	0
207	SLU 66	-0.13	-0.21	15.36	0	0	0
207	SLU 67	-0.13	-0.21	15.35	0	0	0
207	SLU 68	-0.12	-0.22	15.27	0	0	0
207	SLU 69	-0.13	-0.21	15.53	0	0	0
207	SLU 70	-0.13	-0.22	15.52	0	0	0
207	SLU 71	-0.13	-0.21	15.46	0	0	0
207	SLU 72	-0.13	-0.22	15.45	0	0	0
207	SLU 73	-0.13	-0.22	16.41	0	0	0
207	SLU 74	-0.13	-0.21	16.67	0	0	0
207	SLU 75	-0.13	-0.22	16.66	0	0	0
207	SLU 76	-0.13	-0.23	16.58	0	0	0
207	SLU 77	-0.14	-0.21	16.84	0	0	0
207	SLU 78	-0.13	-0.22	16.84	0	0	0
207	SLU 79	-0.14	-0.22	16.77	0	0	0
207	SLU 80	-0.13	-0.22	16.76	0	0	0
207	SLU 81	-0.13	-0.21	16.99	0	0	0
207	SLU 82	-0.13	-0.22	16.98	0	0	0
207	SLU 83	-0.14	-0.22	17.16	0	0	0
207	SLU 84	-0.13	-0.22	17.15	0	0	0
207	SLE RA 1	-0.1	-0.16	11.38	0	0	0
207	SLE RA 2	-0.09	-0.17	11.37	0	0	0
207	SLE RA 3	-0.1	-0.16	11.54	0	0	0
207	SLE RA 4	-0.1	-0.16	11.53	0	0	0
207	SLE RA 5	-0.09	-0.17	11.48	0	0	0
207	SLE RA 6	-0.1	-0.16	11.65	0	0	0
207	SLE RA 7	-0.1	-0.17	11.65	0	0	0
207	SLE RA 8	-0.1	-0.16	11.6	0	0	0
207	SLE RA 9	-0.1	-0.17	11.6	0	0	0
207	SLE RA 10	-0.09	-0.17	12.24	0	0	0
207	SLE RA 11	-0.1	-0.16	12.41	0	0	0
207	SLE RA 12	-0.1	-0.17	12.41	0	0	0
207	SLE RA 13	-0.1	-0.17	12.35	0	0	0
207	SLE RA 14	-0.1	-0.17	12.53	0	0	0
207	SLE RA 15	-0.1	-0.17	12.52	0	0	0
207	SLE RA 16	-0.1	-0.17	12.48	0	0	0
207	SLE RA 17	-0.1	-0.17	12.47	0	0	0
207	SLE RA 18	-0.1	-0.17	12.62	0	0	0
207	SLE RA 19	-0.1	-0.17	12.62	0	0	0
207	SLE RA 20	-0.1	-0.17	12.74	0	0	0
207	SLE RA 21	-0.1	-0.17	12.73	0	0	0
207	SLE FR 1	-0.1	-0.16	11.38	0	0	0
207	SLE FR 2	-0.1	-0.16	11.37	0	0	0
207	SLE FR 3	-0.1	-0.16	11.42	0	0	0
207	SLE FR 4	-0.1	-0.16	11.75	0	0	0
207	SLE FR 5	-0.1	-0.16	11.8	0	0	0
207	SLE FR 6	-0.1	-0.16	12	0	0	0
207	SLE QP 1	-0.1	-0.16	11.38	0	0	0
207	SLE QP 2	-0.1	-0.16	11.75	0	0	0
207	SLD 1	0.83	-0.11	12.31	0	0	0
207	SLD 2	0.93	-0.14	12.26	0	0	0
207	SLD 3	0.89	-0.39	11.98	0	0	0
207	SLD 4	0.99	-0.43	11.93	0	0	0
207	SLD 5	0.07	0.29	12.43	0	0	0
207	SLD 6	0.14	0.27	12.4	0	0	0
207	SLD 7	0.27	-0.66	11.33	0	0	0
207	SLD 8	0.34	-0.68	11.29	0	0	0
207	SLD 9	-0.54	0.36	12.21	0	0	0
207	SLD 10	-0.47	0.33	12.18	0	0	0
207	SLD 11	-0.33	-0.59	11.1	0	0	0
207	SLD 12	-0.27	-0.62	11.07	0	0	0
207	SLD 13	-1.19	0.11	11.57	0	0	0
207	SLD 14	-1.09	0.07	11.52	0	0	0
207	SLD 15	-1.13	-0.18	11.24	0	0	0
207	SLD 16	-1.03	-0.22	11.19	0	0	0
207	SLV 1	2.08	-0.04	13.04	0	0	0
207	SLV 2	2.31	-0.13	12.93	0	0	0
207	SLV 3	2.22	-0.69	12.3	0	0	0
207	SLV 4	2.46	-0.78	12.19	0	0	0
207	SLV 5	0.3	0.86	13.29	0	0	0
207	SLV 6	0.45	0.81	13.22	0	0	0
207	SLV 7	0.77	-1.28	10.8	0	0	0
207	SLV 8	0.93	-1.34	10.73	0	0	0
207	SLV 9	-1.12	1.01	12.77	0	0	0
207	SLV 10	-0.97	0.96	12.7	0	0	0
207	SLV 11	-0.65	-1.13	10.28	0	0	0
207	SLV 12	-0.49	-1.19	10.21	0	0	0
207	SLV 13	-2.65	0.45	11.32	0	0	0
207	SLV 14	-2.42	0.37	11.21	0	0	0
207	SLV 15	-2.51	-0.19	10.57	0	0	0
207	SLV 16	-2.28	-0.28	10.46	0	0	0
208	SLU 1	-0.09	-0.13	11.11	0	0	0
208	SLU 2	-0.09	-0.14	11.1	0	0	0
208	SLU 3	-0.1	-0.13	11.36	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
208	SLU 4	-0.09	-0.14	11.35	0	0	0
208	SLU 5	-0.09	-0.14	11.27	0	0	0
208	SLU 6	-0.1	-0.13	11.53	0	0	0
208	SLU 7	-0.09	-0.14	11.52	0	0	0
208	SLU 8	-0.1	-0.13	11.46	0	0	0
208	SLU 9	-0.09	-0.14	11.45	0	0	0
208	SLU 10	-0.09	-0.14	12.42	0	0	0
208	SLU 11	-0.1	-0.13	12.69	0	0	0
208	SLU 12	-0.09	-0.14	12.68	0	0	0
208	SLU 13	-0.09	-0.15	12.6	0	0	0
208	SLU 14	-0.1	-0.13	12.86	0	0	0
208	SLU 15	-0.1	-0.14	12.85	0	0	0
208	SLU 16	-0.1	-0.14	12.79	0	0	0
208	SLU 17	-0.1	-0.14	12.78	0	0	0
208	SLU 18	-0.1	-0.13	13.01	0	0	0
208	SLU 19	-0.09	-0.14	13	0	0	0
208	SLU 20	-0.1	-0.14	13.18	0	0	0
208	SLU 21	-0.09	-0.14	13.17	0	0	0
208	SLU 22	-0.1	-0.12	12.26	0	0	0
208	SLU 23	-0.1	-0.13	12.25	0	0	0
208	SLU 24	-0.11	-0.12	12.51	0	0	0
208	SLU 25	-0.1	-0.13	12.5	0	0	0
208	SLU 26	-0.1	-0.13	12.42	0	0	0
208	SLU 27	-0.11	-0.12	12.69	0	0	0
208	SLU 28	-0.1	-0.13	12.68	0	0	0
208	SLU 29	-0.11	-0.12	12.61	0	0	0
208	SLU 30	-0.1	-0.13	12.6	0	0	0
208	SLU 31	-0.1	-0.13	13.58	0	0	0
208	SLU 32	-0.11	-0.12	13.84	0	0	0
208	SLU 33	-0.11	-0.13	13.83	0	0	0
208	SLU 34	-0.1	-0.14	13.75	0	0	0
208	SLU 35	-0.11	-0.12	14.01	0	0	0
208	SLU 36	-0.11	-0.13	14	0	0	0
208	SLU 37	-0.11	-0.13	13.94	0	0	0
208	SLU 38	-0.11	-0.13	13.93	0	0	0
208	SLU 39	-0.11	-0.12	14.16	0	0	0
208	SLU 40	-0.1	-0.13	14.15	0	0	0
208	SLU 41	-0.11	-0.13	14.33	0	0	0
208	SLU 42	-0.11	-0.13	14.32	0	0	0
208	SLU 43	-0.12	-0.17	14.05	0	0	0
208	SLU 44	-0.11	-0.18	14.04	0	0	0
208	SLU 45	-0.12	-0.17	14.3	0	0	0
208	SLU 46	-0.12	-0.18	14.29	0	0	0
208	SLU 47	-0.11	-0.19	14.21	0	0	0
208	SLU 48	-0.12	-0.17	14.47	0	0	0
208	SLU 49	-0.12	-0.18	14.46	0	0	0
208	SLU 50	-0.12	-0.18	14.4	0	0	0
208	SLU 51	-0.12	-0.18	14.39	0	0	0
208	SLU 52	-0.11	-0.19	15.36	0	0	0
208	SLU 53	-0.12	-0.18	15.63	0	0	0
208	SLU 54	-0.12	-0.18	15.62	0	0	0
208	SLU 55	-0.12	-0.19	15.54	0	0	0
208	SLU 56	-0.12	-0.18	15.8	0	0	0
208	SLU 57	-0.12	-0.18	15.79	0	0	0
208	SLU 58	-0.12	-0.18	15.73	0	0	0
208	SLU 59	-0.12	-0.19	15.72	0	0	0
208	SLU 60	-0.12	-0.18	15.95	0	0	0
208	SLU 61	-0.12	-0.18	15.94	0	0	0
208	SLU 62	-0.12	-0.18	16.12	0	0	0
208	SLU 63	-0.12	-0.19	16.11	0	0	0
208	SLU 64	-0.13	-0.16	15.2	0	0	0
208	SLU 65	-0.12	-0.17	15.19	0	0	0
208	SLU 66	-0.13	-0.16	15.45	0	0	0
208	SLU 67	-0.13	-0.17	15.44	0	0	0
208	SLU 68	-0.12	-0.18	15.36	0	0	0
208	SLU 69	-0.13	-0.16	15.62	0	0	0
208	SLU 70	-0.13	-0.17	15.62	0	0	0
208	SLU 71	-0.13	-0.17	15.55	0	0	0
208	SLU 72	-0.13	-0.17	15.54	0	0	0
208	SLU 73	-0.12	-0.18	16.51	0	0	0
208	SLU 74	-0.13	-0.16	16.78	0	0	0
208	SLU 75	-0.13	-0.17	16.77	0	0	0
208	SLU 76	-0.13	-0.18	16.69	0	0	0
208	SLU 77	-0.13	-0.17	16.95	0	0	0
208	SLU 78	-0.13	-0.17	16.94	0	0	0
208	SLU 79	-0.13	-0.17	16.88	0	0	0
208	SLU 80	-0.13	-0.18	16.87	0	0	0
208	SLU 81	-0.13	-0.17	17.1	0	0	0
208	SLU 82	-0.13	-0.17	17.09	0	0	0
208	SLU 83	-0.13	-0.17	17.27	0	0	0
208	SLU 84	-0.13	-0.18	17.26	0	0	0
208	SLE RA 1	-0.1	-0.13	11.44	0	0	0
208	SLE RA 2	-0.09	-0.14	11.43	0	0	0
208	SLE RA 3	-0.1	-0.13	11.61	0	0	0
208	SLE RA 4	-0.09	-0.13	11.6	0	0	0
208	SLE RA 5	-0.09	-0.14	11.55	0	0	0
208	SLE RA 6	-0.1	-0.13	11.72	0	0	0
208	SLE RA 7	-0.1	-0.13	11.72	0	0	0
208	SLE RA 8	-0.1	-0.13	11.67	0	0	0
208	SLE RA 9	-0.1	-0.13	11.67	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
208	SLE RA 10	-0.09	-0.14	12.32	0	0	0
208	SLE RA 11	-0.1	-0.13	12.49	0	0	0
208	SLE RA 12	-0.1	-0.13	12.49	0	0	0
208	SLE RA 13	-0.09	-0.14	12.43	0	0	0
208	SLE RA 14	-0.1	-0.13	12.61	0	0	0
208	SLE RA 15	-0.1	-0.13	12.6	0	0	0
208	SLE RA 16	-0.1	-0.13	12.56	0	0	0
208	SLE RA 17	-0.1	-0.14	12.55	0	0	0
208	SLE RA 18	-0.1	-0.13	12.71	0	0	0
208	SLE RA 19	-0.1	-0.13	12.7	0	0	0
208	SLE RA 20	-0.1	-0.13	12.82	0	0	0
208	SLE RA 21	-0.1	-0.14	12.82	0	0	0
208	SLE FR 1	-0.1	-0.13	11.44	0	0	0
208	SLE FR 2	-0.09	-0.13	11.44	0	0	0
208	SLE FR 3	-0.1	-0.13	11.49	0	0	0
208	SLE FR 4	-0.1	-0.13	11.82	0	0	0
208	SLE FR 5	-0.1	-0.13	11.87	0	0	0
208	SLE FR 6	-0.1	-0.13	12.07	0	0	0
208	SLE QP 1	-0.1	-0.13	11.44	0	0	0
208	SLE QP 2	-0.1	-0.13	11.82	0	0	0
208	SLD 1	0.84	-0.06	12.28	0	0	0
208	SLD 2	0.94	-0.09	12.24	0	0	0
208	SLD 3	0.9	-0.35	11.95	0	0	0
208	SLD 4	1.01	-0.38	11.9	0	0	0
208	SLD 5	0.07	0.34	12.47	0	0	0
208	SLD 6	0.14	0.32	12.44	0	0	0
208	SLD 7	0.28	-0.63	11.36	0	0	0
208	SLD 8	0.35	-0.65	11.33	0	0	0
208	SLD 9	-0.54	0.39	12.31	0	0	0
208	SLD 10	-0.47	0.37	12.28	0	0	0
208	SLD 11	-0.33	-0.57	11.2	0	0	0
208	SLD 12	-0.27	-0.59	11.17	0	0	0
208	SLD 13	-1.2	0.12	11.74	0	0	0
208	SLD 14	-1.1	0.09	11.7	0	0	0
208	SLD 15	-1.14	-0.17	11.41	0	0	0
208	SLD 16	-1.04	-0.2	11.36	0	0	0
208	SLV 1	2.1	0.03	12.88	0	0	0
208	SLV 2	2.34	-0.05	12.78	0	0	0
208	SLV 3	2.25	-0.63	12.13	0	0	0
208	SLV 4	2.48	-0.71	12.03	0	0	0
208	SLV 5	0.3	0.92	13.3	0	0	0
208	SLV 6	0.46	0.87	13.23	0	0	0
208	SLV 7	0.78	-1.26	10.79	0	0	0
208	SLV 8	0.94	-1.31	10.72	0	0	0
208	SLV 9	-1.13	1.05	12.92	0	0	0
208	SLV 10	-0.98	1	12.85	0	0	0
208	SLV 11	-0.65	-1.13	10.41	0	0	0
208	SLV 12	-0.5	-1.18	10.34	0	0	0
208	SLV 13	-2.67	0.45	11.62	0	0	0
208	SLV 14	-2.44	0.37	11.51	0	0	0
208	SLV 15	-2.53	-0.2	10.86	0	0	0
208	SLV 16	-2.29	-0.28	10.76	0	0	0
209	SLU 1	-0.09	-0.1	11.17	0	0	0
209	SLU 2	-0.09	-0.11	11.16	0	0	0
209	SLU 3	-0.09	-0.1	11.43	0	0	0
209	SLU 4	-0.09	-0.1	11.42	0	0	0
209	SLU 5	-0.09	-0.11	11.33	0	0	0
209	SLU 6	-0.1	-0.1	11.6	0	0	0
209	SLU 7	-0.09	-0.1	11.59	0	0	0
209	SLU 8	-0.09	-0.1	11.53	0	0	0
209	SLU 9	-0.09	-0.11	11.52	0	0	0
209	SLU 10	-0.09	-0.11	12.5	0	0	0
209	SLU 11	-0.1	-0.1	12.77	0	0	0
209	SLU 12	-0.09	-0.1	12.76	0	0	0
209	SLU 13	-0.09	-0.11	12.68	0	0	0
209	SLU 14	-0.1	-0.1	12.95	0	0	0
209	SLU 15	-0.1	-0.1	12.94	0	0	0
209	SLU 16	-0.1	-0.1	12.87	0	0	0
209	SLU 17	-0.09	-0.11	12.86	0	0	0
209	SLU 18	-0.1	-0.1	13.1	0	0	0
209	SLU 19	-0.09	-0.1	13.09	0	0	0
209	SLU 20	-0.1	-0.1	13.27	0	0	0
209	SLU 21	-0.09	-0.1	13.26	0	0	0
209	SLU 22	-0.1	-0.08	12.33	0	0	0
209	SLU 23	-0.1	-0.09	12.32	0	0	0
209	SLU 24	-0.1	-0.08	12.58	0	0	0
209	SLU 25	-0.1	-0.09	12.57	0	0	0
209	SLU 26	-0.1	-0.1	12.49	0	0	0
209	SLU 27	-0.11	-0.08	12.76	0	0	0
209	SLU 28	-0.1	-0.09	12.75	0	0	0
209	SLU 29	-0.11	-0.09	12.68	0	0	0
209	SLU 30	-0.1	-0.09	12.67	0	0	0
209	SLU 31	-0.1	-0.09	13.66	0	0	0
209	SLU 32	-0.11	-0.08	13.93	0	0	0
209	SLU 33	-0.1	-0.09	13.92	0	0	0
209	SLU 34	-0.1	-0.09	13.84	0	0	0
209	SLU 35	-0.11	-0.08	14.1	0	0	0
209	SLU 36	-0.11	-0.09	14.09	0	0	0
209	SLU 37	-0.11	-0.08	14.03	0	0	0
209	SLU 38	-0.1	-0.09	14.02	0	0	0





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
209	SLU 39	-0.11	-0.08	14.26	0	0	0
209	SLU 40	-0.1	-0.09	14.25	0	0	0
209	SLU 41	-0.11	-0.08	14.43	0	0	0
209	SLU 42	-0.1	-0.09	14.42	0	0	0
209	SLU 43	-0.12	-0.13	14.13	0	0	0
209	SLU 44	-0.11	-0.14	14.11	0	0	0
209	SLU 45	-0.12	-0.13	14.38	0	0	0
209	SLU 46	-0.11	-0.14	14.37	0	0	0
209	SLU 47	-0.11	-0.15	14.29	0	0	0
209	SLU 48	-0.12	-0.13	14.56	0	0	0
209	SLU 49	-0.12	-0.14	14.55	0	0	0
209	SLU 50	-0.12	-0.14	14.48	0	0	0
209	SLU 51	-0.11	-0.14	14.47	0	0	0
209	SLU 52	-0.11	-0.14	15.46	0	0	0
209	SLU 53	-0.12	-0.13	15.73	0	0	0
209	SLU 54	-0.12	-0.14	15.72	0	0	0
209	SLU 55	-0.11	-0.14	15.63	0	0	0
209	SLU 56	-0.12	-0.13	15.9	0	0	0
209	SLU 57	-0.12	-0.14	15.89	0	0	0
209	SLU 58	-0.12	-0.13	15.83	0	0	0
209	SLU 59	-0.12	-0.14	15.82	0	0	0
209	SLU 60	-0.12	-0.13	16.05	0	0	0
209	SLU 61	-0.12	-0.14	16.04	0	0	0
209	SLU 62	-0.12	-0.13	16.23	0	0	0
209	SLU 63	-0.12	-0.14	16.22	0	0	0
209	SLU 64	-0.13	-0.12	15.29	0	0	0
209	SLU 65	-0.12	-0.13	15.27	0	0	0
209	SLU 66	-0.13	-0.12	15.54	0	0	0
209	SLU 67	-0.12	-0.12	15.53	0	0	0
209	SLU 68	-0.12	-0.13	15.45	0	0	0
209	SLU 69	-0.13	-0.12	15.71	0	0	0
209	SLU 70	-0.13	-0.12	15.71	0	0	0
209	SLU 71	-0.13	-0.12	15.64	0	0	0
209	SLU 72	-0.13	-0.13	15.63	0	0	0
209	SLU 73	-0.12	-0.13	16.62	0	0	0
209	SLU 74	-0.13	-0.12	16.88	0	0	0
209	SLU 75	-0.13	-0.12	16.87	0	0	0
209	SLU 76	-0.12	-0.13	16.79	0	0	0
209	SLU 77	-0.13	-0.12	17.06	0	0	0
209	SLU 78	-0.13	-0.12	17.05	0	0	0
209	SLU 79	-0.13	-0.12	16.98	0	0	0
209	SLU 80	-0.13	-0.13	16.97	0	0	0
209	SLU 81	-0.13	-0.12	17.21	0	0	0
209	SLU 82	-0.13	-0.12	17.2	0	0	0
209	SLU 83	-0.13	-0.12	17.39	0	0	0
209	SLU 84	-0.13	-0.12	17.38	0	0	0
209	SLE RA 1	-0.09	-0.09	11.51	0	0	0
209	SLE RA 2	-0.09	-0.1	11.5	0	0	0
209	SLE RA 3	-0.1	-0.09	11.67	0	0	0
209	SLE RA 4	-0.09	-0.1	11.67	0	0	0
209	SLE RA 5	-0.09	-0.1	11.61	0	0	0
209	SLE RA 6	-0.1	-0.09	11.79	0	0	0
209	SLE RA 7	-0.09	-0.1	11.78	0	0	0
209	SLE RA 8	-0.1	-0.1	11.74	0	0	0
209	SLE RA 9	-0.09	-0.1	11.73	0	0	0
209	SLE RA 10	-0.09	-0.1	12.39	0	0	0
209	SLE RA 11	-0.1	-0.09	12.57	0	0	0
209	SLE RA 12	-0.1	-0.1	12.56	0	0	0
209	SLE RA 13	-0.09	-0.1	12.51	0	0	0
209	SLE RA 14	-0.1	-0.09	12.69	0	0	0
209	SLE RA 15	-0.1	-0.1	12.68	0	0	0
209	SLE RA 16	-0.1	-0.09	12.64	0	0	0
209	SLE RA 17	-0.1	-0.1	12.63	0	0	0
209	SLE RA 18	-0.1	-0.09	12.79	0	0	0
209	SLE RA 19	-0.1	-0.1	12.78	0	0	0
209	SLE RA 20	-0.1	-0.09	12.9	0	0	0
209	SLE RA 21	-0.1	-0.1	12.9	0	0	0
209	SLE FR 1	-0.09	-0.09	11.51	0	0	0
209	SLE FR 2	-0.09	-0.1	11.5	0	0	0
209	SLE FR 3	-0.1	-0.09	11.55	0	0	0
209	SLE FR 4	-0.09	-0.1	11.89	0	0	0
209	SLE FR 5	-0.1	-0.09	11.94	0	0	0
209	SLE FR 6	-0.1	-0.09	12.15	0	0	0
209	SLE QP 1	-0.09	-0.09	11.51	0	0	0
209	SLE QP 2	-0.1	-0.09	11.89	0	0	0
209	SLD 1	0.84	-0.01	12.25	0	0	0
209	SLD 2	0.95	-0.04	12.21	0	0	0
209	SLD 3	0.91	-0.3	11.92	0	0	0
209	SLD 4	1.01	-0.33	11.88	0	0	0
209	SLD 5	0.07	0.38	12.51	0	0	0
209	SLD 6	0.14	0.36	12.49	0	0	0
209	SLD 7	0.28	-0.59	11.4	0	0	0
209	SLD 8	0.35	-0.61	11.37	0	0	0
209	SLD 9	-0.54	0.43	12.41	0	0	0
209	SLD 10	-0.47	0.41	12.38	0	0	0
209	SLD 11	-0.33	-0.55	11.29	0	0	0
209	SLD 12	-0.27	-0.57	11.27	0	0	0
209	SLD 13	-1.2	0.14	11.9	0	0	0
209	SLD 14	-1.1	0.11	11.86	0	0	0
209	SLD 15	-1.14	-0.15	11.57	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
209	SLD 16	-1.03	-0.18	11.53	0	0	0
209	SLV 1	2.1	0.1	12.72	0	0	0
209	SLV 2	2.34	0.03	12.63	0	0	0
209	SLV 3	2.25	-0.56	11.97	0	0	0
209	SLV 4	2.48	-0.63	11.87	0	0	0
209	SLV 5	0.3	0.98	13.31	0	0	0
209	SLV 6	0.46	0.93	13.25	0	0	0
209	SLV 7	0.78	-1.23	10.78	0	0	0
209	SLV 8	0.94	-1.27	10.72	0	0	0
209	SLV 9	-1.13	1.08	13.06	0	0	0
209	SLV 10	-0.98	1.04	13	0	0	0
209	SLV 11	-0.65	-1.12	10.53	0	0	0
209	SLV 12	-0.5	-1.16	10.47	0	0	0
209	SLV 13	-2.67	0.44	11.91	0	0	0
209	SLV 14	-2.44	0.38	11.81	0	0	0
209	SLV 15	-2.53	-0.22	11.15	0	0	0
209	SLV 16	-2.29	-0.28	11.06	0	0	0
210	SLU 1	-0.09	-0.07	11.23	0	0	0
210	SLU 2	-0.08	-0.08	11.21	0	0	0
210	SLU 3	-0.09	-0.06	11.48	0	0	0
210	SLU 4	-0.09	-0.07	11.47	0	0	0
210	SLU 5	-0.09	-0.08	11.39	0	0	0
210	SLU 6	-0.09	-0.06	11.66	0	0	0
210	SLU 7	-0.09	-0.07	11.65	0	0	0
210	SLU 8	-0.09	-0.07	11.58	0	0	0
210	SLU 9	-0.09	-0.07	11.57	0	0	0
210	SLU 10	-0.09	-0.07	12.58	0	0	0
210	SLU 11	-0.1	-0.06	12.84	0	0	0
210	SLU 12	-0.09	-0.07	12.83	0	0	0
210	SLU 13	-0.09	-0.07	12.75	0	0	0
210	SLU 14	-0.1	-0.06	13.02	0	0	0
210	SLU 15	-0.09	-0.07	13.01	0	0	0
210	SLU 16	-0.1	-0.06	12.94	0	0	0
210	SLU 17	-0.09	-0.07	12.94	0	0	0
210	SLU 18	-0.09	-0.06	13.17	0	0	0
210	SLU 19	-0.09	-0.07	13.17	0	0	0
210	SLU 20	-0.1	-0.06	13.35	0	0	0
210	SLU 21	-0.09	-0.07	13.34	0	0	0
210	SLU 22	-0.1	-0.05	12.39	0	0	0
210	SLU 23	-0.09	-0.06	12.38	0	0	0
210	SLU 24	-0.1	-0.04	12.65	0	0	0
210	SLU 25	-0.1	-0.05	12.64	0	0	0
210	SLU 26	-0.1	-0.06	12.56	0	0	0
210	SLU 27	-0.1	-0.05	12.82	0	0	0
210	SLU 28	-0.1	-0.05	12.82	0	0	0
210	SLU 29	-0.1	-0.05	12.75	0	0	0
210	SLU 30	-0.1	-0.06	12.74	0	0	0
210	SLU 31	-0.1	-0.05	13.74	0	0	0
210	SLU 32	-0.11	-0.04	14.01	0	0	0
210	SLU 33	-0.1	-0.05	14	0	0	0
210	SLU 34	-0.1	-0.05	13.92	0	0	0
210	SLU 35	-0.11	-0.04	14.19	0	0	0
210	SLU 36	-0.1	-0.05	14.18	0	0	0
210	SLU 37	-0.11	-0.04	14.11	0	0	0
210	SLU 38	-0.1	-0.05	14.1	0	0	0
210	SLU 39	-0.11	-0.04	14.34	0	0	0
210	SLU 40	-0.1	-0.05	14.33	0	0	0
210	SLU 41	-0.11	-0.04	14.52	0	0	0
210	SLU 42	-0.1	-0.05	14.51	0	0	0
210	SLU 43	-0.11	-0.09	14.2	0	0	0
210	SLU 44	-0.11	-0.1	14.18	0	0	0
210	SLU 45	-0.12	-0.09	14.45	0	0	0
210	SLU 46	-0.11	-0.1	14.44	0	0	0
210	SLU 47	-0.11	-0.1	14.36	0	0	0
210	SLU 48	-0.12	-0.09	14.63	0	0	0
210	SLU 49	-0.11	-0.1	14.62	0	0	0
210	SLU 50	-0.12	-0.09	14.55	0	0	0
210	SLU 51	-0.11	-0.1	14.54	0	0	0
210	SLU 52	-0.11	-0.1	15.54	0	0	0
210	SLU 53	-0.12	-0.09	15.81	0	0	0
210	SLU 54	-0.12	-0.09	15.8	0	0	0
210	SLU 55	-0.11	-0.1	15.72	0	0	0
210	SLU 56	-0.12	-0.09	15.99	0	0	0
210	SLU 57	-0.12	-0.09	15.98	0	0	0
210	SLU 58	-0.12	-0.09	15.91	0	0	0
210	SLU 59	-0.12	-0.1	15.9	0	0	0
210	SLU 60	-0.12	-0.09	16.14	0	0	0
210	SLU 61	-0.11	-0.09	16.13	0	0	0
210	SLU 62	-0.12	-0.09	16.32	0	0	0
210	SLU 63	-0.12	-0.09	16.31	0	0	0
210	SLU 64	-0.12	-0.07	15.36	0	0	0
210	SLU 65	-0.12	-0.08	15.35	0	0	0
210	SLU 66	-0.13	-0.07	15.62	0	0	0
210	SLU 67	-0.12	-0.08	15.61	0	0	0
210	SLU 68	-0.12	-0.09	15.52	0	0	0
210	SLU 69	-0.13	-0.07	15.79	0	0	0
210	SLU 70	-0.12	-0.08	15.78	0	0	0
210	SLU 71	-0.13	-0.08	15.72	0	0	0
210	SLU 72	-0.12	-0.08	15.71	0	0	0
210	SLU 73	-0.12	-0.08	16.71	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
210	SLU 74	-0.13	-0.07	16.98	0	0	0
210	SLU 75	-0.13	-0.07	16.97	0	0	0
210	SLU 76	-0.12	-0.08	16.89	0	0	0
210	SLU 77	-0.13	-0.07	17.16	0	0	0
210	SLU 78	-0.13	-0.07	17.15	0	0	0
210	SLU 79	-0.13	-0.07	17.08	0	0	0
210	SLU 80	-0.13	-0.08	17.07	0	0	0
210	SLU 81	-0.13	-0.07	17.31	0	0	0
210	SLU 82	-0.13	-0.07	17.3	0	0	0
210	SLU 83	-0.13	-0.07	17.49	0	0	0
210	SLU 84	-0.13	-0.07	17.48	0	0	0
210	SLE RA 1	-0.09	-0.06	11.56	0	0	0
210	SLE RA 2	-0.09	-0.07	11.55	0	0	0
210	SLE RA 3	-0.1	-0.06	11.73	0	0	0
210	SLE RA 4	-0.09	-0.06	11.72	0	0	0
210	SLE RA 5	-0.09	-0.07	11.67	0	0	0
210	SLE RA 6	-0.1	-0.06	11.85	0	0	0
210	SLE RA 7	-0.09	-0.06	11.84	0	0	0
210	SLE RA 8	-0.1	-0.06	11.8	0	0	0
210	SLE RA 9	-0.09	-0.07	11.79	0	0	0
210	SLE RA 10	-0.09	-0.07	12.46	0	0	0
210	SLE RA 11	-0.1	-0.06	12.64	0	0	0
210	SLE RA 12	-0.09	-0.06	12.63	0	0	0
210	SLE RA 13	-0.09	-0.07	12.58	0	0	0
210	SLE RA 14	-0.1	-0.06	12.76	0	0	0
210	SLE RA 15	-0.1	-0.06	12.75	0	0	0
210	SLE RA 16	-0.1	-0.06	12.71	0	0	0
210	SLE RA 17	-0.1	-0.06	12.7	0	0	0
210	SLE RA 18	-0.1	-0.06	12.86	0	0	0
210	SLE RA 19	-0.09	-0.06	12.85	0	0	0
210	SLE RA 20	-0.1	-0.06	12.98	0	0	0
210	SLE RA 21	-0.09	-0.06	12.97	0	0	0
210	SLE FR 1	-0.09	-0.06	11.56	0	0	0
210	SLE FR 2	-0.09	-0.06	11.56	0	0	0
210	SLE FR 3	-0.09	-0.06	11.61	0	0	0
210	SLE FR 4	-0.09	-0.06	11.95	0	0	0
210	SLE FR 5	-0.09	-0.06	12	0	0	0
210	SLE FR 6	-0.09	-0.06	12.21	0	0	0
210	SLE QP 1	-0.09	-0.06	11.56	0	0	0
210	SLE QP 2	-0.09	-0.06	11.95	0	0	0
210	SLD 1	0.84	0.04	12.23	0	0	0
210	SLD 2	0.94	0.02	12.19	0	0	0
210	SLD 3	0.9	-0.25	11.89	0	0	0
210	SLD 4	1	-0.28	11.86	0	0	0
210	SLD 5	0.07	0.42	12.55	0	0	0
210	SLD 6	0.14	0.4	12.53	0	0	0
210	SLD 7	0.28	-0.56	11.43	0	0	0
210	SLD 8	0.34	-0.57	11.4	0	0	0
210	SLD 9	-0.53	0.45	12.5	0	0	0
210	SLD 10	-0.47	0.44	12.47	0	0	0
210	SLD 11	-0.33	-0.52	11.37	0	0	0
210	SLD 12	-0.26	-0.54	11.35	0	0	0
210	SLD 13	-1.19	0.16	12.04	0	0	0
210	SLD 14	-1.09	0.13	12.01	0	0	0
210	SLD 15	-1.13	-0.13	11.71	0	0	0
210	SLD 16	-1.03	-0.16	11.67	0	0	0
210	SLV 1	2.08	0.16	12.59	0	0	0
210	SLV 2	2.32	0.11	12.51	0	0	0
210	SLV 3	2.23	-0.5	11.82	0	0	0
210	SLV 4	2.46	-0.56	11.74	0	0	0
210	SLV 5	0.3	1.02	13.31	0	0	0
210	SLV 6	0.45	0.98	13.26	0	0	0
210	SLV 7	0.78	-1.19	10.77	0	0	0
210	SLV 8	0.93	-1.22	10.72	0	0	0
210	SLV 9	-1.12	1.1	13.18	0	0	0
210	SLV 10	-0.97	1.07	13.13	0	0	0
210	SLV 11	-0.64	-1.1	10.64	0	0	0
210	SLV 12	-0.49	-1.14	10.59	0	0	0
210	SLV 13	-2.65	0.44	12.16	0	0	0
210	SLV 14	-2.42	0.38	12.08	0	0	0
210	SLV 15	-2.51	-0.22	11.4	0	0	0
210	SLV 16	-2.27	-0.28	11.31	0	0	0
211	SLU 1	-0.09	-0.04	11.19	0	0	0
211	SLU 2	-0.08	-0.05	11.18	0	0	0
211	SLU 3	-0.09	-0.03	11.44	0	0	0
211	SLU 4	-0.09	-0.04	11.44	0	0	0
211	SLU 5	-0.08	-0.05	11.35	0	0	0
211	SLU 6	-0.09	-0.03	11.62	0	0	0
211	SLU 7	-0.09	-0.04	11.61	0	0	0
211	SLU 8	-0.09	-0.04	11.55	0	0	0
211	SLU 9	-0.09	-0.04	11.54	0	0	0
211	SLU 10	-0.09	-0.04	12.55	0	0	0
211	SLU 11	-0.09	-0.03	12.82	0	0	0
211	SLU 12	-0.09	-0.03	12.81	0	0	0
211	SLU 13	-0.09	-0.04	12.72	0	0	0
211	SLU 14	-0.1	-0.03	12.99	0	0	0
211	SLU 15	-0.09	-0.03	12.98	0	0	0
211	SLU 16	-0.09	-0.03	12.92	0	0	0
211	SLU 17	-0.09	-0.04	12.91	0	0	0
211	SLU 18	-0.09	-0.03	13.15	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
211	SLU 19	-0.09	-0.03	13.14	0	0	0
211	SLU 20	-0.09	-0.03	13.33	0	0	0
211	SLU 21	-0.09	-0.03	13.32	0	0	0
211	SLU 22	-0.1	-0.01	12.36	0	0	0
211	SLU 23	-0.09	-0.02	12.34	0	0	0
211	SLU 24	-0.1	-0.01	12.61	0	0	0
211	SLU 25	-0.1	-0.02	12.6	0	0	0
211	SLU 26	-0.09	-0.02	12.52	0	0	0
211	SLU 27	-0.1	-0.01	12.79	0	0	0
211	SLU 28	-0.1	-0.02	12.78	0	0	0
211	SLU 29	-0.1	-0.01	12.71	0	0	0
211	SLU 30	-0.1	-0.02	12.7	0	0	0
211	SLU 31	-0.1	-0.02	13.71	0	0	0
211	SLU 32	-0.1	0	13.98	0	0	0
211	SLU 33	-0.1	-0.01	13.97	0	0	0
211	SLU 34	-0.1	-0.02	13.89	0	0	0
211	SLU 35	-0.11	0	14.16	0	0	0
211	SLU 36	-0.1	-0.01	14.15	0	0	0
211	SLU 37	-0.1	-0.01	14.09	0	0	0
211	SLU 38	-0.1	-0.01	14.08	0	0	0
211	SLU 39	-0.1	0	14.32	0	0	0
211	SLU 40	-0.1	-0.01	14.31	0	0	0
211	SLU 41	-0.1	0	14.5	0	0	0
211	SLU 42	-0.1	-0.01	14.49	0	0	0
211	SLU 43	-0.11	-0.05	14.15	0	0	0
211	SLU 44	-0.1	-0.06	14.13	0	0	0
211	SLU 45	-0.11	-0.05	14.4	0	0	0
211	SLU 46	-0.11	-0.06	14.39	0	0	0
211	SLU 47	-0.11	-0.06	14.31	0	0	0
211	SLU 48	-0.12	-0.05	14.58	0	0	0
211	SLU 49	-0.11	-0.06	14.57	0	0	0
211	SLU 50	-0.11	-0.05	14.5	0	0	0
211	SLU 51	-0.11	-0.06	14.49	0	0	0
211	SLU 52	-0.11	-0.06	15.5	0	0	0
211	SLU 53	-0.12	-0.04	15.77	0	0	0
211	SLU 54	-0.11	-0.05	15.76	0	0	0
211	SLU 55	-0.11	-0.06	15.68	0	0	0
211	SLU 56	-0.12	-0.04	15.95	0	0	0
211	SLU 57	-0.11	-0.05	15.94	0	0	0
211	SLU 58	-0.12	-0.05	15.87	0	0	0
211	SLU 59	-0.11	-0.05	15.87	0	0	0
211	SLU 60	-0.12	-0.04	16.11	0	0	0
211	SLU 61	-0.11	-0.05	16.1	0	0	0
211	SLU 62	-0.12	-0.04	16.28	0	0	0
211	SLU 63	-0.11	-0.05	16.28	0	0	0
211	SLU 64	-0.12	-0.03	15.32	0	0	0
211	SLU 65	-0.12	-0.04	15.3	0	0	0
211	SLU 66	-0.12	-0.03	15.57	0	0	0
211	SLU 67	-0.12	-0.03	15.56	0	0	0
211	SLU 68	-0.12	-0.04	15.48	0	0	0
211	SLU 69	-0.13	-0.03	15.75	0	0	0
211	SLU 70	-0.12	-0.04	15.74	0	0	0
211	SLU 71	-0.12	-0.03	15.67	0	0	0
211	SLU 72	-0.12	-0.04	15.66	0	0	0
211	SLU 73	-0.12	-0.03	16.67	0	0	0
211	SLU 74	-0.13	-0.02	16.94	0	0	0
211	SLU 75	-0.12	-0.03	16.93	0	0	0
211	SLU 76	-0.12	-0.04	16.85	0	0	0
211	SLU 77	-0.13	-0.02	17.12	0	0	0
211	SLU 78	-0.12	-0.03	17.11	0	0	0
211	SLU 79	-0.13	-0.03	17.04	0	0	0
211	SLU 80	-0.12	-0.03	17.03	0	0	0
211	SLU 81	-0.13	-0.02	17.27	0	0	0
211	SLU 82	-0.12	-0.03	17.27	0	0	0
211	SLU 83	-0.13	-0.02	17.45	0	0	0
211	SLU 84	-0.12	-0.03	17.44	0	0	0
211	SLE RA 1	-0.09	-0.03	11.52	0	0	0
211	SLE RA 2	-0.09	-0.04	11.51	0	0	0
211	SLE RA 3	-0.09	-0.03	11.69	0	0	0
211	SLE RA 4	-0.09	-0.03	11.69	0	0	0
211	SLE RA 5	-0.09	-0.04	11.63	0	0	0
211	SLE RA 6	-0.09	-0.03	11.81	0	0	0
211	SLE RA 7	-0.09	-0.03	11.81	0	0	0
211	SLE RA 8	-0.09	-0.03	11.76	0	0	0
211	SLE RA 9	-0.09	-0.03	11.76	0	0	0
211	SLE RA 10	-0.09	-0.03	12.43	0	0	0
211	SLE RA 11	-0.09	-0.02	12.61	0	0	0
211	SLE RA 12	-0.09	-0.03	12.6	0	0	0
211	SLE RA 13	-0.09	-0.03	12.55	0	0	0
211	SLE RA 14	-0.1	-0.02	12.73	0	0	0
211	SLE RA 15	-0.09	-0.03	12.72	0	0	0
211	SLE RA 16	-0.1	-0.02	12.68	0	0	0
211	SLE RA 17	-0.09	-0.03	12.67	0	0	0
211	SLE RA 18	-0.09	-0.02	12.83	0	0	0
211	SLE RA 19	-0.09	-0.03	12.82	0	0	0
211	SLE RA 20	-0.1	-0.02	12.95	0	0	0
211	SLE RA 21	-0.09	-0.03	12.94	0	0	0
211	SLE FR 1	-0.09	-0.03	11.52	0	0	0
211	SLE FR 2	-0.09	-0.03	11.52	0	0	0
211	SLE FR 3	-0.09	-0.03	11.57	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
211	SLE FR 4	-0.09	-0.03	11.91	0	0	0
211	SLE FR 5	-0.09	-0.03	11.96	0	0	0
211	SLE FR 6	-0.09	-0.03	12.18	0	0	0
211	SLE QP 1	-0.09	-0.03	11.52	0	0	0
211	SLE QP 2	-0.09	-0.03	11.92	0	0	0
211	SLD 1	0.82	0.08	12.04	0	0	0
211	SLD 2	0.92	0.06	12.01	0	0	0
211	SLD 3	0.88	-0.21	11.7	0	0	0
211	SLD 4	0.98	-0.23	11.67	0	0	0
211	SLD 5	0.07	0.45	12.47	0	0	0
211	SLD 6	0.14	0.43	12.45	0	0	0
211	SLD 7	0.27	-0.52	11.35	0	0	0
211	SLD 8	0.34	-0.53	11.33	0	0	0
211	SLD 9	-0.52	0.47	12.51	0	0	0
211	SLD 10	-0.46	0.46	12.49	0	0	0
211	SLD 11	-0.32	-0.49	11.39	0	0	0
211	SLD 12	-0.26	-0.5	11.37	0	0	0
211	SLD 13	-1.16	0.17	12.16	0	0	0
211	SLD 14	-1.06	0.15	12.13	0	0	0
211	SLD 15	-1.1	-0.12	11.83	0	0	0
211	SLD 16	-1	-0.13	11.8	0	0	0
211	SLV 1	2.04	0.21	12.19	0	0	0
211	SLV 2	2.27	0.17	12.12	0	0	0
211	SLV 3	2.18	-0.44	11.43	0	0	0
211	SLV 4	2.41	-0.49	11.35	0	0	0
211	SLV 5	0.3	1.04	13.16	0	0	0
211	SLV 6	0.44	1.02	13.12	0	0	0
211	SLV 7	0.76	-1.14	10.63	0	0	0
211	SLV 8	0.91	-1.16	10.58	0	0	0
211	SLV 9	-1.09	1.11	13.25	0	0	0
211	SLV 10	-0.94	1.08	13.21	0	0	0
211	SLV 11	-0.63	-1.07	10.72	0	0	0
211	SLV 12	-0.48	-1.1	10.67	0	0	0
211	SLV 13	-2.59	0.43	12.48	0	0	0
211	SLV 14	-2.36	0.39	12.41	0	0	0
211	SLV 15	-2.45	-0.22	11.72	0	0	0
211	SLV 16	-2.22	-0.27	11.65	0	0	0
213	SLU 1	-0.04	-0.13	5.21	0	0	0
213	SLU 2	-0.04	-0.13	5.2	0	0	0
213	SLU 3	-0.05	-0.13	5.32	0	0	0
213	SLU 4	-0.04	-0.13	5.32	0	0	0
213	SLU 5	-0.04	-0.14	5.28	0	0	0
213	SLU 6	-0.05	-0.13	5.41	0	0	0
213	SLU 7	-0.04	-0.14	5.4	0	0	0
213	SLU 8	-0.05	-0.13	5.37	0	0	0
213	SLU 9	-0.04	-0.14	5.36	0	0	0
213	SLU 10	-0.04	-0.14	5.81	0	0	0
213	SLU 11	-0.05	-0.14	5.94	0	0	0
213	SLU 12	-0.04	-0.14	5.93	0	0	0
213	SLU 13	-0.04	-0.15	5.89	0	0	0
213	SLU 14	-0.05	-0.14	6.02	0	0	0
213	SLU 15	-0.05	-0.15	6.01	0	0	0
213	SLU 16	-0.05	-0.14	5.98	0	0	0
213	SLU 17	-0.05	-0.15	5.98	0	0	0
213	SLU 18	-0.05	-0.14	6.08	0	0	0
213	SLU 19	-0.04	-0.15	6.08	0	0	0
213	SLU 20	-0.05	-0.14	6.16	0	0	0
213	SLU 21	-0.05	-0.15	6.16	0	0	0
213	SLU 22	-0.05	-0.13	5.76	0	0	0
213	SLU 23	-0.05	-0.14	5.75	0	0	0
213	SLU 24	-0.05	-0.14	5.87	0	0	0
213	SLU 25	-0.05	-0.14	5.87	0	0	0
213	SLU 26	-0.05	-0.14	5.83	0	0	0
213	SLU 27	-0.05	-0.14	5.95	0	0	0
213	SLU 28	-0.05	-0.14	5.95	0	0	0
213	SLU 29	-0.05	-0.14	5.92	0	0	0
213	SLU 30	-0.05	-0.14	5.91	0	0	0
213	SLU 31	-0.05	-0.15	6.36	0	0	0
213	SLU 32	-0.05	-0.14	6.48	0	0	0
213	SLU 33	-0.05	-0.15	6.48	0	0	0
213	SLU 34	-0.05	-0.15	6.44	0	0	0
213	SLU 35	-0.05	-0.15	6.56	0	0	0
213	SLU 36	-0.05	-0.15	6.56	0	0	0
213	SLU 37	-0.05	-0.15	6.53	0	0	0
213	SLU 38	-0.05	-0.15	6.52	0	0	0
213	SLU 39	-0.05	-0.15	6.63	0	0	0
213	SLU 40	-0.05	-0.15	6.63	0	0	0
213	SLU 41	-0.05	-0.15	6.71	0	0	0
213	SLU 42	-0.05	-0.15	6.71	0	0	0
213	SLU 43	-0.06	-0.17	6.58	0	0	0
213	SLU 44	-0.05	-0.17	6.57	0	0	0
213	SLU 45	-0.06	-0.17	6.7	0	0	0
213	SLU 46	-0.05	-0.17	6.69	0	0	0
213	SLU 47	-0.05	-0.17	6.66	0	0	0
213	SLU 48	-0.06	-0.17	6.78	0	0	0
213	SLU 49	-0.06	-0.17	6.77	0	0	0
213	SLU 50	-0.06	-0.17	6.74	0	0	0
213	SLU 51	-0.05	-0.17	6.74	0	0	0
213	SLU 52	-0.05	-0.18	7.19	0	0	0
213	SLU 53	-0.06	-0.18	7.31	0	0	0



Nodo	Cont. N.br.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
213	SLU 54	-0.06	-0.18	7.31	0	0	0
213	SLU 55	-0.05	-0.18	7.27	0	0	0
213	SLU 56	-0.06	-0.18	7.39	0	0	0
213	SLU 57	-0.06	-0.18	7.39	0	0	0
213	SLU 58	-0.06	-0.18	7.36	0	0	0
213	SLU 59	-0.06	-0.18	7.35	0	0	0
213	SLU 60	-0.06	-0.18	7.46	0	0	0
213	SLU 61	-0.06	-0.18	7.45	0	0	0
213	SLU 62	-0.06	-0.18	7.54	0	0	0
213	SLU 63	-0.06	-0.18	7.53	0	0	0
213	SLU 64	-0.06	-0.17	7.13	0	0	0
213	SLU 65	-0.06	-0.18	7.12	0	0	0
213	SLU 66	-0.06	-0.17	7.25	0	0	0
213	SLU 67	-0.06	-0.18	7.24	0	0	0
213	SLU 68	-0.06	-0.18	7.2	0	0	0
213	SLU 69	-0.06	-0.17	7.33	0	0	0
213	SLU 70	-0.06	-0.18	7.32	0	0	0
213	SLU 71	-0.06	-0.17	7.29	0	0	0
213	SLU 72	-0.06	-0.18	7.29	0	0	0
213	SLU 73	-0.06	-0.19	7.73	0	0	0
213	SLU 74	-0.06	-0.18	7.86	0	0	0
213	SLU 75	-0.06	-0.18	7.85	0	0	0
213	SLU 76	-0.06	-0.19	7.82	0	0	0
213	SLU 77	-0.06	-0.18	7.94	0	0	0
213	SLU 78	-0.06	-0.19	7.93	0	0	0
213	SLU 79	-0.06	-0.18	7.9	0	0	0
213	SLU 80	-0.06	-0.19	7.9	0	0	0
213	SLU 81	-0.06	-0.18	8	0	0	0
213	SLU 82	-0.06	-0.19	8	0	0	0
213	SLU 83	-0.06	-0.19	8.09	0	0	0
213	SLU 84	-0.06	-0.19	8.08	0	0	0
213	SLE RA 1	-0.05	-0.13	5.36	0	0	0
213	SLE RA 2	-0.04	-0.13	5.36	0	0	0
213	SLE RA 3	-0.05	-0.13	5.44	0	0	0
213	SLE RA 4	-0.04	-0.13	5.44	0	0	0
213	SLE RA 5	-0.04	-0.14	5.41	0	0	0
213	SLE RA 6	-0.05	-0.13	5.5	0	0	0
213	SLE RA 7	-0.05	-0.14	5.49	0	0	0
213	SLE RA 8	-0.05	-0.13	5.47	0	0	0
213	SLE RA 9	-0.05	-0.14	5.47	0	0	0
213	SLE RA 10	-0.04	-0.14	5.77	0	0	0
213	SLE RA 11	-0.05	-0.14	5.85	0	0	0
213	SLE RA 12	-0.05	-0.14	5.85	0	0	0
213	SLE RA 13	-0.04	-0.14	5.82	0	0	0
213	SLE RA 14	-0.05	-0.14	5.9	0	0	0
213	SLE RA 15	-0.05	-0.14	5.9	0	0	0
213	SLE RA 16	-0.05	-0.14	5.88	0	0	0
213	SLE RA 17	-0.05	-0.14	5.88	0	0	0
213	SLE RA 18	-0.05	-0.14	5.95	0	0	0
213	SLE RA 19	-0.05	-0.14	5.94	0	0	0
213	SLE RA 20	-0.05	-0.14	6	0	0	0
213	SLE RA 21	-0.05	-0.14	6	0	0	0
213	SLE FR 1	-0.05	-0.13	5.36	0	0	0
213	SLE FR 2	-0.04	-0.13	5.36	0	0	0
213	SLE FR 3	-0.05	-0.13	5.39	0	0	0
213	SLE FR 4	-0.05	-0.13	5.54	0	0	0
213	SLE FR 5	-0.05	-0.13	5.56	0	0	0
213	SLE FR 6	-0.05	-0.13	5.66	0	0	0
213	SLE QP 1	-0.05	-0.13	5.36	0	0	0
213	SLE QP 2	-0.05	-0.13	5.54	0	0	0
213	SLD 1	0.37	-0.14	5.99	0	0	0
213	SLD 2	0.41	-0.16	5.96	0	0	0
213	SLD 3	0.39	-0.26	5.83	0	0	0
213	SLD 4	0.44	-0.28	5.8	0	0	0
213	SLD 5	0.03	0.06	5.92	0	0	0
213	SLD 6	0.06	0.04	5.9	0	0	0
213	SLD 7	0.12	-0.35	5.39	0	0	0
213	SLD 8	0.15	-0.37	5.37	0	0	0
213	SLD 9	-0.24	0.1	5.71	0	0	0
213	SLD 10	-0.21	0.09	5.69	0	0	0
213	SLD 11	-0.15	-0.31	5.18	0	0	0
213	SLD 12	-0.12	-0.32	5.16	0	0	0
213	SLD 13	-0.53	0.02	5.28	0	0	0
213	SLD 14	-0.48	-0.01	5.25	0	0	0
213	SLD 15	-0.5	-0.11	5.12	0	0	0
213	SLD 16	-0.46	-0.13	5.09	0	0	0
213	SLV 1	0.92	-0.15	6.58	0	0	0
213	SLV 2	1.02	-0.2	6.51	0	0	0
213	SLV 3	0.98	-0.42	6.22	0	0	0
213	SLV 4	1.08	-0.48	6.15	0	0	0
213	SLV 5	0.13	0.29	6.41	0	0	0
213	SLV 6	0.2	0.26	6.36	0	0	0
213	SLV 7	0.34	-0.63	5.21	0	0	0
213	SLV 8	0.41	-0.67	5.16	0	0	0
213	SLV 9	-0.5	0.4	5.91	0	0	0
213	SLV 10	-0.43	0.37	5.87	0	0	0
213	SLV 11	-0.29	-0.52	4.71	0	0	0
213	SLV 12	-0.22	-0.56	4.67	0	0	0
213	SLV 13	-1.17	0.21	4.93	0	0	0
213	SLV 14	-1.07	0.16	4.86	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
213	SLV 15	-1.11	-0.06	4.57	0	0	0
213	SLV 16	-1.01	-0.12	4.5	0	0	0
214	SLU 1	-0.04	0	5.66	0	0.8504	0.0007
214	SLU 2	-0.04	-0.01	5.65	0	0.8492	0.0014
214	SLU 3	-0.05	0	5.79	0	0.8698	0.0004
214	SLU 4	-0.04	-0.01	5.79	0	0.8691	0.0008
214	SLU 5	-0.04	-0.01	5.74	0	0.8628	0.0014
214	SLU 6	-0.05	0	5.88	0	0.8833	0.0004
214	SLU 7	-0.04	-0.01	5.88	0	0.8826	0.0008
214	SLU 8	-0.05	0	5.84	0	0.8775	0.0007
214	SLU 9	-0.04	-0.01	5.84	0	0.8768	0.0011
214	SLU 10	-0.04	0	6.35	0	0.9544	0.0007
214	SLU 11	-0.05	0	6.49	0	0.9749	-0.0004
214	SLU 12	-0.04	0	6.49	0	0.9742	0.0001
214	SLU 13	-0.04	0	6.44	0	0.968	0.0007
214	SLU 14	-0.05	0	6.58	0	0.9885	-0.0004
214	SLU 15	-0.05	0	6.58	0	0.9878	0.0001
214	SLU 16	-0.05	0	6.54	0	0.9827	-0.0001
214	SLU 17	-0.05	0	6.54	0	0.982	0.0004
214	SLU 18	-0.05	0	6.66	0	1.0006	-0.0004
214	SLU 19	-0.04	0	6.66	0	0.9999	0.0001
214	SLU 20	-0.05	0	6.75	0	1.0142	-0.0004
214	SLU 21	-0.04	0	6.75	0	1.0135	0.0001
214	SLU 22	-0.05	0.01	6.25	0	0.9394	-0.0013
214	SLU 23	-0.05	0	6.25	0	0.9383	-0.0005
214	SLU 24	-0.05	0.01	6.38	0	0.9588	-0.0016
214	SLU 25	-0.05	0.01	6.38	0	0.9582	-0.0011
214	SLU 26	-0.05	0	6.34	0	0.9519	-0.0005
214	SLU 27	-0.05	0.01	6.47	0	0.9724	-0.0016
214	SLU 28	-0.05	0.01	6.47	0	0.9717	-0.0011
214	SLU 29	-0.05	0.01	6.43	0	0.9666	-0.0013
214	SLU 30	-0.05	0.01	6.43	0	0.9659	-0.0008
214	SLU 31	-0.05	0.01	6.95	0	1.0435	-0.0013
214	SLU 32	-0.05	0.02	7.08	0	1.064	-0.0023
214	SLU 33	-0.05	0.01	7.08	0	1.0633	-0.0019
214	SLU 34	-0.05	0.01	7.04	0	1.057	-0.0013
214	SLU 35	-0.05	0.02	7.17	0	1.0775	-0.0023
214	SLU 36	-0.05	0.01	7.17	0	1.0769	-0.0019
214	SLU 37	-0.05	0.01	7.13	0	1.0717	-0.002
214	SLU 38	-0.05	0.01	7.13	0	1.071	-0.0016
214	SLU 39	-0.05	0.02	7.25	0	1.0897	-0.0023
214	SLU 40	-0.05	0.01	7.25	0	1.089	-0.0019
214	SLU 41	-0.05	0.02	7.34	0	1.1032	-0.0023
214	SLU 42	-0.05	0.01	7.34	0	1.1025	-0.0019
214	SLU 43	-0.06	-0.01	7.16	0	1.075	0.0015
214	SLU 44	-0.05	-0.02	7.15	0	1.0738	0.0023
214	SLU 45	-0.06	-0.01	7.28	0	1.0943	0.0012
214	SLU 46	-0.05	-0.01	7.28	0	1.0937	0.0017
214	SLU 47	-0.05	-0.02	7.24	0	1.0874	0.0023
214	SLU 48	-0.06	-0.01	7.38	0	1.1079	0.0012
214	SLU 49	-0.06	-0.01	7.37	0	1.1072	0.0017
214	SLU 50	-0.06	-0.01	7.34	0	1.1021	0.0015
214	SLU 51	-0.05	-0.01	7.33	0	1.1014	0.002
214	SLU 52	-0.05	-0.01	7.85	0	1.179	0.0015
214	SLU 53	-0.06	0	7.98	0	1.1995	0.0005
214	SLU 54	-0.06	-0.01	7.98	0	1.1988	0.0009
214	SLU 55	-0.05	-0.01	7.94	0	1.1925	0.0015
214	SLU 56	-0.06	0	8.08	0	1.213	0.0005
214	SLU 57	-0.06	-0.01	8.07	0	1.2124	0.0009
214	SLU 58	-0.06	-0.01	8.04	0	1.2072	0.0008
214	SLU 59	-0.06	-0.01	8.03	0	1.2065	0.0012
214	SLU 60	-0.06	0	8.16	0	1.2252	0.0005
214	SLU 61	-0.06	-0.01	8.15	0	1.2245	0.0009
214	SLU 62	-0.06	0	8.25	0	1.2387	0.0005
214	SLU 63	-0.06	-0.01	8.24	0	1.238	0.0009
214	SLU 64	-0.06	0	7.75	0	1.164	-0.0004
214	SLU 65	-0.06	0	7.74	0	1.1629	0.0003
214	SLU 66	-0.06	0	7.88	0	1.1834	-0.0007
214	SLU 67	-0.06	0	7.87	0	1.1827	-0.0003
214	SLU 68	-0.06	0	7.83	0	1.1765	0.0003
214	SLU 69	-0.06	0	7.97	0	1.197	-0.0007
214	SLU 70	-0.06	0	7.96	0	1.1963	-0.0003
214	SLU 71	-0.06	0	7.93	0	1.1912	-0.0004
214	SLU 72	-0.06	0	7.92	0	1.1905	0
214	SLU 73	-0.06	0	8.44	0	1.268	-0.0004
214	SLU 74	-0.06	0.01	8.58	0	1.2886	-0.0015
214	SLU 75	-0.06	0.01	8.57	0	1.2879	-0.001
214	SLU 76	-0.06	0	8.53	0	1.2816	-0.0004
214	SLU 77	-0.06	0.01	8.67	0	1.3021	-0.0015
214	SLU 78	-0.06	0.01	8.66	0	1.3014	-0.001
214	SLU 79	-0.06	0.01	8.63	0	1.2963	-0.0012
214	SLU 80	-0.06	0	8.62	0	1.2956	-0.0007
214	SLU 81	-0.06	0.01	8.75	0	1.3142	-0.0015
214	SLU 82	-0.06	0.01	8.74	0	1.3136	-0.001
214	SLU 83	-0.06	0.01	8.84	0	1.3278	-0.0015
214	SLU 84	-0.06	0.01	8.83	0	1.3271	-0.001
214	SLE RA 1	-0.05	0	5.83	0	0.8758	0.0001
214	SLE RA 2	-0.04	0	5.83	0	0.8751	0.0006
214	SLE RA 3	-0.05	0	5.92	0	0.8887	-0.0001
214	SLE RA 4	-0.04	0	5.91	0	0.8883	0.0002



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
214	SLE RA 5	-0.04	0	5.89	0	0.8841	0.0006
214	SLE RA 6	-0.05	0	5.98	0	0.8978	-0.0001
214	SLE RA 7	-0.05	0	5.97	0	0.8973	0.0002
214	SLE RA 8	-0.05	0	5.95	0	0.8939	0.0001
214	SLE RA 9	-0.05	0	5.95	0	0.8935	0.0004
214	SLE RA 10	-0.04	0	6.29	0	0.9452	0.0001
214	SLE RA 11	-0.05	0	6.38	0	0.9588	-0.0006
214	SLE RA 12	-0.05	0	6.38	0	0.9584	-0.0003
214	SLE RA 13	-0.04	0	6.35	0	0.9542	0.0001
214	SLE RA 14	-0.05	0	6.44	0	0.9679	-0.0006
214	SLE RA 15	-0.05	0	6.44	0	0.9674	-0.0003
214	SLE RA 16	-0.05	0	6.42	0	0.964	-0.0004
214	SLE RA 17	-0.05	0	6.41	0	0.9636	-0.0001
214	SLE RA 18	-0.05	0	6.5	0	0.976	-0.0006
214	SLE RA 19	-0.05	0	6.49	0	0.9755	-0.0003
214	SLE RA 20	-0.05	0	6.56	0	0.985	-0.0006
214	SLE RA 21	-0.05	0	6.55	0	0.9846	-0.0003
214	SLE FR 1	-0.05	0	5.83	0	0.8758	0.0001
214	SLE FR 2	-0.04	0	5.83	0	0.8757	0.0002
214	SLE FR 3	-0.05	0	5.85	0	0.8794	0.0001
214	SLE FR 4	-0.05	0	6.03	0	0.9057	0
214	SLE FR 5	-0.05	0	6.05	0	0.9095	-0.0001
214	SLE FR 6	-0.05	0	6.16	0	0.9259	-0.0003
214	SLE QP 1	-0.05	0	5.83	0	0.8758	0.0001
214	SLE QP 2	-0.05	0	6.03	0	0.9059	-0.0001
214	SLD 1	0.4	0.05	6.06	0	0.9109	-0.0082
214	SLD 2	0.45	0.05	6.05	0	0.9088	-0.0072
214	SLD 3	0.43	-0.09	5.89	0	0.8853	0.0135
214	SLD 4	0.48	-0.1	5.88	0	0.8833	0.0146
214	SLD 5	0.04	0.24	6.3	0	0.9465	-0.0357
214	SLD 6	0.07	0.23	6.29	0	0.9451	-0.035
214	SLD 7	0.13	-0.24	5.73	0	0.8613	0.0368
214	SLD 8	0.17	-0.25	5.72	0	0.86	0.0375
214	SLD 9	-0.26	0.25	6.34	0	0.9517	-0.0377
214	SLD 10	-0.23	0.25	6.33	0	0.9504	-0.037
214	SLD 11	-0.16	-0.23	5.77	0	0.8666	0.0348
214	SLD 12	-0.13	-0.24	5.76	0	0.8653	0.0355
214	SLD 13	-0.57	0.1	6.18	0	0.9284	-0.0148
214	SLD 14	-0.53	0.09	6.17	0	0.9264	-0.0137
214	SLD 15	-0.54	-0.05	6.01	0	0.9029	0.007
214	SLD 16	-0.5	-0.05	6	0	0.9009	0.008
214	SLV 1	1.01	0.12	6.1	0	0.9166	-0.0183
214	SLV 2	1.12	0.11	6.07	0	0.9119	-0.0159
214	SLV 3	1.08	-0.21	5.72	0	0.8587	0.0309
214	SLV 4	1.19	-0.22	5.69	0	0.854	0.0334
214	SLV 5	0.15	0.54	6.64	0	0.9976	-0.0807
214	SLV 6	0.22	0.53	6.62	0	0.9946	-0.0791
214	SLV 7	0.38	-0.56	5.36	0	0.8048	0.0834
214	SLV 8	0.45	-0.57	5.34	0	0.8017	0.085
214	SLV 9	-0.54	0.57	6.72	0	1.01	-0.0853
214	SLV 10	-0.47	0.56	6.7	0	1.007	-0.0837
214	SLV 11	-0.31	-0.53	5.44	0	0.8171	0.0789
214	SLV 12	-0.24	-0.54	5.42	0	0.8141	0.0805
214	SLV 13	-1.28	0.22	6.38	0	0.9577	-0.0336
214	SLV 14	-1.17	0.21	6.34	0	0.953	-0.0311
214	SLV 15	-1.21	-0.1	5.99	0	0.8999	0.0157
214	SLV 16	-1.1	-0.12	5.96	0	0.8952	0.0181
214	CRTFP Uy+	0	0	0	0	0	0
214	CRTFP Uy-	0	0	0	0	0	0
217	SLU 1	0.05	-0.05	45.12	-0.036	13.0697	0.0049
217	SLU 2	0.07	-0.09	45.07	-0.0357	13.0555	0.0167
217	SLU 3	0.05	-0.03	46.15	-0.0367	13.3708	0.0001
217	SLU 4	0.06	-0.06	46.13	-0.0366	13.3623	0.0073
217	SLU 5	0.07	-0.09	45.78	-0.0364	13.2602	0.0163
217	SLU 6	0.05	-0.03	46.86	-0.0373	13.5755	-0.0003
217	SLU 7	0.06	-0.06	46.83	-0.0372	13.567	0.0068
217	SLU 8	0.04	-0.05	46.53	-0.0372	13.4791	0.0039
217	SLU 9	0.06	-0.07	46.5	-0.0371	13.4705	0.0111
217	SLU 10	0.05	-0.02	50.69	-0.0394	14.6978	-0.003
217	SLU 11	0.03	0.03	51.77	-0.0403	15.0131	-0.0196
217	SLU 12	0.05	0.01	51.75	-0.0402	15.0046	-0.0125
217	SLU 13	0.05	-0.02	51.4	-0.04	14.9025	-0.0034
217	SLU 14	0.03	0.03	52.48	-0.041	15.2178	-0.02
217	SLU 15	0.04	0.01	52.45	-0.0408	15.2093	-0.0129
217	SLU 16	0.03	0.02	52.15	-0.0409	15.1214	-0.0158
217	SLU 17	0.04	-0.01	52.12	-0.0407	15.1128	-0.0087
217	SLU 18	0.02	0.04	53.15	-0.0412	15.4158	-0.0233
217	SLU 19	0.04	0.02	53.12	-0.041	15.4073	-0.0162
217	SLU 20	0.02	0.04	53.85	-0.0418	15.6205	-0.0238
217	SLU 21	0.04	0.02	53.82	-0.0417	15.612	-0.0166
217	SLU 22	0.06	0.05	49.91	-0.0389	14.4593	-0.0256
217	SLU 23	0.09	0.01	49.86	-0.0387	14.4451	-0.0137
217	SLU 24	0.06	0.07	50.94	-0.0396	14.7605	-0.0303
217	SLU 25	0.08	0.04	50.91	-0.0395	14.7519	-0.0232
217	SLU 26	0.09	0.01	50.56	-0.0393	14.6498	-0.0142
217	SLU 27	0.06	0.07	51.65	-0.0403	14.9651	-0.0308
217	SLU 28	0.08	0.04	51.62	-0.0401	14.9566	-0.0237
217	SLU 29	0.06	0.05	51.31	-0.0402	14.8687	-0.0265
217	SLU 30	0.08	0.03	51.29	-0.04	14.8602	-0.0194
217	SLU 31	0.07	0.08	55.48	-0.0423	16.0875	-0.0334





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
217	SLU 32	0.05	0.13	56.56	-0.0433	16.4028	-0.05
217	SLU 33	0.06	0.11	56.53	-0.0431	16.3942	-0.0429
217	SLU 34	0.07	0.08	56.18	-0.0429	16.2921	-0.0339
217	SLU 35	0.05	0.13	57.27	-0.0439	16.6075	-0.0505
217	SLU 36	0.06	0.11	57.24	-0.0438	16.5989	-0.0434
217	SLU 37	0.04	0.12	56.93	-0.0438	16.511	-0.0462
217	SLU 38	0.06	0.09	56.91	-0.0437	16.5025	-0.0391
217	SLU 39	0.04	0.14	57.94	-0.0441	16.8055	-0.0538
217	SLU 40	0.05	0.12	57.91	-0.044	16.797	-0.0467
217	SLU 41	0.04	0.15	58.64	-0.0447	17.0102	-0.0542
217	SLU 42	0.05	0.12	58.61	-0.0446	17.0017	-0.0471
217	SLU 43	0.05	-0.1	57.01	-0.0457	16.5141	0.0168
217	SLU 44	0.08	-0.14	56.97	-0.0455	16.4999	0.0286
217	SLU 45	0.05	-0.08	58.05	-0.0465	16.8153	0.012
217	SLU 46	0.07	-0.11	58.02	-0.0463	16.8067	0.0192
217	SLU 47	0.08	-0.14	57.67	-0.0462	16.7046	0.0282
217	SLU 48	0.05	-0.08	58.75	-0.0471	17.0199	0.0116
217	SLU 49	0.07	-0.1	58.72	-0.047	17.0114	0.0187
217	SLU 50	0.05	-0.09	58.42	-0.047	16.9235	0.0158
217	SLU 51	0.07	-0.12	58.39	-0.0469	16.915	0.023
217	SLU 52	0.06	-0.07	62.59	-0.0492	18.1422	0.0089
217	SLU 53	0.04	-0.02	63.67	-0.0501	18.4576	-0.0077
217	SLU 54	0.05	-0.04	63.64	-0.05	18.449	-0.0006
217	SLU 55	0.06	-0.07	63.29	-0.0498	18.3469	0.0085
217	SLU 56	0.04	-0.02	64.37	-0.0508	18.6622	-0.0081
217	SLU 57	0.05	-0.04	64.34	-0.0506	18.6537	-0.001
217	SLU 58	0.03	-0.03	64.04	-0.0507	18.5658	-0.0039
217	SLU 59	0.05	-0.05	64.01	-0.0505	18.5573	0.0032
217	SLU 60	0.03	-0.01	65.04	-0.0509	18.8603	-0.0114
217	SLU 61	0.05	-0.03	65.01	-0.0508	18.8518	-0.0043
217	SLU 62	0.03	0	65.75	-0.0516	19.065	-0.0119
217	SLU 63	0.04	-0.03	65.72	-0.0514	19.0565	-0.0048
217	SLU 64	0.07	0	61.8	-0.0487	17.9038	-0.0137
217	SLU 65	0.1	-0.04	61.75	-0.0484	17.8896	-0.0018
217	SLU 66	0.07	0.02	62.84	-0.0494	18.2049	-0.0184
217	SLU 67	0.09	0	62.81	-0.0493	18.1964	-0.0113
217	SLU 68	0.1	-0.04	62.46	-0.0491	18.0943	-0.0023
217	SLU 69	0.07	0.02	63.54	-0.0501	18.4096	-0.0189
217	SLU 70	0.09	0	63.51	-0.0499	18.4011	-0.0118
217	SLU 71	0.07	0.01	63.21	-0.05	18.3132	-0.0146
217	SLU 72	0.08	-0.02	63.18	-0.0498	18.3046	-0.0075
217	SLU 73	0.08	0.03	67.37	-0.0521	19.5319	-0.0215
217	SLU 74	0.06	0.08	68.46	-0.0531	19.8472	-0.0381
217	SLU 75	0.07	0.06	68.43	-0.0529	19.8387	-0.031
217	SLU 76	0.08	0.03	68.08	-0.0527	19.7366	-0.022
217	SLU 77	0.05	0.08	69.16	-0.0537	20.0519	-0.0386
217	SLU 78	0.07	0.06	69.13	-0.0536	20.0434	-0.0315
217	SLU 79	0.05	0.07	68.83	-0.0536	19.9555	-0.0343
217	SLU 80	0.07	0.05	68.8	-0.0535	19.947	-0.0272
217	SLU 81	0.05	0.1	69.83	-0.0539	20.2499	-0.0419
217	SLU 82	0.06	0.07	69.8	-0.0537	20.2414	-0.0348
217	SLU 83	0.05	0.1	70.53	-0.0545	20.4546	-0.0423
217	SLU 84	0.06	0.07	70.51	-0.0544	20.4461	-0.0352
217	SLE RA 1	0.05	-0.02	46.49	-0.0368	13.4667	-0.0038
217	SLE RA 2	0.07	-0.05	46.46	-0.0366	13.4573	0.0041
217	SLE RA 3	0.05	-0.01	47.18	-0.0373	13.6675	-0.007
217	SLE RA 4	0.06	-0.02	47.16	-0.0372	13.6618	-0.0022
217	SLE RA 5	0.07	-0.05	46.93	-0.0371	13.5937	0.0038
217	SLE RA 6	0.05	-0.01	47.65	-0.0377	13.8039	-0.0073
217	SLE RA 7	0.06	-0.02	47.63	-0.0376	13.7983	-0.0025
217	SLE RA 8	0.05	-0.02	47.42	-0.0376	13.7396	-0.0045
217	SLE RA 9	0.06	-0.03	47.41	-0.0376	13.734	0.0003
217	SLE RA 10	0.06	0	50.2	-0.0391	14.5521	-0.0091
217	SLE RA 11	0.04	0.03	50.92	-0.0397	14.7623	-0.0201
217	SLE RA 12	0.05	0.02	50.91	-0.0396	14.7567	-0.0154
217	SLE RA 13	0.06	0	50.67	-0.0395	14.6886	-0.0094
217	SLE RA 14	0.04	0.03	51.39	-0.0401	14.8988	-0.0204
217	SLE RA 15	0.05	0.02	51.37	-0.0401	14.8931	-0.0157
217	SLE RA 16	0.04	0.02	51.17	-0.0401	14.8345	-0.0176
217	SLE RA 17	0.05	0.01	51.15	-0.04	14.8288	-0.0129
217	SLE RA 18	0.03	0.04	51.84	-0.0403	15.0308	-0.0226
217	SLE RA 19	0.05	0.03	51.82	-0.0402	15.0252	-0.0179
217	SLE RA 20	0.03	0.04	52.31	-0.0407	15.1673	-0.0229
217	SLE RA 21	0.04	0.03	52.29	-0.0406	15.1616	-0.0182
217	SLE FR 1	0.05	-0.02	46.49	-0.0368	13.4667	-0.0038
217	SLE FR 2	0.05	-0.02	46.48	-0.0368	13.4648	-0.0023
217	SLE FR 3	0.05	-0.02	46.67	-0.037	13.5213	-0.004
217	SLE FR 4	0.05	-0.01	48.09	-0.0378	13.9341	-0.0079
217	SLE FR 5	0.05	0	48.28	-0.038	13.9905	-0.0096
217	SLE FR 6	0.04	0.01	49.16	-0.0385	14.2488	-0.0132
217	SLE QP 1	0.05	-0.02	46.49	-0.0368	13.4667	-0.0038
217	SLE QP 2	0.05	0	48.09	-0.0378	13.936	-0.0095
217	SLD 1	4.26	0.42	48.01	-0.0352	13.9976	-0.1326
217	SLD 2	4.68	0.45	48.13	-0.0355	14.0228	-0.1393
217	SLD 3	4.02	-0.82	46.71	-0.0292	13.616	0.231
217	SLD 4	4.44	-0.79	46.83	-0.0295	13.6411	0.2244
217	SLD 5	1.62	2.01	50.02	-0.046	14.5288	-0.5968
217	SLD 6	1.89	2.03	50.09	-0.0462	14.5453	-0.6012
217	SLD 7	0.78	-2.14	45.69	-0.0262	13.2566	0.6154
217	SLD 8	1.06	-2.12	45.76	-0.0264	13.2731	0.611



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
217	SLD 9	-0.97	2.12	50.42	-0.0493	14.5988	-0.63
217	SLD 10	-0.69	2.14	50.5	-0.0495	14.6153	-0.6344
217	SLD 11	-1.8	-2.03	46.09	-0.0295	13.3266	0.5822
217	SLD 12	-1.52	-2.01	46.17	-0.0297	13.3431	0.5778
217	SLD 13	-4.34	0.79	49.36	-0.0461	14.2308	-0.2433
217	SLD 14	-3.92	0.82	49.47	-0.0464	14.2559	-0.25
217	SLD 15	-4.59	-0.45	48.06	-0.0402	13.8491	0.1203
217	SLD 16	-4.17	-0.42	48.17	-0.0405	13.8743	0.1137
217	SLV 1	9.92	0.94	47.86	-0.0314	14.0668	-0.2845
217	SLV 2	10.9	1.01	48.13	-0.0321	14.1253	-0.3
217	SLV 3	9.34	-1.88	44.92	-0.0179	13.2017	0.5388
217	SLV 4	10.31	-1.8	45.18	-0.0187	13.2602	0.5233
217	SLV 5	3.72	4.54	52.44	-0.0562	15.2771	-1.3379
217	SLV 6	4.35	4.58	52.61	-0.0567	15.3149	-1.348
217	SLV 7	1.78	-4.84	42.63	-0.0113	12.3935	1.4063
217	SLV 8	2.41	-4.8	42.8	-0.0118	12.4313	1.3963
217	SLV 9	-2.32	4.8	53.38	-0.0639	15.4406	-1.4153
217	SLV 10	-1.69	4.84	53.56	-0.0644	15.4784	-1.4253
217	SLV 11	-4.26	-4.58	43.57	-0.019	12.557	1.329
217	SLV 12	-3.63	-4.54	43.74	-0.0195	12.5948	1.319
217	SLV 13	-10.22	1.8	51	-0.057	14.6117	-0.5422
217	SLV 14	-9.24	1.87	51.27	-0.0577	14.6702	-0.5578
217	SLV 15	-10.8	-1.01	48.06	-0.0435	13.7466	0.281
217	SLV 16	-9.83	-0.94	48.32	-0.0443	13.8051	0.2655
217	CRTFP Ux+	0	0	0	0	0	0
217	CRTFP Ux-	0	0	0	0	0	0
217	CRTFP Uy+	0	0	0	0	0	0
217	CRTFP Uy-	0	0	0	0	0	0
219	SLU 1	0.01	-0.05	10.83	0	0	0
219	SLU 2	0.02	-0.06	10.82	0	0	0
219	SLU 3	0.01	-0.05	11.08	0	0	0
219	SLU 4	0.02	-0.06	11.08	0	0	0
219	SLU 5	0.02	-0.06	10.99	0	0	0
219	SLU 6	0.01	-0.05	11.25	0	0	0
219	SLU 7	0.02	-0.06	11.24	0	0	0
219	SLU 8	0.01	-0.06	11.17	0	0	0
219	SLU 9	0.02	-0.06	11.16	0	0	0
219	SLU 10	0.01	-0.05	12.15	0	0	0
219	SLU 11	0.01	-0.04	12.41	0	0	0
219	SLU 12	0.01	-0.05	12.41	0	0	0
219	SLU 13	0.01	-0.05	12.32	0	0	0
219	SLU 14	0.01	-0.04	12.58	0	0	0
219	SLU 15	0.01	-0.05	12.57	0	0	0
219	SLU 16	0.01	-0.05	12.5	0	0	0
219	SLU 17	0.01	-0.05	12.49	0	0	0
219	SLU 18	0.01	-0.04	12.73	0	0	0
219	SLU 19	0.01	-0.05	12.73	0	0	0
219	SLU 20	0.01	-0.04	12.9	0	0	0
219	SLU 21	0.01	-0.05	12.9	0	0	0
219	SLU 22	0.02	-0.04	11.98	0	0	0
219	SLU 23	0.02	-0.04	11.97	0	0	0
219	SLU 24	0.02	-0.03	12.23	0	0	0
219	SLU 25	0.02	-0.04	12.22	0	0	0
219	SLU 26	0.02	-0.05	12.14	0	0	0
219	SLU 27	0.02	-0.03	12.39	0	0	0
219	SLU 28	0.02	-0.04	12.39	0	0	0
219	SLU 29	0.02	-0.04	12.32	0	0	0
219	SLU 30	0.02	-0.04	12.31	0	0	0
219	SLU 31	0.02	-0.04	13.3	0	0	0
219	SLU 32	0.01	-0.02	13.56	0	0	0
219	SLU 33	0.02	-0.03	13.55	0	0	0
219	SLU 34	0.02	-0.04	13.47	0	0	0
219	SLU 35	0.01	-0.02	13.72	0	0	0
219	SLU 36	0.02	-0.03	13.72	0	0	0
219	SLU 37	0.01	-0.03	13.65	0	0	0
219	SLU 38	0.02	-0.03	13.64	0	0	0
219	SLU 39	0.01	-0.02	13.88	0	0	0
219	SLU 40	0.01	-0.03	13.87	0	0	0
219	SLU 41	0.01	-0.02	14.05	0	0	0
219	SLU 42	0.01	-0.03	14.04	0	0	0
219	SLU 43	0.01	-0.08	13.69	0	0	0
219	SLU 44	0.02	-0.09	13.68	0	0	0
219	SLU 45	0.01	-0.08	13.94	0	0	0
219	SLU 46	0.02	-0.08	13.93	0	0	0
219	SLU 47	0.02	-0.09	13.85	0	0	0
219	SLU 48	0.01	-0.08	14.11	0	0	0
219	SLU 49	0.02	-0.08	14.1	0	0	0
219	SLU 50	0.01	-0.08	14.03	0	0	0
219	SLU 51	0.02	-0.08	14.02	0	0	0
219	SLU 52	0.02	-0.08	15.01	0	0	0
219	SLU 53	0.01	-0.07	15.27	0	0	0
219	SLU 54	0.01	-0.07	15.26	0	0	0
219	SLU 55	0.02	-0.08	15.18	0	0	0
219	SLU 56	0.01	-0.07	15.44	0	0	0
219	SLU 57	0.01	-0.07	15.43	0	0	0
219	SLU 58	0.01	-0.07	15.36	0	0	0
219	SLU 59	0.01	-0.07	15.35	0	0	0
219	SLU 60	0.01	-0.06	15.59	0	0	0
219	SLU 61	0.01	-0.07	15.59	0	0	0
219	SLU 62	0.01	-0.06	15.76	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
219	SLU 63	0.01	-0.07	15.75	0	0	0
219	SLU 64	0.02	-0.06	14.84	0	0	0
219	SLU 65	0.02	-0.07	14.83	0	0	0
219	SLU 66	0.02	-0.06	15.08	0	0	0
219	SLU 67	0.02	-0.06	15.08	0	0	0
219	SLU 68	0.02	-0.07	15	0	0	0
219	SLU 69	0.02	-0.06	15.25	0	0	0
219	SLU 70	0.02	-0.06	15.25	0	0	0
219	SLU 71	0.02	-0.06	15.17	0	0	0
219	SLU 72	0.02	-0.07	15.17	0	0	0
219	SLU 73	0.02	-0.06	16.16	0	0	0
219	SLU 74	0.01	-0.05	16.41	0	0	0
219	SLU 75	0.02	-0.05	16.41	0	0	0
219	SLU 76	0.02	-0.06	16.33	0	0	0
219	SLU 77	0.01	-0.05	16.58	0	0	0
219	SLU 78	0.02	-0.05	16.58	0	0	0
219	SLU 79	0.01	-0.05	16.5	0	0	0
219	SLU 80	0.02	-0.06	16.5	0	0	0
219	SLU 81	0.01	-0.04	16.74	0	0	0
219	SLU 82	0.02	-0.05	16.73	0	0	0
219	SLU 83	0.01	-0.05	16.91	0	0	0
219	SLU 84	0.02	-0.05	16.9	0	0	0
219	SLE RA 1	0.01	-0.05	11.16	0	0	0
219	SLE RA 2	0.02	-0.06	11.15	0	0	0
219	SLE RA 3	0.01	-0.05	11.33	0	0	0
219	SLE RA 4	0.02	-0.05	11.32	0	0	0
219	SLE RA 5	0.02	-0.06	11.27	0	0	0
219	SLE RA 6	0.01	-0.05	11.44	0	0	0
219	SLE RA 7	0.02	-0.05	11.43	0	0	0
219	SLE RA 8	0.01	-0.05	11.39	0	0	0
219	SLE RA 9	0.02	-0.05	11.38	0	0	0
219	SLE RA 10	0.01	-0.05	12.04	0	0	0
219	SLE RA 11	0.01	-0.04	12.21	0	0	0
219	SLE RA 12	0.01	-0.04	12.21	0	0	0
219	SLE RA 13	0.01	-0.05	12.15	0	0	0
219	SLE RA 14	0.01	-0.04	12.32	0	0	0
219	SLE RA 15	0.01	-0.05	12.32	0	0	0
219	SLE RA 16	0.01	-0.04	12.27	0	0	0
219	SLE RA 17	0.01	-0.05	12.27	0	0	0
219	SLE RA 18	0.01	-0.04	12.43	0	0	0
219	SLE RA 19	0.01	-0.04	12.42	0	0	0
219	SLE RA 20	0.01	-0.04	12.54	0	0	0
219	SLE RA 21	0.01	-0.04	12.54	0	0	0
219	SLE FR 1	0.01	-0.05	11.16	0	0	0
219	SLE FR 2	0.01	-0.05	11.16	0	0	0
219	SLE FR 3	0.01	-0.05	11.21	0	0	0
219	SLE FR 4	0.01	-0.05	11.54	0	0	0
219	SLE FR 5	0.01	-0.05	11.59	0	0	0
219	SLE FR 6	0.01	-0.04	11.8	0	0	0
219	SLE QP 1	0.01	-0.05	11.16	0	0	0
219	SLE QP 2	0.01	-0.05	11.54	0	0	0
219	SLD 1	1.02	0.15	11.4	0	0	0
219	SLD 2	1.12	0.17	11.44	0	0	0
219	SLD 3	0.96	-0.14	11.09	0	0	0
219	SLD 4	1.06	-0.12	11.13	0	0	0
219	SLD 5	0.39	0.45	11.96	0	0	0
219	SLD 6	0.45	0.46	11.98	0	0	0
219	SLD 7	0.19	-0.52	10.94	0	0	0
219	SLD 8	0.25	-0.5	10.96	0	0	0
219	SLD 9	-0.23	0.41	12.12	0	0	0
219	SLD 10	-0.16	0.42	12.15	0	0	0
219	SLD 11	-0.43	-0.55	11.1	0	0	0
219	SLD 12	-0.36	-0.54	11.13	0	0	0
219	SLD 13	-1.03	0.03	11.95	0	0	0
219	SLD 14	-0.93	0.05	11.99	0	0	0
219	SLD 15	-1.09	-0.26	11.65	0	0	0
219	SLD 16	-0.99	-0.24	11.68	0	0	0
219	SLV 1	2.36	0.4	11.2	0	0	0
219	SLV 2	2.6	0.44	11.28	0	0	0
219	SLV 3	2.23	-0.26	10.51	0	0	0
219	SLV 4	2.46	-0.21	10.59	0	0	0
219	SLV 5	0.89	1.07	12.47	0	0	0
219	SLV 6	1.04	1.1	12.53	0	0	0
219	SLV 7	0.43	-1.11	10.17	0	0	0
219	SLV 8	0.58	-1.08	10.22	0	0	0
219	SLV 9	-0.55	0.99	12.86	0	0	0
219	SLV 10	-0.4	1.02	12.92	0	0	0
219	SLV 11	-1.01	-1.19	10.55	0	0	0
219	SLV 12	-0.86	-1.17	10.61	0	0	0
219	SLV 13	-2.43	0.12	12.49	0	0	0
219	SLV 14	-2.2	0.16	12.58	0	0	0
219	SLV 15	-2.57	-0.53	11.8	0	0	0
219	SLV 16	-2.34	-0.49	11.89	0	0	0
220	SLU 1	0.01	-0.07	11.02	0	0	0
220	SLU 2	0.02	-0.08	11.01	0	0	0
220	SLU 3	0.01	-0.07	11.27	0	0	0
220	SLU 4	0.02	-0.08	11.26	0	0	0
220	SLU 5	0.02	-0.08	11.18	0	0	0
220	SLU 6	0.01	-0.07	11.44	0	0	0
220	SLU 7	0.02	-0.08	11.43	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
220	SLU 8	0.01	-0.08	11.36	0	0	0
220	SLU 9	0.02	-0.08	11.35	0	0	0
220	SLU 10	0.02	-0.08	12.35	0	0	0
220	SLU 11	0.01	-0.07	12.61	0	0	0
220	SLU 12	0.01	-0.07	12.6	0	0	0
220	SLU 13	0.02	-0.08	12.52	0	0	0
220	SLU 14	0.01	-0.07	12.78	0	0	0
220	SLU 15	0.01	-0.07	12.77	0	0	0
220	SLU 16	0.01	-0.07	12.7	0	0	0
220	SLU 17	0.01	-0.07	12.69	0	0	0
220	SLU 18	0.01	-0.06	12.94	0	0	0
220	SLU 19	0.01	-0.07	12.93	0	0	0
220	SLU 20	0.01	-0.06	13.11	0	0	0
220	SLU 21	0.01	-0.07	13.1	0	0	0
220	SLU 22	0.02	-0.06	12.18	0	0	0
220	SLU 23	0.02	-0.07	12.17	0	0	0
220	SLU 24	0.02	-0.06	12.43	0	0	0
220	SLU 25	0.02	-0.06	12.42	0	0	0
220	SLU 26	0.02	-0.07	12.34	0	0	0
220	SLU 27	0.02	-0.06	12.6	0	0	0
220	SLU 28	0.02	-0.06	12.59	0	0	0
220	SLU 29	0.02	-0.06	12.52	0	0	0
220	SLU 30	0.02	-0.06	12.51	0	0	0
220	SLU 31	0.02	-0.06	13.51	0	0	0
220	SLU 32	0.01	-0.05	13.77	0	0	0
220	SLU 33	0.02	-0.05	13.77	0	0	0
220	SLU 34	0.02	-0.06	13.68	0	0	0
220	SLU 35	0.01	-0.05	13.94	0	0	0
220	SLU 36	0.02	-0.05	13.94	0	0	0
220	SLU 37	0.01	-0.05	13.86	0	0	0
220	SLU 38	0.02	-0.06	13.86	0	0	0
220	SLU 39	0.01	-0.05	14.1	0	0	0
220	SLU 40	0.02	-0.05	14.09	0	0	0
220	SLU 41	0.01	-0.05	14.27	0	0	0
220	SLU 42	0.02	-0.05	14.26	0	0	0
220	SLU 43	0.02	-0.1	13.93	0	0	0
220	SLU 44	0.02	-0.11	13.92	0	0	0
220	SLU 45	0.02	-0.1	14.18	0	0	0
220	SLU 46	0.02	-0.11	14.17	0	0	0
220	SLU 47	0.02	-0.11	14.09	0	0	0
220	SLU 48	0.02	-0.1	14.35	0	0	0
220	SLU 49	0.02	-0.11	14.34	0	0	0
220	SLU 50	0.02	-0.1	14.26	0	0	0
220	SLU 51	0.02	-0.11	14.26	0	0	0
220	SLU 52	0.02	-0.1	15.26	0	0	0
220	SLU 53	0.01	-0.09	15.52	0	0	0
220	SLU 54	0.02	-0.1	15.51	0	0	0
220	SLU 55	0.02	-0.1	15.43	0	0	0
220	SLU 56	0.01	-0.09	15.69	0	0	0
220	SLU 57	0.02	-0.1	15.68	0	0	0
220	SLU 58	0.01	-0.1	15.61	0	0	0
220	SLU 59	0.02	-0.1	15.6	0	0	0
220	SLU 60	0.01	-0.09	15.84	0	0	0
220	SLU 61	0.01	-0.1	15.84	0	0	0
220	SLU 62	0.01	-0.09	16.01	0	0	0
220	SLU 63	0.01	-0.1	16.01	0	0	0
220	SLU 64	0.02	-0.09	15.09	0	0	0
220	SLU 65	0.03	-0.09	15.08	0	0	0
220	SLU 66	0.02	-0.08	15.34	0	0	0
220	SLU 67	0.02	-0.09	15.33	0	0	0
220	SLU 68	0.03	-0.1	15.25	0	0	0
220	SLU 69	0.02	-0.08	15.51	0	0	0
220	SLU 70	0.02	-0.09	15.5	0	0	0
220	SLU 71	0.02	-0.09	15.43	0	0	0
220	SLU 72	0.02	-0.09	15.42	0	0	0
220	SLU 73	0.02	-0.09	16.42	0	0	0
220	SLU 74	0.02	-0.08	16.68	0	0	0
220	SLU 75	0.02	-0.08	16.67	0	0	0
220	SLU 76	0.02	-0.09	16.59	0	0	0
220	SLU 77	0.02	-0.08	16.85	0	0	0
220	SLU 78	0.02	-0.08	16.84	0	0	0
220	SLU 79	0.02	-0.08	16.77	0	0	0
220	SLU 80	0.02	-0.09	16.76	0	0	0
220	SLU 81	0.01	-0.07	17	0	0	0
220	SLU 82	0.02	-0.08	17	0	0	0
220	SLU 83	0.01	-0.08	17.17	0	0	0
220	SLU 84	0.02	-0.08	17.17	0	0	0
220	SLE RA 1	0.02	-0.07	11.35	0	0	0
220	SLE RA 2	0.02	-0.08	11.34	0	0	0
220	SLE RA 3	0.02	-0.07	11.52	0	0	0
220	SLE RA 4	0.02	-0.07	11.51	0	0	0
220	SLE RA 5	0.02	-0.08	11.46	0	0	0
220	SLE RA 6	0.02	-0.07	11.63	0	0	0
220	SLE RA 7	0.02	-0.07	11.63	0	0	0
220	SLE RA 8	0.01	-0.07	11.58	0	0	0
220	SLE RA 9	0.02	-0.07	11.57	0	0	0
220	SLE RA 10	0.02	-0.07	12.24	0	0	0
220	SLE RA 11	0.01	-0.06	12.41	0	0	0
220	SLE RA 12	0.01	-0.07	12.41	0	0	0
220	SLE RA 13	0.02	-0.07	12.35	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
220	SLE RA 14	0.01	-0.06	12.53	0	0	0
220	SLE RA 15	0.01	-0.07	12.52	0	0	0
220	SLE RA 16	0.01	-0.07	12.47	0	0	0
220	SLE RA 17	0.01	-0.07	12.47	0	0	0
220	SLE RA 18	0.01	-0.06	12.63	0	0	0
220	SLE RA 19	0.01	-0.07	12.62	0	0	0
220	SLE RA 20	0.01	-0.06	12.74	0	0	0
220	SLE RA 21	0.01	-0.07	12.74	0	0	0
220	SLE FR 1	0.02	-0.07	11.35	0	0	0
220	SLE FR 2	0.02	-0.07	11.35	0	0	0
220	SLE FR 3	0.02	-0.07	11.4	0	0	0
220	SLE FR 4	0.01	-0.07	11.73	0	0	0
220	SLE FR 5	0.01	-0.07	11.78	0	0	0
220	SLE FR 6	0.01	-0.07	11.99	0	0	0
220	SLE QP 1	0.02	-0.07	11.35	0	0	0
220	SLE QP 2	0.01	-0.07	11.73	0	0	0
220	SLD 1	1.04	0.14	11.52	0	0	0
220	SLD 2	1.14	0.16	11.56	0	0	0
220	SLD 3	0.98	-0.15	11.21	0	0	0
220	SLD 4	1.08	-0.13	11.25	0	0	0
220	SLD 5	0.39	0.43	12.13	0	0	0
220	SLD 6	0.46	0.45	12.16	0	0	0
220	SLD 7	0.19	-0.54	11.1	0	0	0
220	SLD 8	0.26	-0.52	11.13	0	0	0
220	SLD 9	-0.23	0.39	12.34	0	0	0
220	SLD 10	-0.16	0.4	12.37	0	0	0
220	SLD 11	-0.43	-0.58	11.31	0	0	0
220	SLD 12	-0.37	-0.57	11.34	0	0	0
220	SLD 13	-1.05	-0.01	12.21	0	0	0
220	SLD 14	-0.95	0.02	12.26	0	0	0
220	SLD 15	-1.11	-0.3	11.91	0	0	0
220	SLD 16	-1.01	-0.27	11.95	0	0	0
220	SLV 1	2.41	0.41	11.22	0	0	0
220	SLV 2	2.65	0.46	11.32	0	0	0
220	SLV 3	2.27	-0.25	10.52	0	0	0
220	SLV 4	2.5	-0.2	10.62	0	0	0
220	SLV 5	0.91	1.07	12.62	0	0	0
220	SLV 6	1.06	1.1	12.69	0	0	0
220	SLV 7	0.43	-1.13	10.29	0	0	0
220	SLV 8	0.59	-1.1	10.36	0	0	0
220	SLV 9	-0.56	0.96	13.11	0	0	0
220	SLV 10	-0.41	1	13.17	0	0	0
220	SLV 11	-1.03	-1.24	10.78	0	0	0
220	SLV 12	-0.88	-1.2	10.84	0	0	0
220	SLV 13	-2.48	0.06	12.85	0	0	0
220	SLV 14	-2.24	0.12	12.94	0	0	0
220	SLV 15	-2.62	-0.6	12.15	0	0	0
220	SLV 16	-2.38	-0.54	12.25	0	0	0
221	SLU 1	0.02	-0.09	11.09	0	0	0
221	SLU 2	0.02	-0.1	11.08	0	0	0
221	SLU 3	0.02	-0.09	11.34	0	0	0
221	SLU 4	0.02	-0.1	11.33	0	0	0
221	SLU 5	0.02	-0.1	11.25	0	0	0
221	SLU 6	0.02	-0.1	11.51	0	0	0
221	SLU 7	0.02	-0.1	11.5	0	0	0
221	SLU 8	0.02	-0.1	11.43	0	0	0
221	SLU 9	0.02	-0.1	11.42	0	0	0
221	SLU 10	0.02	-0.1	12.42	0	0	0
221	SLU 11	0.01	-0.09	12.68	0	0	0
221	SLU 12	0.02	-0.09	12.67	0	0	0
221	SLU 13	0.02	-0.1	12.59	0	0	0
221	SLU 14	0.01	-0.09	12.85	0	0	0
221	SLU 15	0.02	-0.1	12.84	0	0	0
221	SLU 16	0.01	-0.09	12.77	0	0	0
221	SLU 17	0.01	-0.1	12.76	0	0	0
221	SLU 18	0.01	-0.09	13	0	0	0
221	SLU 19	0.01	-0.09	13	0	0	0
221	SLU 20	0.01	-0.09	13.17	0	0	0
221	SLU 21	0.01	-0.09	13.17	0	0	0
221	SLU 22	0.02	-0.08	12.26	0	0	0
221	SLU 23	0.03	-0.09	12.25	0	0	0
221	SLU 24	0.02	-0.08	12.51	0	0	0
221	SLU 25	0.02	-0.08	12.5	0	0	0
221	SLU 26	0.03	-0.09	12.42	0	0	0
221	SLU 27	0.02	-0.08	12.68	0	0	0
221	SLU 28	0.02	-0.09	12.67	0	0	0
221	SLU 29	0.02	-0.08	12.6	0	0	0
221	SLU 30	0.02	-0.09	12.59	0	0	0
221	SLU 31	0.02	-0.08	13.59	0	0	0
221	SLU 32	0.02	-0.07	13.85	0	0	0
221	SLU 33	0.02	-0.08	13.84	0	0	0
221	SLU 34	0.02	-0.09	13.76	0	0	0
221	SLU 35	0.02	-0.08	14.02	0	0	0
221	SLU 36	0.02	-0.08	14.01	0	0	0
221	SLU 37	0.02	-0.08	13.94	0	0	0
221	SLU 38	0.02	-0.08	13.93	0	0	0
221	SLU 39	0.01	-0.07	14.17	0	0	0
221	SLU 40	0.02	-0.08	14.16	0	0	0
221	SLU 41	0.01	-0.08	14.34	0	0	0
221	SLU 42	0.02	-0.08	14.34	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
221	SLU 43	0.02	-0.13	14.02	0	0	0
221	SLU 44	0.02	-0.14	14.01	0	0	0
221	SLU 45	0.02	-0.13	14.27	0	0	0
221	SLU 46	0.02	-0.13	14.26	0	0	0
221	SLU 47	0.02	-0.14	14.18	0	0	0
221	SLU 48	0.02	-0.13	14.44	0	0	0
221	SLU 49	0.02	-0.13	14.43	0	0	0
221	SLU 50	0.02	-0.13	14.36	0	0	0
221	SLU 51	0.02	-0.14	14.35	0	0	0
221	SLU 52	0.02	-0.13	15.35	0	0	0
221	SLU 53	0.01	-0.12	15.61	0	0	0
221	SLU 54	0.02	-0.13	15.6	0	0	0
221	SLU 55	0.02	-0.13	15.52	0	0	0
221	SLU 56	0.01	-0.12	15.78	0	0	0
221	SLU 57	0.02	-0.13	15.77	0	0	0
221	SLU 58	0.01	-0.13	15.7	0	0	0
221	SLU 59	0.02	-0.13	15.69	0	0	0
221	SLU 60	0.01	-0.12	15.93	0	0	0
221	SLU 61	0.02	-0.13	15.93	0	0	0
221	SLU 62	0.01	-0.12	16.1	0	0	0
221	SLU 63	0.02	-0.13	16.1	0	0	0
221	SLU 64	0.02	-0.11	15.18	0	0	0
221	SLU 65	0.03	-0.12	15.17	0	0	0
221	SLU 66	0.02	-0.11	15.43	0	0	0
221	SLU 67	0.03	-0.12	15.43	0	0	0
221	SLU 68	0.03	-0.12	15.34	0	0	0
221	SLU 69	0.02	-0.11	15.6	0	0	0
221	SLU 70	0.03	-0.12	15.6	0	0	0
221	SLU 71	0.02	-0.12	15.52	0	0	0
221	SLU 72	0.03	-0.12	15.52	0	0	0
221	SLU 73	0.03	-0.12	16.51	0	0	0
221	SLU 74	0.02	-0.11	16.77	0	0	0
221	SLU 75	0.02	-0.11	16.77	0	0	0
221	SLU 76	0.03	-0.12	16.68	0	0	0
221	SLU 77	0.02	-0.11	16.94	0	0	0
221	SLU 78	0.02	-0.11	16.94	0	0	0
221	SLU 79	0.02	-0.11	16.86	0	0	0
221	SLU 80	0.02	-0.12	16.86	0	0	0
221	SLU 81	0.02	-0.11	17.1	0	0	0
221	SLU 82	0.02	-0.11	17.09	0	0	0
221	SLU 83	0.02	-0.11	17.27	0	0	0
221	SLU 84	0.02	-0.11	17.26	0	0	0
221	SLE RA 1	0.02	-0.09	11.42	0	0	0
221	SLE RA 2	0.02	-0.1	11.42	0	0	0
221	SLE RA 3	0.02	-0.09	11.59	0	0	0
221	SLE RA 4	0.02	-0.09	11.59	0	0	0
221	SLE RA 5	0.02	-0.1	11.53	0	0	0
221	SLE RA 6	0.02	-0.09	11.7	0	0	0
221	SLE RA 7	0.02	-0.09	11.7	0	0	0
221	SLE RA 8	0.02	-0.09	11.65	0	0	0
221	SLE RA 9	0.02	-0.1	11.65	0	0	0
221	SLE RA 10	0.02	-0.09	12.31	0	0	0
221	SLE RA 11	0.01	-0.09	12.48	0	0	0
221	SLE RA 12	0.02	-0.09	12.48	0	0	0
221	SLE RA 13	0.02	-0.09	12.42	0	0	0
221	SLE RA 14	0.01	-0.09	12.6	0	0	0
221	SLE RA 15	0.02	-0.09	12.59	0	0	0
221	SLE RA 16	0.01	-0.09	12.54	0	0	0
221	SLE RA 17	0.02	-0.09	12.54	0	0	0
221	SLE RA 18	0.01	-0.09	12.7	0	0	0
221	SLE RA 19	0.02	-0.09	12.7	0	0	0
221	SLE RA 20	0.01	-0.09	12.81	0	0	0
221	SLE RA 21	0.02	-0.09	12.81	0	0	0
221	SLE FR 1	0.02	-0.09	11.42	0	0	0
221	SLE FR 2	0.02	-0.09	11.42	0	0	0
221	SLE FR 3	0.02	-0.09	11.47	0	0	0
221	SLE FR 4	0.02	-0.09	11.8	0	0	0
221	SLE FR 5	0.02	-0.09	11.85	0	0	0
221	SLE FR 6	0.01	-0.09	12.06	0	0	0
221	SLE QP 1	0.02	-0.09	11.42	0	0	0
221	SLE QP 2	0.02	-0.09	11.81	0	0	0
221	SLD 1	1.05	0.13	11.51	0	0	0
221	SLD 2	1.15	0.16	11.56	0	0	0
221	SLD 3	0.99	-0.16	11.2	0	0	0
221	SLD 4	1.09	-0.13	11.25	0	0	0
221	SLD 5	0.4	0.41	12.18	0	0	0
221	SLD 6	0.47	0.43	12.21	0	0	0
221	SLD 7	0.2	-0.56	11.15	0	0	0
221	SLD 8	0.26	-0.54	11.18	0	0	0
221	SLD 9	-0.23	0.36	12.43	0	0	0
221	SLD 10	-0.16	0.38	12.46	0	0	0
221	SLD 11	-0.44	-0.61	11.4	0	0	0
221	SLD 12	-0.37	-0.59	11.43	0	0	0
221	SLD 13	-1.06	-0.05	12.36	0	0	0
221	SLD 14	-0.96	-0.02	12.41	0	0	0
221	SLD 15	-1.12	-0.34	12.05	0	0	0
221	SLD 16	-1.02	-0.31	12.1	0	0	0
221	SLV 1	2.43	0.41	11.11	0	0	0
221	SLV 2	2.67	0.48	11.22	0	0	0
221	SLV 3	2.29	-0.25	10.41	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
221	SLV 4	2.53	-0.18	10.52	0	0	0
221	SLV 5	0.91	1.05	12.64	0	0	0
221	SLV 6	1.07	1.09	12.71	0	0	0
221	SLV 7	0.44	-1.15	10.31	0	0	0
221	SLV 8	0.59	-1.1	10.38	0	0	0
221	SLV 9	-0.56	0.93	13.24	0	0	0
221	SLV 10	-0.41	0.97	13.31	0	0	0
221	SLV 11	-1.04	-1.27	10.9	0	0	0
221	SLV 12	-0.88	-1.23	10.97	0	0	0
221	SLV 13	-2.5	0	13.1	0	0	0
221	SLV 14	-2.26	0.07	13.2	0	0	0
221	SLV 15	-2.64	-0.66	12.4	0	0	0
221	SLV 16	-2.4	-0.59	12.5	0	0	0
222	SLU 1	0.02	-0.12	11.1	0	0	0
222	SLU 2	0.02	-0.12	11.09	0	0	0
222	SLU 3	0.02	-0.12	11.35	0	0	0
222	SLU 4	0.02	-0.12	11.35	0	0	0
222	SLU 5	0.02	-0.13	11.26	0	0	0
222	SLU 6	0.02	-0.12	11.52	0	0	0
222	SLU 7	0.02	-0.12	11.51	0	0	0
222	SLU 8	0.02	-0.12	11.44	0	0	0
222	SLU 9	0.02	-0.12	11.43	0	0	0
222	SLU 10	0.02	-0.12	12.42	0	0	0
222	SLU 11	0.01	-0.11	12.68	0	0	0
222	SLU 12	0.02	-0.12	12.68	0	0	0
222	SLU 13	0.02	-0.12	12.59	0	0	0
222	SLU 14	0.01	-0.12	12.85	0	0	0
222	SLU 15	0.02	-0.12	12.85	0	0	0
222	SLU 16	0.01	-0.12	12.77	0	0	0
222	SLU 17	0.02	-0.12	12.77	0	0	0
222	SLU 18	0.01	-0.11	13	0	0	0
222	SLU 19	0.02	-0.12	13	0	0	0
222	SLU 20	0.01	-0.11	13.17	0	0	0
222	SLU 21	0.02	-0.12	13.17	0	0	0
222	SLU 22	0.02	-0.1	12.27	0	0	0
222	SLU 23	0.03	-0.11	12.26	0	0	0
222	SLU 24	0.02	-0.1	12.52	0	0	0
222	SLU 25	0.03	-0.11	12.51	0	0	0
222	SLU 26	0.03	-0.11	12.43	0	0	0
222	SLU 27	0.02	-0.11	12.69	0	0	0
222	SLU 28	0.03	-0.11	12.68	0	0	0
222	SLU 29	0.02	-0.11	12.61	0	0	0
222	SLU 30	0.03	-0.11	12.6	0	0	0
222	SLU 31	0.02	-0.11	13.59	0	0	0
222	SLU 32	0.02	-0.1	13.85	0	0	0
222	SLU 33	0.02	-0.11	13.84	0	0	0
222	SLU 34	0.02	-0.11	13.76	0	0	0
222	SLU 35	0.02	-0.1	14.02	0	0	0
222	SLU 36	0.02	-0.11	14.01	0	0	0
222	SLU 37	0.02	-0.11	13.94	0	0	0
222	SLU 38	0.02	-0.11	13.93	0	0	0
222	SLU 39	0.02	-0.1	14.17	0	0	0
222	SLU 40	0.02	-0.11	14.16	0	0	0
222	SLU 41	0.02	-0.1	14.34	0	0	0
222	SLU 42	0.02	-0.11	14.33	0	0	0
222	SLU 43	0.02	-0.15	14.03	0	0	0
222	SLU 44	0.03	-0.16	14.02	0	0	0
222	SLU 45	0.02	-0.15	14.28	0	0	0
222	SLU 46	0.03	-0.16	14.28	0	0	0
222	SLU 47	0.03	-0.16	14.19	0	0	0
222	SLU 48	0.02	-0.16	14.45	0	0	0
222	SLU 49	0.03	-0.16	14.45	0	0	0
222	SLU 50	0.02	-0.16	14.37	0	0	0
222	SLU 51	0.02	-0.16	14.37	0	0	0
222	SLU 52	0.02	-0.16	15.35	0	0	0
222	SLU 53	0.02	-0.15	15.61	0	0	0
222	SLU 54	0.02	-0.16	15.61	0	0	0
222	SLU 55	0.02	-0.16	15.52	0	0	0
222	SLU 56	0.02	-0.15	15.78	0	0	0
222	SLU 57	0.02	-0.16	15.78	0	0	0
222	SLU 58	0.02	-0.16	15.7	0	0	0
222	SLU 59	0.02	-0.16	15.7	0	0	0
222	SLU 60	0.02	-0.15	15.93	0	0	0
222	SLU 61	0.02	-0.16	15.93	0	0	0
222	SLU 62	0.01	-0.15	16.1	0	0	0
222	SLU 63	0.02	-0.16	16.1	0	0	0
222	SLU 64	0.03	-0.14	15.2	0	0	0
222	SLU 65	0.03	-0.15	15.19	0	0	0
222	SLU 66	0.03	-0.14	15.45	0	0	0
222	SLU 67	0.03	-0.15	15.44	0	0	0
222	SLU 68	0.03	-0.15	15.36	0	0	0
222	SLU 69	0.03	-0.14	15.62	0	0	0
222	SLU 70	0.03	-0.15	15.61	0	0	0
222	SLU 71	0.03	-0.15	15.54	0	0	0
222	SLU 72	0.03	-0.15	15.53	0	0	0
222	SLU 73	0.03	-0.15	16.52	0	0	0
222	SLU 74	0.02	-0.14	16.78	0	0	0
222	SLU 75	0.03	-0.14	16.77	0	0	0
222	SLU 76	0.03	-0.15	16.69	0	0	0
222	SLU 77	0.02	-0.14	16.95	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
222	SLU 78	0.03	-0.15	16.94	0	0	0
222	SLU 79	0.02	-0.14	16.87	0	0	0
222	SLU 80	0.03	-0.15	16.86	0	0	0
222	SLU 81	0.02	-0.14	17.1	0	0	0
222	SLU 82	0.02	-0.14	17.09	0	0	0
222	SLU 83	0.02	-0.14	17.27	0	0	0
222	SLU 84	0.02	-0.15	17.26	0	0	0
222	SLE RA 1	0.02	-0.11	11.43	0	0	0
222	SLE RA 2	0.02	-0.12	11.43	0	0	0
222	SLE RA 3	0.02	-0.11	11.6	0	0	0
222	SLE RA 4	0.02	-0.12	11.6	0	0	0
222	SLE RA 5	0.02	-0.12	11.54	0	0	0
222	SLE RA 6	0.02	-0.11	11.71	0	0	0
222	SLE RA 7	0.02	-0.12	11.71	0	0	0
222	SLE RA 8	0.02	-0.11	11.66	0	0	0
222	SLE RA 9	0.02	-0.12	11.66	0	0	0
222	SLE RA 10	0.02	-0.12	12.31	0	0	0
222	SLE RA 11	0.02	-0.11	12.49	0	0	0
222	SLE RA 12	0.02	-0.11	12.48	0	0	0
222	SLE RA 13	0.02	-0.12	12.43	0	0	0
222	SLE RA 14	0.02	-0.11	12.6	0	0	0
222	SLE RA 15	0.02	-0.12	12.6	0	0	0
222	SLE RA 16	0.02	-0.11	12.55	0	0	0
222	SLE RA 17	0.02	-0.12	12.54	0	0	0
222	SLE RA 18	0.02	-0.11	12.7	0	0	0
222	SLE RA 19	0.02	-0.11	12.7	0	0	0
222	SLE RA 20	0.01	-0.11	12.81	0	0	0
222	SLE RA 21	0.02	-0.11	12.81	0	0	0
222	SLE FR 1	0.02	-0.11	11.43	0	0	0
222	SLE FR 2	0.02	-0.11	11.43	0	0	0
222	SLE FR 3	0.02	-0.11	11.48	0	0	0
222	SLE FR 4	0.02	-0.11	11.81	0	0	0
222	SLE FR 5	0.02	-0.11	11.86	0	0	0
222	SLE FR 6	0.02	-0.11	12.07	0	0	0
222	SLE QP 1	0.02	-0.11	11.43	0	0	0
222	SLE QP 2	0.02	-0.11	11.81	0	0	0
222	SLD 1	1.05	0.12	11.43	0	0	0
222	SLD 2	1.15	0.15	11.49	0	0	0
222	SLD 3	0.99	-0.17	11.13	0	0	0
222	SLD 4	1.09	-0.14	11.18	0	0	0
222	SLD 5	0.4	0.39	12.16	0	0	0
222	SLD 6	0.47	0.41	12.19	0	0	0
222	SLD 7	0.2	-0.57	11.13	0	0	0
222	SLD 8	0.27	-0.55	11.17	0	0	0
222	SLD 9	-0.23	0.33	12.46	0	0	0
222	SLD 10	-0.16	0.35	12.5	0	0	0
222	SLD 11	-0.43	-0.63	11.44	0	0	0
222	SLD 12	-0.37	-0.61	11.47	0	0	0
222	SLD 13	-1.06	-0.09	12.45	0	0	0
222	SLD 14	-0.95	-0.05	12.5	0	0	0
222	SLD 15	-1.12	-0.37	12.14	0	0	0
222	SLD 16	-1.01	-0.34	12.19	0	0	0
222	SLV 1	2.43	0.41	10.91	0	0	0
222	SLV 2	2.67	0.49	11.03	0	0	0
222	SLV 3	2.29	-0.24	10.22	0	0	0
222	SLV 4	2.53	-0.16	10.34	0	0	0
222	SLV 5	0.92	1.02	12.58	0	0	0
222	SLV 6	1.07	1.07	12.66	0	0	0
222	SLV 7	0.44	-1.15	10.25	0	0	0
222	SLV 8	0.6	-1.1	10.33	0	0	0
222	SLV 9	-0.56	0.88	13.3	0	0	0
222	SLV 10	-0.41	0.93	13.37	0	0	0
222	SLV 11	-1.04	-1.29	10.97	0	0	0
222	SLV 12	-0.88	-1.24	11.05	0	0	0
222	SLV 13	-2.5	-0.06	13.29	0	0	0
222	SLV 14	-2.26	0.02	13.41	0	0	0
222	SLV 15	-2.64	-0.71	12.59	0	0	0
222	SLV 16	-2.4	-0.64	12.71	0	0	0
223	SLU 1	0.02	-0.13	11.07	0	0	0
223	SLU 2	0.03	-0.14	11.06	0	0	0
223	SLU 3	0.02	-0.14	11.31	0	0	0
223	SLU 4	0.02	-0.14	11.31	0	0	0
223	SLU 5	0.03	-0.14	11.23	0	0	0
223	SLU 6	0.02	-0.14	11.48	0	0	0
223	SLU 7	0.02	-0.14	11.48	0	0	0
223	SLU 8	0.02	-0.14	11.4	0	0	0
223	SLU 9	0.02	-0.14	11.4	0	0	0
223	SLU 10	0.02	-0.14	12.37	0	0	0
223	SLU 11	0.02	-0.14	12.63	0	0	0
223	SLU 12	0.02	-0.14	12.63	0	0	0
223	SLU 13	0.02	-0.15	12.54	0	0	0
223	SLU 14	0.02	-0.14	12.8	0	0	0
223	SLU 15	0.02	-0.14	12.8	0	0	0
223	SLU 16	0.02	-0.14	12.72	0	0	0
223	SLU 17	0.02	-0.14	12.72	0	0	0
223	SLU 18	0.01	-0.14	12.95	0	0	0
223	SLU 19	0.02	-0.14	12.94	0	0	0
223	SLU 20	0.01	-0.14	13.12	0	0	0
223	SLU 21	0.02	-0.14	13.11	0	0	0
223	SLU 22	0.03	-0.13	12.23	0	0	0





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
223	SLU 23	0.03	-0.13	12.22	0	0	0
223	SLU 24	0.03	-0.13	12.48	0	0	0
223	SLU 25	0.03	-0.13	12.47	0	0	0
223	SLU 26	0.03	-0.14	12.39	0	0	0
223	SLU 27	0.03	-0.13	12.65	0	0	0
223	SLU 28	0.03	-0.13	12.64	0	0	0
223	SLU 29	0.02	-0.13	12.57	0	0	0
223	SLU 30	0.03	-0.14	12.56	0	0	0
223	SLU 31	0.03	-0.13	13.54	0	0	0
223	SLU 32	0.02	-0.13	13.79	0	0	0
223	SLU 33	0.03	-0.13	13.79	0	0	0
223	SLU 34	0.03	-0.14	13.7	0	0	0
223	SLU 35	0.02	-0.13	13.96	0	0	0
223	SLU 36	0.02	-0.13	13.96	0	0	0
223	SLU 37	0.02	-0.13	13.88	0	0	0
223	SLU 38	0.02	-0.14	13.88	0	0	0
223	SLU 39	0.02	-0.13	14.11	0	0	0
223	SLU 40	0.02	-0.13	14.1	0	0	0
223	SLU 41	0.02	-0.13	14.28	0	0	0
223	SLU 42	0.02	-0.13	14.27	0	0	0
223	SLU 43	0.02	-0.18	13.99	0	0	0
223	SLU 44	0.03	-0.19	13.98	0	0	0
223	SLU 45	0.02	-0.18	14.24	0	0	0
223	SLU 46	0.03	-0.18	14.23	0	0	0
223	SLU 47	0.03	-0.19	14.15	0	0	0
223	SLU 48	0.02	-0.18	14.41	0	0	0
223	SLU 49	0.03	-0.19	14.4	0	0	0
223	SLU 50	0.02	-0.18	14.33	0	0	0
223	SLU 51	0.03	-0.19	14.32	0	0	0
223	SLU 52	0.03	-0.19	15.3	0	0	0
223	SLU 53	0.02	-0.18	15.55	0	0	0
223	SLU 54	0.02	-0.18	15.55	0	0	0
223	SLU 55	0.03	-0.19	15.47	0	0	0
223	SLU 56	0.02	-0.18	15.72	0	0	0
223	SLU 57	0.02	-0.19	15.72	0	0	0
223	SLU 58	0.02	-0.18	15.64	0	0	0
223	SLU 59	0.02	-0.19	15.64	0	0	0
223	SLU 60	0.02	-0.18	15.87	0	0	0
223	SLU 61	0.02	-0.18	15.86	0	0	0
223	SLU 62	0.02	-0.18	16.04	0	0	0
223	SLU 63	0.02	-0.19	16.03	0	0	0
223	SLU 64	0.03	-0.17	15.15	0	0	0
223	SLU 65	0.04	-0.18	15.14	0	0	0
223	SLU 66	0.03	-0.17	15.4	0	0	0
223	SLU 67	0.03	-0.17	15.39	0	0	0
223	SLU 68	0.04	-0.18	15.31	0	0	0
223	SLU 69	0.03	-0.17	15.57	0	0	0
223	SLU 70	0.03	-0.18	15.56	0	0	0
223	SLU 71	0.03	-0.17	15.49	0	0	0
223	SLU 72	0.03	-0.18	15.48	0	0	0
223	SLU 73	0.03	-0.18	16.46	0	0	0
223	SLU 74	0.03	-0.17	16.72	0	0	0
223	SLU 75	0.03	-0.18	16.71	0	0	0
223	SLU 76	0.03	-0.18	16.63	0	0	0
223	SLU 77	0.03	-0.17	16.88	0	0	0
223	SLU 78	0.03	-0.18	16.88	0	0	0
223	SLU 79	0.02	-0.18	16.8	0	0	0
223	SLU 80	0.03	-0.18	16.8	0	0	0
223	SLU 81	0.02	-0.17	17.03	0	0	0
223	SLU 82	0.03	-0.18	17.03	0	0	0
223	SLU 83	0.02	-0.17	17.2	0	0	0
223	SLU 84	0.03	-0.18	17.19	0	0	0
223	SLE RA 1	0.02	-0.13	11.4	0	0	0
223	SLE RA 2	0.03	-0.14	11.39	0	0	0
223	SLE RA 3	0.02	-0.13	11.56	0	0	0
223	SLE RA 4	0.02	-0.14	11.56	0	0	0
223	SLE RA 5	0.03	-0.14	11.5	0	0	0
223	SLE RA 6	0.02	-0.13	11.68	0	0	0
223	SLE RA 7	0.02	-0.14	11.67	0	0	0
223	SLE RA 8	0.02	-0.14	11.62	0	0	0
223	SLE RA 9	0.02	-0.14	11.62	0	0	0
223	SLE RA 10	0.02	-0.14	12.27	0	0	0
223	SLE RA 11	0.02	-0.13	12.44	0	0	0
223	SLE RA 12	0.02	-0.14	12.44	0	0	0
223	SLE RA 13	0.02	-0.14	12.38	0	0	0
223	SLE RA 14	0.02	-0.13	12.55	0	0	0
223	SLE RA 15	0.02	-0.14	12.55	0	0	0
223	SLE RA 16	0.02	-0.14	12.5	0	0	0
223	SLE RA 17	0.02	-0.14	12.5	0	0	0
223	SLE RA 18	0.02	-0.13	12.65	0	0	0
223	SLE RA 19	0.02	-0.14	12.65	0	0	0
223	SLE RA 20	0.02	-0.13	12.77	0	0	0
223	SLE RA 21	0.02	-0.14	12.76	0	0	0
223	SLE FR 1	0.02	-0.13	11.4	0	0	0
223	SLE FR 2	0.02	-0.13	11.4	0	0	0
223	SLE FR 3	0.02	-0.13	11.44	0	0	0
223	SLE FR 4	0.02	-0.13	11.77	0	0	0
223	SLE FR 5	0.02	-0.13	11.82	0	0	0
223	SLE FR 6	0.02	-0.13	12.03	0	0	0
223	SLE QP 1	0.02	-0.13	11.4	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
223	SLE QP 2	0.02	-0.13	11.77	0	0	0
223	SLD 1	1.04	0.1	11.31	0	0	0
223	SLD 2	1.15	0.14	11.36	0	0	0
223	SLD 3	0.98	-0.18	11	0	0	0
223	SLD 4	1.09	-0.14	11.05	0	0	0
223	SLD 5	0.4	0.36	12.09	0	0	0
223	SLD 6	0.47	0.39	12.13	0	0	0
223	SLD 7	0.2	-0.58	11.07	0	0	0
223	SLD 8	0.27	-0.56	11.1	0	0	0
223	SLD 9	-0.23	0.29	12.45	0	0	0
223	SLD 10	-0.16	0.32	12.48	0	0	0
223	SLD 11	-0.43	-0.65	11.42	0	0	0
223	SLD 12	-0.36	-0.63	11.46	0	0	0
223	SLD 13	-1.05	-0.12	12.49	0	0	0
223	SLD 14	-0.94	-0.08	12.55	0	0	0
223	SLD 15	-1.11	-0.41	12.19	0	0	0
223	SLD 16	-1	-0.37	12.24	0	0	0
223	SLV 1	2.42	0.41	10.67	0	0	0
223	SLV 2	2.65	0.5	10.8	0	0	0
223	SLV 3	2.27	-0.23	9.97	0	0	0
223	SLV 4	2.51	-0.15	10.1	0	0	0
223	SLV 5	0.91	0.99	12.48	0	0	0
223	SLV 6	1.07	1.04	12.56	0	0	0
223	SLV 7	0.44	-1.15	10.16	0	0	0
223	SLV 8	0.59	-1.09	10.24	0	0	0
223	SLV 9	-0.55	0.83	13.31	0	0	0
223	SLV 10	-0.4	0.89	13.39	0	0	0
223	SLV 11	-1.03	-1.31	10.99	0	0	0
223	SLV 12	-0.87	-1.25	11.07	0	0	0
223	SLV 13	-2.47	-0.12	13.45	0	0	0
223	SLV 14	-2.23	-0.03	13.58	0	0	0
223	SLV 15	-2.61	-0.76	12.75	0	0	0
223	SLV 16	-2.38	-0.67	12.88	0	0	0
224	SLU 1	0.02	-0.15	10.94	0	0	0
224	SLU 2	0.03	-0.16	10.93	0	0	0
224	SLU 3	0.02	-0.15	11.19	0	0	0
224	SLU 4	0.03	-0.16	11.18	0	0	0
224	SLU 5	0.03	-0.16	11.1	0	0	0
224	SLU 6	0.02	-0.16	11.35	0	0	0
224	SLU 7	0.03	-0.16	11.35	0	0	0
224	SLU 8	0.02	-0.16	11.27	0	0	0
224	SLU 9	0.03	-0.16	11.27	0	0	0
224	SLU 10	0.02	-0.16	12.23	0	0	0
224	SLU 11	0.02	-0.16	12.48	0	0	0
224	SLU 12	0.02	-0.16	12.48	0	0	0
224	SLU 13	0.02	-0.16	12.39	0	0	0
224	SLU 14	0.02	-0.16	12.65	0	0	0
224	SLU 15	0.02	-0.16	12.64	0	0	0
224	SLU 16	0.02	-0.16	12.57	0	0	0
224	SLU 17	0.02	-0.16	12.56	0	0	0
224	SLU 18	0.02	-0.16	12.79	0	0	0
224	SLU 19	0.02	-0.16	12.79	0	0	0
224	SLU 20	0.02	-0.16	12.96	0	0	0
224	SLU 21	0.02	-0.16	12.95	0	0	0
224	SLU 22	0.03	-0.15	12.09	0	0	0
224	SLU 23	0.03	-0.15	12.08	0	0	0
224	SLU 24	0.03	-0.15	12.34	0	0	0
224	SLU 25	0.03	-0.15	12.33	0	0	0
224	SLU 26	0.03	-0.16	12.25	0	0	0
224	SLU 27	0.03	-0.15	12.5	0	0	0
224	SLU 28	0.03	-0.15	12.5	0	0	0
224	SLU 29	0.03	-0.15	12.42	0	0	0
224	SLU 30	0.03	-0.16	12.42	0	0	0
224	SLU 31	0.03	-0.16	13.38	0	0	0
224	SLU 32	0.02	-0.15	13.63	0	0	0
224	SLU 33	0.03	-0.15	13.62	0	0	0
224	SLU 34	0.03	-0.16	13.54	0	0	0
224	SLU 35	0.02	-0.15	13.8	0	0	0
224	SLU 36	0.03	-0.16	13.79	0	0	0
224	SLU 37	0.02	-0.15	13.72	0	0	0
224	SLU 38	0.03	-0.16	13.71	0	0	0
224	SLU 39	0.02	-0.15	13.94	0	0	0
224	SLU 40	0.03	-0.15	13.93	0	0	0
224	SLU 41	0.02	-0.15	14.11	0	0	0
224	SLU 42	0.03	-0.16	14.1	0	0	0
224	SLU 43	0.03	-0.2	13.83	0	0	0
224	SLU 44	0.03	-0.21	13.82	0	0	0
224	SLU 45	0.03	-0.2	14.07	0	0	0
224	SLU 46	0.03	-0.2	14.07	0	0	0
224	SLU 47	0.03	-0.21	13.99	0	0	0
224	SLU 48	0.03	-0.2	14.24	0	0	0
224	SLU 49	0.03	-0.21	14.24	0	0	0
224	SLU 50	0.03	-0.2	14.16	0	0	0
224	SLU 51	0.03	-0.21	14.16	0	0	0
224	SLU 52	0.03	-0.21	15.12	0	0	0
224	SLU 53	0.02	-0.2	15.37	0	0	0
224	SLU 54	0.03	-0.21	15.36	0	0	0
224	SLU 55	0.03	-0.21	15.28	0	0	0
224	SLU 56	0.02	-0.21	15.54	0	0	0
224	SLU 57	0.03	-0.21	15.53	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
224	SLU 58	0.02	-0.21	15.46	0	0	0
224	SLU 59	0.03	-0.21	15.45	0	0	0
224	SLU 60	0.02	-0.2	15.68	0	0	0
224	SLU 61	0.02	-0.21	15.67	0	0	0
224	SLU 62	0.02	-0.21	15.85	0	0	0
224	SLU 63	0.02	-0.21	15.84	0	0	0
224	SLU 64	0.03	-0.19	14.98	0	0	0
224	SLU 65	0.04	-0.2	14.97	0	0	0
224	SLU 66	0.03	-0.19	15.22	0	0	0
224	SLU 67	0.04	-0.2	15.22	0	0	0
224	SLU 68	0.04	-0.2	15.14	0	0	0
224	SLU 69	0.03	-0.2	15.39	0	0	0
224	SLU 70	0.04	-0.2	15.39	0	0	0
224	SLU 71	0.03	-0.2	15.31	0	0	0
224	SLU 72	0.04	-0.2	15.31	0	0	0
224	SLU 73	0.03	-0.2	16.26	0	0	0
224	SLU 74	0.03	-0.2	16.52	0	0	0
224	SLU 75	0.03	-0.2	16.51	0	0	0
224	SLU 76	0.03	-0.21	16.43	0	0	0
224	SLU 77	0.03	-0.2	16.69	0	0	0
224	SLU 78	0.03	-0.2	16.68	0	0	0
224	SLU 79	0.03	-0.2	16.61	0	0	0
224	SLU 80	0.03	-0.21	16.6	0	0	0
224	SLU 81	0.03	-0.2	16.83	0	0	0
224	SLU 82	0.03	-0.2	16.82	0	0	0
224	SLU 83	0.03	-0.2	16.99	0	0	0
224	SLU 84	0.03	-0.2	16.99	0	0	0
224	SLE RA 1	0.02	-0.15	11.27	0	0	0
224	SLE RA 2	0.03	-0.15	11.26	0	0	0
224	SLE RA 3	0.02	-0.15	11.43	0	0	0
224	SLE RA 4	0.03	-0.15	11.43	0	0	0
224	SLE RA 5	0.03	-0.16	11.37	0	0	0
224	SLE RA 6	0.02	-0.15	11.54	0	0	0
224	SLE RA 7	0.03	-0.16	11.54	0	0	0
224	SLE RA 8	0.02	-0.15	11.49	0	0	0
224	SLE RA 9	0.03	-0.16	11.49	0	0	0
224	SLE RA 10	0.03	-0.16	12.13	0	0	0
224	SLE RA 11	0.02	-0.15	12.3	0	0	0
224	SLE RA 12	0.02	-0.16	12.29	0	0	0
224	SLE RA 13	0.03	-0.16	12.24	0	0	0
224	SLE RA 14	0.02	-0.15	12.41	0	0	0
224	SLE RA 15	0.02	-0.16	12.4	0	0	0
224	SLE RA 16	0.02	-0.16	12.35	0	0	0
224	SLE RA 17	0.02	-0.16	12.35	0	0	0
224	SLE RA 18	0.02	-0.15	12.5	0	0	0
224	SLE RA 19	0.02	-0.16	12.5	0	0	0
224	SLE RA 20	0.02	-0.15	12.61	0	0	0
224	SLE RA 21	0.02	-0.16	12.61	0	0	0
224	SLE FR 1	0.02	-0.15	11.27	0	0	0
224	SLE FR 2	0.02	-0.15	11.27	0	0	0
224	SLE FR 3	0.02	-0.15	11.31	0	0	0
224	SLE FR 4	0.02	-0.15	11.64	0	0	0
224	SLE FR 5	0.02	-0.15	11.68	0	0	0
224	SLE FR 6	0.02	-0.15	11.89	0	0	0
224	SLE QP 1	0.02	-0.15	11.27	0	0	0
224	SLE QP 2	0.02	-0.15	11.64	0	0	0
224	SLD 1	1.02	0.09	11.09	0	0	0
224	SLD 2	1.12	0.13	11.14	0	0	0
224	SLD 3	0.96	-0.19	10.78	0	0	0
224	SLD 4	1.06	-0.15	10.84	0	0	0
224	SLD 5	0.4	0.33	11.92	0	0	0
224	SLD 6	0.46	0.36	11.96	0	0	0
224	SLD 7	0.2	-0.59	10.91	0	0	0
224	SLD 8	0.26	-0.56	10.95	0	0	0
224	SLD 9	-0.22	0.26	12.33	0	0	0
224	SLD 10	-0.15	0.28	12.37	0	0	0
224	SLD 11	-0.42	-0.66	11.32	0	0	0
224	SLD 12	-0.35	-0.63	11.35	0	0	0
224	SLD 13	-1.02	-0.16	12.44	0	0	0
224	SLD 14	-0.92	-0.11	12.5	0	0	0
224	SLD 15	-1.08	-0.43	12.13	0	0	0
224	SLD 16	-0.98	-0.39	12.19	0	0	0
224	SLV 1	2.37	0.4	10.34	0	0	0
224	SLV 2	2.6	0.49	10.47	0	0	0
224	SLV 3	2.23	-0.22	9.65	0	0	0
224	SLV 4	2.46	-0.13	9.78	0	0	0
224	SLV 5	0.9	0.94	12.27	0	0	0
224	SLV 6	1.05	1	12.36	0	0	0
224	SLV 7	0.43	-1.13	9.97	0	0	0
224	SLV 8	0.58	-1.07	10.06	0	0	0
224	SLV 9	-0.54	0.77	13.22	0	0	0
224	SLV 10	-0.39	0.83	13.31	0	0	0
224	SLV 11	-1	-1.31	10.92	0	0	0
224	SLV 12	-0.85	-1.24	11.01	0	0	0
224	SLV 13	-2.42	-0.17	13.5	0	0	0
224	SLV 14	-2.18	-0.08	13.63	0	0	0
224	SLV 15	-2.55	-0.8	12.81	0	0	0
224	SLV 16	-2.32	-0.7	12.94	0	0	0
224	CRTFP Ux+	0	0	0	0	0	0
224	CRTFP Ux-	0	0	0	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
225	SLU 1	0.02	-0.16	10.58	0	0	0
225	SLU 2	0.03	-0.17	10.57	0	0	0
225	SLU 3	0.02	-0.16	10.82	0	0	0
225	SLU 4	0.03	-0.17	10.81	0	0	0
225	SLU 5	0.03	-0.17	10.73	0	0	0
225	SLU 6	0.02	-0.17	10.98	0	0	0
225	SLU 7	0.03	-0.17	10.97	0	0	0
225	SLU 8	0.02	-0.17	10.9	0	0	0
225	SLU 9	0.03	-0.17	10.9	0	0	0
225	SLU 10	0.03	-0.17	11.82	0	0	0
225	SLU 11	0.02	-0.17	12.06	0	0	0
225	SLU 12	0.02	-0.17	12.06	0	0	0
225	SLU 13	0.03	-0.18	11.98	0	0	0
225	SLU 14	0.02	-0.17	12.22	0	0	0
225	SLU 15	0.02	-0.18	12.22	0	0	0
225	SLU 16	0.02	-0.17	12.15	0	0	0
225	SLU 17	0.02	-0.18	12.14	0	0	0
225	SLU 18	0.02	-0.17	12.36	0	0	0
225	SLU 19	0.02	-0.17	12.36	0	0	0
225	SLU 20	0.02	-0.17	12.52	0	0	0
225	SLU 21	0.02	-0.18	12.52	0	0	0
225	SLU 22	0.03	-0.16	11.69	0	0	0
225	SLU 23	0.03	-0.17	11.68	0	0	0
225	SLU 24	0.03	-0.16	11.93	0	0	0
225	SLU 25	0.03	-0.16	11.92	0	0	0
225	SLU 26	0.03	-0.17	11.85	0	0	0
225	SLU 27	0.03	-0.16	12.09	0	0	0
225	SLU 28	0.03	-0.17	12.09	0	0	0
225	SLU 29	0.03	-0.17	12.01	0	0	0
225	SLU 30	0.03	-0.17	12.01	0	0	0
225	SLU 31	0.03	-0.17	12.93	0	0	0
225	SLU 32	0.03	-0.17	13.18	0	0	0
225	SLU 33	0.03	-0.17	13.17	0	0	0
225	SLU 34	0.03	-0.17	13.09	0	0	0
225	SLU 35	0.03	-0.17	13.34	0	0	0
225	SLU 36	0.03	-0.17	13.33	0	0	0
225	SLU 37	0.03	-0.17	13.26	0	0	0
225	SLU 38	0.03	-0.17	13.26	0	0	0
225	SLU 39	0.02	-0.17	13.47	0	0	0
225	SLU 40	0.03	-0.17	13.47	0	0	0
225	SLU 41	0.02	-0.17	13.63	0	0	0
225	SLU 42	0.03	-0.17	13.63	0	0	0
225	SLU 43	0.03	-0.21	13.37	0	0	0
225	SLU 44	0.03	-0.22	13.36	0	0	0
225	SLU 45	0.03	-0.21	13.61	0	0	0
225	SLU 46	0.03	-0.22	13.6	0	0	0
225	SLU 47	0.03	-0.22	13.53	0	0	0
225	SLU 48	0.03	-0.22	13.77	0	0	0
225	SLU 49	0.03	-0.22	13.77	0	0	0
225	SLU 50	0.03	-0.22	13.69	0	0	0
225	SLU 51	0.03	-0.22	13.69	0	0	0
225	SLU 52	0.03	-0.22	14.61	0	0	0
225	SLU 53	0.03	-0.22	14.86	0	0	0
225	SLU 54	0.03	-0.22	14.85	0	0	0
225	SLU 55	0.03	-0.23	14.77	0	0	0
225	SLU 56	0.03	-0.22	15.02	0	0	0
225	SLU 57	0.03	-0.23	15.01	0	0	0
225	SLU 58	0.02	-0.22	14.94	0	0	0
225	SLU 59	0.03	-0.23	14.94	0	0	0
225	SLU 60	0.02	-0.22	15.15	0	0	0
225	SLU 61	0.03	-0.22	15.15	0	0	0
225	SLU 62	0.02	-0.22	15.31	0	0	0
225	SLU 63	0.03	-0.23	15.31	0	0	0
225	SLU 64	0.03	-0.21	14.48	0	0	0
225	SLU 65	0.04	-0.22	14.48	0	0	0
225	SLU 66	0.03	-0.21	14.72	0	0	0
225	SLU 67	0.04	-0.21	14.72	0	0	0
225	SLU 68	0.04	-0.22	14.64	0	0	0
225	SLU 69	0.03	-0.21	14.88	0	0	0
225	SLU 70	0.04	-0.22	14.88	0	0	0
225	SLU 71	0.03	-0.22	14.81	0	0	0
225	SLU 72	0.04	-0.22	14.8	0	0	0
225	SLU 73	0.04	-0.22	15.72	0	0	0
225	SLU 74	0.03	-0.22	15.97	0	0	0
225	SLU 75	0.03	-0.22	15.96	0	0	0
225	SLU 76	0.04	-0.22	15.88	0	0	0
225	SLU 77	0.03	-0.22	16.13	0	0	0
225	SLU 78	0.03	-0.22	16.12	0	0	0
225	SLU 79	0.03	-0.22	16.05	0	0	0
225	SLU 80	0.03	-0.22	16.05	0	0	0
225	SLU 81	0.03	-0.22	16.27	0	0	0
225	SLU 82	0.03	-0.22	16.26	0	0	0
225	SLU 83	0.03	-0.22	16.43	0	0	0
225	SLU 84	0.03	-0.22	16.42	0	0	0
225	SLE RA 1	0.02	-0.16	10.9	0	0	0
225	SLE RA 2	0.03	-0.17	10.89	0	0	0
225	SLE RA 3	0.03	-0.16	11.06	0	0	0
225	SLE RA 4	0.03	-0.17	11.05	0	0	0
225	SLE RA 5	0.03	-0.17	11	0	0	0
225	SLE RA 6	0.03	-0.16	11.16	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
225	SLE RA 7	0.03	-0.17	11.16	0	0	0
225	SLE RA 8	0.02	-0.17	11.11	0	0	0
225	SLE RA 9	0.03	-0.17	11.11	0	0	0
225	SLE RA 10	0.03	-0.17	11.72	0	0	0
225	SLE RA 11	0.02	-0.17	11.89	0	0	0
225	SLE RA 12	0.03	-0.17	11.88	0	0	0
225	SLE RA 13	0.03	-0.17	11.83	0	0	0
225	SLE RA 14	0.02	-0.17	11.99	0	0	0
225	SLE RA 15	0.03	-0.17	11.99	0	0	0
225	SLE RA 16	0.02	-0.17	11.94	0	0	0
225	SLE RA 17	0.02	-0.17	11.94	0	0	0
225	SLE RA 18	0.02	-0.17	12.08	0	0	0
225	SLE RA 19	0.02	-0.17	12.08	0	0	0
225	SLE RA 20	0.02	-0.17	12.19	0	0	0
225	SLE RA 21	0.02	-0.17	12.19	0	0	0
225	SLE FR 1	0.02	-0.16	10.9	0	0	0
225	SLE FR 2	0.03	-0.16	10.9	0	0	0
225	SLE FR 3	0.02	-0.16	10.94	0	0	0
225	SLE FR 4	0.02	-0.16	11.25	0	0	0
225	SLE FR 5	0.02	-0.16	11.3	0	0	0
225	SLE FR 6	0.02	-0.16	11.49	0	0	0
225	SLE QP 1	0.02	-0.16	10.9	0	0	0
225	SLE QP 2	0.02	-0.16	11.25	0	0	0
225	SLD 1	0.98	0.07	10.63	0	0	0
225	SLD 2	1.07	0.12	10.69	0	0	0
225	SLD 3	0.92	-0.19	10.34	0	0	0
225	SLD 4	1.02	-0.14	10.4	0	0	0
225	SLD 5	0.38	0.29	11.51	0	0	0
225	SLD 6	0.44	0.32	11.54	0	0	0
225	SLD 7	0.19	-0.57	10.52	0	0	0
225	SLD 8	0.25	-0.54	10.56	0	0	0
225	SLD 9	-0.21	0.22	11.95	0	0	0
225	SLD 10	-0.14	0.25	11.99	0	0	0
225	SLD 11	-0.39	-0.65	10.96	0	0	0
225	SLD 12	-0.33	-0.62	11	0	0	0
225	SLD 13	-0.97	-0.18	12.11	0	0	0
225	SLD 14	-0.87	-0.14	12.17	0	0	0
225	SLD 15	-1.03	-0.44	11.81	0	0	0
225	SLD 16	-0.93	-0.4	11.87	0	0	0
225	SLV 1	2.26	0.38	9.79	0	0	0
225	SLV 2	2.48	0.48	9.93	0	0	0
225	SLV 3	2.13	-0.21	9.12	0	0	0
225	SLV 4	2.35	-0.11	9.26	0	0	0
225	SLV 5	0.86	0.88	11.81	0	0	0
225	SLV 6	1	0.94	11.9	0	0	0
225	SLV 7	0.42	-1.09	9.57	0	0	0
225	SLV 8	0.56	-1.02	9.66	0	0	0
225	SLV 9	-0.51	0.7	12.84	0	0	0
225	SLV 10	-0.37	0.76	12.93	0	0	0
225	SLV 11	-0.95	-1.27	10.61	0	0	0
225	SLV 12	-0.81	-1.2	10.7	0	0	0
225	SLV 13	-2.3	-0.22	13.24	0	0	0
225	SLV 14	-2.08	-0.12	13.38	0	0	0
225	SLV 15	-2.43	-0.81	12.57	0	0	0
225	SLV 16	-2.21	-0.71	12.71	0	0	0
225	CRTFP Ux+	0	0	0	0	0	0
225	CRTFP Ux-	0	0	0	0	0	0
226	SLU 1	0.02	-0.17	10.3	0	0	0
226	SLU 2	0.03	-0.18	10.29	0	0	0
226	SLU 3	0.02	-0.18	10.53	0	0	0
226	SLU 4	0.03	-0.18	10.53	0	0	0
226	SLU 5	0.03	-0.18	10.45	0	0	0
226	SLU 6	0.02	-0.18	10.69	0	0	0
226	SLU 7	0.03	-0.18	10.68	0	0	0
226	SLU 8	0.02	-0.18	10.62	0	0	0
226	SLU 9	0.03	-0.18	10.61	0	0	0
226	SLU 10	0.03	-0.19	11.5	0	0	0
226	SLU 11	0.02	-0.18	11.74	0	0	0
226	SLU 12	0.02	-0.19	11.74	0	0	0
226	SLU 13	0.03	-0.19	11.66	0	0	0
226	SLU 14	0.02	-0.19	11.9	0	0	0
226	SLU 15	0.02	-0.19	11.89	0	0	0
226	SLU 16	0.02	-0.19	11.82	0	0	0
226	SLU 17	0.02	-0.19	11.82	0	0	0
226	SLU 18	0.02	-0.19	12.03	0	0	0
226	SLU 19	0.02	-0.19	12.02	0	0	0
226	SLU 20	0.02	-0.19	12.19	0	0	0
226	SLU 21	0.02	-0.19	12.18	0	0	0
226	SLU 22	0.03	-0.17	11.39	0	0	0
226	SLU 23	0.03	-0.18	11.38	0	0	0
226	SLU 24	0.03	-0.18	11.62	0	0	0
226	SLU 25	0.03	-0.18	11.61	0	0	0
226	SLU 26	0.03	-0.18	11.54	0	0	0
226	SLU 27	0.03	-0.18	11.77	0	0	0
226	SLU 28	0.03	-0.18	11.77	0	0	0
226	SLU 29	0.03	-0.18	11.7	0	0	0
226	SLU 30	0.03	-0.18	11.7	0	0	0
226	SLU 31	0.03	-0.19	12.59	0	0	0
226	SLU 32	0.03	-0.18	12.83	0	0	0
226	SLU 33	0.03	-0.19	12.82	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
226	SLU 34	0.03	-0.19	12.75	0	0	0
226	SLU 35	0.03	-0.19	12.98	0	0	0
226	SLU 36	0.03	-0.19	12.98	0	0	0
226	SLU 37	0.02	-0.19	12.91	0	0	0
226	SLU 38	0.03	-0.19	12.91	0	0	0
226	SLU 39	0.02	-0.19	13.11	0	0	0
226	SLU 40	0.03	-0.19	13.11	0	0	0
226	SLU 41	0.02	-0.19	13.27	0	0	0
226	SLU 42	0.03	-0.19	13.27	0	0	0
226	SLU 43	0.03	-0.23	13.02	0	0	0
226	SLU 44	0.03	-0.23	13.01	0	0	0
226	SLU 45	0.03	-0.23	13.25	0	0	0
226	SLU 46	0.03	-0.23	13.25	0	0	0
226	SLU 47	0.03	-0.24	13.17	0	0	0
226	SLU 48	0.03	-0.23	13.41	0	0	0
226	SLU 49	0.03	-0.24	13.4	0	0	0
226	SLU 50	0.03	-0.23	13.33	0	0	0
226	SLU 51	0.03	-0.24	13.33	0	0	0
226	SLU 52	0.03	-0.24	14.22	0	0	0
226	SLU 53	0.03	-0.24	14.46	0	0	0
226	SLU 54	0.03	-0.24	14.46	0	0	0
226	SLU 55	0.03	-0.24	14.38	0	0	0
226	SLU 56	0.03	-0.24	14.62	0	0	0
226	SLU 57	0.03	-0.24	14.61	0	0	0
226	SLU 58	0.02	-0.24	14.54	0	0	0
226	SLU 59	0.03	-0.25	14.54	0	0	0
226	SLU 60	0.02	-0.24	14.75	0	0	0
226	SLU 61	0.03	-0.24	14.74	0	0	0
226	SLU 62	0.02	-0.24	14.9	0	0	0
226	SLU 63	0.03	-0.25	14.9	0	0	0
226	SLU 64	0.03	-0.23	14.1	0	0	0
226	SLU 65	0.04	-0.23	14.1	0	0	0
226	SLU 66	0.03	-0.23	14.34	0	0	0
226	SLU 67	0.04	-0.23	14.33	0	0	0
226	SLU 68	0.04	-0.24	14.25	0	0	0
226	SLU 69	0.03	-0.23	14.49	0	0	0
226	SLU 70	0.04	-0.24	14.49	0	0	0
226	SLU 71	0.03	-0.23	14.42	0	0	0
226	SLU 72	0.04	-0.24	14.41	0	0	0
226	SLU 73	0.04	-0.24	15.31	0	0	0
226	SLU 74	0.03	-0.24	15.54	0	0	0
226	SLU 75	0.03	-0.24	15.54	0	0	0
226	SLU 76	0.04	-0.24	15.46	0	0	0
226	SLU 77	0.03	-0.24	15.7	0	0	0
226	SLU 78	0.03	-0.24	15.7	0	0	0
226	SLU 79	0.03	-0.24	15.63	0	0	0
226	SLU 80	0.03	-0.24	15.62	0	0	0
226	SLU 81	0.03	-0.24	15.83	0	0	0
226	SLU 82	0.03	-0.24	15.83	0	0	0
226	SLU 83	0.03	-0.24	15.99	0	0	0
226	SLU 84	0.03	-0.24	15.98	0	0	0
226	SLE RA 1	0.02	-0.17	10.61	0	0	0
226	SLE RA 2	0.03	-0.18	10.61	0	0	0
226	SLE RA 3	0.02	-0.18	10.77	0	0	0
226	SLE RA 4	0.03	-0.18	10.76	0	0	0
226	SLE RA 5	0.03	-0.18	10.71	0	0	0
226	SLE RA 6	0.02	-0.18	10.87	0	0	0
226	SLE RA 7	0.03	-0.18	10.87	0	0	0
226	SLE RA 8	0.02	-0.18	10.82	0	0	0
226	SLE RA 9	0.03	-0.18	10.82	0	0	0
226	SLE RA 10	0.03	-0.18	11.41	0	0	0
226	SLE RA 11	0.02	-0.18	11.57	0	0	0
226	SLE RA 12	0.02	-0.18	11.57	0	0	0
226	SLE RA 13	0.03	-0.19	11.52	0	0	0
226	SLE RA 14	0.02	-0.18	11.68	0	0	0
226	SLE RA 15	0.02	-0.19	11.67	0	0	0
226	SLE RA 16	0.02	-0.18	11.63	0	0	0
226	SLE RA 17	0.02	-0.19	11.62	0	0	0
226	SLE RA 18	0.02	-0.18	11.76	0	0	0
226	SLE RA 19	0.02	-0.18	11.76	0	0	0
226	SLE RA 20	0.02	-0.18	11.87	0	0	0
226	SLE RA 21	0.02	-0.19	11.86	0	0	0
226	SLE FR 1	0.02	-0.17	10.61	0	0	0
226	SLE FR 2	0.03	-0.18	10.61	0	0	0
226	SLE FR 3	0.02	-0.18	10.65	0	0	0
226	SLE FR 4	0.02	-0.18	10.96	0	0	0
226	SLE FR 5	0.02	-0.18	11	0	0	0
226	SLE FR 6	0.02	-0.18	11.19	0	0	0
226	SLE QP 1	0.02	-0.17	10.61	0	0	0
226	SLE QP 2	0.02	-0.18	10.96	0	0	0
226	SLD 1	0.94	0.06	10.27	0	0	0
226	SLD 2	1.03	0.1	10.34	0	0	0
226	SLD 3	0.88	-0.19	9.98	0	0	0
226	SLD 4	0.98	-0.14	10.05	0	0	0
226	SLD 5	0.36	0.26	11.18	0	0	0
226	SLD 6	0.42	0.29	11.22	0	0	0
226	SLD 7	0.18	-0.56	10.21	0	0	0
226	SLD 8	0.24	-0.54	10.25	0	0	0
226	SLD 9	-0.2	0.18	11.66	0	0	0
226	SLD 10	-0.14	0.21	11.7	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
226	SLD 11	-0.38	-0.65	10.69	0	0	0
226	SLD 12	-0.32	-0.62	10.73	0	0	0
226	SLD 13	-0.93	-0.21	11.87	0	0	0
226	SLD 14	-0.84	-0.16	11.93	0	0	0
226	SLD 15	-0.98	-0.46	11.58	0	0	0
226	SLD 16	-0.89	-0.41	11.64	0	0	0
226	SLV 1	2.17	0.36	9.35	0	0	0
226	SLV 2	2.38	0.47	9.49	0	0	0
226	SLV 3	2.04	-0.2	8.69	0	0	0
226	SLV 4	2.25	-0.09	8.84	0	0	0
226	SLV 5	0.82	0.82	11.45	0	0	0
226	SLV 6	0.96	0.89	11.54	0	0	0
226	SLV 7	0.4	-1.05	9.25	0	0	0
226	SLV 8	0.54	-0.98	9.35	0	0	0
226	SLV 9	-0.49	0.63	12.57	0	0	0
226	SLV 10	-0.35	0.7	12.66	0	0	0
226	SLV 11	-0.91	-1.24	10.37	0	0	0
226	SLV 12	-0.77	-1.17	10.46	0	0	0
226	SLV 13	-2.2	-0.26	13.08	0	0	0
226	SLV 14	-1.99	-0.16	13.22	0	0	0
226	SLV 15	-2.33	-0.82	12.42	0	0	0
226	SLV 16	-2.12	-0.72	12.56	0	0	0
226	CRTFP Ux+	0	0	0	0	0	0
226	CRTFP Ux-	0	0	0	0	0	0
227	SLU 1	0.01	-0.1	5.15	0	0	0
227	SLU 2	0.01	-0.1	5.15	0	0	0
227	SLU 3	0.01	-0.1	5.27	0	0	0
227	SLU 4	0.01	-0.1	5.27	0	0	0
227	SLU 5	0.01	-0.1	5.23	0	0	0
227	SLU 6	0.01	-0.1	5.35	0	0	0
227	SLU 7	0.01	-0.1	5.35	0	0	0
227	SLU 8	0.01	-0.1	5.31	0	0	0
227	SLU 9	0.01	-0.1	5.31	0	0	0
227	SLU 10	0.01	-0.1	5.75	0	0	0
227	SLU 11	0.01	-0.1	5.87	0	0	0
227	SLU 12	0.01	-0.1	5.87	0	0	0
227	SLU 13	0.01	-0.11	5.83	0	0	0
227	SLU 14	0.01	-0.1	5.95	0	0	0
227	SLU 15	0.01	-0.11	5.95	0	0	0
227	SLU 16	0.01	-0.11	5.91	0	0	0
227	SLU 17	0.01	-0.11	5.91	0	0	0
227	SLU 18	0.01	-0.1	6.02	0	0	0
227	SLU 19	0.01	-0.11	6.01	0	0	0
227	SLU 20	0.01	-0.11	6.09	0	0	0
227	SLU 21	0.01	-0.11	6.09	0	0	0
227	SLU 22	0.01	-0.1	5.7	0	0	0
227	SLU 23	0.02	-0.1	5.69	0	0	0
227	SLU 24	0.01	-0.1	5.81	0	0	0
227	SLU 25	0.02	-0.1	5.81	0	0	0
227	SLU 26	0.02	-0.1	5.77	0	0	0
227	SLU 27	0.01	-0.1	5.89	0	0	0
227	SLU 28	0.02	-0.1	5.89	0	0	0
227	SLU 29	0.01	-0.1	5.86	0	0	0
227	SLU 30	0.02	-0.1	5.85	0	0	0
227	SLU 31	0.01	-0.11	6.3	0	0	0
227	SLU 32	0.01	-0.1	6.42	0	0	0
227	SLU 33	0.01	-0.11	6.41	0	0	0
227	SLU 34	0.01	-0.11	6.38	0	0	0
227	SLU 35	0.01	-0.11	6.5	0	0	0
227	SLU 36	0.01	-0.11	6.49	0	0	0
227	SLU 37	0.01	-0.11	6.46	0	0	0
227	SLU 38	0.01	-0.11	6.46	0	0	0
227	SLU 39	0.01	-0.1	6.56	0	0	0
227	SLU 40	0.01	-0.11	6.56	0	0	0
227	SLU 41	0.01	-0.11	6.64	0	0	0
227	SLU 42	0.01	-0.11	6.64	0	0	0
227	SLU 43	0.01	-0.13	6.51	0	0	0
227	SLU 44	0.02	-0.13	6.51	0	0	0
227	SLU 45	0.01	-0.13	6.63	0	0	0
227	SLU 46	0.02	-0.13	6.63	0	0	0
227	SLU 47	0.02	-0.13	6.59	0	0	0
227	SLU 48	0.01	-0.13	6.71	0	0	0
227	SLU 49	0.02	-0.13	6.71	0	0	0
227	SLU 50	0.01	-0.13	6.67	0	0	0
227	SLU 51	0.02	-0.13	6.67	0	0	0
227	SLU 52	0.01	-0.13	7.11	0	0	0
227	SLU 53	0.01	-0.13	7.23	0	0	0
227	SLU 54	0.01	-0.13	7.23	0	0	0
227	SLU 55	0.01	-0.14	7.19	0	0	0
227	SLU 56	0.01	-0.13	7.31	0	0	0
227	SLU 57	0.01	-0.14	7.31	0	0	0
227	SLU 58	0.01	-0.13	7.27	0	0	0
227	SLU 59	0.01	-0.14	7.27	0	0	0
227	SLU 60	0.01	-0.13	7.37	0	0	0
227	SLU 61	0.01	-0.13	7.37	0	0	0
227	SLU 62	0.01	-0.13	7.45	0	0	0
227	SLU 63	0.01	-0.14	7.45	0	0	0
227	SLU 64	0.02	-0.13	7.06	0	0	0
227	SLU 65	0.02	-0.13	7.05	0	0	0
227	SLU 66	0.02	-0.13	7.17	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
227	SLU 67	0.02	-0.13	7.17	0	0	0
227	SLU 68	0.02	-0.13	7.13	0	0	0
227	SLU 69	0.02	-0.13	7.25	0	0	0
227	SLU 70	0.02	-0.13	7.25	0	0	0
227	SLU 71	0.02	-0.13	7.21	0	0	0
227	SLU 72	0.02	-0.13	7.21	0	0	0
227	SLU 73	0.02	-0.13	7.66	0	0	0
227	SLU 74	0.01	-0.13	7.78	0	0	0
227	SLU 75	0.02	-0.13	7.77	0	0	0
227	SLU 76	0.02	-0.14	7.74	0	0	0
227	SLU 77	0.01	-0.13	7.85	0	0	0
227	SLU 78	0.02	-0.14	7.85	0	0	0
227	SLU 79	0.01	-0.13	7.82	0	0	0
227	SLU 80	0.02	-0.14	7.82	0	0	0
227	SLU 81	0.01	-0.13	7.92	0	0	0
227	SLU 82	0.02	-0.14	7.92	0	0	0
227	SLU 83	0.01	-0.14	8	0	0	0
227	SLU 84	0.02	-0.14	8	0	0	0
227	SLE RA 1	0.01	-0.1	5.31	0	0	0
227	SLE RA 2	0.01	-0.1	5.31	0	0	0
227	SLE RA 3	0.01	-0.1	5.39	0	0	0
227	SLE RA 4	0.01	-0.1	5.38	0	0	0
227	SLE RA 5	0.01	-0.1	5.36	0	0	0
227	SLE RA 6	0.01	-0.1	5.44	0	0	0
227	SLE RA 7	0.01	-0.1	5.44	0	0	0
227	SLE RA 8	0.01	-0.1	5.41	0	0	0
227	SLE RA 9	0.01	-0.1	5.41	0	0	0
227	SLE RA 10	0.01	-0.1	5.71	0	0	0
227	SLE RA 11	0.01	-0.1	5.79	0	0	0
227	SLE RA 12	0.01	-0.1	5.79	0	0	0
227	SLE RA 13	0.01	-0.1	5.76	0	0	0
227	SLE RA 14	0.01	-0.1	5.84	0	0	0
227	SLE RA 15	0.01	-0.1	5.84	0	0	0
227	SLE RA 16	0.01	-0.1	5.82	0	0	0
227	SLE RA 17	0.01	-0.1	5.81	0	0	0
227	SLE RA 18	0.01	-0.1	5.88	0	0	0
227	SLE RA 19	0.01	-0.1	5.88	0	0	0
227	SLE RA 20	0.01	-0.1	5.94	0	0	0
227	SLE RA 21	0.01	-0.1	5.93	0	0	0
227	SLE FR 1	0.01	-0.1	5.31	0	0	0
227	SLE FR 2	0.01	-0.1	5.31	0	0	0
227	SLE FR 3	0.01	-0.1	5.33	0	0	0
227	SLE FR 4	0.01	-0.1	5.48	0	0	0
227	SLE FR 5	0.01	-0.1	5.5	0	0	0
227	SLE FR 6	0.01	-0.1	5.6	0	0	0
227	SLE QP 1	0.01	-0.1	5.31	0	0	0
227	SLE QP 2	0.01	-0.1	5.48	0	0	0
227	SLD 1	0.46	0.02	5.1	0	0	0
227	SLD 2	0.51	0.05	5.13	0	0	0
227	SLD 3	0.44	-0.1	4.96	0	0	0
227	SLD 4	0.48	-0.07	4.99	0	0	0
227	SLD 5	0.18	0.12	5.58	0	0	0
227	SLD 6	0.21	0.13	5.61	0	0	0
227	SLD 7	0.09	-0.29	5.1	0	0	0
227	SLD 8	0.12	-0.27	5.12	0	0	0
227	SLD 9	-0.1	0.07	5.85	0	0	0
227	SLD 10	-0.07	0.09	5.87	0	0	0
227	SLD 11	-0.19	-0.33	5.36	0	0	0
227	SLD 12	-0.16	-0.31	5.38	0	0	0
227	SLD 13	-0.46	-0.12	5.97	0	0	0
227	SLD 14	-0.41	-0.1	6.01	0	0	0
227	SLD 15	-0.48	-0.24	5.83	0	0	0
227	SLD 16	-0.44	-0.22	5.86	0	0	0
227	SLV 1	1.07	0.18	4.59	0	0	0
227	SLV 2	1.17	0.24	4.66	0	0	0
227	SLV 3	1	-0.09	4.26	0	0	0
227	SLV 4	1.11	-0.04	4.33	0	0	0
227	SLV 5	0.4	0.39	5.71	0	0	0
227	SLV 6	0.47	0.43	5.75	0	0	0
227	SLV 7	0.2	-0.52	4.6	0	0	0
227	SLV 8	0.26	-0.49	4.64	0	0	0
227	SLV 9	-0.24	0.29	6.32	0	0	0
227	SLV 10	-0.17	0.33	6.37	0	0	0
227	SLV 11	-0.45	-0.63	5.21	0	0	0
227	SLV 12	-0.38	-0.59	5.26	0	0	0
227	SLV 13	-1.09	-0.16	6.63	0	0	0
227	SLV 14	-0.98	-0.1	6.71	0	0	0
227	SLV 15	-1.15	-0.43	6.3	0	0	0
227	SLV 16	-1.04	-0.38	6.37	0	0	0
228	SLU 1	-0.12	-0.21	9.18	0	0	0
228	SLU 2	-0.11	-0.22	9.17	0	0	0
228	SLU 3	-0.12	-0.21	9.39	0	0	0
228	SLU 4	-0.12	-0.22	9.38	0	0	0
228	SLU 5	-0.11	-0.22	9.31	0	0	0
228	SLU 6	-0.12	-0.22	9.53	0	0	0
228	SLU 7	-0.12	-0.22	9.52	0	0	0
228	SLU 8	-0.12	-0.22	9.46	0	0	0
228	SLU 9	-0.12	-0.22	9.46	0	0	0
228	SLU 10	-0.12	-0.23	10.25	0	0	0
228	SLU 11	-0.13	-0.23	10.47	0	0	0





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
228	SLU 12	-0.13	-0.23	10.46	0	0	0
228	SLU 13	-0.12	-0.24	10.39	0	0	0
228	SLU 14	-0.13	-0.23	10.61	0	0	0
228	SLU 15	-0.13	-0.24	10.6	0	0	0
228	SLU 16	-0.13	-0.23	10.54	0	0	0
228	SLU 17	-0.13	-0.24	10.54	0	0	0
228	SLU 18	-0.13	-0.23	10.72	0	0	0
228	SLU 19	-0.12	-0.23	10.72	0	0	0
228	SLU 20	-0.13	-0.23	10.86	0	0	0
228	SLU 21	-0.13	-0.24	10.86	0	0	0
228	SLU 22	-0.13	-0.21	10.15	0	0	0
228	SLU 23	-0.13	-0.23	10.14	0	0	0
228	SLU 24	-0.14	-0.22	10.35	0	0	0
228	SLU 25	-0.13	-0.22	10.35	0	0	0
228	SLU 26	-0.13	-0.23	10.28	0	0	0
228	SLU 27	-0.14	-0.22	10.49	0	0	0
228	SLU 28	-0.13	-0.23	10.49	0	0	0
228	SLU 29	-0.14	-0.22	10.43	0	0	0
228	SLU 30	-0.13	-0.23	10.42	0	0	0
228	SLU 31	-0.13	-0.24	11.22	0	0	0
228	SLU 32	-0.14	-0.23	11.43	0	0	0
228	SLU 33	-0.14	-0.24	11.42	0	0	0
228	SLU 34	-0.14	-0.24	11.36	0	0	0
228	SLU 35	-0.14	-0.23	11.57	0	0	0
228	SLU 36	-0.14	-0.24	11.57	0	0	0
228	SLU 37	-0.14	-0.23	11.51	0	0	0
228	SLU 38	-0.14	-0.24	11.5	0	0	0
228	SLU 39	-0.14	-0.23	11.69	0	0	0
228	SLU 40	-0.14	-0.24	11.68	0	0	0
228	SLU 41	-0.14	-0.24	11.83	0	0	0
228	SLU 42	-0.14	-0.24	11.82	0	0	0
228	SLU 43	-0.15	-0.27	11.6	0	0	0
228	SLU 44	-0.14	-0.28	11.59	0	0	0
228	SLU 45	-0.15	-0.27	11.81	0	0	0
228	SLU 46	-0.15	-0.28	11.8	0	0	0
228	SLU 47	-0.15	-0.29	11.73	0	0	0
228	SLU 48	-0.15	-0.28	11.95	0	0	0
228	SLU 49	-0.15	-0.28	11.94	0	0	0
228	SLU 50	-0.15	-0.28	11.89	0	0	0
228	SLU 51	-0.15	-0.28	11.88	0	0	0
228	SLU 52	-0.15	-0.29	12.67	0	0	0
228	SLU 53	-0.16	-0.29	12.89	0	0	0
228	SLU 54	-0.16	-0.29	12.88	0	0	0
228	SLU 55	-0.15	-0.3	12.81	0	0	0
228	SLU 56	-0.16	-0.29	13.03	0	0	0
228	SLU 57	-0.16	-0.3	13.02	0	0	0
228	SLU 58	-0.16	-0.29	12.97	0	0	0
228	SLU 59	-0.16	-0.3	12.96	0	0	0
228	SLU 60	-0.16	-0.29	13.15	0	0	0
228	SLU 61	-0.16	-0.3	13.14	0	0	0
228	SLU 62	-0.16	-0.29	13.29	0	0	0
228	SLU 63	-0.16	-0.3	13.28	0	0	0
228	SLU 64	-0.16	-0.28	12.57	0	0	0
228	SLU 65	-0.16	-0.29	12.56	0	0	0
228	SLU 66	-0.17	-0.28	12.78	0	0	0
228	SLU 67	-0.16	-0.29	12.77	0	0	0
228	SLU 68	-0.16	-0.29	12.7	0	0	0
228	SLU 69	-0.17	-0.28	12.92	0	0	0
228	SLU 70	-0.17	-0.29	12.91	0	0	0
228	SLU 71	-0.17	-0.28	12.85	0	0	0
228	SLU 72	-0.16	-0.29	12.85	0	0	0
228	SLU 73	-0.16	-0.3	13.64	0	0	0
228	SLU 74	-0.17	-0.29	13.85	0	0	0
228	SLU 75	-0.17	-0.3	13.85	0	0	0
228	SLU 76	-0.17	-0.3	13.78	0	0	0
228	SLU 77	-0.17	-0.3	14	0	0	0
228	SLU 78	-0.17	-0.3	13.99	0	0	0
228	SLU 79	-0.17	-0.3	13.93	0	0	0
228	SLU 80	-0.17	-0.3	13.93	0	0	0
228	SLU 81	-0.17	-0.29	14.11	0	0	0
228	SLU 82	-0.17	-0.3	14.11	0	0	0
228	SLU 83	-0.17	-0.3	14.25	0	0	0
228	SLU 84	-0.17	-0.3	14.25	0	0	0
228	SLE RA 1	-0.12	-0.21	9.46	0	0	0
228	SLE RA 2	-0.12	-0.22	9.45	0	0	0
228	SLE RA 3	-0.12	-0.21	9.59	0	0	0
228	SLE RA 4	-0.12	-0.22	9.59	0	0	0
228	SLE RA 5	-0.12	-0.22	9.54	0	0	0
228	SLE RA 6	-0.13	-0.22	9.69	0	0	0
228	SLE RA 7	-0.12	-0.22	9.68	0	0	0
228	SLE RA 8	-0.12	-0.22	9.65	0	0	0
228	SLE RA 9	-0.12	-0.22	9.64	0	0	0
228	SLE RA 10	-0.12	-0.23	10.17	0	0	0
228	SLE RA 11	-0.13	-0.22	10.31	0	0	0
228	SLE RA 12	-0.13	-0.23	10.31	0	0	0
228	SLE RA 13	-0.12	-0.23	10.26	0	0	0
228	SLE RA 14	-0.13	-0.22	10.41	0	0	0
228	SLE RA 15	-0.13	-0.23	10.4	0	0	0
228	SLE RA 16	-0.13	-0.22	10.37	0	0	0
228	SLE RA 17	-0.13	-0.23	10.36	0	0	0



Nodo	Cont. N.br.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
228	SLE RA 18	-0.13	-0.22	10.49	0	0	0
228	SLE RA 19	-0.13	-0.23	10.48	0	0	0
228	SLE RA 20	-0.13	-0.23	10.58	0	0	0
228	SLE RA 21	-0.13	-0.23	10.58	0	0	0
228	SLE FR 1	-0.12	-0.21	9.46	0	0	0
228	SLE FR 2	-0.12	-0.21	9.46	0	0	0
228	SLE FR 3	-0.12	-0.21	9.5	0	0	0
228	SLE FR 4	-0.12	-0.22	9.76	0	0	0
228	SLE FR 5	-0.12	-0.22	9.8	0	0	0
228	SLE FR 6	-0.13	-0.22	9.97	0	0	0
228	SLE QP 1	-0.12	-0.21	9.46	0	0	0
228	SLE QP 2	-0.12	-0.22	9.77	0	0	0
228	SLD 1	0.63	-0.2	10.41	0	0	0
228	SLD 2	0.71	-0.25	10.36	0	0	0
228	SLD 3	0.68	-0.44	10.18	0	0	0
228	SLD 4	0.76	-0.48	10.13	0	0	0
228	SLD 5	0.01	0.15	10.32	0	0	0
228	SLD 6	0.06	0.12	10.29	0	0	0
228	SLD 7	0.18	-0.62	9.55	0	0	0
228	SLD 8	0.23	-0.65	9.52	0	0	0
228	SLD 9	-0.48	0.22	10.02	0	0	0
228	SLD 10	-0.43	0.19	9.98	0	0	0
228	SLD 11	-0.31	-0.55	9.24	0	0	0
228	SLD 12	-0.26	-0.58	9.21	0	0	0
228	SLD 13	-1.01	0.05	9.4	0	0	0
228	SLD 14	-0.93	0	9.35	0	0	0
228	SLD 15	-0.96	-0.18	9.17	0	0	0
228	SLD 16	-0.88	-0.23	9.12	0	0	0
228	SLV 1	1.64	-0.2	11.27	0	0	0
228	SLV 2	1.82	-0.3	11.16	0	0	0
228	SLV 3	1.76	-0.72	10.74	0	0	0
228	SLV 4	1.94	-0.82	10.63	0	0	0
228	SLV 5	0.19	0.6	11.03	0	0	0
228	SLV 6	0.31	0.54	10.96	0	0	0
228	SLV 7	0.59	-1.14	9.28	0	0	0
228	SLV 8	0.71	-1.21	9.21	0	0	0
228	SLV 9	-0.95	0.77	10.32	0	0	0
228	SLV 10	-0.84	0.71	10.25	0	0	0
228	SLV 11	-0.56	-0.97	8.57	0	0	0
228	SLV 12	-0.44	-1.03	8.5	0	0	0
228	SLV 13	-2.19	0.39	8.9	0	0	0
228	SLV 14	-2.01	0.29	8.79	0	0	0
228	SLV 15	-2.07	-0.14	8.37	0	0	0
228	SLV 16	-1.89	-0.23	8.26	0	0	0
229	SLU 1	-0.13	-0.21	10.02	0	0	0
229	SLU 2	-0.12	-0.22	10.01	0	0	0
229	SLU 3	-0.13	-0.21	10.24	0	0	0
229	SLU 4	-0.13	-0.22	10.23	0	0	0
229	SLU 5	-0.12	-0.23	10.16	0	0	0
229	SLU 6	-0.13	-0.22	10.4	0	0	0
229	SLU 7	-0.13	-0.22	10.39	0	0	0
229	SLU 8	-0.13	-0.22	10.33	0	0	0
229	SLU 9	-0.13	-0.22	10.32	0	0	0
229	SLU 10	-0.13	-0.23	11.18	0	0	0
229	SLU 11	-0.14	-0.23	11.42	0	0	0
229	SLU 12	-0.13	-0.23	11.41	0	0	0
229	SLU 13	-0.13	-0.24	11.34	0	0	0
229	SLU 14	-0.14	-0.23	11.57	0	0	0
229	SLU 15	-0.14	-0.24	11.57	0	0	0
229	SLU 16	-0.14	-0.23	11.51	0	0	0
229	SLU 17	-0.14	-0.24	11.5	0	0	0
229	SLU 18	-0.14	-0.23	11.7	0	0	0
229	SLU 19	-0.13	-0.24	11.69	0	0	0
229	SLU 20	-0.14	-0.23	11.86	0	0	0
229	SLU 21	-0.14	-0.24	11.85	0	0	0
229	SLU 22	-0.14	-0.21	11.07	0	0	0
229	SLU 23	-0.14	-0.22	11.06	0	0	0
229	SLU 24	-0.15	-0.22	11.29	0	0	0
229	SLU 25	-0.14	-0.22	11.28	0	0	0
229	SLU 26	-0.14	-0.23	11.21	0	0	0
229	SLU 27	-0.15	-0.22	11.45	0	0	0
229	SLU 28	-0.14	-0.23	11.44	0	0	0
229	SLU 29	-0.15	-0.22	11.38	0	0	0
229	SLU 30	-0.14	-0.23	11.37	0	0	0
229	SLU 31	-0.14	-0.24	12.23	0	0	0
229	SLU 32	-0.15	-0.23	12.47	0	0	0
229	SLU 33	-0.15	-0.23	12.46	0	0	0
229	SLU 34	-0.15	-0.24	12.39	0	0	0
229	SLU 35	-0.16	-0.23	12.62	0	0	0
229	SLU 36	-0.15	-0.24	12.62	0	0	0
229	SLU 37	-0.15	-0.23	12.56	0	0	0
229	SLU 38	-0.15	-0.24	12.55	0	0	0
229	SLU 39	-0.15	-0.23	12.75	0	0	0
229	SLU 40	-0.15	-0.24	12.74	0	0	0
229	SLU 41	-0.15	-0.23	12.91	0	0	0
229	SLU 42	-0.15	-0.24	12.9	0	0	0
229	SLU 43	-0.16	-0.27	12.66	0	0	0
229	SLU 44	-0.15	-0.29	12.65	0	0	0
229	SLU 45	-0.16	-0.28	12.89	0	0	0
229	SLU 46	-0.16	-0.28	12.88	0	0	0



Nodo	Cont. N.br.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
229	SLU 47	-0.16	-0.29	12.81	0	0	0
229	SLU 48	-0.17	-0.28	13.04	0	0	0
229	SLU 49	-0.16	-0.29	13.03	0	0	0
229	SLU 50	-0.16	-0.28	12.97	0	0	0
229	SLU 51	-0.16	-0.29	12.96	0	0	0
229	SLU 52	-0.16	-0.3	13.83	0	0	0
229	SLU 53	-0.17	-0.29	14.06	0	0	0
229	SLU 54	-0.17	-0.3	14.06	0	0	0
229	SLU 55	-0.16	-0.3	13.98	0	0	0
229	SLU 56	-0.17	-0.29	14.22	0	0	0
229	SLU 57	-0.17	-0.3	14.21	0	0	0
229	SLU 58	-0.17	-0.29	14.15	0	0	0
229	SLU 59	-0.17	-0.3	14.14	0	0	0
229	SLU 60	-0.17	-0.29	14.35	0	0	0
229	SLU 61	-0.17	-0.3	14.34	0	0	0
229	SLU 62	-0.17	-0.29	14.5	0	0	0
229	SLU 63	-0.17	-0.3	14.49	0	0	0
229	SLU 64	-0.18	-0.28	13.71	0	0	0
229	SLU 65	-0.17	-0.29	13.7	0	0	0
229	SLU 66	-0.18	-0.28	13.94	0	0	0
229	SLU 67	-0.18	-0.29	13.93	0	0	0
229	SLU 68	-0.17	-0.29	13.86	0	0	0
229	SLU 69	-0.18	-0.28	14.09	0	0	0
229	SLU 70	-0.18	-0.29	14.08	0	0	0
229	SLU 71	-0.18	-0.28	14.02	0	0	0
229	SLU 72	-0.18	-0.29	14.01	0	0	0
229	SLU 73	-0.18	-0.3	14.88	0	0	0
229	SLU 74	-0.19	-0.29	15.11	0	0	0
229	SLU 75	-0.18	-0.3	15.11	0	0	0
229	SLU 76	-0.18	-0.3	15.03	0	0	0
229	SLU 77	-0.19	-0.29	15.27	0	0	0
229	SLU 78	-0.18	-0.3	15.26	0	0	0
229	SLU 79	-0.19	-0.29	15.2	0	0	0
229	SLU 80	-0.18	-0.3	15.19	0	0	0
229	SLU 81	-0.19	-0.29	15.4	0	0	0
229	SLU 82	-0.18	-0.3	15.39	0	0	0
229	SLU 83	-0.19	-0.3	15.55	0	0	0
229	SLU 84	-0.18	-0.3	15.54	0	0	0
229	SLE RA 1	-0.13	-0.21	10.32	0	0	0
229	SLE RA 2	-0.13	-0.22	10.31	0	0	0
229	SLE RA 3	-0.13	-0.21	10.47	0	0	0
229	SLE RA 4	-0.13	-0.22	10.46	0	0	0
229	SLE RA 5	-0.13	-0.22	10.41	0	0	0
229	SLE RA 6	-0.14	-0.22	10.57	0	0	0
229	SLE RA 7	-0.13	-0.22	10.56	0	0	0
229	SLE RA 8	-0.13	-0.22	10.52	0	0	0
229	SLE RA 9	-0.13	-0.22	10.52	0	0	0
229	SLE RA 10	-0.13	-0.23	11.1	0	0	0
229	SLE RA 11	-0.14	-0.22	11.25	0	0	0
229	SLE RA 12	-0.14	-0.23	11.25	0	0	0
229	SLE RA 13	-0.13	-0.23	11.2	0	0	0
229	SLE RA 14	-0.14	-0.22	11.36	0	0	0
229	SLE RA 15	-0.14	-0.23	11.35	0	0	0
229	SLE RA 16	-0.14	-0.22	11.31	0	0	0
229	SLE RA 17	-0.14	-0.23	11.3	0	0	0
229	SLE RA 18	-0.14	-0.22	11.44	0	0	0
229	SLE RA 19	-0.14	-0.23	11.44	0	0	0
229	SLE RA 20	-0.14	-0.23	11.54	0	0	0
229	SLE RA 21	-0.14	-0.23	11.54	0	0	0
229	SLE FR 1	-0.13	-0.21	10.32	0	0	0
229	SLE FR 2	-0.13	-0.21	10.32	0	0	0
229	SLE FR 3	-0.13	-0.21	10.36	0	0	0
229	SLE FR 4	-0.13	-0.22	10.65	0	0	0
229	SLE FR 5	-0.13	-0.22	10.7	0	0	0
229	SLE FR 6	-0.13	-0.22	10.88	0	0	0
229	SLE QP 1	-0.13	-0.21	10.32	0	0	0
229	SLE QP 2	-0.13	-0.22	10.65	0	0	0
229	SLD 1	0.71	-0.19	11.28	0	0	0
229	SLD 2	0.8	-0.24	11.23	0	0	0
229	SLD 3	0.77	-0.45	11.03	0	0	0
229	SLD 4	0.85	-0.5	10.98	0	0	0
229	SLD 5	0.02	0.19	11.23	0	0	0
229	SLD 6	0.08	0.16	11.2	0	0	0
229	SLD 7	0.21	-0.67	10.4	0	0	0
229	SLD 8	0.26	-0.7	10.36	0	0	0
229	SLD 9	-0.53	0.27	10.95	0	0	0
229	SLD 10	-0.47	0.24	10.91	0	0	0
229	SLD 11	-0.34	-0.59	10.11	0	0	0
229	SLD 12	-0.28	-0.62	10.08	0	0	0
229	SLD 13	-1.12	0.06	10.33	0	0	0
229	SLD 14	-1.03	0.02	10.28	0	0	0
229	SLD 15	-1.06	-0.19	10.08	0	0	0
229	SLD 16	-0.98	-0.24	10.03	0	0	0
229	SLV 1	1.84	-0.17	12.11	0	0	0
229	SLV 2	2.04	-0.27	11.99	0	0	0
229	SLV 3	1.97	-0.76	11.54	0	0	0
229	SLV 4	2.18	-0.86	11.43	0	0	0
229	SLV 5	0.22	0.7	11.97	0	0	0
229	SLV 6	0.36	0.64	11.9	0	0	0
229	SLV 7	0.66	-1.25	10.08	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
229	SLV 8	0.79	-1.32	10.01	0	0	0
229	SLV 9	-1.06	0.89	11.3	0	0	0
229	SLV 10	-0.93	0.82	11.23	0	0	0
229	SLV 11	-0.62	-1.07	9.41	0	0	0
229	SLV 12	-0.49	-1.14	9.34	0	0	0
229	SLV 13	-2.44	0.43	9.88	0	0	0
229	SLV 14	-2.24	0.33	9.77	0	0	0
229	SLV 15	-2.31	-0.16	9.32	0	0	0
229	SLV 16	-2.1	-0.26	9.2	0	0	0
230	SLU 1	-0.13	-0.2	10.61	0	0	0
230	SLU 2	-0.13	-0.21	10.6	0	0	0
230	SLU 3	-0.14	-0.2	10.85	0	0	0
230	SLU 4	-0.13	-0.21	10.84	0	0	0
230	SLU 5	-0.13	-0.21	10.76	0	0	0
230	SLU 6	-0.14	-0.2	11.01	0	0	0
230	SLU 7	-0.13	-0.21	11	0	0	0
230	SLU 8	-0.14	-0.21	10.94	0	0	0
230	SLU 9	-0.13	-0.21	10.93	0	0	0
230	SLU 10	-0.13	-0.22	11.85	0	0	0
230	SLU 11	-0.14	-0.21	12.1	0	0	0
230	SLU 12	-0.14	-0.22	12.09	0	0	0
230	SLU 13	-0.14	-0.22	12.02	0	0	0
230	SLU 14	-0.15	-0.21	12.26	0	0	0
230	SLU 15	-0.14	-0.22	12.26	0	0	0
230	SLU 16	-0.14	-0.22	12.19	0	0	0
230	SLU 17	-0.14	-0.22	12.18	0	0	0
230	SLU 18	-0.14	-0.21	12.4	0	0	0
230	SLU 19	-0.14	-0.22	12.39	0	0	0
230	SLU 20	-0.14	-0.22	12.56	0	0	0
230	SLU 21	-0.14	-0.22	12.56	0	0	0
230	SLU 22	-0.15	-0.2	11.72	0	0	0
230	SLU 23	-0.14	-0.21	11.71	0	0	0
230	SLU 24	-0.15	-0.2	11.96	0	0	0
230	SLU 25	-0.15	-0.21	11.95	0	0	0
230	SLU 26	-0.14	-0.21	11.87	0	0	0
230	SLU 27	-0.15	-0.2	12.12	0	0	0
230	SLU 28	-0.15	-0.21	12.11	0	0	0
230	SLU 29	-0.15	-0.2	12.05	0	0	0
230	SLU 30	-0.15	-0.21	12.04	0	0	0
230	SLU 31	-0.15	-0.22	12.96	0	0	0
230	SLU 32	-0.16	-0.21	13.21	0	0	0
230	SLU 33	-0.16	-0.22	13.2	0	0	0
230	SLU 34	-0.15	-0.22	13.12	0	0	0
230	SLU 35	-0.16	-0.21	13.37	0	0	0
230	SLU 36	-0.16	-0.22	13.36	0	0	0
230	SLU 37	-0.16	-0.21	13.3	0	0	0
230	SLU 38	-0.16	-0.22	13.29	0	0	0
230	SLU 39	-0.16	-0.21	13.51	0	0	0
230	SLU 40	-0.15	-0.22	13.5	0	0	0
230	SLU 41	-0.16	-0.21	13.67	0	0	0
230	SLU 42	-0.16	-0.22	13.66	0	0	0
230	SLU 43	-0.17	-0.26	13.42	0	0	0
230	SLU 44	-0.16	-0.27	13.4	0	0	0
230	SLU 45	-0.17	-0.26	13.65	0	0	0
230	SLU 46	-0.17	-0.27	13.65	0	0	0
230	SLU 47	-0.16	-0.27	13.57	0	0	0
230	SLU 48	-0.17	-0.26	13.82	0	0	0
230	SLU 49	-0.17	-0.27	13.81	0	0	0
230	SLU 50	-0.17	-0.27	13.74	0	0	0
230	SLU 51	-0.17	-0.27	13.74	0	0	0
230	SLU 52	-0.17	-0.28	14.66	0	0	0
230	SLU 53	-0.18	-0.27	14.9	0	0	0
230	SLU 54	-0.17	-0.28	14.9	0	0	0
230	SLU 55	-0.17	-0.28	14.82	0	0	0
230	SLU 56	-0.18	-0.27	15.07	0	0	0
230	SLU 57	-0.18	-0.28	15.06	0	0	0
230	SLU 58	-0.18	-0.28	15	0	0	0
230	SLU 59	-0.17	-0.28	14.99	0	0	0
230	SLU 60	-0.18	-0.27	15.21	0	0	0
230	SLU 61	-0.17	-0.28	15.2	0	0	0
230	SLU 62	-0.18	-0.28	15.37	0	0	0
230	SLU 63	-0.18	-0.28	15.36	0	0	0
230	SLU 64	-0.18	-0.26	14.52	0	0	0
230	SLU 65	-0.18	-0.27	14.51	0	0	0
230	SLU 66	-0.19	-0.26	14.76	0	0	0
230	SLU 67	-0.18	-0.27	14.75	0	0	0
230	SLU 68	-0.18	-0.27	14.68	0	0	0
230	SLU 69	-0.19	-0.26	14.92	0	0	0
230	SLU 70	-0.18	-0.27	14.92	0	0	0
230	SLU 71	-0.19	-0.26	14.85	0	0	0
230	SLU 72	-0.18	-0.27	14.84	0	0	0
230	SLU 73	-0.18	-0.28	15.76	0	0	0
230	SLU 74	-0.19	-0.27	16.01	0	0	0
230	SLU 75	-0.19	-0.28	16	0	0	0
230	SLU 76	-0.19	-0.28	15.93	0	0	0
230	SLU 77	-0.2	-0.27	16.18	0	0	0
230	SLU 78	-0.19	-0.28	16.17	0	0	0
230	SLU 79	-0.19	-0.27	16.1	0	0	0
230	SLU 80	-0.19	-0.28	16.1	0	0	0
230	SLU 81	-0.19	-0.27	16.31	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
230	SLU 82	-0.19	-0.28	16.31	0	0	0
230	SLU 83	-0.2	-0.27	16.48	0	0	0
230	SLU 84	-0.19	-0.28	16.47	0	0	0
230	SLE RA 1	-0.14	-0.2	10.93	0	0	0
230	SLE RA 2	-0.13	-0.21	10.92	0	0	0
230	SLE RA 3	-0.14	-0.2	11.09	0	0	0
230	SLE RA 4	-0.14	-0.2	11.08	0	0	0
230	SLE RA 5	-0.13	-0.21	11.03	0	0	0
230	SLE RA 6	-0.14	-0.2	11.2	0	0	0
230	SLE RA 7	-0.14	-0.21	11.19	0	0	0
230	SLE RA 8	-0.14	-0.2	11.15	0	0	0
230	SLE RA 9	-0.14	-0.21	11.14	0	0	0
230	SLE RA 10	-0.14	-0.21	11.76	0	0	0
230	SLE RA 11	-0.14	-0.21	11.92	0	0	0
230	SLE RA 12	-0.14	-0.21	11.92	0	0	0
230	SLE RA 13	-0.14	-0.22	11.86	0	0	0
230	SLE RA 14	-0.15	-0.21	12.03	0	0	0
230	SLE RA 15	-0.14	-0.21	12.02	0	0	0
230	SLE RA 16	-0.14	-0.21	11.98	0	0	0
230	SLE RA 17	-0.14	-0.21	11.98	0	0	0
230	SLE RA 18	-0.14	-0.21	12.12	0	0	0
230	SLE RA 19	-0.14	-0.21	12.12	0	0	0
230	SLE RA 20	-0.15	-0.21	12.23	0	0	0
230	SLE RA 21	-0.14	-0.21	12.23	0	0	0
230	SLE FR 1	-0.14	-0.2	10.93	0	0	0
230	SLE FR 2	-0.14	-0.2	10.93	0	0	0
230	SLE FR 3	-0.14	-0.2	10.97	0	0	0
230	SLE FR 4	-0.14	-0.2	11.29	0	0	0
230	SLE FR 5	-0.14	-0.2	11.33	0	0	0
230	SLE FR 6	-0.14	-0.2	11.53	0	0	0
230	SLE QP 1	-0.14	-0.2	10.93	0	0	0
230	SLE QP 2	-0.14	-0.2	11.29	0	0	0
230	SLD 1	0.78	-0.16	11.85	0	0	0
230	SLD 2	0.87	-0.21	11.81	0	0	0
230	SLD 3	0.84	-0.45	11.59	0	0	0
230	SLD 4	0.93	-0.49	11.54	0	0	0
230	SLD 5	0.03	0.25	11.87	0	0	0
230	SLD 6	0.09	0.22	11.84	0	0	0
230	SLD 7	0.23	-0.7	10.98	0	0	0
230	SLD 8	0.29	-0.72	10.95	0	0	0
230	SLD 9	-0.57	0.32	11.62	0	0	0
230	SLD 10	-0.51	0.29	11.59	0	0	0
230	SLD 11	-0.37	-0.62	10.74	0	0	0
230	SLD 12	-0.3	-0.65	10.71	0	0	0
230	SLD 13	-1.21	0.09	11.03	0	0	0
230	SLD 14	-1.11	0.04	10.99	0	0	0
230	SLD 15	-1.15	-0.2	10.77	0	0	0
230	SLD 16	-1.05	-0.24	10.72	0	0	0
230	SLV 1	2	-0.12	12.6	0	0	0
230	SLV 2	2.22	-0.22	12.49	0	0	0
230	SLV 3	2.14	-0.77	12	0	0	0
230	SLV 4	2.37	-0.86	11.89	0	0	0
230	SLV 5	0.25	0.81	12.61	0	0	0
230	SLV 6	0.39	0.75	12.54	0	0	0
230	SLV 7	0.72	-1.32	10.61	0	0	0
230	SLV 8	0.87	-1.39	10.54	0	0	0
230	SLV 9	-1.15	0.99	12.03	0	0	0
230	SLV 10	-1	0.92	11.96	0	0	0
230	SLV 11	-0.67	-1.15	10.04	0	0	0
230	SLV 12	-0.53	-1.21	9.97	0	0	0
230	SLV 13	-2.65	0.46	10.68	0	0	0
230	SLV 14	-2.42	0.36	10.57	0	0	0
230	SLV 15	-2.5	-0.18	10.08	0	0	0
230	SLV 16	-2.28	-0.28	9.97	0	0	0
231	SLU 1	-0.13	-0.17	10.68	0	0	0
231	SLU 2	-0.12	-0.18	10.67	0	0	0
231	SLU 3	-0.13	-0.17	10.92	0	0	0
231	SLU 4	-0.13	-0.18	10.91	0	0	0
231	SLU 5	-0.13	-0.18	10.83	0	0	0
231	SLU 6	-0.14	-0.17	11.08	0	0	0
231	SLU 7	-0.13	-0.18	11.08	0	0	0
231	SLU 8	-0.14	-0.17	11.01	0	0	0
231	SLU 9	-0.13	-0.18	11	0	0	0
231	SLU 10	-0.13	-0.19	11.93	0	0	0
231	SLU 11	-0.14	-0.18	12.18	0	0	0
231	SLU 12	-0.14	-0.18	12.18	0	0	0
231	SLU 13	-0.13	-0.19	12.1	0	0	0
231	SLU 14	-0.14	-0.18	12.35	0	0	0
231	SLU 15	-0.14	-0.19	12.34	0	0	0
231	SLU 16	-0.14	-0.18	12.28	0	0	0
231	SLU 17	-0.14	-0.19	12.27	0	0	0
231	SLU 18	-0.14	-0.18	12.49	0	0	0
231	SLU 19	-0.14	-0.19	12.48	0	0	0
231	SLU 20	-0.14	-0.18	12.65	0	0	0
231	SLU 21	-0.14	-0.19	12.65	0	0	0
231	SLU 22	-0.15	-0.16	11.79	0	0	0
231	SLU 23	-0.14	-0.18	11.78	0	0	0
231	SLU 24	-0.15	-0.16	12.03	0	0	0
231	SLU 25	-0.15	-0.17	12.02	0	0	0
231	SLU 26	-0.14	-0.18	11.94	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
231	SLU 27	-0.15	-0.17	12.19	0	0	0
231	SLU 28	-0.15	-0.17	12.19	0	0	0
231	SLU 29	-0.15	-0.17	12.12	0	0	0
231	SLU 30	-0.15	-0.18	12.11	0	0	0
231	SLU 31	-0.15	-0.18	13.04	0	0	0
231	SLU 32	-0.16	-0.17	13.3	0	0	0
231	SLU 33	-0.15	-0.18	13.29	0	0	0
231	SLU 34	-0.15	-0.18	13.21	0	0	0
231	SLU 35	-0.16	-0.17	13.46	0	0	0
231	SLU 36	-0.16	-0.18	13.45	0	0	0
231	SLU 37	-0.16	-0.18	13.39	0	0	0
231	SLU 38	-0.15	-0.18	13.38	0	0	0
231	SLU 39	-0.16	-0.17	13.6	0	0	0
231	SLU 40	-0.15	-0.18	13.59	0	0	0
231	SLU 41	-0.16	-0.18	13.77	0	0	0
231	SLU 42	-0.16	-0.18	13.76	0	0	0
231	SLU 43	-0.16	-0.22	13.5	0	0	0
231	SLU 44	-0.16	-0.23	13.49	0	0	0
231	SLU 45	-0.17	-0.22	13.74	0	0	0
231	SLU 46	-0.16	-0.23	13.73	0	0	0
231	SLU 47	-0.16	-0.24	13.66	0	0	0
231	SLU 48	-0.17	-0.23	13.91	0	0	0
231	SLU 49	-0.17	-0.23	13.9	0	0	0
231	SLU 50	-0.17	-0.23	13.83	0	0	0
231	SLU 51	-0.17	-0.24	13.83	0	0	0
231	SLU 52	-0.17	-0.24	14.76	0	0	0
231	SLU 53	-0.18	-0.23	15.01	0	0	0
231	SLU 54	-0.17	-0.24	15	0	0	0
231	SLU 55	-0.17	-0.24	14.92	0	0	0
231	SLU 56	-0.18	-0.23	15.17	0	0	0
231	SLU 57	-0.17	-0.24	15.16	0	0	0
231	SLU 58	-0.18	-0.23	15.1	0	0	0
231	SLU 59	-0.17	-0.24	15.09	0	0	0
231	SLU 60	-0.18	-0.23	15.31	0	0	0
231	SLU 61	-0.17	-0.24	15.31	0	0	0
231	SLU 62	-0.18	-0.23	15.48	0	0	0
231	SLU 63	-0.17	-0.24	15.47	0	0	0
231	SLU 64	-0.18	-0.22	14.62	0	0	0
231	SLU 65	-0.17	-0.23	14.6	0	0	0
231	SLU 66	-0.18	-0.22	14.85	0	0	0
231	SLU 67	-0.18	-0.22	14.85	0	0	0
231	SLU 68	-0.18	-0.23	14.77	0	0	0
231	SLU 69	-0.19	-0.22	15.02	0	0	0
231	SLU 70	-0.18	-0.23	15.01	0	0	0
231	SLU 71	-0.19	-0.22	14.95	0	0	0
231	SLU 72	-0.18	-0.23	14.94	0	0	0
231	SLU 73	-0.18	-0.24	15.87	0	0	0
231	SLU 74	-0.19	-0.22	16.12	0	0	0
231	SLU 75	-0.19	-0.23	16.11	0	0	0
231	SLU 76	-0.18	-0.24	16.03	0	0	0
231	SLU 77	-0.19	-0.23	16.28	0	0	0
231	SLU 78	-0.19	-0.23	16.28	0	0	0
231	SLU 79	-0.19	-0.23	16.21	0	0	0
231	SLU 80	-0.19	-0.24	16.2	0	0	0
231	SLU 81	-0.19	-0.23	16.42	0	0	0
231	SLU 82	-0.19	-0.23	16.42	0	0	0
231	SLU 83	-0.19	-0.23	16.59	0	0	0
231	SLU 84	-0.19	-0.24	16.58	0	0	0
231	SLE RA 1	-0.14	-0.17	11	0	0	0
231	SLE RA 2	-0.13	-0.18	10.99	0	0	0
231	SLE RA 3	-0.14	-0.17	11.16	0	0	0
231	SLE RA 4	-0.14	-0.17	11.15	0	0	0
231	SLE RA 5	-0.13	-0.18	11.1	0	0	0
231	SLE RA 6	-0.14	-0.17	11.27	0	0	0
231	SLE RA 7	-0.14	-0.17	11.26	0	0	0
231	SLE RA 8	-0.14	-0.17	11.22	0	0	0
231	SLE RA 9	-0.14	-0.18	11.21	0	0	0
231	SLE RA 10	-0.14	-0.18	11.83	0	0	0
231	SLE RA 11	-0.14	-0.17	12	0	0	0
231	SLE RA 12	-0.14	-0.18	12	0	0	0
231	SLE RA 13	-0.14	-0.18	11.94	0	0	0
231	SLE RA 14	-0.14	-0.17	12.11	0	0	0
231	SLE RA 15	-0.14	-0.18	12.11	0	0	0
231	SLE RA 16	-0.14	-0.18	12.06	0	0	0
231	SLE RA 17	-0.14	-0.18	12.06	0	0	0
231	SLE RA 18	-0.14	-0.17	12.2	0	0	0
231	SLE RA 19	-0.14	-0.18	12.2	0	0	0
231	SLE RA 20	-0.14	-0.18	12.31	0	0	0
231	SLE RA 21	-0.14	-0.18	12.31	0	0	0
231	SLE FR 1	-0.14	-0.17	11	0	0	0
231	SLE FR 2	-0.13	-0.17	11	0	0	0
231	SLE FR 3	-0.14	-0.17	11.04	0	0	0
231	SLE FR 4	-0.14	-0.17	11.36	0	0	0
231	SLE FR 5	-0.14	-0.17	11.4	0	0	0
231	SLE FR 6	-0.14	-0.17	11.6	0	0	0
231	SLE QP 1	-0.14	-0.17	11	0	0	0
231	SLE QP 2	-0.14	-0.17	11.36	0	0	0
231	SLD 1	0.8	-0.12	11.83	0	0	0
231	SLD 2	0.9	-0.16	11.79	0	0	0
231	SLD 3	0.86	-0.41	11.56	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
231	SLD 4	0.96	-0.45	11.52	0	0	0
231	SLD 5	0.03	0.3	11.91	0	0	0
231	SLD 6	0.09	0.27	11.89	0	0	0
231	SLD 7	0.24	-0.68	11.02	0	0	0
231	SLD 8	0.3	-0.7	11	0	0	0
231	SLD 9	-0.58	0.36	11.73	0	0	0
231	SLD 10	-0.51	0.34	11.7	0	0	0
231	SLD 11	-0.37	-0.61	10.84	0	0	0
231	SLD 12	-0.31	-0.64	10.81	0	0	0
231	SLD 13	-1.23	0.11	11.2	0	0	0
231	SLD 14	-1.14	0.07	11.16	0	0	0
231	SLD 15	-1.17	-0.18	10.93	0	0	0
231	SLD 16	-1.07	-0.22	10.89	0	0	0
231	SLV 1	2.05	-0.06	12.45	0	0	0
231	SLV 2	2.28	-0.15	12.35	0	0	0
231	SLV 3	2.2	-0.72	11.84	0	0	0
231	SLV 4	2.43	-0.81	11.74	0	0	0
231	SLV 5	0.26	0.88	12.62	0	0	0
231	SLV 6	0.41	0.82	12.56	0	0	0
231	SLV 7	0.74	-1.32	10.61	0	0	0
231	SLV 8	0.89	-1.38	10.54	0	0	0
231	SLV 9	-1.17	1.04	12.18	0	0	0
231	SLV 10	-1.02	0.98	12.11	0	0	0
231	SLV 11	-0.68	-1.16	10.16	0	0	0
231	SLV 12	-0.53	-1.22	10.1	0	0	0
231	SLV 13	-2.7	0.47	10.98	0	0	0
231	SLV 14	-2.47	0.38	10.88	0	0	0
231	SLV 15	-2.56	-0.19	10.37	0	0	0
231	SLV 16	-2.33	-0.28	10.27	0	0	0
232	SLU 1	-0.13	-0.14	10.71	0	0	0
232	SLU 2	-0.12	-0.15	10.7	0	0	0
232	SLU 3	-0.13	-0.14	10.95	0	0	0
232	SLU 4	-0.13	-0.14	10.94	0	0	0
232	SLU 5	-0.13	-0.15	10.87	0	0	0
232	SLU 6	-0.14	-0.14	11.12	0	0	0
232	SLU 7	-0.13	-0.14	11.11	0	0	0
232	SLU 8	-0.13	-0.14	11.05	0	0	0
232	SLU 9	-0.13	-0.15	11.04	0	0	0
232	SLU 10	-0.13	-0.15	11.98	0	0	0
232	SLU 11	-0.14	-0.14	12.23	0	0	0
232	SLU 12	-0.14	-0.15	12.22	0	0	0
232	SLU 13	-0.13	-0.15	12.14	0	0	0
232	SLU 14	-0.14	-0.14	12.4	0	0	0
232	SLU 15	-0.14	-0.15	12.39	0	0	0
232	SLU 16	-0.14	-0.14	12.32	0	0	0
232	SLU 17	-0.14	-0.15	12.32	0	0	0
232	SLU 18	-0.14	-0.14	12.54	0	0	0
232	SLU 19	-0.14	-0.15	12.53	0	0	0
232	SLU 20	-0.14	-0.14	12.71	0	0	0
232	SLU 21	-0.14	-0.15	12.7	0	0	0
232	SLU 22	-0.15	-0.13	11.83	0	0	0
232	SLU 23	-0.14	-0.14	11.81	0	0	0
232	SLU 24	-0.15	-0.12	12.06	0	0	0
232	SLU 25	-0.14	-0.13	12.06	0	0	0
232	SLU 26	-0.14	-0.14	11.98	0	0	0
232	SLU 27	-0.15	-0.13	12.23	0	0	0
232	SLU 28	-0.15	-0.13	12.22	0	0	0
232	SLU 29	-0.15	-0.13	12.16	0	0	0
232	SLU 30	-0.15	-0.14	12.15	0	0	0
232	SLU 31	-0.15	-0.14	13.09	0	0	0
232	SLU 32	-0.16	-0.13	13.34	0	0	0
232	SLU 33	-0.15	-0.13	13.34	0	0	0
232	SLU 34	-0.15	-0.14	13.26	0	0	0
232	SLU 35	-0.16	-0.13	13.51	0	0	0
232	SLU 36	-0.15	-0.14	13.5	0	0	0
232	SLU 37	-0.16	-0.13	13.44	0	0	0
232	SLU 38	-0.15	-0.14	13.43	0	0	0
232	SLU 39	-0.15	-0.13	13.65	0	0	0
232	SLU 40	-0.15	-0.14	13.64	0	0	0
232	SLU 41	-0.16	-0.13	13.82	0	0	0
232	SLU 42	-0.15	-0.14	13.81	0	0	0
232	SLU 43	-0.16	-0.18	13.55	0	0	0
232	SLU 44	-0.16	-0.19	13.53	0	0	0
232	SLU 45	-0.17	-0.18	13.78	0	0	0
232	SLU 46	-0.16	-0.19	13.78	0	0	0
232	SLU 47	-0.16	-0.19	13.7	0	0	0
232	SLU 48	-0.17	-0.18	13.95	0	0	0
232	SLU 49	-0.16	-0.19	13.94	0	0	0
232	SLU 50	-0.17	-0.18	13.88	0	0	0
232	SLU 51	-0.16	-0.19	13.87	0	0	0
232	SLU 52	-0.16	-0.19	14.81	0	0	0
232	SLU 53	-0.17	-0.18	15.06	0	0	0
232	SLU 54	-0.17	-0.19	15.05	0	0	0
232	SLU 55	-0.17	-0.2	14.98	0	0	0
232	SLU 56	-0.18	-0.18	15.23	0	0	0
232	SLU 57	-0.17	-0.19	15.22	0	0	0
232	SLU 58	-0.17	-0.19	15.16	0	0	0
232	SLU 59	-0.17	-0.19	15.15	0	0	0
232	SLU 60	-0.17	-0.18	15.37	0	0	0
232	SLU 61	-0.17	-0.19	15.36	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
232	SLU 62	-0.18	-0.19	15.54	0	0	0
232	SLU 63	-0.17	-0.19	15.53	0	0	0
232	SLU 64	-0.18	-0.17	14.66	0	0	0
232	SLU 65	-0.17	-0.18	14.65	0	0	0
232	SLU 66	-0.18	-0.17	14.9	0	0	0
232	SLU 67	-0.18	-0.18	14.89	0	0	0
232	SLU 68	-0.17	-0.18	14.81	0	0	0
232	SLU 69	-0.18	-0.17	15.06	0	0	0
232	SLU 70	-0.18	-0.18	15.06	0	0	0
232	SLU 71	-0.18	-0.17	14.99	0	0	0
232	SLU 72	-0.18	-0.18	14.98	0	0	0
232	SLU 73	-0.18	-0.18	15.92	0	0	0
232	SLU 74	-0.19	-0.17	16.18	0	0	0
232	SLU 75	-0.19	-0.18	16.17	0	0	0
232	SLU 76	-0.18	-0.19	16.09	0	0	0
232	SLU 77	-0.19	-0.17	16.34	0	0	0
232	SLU 78	-0.19	-0.18	16.33	0	0	0
232	SLU 79	-0.19	-0.18	16.27	0	0	0
232	SLU 80	-0.19	-0.18	16.26	0	0	0
232	SLU 81	-0.19	-0.17	16.48	0	0	0
232	SLU 82	-0.18	-0.18	16.48	0	0	0
232	SLU 83	-0.19	-0.18	16.65	0	0	0
232	SLU 84	-0.19	-0.18	16.64	0	0	0
232	SLE RA 1	-0.13	-0.13	11.03	0	0	0
232	SLE RA 2	-0.13	-0.14	11.02	0	0	0
232	SLE RA 3	-0.14	-0.13	11.19	0	0	0
232	SLE RA 4	-0.13	-0.14	11.19	0	0	0
232	SLE RA 5	-0.13	-0.14	11.13	0	0	0
232	SLE RA 6	-0.14	-0.13	11.3	0	0	0
232	SLE RA 7	-0.14	-0.14	11.3	0	0	0
232	SLE RA 8	-0.14	-0.14	11.25	0	0	0
232	SLE RA 9	-0.13	-0.14	11.25	0	0	0
232	SLE RA 10	-0.13	-0.14	11.87	0	0	0
232	SLE RA 11	-0.14	-0.13	12.04	0	0	0
232	SLE RA 12	-0.14	-0.14	12.04	0	0	0
232	SLE RA 13	-0.14	-0.14	11.99	0	0	0
232	SLE RA 14	-0.14	-0.14	12.15	0	0	0
232	SLE RA 15	-0.14	-0.14	12.15	0	0	0
232	SLE RA 16	-0.14	-0.14	12.1	0	0	0
232	SLE RA 17	-0.14	-0.14	12.1	0	0	0
232	SLE RA 18	-0.14	-0.14	12.25	0	0	0
232	SLE RA 19	-0.14	-0.14	12.24	0	0	0
232	SLE RA 20	-0.14	-0.14	12.36	0	0	0
232	SLE RA 21	-0.14	-0.14	12.35	0	0	0
232	SLE FR 1	-0.13	-0.13	11.03	0	0	0
232	SLE FR 2	-0.13	-0.13	11.03	0	0	0
232	SLE FR 3	-0.13	-0.13	11.08	0	0	0
232	SLE FR 4	-0.14	-0.14	11.39	0	0	0
232	SLE FR 5	-0.14	-0.13	11.44	0	0	0
232	SLE FR 6	-0.14	-0.13	11.64	0	0	0
232	SLE QP 1	-0.13	-0.13	11.03	0	0	0
232	SLE QP 2	-0.14	-0.13	11.4	0	0	0
232	SLD 1	0.81	-0.06	11.77	0	0	0
232	SLD 2	0.91	-0.1	11.73	0	0	0
232	SLD 3	0.87	-0.36	11.5	0	0	0
232	SLD 4	0.97	-0.39	11.46	0	0	0
232	SLD 5	0.03	0.34	11.92	0	0	0
232	SLD 6	0.1	0.32	11.9	0	0	0
232	SLD 7	0.24	-0.65	11.03	0	0	0
232	SLD 8	0.31	-0.67	11	0	0	0
232	SLD 9	-0.58	0.4	11.79	0	0	0
232	SLD 10	-0.52	0.38	11.77	0	0	0
232	SLD 11	-0.37	-0.59	10.9	0	0	0
232	SLD 12	-0.31	-0.61	10.87	0	0	0
232	SLD 13	-1.24	0.13	11.33	0	0	0
232	SLD 14	-1.14	0.09	11.29	0	0	0
232	SLD 15	-1.18	-0.17	11.06	0	0	0
232	SLD 16	-1.08	-0.2	11.03	0	0	0
232	SLV 1	2.07	0.02	12.25	0	0	0
232	SLV 2	2.3	-0.06	12.16	0	0	0
232	SLV 3	2.22	-0.65	11.64	0	0	0
232	SLV 4	2.45	-0.73	11.55	0	0	0
232	SLV 5	0.26	0.95	12.59	0	0	0
232	SLV 6	0.41	0.89	12.54	0	0	0
232	SLV 7	0.75	-1.29	10.56	0	0	0
232	SLV 8	0.9	-1.35	10.5	0	0	0
232	SLV 9	-1.17	1.08	12.29	0	0	0
232	SLV 10	-1.03	1.03	12.23	0	0	0
232	SLV 11	-0.68	-1.16	10.26	0	0	0
232	SLV 12	-0.54	-1.21	10.2	0	0	0
232	SLV 13	-2.72	0.46	11.24	0	0	0
232	SLV 14	-2.49	0.38	11.15	0	0	0
232	SLV 15	-2.57	-0.21	10.63	0	0	0
232	SLV 16	-2.34	-0.29	10.54	0	0	0
233	SLU 1	-0.13	-0.1	10.79	0	0	0
233	SLU 2	-0.12	-0.11	10.78	0	0	0
233	SLU 3	-0.13	-0.1	11.04	0	0	0
233	SLU 4	-0.13	-0.11	11.03	0	0	0
233	SLU 5	-0.12	-0.11	10.95	0	0	0
233	SLU 6	-0.13	-0.1	11.2	0	0	0





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
233	SLU 7	-0.13	-0.11	11.2	0	0	0
233	SLU 8	-0.13	-0.1	11.13	0	0	0
233	SLU 9	-0.13	-0.11	11.12	0	0	0
233	SLU 10	-0.13	-0.11	12.08	0	0	0
233	SLU 11	-0.14	-0.1	12.33	0	0	0
233	SLU 12	-0.13	-0.11	12.33	0	0	0
233	SLU 13	-0.13	-0.11	12.25	0	0	0
233	SLU 14	-0.14	-0.1	12.5	0	0	0
233	SLU 15	-0.14	-0.11	12.5	0	0	0
233	SLU 16	-0.14	-0.1	12.43	0	0	0
233	SLU 17	-0.14	-0.11	12.42	0	0	0
233	SLU 18	-0.14	-0.1	12.65	0	0	0
233	SLU 19	-0.13	-0.11	12.64	0	0	0
233	SLU 20	-0.14	-0.1	12.82	0	0	0
233	SLU 21	-0.14	-0.11	12.81	0	0	0
233	SLU 22	-0.14	-0.09	11.92	0	0	0
233	SLU 23	-0.14	-0.1	11.9	0	0	0
233	SLU 24	-0.15	-0.08	12.16	0	0	0
233	SLU 25	-0.14	-0.09	12.15	0	0	0
233	SLU 26	-0.14	-0.1	12.07	0	0	0
233	SLU 27	-0.15	-0.09	12.33	0	0	0
233	SLU 28	-0.15	-0.09	12.32	0	0	0
233	SLU 29	-0.15	-0.09	12.25	0	0	0
233	SLU 30	-0.14	-0.1	12.25	0	0	0
233	SLU 31	-0.14	-0.1	13.2	0	0	0
233	SLU 32	-0.15	-0.08	13.46	0	0	0
233	SLU 33	-0.15	-0.09	13.45	0	0	0
233	SLU 34	-0.15	-0.1	13.37	0	0	0
233	SLU 35	-0.16	-0.08	13.63	0	0	0
233	SLU 36	-0.15	-0.09	13.62	0	0	0
233	SLU 37	-0.15	-0.09	13.55	0	0	0
233	SLU 38	-0.15	-0.09	13.54	0	0	0
233	SLU 39	-0.15	-0.08	13.77	0	0	0
233	SLU 40	-0.15	-0.09	13.76	0	0	0
233	SLU 41	-0.16	-0.09	13.94	0	0	0
233	SLU 42	-0.15	-0.09	13.93	0	0	0
233	SLU 43	-0.16	-0.14	13.65	0	0	0
233	SLU 44	-0.15	-0.15	13.63	0	0	0
233	SLU 45	-0.16	-0.13	13.89	0	0	0
233	SLU 46	-0.16	-0.14	13.88	0	0	0
233	SLU 47	-0.16	-0.15	13.8	0	0	0
233	SLU 48	-0.17	-0.14	14.06	0	0	0
233	SLU 49	-0.16	-0.14	14.05	0	0	0
233	SLU 50	-0.17	-0.14	13.98	0	0	0
233	SLU 51	-0.16	-0.15	13.98	0	0	0
233	SLU 52	-0.16	-0.15	14.93	0	0	0
233	SLU 53	-0.17	-0.13	15.19	0	0	0
233	SLU 54	-0.17	-0.14	15.18	0	0	0
233	SLU 55	-0.16	-0.15	15.1	0	0	0
233	SLU 56	-0.17	-0.14	15.36	0	0	0
233	SLU 57	-0.17	-0.14	15.35	0	0	0
233	SLU 58	-0.17	-0.14	15.28	0	0	0
233	SLU 59	-0.17	-0.15	15.28	0	0	0
233	SLU 60	-0.17	-0.14	15.5	0	0	0
233	SLU 61	-0.17	-0.14	15.5	0	0	0
233	SLU 62	-0.17	-0.14	15.67	0	0	0
233	SLU 63	-0.17	-0.14	15.66	0	0	0
233	SLU 64	-0.18	-0.12	14.77	0	0	0
233	SLU 65	-0.17	-0.13	14.76	0	0	0
233	SLU 66	-0.18	-0.12	15.01	0	0	0
233	SLU 67	-0.18	-0.13	15	0	0	0
233	SLU 68	-0.17	-0.13	14.93	0	0	0
233	SLU 69	-0.18	-0.12	15.18	0	0	0
233	SLU 70	-0.18	-0.13	15.17	0	0	0
233	SLU 71	-0.18	-0.12	15.11	0	0	0
233	SLU 72	-0.18	-0.13	15.1	0	0	0
233	SLU 73	-0.18	-0.13	16.06	0	0	0
233	SLU 74	-0.19	-0.12	16.31	0	0	0
233	SLU 75	-0.18	-0.13	16.3	0	0	0
233	SLU 76	-0.18	-0.13	16.22	0	0	0
233	SLU 77	-0.19	-0.12	16.48	0	0	0
233	SLU 78	-0.19	-0.13	16.47	0	0	0
233	SLU 79	-0.19	-0.12	16.41	0	0	0
233	SLU 80	-0.18	-0.13	16.4	0	0	0
233	SLU 81	-0.19	-0.12	16.63	0	0	0
233	SLU 82	-0.18	-0.13	16.62	0	0	0
233	SLU 83	-0.19	-0.12	16.79	0	0	0
233	SLU 84	-0.18	-0.13	16.79	0	0	0
233	SLE RA 1	-0.13	-0.1	11.11	0	0	0
233	SLE RA 2	-0.13	-0.1	11.11	0	0	0
233	SLE RA 3	-0.13	-0.1	11.28	0	0	0
233	SLE RA 4	-0.13	-0.1	11.27	0	0	0
233	SLE RA 5	-0.13	-0.11	11.22	0	0	0
233	SLE RA 6	-0.14	-0.1	11.39	0	0	0
233	SLE RA 7	-0.13	-0.1	11.38	0	0	0
233	SLE RA 8	-0.14	-0.1	11.34	0	0	0
233	SLE RA 9	-0.13	-0.1	11.33	0	0	0
233	SLE RA 10	-0.13	-0.1	11.97	0	0	0
233	SLE RA 11	-0.14	-0.1	12.14	0	0	0
233	SLE RA 12	-0.14	-0.1	12.14	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
233	SLE RA 13	-0.13	-0.1	12.08	0	0	0
233	SLE RA 14	-0.14	-0.1	12.25	0	0	0
233	SLE RA 15	-0.14	-0.1	12.25	0	0	0
233	SLE RA 16	-0.14	-0.1	12.21	0	0	0
233	SLE RA 17	-0.14	-0.1	12.2	0	0	0
233	SLE RA 18	-0.14	-0.1	12.35	0	0	0
233	SLE RA 19	-0.14	-0.1	12.35	0	0	0
233	SLE RA 20	-0.14	-0.1	12.46	0	0	0
233	SLE RA 21	-0.14	-0.1	12.46	0	0	0
233	SLE FR 1	-0.13	-0.1	11.11	0	0	0
233	SLE FR 2	-0.13	-0.1	11.11	0	0	0
233	SLE FR 3	-0.13	-0.1	11.16	0	0	0
233	SLE FR 4	-0.13	-0.1	11.48	0	0	0
233	SLE FR 5	-0.13	-0.1	11.53	0	0	0
233	SLE FR 6	-0.14	-0.1	11.73	0	0	0
233	SLE QP 1	-0.13	-0.1	11.11	0	0	0
233	SLE QP 2	-0.13	-0.1	11.49	0	0	0
233	SLD 1	0.81	-0.01	11.77	0	0	0
233	SLD 2	0.91	-0.04	11.73	0	0	0
233	SLD 3	0.87	-0.31	11.49	0	0	0
233	SLD 4	0.97	-0.34	11.46	0	0	0
233	SLD 5	0.04	0.39	11.99	0	0	0
233	SLD 6	0.1	0.37	11.97	0	0	0
233	SLD 7	0.25	-0.61	11.08	0	0	0
233	SLD 8	0.31	-0.63	11.06	0	0	0
233	SLD 9	-0.58	0.44	11.92	0	0	0
233	SLD 10	-0.51	0.42	11.89	0	0	0
233	SLD 11	-0.37	-0.56	11	0	0	0
233	SLD 12	-0.3	-0.58	10.98	0	0	0
233	SLD 13	-1.24	0.15	11.51	0	0	0
233	SLD 14	-1.14	0.12	11.48	0	0	0
233	SLD 15	-1.18	-0.15	11.24	0	0	0
233	SLD 16	-1.08	-0.18	11.21	0	0	0
233	SLV 1	2.07	0.1	12.13	0	0	0
233	SLV 2	2.3	0.03	12.05	0	0	0
233	SLV 3	2.22	-0.58	11.51	0	0	0
233	SLV 4	2.45	-0.65	11.43	0	0	0
233	SLV 5	0.26	1	12.63	0	0	0
233	SLV 6	0.41	0.96	12.58	0	0	0
233	SLV 7	0.75	-1.26	10.57	0	0	0
233	SLV 8	0.9	-1.3	10.52	0	0	0
233	SLV 9	-1.17	1.11	12.46	0	0	0
233	SLV 10	-1.02	1.07	12.4	0	0	0
233	SLV 11	-0.68	-1.15	10.39	0	0	0
233	SLV 12	-0.53	-1.19	10.34	0	0	0
233	SLV 13	-2.72	0.46	11.54	0	0	0
233	SLV 14	-2.49	0.39	11.46	0	0	0
233	SLV 15	-2.57	-0.22	10.92	0	0	0
233	SLV 16	-2.34	-0.29	10.84	0	0	0
234	SLU 1	-0.13	-0.07	10.93	0	0	0
234	SLU 2	-0.12	-0.08	10.92	0	0	0
234	SLU 3	-0.13	-0.07	11.17	0	0	0
234	SLU 4	-0.13	-0.07	11.17	0	0	0
234	SLU 5	-0.12	-0.08	11.09	0	0	0
234	SLU 6	-0.13	-0.07	11.35	0	0	0
234	SLU 7	-0.13	-0.07	11.34	0	0	0
234	SLU 8	-0.13	-0.07	11.27	0	0	0
234	SLU 9	-0.13	-0.08	11.26	0	0	0
234	SLU 10	-0.13	-0.07	12.24	0	0	0
234	SLU 11	-0.14	-0.06	12.5	0	0	0
234	SLU 12	-0.13	-0.07	12.5	0	0	0
234	SLU 13	-0.13	-0.08	12.42	0	0	0
234	SLU 14	-0.14	-0.06	12.68	0	0	0
234	SLU 15	-0.13	-0.07	12.67	0	0	0
234	SLU 16	-0.14	-0.07	12.6	0	0	0
234	SLU 17	-0.13	-0.07	12.59	0	0	0
234	SLU 18	-0.14	-0.06	12.83	0	0	0
234	SLU 19	-0.13	-0.07	12.82	0	0	0
234	SLU 20	-0.14	-0.06	13	0	0	0
234	SLU 21	-0.13	-0.07	12.99	0	0	0
234	SLU 22	-0.14	-0.05	12.07	0	0	0
234	SLU 23	-0.14	-0.06	12.06	0	0	0
234	SLU 24	-0.15	-0.05	12.31	0	0	0
234	SLU 25	-0.14	-0.05	12.31	0	0	0
234	SLU 26	-0.14	-0.06	12.23	0	0	0
234	SLU 27	-0.15	-0.05	12.49	0	0	0
234	SLU 28	-0.14	-0.05	12.48	0	0	0
234	SLU 29	-0.15	-0.05	12.41	0	0	0
234	SLU 30	-0.14	-0.06	12.4	0	0	0
234	SLU 31	-0.14	-0.06	13.38	0	0	0
234	SLU 32	-0.15	-0.04	13.64	0	0	0
234	SLU 33	-0.15	-0.05	13.64	0	0	0
234	SLU 34	-0.14	-0.06	13.56	0	0	0
234	SLU 35	-0.15	-0.04	13.81	0	0	0
234	SLU 36	-0.15	-0.05	13.81	0	0	0
234	SLU 37	-0.15	-0.05	13.74	0	0	0
234	SLU 38	-0.15	-0.05	13.73	0	0	0
234	SLU 39	-0.15	-0.04	13.97	0	0	0
234	SLU 40	-0.15	-0.05	13.96	0	0	0
234	SLU 41	-0.15	-0.04	14.14	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
234	SLU 42	-0.15	-0.05	14.13	0	0	0
234	SLU 43	-0.16	-0.09	13.82	0	0	0
234	SLU 44	-0.15	-0.11	13.8	0	0	0
234	SLU 45	-0.16	-0.09	14.06	0	0	0
234	SLU 46	-0.16	-0.1	14.06	0	0	0
234	SLU 47	-0.15	-0.11	13.98	0	0	0
234	SLU 48	-0.16	-0.09	14.23	0	0	0
234	SLU 49	-0.16	-0.1	14.23	0	0	0
234	SLU 50	-0.16	-0.1	14.16	0	0	0
234	SLU 51	-0.16	-0.1	14.15	0	0	0
234	SLU 52	-0.16	-0.1	15.13	0	0	0
234	SLU 53	-0.17	-0.09	15.39	0	0	0
234	SLU 54	-0.17	-0.09	15.38	0	0	0
234	SLU 55	-0.16	-0.1	15.3	0	0	0
234	SLU 56	-0.17	-0.09	15.56	0	0	0
234	SLU 57	-0.17	-0.1	15.56	0	0	0
234	SLU 58	-0.17	-0.09	15.49	0	0	0
234	SLU 59	-0.17	-0.1	15.48	0	0	0
234	SLU 60	-0.17	-0.09	15.72	0	0	0
234	SLU 61	-0.16	-0.1	15.71	0	0	0
234	SLU 62	-0.17	-0.09	15.89	0	0	0
234	SLU 63	-0.17	-0.1	15.88	0	0	0
234	SLU 64	-0.17	-0.08	14.96	0	0	0
234	SLU 65	-0.17	-0.09	14.94	0	0	0
234	SLU 66	-0.18	-0.07	15.2	0	0	0
234	SLU 67	-0.17	-0.08	15.19	0	0	0
234	SLU 68	-0.17	-0.09	15.11	0	0	0
234	SLU 69	-0.18	-0.07	15.37	0	0	0
234	SLU 70	-0.18	-0.08	15.37	0	0	0
234	SLU 71	-0.18	-0.08	15.3	0	0	0
234	SLU 72	-0.17	-0.08	15.29	0	0	0
234	SLU 73	-0.17	-0.08	16.27	0	0	0
234	SLU 74	-0.18	-0.07	16.53	0	0	0
234	SLU 75	-0.18	-0.08	16.52	0	0	0
234	SLU 76	-0.18	-0.08	16.44	0	0	0
234	SLU 77	-0.19	-0.07	16.7	0	0	0
234	SLU 78	-0.18	-0.08	16.7	0	0	0
234	SLU 79	-0.18	-0.07	16.63	0	0	0
234	SLU 80	-0.18	-0.08	16.62	0	0	0
234	SLU 81	-0.18	-0.07	16.85	0	0	0
234	SLU 82	-0.18	-0.08	16.85	0	0	0
234	SLU 83	-0.19	-0.07	17.03	0	0	0
234	SLU 84	-0.18	-0.08	17.02	0	0	0
234	SLE RA 1	-0.13	-0.06	11.25	0	0	0
234	SLE RA 2	-0.13	-0.07	11.25	0	0	0
234	SLE RA 3	-0.13	-0.06	11.42	0	0	0
234	SLE RA 4	-0.13	-0.07	11.41	0	0	0
234	SLE RA 5	-0.13	-0.07	11.36	0	0	0
234	SLE RA 6	-0.13	-0.06	11.53	0	0	0
234	SLE RA 7	-0.13	-0.07	11.53	0	0	0
234	SLE RA 8	-0.13	-0.06	11.48	0	0	0
234	SLE RA 9	-0.13	-0.07	11.48	0	0	0
234	SLE RA 10	-0.13	-0.07	12.13	0	0	0
234	SLE RA 11	-0.14	-0.06	12.3	0	0	0
234	SLE RA 12	-0.13	-0.06	12.3	0	0	0
234	SLE RA 13	-0.13	-0.07	12.25	0	0	0
234	SLE RA 14	-0.14	-0.06	12.42	0	0	0
234	SLE RA 15	-0.14	-0.06	12.41	0	0	0
234	SLE RA 16	-0.14	-0.06	12.37	0	0	0
234	SLE RA 17	-0.14	-0.06	12.36	0	0	0
234	SLE RA 18	-0.14	-0.06	12.52	0	0	0
234	SLE RA 19	-0.13	-0.06	12.51	0	0	0
234	SLE RA 20	-0.14	-0.06	12.63	0	0	0
234	SLE RA 21	-0.14	-0.06	12.63	0	0	0
234	SLE FR 1	-0.13	-0.06	11.25	0	0	0
234	SLE FR 2	-0.13	-0.06	11.25	0	0	0
234	SLE FR 3	-0.13	-0.06	11.3	0	0	0
234	SLE FR 4	-0.13	-0.06	11.63	0	0	0
234	SLE FR 5	-0.13	-0.06	11.68	0	0	0
234	SLE FR 6	-0.13	-0.06	11.89	0	0	0
234	SLE QP 1	-0.13	-0.06	11.25	0	0	0
234	SLE QP 2	-0.13	-0.06	11.63	0	0	0
234	SLD 1	0.8	0.04	11.84	0	0	0
234	SLD 2	0.9	0.02	11.81	0	0	0
234	SLD 3	0.87	-0.26	11.57	0	0	0
234	SLD 4	0.96	-0.28	11.54	0	0	0
234	SLD 5	0.04	0.43	12.13	0	0	0
234	SLD 6	0.1	0.41	12.11	0	0	0
234	SLD 7	0.24	-0.57	11.2	0	0	0
234	SLD 8	0.31	-0.59	11.18	0	0	0
234	SLD 9	-0.57	0.47	12.09	0	0	0
234	SLD 10	-0.51	0.45	12.07	0	0	0
234	SLD 11	-0.37	-0.54	11.16	0	0	0
234	SLD 12	-0.3	-0.55	11.14	0	0	0
234	SLD 13	-1.23	0.16	11.73	0	0	0
234	SLD 14	-1.13	0.14	11.7	0	0	0
234	SLD 15	-1.17	-0.14	11.45	0	0	0
234	SLD 16	-1.07	-0.16	11.42	0	0	0
234	SLV 1	2.06	0.17	12.12	0	0	0
234	SLV 2	2.29	0.11	12.05	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
234	SLV 3	2.2	-0.51	11.49	0	0	0
234	SLV 4	2.43	-0.57	11.41	0	0	0
234	SLV 5	0.26	1.05	12.75	0	0	0
234	SLV 6	0.41	1.01	12.7	0	0	0
234	SLV 7	0.75	-1.22	10.64	0	0	0
234	SLV 8	0.9	-1.26	10.6	0	0	0
234	SLV 9	-1.16	1.13	12.67	0	0	0
234	SLV 10	-1.01	1.1	12.62	0	0	0
234	SLV 11	-0.68	-1.13	10.56	0	0	0
234	SLV 12	-0.53	-1.17	10.52	0	0	0
234	SLV 13	-2.7	0.45	11.85	0	0	0
234	SLV 14	-2.47	0.39	11.78	0	0	0
234	SLV 15	-2.55	-0.23	11.22	0	0	0
234	SLV 16	-2.32	-0.29	11.15	0	0	0
235	SLU 1	-0.12	-0.03	10.63	0	0	0
235	SLU 2	-0.11	-0.04	10.62	0	0	0
235	SLU 3	-0.12	-0.03	10.88	0	0	0
235	SLU 4	-0.12	-0.04	10.87	0	0	0
235	SLU 5	-0.11	-0.05	10.79	0	0	0
235	SLU 6	-0.12	-0.03	11.04	0	0	0
235	SLU 7	-0.12	-0.04	11.04	0	0	0
235	SLU 8	-0.12	-0.04	10.97	0	0	0
235	SLU 9	-0.12	-0.04	10.96	0	0	0
235	SLU 10	-0.12	-0.04	11.93	0	0	0
235	SLU 11	-0.13	-0.02	12.18	0	0	0
235	SLU 12	-0.12	-0.03	12.18	0	0	0
235	SLU 13	-0.12	-0.04	12.1	0	0	0
235	SLU 14	-0.13	-0.02	12.35	0	0	0
235	SLU 15	-0.13	-0.03	12.34	0	0	0
235	SLU 16	-0.13	-0.03	12.28	0	0	0
235	SLU 17	-0.13	-0.03	12.27	0	0	0
235	SLU 18	-0.13	-0.02	12.5	0	0	0
235	SLU 19	-0.12	-0.03	12.5	0	0	0
235	SLU 20	-0.13	-0.02	12.67	0	0	0
235	SLU 21	-0.13	-0.03	12.66	0	0	0
235	SLU 22	-0.13	-0.01	11.75	0	0	0
235	SLU 23	-0.13	-0.02	11.74	0	0	0
235	SLU 24	-0.14	-0.01	11.99	0	0	0
235	SLU 25	-0.13	-0.02	11.98	0	0	0
235	SLU 26	-0.13	-0.02	11.9	0	0	0
235	SLU 27	-0.14	-0.01	12.16	0	0	0
235	SLU 28	-0.14	-0.02	12.15	0	0	0
235	SLU 29	-0.14	-0.01	12.09	0	0	0
235	SLU 30	-0.13	-0.02	12.08	0	0	0
235	SLU 31	-0.13	-0.02	13.04	0	0	0
235	SLU 32	-0.14	0	13.3	0	0	0
235	SLU 33	-0.14	-0.01	13.29	0	0	0
235	SLU 34	-0.14	-0.02	13.21	0	0	0
235	SLU 35	-0.14	0	13.47	0	0	0
235	SLU 36	-0.14	-0.01	13.46	0	0	0
235	SLU 37	-0.14	-0.01	13.39	0	0	0
235	SLU 38	-0.14	-0.01	13.39	0	0	0
235	SLU 39	-0.14	0	13.62	0	0	0
235	SLU 40	-0.14	-0.01	13.61	0	0	0
235	SLU 41	-0.14	0	13.78	0	0	0
235	SLU 42	-0.14	-0.01	13.78	0	0	0
235	SLU 43	-0.15	-0.05	13.44	0	0	0
235	SLU 44	-0.14	-0.06	13.43	0	0	0
235	SLU 45	-0.15	-0.05	13.68	0	0	0
235	SLU 46	-0.15	-0.06	13.68	0	0	0
235	SLU 47	-0.15	-0.06	13.6	0	0	0
235	SLU 48	-0.16	-0.05	13.85	0	0	0
235	SLU 49	-0.15	-0.06	13.85	0	0	0
235	SLU 50	-0.15	-0.05	13.78	0	0	0
235	SLU 51	-0.15	-0.06	13.77	0	0	0
235	SLU 52	-0.15	-0.06	14.74	0	0	0
235	SLU 53	-0.16	-0.04	14.99	0	0	0
235	SLU 54	-0.16	-0.05	14.98	0	0	0
235	SLU 55	-0.15	-0.06	14.91	0	0	0
235	SLU 56	-0.16	-0.04	15.16	0	0	0
235	SLU 57	-0.16	-0.05	15.15	0	0	0
235	SLU 58	-0.16	-0.05	15.09	0	0	0
235	SLU 59	-0.16	-0.05	15.08	0	0	0
235	SLU 60	-0.16	-0.04	15.31	0	0	0
235	SLU 61	-0.15	-0.05	15.3	0	0	0
235	SLU 62	-0.16	-0.04	15.48	0	0	0
235	SLU 63	-0.16	-0.05	15.47	0	0	0
235	SLU 64	-0.16	-0.03	14.56	0	0	0
235	SLU 65	-0.16	-0.04	14.55	0	0	0
235	SLU 66	-0.17	-0.03	14.8	0	0	0
235	SLU 67	-0.16	-0.03	14.79	0	0	0
235	SLU 68	-0.16	-0.04	14.71	0	0	0
235	SLU 69	-0.17	-0.03	14.97	0	0	0
235	SLU 70	-0.17	-0.03	14.96	0	0	0
235	SLU 71	-0.17	-0.03	14.89	0	0	0
235	SLU 72	-0.16	-0.04	14.89	0	0	0
235	SLU 73	-0.16	-0.03	15.85	0	0	0
235	SLU 74	-0.17	-0.02	16.11	0	0	0
235	SLU 75	-0.17	-0.03	16.1	0	0	0
235	SLU 76	-0.17	-0.03	16.02	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
235	SLU 77	-0.18	-0.02	16.27	0	0	0
235	SLU 78	-0.17	-0.03	16.27	0	0	0
235	SLU 79	-0.17	-0.02	16.2	0	0	0
235	SLU 80	-0.17	-0.03	16.19	0	0	0
235	SLU 81	-0.17	-0.02	16.42	0	0	0
235	SLU 82	-0.17	-0.03	16.42	0	0	0
235	SLU 83	-0.17	-0.02	16.59	0	0	0
235	SLU 84	-0.17	-0.03	16.59	0	0	0
235	SLE RA 1	-0.12	-0.03	10.95	0	0	0
235	SLE RA 2	-0.12	-0.03	10.94	0	0	0
235	SLE RA 3	-0.13	-0.03	11.11	0	0	0
235	SLE RA 4	-0.12	-0.03	11.11	0	0	0
235	SLE RA 5	-0.12	-0.04	11.06	0	0	0
235	SLE RA 6	-0.13	-0.03	11.23	0	0	0
235	SLE RA 7	-0.12	-0.03	11.22	0	0	0
235	SLE RA 8	-0.13	-0.03	11.18	0	0	0
235	SLE RA 9	-0.12	-0.03	11.17	0	0	0
235	SLE RA 10	-0.12	-0.03	11.82	0	0	0
235	SLE RA 11	-0.13	-0.02	11.99	0	0	0
235	SLE RA 12	-0.13	-0.03	11.98	0	0	0
235	SLE RA 13	-0.12	-0.03	11.93	0	0	0
235	SLE RA 14	-0.13	-0.02	12.1	0	0	0
235	SLE RA 15	-0.13	-0.03	12.09	0	0	0
235	SLE RA 16	-0.13	-0.02	12.05	0	0	0
235	SLE RA 17	-0.13	-0.03	12.04	0	0	0
235	SLE RA 18	-0.13	-0.02	12.2	0	0	0
235	SLE RA 19	-0.13	-0.03	12.19	0	0	0
235	SLE RA 20	-0.13	-0.02	12.31	0	0	0
235	SLE RA 21	-0.13	-0.03	12.31	0	0	0
235	SLE FR 1	-0.12	-0.03	10.95	0	0	0
235	SLE FR 2	-0.12	-0.03	10.95	0	0	0
235	SLE FR 3	-0.12	-0.03	11	0	0	0
235	SLE FR 4	-0.12	-0.03	11.33	0	0	0
235	SLE FR 5	-0.13	-0.03	11.37	0	0	0
235	SLE FR 6	-0.13	-0.02	11.58	0	0	0
235	SLE QP 1	-0.12	-0.03	10.95	0	0	0
235	SLE QP 2	-0.12	-0.03	11.33	0	0	0
235	SLD 1	0.76	0.08	11.4	0	0	0
235	SLD 2	0.85	0.06	11.37	0	0	0
235	SLD 3	0.82	-0.21	11.12	0	0	0
235	SLD 4	0.91	-0.22	11.1	0	0	0
235	SLD 5	0.03	0.44	11.77	0	0	0
235	SLD 6	0.09	0.43	11.75	0	0	0
235	SLD 7	0.23	-0.51	10.86	0	0	0
235	SLD 8	0.29	-0.52	10.84	0	0	0
235	SLD 9	-0.54	0.47	11.81	0	0	0
235	SLD 10	-0.48	0.46	11.8	0	0	0
235	SLD 11	-0.34	-0.48	10.9	0	0	0
235	SLD 12	-0.28	-0.5	10.89	0	0	0
235	SLD 13	-1.16	0.17	11.56	0	0	0
235	SLD 14	-1.07	0.15	11.53	0	0	0
235	SLD 15	-1.1	-0.11	11.28	0	0	0
235	SLD 16	-1.01	-0.13	11.26	0	0	0
235	SLV 1	1.94	0.21	11.48	0	0	0
235	SLV 2	2.16	0.17	11.42	0	0	0
235	SLV 3	2.08	-0.44	10.86	0	0	0
235	SLV 4	2.3	-0.48	10.8	0	0	0
235	SLV 5	0.25	1.04	12.32	0	0	0
235	SLV 6	0.39	1.01	12.28	0	0	0
235	SLV 7	0.71	-1.13	10.26	0	0	0
235	SLV 8	0.85	-1.15	10.22	0	0	0
235	SLV 9	-1.1	1.1	12.43	0	0	0
235	SLV 10	-0.96	1.07	12.4	0	0	0
235	SLV 11	-0.64	-1.06	10.37	0	0	0
235	SLV 12	-0.5	-1.09	10.33	0	0	0
235	SLV 13	-2.55	0.43	11.85	0	0	0
235	SLV 14	-2.33	0.38	11.79	0	0	0
235	SLV 15	-2.41	-0.22	11.23	0	0	0
235	SLV 16	-2.19	-0.26	11.17	0	0	0
237	SLU 1	-0.06	-0.12	4.64	0	0	0
237	SLU 2	-0.06	-0.12	4.64	0	0	0
237	SLU 3	-0.06	-0.12	4.75	0	0	0
237	SLU 4	-0.06	-0.12	4.74	0	0	0
237	SLU 5	-0.06	-0.13	4.71	0	0	0
237	SLU 6	-0.06	-0.12	4.82	0	0	0
237	SLU 7	-0.06	-0.12	4.82	0	0	0
237	SLU 8	-0.06	-0.12	4.79	0	0	0
237	SLU 9	-0.06	-0.12	4.78	0	0	0
237	SLU 10	-0.06	-0.13	5.18	0	0	0
237	SLU 11	-0.06	-0.13	5.29	0	0	0
237	SLU 12	-0.06	-0.13	5.29	0	0	0
237	SLU 13	-0.06	-0.13	5.25	0	0	0
237	SLU 14	-0.06	-0.13	5.36	0	0	0
237	SLU 15	-0.06	-0.13	5.36	0	0	0
237	SLU 16	-0.06	-0.13	5.33	0	0	0
237	SLU 17	-0.06	-0.13	5.33	0	0	0
237	SLU 18	-0.06	-0.13	5.42	0	0	0
237	SLU 19	-0.06	-0.13	5.42	0	0	0
237	SLU 20	-0.06	-0.13	5.49	0	0	0
237	SLU 21	-0.06	-0.13	5.49	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
237	SLU 22	-0.07	-0.12	5.14	0	0	0
237	SLU 23	-0.06	-0.13	5.13	0	0	0
237	SLU 24	-0.07	-0.12	5.24	0	0	0
237	SLU 25	-0.07	-0.13	5.24	0	0	0
237	SLU 26	-0.06	-0.13	5.2	0	0	0
237	SLU 27	-0.07	-0.13	5.31	0	0	0
237	SLU 28	-0.07	-0.13	5.31	0	0	0
237	SLU 29	-0.07	-0.13	5.28	0	0	0
237	SLU 30	-0.07	-0.13	5.27	0	0	0
237	SLU 31	-0.07	-0.14	5.67	0	0	0
237	SLU 32	-0.07	-0.13	5.78	0	0	0
237	SLU 33	-0.07	-0.14	5.78	0	0	0
237	SLU 34	-0.07	-0.14	5.75	0	0	0
237	SLU 35	-0.07	-0.13	5.86	0	0	0
237	SLU 36	-0.07	-0.14	5.85	0	0	0
237	SLU 37	-0.07	-0.13	5.82	0	0	0
237	SLU 38	-0.07	-0.14	5.82	0	0	0
237	SLU 39	-0.07	-0.13	5.91	0	0	0
237	SLU 40	-0.07	-0.14	5.91	0	0	0
237	SLU 41	-0.07	-0.14	5.99	0	0	0
237	SLU 42	-0.07	-0.14	5.98	0	0	0
237	SLU 43	-0.07	-0.15	5.87	0	0	0
237	SLU 44	-0.07	-0.16	5.86	0	0	0
237	SLU 45	-0.08	-0.15	5.97	0	0	0
237	SLU 46	-0.07	-0.16	5.97	0	0	0
237	SLU 47	-0.07	-0.16	5.93	0	0	0
237	SLU 48	-0.08	-0.16	6.04	0	0	0
237	SLU 49	-0.07	-0.16	6.04	0	0	0
237	SLU 50	-0.08	-0.16	6.01	0	0	0
237	SLU 51	-0.07	-0.16	6.01	0	0	0
237	SLU 52	-0.07	-0.17	6.41	0	0	0
237	SLU 53	-0.08	-0.16	6.52	0	0	0
237	SLU 54	-0.08	-0.17	6.51	0	0	0
237	SLU 55	-0.08	-0.17	6.48	0	0	0
237	SLU 56	-0.08	-0.16	6.59	0	0	0
237	SLU 57	-0.08	-0.17	6.59	0	0	0
237	SLU 58	-0.08	-0.16	6.56	0	0	0
237	SLU 59	-0.08	-0.17	6.55	0	0	0
237	SLU 60	-0.08	-0.16	6.65	0	0	0
237	SLU 61	-0.08	-0.17	6.64	0	0	0
237	SLU 62	-0.08	-0.17	6.72	0	0	0
237	SLU 63	-0.08	-0.17	6.72	0	0	0
237	SLU 64	-0.08	-0.16	6.36	0	0	0
237	SLU 65	-0.08	-0.16	6.35	0	0	0
237	SLU 66	-0.08	-0.16	6.46	0	0	0
237	SLU 67	-0.08	-0.16	6.46	0	0	0
237	SLU 68	-0.08	-0.16	6.43	0	0	0
237	SLU 69	-0.08	-0.16	6.54	0	0	0
237	SLU 70	-0.08	-0.16	6.53	0	0	0
237	SLU 71	-0.08	-0.16	6.5	0	0	0
237	SLU 72	-0.08	-0.16	6.5	0	0	0
237	SLU 73	-0.08	-0.17	6.9	0	0	0
237	SLU 74	-0.09	-0.17	7.01	0	0	0
237	SLU 75	-0.08	-0.17	7.01	0	0	0
237	SLU 76	-0.08	-0.17	6.97	0	0	0
237	SLU 77	-0.09	-0.17	7.08	0	0	0
237	SLU 78	-0.09	-0.17	7.08	0	0	0
237	SLU 79	-0.09	-0.17	7.05	0	0	0
237	SLU 80	-0.08	-0.17	7.04	0	0	0
237	SLU 81	-0.09	-0.17	7.14	0	0	0
237	SLU 82	-0.08	-0.17	7.14	0	0	0
237	SLU 83	-0.09	-0.17	7.21	0	0	0
237	SLU 84	-0.08	-0.17	7.21	0	0	0
237	SLE RA 1	-0.06	-0.12	4.78	0	0	0
237	SLE RA 2	-0.06	-0.12	4.78	0	0	0
237	SLE RA 3	-0.06	-0.12	4.85	0	0	0
237	SLE RA 4	-0.06	-0.12	4.85	0	0	0
237	SLE RA 5	-0.06	-0.12	4.83	0	0	0
237	SLE RA 6	-0.06	-0.12	4.9	0	0	0
237	SLE RA 7	-0.06	-0.12	4.9	0	0	0
237	SLE RA 8	-0.06	-0.12	4.88	0	0	0
237	SLE RA 9	-0.06	-0.12	4.88	0	0	0
237	SLE RA 10	-0.06	-0.13	5.14	0	0	0
237	SLE RA 11	-0.06	-0.13	5.22	0	0	0
237	SLE RA 12	-0.06	-0.13	5.21	0	0	0
237	SLE RA 13	-0.06	-0.13	5.19	0	0	0
237	SLE RA 14	-0.06	-0.13	5.26	0	0	0
237	SLE RA 15	-0.06	-0.13	5.26	0	0	0
237	SLE RA 16	-0.06	-0.13	5.24	0	0	0
237	SLE RA 17	-0.06	-0.13	5.24	0	0	0
237	SLE RA 18	-0.06	-0.13	5.3	0	0	0
237	SLE RA 19	-0.06	-0.13	5.3	0	0	0
237	SLE RA 20	-0.06	-0.13	5.35	0	0	0
237	SLE RA 21	-0.06	-0.13	5.35	0	0	0
237	SLE FR 1	-0.06	-0.12	4.78	0	0	0
237	SLE FR 2	-0.06	-0.12	4.78	0	0	0
237	SLE FR 3	-0.06	-0.12	4.8	0	0	0
237	SLE FR 4	-0.06	-0.12	4.94	0	0	0
237	SLE FR 5	-0.06	-0.12	4.96	0	0	0
237	SLE FR 6	-0.06	-0.12	5.04	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
237	SLE QP 1	-0.06	-0.12	4.78	0	0	0
237	SLE QP 2	-0.06	-0.12	4.94	0	0	0
237	SLD 1	0.31	-0.12	5.3	0	0	0
237	SLD 2	0.35	-0.14	5.28	0	0	0
237	SLD 3	0.34	-0.24	5.18	0	0	0
237	SLD 4	0.38	-0.26	5.16	0	0	0
237	SLD 5	0.01	0.05	5.23	0	0	0
237	SLD 6	0.03	0.04	5.22	0	0	0
237	SLD 7	0.09	-0.32	4.84	0	0	0
237	SLD 8	0.11	-0.34	4.82	0	0	0
237	SLD 9	-0.24	0.1	5.06	0	0	0
237	SLD 10	-0.21	0.08	5.04	0	0	0
237	SLD 11	-0.15	-0.28	4.66	0	0	0
237	SLD 12	-0.13	-0.3	4.65	0	0	0
237	SLD 13	-0.5	0.02	4.72	0	0	0
237	SLD 14	-0.46	-0.01	4.7	0	0	0
237	SLD 15	-0.47	-0.1	4.6	0	0	0
237	SLD 16	-0.43	-0.12	4.58	0	0	0
237	SLV 1	0.81	-0.13	5.78	0	0	0
237	SLV 2	0.9	-0.18	5.72	0	0	0
237	SLV 3	0.87	-0.39	5.51	0	0	0
237	SLV 4	0.96	-0.44	5.46	0	0	0
237	SLV 5	0.1	0.27	5.61	0	0	0
237	SLV 6	0.15	0.24	5.57	0	0	0
237	SLV 7	0.29	-0.58	4.72	0	0	0
237	SLV 8	0.35	-0.62	4.68	0	0	0
237	SLV 9	-0.47	0.37	5.2	0	0	0
237	SLV 10	-0.41	0.34	5.16	0	0	0
237	SLV 11	-0.28	-0.49	4.31	0	0	0
237	SLV 12	-0.22	-0.52	4.27	0	0	0
237	SLV 13	-1.08	0.19	4.42	0	0	0
237	SLV 14	-0.99	0.14	4.37	0	0	0
237	SLV 15	-1.03	-0.06	4.16	0	0	0
237	SLV 16	-0.93	-0.11	4.1	0	0	0
238	SLU 1	-0.06	0	5.32	0	0.7996	0.0007
238	SLU 2	-0.05	-0.01	5.32	0	0.7987	0.0015
238	SLU 3	-0.06	0	5.44	0	0.8179	0.0005
238	SLU 4	-0.06	-0.01	5.44	0	0.8173	0.0009
238	SLU 5	-0.06	-0.01	5.4	0	0.8114	0.0015
238	SLU 6	-0.06	0	5.53	0	0.8306	0.0005
238	SLU 7	-0.06	-0.01	5.53	0	0.8301	0.0009
238	SLU 8	-0.06	-0.01	5.49	0	0.8251	0.0008
238	SLU 9	-0.06	-0.01	5.49	0	0.8245	0.0012
238	SLU 10	-0.06	-0.01	5.98	0	0.898	0.0008
238	SLU 11	-0.06	0	6.11	0	0.9172	-0.0003
238	SLU 12	-0.06	0	6.1	0	0.9166	0.0002
238	SLU 13	-0.06	-0.01	6.06	0	0.9107	0.0008
238	SLU 14	-0.06	0	6.19	0	0.9299	-0.0003
238	SLU 15	-0.06	0	6.19	0	0.9294	0.0002
238	SLU 16	-0.06	0	6.15	0	0.9244	0
238	SLU 17	-0.06	0	6.15	0	0.9238	0.0005
238	SLU 18	-0.06	0	6.27	0	0.9415	-0.0003
238	SLU 19	-0.06	0	6.26	0	0.9409	0.0002
238	SLU 20	-0.06	0	6.35	0	0.9542	-0.0003
238	SLU 21	-0.06	0	6.35	0	0.9537	0.0002
238	SLU 22	-0.06	0.01	5.88	0	0.8838	-0.0011
238	SLU 23	-0.06	0	5.88	0	0.8828	-0.0004
238	SLU 24	-0.07	0.01	6	0	0.902	-0.0014
238	SLU 25	-0.06	0.01	6	0	0.9015	-0.001
238	SLU 26	-0.06	0	5.96	0	0.8956	-0.0004
238	SLU 27	-0.07	0.01	6.09	0	0.9148	-0.0014
238	SLU 28	-0.07	0.01	6.09	0	0.9142	-0.0009
238	SLU 29	-0.07	0.01	6.05	0	0.9092	-0.0011
238	SLU 30	-0.06	0	6.05	0	0.9087	-0.0007
238	SLU 31	-0.06	0.01	6.54	0	0.9822	-0.0011
238	SLU 32	-0.07	0.01	6.67	0	1.0013	-0.0021
238	SLU 33	-0.07	0.01	6.66	0	1.0008	-0.0017
238	SLU 34	-0.07	0.01	6.62	0	0.9949	-0.0011
238	SLU 35	-0.07	0.01	6.75	0	1.0141	-0.0021
238	SLU 36	-0.07	0.01	6.75	0	1.0135	-0.0017
238	SLU 37	-0.07	0.01	6.71	0	1.0085	-0.0018
238	SLU 38	-0.07	0.01	6.71	0	1.008	-0.0014
238	SLU 39	-0.07	0.01	6.83	0	1.0256	-0.0022
238	SLU 40	-0.07	0.01	6.82	0	1.0251	-0.0017
238	SLU 41	-0.07	0.01	6.91	0	1.0384	-0.0021
238	SLU 42	-0.07	0.01	6.91	0	1.0378	-0.0017
238	SLU 43	-0.07	-0.01	6.73	0	1.0106	0.0016
238	SLU 44	-0.07	-0.02	6.72	0	1.0097	0.0024
238	SLU 45	-0.07	-0.01	6.85	0	1.0289	0.0013
238	SLU 46	-0.07	-0.01	6.85	0	1.0283	0.0018
238	SLU 47	-0.07	-0.02	6.81	0	1.0224	0.0024
238	SLU 48	-0.07	-0.01	6.93	0	1.0416	0.0013
238	SLU 49	-0.07	-0.01	6.93	0	1.0411	0.0018
238	SLU 50	-0.07	-0.01	6.9	0	1.0361	0.0016
238	SLU 51	-0.07	-0.01	6.89	0	1.0355	0.0021
238	SLU 52	-0.07	-0.01	7.38	0	1.109	0.0016
238	SLU 53	-0.08	0	7.51	0	1.1282	0.0006
238	SLU 54	-0.08	-0.01	7.51	0	1.1277	0.001
238	SLU 55	-0.07	-0.01	7.47	0	1.1218	0.0016
238	SLU 56	-0.08	0	7.6	0	1.1409	0.0006



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
238	SLU 57	-0.08	-0.01	7.59	0	1.1404	0.001
238	SLU 58	-0.08	-0.01	7.56	0	1.1354	0.0009
238	SLU 59	-0.08	-0.01	7.55	0	1.1348	0.0013
238	SLU 60	-0.08	0	7.67	0	1.1525	0.0006
238	SLU 61	-0.07	-0.01	7.67	0	1.1519	0.001
238	SLU 62	-0.08	0	7.76	0	1.1652	0.0006
238	SLU 63	-0.08	-0.01	7.75	0	1.1647	0.001
238	SLU 64	-0.08	0	7.29	0	1.0948	-0.0003
238	SLU 65	-0.08	0	7.28	0	1.0939	0.0005
238	SLU 66	-0.08	0	7.41	0	1.113	-0.0005
238	SLU 67	-0.08	0	7.41	0	1.1125	-0.0001
238	SLU 68	-0.08	0	7.37	0	1.1066	0.0005
238	SLU 69	-0.08	0	7.49	0	1.1258	-0.0005
238	SLU 70	-0.08	0	7.49	0	1.1252	-0.0001
238	SLU 71	-0.08	0	7.46	0	1.1202	-0.0002
238	SLU 72	-0.08	0	7.45	0	1.1197	0.0002
238	SLU 73	-0.08	0	7.94	0	1.1932	-0.0002
238	SLU 74	-0.08	0.01	8.07	0	1.2124	-0.0013
238	SLU 75	-0.08	0.01	8.07	0	1.2118	-0.0008
238	SLU 76	-0.08	0	8.03	0	1.2059	-0.0002
238	SLU 77	-0.08	0.01	8.16	0	1.2251	-0.0013
238	SLU 78	-0.08	0.01	8.15	0	1.2245	-0.0008
238	SLU 79	-0.08	0.01	8.12	0	1.2196	-0.001
238	SLU 80	-0.08	0	8.11	0	1.219	-0.0005
238	SLU 81	-0.08	0.01	8.23	0	1.2366	-0.0013
238	SLU 82	-0.08	0.01	8.23	0	1.2361	-0.0008
238	SLU 83	-0.08	0.01	8.32	0	1.2494	-0.0013
238	SLU 84	-0.08	0.01	8.31	0	1.2488	-0.0008
238	SLE RA 1	-0.06	0	5.48	0	0.8236	0.0002
238	SLE RA 2	-0.06	0	5.48	0	0.823	0.0007
238	SLE RA 3	-0.06	0	5.56	0	0.8358	0
238	SLE RA 4	-0.06	0	5.56	0	0.8355	0.0003
238	SLE RA 5	-0.06	0	5.54	0	0.8315	0.0007
238	SLE RA 6	-0.06	0	5.62	0	0.8443	0
238	SLE RA 7	-0.06	0	5.62	0	0.8439	0.0003
238	SLE RA 8	-0.06	0	5.6	0	0.8406	0.0002
238	SLE RA 9	-0.06	0	5.59	0	0.8403	0.0005
238	SLE RA 10	-0.06	0	5.92	0	0.8892	0.0002
238	SLE RA 11	-0.06	0	6	0	0.902	-0.0005
238	SLE RA 12	-0.06	0	6	0	0.9017	-0.0002
238	SLE RA 13	-0.06	0	5.98	0	0.8977	0.0002
238	SLE RA 14	-0.06	0	6.06	0	0.9105	-0.0005
238	SLE RA 15	-0.06	0	6.06	0	0.9101	-0.0002
238	SLE RA 16	-0.06	0	6.04	0	0.9068	-0.0003
238	SLE RA 17	-0.06	0	6.03	0	0.9065	0
238	SLE RA 18	-0.06	0	6.11	0	0.9182	-0.0005
238	SLE RA 19	-0.06	0	6.11	0	0.9179	-0.0002
238	SLE RA 20	-0.06	0	6.17	0	0.9267	-0.0005
238	SLE RA 21	-0.06	0	6.17	0	0.9263	-0.0002
238	SLE FR 1	-0.06	0	5.48	0	0.8236	0.0002
238	SLE FR 2	-0.06	0	5.48	0	0.8235	0.0003
238	SLE FR 3	-0.06	0	5.51	0	0.827	0.0002
238	SLE FR 4	-0.06	0	5.67	0	0.8519	0.0001
238	SLE FR 5	-0.06	0	5.69	0	0.8554	0
238	SLE FR 6	-0.06	0	5.8	0	0.8709	-0.0001
238	SLE QP 1	-0.06	0	5.48	0	0.8236	0.0002
238	SLE QP 2	-0.06	0	5.67	0	0.852	0
238	SLD 1	0.37	0.05	5.67	0	0.8523	-0.0079
238	SLD 2	0.41	0.05	5.66	0	0.8506	-0.0069
238	SLD 3	0.4	-0.09	5.54	0	0.8316	0.0132
238	SLD 4	0.44	-0.09	5.52	0	0.8299	0.0142
238	SLD 5	0.02	0.23	5.88	0	0.8837	-0.0345
238	SLD 6	0.05	0.23	5.88	0	0.8826	-0.0339
238	SLD 7	0.11	-0.24	5.42	0	0.8148	0.0358
238	SLD 8	0.14	-0.24	5.42	0	0.8137	0.0365
238	SLD 9	-0.26	0.24	5.93	0	0.8903	-0.0364
238	SLD 10	-0.23	0.24	5.92	0	0.8892	-0.0358
238	SLD 11	-0.17	-0.23	5.47	0	0.8214	0.0339
238	SLD 12	-0.14	-0.23	5.46	0	0.8203	0.0346
238	SLD 13	-0.56	0.09	5.82	0	0.8741	-0.0142
238	SLD 14	-0.52	0.09	5.81	0	0.8724	-0.0132
238	SLD 15	-0.53	-0.05	5.68	0	0.8534	0.0069
238	SLD 16	-0.49	-0.05	5.67	0	0.8518	0.0079
238	SLV 1	0.94	0.12	5.67	0	0.8519	-0.0177
238	SLV 2	1.05	0.1	5.64	0	0.8479	-0.0153
238	SLV 3	1.01	-0.2	5.36	0	0.805	0.0301
238	SLV 4	1.11	-0.22	5.33	0	0.8011	0.0325
238	SLV 5	0.12	0.52	6.15	0	0.9237	-0.0781
238	SLV 6	0.19	0.51	6.13	0	0.9212	-0.0766
238	SLV 7	0.34	-0.54	5.11	0	0.7675	0.081
238	SLV 8	0.41	-0.55	5.09	0	0.765	0.0826
238	SLV 9	-0.53	0.55	6.25	0	0.939	-0.0826
238	SLV 10	-0.46	0.54	6.23	0	0.9365	-0.081
238	SLV 11	-0.31	-0.51	5.21	0	0.7829	0.0766
238	SLV 12	-0.24	-0.52	5.19	0	0.7803	0.0782
238	SLV 13	-1.23	0.22	6.01	0	0.9029	-0.0325
238	SLV 14	-1.13	0.2	5.98	0	0.899	-0.0301
238	SLV 15	-1.17	-0.1	5.7	0	0.8561	0.0153
238	SLV 16	-1.06	-0.12	5.67	0	0.8522	0.0177
238	CRTP Ux+	0	0	0	0	0	0





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
238	CRTFP Ux-	0	0	0	0	0	0
238	CRTFP Uy+	0	0	0	0	0	0
238	CRTFP Uy-	0	0	0	0	0	0
240	SLU 1	0.12	-0.04	37.86	-0.9411	10.7592	0.0064
240	SLU 2	0.14	-0.07	37.83	-0.9401	10.749	0.0169
240	SLU 3	0.12	-0.03	38.73	-0.9627	11.0078	0.0025
240	SLU 4	0.13	-0.05	38.71	-0.9621	11.0017	0.0088
240	SLU 5	0.14	-0.07	38.42	-0.9548	10.9168	0.0166
240	SLU 6	0.12	-0.02	39.32	-0.9773	11.1756	0.0021
240	SLU 7	0.13	-0.05	39.3	-0.9768	11.1695	0.0084
240	SLU 8	0.12	-0.04	39.04	-0.9704	11.0948	0.0056
240	SLU 9	0.13	-0.06	39.02	-0.9698	11.0887	0.012
240	SLU 10	0.13	-0.02	42.57	-1.0576	12.1093	0.0002
240	SLU 11	0.11	0.03	43.47	-1.0801	12.3681	-0.0142
240	SLU 12	0.13	0.01	43.45	-1.0796	12.362	-0.0079
240	SLU 13	0.13	-0.02	43.15	-1.0722	12.2771	-0.0002
240	SLU 14	0.11	0.03	44.06	-1.0948	12.5359	-0.0146
240	SLU 15	0.13	0.01	44.04	-1.0942	12.5298	-0.0083
240	SLU 16	0.11	0.02	43.78	-1.0878	12.4551	-0.0111
240	SLU 17	0.12	0	43.76	-1.0873	12.449	-0.0048
240	SLU 18	0.11	0.04	44.63	-1.1088	12.7024	-0.0175
240	SLU 19	0.12	0.02	44.61	-1.1083	12.6963	-0.0112
240	SLU 20	0.11	0.04	45.22	-1.1235	12.8702	-0.0179
240	SLU 21	0.12	0.02	45.2	-1.1229	12.8641	-0.0116
240	SLU 22	0.14	0.05	41.9	-1.0411	11.9109	-0.0187
240	SLU 23	0.16	0.01	41.87	-1.0401	11.9007	-0.0082
240	SLU 24	0.14	0.06	42.77	-1.0627	12.1596	-0.0226
240	SLU 25	0.16	0.04	42.75	-1.0621	12.1535	-0.0163
240	SLU 26	0.16	0.01	42.46	-1.0548	12.0685	-0.0085
240	SLU 27	0.14	0.06	43.36	-1.0773	12.3274	-0.023
240	SLU 28	0.16	0.04	43.34	-1.0768	12.3213	-0.0167
240	SLU 29	0.14	0.05	43.08	-1.0704	12.2465	-0.0195
240	SLU 30	0.15	0.03	43.06	-1.0698	12.2404	-0.0131
240	SLU 31	0.16	0.07	46.61	-1.1575	13.261	-0.0249
240	SLU 32	0.14	0.12	47.51	-1.1801	13.5198	-0.0393
240	SLU 33	0.15	0.1	47.49	-1.1795	13.5137	-0.033
240	SLU 34	0.16	0.07	47.2	-1.1722	13.4288	-0.0253
240	SLU 35	0.14	0.12	48.1	-1.1948	13.6876	-0.0397
240	SLU 36	0.15	0.1	48.08	-1.1942	13.6815	-0.0334
240	SLU 37	0.14	0.11	47.82	-1.1878	13.6068	-0.0362
240	SLU 38	0.15	0.08	47.8	-1.1873	13.6007	-0.0299
240	SLU 39	0.13	0.13	48.67	-1.2088	13.8542	-0.0426
240	SLU 40	0.14	0.11	48.65	-1.2083	13.848	-0.0363
240	SLU 41	0.13	0.13	49.26	-1.2235	14.022	-0.043
240	SLU 42	0.15	0.11	49.24	-1.2229	14.0158	-0.0367
240	SLU 43	0.14	-0.08	47.83	-1.1891	13.5921	0.0169
240	SLU 44	0.16	-0.11	47.8	-1.1881	13.5819	0.0275
240	SLU 45	0.14	-0.07	48.7	-1.2107	13.8407	0.013
240	SLU 46	0.16	-0.09	48.68	-1.2101	13.8346	0.0194
240	SLU 47	0.16	-0.11	48.39	-1.2028	13.7497	0.0271
240	SLU 48	0.15	-0.07	49.29	-1.2254	14.0085	0.0127
240	SLU 49	0.16	-0.09	49.27	-1.2248	14.0024	0.019
240	SLU 50	0.14	-0.08	49.01	-1.2184	13.9277	0.0162
240	SLU 51	0.15	-0.1	48.99	-1.2179	13.9216	0.0225
240	SLU 52	0.16	-0.06	52.54	-1.3056	14.9421	0.0107
240	SLU 53	0.14	-0.01	53.44	-1.3282	15.201	-0.0037
240	SLU 54	0.15	-0.03	53.42	-1.3276	15.1949	0.0026
240	SLU 55	0.16	-0.06	53.13	-1.3203	15.11	0.0103
240	SLU 56	0.14	-0.01	54.03	-1.3428	15.3688	-0.0041
240	SLU 57	0.15	-0.03	54.01	-1.3423	15.3627	0.0022
240	SLU 58	0.14	-0.02	53.75	-1.3359	15.288	-0.0006
240	SLU 59	0.15	-0.04	53.73	-1.3353	15.2818	0.0058
240	SLU 60	0.13	0	54.6	-1.3569	15.5353	-0.007
240	SLU 61	0.15	-0.02	54.58	-1.3563	15.5292	-0.0007
240	SLU 62	0.13	0	55.19	-1.3715	15.7031	-0.0074
240	SLU 63	0.15	-0.02	55.17	-1.371	15.697	-0.001
240	SLU 64	0.17	0.01	51.88	-1.2891	14.7438	-0.0082
240	SLU 65	0.19	-0.03	51.84	-1.2881	14.7336	0.0024
240	SLU 66	0.17	0.02	52.75	-1.3107	14.9925	-0.0121
240	SLU 67	0.18	0	52.73	-1.3101	14.9863	-0.0057
240	SLU 68	0.19	-0.03	52.43	-1.3028	14.9014	0.002
240	SLU 69	0.17	0.02	53.33	-1.3254	15.1603	-0.0125
240	SLU 70	0.18	0	53.31	-1.3248	15.1541	-0.0061
240	SLU 71	0.17	0.01	53.05	-1.3184	15.0794	-0.0089
240	SLU 72	0.18	-0.01	53.03	-1.3179	15.0733	-0.0026
240	SLU 73	0.18	0.03	56.58	-1.4056	16.0939	-0.0144
240	SLU 74	0.16	0.08	57.49	-1.4282	16.3527	-0.0288
240	SLU 75	0.18	0.05	57.47	-1.4276	16.3466	-0.0225
240	SLU 76	0.18	0.03	57.17	-1.4203	16.2617	-0.0148
240	SLU 77	0.16	0.08	58.07	-1.4428	16.5205	-0.0292
240	SLU 78	0.18	0.06	58.05	-1.4423	16.5144	-0.0229
240	SLU 79	0.16	0.06	57.79	-1.4359	16.4397	-0.0257
240	SLU 80	0.17	0.04	57.77	-1.4353	16.4336	-0.0194
240	SLU 81	0.16	0.09	58.65	-1.4569	16.687	-0.0321
240	SLU 82	0.17	0.06	58.63	-1.4563	16.6809	-0.0258
240	SLU 83	0.16	0.09	59.23	-1.4715	16.8548	-0.0325
240	SLU 84	0.17	0.07	59.21	-1.471	16.8487	-0.0261
240	SLE RA 1	0.12	-0.01	39.02	-0.9696	11.0883	-0.0008
240	SLE RA 2	0.14	-0.04	38.99	-0.969	11.0815	0.0063
240	SLE RA 3	0.12	-0.01	39.6	-0.984	11.254	-0.0034



Nodo	Cont. N.br.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
240	SLE RA 4	0.13	-0.02	39.58	-0.9837	11.2499	0.0008
240	SLE RA 5	0.14	-0.04	39.39	-0.9788	11.1933	0.006
240	SLE RA 6	0.12	0	39.99	-0.9938	11.3659	-0.0036
240	SLE RA 7	0.13	-0.02	39.98	-0.9934	11.3618	0.0006
240	SLE RA 8	0.12	-0.01	39.8	-0.9892	11.312	-0.0013
240	SLE RA 9	0.13	-0.03	39.79	-0.9888	11.3079	0.0029
240	SLE RA 10	0.13	0	42.15	-1.0473	11.9883	-0.0049
240	SLE RA 11	0.12	0.03	42.76	-1.0623	12.1609	-0.0145
240	SLE RA 12	0.13	0.02	42.74	-1.062	12.1568	-0.0103
240	SLE RA 13	0.13	0	42.55	-1.0571	12.1002	-0.0052
240	SLE RA 14	0.12	0.03	43.15	-1.0721	12.2727	-0.0148
240	SLE RA 15	0.13	0.02	43.13	-1.0717	12.2687	-0.0106
240	SLE RA 16	0.12	0.02	42.96	-1.0675	12.2188	-0.0124
240	SLE RA 17	0.13	0.01	42.95	-1.0671	12.2148	-0.0082
240	SLE RA 18	0.12	0.04	43.53	-1.0815	12.3838	-0.0167
240	SLE RA 19	0.13	0.02	43.52	-1.0811	12.3797	-0.0125
240	SLE RA 20	0.12	0.04	43.92	-1.0913	12.4956	-0.017
240	SLE RA 21	0.13	0.03	43.91	-1.0909	12.4915	-0.0128
240	SLE FR 1	0.12	-0.01	39.02	-0.9696	11.0883	-0.0008
240	SLE FR 2	0.13	-0.02	39.01	-0.9695	11.0869	0.0006
240	SLE FR 3	0.12	-0.01	39.17	-0.9735	11.133	-0.0009
240	SLE FR 4	0.12	0	40.37	-1.0031	11.4756	-0.0041
240	SLE FR 5	0.12	0	40.53	-1.0071	11.5217	-0.0057
240	SLE FR 6	0.12	0.01	41.27	-1.0256	11.736	-0.0087
240	SLE QP 1	0.12	-0.01	39.02	-0.9696	11.0883	-0.0008
240	SLE QP 2	0.12	0	40.37	-1.0032	11.4769	-0.0056
240	SLD 1	3.7	0.37	40.37	-1.0026	11.5386	-0.052
240	SLD 2	4.04	0.39	40.45	-1.0049	11.5576	-0.0493
240	SLD 3	3.48	-0.71	39.42	-0.9761	11.263	0.2551
240	SLD 4	3.83	-0.68	39.51	-0.9784	11.282	0.2579
240	SLD 5	1.45	1.74	41.79	-1.0429	11.91	-0.4858
240	SLD 6	1.68	1.75	41.85	-1.0444	11.9225	-0.484
240	SLD 7	0.75	-1.85	38.63	-0.9544	10.9914	0.538
240	SLD 8	0.97	-1.83	38.69	-0.9559	11.0039	0.5398
240	SLD 9	-0.73	1.83	42.05	-1.0505	11.95	-0.5509
240	SLD 10	-0.51	1.85	42.11	-1.052	11.9624	-0.5491
240	SLD 11	-1.44	-1.75	38.89	-0.962	11.0314	0.4729
240	SLD 12	-1.21	-1.73	38.95	-0.9635	11.0438	0.4747
240	SLD 13	-3.59	0.69	41.23	-1.028	11.6718	-0.269
240	SLD 14	-3.24	0.71	41.32	-1.0303	11.6908	-0.2662
240	SLD 15	-3.8	-0.39	40.29	-1.0015	11.3962	0.0382
240	SLD 16	-3.45	-0.36	40.37	-1.0038	11.4152	0.0409
240	SLV 1	8.49	0.81	40.33	-1.0009	11.6118	-0.1029
240	SLV 2	9.29	0.88	40.53	-1.0062	11.6559	-0.0965
240	SLV 3	7.99	-1.62	38.18	-0.9407	10.9869	0.5925
240	SLV 4	8.8	-1.56	38.39	-0.9461	11.0311	0.5989
240	SLV 5	3.24	3.92	43.58	-1.0928	12.4574	-1.0905
240	SLV 6	3.76	3.96	43.71	-1.0963	12.4859	-1.0864
240	SLV 7	1.6	-4.18	36.42	-0.8923	10.3746	1.2274
240	SLV 8	2.11	-4.14	36.56	-0.8957	10.4032	1.2315
240	SLV 9	-1.87	4.15	44.18	-1.1106	12.5507	-1.2426
240	SLV 10	-1.36	4.19	44.32	-1.1141	12.5792	-1.2385
240	SLV 11	-3.52	-3.96	37.03	-0.9101	10.4679	1.0753
240	SLV 12	-3	-3.92	37.16	-0.9135	10.4964	1.0794
240	SLV 13	-8.55	1.56	42.35	-1.0603	11.9227	-0.61
240	SLV 14	-7.75	1.62	42.56	-1.0656	11.9669	-0.6036
240	SLV 15	-9.05	-0.87	40.21	-1.0001	11.2979	0.0854
240	SLV 16	-8.24	-0.81	40.41	-1.0055	11.3421	0.0918
240	CRTFP Ux+	0	0	0	0	0	0
240	CRTFP Ux-	0	0	0	0	0	0
240	CRTFP Uy+	0	0	0	0	0	0
240	CRTFP Uy-	0	0	0	0	0	0
242	SLU 1	0.03	-0.05	10.45	0	0	0
242	SLU 2	0.04	-0.06	10.44	0	0	0
242	SLU 3	0.03	-0.05	10.69	0	0	0
242	SLU 4	0.04	-0.06	10.68	0	0	0
242	SLU 5	0.04	-0.06	10.6	0	0	0
242	SLU 6	0.03	-0.05	10.85	0	0	0
242	SLU 7	0.04	-0.06	10.84	0	0	0
242	SLU 8	0.03	-0.05	10.77	0	0	0
242	SLU 9	0.04	-0.06	10.76	0	0	0
242	SLU 10	0.04	-0.05	11.73	0	0	0
242	SLU 11	0.03	-0.04	11.97	0	0	0
242	SLU 12	0.04	-0.05	11.97	0	0	0
242	SLU 13	0.04	-0.05	11.89	0	0	0
242	SLU 14	0.03	-0.04	12.14	0	0	0
242	SLU 15	0.04	-0.05	12.13	0	0	0
242	SLU 16	0.03	-0.04	12.06	0	0	0
242	SLU 17	0.04	-0.05	12.05	0	0	0
242	SLU 18	0.03	-0.04	12.29	0	0	0
242	SLU 19	0.03	-0.04	12.28	0	0	0
242	SLU 20	0.03	-0.04	12.45	0	0	0
242	SLU 21	0.03	-0.04	12.44	0	0	0
242	SLU 22	0.04	-0.03	11.56	0	0	0
242	SLU 23	0.05	-0.04	11.55	0	0	0
242	SLU 24	0.04	-0.03	11.8	0	0	0
242	SLU 25	0.04	-0.04	11.79	0	0	0
242	SLU 26	0.05	-0.04	11.71	0	0	0
242	SLU 27	0.04	-0.03	11.96	0	0	0
242	SLU 28	0.04	-0.04	11.95	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
242	SLU 29	0.04	-0.04	11.88	0	0	0
242	SLU 30	0.04	-0.04	11.88	0	0	0
242	SLU 31	0.04	-0.03	12.84	0	0	0
242	SLU 32	0.04	-0.02	13.09	0	0	0
242	SLU 33	0.04	-0.03	13.08	0	0	0
242	SLU 34	0.04	-0.03	13	0	0	0
242	SLU 35	0.04	-0.02	13.25	0	0	0
242	SLU 36	0.04	-0.03	13.24	0	0	0
242	SLU 37	0.04	-0.03	13.17	0	0	0
242	SLU 38	0.04	-0.03	13.16	0	0	0
242	SLU 39	0.04	-0.02	13.4	0	0	0
242	SLU 40	0.04	-0.03	13.39	0	0	0
242	SLU 41	0.04	-0.02	13.56	0	0	0
242	SLU 42	0.04	-0.03	13.55	0	0	0
242	SLU 43	0.04	-0.08	13.2	0	0	0
242	SLU 44	0.05	-0.08	13.19	0	0	0
242	SLU 45	0.04	-0.07	13.44	0	0	0
242	SLU 46	0.05	-0.08	13.44	0	0	0
242	SLU 47	0.05	-0.08	13.35	0	0	0
242	SLU 48	0.04	-0.07	13.6	0	0	0
242	SLU 49	0.05	-0.08	13.6	0	0	0
242	SLU 50	0.04	-0.08	13.52	0	0	0
242	SLU 51	0.04	-0.08	13.52	0	0	0
242	SLU 52	0.05	-0.07	14.48	0	0	0
242	SLU 53	0.04	-0.06	14.73	0	0	0
242	SLU 54	0.04	-0.07	14.72	0	0	0
242	SLU 55	0.05	-0.07	14.64	0	0	0
242	SLU 56	0.04	-0.06	14.89	0	0	0
242	SLU 57	0.04	-0.07	14.88	0	0	0
242	SLU 58	0.04	-0.07	14.81	0	0	0
242	SLU 59	0.04	-0.07	14.81	0	0	0
242	SLU 60	0.04	-0.06	15.04	0	0	0
242	SLU 61	0.04	-0.07	15.04	0	0	0
242	SLU 62	0.04	-0.06	15.2	0	0	0
242	SLU 63	0.04	-0.07	15.2	0	0	0
242	SLU 64	0.05	-0.06	14.31	0	0	0
242	SLU 65	0.05	-0.07	14.3	0	0	0
242	SLU 66	0.05	-0.05	14.55	0	0	0
242	SLU 67	0.05	-0.06	14.55	0	0	0
242	SLU 68	0.05	-0.07	14.47	0	0	0
242	SLU 69	0.05	-0.05	14.71	0	0	0
242	SLU 70	0.05	-0.06	14.71	0	0	0
242	SLU 71	0.05	-0.06	14.63	0	0	0
242	SLU 72	0.05	-0.06	14.63	0	0	0
242	SLU 73	0.05	-0.06	15.59	0	0	0
242	SLU 74	0.05	-0.04	15.84	0	0	0
242	SLU 75	0.05	-0.05	15.83	0	0	0
242	SLU 76	0.05	-0.06	15.75	0	0	0
242	SLU 77	0.05	-0.04	16	0	0	0
242	SLU 78	0.05	-0.05	15.99	0	0	0
242	SLU 79	0.05	-0.05	15.92	0	0	0
242	SLU 80	0.05	-0.05	15.92	0	0	0
242	SLU 81	0.05	-0.04	16.15	0	0	0
242	SLU 82	0.05	-0.05	16.15	0	0	0
242	SLU 83	0.05	-0.04	16.31	0	0	0
242	SLU 84	0.05	-0.05	16.31	0	0	0
242	SLE RA 1	0.04	-0.05	10.77	0	0	0
242	SLE RA 2	0.04	-0.05	10.76	0	0	0
242	SLE RA 3	0.04	-0.05	10.92	0	0	0
242	SLE RA 4	0.04	-0.05	10.92	0	0	0
242	SLE RA 5	0.04	-0.05	10.87	0	0	0
242	SLE RA 6	0.04	-0.05	11.03	0	0	0
242	SLE RA 7	0.04	-0.05	11.03	0	0	0
242	SLE RA 8	0.04	-0.05	10.98	0	0	0
242	SLE RA 9	0.04	-0.05	10.98	0	0	0
242	SLE RA 10	0.04	-0.05	11.62	0	0	0
242	SLE RA 11	0.03	-0.04	11.78	0	0	0
242	SLE RA 12	0.04	-0.04	11.78	0	0	0
242	SLE RA 13	0.04	-0.05	11.73	0	0	0
242	SLE RA 14	0.04	-0.04	11.89	0	0	0
242	SLE RA 15	0.04	-0.04	11.89	0	0	0
242	SLE RA 16	0.03	-0.04	11.84	0	0	0
242	SLE RA 17	0.04	-0.05	11.84	0	0	0
242	SLE RA 18	0.03	-0.04	11.99	0	0	0
242	SLE RA 19	0.04	-0.04	11.99	0	0	0
242	SLE RA 20	0.03	-0.04	12.1	0	0	0
242	SLE RA 21	0.04	-0.04	12.1	0	0	0
242	SLE FR 1	0.04	-0.05	10.77	0	0	0
242	SLE FR 2	0.04	-0.05	10.76	0	0	0
242	SLE FR 3	0.04	-0.05	10.81	0	0	0
242	SLE FR 4	0.04	-0.05	11.13	0	0	0
242	SLE FR 5	0.03	-0.04	11.18	0	0	0
242	SLE FR 6	0.03	-0.04	11.38	0	0	0
242	SLE QP 1	0.04	-0.05	10.77	0	0	0
242	SLE QP 2	0.03	-0.04	11.13	0	0	0
242	SLD 1	1.02	0.15	11.02	0	0	0
242	SLD 2	1.12	0.17	11.05	0	0	0
242	SLD 3	0.96	-0.14	10.77	0	0	0
242	SLD 4	1.06	-0.12	10.8	0	0	0
242	SLD 5	0.4	0.45	11.47	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
242	SLD 6	0.46	0.46	11.49	0	0	0
242	SLD 7	0.21	-0.52	10.64	0	0	0
242	SLD 8	0.27	-0.5	10.66	0	0	0
242	SLD 9	-0.2	0.41	11.61	0	0	0
242	SLD 10	-0.14	0.43	11.63	0	0	0
242	SLD 11	-0.4	-0.55	10.77	0	0	0
242	SLD 12	-0.33	-0.54	10.79	0	0	0
242	SLD 13	-0.99	0.03	11.47	0	0	0
242	SLD 14	-0.89	0.05	11.5	0	0	0
242	SLD 15	-1.05	-0.26	11.22	0	0	0
242	SLD 16	-0.95	-0.24	11.25	0	0	0
242	SLV 1	2.35	0.4	10.85	0	0	0
242	SLV 2	2.57	0.44	10.93	0	0	0
242	SLV 3	2.21	-0.25	10.29	0	0	0
242	SLV 4	2.43	-0.21	10.37	0	0	0
242	SLV 5	0.9	1.08	11.9	0	0	0
242	SLV 6	1.04	1.1	11.95	0	0	0
242	SLV 7	0.44	-1.11	10	0	0	0
242	SLV 8	0.59	-1.08	10.06	0	0	0
242	SLV 9	-0.52	0.99	12.21	0	0	0
242	SLV 10	-0.37	1.02	12.26	0	0	0
242	SLV 11	-0.97	-1.19	10.32	0	0	0
242	SLV 12	-0.83	-1.17	10.37	0	0	0
242	SLV 13	-2.36	0.12	11.9	0	0	0
242	SLV 14	-2.14	0.17	11.98	0	0	0
242	SLV 15	-2.5	-0.53	11.33	0	0	0
242	SLV 16	-2.28	-0.49	11.41	0	0	0
243	SLU 1	0.04	-0.08	10.83	0	0	0
243	SLU 2	0.04	-0.08	10.82	0	0	0
243	SLU 3	0.04	-0.07	11.07	0	0	0
243	SLU 4	0.04	-0.08	11.07	0	0	0
243	SLU 5	0.04	-0.09	10.99	0	0	0
243	SLU 6	0.04	-0.07	11.24	0	0	0
243	SLU 7	0.04	-0.08	11.24	0	0	0
243	SLU 8	0.04	-0.08	11.16	0	0	0
243	SLU 9	0.04	-0.08	11.16	0	0	0
243	SLU 10	0.04	-0.08	12.14	0	0	0
243	SLU 11	0.04	-0.07	12.4	0	0	0
243	SLU 12	0.04	-0.07	12.39	0	0	0
243	SLU 13	0.04	-0.08	12.31	0	0	0
243	SLU 14	0.04	-0.07	12.56	0	0	0
243	SLU 15	0.04	-0.07	12.56	0	0	0
243	SLU 16	0.03	-0.07	12.48	0	0	0
243	SLU 17	0.04	-0.08	12.48	0	0	0
243	SLU 18	0.03	-0.06	12.72	0	0	0
243	SLU 19	0.04	-0.07	12.71	0	0	0
243	SLU 20	0.03	-0.07	12.88	0	0	0
243	SLU 21	0.04	-0.07	12.88	0	0	0
243	SLU 22	0.04	-0.06	11.98	0	0	0
243	SLU 23	0.05	-0.07	11.97	0	0	0
243	SLU 24	0.04	-0.06	12.22	0	0	0
243	SLU 25	0.05	-0.06	12.22	0	0	0
243	SLU 26	0.05	-0.07	12.13	0	0	0
243	SLU 27	0.04	-0.06	12.39	0	0	0
243	SLU 28	0.05	-0.06	12.38	0	0	0
243	SLU 29	0.04	-0.06	12.31	0	0	0
243	SLU 30	0.05	-0.07	12.3	0	0	0
243	SLU 31	0.05	-0.06	13.29	0	0	0
243	SLU 32	0.04	-0.05	13.55	0	0	0
243	SLU 33	0.05	-0.05	13.54	0	0	0
243	SLU 34	0.05	-0.06	13.46	0	0	0
243	SLU 35	0.04	-0.05	13.71	0	0	0
243	SLU 36	0.05	-0.06	13.71	0	0	0
243	SLU 37	0.04	-0.05	13.63	0	0	0
243	SLU 38	0.05	-0.06	13.63	0	0	0
243	SLU 39	0.04	-0.05	13.87	0	0	0
243	SLU 40	0.04	-0.05	13.86	0	0	0
243	SLU 41	0.04	-0.05	14.03	0	0	0
243	SLU 42	0.04	-0.05	14.03	0	0	0
243	SLU 43	0.04	-0.1	13.68	0	0	0
243	SLU 44	0.05	-0.11	13.68	0	0	0
243	SLU 45	0.05	-0.1	13.93	0	0	0
243	SLU 46	0.05	-0.11	13.92	0	0	0
243	SLU 47	0.05	-0.11	13.84	0	0	0
243	SLU 48	0.05	-0.1	14.1	0	0	0
243	SLU 49	0.05	-0.11	14.09	0	0	0
243	SLU 50	0.04	-0.11	14.02	0	0	0
243	SLU 51	0.05	-0.11	14.01	0	0	0
243	SLU 52	0.05	-0.1	15	0	0	0
243	SLU 53	0.04	-0.09	15.25	0	0	0
243	SLU 54	0.05	-0.1	15.25	0	0	0
243	SLU 55	0.05	-0.11	15.16	0	0	0
243	SLU 56	0.04	-0.1	15.42	0	0	0
243	SLU 57	0.05	-0.1	15.41	0	0	0
243	SLU 58	0.04	-0.1	15.34	0	0	0
243	SLU 59	0.05	-0.1	15.33	0	0	0
243	SLU 60	0.04	-0.09	15.57	0	0	0
243	SLU 61	0.05	-0.1	15.57	0	0	0
243	SLU 62	0.04	-0.09	15.74	0	0	0
243	SLU 63	0.05	-0.1	15.73	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
243	SLU 64	0.05	-0.09	14.83	0	0	0
243	SLU 65	0.06	-0.1	14.82	0	0	0
243	SLU 66	0.05	-0.09	15.08	0	0	0
243	SLU 67	0.06	-0.09	15.07	0	0	0
243	SLU 68	0.06	-0.1	14.99	0	0	0
243	SLU 69	0.05	-0.09	15.24	0	0	0
243	SLU 70	0.06	-0.09	15.24	0	0	0
243	SLU 71	0.05	-0.09	15.16	0	0	0
243	SLU 72	0.06	-0.09	15.16	0	0	0
243	SLU 73	0.06	-0.09	16.15	0	0	0
243	SLU 74	0.05	-0.08	16.4	0	0	0
243	SLU 75	0.05	-0.08	16.4	0	0	0
243	SLU 76	0.06	-0.09	16.31	0	0	0
243	SLU 77	0.05	-0.08	16.57	0	0	0
243	SLU 78	0.05	-0.08	16.56	0	0	0
243	SLU 79	0.05	-0.08	16.49	0	0	0
243	SLU 80	0.05	-0.09	16.48	0	0	0
243	SLU 81	0.05	-0.08	16.72	0	0	0
243	SLU 82	0.05	-0.08	16.72	0	0	0
243	SLU 83	0.05	-0.08	16.89	0	0	0
243	SLU 84	0.05	-0.08	16.88	0	0	0
243	SLE RA 1	0.04	-0.07	11.16	0	0	0
243	SLE RA 2	0.04	-0.08	11.15	0	0	0
243	SLE RA 3	0.04	-0.07	11.32	0	0	0
243	SLE RA 4	0.04	-0.07	11.32	0	0	0
243	SLE RA 5	0.04	-0.08	11.26	0	0	0
243	SLE RA 6	0.04	-0.07	11.43	0	0	0
243	SLE RA 7	0.04	-0.07	11.43	0	0	0
243	SLE RA 8	0.04	-0.07	11.38	0	0	0
243	SLE RA 9	0.04	-0.08	11.37	0	0	0
243	SLE RA 10	0.04	-0.07	12.03	0	0	0
243	SLE RA 11	0.04	-0.06	12.2	0	0	0
243	SLE RA 12	0.04	-0.07	12.2	0	0	0
243	SLE RA 13	0.04	-0.07	12.14	0	0	0
243	SLE RA 14	0.04	-0.07	12.31	0	0	0
243	SLE RA 15	0.04	-0.07	12.31	0	0	0
243	SLE RA 16	0.04	-0.07	12.26	0	0	0
243	SLE RA 17	0.04	-0.07	12.26	0	0	0
243	SLE RA 18	0.04	-0.06	12.42	0	0	0
243	SLE RA 19	0.04	-0.07	12.41	0	0	0
243	SLE RA 20	0.04	-0.06	12.53	0	0	0
243	SLE RA 21	0.04	-0.07	12.52	0	0	0
243	SLE FR 1	0.04	-0.07	11.16	0	0	0
243	SLE FR 2	0.04	-0.07	11.16	0	0	0
243	SLE FR 3	0.04	-0.07	11.2	0	0	0
243	SLE FR 4	0.04	-0.07	11.53	0	0	0
243	SLE FR 5	0.04	-0.07	11.58	0	0	0
243	SLE FR 6	0.04	-0.07	11.79	0	0	0
243	SLE QP 1	0.04	-0.07	11.16	0	0	0
243	SLE QP 2	0.04	-0.07	11.53	0	0	0
243	SLD 1	1.07	0.14	11.35	0	0	0
243	SLD 2	1.17	0.17	11.39	0	0	0
243	SLD 3	1.01	-0.15	11.09	0	0	0
243	SLD 4	1.11	-0.13	11.13	0	0	0
243	SLD 5	0.42	0.44	11.86	0	0	0
243	SLD 6	0.49	0.46	11.89	0	0	0
243	SLD 7	0.22	-0.55	11.01	0	0	0
243	SLD 8	0.28	-0.54	11.03	0	0	0
243	SLD 9	-0.21	0.4	12.04	0	0	0
243	SLD 10	-0.14	0.41	12.06	0	0	0
243	SLD 11	-0.41	-0.6	11.18	0	0	0
243	SLD 12	-0.35	-0.58	11.21	0	0	0
243	SLD 13	-1.03	-0.01	11.94	0	0	0
243	SLD 14	-0.93	0.02	11.98	0	0	0
243	SLD 15	-1.09	-0.31	11.68	0	0	0
243	SLD 16	-0.99	-0.28	11.72	0	0	0
243	SLV 1	2.45	0.42	11.09	0	0	0
243	SLV 2	2.68	0.47	11.18	0	0	0
243	SLV 3	2.31	-0.26	10.51	0	0	0
243	SLV 4	2.54	-0.2	10.6	0	0	0
243	SLV 5	0.94	1.09	12.27	0	0	0
243	SLV 6	1.08	1.13	12.33	0	0	0
243	SLV 7	0.46	-1.16	10.33	0	0	0
243	SLV 8	0.61	-1.12	10.39	0	0	0
243	SLV 9	-0.54	0.99	12.68	0	0	0
243	SLV 10	-0.39	1.02	12.74	0	0	0
243	SLV 11	-1.01	-1.27	10.74	0	0	0
243	SLV 12	-0.86	-1.23	10.8	0	0	0
243	SLV 13	-2.46	0.07	12.47	0	0	0
243	SLV 14	-2.23	0.12	12.56	0	0	0
243	SLV 15	-2.6	-0.61	11.89	0	0	0
243	SLV 16	-2.37	-0.55	11.98	0	0	0
244	SLU 1	0.04	-0.1	10.87	0	0	0
244	SLU 2	0.04	-0.11	10.86	0	0	0
244	SLU 3	0.04	-0.1	11.12	0	0	0
244	SLU 4	0.04	-0.1	11.11	0	0	0
244	SLU 5	0.04	-0.11	11.03	0	0	0
244	SLU 6	0.04	-0.1	11.28	0	0	0
244	SLU 7	0.04	-0.1	11.28	0	0	0
244	SLU 8	0.04	-0.1	11.2	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
244	SLU 9	0.04	-0.11	11.2	0	0	0
244	SLU 10	0.04	-0.1	12.18	0	0	0
244	SLU 11	0.04	-0.09	12.43	0	0	0
244	SLU 12	0.04	-0.1	12.43	0	0	0
244	SLU 13	0.04	-0.1	12.35	0	0	0
244	SLU 14	0.04	-0.09	12.6	0	0	0
244	SLU 15	0.04	-0.1	12.59	0	0	0
244	SLU 16	0.04	-0.1	12.52	0	0	0
244	SLU 17	0.04	-0.1	12.51	0	0	0
244	SLU 18	0.04	-0.09	12.75	0	0	0
244	SLU 19	0.04	-0.1	12.75	0	0	0
244	SLU 20	0.04	-0.09	12.92	0	0	0
244	SLU 21	0.04	-0.1	12.91	0	0	0
244	SLU 22	0.05	-0.08	12.02	0	0	0
244	SLU 23	0.05	-0.09	12.01	0	0	0
244	SLU 24	0.05	-0.08	12.27	0	0	0
244	SLU 25	0.05	-0.09	12.26	0	0	0
244	SLU 26	0.05	-0.09	12.18	0	0	0
244	SLU 27	0.05	-0.08	12.43	0	0	0
244	SLU 28	0.05	-0.09	12.43	0	0	0
244	SLU 29	0.05	-0.09	12.35	0	0	0
244	SLU 30	0.05	-0.09	12.35	0	0	0
244	SLU 31	0.05	-0.09	13.33	0	0	0
244	SLU 32	0.05	-0.08	13.58	0	0	0
244	SLU 33	0.05	-0.08	13.58	0	0	0
244	SLU 34	0.05	-0.09	13.5	0	0	0
244	SLU 35	0.05	-0.08	13.75	0	0	0
244	SLU 36	0.05	-0.08	13.74	0	0	0
244	SLU 37	0.04	-0.08	13.67	0	0	0
244	SLU 38	0.05	-0.09	13.66	0	0	0
244	SLU 39	0.04	-0.08	13.9	0	0	0
244	SLU 40	0.05	-0.08	13.9	0	0	0
244	SLU 41	0.04	-0.08	14.07	0	0	0
244	SLU 42	0.05	-0.08	14.06	0	0	0
244	SLU 43	0.05	-0.13	13.74	0	0	0
244	SLU 44	0.05	-0.14	13.73	0	0	0
244	SLU 45	0.05	-0.13	13.99	0	0	0
244	SLU 46	0.05	-0.14	13.98	0	0	0
244	SLU 47	0.05	-0.14	13.9	0	0	0
244	SLU 48	0.05	-0.13	14.15	0	0	0
244	SLU 49	0.05	-0.14	14.15	0	0	0
244	SLU 50	0.05	-0.14	14.07	0	0	0
244	SLU 51	0.05	-0.14	14.07	0	0	0
244	SLU 52	0.05	-0.14	15.05	0	0	0
244	SLU 53	0.05	-0.13	15.3	0	0	0
244	SLU 54	0.05	-0.13	15.3	0	0	0
244	SLU 55	0.05	-0.14	15.21	0	0	0
244	SLU 56	0.05	-0.13	15.47	0	0	0
244	SLU 57	0.05	-0.13	15.46	0	0	0
244	SLU 58	0.05	-0.13	15.39	0	0	0
244	SLU 59	0.05	-0.14	15.38	0	0	0
244	SLU 60	0.04	-0.13	15.62	0	0	0
244	SLU 61	0.05	-0.13	15.61	0	0	0
244	SLU 62	0.05	-0.13	15.78	0	0	0
244	SLU 63	0.05	-0.13	15.78	0	0	0
244	SLU 64	0.05	-0.12	14.89	0	0	0
244	SLU 65	0.06	-0.13	14.88	0	0	0
244	SLU 66	0.06	-0.12	15.13	0	0	0
244	SLU 67	0.06	-0.12	15.13	0	0	0
244	SLU 68	0.06	-0.13	15.05	0	0	0
244	SLU 69	0.06	-0.12	15.3	0	0	0
244	SLU 70	0.06	-0.12	15.3	0	0	0
244	SLU 71	0.06	-0.12	15.22	0	0	0
244	SLU 72	0.06	-0.13	15.22	0	0	0
244	SLU 73	0.06	-0.12	16.2	0	0	0
244	SLU 74	0.05	-0.11	16.45	0	0	0
244	SLU 75	0.06	-0.12	16.45	0	0	0
244	SLU 76	0.06	-0.12	16.36	0	0	0
244	SLU 77	0.05	-0.11	16.62	0	0	0
244	SLU 78	0.06	-0.12	16.61	0	0	0
244	SLU 79	0.05	-0.12	16.54	0	0	0
244	SLU 80	0.06	-0.12	16.53	0	0	0
244	SLU 81	0.05	-0.11	16.77	0	0	0
244	SLU 82	0.06	-0.12	16.76	0	0	0
244	SLU 83	0.05	-0.11	16.93	0	0	0
244	SLU 84	0.06	-0.12	16.93	0	0	0
244	SLE RA 1	0.04	-0.09	11.2	0	0	0
244	SLE RA 2	0.04	-0.1	11.2	0	0	0
244	SLE RA 3	0.04	-0.09	11.36	0	0	0
244	SLE RA 4	0.04	-0.1	11.36	0	0	0
244	SLE RA 5	0.04	-0.1	11.31	0	0	0
244	SLE RA 6	0.04	-0.09	11.47	0	0	0
244	SLE RA 7	0.04	-0.1	11.47	0	0	0
244	SLE RA 8	0.04	-0.1	11.42	0	0	0
244	SLE RA 9	0.04	-0.1	11.42	0	0	0
244	SLE RA 10	0.04	-0.1	12.07	0	0	0
244	SLE RA 11	0.04	-0.09	12.24	0	0	0
244	SLE RA 12	0.04	-0.09	12.24	0	0	0
244	SLE RA 13	0.04	-0.1	12.18	0	0	0
244	SLE RA 14	0.04	-0.09	12.35	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
244	SLE RA 15	0.04	-0.09	12.35	0	0	0
244	SLE RA 16	0.04	-0.09	12.3	0	0	0
244	SLE RA 17	0.04	-0.1	12.3	0	0	0
244	SLE RA 18	0.04	-0.09	12.45	0	0	0
244	SLE RA 19	0.04	-0.09	12.45	0	0	0
244	SLE RA 20	0.04	-0.09	12.56	0	0	0
244	SLE RA 21	0.04	-0.09	12.56	0	0	0
244	SLE FR 1	0.04	-0.09	11.2	0	0	0
244	SLE FR 2	0.04	-0.1	11.2	0	0	0
244	SLE FR 3	0.04	-0.09	11.24	0	0	0
244	SLE FR 4	0.04	-0.09	11.58	0	0	0
244	SLE FR 5	0.04	-0.09	11.62	0	0	0
244	SLE FR 6	0.04	-0.09	11.83	0	0	0
244	SLE QP 1	0.04	-0.09	11.2	0	0	0
244	SLE QP 2	0.04	-0.09	11.58	0	0	0
244	SLD 1	1.08	0.13	11.32	0	0	0
244	SLD 2	1.18	0.16	11.36	0	0	0
244	SLD 3	1.02	-0.17	11.06	0	0	0
244	SLD 4	1.12	-0.14	11.1	0	0	0
244	SLD 5	0.43	0.42	11.88	0	0	0
244	SLD 6	0.49	0.44	11.9	0	0	0
244	SLD 7	0.22	-0.57	11.03	0	0	0
244	SLD 8	0.29	-0.55	11.06	0	0	0
244	SLD 9	-0.21	0.37	12.09	0	0	0
244	SLD 10	-0.14	0.39	12.12	0	0	0
244	SLD 11	-0.41	-0.63	11.25	0	0	0
244	SLD 12	-0.35	-0.61	11.28	0	0	0
244	SLD 13	-1.04	-0.05	12.05	0	0	0
244	SLD 14	-0.94	-0.02	12.09	0	0	0
244	SLD 15	-1.1	-0.35	11.79	0	0	0
244	SLD 16	-1	-0.32	11.84	0	0	0
244	SLV 1	2.47	0.42	10.96	0	0	0
244	SLV 2	2.71	0.49	11.06	0	0	0
244	SLV 3	2.33	-0.25	10.38	0	0	0
244	SLV 4	2.56	-0.18	10.48	0	0	0
244	SLV 5	0.95	1.07	12.25	0	0	0
244	SLV 6	1.1	1.12	12.31	0	0	0
244	SLV 7	0.47	-1.18	10.33	0	0	0
244	SLV 8	0.62	-1.13	10.39	0	0	0
244	SLV 9	-0.54	0.95	12.76	0	0	0
244	SLV 10	-0.39	0.99	12.83	0	0	0
244	SLV 11	-1.02	-1.3	10.84	0	0	0
244	SLV 12	-0.87	-1.26	10.91	0	0	0
244	SLV 13	-2.48	0	12.67	0	0	0
244	SLV 14	-2.25	0.07	12.77	0	0	0
244	SLV 15	-2.63	-0.68	12.09	0	0	0
244	SLV 16	-2.39	-0.61	12.2	0	0	0
245	SLU 1	0.04	-0.12	10.87	0	0	0
245	SLU 2	0.05	-0.13	10.86	0	0	0
245	SLU 3	0.04	-0.12	11.12	0	0	0
245	SLU 4	0.05	-0.12	11.11	0	0	0
245	SLU 5	0.05	-0.13	11.03	0	0	0
245	SLU 6	0.04	-0.12	11.28	0	0	0
245	SLU 7	0.05	-0.13	11.28	0	0	0
245	SLU 8	0.04	-0.12	11.2	0	0	0
245	SLU 9	0.04	-0.13	11.2	0	0	0
245	SLU 10	0.05	-0.13	12.17	0	0	0
245	SLU 11	0.04	-0.12	12.42	0	0	0
245	SLU 12	0.04	-0.12	12.41	0	0	0
245	SLU 13	0.05	-0.13	12.33	0	0	0
245	SLU 14	0.04	-0.12	12.58	0	0	0
245	SLU 15	0.04	-0.13	12.58	0	0	0
245	SLU 16	0.04	-0.12	12.5	0	0	0
245	SLU 17	0.04	-0.13	12.5	0	0	0
245	SLU 18	0.04	-0.12	12.73	0	0	0
245	SLU 19	0.04	-0.12	12.73	0	0	0
245	SLU 20	0.04	-0.12	12.9	0	0	0
245	SLU 21	0.04	-0.12	12.89	0	0	0
245	SLU 22	0.05	-0.11	12.02	0	0	0
245	SLU 23	0.05	-0.12	12.01	0	0	0
245	SLU 24	0.05	-0.11	12.26	0	0	0
245	SLU 25	0.05	-0.11	12.26	0	0	0
245	SLU 26	0.06	-0.12	12.18	0	0	0
245	SLU 27	0.05	-0.11	12.43	0	0	0
245	SLU 28	0.05	-0.12	12.42	0	0	0
245	SLU 29	0.05	-0.11	12.35	0	0	0
245	SLU 30	0.05	-0.12	12.34	0	0	0
245	SLU 31	0.05	-0.11	13.31	0	0	0
245	SLU 32	0.05	-0.11	13.57	0	0	0
245	SLU 33	0.05	-0.11	13.56	0	0	0
245	SLU 34	0.05	-0.12	13.48	0	0	0
245	SLU 35	0.05	-0.11	13.73	0	0	0
245	SLU 36	0.05	-0.11	13.73	0	0	0
245	SLU 37	0.05	-0.11	13.65	0	0	0
245	SLU 38	0.05	-0.12	13.65	0	0	0
245	SLU 39	0.05	-0.11	13.88	0	0	0
245	SLU 40	0.05	-0.11	13.87	0	0	0
245	SLU 41	0.05	-0.11	14.04	0	0	0
245	SLU 42	0.05	-0.11	14.04	0	0	0
245	SLU 43	0.05	-0.16	13.74	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
245	SLU 44	0.06	-0.17	13.73	0	0	0
245	SLU 45	0.05	-0.16	13.98	0	0	0
245	SLU 46	0.05	-0.16	13.98	0	0	0
245	SLU 47	0.06	-0.17	13.9	0	0	0
245	SLU 48	0.05	-0.16	14.15	0	0	0
245	SLU 49	0.06	-0.17	14.14	0	0	0
245	SLU 50	0.05	-0.16	14.07	0	0	0
245	SLU 51	0.05	-0.17	14.06	0	0	0
245	SLU 52	0.05	-0.17	15.03	0	0	0
245	SLU 53	0.05	-0.16	15.29	0	0	0
245	SLU 54	0.05	-0.16	15.28	0	0	0
245	SLU 55	0.05	-0.17	15.2	0	0	0
245	SLU 56	0.05	-0.16	15.45	0	0	0
245	SLU 57	0.05	-0.17	15.45	0	0	0
245	SLU 58	0.05	-0.16	15.37	0	0	0
245	SLU 59	0.05	-0.17	15.37	0	0	0
245	SLU 60	0.05	-0.16	15.6	0	0	0
245	SLU 61	0.05	-0.16	15.6	0	0	0
245	SLU 62	0.05	-0.16	15.77	0	0	0
245	SLU 63	0.05	-0.16	15.76	0	0	0
245	SLU 64	0.06	-0.15	14.88	0	0	0
245	SLU 65	0.06	-0.16	14.88	0	0	0
245	SLU 66	0.06	-0.15	15.13	0	0	0
245	SLU 67	0.06	-0.15	15.13	0	0	0
245	SLU 68	0.06	-0.16	15.04	0	0	0
245	SLU 69	0.06	-0.15	15.3	0	0	0
245	SLU 70	0.06	-0.16	15.29	0	0	0
245	SLU 71	0.06	-0.15	15.22	0	0	0
245	SLU 72	0.06	-0.16	15.21	0	0	0
245	SLU 73	0.06	-0.15	16.18	0	0	0
245	SLU 74	0.06	-0.15	16.43	0	0	0
245	SLU 75	0.06	-0.15	16.43	0	0	0
245	SLU 76	0.06	-0.16	16.35	0	0	0
245	SLU 77	0.06	-0.15	16.6	0	0	0
245	SLU 78	0.06	-0.15	16.59	0	0	0
245	SLU 79	0.06	-0.15	16.52	0	0	0
245	SLU 80	0.06	-0.16	16.51	0	0	0
245	SLU 81	0.06	-0.15	16.75	0	0	0
245	SLU 82	0.06	-0.15	16.74	0	0	0
245	SLU 83	0.06	-0.15	16.91	0	0	0
245	SLU 84	0.06	-0.15	16.91	0	0	0
245	SLE RA 1	0.04	-0.12	11.2	0	0	0
245	SLE RA 2	0.05	-0.12	11.19	0	0	0
245	SLE RA 3	0.04	-0.12	11.36	0	0	0
245	SLE RA 4	0.05	-0.12	11.36	0	0	0
245	SLE RA 5	0.05	-0.12	11.3	0	0	0
245	SLE RA 6	0.04	-0.12	11.47	0	0	0
245	SLE RA 7	0.05	-0.12	11.47	0	0	0
245	SLE RA 8	0.04	-0.12	11.42	0	0	0
245	SLE RA 9	0.05	-0.12	11.42	0	0	0
245	SLE RA 10	0.05	-0.12	12.06	0	0	0
245	SLE RA 11	0.04	-0.12	12.23	0	0	0
245	SLE RA 12	0.05	-0.12	12.23	0	0	0
245	SLE RA 13	0.05	-0.12	12.17	0	0	0
245	SLE RA 14	0.04	-0.12	12.34	0	0	0
245	SLE RA 15	0.05	-0.12	12.34	0	0	0
245	SLE RA 16	0.04	-0.12	12.29	0	0	0
245	SLE RA 17	0.04	-0.12	12.28	0	0	0
245	SLE RA 18	0.04	-0.12	12.44	0	0	0
245	SLE RA 19	0.04	-0.12	12.44	0	0	0
245	SLE RA 20	0.04	-0.12	12.55	0	0	0
245	SLE RA 21	0.04	-0.12	12.55	0	0	0
245	SLE FR 1	0.04	-0.12	11.2	0	0	0
245	SLE FR 2	0.04	-0.12	11.2	0	0	0
245	SLE FR 3	0.04	-0.12	11.24	0	0	0
245	SLE FR 4	0.04	-0.12	11.57	0	0	0
245	SLE FR 5	0.04	-0.12	11.61	0	0	0
245	SLE FR 6	0.04	-0.12	11.82	0	0	0
245	SLE QP 1	0.04	-0.12	11.2	0	0	0
245	SLE QP 2	0.04	-0.12	11.57	0	0	0
245	SLD 1	1.08	0.12	11.23	0	0	0
245	SLD 2	1.18	0.15	11.27	0	0	0
245	SLD 3	1.02	-0.18	10.98	0	0	0
245	SLD 4	1.12	-0.14	11.02	0	0	0
245	SLD 5	0.43	0.4	11.84	0	0	0
245	SLD 6	0.5	0.42	11.87	0	0	0
245	SLD 7	0.23	-0.59	11	0	0	0
245	SLD 8	0.29	-0.57	11.03	0	0	0
245	SLD 9	-0.21	0.33	12.11	0	0	0
245	SLD 10	-0.14	0.36	12.14	0	0	0
245	SLD 11	-0.41	-0.65	11.27	0	0	0
245	SLD 12	-0.35	-0.63	11.3	0	0	0
245	SLD 13	-1.04	-0.09	12.12	0	0	0
245	SLD 14	-0.94	-0.06	12.16	0	0	0
245	SLD 15	-1.1	-0.39	11.87	0	0	0
245	SLD 16	-1	-0.35	11.91	0	0	0
245	SLV 1	2.48	0.42	10.76	0	0	0
245	SLV 2	2.71	0.5	10.87	0	0	0
245	SLV 3	2.34	-0.25	10.19	0	0	0
245	SLV 4	2.57	-0.17	10.3	0	0	0





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
245	SLV 5	0.95	1.05	12.17	0	0	0
245	SLV 6	1.1	1.1	12.24	0	0	0
245	SLV 7	0.47	-1.18	10.27	0	0	0
245	SLV 8	0.62	-1.13	10.34	0	0	0
245	SLV 9	-0.54	0.9	12.8	0	0	0
245	SLV 10	-0.39	0.95	12.87	0	0	0
245	SLV 11	-1.02	-1.33	10.9	0	0	0
245	SLV 12	-0.87	-1.28	10.97	0	0	0
245	SLV 13	-2.49	-0.07	12.84	0	0	0
245	SLV 14	-2.25	0.01	12.95	0	0	0
245	SLV 15	-2.63	-0.74	12.27	0	0	0
245	SLV 16	-2.4	-0.66	12.38	0	0	0
246	SLU 1	0.04	-0.14	10.86	0	0	0
246	SLU 2	0.05	-0.15	10.86	0	0	0
246	SLU 3	0.04	-0.14	11.11	0	0	0
246	SLU 4	0.05	-0.15	11.1	0	0	0
246	SLU 5	0.05	-0.15	11.02	0	0	0
246	SLU 6	0.04	-0.14	11.27	0	0	0
246	SLU 7	0.05	-0.15	11.27	0	0	0
246	SLU 8	0.04	-0.15	11.19	0	0	0
246	SLU 9	0.05	-0.15	11.19	0	0	0
246	SLU 10	0.05	-0.15	12.15	0	0	0
246	SLU 11	0.04	-0.14	12.4	0	0	0
246	SLU 12	0.05	-0.15	12.4	0	0	0
246	SLU 13	0.05	-0.15	12.31	0	0	0
246	SLU 14	0.04	-0.15	12.57	0	0	0
246	SLU 15	0.05	-0.15	12.56	0	0	0
246	SLU 16	0.04	-0.15	12.49	0	0	0
246	SLU 17	0.05	-0.15	12.48	0	0	0
246	SLU 18	0.04	-0.14	12.71	0	0	0
246	SLU 19	0.05	-0.15	12.71	0	0	0
246	SLU 20	0.04	-0.15	12.88	0	0	0
246	SLU 21	0.05	-0.15	12.87	0	0	0
246	SLU 22	0.05	-0.13	12.01	0	0	0
246	SLU 23	0.06	-0.14	12	0	0	0
246	SLU 24	0.05	-0.13	12.25	0	0	0
246	SLU 25	0.06	-0.14	12.25	0	0	0
246	SLU 26	0.06	-0.14	12.17	0	0	0
246	SLU 27	0.05	-0.14	12.42	0	0	0
246	SLU 28	0.06	-0.14	12.41	0	0	0
246	SLU 29	0.05	-0.14	12.34	0	0	0
246	SLU 30	0.06	-0.14	12.34	0	0	0
246	SLU 31	0.06	-0.14	13.3	0	0	0
246	SLU 32	0.05	-0.13	13.55	0	0	0
246	SLU 33	0.06	-0.14	13.54	0	0	0
246	SLU 34	0.06	-0.14	13.46	0	0	0
246	SLU 35	0.05	-0.14	13.71	0	0	0
246	SLU 36	0.06	-0.14	13.71	0	0	0
246	SLU 37	0.05	-0.14	13.63	0	0	0
246	SLU 38	0.05	-0.14	13.63	0	0	0
246	SLU 39	0.05	-0.13	13.86	0	0	0
246	SLU 40	0.05	-0.14	13.85	0	0	0
246	SLU 41	0.05	-0.14	14.02	0	0	0
246	SLU 42	0.05	-0.14	14.02	0	0	0
246	SLU 43	0.05	-0.19	13.73	0	0	0
246	SLU 44	0.06	-0.19	13.72	0	0	0
246	SLU 45	0.05	-0.19	13.97	0	0	0
246	SLU 46	0.06	-0.19	13.97	0	0	0
246	SLU 47	0.06	-0.2	13.89	0	0	0
246	SLU 48	0.06	-0.19	14.14	0	0	0
246	SLU 49	0.06	-0.19	14.14	0	0	0
246	SLU 50	0.05	-0.19	14.06	0	0	0
246	SLU 51	0.06	-0.2	14.06	0	0	0
246	SLU 52	0.06	-0.2	15.02	0	0	0
246	SLU 53	0.05	-0.19	15.27	0	0	0
246	SLU 54	0.06	-0.19	15.26	0	0	0
246	SLU 55	0.06	-0.2	15.18	0	0	0
246	SLU 56	0.05	-0.19	15.43	0	0	0
246	SLU 57	0.06	-0.2	15.43	0	0	0
246	SLU 58	0.05	-0.19	15.35	0	0	0
246	SLU 59	0.06	-0.2	15.35	0	0	0
246	SLU 60	0.05	-0.19	15.58	0	0	0
246	SLU 61	0.06	-0.19	15.57	0	0	0
246	SLU 62	0.05	-0.19	15.74	0	0	0
246	SLU 63	0.06	-0.2	15.74	0	0	0
246	SLU 64	0.06	-0.18	14.88	0	0	0
246	SLU 65	0.07	-0.19	14.87	0	0	0
246	SLU 66	0.06	-0.18	15.12	0	0	0
246	SLU 67	0.07	-0.18	15.12	0	0	0
246	SLU 68	0.07	-0.19	15.03	0	0	0
246	SLU 69	0.06	-0.18	15.29	0	0	0
246	SLU 70	0.07	-0.19	15.28	0	0	0
246	SLU 71	0.06	-0.18	15.21	0	0	0
246	SLU 72	0.07	-0.19	15.2	0	0	0
246	SLU 73	0.07	-0.19	16.16	0	0	0
246	SLU 74	0.06	-0.18	16.41	0	0	0
246	SLU 75	0.07	-0.18	16.41	0	0	0
246	SLU 76	0.07	-0.19	16.33	0	0	0
246	SLU 77	0.06	-0.18	16.58	0	0	0
246	SLU 78	0.07	-0.19	16.57	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
246	SLU 79	0.06	-0.18	16.5	0	0	0
246	SLU 80	0.06	-0.19	16.49	0	0	0
246	SLU 81	0.06	-0.18	16.72	0	0	0
246	SLU 82	0.06	-0.18	16.72	0	0	0
246	SLU 83	0.06	-0.18	16.89	0	0	0
246	SLU 84	0.06	-0.19	16.88	0	0	0
246	SLE RA 1	0.05	-0.14	11.19	0	0	0
246	SLE RA 2	0.05	-0.14	11.19	0	0	0
246	SLE RA 3	0.05	-0.14	11.35	0	0	0
246	SLE RA 4	0.05	-0.14	11.35	0	0	0
246	SLE RA 5	0.05	-0.15	11.3	0	0	0
246	SLE RA 6	0.05	-0.14	11.46	0	0	0
246	SLE RA 7	0.05	-0.14	11.46	0	0	0
246	SLE RA 8	0.05	-0.14	11.41	0	0	0
246	SLE RA 9	0.05	-0.15	11.41	0	0	0
246	SLE RA 10	0.05	-0.14	12.05	0	0	0
246	SLE RA 11	0.05	-0.14	12.22	0	0	0
246	SLE RA 12	0.05	-0.14	12.21	0	0	0
246	SLE RA 13	0.05	-0.15	12.16	0	0	0
246	SLE RA 14	0.05	-0.14	12.33	0	0	0
246	SLE RA 15	0.05	-0.14	12.32	0	0	0
246	SLE RA 16	0.05	-0.14	12.27	0	0	0
246	SLE RA 17	0.05	-0.15	12.27	0	0	0
246	SLE RA 18	0.04	-0.14	12.42	0	0	0
246	SLE RA 19	0.05	-0.14	12.42	0	0	0
246	SLE RA 20	0.04	-0.14	12.53	0	0	0
246	SLE RA 21	0.05	-0.14	12.53	0	0	0
246	SLE FR 1	0.05	-0.14	11.19	0	0	0
246	SLE FR 2	0.05	-0.14	11.19	0	0	0
246	SLE FR 3	0.05	-0.14	11.24	0	0	0
246	SLE FR 4	0.05	-0.14	11.56	0	0	0
246	SLE FR 5	0.05	-0.14	11.6	0	0	0
246	SLE FR 6	0.05	-0.14	11.81	0	0	0
246	SLE QP 1	0.05	-0.14	11.19	0	0	0
246	SLE QP 2	0.05	-0.14	11.56	0	0	0
246	SLD 1	1.08	0.1	11.13	0	0	0
246	SLD 2	1.18	0.14	11.18	0	0	0
246	SLD 3	1.02	-0.19	10.88	0	0	0
246	SLD 4	1.12	-0.15	10.93	0	0	0
246	SLD 5	0.43	0.37	11.8	0	0	0
246	SLD 6	0.5	0.39	11.83	0	0	0
246	SLD 7	0.23	-0.6	10.97	0	0	0
246	SLD 8	0.29	-0.58	11	0	0	0
246	SLD 9	-0.2	0.3	12.12	0	0	0
246	SLD 10	-0.14	0.32	12.15	0	0	0
246	SLD 11	-0.41	-0.67	11.29	0	0	0
246	SLD 12	-0.34	-0.65	11.32	0	0	0
246	SLD 13	-1.03	-0.13	12.19	0	0	0
246	SLD 14	-0.93	-0.09	12.24	0	0	0
246	SLD 15	-1.09	-0.42	11.94	0	0	0
246	SLD 16	-0.99	-0.38	11.99	0	0	0
246	SLV 1	2.47	0.42	10.55	0	0	0
246	SLV 2	2.7	0.51	10.67	0	0	0
246	SLV 3	2.33	-0.24	9.98	0	0	0
246	SLV 4	2.56	-0.15	10.1	0	0	0
246	SLV 5	0.95	1.01	12.09	0	0	0
246	SLV 6	1.1	1.07	12.17	0	0	0
246	SLV 7	0.47	-1.18	10.21	0	0	0
246	SLV 8	0.62	-1.12	10.29	0	0	0
246	SLV 9	-0.53	0.84	12.83	0	0	0
246	SLV 10	-0.38	0.9	12.91	0	0	0
246	SLV 11	-1.01	-1.35	10.95	0	0	0
246	SLV 12	-0.86	-1.29	11.03	0	0	0
246	SLV 13	-2.47	-0.13	13.02	0	0	0
246	SLV 14	-2.24	-0.04	13.14	0	0	0
246	SLV 15	-2.61	-0.79	12.45	0	0	0
246	SLV 16	-2.38	-0.7	12.58	0	0	0
247	SLU 1	0.05	-0.16	10.82	0	0	0
247	SLU 2	0.05	-0.17	10.82	0	0	0
247	SLU 3	0.05	-0.16	11.06	0	0	0
247	SLU 4	0.05	-0.17	11.06	0	0	0
247	SLU 5	0.05	-0.17	10.98	0	0	0
247	SLU 6	0.05	-0.16	11.23	0	0	0
247	SLU 7	0.05	-0.17	11.22	0	0	0
247	SLU 8	0.05	-0.17	11.15	0	0	0
247	SLU 9	0.05	-0.17	11.15	0	0	0
247	SLU 10	0.05	-0.17	12.09	0	0	0
247	SLU 11	0.05	-0.16	12.34	0	0	0
247	SLU 12	0.05	-0.17	12.34	0	0	0
247	SLU 13	0.05	-0.17	12.26	0	0	0
247	SLU 14	0.05	-0.17	12.51	0	0	0
247	SLU 15	0.05	-0.17	12.5	0	0	0
247	SLU 16	0.05	-0.17	12.43	0	0	0
247	SLU 17	0.05	-0.17	12.42	0	0	0
247	SLU 18	0.05	-0.17	12.65	0	0	0
247	SLU 19	0.05	-0.17	12.64	0	0	0
247	SLU 20	0.05	-0.17	12.81	0	0	0
247	SLU 21	0.05	-0.17	12.81	0	0	0
247	SLU 22	0.06	-0.15	11.96	0	0	0
247	SLU 23	0.06	-0.16	11.96	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
247	SLU 24	0.06	-0.16	12.21	0	0	0
247	SLU 25	0.06	-0.16	12.2	0	0	0
247	SLU 26	0.06	-0.16	12.12	0	0	0
247	SLU 27	0.06	-0.16	12.37	0	0	0
247	SLU 28	0.06	-0.16	12.37	0	0	0
247	SLU 29	0.06	-0.16	12.29	0	0	0
247	SLU 30	0.06	-0.16	12.29	0	0	0
247	SLU 31	0.06	-0.16	13.24	0	0	0
247	SLU 32	0.06	-0.16	13.49	0	0	0
247	SLU 33	0.06	-0.16	13.48	0	0	0
247	SLU 34	0.06	-0.17	13.4	0	0	0
247	SLU 35	0.06	-0.16	13.65	0	0	0
247	SLU 36	0.06	-0.17	13.65	0	0	0
247	SLU 37	0.06	-0.16	13.57	0	0	0
247	SLU 38	0.06	-0.17	13.57	0	0	0
247	SLU 39	0.05	-0.16	13.79	0	0	0
247	SLU 40	0.06	-0.16	13.79	0	0	0
247	SLU 41	0.05	-0.16	13.95	0	0	0
247	SLU 42	0.06	-0.17	13.95	0	0	0
247	SLU 43	0.06	-0.21	13.68	0	0	0
247	SLU 44	0.06	-0.22	13.67	0	0	0
247	SLU 45	0.06	-0.21	13.92	0	0	0
247	SLU 46	0.06	-0.22	13.92	0	0	0
247	SLU 47	0.06	-0.22	13.83	0	0	0
247	SLU 48	0.06	-0.21	14.08	0	0	0
247	SLU 49	0.06	-0.22	14.08	0	0	0
247	SLU 50	0.06	-0.22	14	0	0	0
247	SLU 51	0.06	-0.22	14	0	0	0
247	SLU 52	0.06	-0.22	14.95	0	0	0
247	SLU 53	0.06	-0.21	15.2	0	0	0
247	SLU 54	0.06	-0.22	15.19	0	0	0
247	SLU 55	0.06	-0.22	15.11	0	0	0
247	SLU 56	0.06	-0.22	15.36	0	0	0
247	SLU 57	0.06	-0.22	15.36	0	0	0
247	SLU 58	0.06	-0.22	15.28	0	0	0
247	SLU 59	0.06	-0.22	15.28	0	0	0
247	SLU 60	0.06	-0.22	15.5	0	0	0
247	SLU 61	0.06	-0.22	15.5	0	0	0
247	SLU 62	0.06	-0.22	15.67	0	0	0
247	SLU 63	0.06	-0.22	15.66	0	0	0
247	SLU 64	0.07	-0.2	14.82	0	0	0
247	SLU 65	0.07	-0.21	14.81	0	0	0
247	SLU 66	0.07	-0.2	15.06	0	0	0
247	SLU 67	0.07	-0.21	15.06	0	0	0
247	SLU 68	0.07	-0.21	14.98	0	0	0
247	SLU 69	0.07	-0.21	15.23	0	0	0
247	SLU 70	0.07	-0.21	15.22	0	0	0
247	SLU 71	0.07	-0.21	15.15	0	0	0
247	SLU 72	0.07	-0.21	15.14	0	0	0
247	SLU 73	0.07	-0.21	16.09	0	0	0
247	SLU 74	0.07	-0.21	16.34	0	0	0
247	SLU 75	0.07	-0.21	16.34	0	0	0
247	SLU 76	0.07	-0.22	16.26	0	0	0
247	SLU 77	0.07	-0.21	16.5	0	0	0
247	SLU 78	0.07	-0.22	16.5	0	0	0
247	SLU 79	0.07	-0.21	16.43	0	0	0
247	SLU 80	0.07	-0.22	16.42	0	0	0
247	SLU 81	0.07	-0.21	16.65	0	0	0
247	SLU 82	0.07	-0.21	16.64	0	0	0
247	SLU 83	0.07	-0.21	16.81	0	0	0
247	SLU 84	0.07	-0.22	16.81	0	0	0
247	SLE RA 1	0.05	-0.16	11.15	0	0	0
247	SLE RA 2	0.05	-0.16	11.14	0	0	0
247	SLE RA 3	0.05	-0.16	11.31	0	0	0
247	SLE RA 4	0.05	-0.16	11.31	0	0	0
247	SLE RA 5	0.05	-0.16	11.25	0	0	0
247	SLE RA 6	0.05	-0.16	11.42	0	0	0
247	SLE RA 7	0.05	-0.16	11.42	0	0	0
247	SLE RA 8	0.05	-0.16	11.37	0	0	0
247	SLE RA 9	0.05	-0.16	11.36	0	0	0
247	SLE RA 10	0.05	-0.17	12	0	0	0
247	SLE RA 11	0.05	-0.16	12.16	0	0	0
247	SLE RA 12	0.05	-0.16	12.16	0	0	0
247	SLE RA 13	0.05	-0.17	12.11	0	0	0
247	SLE RA 14	0.05	-0.16	12.27	0	0	0
247	SLE RA 15	0.05	-0.17	12.27	0	0	0
247	SLE RA 16	0.05	-0.16	12.22	0	0	0
247	SLE RA 17	0.05	-0.17	12.22	0	0	0
247	SLE RA 18	0.05	-0.16	12.37	0	0	0
247	SLE RA 19	0.05	-0.16	12.36	0	0	0
247	SLE RA 20	0.05	-0.16	12.48	0	0	0
247	SLE RA 21	0.05	-0.17	12.47	0	0	0
247	SLE FR 1	0.05	-0.16	11.15	0	0	0
247	SLE FR 2	0.05	-0.16	11.15	0	0	0
247	SLE FR 3	0.05	-0.16	11.19	0	0	0
247	SLE FR 4	0.05	-0.16	11.51	0	0	0
247	SLE FR 5	0.05	-0.16	11.56	0	0	0
247	SLE FR 6	0.05	-0.16	11.76	0	0	0
247	SLE QP 1	0.05	-0.16	11.15	0	0	0
247	SLE QP 2	0.05	-0.16	11.51	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
247	SLD 1	1.07	0.09	11	0	0	0
247	SLD 2	1.16	0.13	11.05	0	0	0
247	SLD 3	1.01	-0.19	10.75	0	0	0
247	SLD 4	1.1	-0.15	10.8	0	0	0
247	SLD 5	0.43	0.34	11.72	0	0	0
247	SLD 6	0.49	0.37	11.76	0	0	0
247	SLD 7	0.23	-0.61	10.9	0	0	0
247	SLD 8	0.29	-0.58	10.94	0	0	0
247	SLD 9	-0.19	0.26	12.09	0	0	0
247	SLD 10	-0.13	0.29	12.13	0	0	0
247	SLD 11	-0.39	-0.68	11.27	0	0	0
247	SLD 12	-0.33	-0.66	11.3	0	0	0
247	SLD 13	-1.01	-0.17	12.22	0	0	0
247	SLD 14	-0.91	-0.12	12.28	0	0	0
247	SLD 15	-1.07	-0.45	11.97	0	0	0
247	SLD 16	-0.97	-0.41	12.03	0	0	0
247	SLV 1	2.43	0.41	10.3	0	0	0
247	SLV 2	2.66	0.51	10.43	0	0	0
247	SLV 3	2.29	-0.23	9.73	0	0	0
247	SLV 4	2.52	-0.13	9.86	0	0	0
247	SLV 5	0.94	0.97	11.98	0	0	0
247	SLV 6	1.08	1.03	12.06	0	0	0
247	SLV 7	0.47	-1.17	10.1	0	0	0
247	SLV 8	0.62	-1.11	10.19	0	0	0
247	SLV 9	-0.52	0.79	12.84	0	0	0
247	SLV 10	-0.37	0.85	12.92	0	0	0
247	SLV 11	-0.99	-1.35	10.97	0	0	0
247	SLV 12	-0.84	-1.29	11.05	0	0	0
247	SLV 13	-2.42	-0.19	13.16	0	0	0
247	SLV 14	-2.19	-0.09	13.29	0	0	0
247	SLV 15	-2.56	-0.83	12.6	0	0	0
247	SLV 16	-2.33	-0.73	12.73	0	0	0
248	SLU 1	0.05	-0.16	9.94	0	0	0
248	SLU 2	0.05	-0.17	9.94	0	0	0
248	SLU 3	0.05	-0.16	10.17	0	0	0
248	SLU 4	0.05	-0.17	10.16	0	0	0
248	SLU 5	0.05	-0.17	10.09	0	0	0
248	SLU 6	0.05	-0.17	10.32	0	0	0
248	SLU 7	0.05	-0.17	10.31	0	0	0
248	SLU 8	0.05	-0.17	10.24	0	0	0
248	SLU 9	0.05	-0.17	10.24	0	0	0
248	SLU 10	0.05	-0.17	11.11	0	0	0
248	SLU 11	0.05	-0.17	11.34	0	0	0
248	SLU 12	0.05	-0.17	11.33	0	0	0
248	SLU 13	0.05	-0.18	11.26	0	0	0
248	SLU 14	0.05	-0.17	11.49	0	0	0
248	SLU 15	0.05	-0.17	11.48	0	0	0
248	SLU 16	0.05	-0.17	11.41	0	0	0
248	SLU 17	0.05	-0.18	11.41	0	0	0
248	SLU 18	0.05	-0.17	11.61	0	0	0
248	SLU 19	0.05	-0.17	11.61	0	0	0
248	SLU 20	0.05	-0.17	11.76	0	0	0
248	SLU 21	0.05	-0.18	11.76	0	0	0
248	SLU 22	0.05	-0.16	10.99	0	0	0
248	SLU 23	0.06	-0.16	10.99	0	0	0
248	SLU 24	0.06	-0.16	11.22	0	0	0
248	SLU 25	0.06	-0.16	11.21	0	0	0
248	SLU 26	0.06	-0.17	11.14	0	0	0
248	SLU 27	0.06	-0.16	11.37	0	0	0
248	SLU 28	0.06	-0.17	11.36	0	0	0
248	SLU 29	0.06	-0.16	11.3	0	0	0
248	SLU 30	0.06	-0.17	11.29	0	0	0
248	SLU 31	0.06	-0.17	12.16	0	0	0
248	SLU 32	0.06	-0.17	12.39	0	0	0
248	SLU 33	0.06	-0.17	12.38	0	0	0
248	SLU 34	0.06	-0.17	12.31	0	0	0
248	SLU 35	0.06	-0.17	12.54	0	0	0
248	SLU 36	0.06	-0.17	12.53	0	0	0
248	SLU 37	0.06	-0.17	12.47	0	0	0
248	SLU 38	0.06	-0.17	12.46	0	0	0
248	SLU 39	0.05	-0.17	12.66	0	0	0
248	SLU 40	0.06	-0.17	12.66	0	0	0
248	SLU 41	0.05	-0.17	12.82	0	0	0
248	SLU 42	0.06	-0.17	12.81	0	0	0
248	SLU 43	0.06	-0.21	12.56	0	0	0
248	SLU 44	0.06	-0.22	12.56	0	0	0
248	SLU 45	0.06	-0.21	12.79	0	0	0
248	SLU 46	0.06	-0.22	12.78	0	0	0
248	SLU 47	0.06	-0.22	12.71	0	0	0
248	SLU 48	0.06	-0.21	12.94	0	0	0
248	SLU 49	0.06	-0.22	12.94	0	0	0
248	SLU 50	0.06	-0.22	12.87	0	0	0
248	SLU 51	0.06	-0.22	12.86	0	0	0
248	SLU 52	0.06	-0.22	13.73	0	0	0
248	SLU 53	0.06	-0.22	13.96	0	0	0
248	SLU 54	0.06	-0.22	13.95	0	0	0
248	SLU 55	0.06	-0.22	13.88	0	0	0
248	SLU 56	0.06	-0.22	14.11	0	0	0
248	SLU 57	0.06	-0.22	14.11	0	0	0
248	SLU 58	0.06	-0.22	14.04	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
248	SLU 59	0.06	-0.23	14.03	0	0	0
248	SLU 60	0.06	-0.22	14.24	0	0	0
248	SLU 61	0.06	-0.22	14.23	0	0	0
248	SLU 62	0.06	-0.22	14.39	0	0	0
248	SLU 63	0.06	-0.22	14.38	0	0	0
248	SLU 64	0.07	-0.21	13.62	0	0	0
248	SLU 65	0.07	-0.21	13.61	0	0	0
248	SLU 66	0.07	-0.21	13.84	0	0	0
248	SLU 67	0.07	-0.21	13.84	0	0	0
248	SLU 68	0.07	-0.22	13.76	0	0	0
248	SLU 69	0.07	-0.21	13.99	0	0	0
248	SLU 70	0.07	-0.22	13.99	0	0	0
248	SLU 71	0.07	-0.21	13.92	0	0	0
248	SLU 72	0.07	-0.22	13.91	0	0	0
248	SLU 73	0.07	-0.22	14.78	0	0	0
248	SLU 74	0.07	-0.21	15.01	0	0	0
248	SLU 75	0.07	-0.22	15.01	0	0	0
248	SLU 76	0.07	-0.22	14.93	0	0	0
248	SLU 77	0.07	-0.22	15.16	0	0	0
248	SLU 78	0.07	-0.22	15.16	0	0	0
248	SLU 79	0.07	-0.22	15.09	0	0	0
248	SLU 80	0.07	-0.22	15.08	0	0	0
248	SLU 81	0.07	-0.22	15.29	0	0	0
248	SLU 82	0.07	-0.22	15.28	0	0	0
248	SLU 83	0.07	-0.22	15.44	0	0	0
248	SLU 84	0.07	-0.22	15.43	0	0	0
248	SLE RA 1	0.05	-0.16	10.24	0	0	0
248	SLE RA 2	0.05	-0.16	10.24	0	0	0
248	SLE RA 3	0.05	-0.16	10.39	0	0	0
248	SLE RA 4	0.05	-0.16	10.39	0	0	0
248	SLE RA 5	0.05	-0.17	10.34	0	0	0
248	SLE RA 6	0.05	-0.16	10.49	0	0	0
248	SLE RA 7	0.05	-0.17	10.49	0	0	0
248	SLE RA 8	0.05	-0.16	10.44	0	0	0
248	SLE RA 9	0.05	-0.17	10.44	0	0	0
248	SLE RA 10	0.05	-0.17	11.02	0	0	0
248	SLE RA 11	0.05	-0.16	11.17	0	0	0
248	SLE RA 12	0.05	-0.17	11.17	0	0	0
248	SLE RA 13	0.05	-0.17	11.12	0	0	0
248	SLE RA 14	0.05	-0.17	11.27	0	0	0
248	SLE RA 15	0.05	-0.17	11.27	0	0	0
248	SLE RA 16	0.05	-0.17	11.22	0	0	0
248	SLE RA 17	0.05	-0.17	11.22	0	0	0
248	SLE RA 18	0.05	-0.17	11.36	0	0	0
248	SLE RA 19	0.05	-0.17	11.35	0	0	0
248	SLE RA 20	0.05	-0.17	11.46	0	0	0
248	SLE RA 21	0.05	-0.17	11.46	0	0	0
248	SLE FR 1	0.05	-0.16	10.24	0	0	0
248	SLE FR 2	0.05	-0.16	10.24	0	0	0
248	SLE FR 3	0.05	-0.16	10.28	0	0	0
248	SLE FR 4	0.05	-0.16	10.58	0	0	0
248	SLE FR 5	0.05	-0.16	10.62	0	0	0
248	SLE FR 6	0.05	-0.16	10.8	0	0	0
248	SLE QP 1	0.05	-0.16	10.24	0	0	0
248	SLE QP 2	0.05	-0.16	10.58	0	0	0
248	SLD 1	0.96	0.07	10.02	0	0	0
248	SLD 2	1.05	0.11	10.08	0	0	0
248	SLD 3	0.91	-0.18	9.79	0	0	0
248	SLD 4	1	-0.14	9.85	0	0	0
248	SLD 5	0.39	0.28	10.75	0	0	0
248	SLD 6	0.45	0.31	10.78	0	0	0
248	SLD 7	0.21	-0.56	9.99	0	0	0
248	SLD 8	0.27	-0.53	10.02	0	0	0
248	SLD 9	-0.17	0.21	11.13	0	0	0
248	SLD 10	-0.11	0.24	11.17	0	0	0
248	SLD 11	-0.35	-0.64	10.37	0	0	0
248	SLD 12	-0.29	-0.61	10.41	0	0	0
248	SLD 13	-0.9	-0.18	11.3	0	0	0
248	SLD 14	-0.81	-0.14	11.36	0	0	0
248	SLD 15	-0.96	-0.43	11.08	0	0	0
248	SLD 16	-0.87	-0.39	11.13	0	0	0
248	SLV 1	2.19	0.37	9.27	0	0	0
248	SLV 2	2.4	0.47	9.4	0	0	0
248	SLV 3	2.07	-0.21	8.75	0	0	0
248	SLV 4	2.27	-0.11	8.88	0	0	0
248	SLV 5	0.85	0.85	10.95	0	0	0
248	SLV 6	0.98	0.92	11.03	0	0	0
248	SLV 7	0.43	-1.06	9.22	0	0	0
248	SLV 8	0.56	-1	9.3	0	0	0
248	SLV 9	-0.46	0.68	11.85	0	0	0
248	SLV 10	-0.33	0.74	11.93	0	0	0
248	SLV 11	-0.88	-1.24	10.12	0	0	0
248	SLV 12	-0.75	-1.17	10.2	0	0	0
248	SLV 13	-2.17	-0.22	12.27	0	0	0
248	SLV 14	-1.97	-0.12	12.4	0	0	0
248	SLV 15	-2.3	-0.79	11.75	0	0	0
248	SLV 16	-2.09	-0.69	11.88	0	0	0
249	SLU 1	0.05	-0.16	9.29	0	0	0
249	SLU 2	0.05	-0.17	9.28	0	0	0
249	SLU 3	0.05	-0.16	9.5	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
249	SLU 4	0.05	-0.17	9.49	0	0	0
249	SLU 5	0.05	-0.17	9.42	0	0	0
249	SLU 6	0.05	-0.16	9.64	0	0	0
249	SLU 7	0.05	-0.17	9.63	0	0	0
249	SLU 8	0.05	-0.17	9.57	0	0	0
249	SLU 9	0.05	-0.17	9.57	0	0	0
249	SLU 10	0.05	-0.17	10.37	0	0	0
249	SLU 11	0.05	-0.17	10.59	0	0	0
249	SLU 12	0.05	-0.17	10.58	0	0	0
249	SLU 13	0.05	-0.18	10.51	0	0	0
249	SLU 14	0.05	-0.17	10.73	0	0	0
249	SLU 15	0.05	-0.18	10.72	0	0	0
249	SLU 16	0.05	-0.17	10.66	0	0	0
249	SLU 17	0.05	-0.18	10.66	0	0	0
249	SLU 18	0.05	-0.17	10.84	0	0	0
249	SLU 19	0.05	-0.17	10.84	0	0	0
249	SLU 20	0.05	-0.17	10.98	0	0	0
249	SLU 21	0.05	-0.18	10.98	0	0	0
249	SLU 22	0.05	-0.16	10.27	0	0	0
249	SLU 23	0.06	-0.16	10.27	0	0	0
249	SLU 24	0.06	-0.16	10.48	0	0	0
249	SLU 25	0.06	-0.16	10.48	0	0	0
249	SLU 26	0.06	-0.17	10.41	0	0	0
249	SLU 27	0.06	-0.16	10.62	0	0	0
249	SLU 28	0.06	-0.17	10.62	0	0	0
249	SLU 29	0.06	-0.16	10.55	0	0	0
249	SLU 30	0.06	-0.17	10.55	0	0	0
249	SLU 31	0.06	-0.17	11.36	0	0	0
249	SLU 32	0.06	-0.17	11.57	0	0	0
249	SLU 33	0.06	-0.17	11.57	0	0	0
249	SLU 34	0.06	-0.17	11.5	0	0	0
249	SLU 35	0.06	-0.17	11.71	0	0	0
249	SLU 36	0.06	-0.17	11.71	0	0	0
249	SLU 37	0.06	-0.17	11.64	0	0	0
249	SLU 38	0.06	-0.18	11.64	0	0	0
249	SLU 39	0.05	-0.17	11.83	0	0	0
249	SLU 40	0.06	-0.17	11.82	0	0	0
249	SLU 41	0.05	-0.17	11.97	0	0	0
249	SLU 42	0.06	-0.17	11.97	0	0	0
249	SLU 43	0.06	-0.21	11.74	0	0	0
249	SLU 44	0.06	-0.21	11.73	0	0	0
249	SLU 45	0.06	-0.21	11.95	0	0	0
249	SLU 46	0.06	-0.21	11.94	0	0	0
249	SLU 47	0.06	-0.22	11.87	0	0	0
249	SLU 48	0.06	-0.21	12.09	0	0	0
249	SLU 49	0.06	-0.22	12.08	0	0	0
249	SLU 50	0.06	-0.21	12.02	0	0	0
249	SLU 51	0.06	-0.22	12.02	0	0	0
249	SLU 52	0.06	-0.22	12.82	0	0	0
249	SLU 53	0.06	-0.22	13.03	0	0	0
249	SLU 54	0.06	-0.22	13.03	0	0	0
249	SLU 55	0.06	-0.22	12.96	0	0	0
249	SLU 56	0.06	-0.22	13.18	0	0	0
249	SLU 57	0.06	-0.22	13.17	0	0	0
249	SLU 58	0.06	-0.22	13.11	0	0	0
249	SLU 59	0.06	-0.22	13.11	0	0	0
249	SLU 60	0.06	-0.22	13.29	0	0	0
249	SLU 61	0.06	-0.22	13.29	0	0	0
249	SLU 62	0.06	-0.22	13.43	0	0	0
249	SLU 63	0.06	-0.22	13.43	0	0	0
249	SLU 64	0.07	-0.21	12.72	0	0	0
249	SLU 65	0.07	-0.21	12.72	0	0	0
249	SLU 66	0.07	-0.21	12.93	0	0	0
249	SLU 67	0.07	-0.21	12.93	0	0	0
249	SLU 68	0.07	-0.22	12.86	0	0	0
249	SLU 69	0.07	-0.21	13.07	0	0	0
249	SLU 70	0.07	-0.22	13.07	0	0	0
249	SLU 71	0.07	-0.21	13	0	0	0
249	SLU 72	0.07	-0.22	13	0	0	0
249	SLU 73	0.07	-0.22	13.81	0	0	0
249	SLU 74	0.07	-0.22	14.02	0	0	0
249	SLU 75	0.07	-0.22	14.02	0	0	0
249	SLU 76	0.07	-0.22	13.95	0	0	0
249	SLU 77	0.07	-0.22	14.16	0	0	0
249	SLU 78	0.07	-0.22	14.16	0	0	0
249	SLU 79	0.07	-0.22	14.09	0	0	0
249	SLU 80	0.07	-0.22	14.09	0	0	0
249	SLU 81	0.07	-0.22	14.28	0	0	0
249	SLU 82	0.07	-0.22	14.27	0	0	0
249	SLU 83	0.07	-0.22	14.42	0	0	0
249	SLU 84	0.07	-0.22	14.42	0	0	0
249	SLE RA 1	0.05	-0.16	9.57	0	0	0
249	SLE RA 2	0.05	-0.16	9.57	0	0	0
249	SLE RA 3	0.05	-0.16	9.71	0	0	0
249	SLE RA 4	0.05	-0.16	9.71	0	0	0
249	SLE RA 5	0.05	-0.17	9.66	0	0	0
249	SLE RA 6	0.05	-0.16	9.8	0	0	0
249	SLE RA 7	0.05	-0.17	9.8	0	0	0
249	SLE RA 8	0.05	-0.16	9.76	0	0	0
249	SLE RA 9	0.05	-0.17	9.76	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
249	SLE RA 10	0.05	-0.17	10.29	0	0	0
249	SLE RA 11	0.05	-0.17	10.43	0	0	0
249	SLE RA 12	0.05	-0.17	10.43	0	0	0
249	SLE RA 13	0.05	-0.17	10.39	0	0	0
249	SLE RA 14	0.05	-0.17	10.53	0	0	0
249	SLE RA 15	0.05	-0.17	10.53	0	0	0
249	SLE RA 16	0.05	-0.17	10.48	0	0	0
249	SLE RA 17	0.05	-0.17	10.48	0	0	0
249	SLE RA 18	0.05	-0.17	10.61	0	0	0
249	SLE RA 19	0.05	-0.17	10.6	0	0	0
249	SLE RA 20	0.05	-0.17	10.7	0	0	0
249	SLE RA 21	0.05	-0.17	10.7	0	0	0
249	SLE FR 1	0.05	-0.16	9.57	0	0	0
249	SLE FR 2	0.05	-0.16	9.57	0	0	0
249	SLE FR 3	0.05	-0.16	9.61	0	0	0
249	SLE FR 4	0.05	-0.16	9.88	0	0	0
249	SLE FR 5	0.05	-0.16	9.92	0	0	0
249	SLE FR 6	0.05	-0.16	10.09	0	0	0
249	SLE QP 1	0.05	-0.16	9.57	0	0	0
249	SLE QP 2	0.05	-0.16	9.88	0	0	0
249	SLD 1	0.89	0.05	9.3	0	0	0
249	SLD 2	0.97	0.1	9.35	0	0	0
249	SLD 3	0.84	-0.18	9.08	0	0	0
249	SLD 4	0.92	-0.13	9.14	0	0	0
249	SLD 5	0.36	0.25	10.02	0	0	0
249	SLD 6	0.41	0.27	10.06	0	0	0
249	SLD 7	0.2	-0.52	9.3	0	0	0
249	SLD 8	0.25	-0.5	9.34	0	0	0
249	SLD 9	-0.15	0.17	10.42	0	0	0
249	SLD 10	-0.1	0.2	10.46	0	0	0
249	SLD 11	-0.32	-0.6	9.7	0	0	0
249	SLD 12	-0.26	-0.57	9.74	0	0	0
249	SLD 13	-0.82	-0.19	10.62	0	0	0
249	SLD 14	-0.74	-0.15	10.68	0	0	0
249	SLD 15	-0.87	-0.42	10.41	0	0	0
249	SLD 16	-0.79	-0.38	10.46	0	0	0
249	SLV 1	2.01	0.34	8.51	0	0	0
249	SLV 2	2.2	0.43	8.63	0	0	0
249	SLV 3	1.9	-0.19	8.02	0	0	0
249	SLV 4	2.08	-0.09	8.14	0	0	0
249	SLV 5	0.78	0.76	10.19	0	0	0
249	SLV 6	0.9	0.83	10.27	0	0	0
249	SLV 7	0.39	-0.98	8.56	0	0	0
249	SLV 8	0.52	-0.92	8.64	0	0	0
249	SLV 9	-0.42	0.59	11.12	0	0	0
249	SLV 10	-0.3	0.66	11.2	0	0	0
249	SLV 11	-0.8	-1.15	9.49	0	0	0
249	SLV 12	-0.68	-1.09	9.57	0	0	0
249	SLV 13	-1.99	-0.23	11.62	0	0	0
249	SLV 14	-1.8	-0.13	11.74	0	0	0
249	SLV 15	-2.1	-0.76	11.13	0	0	0
249	SLV 16	-1.91	-0.66	11.25	0	0	0
250	SLU 1	0.02	-0.09	4.64	0	0	0
250	SLU 2	0.03	-0.09	4.64	0	0	0
250	SLU 3	0.02	-0.09	4.74	0	0	0
250	SLU 4	0.02	-0.09	4.74	0	0	0
250	SLU 5	0.03	-0.09	4.71	0	0	0
250	SLU 6	0.02	-0.09	4.82	0	0	0
250	SLU 7	0.03	-0.09	4.81	0	0	0
250	SLU 8	0.02	-0.09	4.78	0	0	0
250	SLU 9	0.02	-0.09	4.78	0	0	0
250	SLU 10	0.03	-0.1	5.18	0	0	0
250	SLU 11	0.02	-0.09	5.29	0	0	0
250	SLU 12	0.02	-0.1	5.29	0	0	0
250	SLU 13	0.03	-0.1	5.25	0	0	0
250	SLU 14	0.02	-0.1	5.36	0	0	0
250	SLU 15	0.03	-0.1	5.36	0	0	0
250	SLU 16	0.02	-0.1	5.32	0	0	0
250	SLU 17	0.02	-0.1	5.32	0	0	0
250	SLU 18	0.02	-0.09	5.42	0	0	0
250	SLU 19	0.02	-0.1	5.41	0	0	0
250	SLU 20	0.02	-0.1	5.49	0	0	0
250	SLU 21	0.02	-0.1	5.49	0	0	0
250	SLU 22	0.03	-0.09	5.13	0	0	0
250	SLU 23	0.03	-0.09	5.13	0	0	0
250	SLU 24	0.03	-0.09	5.24	0	0	0
250	SLU 25	0.03	-0.09	5.24	0	0	0
250	SLU 26	0.03	-0.09	5.2	0	0	0
250	SLU 27	0.03	-0.09	5.31	0	0	0
250	SLU 28	0.03	-0.09	5.31	0	0	0
250	SLU 29	0.03	-0.09	5.27	0	0	0
250	SLU 30	0.03	-0.09	5.27	0	0	0
250	SLU 31	0.03	-0.1	5.67	0	0	0
250	SLU 32	0.03	-0.09	5.78	0	0	0
250	SLU 33	0.03	-0.1	5.78	0	0	0
250	SLU 34	0.03	-0.1	5.74	0	0	0
250	SLU 35	0.03	-0.1	5.85	0	0	0
250	SLU 36	0.03	-0.1	5.85	0	0	0
250	SLU 37	0.03	-0.1	5.82	0	0	0
250	SLU 38	0.03	-0.1	5.82	0	0	0



Nodo	Cont. N.br.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
250	SLU 39	0.03	-0.1	5.91	0	0	0
250	SLU 40	0.03	-0.1	5.91	0	0	0
250	SLU 41	0.03	-0.1	5.98	0	0	0
250	SLU 42	0.03	-0.1	5.98	0	0	0
250	SLU 43	0.03	-0.11	5.86	0	0	0
250	SLU 44	0.03	-0.12	5.86	0	0	0
250	SLU 45	0.03	-0.12	5.97	0	0	0
250	SLU 46	0.03	-0.12	5.97	0	0	0
250	SLU 47	0.03	-0.12	5.93	0	0	0
250	SLU 48	0.03	-0.12	6.04	0	0	0
250	SLU 49	0.03	-0.12	6.04	0	0	0
250	SLU 50	0.03	-0.12	6.01	0	0	0
250	SLU 51	0.03	-0.12	6	0	0	0
250	SLU 52	0.03	-0.12	6.4	0	0	0
250	SLU 53	0.03	-0.12	6.51	0	0	0
250	SLU 54	0.03	-0.12	6.51	0	0	0
250	SLU 55	0.03	-0.12	6.47	0	0	0
250	SLU 56	0.03	-0.12	6.58	0	0	0
250	SLU 57	0.03	-0.12	6.58	0	0	0
250	SLU 58	0.03	-0.12	6.55	0	0	0
250	SLU 59	0.03	-0.12	6.55	0	0	0
250	SLU 60	0.03	-0.12	6.64	0	0	0
250	SLU 61	0.03	-0.12	6.64	0	0	0
250	SLU 62	0.03	-0.12	6.71	0	0	0
250	SLU 63	0.03	-0.12	6.71	0	0	0
250	SLU 64	0.03	-0.12	6.36	0	0	0
250	SLU 65	0.03	-0.12	6.35	0	0	0
250	SLU 66	0.03	-0.12	6.46	0	0	0
250	SLU 67	0.03	-0.12	6.46	0	0	0
250	SLU 68	0.03	-0.12	6.42	0	0	0
250	SLU 69	0.03	-0.12	6.53	0	0	0
250	SLU 70	0.03	-0.12	6.53	0	0	0
250	SLU 71	0.03	-0.12	6.5	0	0	0
250	SLU 72	0.03	-0.12	6.5	0	0	0
250	SLU 73	0.03	-0.12	6.9	0	0	0
250	SLU 74	0.03	-0.12	7	0	0	0
250	SLU 75	0.03	-0.12	7	0	0	0
250	SLU 76	0.03	-0.12	6.97	0	0	0
250	SLU 77	0.03	-0.12	7.07	0	0	0
250	SLU 78	0.03	-0.12	7.07	0	0	0
250	SLU 79	0.03	-0.12	7.04	0	0	0
250	SLU 80	0.03	-0.12	7.04	0	0	0
250	SLU 81	0.03	-0.12	7.13	0	0	0
250	SLU 82	0.03	-0.12	7.13	0	0	0
250	SLU 83	0.03	-0.12	7.2	0	0	0
250	SLU 84	0.03	-0.13	7.2	0	0	0
250	SLE RA 1	0.02	-0.09	4.78	0	0	0
250	SLE RA 2	0.03	-0.09	4.78	0	0	0
250	SLE RA 3	0.02	-0.09	4.85	0	0	0
250	SLE RA 4	0.03	-0.09	4.85	0	0	0
250	SLE RA 5	0.03	-0.09	4.83	0	0	0
250	SLE RA 6	0.02	-0.09	4.9	0	0	0
250	SLE RA 7	0.03	-0.09	4.9	0	0	0
250	SLE RA 8	0.02	-0.09	4.88	0	0	0
250	SLE RA 9	0.03	-0.09	4.87	0	0	0
250	SLE RA 10	0.03	-0.09	5.14	0	0	0
250	SLE RA 11	0.02	-0.09	5.21	0	0	0
250	SLE RA 12	0.03	-0.09	5.21	0	0	0
250	SLE RA 13	0.03	-0.09	5.19	0	0	0
250	SLE RA 14	0.02	-0.09	5.26	0	0	0
250	SLE RA 15	0.03	-0.09	5.26	0	0	0
250	SLE RA 16	0.02	-0.09	5.24	0	0	0
250	SLE RA 17	0.03	-0.09	5.24	0	0	0
250	SLE RA 18	0.02	-0.09	5.3	0	0	0
250	SLE RA 19	0.02	-0.09	5.3	0	0	0
250	SLE RA 20	0.02	-0.09	5.35	0	0	0
250	SLE RA 21	0.03	-0.1	5.34	0	0	0
250	SLE FR 1	0.02	-0.09	4.78	0	0	0
250	SLE FR 2	0.02	-0.09	4.78	0	0	0
250	SLE FR 3	0.02	-0.09	4.8	0	0	0
250	SLE FR 4	0.02	-0.09	4.94	0	0	0
250	SLE FR 5	0.02	-0.09	4.96	0	0	0
250	SLE FR 6	0.02	-0.09	5.04	0	0	0
250	SLE QP 1	0.02	-0.09	4.78	0	0	0
250	SLE QP 2	0.02	-0.09	4.94	0	0	0
250	SLD 1	0.44	0.02	4.61	0	0	0
250	SLD 2	0.48	0.04	4.64	0	0	0
250	SLD 3	0.41	-0.09	4.5	0	0	0
250	SLD 4	0.45	-0.07	4.53	0	0	0
250	SLD 5	0.18	0.11	5	0	0	0
250	SLD 6	0.2	0.12	5.02	0	0	0
250	SLD 7	0.1	-0.27	4.64	0	0	0
250	SLD 8	0.12	-0.25	4.66	0	0	0
250	SLD 9	-0.07	0.07	5.22	0	0	0
250	SLD 10	-0.05	0.09	5.24	0	0	0
250	SLD 11	-0.16	-0.3	4.85	0	0	0
250	SLD 12	-0.13	-0.29	4.87	0	0	0
250	SLD 13	-0.4	-0.11	5.34	0	0	0
250	SLD 14	-0.36	-0.09	5.37	0	0	0
250	SLD 15	-0.43	-0.22	5.23	0	0	0





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
250	SLD 16	-0.39	-0.2	5.26	0	0	0
250	SLV 1	0.99	0.16	4.18	0	0	0
250	SLV 2	1.08	0.22	4.24	0	0	0
250	SLV 3	0.93	-0.09	3.93	0	0	0
250	SLV 4	1.02	-0.04	4	0	0	0
250	SLV 5	0.38	0.36	5.07	0	0	0
250	SLV 6	0.44	0.4	5.11	0	0	0
250	SLV 7	0.19	-0.49	4.25	0	0	0
250	SLV 8	0.25	-0.45	4.29	0	0	0
250	SLV 9	-0.21	0.27	5.58	0	0	0
250	SLV 10	-0.15	0.31	5.63	0	0	0
250	SLV 11	-0.4	-0.58	4.76	0	0	0
250	SLV 12	-0.34	-0.54	4.8	0	0	0
250	SLV 13	-0.98	-0.14	5.88	0	0	0
250	SLV 14	-0.88	-0.09	5.94	0	0	0
250	SLV 15	-1.03	-0.4	5.63	0	0	0
250	SLV 16	-0.94	-0.34	5.7	0	0	0
251	SLU 1	-1.04	0.19	55.84	12.7458	-9.6181	0.2931
251	SLU 2	-1.01	0.07	55.75	12.7262	-9.6017	0.2639
251	SLU 3	-1.08	0.2	57.18	13.0493	-9.8466	0.3038
251	SLU 4	-1.06	0.13	57.12	13.0375	-9.8368	0.2862
251	SLU 5	-1.03	0.08	56.62	12.9237	-9.7511	0.2699
251	SLU 6	-1.1	0.21	58.05	13.2468	-9.996	0.3097
251	SLU 7	-1.08	0.14	57.99	13.235	-9.9862	0.2922
251	SLU 8	-1.08	0.21	57.59	13.1407	-9.9169	0.3051
251	SLU 9	-1.06	0.13	57.53	13.129	-9.9071	0.2875
251	SLU 10	-1.09	0.18	62.06	14.1615	-10.6826	0.3031
251	SLU 11	-1.15	0.32	63.49	14.4846	-10.9275	0.343
251	SLU 12	-1.14	0.24	63.43	14.4728	-10.9177	0.3255
251	SLU 13	-1.11	0.19	62.93	14.3589	-10.832	0.3091
251	SLU 14	-1.17	0.33	64.36	14.682	-11.0769	0.349
251	SLU 15	-1.15	0.25	64.3	14.6703	-11.0671	0.3314
251	SLU 16	-1.16	0.32	63.89	14.576	-10.9978	0.3443
251	SLU 17	-1.14	0.25	63.84	14.5642	-10.988	0.3268
251	SLU 18	-1.15	0.35	64.85	14.7962	-11.1623	0.3492
251	SLU 19	-1.13	0.28	64.8	14.7844	-11.1524	0.3316
251	SLU 20	-1.17	0.36	65.73	14.9936	-11.3117	0.3551
251	SLU 21	-1.15	0.29	65.67	14.9819	-11.3018	0.3376
251	SLU 22	-1.18	0.29	62.15	14.1821	-10.6963	0.3443
251	SLU 23	-1.15	0.17	62.05	14.1625	-10.6799	0.3151
251	SLU 24	-1.21	0.3	63.48	14.4856	-10.9248	0.355
251	SLU 25	-1.19	0.23	63.43	14.4738	-10.915	0.3374
251	SLU 26	-1.17	0.18	62.92	14.3599	-10.8293	0.3211
251	SLU 27	-1.23	0.31	64.35	14.6831	-11.0742	0.3609
251	SLU 28	-1.21	0.24	64.3	14.6713	-11.0644	0.3434
251	SLU 29	-1.21	0.31	63.89	14.577	-10.9951	0.3563
251	SLU 30	-1.2	0.23	63.83	14.5652	-10.9852	0.3387
251	SLU 31	-1.22	0.28	68.36	15.5977	-11.7608	0.3543
251	SLU 32	-1.29	0.42	69.79	15.9209	-12.0057	0.3942
251	SLU 33	-1.27	0.34	69.73	15.9091	-11.9959	0.3767
251	SLU 34	-1.24	0.29	69.23	15.7952	-11.9102	0.3603
251	SLU 35	-1.3	0.42	70.66	16.1183	-12.1551	0.4002
251	SLU 36	-1.29	0.35	70.61	16.1066	-12.1453	0.3826
251	SLU 37	-1.29	0.42	70.2	16.0123	-12.076	0.3955
251	SLU 38	-1.27	0.35	70.14	16.0005	-12.0661	0.378
251	SLU 39	-1.28	0.45	71.16	16.2325	-12.2404	0.4004
251	SLU 40	-1.27	0.38	71.1	16.2207	-12.2306	0.3828
251	SLU 41	-1.3	0.46	72.03	16.4299	-12.3898	0.4063
251	SLU 42	-1.29	0.39	71.97	16.4182	-12.38	0.3888
251	SLU 43	-1.31	0.21	70.43	16.0771	-12.1339	0.3635
251	SLU 44	-1.28	0.09	70.34	16.0575	-12.1175	0.3343
251	SLU 45	-1.34	0.23	71.77	16.3806	-12.3624	0.3742
251	SLU 46	-1.33	0.15	71.71	16.3689	-12.3526	0.3566
251	SLU 47	-1.3	0.1	71.21	16.255	-12.2669	0.3403
251	SLU 48	-1.36	0.24	72.64	16.5781	-12.5118	0.3801
251	SLU 49	-1.35	0.16	72.59	16.5663	-12.502	0.3626
251	SLU 50	-1.35	0.23	72.18	16.472	-12.4327	0.3755
251	SLU 51	-1.33	0.16	72.12	16.4603	-12.4229	0.3579
251	SLU 52	-1.36	0.21	76.65	17.4928	-13.1984	0.3735
251	SLU 53	-1.42	0.34	78.08	17.8159	-13.4433	0.4134
251	SLU 54	-1.4	0.27	78.02	17.8041	-13.4335	0.3959
251	SLU 55	-1.38	0.21	77.52	17.6902	-13.3478	0.3795
251	SLU 56	-1.44	0.35	78.95	18.0133	-13.5927	0.4194
251	SLU 57	-1.42	0.28	78.89	18.0016	-13.5829	0.4018
251	SLU 58	-1.42	0.34	78.49	17.9073	-13.5136	0.4147
251	SLU 59	-1.41	0.27	78.43	17.8955	-13.5038	0.3972
251	SLU 60	-1.42	0.38	79.45	18.1275	-13.6781	0.4196
251	SLU 61	-1.4	0.3	79.39	18.1157	-13.6682	0.402
251	SLU 62	-1.44	0.38	80.32	18.325	-13.8274	0.4255
251	SLU 63	-1.42	0.31	80.26	18.3132	-13.8176	0.408
251	SLU 64	-1.45	0.31	76.74	17.5134	-13.2121	0.4147
251	SLU 65	-1.42	0.19	76.64	17.4938	-13.1957	0.3855
251	SLU 66	-1.48	0.33	78.07	17.8169	-13.4406	0.4254
251	SLU 67	-1.46	0.25	78.02	17.8051	-13.4307	0.4078
251	SLU 68	-1.43	0.2	77.51	17.6912	-13.3451	0.3914
251	SLU 69	-1.5	0.33	78.95	18.0144	-13.59	0.4313
251	SLU 70	-1.48	0.26	78.89	18.0026	-13.5801	0.4138
251	SLU 71	-1.48	0.33	78.48	17.9083	-13.5109	0.4266
251	SLU 72	-1.46	0.26	78.42	17.8966	-13.501	0.4091
251	SLU 73	-1.49	0.3	82.95	18.929	-14.2766	0.4247



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
251	SLU 74	-1.55	0.44	84.38	19.2522	-14.5215	0.4646
251	SLU 75	-1.54	0.37	84.32	19.2404	-14.5116	0.447
251	SLU 76	-1.51	0.31	83.82	19.1265	-14.426	0.4307
251	SLU 77	-1.57	0.45	85.25	19.4496	-14.6709	0.4706
251	SLU 78	-1.55	0.37	85.2	19.4379	-14.661	0.453
251	SLU 79	-1.56	0.44	84.79	19.3436	-14.5918	0.4659
251	SLU 80	-1.54	0.37	84.73	19.3318	-14.5819	0.4483
251	SLU 81	-1.55	0.47	85.75	19.5638	-14.7562	0.4708
251	SLU 82	-1.53	0.4	85.69	19.552	-14.7464	0.4532
251	SLU 83	-1.57	0.48	86.62	19.7612	-14.9056	0.4767
251	SLU 84	-1.55	0.41	86.56	19.7495	-14.8958	0.4592
251	SLE RA 1	-1.08	0.22	57.64	13.1562	-9.9262	0.3078
251	SLE RA 2	-1.06	0.14	57.58	13.1431	-9.9152	0.2883
251	SLE RA 3	-1.1	0.23	58.53	13.3585	-10.0785	0.3149
251	SLE RA 4	-1.09	0.18	58.5	13.3507	-10.0719	0.3032
251	SLE RA 5	-1.07	0.14	58.16	13.2747	-10.0148	0.2922
251	SLE RA 6	-1.12	0.23	59.12	13.4902	-10.1781	0.3188
251	SLE RA 7	-1.11	0.18	59.08	13.4823	-10.1715	0.3071
251	SLE RA 8	-1.11	0.23	58.81	13.4195	-10.1254	0.3157
251	SLE RA 9	-1.09	0.18	58.77	13.4116	-10.1188	0.304
251	SLE RA 10	-1.11	0.21	61.79	14.0999	-10.6358	0.3144
251	SLE RA 11	-1.15	0.3	62.74	14.3154	-10.7991	0.341
251	SLE RA 12	-1.14	0.25	62.7	14.3075	-10.7926	0.3293
251	SLE RA 13	-1.12	0.22	62.37	14.2316	-10.7354	0.3184
251	SLE RA 14	-1.17	0.31	63.32	14.447	-10.8987	0.345
251	SLE RA 15	-1.16	0.26	63.28	14.4391	-10.8922	0.3333
251	SLE RA 16	-1.16	0.31	63.01	14.3763	-10.846	0.3419
251	SLE RA 17	-1.14	0.26	62.97	14.3685	-10.8394	0.3302
251	SLE RA 18	-1.15	0.33	63.65	14.5231	-10.9556	0.3451
251	SLE RA 19	-1.14	0.28	63.61	14.5152	-10.949	0.3334
251	SLE RA 20	-1.17	0.33	64.23	14.6547	-11.0552	0.3491
251	SLE RA 21	-1.15	0.28	64.19	14.6469	-11.0486	0.3374
251	SLE FR 1	-1.08	0.22	57.64	13.1562	-9.9262	0.3078
251	SLE FR 2	-1.08	0.2	57.63	13.1536	-9.924	0.3039
251	SLE FR 3	-1.09	0.22	57.88	13.2088	-9.966	0.3093
251	SLE FR 4	-1.1	0.24	59.43	13.5636	-10.2328	0.3151
251	SLE FR 5	-1.11	0.25	59.68	13.6189	-10.2748	0.3206
251	SLE FR 6	-1.12	0.27	60.65	13.8396	-10.4409	0.3264
251	SLE QP 1	-1.08	0.22	57.64	13.1562	-9.9262	0.3078
251	SLE QP 2	-1.1	0.25	59.45	13.5662	-10.235	0.319
251	SLD 1	2.92	1.03	77.22	17.6082	-13.2177	-0.5286
251	SLD 2	3.34	0.28	76.42	17.4414	-13.0805	-0.771
251	SLD 3	3.23	-0.82	75.46	17.2329	-12.9187	-0.9144
251	SLD 4	3.66	-1.57	74.66	17.0661	-12.7815	-1.1568
251	SLD 5	-0.45	3.43	67.59	15.3778	-11.6079	0.6931
251	SLD 6	-0.16	2.93	67.07	15.2682	-11.5177	0.5338
251	SLD 7	0.59	-2.74	61.72	14.1268	-10.6111	-0.5929
251	SLD 8	0.87	-3.24	61.2	14.0172	-10.5209	-0.7522
251	SLD 9	-3.08	3.74	57.7	13.1152	-9.9491	1.3901
251	SLD 10	-2.8	3.25	57.17	13.0056	-9.8589	1.2308
251	SLD 11	-2.04	-2.43	51.83	11.8643	-8.9523	0.1041
251	SLD 12	-1.76	-2.92	51.3	11.7547	-8.8621	-0.0552
251	SLD 13	-5.86	2.07	44.23	10.0664	-7.6885	1.7947
251	SLD 14	-5.43	1.32	43.43	9.8996	-7.5513	1.5524
251	SLD 15	-5.55	0.22	42.47	9.6911	-7.3895	1.4089
251	SLD 16	-5.12	-0.53	41.67	9.5243	-7.2522	1.1666
251	SLV 1	8.3	1.99	101	23.0179	-17.2085	-1.6787
251	SLV 2	9.3	0.25	99.14	22.6295	-16.889	-2.243
251	SLV 3	9.02	-2.19	96.98	22.1604	-16.5262	-2.5534
251	SLV 4	10.02	-3.94	95.12	21.772	-16.2066	-3.1177
251	SLV 5	0.45	7.43	78.33	17.7695	-13.4172	1.1438
251	SLV 6	1.1	6.3	77.13	17.5186	-13.2108	0.7793
251	SLV 7	2.85	-6.53	64.93	14.9111	-11.1427	-1.7717
251	SLV 8	3.5	-7.66	63.73	14.6603	-10.9363	-2.1362
251	SLV 9	-5.71	8.16	55.16	12.4722	-9.5337	2.7741
251	SLV 10	-5.06	7.04	53.96	12.2214	-9.3273	2.4096
251	SLV 11	-3.31	-5.8	41.77	9.6139	-7.2592	-0.1414
251	SLV 12	-2.66	-6.93	40.56	9.363	-7.0528	-0.5059
251	SLV 13	-12.23	4.44	23.77	5.3605	-4.2634	3.7556
251	SLV 14	-11.23	2.7	21.91	4.9721	-3.9438	3.1913
251	SLV 15	-11.51	0.25	19.76	4.503	-3.581	2.881
251	SLV 16	-10.51	-1.49	17.89	4.1146	-3.2615	2.3166
251	CRTFP Ux+	0	0	0	0	0	0
251	CRTFP Ux-	0	0	0	0	0	0
251	CRTFP Uy+	0	0	0	0	0	0
251	CRTFP Uy-	0	0	0	0	0	0
253	SLU 1	-0.76	0.12	37.71	10.2645	-0.9655	0.2676
253	SLU 2	-0.74	0.04	37.65	10.2497	-0.9639	0.2586
253	SLU 3	-0.78	0.13	38.61	10.5043	-0.9882	0.2763
253	SLU 4	-0.77	0.08	38.57	10.4954	-0.9873	0.2709
253	SLU 5	-0.75	0.04	38.23	10.4055	-0.9788	0.2633
253	SLU 6	-0.79	0.13	39.19	10.66	-1.0031	0.281
253	SLU 7	-0.78	0.08	39.16	10.6511	-1.0021	0.2756
253	SLU 8	-0.78	0.13	38.88	10.5761	-0.9952	0.277
253	SLU 9	-0.77	0.08	38.84	10.5672	-0.9943	0.2716
253	SLU 10	-0.79	0.11	41.89	11.3814	-1.0719	0.2794
253	SLU 11	-0.84	0.21	42.85	11.636	-1.0961	0.2971
253	SLU 12	-0.82	0.16	42.81	11.6271	-1.0952	0.2917
253	SLU 13	-0.8	0.12	42.48	11.5372	-1.0867	0.2841
253	SLU 14	-0.85	0.21	43.43	11.7917	-1.111	0.3018



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
253	SLU 15	-0.84	0.16	43.4	11.7828	-1.1101	0.2964
253	SLU 16	-0.84	0.21	43.12	11.7078	-1.1031	0.2978
253	SLU 17	-0.83	0.16	43.09	11.6989	-1.1022	0.2924
253	SLU 18	-0.83	0.23	43.77	11.8812	-1.1197	0.2973
253	SLU 19	-0.82	0.18	43.73	11.8723	-1.1187	0.2919
253	SLU 20	-0.85	0.24	44.36	12.037	-1.1345	0.302
253	SLU 21	-0.84	0.19	44.32	12.0281	-1.1336	0.2966
253	SLU 22	-0.85	0.19	41.94	11.3986	-1.0729	0.3033
253	SLU 23	-0.83	0.1	41.88	11.3837	-1.0714	0.2943
253	SLU 24	-0.88	0.2	42.84	11.6383	-1.0956	0.312
253	SLU 25	-0.87	0.15	42.8	11.6294	-1.0947	0.3066
253	SLU 26	-0.85	0.11	42.47	11.5395	-1.0862	0.299
253	SLU 27	-0.89	0.2	43.43	11.7941	-1.1105	0.3167
253	SLU 28	-0.88	0.15	43.39	11.7852	-1.1096	0.3113
253	SLU 29	-0.88	0.2	43.11	11.7101	-1.1027	0.3127
253	SLU 30	-0.87	0.15	43.08	11.7012	-1.1017	0.3073
253	SLU 31	-0.89	0.18	46.12	12.5154	-1.1793	0.315
253	SLU 32	-0.93	0.28	47.08	12.77	-1.2036	0.3328
253	SLU 33	-0.92	0.22	47.05	12.7611	-1.2027	0.3274
253	SLU 34	-0.9	0.19	46.71	12.6712	-1.1942	0.3198
253	SLU 35	-0.95	0.28	47.67	12.9258	-1.2185	0.3375
253	SLU 36	-0.93	0.23	47.63	12.9169	-1.2175	0.3321
253	SLU 37	-0.93	0.28	47.36	12.8418	-1.2106	0.3335
253	SLU 38	-0.92	0.23	47.32	12.8329	-1.2097	0.3281
253	SLU 39	-0.93	0.3	48	13.0153	-1.2271	0.333
253	SLU 40	-0.92	0.25	47.97	13.0064	-1.2262	0.3276
253	SLU 41	-0.94	0.31	48.59	13.1711	-1.242	0.3377
253	SLU 42	-0.93	0.26	48.55	13.1621	-1.2411	0.3323
253	SLU 43	-0.95	0.13	47.57	12.9551	-1.2182	0.3357
253	SLU 44	-0.93	0.05	47.51	12.9402	-1.2167	0.3266
253	SLU 45	-0.98	0.14	48.47	13.1948	-1.241	0.3444
253	SLU 46	-0.96	0.09	48.43	13.1859	-1.2401	0.3389
253	SLU 47	-0.94	0.05	48.1	13.096	-1.2316	0.3313
253	SLU 48	-0.99	0.15	49.05	13.3506	-1.2559	0.3491
253	SLU 49	-0.98	0.1	49.02	13.3417	-1.2549	0.3436
253	SLU 50	-0.98	0.14	48.74	13.2666	-1.248	0.3451
253	SLU 51	-0.97	0.09	48.71	13.2577	-1.2471	0.3397
253	SLU 52	-0.99	0.13	51.75	14.0719	-1.3246	0.3474
253	SLU 53	-1.03	0.22	52.71	14.3265	-1.3489	0.3652
253	SLU 54	-1.02	0.17	52.67	14.3176	-1.348	0.3597
253	SLU 55	-1	0.13	52.34	14.2277	-1.3395	0.3521
253	SLU 56	-1.04	0.22	53.3	14.4823	-1.3638	0.3699
253	SLU 57	-1.03	0.17	53.26	14.4734	-1.3629	0.3644
253	SLU 58	-1.03	0.22	52.98	14.3983	-1.3559	0.3659
253	SLU 59	-1.02	0.17	52.95	14.3894	-1.355	0.3604
253	SLU 60	-1.03	0.25	53.63	14.5718	-1.3725	0.3654
253	SLU 61	-1.02	0.19	53.6	14.5629	-1.3715	0.3599
253	SLU 62	-1.04	0.25	54.22	14.7276	-1.3873	0.3701
253	SLU 63	-1.03	0.2	54.18	14.7186	-1.3864	0.3646
253	SLU 64	-1.05	0.2	51.81	14.0891	-1.3257	0.3714
253	SLU 65	-1.03	0.12	51.74	14.0743	-1.3242	0.3623
253	SLU 66	-1.07	0.21	52.7	14.3289	-1.3484	0.3801
253	SLU 67	-1.06	0.16	52.67	14.32	-1.3475	0.3746
253	SLU 68	-1.04	0.12	52.33	14.2301	-1.339	0.367
253	SLU 69	-1.09	0.21	53.29	14.4846	-1.3633	0.3848
253	SLU 70	-1.07	0.16	53.25	14.4757	-1.3624	0.3793
253	SLU 71	-1.07	0.21	52.98	14.4007	-1.3554	0.3808
253	SLU 72	-1.06	0.16	52.94	14.3918	-1.3545	0.3753
253	SLU 73	-1.08	0.2	55.99	15.206	-1.4321	0.3831
253	SLU 74	-1.13	0.29	56.94	15.4606	-1.4564	0.4009
253	SLU 75	-1.11	0.24	56.91	15.4517	-1.4554	0.3954
253	SLU 76	-1.1	0.2	56.57	15.3617	-1.447	0.3878
253	SLU 77	-1.14	0.29	57.53	15.6163	-1.4712	0.4056
253	SLU 78	-1.13	0.24	57.49	15.6074	-1.4703	0.4001
253	SLU 79	-1.13	0.29	57.22	15.5324	-1.4634	0.4016
253	SLU 80	-1.12	0.24	57.18	15.5235	-1.4625	0.3961
253	SLU 81	-1.12	0.31	57.87	15.7058	-1.4799	0.4011
253	SLU 82	-1.11	0.26	57.83	15.6969	-1.479	0.3956
253	SLU 83	-1.14	0.32	58.45	15.8616	-1.4948	0.4058
253	SLU 84	-1.13	0.27	58.41	15.8527	-1.4938	0.4003
253	SLE RA 1	-0.79	0.14	38.92	10.5885	-0.9962	0.2778
253	SLE RA 2	-0.77	0.08	38.88	10.5787	-0.9951	0.2718
253	SLE RA 3	-0.8	0.14	39.52	10.7484	-1.0113	0.2836
253	SLE RA 4	-0.79	0.11	39.49	10.7424	-1.0107	0.28
253	SLE RA 5	-0.78	0.09	39.27	10.6825	-1.005	0.2749
253	SLE RA 6	-0.81	0.15	39.91	10.8522	-1.0212	0.2868
253	SLE RA 7	-0.8	0.11	39.88	10.8463	-1.0206	0.2831
253	SLE RA 8	-0.8	0.15	39.7	10.7962	-1.016	0.2841
253	SLE RA 9	-0.79	0.11	39.68	10.7903	-1.0154	0.2805
253	SLE RA 10	-0.81	0.14	41.71	11.3331	-1.0671	0.2856
253	SLE RA 11	-0.84	0.2	42.35	11.5028	-1.0833	0.2975
253	SLE RA 12	-0.83	0.16	42.32	11.4969	-1.0827	0.2939
253	SLE RA 13	-0.82	0.14	42.1	11.437	-1.077	0.2888
253	SLE RA 14	-0.85	0.2	42.74	11.6067	-1.0932	0.3006
253	SLE RA 15	-0.84	0.17	42.71	11.6007	-1.0926	0.297
253	SLE RA 16	-0.84	0.2	42.53	11.5507	-1.0879	0.298
253	SLE RA 17	-0.83	0.17	42.5	11.5448	-1.0873	0.2943
253	SLE RA 18	-0.84	0.21	42.96	11.6664	-1.099	0.2976
253	SLE RA 19	-0.83	0.18	42.94	11.6604	-1.0983	0.294
253	SLE RA 20	-0.84	0.22	43.35	11.7702	-1.1089	0.3008



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
253	SLE RA 21	-0.84	0.18	43.33	11.7643	-1.1083	0.2971
253	SLE FR 1	-0.79	0.14	38.92	10.5885	-0.9962	0.2778
253	SLE FR 2	-0.78	0.13	38.91	10.5866	-0.9959	0.2766
253	SLE FR 3	-0.79	0.14	39.08	10.6301	-1.0001	0.2791
253	SLE FR 4	-0.8	0.15	40.12	10.9099	-1.0268	0.2826
253	SLE FR 5	-0.8	0.16	40.29	10.9534	-1.031	0.285
253	SLE FR 6	-0.81	0.18	40.94	11.1274	-1.0476	0.2877
253	SLE QP 1	-0.79	0.14	38.92	10.5885	-0.9962	0.2778
253	SLE QP 2	-0.8	0.16	40.13	10.9119	-1.027	0.2838
253	SLD 1	2.14	0.72	51.82	14.1143	-1.3142	-0.7341
253	SLD 2	2.44	0.2	51.31	13.9869	-1.3013	-0.8531
253	SLD 3	2.36	-0.58	50.68	13.8294	-1.2862	-0.8309
253	SLD 4	2.66	-1.1	50.17	13.7021	-1.2733	-0.95
253	SLD 5	-0.3	2.4	45.46	12.3274	-1.1579	0.1466
253	SLD 6	-0.1	2.06	45.12	12.2437	-1.1495	0.0683
253	SLD 7	0.42	-1.94	41.66	11.3778	-1.0646	-0.1763
253	SLD 8	0.62	-2.28	41.32	11.2942	-1.0561	-0.2545
253	SLD 9	-2.22	2.61	38.94	10.5296	-0.9979	0.8221
253	SLD 10	-2.02	2.27	38.6	10.4459	-0.9894	0.7438
253	SLD 11	-1.5	-1.73	35.14	9.5801	-0.9045	0.4992
253	SLD 12	-1.3	-2.07	34.8	9.4964	-0.8961	0.421
253	SLD 13	-4.26	1.42	30.1	8.1217	-0.7807	1.5175
253	SLD 14	-3.96	0.91	29.58	7.9944	-0.7678	1.3985
253	SLD 15	-4.04	0.12	28.96	7.8368	-0.7527	1.4207
253	SLD 16	-3.74	-0.4	28.44	7.7095	-0.7398	1.3016
253	SLV 1	6.08	1.41	67.47	18.4011	-1.6985	-2.0996
253	SLV 2	6.79	0.21	66.26	18.1045	-1.6685	-2.3768
253	SLV 3	6.58	-1.53	64.87	17.7497	-1.6345	-2.3224
253	SLV 4	7.29	-2.74	63.66	17.4531	-1.6046	-2.5996
253	SLV 5	0.38	5.21	52.49	14.198	-1.3306	-0.0453
253	SLV 6	0.84	4.43	51.71	14.0064	-1.3113	-0.2244
253	SLV 7	2.05	-4.61	43.82	12.0265	-1.1174	-0.7881
253	SLV 8	2.51	-5.38	43.04	11.835	-1.0981	-0.9672
253	SLV 9	-4.11	5.71	37.23	9.9888	-0.9559	1.5347
253	SLV 10	-3.65	4.93	36.45	9.7973	-0.9365	1.3557
253	SLV 11	-2.44	-4.11	28.56	7.8174	-0.7427	0.7919
253	SLV 12	-1.98	-4.89	27.78	7.6258	-0.7234	0.6128
253	SLV 13	-8.89	3.06	16.6	4.3707	-0.4494	3.1672
253	SLV 14	-8.18	1.86	15.4	4.0741	-0.4195	2.8899
253	SLV 15	-8.39	0.12	14	3.7192	-0.3855	2.9443
253	SLV 16	-7.68	-1.09	12.8	3.4227	-0.3555	2.6671
253	CRTFP Ux+	0	0	0	0	0	0
253	CRTFP Ux-	0	0	0	0	0	0
253	CRTFP Uy+	0	0	0	0	0	0
253	CRTFP Uy-	0	0	0	0	0	0
254	SLU 1	-0.88	0.11	40.18	9.3126	0.1165	0.3078
254	SLU 2	-0.86	0.02	40.12	9.2995	0.1162	0.3001
254	SLU 3	-0.91	0.11	41.13	9.5243	0.1195	0.3177
254	SLU 4	-0.9	0.06	41.09	9.5165	0.1194	0.313
254	SLU 5	-0.88	0.02	40.74	9.4372	0.1182	0.3054
254	SLU 6	-0.93	0.12	41.75	9.662	0.1215	0.323
254	SLU 7	-0.91	0.06	41.71	9.6541	0.1213	0.3183
254	SLU 8	-0.91	0.12	41.42	9.5879	0.1204	0.3184
254	SLU 9	-0.9	0.06	41.38	9.5801	0.1202	0.3138
254	SLU 10	-0.92	0.1	44.61	10.2962	0.1302	0.3218
254	SLU 11	-0.97	0.2	45.62	10.5211	0.1335	0.3393
254	SLU 12	-0.96	0.14	45.58	10.5132	0.1333	0.3347
254	SLU 13	-0.94	0.11	45.23	10.4339	0.1321	0.3271
254	SLU 14	-0.99	0.2	46.24	10.6587	0.1354	0.3446
254	SLU 15	-0.98	0.15	46.2	10.6509	0.1353	0.34
254	SLU 16	-0.98	0.2	45.91	10.5847	0.1343	0.3401
254	SLU 17	-0.96	0.15	45.88	10.5768	0.1342	0.3355
254	SLU 18	-0.97	0.23	46.6	10.7365	0.1364	0.3388
254	SLU 19	-0.96	0.17	46.56	10.7286	0.1362	0.3342
254	SLU 20	-0.99	0.23	47.22	10.8742	0.1383	0.3441
254	SLU 21	-0.97	0.18	47.18	10.8663	0.1382	0.3395
254	SLU 22	-1	0.18	44.65	10.3117	0.1308	0.3472
254	SLU 23	-0.97	0.09	44.59	10.2986	0.1306	0.3395
254	SLU 24	-1.02	0.19	45.6	10.5235	0.1339	0.357
254	SLU 25	-1.01	0.13	45.56	10.5156	0.1337	0.3524
254	SLU 26	-0.99	0.09	45.21	10.4363	0.1325	0.3448
254	SLU 27	-1.04	0.19	46.22	10.6612	0.1358	0.3623
254	SLU 28	-1.03	0.14	46.18	10.6533	0.1357	0.3577
254	SLU 29	-1.03	0.19	45.89	10.5871	0.1347	0.3578
254	SLU 30	-1.01	0.14	45.85	10.5792	0.1346	0.3532
254	SLU 31	-1.04	0.17	49.08	11.2954	0.1445	0.3612
254	SLU 32	-1.09	0.27	50.09	11.5202	0.1478	0.3787
254	SLU 33	-1.07	0.22	50.06	11.5124	0.1477	0.3741
254	SLU 34	-1.05	0.18	49.7	11.4331	0.1465	0.3665
254	SLU 35	-1.1	0.28	50.71	11.6579	0.1498	0.384
254	SLU 36	-1.09	0.22	50.68	11.65	0.1496	0.3794
254	SLU 37	-1.09	0.27	50.39	11.5838	0.1487	0.3795
254	SLU 38	-1.08	0.22	50.35	11.576	0.1485	0.3748
254	SLU 39	-1.09	0.3	51.07	11.7356	0.1507	0.3781
254	SLU 40	-1.07	0.25	51.04	11.7278	0.1506	0.3735
254	SLU 41	-1.1	0.31	51.69	11.8733	0.1527	0.3834
254	SLU 42	-1.09	0.25	51.65	11.8655	0.1525	0.3788
254	SLU 43	-1.11	0.11	50.7	11.7638	0.1465	0.3867
254	SLU 44	-1.09	0.02	50.64	11.7507	0.1463	0.379
254	SLU 45	-1.14	0.12	51.65	11.9755	0.1496	0.3965



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
254	SLU 46	-1.12	0.07	51.61	11.9677	0.1494	0.3919
254	SLU 47	-1.1	0.03	51.26	11.8884	0.1482	0.3843
254	SLU 48	-1.15	0.13	52.27	12.1132	0.1515	0.4018
254	SLU 49	-1.14	0.07	52.23	12.1053	0.1514	0.3972
254	SLU 50	-1.14	0.12	51.94	12.0391	0.1504	0.3973
254	SLU 51	-1.13	0.07	51.9	12.0313	0.1503	0.3927
254	SLU 52	-1.15	0.11	55.13	12.7474	0.1602	0.4007
254	SLU 53	-1.2	0.21	56.14	12.9722	0.1635	0.4182
254	SLU 54	-1.19	0.15	56.1	12.9644	0.1633	0.4136
254	SLU 55	-1.16	0.11	55.75	12.8851	0.1621	0.406
254	SLU 56	-1.22	0.21	56.76	13.1099	0.1654	0.4235
254	SLU 57	-1.2	0.16	56.72	13.1021	0.1653	0.4189
254	SLU 58	-1.2	0.21	56.43	13.0359	0.1643	0.419
254	SLU 59	-1.19	0.15	56.4	13.028	0.1642	0.4144
254	SLU 60	-1.2	0.23	57.12	13.1877	0.1664	0.4177
254	SLU 61	-1.18	0.18	57.08	13.1798	0.1663	0.413
254	SLU 62	-1.21	0.24	57.74	13.3254	0.1684	0.423
254	SLU 63	-1.2	0.18	57.7	13.3175	0.1682	0.4183
254	SLU 64	-1.22	0.19	55.18	12.7629	0.1609	0.4261
254	SLU 65	-1.2	0.1	55.11	12.7498	0.1606	0.4184
254	SLU 66	-1.25	0.19	56.12	12.9747	0.1639	0.4359
254	SLU 67	-1.24	0.14	56.08	12.9668	0.1638	0.4313
254	SLU 68	-1.21	0.1	55.73	12.8875	0.1626	0.4237
254	SLU 69	-1.27	0.2	56.74	13.1124	0.1659	0.4412
254	SLU 70	-1.25	0.15	56.7	13.1045	0.1657	0.4366
254	SLU 71	-1.25	0.2	56.41	13.0383	0.1648	0.4367
254	SLU 72	-1.24	0.14	56.38	13.0304	0.1646	0.432
254	SLU 73	-1.26	0.18	59.61	13.7466	0.1745	0.44
254	SLU 74	-1.31	0.28	60.62	13.9714	0.1778	0.4575
254	SLU 75	-1.3	0.23	60.58	13.9636	0.1777	0.4529
254	SLU 76	-1.28	0.19	60.22	13.8843	0.1765	0.4453
254	SLU 77	-1.33	0.28	61.23	14.1091	0.1798	0.4628
254	SLU 78	-1.31	0.23	61.2	14.1012	0.1796	0.4582
254	SLU 79	-1.32	0.28	60.91	14.035	0.1787	0.4583
254	SLU 80	-1.3	0.23	60.87	14.0272	0.1785	0.4537
254	SLU 81	-1.31	0.31	61.6	14.1868	0.1808	0.457
254	SLU 82	-1.3	0.25	61.56	14.179	0.1806	0.4524
254	SLU 83	-1.33	0.31	62.21	14.3245	0.1827	0.4623
254	SLU 84	-1.31	0.26	62.18	14.3167	0.1825	0.4577
254	SLE RA 1	-0.92	0.13	41.46	9.598	0.1206	0.3191
254	SLE RA 2	-0.9	0.07	41.42	9.5893	0.1204	0.314
254	SLE RA 3	-0.93	0.13	42.09	9.7392	0.1226	0.3256
254	SLE RA 4	-0.92	0.1	42.06	9.734	0.1225	0.3226
254	SLE RA 5	-0.91	0.07	41.83	9.6811	0.1217	0.3175
254	SLE RA 6	-0.94	0.14	42.5	9.831	0.1239	0.3292
254	SLE RA 7	-0.93	0.1	42.48	9.8258	0.1238	0.3261
254	SLE RA 8	-0.94	0.13	42.29	9.7816	0.1232	0.3262
254	SLE RA 9	-0.93	0.1	42.26	9.7764	0.1231	0.3231
254	SLE RA 10	-0.94	0.12	44.41	10.2538	0.1297	0.3284
254	SLE RA 11	-0.98	0.19	45.09	10.4037	0.1319	0.3401
254	SLE RA 12	-0.97	0.15	45.06	10.3985	0.1318	0.337
254	SLE RA 13	-0.95	0.13	44.83	10.3456	0.131	0.3319
254	SLE RA 14	-0.99	0.19	45.5	10.4955	0.1332	0.3436
254	SLE RA 15	-0.98	0.16	45.47	10.4903	0.1331	0.3405
254	SLE RA 16	-0.98	0.19	45.28	10.4461	0.1325	0.3406
254	SLE RA 17	-0.97	0.15	45.26	10.4409	0.1324	0.3375
254	SLE RA 18	-0.97	0.21	45.74	10.5473	0.1338	0.3397
254	SLE RA 19	-0.97	0.17	45.71	10.5421	0.1337	0.3366
254	SLE RA 20	-0.98	0.21	46.15	10.6391	0.1351	0.3433
254	SLE RA 21	-0.98	0.18	46.13	10.6339	0.135	0.3402
254	SLE FR 1	-0.92	0.13	41.46	9.598	0.1206	0.3191
254	SLE FR 2	-0.91	0.12	41.45	9.5963	0.1205	0.3181
254	SLE FR 3	-0.92	0.13	41.62	9.6348	0.1211	0.3205
254	SLE FR 4	-0.93	0.14	42.74	9.8811	0.1245	0.3243
254	SLE FR 5	-0.94	0.15	42.91	9.9195	0.1251	0.3267
254	SLE FR 6	-0.94	0.17	43.6	10.0727	0.1272	0.3294
254	SLE QP 1	-0.92	0.13	41.46	9.598	0.1206	0.3191
254	SLE QP 2	-0.93	0.15	42.74	9.8828	0.1246	0.3253
254	SLD 1	2.48	0.77	54.68	12.6984	0.1791	-0.8702
254	SLD 2	2.83	0.22	54.15	12.5865	0.1769	-0.991
254	SLD 3	2.73	-0.65	53.52	12.4544	0.1738	-0.956
254	SLD 4	3.08	-1.2	52.98	12.3425	0.1716	-1.0768
254	SLD 5	-0.35	2.58	48.19	11.1175	0.1493	0.1184
254	SLD 6	-0.12	2.22	47.84	11.044	0.1479	0.0389
254	SLD 7	0.48	-2.13	44.31	10.3043	0.1317	-0.1676
254	SLD 8	0.71	-2.5	43.95	10.2307	0.1303	-0.2471
254	SLD 9	-2.58	2.8	41.53	9.5349	0.1188	0.8976
254	SLD 10	-2.35	2.44	41.18	9.4614	0.1174	0.8182
254	SLD 11	-1.75	-1.91	37.65	8.7217	0.1012	0.6116
254	SLD 12	-1.52	-2.28	37.3	8.6481	0.0998	0.5322
254	SLD 13	-4.95	1.5	32.5	7.4231	0.0775	1.7274
254	SLD 14	-4.6	0.95	31.97	7.3112	0.0753	1.6065
254	SLD 15	-4.7	0.09	31.34	7.1792	0.0722	1.6416
254	SLD 16	-4.35	-0.46	30.81	7.0672	0.07	1.5207
254	SLV 1	7.05	1.53	70.65	16.4677	0.2521	-2.4723
254	SLV 2	7.87	0.25	69.41	16.207	0.247	-2.7537
254	SLV 3	7.63	-1.67	68	15.9095	0.2401	-2.6716
254	SLV 4	8.45	-2.95	66.75	15.6488	0.2349	-2.953
254	SLV 5	0.44	5.64	55.36	12.7499	0.182	-0.1632
254	SLV 6	0.97	4.81	54.56	12.5816	0.1787	-0.3449



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
254	SLV 7	2.38	-5.03	46.5	10.8893	0.1418	-0.8273
254	SLV 8	2.9	-5.85	45.7	10.721	0.1385	-1.009
254	SLV 9	-4.77	6.16	39.79	9.0446	0.1106	1.6596
254	SLV 10	-4.24	5.33	38.98	8.8763	0.1073	1.4778
254	SLV 11	-2.84	-4.51	30.93	7.1841	0.0704	0.9955
254	SLV 12	-2.31	-5.34	30.12	7.0157	0.0671	0.8137
254	SLV 13	-10.32	3.25	18.74	4.1168	0.0142	3.6035
254	SLV 14	-9.5	1.97	17.49	3.8561	0.009	3.3221
254	SLV 15	-9.74	0.05	16.08	3.5586	0.0022	3.4043
254	SLV 16	-8.92	-1.23	14.83	3.298	-0.003	3.1229
254	CRTFP Ux+	0	0	0	0	0	0
254	CRTFP Ux-	0	0	0	0	0	0
254	CRTFP Uy+	0	0	0	0	0	0
254	CRTFP Uy-	0	0	0	0	0	0
255	SLU 1	-0.89	0.07	37.04	7.1243	0.0931	0.3096
255	SLU 2	-0.86	-0.01	36.98	7.1148	0.0929	0.3019
255	SLU 3	-0.92	0.08	37.9	7.2801	0.0956	0.3194
255	SLU 4	-0.9	0.03	37.87	7.2744	0.0955	0.3148
255	SLU 5	-0.88	-0.01	37.55	7.2162	0.0945	0.3072
255	SLU 6	-0.93	0.08	38.47	7.3815	0.0971	0.3247
255	SLU 7	-0.92	0.03	38.44	7.3758	0.097	0.3201
255	SLU 8	-0.92	0.08	38.17	7.3272	0.0962	0.3202
255	SLU 9	-0.9	0.03	38.14	7.3215	0.0961	0.3156
255	SLU 10	-0.93	0.07	41.1	7.8451	0.104	0.3237
255	SLU 11	-0.98	0.16	42.02	8.0104	0.1066	0.3413
255	SLU 12	-0.97	0.11	41.99	8.0047	0.1065	0.3367
255	SLU 13	-0.94	0.07	41.67	7.9466	0.1055	0.329
255	SLU 14	-0.99	0.16	42.59	8.1119	0.1082	0.3466
255	SLU 15	-0.98	0.11	42.56	8.1061	0.1081	0.342
255	SLU 16	-0.98	0.16	42.29	8.0575	0.1073	0.3421
255	SLU 17	-0.97	0.11	42.26	8.0518	0.1072	0.3374
255	SLU 18	-0.98	0.18	42.93	8.1677	0.1089	0.3408
255	SLU 19	-0.96	0.13	42.89	8.1619	0.1088	0.3362
255	SLU 20	-0.99	0.19	43.49	8.2691	0.1105	0.3461
255	SLU 21	-0.98	0.14	43.46	8.2634	0.1104	0.3415
255	SLU 22	-1	0.14	41.13	7.8565	0.1046	0.3492
255	SLU 23	-0.98	0.06	41.07	7.8469	0.1044	0.3415
255	SLU 24	-1.03	0.15	41.99	8.0122	0.1071	0.359
255	SLU 25	-1.02	0.1	41.96	8.0065	0.107	0.3544
255	SLU 26	-0.99	0.06	41.64	7.9484	0.106	0.3468
255	SLU 27	-1.04	0.15	42.56	8.1137	0.1086	0.3643
255	SLU 28	-1.03	0.1	42.52	8.108	0.1085	0.3597
255	SLU 29	-1.03	0.15	42.26	8.0593	0.1077	0.3598
255	SLU 30	-1.02	0.1	42.23	8.0536	0.1076	0.3552
255	SLU 31	-1.04	0.13	45.19	8.5773	0.1155	0.3633
255	SLU 32	-1.09	0.22	46.11	8.7426	0.1181	0.3809
255	SLU 33	-1.08	0.17	46.08	8.7369	0.118	0.3763
255	SLU 34	-1.06	0.14	45.76	8.6787	0.117	0.3686
255	SLU 35	-1.11	0.23	46.68	8.844	0.1197	0.3862
255	SLU 36	-1.09	0.18	46.64	8.8383	0.1196	0.3816
255	SLU 37	-1.1	0.22	46.38	8.7897	0.1188	0.3817
255	SLU 38	-1.08	0.17	46.34	8.784	0.1187	0.377
255	SLU 39	-1.09	0.25	47.01	8.8998	0.1204	0.3804
255	SLU 40	-1.08	0.2	46.98	8.8941	0.1203	0.3758
255	SLU 41	-1.11	0.25	47.58	9.0013	0.122	0.3857
255	SLU 42	-1.09	0.2	47.54	8.9955	0.1219	0.3811
255	SLU 43	-1.12	0.07	46.75	9.0106	0.1171	0.3889
255	SLU 44	-1.09	-0.01	46.7	9.001	0.1169	0.3812
255	SLU 45	-1.14	0.08	47.62	9.1663	0.1196	0.3987
255	SLU 46	-1.13	0.03	47.58	9.1606	0.1194	0.3941
255	SLU 47	-1.11	-0.01	47.26	9.1025	0.1185	0.3865
255	SLU 48	-1.16	0.08	48.18	9.2678	0.1211	0.404
255	SLU 49	-1.15	0.03	48.15	9.2621	0.121	0.3994
255	SLU 50	-1.15	0.08	47.89	9.2134	0.1202	0.3995
255	SLU 51	-1.13	0.03	47.85	9.2077	0.1201	0.3949
255	SLU 52	-1.16	0.07	50.81	9.7314	0.128	0.403
255	SLU 53	-1.21	0.15	51.74	9.8967	0.1306	0.4206
255	SLU 54	-1.19	0.11	51.7	9.891	0.1305	0.416
255	SLU 55	-1.17	0.07	51.38	9.8328	0.1295	0.4083
255	SLU 56	-1.22	0.16	52.3	9.9981	0.1322	0.4259
255	SLU 57	-1.21	0.11	52.27	9.9924	0.1321	0.4213
255	SLU 58	-1.21	0.16	52.01	9.9438	0.1313	0.4214
255	SLU 59	-1.2	0.11	51.97	9.9381	0.1312	0.4167
255	SLU 60	-1.21	0.18	52.64	10.0539	0.1329	0.4201
255	SLU 61	-1.19	0.13	52.6	10.0482	0.1328	0.4155
255	SLU 62	-1.22	0.18	53.2	10.1554	0.1345	0.4254
255	SLU 63	-1.21	0.13	53.17	10.1496	0.1344	0.4208
255	SLU 64	-1.23	0.14	50.84	9.7427	0.1286	0.4284
255	SLU 65	-1.21	0.06	50.78	9.7332	0.1284	0.4208
255	SLU 66	-1.26	0.15	51.7	9.8985	0.1311	0.4383
255	SLU 67	-1.24	0.1	51.67	9.8928	0.1309	0.4337
255	SLU 68	-1.22	0.06	51.35	9.8346	0.13	0.4261
255	SLU 69	-1.27	0.15	52.27	9.9999	0.1326	0.4436
255	SLU 70	-1.26	0.1	52.23	9.9942	0.1325	0.439
255	SLU 71	-1.26	0.15	51.97	9.9456	0.1317	0.4391
255	SLU 72	-1.25	0.1	51.94	9.9399	0.1316	0.4345
255	SLU 73	-1.27	0.13	54.9	10.4635	0.1395	0.4426
255	SLU 74	-1.32	0.22	55.82	10.6288	0.1421	0.4602
255	SLU 75	-1.31	0.17	55.79	10.6231	0.142	0.4556
255	SLU 76	-1.28	0.14	55.47	10.565	0.141	0.4479



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
255	SLU 77	-1.34	0.23	56.39	10.7303	0.1437	0.4655
255	SLU 78	-1.32	0.18	56.35	10.7246	0.1436	0.4609
255	SLU 79	-1.32	0.22	56.09	10.676	0.1428	0.461
255	SLU 80	-1.31	0.17	56.06	10.6702	0.1427	0.4563
255	SLU 81	-1.32	0.25	56.72	10.7861	0.1444	0.4597
255	SLU 82	-1.31	0.2	56.69	10.7804	0.1443	0.4551
255	SLU 83	-1.33	0.25	57.29	10.8875	0.146	0.465
255	SLU 84	-1.32	0.2	57.26	10.8818	0.1459	0.4604
255	SLE RA 1	-0.92	0.09	38.21	7.3335	0.0964	0.3209
255	SLE RA 2	-0.91	0.04	38.17	7.3271	0.0963	0.3157
255	SLE RA 3	-0.94	0.1	38.78	7.4373	0.098	0.3274
255	SLE RA 4	-0.93	0.06	38.76	7.4335	0.098	0.3244
255	SLE RA 5	-0.92	0.04	38.55	7.3948	0.0973	0.3193
255	SLE RA 6	-0.95	0.1	39.16	7.505	0.0991	0.331
255	SLE RA 7	-0.94	0.07	39.14	7.5012	0.099	0.3279
255	SLE RA 8	-0.94	0.1	38.96	7.4687	0.0985	0.328
255	SLE RA 9	-0.93	0.06	38.94	7.4649	0.0984	0.3249
255	SLE RA 10	-0.95	0.09	40.92	7.814	0.1036	0.3303
255	SLE RA 11	-0.98	0.15	41.53	7.9242	0.1054	0.342
255	SLE RA 12	-0.97	0.11	41.51	7.9204	0.1053	0.3389
255	SLE RA 13	-0.96	0.09	41.29	7.8817	0.1047	0.3339
255	SLE RA 14	-0.99	0.15	41.91	7.9919	0.1065	0.3456
255	SLE RA 15	-0.98	0.12	41.89	7.988	0.1064	0.3425
255	SLE RA 16	-0.98	0.15	41.71	7.9556	0.1059	0.3425
255	SLE RA 17	-0.97	0.11	41.69	7.9518	0.1058	0.3395
255	SLE RA 18	-0.98	0.17	42.13	8.0291	0.1069	0.3417
255	SLE RA 19	-0.97	0.13	42.11	8.0252	0.1069	0.3386
255	SLE RA 20	-0.99	0.17	42.51	8.0967	0.108	0.3452
255	SLE RA 21	-0.98	0.13	42.49	8.0929	0.1079	0.3422
255	SLE FR 1	-0.92	0.09	38.21	7.3335	0.0964	0.3209
255	SLE FR 2	-0.92	0.08	38.2	7.3322	0.0964	0.3198
255	SLE FR 3	-0.92	0.09	38.36	7.3605	0.0968	0.3223
255	SLE FR 4	-0.94	0.1	39.38	7.5409	0.0995	0.3261
255	SLE FR 5	-0.94	0.12	39.54	7.5692	0.1	0.3285
255	SLE FR 6	-0.95	0.13	40.17	7.6813	0.1017	0.3313
255	SLE QP 1	-0.92	0.09	38.21	7.3335	0.0964	0.3209
255	SLE QP 2	-0.94	0.11	39.39	7.5422	0.0996	0.3271
255	SLD 1	2.48	0.68	49.81	9.5809	0.1464	-0.8709
255	SLD 2	2.83	0.19	49.33	9.5003	0.1445	-0.9919
255	SLD 3	2.73	-0.63	48.79	9.412	0.1419	-0.9567
255	SLD 4	3.08	-1.13	48.31	9.3314	0.14	-1.0777
255	SLD 5	-0.35	2.37	44.14	8.4244	0.1207	0.1193
255	SLD 6	-0.12	2.04	43.83	8.3714	0.1194	0.0398
255	SLD 7	0.48	-2.01	40.74	7.8613	0.1059	-0.1664
255	SLD 8	0.71	-2.34	40.43	7.8084	0.1047	-0.246
255	SLD 9	-2.58	2.57	38.34	7.276	0.0945	0.9002
255	SLD 10	-2.35	2.24	38.03	7.223	0.0932	0.8207
255	SLD 11	-1.75	-1.81	34.94	6.7129	0.0797	0.6144
255	SLD 12	-1.52	-2.14	34.63	6.66	0.0785	0.5349
255	SLD 13	-4.96	1.36	30.46	5.7529	0.0591	1.7319
255	SLD 14	-4.61	0.86	29.98	5.6723	0.0572	1.6109
255	SLD 15	-4.71	0.04	29.44	5.584	0.0547	1.6462
255	SLD 16	-4.36	-0.45	28.96	5.5034	0.0528	1.5252
255	SLV 1	7.06	1.39	63.75	12.3107	0.209	-2.4766
255	SLV 2	7.88	0.23	62.65	12.123	0.2046	-2.7584
255	SLV 3	7.64	-1.58	61.42	11.9237	0.1989	-2.6757
255	SLV 4	8.46	-2.74	60.32	11.736	0.1945	-2.9575
255	SLV 5	0.44	5.21	50.41	9.5921	0.1485	-0.1633
255	SLV 6	0.97	4.46	49.7	9.4709	0.1457	-0.3453
255	SLV 7	2.37	-4.7	42.66	8.3021	0.1148	-0.827
255	SLV 8	2.9	-5.45	41.95	8.1809	0.1119	-1.009
255	SLV 9	-4.78	5.68	36.82	6.9034	0.0872	1.6632
255	SLV 10	-4.25	4.93	36.11	6.7822	0.0844	1.4812
255	SLV 11	-2.85	-4.23	29.07	5.6134	0.0535	0.9995
255	SLV 12	-2.32	-4.98	28.36	5.4922	0.0506	0.8175
255	SLV 13	-10.34	2.97	18.45	3.3483	0.0046	3.6117
255	SLV 14	-9.52	1.81	17.35	3.1606	0.0002	3.33
255	SLV 15	-9.76	0	16.12	2.9613	-0.0055	3.4126
255	SLV 16	-8.94	-1.16	15.02	2.7736	-0.0099	3.1309
255	CRTFP Ux+	0	0	0	0	0	0
255	CRTFP Ux-	0	0	0	0	0	0
255	CRTFP Uy+	0	0	0	0	0	0
255	CRTFP Uy-	0	0	0	0	0	0
256	SLU 1	-0.89	0.04	34.61	5.4962	0.0693	0.3107
256	SLU 2	-0.87	-0.04	34.56	5.4893	0.0692	0.303
256	SLU 3	-0.92	0.04	35.41	5.6103	0.0712	0.3206
256	SLU 4	-0.91	0	35.38	5.6062	0.0711	0.316
256	SLU 5	-0.88	-0.03	35.08	5.5638	0.0703	0.3084
256	SLU 6	-0.93	0.05	35.94	5.6848	0.0723	0.3259
256	SLU 7	-0.92	0	35.9	5.6807	0.0722	0.3213
256	SLU 8	-0.92	0.04	35.66	5.6452	0.0716	0.3214
256	SLU 9	-0.91	0	35.63	5.6411	0.0715	0.3168
256	SLU 10	-0.93	0.03	38.39	6.0219	0.0773	0.3251
256	SLU 11	-0.98	0.11	39.24	6.1429	0.0793	0.3426
256	SLU 12	-0.97	0.07	39.21	6.1387	0.0792	0.338
256	SLU 13	-0.95	0.03	38.92	6.0964	0.0785	0.3304
256	SLU 14	-1	0.12	39.77	6.2174	0.0805	0.348
256	SLU 15	-0.98	0.07	39.74	6.2133	0.0804	0.3433
256	SLU 16	-0.99	0.11	39.49	6.1778	0.0798	0.3434
256	SLU 17	-0.97	0.07	39.46	6.1737	0.0797	0.3388



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
256	SLU 18	-0.98	0.14	40.08	6.257	0.081	0.3422
256	SLU 19	-0.97	0.09	40.05	6.2529	0.0809	0.3376
256	SLU 20	-1	0.14	40.61	6.3315	0.0821	0.3475
256	SLU 21	-0.98	0.09	40.58	6.3274	0.082	0.3429
256	SLU 22	-1.01	0.1	38.39	6.0296	0.0779	0.3505
256	SLU 23	-0.98	0.03	38.34	6.0228	0.0778	0.3428
256	SLU 24	-1.03	0.11	39.19	6.1437	0.0798	0.3604
256	SLU 25	-1.02	0.06	39.16	6.1396	0.0797	0.3558
256	SLU 26	-1	0.03	38.87	6.0973	0.0789	0.3481
256	SLU 27	-1.05	0.11	39.72	6.2183	0.0809	0.3657
256	SLU 28	-1.04	0.06	39.69	6.2142	0.0808	0.3611
256	SLU 29	-1.04	0.11	39.45	6.1787	0.0803	0.3612
256	SLU 30	-1.02	0.06	39.42	6.1746	0.0802	0.3565
256	SLU 31	-1.05	0.1	42.17	6.5554	0.0859	0.3648
256	SLU 32	-1.1	0.18	43.03	6.6763	0.0879	0.3824
256	SLU 33	-1.08	0.13	42.99	6.6722	0.0878	0.3778
256	SLU 34	-1.06	0.1	42.7	6.6299	0.0871	0.3702
256	SLU 35	-1.11	0.18	43.55	6.7509	0.0891	0.3877
256	SLU 36	-1.1	0.13	43.52	6.7467	0.089	0.3831
256	SLU 37	-1.1	0.18	43.28	6.7113	0.0884	0.3832
256	SLU 38	-1.09	0.13	43.25	6.7072	0.0883	0.3786
256	SLU 39	-1.1	0.2	43.87	6.7905	0.0896	0.382
256	SLU 40	-1.08	0.16	43.84	6.7863	0.0895	0.3774
256	SLU 41	-1.11	0.2	44.39	6.865	0.0907	0.3873
256	SLU 42	-1.1	0.16	44.36	6.8609	0.0906	0.3827
256	SLU 43	-1.12	0.03	43.7	6.9621	0.0872	0.3903
256	SLU 44	-1.1	-0.05	43.64	6.9553	0.087	0.3826
256	SLU 45	-1.15	0.03	44.49	7.0762	0.089	0.4002
256	SLU 46	-1.13	-0.01	44.46	7.0721	0.0889	0.3956
256	SLU 47	-1.11	-0.04	44.17	7.0298	0.0882	0.3879
256	SLU 48	-1.16	0.04	45.02	7.1508	0.0902	0.4055
256	SLU 49	-1.15	-0.01	44.99	7.1466	0.0901	0.4009
256	SLU 50	-1.15	0.03	44.75	7.1112	0.0895	0.401
256	SLU 51	-1.14	-0.01	44.72	7.1071	0.0894	0.3964
256	SLU 52	-1.16	0.02	47.48	7.4878	0.0952	0.4046
256	SLU 53	-1.21	0.1	48.33	7.6088	0.0972	0.4222
256	SLU 54	-1.2	0.06	48.3	7.6047	0.0971	0.4176
256	SLU 55	-1.18	0.02	48	7.5624	0.0963	0.41
256	SLU 56	-1.23	0.11	48.85	7.6833	0.0983	0.4276
256	SLU 57	-1.21	0.06	48.82	7.6792	0.0982	0.4229
256	SLU 58	-1.21	0.1	48.58	7.6437	0.0976	0.423
256	SLU 59	-1.2	0.06	48.55	7.6396	0.0975	0.4184
256	SLU 60	-1.21	0.13	49.17	7.7229	0.0988	0.4218
256	SLU 61	-1.2	0.08	49.14	7.7188	0.0987	0.4172
256	SLU 62	-1.23	0.13	49.7	7.7975	0.1	0.4271
256	SLU 63	-1.21	0.08	49.66	7.7934	0.0999	0.4225
256	SLU 64	-1.23	0.09	47.48	7.4956	0.0958	0.4301
256	SLU 65	-1.21	0.02	47.43	7.4887	0.0956	0.4224
256	SLU 66	-1.26	0.1	48.28	7.6097	0.0976	0.44
256	SLU 67	-1.25	0.05	48.25	7.6056	0.0975	0.4353
256	SLU 68	-1.23	0.02	47.95	7.5633	0.0968	0.4277
256	SLU 69	-1.28	0.1	48.81	7.6842	0.0988	0.4453
256	SLU 70	-1.26	0.05	48.77	7.6801	0.0987	0.4407
256	SLU 71	-1.26	0.1	48.53	7.6446	0.0981	0.4408
256	SLU 72	-1.25	0.05	48.5	7.6405	0.098	0.4361
256	SLU 73	-1.27	0.09	51.26	8.0213	0.1038	0.4444
256	SLU 74	-1.33	0.17	52.11	8.1423	0.1058	0.462
256	SLU 75	-1.31	0.12	52.08	8.1382	0.1057	0.4574
256	SLU 76	-1.29	0.09	51.79	8.0958	0.1049	0.4497
256	SLU 77	-1.34	0.17	52.64	8.2168	0.1069	0.4673
256	SLU 78	-1.33	0.12	52.61	8.2127	0.1068	0.4627
256	SLU 79	-1.33	0.17	52.36	8.1772	0.1062	0.4628
256	SLU 80	-1.31	0.12	52.33	8.1731	0.1062	0.4582
256	SLU 81	-1.32	0.19	52.95	8.2564	0.1074	0.4616
256	SLU 82	-1.31	0.15	52.92	8.2523	0.1073	0.4569
256	SLU 83	-1.34	0.19	53.48	8.3309	0.1086	0.4669
256	SLU 84	-1.33	0.15	53.45	8.3268	0.1085	0.4623
256	SLE RA 1	-0.92	0.06	35.69	5.6486	0.0718	0.3221
256	SLE RA 2	-0.91	0.01	35.66	5.644	0.0717	0.317
256	SLE RA 3	-0.94	0.06	36.22	5.7247	0.073	0.3287
256	SLE RA 4	-0.93	0.03	36.2	5.7219	0.073	0.3256
256	SLE RA 5	-0.92	0.01	36.01	5.6937	0.0725	0.3205
256	SLE RA 6	-0.95	0.06	36.58	5.7743	0.0738	0.3322
256	SLE RA 7	-0.94	0.03	36.55	5.7716	0.0737	0.3292
256	SLE RA 8	-0.94	0.06	36.39	5.748	0.0733	0.3292
256	SLE RA 9	-0.94	0.03	36.37	5.7452	0.0733	0.3261
256	SLE RA 10	-0.95	0.05	38.21	5.9991	0.0771	0.3317
256	SLE RA 11	-0.98	0.11	38.78	6.0797	0.0785	0.3434
256	SLE RA 12	-0.98	0.08	38.76	6.077	0.0784	0.3403
256	SLE RA 13	-0.96	0.05	38.56	6.0488	0.0779	0.3352
256	SLE RA 14	-1	0.11	39.13	6.1294	0.0792	0.3469
256	SLE RA 15	-0.99	0.08	39.11	6.1267	0.0792	0.3438
256	SLE RA 16	-0.99	0.11	38.95	6.103	0.0788	0.3439
256	SLE RA 17	-0.98	0.08	38.93	6.1003	0.0787	0.3408
256	SLE RA 18	-0.98	0.12	39.34	6.1558	0.0796	0.3431
256	SLE RA 19	-0.98	0.09	39.32	6.1531	0.0795	0.34
256	SLE RA 20	-0.99	0.12	39.69	6.2055	0.0803	0.3466
256	SLE RA 21	-0.99	0.09	39.67	6.2027	0.0803	0.3436
256	SLE FR 1	-0.92	0.06	35.69	5.6486	0.0718	0.3221
256	SLE FR 2	-0.92	0.05	35.68	5.6477	0.0718	0.3211





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
256	SLE FR 3	-0.93	0.06	35.83	5.6685	0.0721	0.3235
256	SLE FR 4	-0.94	0.07	36.78	5.7998	0.0741	0.3274
256	SLE FR 5	-0.95	0.08	36.93	5.8206	0.0744	0.3298
256	SLE FR 6	-0.95	0.09	37.52	5.9022	0.0757	0.3326
256	SLE QP 1	-0.92	0.06	35.69	5.6486	0.0718	0.3221
256	SLE QP 2	-0.94	0.08	36.79	5.8007	0.0741	0.3284
256	SLD 1	2.48	0.59	45.92	7.2366	0.1132	-0.8722
256	SLD 2	2.83	0.14	45.5	7.18	0.1116	-0.9934
256	SLD 3	2.73	-0.63	45.02	7.1236	0.1097	-0.958
256	SLD 4	3.08	-1.08	44.6	7.067	0.1081	-1.0792
256	SLD 5	-0.35	2.16	40.97	6.413	0.0914	0.1199
256	SLD 6	-0.12	1.87	40.69	6.3758	0.0904	0.0403
256	SLD 7	0.48	-1.91	37.97	6.0363	0.0797	-0.1659
256	SLD 8	0.71	-2.2	37.69	5.9991	0.0787	-0.2456
256	SLD 9	-2.59	2.36	35.88	5.6024	0.0695	0.9024
256	SLD 10	-2.36	2.06	35.61	5.5652	0.0685	0.8227
256	SLD 11	-1.76	-1.71	32.88	5.2257	0.0578	0.6165
256	SLD 12	-1.53	-2.01	32.6	5.1885	0.0568	0.5369
256	SLD 13	-4.97	1.23	28.97	4.5345	0.0401	1.736
256	SLD 14	-4.62	0.78	28.55	4.4779	0.0386	1.6148
256	SLD 15	-4.72	0.01	28.07	4.4215	0.0366	1.6502
256	SLD 16	-4.37	-0.44	27.65	4.3649	0.0351	1.529
256	SLV 1	7.08	1.23	58.15	9.1598	0.1655	-2.4813
256	SLV 2	7.89	0.19	57.17	9.028	0.1619	-2.7636
256	SLV 3	7.65	-1.53	56.09	8.8997	0.1574	-2.6805
256	SLV 4	8.47	-2.58	55.11	8.768	0.1538	-2.9627
256	SLV 5	0.45	4.8	46.48	7.2257	0.1143	-0.1636
256	SLV 6	0.97	4.12	45.85	7.1406	0.112	-0.346
256	SLV 7	2.37	-4.41	39.63	6.3588	0.0875	-0.8275
256	SLV 8	2.9	-5.09	38.99	6.2737	0.0852	-1.0098
256	SLV 9	-4.78	5.24	34.58	5.3278	0.063	1.6666
256	SLV 10	-4.26	4.57	33.94	5.2427	0.0607	1.4843
256	SLV 11	-2.86	-3.97	27.72	4.4609	0.0362	1.0028
256	SLV 12	-2.33	-4.64	27.09	4.3758	0.0339	0.8204
256	SLV 13	-10.35	2.73	18.46	2.8335	-0.0056	3.6195
256	SLV 14	-9.54	1.68	17.48	2.7018	-0.0092	3.3373
256	SLV 15	-9.78	-0.03	16.41	2.5735	-0.0136	3.4204
256	SLV 16	-8.96	-1.08	15.42	2.4417	-0.0172	3.1381
256	CRTFP Ux+	0	0	0	0	0	0
256	CRTFP Ux-	0	0	0	0	0	0
256	CRTFP Uy+	0	0	0	0	0	0
256	CRTFP Uy-	0	0	0	0	0	0
257	SLU 1	-0.89	0.01	32.88	4.4004	0.0464	0.3113
257	SLU 2	-0.87	-0.06	32.83	4.3953	0.0463	0.3035
257	SLU 3	-0.92	0.01	33.63	4.4864	0.0477	0.3211
257	SLU 4	-0.91	-0.03	33.6	4.4834	0.0476	0.3165
257	SLU 5	-0.89	-0.06	33.33	4.4518	0.0471	0.3089
257	SLU 6	-0.94	0.01	34.13	4.5429	0.0485	0.3265
257	SLU 7	-0.92	-0.03	34.1	4.5399	0.0484	0.3218
257	SLU 8	-0.92	0.01	33.87	4.5133	0.048	0.3219
257	SLU 9	-0.91	-0.03	33.85	4.5103	0.0479	0.3173
257	SLU 10	-0.93	0	36.46	4.7956	0.0516	0.3257
257	SLU 11	-0.98	0.07	37.26	4.8866	0.053	0.3433
257	SLU 12	-0.97	0.03	37.23	4.8836	0.0529	0.3386
257	SLU 13	-0.95	0	36.96	4.852	0.0524	0.331
257	SLU 14	-1	0.07	37.76	4.9431	0.0538	0.3486
257	SLU 15	-0.99	0.03	37.73	4.9401	0.0537	0.344
257	SLU 16	-0.99	0.07	37.5	4.9135	0.0533	0.3441
257	SLU 17	-0.97	0.03	37.48	4.9105	0.0532	0.3394
257	SLU 18	-0.98	0.09	38.07	4.9721	0.054	0.3429
257	SLU 19	-0.97	0.05	38.04	4.9691	0.054	0.3383
257	SLU 20	-1	0.09	38.56	5.0286	0.0548	0.3482
257	SLU 21	-0.99	0.05	38.53	5.0256	0.0547	0.3436
257	SLU 22	-1.01	0.06	36.45	4.8	0.0523	0.3511
257	SLU 23	-0.98	-0.01	36.4	4.795	0.0521	0.3434
257	SLU 24	-1.04	0.07	37.2	4.886	0.0535	0.361
257	SLU 25	-1.02	0.03	37.17	4.883	0.0534	0.3564
257	SLU 26	-1	0	36.9	4.8514	0.0529	0.3487
257	SLU 27	-1.05	0.07	37.7	4.9425	0.0543	0.3663
257	SLU 28	-1.04	0.03	37.67	4.9395	0.0542	0.3617
257	SLU 29	-1.04	0.07	37.44	4.9129	0.0538	0.3618
257	SLU 30	-1.02	0.02	37.41	4.9099	0.0537	0.3572
257	SLU 31	-1.05	0.06	40.03	5.1952	0.0575	0.3656
257	SLU 32	-1.1	0.13	40.83	5.2863	0.0588	0.3832
257	SLU 33	-1.09	0.09	40.8	5.2833	0.0588	0.3785
257	SLU 34	-1.06	0.06	40.53	5.2517	0.0582	0.3709
257	SLU 35	-1.11	0.13	41.33	5.3427	0.0596	0.3885
257	SLU 36	-1.1	0.09	41.3	5.3397	0.0595	0.3838
257	SLU 37	-1.1	0.13	41.07	5.3132	0.0591	0.3839
257	SLU 38	-1.09	0.09	41.04	5.3101	0.0591	0.3793
257	SLU 39	-1.1	0.15	41.63	5.3718	0.0599	0.3828
257	SLU 40	-1.08	0.11	41.61	5.3687	0.0598	0.3781
257	SLU 41	-1.11	0.15	42.13	5.4282	0.0606	0.3881
257	SLU 42	-1.1	0.11	42.1	5.4252	0.0606	0.3835
257	SLU 43	-1.12	-0.01	41.52	5.5835	0.0584	0.391
257	SLU 44	-1.1	-0.08	41.47	5.5784	0.0582	0.3832
257	SLU 45	-1.15	-0.01	42.27	5.6695	0.0596	0.4008
257	SLU 46	-1.14	-0.05	42.24	5.6665	0.0595	0.3962
257	SLU 47	-1.11	-0.08	41.97	5.6349	0.059	0.3886
257	SLU 48	-1.16	-0.01	42.77	5.726	0.0604	0.4062



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
257	SLU 49	-1.15	-0.05	42.74	5.723	0.0603	0.4015
257	SLU 50	-1.15	-0.01	42.51	5.6964	0.0599	0.4016
257	SLU 51	-1.14	-0.05	42.49	5.6934	0.0598	0.397
257	SLU 52	-1.16	-0.02	45.1	5.9787	0.0636	0.4054
257	SLU 53	-1.21	0.05	45.9	6.0697	0.0649	0.423
257	SLU 54	-1.2	0.01	45.88	6.0667	0.0649	0.4183
257	SLU 55	-1.18	-0.02	45.6	6.0351	0.0643	0.4107
257	SLU 56	-1.23	0.05	46.4	6.1262	0.0657	0.4283
257	SLU 57	-1.21	0.01	46.37	6.1232	0.0656	0.4237
257	SLU 58	-1.22	0.05	46.14	6.0966	0.0652	0.4238
257	SLU 59	-1.2	0.01	46.12	6.0936	0.0652	0.4191
257	SLU 60	-1.21	0.08	46.71	6.1552	0.066	0.4226
257	SLU 61	-1.2	0.03	46.68	6.1522	0.0659	0.418
257	SLU 62	-1.23	0.08	47.2	6.2117	0.0667	0.4279
257	SLU 63	-1.21	0.04	47.18	6.2087	0.0667	0.4233
257	SLU 64	-1.24	0.05	45.09	5.9831	0.0642	0.4309
257	SLU 65	-1.21	-0.02	45.04	5.9781	0.0641	0.4231
257	SLU 66	-1.26	0.05	45.84	6.0691	0.0654	0.4407
257	SLU 67	-1.25	0.01	45.81	6.0661	0.0654	0.4361
257	SLU 68	-1.23	-0.02	45.54	6.0345	0.0648	0.4284
257	SLU 69	-1.28	0.05	46.34	6.1256	0.0662	0.446
257	SLU 70	-1.27	0.01	46.31	6.1226	0.0661	0.4414
257	SLU 71	-1.27	0.05	46.08	6.096	0.0657	0.4415
257	SLU 72	-1.25	0.01	46.06	6.093	0.0657	0.4369
257	SLU 73	-1.28	0.04	48.67	6.3783	0.0694	0.4453
257	SLU 74	-1.33	0.11	49.47	6.4694	0.0708	0.4629
257	SLU 75	-1.31	0.07	49.44	6.4664	0.0707	0.4582
257	SLU 76	-1.29	0.04	49.17	6.4348	0.0702	0.4506
257	SLU 77	-1.34	0.11	49.97	6.5258	0.0715	0.4682
257	SLU 78	-1.33	0.07	49.94	6.5228	0.0715	0.4635
257	SLU 79	-1.33	0.11	49.71	6.4963	0.0711	0.4636
257	SLU 80	-1.32	0.07	49.69	6.4932	0.071	0.459
257	SLU 81	-1.33	0.13	50.28	6.5549	0.0718	0.4625
257	SLU 82	-1.31	0.09	50.25	6.5518	0.0717	0.4578
257	SLU 83	-1.34	0.14	50.77	6.6113	0.0726	0.4678
257	SLU 84	-1.33	0.09	50.74	6.6083	0.0725	0.4632
257	SLE RA 1	-0.93	0.02	33.9	4.5145	0.0481	0.3227
257	SLE RA 2	-0.91	-0.02	33.87	4.5112	0.048	0.3175
257	SLE RA 3	-0.94	0.03	34.4	4.5719	0.0489	0.3292
257	SLE RA 4	-0.93	0	34.38	4.5699	0.0489	0.3261
257	SLE RA 5	-0.92	-0.02	34.2	4.5488	0.0485	0.3211
257	SLE RA 6	-0.95	0.03	34.73	4.6096	0.0494	0.3328
257	SLE RA 7	-0.95	0	34.71	4.6075	0.0494	0.3297
257	SLE RA 8	-0.95	0.02	34.56	4.5898	0.0491	0.3298
257	SLE RA 9	-0.94	0	34.54	4.5878	0.0491	0.3267
257	SLE RA 10	-0.95	0.02	36.29	4.778	0.0516	0.3323
257	SLE RA 11	-0.99	0.07	36.82	4.8387	0.0525	0.344
257	SLE RA 12	-0.98	0.04	36.8	4.8367	0.0524	0.3409
257	SLE RA 13	-0.96	0.02	36.62	4.8157	0.0521	0.3358
257	SLE RA 14	-1	0.07	37.15	4.8764	0.053	0.3475
257	SLE RA 15	-0.99	0.04	37.13	4.8744	0.0529	0.3445
257	SLE RA 16	-0.99	0.06	36.98	4.8567	0.0527	0.3445
257	SLE RA 17	-0.98	0.04	36.96	4.8546	0.0526	0.3414
257	SLE RA 18	-0.99	0.08	37.36	4.8957	0.0532	0.3438
257	SLE RA 19	-0.98	0.05	37.34	4.8937	0.0531	0.3407
257	SLE RA 20	-1	0.08	37.69	4.9334	0.0537	0.3473
257	SLE RA 21	-0.99	0.05	37.67	4.9314	0.0536	0.3442
257	SLE FR 1	-0.93	0.02	33.9	4.5145	0.0481	0.3227
257	SLE FR 2	-0.92	0.01	33.89	4.5139	0.0481	0.3216
257	SLE FR 3	-0.93	0.02	34.03	4.5296	0.0483	0.3241
257	SLE FR 4	-0.94	0.03	34.93	4.6282	0.0496	0.328
257	SLE FR 5	-0.95	0.04	35.07	4.644	0.0498	0.3304
257	SLE FR 6	-0.96	0.05	35.63	4.7051	0.0506	0.3332
257	SLE QP 1	-0.93	0.02	33.9	4.5145	0.0481	0.3227
257	SLE QP 2	-0.94	0.04	34.94	4.6289	0.0496	0.329
257	SLD 1	2.49	0.5	43.02	5.6219	0.0815	-0.8741
257	SLD 2	2.84	0.09	42.64	5.5822	0.0802	-0.9955
257	SLD 3	2.74	-0.64	42.21	5.544	0.0789	-0.9599
257	SLD 4	3.09	-1.05	41.82	5.5043	0.0776	-1.0813
257	SLD 5	-0.35	1.98	38.66	5.052	0.0633	0.12
257	SLD 6	-0.12	1.71	38.41	5.0259	0.0625	0.0401
257	SLD 7	0.48	-1.82	35.96	4.7924	0.0547	-0.1662
257	SLD 8	0.71	-2.09	35.71	4.7663	0.0539	-0.246
257	SLD 9	-2.59	2.17	34.17	4.4915	0.0454	0.904
257	SLD 10	-2.36	1.9	33.92	4.4654	0.0446	0.8242
257	SLD 11	-1.76	-1.63	31.47	4.2319	0.0367	0.6178
257	SLD 12	-1.53	-1.9	31.22	4.2058	0.0359	0.538
257	SLD 13	-4.98	1.13	28.05	3.7535	0.0216	1.7393
257	SLD 14	-4.62	0.72	27.67	3.7138	0.0204	1.6179
257	SLD 15	-4.73	-0.01	27.24	3.6756	0.019	1.6535
257	SLD 16	-4.38	-0.42	26.86	3.6359	0.0178	1.532
257	SLV 1	7.09	1.07	53.82	6.9529	0.1241	-2.4864
257	SLV 2	7.91	0.12	52.94	6.8605	0.1213	-2.7693
257	SLV 3	7.67	-1.51	51.97	6.7717	0.1181	-2.6858
257	SLV 4	8.48	-2.46	51.09	6.6792	0.1153	-2.9686
257	SLV 5	0.45	4.43	43.56	5.617	0.0815	-0.1644
257	SLV 6	0.98	3.81	42.99	5.5573	0.0797	-0.347
257	SLV 7	2.37	-4.17	37.39	5.0128	0.0616	-0.8289
257	SLV 8	2.9	-4.79	36.82	4.9531	0.0598	-1.0116
257	SLV 9	-4.79	4.87	33.05	4.3047	0.0395	1.6695



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
257	SLV 10	-4.26	4.25	32.48	4.245	0.0376	1.4869
257	SLV 11	-2.86	-3.73	26.88	3.7005	0.0196	1.005
257	SLV 12	-2.34	-4.35	26.31	3.6408	0.0177	0.8223
257	SLV 13	-10.37	2.54	18.79	2.5786	-0.0161	3.6266
257	SLV 14	-9.55	1.59	17.9	2.4861	-0.0189	3.3438
257	SLV 15	-9.79	-0.04	16.94	2.3973	-0.022	3.4272
257	SLV 16	-8.98	-0.99	16.05	2.3049	-0.0249	3.1444
257	CRTFP Ux+	0	0	0	0	0	0
257	CRTFP Ux-	0	0	0	0	0	0
257	CRTFP Uy+	0	0	0	0	0	0
257	CRTFP Uy-	0	0	0	0	0	0
258	SLU 1	-0.89	-0.03	31.81	3.7984	0.0249	0.3111
258	SLU 2	-0.87	-0.09	31.77	3.7944	0.0249	0.3033
258	SLU 3	-0.92	-0.02	32.54	3.8689	0.0256	0.3209
258	SLU 4	-0.91	-0.06	32.51	3.8665	0.0256	0.3163
258	SLU 5	-0.88	-0.09	32.25	3.8409	0.0253	0.3086
258	SLU 6	-0.94	-0.02	33.02	3.9155	0.0261	0.3262
258	SLU 7	-0.92	-0.06	32.99	3.913	0.026	0.3216
258	SLU 8	-0.92	-0.03	32.77	3.8915	0.0258	0.3217
258	SLU 9	-0.91	-0.07	32.75	3.8891	0.0257	0.3171
258	SLU 10	-0.93	-0.04	35.28	4.1231	0.0275	0.3255
258	SLU 11	-0.98	0.03	36.05	4.1976	0.0283	0.3431
258	SLU 12	-0.97	-0.01	36.02	4.1952	0.0283	0.3385
258	SLU 13	-0.95	-0.04	35.76	4.1697	0.0279	0.3308
258	SLU 14	-1	0.03	36.53	4.2442	0.0287	0.3484
258	SLU 15	-0.99	-0.01	36.5	4.2418	0.0287	0.3438
258	SLU 16	-0.99	0.03	36.28	4.2203	0.0284	0.3439
258	SLU 17	-0.97	-0.01	36.26	4.2178	0.0284	0.3393
258	SLU 18	-0.98	0.05	36.83	4.268	0.0288	0.3428
258	SLU 19	-0.97	0.01	36.8	4.2656	0.0287	0.3382
258	SLU 20	-1	0.05	37.31	4.3146	0.0292	0.3481
258	SLU 21	-0.99	0.01	37.28	4.3121	0.0291	0.3435
258	SLU 22	-1.01	0.03	35.25	4.1241	0.0282	0.351
258	SLU 23	-0.98	-0.04	35.2	4.1201	0.0281	0.3432
258	SLU 24	-1.03	0.03	35.97	4.1946	0.0289	0.3608
258	SLU 25	-1.02	-0.01	35.95	4.1922	0.0288	0.3562
258	SLU 26	-1	-0.04	35.68	4.1667	0.0285	0.3485
258	SLU 27	-1.05	0.03	36.45	4.2412	0.0293	0.3661
258	SLU 28	-1.04	-0.01	36.43	4.2388	0.0292	0.3615
258	SLU 29	-1.04	0.03	36.21	4.2173	0.029	0.3616
258	SLU 30	-1.02	-0.01	36.18	4.2149	0.0289	0.357
258	SLU 31	-1.05	0.02	38.71	4.4488	0.0308	0.3654
258	SLU 32	-1.1	0.09	39.48	4.5233	0.0315	0.383
258	SLU 33	-1.08	0.05	39.46	4.5209	0.0315	0.3784
258	SLU 34	-1.06	0.02	39.19	4.4954	0.0312	0.3707
258	SLU 35	-1.11	0.09	39.96	4.5699	0.0319	0.3883
258	SLU 36	-1.1	0.05	39.94	4.5675	0.0319	0.3837
258	SLU 37	-1.1	0.08	39.72	4.546	0.0317	0.3838
258	SLU 38	-1.09	0.04	39.69	4.5436	0.0316	0.3792
258	SLU 39	-1.1	0.11	40.26	4.5937	0.032	0.3827
258	SLU 40	-1.08	0.07	40.24	4.5913	0.0319	0.3781
258	SLU 41	-1.11	0.11	40.74	4.6403	0.0324	0.388
258	SLU 42	-1.1	0.07	40.72	4.6379	0.0323	0.3834
258	SLU 43	-1.12	-0.05	40.18	4.8262	0.0313	0.3908
258	SLU 44	-1.1	-0.12	40.14	4.8222	0.0312	0.383
258	SLU 45	-1.15	-0.05	40.91	4.8967	0.032	0.4006
258	SLU 46	-1.13	-0.09	40.88	4.8943	0.032	0.3959
258	SLU 47	-1.11	-0.12	40.62	4.8688	0.0317	0.3883
258	SLU 48	-1.16	-0.05	41.39	4.9433	0.0324	0.4059
258	SLU 49	-1.15	-0.09	41.36	4.9409	0.0324	0.4012
258	SLU 50	-1.15	-0.05	41.14	4.9194	0.0321	0.4014
258	SLU 51	-1.14	-0.09	41.11	4.9169	0.0321	0.3967
258	SLU 52	-1.16	-0.06	43.65	5.1509	0.0339	0.4052
258	SLU 53	-1.21	0	44.42	5.2254	0.0347	0.4228
258	SLU 54	-1.2	-0.03	44.39	5.223	0.0346	0.4181
258	SLU 55	-1.18	-0.06	44.13	5.1975	0.0343	0.4105
258	SLU 56	-1.23	0	44.9	5.272	0.0351	0.4281
258	SLU 57	-1.21	-0.03	44.87	5.2696	0.0351	0.4234
258	SLU 58	-1.21	0	44.65	5.2481	0.0348	0.4236
258	SLU 59	-1.2	-0.04	44.63	5.2457	0.0348	0.4189
258	SLU 60	-1.21	0.02	45.2	5.2958	0.0351	0.4225
258	SLU 61	-1.2	-0.01	45.17	5.2934	0.0351	0.4178
258	SLU 62	-1.23	0.02	45.68	5.3424	0.0355	0.4278
258	SLU 63	-1.21	-0.01	45.65	5.34	0.0355	0.4231
258	SLU 64	-1.23	0	43.62	5.1519	0.0345	0.4307
258	SLU 65	-1.21	-0.06	43.57	5.1479	0.0345	0.4229
258	SLU 66	-1.26	0	44.34	5.2224	0.0352	0.4405
258	SLU 67	-1.25	-0.03	44.31	5.22	0.0352	0.4358
258	SLU 68	-1.23	-0.06	44.05	5.1945	0.0349	0.4282
258	SLU 69	-1.28	0	44.82	5.269	0.0357	0.4458
258	SLU 70	-1.26	-0.03	44.79	5.2666	0.0356	0.4411
258	SLU 71	-1.27	0	44.57	5.2451	0.0354	0.4413
258	SLU 72	-1.25	-0.04	44.55	5.2427	0.0353	0.4366
258	SLU 73	-1.28	-0.01	47.08	5.4766	0.0371	0.4451
258	SLU 74	-1.33	0.06	47.85	5.5512	0.0379	0.4627
258	SLU 75	-1.31	0.02	47.82	5.5488	0.0379	0.458
258	SLU 76	-1.29	-0.01	47.56	5.5232	0.0375	0.4504
258	SLU 77	-1.34	0.06	48.33	5.5977	0.0383	0.468
258	SLU 78	-1.33	0.02	48.3	5.5953	0.0383	0.4633
258	SLU 79	-1.33	0.06	48.09	5.5738	0.038	0.4635



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
258	SLU 80	-1.32	0.02	48.06	5.5714	0.038	0.4588
258	SLU 81	-1.33	0.08	48.63	5.6215	0.0384	0.4624
258	SLU 82	-1.31	0.04	48.6	5.6191	0.0383	0.4577
258	SLU 83	-1.34	0.08	49.11	5.6681	0.0388	0.4677
258	SLU 84	-1.33	0.04	49.08	5.6657	0.0387	0.463
258	SLE RA 1	-0.92	-0.01	32.8	3.8914	0.0259	0.3225
258	SLE RA 2	-0.91	-0.05	32.77	3.8888	0.0258	0.3173
258	SLE RA 3	-0.94	-0.01	33.28	3.9384	0.0263	0.3291
258	SLE RA 4	-0.93	-0.03	33.26	3.9368	0.0263	0.3259
258	SLE RA 5	-0.92	-0.05	33.09	3.9198	0.0261	0.3209
258	SLE RA 6	-0.95	-0.01	33.6	3.9695	0.0266	0.3326
258	SLE RA 7	-0.94	-0.03	33.58	3.9679	0.0266	0.3295
258	SLE RA 8	-0.94	-0.01	33.44	3.9535	0.0264	0.3296
258	SLE RA 9	-0.94	-0.04	33.42	3.9519	0.0264	0.3265
258	SLE RA 10	-0.95	-0.02	35.11	4.1079	0.0276	0.3321
258	SLE RA 11	-0.99	0.03	35.62	4.1576	0.0281	0.3439
258	SLE RA 12	-0.98	0	35.6	4.156	0.0281	0.3407
258	SLE RA 13	-0.96	-0.02	35.43	4.139	0.0279	0.3357
258	SLE RA 14	-1	0.03	35.94	4.1886	0.0284	0.3474
258	SLE RA 15	-0.99	0	35.92	4.187	0.0284	0.3443
258	SLE RA 16	-0.99	0.03	35.78	4.1727	0.0282	0.3444
258	SLE RA 17	-0.98	0	35.76	4.1711	0.0282	0.3413
258	SLE RA 18	-0.99	0.04	36.14	4.2045	0.0284	0.3436
258	SLE RA 19	-0.98	0.02	36.12	4.2029	0.0284	0.3405
258	SLE RA 20	-1	0.04	36.46	4.2356	0.0287	0.3472
258	SLE RA 21	-0.99	0.02	36.44	4.234	0.0286	0.3441
258	SLE FR 1	-0.92	-0.01	32.8	3.8914	0.0259	0.3225
258	SLE FR 2	-0.92	-0.02	32.79	3.8909	0.0259	0.3215
258	SLE FR 3	-0.93	-0.01	32.92	3.9039	0.026	0.3239
258	SLE FR 4	-0.94	0	33.79	3.9848	0.0266	0.3278
258	SLE FR 5	-0.95	0	33.93	3.9978	0.0267	0.3303
258	SLE FR 6	-0.96	0.02	34.47	4.048	0.0271	0.3331
258	SLE QP 1	-0.92	-0.01	32.8	3.8914	0.0259	0.3225
258	SLE QP 2	-0.94	0	33.8	3.9854	0.0266	0.3288
258	SLD 1	2.5	0.41	41.02	4.6776	0.0521	-0.8765
258	SLD 2	2.85	0.04	40.68	4.6483	0.0512	-0.9982
258	SLD 3	2.74	-0.67	40.28	4.615	0.0503	-0.9624
258	SLD 4	3.1	-1.04	39.93	4.5857	0.0494	-1.0841
258	SLD 5	-0.35	1.82	37.16	4.2932	0.0371	0.1193
258	SLD 6	-0.12	1.58	36.93	4.2739	0.0365	0.0394
258	SLD 7	0.48	-1.76	34.67	4.0846	0.0312	-0.1672
258	SLD 8	0.71	-2	34.44	4.0653	0.0306	-0.2471
258	SLD 9	-2.59	2.01	33.16	3.9054	0.0226	0.9048
258	SLD 10	-2.36	1.77	32.93	3.8861	0.022	0.8249
258	SLD 11	-1.77	-1.57	30.66	3.6968	0.0167	0.6183
258	SLD 12	-1.54	-1.81	30.43	3.6775	0.0161	0.5383
258	SLD 13	-4.98	1.05	27.67	3.3851	0.0039	1.7418
258	SLD 14	-4.63	0.67	27.32	3.3557	0.0029	1.6201
258	SLD 15	-4.73	-0.03	26.92	3.3225	0.0021	1.6559
258	SLD 16	-4.38	-0.4	26.57	3.2931	0.0012	1.5342
258	SLV 1	7.11	0.91	50.69	5.6068	0.0862	-2.4919
258	SLV 2	7.92	0.04	49.88	5.5384	0.0841	-2.7753
258	SLV 3	7.68	-1.52	48.98	5.4587	0.0821	-2.6916
258	SLV 4	8.5	-2.39	48.17	5.3903	0.08	-2.9749
258	SLV 5	0.46	4.12	41.59	4.7082	0.0511	-0.1656
258	SLV 6	0.98	3.56	41.07	4.664	0.0497	-0.3486
258	SLV 7	2.38	-3.99	35.9	4.2146	0.0375	-0.8311
258	SLV 8	2.9	-4.55	35.38	4.1704	0.0361	-1.0141
258	SLV 9	-4.79	4.56	32.22	3.8003	0.0172	1.6718
258	SLV 10	-4.26	4	31.69	3.7561	0.0158	1.4888
258	SLV 11	-2.87	-3.55	26.53	3.3067	0.0036	1.0063
258	SLV 12	-2.34	-4.11	26	3.2625	0.0022	0.8233
258	SLV 13	-10.38	2.4	19.43	2.5804	-0.0267	3.6326
258	SLV 14	-9.57	1.53	18.62	2.512	-0.0289	3.3493
258	SLV 15	-9.81	-0.03	17.72	2.4323	-0.0308	3.433
258	SLV 16	-8.99	-0.9	16.91	2.3639	-0.0329	3.1496
258	CRTFP Ux+	0	0	0	0	0	0
258	CRTFP Ux-	0	0	0	0	0	0
258	CRTFP Uy+	0	0	0	0	0	0
258	CRTFP Uy-	0	0	0	0	0	0
259	SLU 1	-0.89	-0.06	31.37	3.6493	0.005	0.3103
259	SLU 2	-0.87	-0.12	31.33	3.6456	0.005	0.3025
259	SLU 3	-0.92	-0.06	32.08	3.7157	0.0052	0.32
259	SLU 4	-0.9	-0.09	32.05	3.7134	0.0052	0.3154
259	SLU 5	-0.88	-0.12	31.8	3.6897	0.005	0.3077
259	SLU 6	-0.93	-0.06	32.55	3.7599	0.0053	0.3253
259	SLU 7	-0.92	-0.09	32.53	3.7576	0.0052	0.3206
259	SLU 8	-0.92	-0.06	32.31	3.7377	0.0051	0.3208
259	SLU 9	-0.91	-0.1	32.29	3.7354	0.0051	0.3162
259	SLU 10	-0.93	-0.07	34.8	3.9587	0.0051	0.3247
259	SLU 11	-0.98	-0.01	35.55	4.0289	0.0054	0.3422
259	SLU 12	-0.97	-0.04	35.52	4.0266	0.0054	0.3375
259	SLU 13	-0.95	-0.07	35.27	4.0029	0.0052	0.3299
259	SLU 14	-1	-0.01	36.02	4.073	0.0055	0.3475
259	SLU 15	-0.98	-0.04	36	4.0708	0.0054	0.3428
259	SLU 16	-0.98	-0.01	35.78	4.0509	0.0053	0.343
259	SLU 17	-0.97	-0.05	35.76	4.0486	0.0053	0.3383
259	SLU 18	-0.98	0.01	36.32	4.0967	0.0053	0.342
259	SLU 19	-0.97	-0.02	36.3	4.0945	0.0052	0.3373
259	SLU 20	-1	0.01	36.8	4.1409	0.0053	0.3473



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
259	SLU 21	-0.98	-0.03	36.77	4.1387	0.0053	0.3426
259	SLU 22	-1	-0.01	34.74	3.9559	0.0058	0.3501
259	SLU 23	-0.98	-0.07	34.7	3.9521	0.0058	0.3423
259	SLU 24	-1.03	0	35.45	4.0223	0.006	0.3599
259	SLU 25	-1.02	-0.04	35.43	4.02	0.006	0.3552
259	SLU 26	-1	-0.07	35.17	3.9963	0.0058	0.3476
259	SLU 27	-1.05	-0.01	35.93	4.0664	0.0061	0.3652
259	SLU 28	-1.03	-0.04	35.9	4.0642	0.006	0.3605
259	SLU 29	-1.03	-0.01	35.69	4.0443	0.006	0.3607
259	SLU 30	-1.02	-0.04	35.66	4.042	0.0059	0.356
259	SLU 31	-1.04	-0.02	38.17	4.2653	0.006	0.3645
259	SLU 32	-1.1	0.04	38.92	4.3354	0.0062	0.3821
259	SLU 33	-1.08	0.01	38.9	4.3332	0.0062	0.3774
259	SLU 34	-1.06	-0.02	38.64	4.3095	0.006	0.3698
259	SLU 35	-1.11	0.04	39.4	4.3796	0.0063	0.3873
259	SLU 36	-1.1	0.01	39.37	4.3774	0.0062	0.3827
259	SLU 37	-1.1	0.04	39.16	4.3574	0.0061	0.3829
259	SLU 38	-1.08	0	39.13	4.3552	0.0061	0.3782
259	SLU 39	-1.09	0.06	39.7	4.4033	0.0061	0.3818
259	SLU 40	-1.08	0.03	39.67	4.401	0.0061	0.3771
259	SLU 41	-1.11	0.06	40.17	4.4475	0.0062	0.3871
259	SLU 42	-1.1	0.03	40.15	4.4452	0.0061	0.3824
259	SLU 43	-1.12	-0.09	39.62	4.639	0.0062	0.3897
259	SLU 44	-1.09	-0.15	39.58	4.6352	0.0062	0.3819
259	SLU 45	-1.15	-0.09	40.33	4.7053	0.0064	0.3995
259	SLU 46	-1.13	-0.13	40.31	4.7031	0.0064	0.3948
259	SLU 47	-1.11	-0.15	40.05	4.6794	0.0063	0.3872
259	SLU 48	-1.16	-0.09	40.81	4.7495	0.0065	0.4047
259	SLU 49	-1.15	-0.13	40.78	4.7473	0.0065	0.4001
259	SLU 50	-1.15	-0.1	40.57	4.7273	0.0064	0.4003
259	SLU 51	-1.13	-0.13	40.54	4.7251	0.0063	0.3956
259	SLU 52	-1.16	-0.1	43.05	4.9484	0.0064	0.4041
259	SLU 53	-1.21	-0.04	43.8	5.0185	0.0066	0.4217
259	SLU 54	-1.2	-0.08	43.78	5.0163	0.0066	0.417
259	SLU 55	-1.17	-0.11	43.52	4.9926	0.0064	0.4094
259	SLU 56	-1.22	-0.04	44.28	5.0627	0.0067	0.4269
259	SLU 57	-1.21	-0.08	44.25	5.0605	0.0067	0.4222
259	SLU 58	-1.21	-0.05	44.04	5.0405	0.0066	0.4225
259	SLU 59	-1.2	-0.08	44.01	5.0383	0.0065	0.4178
259	SLU 60	-1.21	-0.02	44.58	5.0864	0.0065	0.4214
259	SLU 61	-1.2	-0.06	44.55	5.0841	0.0065	0.4167
259	SLU 62	-1.22	-0.03	45.05	5.1306	0.0066	0.4267
259	SLU 63	-1.21	-0.06	45.03	5.1283	0.0065	0.422
259	SLU 64	-1.23	-0.04	43	4.9455	0.007	0.4295
259	SLU 65	-1.21	-0.1	42.96	4.9418	0.007	0.4217
259	SLU 66	-1.26	-0.04	43.71	5.0119	0.0072	0.4393
259	SLU 67	-1.25	-0.08	43.68	5.0097	0.0072	0.4346
259	SLU 68	-1.22	-0.1	43.43	4.986	0.0071	0.427
259	SLU 69	-1.27	-0.04	44.18	5.0561	0.0073	0.4446
259	SLU 70	-1.26	-0.08	44.16	5.0539	0.0073	0.4399
259	SLU 71	-1.26	-0.04	43.94	5.0339	0.0072	0.4401
259	SLU 72	-1.25	-0.08	43.92	5.0317	0.0072	0.4354
259	SLU 73	-1.27	-0.05	46.42	5.255	0.0072	0.4439
259	SLU 74	-1.32	0.01	47.18	5.3251	0.0074	0.4615
259	SLU 75	-1.31	-0.03	47.15	5.3229	0.0074	0.4568
259	SLU 76	-1.29	-0.05	46.9	5.2992	0.0073	0.4492
259	SLU 77	-1.34	0.01	47.65	5.3693	0.0075	0.4668
259	SLU 78	-1.32	-0.03	47.62	5.3671	0.0075	0.4621
259	SLU 79	-1.33	0	47.41	5.3471	0.0074	0.4623
259	SLU 80	-1.31	-0.03	47.39	5.3449	0.0073	0.4576
259	SLU 81	-1.32	0.03	47.95	5.393	0.0073	0.4612
259	SLU 82	-1.31	-0.01	47.93	5.3907	0.0073	0.4565
259	SLU 83	-1.34	0.03	48.43	5.4371	0.0074	0.4665
259	SLU 84	-1.32	-0.01	48.4	5.4349	0.0074	0.4618
259	SLE RA 1	-0.92	-0.04	32.33	3.7369	0.0052	0.3217
259	SLE RA 2	-0.91	-0.08	32.31	3.7344	0.0052	0.3164
259	SLE RA 3	-0.94	-0.04	32.81	3.7811	0.0054	0.3282
259	SLE RA 4	-0.93	-0.07	32.79	3.7796	0.0053	0.325
259	SLE RA 5	-0.92	-0.08	32.62	3.7639	0.0053	0.32
259	SLE RA 6	-0.95	-0.04	33.12	3.8106	0.0054	0.3317
259	SLE RA 7	-0.94	-0.07	33.11	3.8091	0.0054	0.3286
259	SLE RA 8	-0.94	-0.05	32.96	3.7958	0.0053	0.3287
259	SLE RA 9	-0.93	-0.07	32.95	3.7943	0.0053	0.3256
259	SLE RA 10	-0.95	-0.05	34.62	3.9432	0.0053	0.3312
259	SLE RA 11	-0.98	-0.01	35.12	3.9899	0.0055	0.343
259	SLE RA 12	-0.97	-0.03	35.1	3.9884	0.0055	0.3398
259	SLE RA 13	-0.96	-0.05	34.93	3.9726	0.0054	0.3348
259	SLE RA 14	-0.99	-0.01	35.43	4.0194	0.0055	0.3465
259	SLE RA 15	-0.98	-0.03	35.42	4.0179	0.0055	0.3434
259	SLE RA 16	-0.99	-0.01	35.28	4.0046	0.0055	0.3435
259	SLE RA 17	-0.98	-0.04	35.26	4.0031	0.0054	0.3404
259	SLE RA 18	-0.98	0	35.64	4.0352	0.0054	0.3428
259	SLE RA 19	-0.97	-0.02	35.62	4.0337	0.0054	0.3397
259	SLE RA 20	-0.99	0	35.95	4.0646	0.0055	0.3463
259	SLE RA 21	-0.98	-0.02	35.93	4.0631	0.0054	0.3432
259	SLE FR 1	-0.92	-0.04	32.33	3.7369	0.0052	0.3217
259	SLE FR 2	-0.92	-0.05	32.33	3.7364	0.0052	0.3206
259	SLE FR 3	-0.93	-0.04	32.46	3.7487	0.0052	0.3231
259	SLE FR 4	-0.94	-0.04	33.32	3.8259	0.0053	0.327
259	SLE FR 5	-0.94	-0.03	33.45	3.8381	0.0053	0.3294



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
259	SLE FR 6	-0.95	-0.02	33.99	3.886	0.0053	0.3322
259	SLE QP 1	-0.92	-0.04	32.33	3.7369	0.0052	0.3217
259	SLE QP 2	-0.94	-0.03	33.32	3.8264	0.0053	0.328
259	SLD 1	2.5	0.32	39.88	4.3392	0.0253	-0.8794
259	SLD 2	2.86	-0.02	39.55	4.3145	0.0247	-1.0013
259	SLD 3	2.75	-0.7	39.16	4.2784	0.0242	-0.9655
259	SLD 4	3.1	-1.05	38.84	4.2538	0.0235	-1.0874
259	SLD 5	-0.34	1.69	36.43	4.0767	0.0131	0.1181
259	SLD 6	-0.11	1.47	36.21	4.0605	0.0127	0.038
259	SLD 7	0.48	-1.73	34.05	3.8743	0.0093	-0.1689
259	SLD 8	0.71	-1.95	33.84	3.858	0.0089	-0.249
259	SLD 9	-2.59	1.89	32.81	3.7947	0.0016	0.9049
259	SLD 10	-2.36	1.67	32.6	3.7785	0.0012	0.8249
259	SLD 11	-1.77	-1.53	30.43	3.5922	-0.0021	0.618
259	SLD 12	-1.54	-1.75	30.22	3.576	-0.0026	0.5379
259	SLD 13	-4.98	0.99	27.81	3.399	-0.013	1.7434
259	SLD 14	-4.63	0.64	27.49	3.3743	-0.0136	1.6215
259	SLD 15	-4.74	-0.04	27.1	3.3382	-0.0141	1.6573
259	SLD 16	-4.39	-0.38	26.77	3.3136	-0.0147	1.5354
259	SLV 1	7.12	0.76	48.64	5.0284	0.0522	-2.4977
259	SLV 2	7.94	-0.04	47.88	4.9709	0.0507	-2.7815
259	SLV 3	7.7	-1.57	47.01	4.8835	0.0495	-2.6976
259	SLV 4	8.51	-2.36	46.25	4.8261	0.048	-2.9814
259	SLV 5	0.47	3.87	40.51	4.4166	0.0236	-0.1674
259	SLV 6	0.99	3.35	40.02	4.3795	0.0227	-0.3507
259	SLV 7	2.38	-3.88	35.1	3.9338	0.0148	-0.8339
259	SLV 8	2.91	-4.39	34.61	3.8966	0.0138	-1.0172
259	SLV 9	-4.79	4.33	32.04	3.7561	-0.0033	1.6731
259	SLV 10	-4.26	3.82	31.55	3.719	-0.0042	1.4898
259	SLV 11	-2.87	-3.41	26.63	3.2732	-0.0121	1.0067
259	SLV 12	-2.35	-3.93	26.14	3.2361	-0.0131	0.8234
259	SLV 13	-10.4	2.3	20.39	2.8267	-0.0375	3.6374
259	SLV 14	-9.58	1.51	19.64	2.7692	-0.0389	3.3536
259	SLV 15	-9.82	-0.02	18.77	2.6818	-0.0401	3.4375
259	SLV 16	-9	-0.82	18.01	2.6244	-0.0416	3.1536
259	CRTFP Ux+	0	0	0	0	0	0
259	CRTFP Ux-	0	0	0	0	0	0
259	CRTFP Uy+	0	0	0	0	0	0
259	CRTFP Uy-	0	0	0	0	0	0
260	SLU 1	-0.89	-0.09	31.5	3.9169	-0.0134	0.3088
260	SLU 2	-0.86	-0.15	31.46	3.9128	-0.0134	0.301
260	SLU 3	-0.91	-0.09	32.21	3.9896	-0.0137	0.3185
260	SLU 4	-0.9	-0.12	32.19	3.9871	-0.0137	0.3138
260	SLU 5	-0.88	-0.15	31.93	3.9615	-0.0137	0.3062
260	SLU 6	-0.93	-0.09	32.69	4.0383	-0.014	0.3238
260	SLU 7	-0.91	-0.12	32.66	4.0358	-0.014	0.3191
260	SLU 8	-0.92	-0.1	32.45	4.0143	-0.0139	0.3193
260	SLU 9	-0.9	-0.13	32.42	4.0118	-0.0139	0.3146
260	SLU 10	-0.93	-0.11	34.96	4.2622	-0.0156	0.3231
260	SLU 11	-0.98	-0.05	35.71	4.339	-0.0158	0.3407
260	SLU 12	-0.96	-0.08	35.68	4.3366	-0.0158	0.3359
260	SLU 13	-0.94	-0.11	35.43	4.3109	-0.0158	0.3284
260	SLU 14	-0.99	-0.05	36.18	4.3877	-0.0161	0.3459
260	SLU 15	-0.98	-0.08	36.16	4.3852	-0.0161	0.3412
260	SLU 16	-0.98	-0.05	35.95	4.3637	-0.016	0.3415
260	SLU 17	-0.97	-0.09	35.92	4.3612	-0.016	0.3368
260	SLU 18	-0.98	-0.03	36.5	4.4161	-0.0165	0.3405
260	SLU 19	-0.96	-0.06	36.47	4.4136	-0.0165	0.3357
260	SLU 20	-0.99	-0.03	36.97	4.4648	-0.0167	0.3457
260	SLU 21	-0.98	-0.07	36.95	4.4623	-0.0167	0.341
260	SLU 22	-1	-0.04	34.88	4.2545	-0.0149	0.3485
260	SLU 23	-0.98	-0.1	34.84	4.2504	-0.0149	0.3407
260	SLU 24	-1.03	-0.04	35.59	4.3271	-0.0151	0.3582
260	SLU 25	-1.01	-0.07	35.57	4.3247	-0.0151	0.3535
260	SLU 26	-0.99	-0.1	35.32	4.299	-0.0151	0.3459
260	SLU 27	-1.04	-0.04	36.07	4.3758	-0.0154	0.3635
260	SLU 28	-1.03	-0.08	36.04	4.3734	-0.0154	0.3588
260	SLU 29	-1.03	-0.05	35.83	4.3518	-0.0153	0.359
260	SLU 30	-1.02	-0.08	35.81	4.3494	-0.0153	0.3543
260	SLU 31	-1.04	-0.06	38.34	4.5998	-0.017	0.3628
260	SLU 32	-1.09	0	39.09	4.6766	-0.0172	0.3803
260	SLU 33	-1.08	-0.03	39.07	4.6741	-0.0172	0.3756
260	SLU 34	-1.06	-0.06	38.81	4.6485	-0.0172	0.3681
260	SLU 35	-1.11	0	39.57	4.7252	-0.0175	0.3856
260	SLU 36	-1.09	-0.03	39.54	4.7228	-0.0175	0.3809
260	SLU 37	-1.09	0	39.33	4.7012	-0.0174	0.3812
260	SLU 38	-1.08	-0.04	39.3	4.6988	-0.0174	0.3764
260	SLU 39	-1.09	0.02	39.88	4.7536	-0.0179	0.3801
260	SLU 40	-1.08	-0.01	39.85	4.7512	-0.0179	0.3754
260	SLU 41	-1.11	0.02	40.35	4.8023	-0.0181	0.3854
260	SLU 42	-1.09	-0.02	40.33	4.7999	-0.0181	0.3807
260	SLU 43	-1.11	-0.14	39.79	4.9763	-0.017	0.3879
260	SLU 44	-1.09	-0.19	39.75	4.9722	-0.017	0.38
260	SLU 45	-1.14	-0.13	40.5	5.0489	-0.0173	0.3976
260	SLU 46	-1.13	-0.17	40.48	5.0465	-0.0173	0.3929
260	SLU 47	-1.1	-0.19	40.22	5.0208	-0.0172	0.3853
260	SLU 48	-1.16	-0.14	40.98	5.0976	-0.0175	0.4028
260	SLU 49	-1.14	-0.17	40.95	5.0952	-0.0175	0.3981
260	SLU 50	-1.14	-0.14	40.74	5.0736	-0.0175	0.3984
260	SLU 51	-1.13	-0.17	40.71	5.0712	-0.0175	0.3937



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
260	SLU 52	-1.15	-0.15	43.24	5.3216	-0.0191	0.4022
260	SLU 53	-1.2	-0.09	44	5.3984	-0.0194	0.4197
260	SLU 54	-1.19	-0.12	43.97	5.3959	-0.0194	0.415
260	SLU 55	-1.17	-0.15	43.72	5.3703	-0.0193	0.4074
260	SLU 56	-1.22	-0.09	44.47	5.447	-0.0196	0.4249
260	SLU 57	-1.21	-0.13	44.45	5.4446	-0.0196	0.4202
260	SLU 58	-1.21	-0.1	44.24	5.4231	-0.0196	0.4205
260	SLU 59	-1.19	-0.13	44.21	5.4206	-0.0196	0.4158
260	SLU 60	-1.2	-0.08	44.79	5.4754	-0.02	0.4195
260	SLU 61	-1.19	-0.11	44.76	5.473	-0.02	0.4148
260	SLU 62	-1.22	-0.08	45.26	5.5241	-0.0202	0.4247
260	SLU 63	-1.21	-0.11	45.24	5.5217	-0.0202	0.42
260	SLU 64	-1.23	-0.09	43.17	5.3138	-0.0184	0.4276
260	SLU 65	-1.2	-0.14	43.13	5.3097	-0.0184	0.4197
260	SLU 66	-1.25	-0.08	43.88	5.3865	-0.0187	0.4373
260	SLU 67	-1.24	-0.12	43.86	5.384	-0.0187	0.4326
260	SLU 68	-1.22	-0.14	43.61	5.3584	-0.0186	0.425
260	SLU 69	-1.27	-0.09	44.36	5.4352	-0.0189	0.4425
260	SLU 70	-1.26	-0.12	44.33	5.4327	-0.0189	0.4378
260	SLU 71	-1.26	-0.09	44.12	5.4112	-0.0189	0.4381
260	SLU 72	-1.24	-0.12	44.1	5.4087	-0.0189	0.4334
260	SLU 73	-1.27	-0.1	46.63	5.6591	-0.0205	0.4419
260	SLU 74	-1.32	-0.04	47.38	5.7359	-0.0208	0.4594
260	SLU 75	-1.3	-0.08	47.36	5.7334	-0.0208	0.4547
260	SLU 76	-1.28	-0.1	47.1	5.7078	-0.0208	0.4471
260	SLU 77	-1.33	-0.04	47.86	5.7846	-0.021	0.4646
260	SLU 78	-1.32	-0.08	47.83	5.7821	-0.021	0.4599
260	SLU 79	-1.32	-0.05	47.62	5.7606	-0.021	0.4602
260	SLU 80	-1.31	-0.08	47.59	5.7581	-0.021	0.4555
260	SLU 81	-1.32	-0.03	48.17	5.813	-0.0214	0.4592
260	SLU 82	-1.3	-0.06	48.14	5.8105	-0.0214	0.4545
260	SLU 83	-1.33	-0.03	48.64	5.8617	-0.0217	0.4644
260	SLU 84	-1.32	-0.06	48.62	5.8592	-0.0217	0.4597
260	SLE RA 1	-0.92	-0.08	32.47	4.0134	-0.0138	0.3202
260	SLE RA 2	-0.9	-0.12	32.44	4.0106	-0.0139	0.3149
260	SLE RA 3	-0.94	-0.08	32.94	4.0618	-0.014	0.3266
260	SLE RA 4	-0.93	-0.1	32.92	4.0602	-0.014	0.3235
260	SLE RA 5	-0.91	-0.12	32.75	4.0431	-0.014	0.3184
260	SLE RA 6	-0.95	-0.08	33.26	4.0943	-0.0142	0.3301
260	SLE RA 7	-0.94	-0.1	33.24	4.0926	-0.0142	0.327
260	SLE RA 8	-0.94	-0.08	33.1	4.0783	-0.0142	0.3272
260	SLE RA 9	-0.93	-0.1	33.08	4.0766	-0.0142	0.324
260	SLE RA 10	-0.95	-0.09	34.77	4.2436	-0.0153	0.3297
260	SLE RA 11	-0.98	-0.05	35.27	4.2948	-0.0154	0.3414
260	SLE RA 12	-0.97	-0.07	35.26	4.2931	-0.0154	0.3383
260	SLE RA 13	-0.96	-0.09	35.09	4.276	-0.0154	0.3332
260	SLE RA 14	-0.99	-0.05	35.59	4.3272	-0.0156	0.3449
260	SLE RA 15	-0.98	-0.07	35.57	4.3256	-0.0156	0.3418
260	SLE RA 16	-0.98	-0.05	35.43	4.3112	-0.0156	0.3419
260	SLE RA 17	-0.97	-0.07	35.41	4.3096	-0.0156	0.3388
260	SLE RA 18	-0.98	-0.04	35.8	4.3461	-0.0159	0.3413
260	SLE RA 19	-0.97	-0.06	35.78	4.3445	-0.0159	0.3381
260	SLE RA 20	-0.99	-0.04	36.11	4.3786	-0.016	0.3448
260	SLE RA 21	-0.98	-0.06	36.1	4.377	-0.016	0.3416
260	SLE FR 1	-0.92	-0.08	32.47	4.0134	-0.0138	0.3202
260	SLE FR 2	-0.92	-0.09	32.46	4.0128	-0.0138	0.3191
260	SLE FR 3	-0.92	-0.08	32.59	4.0263	-0.0139	0.3216
260	SLE FR 4	-0.93	-0.07	33.46	4.1126	-0.0145	0.3255
260	SLE FR 5	-0.94	-0.07	33.59	4.1262	-0.0145	0.3279
260	SLE FR 6	-0.95	-0.06	34.13	4.1797	-0.0149	0.3307
260	SLE QP 1	-0.92	-0.08	32.47	4.0134	-0.0138	0.3202
260	SLE QP 2	-0.94	-0.07	33.47	4.1132	-0.0145	0.3265
260	SLD 1	2.51	0.24	39.5	4.5485	0.0002	-0.8827
260	SLD 2	2.87	-0.08	39.19	4.524	-0.0002	-1.0047
260	SLD 3	2.76	-0.75	38.79	4.4818	0.0012	-0.969
260	SLD 4	3.11	-1.07	38.48	4.4573	0.0008	-1.091
260	SLD 5	-0.34	1.6	36.39	4.3493	-0.0115	0.1163
260	SLD 6	-0.11	1.39	36.19	4.3332	-0.0117	0.0361
260	SLD 7	0.49	-1.73	34.06	4.127	-0.0082	-0.1711
260	SLD 8	0.72	-1.94	33.85	4.1109	-0.0084	-0.2513
260	SLD 9	-2.59	1.81	33.08	4.1155	-0.0205	0.9043
260	SLD 10	-2.36	1.59	32.88	4.0994	-0.0207	0.8241
260	SLD 11	-1.76	-1.52	30.74	3.8932	-0.0172	0.6169
260	SLD 12	-1.53	-1.73	30.54	3.877	-0.0174	0.5367
260	SLD 13	-4.99	0.94	28.45	3.7691	-0.0297	1.744
260	SLD 14	-4.63	0.62	28.14	3.7446	-0.0301	1.622
260	SLD 15	-4.74	-0.05	27.74	3.7024	-0.0287	1.6577
260	SLD 16	-4.39	-0.37	27.44	3.6779	-0.0291	1.5357
260	SLV 1	7.14	0.62	47.56	5.1336	0.0199	-2.5035
260	SLV 2	7.96	-0.13	46.84	5.0764	0.019	-2.7876
260	SLV 3	7.71	-1.64	45.96	4.9755	0.0222	-2.7037
260	SLV 4	8.53	-2.38	45.24	4.9183	0.0213	-2.9878
260	SLV 5	0.47	3.69	40.24	4.669	-0.0075	-0.1697
260	SLV 6	1	3.21	39.78	4.6321	-0.0081	-0.3532
260	SLV 7	2.39	-3.83	34.91	4.1419	0.0002	-0.8371
260	SLV 8	2.92	-4.31	34.45	4.105	-0.0004	-1.0206
260	SLV 9	-4.79	4.18	32.48	4.1214	-0.0285	1.6736
260	SLV 10	-4.26	3.7	32.02	4.0845	-0.0291	1.4901
260	SLV 11	-2.87	-3.34	27.16	3.5943	-0.0208	1.0062
260	SLV 12	-2.35	-3.82	26.69	3.5573	-0.0214	0.8227



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
260	SLV 13	-10.4	2.25	21.69	3.3081	-0.0502	3.6408
260	SLV 14	-9.59	1.51	20.97	3.2509	-0.0511	3.3567
260	SLV 15	-9.83	0	20.1	3.15	-0.0479	3.4406
260	SLV 16	-9.01	-0.75	19.37	3.0928	-0.0488	3.1565
260	CRTFP Ux+	0	0	0	0	0	0
260	CRTFP Ux-	0	0	0	0	0	0
260	CRTFP Uy+	0	0	0	0	0	0
260	CRTFP Uy-	0	0	0	0	0	0
261	SLU 1	-0.88	-0.13	32.16	4.5713	-0.0303	0.3069
261	SLU 2	-0.86	-0.18	32.12	4.5663	-0.0302	0.299
261	SLU 3	-0.91	-0.13	32.88	4.6599	-0.031	0.3165
261	SLU 4	-0.89	-0.16	32.86	4.6569	-0.031	0.3117
261	SLU 5	-0.87	-0.19	32.6	4.6258	-0.0308	0.3042
261	SLU 6	-0.92	-0.13	33.37	4.7194	-0.0315	0.3217
261	SLU 7	-0.91	-0.16	33.35	4.7164	-0.0315	0.3169
261	SLU 8	-0.91	-0.13	33.13	4.6904	-0.0313	0.3173
261	SLU 9	-0.9	-0.17	33.1	4.6874	-0.0313	0.3126
261	SLU 10	-0.92	-0.15	35.71	5.0003	-0.0345	0.321
261	SLU 11	-0.97	-0.09	36.48	5.0939	-0.0352	0.3385
261	SLU 12	-0.96	-0.12	36.45	5.0909	-0.0352	0.3338
261	SLU 13	-0.94	-0.15	36.19	5.0598	-0.035	0.3262
261	SLU 14	-0.99	-0.09	36.96	5.1534	-0.0357	0.3437
261	SLU 15	-0.97	-0.12	36.94	5.1504	-0.0357	0.339
261	SLU 16	-0.97	-0.1	36.72	5.1244	-0.0355	0.3393
261	SLU 17	-0.96	-0.13	36.7	5.1214	-0.0355	0.3346
261	SLU 18	-0.97	-0.08	37.29	5.1913	-0.0363	0.3383
261	SLU 19	-0.96	-0.11	37.26	5.1883	-0.0363	0.3336
261	SLU 20	-0.99	-0.08	37.78	5.2508	-0.0368	0.3435
261	SLU 21	-0.97	-0.11	37.75	5.2478	-0.0368	0.3388
261	SLU 22	-0.99	-0.08	35.61	4.9861	-0.0337	0.3463
261	SLU 23	-0.97	-0.14	35.57	4.9811	-0.0337	0.3385
261	SLU 24	-1.02	-0.08	36.34	5.0747	-0.0344	0.3559
261	SLU 25	-1.01	-0.11	36.32	5.0717	-0.0344	0.3512
261	SLU 26	-0.99	-0.14	36.06	5.0407	-0.0342	0.3437
261	SLU 27	-1.04	-0.08	36.83	5.1343	-0.0349	0.3611
261	SLU 28	-1.02	-0.11	36.8	5.1313	-0.0349	0.3564
261	SLU 29	-1.02	-0.09	36.59	5.1052	-0.0347	0.3568
261	SLU 30	-1.01	-0.12	36.56	5.1022	-0.0347	0.352
261	SLU 31	-1.03	-0.1	39.16	5.4151	-0.0379	0.3605
261	SLU 32	-1.08	-0.04	39.93	5.5087	-0.0386	0.378
261	SLU 33	-1.07	-0.07	39.91	5.5057	-0.0386	0.3732
261	SLU 34	-1.05	-0.1	39.65	5.4747	-0.0384	0.3657
261	SLU 35	-1.1	-0.04	40.42	5.5683	-0.0391	0.3832
261	SLU 36	-1.09	-0.08	40.39	5.5653	-0.0391	0.3784
261	SLU 37	-1.09	-0.05	40.18	5.5392	-0.0389	0.3788
261	SLU 38	-1.07	-0.08	40.15	5.5362	-0.0389	0.374
261	SLU 39	-1.08	-0.03	40.75	5.6061	-0.0397	0.3778
261	SLU 40	-1.07	-0.06	40.72	5.6031	-0.0397	0.3731
261	SLU 41	-1.1	-0.03	41.23	5.6657	-0.0402	0.383
261	SLU 42	-1.09	-0.06	41.21	5.6627	-0.0402	0.3783
261	SLU 43	-1.11	-0.19	40.62	5.8004	-0.0382	0.3854
261	SLU 44	-1.08	-0.24	40.58	5.7954	-0.0381	0.3775
261	SLU 45	-1.13	-0.18	41.35	5.889	-0.0389	0.395
261	SLU 46	-1.12	-0.22	41.32	5.886	-0.0389	0.3903
261	SLU 47	-1.1	-0.24	41.06	5.8549	-0.0387	0.3827
261	SLU 48	-1.15	-0.19	41.83	5.9486	-0.0394	0.4002
261	SLU 49	-1.14	-0.22	41.81	5.9456	-0.0394	0.3955
261	SLU 50	-1.14	-0.19	41.59	5.9195	-0.0392	0.3958
261	SLU 51	-1.12	-0.22	41.57	5.9165	-0.0392	0.3911
261	SLU 52	-1.15	-0.2	44.17	6.2294	-0.0424	0.3995
261	SLU 53	-1.2	-0.15	44.94	6.323	-0.0431	0.417
261	SLU 54	-1.18	-0.18	44.91	6.32	-0.0431	0.4123
261	SLU 55	-1.16	-0.2	44.66	6.289	-0.0429	0.4048
261	SLU 56	-1.21	-0.15	45.43	6.3826	-0.0436	0.4222
261	SLU 57	-1.2	-0.18	45.4	6.3796	-0.0436	0.4175
261	SLU 58	-1.2	-0.15	45.19	6.3535	-0.0434	0.4178
261	SLU 59	-1.19	-0.18	45.16	6.3505	-0.0434	0.4131
261	SLU 60	-1.2	-0.13	45.75	6.4204	-0.0442	0.4169
261	SLU 61	-1.18	-0.16	45.73	6.4174	-0.0442	0.4121
261	SLU 62	-1.21	-0.13	46.24	6.48	-0.0447	0.4221
261	SLU 63	-1.2	-0.17	46.21	6.477	-0.0447	0.4173
261	SLU 64	-1.22	-0.14	44.08	6.2152	-0.0416	0.4249
261	SLU 65	-1.2	-0.19	44.03	6.2102	-0.0416	0.417
261	SLU 66	-1.25	-0.14	44.8	6.3038	-0.0423	0.4345
261	SLU 67	-1.23	-0.17	44.78	6.3008	-0.0423	0.4297
261	SLU 68	-1.21	-0.19	44.52	6.2698	-0.0421	0.4222
261	SLU 69	-1.26	-0.14	45.29	6.3634	-0.0428	0.4397
261	SLU 70	-1.25	-0.17	45.26	6.3604	-0.0428	0.4349
261	SLU 71	-1.25	-0.14	45.05	6.3344	-0.0426	0.4353
261	SLU 72	-1.24	-0.17	45.02	6.3314	-0.0426	0.4306
261	SLU 73	-1.26	-0.15	47.63	6.6443	-0.0458	0.439
261	SLU 74	-1.31	-0.1	48.4	6.7379	-0.0465	0.4565
261	SLU 75	-1.3	-0.13	48.37	6.7349	-0.0465	0.4518
261	SLU 76	-1.27	-0.16	48.11	6.7038	-0.0463	0.4442
261	SLU 77	-1.33	-0.1	48.88	6.7974	-0.047	0.4617
261	SLU 78	-1.31	-0.13	48.86	6.7944	-0.047	0.457
261	SLU 79	-1.31	-0.1	48.64	6.7684	-0.0468	0.4573
261	SLU 80	-1.3	-0.14	48.62	6.7654	-0.0468	0.4526
261	SLU 81	-1.31	-0.08	49.21	6.8353	-0.0476	0.4563
261	SLU 82	-1.3	-0.12	49.18	6.8323	-0.0476	0.4516





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
261	SLU 83	-1.32	-0.09	49.7	6.8948	-0.0481	0.4615
261	SLU 84	-1.31	-0.12	49.67	6.8918	-0.0481	0.4568
261	SLE RA 1	-0.91	-0.12	33.15	4.6898	-0.0312	0.3182
261	SLE RA 2	-0.9	-0.15	33.12	4.6864	-0.0312	0.3129
261	SLE RA 3	-0.93	-0.11	33.63	4.7489	-0.0317	0.3245
261	SLE RA 4	-0.92	-0.14	33.61	4.7469	-0.0317	0.3214
261	SLE RA 5	-0.91	-0.15	33.44	4.7262	-0.0316	0.3164
261	SLE RA 6	-0.94	-0.12	33.95	4.7886	-0.0321	0.328
261	SLE RA 7	-0.93	-0.14	33.94	4.7866	-0.032	0.3249
261	SLE RA 8	-0.93	-0.12	33.79	4.7692	-0.0319	0.3251
261	SLE RA 9	-0.92	-0.14	33.78	4.7672	-0.0319	0.3219
261	SLE RA 10	-0.94	-0.13	35.51	4.9758	-0.034	0.3276
261	SLE RA 11	-0.97	-0.09	36.02	5.0382	-0.0345	0.3392
261	SLE RA 12	-0.96	-0.11	36.01	5.0362	-0.0345	0.3361
261	SLE RA 13	-0.95	-0.13	35.84	5.0155	-0.0344	0.3311
261	SLE RA 14	-0.98	-0.09	36.35	5.0779	-0.0349	0.3427
261	SLE RA 15	-0.97	-0.11	36.33	5.0759	-0.0349	0.3395
261	SLE RA 16	-0.98	-0.09	36.19	5.0585	-0.0347	0.3398
261	SLE RA 17	-0.97	-0.12	36.17	5.0565	-0.0347	0.3366
261	SLE RA 18	-0.97	-0.08	36.57	5.1031	-0.0353	0.3391
261	SLE RA 19	-0.96	-0.1	36.55	5.1011	-0.0352	0.336
261	SLE RA 20	-0.98	-0.08	36.89	5.1428	-0.0356	0.3426
261	SLE RA 21	-0.97	-0.1	36.87	5.1408	-0.0356	0.3394
261	SLE FR 1	-0.91	-0.12	33.15	4.6898	-0.0312	0.3182
261	SLE FR 2	-0.91	-0.12	33.14	4.6891	-0.0312	0.3171
261	SLE FR 3	-0.92	-0.12	33.27	4.7057	-0.0314	0.3195
261	SLE FR 4	-0.93	-0.11	34.17	4.8131	-0.0324	0.3234
261	SLE FR 5	-0.94	-0.11	34.3	4.8297	-0.0326	0.3258
261	SLE FR 6	-0.94	-0.1	34.86	4.8965	-0.0333	0.3286
261	SLE QP 1	-0.91	-0.12	33.15	4.6898	-0.0312	0.3182
261	SLE QP 2	-0.93	-0.11	34.17	4.8138	-0.0324	0.3244
261	SLD 1	2.52	0.16	39.81	5.2586	-0.0215	-0.8864
261	SLD 2	2.87	-0.14	39.51	5.2305	-0.0216	-1.0084
261	SLD 3	2.77	-0.82	39.1	5.1776	-0.0202	-0.9727
261	SLD 4	3.12	-1.12	38.79	5.1495	-0.0203	-1.0948
261	SLD 5	-0.33	1.52	37	5.0751	-0.0311	0.1139
261	SLD 6	-0.1	1.32	36.8	5.0566	-0.0312	0.0337
261	SLD 7	0.49	-1.76	34.62	4.8051	-0.0267	-0.1738
261	SLD 8	0.72	-1.95	34.42	4.7866	-0.0269	-0.254
261	SLD 9	-2.58	1.74	33.92	4.841	-0.038	0.9029
261	SLD 10	-2.35	1.54	33.72	4.8225	-0.0382	0.8227
261	SLD 11	-1.76	-1.53	31.54	4.5709	-0.0337	0.6152
261	SLD 12	-1.53	-1.73	31.34	4.5524	-0.0338	0.535
261	SLD 13	-4.98	0.91	29.55	4.4781	-0.0446	1.7436
261	SLD 14	-4.63	0.61	29.25	4.45	-0.0447	1.6216
261	SLD 15	-4.74	-0.07	28.84	4.3971	-0.0432	1.6573
261	SLD 16	-4.39	-0.37	28.53	4.369	-0.0434	1.5353
261	SLV 1	7.16	0.49	47.34	5.8552	-0.0067	-2.5092
261	SLV 2	7.97	-0.22	46.64	5.7896	-0.0071	-2.7935
261	SLV 3	7.73	-1.74	45.72	5.666	-0.0037	-2.7097
261	SLV 4	8.55	-2.44	45.02	5.6005	-0.0041	-2.994
261	SLV 5	0.49	3.57	40.71	5.4244	-0.0292	-0.1725
261	SLV 6	1.01	3.11	40.25	5.3821	-0.0295	-0.3561
261	SLV 7	2.39	-3.85	35.29	4.7939	-0.0192	-0.8407
261	SLV 8	2.92	-4.3	34.84	4.7516	-0.0195	-1.0243
261	SLV 9	-4.78	4.09	33.5	4.876	-0.0454	1.6732
261	SLV 10	-4.26	3.64	33.05	4.8336	-0.0457	1.4896
261	SLV 11	-2.87	-3.32	28.09	4.2455	-0.0354	1.005
261	SLV 12	-2.35	-3.78	27.64	4.2032	-0.0357	0.8214
261	SLV 13	-10.41	2.23	23.33	4.0271	-0.0608	3.6429
261	SLV 14	-9.59	1.53	22.62	3.9616	-0.0612	3.3586
261	SLV 15	-9.83	0.01	21.7	3.838	-0.0578	3.4424
261	SLV 16	-9.02	-0.7	21	3.7724	-0.0582	3.1581
261	CRTFP Ux+	0	0	0	0	0	0
261	CRTFP Ux-	0	0	0	0	0	0
261	CRTFP Uy+	0	0	0	0	0	0
261	CRTFP Uy-	0	0	0	0	0	0
262	SLU 1	-0.87	-0.18	33.29	5.582	-0.045	0.3044
262	SLU 2	-0.85	-0.23	33.25	5.5757	-0.0449	0.2965
262	SLU 3	-0.9	-0.18	34.04	5.6954	-0.046	0.3139
262	SLU 4	-0.89	-0.21	34.02	5.6916	-0.046	0.3092
262	SLU 5	-0.87	-0.23	33.75	5.652	-0.0457	0.3017
262	SLU 6	-0.92	-0.18	34.55	5.7717	-0.0468	0.3191
262	SLU 7	-0.9	-0.21	34.52	5.7679	-0.0468	0.3143
262	SLU 8	-0.9	-0.18	34.3	5.7346	-0.0465	0.3147
262	SLU 9	-0.89	-0.22	34.27	5.7309	-0.0465	0.31
262	SLU 10	-0.92	-0.2	36.99	6.1392	-0.051	0.3184
262	SLU 11	-0.97	-0.14	37.79	6.2588	-0.0521	0.3358
262	SLU 12	-0.95	-0.18	37.76	6.255	-0.0521	0.331
262	SLU 13	-0.93	-0.2	37.5	6.2155	-0.0517	0.3235
262	SLU 14	-0.98	-0.15	38.3	6.3351	-0.0529	0.3409
262	SLU 15	-0.97	-0.18	38.27	6.3313	-0.0528	0.3362
262	SLU 16	-0.97	-0.15	38.05	6.2981	-0.0526	0.3366
262	SLU 17	-0.95	-0.18	38.02	6.2943	-0.0525	0.3319
262	SLU 18	-0.97	-0.13	38.64	6.3869	-0.0536	0.3356
262	SLU 19	-0.95	-0.16	38.62	6.3832	-0.0536	0.3309
262	SLU 20	-0.98	-0.14	39.15	6.4632	-0.0544	0.3408
262	SLU 21	-0.97	-0.17	39.12	6.4595	-0.0544	0.3361
262	SLU 22	-0.99	-0.13	36.88	6.1168	-0.0501	0.3436
262	SLU 23	-0.96	-0.18	36.83	6.1105	-0.0501	0.3357



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
262	SLU 24	-1.01	-0.13	37.63	6.2302	-0.0512	0.3531
262	SLU 25	-1	-0.16	37.6	6.2264	-0.0512	0.3483
262	SLU 26	-0.98	-0.19	37.34	6.1868	-0.0509	0.3408
262	SLU 27	-1.03	-0.13	38.13	6.3065	-0.052	0.3582
262	SLU 28	-1.02	-0.16	38.11	6.3027	-0.0519	0.3535
262	SLU 29	-1.02	-0.14	37.89	6.2694	-0.0517	0.3539
262	SLU 30	-1	-0.17	37.86	6.2656	-0.0516	0.3492
262	SLU 31	-1.03	-0.15	40.58	6.6739	-0.0562	0.3576
262	SLU 32	-1.08	-0.1	41.38	6.7936	-0.0573	0.3749
262	SLU 33	-1.06	-0.13	41.35	6.7898	-0.0572	0.3702
262	SLU 34	-1.04	-0.16	41.08	6.7502	-0.0569	0.3627
262	SLU 35	-1.09	-0.1	41.88	6.8699	-0.058	0.3801
262	SLU 36	-1.08	-0.13	41.85	6.8661	-0.058	0.3753
262	SLU 37	-1.08	-0.11	41.63	6.8329	-0.0577	0.3758
262	SLU 38	-1.07	-0.14	41.61	6.8291	-0.0577	0.371
262	SLU 39	-1.08	-0.09	42.23	6.9217	-0.0588	0.3748
262	SLU 40	-1.06	-0.12	42.2	6.9179	-0.0588	0.3701
262	SLU 41	-1.09	-0.09	42.73	6.998	-0.0596	0.38
262	SLU 42	-1.08	-0.12	42.71	6.9942	-0.0595	0.3752
262	SLU 43	-1.1	-0.25	42.05	7.0733	-0.0567	0.3823
262	SLU 44	-1.08	-0.3	42	7.067	-0.0566	0.3744
262	SLU 45	-1.13	-0.24	42.8	7.1866	-0.0578	0.3918
262	SLU 46	-1.11	-0.28	42.77	7.1829	-0.0577	0.3871
262	SLU 47	-1.09	-0.3	42.51	7.1433	-0.0574	0.3796
262	SLU 48	-1.14	-0.25	43.31	7.263	-0.0585	0.397
262	SLU 49	-1.13	-0.28	43.28	7.2592	-0.0585	0.3922
262	SLU 50	-1.13	-0.25	43.06	7.2259	-0.0582	0.3926
262	SLU 51	-1.12	-0.28	43.03	7.2221	-0.0582	0.3879
262	SLU 52	-1.14	-0.27	45.75	7.6304	-0.0627	0.3963
262	SLU 53	-1.19	-0.21	46.55	7.7501	-0.0638	0.4137
262	SLU 54	-1.18	-0.24	46.52	7.7463	-0.0638	0.4089
262	SLU 55	-1.15	-0.27	46.26	7.7067	-0.0635	0.4014
262	SLU 56	-1.2	-0.22	47.05	7.8264	-0.0646	0.4188
262	SLU 57	-1.19	-0.25	47.03	7.8226	-0.0645	0.4141
262	SLU 58	-1.19	-0.22	46.8	7.7893	-0.0643	0.4145
262	SLU 59	-1.18	-0.25	46.78	7.7855	-0.0642	0.4097
262	SLU 60	-1.19	-0.2	47.4	7.8782	-0.0653	0.4135
262	SLU 61	-1.18	-0.23	47.37	7.8744	-0.0653	0.4088
262	SLU 62	-1.2	-0.2	47.91	7.9545	-0.0661	0.4187
262	SLU 63	-1.19	-0.24	47.88	7.9507	-0.0661	0.414
262	SLU 64	-1.21	-0.2	45.63	7.6081	-0.0619	0.4215
262	SLU 65	-1.19	-0.25	45.59	7.6018	-0.0618	0.4136
262	SLU 66	-1.24	-0.2	46.39	7.7214	-0.0629	0.431
262	SLU 67	-1.22	-0.23	46.36	7.7176	-0.0629	0.4262
262	SLU 68	-1.2	-0.26	46.09	7.6781	-0.0626	0.4187
262	SLU 69	-1.25	-0.2	46.89	7.7977	-0.0637	0.4361
262	SLU 70	-1.24	-0.23	46.87	7.7939	-0.0637	0.4314
262	SLU 71	-1.24	-0.21	46.64	7.7607	-0.0634	0.4318
262	SLU 72	-1.23	-0.24	46.62	7.7569	-0.0634	0.4271
262	SLU 73	-1.25	-0.22	49.34	8.1652	-0.0679	0.4354
262	SLU 74	-1.3	-0.17	50.13	8.2849	-0.069	0.4528
262	SLU 75	-1.29	-0.2	50.11	8.2811	-0.069	0.4481
262	SLU 76	-1.27	-0.22	49.84	8.2415	-0.0686	0.4406
262	SLU 77	-1.32	-0.17	50.64	8.3612	-0.0698	0.458
262	SLU 78	-1.3	-0.2	50.61	8.3574	-0.0697	0.4532
262	SLU 79	-1.3	-0.18	50.39	8.3241	-0.0694	0.4537
262	SLU 80	-1.29	-0.21	50.36	8.3203	-0.0694	0.4489
262	SLU 81	-1.3	-0.16	50.99	8.413	-0.0705	0.4527
262	SLU 82	-1.29	-0.19	50.96	8.4092	-0.0705	0.448
262	SLU 83	-1.32	-0.16	51.49	8.4893	-0.0713	0.4579
262	SLU 84	-1.3	-0.19	51.46	8.4855	-0.0713	0.4531
262	SLE RA 1	-0.91	-0.16	34.31	5.7348	-0.0464	0.3156
262	SLE RA 2	-0.89	-0.2	34.28	5.7306	-0.0464	0.3103
262	SLE RA 3	-0.93	-0.16	34.82	5.8104	-0.0472	0.3219
262	SLE RA 4	-0.92	-0.18	34.8	5.8079	-0.0471	0.3188
262	SLE RA 5	-0.9	-0.2	34.62	5.7815	-0.0469	0.3138
262	SLE RA 6	-0.93	-0.17	35.15	5.8613	-0.0477	0.3254
262	SLE RA 7	-0.93	-0.19	35.14	5.8587	-0.0476	0.3222
262	SLE RA 8	-0.93	-0.17	34.99	5.8366	-0.0475	0.3225
262	SLE RA 9	-0.92	-0.19	34.97	5.834	-0.0474	0.3193
262	SLE RA 10	-0.93	-0.18	36.78	6.1062	-0.0505	0.3249
262	SLE RA 11	-0.97	-0.14	37.31	6.186	-0.0512	0.3365
262	SLE RA 12	-0.96	-0.16	37.3	6.1835	-0.0512	0.3333
262	SLE RA 13	-0.94	-0.18	37.12	6.1571	-0.051	0.3284
262	SLE RA 14	-0.98	-0.14	37.65	6.2369	-0.0517	0.3399
262	SLE RA 15	-0.97	-0.17	37.63	6.2344	-0.0517	0.3368
262	SLE RA 16	-0.97	-0.15	37.49	6.2122	-0.0515	0.3371
262	SLE RA 17	-0.96	-0.17	37.47	6.2097	-0.0515	0.3339
262	SLE RA 18	-0.97	-0.13	37.88	6.2714	-0.0522	0.3364
262	SLE RA 19	-0.96	-0.16	37.87	6.2689	-0.0522	0.3333
262	SLE RA 20	-0.98	-0.14	38.22	6.3223	-0.0527	0.3399
262	SLE RA 21	-0.97	-0.16	38.2	6.3198	-0.0527	0.3367
262	SLE FR 1	-0.91	-0.16	34.31	5.7348	-0.0464	0.3156
262	SLE FR 2	-0.9	-0.17	34.31	5.734	-0.0464	0.3146
262	SLE FR 3	-0.91	-0.17	34.45	5.7552	-0.0467	0.317
262	SLE FR 4	-0.92	-0.16	35.38	5.895	-0.0482	0.3208
262	SLE FR 5	-0.93	-0.16	35.52	5.9162	-0.0484	0.3232
262	SLE FR 6	-0.94	-0.15	36.1	6.0031	-0.0493	0.326
262	SLE QP 1	-0.91	-0.16	34.31	5.7348	-0.0464	0.3156
262	SLE QP 2	-0.93	-0.16	35.38	5.8958	-0.0482	0.3219



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
262	SLD 1	2.54	0.08	40.73	6.4235	-0.0402	-0.8903
262	SLD 2	2.88	-0.21	40.44	6.3889	-0.0402	-1.0123
262	SLD 3	2.78	-0.9	39.99	6.3182	-0.0385	-0.9767
262	SLD 4	3.13	-1.19	39.69	6.2835	-0.0385	-1.0987
262	SLD 5	-0.32	1.46	38.17	6.2201	-0.0484	0.111
262	SLD 6	-0.09	1.27	37.98	6.1973	-0.0484	0.0308
262	SLD 7	0.5	-1.82	35.69	5.869	-0.0427	-0.1769
262	SLD 8	0.73	-2.01	35.49	5.8462	-0.0427	-0.2571
262	SLD 9	-2.58	1.7	35.28	5.9455	-0.0537	0.9008
262	SLD 10	-2.35	1.51	35.08	5.9227	-0.0537	0.8206
262	SLD 11	-1.76	-1.58	32.79	5.5943	-0.048	0.6129
262	SLD 12	-1.53	-1.77	32.6	5.5716	-0.048	0.5327
262	SLD 13	-4.98	0.88	31.08	5.5081	-0.0579	1.7424
262	SLD 14	-4.63	0.59	30.78	5.4735	-0.0579	1.6204
262	SLD 15	-4.73	-0.1	30.33	5.4028	-0.0562	1.6561
262	SLD 16	-4.39	-0.39	30.03	5.3681	-0.0562	1.534
262	SLV 1	7.17	0.36	47.88	7.1291	-0.0294	-2.515
262	SLV 2	7.99	-0.32	47.18	7.0485	-0.0294	-2.7992
262	SLV 3	7.74	-1.87	46.19	6.8869	-0.0256	-2.7156
262	SLV 4	8.56	-2.54	45.49	6.8062	-0.0256	-2.9998
262	SLV 5	0.5	3.49	41.82	6.6472	-0.0484	-0.1758
262	SLV 6	1.02	3.06	41.37	6.5951	-0.0484	-0.3594
262	SLV 7	2.4	-3.93	36.18	5.8396	-0.0355	-0.8444
262	SLV 8	2.93	-4.37	35.73	5.7875	-0.0355	-1.028
262	SLV 9	-4.78	4.06	35.04	6.0041	-0.0608	1.6717
262	SLV 10	-4.25	3.62	34.59	5.952	-0.0608	1.4881
262	SLV 11	-2.87	-3.37	29.4	5.1965	-0.0479	1.0031
262	SLV 12	-2.35	-3.81	28.95	5.1444	-0.0479	0.8196
262	SLV 13	-10.41	2.23	25.28	4.9855	-0.0708	3.6435
262	SLV 14	-9.59	1.56	24.58	4.9048	-0.0708	3.3593
262	SLV 15	-9.84	0.01	23.58	4.7432	-0.0669	3.4429
262	SLV 16	-9.02	-0.67	22.89	4.6625	-0.0669	3.1587
262	CRTFP Ux+	0	0	0	0	0	0
262	CRTFP Ux-	0	0	0	0	0	0
262	CRTFP Uy+	0	0	0	0	0	0
262	CRTFP Uy-	0	0	0	0	0	0
263	SLU 1	-0.87	-0.24	34.82	6.9075	-0.0564	0.3015
263	SLU 2	-0.85	-0.29	34.77	6.8996	-0.0564	0.2935
263	SLU 3	-0.9	-0.24	35.61	7.0534	-0.0578	0.3108
263	SLU 4	-0.88	-0.27	35.58	7.0486	-0.0578	0.306
263	SLU 5	-0.86	-0.3	35.3	6.9978	-0.0573	0.2986
263	SLU 6	-0.91	-0.24	36.14	7.1516	-0.0587	0.3159
263	SLU 7	-0.9	-0.27	36.11	7.1468	-0.0587	0.3111
263	SLU 8	-0.9	-0.25	35.88	7.1039	-0.0583	0.3116
263	SLU 9	-0.88	-0.28	35.85	7.0992	-0.0583	0.3069
263	SLU 10	-0.91	-0.27	38.72	7.6321	-0.0639	0.3152
263	SLU 11	-0.96	-0.21	39.56	7.7859	-0.0653	0.3324
263	SLU 12	-0.94	-0.25	39.53	7.7812	-0.0653	0.3277
263	SLU 13	-0.92	-0.27	39.25	7.7304	-0.0648	0.3203
263	SLU 14	-0.97	-0.22	40.09	7.8841	-0.0662	0.3375
263	SLU 15	-0.96	-0.25	40.06	7.8794	-0.0662	0.3328
263	SLU 16	-0.96	-0.22	39.83	7.8365	-0.0658	0.3333
263	SLU 17	-0.95	-0.26	39.8	7.8318	-0.0658	0.3285
263	SLU 18	-0.96	-0.21	40.46	7.954	-0.0671	0.3324
263	SLU 19	-0.94	-0.24	40.43	7.9492	-0.0671	0.3276
263	SLU 20	-0.97	-0.21	40.99	8.0522	-0.0681	0.3375
263	SLU 21	-0.96	-0.24	40.96	8.0475	-0.0681	0.3327
263	SLU 22	-0.98	-0.2	38.58	7.5997	-0.063	0.3402
263	SLU 23	-0.96	-0.25	38.53	7.5918	-0.0629	0.3323
263	SLU 24	-1.01	-0.2	39.37	7.7456	-0.0643	0.3496
263	SLU 25	-0.99	-0.23	39.34	7.7408	-0.0643	0.3448
263	SLU 26	-0.97	-0.25	39.06	7.69	-0.0638	0.3374
263	SLU 27	-1.02	-0.2	39.9	7.8438	-0.0653	0.3547
263	SLU 28	-1.01	-0.23	39.87	7.8391	-0.0652	0.3499
263	SLU 29	-1.01	-0.21	39.64	7.7962	-0.0648	0.3504
263	SLU 30	-1	-0.24	39.61	7.7914	-0.0648	0.3457
263	SLU 31	-1.02	-0.23	42.48	8.3244	-0.0704	0.354
263	SLU 32	-1.07	-0.17	43.32	8.4782	-0.0718	0.3712
263	SLU 33	-1.06	-0.2	43.29	8.4734	-0.0718	0.3665
263	SLU 34	-1.03	-0.23	43.01	8.4226	-0.0713	0.3591
263	SLU 35	-1.08	-0.18	43.85	8.5764	-0.0728	0.3763
263	SLU 36	-1.07	-0.21	43.82	8.5716	-0.0727	0.3716
263	SLU 37	-1.07	-0.18	43.59	8.5287	-0.0723	0.3721
263	SLU 38	-1.06	-0.21	43.56	8.524	-0.0723	0.3673
263	SLU 39	-1.07	-0.16	44.22	8.6462	-0.0737	0.3712
263	SLU 40	-1.06	-0.2	44.2	8.6415	-0.0736	0.3664
263	SLU 41	-1.08	-0.17	44.75	8.7445	-0.0746	0.3763
263	SLU 42	-1.07	-0.2	44.73	8.7397	-0.0746	0.3715
263	SLU 43	-1.09	-0.33	43.97	8.7424	-0.0711	0.3786
263	SLU 44	-1.07	-0.38	43.93	8.7345	-0.0711	0.3707
263	SLU 45	-1.12	-0.33	44.76	8.8883	-0.0725	0.3879
263	SLU 46	-1.1	-0.36	44.73	8.8835	-0.0724	0.3832
263	SLU 47	-1.08	-0.38	44.46	8.8327	-0.072	0.3758
263	SLU 48	-1.13	-0.33	45.29	8.9865	-0.0734	0.393
263	SLU 49	-1.12	-0.36	45.26	8.9817	-0.0734	0.3883
263	SLU 50	-1.12	-0.34	45.03	8.9389	-0.073	0.3888
263	SLU 51	-1.11	-0.37	45.01	8.9341	-0.073	0.384
263	SLU 52	-1.13	-0.35	47.88	9.467	-0.0786	0.3923
263	SLU 53	-1.18	-0.3	48.71	9.6208	-0.08	0.4096
263	SLU 54	-1.17	-0.33	48.69	9.6161	-0.0799	0.4048



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
263	SLU 55	-1.15	-0.36	48.41	9.5653	-0.0795	0.3974
263	SLU 56	-1.19	-0.31	49.24	9.719	-0.0809	0.4147
263	SLU 57	-1.18	-0.34	49.22	9.7143	-0.0809	0.4099
263	SLU 58	-1.18	-0.31	48.98	9.6714	-0.0805	0.4104
263	SLU 59	-1.17	-0.34	48.96	9.6667	-0.0805	0.4057
263	SLU 60	-1.18	-0.29	49.62	9.7889	-0.0818	0.4095
263	SLU 61	-1.17	-0.32	49.59	9.7842	-0.0818	0.4048
263	SLU 62	-1.19	-0.3	50.15	9.8871	-0.0828	0.4146
263	SLU 63	-1.18	-0.33	50.12	9.8824	-0.0828	0.4098
263	SLU 64	-1.2	-0.29	47.73	9.4346	-0.0776	0.4174
263	SLU 65	-1.18	-0.34	47.69	9.4267	-0.0776	0.4095
263	SLU 66	-1.23	-0.28	48.52	9.5805	-0.079	0.4267
263	SLU 67	-1.22	-0.32	48.5	9.5757	-0.079	0.422
263	SLU 68	-1.19	-0.34	48.22	9.5249	-0.0785	0.4146
263	SLU 69	-1.24	-0.29	49.05	9.6787	-0.08	0.4318
263	SLU 70	-1.23	-0.32	49.03	9.674	-0.0799	0.4271
263	SLU 71	-1.23	-0.29	48.79	9.6311	-0.0795	0.4276
263	SLU 72	-1.22	-0.32	48.77	9.6263	-0.0795	0.4228
263	SLU 73	-1.24	-0.31	51.64	10.1593	-0.0851	0.4311
263	SLU 74	-1.29	-0.26	52.47	10.3131	-0.0865	0.4484
263	SLU 75	-1.28	-0.29	52.45	10.3083	-0.0865	0.4436
263	SLU 76	-1.26	-0.32	52.17	10.2575	-0.086	0.4362
263	SLU 77	-1.31	-0.26	53.01	10.4113	-0.0875	0.4535
263	SLU 78	-1.29	-0.29	52.98	10.4065	-0.0874	0.4487
263	SLU 79	-1.29	-0.27	52.75	10.3637	-0.087	0.4492
263	SLU 80	-1.28	-0.3	52.72	10.3589	-0.087	0.4445
263	SLU 81	-1.29	-0.25	53.38	10.4811	-0.0884	0.4483
263	SLU 82	-1.28	-0.28	53.35	10.4764	-0.0883	0.4435
263	SLU 83	-1.31	-0.25	53.91	10.5794	-0.0893	0.4534
263	SLU 84	-1.29	-0.29	53.88	10.5746	-0.0893	0.4486
263	SLE RA 1	-0.9	-0.23	35.89	7.1053	-0.0583	0.3125
263	SLE RA 2	-0.88	-0.26	35.86	7.1	-0.0583	0.3073
263	SLE RA 3	-0.92	-0.23	36.42	7.2025	-0.0592	0.3188
263	SLE RA 4	-0.91	-0.25	36.4	7.1993	-0.0592	0.3156
263	SLE RA 5	-0.89	-0.27	36.21	7.1655	-0.0589	0.3107
263	SLE RA 6	-0.93	-0.23	36.77	7.268	-0.0598	0.3222
263	SLE RA 7	-0.92	-0.25	36.75	7.2648	-0.0598	0.319
263	SLE RA 8	-0.92	-0.23	36.6	7.2362	-0.0596	0.3193
263	SLE RA 9	-0.91	-0.25	36.58	7.2331	-0.0595	0.3162
263	SLE RA 10	-0.93	-0.25	38.49	7.5884	-0.0633	0.3217
263	SLE RA 11	-0.96	-0.21	39.05	7.6909	-0.0642	0.3332
263	SLE RA 12	-0.95	-0.23	39.03	7.6877	-0.0642	0.33
263	SLE RA 13	-0.94	-0.25	38.85	7.6539	-0.0639	0.3251
263	SLE RA 14	-0.97	-0.21	39.41	7.7564	-0.0648	0.3366
263	SLE RA 15	-0.96	-0.23	39.39	7.7532	-0.0648	0.3334
263	SLE RA 16	-0.96	-0.22	39.23	7.7246	-0.0646	0.3338
263	SLE RA 17	-0.95	-0.24	39.21	7.7214	-0.0645	0.3306
263	SLE RA 18	-0.96	-0.21	39.65	7.8029	-0.0654	0.3331
263	SLE RA 19	-0.95	-0.23	39.64	7.7998	-0.0654	0.33
263	SLE RA 20	-0.97	-0.21	40.01	7.8684	-0.0661	0.3365
263	SLE RA 21	-0.96	-0.23	39.99	7.8653	-0.066	0.3334
263	SLE FR 1	-0.9	-0.23	35.89	7.1053	-0.0583	0.3125
263	SLE FR 2	-0.9	-0.24	35.88	7.1042	-0.0583	0.3115
263	SLE FR 3	-0.9	-0.23	36.03	7.1315	-0.0585	0.3139
263	SLE FR 4	-0.91	-0.23	37.01	7.3135	-0.0604	0.3177
263	SLE FR 5	-0.92	-0.22	37.16	7.3408	-0.0607	0.3201
263	SLE FR 6	-0.93	-0.22	37.77	7.4541	-0.0619	0.3228
263	SLE QP 1	-0.9	-0.23	35.89	7.1053	-0.0583	0.3125
263	SLE QP 2	-0.92	-0.22	37.02	7.3146	-0.0604	0.3187
263	SLD 1	2.55	-0.01	42.16	7.9822	-0.0546	-0.8945
263	SLD 2	2.9	-0.29	41.86	7.9389	-0.0545	-1.0165
263	SLD 3	2.79	-1.01	41.37	7.8445	-0.0527	-0.9809
263	SLD 4	3.14	-1.29	41.07	7.8011	-0.0526	-1.1028
263	SLD 5	-0.31	1.41	39.81	7.7315	-0.0616	0.1075
263	SLD 6	-0.08	1.22	39.62	7.703	-0.0616	0.0274
263	SLD 7	0.51	-1.92	37.18	7.2724	-0.0552	-0.1804
263	SLD 8	0.73	-2.11	36.99	7.2439	-0.0551	-0.2605
263	SLD 9	-2.57	1.66	37.05	7.3853	-0.0657	0.8979
263	SLD 10	-2.34	1.48	36.86	7.3568	-0.0657	0.8178
263	SLD 11	-1.75	-1.66	34.42	6.9261	-0.0593	0.6101
263	SLD 12	-1.52	-1.85	34.23	6.8976	-0.0593	0.53
263	SLD 13	-4.98	0.85	32.97	6.8281	-0.0683	1.7403
263	SLD 14	-4.63	0.56	32.67	6.7847	-0.0682	1.6183
263	SLD 15	-4.73	-0.15	32.18	6.6903	-0.0664	1.6539
263	SLD 16	-4.38	-0.43	31.88	6.6469	-0.0663	1.532
263	SLV 1	7.19	0.24	49.02	8.8733	-0.0467	-2.5207
263	SLV 2	8	-0.42	48.33	8.7723	-0.0464	-2.8047
263	SLV 3	7.76	-2.02	47.23	8.5593	-0.0423	-2.7213
263	SLV 4	8.57	-2.68	46.53	8.4582	-0.0421	-3.0052
263	SLV 5	0.51	3.45	43.46	8.276	-0.063	-0.1799
263	SLV 6	1.03	3.03	43.01	8.2108	-0.0628	-0.3633
263	SLV 7	2.41	-4.07	37.49	7.2291	-0.0484	-0.8483
263	SLV 8	2.94	-4.5	37.04	7.1639	-0.0482	-1.0317
263	SLV 9	-4.77	4.05	37	7.4653	-0.0726	1.6692
263	SLV 10	-4.25	3.63	36.55	7.4	-0.0725	1.4858
263	SLV 11	-2.87	-3.47	31.03	6.4184	-0.058	1.0007
263	SLV 12	-2.34	-3.9	30.58	6.3531	-0.0579	0.8173
263	SLV 13	-10.41	2.24	27.51	6.1709	-0.0788	3.6426
263	SLV 14	-9.6	1.58	26.81	6.0699	-0.0786	3.3587
263	SLV 15	-9.84	-0.02	25.71	5.8569	-0.0744	3.4421



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
263	SLV 16	-9.02	-0.68	25.01	5.7558	-0.0742	3.1582
263	CRTFP Ux+	0	0	0	0	0	0
263	CRTFP Ux-	0	0	0	0	0	0
263	CRTFP Uy+	0	0	0	0	0	0
263	CRTFP Uy-	0	0	0	0	0	0
264	SLU 1	-0.86	-0.32	36.61	8.4777	-0.0626	0.2979
264	SLU 2	-0.84	-0.38	36.56	8.4681	-0.0626	0.2899
264	SLU 3	-0.89	-0.32	37.45	8.6622	-0.0641	0.3071
264	SLU 4	-0.87	-0.36	37.42	8.6564	-0.0641	0.3023
264	SLU 5	-0.85	-0.38	37.13	8.5923	-0.0636	0.295
264	SLU 6	-0.9	-0.33	38.01	8.7863	-0.0652	0.3121
264	SLU 7	-0.89	-0.36	37.98	8.7806	-0.0651	0.3073
264	SLU 8	-0.89	-0.33	37.73	8.7261	-0.0647	0.3079
264	SLU 9	-0.88	-0.37	37.71	8.7203	-0.0647	0.3032
264	SLU 10	-0.9	-0.36	40.75	9.4007	-0.0708	0.3113
264	SLU 11	-0.95	-0.31	41.63	9.5947	-0.0724	0.3284
264	SLU 12	-0.93	-0.34	41.61	9.589	-0.0724	0.3236
264	SLU 13	-0.91	-0.37	41.31	9.5249	-0.0719	0.3163
264	SLU 14	-0.96	-0.31	42.2	9.7189	-0.0735	0.3334
264	SLU 15	-0.95	-0.34	42.17	9.7131	-0.0734	0.3287
264	SLU 16	-0.95	-0.32	41.92	9.6586	-0.073	0.3293
264	SLU 17	-0.94	-0.35	41.89	9.6529	-0.073	0.3245
264	SLU 18	-0.95	-0.3	42.6	9.81	-0.0744	0.3284
264	SLU 19	-0.94	-0.33	42.57	9.8042	-0.0744	0.3236
264	SLU 20	-0.96	-0.31	43.16	9.9341	-0.0755	0.3334
264	SLU 21	-0.95	-0.34	43.13	9.9284	-0.0755	0.3286
264	SLU 22	-0.97	-0.29	40.58	9.3565	-0.0699	0.3362
264	SLU 23	-0.95	-0.34	40.53	9.3469	-0.0698	0.3282
264	SLU 24	-1	-0.29	41.41	9.5409	-0.0714	0.3454
264	SLU 25	-0.98	-0.32	41.39	9.5352	-0.0713	0.3406
264	SLU 26	-0.96	-0.35	41.09	9.4711	-0.0708	0.3333
264	SLU 27	-1.01	-0.29	41.98	9.6651	-0.0724	0.3504
264	SLU 28	-1	-0.33	41.95	9.6593	-0.0724	0.3456
264	SLU 29	-1	-0.3	41.7	9.6048	-0.0719	0.3462
264	SLU 30	-0.99	-0.33	41.67	9.5991	-0.0719	0.3415
264	SLU 31	-1.01	-0.33	44.72	10.2795	-0.0781	0.3496
264	SLU 32	-1.06	-0.27	45.6	10.4735	-0.0796	0.3667
264	SLU 33	-1.05	-0.3	45.58	10.4677	-0.0796	0.362
264	SLU 34	-1.02	-0.33	45.28	10.4036	-0.0791	0.3546
264	SLU 35	-1.07	-0.28	46.16	10.5977	-0.0807	0.3718
264	SLU 36	-1.06	-0.31	46.14	10.5919	-0.0806	0.367
264	SLU 37	-1.06	-0.28	45.89	10.5374	-0.0802	0.3676
264	SLU 38	-1.05	-0.32	45.86	10.5317	-0.0802	0.3628
264	SLU 39	-1.06	-0.27	46.57	10.6887	-0.0817	0.3667
264	SLU 40	-1.05	-0.3	46.54	10.683	-0.0816	0.3619
264	SLU 41	-1.07	-0.27	47.13	10.8129	-0.0827	0.3717
264	SLU 42	-1.06	-0.3	47.1	10.8071	-0.0827	0.367
264	SLU 43	-1.08	-0.43	46.23	10.7198	-0.0789	0.3741
264	SLU 44	-1.06	-0.49	46.19	10.7102	-0.0789	0.3661
264	SLU 45	-1.11	-0.43	47.07	10.9042	-0.0804	0.3833
264	SLU 46	-1.09	-0.46	47.04	10.8984	-0.0804	0.3785
264	SLU 47	-1.07	-0.49	46.75	10.8344	-0.0799	0.3712
264	SLU 48	-1.12	-0.44	47.63	11.0284	-0.0815	0.3883
264	SLU 49	-1.11	-0.47	47.6	11.0226	-0.0815	0.3835
264	SLU 50	-1.11	-0.44	47.36	10.9681	-0.081	0.3841
264	SLU 51	-1.1	-0.48	47.33	10.9624	-0.081	0.3794
264	SLU 52	-1.12	-0.47	50.38	11.6427	-0.0872	0.3875
264	SLU 53	-1.17	-0.42	51.26	11.8367	-0.0887	0.4046
264	SLU 54	-1.16	-0.45	51.23	11.831	-0.0887	0.3999
264	SLU 55	-1.13	-0.48	50.94	11.7669	-0.0882	0.3925
264	SLU 56	-1.18	-0.42	51.82	11.9609	-0.0898	0.4097
264	SLU 57	-1.17	-0.45	51.79	11.9552	-0.0897	0.4049
264	SLU 58	-1.17	-0.43	51.55	11.9007	-0.0893	0.4055
264	SLU 59	-1.16	-0.46	51.52	11.8949	-0.0893	0.4007
264	SLU 60	-1.17	-0.41	52.22	12.052	-0.0908	0.4046
264	SLU 61	-1.16	-0.44	52.19	12.0462	-0.0907	0.3998
264	SLU 62	-1.18	-0.42	52.78	12.1762	-0.0918	0.4096
264	SLU 63	-1.17	-0.45	52.75	12.1704	-0.0918	0.4049
264	SLU 64	-1.19	-0.4	50.2	11.5985	-0.0862	0.4124
264	SLU 65	-1.17	-0.45	50.16	11.5889	-0.0861	0.4045
264	SLU 66	-1.22	-0.4	51.04	11.7829	-0.0877	0.4216
264	SLU 67	-1.2	-0.43	51.01	11.7772	-0.0876	0.4168
264	SLU 68	-1.18	-0.46	50.72	11.7131	-0.0871	0.4095
264	SLU 69	-1.23	-0.4	51.6	11.9071	-0.0887	0.4266
264	SLU 70	-1.22	-0.43	51.57	11.9014	-0.0887	0.4219
264	SLU 71	-1.22	-0.41	51.33	11.8469	-0.0882	0.4225
264	SLU 72	-1.21	-0.44	51.3	11.8411	-0.0882	0.4177
264	SLU 73	-1.23	-0.44	54.35	12.5215	-0.0944	0.4258
264	SLU 74	-1.28	-0.38	55.23	12.7155	-0.0959	0.4429
264	SLU 75	-1.27	-0.41	55.2	12.7098	-0.0959	0.4382
264	SLU 76	-1.24	-0.44	54.91	12.6457	-0.0954	0.4308
264	SLU 77	-1.29	-0.39	55.79	12.8397	-0.097	0.448
264	SLU 78	-1.28	-0.42	55.76	12.8339	-0.0969	0.4432
264	SLU 79	-1.28	-0.39	55.52	12.7794	-0.0965	0.4438
264	SLU 80	-1.27	-0.42	55.49	12.7737	-0.0965	0.4391
264	SLU 81	-1.28	-0.38	56.19	12.9308	-0.098	0.4429
264	SLU 82	-1.27	-0.41	56.16	12.925	-0.0979	0.4381
264	SLU 83	-1.29	-0.38	56.75	13.0549	-0.099	0.4479
264	SLU 84	-1.28	-0.41	56.72	13.0492	-0.099	0.4432
264	SLE RA 1	-0.89	-0.31	37.75	8.7288	-0.0647	0.3088



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
264	SLE RA 2	-0.88	-0.35	37.71	8.7224	-0.0646	0.3035
264	SLE RA 3	-0.91	-0.31	38.3	8.8518	-0.0657	0.3149
264	SLE RA 4	-0.9	-0.34	38.28	8.8479	-0.0657	0.3118
264	SLE RA 5	-0.89	-0.35	38.09	8.8052	-0.0653	0.3069
264	SLE RA 6	-0.92	-0.32	38.68	8.9345	-0.0664	0.3183
264	SLE RA 7	-0.91	-0.34	38.66	8.9307	-0.0664	0.3151
264	SLE RA 8	-0.91	-0.32	38.49	8.8944	-0.0661	0.3155
264	SLE RA 9	-0.9	-0.34	38.48	8.8905	-0.0661	0.3123
264	SLE RA 10	-0.92	-0.34	40.51	9.3441	-0.0702	0.3178
264	SLE RA 11	-0.95	-0.3	41.09	9.4735	-0.0712	0.3292
264	SLE RA 12	-0.94	-0.32	41.08	9.4696	-0.0712	0.326
264	SLE RA 13	-0.93	-0.34	40.88	9.4269	-0.0709	0.3211
264	SLE RA 14	-0.96	-0.31	41.47	9.5562	-0.0719	0.3325
264	SLE RA 15	-0.95	-0.33	41.45	9.5524	-0.0719	0.3294
264	SLE RA 16	-0.95	-0.31	41.29	9.5161	-0.0716	0.3297
264	SLE RA 17	-0.94	-0.33	41.27	9.5122	-0.0716	0.3266
264	SLE RA 18	-0.95	-0.3	41.74	9.617	-0.0726	0.3291
264	SLE RA 19	-0.94	-0.32	41.72	9.6131	-0.0725	0.326
264	SLE RA 20	-0.96	-0.3	42.11	9.6997	-0.0733	0.3325
264	SLE RA 21	-0.95	-0.32	42.09	9.6959	-0.0732	0.3293
264	SLE FR 1	-0.89	-0.31	37.75	8.7288	-0.0647	0.3088
264	SLE FR 2	-0.89	-0.32	37.74	8.7275	-0.0647	0.3077
264	SLE FR 3	-0.9	-0.32	37.9	8.7619	-0.065	0.3101
264	SLE FR 4	-0.91	-0.32	38.94	8.994	-0.067	0.3138
264	SLE FR 5	-0.91	-0.31	39.09	9.0284	-0.0673	0.3162
264	SLE FR 6	-0.92	-0.31	39.74	9.1729	-0.0686	0.319
264	SLE QP 1	-0.89	-0.31	37.75	8.7288	-0.0647	0.3088
264	SLE QP 2	-0.91	-0.31	38.94	8.9953	-0.0671	0.3149
264	SLD 1	2.56	-0.12	43.93	9.8395	-0.0623	-0.8992
264	SLD 2	2.91	-0.39	43.62	9.7859	-0.0621	-1.0209
264	SLD 3	2.8	-1.14	43.09	9.6664	-0.0604	-0.9855
264	SLD 4	3.15	-1.41	42.78	9.6128	-0.0603	-1.1072
264	SLD 5	-0.3	1.34	41.76	9.5206	-0.0685	0.1032
264	SLD 6	-0.07	1.16	41.56	9.4854	-0.0684	0.0232
264	SLD 7	0.51	-2.06	38.97	8.9436	-0.0623	-0.1843
264	SLD 8	0.74	-2.24	38.77	8.9084	-0.0622	-0.2643
264	SLD 9	-2.56	1.62	39.12	9.0821	-0.0719	0.8941
264	SLD 10	-2.33	1.44	38.92	9.0469	-0.0718	0.8141
264	SLD 11	-1.74	-1.78	36.32	8.5051	-0.0657	0.6066
264	SLD 12	-1.52	-1.96	36.12	8.4699	-0.0656	0.5266
264	SLD 13	-4.97	0.79	35.1	8.3777	-0.0738	1.737
264	SLD 14	-4.62	0.52	34.8	8.3241	-0.0737	1.6153
264	SLD 15	-4.72	-0.23	34.26	8.2046	-0.072	1.6507
264	SLD 16	-4.38	-0.5	33.96	8.151	-0.0718	1.529
264	SLV 1	7.2	0.1	50.58	10.9652	-0.0558	-2.5266
264	SLV 2	8.02	-0.54	49.87	10.8404	-0.0555	-2.81
264	SLV 3	7.77	-2.2	48.67	10.5721	-0.0516	-2.7269
264	SLV 4	8.59	-2.84	47.97	10.4474	-0.0513	-3.0103
264	SLV 5	0.52	3.43	45.44	10.204	-0.0701	-0.1847
264	SLV 6	1.04	3.01	44.98	10.1234	-0.0699	-0.3678
264	SLV 7	2.42	-4.27	39.1	8.8937	-0.0561	-0.8525
264	SLV 8	2.94	-4.68	38.64	8.8132	-0.0559	-1.0355
264	SLV 9	-4.76	4.06	39.24	9.1773	-0.0783	1.6653
264	SLV 10	-4.24	3.65	38.79	9.0968	-0.0781	1.4823
264	SLV 11	-2.86	-3.63	32.9	7.8671	-0.0642	0.9976
264	SLV 12	-2.34	-4.05	32.45	7.7865	-0.064	0.8145
264	SLV 13	-10.4	2.22	29.92	7.5431	-0.0829	3.6401
264	SLV 14	-9.59	1.58	29.21	7.4184	-0.0825	3.3567
264	SLV 15	-9.83	-0.09	28.02	7.1501	-0.0786	3.4398
264	SLV 16	-9.02	-0.72	27.31	7.0253	-0.0783	3.1564
264	CRTFP Ux+	0	0	0	0	0	0
264	CRTFP Ux-	0	0	0	0	0	0
264	CRTFP Uy+	0	0	0	0	0	0
264	CRTFP Uy-	0	0	0	0	0	0
265	SLU 1	-0.85	-0.43	38.47	10.1815	-0.0603	0.2934
265	SLU 2	-0.83	-0.48	38.43	10.1705	-0.0603	0.2855
265	SLU 3	-0.88	-0.43	39.35	10.4078	-0.0618	0.3024
265	SLU 4	-0.86	-0.47	39.32	10.4012	-0.0618	0.2977
265	SLU 5	-0.84	-0.49	39.02	10.3228	-0.0613	0.2904
265	SLU 6	-0.89	-0.44	39.94	10.5601	-0.0628	0.3074
265	SLU 7	-0.88	-0.47	39.91	10.5535	-0.0628	0.3026
265	SLU 8	-0.88	-0.45	39.66	10.4861	-0.0623	0.3033
265	SLU 9	-0.86	-0.48	39.63	10.4795	-0.0623	0.2985
265	SLU 10	-0.89	-0.48	42.86	11.3198	-0.0683	0.3064
265	SLU 11	-0.94	-0.43	43.79	11.5571	-0.0698	0.3234
265	SLU 12	-0.92	-0.46	43.76	11.5505	-0.0697	0.3186
265	SLU 13	-0.9	-0.49	43.45	11.4721	-0.0693	0.3114
265	SLU 14	-0.95	-0.44	44.38	11.7094	-0.0708	0.3283
265	SLU 15	-0.94	-0.47	44.35	11.7028	-0.0707	0.3236
265	SLU 16	-0.94	-0.44	44.09	11.6354	-0.0703	0.3243
265	SLU 17	-0.93	-0.47	44.06	11.6288	-0.0703	0.3195
265	SLU 18	-0.94	-0.43	44.81	11.8234	-0.0717	0.3233
265	SLU 19	-0.92	-0.46	44.78	11.8168	-0.0717	0.3186
265	SLU 20	-0.95	-0.43	45.4	11.9757	-0.0727	0.3283
265	SLU 21	-0.94	-0.47	45.37	11.9691	-0.0727	0.3235
265	SLU 22	-0.96	-0.41	42.66	11.2624	-0.0672	0.3311
265	SLU 23	-0.94	-0.46	42.61	11.2514	-0.0672	0.3232
265	SLU 24	-0.98	-0.41	43.54	11.4887	-0.0687	0.3401
265	SLU 25	-0.97	-0.44	43.51	11.4821	-0.0687	0.3354
265	SLU 26	-0.95	-0.47	43.2	11.4037	-0.0682	0.3281



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
265	SLU 27	-1	-0.41	44.13	11.641	-0.0697	0.3451
265	SLU 28	-0.99	-0.45	44.1	11.6344	-0.0696	0.3403
265	SLU 29	-0.99	-0.42	43.84	11.567	-0.0692	0.341
265	SLU 30	-0.97	-0.45	43.81	11.5604	-0.0692	0.3362
265	SLU 31	-1	-0.46	47.04	12.4007	-0.0752	0.3441
265	SLU 32	-1.05	-0.4	47.97	12.6381	-0.0767	0.3611
265	SLU 33	-1.03	-0.44	47.94	12.6314	-0.0766	0.3563
265	SLU 34	-1.01	-0.46	47.64	12.553	-0.0762	0.3491
265	SLU 35	-1.06	-0.41	48.56	12.7903	-0.0776	0.366
265	SLU 36	-1.05	-0.44	48.53	12.7837	-0.0776	0.3613
265	SLU 37	-1.05	-0.42	48.28	12.7163	-0.0772	0.362
265	SLU 38	-1.03	-0.45	48.25	12.7097	-0.0772	0.3572
265	SLU 39	-1.05	-0.4	48.99	12.9043	-0.0786	0.361
265	SLU 40	-1.03	-0.43	48.96	12.8977	-0.0786	0.3563
265	SLU 41	-1.06	-0.41	49.59	13.0566	-0.0796	0.366
265	SLU 42	-1.05	-0.44	49.56	13.05	-0.0796	0.3612
265	SLU 43	-1.07	-0.57	48.58	12.8654	-0.0761	0.3685
265	SLU 44	-1.04	-0.62	48.53	12.8543	-0.076	0.3606
265	SLU 45	-1.09	-0.57	49.46	13.0917	-0.0775	0.3775
265	SLU 46	-1.08	-0.6	49.43	13.085	-0.0775	0.3728
265	SLU 47	-1.06	-0.63	49.13	13.0066	-0.077	0.3655
265	SLU 48	-1.11	-0.58	50.05	13.244	-0.0785	0.3825
265	SLU 49	-1.09	-0.61	50.02	13.2373	-0.0785	0.3777
265	SLU 50	-1.1	-0.58	49.77	13.17	-0.0781	0.3784
265	SLU 51	-1.08	-0.62	49.74	13.1633	-0.0781	0.3736
265	SLU 52	-1.11	-0.62	52.97	14.0037	-0.084	0.3815
265	SLU 53	-1.15	-0.57	53.9	14.241	-0.0855	0.3985
265	SLU 54	-1.14	-0.6	53.87	14.2344	-0.0855	0.3937
265	SLU 55	-1.12	-0.63	53.56	14.1559	-0.085	0.3865
265	SLU 56	-1.17	-0.58	54.49	14.3933	-0.0865	0.4034
265	SLU 57	-1.16	-0.61	54.46	14.3866	-0.0865	0.3987
265	SLU 58	-1.16	-0.58	54.2	14.3193	-0.0861	0.3994
265	SLU 59	-1.14	-0.61	54.17	14.3127	-0.086	0.3946
265	SLU 60	-1.15	-0.57	54.92	14.5073	-0.0875	0.3984
265	SLU 61	-1.14	-0.6	54.89	14.5006	-0.0875	0.3937
265	SLU 62	-1.17	-0.57	55.51	14.6596	-0.0885	0.4034
265	SLU 63	-1.16	-0.6	55.48	14.6529	-0.0884	0.3986
265	SLU 64	-1.18	-0.55	52.77	13.9463	-0.083	0.4062
265	SLU 65	-1.15	-0.6	52.72	13.9352	-0.0829	0.3983
265	SLU 66	-1.2	-0.55	53.64	14.1726	-0.0844	0.4152
265	SLU 67	-1.19	-0.58	53.61	14.1659	-0.0844	0.4105
265	SLU 68	-1.17	-0.6	53.31	14.0875	-0.0839	0.4032
265	SLU 69	-1.22	-0.55	54.24	14.3249	-0.0854	0.4202
265	SLU 70	-1.2	-0.58	54.21	14.3182	-0.0854	0.4154
265	SLU 71	-1.2	-0.56	53.95	14.2509	-0.085	0.4161
265	SLU 72	-1.19	-0.59	53.92	14.2442	-0.0849	0.4113
265	SLU 73	-1.21	-0.59	57.15	15.0846	-0.0909	0.4192
265	SLU 74	-1.26	-0.54	58.08	15.3219	-0.0924	0.4362
265	SLU 75	-1.25	-0.57	58.05	15.3153	-0.0924	0.4314
265	SLU 76	-1.23	-0.6	57.74	15.2369	-0.0919	0.4242
265	SLU 77	-1.28	-0.55	58.67	15.4742	-0.0934	0.4411
265	SLU 78	-1.26	-0.58	58.64	15.4676	-0.0934	0.4364
265	SLU 79	-1.27	-0.56	58.39	15.4002	-0.0929	0.4371
265	SLU 80	-1.25	-0.59	58.36	15.3936	-0.0929	0.4323
265	SLU 81	-1.26	-0.54	59.1	15.5882	-0.0944	0.4361
265	SLU 82	-1.25	-0.57	59.07	15.5816	-0.0943	0.4314
265	SLU 83	-1.28	-0.55	59.69	15.7405	-0.0954	0.4411
265	SLU 84	-1.26	-0.58	59.66	15.7338	-0.0953	0.4363
265	SLE RA 1	-0.88	-0.43	39.67	10.4904	-0.0623	0.3042
265	SLE RA 2	-0.87	-0.46	39.64	10.483	-0.0623	0.2989
265	SLE RA 3	-0.9	-0.43	40.25	10.6412	-0.0633	0.3102
265	SLE RA 4	-0.89	-0.45	40.24	10.6368	-0.0633	0.307
265	SLE RA 5	-0.88	-0.46	40.03	10.5845	-0.063	0.3022
265	SLE RA 6	-0.91	-0.43	40.65	10.7427	-0.0639	0.3135
265	SLE RA 7	-0.9	-0.45	40.63	10.7383	-0.0639	0.3103
265	SLE RA 8	-0.9	-0.43	40.46	10.6934	-0.0636	0.3108
265	SLE RA 9	-0.89	-0.45	40.44	10.689	-0.0636	0.3076
265	SLE RA 10	-0.91	-0.46	42.59	11.2492	-0.0676	0.3129
265	SLE RA 11	-0.94	-0.42	43.21	11.4074	-0.0686	0.3242
265	SLE RA 12	-0.93	-0.44	43.19	11.403	-0.0686	0.321
265	SLE RA 13	-0.92	-0.46	42.99	11.3507	-0.0683	0.3162
265	SLE RA 14	-0.95	-0.43	43.61	11.509	-0.0693	0.3275
265	SLE RA 15	-0.94	-0.45	43.59	11.5045	-0.0692	0.3243
265	SLE RA 16	-0.94	-0.43	43.42	11.4596	-0.069	0.3247
265	SLE RA 17	-0.93	-0.45	43.4	11.4552	-0.0689	0.3216
265	SLE RA 18	-0.94	-0.42	43.89	11.585	-0.0699	0.3241
265	SLE RA 19	-0.93	-0.44	43.87	11.5805	-0.0699	0.321
265	SLE RA 20	-0.95	-0.43	44.29	11.6865	-0.0706	0.3274
265	SLE RA 21	-0.94	-0.45	44.27	11.6821	-0.0706	0.3243
265	SLE FR 1	-0.88	-0.43	39.67	10.4904	-0.0623	0.3042
265	SLE FR 2	-0.88	-0.43	39.66	10.4889	-0.0623	0.3031
265	SLE FR 3	-0.88	-0.43	39.83	10.531	-0.0626	0.3055
265	SLE FR 4	-0.9	-0.43	40.93	10.8173	-0.0646	0.3091
265	SLE FR 5	-0.9	-0.43	41.09	10.8594	-0.0649	0.3115
265	SLE FR 6	-0.91	-0.42	41.78	11.0377	-0.0661	0.3141
265	SLE QP 1	-0.88	-0.43	39.67	10.4904	-0.0623	0.3042
265	SLE QP 2	-0.9	-0.42	40.94	10.8187	-0.0646	0.3102
265	SLD 1	2.57	-0.24	45.77	11.8506	-0.0595	-0.9046
265	SLD 2	2.92	-0.51	45.47	11.7865	-0.0594	-1.026
265	SLD 3	2.82	-1.29	44.89	11.6464	-0.0581	-0.9907



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
265	SLD 4	3.16	-1.55	44.59	11.5822	-0.058	-1.112
265	SLD 5	-0.29	1.26	43.78	11.4496	-0.0652	0.0979
265	SLD 6	-0.06	1.09	43.58	11.4074	-0.0651	0.0182
265	SLD 7	0.53	-2.22	40.84	10.7687	-0.0606	-0.1889
265	SLD 8	0.75	-2.39	40.64	10.7265	-0.0605	-0.2687
265	SLD 9	-2.55	1.55	41.23	10.911	-0.0687	0.889
265	SLD 10	-2.32	1.37	41.03	10.8688	-0.0686	0.8092
265	SLD 11	-1.73	-1.94	38.3	10.2301	-0.0641	0.6021
265	SLD 12	-1.51	-2.11	38.1	10.1879	-0.064	0.5224
265	SLD 13	-4.96	0.7	37.29	10.0553	-0.0712	1.7323
265	SLD 14	-4.61	0.44	36.98	9.9911	-0.0711	1.611
265	SLD 15	-4.72	-0.34	36.41	9.851	-0.0698	1.6463
265	SLD 16	-4.37	-0.61	36.1	9.7868	-0.0697	1.5249
265	SLV 1	7.22	-0.04	52.23	13.2264	-0.0525	-2.5329
265	SLV 2	8.03	-0.66	51.51	13.0769	-0.0524	-2.8155
265	SLV 3	7.79	-2.4	50.23	12.7633	-0.0494	-2.7328
265	SLV 4	8.6	-3.02	49.51	12.6138	-0.0492	-3.0153
265	SLV 5	0.54	3.38	47.48	12.2692	-0.0658	-0.1908
265	SLV 6	1.06	2.98	47.01	12.1727	-0.0657	-0.3733
265	SLV 7	2.43	-4.5	40.82	10.7256	-0.0553	-0.857
265	SLV 8	2.95	-4.9	40.36	10.629	-0.0552	-1.0395
265	SLV 9	-4.75	4.05	41.52	11.0084	-0.074	1.6598
265	SLV 10	-4.23	3.65	41.05	10.9119	-0.0739	1.4773
265	SLV 11	-2.85	-3.83	34.86	9.4648	-0.0635	0.9936
265	SLV 12	-2.33	-4.23	34.4	9.3682	-0.0634	0.8111
265	SLV 13	-10.4	2.18	32.36	9.0237	-0.0799	3.6356
265	SLV 14	-9.59	1.56	31.65	8.8742	-0.0798	3.3531
265	SLV 15	-9.83	-0.19	30.36	8.5606	-0.0768	3.4358
265	SLV 16	-9.02	-0.81	29.65	8.4111	-0.0766	3.1532
265	CRTFP Ux+	0	0	0	0	0	0
265	CRTFP Ux-	0	0	0	0	0	0
265	CRTFP Uy+	0	0	0	0	0	0
265	CRTFP Uy-	0	0	0	0	0	0
266	SLU 1	-0.76	-0.51	36.37	10.7339	0.6422	0.2717
266	SLU 2	-0.74	-0.55	36.32	10.7229	0.6414	0.2654
266	SLU 3	-0.78	-0.51	37.2	10.9759	0.6569	0.2798
266	SLU 4	-0.77	-0.54	37.17	10.9694	0.6564	0.276
266	SLU 5	-0.75	-0.56	36.88	10.8857	0.6513	0.27
266	SLU 6	-0.8	-0.52	37.76	11.1387	0.6668	0.2844
266	SLU 7	-0.78	-0.54	37.73	11.1321	0.6663	0.2806
266	SLU 8	-0.78	-0.52	37.49	11.0594	0.662	0.2808
266	SLU 9	-0.77	-0.55	37.46	11.0528	0.6615	0.2771
266	SLU 10	-0.79	-0.56	40.54	11.9558	0.7152	0.2842
266	SLU 11	-0.84	-0.52	41.42	12.2088	0.7307	0.2986
266	SLU 12	-0.82	-0.55	41.39	12.2022	0.7302	0.2948
266	SLU 13	-0.81	-0.57	41.1	12.1185	0.7251	0.2888
266	SLU 14	-0.85	-0.53	41.98	12.3715	0.7406	0.3032
266	SLU 15	-0.84	-0.55	41.95	12.365	0.7401	0.2994
266	SLU 16	-0.84	-0.53	41.71	12.2922	0.7358	0.2997
266	SLU 17	-0.83	-0.56	41.68	12.2857	0.7353	0.2959
266	SLU 18	-0.84	-0.52	42.39	12.4951	0.7477	0.2986
266	SLU 19	-0.82	-0.55	42.37	12.4885	0.7472	0.2948
266	SLU 20	-0.85	-0.53	42.95	12.6578	0.7576	0.3032
266	SLU 21	-0.84	-0.55	42.93	12.6513	0.7571	0.2994
266	SLU 22	-0.86	-0.49	40.33	11.8918	0.7121	0.3051
266	SLU 23	-0.84	-0.54	40.28	11.8808	0.7112	0.2988
266	SLU 24	-0.88	-0.5	41.16	12.1338	0.7267	0.3132
266	SLU 25	-0.87	-0.52	41.13	12.1273	0.7262	0.3094
266	SLU 26	-0.85	-0.55	40.85	12.0436	0.7211	0.3034
266	SLU 27	-0.89	-0.5	41.72	12.2966	0.7366	0.3178
266	SLU 28	-0.88	-0.53	41.69	12.29	0.7361	0.314
266	SLU 29	-0.88	-0.51	41.45	12.2173	0.7318	0.3142
266	SLU 30	-0.87	-0.54	41.42	12.2108	0.7313	0.3105
266	SLU 31	-0.89	-0.55	44.5	13.1137	0.7851	0.3176
266	SLU 32	-0.93	-0.51	45.38	13.3667	0.8006	0.332
266	SLU 33	-0.92	-0.53	45.35	13.3601	0.8001	0.3282
266	SLU 34	-0.9	-0.56	45.06	13.2764	0.795	0.3222
266	SLU 35	-0.95	-0.51	45.94	13.5294	0.8105	0.3366
266	SLU 36	-0.93	-0.54	45.91	13.5229	0.81	0.3328
266	SLU 37	-0.94	-0.52	45.67	13.4501	0.8057	0.3331
266	SLU 38	-0.92	-0.55	45.64	13.4436	0.8052	0.3293
266	SLU 39	-0.93	-0.51	46.35	13.653	0.8176	0.332
266	SLU 40	-0.92	-0.53	46.33	13.6464	0.8171	0.3282
266	SLU 41	-0.95	-0.51	46.91	13.8157	0.8275	0.3365
266	SLU 42	-0.93	-0.54	46.89	13.8092	0.827	0.3328
266	SLU 43	-0.95	-0.66	45.92	13.557	0.8109	0.3418
266	SLU 44	-0.93	-0.71	45.88	13.5461	0.8101	0.3355
266	SLU 45	-0.98	-0.66	46.75	13.7991	0.8256	0.3499
266	SLU 46	-0.96	-0.69	46.73	13.7925	0.8251	0.3461
266	SLU 47	-0.95	-0.72	46.44	13.7089	0.82	0.34
266	SLU 48	-0.99	-0.67	47.31	13.9619	0.8355	0.3544
266	SLU 49	-0.98	-0.7	47.29	13.9553	0.835	0.3506
266	SLU 50	-0.98	-0.68	47.04	13.8826	0.8307	0.3509
266	SLU 51	-0.97	-0.7	47.02	13.876	0.8302	0.3471
266	SLU 52	-0.99	-0.72	50.09	14.7789	0.884	0.3543
266	SLU 53	-1.03	-0.67	50.97	15.0319	0.8995	0.3687
266	SLU 54	-1.02	-0.7	50.94	15.0254	0.8989	0.3649
266	SLU 55	-1	-0.72	50.65	14.9417	0.8938	0.3588
266	SLU 56	-1.04	-0.68	51.53	15.1947	0.9093	0.3732
266	SLU 57	-1.03	-0.71	51.5	15.1881	0.9088	0.3695





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
266	SLU 58	-1.03	-0.69	51.26	15.1154	0.9046	0.3697
266	SLU 59	-1.02	-0.71	51.23	15.1088	0.904	0.3659
266	SLU 60	-1.03	-0.67	51.95	15.3182	0.9165	0.3686
266	SLU 61	-1.02	-0.7	51.92	15.3117	0.9159	0.3649
266	SLU 62	-1.04	-0.68	52.51	15.481	0.9263	0.3732
266	SLU 63	-1.03	-0.71	52.48	15.4744	0.9258	0.3694
266	SLU 64	-1.05	-0.65	49.88	14.7149	0.8808	0.3752
266	SLU 65	-1.03	-0.7	49.84	14.704	0.88	0.3689
266	SLU 66	-1.07	-0.65	50.71	14.957	0.8955	0.3833
266	SLU 67	-1.06	-0.68	50.69	14.9504	0.8949	0.3795
266	SLU 68	-1.04	-0.7	50.4	14.8668	0.8898	0.3734
266	SLU 69	-1.09	-0.66	51.27	15.1198	0.9053	0.3878
266	SLU 70	-1.07	-0.69	51.25	15.1132	0.9048	0.384
266	SLU 71	-1.08	-0.66	51	15.0405	0.9006	0.3843
266	SLU 72	-1.06	-0.69	50.98	15.0339	0.9	0.3805
266	SLU 73	-1.08	-0.7	54.05	15.9368	0.9538	0.3877
266	SLU 74	-1.13	-0.66	54.93	16.1898	0.9693	0.4021
266	SLU 75	-1.12	-0.69	54.9	16.1833	0.9688	0.3983
266	SLU 76	-1.1	-0.71	54.61	16.0996	0.9637	0.3922
266	SLU 77	-1.14	-0.67	55.49	16.3526	0.9792	0.4066
266	SLU 78	-1.13	-0.7	55.46	16.346	0.9787	0.4029
266	SLU 79	-1.13	-0.67	55.22	16.2733	0.9744	0.4031
266	SLU 80	-1.12	-0.7	55.19	16.2668	0.9739	0.3993
266	SLU 81	-1.13	-0.66	55.91	16.4761	0.9863	0.402
266	SLU 82	-1.12	-0.69	55.88	16.4696	0.9858	0.3983
266	SLU 83	-1.14	-0.67	56.47	16.6389	0.9962	0.4066
266	SLU 84	-1.13	-0.7	56.44	16.6323	0.9957	0.4028
266	SLE RA 1	-0.79	-0.5	37.5	11.0647	0.6622	0.2813
266	SLE RA 2	-0.77	-0.53	37.47	11.0574	0.6616	0.277
266	SLE RA 3	-0.8	-0.5	38.05	11.2261	0.672	0.2866
266	SLE RA 4	-0.79	-0.52	38.04	11.2217	0.6716	0.2841
266	SLE RA 5	-0.78	-0.54	37.84	11.1659	0.6682	0.2801
266	SLE RA 6	-0.81	-0.51	38.43	11.3346	0.6785	0.2897
266	SLE RA 7	-0.8	-0.53	38.41	11.3302	0.6782	0.2872
266	SLE RA 8	-0.8	-0.51	38.25	11.2817	0.6754	0.2873
266	SLE RA 9	-0.8	-0.53	38.23	11.2773	0.675	0.2848
266	SLE RA 10	-0.81	-0.54	40.28	11.8793	0.7109	0.2896
266	SLE RA 11	-0.84	-0.51	40.87	12.048	0.7212	0.2992
266	SLE RA 12	-0.83	-0.53	40.85	12.0436	0.7209	0.2967
266	SLE RA 13	-0.82	-0.54	40.66	11.9878	0.7174	0.2926
266	SLE RA 14	-0.85	-0.52	41.24	12.1565	0.7278	0.3022
266	SLE RA 15	-0.84	-0.53	41.22	12.1521	0.7274	0.2997
266	SLE RA 16	-0.84	-0.52	41.06	12.1036	0.7246	0.2999
266	SLE RA 17	-0.83	-0.54	41.04	12.0992	0.7243	0.2974
266	SLE RA 18	-0.84	-0.51	41.52	12.2388	0.7325	0.2992
266	SLE RA 19	-0.83	-0.53	41.5	12.2344	0.7322	0.2966
266	SLE RA 20	-0.85	-0.52	41.89	12.3473	0.7391	0.3022
266	SLE RA 21	-0.84	-0.53	41.87	12.343	0.7388	0.2997
266	SLE FR 1	-0.79	-0.5	37.5	11.0647	0.6622	0.2813
266	SLE FR 2	-0.78	-0.51	37.49	11.0632	0.6621	0.2804
266	SLE FR 3	-0.79	-0.5	37.65	11.1081	0.6648	0.2825
266	SLE FR 4	-0.8	-0.51	38.7	11.4155	0.6832	0.2858
266	SLE FR 5	-0.81	-0.51	38.86	11.4603	0.6859	0.2878
266	SLE FR 6	-0.81	-0.51	39.51	11.6517	0.6974	0.2902
266	SLE QP 1	-0.79	-0.5	37.5	11.0647	0.6622	0.2813
266	SLE QP 2	-0.8	-0.5	38.71	11.4169	0.6833	0.2866
266	SLD 1	2.35	-0.35	42.94	12.5064	0.7677	-0.8151
266	SLD 2	2.67	-0.58	42.66	12.4393	0.7624	-0.9207
266	SLD 3	2.57	-1.31	42.12	12.3038	0.7525	-0.8867
266	SLD 4	2.89	-1.54	41.85	12.2367	0.7473	-0.9923
266	SLD 5	-0.25	1.05	41.27	12.0631	0.7325	0.0835
266	SLD 6	-0.04	0.9	41.08	12.019	0.729	0.0141
266	SLD 7	0.49	-2.17	38.54	11.3876	0.682	-0.1551
266	SLD 8	0.7	-2.32	38.36	11.3436	0.6786	-0.2245
266	SLD 9	-2.3	1.32	39.05	11.4903	0.688	0.7977
266	SLD 10	-2.1	1.16	38.87	11.4462	0.6845	0.7283
266	SLD 11	-1.56	-1.91	36.33	10.8149	0.6375	0.5591
266	SLD 12	-1.36	-2.06	36.14	10.7708	0.6341	0.4897
266	SLD 13	-4.49	0.54	35.57	10.5971	0.6193	1.5655
266	SLD 14	-4.18	0.3	35.29	10.53	0.614	1.46
266	SLD 15	-4.27	-0.43	34.75	10.3945	0.6042	1.4939
266	SLD 16	-3.96	-0.66	34.47	10.3274	0.5989	1.3884
266	SLV 1	6.58	-0.17	48.59	13.9593	0.8802	-2.2916
266	SLV 2	7.31	-0.71	47.94	13.803	0.8679	-2.5374
266	SLV 3	7.09	-2.36	46.74	13.5	0.8459	-2.4584
266	SLV 4	7.83	-2.9	46.09	13.3438	0.8336	-2.7043
266	SLV 5	0.5	3.01	44.59	12.9032	0.7966	-0.1912
266	SLV 6	0.98	2.66	44.18	12.8023	0.7886	-0.35
266	SLV 7	2.22	-4.29	38.42	11.3723	0.6821	-0.7475
266	SLV 8	2.7	-4.64	38	11.2714	0.6742	-0.9062
266	SLV 9	-4.3	3.63	39.41	11.5624	0.6924	1.4795
266	SLV 10	-3.83	3.28	39	11.4615	0.6844	1.3207
266	SLV 11	-2.58	-3.67	33.24	10.0316	0.578	0.9233
266	SLV 12	-2.11	-4.02	32.82	9.9307	0.57	0.7645
266	SLV 13	-9.43	1.89	31.32	9.4901	0.533	3.2775
266	SLV 14	-8.7	1.35	30.67	9.3338	0.5207	3.0317
266	SLV 15	-8.92	-0.3	29.47	9.0308	0.4986	3.1106
266	SLV 16	-8.18	-0.84	28.82	8.8746	0.4863	2.8648
266	CRTFP Ux+	0	0	0	0	0	0
266	CRTFP Ux-	0	0	0	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
266	CRTPP Uy+	0	0	0	0	0	0
266	CRTPP Uy-	0	0	0	0	0	0
268	SLU 1	-1.85	-1.51	90.2	20.6128	0.2918	0.4182
268	SLU 2	-1.8	-1.62	90.08	20.5914	0.2901	0.4072
268	SLU 3	-1.9	-1.53	92.26	21.0831	0.2991	0.4308
268	SLU 4	-1.87	-1.59	92.19	21.0703	0.2981	0.4242
268	SLU 5	-1.83	-1.65	91.48	20.908	0.2948	0.4142
268	SLU 6	-1.94	-1.55	93.65	21.3997	0.3037	0.4378
268	SLU 7	-1.91	-1.62	93.58	21.3868	0.3028	0.4312
268	SLU 8	-1.91	-1.56	92.99	21.246	0.301	0.4323
268	SLU 9	-1.88	-1.62	92.92	21.2331	0.3001	0.4257
268	SLU 10	-1.93	-1.68	100.58	22.9906	0.3172	0.4357
268	SLU 11	-2.04	-1.58	102.76	23.4822	0.3262	0.4593
268	SLU 12	-2.01	-1.65	102.69	23.4694	0.3252	0.4527
268	SLU 13	-1.96	-1.7	101.98	23.3072	0.3218	0.4427
268	SLU 14	-2.07	-1.61	104.15	23.7988	0.3308	0.4663
268	SLU 15	-2.04	-1.67	104.08	23.786	0.3298	0.4597
268	SLU 16	-2.05	-1.61	103.49	23.6451	0.3281	0.4608
268	SLU 17	-2.02	-1.68	103.42	23.6323	0.3271	0.4542
268	SLU 18	-2.04	-1.59	105.2	24.0402	0.3304	0.4589
268	SLU 19	-2.01	-1.66	105.13	24.0274	0.3294	0.4523
268	SLU 20	-2.07	-1.61	106.59	24.3568	0.335	0.4659
268	SLU 21	-2.04	-1.68	106.52	24.3439	0.3341	0.4593
268	SLU 22	-2.08	-1.52	100	22.86	0.3269	0.4707
268	SLU 23	-2.03	-1.63	99.89	22.8386	0.3253	0.4597
268	SLU 24	-2.14	-1.53	102.06	23.3303	0.3343	0.4833
268	SLU 25	-2.11	-1.6	101.99	23.3175	0.3333	0.4767
268	SLU 26	-2.07	-1.65	101.28	23.1552	0.3299	0.4667
268	SLU 27	-2.17	-1.55	103.46	23.6469	0.3389	0.4904
268	SLU 28	-2.14	-1.62	103.39	23.634	0.3379	0.4838
268	SLU 29	-2.15	-1.56	102.79	23.4932	0.3362	0.4848
268	SLU 30	-2.12	-1.63	102.72	23.4803	0.3352	0.4782
268	SLU 31	-2.17	-1.68	110.39	25.2378	0.3523	0.4882
268	SLU 32	-2.27	-1.59	112.56	25.7294	0.3613	0.5118
268	SLU 33	-2.24	-1.65	112.49	25.7166	0.3603	0.5052
268	SLU 34	-2.2	-1.7	111.78	25.5544	0.357	0.4952
268	SLU 35	-2.3	-1.61	113.96	26.046	0.3659	0.5188
268	SLU 36	-2.28	-1.68	113.89	26.0332	0.365	0.5123
268	SLU 37	-2.28	-1.62	113.29	25.8923	0.3633	0.5133
268	SLU 38	-2.25	-1.68	113.22	25.8795	0.3623	0.5067
268	SLU 39	-2.28	-1.59	115	26.2874	0.3656	0.5114
268	SLU 40	-2.25	-1.66	114.94	26.2746	0.3646	0.5048
268	SLU 41	-2.31	-1.62	116.4	26.604	0.3702	0.5184
268	SLU 42	-2.28	-1.68	116.33	26.5911	0.3692	0.5118
268	SLU 43	-2.32	-1.97	113.89	26.0262	0.3672	0.5256
268	SLU 44	-2.27	-2.08	113.78	26.0048	0.3656	0.5146
268	SLU 45	-2.38	-1.98	115.95	26.4964	0.3746	0.5382
268	SLU 46	-2.35	-2.05	115.88	26.4836	0.3736	0.5316
268	SLU 47	-2.3	-2.1	115.18	26.3214	0.3702	0.5217
268	SLU 48	-2.41	-2	117.35	26.813	0.3792	0.5453
268	SLU 49	-2.38	-2.07	117.28	26.8002	0.3782	0.5387
268	SLU 50	-2.39	-2.01	116.68	26.6593	0.3765	0.5397
268	SLU 51	-2.36	-2.08	116.61	26.6465	0.3755	0.5331
268	SLU 52	-2.41	-2.13	124.28	28.404	0.3927	0.5431
268	SLU 53	-2.51	-2.04	126.45	28.8956	0.4016	0.5667
268	SLU 54	-2.48	-2.1	126.39	28.8828	0.4006	0.5601
268	SLU 55	-2.44	-2.15	125.68	28.7206	0.3973	0.5502
268	SLU 56	-2.54	-2.06	127.85	29.2122	0.4063	0.5738
268	SLU 57	-2.51	-2.12	127.78	29.1994	0.4053	0.5672
268	SLU 58	-2.52	-2.07	127.18	29.0585	0.4036	0.5682
268	SLU 59	-2.49	-2.13	127.12	29.0457	0.4026	0.5616
268	SLU 60	-2.51	-2.04	128.89	29.4535	0.4059	0.5663
268	SLU 61	-2.49	-2.11	128.83	29.4407	0.4049	0.5597
268	SLU 62	-2.55	-2.07	130.29	29.7701	0.4105	0.5734
268	SLU 63	-2.52	-2.13	130.22	29.7573	0.4095	0.5668
268	SLU 64	-2.56	-1.97	123.7	28.2734	0.4024	0.5781
268	SLU 65	-2.51	-2.08	123.59	28.252	0.4008	0.5671
268	SLU 66	-2.61	-1.98	125.76	28.7436	0.4097	0.5907
268	SLU 67	-2.58	-2.05	125.69	28.7308	0.4087	0.5842
268	SLU 68	-2.54	-2.1	124.98	28.5686	0.4054	0.5742
268	SLU 69	-2.64	-2.01	127.15	29.0602	0.4144	0.5978
268	SLU 70	-2.61	-2.07	127.09	29.0474	0.4134	0.5912
268	SLU 71	-2.62	-2.01	126.49	28.9065	0.4117	0.5922
268	SLU 72	-2.59	-2.08	126.42	28.8937	0.4107	0.5856
268	SLU 73	-2.64	-2.13	134.09	30.6512	0.4278	0.5956
268	SLU 74	-2.75	-2.04	136.26	31.1428	0.4368	0.6192
268	SLU 75	-2.72	-2.11	136.19	31.13	0.4358	0.6126
268	SLU 76	-2.67	-2.16	135.48	30.9678	0.4324	0.6027
268	SLU 77	-2.78	-2.06	137.65	31.4594	0.4414	0.6263
268	SLU 78	-2.75	-2.13	137.59	31.4466	0.4404	0.6197
268	SLU 79	-2.75	-2.07	136.99	31.3057	0.4387	0.6207
268	SLU 80	-2.72	-2.14	136.92	31.2929	0.4377	0.6141
268	SLU 81	-2.75	-2.05	138.7	31.7007	0.441	0.6188
268	SLU 82	-2.72	-2.11	138.63	31.6879	0.4401	0.6122
268	SLU 83	-2.78	-2.07	140.09	32.0173	0.4457	0.6259
268	SLU 84	-2.75	-2.14	140.03	32.0045	0.4447	0.6193
268	SLE RA 1	-1.92	-1.51	93	21.2549	0.3018	0.4332
268	SLE RA 2	-1.88	-1.59	92.92	21.2406	0.3007	0.4258
268	SLE RA 3	-1.95	-1.52	94.37	21.5684	0.3067	0.4416
268	SLE RA 4	-1.93	-1.57	94.33	21.5598	0.306	0.4372



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
268	SLE RA 5	-1.9	-1.6	93.85	21.4517	0.3038	0.4305
268	SLE RA 6	-1.97	-1.54	95.3	21.7794	0.3098	0.4463
268	SLE RA 7	-1.95	-1.58	95.26	21.7709	0.3091	0.4419
268	SLE RA 8	-1.96	-1.54	94.86	21.677	0.308	0.4426
268	SLE RA 9	-1.94	-1.59	94.81	21.6684	0.3073	0.4382
268	SLE RA 10	-1.97	-1.62	99.92	22.8401	0.3187	0.4448
268	SLE RA 11	-2.04	-1.56	101.37	23.1678	0.3247	0.4606
268	SLE RA 12	-2.02	-1.6	101.33	23.1593	0.3241	0.4562
268	SLE RA 13	-1.99	-1.64	100.85	23.0511	0.3218	0.4495
268	SLE RA 14	-2.06	-1.58	102.3	23.3789	0.3278	0.4653
268	SLE RA 15	-2.04	-1.62	102.26	23.3703	0.3272	0.4609
268	SLE RA 16	-2.05	-1.58	101.86	23.2764	0.326	0.4616
268	SLE RA 17	-2.03	-1.63	101.81	23.2679	0.3254	0.4572
268	SLE RA 18	-2.04	-1.57	103	23.5398	0.3276	0.4603
268	SLE RA 19	-2.02	-1.61	102.95	23.5312	0.3269	0.4559
268	SLE RA 20	-2.06	-1.58	103.93	23.7508	0.3307	0.465
268	SLE RA 21	-2.04	-1.63	103.88	23.7423	0.33	0.4606
268	SLE FR 1	-1.92	-1.51	93	21.2549	0.3018	0.4332
268	SLE FR 2	-1.91	-1.53	92.98	21.252	0.3016	0.4317
268	SLE FR 3	-1.92	-1.52	93.37	21.3393	0.303	0.435
268	SLE FR 4	-1.95	-1.54	95.98	21.9375	0.3093	0.4398
268	SLE FR 5	-1.96	-1.54	96.37	22.0247	0.3108	0.4432
268	SLE FR 6	-1.98	-1.54	98	22.3973	0.3147	0.4467
268	SLE QP 1	-1.92	-1.51	93	21.2549	0.3018	0.4332
268	SLE QP 2	-1.95	-1.53	96	21.9403	0.3095	0.4413
268	SLD 1	5.57	-1.16	105.75	24.0514	0.5268	-1.3793
268	SLD 2	6.33	-1.67	105.07	23.9147	0.517	-1.5544
268	SLD 3	6.1	-3.48	103.72	23.6625	0.4944	-1.5014
268	SLD 4	6.86	-4	103.04	23.5258	0.4846	-1.6765
268	SLD 5	-0.63	2.21	102.12	23.188	0.4256	0.1116
268	SLD 6	-0.13	1.87	101.68	23.0981	0.4191	-0.0035
268	SLD 7	1.13	-5.55	95.36	21.8915	0.3176	-0.2954
268	SLD 8	1.63	-5.89	94.91	21.8017	0.3112	-0.4105
268	SLD 9	-5.54	2.84	97.09	22.079	0.3079	1.2931
268	SLD 10	-5.04	2.5	96.64	21.9892	0.3014	1.178
268	SLD 11	-3.77	-4.93	90.32	20.7825	0.1999	0.8861
268	SLD 12	-3.27	-5.26	89.87	20.6927	0.1935	0.771
268	SLD 13	-10.77	0.94	88.96	20.3549	0.1345	2.5591
268	SLD 14	-10.01	0.42	88.28	20.2182	0.1246	2.384
268	SLD 15	-10.24	-1.39	86.93	19.9659	0.1021	2.437
268	SLD 16	-9.48	-1.9	86.25	19.8292	0.0922	2.2619
268	SLV 1	15.65	-0.74	118.74	26.8665	0.8172	-3.8193
268	SLV 2	17.43	-1.95	117.15	26.5481	0.7942	-4.2271
268	SLV 3	16.88	-6.01	114.14	25.9848	0.7433	-4.1035
268	SLV 4	18.65	-7.22	112.55	25.6665	0.7203	-4.5113
268	SLV 5	1.16	6.91	110.07	24.8104	0.5779	-0.3353
268	SLV 6	2.3	6.13	109.05	24.6048	0.5631	-0.5987
268	SLV 7	5.25	-10.66	94.74	21.8716	0.3315	-1.2827
268	SLV 8	6.4	-11.44	93.71	21.666	0.3167	-1.5461
268	SLV 9	-10.3	8.38	98.28	22.2147	0.3024	2.4287
268	SLV 10	-9.16	7.6	97.26	22.0091	0.2875	2.1653
268	SLV 11	-6.21	-9.19	82.95	19.2759	0.056	1.4813
268	SLV 12	-5.07	-9.96	81.93	19.0703	0.0411	1.2179
268	SLV 13	-22.56	4.16	79.44	18.2142	-0.1012	5.3939
268	SLV 14	-20.79	2.96	77.86	17.8958	-0.1242	4.9861
268	SLV 15	-21.33	-1.11	74.84	17.3325	-0.1752	5.1097
268	SLV 16	-19.56	-2.31	73.26	17.0142	-0.1981	4.7019
268	CRTFP Ux+	0	0	0	0	0	0
268	CRTFP Ux-	0	0	0	0	0	0
268	CRTFP Uy+	0	0	0	0	0	0
268	CRTFP Uy-	0	0	0	0	0	0
270	SLU 1	-0.63	-0.66	32.62	10.4678	-0.6072	0.2065
270	SLU 2	-0.61	-0.7	32.58	10.4586	-0.6066	0.1996
270	SLU 3	-0.65	-0.66	33.36	10.7058	-0.6209	0.213
270	SLU 4	-0.64	-0.69	33.34	10.7003	-0.6206	0.2089
270	SLU 5	-0.62	-0.71	33.09	10.6185	-0.6159	0.2031
270	SLU 6	-0.66	-0.67	33.87	10.8656	-0.6303	0.2165
270	SLU 7	-0.65	-0.7	33.84	10.8601	-0.6299	0.2123
270	SLU 8	-0.65	-0.68	33.63	10.7874	-0.6258	0.2135
270	SLU 9	-0.64	-0.7	33.6	10.7819	-0.6255	0.2093
270	SLU 10	-0.66	-0.73	36.39	11.675	-0.6776	0.2143
270	SLU 11	-0.7	-0.7	37.17	11.9222	-0.6919	0.2277
270	SLU 12	-0.68	-0.72	37.15	11.9167	-0.6916	0.2236
270	SLU 13	-0.67	-0.74	36.89	11.8349	-0.6869	0.2177
270	SLU 14	-0.71	-0.71	37.67	12.082	-0.7013	0.2312
270	SLU 15	-0.7	-0.73	37.65	12.0765	-0.7009	0.227
270	SLU 16	-0.7	-0.71	37.43	12.0038	-0.6969	0.2282
270	SLU 17	-0.69	-0.73	37.41	11.9983	-0.6965	0.224
270	SLU 18	-0.7	-0.7	38.06	12.2055	-0.7086	0.2275
270	SLU 19	-0.68	-0.73	38.04	12.2	-0.7082	0.2233
270	SLU 20	-0.71	-0.71	38.56	12.3653	-0.718	0.231
270	SLU 21	-0.7	-0.74	38.54	12.3598	-0.7176	0.2268
270	SLU 22	-0.71	-0.67	36.16	11.6067	-0.6728	0.2343
270	SLU 23	-0.69	-0.71	36.12	11.5975	-0.6722	0.2273
270	SLU 24	-0.73	-0.68	36.9	11.8447	-0.6866	0.2408
270	SLU 25	-0.72	-0.7	36.88	11.8392	-0.6862	0.2366
270	SLU 26	-0.71	-0.72	36.63	11.7573	-0.6815	0.2308
270	SLU 27	-0.74	-0.69	37.41	12.0045	-0.6959	0.2443
270	SLU 28	-0.73	-0.71	37.38	11.999	-0.6955	0.2401
270	SLU 29	-0.73	-0.69	37.17	11.9263	-0.6915	0.2413



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
270	SLU 30	-0.72	-0.71	37.14	11.9208	-0.6911	0.2371
270	SLU 31	-0.74	-0.74	39.93	12.8139	-0.7432	0.242
270	SLU 32	-0.78	-0.71	40.71	13.0611	-0.7576	0.2555
270	SLU 33	-0.77	-0.73	40.69	13.0556	-0.7572	0.2513
270	SLU 34	-0.75	-0.75	40.43	12.9737	-0.7525	0.2455
270	SLU 35	-0.79	-0.72	41.21	13.2209	-0.7669	0.259
270	SLU 36	-0.78	-0.74	41.19	13.2154	-0.7665	0.2548
270	SLU 37	-0.78	-0.72	40.97	13.1427	-0.7625	0.256
270	SLU 38	-0.77	-0.74	40.95	13.1372	-0.7621	0.2518
270	SLU 39	-0.78	-0.71	41.6	13.3444	-0.7742	0.2553
270	SLU 40	-0.77	-0.74	41.58	13.3389	-0.7739	0.2511
270	SLU 41	-0.79	-0.72	42.1	13.5042	-0.7836	0.2588
270	SLU 42	-0.78	-0.75	42.08	13.4987	-0.7832	0.2546
270	SLU 43	-0.79	-0.85	41.19	13.2176	-0.7668	0.259
270	SLU 44	-0.78	-0.89	41.16	13.2085	-0.7662	0.252
270	SLU 45	-0.81	-0.86	41.93	13.4556	-0.7806	0.2655
270	SLU 46	-0.8	-0.88	41.91	13.4502	-0.7802	0.2613
270	SLU 47	-0.79	-0.9	41.66	13.3683	-0.7756	0.2555
270	SLU 48	-0.82	-0.87	42.44	13.6154	-0.7899	0.269
270	SLU 49	-0.81	-0.89	42.42	13.61	-0.7896	0.2648
270	SLU 50	-0.81	-0.87	42.2	13.5373	-0.7855	0.266
270	SLU 51	-0.8	-0.89	42.18	13.5318	-0.7851	0.2618
270	SLU 52	-0.82	-0.92	44.96	14.4249	-0.8372	0.2667
270	SLU 53	-0.86	-0.89	45.74	14.672	-0.8516	0.2802
270	SLU 54	-0.85	-0.91	45.72	14.6665	-0.8512	0.276
270	SLU 55	-0.83	-0.93	45.47	14.5847	-0.8466	0.2702
270	SLU 56	-0.87	-0.9	46.24	14.8318	-0.8609	0.2837
270	SLU 57	-0.86	-0.92	46.22	14.8264	-0.8606	0.2795
270	SLU 58	-0.86	-0.9	46	14.7537	-0.8565	0.2806
270	SLU 59	-0.85	-0.93	45.98	14.7482	-0.8561	0.2765
270	SLU 60	-0.86	-0.9	46.63	14.9553	-0.8683	0.28
270	SLU 61	-0.85	-0.92	46.61	14.9499	-0.8679	0.2758
270	SLU 62	-0.87	-0.91	47.13	15.1151	-0.8776	0.2835
270	SLU 63	-0.86	-0.93	47.11	15.1097	-0.8772	0.2793
270	SLU 64	-0.87	-0.86	44.73	14.3565	-0.8325	0.2868
270	SLU 65	-0.86	-0.9	44.7	14.3474	-0.8318	0.2798
270	SLU 66	-0.89	-0.87	45.48	14.5945	-0.8462	0.2933
270	SLU 67	-0.88	-0.89	45.45	14.589	-0.8458	0.2891
270	SLU 68	-0.87	-0.91	45.2	14.5072	-0.8412	0.2833
270	SLU 69	-0.9	-0.88	45.98	14.7543	-0.8555	0.2968
270	SLU 70	-0.89	-0.9	45.96	14.7489	-0.8552	0.2926
270	SLU 71	-0.9	-0.88	45.74	14.6762	-0.8511	0.2937
270	SLU 72	-0.88	-0.91	45.72	14.6707	-0.8508	0.2896
270	SLU 73	-0.9	-0.93	48.5	15.5638	-0.9028	0.2945
270	SLU 74	-0.94	-0.9	49.28	15.8109	-0.9172	0.308
270	SLU 75	-0.93	-0.93	49.26	15.8054	-0.9168	0.3038
270	SLU 76	-0.91	-0.94	49.01	15.7236	-0.9122	0.298
270	SLU 77	-0.95	-0.91	49.79	15.9707	-0.9266	0.3114
270	SLU 78	-0.94	-0.94	49.76	15.9653	-0.9262	0.3073
270	SLU 79	-0.94	-0.91	49.55	15.8925	-0.9221	0.3084
270	SLU 80	-0.93	-0.94	49.52	15.8871	-0.9218	0.3042
270	SLU 81	-0.94	-0.91	50.17	16.0942	-0.9339	0.3077
270	SLU 82	-0.93	-0.93	50.15	16.0887	-0.9335	0.3036
270	SLU 83	-0.95	-0.92	50.67	16.254	-0.9432	0.3112
270	SLU 84	-0.94	-0.94	50.65	16.2486	-0.9429	0.307
270	SLE RA 1	-0.65	-0.66	33.63	10.7932	-0.6259	0.2145
270	SLE RA 2	-0.64	-0.69	33.61	10.7871	-0.6255	0.2098
270	SLE RA 3	-0.67	-0.67	34.13	10.9518	-0.6351	0.2188
270	SLE RA 4	-0.66	-0.68	34.11	10.9482	-0.6349	0.216
270	SLE RA 5	-0.65	-0.69	33.94	10.8936	-0.6317	0.2122
270	SLE RA 6	-0.67	-0.67	34.46	11.0584	-0.6413	0.2211
270	SLE RA 7	-0.67	-0.69	34.45	11.0547	-0.6411	0.2183
270	SLE RA 8	-0.67	-0.67	34.3	11.0063	-0.6384	0.2191
270	SLE RA 9	-0.66	-0.69	34.29	11.0026	-0.6381	0.2163
270	SLE RA 10	-0.67	-0.71	36.15	11.598	-0.6729	0.2196
270	SLE RA 11	-0.7	-0.69	36.66	11.7628	-0.6824	0.2286
270	SLE RA 12	-0.69	-0.7	36.65	11.7591	-0.6822	0.2258
270	SLE RA 13	-0.68	-0.71	36.48	11.7046	-0.6791	0.2219
270	SLE RA 14	-0.7	-0.69	37	11.8693	-0.6887	0.2309
270	SLE RA 15	-0.7	-0.71	36.99	11.8657	-0.6884	0.2281
270	SLE RA 16	-0.7	-0.7	36.84	11.8172	-0.6857	0.2289
270	SLE RA 17	-0.69	-0.71	36.83	11.8135	-0.6855	0.2261
270	SLE RA 18	-0.7	-0.69	37.26	11.9516	-0.6936	0.2285
270	SLE RA 19	-0.69	-0.71	37.24	11.948	-0.6933	0.2257
270	SLE RA 20	-0.7	-0.7	37.59	12.0582	-0.6998	0.2308
270	SLE RA 21	-0.7	-0.71	37.58	12.0545	-0.6995	0.228
270	SLE FR 1	-0.65	-0.66	33.63	10.7932	-0.6259	0.2145
270	SLE FR 2	-0.65	-0.67	33.63	10.792	-0.6258	0.2135
270	SLE FR 3	-0.66	-0.66	33.77	10.8358	-0.6284	0.2154
270	SLE FR 4	-0.67	-0.67	34.71	11.1395	-0.6461	0.2177
270	SLE FR 5	-0.67	-0.67	34.85	11.1833	-0.6487	0.2196
270	SLE FR 6	-0.68	-0.68	35.44	11.3724	-0.6597	0.2215
270	SLE QP 1	-0.65	-0.66	33.63	10.7932	-0.6259	0.2145
270	SLE QP 2	-0.67	-0.67	34.72	11.1407	-0.6462	0.2187
270	SLD 1	2.08	-0.55	37.88	12.0969	-0.6974	-0.7447
270	SLD 2	2.35	-0.73	37.65	12.0322	-0.6936	-0.8435
270	SLD 3	2.27	-1.4	37.22	11.9345	-0.6863	-0.8206
270	SLD 4	2.55	-1.57	37	11.8698	-0.6826	-0.9194
270	SLD 5	-0.18	0.69	36.7	11.6855	-0.679	0.0624
270	SLD 6	0	0.57	36.55	11.643	-0.6765	-0.0025



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
270	SLD 7	0.46	-2.15	34.52	11.144	-0.6422	-0.1906
270	SLD 8	0.64	-2.26	34.37	11.1015	-0.6397	-0.2555
270	SLD 9	-1.97	0.92	35.07	11.1799	-0.6528	0.6928
270	SLD 10	-1.79	0.81	34.92	11.1374	-0.6503	0.6279
270	SLD 11	-1.33	-1.91	32.89	10.6385	-0.6159	0.4398
270	SLD 12	-1.15	-2.03	32.74	10.596	-0.6134	0.3749
270	SLD 13	-3.88	0.24	32.44	10.4116	-0.6099	1.3567
270	SLD 14	-3.61	0.06	32.22	10.347	-0.6061	1.2579
270	SLD 15	-3.69	-0.61	31.78	10.2492	-0.5988	1.2808
270	SLD 16	-3.42	-0.79	31.56	10.1845	-0.595	1.182
270	SLV 1	5.76	-0.42	42.08	13.3725	-0.7656	-2.0365
270	SLV 2	6.4	-0.83	41.56	13.222	-0.7568	-2.2665
270	SLV 3	6.21	-2.34	40.6	13.004	-0.7405	-2.212
270	SLV 4	6.85	-2.75	40.08	12.8534	-0.7317	-2.442
270	SLV 5	0.47	2.39	39.27	12.3952	-0.7216	-0.1519
270	SLV 6	0.88	2.13	38.93	12.298	-0.7159	-0.3005
270	SLV 7	1.97	-4.02	34.32	11.1668	-0.638	-0.737
270	SLV 8	2.38	-4.28	33.99	11.0695	-0.6323	-0.8855
270	SLV 9	-3.71	2.94	35.45	11.2119	-0.6601	1.3229
270	SLV 10	-3.3	2.68	35.11	11.1146	-0.6544	1.1743
270	SLV 11	-2.22	-3.47	30.51	9.9834	-0.5766	0.7378
270	SLV 12	-1.81	-3.73	30.17	9.8862	-0.5709	0.5893
270	SLV 13	-8.18	1.41	29.36	9.428	-0.5607	2.8794
270	SLV 14	-7.55	1	28.84	9.2774	-0.5519	2.6494
270	SLV 15	-7.73	-0.51	27.87	9.0595	-0.5357	2.7039
270	SLV 16	-7.1	-0.92	27.36	8.9089	-0.5269	2.4739
270	CRTFP Ux+	0	0	0	0	0	0
270	CRTFP Ux-	0	0	0	0	0	0
270	CRTFP Uy+	0	0	0	0	0	0
270	CRTFP Uy-	0	0	0	0	0	0
271	SLU 1	-0.69	-0.83	36.22	11.5172	0.0105	0.2403
271	SLU 2	-0.67	-0.88	36.18	11.5081	0.0104	0.2333
271	SLU 3	-0.72	-0.84	37.04	11.778	0.0108	0.2476
271	SLU 4	-0.7	-0.87	37.02	11.7724	0.0108	0.2434
271	SLU 5	-0.69	-0.89	36.74	11.6833	0.0106	0.2373
271	SLU 6	-0.73	-0.86	37.6	11.9532	0.011	0.2516
271	SLU 7	-0.72	-0.88	37.58	11.9477	0.011	0.2474
271	SLU 8	-0.72	-0.86	37.34	11.8678	0.0109	0.2483
271	SLU 9	-0.71	-0.88	37.31	11.8623	0.0108	0.2441
271	SLU 10	-0.72	-0.92	40.42	12.8449	0.0115	0.25
271	SLU 11	-0.76	-0.89	41.28	13.1148	0.012	0.2643
271	SLU 12	-0.75	-0.92	41.25	13.1093	0.0119	0.2601
271	SLU 13	-0.73	-0.94	40.97	13.0202	0.0117	0.254
271	SLU 14	-0.78	-0.9	41.83	13.2901	0.0122	0.2683
271	SLU 15	-0.76	-0.93	41.81	13.2846	0.0121	0.2641
271	SLU 16	-0.77	-0.91	41.57	13.2047	0.012	0.265
271	SLU 17	-0.75	-0.93	41.55	13.1991	0.0119	0.2609
271	SLU 18	-0.76	-0.9	42.27	13.4271	0.0121	0.2642
271	SLU 19	-0.75	-0.93	42.25	13.4216	0.012	0.26
271	SLU 20	-0.78	-0.91	42.83	13.6023	0.0123	0.2682
271	SLU 21	-0.76	-0.94	42.8	13.5968	0.0122	0.264
271	SLU 22	-0.78	-0.86	40.14	12.7653	0.0122	0.271
271	SLU 23	-0.76	-0.9	40.1	12.7561	0.0121	0.264
271	SLU 24	-0.8	-0.87	40.96	13.026	0.0125	0.2783
271	SLU 25	-0.79	-0.89	40.94	13.0205	0.0125	0.2741
271	SLU 26	-0.77	-0.91	40.66	12.9314	0.0123	0.2681
271	SLU 27	-0.82	-0.88	41.52	13.2013	0.0128	0.2823
271	SLU 28	-0.8	-0.91	41.49	13.1957	0.0127	0.2781
271	SLU 29	-0.81	-0.88	41.25	13.1158	0.0126	0.2791
271	SLU 30	-0.79	-0.91	41.23	13.1103	0.0125	0.2749
271	SLU 31	-0.81	-0.95	44.33	14.093	0.0132	0.2808
271	SLU 32	-0.85	-0.91	45.19	14.3629	0.0137	0.295
271	SLU 33	-0.84	-0.94	45.17	14.3574	0.0136	0.2909
271	SLU 34	-0.82	-0.96	44.89	14.2682	0.0134	0.2848
271	SLU 35	-0.86	-0.93	45.75	14.5381	0.0139	0.2991
271	SLU 36	-0.85	-0.95	45.73	14.5326	0.0138	0.2949
271	SLU 37	-0.85	-0.93	45.48	14.4527	0.0137	0.2958
271	SLU 38	-0.84	-0.95	45.46	14.4472	0.0137	0.2916
271	SLU 39	-0.85	-0.92	46.18	14.6751	0.0138	0.2949
271	SLU 40	-0.84	-0.95	46.16	14.6696	0.0137	0.2907
271	SLU 41	-0.86	-0.94	46.74	14.8504	0.014	0.299
271	SLU 42	-0.85	-0.96	46.72	14.8449	0.0139	0.2948
271	SLU 43	-0.87	-1.07	45.75	14.5445	0.013	0.3018
271	SLU 44	-0.85	-1.12	45.71	14.5353	0.0129	0.2948
271	SLU 45	-0.89	-1.09	46.57	14.8052	0.0134	0.3091
271	SLU 46	-0.88	-1.11	46.55	14.7997	0.0133	0.3049
271	SLU 47	-0.86	-1.13	46.27	14.7106	0.0131	0.2988
271	SLU 48	-0.91	-1.1	47.12	14.9805	0.0136	0.3131
271	SLU 49	-0.89	-1.12	47.1	14.975	0.0135	0.3089
271	SLU 50	-0.9	-1.1	46.86	14.895	0.0134	0.3098
271	SLU 51	-0.88	-1.13	46.84	14.8895	0.0134	0.3057
271	SLU 52	-0.9	-1.17	49.94	15.8722	0.014	0.3115
271	SLU 53	-0.94	-1.13	50.8	16.1421	0.0145	0.3258
271	SLU 54	-0.93	-1.16	50.78	16.1366	0.0145	0.3216
271	SLU 55	-0.91	-1.18	50.5	16.0475	0.0143	0.3156
271	SLU 56	-0.95	-1.15	51.36	16.3174	0.0147	0.3298
271	SLU 57	-0.94	-1.17	51.33	16.3119	0.0147	0.3257
271	SLU 58	-0.94	-1.15	51.09	16.2319	0.0146	0.3266
271	SLU 59	-0.93	-1.17	51.07	16.2264	0.0145	0.3224
271	SLU 60	-0.94	-1.14	51.79	16.4544	0.0146	0.3257



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
271	SLU 61	-0.93	-1.17	51.77	16.4488	0.0146	0.3215
271	SLU 62	-0.95	-1.15	52.35	16.6296	0.0148	0.3297
271	SLU 63	-0.94	-1.18	52.33	16.6241	0.0148	0.3255
271	SLU 64	-0.96	-1.1	49.66	15.7926	0.0147	0.3326
271	SLU 65	-0.94	-1.14	49.62	15.7834	0.0146	0.3256
271	SLU 66	-0.98	-1.11	50.48	16.0533	0.0151	0.3398
271	SLU 67	-0.97	-1.13	50.46	16.0478	0.015	0.3357
271	SLU 68	-0.95	-1.15	50.18	15.9586	0.0148	0.3296
271	SLU 69	-0.99	-1.12	51.04	16.2285	0.0153	0.3439
271	SLU 70	-0.98	-1.15	51.02	16.223	0.0152	0.3397
271	SLU 71	-0.98	-1.12	50.78	16.1431	0.0152	0.3406
271	SLU 72	-0.97	-1.15	50.75	16.1376	0.0151	0.3364
271	SLU 73	-0.99	-1.19	53.86	17.1203	0.0158	0.3423
271	SLU 74	-1.03	-1.16	54.72	17.3902	0.0162	0.3566
271	SLU 75	-1.02	-1.18	54.69	17.3846	0.0162	0.3524
271	SLU 76	-1	-1.2	54.41	17.2955	0.016	0.3463
271	SLU 77	-1.04	-1.17	55.27	17.5654	0.0164	0.3606
271	SLU 78	-1.03	-1.19	55.25	17.5599	0.0164	0.3564
271	SLU 79	-1.03	-1.17	55.01	17.48	0.0163	0.3573
271	SLU 80	-1.02	-1.2	54.99	17.4745	0.0162	0.3532
271	SLU 81	-1.03	-1.16	55.71	17.7024	0.0163	0.3565
271	SLU 82	-1.02	-1.19	55.69	17.6969	0.0163	0.3523
271	SLU 83	-1.04	-1.18	56.27	17.8777	0.0165	0.3605
271	SLU 84	-1.03	-1.2	56.24	17.8721	0.0165	0.3563
271	SLE RA 1	-0.72	-0.84	37.34	11.8738	0.011	0.2491
271	SLE RA 2	-0.71	-0.87	37.32	11.8677	0.0109	0.2444
271	SLE RA 3	-0.73	-0.85	37.89	12.0476	0.0112	0.2539
271	SLE RA 4	-0.73	-0.86	37.87	12.044	0.0112	0.2511
271	SLE RA 5	-0.71	-0.88	37.69	11.9845	0.011	0.2471
271	SLE RA 6	-0.74	-0.86	38.26	12.1645	0.0113	0.2566
271	SLE RA 7	-0.73	-0.87	38.24	12.1608	0.0113	0.2538
271	SLE RA 8	-0.74	-0.86	38.08	12.1075	0.0112	0.2544
271	SLE RA 9	-0.73	-0.87	38.07	12.1038	0.0112	0.2516
271	SLE RA 10	-0.74	-0.9	40.14	12.759	0.0116	0.2556
271	SLE RA 11	-0.77	-0.88	40.71	12.9389	0.012	0.2651
271	SLE RA 12	-0.76	-0.9	40.7	12.9352	0.0119	0.2623
271	SLE RA 13	-0.75	-0.91	40.51	12.8758	0.0118	0.2582
271	SLE RA 14	-0.77	-0.89	41.08	13.0557	0.0121	0.2678
271	SLE RA 15	-0.77	-0.9	41.07	13.0521	0.012	0.265
271	SLE RA 16	-0.77	-0.89	40.91	12.9988	0.012	0.2656
271	SLE RA 17	-0.76	-0.9	40.89	12.9951	0.0119	0.2628
271	SLE RA 18	-0.77	-0.88	41.37	13.1471	0.012	0.265
271	SLE RA 19	-0.76	-0.9	41.36	13.1434	0.012	0.2622
271	SLE RA 20	-0.77	-0.89	41.74	13.2639	0.0122	0.2677
271	SLE RA 21	-0.77	-0.91	41.73	13.2602	0.0121	0.2649
271	SLE FR 1	-0.72	-0.84	37.34	11.8738	0.011	0.2491
271	SLE FR 2	-0.72	-0.84	37.34	11.8726	0.0109	0.2481
271	SLE FR 3	-0.72	-0.84	37.49	11.9206	0.011	0.2501
271	SLE FR 4	-0.73	-0.86	38.55	12.2546	0.0113	0.2529
271	SLE FR 5	-0.74	-0.86	38.7	12.3025	0.0113	0.2549
271	SLE FR 6	-0.74	-0.86	39.36	12.5104	0.0115	0.257
271	SLE QP 1	-0.72	-0.84	37.34	11.8738	0.011	0.2491
271	SLE QP 2	-0.73	-0.85	38.55	12.2558	0.0113	0.2538
271	SLD 1	2.34	-0.76	41.7	13.2002	0.0237	-0.8232
271	SLD 2	2.65	-0.95	41.47	13.1314	0.0231	-0.93
271	SLD 3	2.56	-1.71	41.03	13.0407	0.0217	-0.8987
271	SLD 4	2.86	-1.9	40.8	12.9719	0.0211	-1.0055
271	SLD 5	-0.19	0.65	40.56	12.7933	0.0181	0.0643
271	SLD 6	0.01	0.53	40.41	12.748	0.0177	-0.0059
271	SLD 7	0.53	-2.52	38.31	12.2617	0.0115	-0.1873
271	SLD 8	0.73	-2.64	38.16	12.2165	0.0111	-0.2575
271	SLD 9	-2.19	0.94	38.94	12.2951	0.0115	0.7652
271	SLD 10	-1.99	0.81	38.79	12.2499	0.011	0.695
271	SLD 11	-1.48	-2.23	36.69	11.7635	0.0048	0.5135
271	SLD 12	-1.27	-2.36	36.54	11.7183	0.0044	0.4434
271	SLD 13	-4.33	0.19	36.3	11.5397	0.0015	1.5131
271	SLD 14	-4.02	0	36.07	11.4708	0.0008	1.4063
271	SLD 15	-4.11	-0.76	35.63	11.3802	-0.0005	1.4376
271	SLD 16	-3.81	-0.95	35.4	11.3114	-0.0012	1.3308
271	SLV 1	6.46	-0.67	45.9	14.4602	0.0403	-2.2668
271	SLV 2	7.17	-1.11	45.36	14.2999	0.0388	-2.5155
271	SLV 3	6.96	-2.82	44.37	14.0981	0.0358	-2.4422
271	SLV 4	7.67	-3.26	43.84	13.9378	0.0343	-2.6909
271	SLV 5	0.54	2.54	43.16	13.4941	0.0271	-0.1934
271	SLV 6	1	2.25	42.82	13.3905	0.0262	-0.354
271	SLV 7	2.21	-4.63	38.07	12.287	0.012	-0.778
271	SLV 8	2.67	-4.91	37.73	12.1834	0.011	-0.9386
271	SLV 9	-4.14	3.21	39.37	12.3282	0.0115	1.4463
271	SLV 10	-3.68	2.92	39.03	12.2246	0.0105	1.2856
271	SLV 11	-2.47	-3.96	34.28	11.121	-0.0036	0.8617
271	SLV 12	-2.01	-4.25	33.94	11.0175	-0.0046	0.701
271	SLV 13	-9.14	1.55	33.26	10.5738	-0.0117	3.1986
271	SLV 14	-8.43	1.11	32.73	10.4135	-0.0132	2.9499
271	SLV 15	-8.64	-0.6	31.74	10.2117	-0.0163	3.0232
271	SLV 16	-7.93	-1.04	31.2	10.0513	-0.0178	2.7745
271	CRTFP Ux+	0	0	0	0	0	0
271	CRTFP Ux-	0	0	0	0	0	0
271	CRTFP Uy+	0	0	0	0	0	0
271	CRTFP Uy-	0	0	0	0	0	0
272	SLU 1	-0.58	-0.76	30.19	9.5729	0.8542	0.2234



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
272	SLU 2	-0.56	-0.8	30.17	9.5661	0.8534	0.2185
272	SLU 3	-0.6	-0.77	30.88	9.7887	0.8736	0.2298
272	SLU 4	-0.59	-0.79	30.86	9.7846	0.8731	0.2269
272	SLU 5	-0.57	-0.81	30.63	9.7114	0.8665	0.2222
272	SLU 6	-0.61	-0.78	31.34	9.9339	0.8867	0.2335
272	SLU 7	-0.6	-0.81	31.32	9.9298	0.8862	0.2306
272	SLU 8	-0.6	-0.78	31.12	9.8635	0.8805	0.2308
272	SLU 9	-0.59	-0.81	31.1	9.8594	0.88	0.2279
272	SLU 10	-0.6	-0.84	33.7	10.6776	0.9532	0.234
272	SLU 11	-0.64	-0.82	34.41	10.9001	0.9734	0.2453
272	SLU 12	-0.63	-0.84	34.39	10.896	0.9729	0.2423
272	SLU 13	-0.61	-0.86	34.16	10.8229	0.9663	0.2377
272	SLU 14	-0.65	-0.83	34.87	11.0454	0.9865	0.249
272	SLU 15	-0.64	-0.85	34.85	11.0413	0.986	0.246
272	SLU 16	-0.64	-0.83	34.65	10.975	0.9803	0.2463
272	SLU 17	-0.63	-0.85	34.63	10.9709	0.9798	0.2434
272	SLU 18	-0.64	-0.83	35.24	11.1608	0.9969	0.2455
272	SLU 19	-0.63	-0.85	35.22	11.1567	0.9963	0.2426
272	SLU 20	-0.65	-0.84	35.7	11.306	1.01	0.2492
272	SLU 21	-0.64	-0.86	35.68	11.302	1.0095	0.2463
272	SLU 22	-0.65	-0.78	33.44	10.606	0.9465	0.2498
272	SLU 23	-0.64	-0.82	33.41	10.5993	0.9457	0.245
272	SLU 24	-0.67	-0.8	34.12	10.8218	0.9659	0.2562
272	SLU 25	-0.66	-0.82	34.11	10.8177	0.9653	0.2533
272	SLU 26	-0.65	-0.83	33.88	10.7445	0.9588	0.2487
272	SLU 27	-0.68	-0.81	34.59	10.967	0.979	0.2599
272	SLU 28	-0.67	-0.83	34.57	10.963	0.9785	0.257
272	SLU 29	-0.67	-0.81	34.37	10.8966	0.9728	0.2572
272	SLU 30	-0.66	-0.83	34.35	10.8925	0.9723	0.2543
272	SLU 31	-0.68	-0.87	36.94	11.7107	1.0455	0.2604
272	SLU 32	-0.71	-0.84	37.65	11.9332	1.0657	0.2717
272	SLU 33	-0.7	-0.86	37.64	11.9292	1.0652	0.2688
272	SLU 34	-0.69	-0.88	37.41	11.856	1.0586	0.2641
272	SLU 35	-0.72	-0.85	38.12	12.0785	1.0788	0.2754
272	SLU 36	-0.71	-0.88	38.1	12.0744	1.0783	0.2725
272	SLU 37	-0.71	-0.85	37.9	12.0081	1.0726	0.2727
272	SLU 38	-0.7	-0.88	37.88	12.004	1.0721	0.2698
272	SLU 39	-0.71	-0.85	38.49	12.1939	1.0891	0.2719
272	SLU 40	-0.7	-0.87	38.47	12.1898	1.0886	0.269
272	SLU 41	-0.72	-0.86	38.95	12.3391	1.1023	0.2756
272	SLU 42	-0.71	-0.88	38.93	12.3351	1.1017	0.2727
272	SLU 43	-0.73	-0.98	38.14	12.0906	1.0789	0.2814
272	SLU 44	-0.71	-1.02	38.11	12.0838	1.078	0.2765
272	SLU 45	-0.75	-0.99	38.82	12.3063	1.0982	0.2878
272	SLU 46	-0.74	-1.01	38.8	12.3022	1.0977	0.2848
272	SLU 47	-0.72	-1.03	38.57	12.2291	1.0911	0.2802
272	SLU 48	-0.76	-1	39.28	12.4516	1.1113	0.2915
272	SLU 49	-0.75	-1.03	39.27	12.4475	1.1108	0.2885
272	SLU 50	-0.75	-1	39.07	12.3812	1.1051	0.2888
272	SLU 51	-0.74	-1.03	39.05	12.3771	1.1046	0.2858
272	SLU 52	-0.75	-1.06	41.64	13.1953	1.1778	0.292
272	SLU 53	-0.79	-1.04	42.35	13.4178	1.198	0.3032
272	SLU 54	-0.78	-1.06	42.33	13.4137	1.1975	0.3003
272	SLU 55	-0.76	-1.08	42.1	13.3406	1.191	0.2957
272	SLU 56	-0.8	-1.05	42.81	13.5631	1.2112	0.3069
272	SLU 57	-0.79	-1.07	42.8	13.559	1.2107	0.304
272	SLU 58	-0.79	-1.05	42.6	13.4926	1.205	0.3042
272	SLU 59	-0.78	-1.07	42.58	13.4886	1.2044	0.3013
272	SLU 60	-0.79	-1.05	43.18	13.6784	1.2215	0.3035
272	SLU 61	-0.78	-1.07	43.17	13.6744	1.221	0.3005
272	SLU 62	-0.8	-1.06	43.65	13.8237	1.2346	0.3072
272	SLU 63	-0.79	-1.08	43.63	13.8196	1.2341	0.3042
272	SLU 64	-0.8	-1	41.39	13.1237	1.1712	0.3078
272	SLU 65	-0.79	-1.04	41.36	13.1169	1.1703	0.3029
272	SLU 66	-0.82	-1.02	42.07	13.3394	1.1905	0.3142
272	SLU 67	-0.81	-1.04	42.05	13.3354	1.19	0.3113
272	SLU 68	-0.8	-1.05	41.82	13.2622	1.1834	0.3066
272	SLU 69	-0.83	-1.03	42.53	13.4847	1.2036	0.3179
272	SLU 70	-0.82	-1.05	42.51	13.4806	1.2031	0.315
272	SLU 71	-0.82	-1.03	42.31	13.4143	1.1974	0.3152
272	SLU 72	-0.81	-1.05	42.3	13.4102	1.1969	0.3123
272	SLU 73	-0.83	-1.09	44.89	14.2284	1.2701	0.3184
272	SLU 74	-0.86	-1.06	45.6	14.4509	1.2903	0.3297
272	SLU 75	-0.85	-1.08	45.58	14.4468	1.2898	0.3267
272	SLU 76	-0.84	-1.1	45.35	14.3737	1.2832	0.3221
272	SLU 77	-0.87	-1.07	46.06	14.5962	1.3035	0.3334
272	SLU 78	-0.86	-1.1	46.04	14.5921	1.3029	0.3304
272	SLU 79	-0.86	-1.07	45.84	14.5257	1.2972	0.3307
272	SLU 80	-0.85	-1.1	45.83	14.5217	1.2967	0.3277
272	SLU 81	-0.86	-1.07	46.43	14.7115	1.3138	0.3299
272	SLU 82	-0.85	-1.09	46.41	14.7075	1.3132	0.327
272	SLU 83	-0.87	-1.08	46.89	14.8568	1.3269	0.3336
272	SLU 84	-0.86	-1.1	46.88	14.8527	1.3264	0.3307
272	SLE RA 1	-0.6	-0.77	31.12	9.8681	0.8806	0.231
272	SLE RA 2	-0.59	-0.79	31.1	9.8636	0.88	0.2277
272	SLE RA 3	-0.61	-0.77	31.58	10.0119	0.8935	0.2352
272	SLE RA 4	-0.61	-0.79	31.57	10.0092	0.8932	0.2333
272	SLE RA 5	-0.6	-0.8	31.41	9.9604	0.8888	0.2302
272	SLE RA 6	-0.62	-0.78	31.89	10.1088	0.9023	0.2377
272	SLE RA 7	-0.61	-0.8	31.87	10.1061	0.9019	0.2357



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
272	SLE RA 8	-0.61	-0.78	31.74	10.0618	0.8981	0.2359
272	SLE RA 9	-0.61	-0.8	31.73	10.0591	0.8978	0.2339
272	SLE RA 10	-0.62	-0.82	33.46	10.6046	0.9466	0.238
272	SLE RA 11	-0.64	-0.81	33.93	10.7529	0.9601	0.2455
272	SLE RA 12	-0.63	-0.82	33.92	10.7502	0.9597	0.2436
272	SLE RA 13	-0.62	-0.83	33.77	10.7014	0.9553	0.2405
272	SLE RA 14	-0.65	-0.81	34.24	10.8498	0.9688	0.248
272	SLE RA 15	-0.64	-0.83	34.23	10.847	0.9685	0.246
272	SLE RA 16	-0.64	-0.81	34.09	10.8028	0.9647	0.2462
272	SLE RA 17	-0.63	-0.83	34.08	10.8001	0.9643	0.2443
272	SLE RA 18	-0.64	-0.81	34.48	10.9267	0.9757	0.2457
272	SLE RA 19	-0.63	-0.83	34.47	10.9239	0.9753	0.2437
272	SLE RA 20	-0.65	-0.82	34.79	11.0235	0.9844	0.2482
272	SLE RA 21	-0.64	-0.83	34.78	11.0208	0.9841	0.2462
272	SLE FR 1	-0.6	-0.77	31.12	9.8681	0.8806	0.231
272	SLE FR 2	-0.6	-0.77	31.12	9.8672	0.8805	0.2303
272	SLE FR 3	-0.6	-0.77	31.25	9.9069	0.8841	0.232
272	SLE FR 4	-0.61	-0.79	32.13	10.1848	0.909	0.2347
272	SLE FR 5	-0.62	-0.78	32.26	10.2244	0.9126	0.2364
272	SLE FR 6	-0.62	-0.79	32.8	10.3974	0.9281	0.2383
272	SLE QP 1	-0.6	-0.77	31.12	9.8681	0.8806	0.231
272	SLE QP 2	-0.61	-0.78	32.13	10.1857	0.9091	0.2354
272	SLD 1	1.99	-0.73	34.45	10.8687	0.9818	-0.7261
272	SLD 2	2.24	-0.89	34.28	10.8144	0.9765	-0.812
272	SLD 3	2.17	-1.54	33.93	10.7536	0.9662	-0.6688
272	SLD 4	2.43	-1.69	33.76	10.6993	0.9609	-0.7547
272	SLD 5	-0.16	0.48	33.65	10.5749	0.9555	-0.1246
272	SLD 6	0.01	0.38	33.53	10.5392	0.952	-0.1811
272	SLD 7	0.45	-2.2	31.92	10.1912	0.9036	0.0664
272	SLD 8	0.62	-2.3	31.8	10.1555	0.9001	0.0099
272	SLD 9	-1.85	0.74	32.46	10.2159	0.9182	0.4609
272	SLD 10	-1.68	0.64	32.35	10.1802	0.9147	0.4044
272	SLD 11	-1.24	-1.94	30.73	9.8322	0.8662	0.6518
272	SLD 12	-1.07	-2.04	30.62	9.7965	0.8627	0.5954
272	SLD 13	-3.65	0.13	30.5	9.6721	0.8574	1.2255
272	SLD 14	-3.39	-0.03	30.33	9.6178	0.8521	1.1396
272	SLD 15	-3.47	-0.67	29.99	9.5569	0.8418	1.2828
272	SLD 16	-3.21	-0.83	29.81	9.5027	0.8365	1.1969
272	SLV 1	5.47	-0.7	37.55	11.78	1.0786	-2.0141
272	SLV 2	6.07	-1.06	37.14	11.6536	1.0662	-2.2141
272	SLV 3	5.89	-2.52	36.37	11.5183	1.0433	-1.8805
272	SLV 4	6.49	-2.88	35.96	11.3919	1.0309	-2.0805
272	SLV 5	0.47	2.07	35.61	11.0828	1.0157	-0.6076
272	SLV 6	0.86	1.83	35.35	11.0012	1.0077	-0.7368
272	SLV 7	1.88	-4	31.69	10.2104	0.8979	-0.162
272	SLV 8	2.26	-4.24	31.43	10.1287	0.8899	-0.2912
272	SLV 9	-3.49	2.68	32.84	10.2426	0.9283	0.762
272	SLV 10	-3.1	2.44	32.57	10.161	0.9203	0.6328
272	SLV 11	-2.08	-3.4	28.92	9.3702	0.8106	1.2076
272	SLV 12	-1.69	-3.63	28.65	9.2886	0.8026	1.0784
272	SLV 13	-7.72	1.32	28.3	8.9795	0.7874	2.5512
272	SLV 14	-7.12	0.96	27.89	8.8531	0.775	2.3512
272	SLV 15	-7.3	-0.5	27.13	8.7178	0.7521	2.6849
272	SLV 16	-6.7	-0.87	26.72	8.5913	0.7397	2.4849
272	CRTFP Ux+	0	0	0	0	0	0
272	CRTFP Ux-	0	0	0	0	0	0
272	CRTFP Uy+	0	0	0	0	0	0
272	CRTFP Uy-	0	0	0	0	0	0
273	SLU 1	-0.84	-1.12	43.41	13.3228	1.031	0.3075
273	SLU 2	-0.82	-1.18	43.37	13.3149	1.0299	0.3005
273	SLU 3	-0.87	-1.14	44.38	13.622	1.0543	0.3163
273	SLU 4	-0.85	-1.17	44.36	13.6173	1.0537	0.3121
273	SLU 5	-0.83	-1.19	44.03	13.517	1.0458	0.3056
273	SLU 6	-0.88	-1.16	45.05	13.8241	1.0701	0.3214
273	SLU 7	-0.87	-1.19	45.02	13.8194	1.0695	0.3172
273	SLU 8	-0.87	-1.16	44.74	13.727	1.0626	0.3177
273	SLU 9	-0.85	-1.19	44.71	13.7222	1.062	0.3135
273	SLU 10	-0.88	-1.25	48.45	14.868	1.1504	0.322
273	SLU 11	-0.93	-1.21	49.46	15.1752	1.1748	0.3378
273	SLU 12	-0.91	-1.24	49.44	15.1704	1.1742	0.3336
273	SLU 13	-0.89	-1.26	49.11	15.0701	1.1663	0.327
273	SLU 14	-0.94	-1.23	50.12	15.3773	1.1906	0.3428
273	SLU 15	-0.92	-1.26	50.1	15.3725	1.19	0.3386
273	SLU 16	-0.93	-1.23	49.81	15.2802	1.1831	0.3391
273	SLU 17	-0.91	-1.26	49.79	15.2754	1.1825	0.3349
273	SLU 18	-0.93	-1.22	50.66	15.5416	1.2031	0.3382
273	SLU 19	-0.91	-1.26	50.64	15.5368	1.2025	0.334
273	SLU 20	-0.94	-1.24	51.33	15.7437	1.2189	0.3433
273	SLU 21	-0.93	-1.27	51.3	15.7389	1.2183	0.3391
273	SLU 22	-0.95	-1.16	48.05	14.7562	1.1423	0.3441
273	SLU 23	-0.92	-1.21	48.01	14.7483	1.1413	0.3371
273	SLU 24	-0.97	-1.17	49.02	15.0555	1.1657	0.3529
273	SLU 25	-0.96	-1.2	49	15.0507	1.165	0.3487
273	SLU 26	-0.94	-1.23	48.67	14.9504	1.1571	0.3421
273	SLU 27	-0.99	-1.19	49.69	15.2576	1.1815	0.3579
273	SLU 28	-0.97	-1.22	49.66	15.2528	1.1809	0.3537
273	SLU 29	-0.98	-1.19	49.38	15.1604	1.174	0.3542
273	SLU 30	-0.96	-1.22	49.35	15.1557	1.1734	0.35
273	SLU 31	-0.98	-1.28	53.09	16.3014	1.2618	0.3585
273	SLU 32	-1.03	-1.24	54.1	16.6086	1.2861	0.3743





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
273	SLU 33	-1.02	-1.27	54.08	16.6038	1.2855	0.3701
273	SLU 34	-1	-1.3	53.75	16.5035	1.2776	0.3636
273	SLU 35	-1.05	-1.26	54.76	16.8107	1.302	0.3794
273	SLU 36	-1.03	-1.29	54.74	16.8059	1.3014	0.3752
273	SLU 37	-1.03	-1.26	54.45	16.7136	1.2945	0.3757
273	SLU 38	-1.02	-1.29	54.43	16.7088	1.2939	0.3715
273	SLU 39	-1.03	-1.26	55.3	16.975	1.3145	0.3747
273	SLU 40	-1.02	-1.29	55.28	16.9703	1.3138	0.3705
273	SLU 41	-1.05	-1.27	55.97	17.1771	1.3303	0.3798
273	SLU 42	-1.03	-1.3	55.94	17.1724	1.3297	0.3756
273	SLU 43	-1.06	-1.45	54.84	16.8282	1.3021	0.3872
273	SLU 44	-1.03	-1.5	54.8	16.8203	1.3011	0.3802
273	SLU 45	-1.08	-1.46	55.81	17.1274	1.3254	0.396
273	SLU 46	-1.07	-1.5	55.79	17.1227	1.3248	0.3918
273	SLU 47	-1.05	-1.52	55.47	17.0224	1.3169	0.3853
273	SLU 48	-1.1	-1.48	56.48	17.3295	1.3412	0.4011
273	SLU 49	-1.08	-1.51	56.45	17.3248	1.3406	0.3969
273	SLU 50	-1.09	-1.48	56.17	17.2324	1.3338	0.3974
273	SLU 51	-1.07	-1.52	56.14	17.2276	1.3331	0.3932
273	SLU 52	-1.09	-1.57	59.88	18.3734	1.4215	0.4017
273	SLU 53	-1.14	-1.53	60.89	18.6806	1.4459	0.4175
273	SLU 54	-1.13	-1.57	60.87	18.6758	1.4453	0.4133
273	SLU 55	-1.11	-1.59	60.54	18.5755	1.4374	0.4068
273	SLU 56	-1.16	-1.55	61.56	18.8827	1.4617	0.4226
273	SLU 57	-1.14	-1.58	61.53	18.8779	1.4611	0.4184
273	SLU 58	-1.14	-1.55	61.25	18.7855	1.4542	0.4189
273	SLU 59	-1.13	-1.59	61.22	18.7808	1.4536	0.4146
273	SLU 60	-1.14	-1.55	62.1	19.047	1.4742	0.4179
273	SLU 61	-1.13	-1.58	62.07	19.0422	1.4736	0.4137
273	SLU 62	-1.16	-1.57	62.76	19.2491	1.49	0.423
273	SLU 63	-1.14	-1.6	62.74	19.2443	1.4894	0.4188
273	SLU 64	-1.16	-1.48	59.48	18.2616	1.4134	0.4238
273	SLU 65	-1.14	-1.53	59.44	18.2537	1.4124	0.4168
273	SLU 66	-1.19	-1.5	60.45	18.5609	1.4368	0.4326
273	SLU 67	-1.17	-1.53	60.43	18.5561	1.4361	0.4284
273	SLU 68	-1.15	-1.55	60.11	18.4558	1.4283	0.4219
273	SLU 69	-1.2	-1.51	61.12	18.763	1.4526	0.4377
273	SLU 70	-1.19	-1.55	61.09	18.7582	1.452	0.4334
273	SLU 71	-1.19	-1.52	60.81	18.6658	1.4451	0.4339
273	SLU 72	-1.18	-1.55	60.78	18.6611	1.4445	0.4297
273	SLU 73	-1.2	-1.6	64.52	19.8068	1.5329	0.4383
273	SLU 74	-1.25	-1.57	65.53	20.114	1.5572	0.4541
273	SLU 75	-1.23	-1.6	65.51	20.1092	1.5566	0.4498
273	SLU 76	-1.21	-1.62	65.18	20.0089	1.5487	0.4433
273	SLU 77	-1.26	-1.58	66.2	20.3161	1.5731	0.4591
273	SLU 78	-1.25	-1.62	66.17	20.3113	1.5725	0.4549
273	SLU 79	-1.25	-1.59	65.89	20.219	1.5656	0.4554
273	SLU 80	-1.24	-1.62	65.86	20.2142	1.565	0.4512
273	SLU 81	-1.25	-1.58	66.74	20.4804	1.5856	0.4545
273	SLU 82	-1.23	-1.61	66.71	20.4756	1.5849	0.4503
273	SLU 83	-1.26	-1.6	67.4	20.6825	1.6014	0.4595
273	SLU 84	-1.25	-1.63	67.38	20.6777	1.6008	0.4553
273	SLE RA 1	-0.87	-1.13	44.73	13.7324	1.0628	0.318
273	SLE RA 2	-0.86	-1.17	44.71	13.7271	1.0621	0.3133
273	SLE RA 3	-0.89	-1.14	45.38	13.9319	1.0783	0.3238
273	SLE RA 4	-0.88	-1.16	45.37	13.9287	1.0779	0.321
273	SLE RA 5	-0.86	-1.18	45.15	13.8618	1.0727	0.3167
273	SLE RA 6	-0.9	-1.15	45.83	14.0666	1.0889	0.3272
273	SLE RA 7	-0.89	-1.18	45.81	14.0634	1.0885	0.3244
273	SLE RA 8	-0.89	-1.16	45.62	14.0018	1.0839	0.3247
273	SLE RA 9	-0.88	-1.18	45.6	13.9987	1.0835	0.3219
273	SLE RA 10	-0.89	-1.21	48.09	14.7625	1.1424	0.3276
273	SLE RA 11	-0.93	-1.19	48.77	14.9673	1.1587	0.3381
273	SLE RA 12	-0.92	-1.21	48.75	14.9641	1.1582	0.3353
273	SLE RA 13	-0.9	-1.23	48.54	14.8972	1.153	0.331
273	SLE RA 14	-0.94	-1.2	49.21	15.102	1.1692	0.3415
273	SLE RA 15	-0.93	-1.22	49.2	15.0988	1.1688	0.3387
273	SLE RA 16	-0.93	-1.2	49	15.0373	1.1642	0.339
273	SLE RA 17	-0.92	-1.22	48.99	15.0341	1.1638	0.3362
273	SLE RA 18	-0.93	-1.2	49.57	15.2115	1.1775	0.3384
273	SLE RA 19	-0.92	-1.22	49.56	15.2084	1.1771	0.3356
273	SLE RA 20	-0.94	-1.21	50.01	15.3463	1.1881	0.3418
273	SLE RA 21	-0.93	-1.23	50	15.3431	1.1877	0.339
273	SLE FR 1	-0.87	-1.13	44.73	13.7324	1.0628	0.318
273	SLE FR 2	-0.87	-1.14	44.73	13.7313	1.0626	0.317
273	SLE FR 3	-0.88	-1.14	44.91	13.7863	1.067	0.3193
273	SLE FR 4	-0.89	-1.16	46.18	14.1751	1.0971	0.3232
273	SLE FR 5	-0.89	-1.16	46.36	14.23	1.1014	0.3255
273	SLE FR 6	-0.9	-1.17	47.15	14.472	1.1202	0.3282
273	SLE QP 1	-0.87	-1.13	44.73	13.7324	1.0628	0.318
273	SLE QP 2	-0.89	-1.15	46.19	14.1761	1.0972	0.3241
273	SLD 1	2.92	-1.1	49.05	14.9507	1.1839	-0.9391
273	SLD 2	3.3	-1.32	48.83	14.8818	1.1775	-1.0597
273	SLD 3	3.19	-2.28	48.35	14.8198	1.1655	-1.0196
273	SLD 4	3.57	-2.51	48.13	14.7509	1.1592	-1.1402
273	SLD 5	-0.22	0.7	48.15	14.6194	1.1522	0.0887
273	SLD 6	0.03	0.56	48	14.5741	1.148	0.0095
273	SLD 7	0.67	-3.25	45.81	14.183	1.091	-0.1795
273	SLD 8	0.92	-3.4	45.66	14.1377	1.0868	-0.2588
273	SLD 9	-2.7	1.09	46.71	14.2146	1.1076	0.907



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
273	SLD 10	-2.45	0.95	46.56	14.1693	1.1034	0.8277
273	SLD 11	-1.81	-2.86	44.37	13.7782	1.0464	0.6387
273	SLD 12	-1.56	-3.01	44.22	13.7329	1.0423	0.5594
273	SLD 13	-5.35	0.2	44.25	13.6013	1.0352	1.7884
273	SLD 14	-4.97	-0.02	44.02	13.5324	1.0289	1.6677
273	SLD 15	-5.08	-0.99	43.55	13.4704	1.0169	1.7079
273	SLD 16	-4.7	-1.21	43.32	13.4015	1.0106	1.5873
273	SLV 1	8.03	-1.07	52.87	15.9844	1.2993	-2.6318
273	SLV 2	8.92	-1.59	52.34	15.824	1.2845	-2.9128
273	SLV 3	8.65	-3.75	51.29	15.6859	1.2577	-2.8196
273	SLV 4	9.54	-4.27	50.75	15.5255	1.2429	-3.1005
273	SLV 5	0.7	3.04	50.69	15.1991	1.2235	-0.2294
273	SLV 6	1.27	2.7	50.35	15.0955	1.214	-0.4108
273	SLV 7	2.76	-5.92	45.4	14.2041	1.0848	-0.8551
273	SLV 8	3.33	-6.25	45.05	14.1004	1.0753	-1.0366
273	SLV 9	-5.11	3.95	47.32	14.2518	1.1192	1.6848
273	SLV 10	-4.54	3.61	46.97	14.1482	1.1096	1.5033
273	SLV 11	-3.04	-5.01	42.02	13.2568	0.9804	1.059
273	SLV 12	-2.47	-5.34	41.68	13.1531	0.9709	0.8776
273	SLV 13	-11.31	1.97	41.62	12.8268	0.9515	3.7487
273	SLV 14	-10.43	1.45	41.09	12.6663	0.9367	3.4678
273	SLV 15	-10.69	-0.72	40.03	12.5283	0.9099	3.561
273	SLV 16	-9.81	-1.24	39.5	12.3678	0.8951	3.28
273	CRTFP Ux+	0	0	0	0	0	0
273	CRTFP Ux-	0	0	0	0	0	0
273	CRTFP Uy+	0	0	0	0	0	0
273	CRTFP Uy-	0	0	0	0	0	0
274	SLU 1	-0.47	-0.61	23.98	6.4054	-0.5454	0.1239
274	SLU 2	-0.45	-0.64	23.96	6.4021	-0.545	0.1192
274	SLU 3	-0.48	-0.62	24.52	6.5485	-0.5576	0.1279
274	SLU 4	-0.47	-0.63	24.51	6.5465	-0.5573	0.125
274	SLU 5	-0.46	-0.65	24.33	6.499	-0.5533	0.1213
274	SLU 6	-0.49	-0.63	24.89	6.6454	-0.5659	0.1299
274	SLU 7	-0.48	-0.64	24.87	6.6434	-0.5656	0.1271
274	SLU 8	-0.48	-0.63	24.72	6.5992	-0.562	0.1281
274	SLU 9	-0.47	-0.65	24.7	6.5972	-0.5618	0.1252
274	SLU 10	-0.49	-0.68	26.77	7.1495	-0.6088	0.1281
274	SLU 11	-0.51	-0.65	27.33	7.296	-0.6214	0.1368
274	SLU 12	-0.5	-0.67	27.32	7.294	-0.6212	0.1339
274	SLU 13	-0.49	-0.69	27.14	7.2464	-0.6171	0.1302
274	SLU 14	-0.52	-0.66	27.69	7.3929	-0.6297	0.1388
274	SLU 15	-0.51	-0.68	27.68	7.3909	-0.6295	0.136
274	SLU 16	-0.51	-0.67	27.52	7.3466	-0.6259	0.137
274	SLU 17	-0.51	-0.68	27.51	7.3447	-0.6256	0.1341
274	SLU 18	-0.51	-0.66	28	7.4732	-0.6366	0.1367
274	SLU 19	-0.5	-0.68	27.98	7.4712	-0.6364	0.1338
274	SLU 20	-0.52	-0.67	28.36	7.5701	-0.6449	0.1387
274	SLU 21	-0.51	-0.69	28.35	7.5681	-0.6447	0.1359
274	SLU 22	-0.52	-0.62	26.53	7.0907	-0.6033	0.141
274	SLU 23	-0.51	-0.65	26.51	7.0874	-0.6028	0.1363
274	SLU 24	-0.54	-0.63	27.07	7.2338	-0.6154	0.145
274	SLU 25	-0.53	-0.65	27.06	7.2318	-0.6152	0.1421
274	SLU 26	-0.52	-0.66	26.88	7.1843	-0.6112	0.1384
274	SLU 27	-0.55	-0.64	27.43	7.3307	-0.6237	0.147
274	SLU 28	-0.54	-0.66	27.42	7.3287	-0.6235	0.1442
274	SLU 29	-0.54	-0.64	27.26	7.2845	-0.6199	0.1452
274	SLU 30	-0.53	-0.66	27.25	7.2825	-0.6196	0.1423
274	SLU 31	-0.54	-0.69	29.32	7.8348	-0.6667	0.1452
274	SLU 32	-0.57	-0.67	29.88	7.9813	-0.6793	0.1539
274	SLU 33	-0.56	-0.69	29.86	7.9793	-0.679	0.151
274	SLU 34	-0.55	-0.7	29.69	7.9317	-0.675	0.1473
274	SLU 35	-0.58	-0.68	30.24	8.0782	-0.6876	0.156
274	SLU 36	-0.57	-0.7	30.23	8.0762	-0.6873	0.1531
274	SLU 37	-0.57	-0.68	30.07	8.0319	-0.6837	0.1541
274	SLU 38	-0.56	-0.7	30.06	8.0299	-0.6835	0.1513
274	SLU 39	-0.57	-0.68	30.54	8.1585	-0.6945	0.1538
274	SLU 40	-0.56	-0.69	30.53	8.1565	-0.6942	0.1509
274	SLU 41	-0.58	-0.69	30.91	8.2554	-0.7028	0.1558
274	SLU 42	-0.57	-0.7	30.9	8.2534	-0.7025	0.153
274	SLU 43	-0.59	-0.79	30.31	8.0921	-0.6892	0.1552
274	SLU 44	-0.57	-0.82	30.29	8.0888	-0.6888	0.1505
274	SLU 45	-0.6	-0.79	30.84	8.2352	-0.7014	0.1592
274	SLU 46	-0.59	-0.81	30.83	8.2332	-0.7011	0.1563
274	SLU 47	-0.58	-0.83	30.65	8.1857	-0.6971	0.1526
274	SLU 48	-0.61	-0.8	31.21	8.3321	-0.7097	0.1612
274	SLU 49	-0.6	-0.82	31.19	8.3301	-0.7094	0.1584
274	SLU 50	-0.6	-0.81	31.04	8.2859	-0.7058	0.1594
274	SLU 51	-0.59	-0.82	31.03	8.2839	-0.7056	0.1565
274	SLU 52	-0.6	-0.85	33.09	8.8362	-0.7526	0.1594
274	SLU 53	-0.63	-0.83	33.65	8.9827	-0.7652	0.1681
274	SLU 54	-0.62	-0.85	33.64	8.9807	-0.765	0.1652
274	SLU 55	-0.61	-0.86	33.46	8.9331	-0.7609	0.1615
274	SLU 56	-0.64	-0.84	34.02	9.0796	-0.7735	0.1702
274	SLU 57	-0.63	-0.86	34	9.0776	-0.7733	0.1673
274	SLU 58	-0.63	-0.84	33.85	9.0333	-0.7697	0.1683
274	SLU 59	-0.63	-0.86	33.83	9.0313	-0.7694	0.1655
274	SLU 60	-0.63	-0.84	34.32	9.1599	-0.7804	0.168
274	SLU 61	-0.62	-0.86	34.31	9.1579	-0.7802	0.1651
274	SLU 62	-0.64	-0.85	34.68	9.2568	-0.7887	0.17
274	SLU 63	-0.63	-0.87	34.67	9.2548	-0.7885	0.1672



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
274	SLU 64	-0.64	-0.8	32.85	8.7774	-0.7471	0.1723
274	SLU 65	-0.63	-0.83	32.83	8.774	-0.7466	0.1676
274	SLU 66	-0.66	-0.81	33.39	8.9205	-0.7592	0.1763
274	SLU 67	-0.65	-0.83	33.38	8.9185	-0.759	0.1734
274	SLU 68	-0.64	-0.84	33.2	8.8709	-0.7549	0.1697
274	SLU 69	-0.67	-0.82	33.76	9.0174	-0.7675	0.1783
274	SLU 70	-0.66	-0.84	33.74	9.0154	-0.7673	0.1755
274	SLU 71	-0.66	-0.82	33.59	8.9711	-0.7637	0.1765
274	SLU 72	-0.65	-0.84	33.57	8.9691	-0.7634	0.1736
274	SLU 73	-0.66	-0.87	35.64	9.5215	-0.8105	0.1765
274	SLU 74	-0.69	-0.85	36.2	9.6679	-0.8231	0.1852
274	SLU 75	-0.68	-0.86	36.19	9.6659	-0.8228	0.1824
274	SLU 76	-0.67	-0.88	36.01	9.6184	-0.8188	0.1786
274	SLU 77	-0.7	-0.86	36.56	9.7648	-0.8314	0.1873
274	SLU 78	-0.69	-0.87	36.55	9.7628	-0.8311	0.1844
274	SLU 79	-0.69	-0.86	36.39	9.7186	-0.8275	0.1854
274	SLU 80	-0.68	-0.87	36.38	9.7166	-0.8273	0.1826
274	SLU 81	-0.69	-0.85	36.87	9.8452	-0.8383	0.1851
274	SLU 82	-0.68	-0.87	36.85	9.8432	-0.838	0.1823
274	SLU 83	-0.7	-0.86	37.23	9.942	-0.8466	0.1872
274	SLU 84	-0.69	-0.88	37.22	9.94	-0.8463	0.1843
274	SLE RA 1	-0.48	-0.61	24.71	6.6012	-0.5619	0.1288
274	SLE RA 2	-0.47	-0.63	24.7	6.599	-0.5617	0.1257
274	SLE RA 3	-0.49	-0.62	25.07	6.6966	-0.5701	0.1314
274	SLE RA 4	-0.49	-0.63	25.06	6.6953	-0.5699	0.1295
274	SLE RA 5	-0.48	-0.64	24.94	6.6636	-0.5672	0.127
274	SLE RA 6	-0.5	-0.62	25.31	6.7612	-0.5756	0.1328
274	SLE RA 7	-0.49	-0.64	25.31	6.7599	-0.5754	0.1309
274	SLE RA 8	-0.49	-0.63	25.2	6.7304	-0.573	0.1316
274	SLE RA 9	-0.49	-0.64	25.19	6.7291	-0.5729	0.1297
274	SLE RA 10	-0.5	-0.66	26.57	7.0973	-0.6042	0.1316
274	SLE RA 11	-0.51	-0.64	26.94	7.1949	-0.6126	0.1374
274	SLE RA 12	-0.51	-0.66	26.93	7.1936	-0.6124	0.1355
274	SLE RA 13	-0.5	-0.66	26.81	7.1619	-0.6098	0.133
274	SLE RA 14	-0.52	-0.65	27.19	7.2595	-0.6182	0.1388
274	SLE RA 15	-0.51	-0.66	27.18	7.2582	-0.618	0.1369
274	SLE RA 16	-0.52	-0.65	27.07	7.2287	-0.6156	0.1375
274	SLE RA 17	-0.51	-0.66	27.06	7.2274	-0.6154	0.1356
274	SLE RA 18	-0.51	-0.65	27.39	7.3131	-0.6228	0.1373
274	SLE RA 19	-0.51	-0.66	27.38	7.3117	-0.6226	0.1354
274	SLE RA 20	-0.52	-0.66	27.63	7.3777	-0.6283	0.1387
274	SLE RA 21	-0.51	-0.67	27.62	7.3763	-0.6281	0.1368
274	SLE FR 1	-0.48	-0.61	24.71	6.6012	-0.5619	0.1288
274	SLE FR 2	-0.48	-0.62	24.71	6.6008	-0.5619	0.1282
274	SLE FR 3	-0.48	-0.62	24.81	6.627	-0.5642	0.1294
274	SLE FR 4	-0.49	-0.63	25.51	6.8143	-0.5801	0.1307
274	SLE FR 5	-0.49	-0.63	25.61	6.8406	-0.5824	0.1319
274	SLE FR 6	-0.5	-0.63	26.05	6.9571	-0.5924	0.1331
274	SLE QP 1	-0.48	-0.61	24.71	6.6012	-0.5619	0.1288
274	SLE QP 2	-0.49	-0.62	25.51	6.8148	-0.5802	0.1314
274	SLD 1	1.65	-0.59	26.89	7.1189	-0.6088	-0.4932
274	SLD 2	1.86	-0.71	26.78	7.0891	-0.6062	-0.5577
274	SLD 3	1.8	-1.26	26.51	7.0641	-0.6008	-0.5456
274	SLD 4	2.01	-1.38	26.4	7.0343	-0.5982	-0.6101
274	SLD 5	-0.11	0.42	26.53	6.9943	-0.6014	0.0349
274	SLD 6	0.03	0.35	26.45	6.9748	-0.5997	-0.0074
274	SLD 7	0.38	-1.81	25.26	6.8118	-0.5747	-0.1397
274	SLD 8	0.52	-1.89	25.18	6.7923	-0.573	-0.182
274	SLD 9	-1.51	0.64	25.85	6.8372	-0.5874	0.4447
274	SLD 10	-1.37	0.56	25.77	6.8177	-0.5857	0.4024
274	SLD 11	-1.01	-1.59	24.58	6.6547	-0.5607	0.2702
274	SLD 12	-0.87	-1.67	24.5	6.6352	-0.559	0.2278
274	SLD 13	-2.99	0.13	24.63	6.5952	-0.5622	0.8728
274	SLD 14	-2.78	0.01	24.52	6.5654	-0.5596	0.8083
274	SLD 15	-2.84	-0.54	24.25	6.5404	-0.5542	0.8204
274	SLD 16	-2.63	-0.66	24.13	6.5107	-0.5516	0.756
274	SLV 1	4.51	-0.57	28.73	7.5247	-0.6468	-1.331
274	SLV 2	5.01	-0.84	28.46	7.4553	-0.6408	-1.4811
274	SLV 3	4.86	-2.08	27.87	7.3995	-0.6286	-1.4518
274	SLV 4	5.36	-2.36	27.59	7.3302	-0.6227	-1.602
274	SLV 5	0.4	1.74	27.84	7.2296	-0.6287	-0.0981
274	SLV 6	0.72	1.56	27.66	7.1848	-0.6249	-0.1951
274	SLV 7	1.55	-3.31	24.96	6.8124	-0.5682	-0.5009
274	SLV 8	1.87	-3.49	24.78	6.7676	-0.5644	-0.5979
274	SLV 9	-2.86	2.25	26.25	6.862	-0.596	0.8606
274	SLV 10	-2.54	2.07	26.07	6.8172	-0.5922	0.7636
274	SLV 11	-1.7	-2.81	23.37	6.4448	-0.5355	0.4578
274	SLV 12	-1.38	-2.99	23.19	6.4	-0.5317	0.3608
274	SLV 13	-6.34	1.11	23.43	6.2993	-0.5377	1.8647
274	SLV 14	-5.85	0.84	23.16	6.23	-0.5318	1.7146
274	SLV 15	-6	-0.4	22.57	6.1742	-0.5195	1.7438
274	SLV 16	-5.5	-0.68	22.3	6.1048	-0.5136	1.5937
274	CRTFP Ux+	0	0	0	0	0	0
274	CRTFP Ux-	0	0	0	0	0	0
274	CRTFP Uy+	0	0	0	0	0	0
274	CRTFP Uy-	0	0	0	0	0	0
275	SLU 1	-0.69	-0.84	34.45	9.7346	-0.8588	0.1946
275	SLU 2	-0.67	-0.88	34.43	9.73	-0.8581	0.1873
275	SLU 3	-0.71	-0.85	35.22	9.9513	-0.8778	0.2008
275	SLU 4	-0.69	-0.87	35.2	9.9486	-0.8774	0.1964



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
275	SLU 5	-0.68	-0.89	34.95	9.877	-0.8712	0.1905
275	SLU 6	-0.72	-0.86	35.75	10.0983	-0.8909	0.204
275	SLU 7	-0.71	-0.89	35.73	10.0955	-0.8905	0.1996
275	SLU 8	-0.71	-0.86	35.5	10.0285	-0.8849	0.2011
275	SLU 9	-0.7	-0.89	35.49	10.0257	-0.8845	0.1967
275	SLU 10	-0.71	-0.93	38.46	10.8672	-0.9589	0.2015
275	SLU 11	-0.76	-0.9	39.26	11.0885	-0.9786	0.215
275	SLU 12	-0.74	-0.92	39.24	11.0857	-0.9782	0.2106
275	SLU 13	-0.73	-0.94	38.99	11.0142	-0.9719	0.2048
275	SLU 14	-0.77	-0.91	39.78	11.2354	-0.9916	0.2183
275	SLU 15	-0.75	-0.93	39.77	11.2327	-0.9912	0.2138
275	SLU 16	-0.76	-0.91	39.54	11.1657	-0.9856	0.2153
275	SLU 17	-0.75	-0.94	39.52	11.1629	-0.9852	0.2109
275	SLU 18	-0.76	-0.91	40.22	11.3592	-1.0027	0.215
275	SLU 19	-0.74	-0.93	40.2	11.3564	-1.0023	0.2106
275	SLU 20	-0.77	-0.92	40.75	11.5061	-1.0157	0.2182
275	SLU 21	-0.76	-0.95	40.73	11.5033	-1.0154	0.2138
275	SLU 22	-0.77	-0.85	38.1	10.7708	-0.9492	0.2215
275	SLU 23	-0.75	-0.89	38.07	10.7662	-0.9486	0.2142
275	SLU 24	-0.79	-0.86	38.87	10.9875	-0.9682	0.2277
275	SLU 25	-0.78	-0.88	38.85	10.9847	-0.9679	0.2232
275	SLU 26	-0.76	-0.9	38.6	10.9131	-0.9616	0.2174
275	SLU 27	-0.8	-0.87	39.39	11.1344	-0.9813	0.2309
275	SLU 28	-0.79	-0.9	39.37	11.1317	-0.9809	0.2265
275	SLU 29	-0.8	-0.87	39.15	11.0647	-0.9753	0.228
275	SLU 30	-0.78	-0.9	39.13	11.0619	-0.9749	0.2236
275	SLU 31	-0.8	-0.94	42.11	11.9034	-1.0493	0.2284
275	SLU 32	-0.84	-0.91	42.9	12.1247	-1.069	0.2419
275	SLU 33	-0.83	-0.93	42.89	12.1219	-1.0686	0.2375
275	SLU 34	-0.81	-0.95	42.63	12.0503	-1.0624	0.2316
275	SLU 35	-0.85	-0.92	43.43	12.2716	-1.082	0.2451
275	SLU 36	-0.84	-0.95	43.41	12.2688	-1.0817	0.2407
275	SLU 37	-0.84	-0.92	43.19	12.2018	-1.076	0.2422
275	SLU 38	-0.83	-0.95	43.17	12.1991	-1.0757	0.2378
275	SLU 39	-0.84	-0.92	43.87	12.3953	-1.0931	0.2418
275	SLU 40	-0.83	-0.94	43.85	12.3926	-1.0927	0.2374
275	SLU 41	-0.85	-0.93	44.39	12.5423	-1.1062	0.2451
275	SLU 42	-0.84	-0.96	44.37	12.5395	-1.1058	0.2407
275	SLU 43	-0.86	-1.08	43.54	12.2998	-1.0854	0.2438
275	SLU 44	-0.84	-1.13	43.51	12.2952	-1.0848	0.2365
275	SLU 45	-0.88	-1.09	44.31	12.5165	-1.1045	0.25
275	SLU 46	-0.87	-1.12	44.29	12.5137	-1.1041	0.2456
275	SLU 47	-0.85	-1.14	44.04	12.4421	-1.0978	0.2397
275	SLU 48	-0.89	-1.11	44.83	12.6634	-1.1175	0.2532
275	SLU 49	-0.88	-1.13	44.82	12.6606	-1.1171	0.2488
275	SLU 50	-0.89	-1.11	44.59	12.5936	-1.1115	0.2503
275	SLU 51	-0.87	-1.14	44.57	12.5909	-1.1111	0.2459
275	SLU 52	-0.89	-1.18	47.55	13.4324	-1.1855	0.2507
275	SLU 53	-0.93	-1.14	48.34	13.6536	-1.2052	0.2642
275	SLU 54	-0.92	-1.17	48.33	13.6509	-1.2048	0.2598
275	SLU 55	-0.9	-1.19	48.07	13.5793	-1.1986	0.2539
275	SLU 56	-0.94	-1.16	48.87	13.8006	-1.2182	0.2674
275	SLU 57	-0.93	-1.18	48.85	13.7978	-1.2179	0.263
275	SLU 58	-0.93	-1.16	48.63	13.7308	-1.2122	0.2645
275	SLU 59	-0.92	-1.18	48.61	13.7281	-1.2119	0.2601
275	SLU 60	-0.93	-1.15	49.31	13.9243	-1.2293	0.2642
275	SLU 61	-0.92	-1.18	49.29	13.9216	-1.2289	0.2597
275	SLU 62	-0.94	-1.17	49.83	14.0712	-1.2424	0.2674
275	SLU 63	-0.93	-1.19	49.82	14.0685	-1.242	0.263
275	SLU 64	-0.95	-1.1	47.19	13.3359	-1.1758	0.2707
275	SLU 65	-0.93	-1.14	47.16	13.3313	-1.1752	0.2633
275	SLU 66	-0.97	-1.11	47.95	13.5526	-1.1949	0.2768
275	SLU 67	-0.96	-1.13	47.94	13.5499	-1.1945	0.2724
275	SLU 68	-0.94	-1.15	47.68	13.4783	-1.1882	0.2666
275	SLU 69	-0.98	-1.12	48.48	13.6995	-1.2079	0.2801
275	SLU 70	-0.97	-1.14	48.46	13.6968	-1.2075	0.2757
275	SLU 71	-0.97	-1.12	48.24	13.6298	-1.2019	0.2772
275	SLU 72	-0.96	-1.15	48.22	13.627	-1.2015	0.2728
275	SLU 73	-0.98	-1.19	51.19	14.4685	-1.2759	0.2776
275	SLU 74	-1.02	-1.15	51.99	14.6898	-1.2956	0.2911
275	SLU 75	-1.01	-1.18	51.97	14.687	-1.2952	0.2867
275	SLU 76	-0.99	-1.2	51.72	14.6155	-1.289	0.2808
275	SLU 77	-1.03	-1.17	52.51	14.8367	-1.3087	0.2943
275	SLU 78	-1.02	-1.19	52.5	14.834	-1.3083	0.2899
275	SLU 79	-1.02	-1.17	52.27	14.767	-1.3027	0.2914
275	SLU 80	-1.01	-1.2	52.26	14.7642	-1.3023	0.287
275	SLU 81	-1.02	-1.17	52.95	14.9605	-1.3197	0.291
275	SLU 82	-1.01	-1.19	52.94	14.9577	-1.3194	0.2866
275	SLU 83	-1.03	-1.18	53.48	15.1074	-1.3328	0.2943
275	SLU 84	-1.02	-1.2	53.46	15.1046	-1.3324	0.2898
275	SLE RA 1	-0.71	-0.84	35.5	10.0307	-0.8846	0.2023
275	SLE RA 2	-0.7	-0.87	35.48	10.0276	-0.8842	0.1974
275	SLE RA 3	-0.72	-0.85	36.01	10.1751	-0.8973	0.2064
275	SLE RA 4	-0.72	-0.86	36	10.1733	-0.8971	0.2035
275	SLE RA 5	-0.71	-0.88	35.83	10.1256	-0.8929	0.1996
275	SLE RA 6	-0.73	-0.86	36.36	10.2731	-0.906	0.2086
275	SLE RA 7	-0.72	-0.87	36.35	10.2713	-0.9058	0.2056
275	SLE RA 8	-0.73	-0.86	36.2	10.2266	-0.902	0.2066
275	SLE RA 9	-0.72	-0.87	36.18	10.2248	-0.9018	0.2037
275	SLE RA 10	-0.73	-0.9	38.17	10.7857	-0.9513	0.2069



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
275	SLE RA 11	-0.76	-0.88	38.7	10.9333	-0.9645	0.2159
275	SLE RA 12	-0.75	-0.9	38.69	10.9314	-0.9642	0.213
275	SLE RA 13	-0.74	-0.91	38.52	10.8837	-0.96	0.2091
275	SLE RA 14	-0.76	-0.89	39.05	11.0312	-0.9732	0.2181
275	SLE RA 15	-0.76	-0.91	39.04	11.0294	-0.9729	0.2151
275	SLE RA 16	-0.76	-0.89	38.89	10.9847	-0.9692	0.2161
275	SLE RA 17	-0.75	-0.91	38.88	10.9829	-0.9689	0.2132
275	SLE RA 18	-0.76	-0.89	39.34	11.1137	-0.9806	0.2159
275	SLE RA 19	-0.75	-0.9	39.33	11.1119	-0.9803	0.2129
275	SLE RA 20	-0.77	-0.9	39.69	11.2117	-0.9893	0.218
275	SLE RA 21	-0.76	-0.91	39.68	11.2098	-0.989	0.2151
275	SLE FR 1	-0.71	-0.84	35.5	10.0307	-0.8846	0.2023
275	SLE FR 2	-0.71	-0.85	35.49	10.0301	-0.8845	0.2013
275	SLE FR 3	-0.71	-0.84	35.64	10.0699	-0.8881	0.2032
275	SLE FR 4	-0.72	-0.86	36.65	10.355	-0.9133	0.2054
275	SLE FR 5	-0.73	-0.86	36.79	10.3948	-0.9169	0.2073
275	SLE FR 6	-0.73	-0.86	37.42	10.5722	-0.9326	0.2091
275	SLE QP 1	-0.71	-0.84	35.5	10.0307	-0.8846	0.2023
275	SLE QP 2	-0.73	-0.85	36.65	10.3556	-0.9134	0.2064
275	SLD 1	2.42	-0.78	38.36	10.7373	-0.9478	-0.7607
275	SLD 2	2.73	-0.95	38.2	10.6961	-0.9443	-0.8603
275	SLD 3	2.64	-1.77	37.83	10.6608	-0.9358	-0.8429
275	SLD 4	2.95	-1.94	37.68	10.6195	-0.9323	-0.9425
275	SLD 5	-0.17	0.7	37.98	10.5936	-0.9426	0.0588
275	SLD 6	0.04	0.59	37.88	10.5664	-0.9402	-0.0067
275	SLD 7	0.56	-2.61	36.24	10.3385	-0.9025	-0.2153
275	SLD 8	0.77	-2.72	36.14	10.3113	-0.9002	-0.2808
275	SLD 9	-2.22	1.01	37.16	10.3998	-0.9266	0.6936
275	SLD 10	-2.01	0.9	37.06	10.3727	-0.9243	0.6281
275	SLD 11	-1.49	-2.3	35.42	10.1448	-0.8865	0.4195
275	SLD 12	-1.28	-2.41	35.32	10.1176	-0.8842	0.354
275	SLD 13	-4.4	0.23	35.62	10.0916	-0.8945	1.3553
275	SLD 14	-4.09	0.06	35.46	10.0504	-0.891	1.2557
275	SLD 15	-4.18	-0.76	35.1	10.0151	-0.8825	1.2731
275	SLD 16	-3.87	-0.93	34.94	9.9738	-0.879	1.1735
275	SLV 1	6.64	-0.72	40.62	11.2466	-0.9934	-2.0579
275	SLV 2	7.37	-1.1	40.26	11.1505	-0.9852	-2.2899
275	SLV 3	7.15	-2.96	39.44	11.0715	-0.9662	-2.2475
275	SLV 4	7.88	-3.35	39.08	10.9753	-0.958	-2.4795
275	SLV 5	0.59	2.66	39.7	10.9052	-0.9801	-0.1452
275	SLV 6	1.06	2.41	39.47	10.8431	-0.9749	-0.2951
275	SLV 7	2.28	-4.83	35.75	10.3213	-0.8893	-0.7772
275	SLV 8	2.76	-5.08	35.52	10.2592	-0.884	-0.9271
275	SLV 9	-4.21	3.37	37.78	10.4519	-0.9428	1.3399
275	SLV 10	-3.74	3.12	37.54	10.3899	-0.9375	1.19
275	SLV 11	-2.51	-4.12	33.83	9.8681	-0.8519	0.7078
275	SLV 12	-2.04	-4.37	33.6	9.806	-0.8466	0.558
275	SLV 13	-9.33	1.64	34.22	9.7359	-0.8688	2.8923
275	SLV 14	-8.6	1.25	33.86	9.6397	-0.8606	2.6602
275	SLV 15	-8.82	-0.6	33.04	9.5607	-0.8416	2.7027
275	SLV 16	-8.09	-0.99	32.67	9.4646	-0.8334	2.4706
275	CRTFP Ux+	0	0	0	0	0	0
275	CRTFP Ux-	0	0	0	0	0	0
275	CRTFP Uy+	0	0	0	0	0	0
275	CRTFP Uy-	0	0	0	0	0	0
276	SLU 1	-0.81	-0.86	39.6	11.1771	0.0297	0.2563
276	SLU 2	-0.78	-0.91	39.57	11.1724	0.0296	0.249
276	SLU 3	-0.83	-0.87	40.48	11.4249	0.0304	0.2639
276	SLU 4	-0.81	-0.9	40.46	11.4221	0.0304	0.2594
276	SLU 5	-0.79	-0.93	40.18	11.3408	0.0301	0.2532
276	SLU 6	-0.84	-0.88	41.09	11.5933	0.0309	0.2681
276	SLU 7	-0.83	-0.91	41.07	11.5905	0.0308	0.2636
276	SLU 8	-0.83	-0.89	40.81	11.5139	0.0306	0.2647
276	SLU 9	-0.82	-0.92	40.79	11.511	0.0306	0.2603
276	SLU 10	-0.84	-0.96	44.23	12.4818	0.0326	0.2675
276	SLU 11	-0.89	-0.92	45.14	12.7343	0.0334	0.2824
276	SLU 12	-0.87	-0.95	45.12	12.7315	0.0334	0.278
276	SLU 13	-0.85	-0.97	44.83	12.6502	0.0331	0.2717
276	SLU 14	-0.9	-0.93	45.74	12.9027	0.0339	0.2866
276	SLU 15	-0.88	-0.96	45.72	12.8999	0.0338	0.2822
276	SLU 16	-0.89	-0.93	45.46	12.8232	0.0336	0.2833
276	SLU 17	-0.87	-0.96	45.44	12.8204	0.0336	0.2788
276	SLU 18	-0.89	-0.93	46.25	13.0476	0.034	0.2828
276	SLU 19	-0.87	-0.96	46.23	13.0448	0.034	0.2784
276	SLU 20	-0.9	-0.94	46.85	13.216	0.0345	0.287
276	SLU 21	-0.89	-0.97	46.83	13.2132	0.0344	0.2826
276	SLU 22	-0.91	-0.86	43.77	12.3592	0.0335	0.2884
276	SLU 23	-0.88	-0.91	43.74	12.3545	0.0334	0.281
276	SLU 24	-0.93	-0.87	44.65	12.6071	0.0342	0.2959
276	SLU 25	-0.92	-0.9	44.63	12.6043	0.0342	0.2915
276	SLU 26	-0.89	-0.92	44.34	12.5229	0.0339	0.2852
276	SLU 27	-0.94	-0.88	45.25	12.7755	0.0347	0.3001
276	SLU 28	-0.93	-0.91	45.23	12.7726	0.0346	0.2957
276	SLU 29	-0.93	-0.89	44.97	12.696	0.0344	0.2968
276	SLU 30	-0.92	-0.92	44.96	12.6932	0.0344	0.2924
276	SLU 31	-0.94	-0.96	48.39	13.6639	0.0364	0.2995
276	SLU 32	-0.99	-0.91	49.3	13.9165	0.0372	0.3144
276	SLU 33	-0.97	-0.94	49.28	13.9136	0.0372	0.31
276	SLU 34	-0.95	-0.97	48.99	13.8323	0.0369	0.3037
276	SLU 35	-1	-0.93	49.9	14.0848	0.0377	0.3186



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
276	SLU 36	-0.99	-0.96	49.89	14.082	0.0376	0.3142
276	SLU 37	-0.99	-0.93	49.63	14.0054	0.0374	0.3153
276	SLU 38	-0.98	-0.96	49.61	14.0026	0.0374	0.3109
276	SLU 39	-0.99	-0.92	50.42	14.2298	0.0378	0.3148
276	SLU 40	-0.97	-0.95	50.4	14.227	0.0377	0.3104
276	SLU 41	-1	-0.94	51.02	14.3982	0.0382	0.319
276	SLU 42	-0.99	-0.97	51	14.3954	0.0382	0.3146
276	SLU 43	-1.01	-1.12	50.06	14.1249	0.0373	0.3223
276	SLU 44	-0.99	-1.17	50.03	14.1202	0.0373	0.3149
276	SLU 45	-1.04	-1.13	50.94	14.3727	0.038	0.3298
276	SLU 46	-1.02	-1.16	50.92	14.3699	0.038	0.3254
276	SLU 47	-1	-1.19	50.63	14.2886	0.0377	0.3191
276	SLU 48	-1.05	-1.14	51.54	14.5411	0.0385	0.334
276	SLU 49	-1.03	-1.17	51.52	14.5383	0.0385	0.3296
276	SLU 50	-1.04	-1.15	51.26	14.4617	0.0382	0.3307
276	SLU 51	-1.02	-1.18	51.24	14.4588	0.0382	0.3263
276	SLU 52	-1.05	-1.22	54.68	15.4296	0.0403	0.3334
276	SLU 53	-1.09	-1.18	55.59	15.6821	0.041	0.3483
276	SLU 54	-1.08	-1.21	55.57	15.6793	0.041	0.3439
276	SLU 55	-1.06	-1.23	55.28	15.598	0.0407	0.3376
276	SLU 56	-1.11	-1.19	56.19	15.8505	0.0415	0.3525
276	SLU 57	-1.09	-1.22	56.17	15.8477	0.0415	0.3481
276	SLU 58	-1.1	-1.2	55.91	15.7711	0.0412	0.3492
276	SLU 59	-1.08	-1.23	55.9	15.7682	0.0412	0.3448
276	SLU 60	-1.09	-1.19	56.7	15.9954	0.0416	0.3487
276	SLU 61	-1.08	-1.22	56.69	15.9926	0.0416	0.3443
276	SLU 62	-1.11	-1.2	57.31	16.1638	0.0421	0.3529
276	SLU 63	-1.09	-1.23	57.29	16.161	0.042	0.3485
276	SLU 64	-1.11	-1.12	54.22	15.3071	0.0411	0.3543
276	SLU 65	-1.09	-1.17	54.19	15.3024	0.041	0.3469
276	SLU 66	-1.14	-1.13	55.1	15.5549	0.0418	0.3618
276	SLU 67	-1.12	-1.16	55.08	15.5521	0.0418	0.3574
276	SLU 68	-1.1	-1.18	54.79	15.4707	0.0415	0.3511
276	SLU 69	-1.15	-1.14	55.7	15.7233	0.0423	0.366
276	SLU 70	-1.14	-1.17	55.69	15.7205	0.0422	0.3616
276	SLU 71	-1.14	-1.15	55.43	15.6438	0.042	0.3627
276	SLU 72	-1.13	-1.18	55.41	15.641	0.042	0.3583
276	SLU 73	-1.15	-1.22	58.84	16.6117	0.044	0.3655
276	SLU 74	-1.19	-1.17	59.75	16.8643	0.0448	0.3803
276	SLU 75	-1.18	-1.2	59.74	16.8615	0.0448	0.3759
276	SLU 76	-1.16	-1.23	59.45	16.7801	0.0445	0.3697
276	SLU 77	-1.21	-1.19	60.36	17.0327	0.0453	0.3845
276	SLU 78	-1.19	-1.22	60.34	17.0298	0.0452	0.3801
276	SLU 79	-1.2	-1.19	60.08	16.9532	0.045	0.3812
276	SLU 80	-1.18	-1.22	60.06	16.9504	0.045	0.3768
276	SLU 81	-1.19	-1.18	60.87	17.1776	0.0454	0.3808
276	SLU 82	-1.18	-1.22	60.85	17.1748	0.0453	0.3763
276	SLU 83	-1.21	-1.2	61.47	17.346	0.0458	0.385
276	SLU 84	-1.19	-1.23	61.45	17.3432	0.0458	0.3805
276	SLE RA 1	-0.83	-0.86	40.79	11.5148	0.0308	0.2655
276	SLE RA 2	-0.82	-0.9	40.77	11.5117	0.0307	0.2606
276	SLE RA 3	-0.85	-0.87	41.38	11.6801	0.0313	0.2705
276	SLE RA 4	-0.84	-0.89	41.37	11.6782	0.0312	0.2676
276	SLE RA 5	-0.83	-0.91	41.18	11.624	0.0311	0.2634
276	SLE RA 6	-0.86	-0.88	41.78	11.7923	0.0316	0.2733
276	SLE RA 7	-0.85	-0.9	41.77	11.7904	0.0315	0.2704
276	SLE RA 8	-0.85	-0.88	41.6	11.7394	0.0314	0.2711
276	SLE RA 9	-0.84	-0.9	41.59	11.7375	0.0314	0.2682
276	SLE RA 10	-0.86	-0.93	43.88	12.3846	0.0327	0.2729
276	SLE RA 11	-0.89	-0.9	44.48	12.553	0.0333	0.2829
276	SLE RA 12	-0.88	-0.92	44.47	12.5511	0.0332	0.2799
276	SLE RA 13	-0.86	-0.94	44.28	12.4969	0.0331	0.2757
276	SLE RA 14	-0.9	-0.91	44.88	12.6652	0.0336	0.2857
276	SLE RA 15	-0.89	-0.93	44.87	12.6634	0.0335	0.2827
276	SLE RA 16	-0.89	-0.91	44.7	12.6123	0.0334	0.2834
276	SLE RA 17	-0.88	-0.93	44.69	12.6104	0.0334	0.2805
276	SLE RA 18	-0.89	-0.91	45.23	12.7619	0.0336	0.2831
276	SLE RA 19	-0.88	-0.93	45.21	12.76	0.0336	0.2802
276	SLE RA 20	-0.9	-0.91	45.63	12.8741	0.0339	0.2859
276	SLE RA 21	-0.89	-0.93	45.61	12.8723	0.0339	0.283
276	SLE FR 1	-0.83	-0.86	40.79	11.5148	0.0308	0.2655
276	SLE FR 2	-0.83	-0.87	40.79	11.5142	0.0308	0.2645
276	SLE FR 3	-0.84	-0.87	40.95	11.5597	0.0309	0.2666
276	SLE FR 4	-0.85	-0.88	42.12	11.8883	0.0316	0.2698
276	SLE FR 5	-0.85	-0.88	42.28	11.9339	0.0318	0.2719
276	SLE FR 6	-0.86	-0.88	43.01	12.1384	0.0322	0.2743
276	SLE QP 1	-0.83	-0.86	40.79	11.5148	0.0308	0.2655
276	SLE QP 2	-0.85	-0.88	42.12	11.889	0.0316	0.2708
276	SLD 1	2.86	-0.73	43.7	12.2124	0.0441	-0.8661
276	SLD 2	3.23	-0.91	43.54	12.1708	0.0434	-0.9782
276	SLD 3	3.12	-1.92	43.11	12.1313	0.0431	-0.9458
276	SLD 4	3.49	-2.1	42.95	12.0897	0.0425	-1.0579
276	SLD 5	-0.2	1	43.51	12.1164	0.037	0.0706
276	SLD 6	0.05	0.88	43.41	12.0891	0.0365	-0.0031
276	SLD 7	0.67	-2.95	41.56	11.8461	0.0337	-0.195
276	SLD 8	0.91	-3.07	41.46	11.8188	0.0333	-0.2687
276	SLD 9	-2.61	1.32	42.79	11.9592	0.03	0.8103
276	SLD 10	-2.37	1.2	42.69	11.9319	0.0296	0.7366
276	SLD 11	-1.75	-2.63	40.84	11.6888	0.0268	0.5447
276	SLD 12	-1.51	-2.75	40.73	11.6615	0.0263	0.471



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
276	SLD 13	-5.19	0.35	41.29	11.6882	0.0208	1.5995
276	SLD 14	-4.82	0.16	41.13	11.6466	0.0202	1.4873
276	SLD 15	-4.93	-0.84	40.71	11.6071	0.0199	1.5198
276	SLD 16	-4.56	-1.02	40.55	11.5655	0.0192	1.4077
276	SLV 1	7.84	-0.58	45.79	12.6433	0.0608	-2.3901
276	SLV 2	8.7	-1.01	45.41	12.5466	0.0592	-2.6513
276	SLV 3	8.44	-3.26	44.46	12.4577	0.0585	-2.5752
276	SLV 4	9.3	-3.69	44.09	12.3609	0.057	-2.8363
276	SLV 5	0.7	3.35	45.3	12.4136	0.0441	-0.2016
276	SLV 6	1.25	3.08	45.06	12.3511	0.0431	-0.3703
276	SLV 7	2.7	-5.58	40.88	11.7947	0.0365	-0.8185
276	SLV 8	3.26	-5.86	40.63	11.7322	0.0356	-0.9872
276	SLV 9	-4.96	4.1	43.61	12.0457	0.0277	1.5288
276	SLV 10	-4.4	3.83	43.37	11.9832	0.0267	1.3601
276	SLV 11	-2.95	-4.83	39.19	11.4268	0.0202	0.9119
276	SLV 12	-2.4	-5.1	38.95	11.3643	0.0192	0.7432
276	SLV 13	-1.1	1.93	40.16	11.417	0.0063	3.3779
276	SLV 14	-10.15	1.51	39.79	11.3202	0.0048	3.1167
276	SLV 15	-10.4	-0.75	38.83	11.2313	0.0041	3.1928
276	SLV 16	-9.54	-1.17	38.46	11.1346	0.0025	2.9316
276	CRTFP Ux+	0	0	0	0	0	0
276	CRTFP Ux-	0	0	0	0	0	0
276	CRTFP Uy+	0	0	0	0	0	0
276	CRTFP Uy-	0	0	0	0	0	0
277	SLU 1	-0.8	-0.72	38.82	10.9045	0.0161	0.2542
277	SLU 2	-0.77	-0.76	38.79	10.9003	0.0161	0.2469
277	SLU 3	-0.82	-0.72	39.68	11.1459	0.0165	0.2617
277	SLU 4	-0.81	-0.75	39.66	11.1434	0.0165	0.2573
277	SLU 5	-0.79	-0.78	39.38	11.0646	0.0163	0.251
277	SLU 6	-0.83	-0.73	40.27	11.3102	0.0167	0.2658
277	SLU 7	-0.82	-0.76	40.25	11.3077	0.0167	0.2614
277	SLU 8	-0.82	-0.74	40	11.2331	0.0165	0.2625
277	SLU 9	-0.81	-0.77	39.98	11.2306	0.0165	0.2581
277	SLU 10	-0.83	-0.79	43.37	12.1852	0.0171	0.2653
277	SLU 11	-0.88	-0.75	44.26	12.4308	0.0175	0.2801
277	SLU 12	-0.86	-0.78	44.24	12.4283	0.0175	0.2757
277	SLU 13	-0.84	-0.8	43.96	12.3495	0.0174	0.2694
277	SLU 14	-0.89	-0.76	44.85	12.5951	0.0177	0.2842
277	SLU 15	-0.88	-0.79	44.83	12.5926	0.0177	0.2798
277	SLU 16	-0.88	-0.77	44.58	12.518	0.0176	0.2809
277	SLU 17	-0.87	-0.79	44.56	12.5155	0.0176	0.2765
277	SLU 18	-0.88	-0.76	45.36	12.7401	0.0176	0.2805
277	SLU 19	-0.86	-0.79	45.35	12.7376	0.0176	0.2761
277	SLU 20	-0.89	-0.77	45.96	12.9044	0.0178	0.2847
277	SLU 21	-0.88	-0.8	45.94	12.9019	0.0178	0.2803
277	SLU 22	-0.9	-0.69	42.88	12.0515	0.0182	0.2859
277	SLU 23	-0.87	-0.74	42.85	12.0473	0.0182	0.2786
277	SLU 24	-0.92	-0.7	43.74	12.2929	0.0186	0.2933
277	SLU 25	-0.91	-0.72	43.72	12.2904	0.0186	0.2889
277	SLU 26	-0.89	-0.75	43.44	12.2116	0.0184	0.2827
277	SLU 27	-0.93	-0.71	44.33	12.4572	0.0188	0.2975
277	SLU 28	-0.92	-0.74	44.31	12.4547	0.0188	0.2931
277	SLU 29	-0.92	-0.71	44.06	12.3801	0.0186	0.2942
277	SLU 30	-0.91	-0.74	44.04	12.3776	0.0186	0.2898
277	SLU 31	-0.93	-0.77	47.43	13.3322	0.0192	0.297
277	SLU 32	-0.98	-0.72	48.32	13.5778	0.0196	0.3117
277	SLU 33	-0.96	-0.75	48.31	13.5752	0.0196	0.3073
277	SLU 34	-0.94	-0.78	48.03	13.4965	0.0195	0.3011
277	SLU 35	-0.99	-0.73	48.92	13.7421	0.0198	0.3159
277	SLU 36	-0.98	-0.76	48.9	13.7396	0.0198	0.3115
277	SLU 37	-0.98	-0.74	48.65	13.665	0.0197	0.3126
277	SLU 38	-0.97	-0.77	48.63	13.6625	0.0197	0.3082
277	SLU 39	-0.98	-0.73	49.43	13.8871	0.0197	0.3122
277	SLU 40	-0.96	-0.76	49.41	13.8845	0.0197	0.3078
277	SLU 41	-0.99	-0.74	50.02	14.0514	0.0199	0.3163
277	SLU 42	-0.98	-0.77	50	14.0489	0.0199	0.3119
277	SLU 43	-1	-0.94	49.07	13.7826	0.0202	0.3197
277	SLU 44	-0.98	-0.99	49.04	13.7784	0.0202	0.3123
277	SLU 45	-1.03	-0.94	49.93	14.024	0.0206	0.3271
277	SLU 46	-1.01	-0.97	49.91	14.0215	0.0206	0.3227
277	SLU 47	-0.99	-1	49.63	13.9427	0.0204	0.3165
277	SLU 48	-1.04	-0.95	50.52	14.1883	0.0208	0.3312
277	SLU 49	-1.03	-0.98	50.5	14.1858	0.0208	0.3268
277	SLU 50	-1.03	-0.96	50.25	14.1112	0.0207	0.328
277	SLU 51	-1.02	-0.99	50.23	14.1087	0.0206	0.3235
277	SLU 52	-1.04	-1.02	53.62	15.0633	0.0213	0.3307
277	SLU 53	-1.08	-0.97	54.51	15.3089	0.0216	0.3455
277	SLU 54	-1.07	-1	54.49	15.3064	0.0216	0.3411
277	SLU 55	-1.05	-1.03	54.21	15.2276	0.0215	0.3349
277	SLU 56	-1.1	-0.98	55.1	15.4732	0.0219	0.3496
277	SLU 57	-1.08	-1.01	55.09	15.4707	0.0218	0.3452
277	SLU 58	-1.09	-0.99	54.83	15.3961	0.0217	0.3463
277	SLU 59	-1.07	-1.02	54.82	15.3936	0.0217	0.3419
277	SLU 60	-1.08	-0.98	55.62	15.6182	0.0218	0.3459
277	SLU 61	-1.07	-1.01	55.6	15.6157	0.0217	0.3415
277	SLU 62	-1.1	-0.99	56.21	15.7825	0.022	0.3501
277	SLU 63	-1.08	-1.02	56.19	15.78	0.0219	0.3457
277	SLU 64	-1.1	-0.91	53.13	14.9296	0.0223	0.3513
277	SLU 65	-1.08	-0.96	53.1	14.9254	0.0223	0.344
277	SLU 66	-1.13	-0.92	53.99	15.171	0.0227	0.3587



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
277	SLU 67	-1.11	-0.95	53.97	15.1684	0.0227	0.3543
277	SLU 68	-1.09	-0.97	53.69	15.0897	0.0225	0.3481
277	SLU 69	-1.14	-0.93	54.58	15.3353	0.0229	0.3629
277	SLU 70	-1.12	-0.96	54.57	15.3328	0.0229	0.3585
277	SLU 71	-1.13	-0.94	54.31	15.2582	0.0228	0.3596
277	SLU 72	-1.11	-0.97	54.3	15.2557	0.0227	0.3552
277	SLU 73	-1.14	-0.99	57.69	16.2103	0.0234	0.3624
277	SLU 74	-1.18	-0.95	58.58	16.4559	0.0237	0.3771
277	SLU 75	-1.17	-0.98	58.56	16.4533	0.0237	0.3727
277	SLU 76	-1.15	-1	58.28	16.3746	0.0236	0.3665
277	SLU 77	-1.2	-0.96	59.17	16.6202	0.024	0.3813
277	SLU 78	-1.18	-0.99	59.15	16.6177	0.0239	0.3769
277	SLU 79	-1.19	-0.96	58.9	16.5431	0.0238	0.378
277	SLU 80	-1.17	-0.99	58.88	16.5406	0.0238	0.3736
277	SLU 81	-1.18	-0.96	59.68	16.7652	0.0239	0.3776
277	SLU 82	-1.17	-0.99	59.66	16.7626	0.0238	0.3732
277	SLU 83	-1.2	-0.97	60.27	16.9295	0.0241	0.3818
277	SLU 84	-1.18	-1	60.25	16.927	0.024	0.3774
277	SLE RA 1	-0.83	-0.71	39.98	11.2322	0.0167	0.2633
277	SLE RA 2	-0.81	-0.74	39.96	11.2294	0.0167	0.2584
277	SLE RA 3	-0.84	-0.71	40.55	11.3931	0.017	0.2682
277	SLE RA 4	-0.83	-0.73	40.54	11.3915	0.0169	0.2653
277	SLE RA 5	-0.82	-0.75	40.35	11.339	0.0168	0.2612
277	SLE RA 6	-0.85	-0.72	40.94	11.5027	0.0171	0.271
277	SLE RA 7	-0.84	-0.74	40.93	11.501	0.0171	0.2681
277	SLE RA 8	-0.84	-0.72	40.77	11.4513	0.017	0.2688
277	SLE RA 9	-0.83	-0.74	40.75	11.4496	0.017	0.2659
277	SLE RA 10	-0.85	-0.76	43.01	12.086	0.0174	0.2707
277	SLE RA 11	-0.88	-0.73	43.61	12.2497	0.0177	0.2805
277	SLE RA 12	-0.87	-0.75	43.6	12.2481	0.0176	0.2776
277	SLE RA 13	-0.86	-0.77	43.41	12.1956	0.0175	0.2734
277	SLE RA 14	-0.89	-0.74	44	12.3593	0.0178	0.2833
277	SLE RA 15	-0.88	-0.76	43.99	12.3576	0.0178	0.2803
277	SLE RA 16	-0.88	-0.74	43.82	12.3079	0.0177	0.2811
277	SLE RA 17	-0.87	-0.76	43.81	12.3062	0.0177	0.2781
277	SLE RA 18	-0.88	-0.74	44.34	12.4559	0.0177	0.2808
277	SLE RA 19	-0.87	-0.76	44.33	12.4542	0.0177	0.2779
277	SLE RA 20	-0.89	-0.74	44.74	12.5655	0.0179	0.2836
277	SLE RA 21	-0.88	-0.76	44.73	12.5638	0.0179	0.2806
277	SLE FR 1	-0.83	-0.71	39.98	11.2322	0.0167	0.2633
277	SLE FR 2	-0.82	-0.72	39.97	11.2317	0.0167	0.2623
277	SLE FR 3	-0.83	-0.71	40.13	11.276	0.0168	0.2644
277	SLE FR 4	-0.84	-0.72	41.28	11.5988	0.017	0.2676
277	SLE FR 5	-0.85	-0.72	41.44	11.6431	0.0171	0.2697
277	SLE FR 6	-0.85	-0.72	42.16	11.8441	0.0172	0.2721
277	SLE QP 1	-0.83	-0.71	39.98	11.2322	0.0167	0.2633
277	SLE QP 2	-0.84	-0.72	41.29	11.5993	0.017	0.2686
277	SLD 1	2.87	-0.5	42.44	11.8034	0.0275	-0.8657
277	SLD 2	3.24	-0.67	42.31	11.7689	0.0269	-0.9774
277	SLD 3	3.13	-1.7	41.87	11.7263	0.0282	-0.9453
277	SLD 4	3.5	-1.86	41.73	11.6918	0.0277	-1.057
277	SLD 5	-0.19	1.19	42.53	11.7836	0.0191	0.0689
277	SLD 6	0.05	1.08	42.44	11.761	0.0187	-0.0045
277	SLD 7	0.68	-2.8	40.62	11.5267	0.0217	-0.1963
277	SLD 8	0.92	-2.91	40.53	11.504	0.0213	-0.2698
277	SLD 9	-2.6	1.47	42.05	11.6946	0.0128	0.8069
277	SLD 10	-2.36	1.36	41.96	11.672	0.0124	0.7334
277	SLD 11	-1.74	-2.52	40.14	11.4377	0.0154	0.5416
277	SLD 12	-1.5	-2.63	40.04	11.415	0.015	0.4682
277	SLD 13	-5.18	0.43	40.84	11.5068	0.0064	1.5941
277	SLD 14	-4.81	0.27	40.7	11.4724	0.0058	1.4824
277	SLD 15	-4.92	-0.77	40.27	11.4297	0.0072	1.5145
277	SLD 16	-4.56	-0.93	40.13	11.3953	0.0066	1.4028
277	SLV 1	7.85	-0.27	43.97	12.0743	0.0414	-2.3862
277	SLV 2	8.7	-0.64	43.65	11.9941	0.0401	-2.6464
277	SLV 3	8.45	-2.97	42.67	11.8983	0.0433	-2.571
277	SLV 4	9.31	-3.35	42.35	11.818	0.0419	-2.8312
277	SLV 5	0.7	3.59	44.12	12.0228	0.0217	-0.2025
277	SLV 6	1.26	3.35	43.91	11.9709	0.0209	-0.3706
277	SLV 7	2.71	-5.44	39.79	11.4358	0.028	-0.8186
277	SLV 8	3.26	-5.68	39.58	11.384	0.0271	-0.9867
277	SLV 9	-4.95	4.25	43	11.8147	0.0069	1.5238
277	SLV 10	-4.4	4	42.79	11.7628	0.0061	1.3557
277	SLV 11	-2.94	-4.78	38.66	11.2277	0.0132	0.9077
277	SLV 12	-2.39	-5.03	38.45	11.1759	0.0123	0.7396
277	SLV 13	-10.99	1.92	40.22	11.3806	-0.0079	3.3683
277	SLV 14	-10.13	1.54	39.9	11.3004	-0.0092	3.1081
277	SLV 15	-10.39	-0.79	38.92	11.2046	-0.006	3.1835
277	SLV 16	-9.53	-1.17	38.6	11.1243	-0.0074	2.9233
277	CRTFP Ux+	0	0	0	0	0	0
277	CRTFP Ux-	0	0	0	0	0	0
277	CRTFP Uy+	0	0	0	0	0	0
277	CRTFP Uy-	0	0	0	0	0	0
278	SLU 1	-0.79	-0.56	38.56	10.8141	-0.0016	0.2509
278	SLU 2	-0.76	-0.61	38.53	10.8101	-0.0016	0.2436
278	SLU 3	-0.81	-0.56	39.42	11.0538	-0.0018	0.2582
278	SLU 4	-0.8	-0.59	39.4	11.0514	-0.0018	0.2538
278	SLU 5	-0.78	-0.62	39.12	10.9736	-0.0018	0.2477
278	SLU 6	-0.82	-0.57	40.01	11.2174	-0.0019	0.2623
278	SLU 7	-0.81	-0.6	39.99	11.2149	-0.0019	0.2579





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
278	SLU 8	-0.81	-0.58	39.74	11.1411	-0.0019	0.2591
278	SLU 9	-0.8	-0.61	39.72	11.1387	-0.0019	0.2547
278	SLU 10	-0.82	-0.62	43.12	12.0962	-0.0031	0.2617
278	SLU 11	-0.87	-0.57	44.01	12.34	-0.0032	0.2764
278	SLU 12	-0.85	-0.6	43.99	12.3376	-0.0032	0.272
278	SLU 13	-0.83	-0.63	43.71	12.2597	-0.0032	0.2658
278	SLU 14	-0.88	-0.58	44.6	12.5035	-0.0033	0.2804
278	SLU 15	-0.87	-0.61	44.58	12.5011	-0.0033	0.276
278	SLU 16	-0.87	-0.59	44.33	12.4273	-0.0033	0.2772
278	SLU 17	-0.85	-0.62	44.31	12.4249	-0.0033	0.2728
278	SLU 18	-0.87	-0.58	45.12	12.6514	-0.0037	0.2768
278	SLU 19	-0.85	-0.61	45.1	12.649	-0.0037	0.2724
278	SLU 20	-0.88	-0.59	45.71	12.815	-0.0038	0.2809
278	SLU 21	-0.87	-0.62	45.69	12.8126	-0.0038	0.2765
278	SLU 22	-0.89	-0.52	42.59	11.9481	-0.0017	0.2822
278	SLU 23	-0.86	-0.57	42.56	11.9441	-0.0017	0.2748
278	SLU 24	-0.91	-0.52	43.45	12.1878	-0.0018	0.2894
278	SLU 25	-0.89	-0.55	43.43	12.1854	-0.0018	0.2851
278	SLU 26	-0.87	-0.58	43.15	12.1076	-0.0018	0.2789
278	SLU 27	-0.92	-0.53	44.03	12.3514	-0.0019	0.2935
278	SLU 28	-0.91	-0.56	44.02	12.349	-0.0019	0.2891
278	SLU 29	-0.91	-0.54	43.77	12.2751	-0.0019	0.2903
278	SLU 30	-0.9	-0.57	43.75	12.2727	-0.0019	0.2859
278	SLU 31	-0.92	-0.58	47.15	13.2302	-0.0031	0.2929
278	SLU 32	-0.96	-0.53	48.04	13.474	-0.0032	0.3076
278	SLU 33	-0.95	-0.56	48.02	13.4716	-0.0032	0.3032
278	SLU 34	-0.93	-0.59	47.74	13.3938	-0.0032	0.297
278	SLU 35	-0.98	-0.54	48.63	13.6375	-0.0033	0.3116
278	SLU 36	-0.96	-0.57	48.61	13.6351	-0.0033	0.3072
278	SLU 37	-0.97	-0.55	48.36	13.5613	-0.0033	0.3084
278	SLU 38	-0.95	-0.58	48.34	13.5589	-0.0033	0.304
278	SLU 39	-0.97	-0.54	49.15	13.7854	-0.0037	0.308
278	SLU 40	-0.95	-0.57	49.13	13.783	-0.0037	0.3036
278	SLU 41	-0.98	-0.55	49.74	13.949	-0.0038	0.3121
278	SLU 42	-0.96	-0.58	49.72	13.9466	-0.0038	0.3077
278	SLU 43	-0.99	-0.75	48.75	13.6695	-0.0021	0.3155
278	SLU 44	-0.97	-0.8	48.72	13.6655	-0.0021	0.3082
278	SLU 45	-1.01	-0.75	49.61	13.9092	-0.0022	0.3228
278	SLU 46	-1	-0.77	49.59	13.9068	-0.0022	0.3184
278	SLU 47	-0.98	-0.8	49.31	13.829	-0.0022	0.3123
278	SLU 48	-1.03	-0.75	50.19	14.0728	-0.0023	0.3269
278	SLU 49	-1.01	-0.78	50.18	14.0704	-0.0023	0.3225
278	SLU 50	-1.02	-0.76	49.93	13.9965	-0.0023	0.3237
278	SLU 51	-1	-0.79	49.91	13.9941	-0.0023	0.3193
278	SLU 52	-1.02	-0.81	53.31	14.9516	-0.0035	0.3263
278	SLU 53	-1.07	-0.76	54.2	15.1954	-0.0037	0.3409
278	SLU 54	-1.06	-0.79	54.18	15.193	-0.0037	0.3365
278	SLU 55	-1.04	-0.82	53.9	15.1152	-0.0036	0.3304
278	SLU 56	-1.08	-0.77	54.79	15.3589	-0.0038	0.345
278	SLU 57	-1.07	-0.79	54.77	15.3565	-0.0038	0.3406
278	SLU 58	-1.07	-0.78	54.52	15.2827	-0.0037	0.3418
278	SLU 59	-1.06	-0.8	54.5	15.2803	-0.0038	0.3374
278	SLU 60	-1.07	-0.76	55.31	15.5068	-0.0041	0.3414
278	SLU 61	-1.06	-0.79	55.29	15.5044	-0.0041	0.337
278	SLU 62	-1.08	-0.77	55.9	15.6704	-0.0043	0.3455
278	SLU 63	-1.07	-0.8	55.88	15.668	-0.0043	0.3411
278	SLU 64	-1.09	-0.7	52.78	14.8035	-0.0022	0.3467
278	SLU 65	-1.06	-0.75	52.75	14.7995	-0.0022	0.3394
278	SLU 66	-1.11	-0.7	53.63	15.0432	-0.0023	0.354
278	SLU 67	-1.1	-0.73	53.62	15.0408	-0.0023	0.3496
278	SLU 68	-1.08	-0.76	53.34	14.963	-0.0023	0.3435
278	SLU 69	-1.12	-0.71	54.22	15.2068	-0.0024	0.3581
278	SLU 70	-1.11	-0.74	54.21	15.2044	-0.0024	0.3537
278	SLU 71	-1.11	-0.72	53.95	15.1306	-0.0024	0.3549
278	SLU 72	-1.1	-0.75	53.94	15.1282	-0.0024	0.3505
278	SLU 73	-1.12	-0.77	57.34	16.0856	-0.0036	0.3575
278	SLU 74	-1.17	-0.71	58.22	16.3294	-0.0037	0.3721
278	SLU 75	-1.15	-0.74	58.21	16.327	-0.0037	0.3678
278	SLU 76	-1.13	-0.77	57.93	16.2492	-0.0037	0.3616
278	SLU 77	-1.18	-0.72	58.81	16.4929	-0.0038	0.3762
278	SLU 78	-1.17	-0.75	58.8	16.4905	-0.0038	0.3718
278	SLU 79	-1.17	-0.73	58.55	16.4167	-0.0038	0.373
278	SLU 80	-1.16	-0.76	58.53	16.4143	-0.0038	0.3686
278	SLU 81	-1.17	-0.72	59.34	16.6408	-0.0042	0.3726
278	SLU 82	-1.15	-0.75	59.32	16.6384	-0.0042	0.3682
278	SLU 83	-1.18	-0.73	59.93	16.8044	-0.0043	0.3767
278	SLU 84	-1.17	-0.76	59.91	16.802	-0.0043	0.3723
278	SLE RA 1	-0.82	-0.55	39.71	11.1381	-0.0017	0.2599
278	SLE RA 2	-0.8	-0.58	39.69	11.1354	-0.0017	0.255
278	SLE RA 3	-0.83	-0.55	40.28	11.2979	-0.0017	0.2647
278	SLE RA 4	-0.82	-0.57	40.27	11.2963	-0.0017	0.2618
278	SLE RA 5	-0.81	-0.59	40.09	11.2444	-0.0017	0.2577
278	SLE RA 6	-0.84	-0.56	40.68	11.4069	-0.0018	0.2674
278	SLE RA 7	-0.83	-0.57	40.66	11.4053	-0.0018	0.2645
278	SLE RA 8	-0.83	-0.56	40.5	11.3561	-0.0018	0.2653
278	SLE RA 9	-0.82	-0.58	40.49	11.3545	-0.0018	0.2624
278	SLE RA 10	-0.84	-0.59	42.75	11.9928	-0.0026	0.2671
278	SLE RA 11	-0.87	-0.56	43.34	12.1553	-0.0027	0.2768
278	SLE RA 12	-0.86	-0.58	43.33	12.1537	-0.0027	0.2739
278	SLE RA 13	-0.85	-0.6	43.15	12.1019	-0.0027	0.2698



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
278	SLE RA 14	-0.88	-0.56	43.74	12.2644	-0.0028	0.2795
278	SLE RA 15	-0.87	-0.58	43.73	12.2628	-0.0028	0.2766
278	SLE RA 16	-0.87	-0.57	43.56	12.2135	-0.0027	0.2774
278	SLE RA 17	-0.86	-0.59	43.55	12.2119	-0.0028	0.2744
278	SLE RA 18	-0.87	-0.56	44.08	12.363	-0.003	0.2771
278	SLE RA 19	-0.86	-0.58	44.07	12.3614	-0.003	0.2742
278	SLE RA 20	-0.88	-0.57	44.48	12.472	-0.0031	0.2798
278	SLE RA 21	-0.87	-0.59	44.47	12.4704	-0.0031	0.2769
278	SLE FR 1	-0.82	-0.55	39.71	11.1381	-0.0017	0.2599
278	SLE FR 2	-0.81	-0.56	39.71	11.1375	-0.0017	0.2589
278	SLE FR 3	-0.82	-0.55	39.87	11.1817	-0.0017	0.2609
278	SLE FR 4	-0.83	-0.56	41.02	11.505	-0.0021	0.2641
278	SLE FR 5	-0.84	-0.56	41.18	11.5491	-0.0021	0.2661
278	SLE FR 6	-0.84	-0.56	41.9	11.7505	-0.0023	0.2685
278	SLE QP 1	-0.82	-0.55	39.71	11.1381	-0.0017	0.2599
278	SLE QP 2	-0.83	-0.55	41.02	11.5055	-0.0021	0.265
278	SLD 1	2.88	-0.27	41.81	11.6155	0.0074	-0.8669
278	SLD 2	3.24	-0.41	41.7	11.5872	0.0069	-0.9783
278	SLD 3	3.13	-1.48	41.23	11.5347	0.0084	-0.9464
278	SLD 4	3.5	-1.62	41.11	11.5063	0.0079	-1.0578
278	SLD 5	-0.18	1.39	42.17	11.6662	-0.0006	0.0659
278	SLD 6	0.06	1.3	42.09	11.6476	-0.001	-0.0073
278	SLD 7	0.69	-2.64	40.22	11.3967	0.0027	-0.1991
278	SLD 8	0.93	-2.74	40.14	11.3781	0.0023	-0.2723
278	SLD 9	-2.59	1.63	41.9	11.633	-0.0064	0.8023
278	SLD 10	-2.35	1.53	41.82	11.6144	-0.0068	0.7292
278	SLD 11	-1.73	-2.41	39.96	11.3635	-0.0032	0.5374
278	SLD 12	-1.49	-2.5	39.88	11.3448	-0.0035	0.4642
278	SLD 13	-5.17	0.51	40.93	11.5047	-0.012	1.5879
278	SLD 14	-4.8	0.37	40.82	11.4764	-0.0125	1.4765
278	SLD 15	-4.91	-0.7	40.35	11.4239	-0.011	1.5084
278	SLD 16	-4.54	-0.84	40.23	11.3955	-0.0115	1.397
278	SLV 1	7.85	0.07	42.85	11.7602	0.0201	-2.3844
278	SLV 2	8.7	-0.27	42.58	11.6942	0.0189	-2.6437
278	SLV 3	8.45	-2.67	41.53	11.5761	0.0224	-2.569
278	SLV 4	9.3	-3.01	41.26	11.5101	0.0212	-2.8283
278	SLV 5	0.71	3.84	43.62	11.8726	0.0013	-0.2049
278	SLV 6	1.26	3.63	43.45	11.83	0.0005	-0.3724
278	SLV 7	2.72	-5.29	39.22	11.2588	0.009	-0.8203
278	SLV 8	3.27	-5.5	39.04	11.2162	0.0082	-0.9878
278	SLV 9	-4.93	4.39	43.01	11.7949	-0.0124	1.5179
278	SLV 10	-4.38	4.18	42.83	11.7522	-0.0131	1.3504
278	SLV 11	-2.93	-4.74	38.6	11.1811	-0.0046	0.9025
278	SLV 12	-2.38	-4.95	38.42	11.1384	-0.0054	0.735
278	SLV 13	-10.97	1.9	40.79	11.501	-0.0253	3.3584
278	SLV 14	-10.11	1.56	40.52	11.435	-0.0265	3.0991
278	SLV 15	-10.36	-0.84	39.47	11.3168	-0.023	3.1738
278	SLV 16	-9.51	-1.18	39.19	11.2508	-0.0242	2.9145
278	CRTFP Ux+	0	0	0	0	0	0
278	CRTFP Ux-	0	0	0	0	0	0
278	CRTFP Uy+	0	0	0	0	0	0
278	CRTFP Uy-	0	0	0	0	0	0
279	SLU 1	-0.78	-0.41	38.95	10.9447	-0.0207	0.2469
279	SLU 2	-0.75	-0.46	38.92	10.9405	-0.0207	0.2395
279	SLU 3	-0.8	-0.41	39.82	11.1885	-0.0213	0.254
279	SLU 4	-0.78	-0.44	39.81	11.186	-0.0213	0.2496
279	SLU 5	-0.76	-0.47	39.52	11.1072	-0.0212	0.2435
279	SLU 6	-0.81	-0.41	40.42	11.3552	-0.0218	0.258
279	SLU 7	-0.8	-0.44	40.41	11.3527	-0.0218	0.2536
279	SLU 8	-0.8	-0.43	40.15	11.278	-0.0216	0.2548
279	SLU 9	-0.79	-0.45	40.13	11.2755	-0.0216	0.2504
279	SLU 10	-0.81	-0.46	43.61	12.2586	-0.0248	0.2573
279	SLU 11	-0.85	-0.4	44.51	12.5066	-0.0254	0.2717
279	SLU 12	-0.84	-0.43	44.5	12.5041	-0.0254	0.2674
279	SLU 13	-0.82	-0.46	44.21	12.4252	-0.0252	0.2613
279	SLU 14	-0.86	-0.41	45.11	12.6733	-0.0258	0.2757
279	SLU 15	-0.85	-0.44	45.1	12.6708	-0.0258	0.2713
279	SLU 16	-0.86	-0.42	44.84	12.596	-0.0257	0.2726
279	SLU 17	-0.84	-0.45	44.82	12.5936	-0.0257	0.2682
279	SLU 18	-0.85	-0.41	45.65	12.8276	-0.0265	0.2722
279	SLU 19	-0.84	-0.44	45.64	12.8251	-0.0265	0.2678
279	SLU 20	-0.87	-0.41	46.25	12.9943	-0.027	0.2762
279	SLU 21	-0.85	-0.44	46.24	12.9918	-0.027	0.2718
279	SLU 22	-0.87	-0.35	43.02	12.0923	-0.0231	0.2775
279	SLU 23	-0.85	-0.4	42.99	12.0882	-0.0231	0.2702
279	SLU 24	-0.89	-0.35	43.89	12.3362	-0.0237	0.2847
279	SLU 25	-0.88	-0.37	43.88	12.3337	-0.0237	0.2803
279	SLU 26	-0.86	-0.41	43.59	12.2548	-0.0235	0.2742
279	SLU 27	-0.91	-0.35	44.49	12.5029	-0.0241	0.2887
279	SLU 28	-0.89	-0.38	44.48	12.5004	-0.0241	0.2843
279	SLU 29	-0.9	-0.36	44.22	12.4257	-0.024	0.2855
279	SLU 30	-0.88	-0.39	44.2	12.4232	-0.024	0.2811
279	SLU 31	-0.9	-0.4	47.68	13.4063	-0.0271	0.288
279	SLU 32	-0.95	-0.34	48.58	13.6543	-0.0278	0.3024
279	SLU 33	-0.93	-0.37	48.57	13.6518	-0.0277	0.2981
279	SLU 34	-0.91	-0.4	48.28	13.5729	-0.0276	0.292
279	SLU 35	-0.96	-0.35	49.18	13.8209	-0.0282	0.3064
279	SLU 36	-0.95	-0.38	49.16	13.8184	-0.0282	0.302
279	SLU 37	-0.95	-0.36	48.91	13.7437	-0.028	0.3033
279	SLU 38	-0.94	-0.39	48.89	13.7412	-0.028	0.2989



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
279	SLU 39	-0.95	-0.35	49.72	13.9753	-0.0289	0.3029
279	SLU 40	-0.94	-0.38	49.71	13.9728	-0.0289	0.2985
279	SLU 41	-0.96	-0.35	50.32	14.1419	-0.0293	0.3069
279	SLU 42	-0.95	-0.38	50.31	14.1395	-0.0293	0.3025
279	SLU 43	-0.97	-0.56	49.24	13.8346	-0.0261	0.3104
279	SLU 44	-0.95	-0.61	49.22	13.8304	-0.0261	0.3031
279	SLU 45	-1	-0.55	50.11	14.0784	-0.0267	0.3175
279	SLU 46	-0.98	-0.58	50.1	14.076	-0.0267	0.3131
279	SLU 47	-0.96	-0.61	49.81	13.9971	-0.0266	0.3071
279	SLU 48	-1.01	-0.56	50.71	14.2451	-0.0272	0.3215
279	SLU 49	-1	-0.59	50.7	14.2426	-0.0272	0.3171
279	SLU 50	-1	-0.57	50.44	14.1679	-0.027	0.3184
279	SLU 51	-0.99	-0.6	50.43	14.1654	-0.027	0.314
279	SLU 52	-1.01	-0.6	53.91	15.1485	-0.0302	0.3208
279	SLU 53	-1.05	-0.55	54.8	15.3965	-0.0308	0.3353
279	SLU 54	-1.04	-0.58	54.79	15.394	-0.0308	0.3309
279	SLU 55	-1.02	-0.61	54.5	15.3151	-0.0306	0.3248
279	SLU 56	-1.06	-0.56	55.4	15.5632	-0.0313	0.3393
279	SLU 57	-1.05	-0.58	55.39	15.5607	-0.0312	0.3349
279	SLU 58	-1.05	-0.57	55.13	15.4859	-0.0311	0.3361
279	SLU 59	-1.04	-0.6	55.12	15.4835	-0.0311	0.3317
279	SLU 60	-1.05	-0.55	55.94	15.7175	-0.0319	0.3357
279	SLU 61	-1.04	-0.58	55.93	15.715	-0.0319	0.3314
279	SLU 62	-1.07	-0.56	56.54	15.8842	-0.0324	0.3397
279	SLU 63	-1.05	-0.59	56.53	15.8817	-0.0324	0.3353
279	SLU 64	-1.07	-0.5	53.31	14.9822	-0.0285	0.3411
279	SLU 65	-1.05	-0.54	53.29	14.9781	-0.0285	0.3338
279	SLU 66	-1.09	-0.49	54.18	15.2261	-0.0291	0.3482
279	SLU 67	-1.08	-0.52	54.17	15.2236	-0.0291	0.3438
279	SLU 68	-1.06	-0.55	53.88	15.1448	-0.0289	0.3377
279	SLU 69	-1.11	-0.5	54.78	15.3928	-0.0296	0.3522
279	SLU 70	-1.09	-0.53	54.77	15.3903	-0.0295	0.3478
279	SLU 71	-1.1	-0.51	54.51	15.3156	-0.0294	0.349
279	SLU 72	-1.08	-0.54	54.5	15.3131	-0.0294	0.3447
279	SLU 73	-1.1	-0.54	57.98	16.2962	-0.0325	0.3515
279	SLU 74	-1.15	-0.49	58.87	16.5442	-0.0332	0.366
279	SLU 75	-1.13	-0.52	58.86	16.5417	-0.0332	0.3616
279	SLU 76	-1.11	-0.55	58.57	16.4628	-0.033	0.3555
279	SLU 77	-1.16	-0.49	59.47	16.7108	-0.0336	0.37
279	SLU 78	-1.15	-0.52	59.46	16.7084	-0.0336	0.3656
279	SLU 79	-1.15	-0.51	59.2	16.6336	-0.0334	0.3668
279	SLU 80	-1.14	-0.53	59.19	16.6311	-0.0334	0.3624
279	SLU 81	-1.15	-0.49	60.01	16.8652	-0.0343	0.3664
279	SLU 82	-1.13	-0.52	60	16.8627	-0.0343	0.362
279	SLU 83	-1.16	-0.5	60.61	17.0319	-0.0347	0.3704
279	SLU 84	-1.15	-0.53	60.6	17.0294	-0.0347	0.366
279	SLE RA 1	-0.8	-0.4	40.12	11.2726	-0.0214	0.2556
279	SLE RA 2	-0.79	-0.43	40.1	11.2698	-0.0214	0.2507
279	SLE RA 3	-0.82	-0.39	40.7	11.4351	-0.0218	0.2604
279	SLE RA 4	-0.81	-0.41	40.68	11.4335	-0.0218	0.2575
279	SLE RA 5	-0.8	-0.43	40.5	11.3809	-0.0217	0.2534
279	SLE RA 6	-0.83	-0.4	41.1	11.5463	-0.0221	0.263
279	SLE RA 7	-0.82	-0.41	41.08	11.5446	-0.0221	0.2601
279	SLE RA 8	-0.82	-0.4	40.92	11.4948	-0.022	0.2609
279	SLE RA 9	-0.81	-0.42	40.9	11.4931	-0.022	0.258
279	SLE RA 10	-0.82	-0.43	43.22	12.1485	-0.0241	0.2626
279	SLE RA 11	-0.85	-0.39	43.82	12.3139	-0.0245	0.2722
279	SLE RA 12	-0.84	-0.41	43.81	12.3122	-0.0245	0.2693
279	SLE RA 13	-0.83	-0.43	43.62	12.2596	-0.0244	0.2652
279	SLE RA 14	-0.86	-0.39	44.22	12.425	-0.0248	0.2749
279	SLE RA 15	-0.85	-0.41	44.21	12.4233	-0.0248	0.2719
279	SLE RA 16	-0.86	-0.4	44.04	12.3735	-0.0247	0.2728
279	SLE RA 17	-0.85	-0.42	44.03	12.3718	-0.0247	0.2698
279	SLE RA 18	-0.85	-0.39	44.58	12.5279	-0.0253	0.2725
279	SLE RA 19	-0.85	-0.41	44.57	12.5262	-0.0253	0.2696
279	SLE RA 20	-0.86	-0.4	44.98	12.639	-0.0256	0.2752
279	SLE RA 21	-0.85	-0.42	44.97	12.6373	-0.0256	0.2723
279	SLE FR 1	-0.8	-0.4	40.12	11.2726	-0.0214	0.2556
279	SLE FR 2	-0.8	-0.4	40.11	11.272	-0.0214	0.2546
279	SLE FR 3	-0.81	-0.4	40.28	11.317	-0.0215	0.2567
279	SLE FR 4	-0.82	-0.4	41.45	11.6486	-0.0226	0.2597
279	SLE FR 5	-0.82	-0.4	41.62	11.6936	-0.0227	0.2618
279	SLE FR 6	-0.83	-0.39	42.35	11.9002	-0.0233	0.2641
279	SLE QP 1	-0.8	-0.4	40.12	11.2726	-0.0214	0.2556
279	SLE QP 2	-0.82	-0.4	41.46	11.6492	-0.0226	0.2607
279	SLD 1	2.88	-0.04	41.97	11.6387	-0.0139	-0.8691
279	SLD 2	3.25	-0.16	41.87	11.6155	-0.0143	-0.98
279	SLD 3	3.14	-1.26	41.36	11.5463	-0.0125	-0.9484
279	SLD 4	3.51	-1.39	41.26	11.5231	-0.0129	-1.0594
279	SLD 5	-0.17	1.59	42.56	11.7903	-0.022	0.062
279	SLD 6	0.07	1.51	42.49	11.775	-0.0222	-0.0109
279	SLD 7	0.7	-2.49	40.51	11.4823	-0.0174	-0.2026
279	SLD 8	0.94	-2.57	40.45	11.4671	-0.0177	-0.2755
279	SLD 9	-2.57	1.78	42.46	11.8312	-0.0275	0.7969
279	SLD 10	-2.33	1.7	42.4	11.816	-0.0277	0.724
279	SLD 11	-1.71	-2.3	40.42	11.5233	-0.0229	0.5323
279	SLD 12	-1.47	-2.38	40.35	11.5081	-0.0232	0.4594
279	SLD 13	-5.14	0.6	41.65	11.7752	-0.0322	1.5807
279	SLD 14	-4.78	0.47	41.55	11.752	-0.0326	1.4698
279	SLD 15	-4.88	-0.63	41.04	11.6828	-0.0308	1.5014



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
279	SLD 16	-4.52	-0.75	40.94	11.6596	-0.0313	1.3904
279	SLV 1	7.84	0.39	42.64	11.6213	-0.0022	-2.3835
279	SLV 2	8.69	0.11	42.41	11.5673	-0.0032	-2.6418
279	SLV 3	8.44	-2.38	41.25	11.4113	0.001	-2.5678
279	SLV 4	9.29	-2.66	41.02	11.3573	0	-2.8262
279	SLV 5	0.72	4.09	43.96	11.9686	-0.0211	-0.2083
279	SLV 6	1.27	3.91	43.81	11.9338	-0.0217	-0.3752
279	SLV 7	2.72	-5.14	39.33	11.2686	-0.0105	-0.8228
279	SLV 8	3.27	-5.32	39.17	11.2338	-0.0112	-0.9896
279	SLV 9	-4.91	4.53	43.74	12.0645	-0.034	1.511
279	SLV 10	-4.36	4.35	43.59	12.0297	-0.0346	1.3441
279	SLV 11	-2.91	-4.7	39.1	11.3646	-0.0234	0.8966
279	SLV 12	-2.36	-4.88	38.95	11.3297	-0.024	0.7297
279	SLV 13	-10.93	1.87	41.89	11.941	-0.0451	3.3476
279	SLV 14	-10.08	1.59	41.66	11.887	-0.0461	3.0892
279	SLV 15	-10.33	-0.9	40.5	11.731	-0.0419	3.1632
279	SLV 16	-9.48	-1.18	40.27	11.6771	-0.0429	2.9049
279	CRTFP Ux+	0	0	0	0	0	0
279	CRTFP Ux-	0	0	0	0	0	0
279	CRTFP Uy+	0	0	0	0	0	0
279	CRTFP Uy-	0	0	0	0	0	0
280	SLU 1	-0.76	-0.27	39.98	11.2934	-0.0386	0.242
280	SLU 2	-0.74	-0.32	39.95	11.2888	-0.0386	0.2348
280	SLU 3	-0.78	-0.26	40.88	11.547	-0.0397	0.249
280	SLU 4	-0.77	-0.29	40.86	11.5442	-0.0397	0.2447
280	SLU 5	-0.75	-0.32	40.57	11.4624	-0.0393	0.2386
280	SLU 6	-0.79	-0.26	41.5	11.7206	-0.0404	0.2529
280	SLU 7	-0.78	-0.29	41.48	11.7178	-0.0404	0.2485
280	SLU 8	-0.78	-0.28	41.22	11.6406	-0.0401	0.2498
280	SLU 9	-0.77	-0.31	41.2	11.6378	-0.0401	0.2454
280	SLU 10	-0.79	-0.3	44.83	12.6688	-0.0451	0.2521
280	SLU 11	-0.84	-0.24	45.76	12.927	-0.0462	0.2664
280	SLU 12	-0.82	-0.27	45.74	12.9242	-0.0462	0.262
280	SLU 13	-0.8	-0.3	45.45	12.8424	-0.0458	0.256
280	SLU 14	-0.85	-0.24	46.38	13.1006	-0.0469	0.2702
280	SLU 15	-0.83	-0.27	46.36	13.0978	-0.0469	0.2659
280	SLU 16	-0.84	-0.26	46.1	13.0206	-0.0466	0.2671
280	SLU 17	-0.82	-0.29	46.08	13.0178	-0.0466	0.2628
280	SLU 18	-0.84	-0.24	46.95	13.2648	-0.0479	0.2668
280	SLU 19	-0.82	-0.27	46.93	13.2621	-0.0479	0.2624
280	SLU 20	-0.85	-0.25	47.57	13.4384	-0.0487	0.2707
280	SLU 21	-0.83	-0.28	47.55	13.4357	-0.0486	0.2663
280	SLU 22	-0.85	-0.19	44.17	12.4809	-0.0431	0.2721
280	SLU 23	-0.83	-0.24	44.14	12.4764	-0.0431	0.2648
280	SLU 24	-0.88	-0.18	45.07	12.7345	-0.0442	0.2791
280	SLU 25	-0.86	-0.21	45.05	12.7318	-0.0442	0.2747
280	SLU 26	-0.84	-0.24	44.76	12.65	-0.0438	0.2687
280	SLU 27	-0.89	-0.18	45.69	12.9081	-0.0449	0.283
280	SLU 28	-0.87	-0.21	45.67	12.9054	-0.0449	0.2786
280	SLU 29	-0.88	-0.2	45.41	12.8281	-0.0446	0.2799
280	SLU 30	-0.86	-0.22	45.39	12.8254	-0.0446	0.2755
280	SLU 31	-0.88	-0.22	49.02	13.8564	-0.0496	0.2822
280	SLU 32	-0.93	-0.16	49.95	14.1145	-0.0507	0.2964
280	SLU 33	-0.92	-0.19	49.93	14.1118	-0.0507	0.2921
280	SLU 34	-0.9	-0.22	49.64	14.03	-0.0504	0.2861
280	SLU 35	-0.94	-0.16	50.57	14.2881	-0.0515	0.3003
280	SLU 36	-0.93	-0.19	50.55	14.2854	-0.0514	0.296
280	SLU 37	-0.93	-0.18	50.29	14.2081	-0.0511	0.2972
280	SLU 38	-0.92	-0.21	50.27	14.2054	-0.0511	0.2929
280	SLU 39	-0.93	-0.16	51.14	14.4523	-0.0524	0.2969
280	SLU 40	-0.92	-0.19	51.12	14.4496	-0.0524	0.2925
280	SLU 41	-0.94	-0.17	51.76	14.6259	-0.0532	0.3008
280	SLU 42	-0.93	-0.19	51.74	14.6232	-0.0532	0.2964
280	SLU 43	-0.96	-0.38	50.54	14.2743	-0.0486	0.3043
280	SLU 44	-0.93	-0.43	50.51	14.2697	-0.0486	0.2971
280	SLU 45	-0.98	-0.37	51.44	14.5278	-0.0497	0.3113
280	SLU 46	-0.96	-0.4	51.42	14.5251	-0.0497	0.307
280	SLU 47	-0.94	-0.43	51.13	14.4433	-0.0494	0.3009
280	SLU 48	-0.99	-0.37	52.06	14.7014	-0.0505	0.3152
280	SLU 49	-0.98	-0.4	52.04	14.6987	-0.0504	0.3108
280	SLU 50	-0.98	-0.39	51.78	14.6214	-0.0501	0.3121
280	SLU 51	-0.97	-0.41	51.76	14.6187	-0.0501	0.3077
280	SLU 52	-0.99	-0.41	55.39	15.6497	-0.0551	0.3144
280	SLU 53	-1.03	-0.35	56.31	15.9078	-0.0562	0.3287
280	SLU 54	-1.02	-0.38	56.3	15.9051	-0.0562	0.3243
280	SLU 55	-1	-0.41	56.01	15.8233	-0.0559	0.3183
280	SLU 56	-1.04	-0.35	56.93	16.0814	-0.057	0.3325
280	SLU 57	-1.03	-0.38	56.92	16.0787	-0.057	0.3282
280	SLU 58	-1.03	-0.37	56.66	16.0014	-0.0567	0.3294
280	SLU 59	-1.02	-0.4	56.64	15.9987	-0.0566	0.3251
280	SLU 60	-1.03	-0.35	57.51	16.2457	-0.0579	0.3291
280	SLU 61	-1.02	-0.38	57.49	16.2429	-0.0579	0.3247
280	SLU 62	-1.04	-0.36	58.13	16.4193	-0.0587	0.333
280	SLU 63	-1.03	-0.38	58.11	16.4165	-0.0587	0.3286
280	SLU 64	-1.05	-0.3	54.73	15.4618	-0.0532	0.3344
280	SLU 65	-1.03	-0.34	54.7	15.4572	-0.0531	0.3271
280	SLU 66	-1.07	-0.29	55.63	15.7154	-0.0542	0.3414
280	SLU 67	-1.06	-0.32	55.61	15.7126	-0.0542	0.337
280	SLU 68	-1.04	-0.35	55.32	15.6308	-0.0539	0.331
280	SLU 69	-1.08	-0.29	56.25	15.889	-0.055	0.3453



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
280	SLU 70	-1.07	-0.32	56.23	15.8862	-0.055	0.3409
280	SLU 71	-1.07	-0.31	55.97	15.809	-0.0547	0.3422
280	SLU 72	-1.06	-0.33	55.95	15.8062	-0.0546	0.3378
280	SLU 73	-1.08	-0.33	59.58	16.8372	-0.0596	0.3445
280	SLU 74	-1.13	-0.27	60.5	17.0954	-0.0607	0.3587
280	SLU 75	-1.11	-0.3	60.49	17.0926	-0.0607	0.3544
280	SLU 76	-1.09	-0.33	60.2	17.0108	-0.0604	0.3484
280	SLU 77	-1.14	-0.27	61.12	17.2689	-0.0615	0.3626
280	SLU 78	-1.12	-0.3	61.11	17.2662	-0.0615	0.3583
280	SLU 79	-1.13	-0.29	60.85	17.189	-0.0612	0.3595
280	SLU 80	-1.11	-0.31	60.83	17.1862	-0.0612	0.3552
280	SLU 81	-1.13	-0.27	61.7	17.4332	-0.0625	0.3592
280	SLU 82	-1.11	-0.3	61.68	17.4305	-0.0624	0.3548
280	SLU 83	-1.14	-0.28	62.32	17.6068	-0.0632	0.3631
280	SLU 84	-1.12	-0.3	62.3	17.6041	-0.0632	0.3587
280	SLE RA 1	-0.79	-0.25	41.18	11.6327	-0.0399	0.2506
280	SLE RA 2	-0.77	-0.28	41.16	11.6297	-0.0399	0.2458
280	SLE RA 3	-0.8	-0.24	41.78	11.8017	-0.0406	0.2553
280	SLE RA 4	-0.79	-0.26	41.77	11.7999	-0.0406	0.2524
280	SLE RA 5	-0.78	-0.28	41.57	11.7454	-0.0404	0.2484
280	SLE RA 6	-0.81	-0.24	42.19	11.9175	-0.0411	0.2579
280	SLE RA 7	-0.8	-0.26	42.18	11.9156	-0.0411	0.255
280	SLE RA 8	-0.8	-0.25	42.01	11.8641	-0.0409	0.2558
280	SLE RA 9	-0.79	-0.27	41.99	11.8623	-0.0409	0.2529
280	SLE RA 10	-0.81	-0.27	44.41	12.5496	-0.0442	0.2573
280	SLE RA 11	-0.84	-0.23	45.03	12.7217	-0.0449	0.2668
280	SLE RA 12	-0.83	-0.25	45.02	12.7199	-0.0449	0.2639
280	SLE RA 13	-0.82	-0.27	44.82	12.6654	-0.0447	0.2599
280	SLE RA 14	-0.85	-0.23	45.44	12.8375	-0.0455	0.2694
280	SLE RA 15	-0.84	-0.25	45.43	12.8356	-0.0454	0.2665
280	SLE RA 16	-0.84	-0.24	45.26	12.7841	-0.0452	0.2674
280	SLE RA 17	-0.83	-0.26	45.24	12.7823	-0.0452	0.2645
280	SLE RA 18	-0.84	-0.23	45.82	12.947	-0.0461	0.2671
280	SLE RA 19	-0.83	-0.25	45.81	12.9451	-0.0461	0.2642
280	SLE RA 20	-0.85	-0.23	46.24	13.0627	-0.0466	0.2697
280	SLE RA 21	-0.84	-0.25	46.22	13.0609	-0.0466	0.2668
280	SLE FR 1	-0.79	-0.25	41.18	11.6327	-0.0399	0.2506
280	SLE FR 2	-0.78	-0.25	41.17	11.6321	-0.0399	0.2497
280	SLE FR 3	-0.79	-0.25	41.34	11.679	-0.0401	0.2517
280	SLE FR 4	-0.8	-0.25	42.57	12.0264	-0.0417	0.2546
280	SLE FR 5	-0.81	-0.24	42.74	12.0733	-0.042	0.2566
280	SLE FR 6	-0.81	-0.24	43.5	12.2898	-0.043	0.2589
280	SLE QP 1	-0.79	-0.25	41.18	11.6327	-0.0399	0.2506
280	SLE QP 2	-0.8	-0.24	42.57	12.027	-0.0418	0.2556
280	SLD 1	2.89	0.18	42.64	11.9391	-0.0334	-0.8718
280	SLD 2	3.25	0.08	42.56	11.9203	-0.0338	-0.9822
280	SLD 3	3.14	-1.06	41.98	11.8286	-0.0317	-0.9509
280	SLD 4	3.51	-1.16	41.89	11.8098	-0.0321	-1.0613
280	SLD 5	-0.15	1.78	43.61	12.1716	-0.0418	0.0571
280	SLD 6	0.09	1.71	43.56	12.1592	-0.0421	-0.0154
280	SLD 7	0.71	-2.34	41.41	11.8032	-0.036	-0.2067
280	SLD 8	0.95	-2.41	41.35	11.7909	-0.0363	-0.2793
280	SLD 9	-2.55	1.93	43.79	12.2631	-0.0472	0.7904
280	SLD 10	-2.31	1.86	43.74	12.2508	-0.0475	0.7179
280	SLD 11	-1.69	-2.19	41.59	11.8947	-0.0414	0.5266
280	SLD 12	-1.45	-2.26	41.53	11.8824	-0.0417	0.454
280	SLD 13	-5.11	0.68	43.25	12.2441	-0.0514	1.5725
280	SLD 14	-4.75	0.57	43.16	12.2254	-0.0518	1.4621
280	SLD 15	-4.85	-0.56	42.59	12.1336	-0.0497	1.4934
280	SLD 16	-4.49	-0.66	42.5	12.1149	-0.0501	1.3829
280	SLV 1	7.83	0.7	42.71	11.8173	-0.0222	-2.383
280	SLV 2	8.68	0.46	42.51	11.7737	-0.0231	-2.6402
280	SLV 3	8.43	-2.1	41.21	11.5662	-0.0183	-2.5668
280	SLV 4	9.27	-2.34	41.01	11.5226	-0.0192	-2.824
280	SLV 5	0.73	4.32	44.92	12.3524	-0.0418	-0.2127
280	SLV 6	1.28	4.17	44.8	12.3242	-0.0423	-0.3788
280	SLV 7	2.73	-5	39.92	11.5155	-0.0285	-0.8255
280	SLV 8	3.27	-5.15	39.79	11.4873	-0.0291	-0.9916
280	SLV 9	-4.88	4.67	45.35	12.5666	-0.0544	1.5027
280	SLV 10	-4.33	4.52	45.22	12.5384	-0.055	1.3366
280	SLV 11	-2.89	-4.65	40.35	11.7297	-0.0412	0.89
280	SLV 12	-2.34	-4.81	40.22	11.7015	-0.0417	0.7239
280	SLV 13	-10.88	1.85	44.13	12.5314	-0.0644	3.3352
280	SLV 14	-10.03	1.62	43.93	12.4877	-0.0652	3.078
280	SLV 15	-10.28	-0.94	42.63	12.2803	-0.0604	3.1514
280	SLV 16	-9.43	-1.18	42.43	12.2366	-0.0613	2.8942
280	CRTFP Ux+	0	0	0	0	0	0
280	CRTFP Ux-	0	0	0	0	0	0
280	CRTFP Uy+	0	0	0	0	0	0
280	CRTFP Uy-	0	0	0	0	0	0
281	SLU 1	-2.08	-0.33	117.33	41.1405	-9.2483	0.7539
281	SLU 2	-2.01	-0.45	117.24	41.1174	-9.2417	0.7216
281	SLU 3	-2.13	-0.28	119.99	42.0745	-9.4624	0.7791
281	SLU 4	-2.1	-0.36	119.94	42.0607	-9.4584	0.7597
281	SLU 5	-2.04	-0.46	119.08	41.7596	-9.3896	0.7337
281	SLU 6	-2.17	-0.29	121.83	42.7166	-9.6103	0.7911
281	SLU 7	-2.13	-0.36	121.78	42.7028	-9.6064	0.7717
281	SLU 8	-2.14	-0.33	121	42.4248	-9.5442	0.778
281	SLU 9	-2.1	-0.41	120.95	42.4109	-9.5402	0.7586
281	SLU 10	-2.16	-0.36	131.79	46.2322	-10.4229	0.7844



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
281	SLU 11	-2.28	-0.19	134.54	47.1893	-10.6436	0.8419
281	SLU 12	-2.24	-0.26	134.49	47.1754	-10.6396	0.8225
281	SLU 13	-2.19	-0.36	133.63	46.8743	-10.5708	0.7964
281	SLU 14	-2.31	-0.19	136.38	47.8314	-10.7915	0.8539
281	SLU 15	-2.27	-0.27	136.33	47.8175	-10.7876	0.8345
281	SLU 16	-2.29	-0.24	135.56	47.5395	-10.7254	0.8408
281	SLU 17	-2.25	-0.31	135.51	47.5256	-10.7214	0.8214
281	SLU 18	-2.28	-0.19	138.12	48.4473	-10.9357	0.8436
281	SLU 19	-2.24	-0.26	138.07	48.4335	-10.9318	0.8242
281	SLU 20	-2.32	-0.19	139.95	49.0894	-11.0837	0.8556
281	SLU 21	-2.28	-0.27	139.9	49.0756	-11.0797	0.8363
281	SLU 22	-2.33	-0.04	129.7	45.4867	-10.2356	0.8702
281	SLU 23	-2.27	-0.17	129.61	45.4636	-10.229	0.8379
281	SLU 24	-2.39	0	132.36	46.4206	-10.4497	0.8954
281	SLU 25	-2.35	-0.08	132.31	46.4068	-10.4458	0.876
281	SLU 26	-2.3	-0.17	131.45	46.1057	-10.377	0.8499
281	SLU 27	-2.42	-0.01	134.2	47.0627	-10.5977	0.9074
281	SLU 28	-2.39	-0.08	134.15	47.0489	-10.5937	0.888
281	SLU 29	-2.4	-0.05	133.38	46.7709	-10.5315	0.8943
281	SLU 30	-2.36	-0.13	133.33	46.757	-10.5276	0.8749
281	SLU 31	-2.41	-0.07	144.17	50.5783	-11.4103	0.9007
281	SLU 32	-2.54	0.1	146.92	51.5354	-11.631	0.9582
281	SLU 33	-2.5	0.02	146.87	51.5215	-11.627	0.9388
281	SLU 34	-2.45	-0.08	146.01	51.2204	-11.5582	0.9127
281	SLU 35	-2.57	0.09	148.76	52.1775	-11.7789	0.9702
281	SLU 36	-2.53	0.02	148.71	52.1636	-11.7749	0.9508
281	SLU 37	-2.54	0.05	147.93	51.8856	-11.7127	0.9571
281	SLU 38	-2.5	-0.03	147.88	51.8718	-11.7088	0.9377
281	SLU 39	-2.54	0.1	150.49	52.7934	-11.9231	0.9599
281	SLU 40	-2.5	0.02	150.44	52.7796	-11.9191	0.9405
281	SLU 41	-2.57	0.09	152.33	53.4355	-12.071	0.9719
281	SLU 42	-2.53	0.02	152.28	53.4217	-12.0671	0.9526
281	SLU 43	-2.61	-0.52	148.28	51.9926	-11.6843	0.9402
281	SLU 44	-2.54	-0.65	148.2	51.9695	-11.6776	0.9079
281	SLU 45	-2.67	-0.48	150.95	52.9266	-11.8984	0.9654
281	SLU 46	-2.63	-0.56	150.9	52.9127	-11.8944	0.946
281	SLU 47	-2.58	-0.65	150.04	52.6116	-11.8256	0.92
281	SLU 48	-2.7	-0.48	152.78	53.5687	-12.0463	0.9774
281	SLU 49	-2.66	-0.56	152.73	53.5548	-12.0423	0.9581
281	SLU 50	-2.68	-0.53	151.96	53.2768	-11.9801	0.9643
281	SLU 51	-2.64	-0.6	151.91	53.263	-11.9762	0.9449
281	SLU 52	-2.69	-0.55	162.75	57.0843	-12.8589	0.9707
281	SLU 53	-2.82	-0.38	165.5	58.0413	-13.0796	1.0282
281	SLU 54	-2.78	-0.46	165.45	58.0275	-13.0756	1.0088
281	SLU 55	-2.72	-0.55	164.59	57.7264	-13.0068	0.9827
281	SLU 56	-2.85	-0.39	167.34	58.6835	-13.2275	1.0402
281	SLU 57	-2.81	-0.46	167.29	58.6696	-13.2235	1.0208
281	SLU 58	-2.82	-0.43	166.51	58.3916	-13.1614	1.0271
281	SLU 59	-2.78	-0.51	166.46	58.3777	-13.1574	1.0077
281	SLU 60	-2.82	-0.38	169.07	59.2994	-13.3717	1.0299
281	SLU 61	-2.78	-0.46	169.02	59.2855	-13.3677	1.0105
281	SLU 62	-2.85	-0.39	170.91	59.9415	-13.5196	1.042
281	SLU 63	-2.81	-0.46	170.86	59.9276	-13.5157	1.0276
281	SLU 64	-2.87	-0.24	160.65	56.3387	-12.6716	1.0565
281	SLU 65	-2.8	-0.37	160.57	56.3156	-12.665	1.0242
281	SLU 66	-2.93	-0.2	163.32	57.2727	-12.8857	1.0817
281	SLU 67	-2.89	-0.27	163.27	57.2588	-12.8817	1.0623
281	SLU 68	-2.83	-0.37	162.41	56.9577	-12.8129	1.0363
281	SLU 69	-2.96	-0.2	165.16	57.9148	-13.0336	1.0937
281	SLU 70	-2.92	-0.28	165.11	57.901	-13.0297	1.0743
281	SLU 71	-2.93	-0.25	164.33	57.6229	-12.9675	1.0806
281	SLU 72	-2.89	-0.32	164.28	57.6091	-12.9635	1.0612
281	SLU 73	-2.95	-0.27	175.12	61.4304	-13.8462	1.087
281	SLU 74	-3.07	-0.1	177.87	62.3875	-14.0669	1.1445
281	SLU 75	-3.03	-0.18	177.82	62.3736	-14.063	1.1251
281	SLU 76	-2.98	-0.27	176.96	62.0725	-13.9942	1.099
281	SLU 77	-3.1	-0.1	179.71	63.0296	-14.2149	1.1565
281	SLU 78	-3.07	-0.18	179.66	63.0157	-14.2109	1.1371
281	SLU 79	-3.08	-0.15	178.88	62.7377	-14.1487	1.1434
281	SLU 80	-3.04	-0.22	178.83	62.7238	-14.1447	1.124
281	SLU 81	-3.07	-0.1	181.44	63.6455	-14.3591	1.1462
281	SLU 82	-3.04	-0.18	181.39	63.6316	-14.3551	1.1268
281	SLU 83	-3.11	-0.1	183.28	64.2876	-14.507	1.1582
281	SLU 84	-3.07	-0.18	183.23	64.2738	-14.503	1.1389
281	SLE RA 1	-2.15	-0.25	120.86	42.3823	-9.5304	0.7872
281	SLE RA 2	-2.1	-0.33	120.8	42.3669	-9.526	0.7656
281	SLE RA 3	-2.19	-0.22	122.64	43.0049	-9.6731	0.8039
281	SLE RA 4	-2.16	-0.27	122.6	42.9957	-9.6705	0.791
281	SLE RA 5	-2.13	-0.33	122.03	42.795	-9.6246	0.7736
281	SLE RA 6	-2.21	-0.22	123.86	43.433	-9.7718	0.812
281	SLE RA 7	-2.18	-0.27	123.83	43.4238	-9.7691	0.799
281	SLE RA 8	-2.19	-0.25	123.31	43.2384	-9.7276	0.8032
281	SLE RA 9	-2.17	-0.3	123.28	43.2292	-9.725	0.7903
281	SLE RA 10	-2.2	-0.27	130.51	45.7767	-10.3135	0.8075
281	SLE RA 11	-2.29	-0.15	132.34	46.4148	-10.4606	0.8458
281	SLE RA 12	-2.26	-0.2	132.31	46.4055	-10.458	0.8329
281	SLE RA 13	-2.22	-0.27	131.73	46.2048	-10.4121	0.8155
281	SLE RA 14	-2.31	-0.16	133.57	46.8428	-10.5592	0.8538
281	SLE RA 15	-2.28	-0.21	133.53	46.8336	-10.5566	0.8409
281	SLE RA 16	-2.29	-0.19	133.01	46.6483	-10.5151	0.8451



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
281	SLE RA 17	-2.26	-0.24	132.98	46.639	-10.5125	0.8321
281	SLE RA 18	-2.29	-0.15	134.72	47.2535	-10.6554	0.8469
281	SLE RA 19	-2.26	-0.2	134.69	47.2442	-10.6527	0.834
281	SLE RA 20	-2.31	-0.16	135.95	47.6815	-10.754	0.855
281	SLE RA 21	-2.28	-0.21	135.91	47.6723	-10.7513	0.842
281	SLE FR 1	-2.15	-0.25	120.86	42.3823	-9.5304	0.7872
281	SLE FR 2	-2.14	-0.26	120.85	42.3792	-9.5295	0.7828
281	SLE FR 3	-2.16	-0.25	121.35	42.5535	-9.5698	0.7904
281	SLE FR 4	-2.18	-0.23	125.01	43.8406	-9.867	0.8008
281	SLE FR 5	-2.2	-0.22	125.51	44.0149	-9.9073	0.8083
281	SLE FR 6	-2.22	-0.2	127.79	44.8179	-10.0929	0.8171
281	SLE QP 1	-2.15	-0.25	120.86	42.3823	-9.5304	0.7872
281	SLE QP 2	-2.19	-0.22	125.02	43.8436	-9.8679	0.8051
281	SLD 1	8.12	1.11	124.16	43.3589	-9.6545	-2.831
281	SLD 2	9.12	0.9	123.97	43.3029	-9.6472	-3.2013
281	SLD 3	8.84	-2.41	122.17	42.783	-9.4838	-3.2606
281	SLD 4	9.84	-2.63	121.98	42.727	-9.4765	-3.6309
281	SLD 5	-0.36	5.56	127.81	44.5816	-10.0642	0.4319
281	SLD 6	0.3	5.42	127.69	44.5448	-10.0594	0.1886
281	SLD 7	2.02	-6.18	121.18	42.6621	-9.4949	-1
281	SLD 8	2.68	-6.32	121.06	42.6253	-9.4901	-1.2434
281	SLD 9	-7.06	5.88	128.98	45.062	-10.2456	2.8535
281	SLD 10	-6.4	5.74	128.86	45.0252	-10.2408	2.6102
281	SLD 11	-4.68	-5.85	122.35	43.1425	-9.6764	1.4216
281	SLD 12	-4.02	-5.99	122.23	43.1057	-9.6716	1.1783
281	SLD 13	-14.22	2.19	128.06	44.9603	-10.2593	5.2411
281	SLD 14	-13.22	1.98	127.87	44.9042	-10.252	4.8708
281	SLD 15	-13.5	-1.33	126.07	44.3844	-10.0885	4.8115
281	SLD 16	-12.5	-1.54	125.88	44.3284	-10.0812	4.4412
281	SLV 1	21.94	2.75	122.94	42.6887	-9.3627	-7.7144
281	SLV 2	24.28	2.26	122.49	42.5582	-9.3457	-8.5767
281	SLV 3	23.6	-5.22	118.42	41.3816	-8.9749	-8.6973
281	SLV 4	25.94	-5.71	117.98	41.2512	-8.958	-9.5595
281	SLV 5	2.12	12.85	131.31	45.502	-10.3073	-0.111
281	SLV 6	3.63	12.53	131.02	45.4178	-10.2963	-0.6679
281	SLV 7	7.67	-13.72	116.28	41.1453	-9.0149	-3.3871
281	SLV 8	9.17	-14.04	115.99	41.0611	-9.0039	-3.944
281	SLV 9	-13.55	13.6	134.05	46.6262	-10.7318	5.5542
281	SLV 10	-12.05	13.28	133.76	46.542	-10.7209	4.9973
281	SLV 11	-8.01	-12.96	119.01	42.2695	-9.4394	2.2781
281	SLV 12	-6.5	-13.28	118.73	42.1853	-9.4284	1.7212
281	SLV 13	-30.32	5.28	132.06	46.4361	-10.7778	11.1697
281	SLV 14	-27.98	4.78	131.61	46.3056	-10.7608	10.3075
281	SLV 15	-28.66	-2.69	127.55	45.1291	-10.3901	10.1868
281	SLV 16	-26.32	-3.19	127.1	44.9986	-10.3731	9.3246
281	CRTFP Ux+	0	0	0	0	0	0
281	CRTFP Ux-	0	0	0	0	0	0
281	CRTFP Uy+	0	0	0	0	0	0
281	CRTFP Uy-	0	0	0	0	0	0
284	SLU 1	-0.5	-0.02	28.83	8.622	3.8598	0.1672
284	SLU 2	-0.48	-0.05	28.81	8.6181	3.857	0.1661
284	SLU 3	-0.51	-0.01	29.49	8.8189	3.948	0.1704
284	SLU 4	-0.5	-0.03	29.48	8.8166	3.9463	0.1697
284	SLU 5	-0.49	-0.05	29.26	8.7533	3.9179	0.1687
284	SLU 6	-0.52	-0.01	29.94	8.9542	4.0089	0.173
284	SLU 7	-0.51	-0.03	29.93	8.9518	4.0072	0.1723
284	SLU 8	-0.52	-0.02	29.74	8.8924	3.9817	0.1724
284	SLU 9	-0.51	-0.04	29.73	8.8901	3.98	0.1718
284	SLU 10	-0.52	-0.02	32.41	9.7005	4.339	0.1738
284	SLU 11	-0.55	0.02	33.09	9.9014	4.43	0.1781
284	SLU 12	-0.54	0	33.08	9.899	4.4283	0.1774
284	SLU 13	-0.53	-0.02	32.87	9.8357	4.3999	0.1764
284	SLU 14	-0.56	0.02	33.55	10.0366	4.4909	0.1807
284	SLU 15	-0.55	0	33.54	10.0343	4.4892	0.1801
284	SLU 16	-0.55	0.01	33.35	9.9748	4.4637	0.1802
284	SLU 17	-0.54	-0.01	33.33	9.9725	4.462	0.1795
284	SLU 18	-0.55	0.02	33.98	10.1683	4.5485	0.1782
284	SLU 19	-0.54	0	33.97	10.1659	4.5467	0.1776
284	SLU 20	-0.56	0.02	34.44	10.3035	4.6094	0.1809
284	SLU 21	-0.55	0	34.42	10.3012	4.6077	0.1802
284	SLU 22	-0.56	0.05	31.88	9.5376	4.2682	0.1776
284	SLU 23	-0.55	0.02	31.86	9.5337	4.2654	0.1765
284	SLU 24	-0.58	0.06	32.54	9.7346	4.3564	0.1808
284	SLU 25	-0.57	0.05	32.53	9.7322	4.3547	0.1801
284	SLU 26	-0.55	0.02	32.32	9.6689	4.3263	0.1791
284	SLU 27	-0.58	0.06	33	9.8698	4.4173	0.1834
284	SLU 28	-0.57	0.05	32.98	9.8675	4.4156	0.1828
284	SLU 29	-0.58	0.05	32.79	9.808	4.39	0.1829
284	SLU 30	-0.57	0.03	32.78	9.8057	4.3883	0.1822
284	SLU 31	-0.58	0.05	35.47	10.6161	4.7474	0.1842
284	SLU 32	-0.61	0.09	36.15	10.817	4.8384	0.1885
284	SLU 33	-0.6	0.08	36.13	10.8146	4.8367	0.1879
284	SLU 34	-0.59	0.05	35.92	10.7513	4.8083	0.1869
284	SLU 35	-0.62	0.09	36.6	10.9522	4.8993	0.1912
284	SLU 36	-0.61	0.08	36.59	10.9499	4.8976	0.1905
284	SLU 37	-0.61	0.08	36.4	10.8904	4.8721	0.1906
284	SLU 38	-0.6	0.06	36.39	10.8881	4.8704	0.1899
284	SLU 39	-0.61	0.09	37.03	11.0839	4.9568	0.1887
284	SLU 40	-0.6	0.08	37.02	11.0815	4.9551	0.188
284	SLU 41	-0.62	0.09	37.49	11.2191	5.0177	0.1913



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
284	SLU 42	-0.61	0.08	37.48	11.2168	5.016	0.1906
284	SLU 43	-0.63	-0.05	36.43	10.8946	4.8778	0.2137
284	SLU 44	-0.61	-0.08	36.41	10.8907	4.8749	0.2126
284	SLU 45	-0.64	-0.04	37.09	11.0916	4.966	0.2169
284	SLU 46	-0.63	-0.06	37.08	11.0893	4.9642	0.2163
284	SLU 47	-0.62	-0.08	36.87	11.026	4.9359	0.2153
284	SLU 48	-0.65	-0.04	37.55	11.2268	5.0269	0.2196
284	SLU 49	-0.64	-0.06	37.53	11.2245	5.0252	0.2189
284	SLU 50	-0.64	-0.05	37.34	11.1651	4.9996	0.219
284	SLU 51	-0.63	-0.07	37.33	11.1628	4.9979	0.2184
284	SLU 52	-0.65	-0.05	40.02	11.9732	5.357	0.2204
284	SLU 53	-0.68	-0.01	40.7	12.174	5.448	0.2247
284	SLU 54	-0.67	-0.03	40.68	12.1717	5.4463	0.224
284	SLU 55	-0.66	-0.05	40.47	12.1084	5.4179	0.223
284	SLU 56	-0.69	-0.01	41.15	12.3092	5.5089	0.2273
284	SLU 57	-0.68	-0.03	41.14	12.3069	5.5072	0.2267
284	SLU 58	-0.68	-0.02	40.95	12.2475	5.4816	0.2268
284	SLU 59	-0.67	-0.04	40.94	12.2452	5.4799	0.2261
284	SLU 60	-0.68	-0.01	41.58	12.4409	5.5664	0.2248
284	SLU 61	-0.67	-0.03	41.57	12.4386	5.5647	0.2241
284	SLU 62	-0.69	-0.01	42.04	12.5762	5.6273	0.2274
284	SLU 63	-0.68	-0.03	42.03	12.5738	5.6256	0.2268
284	SLU 64	-0.69	0.02	39.48	11.8102	5.2862	0.2242
284	SLU 65	-0.67	-0.01	39.46	11.8064	5.2833	0.2231
284	SLU 66	-0.7	0.03	40.14	12.0072	5.3743	0.2274
284	SLU 67	-0.69	0.01	40.13	12.0049	5.3726	0.2267
284	SLU 68	-0.68	-0.01	39.92	11.9416	5.3442	0.2257
284	SLU 69	-0.71	0.03	40.6	12.1425	5.4352	0.23
284	SLU 70	-0.7	0.01	40.59	12.1401	5.4335	0.2293
284	SLU 71	-0.71	0.02	40.4	12.0807	5.408	0.2294
284	SLU 72	-0.7	0	40.38	12.0784	5.4063	0.2288
284	SLU 73	-0.71	0.02	43.07	12.8888	5.7653	0.2308
284	SLU 74	-0.74	0.06	43.75	13.0896	5.8563	0.2351
284	SLU 75	-0.73	0.04	43.74	13.0873	5.8546	0.2344
284	SLU 76	-0.72	0.02	43.52	13.024	5.8262	0.2334
284	SLU 77	-0.75	0.06	44.2	13.2249	5.9173	0.2377
284	SLU 78	-0.74	0.04	44.19	13.2225	5.9156	0.2371
284	SLU 79	-0.74	0.05	44	13.1631	5.89	0.2372
284	SLU 80	-0.73	0.03	43.99	13.1608	5.8883	0.2365
284	SLU 81	-0.74	0.06	44.63	13.3565	5.9748	0.2352
284	SLU 82	-0.73	0.04	44.62	13.3542	5.9731	0.2346
284	SLU 83	-0.75	0.06	45.09	13.4918	6.0357	0.2379
284	SLU 84	-0.74	0.04	45.08	13.4894	6.034	0.2372
284	SLE RA 1	-0.52	0	29.7	8.8836	3.9765	0.1701
284	SLE RA 2	-0.51	-0.02	29.69	8.881	3.9746	0.1694
284	SLE RA 3	-0.53	0.01	30.14	9.0149	4.0353	0.1723
284	SLE RA 4	-0.52	-0.01	30.13	9.0133	4.0342	0.1718
284	SLE RA 5	-0.51	-0.02	29.99	8.9711	4.0152	0.1712
284	SLE RA 6	-0.53	0.01	30.44	9.105	4.0759	0.174
284	SLE RA 7	-0.53	-0.01	30.44	9.1035	4.0748	0.1736
284	SLE RA 8	-0.53	0	30.31	9.0639	4.0577	0.1737
284	SLE RA 9	-0.52	-0.01	30.3	9.0623	4.0566	0.1732
284	SLE RA 10	-0.53	0	32.09	9.6026	4.296	0.1746
284	SLE RA 11	-0.55	0.03	32.54	9.7365	4.3566	0.1774
284	SLE RA 12	-0.54	0.01	32.54	9.7349	4.3555	0.177
284	SLE RA 13	-0.54	0	32.39	9.6927	4.3366	0.1763
284	SLE RA 14	-0.56	0.03	32.85	9.8266	4.3973	0.1792
284	SLE RA 15	-0.55	0.01	32.84	9.8251	4.3961	0.1788
284	SLE RA 16	-0.55	0.02	32.71	9.7855	4.3791	0.1788
284	SLE RA 17	-0.54	0.01	32.7	9.7839	4.378	0.1784
284	SLE RA 18	-0.55	0.03	33.14	9.9144	4.4356	0.1775
284	SLE RA 19	-0.54	0.02	33.13	9.9129	4.4345	0.1771
284	SLE RA 20	-0.56	0.03	33.44	10.0046	4.4762	0.1793
284	SLE RA 21	-0.55	0.02	33.43	10.003	4.4751	0.1788
284	SLE FR 1	-0.52	0	29.7	8.8836	3.9765	0.1701
284	SLE FR 2	-0.51	-0.01	29.7	8.8831	3.9761	0.17
284	SLE FR 3	-0.52	0	29.82	8.9196	3.9928	0.1709
284	SLE FR 4	-0.52	0	30.73	9.1923	4.1139	0.1722
284	SLE FR 5	-0.53	0.01	30.85	9.2289	4.1305	0.1731
284	SLE FR 6	-0.53	0.01	31.42	9.399	4.2061	0.1738
284	SLE QP 1	-0.52	0	29.7	8.8836	3.9765	0.1701
284	SLE QP 2	-0.53	0.01	30.73	9.1928	4.1142	0.1724
284	SLD 1	1.92	0.57	30.4	9.0189	4.0728	-0.697
284	SLD 2	2.16	0.53	30.36	9.0107	4.0671	-0.7686
284	SLD 3	2.09	-0.26	29.89	8.914	4.0042	-0.5954
284	SLD 4	2.33	-0.3	29.85	8.9059	3.9985	-0.6669
284	SLD 5	-0.1	1.45	31.42	9.3011	4.2069	-0.2299
284	SLD 6	0.06	1.43	31.39	9.2957	4.2031	-0.2769
284	SLD 7	0.47	-1.34	29.71	8.9517	3.9782	0.109
284	SLD 8	0.63	-1.36	29.68	8.9463	3.9745	0.062
284	SLD 9	-1.69	1.38	31.78	9.4394	4.254	0.2827
284	SLD 10	-1.53	1.35	31.76	9.434	4.2503	0.2357
284	SLD 11	-1.12	-1.41	30.07	9.0899	4.0253	0.6216
284	SLD 12	-0.96	-1.44	30.05	9.0846	4.0216	0.5746
284	SLD 13	-3.38	0.32	31.62	9.4798	4.2299	1.0116
284	SLD 14	-3.14	0.28	31.58	9.4716	4.2243	0.9401
284	SLD 15	-3.21	-0.52	31.1	9.375	4.1613	1.1133
284	SLD 16	-2.97	-0.56	31.06	9.3668	4.1557	1.0418
284	SLV 1	5.19	1.3	29.94	8.7821	4.0148	-1.8587
284	SLV 2	5.75	1.2	29.84	8.7631	4.0016	-2.0254





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
284	SLV 3	5.59	-0.6	28.77	8.5438	3.8592	-1.6272
284	SLV 4	6.15	-0.69	28.68	8.5248	3.846	-1.7938
284	SLV 5	0.49	3.28	32.28	9.4343	4.3227	-0.7593
284	SLV 6	0.85	3.22	32.21	9.422	4.3142	-0.867
284	SLV 7	1.81	-3.03	28.39	8.64	3.804	0.0125
284	SLV 8	2.17	-3.09	28.33	8.6278	3.7955	-0.0951
284	SLV 9	-3.23	3.11	33.13	9.7579	4.433	0.4399
284	SLV 10	-2.87	3.05	33.07	9.7456	4.4245	0.3322
284	SLV 11	-1.91	-3.21	29.25	8.9636	3.9143	1.2117
284	SLV 12	-1.55	-3.27	29.19	8.9514	3.9058	1.104
284	SLV 13	-7.2	0.7	32.79	9.8608	4.3825	2.1386
284	SLV 14	-6.65	0.61	32.69	9.8418	4.3693	1.9719
284	SLV 15	-6.81	-1.19	31.62	9.6225	4.2269	2.3701
284	SLV 16	-6.25	-1.28	31.53	9.6036	4.2136	2.2034
284	CRTFP Ux+	0	0	0	0	0	0
284	CRTFP Ux-	0	0	0	0	0	0
284	CRTFP Uy+	0	0	0	0	0	0
284	CRTFP Uy-	0	0	0	0	0	0
286	SLU 1	0.45	-0.12	75.86	8.3542	12.796	-0.0721
286	SLU 2	0.49	-0.19	75.81	8.352	12.785	-0.0639
286	SLU 3	0.47	-0.09	77.61	8.5466	13.0925	-0.0794
286	SLU 4	0.49	-0.14	77.58	8.5453	13.0859	-0.0745
286	SLU 5	0.5	-0.19	76.98	8.4782	12.9838	-0.0655
286	SLU 6	0.47	-0.09	78.77	8.6728	13.2913	-0.081
286	SLU 7	0.5	-0.13	78.74	8.6715	13.2847	-0.0761
286	SLU 8	0.46	-0.12	78.19	8.6066	13.1936	-0.0753
286	SLU 9	0.49	-0.16	78.16	8.6053	13.187	-0.0704
286	SLU 10	0.51	-0.08	85.35	9.4062	14.4166	-0.0889
286	SLU 11	0.48	0.02	87.15	9.6008	14.7241	-0.1045
286	SLU 12	0.51	-0.03	87.12	9.5995	14.7175	-0.0995
286	SLU 13	0.51	-0.08	86.52	9.5324	14.6154	-0.0906
286	SLU 14	0.49	0.02	88.31	9.727	14.9229	-0.1061
286	SLU 15	0.51	-0.02	88.28	9.7257	14.9163	-0.1012
286	SLU 16	0.48	-0.01	87.73	9.6608	14.8253	-0.1004
286	SLU 17	0.5	-0.05	87.7	9.6595	14.8186	-0.0955
286	SLU 18	0.47	0.04	89.49	9.8602	15.1269	-0.1079
286	SLU 19	0.5	0	89.46	9.8589	15.1203	-0.103
286	SLU 20	0.48	0.04	90.65	9.9864	15.3257	-0.1095
286	SLU 21	0.5	0	90.62	9.9851	15.3191	-0.1046
286	SLU 22	0.53	0.06	84.02	9.2634	14.1732	-0.1157
286	SLU 23	0.57	-0.01	83.97	9.2613	14.1621	-0.1075
286	SLU 24	0.54	0.09	85.77	9.4559	14.4696	-0.123
286	SLU 25	0.57	0.04	85.74	9.4545	14.463	-0.1181
286	SLU 26	0.57	-0.01	85.14	9.3875	14.361	-0.1091
286	SLU 27	0.55	0.09	86.94	9.5821	14.6685	-0.1246
286	SLU 28	0.57	0.04	86.91	9.5807	14.6619	-0.1197
286	SLU 29	0.54	0.06	86.36	9.5159	14.5708	-0.1189
286	SLU 30	0.56	0.02	86.33	9.5145	14.5642	-0.114
286	SLU 31	0.58	0.1	93.51	10.3154	15.7938	-0.1325
286	SLU 32	0.56	0.2	95.31	10.51	16.1013	-0.1481
286	SLU 33	0.58	0.15	95.28	10.5087	16.0947	-0.1431
286	SLU 34	0.59	0.1	94.68	10.4416	15.9926	-0.1342
286	SLU 35	0.57	0.2	96.48	10.6362	16.3001	-0.1497
286	SLU 36	0.59	0.15	96.45	10.6349	16.2935	-0.1447
286	SLU 37	0.56	0.17	95.9	10.57	16.2024	-0.144
286	SLU 38	0.58	0.13	95.87	10.5687	16.1958	-0.1391
286	SLU 39	0.55	0.22	97.65	10.7694	16.5041	-0.1515
286	SLU 40	0.58	0.17	97.62	10.7681	16.4975	-0.1466
286	SLU 41	0.56	0.22	98.82	10.8956	16.7029	-0.1531
286	SLU 42	0.58	0.17	98.79	10.8943	16.6963	-0.1482
286	SLU 43	0.56	-0.21	95.82	10.5487	16.1626	-0.0788
286	SLU 44	0.6	-0.29	95.77	10.5465	16.1516	-0.0706
286	SLU 45	0.58	-0.19	97.57	10.7411	16.4591	-0.0861
286	SLU 46	0.6	-0.23	97.54	10.7398	16.4525	-0.0811
286	SLU 47	0.61	-0.29	96.94	10.6727	16.3504	-0.0722
286	SLU 48	0.58	-0.19	98.73	10.8673	16.6579	-0.0877
286	SLU 49	0.6	-0.23	98.7	10.866	16.6513	-0.0828
286	SLU 50	0.57	-0.21	98.15	10.8011	16.5602	-0.082
286	SLU 51	0.6	-0.26	98.12	10.7998	16.5536	-0.0771
286	SLU 52	0.62	-0.18	105.31	11.6007	17.7832	-0.0956
286	SLU 53	0.59	-0.08	107.11	11.7953	18.0907	-0.1112
286	SLU 54	0.61	-0.12	107.08	11.794	18.0841	-0.1062
286	SLU 55	0.62	-0.18	106.47	11.7269	17.982	-0.0972
286	SLU 56	0.6	-0.08	108.27	11.9215	18.2895	-0.1128
286	SLU 57	0.62	-0.12	108.24	11.9202	18.2829	-0.1078
286	SLU 58	0.59	-0.1	107.69	11.8553	18.1919	-0.1071
286	SLU 59	0.61	-0.15	107.66	11.854	18.1853	-0.1022
286	SLU 60	0.58	-0.06	109.45	12.0547	18.4935	-0.1146
286	SLU 61	0.61	-0.1	109.42	12.0534	18.4869	-0.1097
286	SLU 62	0.59	-0.06	110.61	12.1809	18.6923	-0.1162
286	SLU 63	0.61	-0.1	110.58	12.1796	18.6857	-0.1113
286	SLU 64	0.64	-0.04	103.98	11.458	17.5398	-0.1224
286	SLU 65	0.68	-0.11	103.93	11.4558	17.5288	-0.1142
286	SLU 66	0.65	-0.01	105.73	11.6504	17.8363	-0.1297
286	SLU 67	0.68	-0.05	105.7	11.6491	17.8297	-0.1247
286	SLU 68	0.68	-0.11	105.1	11.582	17.7276	-0.1158
286	SLU 69	0.66	-0.01	106.9	11.7766	18.0351	-0.1313
286	SLU 70	0.68	-0.05	106.87	11.7753	18.0285	-0.1264
286	SLU 71	0.65	-0.04	106.32	11.7104	17.9374	-0.1256
286	SLU 72	0.67	-0.08	106.29	11.7091	17.9308	-0.1207



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
286	SLU 73	0.69	0	113.47	12.51	19.1604	-0.1392
286	SLU 74	0.67	0.1	115.27	12.7046	19.4679	-0.1547
286	SLU 75	0.69	0.06	115.24	12.7032	19.4613	-0.1498
286	SLU 76	0.7	0	114.64	12.6362	19.3592	-0.1408
286	SLU 77	0.67	0.1	116.44	12.8308	19.6667	-0.1564
286	SLU 78	0.7	0.06	116.41	12.8295	19.6601	-0.1514
286	SLU 79	0.67	0.08	115.85	12.7646	19.569	-0.1507
286	SLU 80	0.69	0.03	115.83	12.7632	19.5624	-0.1458
286	SLU 81	0.66	0.12	117.61	12.9639	19.8707	-0.1582
286	SLU 82	0.68	0.08	117.58	12.9626	19.8641	-0.1533
286	SLU 83	0.67	0.12	118.78	13.0902	20.0695	-0.1598
286	SLU 84	0.69	0.08	118.75	13.0888	20.0629	-0.1549
286	SLE RA 1	0.47	-0.07	78.19	8.614	13.1895	-0.0846
286	SLE RA 2	0.5	-0.12	78.16	8.6125	13.1821	-0.0791
286	SLE RA 3	0.48	-0.05	79.36	8.7423	13.3871	-0.0894
286	SLE RA 4	0.5	-0.08	79.34	8.7414	13.3827	-0.0861
286	SLE RA 5	0.5	-0.12	78.94	8.6967	13.3147	-0.0802
286	SLE RA 6	0.49	-0.05	80.14	8.8264	13.5197	-0.0905
286	SLE RA 7	0.5	-0.08	80.12	8.8255	13.5153	-0.0872
286	SLE RA 8	0.48	-0.07	79.75	8.7823	13.4545	-0.0867
286	SLE RA 9	0.5	-0.1	79.73	8.7814	13.4501	-0.0834
286	SLE RA 10	0.51	-0.04	84.52	9.3153	14.2699	-0.0958
286	SLE RA 11	0.49	0.02	85.72	9.4451	14.4749	-0.1061
286	SLE RA 12	0.51	-0.01	85.7	9.4442	14.4705	-0.1028
286	SLE RA 13	0.51	-0.04	85.3	9.3995	14.4024	-0.0969
286	SLE RA 14	0.5	0.02	86.49	9.5292	14.6074	-0.1072
286	SLE RA 15	0.51	0	86.47	9.5283	14.603	-0.1039
286	SLE RA 16	0.49	0.01	86.11	9.4851	14.5423	-0.1034
286	SLE RA 17	0.51	-0.02	86.09	9.4842	14.5379	-0.1001
286	SLE RA 18	0.49	0.04	87.28	9.618	14.7434	-0.1084
286	SLE RA 19	0.5	0.01	87.26	9.6171	14.739	-0.1051
286	SLE RA 20	0.49	0.04	88.05	9.7021	14.8759	-0.1095
286	SLE RA 21	0.51	0.01	88.04	9.7012	14.8715	-0.1062
286	SLE FR 1	0.47	-0.07	78.19	8.614	13.1895	-0.0846
286	SLE FR 2	0.48	-0.08	78.19	8.6137	13.188	-0.0835
286	SLE FR 3	0.48	-0.07	78.5	8.6476	13.2425	-0.085
286	SLE FR 4	0.48	-0.05	80.91	8.9149	13.6542	-0.0906
286	SLE FR 5	0.48	-0.04	81.23	8.9488	13.7087	-0.0922
286	SLE FR 6	0.48	-0.01	82.74	9.116	13.9664	-0.0965
286	SLE QP 1	0.47	-0.07	78.19	8.614	13.1895	-0.0846
286	SLE QP 2	0.48	-0.04	80.92	8.9152	13.6556	-0.0917
286	SLD 1	7.78	1.39	80.95	8.9018	13.8689	-1.0919
286	SLD 2	8.45	1.46	81.11	8.9195	13.8864	-1.1713
286	SLD 3	7.35	-0.86	79.49	8.8183	13.575	-0.7023
286	SLD 4	8.02	-0.79	79.65	8.836	13.5925	-0.7818
286	SLD 5	3.21	3.8	83.11	9.0347	14.1622	-0.9684
286	SLD 6	3.65	3.84	83.22	9.0463	14.1737	-1.0206
286	SLD 7	1.76	-3.71	78.24	8.7563	13.1826	0.3301
286	SLD 8	2.2	-3.67	78.35	8.7679	13.1942	0.2779
286	SLD 9	-1.24	3.59	83.48	9.0625	14.1171	-0.4613
286	SLD 10	-0.81	3.64	83.59	9.0741	14.1286	-0.5136
286	SLD 11	-2.69	-3.91	78.61	8.784	13.1376	0.8372
286	SLD 12	-2.25	-3.87	78.72	8.7957	13.1491	0.785
286	SLD 13	-7.06	0.72	82.18	8.9944	13.7187	0.5983
286	SLD 14	-6.39	0.79	82.35	9.0121	13.7363	0.5189
286	SLD 15	-7.49	-1.53	80.72	8.9109	13.4249	0.9879
286	SLD 16	-6.83	-1.47	80.89	8.9285	13.4424	0.9084
286	SLV 1	17.57	3.22	80.94	8.8817	14.1438	-2.4173
286	SLV 2	19.12	3.38	81.33	8.9229	14.1847	-2.6023
286	SLV 3	16.56	-1.88	77.62	8.6916	13.4774	-1.5353
286	SLV 4	18.11	-1.72	78.01	8.7328	13.5182	-1.7203
286	SLV 5	6.87	8.64	85.88	9.1865	14.8058	-2.0951
286	SLV 6	7.87	8.75	86.14	9.2131	14.8322	-2.2146
286	SLV 7	3.5	-8.35	74.83	8.5526	12.5843	0.8449
286	SLV 8	4.51	-8.25	75.08	8.5792	12.6107	0.7254
286	SLV 9	-3.55	8.17	86.75	9.2512	14.7006	-0.9089
286	SLV 10	-2.55	8.28	87	9.2778	14.727	-1.0284
286	SLV 11	-6.91	-8.82	75.7	8.6173	12.4791	2.0312
286	SLV 12	-5.91	-8.72	75.95	8.6439	12.5054	1.9117
286	SLV 13	-17.15	1.65	83.83	9.0976	13.7931	1.5368
286	SLV 14	-15.6	1.81	84.21	9.1388	13.8339	1.3518
286	SLV 15	-18.16	-3.45	80.51	8.9074	13.1266	2.4188
286	SLV 16	-16.61	-3.29	80.9	8.9486	13.1674	2.2339
286	CRTFP Ux+	0	0	0	0	0	0
286	CRTFP Ux-	0	0	0	0	0	0
286	CRTFP Uy+	0	0	0	0	0	0
286	CRTFP Uy-	0	0	0	0	0	0
288	SLU 1	0.3	-0.21	41.52	12.2807	0.0299	-0.0997
288	SLU 2	0.32	-0.25	41.5	12.2775	0.0299	-0.1061
288	SLU 3	0.31	-0.2	42.47	12.5624	0.0307	-0.1029
288	SLU 4	0.33	-0.22	42.46	12.5604	0.0307	-0.1067
288	SLU 5	0.33	-0.25	42.13	12.4629	0.0304	-0.1075
288	SLU 6	0.32	-0.2	43.1	12.7478	0.0313	-0.1042
288	SLU 7	0.33	-0.23	43.09	12.7458	0.0312	-0.1081
288	SLU 8	0.31	-0.22	42.79	12.6515	0.031	-0.1025
288	SLU 9	0.32	-0.24	42.77	12.6496	0.031	-0.1063
288	SLU 10	0.34	-0.2	46.66	13.8111	0.0351	-0.1113
288	SLU 11	0.33	-0.16	47.63	14.096	0.0359	-0.1081
288	SLU 12	0.34	-0.18	47.62	14.0941	0.0359	-0.1119
288	SLU 13	0.34	-0.21	47.29	13.9965	0.0356	-0.1127



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
288	SLU 14	0.33	-0.16	48.26	14.2814	0.0365	-0.1095
288	SLU 15	0.34	-0.18	48.25	14.2794	0.0364	-0.1133
288	SLU 16	0.33	-0.17	47.94	14.1851	0.0362	-0.1077
288	SLU 17	0.34	-0.19	47.93	14.1832	0.0361	-0.1115
288	SLU 18	0.32	-0.15	48.89	14.4716	0.0374	-0.1072
288	SLU 19	0.34	-0.17	48.88	14.4697	0.0373	-0.111
288	SLU 20	0.33	-0.15	49.52	14.657	0.0379	-0.1086
288	SLU 21	0.34	-0.17	49.51	14.655	0.0378	-0.1124
288	SLU 22	0.35	-0.13	45.99	13.611	0.0336	-0.116
288	SLU 23	0.37	-0.17	45.97	13.6077	0.0335	-0.1224
288	SLU 24	0.36	-0.12	46.94	13.8926	0.0344	-0.1192
288	SLU 25	0.38	-0.14	46.92	13.8907	0.0343	-0.123
288	SLU 26	0.38	-0.17	46.6	13.7931	0.034	-0.1238
288	SLU 27	0.37	-0.12	47.57	14.078	0.0349	-0.1205
288	SLU 28	0.38	-0.14	47.56	14.0761	0.0349	-0.1244
288	SLU 29	0.36	-0.13	47.25	13.9817	0.0346	-0.1188
288	SLU 30	0.37	-0.16	47.24	13.9798	0.0346	-0.1226
288	SLU 31	0.39	-0.12	51.13	15.1413	0.0387	-0.1276
288	SLU 32	0.38	-0.07	52.1	15.4262	0.0396	-0.1244
288	SLU 33	0.39	-0.1	52.08	15.4243	0.0395	-0.1282
288	SLU 34	0.39	-0.12	51.76	15.3267	0.0392	-0.129
288	SLU 35	0.38	-0.08	52.73	15.6116	0.0401	-0.1258
288	SLU 36	0.39	-0.1	52.72	15.6097	0.0401	-0.1296
288	SLU 37	0.38	-0.09	52.41	15.5154	0.0398	-0.124
288	SLU 38	0.39	-0.11	52.4	15.5134	0.0398	-0.1278
288	SLU 39	0.37	-0.07	53.36	15.8018	0.041	-0.1235
288	SLU 40	0.39	-0.09	53.34	15.7999	0.0409	-0.1273
288	SLU 41	0.38	-0.07	53.99	15.9872	0.0415	-0.1248
288	SLU 42	0.39	-0.09	53.98	15.9853	0.0415	-0.1287
288	SLU 43	0.38	-0.3	52.45	15.5089	0.0377	-0.124
288	SLU 44	0.4	-0.34	52.43	15.5056	0.0376	-0.1304
288	SLU 45	0.39	-0.29	53.4	15.7906	0.0385	-0.1272
288	SLU 46	0.4	-0.31	53.39	15.7886	0.0384	-0.131
288	SLU 47	0.4	-0.34	53.06	15.691	0.0381	-0.1318
288	SLU 48	0.39	-0.29	54.03	15.9759	0.039	-0.1286
288	SLU 49	0.4	-0.32	54.02	15.974	0.039	-0.1324
288	SLU 50	0.38	-0.31	53.71	15.8797	0.0387	-0.1268
288	SLU 51	0.4	-0.33	53.7	15.8777	0.0387	-0.1306
288	SLU 52	0.41	-0.3	57.59	17.0392	0.0428	-0.1357
288	SLU 53	0.4	-0.25	58.56	17.3242	0.0437	-0.1324
288	SLU 54	0.41	-0.27	58.55	17.3222	0.0436	-0.1363
288	SLU 55	0.42	-0.3	58.22	17.2246	0.0433	-0.137
288	SLU 56	0.4	-0.25	59.19	17.5095	0.0442	-0.1338
288	SLU 57	0.42	-0.27	59.18	17.5076	0.0442	-0.1376
288	SLU 58	0.4	-0.26	58.87	17.4133	0.0439	-0.132
288	SLU 59	0.41	-0.29	58.86	17.4113	0.0439	-0.1359
288	SLU 60	0.4	-0.24	59.82	17.6998	0.0451	-0.1315
288	SLU 61	0.41	-0.26	59.81	17.6978	0.045	-0.1353
288	SLU 62	0.4	-0.24	60.45	17.8851	0.0456	-0.1329
288	SLU 63	0.41	-0.26	60.44	17.8832	0.0456	-0.1367
288	SLU 64	0.43	-0.22	56.91	16.8391	0.0413	-0.1403
288	SLU 65	0.45	-0.26	56.89	16.8359	0.0412	-0.1467
288	SLU 66	0.44	-0.21	57.86	17.1208	0.0421	-0.1435
288	SLU 67	0.45	-0.23	57.85	17.1188	0.0421	-0.1473
288	SLU 68	0.45	-0.26	57.52	17.0212	0.0418	-0.1481
288	SLU 69	0.44	-0.21	58.49	17.3062	0.0426	-0.1449
288	SLU 70	0.45	-0.23	58.48	17.3042	0.0426	-0.1487
288	SLU 71	0.43	-0.22	58.18	17.2099	0.0424	-0.1431
288	SLU 72	0.45	-0.25	58.16	17.2079	0.0423	-0.1469
288	SLU 73	0.46	-0.21	62.05	18.3695	0.0464	-0.1519
288	SLU 74	0.45	-0.17	63.02	18.6544	0.0473	-0.1487
288	SLU 75	0.46	-0.19	63.01	18.6524	0.0473	-0.1525
288	SLU 76	0.47	-0.22	62.68	18.5548	0.047	-0.1533
288	SLU 77	0.45	-0.17	63.65	18.8398	0.0478	-0.1501
288	SLU 78	0.47	-0.19	63.64	18.8378	0.0478	-0.1539
288	SLU 79	0.45	-0.18	63.34	18.7435	0.0476	-0.1483
288	SLU 80	0.46	-0.2	63.32	18.7415	0.0475	-0.1522
288	SLU 81	0.45	-0.16	64.28	19.03	0.0487	-0.1478
288	SLU 82	0.46	-0.18	64.27	19.028	0.0487	-0.1516
288	SLU 83	0.45	-0.16	64.91	19.2154	0.0493	-0.1492
288	SLU 84	0.46	-0.18	64.9	19.2134	0.0492	-0.153
288	SLE RA 1	0.32	-0.19	42.8	12.6608	0.031	-0.1044
288	SLE RA 2	0.33	-0.21	42.78	12.6586	0.0309	-0.1086
288	SLE RA 3	0.32	-0.18	43.43	12.8486	0.0315	-0.1065
288	SLE RA 4	0.33	-0.2	43.42	12.8473	0.0315	-0.109
288	SLE RA 5	0.33	-0.21	43.21	12.7822	0.0313	-0.1095
288	SLE RA 6	0.33	-0.18	43.85	12.9722	0.0319	-0.1074
288	SLE RA 7	0.33	-0.2	43.84	12.9709	0.0318	-0.1099
288	SLE RA 8	0.32	-0.19	43.64	12.908	0.0317	-0.1062
288	SLE RA 9	0.33	-0.21	43.63	12.9067	0.0316	-0.1088
288	SLE RA 10	0.34	-0.18	46.22	13.681	0.0344	-0.1121
288	SLE RA 11	0.33	-0.15	46.87	13.871	0.035	-0.1099
288	SLE RA 12	0.34	-0.17	46.86	13.8697	0.0349	-0.1125
288	SLE RA 13	0.34	-0.18	46.64	13.8046	0.0347	-0.113
288	SLE RA 14	0.34	-0.15	47.29	13.9946	0.0353	-0.1109
288	SLE RA 15	0.34	-0.17	47.28	13.9933	0.0353	-0.1134
288	SLE RA 16	0.33	-0.16	47.08	13.9304	0.0351	-0.1097
288	SLE RA 17	0.34	-0.18	47.07	13.9291	0.0351	-0.1123
288	SLE RA 18	0.33	-0.15	47.71	14.1214	0.0359	-0.1093
288	SLE RA 19	0.34	-0.16	47.7	14.1201	0.0359	-0.1119



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
288	SLE RA 20	0.33	-0.15	48.13	14.245	0.0363	-0.1103
288	SLE RA 21	0.34	-0.16	48.12	14.2437	0.0362	-0.1128
288	SLE FR 1	0.32	-0.19	42.8	12.6608	0.031	-0.1044
288	SLE FR 2	0.32	-0.19	42.79	12.6604	0.031	-0.1052
288	SLE FR 3	0.32	-0.19	42.97	12.7102	0.0311	-0.1047
288	SLE FR 4	0.32	-0.18	44.27	13.0985	0.0324	-0.1067
288	SLE FR 5	0.32	-0.18	44.44	13.1484	0.0326	-0.1062
288	SLE FR 6	0.32	-0.17	45.25	13.3911	0.0334	-0.1068
288	SLE QP 1	0.32	-0.19	42.8	12.6608	0.031	-0.1044
288	SLE QP 2	0.32	-0.17	44.27	13.099	0.0325	-0.1058
288	SLD 1	4.4	0.66	43.97	13.0372	0.0387	-1.3661
288	SLD 2	4.76	0.73	44.09	13.0679	0.0384	-1.4777
288	SLD 3	4.15	-0.58	43.31	12.9071	0.0373	-1.2909
288	SLD 4	4.52	-0.5	43.42	12.9378	0.0369	-1.4025
288	SLD 5	1.85	1.94	45.17	13.2723	0.0366	-0.578
288	SLD 6	2.09	1.99	45.25	13.2924	0.0364	-0.6513
288	SLD 7	1.04	-2.19	42.95	12.8387	0.0317	-0.3274
288	SLD 8	1.28	-2.14	43.03	12.8588	0.0315	-0.4007
288	SLD 9	-0.63	1.79	45.51	13.3391	0.0334	0.189
288	SLD 10	-0.4	1.84	45.59	13.3593	0.0332	0.1157
288	SLD 11	-1.44	-2.34	43.29	12.9055	0.0285	0.4396
288	SLD 12	-1.2	-2.29	43.37	12.9257	0.0283	0.3663
288	SLD 13	-3.87	0.16	45.12	13.2601	0.028	1.1908
288	SLD 14	-3.51	0.23	45.23	13.2908	0.0276	1.0792
288	SLD 15	-4.12	-1.08	44.45	13.1301	0.0265	1.266
288	SLD 16	-3.75	-1.01	44.57	13.1607	0.0262	1.1544
288	SLV 1	9.85	1.72	43.55	12.9508	0.0471	-3.0545
288	SLV 2	10.7	1.9	43.82	13.0223	0.0463	-3.3143
288	SLV 3	9.29	-1.08	42.04	12.6548	0.0438	-2.8793
288	SLV 4	10.13	-0.9	42.31	12.7263	0.0429	-3.1391
288	SLV 5	3.89	4.62	46.3	13.491	0.0421	-1.2113
288	SLV 6	4.44	4.73	46.48	13.5372	0.0415	-1.3791
288	SLV 7	2.01	-4.73	41.26	12.5045	0.0309	-0.6272
288	SLV 8	2.55	-4.61	41.44	12.5506	0.0304	-0.795
288	SLV 9	-1.91	4.27	47.11	13.6473	0.0345	0.5833
288	SLV 10	-1.37	4.38	47.28	13.6935	0.034	0.4155
288	SLV 11	-3.8	-5.08	42.07	12.6607	0.0234	1.1674
288	SLV 12	-3.25	-4.97	42.24	12.7069	0.0228	0.9996
288	SLV 13	-9.49	0.55	46.23	13.4717	0.022	2.9274
288	SLV 14	-8.65	0.73	46.5	13.5431	0.0211	2.6676
288	SLV 15	-10.06	-2.25	44.72	13.1757	0.0187	3.1026
288	SLV 16	-9.21	-2.07	44.99	13.2472	0.0178	2.8428
288	CRTFP Ux+	0	0	0	0	0	0
288	CRTFP Ux-	0	0	0	0	0	0
288	CRTFP Uy+	0	0	0	0	0	0
288	CRTFP Uy-	0	0	0	0	0	0
289	SLU 1	0.31	-0.31	41.32	12.0197	0.0176	-0.1025
289	SLU 2	0.34	-0.34	41.31	12.0174	0.0175	-0.1089
289	SLU 3	0.32	-0.3	42.26	12.2939	0.0182	-0.1057
289	SLU 4	0.34	-0.32	42.25	12.2925	0.0181	-0.1096
289	SLU 5	0.34	-0.35	41.93	12.198	0.0179	-0.1103
289	SLU 6	0.33	-0.31	42.89	12.4745	0.0185	-0.1072
289	SLU 7	0.34	-0.33	42.88	12.4732	0.0185	-0.111
289	SLU 8	0.32	-0.32	42.58	12.3809	0.0183	-0.1053
289	SLU 9	0.34	-0.34	42.57	12.3796	0.0183	-0.1092
289	SLU 10	0.35	-0.31	46.38	13.5005	0.0213	-0.1143
289	SLU 11	0.34	-0.27	47.34	13.777	0.0219	-0.1111
289	SLU 12	0.35	-0.29	47.33	13.7756	0.0219	-0.115
289	SLU 13	0.36	-0.32	47.01	13.6811	0.0217	-0.1158
289	SLU 14	0.34	-0.27	47.97	13.9576	0.0223	-0.1126
289	SLU 15	0.36	-0.3	47.96	13.9562	0.0222	-0.1164
289	SLU 16	0.34	-0.29	47.65	13.864	0.0221	-0.1108
289	SLU 17	0.35	-0.31	47.64	13.8627	0.022	-0.1146
289	SLU 18	0.34	-0.26	48.58	14.1384	0.023	-0.1102
289	SLU 19	0.35	-0.28	48.57	14.137	0.023	-0.1141
289	SLU 20	0.34	-0.27	49.2	14.319	0.0234	-0.1117
289	SLU 21	0.35	-0.29	49.19	14.3176	0.0233	-0.1155
289	SLU 22	0.37	-0.24	45.75	13.3169	0.02	-0.1191
289	SLU 23	0.39	-0.27	45.73	13.3146	0.0199	-0.1256
289	SLU 24	0.38	-0.23	46.69	13.5911	0.0205	-0.1224
289	SLU 25	0.39	-0.25	46.68	13.5897	0.0204	-0.1262
289	SLU 26	0.39	-0.28	46.36	13.4953	0.0202	-0.127
289	SLU 27	0.38	-0.24	47.32	13.7717	0.0208	-0.1238
289	SLU 28	0.39	-0.26	47.31	13.7704	0.0208	-0.1277
289	SLU 29	0.38	-0.25	47	13.6782	0.0206	-0.122
289	SLU 30	0.39	-0.27	46.99	13.6768	0.0206	-0.1259
289	SLU 31	0.4	-0.24	50.81	14.7977	0.0237	-0.131
289	SLU 32	0.39	-0.2	51.77	15.0742	0.0243	-0.1278
289	SLU 33	0.4	-0.22	51.76	15.0728	0.0242	-0.1317
289	SLU 34	0.41	-0.25	51.44	14.9783	0.024	-0.1324
289	SLU 35	0.4	-0.2	52.4	15.2548	0.0246	-0.1292
289	SLU 36	0.41	-0.23	52.39	15.2535	0.0246	-0.1331
289	SLU 37	0.39	-0.22	52.08	15.1613	0.0244	-0.1274
289	SLU 38	0.4	-0.24	52.07	15.1599	0.0244	-0.1313
289	SLU 39	0.39	-0.19	53	15.4356	0.0254	-0.1269
289	SLU 40	0.4	-0.21	52.99	15.4342	0.0253	-0.1307
289	SLU 41	0.39	-0.2	53.63	15.6162	0.0257	-0.1283
289	SLU 42	0.41	-0.22	53.62	15.6149	0.0257	-0.1322
289	SLU 43	0.39	-0.43	52.2	15.1808	0.0221	-0.1275
289	SLU 44	0.41	-0.46	52.18	15.1785	0.022	-0.1339



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
289	SLU 45	0.4	-0.42	53.14	15.455	0.0226	-0.1307
289	SLU 46	0.41	-0.44	53.13	15.4537	0.0226	-0.1346
289	SLU 47	0.42	-0.47	52.81	15.3592	0.0224	-0.1354
289	SLU 48	0.41	-0.42	53.77	15.6357	0.023	-0.1322
289	SLU 49	0.42	-0.44	53.76	15.6343	0.0229	-0.136
289	SLU 50	0.4	-0.43	53.45	15.5421	0.0228	-0.1304
289	SLU 51	0.41	-0.46	53.44	15.5407	0.0228	-0.1342
289	SLU 52	0.43	-0.43	57.26	16.6616	0.0258	-0.1394
289	SLU 53	0.42	-0.39	58.22	16.9381	0.0264	-0.1362
289	SLU 54	0.43	-0.41	58.21	16.9367	0.0264	-0.14
289	SLU 55	0.43	-0.43	57.89	16.8422	0.0262	-0.1408
289	SLU 56	0.42	-0.39	58.85	17.1187	0.0268	-0.1376
289	SLU 57	0.43	-0.41	58.84	17.1174	0.0267	-0.1415
289	SLU 58	0.42	-0.4	58.53	17.0252	0.0266	-0.1358
289	SLU 59	0.43	-0.42	58.52	17.0238	0.0265	-0.1396
289	SLU 60	0.41	-0.38	59.46	17.2995	0.0275	-0.1353
289	SLU 61	0.43	-0.4	59.45	17.2981	0.0275	-0.1391
289	SLU 62	0.42	-0.38	60.08	17.4801	0.0279	-0.1367
289	SLU 63	0.43	-0.41	60.07	17.4788	0.0278	-0.1405
289	SLU 64	0.44	-0.35	56.63	16.478	0.0244	-0.1442
289	SLU 65	0.46	-0.39	56.61	16.4758	0.0244	-0.1506
289	SLU 66	0.45	-0.35	57.57	16.7523	0.025	-0.1474
289	SLU 67	0.47	-0.37	57.56	16.7509	0.0249	-0.1513
289	SLU 68	0.47	-0.4	57.24	16.6564	0.0247	-0.152
289	SLU 69	0.46	-0.35	58.2	16.9329	0.0253	-0.1488
289	SLU 70	0.47	-0.37	58.19	16.9315	0.0253	-0.1527
289	SLU 71	0.45	-0.36	57.88	16.8393	0.0251	-0.147
289	SLU 72	0.46	-0.39	57.87	16.8379	0.0251	-0.1509
289	SLU 73	0.48	-0.36	61.69	17.9588	0.0281	-0.156
289	SLU 74	0.47	-0.32	62.65	18.2353	0.0288	-0.1528
289	SLU 75	0.48	-0.34	62.64	18.234	0.0287	-0.1567
289	SLU 76	0.48	-0.36	62.32	18.1395	0.0285	-0.1575
289	SLU 77	0.47	-0.32	63.28	18.416	0.0291	-0.1543
289	SLU 78	0.49	-0.34	63.26	18.4146	0.0291	-0.1581
289	SLU 79	0.47	-0.33	62.96	18.3224	0.0289	-0.1524
289	SLU 80	0.48	-0.35	62.95	18.321	0.0289	-0.1563
289	SLU 81	0.46	-0.31	63.88	18.5967	0.0298	-0.1519
289	SLU 82	0.48	-0.33	63.87	18.5954	0.0298	-0.1558
289	SLU 83	0.47	-0.31	64.51	18.7774	0.0302	-0.1533
289	SLU 84	0.48	-0.34	64.5	18.776	0.0301	-0.1572
289	SLE RA 1	0.33	-0.29	42.59	12.3903	0.0183	-0.1072
289	SLE RA 2	0.34	-0.31	42.58	12.3888	0.0182	-0.1115
289	SLE RA 3	0.34	-0.28	43.22	12.5731	0.0186	-0.1094
289	SLE RA 4	0.34	-0.3	43.21	12.5722	0.0186	-0.112
289	SLE RA 5	0.35	-0.32	42.99	12.5092	0.0185	-0.1125
289	SLE RA 6	0.34	-0.29	43.63	12.6935	0.0189	-0.1103
289	SLE RA 7	0.35	-0.3	43.63	12.6926	0.0188	-0.1129
289	SLE RA 8	0.34	-0.29	43.42	12.6312	0.0187	-0.1091
289	SLE RA 9	0.34	-0.31	43.42	12.6302	0.0187	-0.1117
289	SLE RA 10	0.35	-0.29	45.96	13.3775	0.0208	-0.1151
289	SLE RA 11	0.35	-0.26	46.6	13.5618	0.0212	-0.113
289	SLE RA 12	0.35	-0.28	46.59	13.5609	0.0211	-0.1156
289	SLE RA 13	0.36	-0.29	46.38	13.4979	0.021	-0.1161
289	SLE RA 14	0.35	-0.27	47.02	13.6823	0.0214	-0.114
289	SLE RA 15	0.36	-0.28	47.01	13.6813	0.0214	-0.1165
289	SLE RA 16	0.35	-0.27	46.81	13.6199	0.0213	-0.1128
289	SLE RA 17	0.35	-0.29	46.8	13.619	0.0212	-0.1153
289	SLE RA 18	0.34	-0.26	47.42	13.8028	0.0219	-0.1124
289	SLE RA 19	0.35	-0.27	47.42	13.8019	0.0219	-0.115
289	SLE RA 20	0.35	-0.26	47.84	13.9232	0.0221	-0.1134
289	SLE RA 21	0.36	-0.28	47.83	13.9223	0.0221	-0.1159
289	SLE FR 1	0.33	-0.29	42.59	12.3903	0.0183	-0.1072
289	SLE FR 2	0.33	-0.29	42.59	12.39	0.0183	-0.1081
289	SLE FR 3	0.33	-0.29	42.75	12.4385	0.0184	-0.1076
289	SLE FR 4	0.34	-0.28	44.04	12.8137	0.0194	-0.1096
289	SLE FR 5	0.34	-0.28	44.21	12.8622	0.0195	-0.1092
289	SLE FR 6	0.34	-0.27	45.01	13.0965	0.0201	-0.1098
289	SLE QP 1	0.33	-0.29	42.59	12.3903	0.0183	-0.1072
289	SLE QP 2	0.33	-0.28	44.04	12.814	0.0194	-0.1088
289	SLD 1	4.46	0.6	43.51	12.6962	0.026	-1.3698
289	SLD 2	4.83	0.7	43.64	12.7307	0.0256	-1.4816
289	SLD 3	4.21	-0.63	42.88	12.5835	0.0247	-1.2946
289	SLD 4	4.58	-0.53	43.01	12.618	0.0243	-1.4064
289	SLD 5	1.88	1.84	44.82	12.9434	0.0234	-0.5811
289	SLD 6	2.12	1.9	44.9	12.9661	0.0232	-0.6546
289	SLD 7	1.06	-2.27	42.71	12.5678	0.019	-0.3306
289	SLD 8	1.3	-2.21	42.8	12.5905	0.0188	-0.404
289	SLD 9	-0.63	1.65	45.28	13.0376	0.02	0.1865
289	SLD 10	-0.39	1.72	45.37	13.0603	0.0197	0.113
289	SLD 11	-1.45	-2.46	43.18	12.662	0.0156	0.437
289	SLD 12	-1.21	-2.4	43.26	12.6847	0.0153	0.3636
289	SLD 13	-3.91	-0.02	45.07	13.0101	0.0145	1.1889
289	SLD 14	-3.54	0.08	45.2	13.0446	0.0141	1.0771
289	SLD 15	-4.16	-1.26	44.43	12.8974	0.0131	1.264
289	SLD 16	-3.79	-1.16	44.56	12.9319	0.0127	1.1522
289	SLV 1	9.98	1.73	42.79	12.5353	0.0348	-3.0592
289	SLV 2	10.84	1.96	43.09	12.6155	0.0339	-3.3196
289	SLV 3	9.41	-1.06	41.35	12.2786	0.0318	-2.884
289	SLV 4	10.27	-0.83	41.66	12.3589	0.0309	-3.1443
289	SLV 5	3.95	4.52	45.79	13.1058	0.0288	-1.2147



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
289	SLV 6	4.5	4.67	45.98	13.1576	0.0282	-1.3828
289	SLV 7	2.04	-4.79	41.01	12.2503	0.0186	-0.6306
289	SLV 8	2.6	-4.64	41.2	12.3022	0.0181	-0.7987
289	SLV 9	-1.93	4.08	46.87	13.3259	0.0207	0.5812
289	SLV 10	-1.37	4.23	47.07	13.3778	0.0201	0.413
289	SLV 11	-3.83	-5.23	42.1	12.4705	0.0106	1.1652
289	SLV 12	-3.28	-5.08	42.29	12.5223	0.01	0.9971
289	SLV 13	-9.6	0.27	46.42	13.2692	0.0078	2.9268
289	SLV 14	-8.74	0.5	46.72	13.3495	0.0069	2.6665
289	SLV 15	-10.17	-2.52	44.99	13.0126	0.0048	3.102
289	SLV 16	-9.31	-2.29	45.29	13.0928	0.0039	2.8417
289	CRTFP Ux+	0	0	0	0	0	0
289	CRTFP Ux-	0	0	0	0	0	0
289	CRTFP Uy+	0	0	0	0	0	0
289	CRTFP Uy-	0	0	0	0	0	0
290	SLU 1	0.32	-0.4	40.81	11.8077	0.0118	-0.1054
290	SLU 2	0.35	-0.44	40.79	11.8064	0.0118	-0.1119
290	SLU 3	0.33	-0.4	41.73	12.0756	0.0122	-0.1088
290	SLU 4	0.35	-0.42	41.72	12.0748	0.0122	-0.1126
290	SLU 5	0.35	-0.44	41.41	11.983	0.012	-0.1134
290	SLU 6	0.34	-0.41	42.35	12.2522	0.0125	-0.1102
290	SLU 7	0.35	-0.43	42.34	12.2514	0.0124	-0.1141
290	SLU 8	0.33	-0.42	42.04	12.161	0.0123	-0.1084
290	SLU 9	0.35	-0.44	42.03	12.1602	0.0123	-0.1122
290	SLU 10	0.36	-0.42	45.75	13.2444	0.0148	-0.1175
290	SLU 11	0.35	-0.38	46.69	13.5136	0.0153	-0.1144
290	SLU 12	0.36	-0.4	46.68	13.5128	0.0152	-0.1183
290	SLU 13	0.37	-0.43	46.36	13.4211	0.0151	-0.119
290	SLU 14	0.36	-0.39	47.3	13.6903	0.0155	-0.1159
290	SLU 15	0.37	-0.41	47.29	13.6895	0.0155	-0.1198
290	SLU 16	0.35	-0.4	46.99	13.5991	0.0154	-0.114
290	SLU 17	0.36	-0.42	46.99	13.5983	0.0153	-0.1179
290	SLU 18	0.35	-0.38	47.89	13.862	0.0162	-0.1135
290	SLU 19	0.36	-0.4	47.88	13.8612	0.0162	-0.1174
290	SLU 20	0.35	-0.38	48.5	14.0387	0.0164	-0.1149
290	SLU 21	0.36	-0.4	48.49	14.0379	0.0164	-0.1188
290	SLU 22	0.38	-0.34	45.16	13.0775	0.0135	-0.1225
290	SLU 23	0.4	-0.38	45.15	13.0762	0.0134	-0.129
290	SLU 24	0.39	-0.34	46.09	13.3454	0.0139	-0.1258
290	SLU 25	0.4	-0.36	46.08	13.3446	0.0138	-0.1297
290	SLU 26	0.4	-0.39	45.76	13.2528	0.0136	-0.1305
290	SLU 27	0.39	-0.35	46.7	13.522	0.0141	-0.1273
290	SLU 28	0.41	-0.37	46.69	13.5212	0.0141	-0.1312
290	SLU 29	0.39	-0.36	46.39	13.4308	0.014	-0.1255
290	SLU 30	0.4	-0.38	46.39	13.43	0.0139	-0.1293
290	SLU 31	0.42	-0.36	50.1	14.5142	0.0164	-0.1346
290	SLU 32	0.4	-0.32	51.04	14.7834	0.0169	-0.1315
290	SLU 33	0.42	-0.34	51.04	14.7826	0.0169	-0.1354
290	SLU 34	0.42	-0.37	50.72	14.6908	0.0167	-0.1361
290	SLU 35	0.41	-0.33	51.66	14.96	0.0172	-0.133
290	SLU 36	0.42	-0.35	51.65	14.9592	0.0171	-0.1369
290	SLU 37	0.4	-0.34	51.35	14.8688	0.017	-0.1311
290	SLU 38	0.42	-0.36	51.34	14.868	0.017	-0.135
290	SLU 39	0.4	-0.32	52.24	15.1318	0.0178	-0.1306
290	SLU 40	0.41	-0.34	52.23	15.131	0.0178	-0.1344
290	SLU 41	0.4	-0.32	52.86	15.3085	0.0181	-0.132
290	SLU 42	0.42	-0.34	52.85	15.3077	0.018	-0.1359
290	SLU 43	0.4	-0.54	51.55	14.9147	0.0148	-0.1312
290	SLU 44	0.43	-0.58	51.54	14.9133	0.0148	-0.1376
290	SLU 45	0.41	-0.54	52.48	15.1825	0.0152	-0.1345
290	SLU 46	0.43	-0.56	52.47	15.1817	0.0152	-0.1384
290	SLU 47	0.43	-0.59	52.16	15.09	0.015	-0.1391
290	SLU 48	0.42	-0.55	53.09	15.3592	0.0155	-0.136
290	SLU 49	0.43	-0.57	53.09	15.3584	0.0154	-0.1399
290	SLU 50	0.41	-0.56	52.79	15.268	0.0153	-0.1341
290	SLU 51	0.43	-0.58	52.78	15.2672	0.0153	-0.138
290	SLU 52	0.44	-0.56	56.5	16.3513	0.0178	-0.1433
290	SLU 53	0.43	-0.52	57.43	16.6205	0.0183	-0.1402
290	SLU 54	0.44	-0.54	57.43	16.6197	0.0182	-0.1441
290	SLU 55	0.45	-0.57	57.11	16.528	0.0181	-0.1448
290	SLU 56	0.43	-0.53	58.05	16.7972	0.0185	-0.1416
290	SLU 57	0.45	-0.55	58.04	16.7964	0.0185	-0.1455
290	SLU 58	0.43	-0.54	57.74	16.706	0.0184	-0.1398
290	SLU 59	0.44	-0.56	57.73	16.7052	0.0183	-0.1437
290	SLU 60	0.43	-0.52	58.63	16.969	0.0192	-0.1392
290	SLU 61	0.44	-0.54	58.63	16.9682	0.0191	-0.1431
290	SLU 62	0.43	-0.52	59.25	17.1456	0.0194	-0.1407
290	SLU 63	0.44	-0.54	59.24	17.1448	0.0194	-0.1446
290	SLU 64	0.46	-0.49	55.91	16.1844	0.0165	-0.1483
290	SLU 65	0.48	-0.52	55.9	16.1831	0.0164	-0.1547
290	SLU 66	0.47	-0.48	56.84	16.4523	0.0169	-0.1516
290	SLU 67	0.48	-0.5	56.83	16.4515	0.0168	-0.1555
290	SLU 68	0.48	-0.53	56.51	16.3598	0.0166	-0.1562
290	SLU 69	0.47	-0.49	57.45	16.629	0.0171	-0.1531
290	SLU 70	0.48	-0.51	57.44	16.6282	0.0171	-0.157
290	SLU 71	0.47	-0.5	57.14	16.5378	0.017	-0.1512
290	SLU 72	0.48	-0.52	57.13	16.537	0.0169	-0.1551
290	SLU 73	0.49	-0.5	60.85	17.6211	0.0194	-0.1604
290	SLU 74	0.48	-0.46	61.79	17.8903	0.0199	-0.1573
290	SLU 75	0.5	-0.48	61.78	17.8895	0.0199	-0.1611



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
290	SLU 76	0.5	-0.51	61.47	17.7978	0.0197	-0.1619
290	SLU 77	0.49	-0.47	62.41	18.067	0.0202	-0.1587
290	SLU 78	0.5	-0.49	62.4	18.0662	0.0201	-0.1626
290	SLU 79	0.48	-0.48	62.1	17.9758	0.02	-0.1569
290	SLU 80	0.49	-0.5	62.09	17.975	0.02	-0.1607
290	SLU 81	0.48	-0.46	62.99	18.2387	0.0208	-0.1563
290	SLU 82	0.49	-0.48	62.98	18.2379	0.0208	-0.1602
290	SLU 83	0.48	-0.46	63.61	18.4154	0.0211	-0.1578
290	SLU 84	0.5	-0.49	63.6	18.4146	0.021	-0.1617
290	SLE RA 1	0.34	-0.39	42.05	12.1705	0.0123	-0.1103
290	SLE RA 2	0.35	-0.41	42.04	12.1696	0.0123	-0.1146
290	SLE RA 3	0.35	-0.38	42.67	12.3491	0.0126	-0.1125
290	SLE RA 4	0.36	-0.4	42.66	12.3485	0.0125	-0.1151
290	SLE RA 5	0.36	-0.41	42.45	12.2874	0.0124	-0.1156
290	SLE RA 6	0.35	-0.39	43.08	12.4669	0.0127	-0.1135
290	SLE RA 7	0.36	-0.4	43.07	12.4663	0.0127	-0.1161
290	SLE RA 8	0.35	-0.4	42.87	12.4061	0.0126	-0.1123
290	SLE RA 9	0.35	-0.41	42.87	12.4055	0.0126	-0.1148
290	SLE RA 10	0.36	-0.4	45.35	13.1283	0.0143	-0.1184
290	SLE RA 11	0.36	-0.37	45.97	13.3078	0.0146	-0.1163
290	SLE RA 12	0.37	-0.38	45.97	13.3072	0.0146	-0.1189
290	SLE RA 13	0.37	-0.4	45.76	13.2461	0.0145	-0.1194
290	SLE RA 14	0.36	-0.38	46.38	13.4255	0.0148	-0.1173
290	SLE RA 15	0.37	-0.39	46.38	13.425	0.0147	-0.1199
290	SLE RA 16	0.36	-0.38	46.18	13.3647	0.0147	-0.1116
290	SLE RA 17	0.36	-0.4	46.17	13.3642	0.0146	-0.1186
290	SLE RA 18	0.35	-0.37	46.77	13.54	0.0152	-0.1157
290	SLE RA 19	0.36	-0.38	46.77	13.5395	0.0152	-0.1183
290	SLE RA 20	0.36	-0.37	47.18	13.6578	0.0154	-0.1166
290	SLE RA 21	0.37	-0.39	47.18	13.6573	0.0153	-0.1192
290	SLE FR 1	0.34	-0.39	42.05	12.1705	0.0123	-0.1103
290	SLE FR 2	0.34	-0.39	42.05	12.1703	0.0123	-0.1111
290	SLE FR 3	0.34	-0.39	42.22	12.2176	0.0124	-0.1107
290	SLE FR 4	0.35	-0.39	43.47	12.5812	0.0132	-0.1128
290	SLE FR 5	0.35	-0.38	43.63	12.6285	0.0132	-0.1123
290	SLE FR 6	0.35	-0.38	44.41	12.8553	0.0138	-0.113
290	SLE QP 1	0.34	-0.39	42.05	12.1705	0.0123	-0.1103
290	SLE QP 2	0.34	-0.38	43.47	12.5814	0.0132	-0.1119
290	SLD 1	4.48	0.54	42.69	12.4003	0.0205	-1.3759
290	SLD 2	4.85	0.66	42.84	12.4387	0.0201	-1.4881
290	SLD 3	4.23	-0.68	42.1	12.3034	0.0194	-1.3006
290	SLD 4	4.6	-0.56	42.25	12.3418	0.019	-1.4128
290	SLD 5	1.89	1.72	44.11	12.6672	0.0173	-0.5853
290	SLD 6	2.14	1.8	44.2	12.6924	0.017	-0.659
290	SLD 7	1.07	-2.34	42.13	12.3442	0.0133	-0.3342
290	SLD 8	1.32	-2.26	42.23	12.3693	0.0131	-0.408
290	SLD 9	-0.63	1.5	44.7	12.7934	0.0133	0.1842
290	SLD 10	-0.38	1.58	44.8	12.8186	0.013	0.1104
290	SLD 11	-1.45	-2.56	42.73	12.4703	0.0094	0.4352
290	SLD 12	-1.2	-2.48	42.83	12.4955	0.0091	0.3615
290	SLD 13	-3.91	-0.2	44.69	12.821	0.0074	1.189
290	SLD 14	-3.54	-0.08	44.83	12.8593	0.007	1.0768
290	SLD 15	-4.16	-1.42	44.1	12.7241	0.0062	1.2643
290	SLD 16	-3.79	-1.3	44.24	12.7624	0.0058	1.1521
290	SLV 1	10.02	1.73	41.64	12.1553	0.0304	-3.0693
290	SLV 2	10.88	2.01	41.97	12.2446	0.0295	-3.3306
290	SLV 3	9.45	-1.03	40.29	11.9342	0.0277	-2.8937
290	SLV 4	10.31	-0.75	40.63	12.0235	0.0268	-3.155
290	SLV 5	3.97	4.39	44.9	12.7734	0.0226	-1.2203
290	SLV 6	4.52	4.57	45.12	12.8311	0.022	-1.389
290	SLV 7	2.06	-4.81	40.42	12.0364	0.0136	-0.6349
290	SLV 8	2.61	-4.63	40.64	12.0941	0.013	-0.8037
290	SLV 9	-1.92	3.86	46.3	13.0686	0.0134	0.5799
290	SLV 10	-1.37	4.05	46.52	13.1263	0.0128	0.4111
290	SLV 11	-3.84	-5.33	41.82	12.3316	0.0044	1.1652
290	SLV 12	-3.28	-5.15	42.04	12.3893	0.0038	0.9965
290	SLV 13	-9.62	-0.01	46.3	13.1392	-0.0004	2.9312
290	SLV 14	-8.76	0.27	46.64	13.2285	-0.0013	2.6699
290	SLV 15	-10.19	-2.77	44.96	12.9181	-0.0031	3.1068
290	SLV 16	-9.33	-2.49	45.3	13.0074	-0.004	2.8455
290	CRTFP Ux+	0	0	0	0	0	0
290	CRTFP Ux-	0	0	0	0	0	0
290	CRTFP Uy+	0	0	0	0	0	0
290	CRTFP Uy-	0	0	0	0	0	0
291	SLU 1	0.33	-0.5	40.57	11.7038	0.001	-0.1084
291	SLU 2	0.36	-0.53	40.55	11.7033	0.001	-0.1149
291	SLU 3	0.34	-0.5	41.48	11.9681	0.0011	-0.1119
291	SLU 4	0.36	-0.52	41.47	11.9678	0.0011	-0.1158
291	SLU 5	0.36	-0.54	41.16	11.8779	0.001	-0.1165
291	SLU 6	0.35	-0.51	42.09	12.1426	0.0012	-0.1134
291	SLU 7	0.36	-0.53	42.08	12.1423	0.0012	-0.1173
291	SLU 8	0.34	-0.52	41.79	12.0529	0.0011	-0.1115
291	SLU 9	0.36	-0.54	41.78	12.0526	0.0011	-0.1154
291	SLU 10	0.37	-0.52	45.42	13.1105	0.0025	-0.1208
291	SLU 11	0.36	-0.49	46.35	13.3753	0.0027	-0.1177
291	SLU 12	0.37	-0.51	46.34	13.375	0.0027	-0.1216
291	SLU 13	0.38	-0.53	46.04	13.2851	0.0026	-0.1223
291	SLU 14	0.37	-0.5	46.96	13.5498	0.0028	-0.1192
291	SLU 15	0.38	-0.52	46.95	13.5496	0.0027	-0.1231
291	SLU 16	0.36	-0.51	46.66	13.4601	0.0027	-0.1173



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
291	SLU 17	0.37	-0.53	46.65	13.4599	0.0027	-0.1212
291	SLU 18	0.36	-0.49	47.52	13.7141	0.0033	-0.1167
291	SLU 19	0.37	-0.51	47.52	13.7138	0.0032	-0.1206
291	SLU 20	0.36	-0.5	48.13	13.8887	0.0033	-0.1183
291	SLU 21	0.38	-0.52	48.13	13.8884	0.0033	-0.1222
291	SLU 22	0.39	-0.45	44.89	12.9592	0.0013	-0.1259
291	SLU 23	0.41	-0.48	44.87	12.9587	0.0013	-0.1324
291	SLU 24	0.4	-0.45	45.8	13.2234	0.0014	-0.1294
291	SLU 25	0.41	-0.47	45.79	13.2232	0.0014	-0.1333
291	SLU 26	0.42	-0.49	45.49	13.1333	0.0013	-0.134
291	SLU 27	0.4	-0.46	46.41	13.398	0.0015	-0.1309
291	SLU 28	0.42	-0.48	46.4	13.3977	0.0015	-0.1348
291	SLU 29	0.4	-0.47	46.11	13.3083	0.0014	-0.129
291	SLU 30	0.41	-0.49	46.1	13.308	0.0014	-0.1329
291	SLU 31	0.43	-0.48	49.75	14.3659	0.0028	-0.1383
291	SLU 32	0.42	-0.44	50.67	14.6307	0.003	-0.1352
291	SLU 33	0.43	-0.46	50.67	14.6304	0.003	-0.1391
291	SLU 34	0.43	-0.49	50.36	14.5405	0.0029	-0.1398
291	SLU 35	0.42	-0.45	51.28	14.8052	0.0031	-0.1368
291	SLU 36	0.43	-0.47	51.28	14.805	0.003	-0.1407
291	SLU 37	0.41	-0.46	50.98	14.7155	0.003	-0.1348
291	SLU 38	0.43	-0.48	50.97	14.7153	0.003	-0.1387
291	SLU 39	0.41	-0.44	51.85	14.9695	0.0036	-0.1343
291	SLU 40	0.43	-0.46	51.84	14.9692	0.0035	-0.1382
291	SLU 41	0.42	-0.45	52.46	15.1441	0.0036	-0.1358
291	SLU 42	0.43	-0.47	52.45	15.1438	0.0036	-0.1397
291	SLU 43	0.42	-0.66	51.25	14.7845	0.0012	-0.1349
291	SLU 44	0.44	-0.7	51.24	14.784	0.0012	-0.1414
291	SLU 45	0.43	-0.66	52.17	15.0488	0.0013	-0.1384
291	SLU 46	0.44	-0.68	52.16	15.0485	0.0013	-0.1423
291	SLU 47	0.44	-0.71	51.85	14.9586	0.0012	-0.143
291	SLU 48	0.43	-0.67	52.78	15.2233	0.0014	-0.1399
291	SLU 49	0.44	-0.69	52.77	15.223	0.0014	-0.1438
291	SLU 50	0.42	-0.68	52.47	15.1336	0.0013	-0.138
291	SLU 51	0.44	-0.7	52.47	15.1333	0.0013	-0.1419
291	SLU 52	0.45	-0.69	56.11	16.1912	0.0027	-0.1473
291	SLU 53	0.44	-0.66	57.04	16.456	0.0029	-0.1442
291	SLU 54	0.46	-0.68	57.03	16.4557	0.0029	-0.1481
291	SLU 55	0.46	-0.7	56.72	16.3658	0.0028	-0.1488
291	SLU 56	0.45	-0.67	57.65	16.6306	0.003	-0.1457
291	SLU 57	0.46	-0.68	57.64	16.6303	0.0029	-0.1497
291	SLU 58	0.44	-0.67	57.35	16.5408	0.0029	-0.1438
291	SLU 59	0.45	-0.69	57.34	16.5406	0.0029	-0.1477
291	SLU 60	0.44	-0.65	58.21	16.7948	0.0035	-0.1432
291	SLU 61	0.45	-0.67	58.21	16.7945	0.0034	-0.1472
291	SLU 62	0.44	-0.66	58.82	16.9694	0.0035	-0.1448
291	SLU 63	0.46	-0.68	58.82	16.9691	0.0035	-0.1487
291	SLU 64	0.47	-0.62	55.58	16.0399	0.0015	-0.1524
291	SLU 65	0.49	-0.65	55.56	16.0394	0.0015	-0.159
291	SLU 66	0.48	-0.62	56.49	16.3042	0.0016	-0.1559
291	SLU 67	0.49	-0.64	56.48	16.3039	0.0016	-0.1598
291	SLU 68	0.5	-0.66	56.17	16.214	0.0015	-0.1605
291	SLU 69	0.49	-0.63	57.1	16.4787	0.0017	-0.1574
291	SLU 70	0.5	-0.65	57.09	16.4784	0.0017	-0.1614
291	SLU 71	0.48	-0.63	56.8	16.389	0.0016	-0.1555
291	SLU 72	0.49	-0.65	56.79	16.3887	0.0016	-0.1594
291	SLU 73	0.51	-0.64	60.43	17.4466	0.003	-0.1648
291	SLU 74	0.5	-0.61	61.36	17.7114	0.0032	-0.1617
291	SLU 75	0.51	-0.63	61.35	17.7111	0.0032	-0.1657
291	SLU 76	0.51	-0.65	61.04	17.6212	0.0031	-0.1663
291	SLU 77	0.5	-0.62	61.97	17.886	0.0033	-0.1633
291	SLU 78	0.52	-0.64	61.96	17.8857	0.0032	-0.1672
291	SLU 79	0.5	-0.63	61.67	17.7962	0.0032	-0.1613
291	SLU 80	0.51	-0.65	61.66	17.796	0.0032	-0.1653
291	SLU 81	0.49	-0.61	62.53	18.0502	0.0038	-0.1608
291	SLU 82	0.51	-0.63	62.53	18.0499	0.0037	-0.1647
291	SLU 83	0.5	-0.62	63.14	18.2248	0.0038	-0.1623
291	SLU 84	0.51	-0.64	63.14	18.2245	0.0038	-0.1662
291	SLE RA 1	0.35	-0.49	41.8	12.0625	0.0011	-0.1134
291	SLE RA 2	0.36	-0.51	41.79	12.0621	0.0011	-0.1178
291	SLE RA 3	0.36	-0.48	42.41	12.2386	0.0012	-0.1157
291	SLE RA 4	0.37	-0.5	42.41	12.2385	0.0012	-0.1183
291	SLE RA 5	0.37	-0.51	42.2	12.1785	0.0011	-0.1188
291	SLE RA 6	0.36	-0.49	42.82	12.355	0.0012	-0.1167
291	SLE RA 7	0.37	-0.5	42.81	12.3548	0.0012	-0.1194
291	SLE RA 8	0.36	-0.5	42.61	12.2952	0.0012	-0.1155
291	SLE RA 9	0.36	-0.51	42.61	12.295	0.0012	-0.1181
291	SLE RA 10	0.38	-0.5	45.04	13.0003	0.0021	-0.1216
291	SLE RA 11	0.37	-0.48	45.66	13.1768	0.0022	-0.1196
291	SLE RA 12	0.38	-0.49	45.65	13.1766	0.0022	-0.1222
291	SLE RA 13	0.38	-0.51	45.45	13.1167	0.0022	-0.1227
291	SLE RA 14	0.37	-0.49	46.06	13.2932	0.0023	-0.1206
291	SLE RA 15	0.38	-0.5	46.06	13.293	0.0022	-0.1232
291	SLE RA 16	0.37	-0.49	45.86	13.2334	0.0022	-0.1193
291	SLE RA 17	0.38	-0.51	45.86	13.2332	0.0022	-0.122
291	SLE RA 18	0.37	-0.48	46.44	13.4027	0.0026	-0.119
291	SLE RA 19	0.37	-0.49	46.43	13.4025	0.0026	-0.1216
291	SLE RA 20	0.37	-0.48	46.85	13.5191	0.0026	-0.12
291	SLE RA 21	0.38	-0.5	46.84	13.5189	0.0026	-0.1226
291	SLE FR 1	0.35	-0.49	41.8	12.0625	0.0011	-0.1134





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
291	SLE FR 2	0.35	-0.49	41.8	12.0624	0.0011	-0.1143
291	SLE FR 3	0.35	-0.49	41.96	12.109	0.0011	-0.1138
291	SLE FR 4	0.36	-0.49	43.19	12.4645	0.0016	-0.1159
291	SLE FR 5	0.36	-0.49	43.35	12.5111	0.0016	-0.1155
291	SLE FR 6	0.36	-0.48	44.12	12.7326	0.0019	-0.1162
291	SLE QP 1	0.35	-0.49	41.8	12.0625	0.0011	-0.1134
291	SLE QP 2	0.35	-0.48	43.19	12.4645	0.0016	-0.1151
291	SLD 1	4.5	0.48	42.13	12.2092	0.01	-1.3816
291	SLD 2	4.87	0.62	42.3	12.2519	0.0095	-1.4942
291	SLD 3	4.25	-0.72	41.57	12.1238	0.0091	-1.3062
291	SLD 4	4.62	-0.58	41.73	12.1666	0.0086	-1.4188
291	SLD 5	1.9	1.61	43.7	12.5097	0.0055	-0.5894
291	SLD 6	2.15	1.7	43.8	12.5378	0.0052	-0.6634
291	SLD 7	1.08	-2.41	41.83	12.2252	0.0025	-0.3379
291	SLD 8	1.33	-2.31	41.93	12.2533	0.0022	-0.4118
291	SLD 9	-0.62	1.35	44.45	12.6757	0.0009	0.1817
291	SLD 10	-0.37	1.44	44.56	12.7038	0.0006	0.1077
291	SLD 11	-1.44	-2.67	42.58	12.3912	-0.0021	0.4332
291	SLD 12	-1.2	-2.57	42.69	12.4193	-0.0024	0.3592
291	SLD 13	-3.91	-0.38	44.65	12.7625	-0.0055	1.1886
291	SLD 14	-3.54	-0.24	44.81	12.8052	-0.006	1.076
291	SLD 15	-4.16	-1.59	44.09	12.6771	-0.0064	1.2641
291	SLD 16	-3.79	-1.45	44.25	12.7199	-0.0069	1.1515
291	SLV 1	10.05	1.73	40.7	11.8652	0.0213	-3.0785
291	SLV 2	10.91	2.06	41.08	11.9648	0.0202	-3.3407
291	SLV 3	9.47	-1	39.42	11.6699	0.0192	-2.9026
291	SLV 4	10.34	-0.67	39.8	11.7695	0.0181	-3.1648
291	SLV 5	3.98	4.25	44.32	12.5637	0.0108	-1.2256
291	SLV 6	4.54	4.47	44.56	12.628	0.0101	-1.3949
291	SLV 7	2.07	-4.83	40.06	11.9127	0.0039	-0.6392
291	SLV 8	2.63	-4.61	40.3	11.977	0.0032	-0.8085
291	SLV 9	-1.92	3.65	46.08	12.952	-0.0001	0.5783
291	SLV 10	-1.36	3.86	46.32	13.0163	-0.0007	0.409
291	SLV 11	-3.83	-5.43	41.83	12.301	-0.007	1.1648
291	SLV 12	-3.27	-5.22	42.07	12.3654	-0.0077	0.9954
291	SLV 13	-9.63	-0.3	46.59	13.1596	-0.015	2.9346
291	SLV 14	-8.76	0.03	46.96	13.2592	-0.016	2.6724
291	SLV 15	-10.2	-3.02	45.31	12.9643	-0.0171	3.1105
291	SLV 16	-9.34	-2.69	45.68	13.0639	-0.0181	2.8484
291	CRTFP Ux+	0	0	0	0	0	0
291	CRTFP Ux-	0	0	0	0	0	0
291	CRTFP Uy+	0	0	0	0	0	0
291	CRTFP Uy-	0	0	0	0	0	0
292	SLU 1	0.34	-0.59	40.72	11.7471	-0.0114	-0.1113
292	SLU 2	0.37	-0.62	40.71	11.7473	-0.0115	-0.1178
292	SLU 3	0.35	-0.6	41.64	12.0116	-0.0116	-0.1148
292	SLU 4	0.37	-0.61	41.63	12.0117	-0.0117	-0.1188
292	SLU 5	0.37	-0.64	41.32	11.9223	-0.0116	-0.1194
292	SLU 6	0.36	-0.61	42.25	12.1866	-0.0118	-0.1164
292	SLU 7	0.37	-0.63	42.24	12.1868	-0.0118	-0.1204
292	SLU 8	0.35	-0.61	41.94	12.0971	-0.0118	-0.1144
292	SLU 9	0.37	-0.63	41.94	12.0973	-0.0118	-0.1184
292	SLU 10	0.38	-0.63	45.55	13.1439	-0.0116	-0.1238
292	SLU 11	0.37	-0.6	46.48	13.4082	-0.0118	-0.1208
292	SLU 12	0.38	-0.62	46.47	13.4083	-0.0118	-0.1247
292	SLU 13	0.39	-0.64	46.16	13.3189	-0.0118	-0.1254
292	SLU 14	0.38	-0.61	47.09	13.5832	-0.012	-0.1224
292	SLU 15	0.39	-0.63	47.08	13.5833	-0.012	-0.1263
292	SLU 16	0.37	-0.62	46.78	13.4937	-0.0119	-0.1204
292	SLU 17	0.38	-0.64	46.78	13.4939	-0.0119	-0.1243
292	SLU 18	0.37	-0.6	47.63	13.7422	-0.0116	-0.1198
292	SLU 19	0.38	-0.62	47.63	13.7423	-0.0117	-0.1237
292	SLU 20	0.37	-0.61	48.25	13.9172	-0.0118	-0.1214
292	SLU 21	0.39	-0.63	48.24	13.9174	-0.0118	-0.1253
292	SLU 22	0.4	-0.56	45.05	13.006	-0.0127	-0.1292
292	SLU 23	0.42	-0.59	45.04	13.0063	-0.0127	-0.1358
292	SLU 24	0.41	-0.56	45.97	13.2705	-0.0129	-0.1328
292	SLU 25	0.42	-0.58	45.96	13.2707	-0.0129	-0.1367
292	SLU 26	0.43	-0.6	45.66	13.1813	-0.0129	-0.1374
292	SLU 27	0.42	-0.57	46.58	13.4456	-0.013	-0.1344
292	SLU 28	0.43	-0.59	46.58	13.4457	-0.0131	-0.1383
292	SLU 29	0.41	-0.58	46.28	13.3561	-0.013	-0.1324
292	SLU 30	0.42	-0.6	46.27	13.3562	-0.013	-0.1363
292	SLU 31	0.44	-0.6	49.88	14.4028	-0.0129	-0.1417
292	SLU 32	0.43	-0.57	50.81	14.6671	-0.013	-0.1388
292	SLU 33	0.44	-0.59	50.8	14.6673	-0.0131	-0.1427
292	SLU 34	0.44	-0.61	50.5	14.5779	-0.013	-0.1433
292	SLU 35	0.43	-0.58	51.42	14.8422	-0.0132	-0.1403
292	SLU 36	0.45	-0.6	51.42	14.8423	-0.0132	-0.1443
292	SLU 37	0.43	-0.59	51.12	14.7527	-0.0131	-0.1384
292	SLU 38	0.44	-0.61	51.11	14.7528	-0.0132	-0.1423
292	SLU 39	0.42	-0.57	51.97	15.0011	-0.0129	-0.1377
292	SLU 40	0.44	-0.59	51.96	15.0013	-0.0129	-0.1417
292	SLU 41	0.43	-0.58	52.58	15.1762	-0.013	-0.1393
292	SLU 42	0.44	-0.6	52.57	15.1763	-0.0131	-0.1433
292	SLU 43	0.43	-0.78	51.45	14.8395	-0.0144	-0.1385
292	SLU 44	0.45	-0.81	51.44	14.8398	-0.0145	-0.145
292	SLU 45	0.44	-0.79	52.36	15.104	-0.0146	-0.142
292	SLU 46	0.45	-0.8	52.36	15.1042	-0.0147	-0.146
292	SLU 47	0.45	-0.82	52.05	15.0148	-0.0146	-0.1466



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
292	SLU 48	0.44	-0.8	52.98	15.2791	-0.0148	-0.1436
292	SLU 49	0.46	-0.82	52.97	15.2792	-0.0148	-0.1476
292	SLU 50	0.44	-0.8	52.67	15.1896	-0.0148	-0.1417
292	SLU 51	0.45	-0.82	52.67	15.1897	-0.0148	-0.1456
292	SLU 52	0.47	-0.82	56.28	16.2364	-0.0146	-0.151
292	SLU 53	0.46	-0.79	57.21	16.5006	-0.0148	-0.148
292	SLU 54	0.47	-0.81	57.2	16.5008	-0.0148	-0.1519
292	SLU 55	0.47	-0.83	56.89	16.4114	-0.0148	-0.1526
292	SLU 56	0.46	-0.8	57.82	16.6757	-0.015	-0.1496
292	SLU 57	0.47	-0.82	57.81	16.6758	-0.015	-0.1535
292	SLU 58	0.45	-0.81	57.51	16.5862	-0.0149	-0.1476
292	SLU 59	0.47	-0.83	57.51	16.5863	-0.0149	-0.1515
292	SLU 60	0.45	-0.79	58.36	16.8346	-0.0146	-0.147
292	SLU 61	0.46	-0.81	58.36	16.8348	-0.0147	-0.1509
292	SLU 62	0.46	-0.8	58.98	17.0097	-0.0148	-0.1486
292	SLU 63	0.47	-0.82	58.97	17.0098	-0.0148	-0.1525
292	SLU 64	0.48	-0.75	55.78	16.0985	-0.0157	-0.1564
292	SLU 65	0.5	-0.78	55.77	16.0987	-0.0157	-0.163
292	SLU 66	0.49	-0.75	56.7	16.363	-0.0159	-0.16
292	SLU 67	0.51	-0.77	56.69	16.3632	-0.0159	-0.1639
292	SLU 68	0.51	-0.79	56.38	16.2738	-0.0159	-0.1646
292	SLU 69	0.5	-0.76	57.31	16.538	-0.016	-0.1616
292	SLU 70	0.51	-0.78	57.3	16.5382	-0.0161	-0.1655
292	SLU 71	0.49	-0.77	57.01	16.4486	-0.016	-0.1596
292	SLU 72	0.51	-0.79	57	16.4487	-0.016	-0.1635
292	SLU 73	0.52	-0.79	60.61	17.4953	-0.0159	-0.169
292	SLU 74	0.51	-0.76	61.54	17.7596	-0.016	-0.166
292	SLU 75	0.52	-0.78	61.53	17.7597	-0.0161	-0.1699
292	SLU 76	0.53	-0.8	61.23	17.6704	-0.016	-0.1705
292	SLU 77	0.52	-0.77	62.15	17.9346	-0.0162	-0.1676
292	SLU 78	0.53	-0.79	62.15	17.9348	-0.0162	-0.1715
292	SLU 79	0.51	-0.78	61.85	17.8451	-0.0161	-0.1656
292	SLU 80	0.52	-0.8	61.84	17.8453	-0.0162	-0.1695
292	SLU 81	0.51	-0.76	62.7	18.0936	-0.0159	-0.165
292	SLU 82	0.52	-0.78	62.69	18.0938	-0.0159	-0.1689
292	SLU 83	0.51	-0.77	63.31	18.2686	-0.016	-0.1665
292	SLU 84	0.53	-0.79	63.3	18.2688	-0.0161	-0.1705
292	SLE RA 1	0.36	-0.58	41.96	12.1068	-0.0118	-0.1164
292	SLE RA 2	0.37	-0.6	41.95	12.1069	-0.0118	-0.1208
292	SLE RA 3	0.37	-0.59	42.57	12.2831	-0.0119	-0.1188
292	SLE RA 4	0.38	-0.6	42.56	12.2832	-0.0119	-0.1214
292	SLE RA 5	0.38	-0.61	42.36	12.2236	-0.0119	-0.1218
292	SLE RA 6	0.37	-0.59	42.98	12.3998	-0.012	-0.1198
292	SLE RA 7	0.38	-0.6	42.97	12.3999	-0.012	-0.1225
292	SLE RA 8	0.37	-0.6	42.77	12.3401	-0.012	-0.1185
292	SLE RA 9	0.37	-0.61	42.77	12.3402	-0.012	-0.1211
292	SLE RA 10	0.39	-0.61	45.18	13.038	-0.0119	-0.1247
292	SLE RA 11	0.38	-0.59	45.8	13.2142	-0.012	-0.1227
292	SLE RA 12	0.39	-0.6	45.79	13.2143	-0.012	-0.1254
292	SLE RA 13	0.39	-0.62	45.59	13.1547	-0.012	-0.1258
292	SLE RA 14	0.38	-0.6	46.2	13.3308	-0.0121	-0.1238
292	SLE RA 15	0.39	-0.61	46.2	13.3309	-0.0121	-0.1264
292	SLE RA 16	0.38	-0.6	46	13.2712	-0.0121	-0.1225
292	SLE RA 17	0.39	-0.61	46	13.2713	-0.0121	-0.1251
292	SLE RA 18	0.38	-0.59	46.57	13.4368	-0.0119	-0.1221
292	SLE RA 19	0.38	-0.6	46.56	13.4369	-0.0119	-0.1247
292	SLE RA 20	0.38	-0.6	46.98	13.5535	-0.012	-0.1231
292	SLE RA 21	0.39	-0.61	46.97	13.5536	-0.0121	-0.1258
292	SLE FR 1	0.36	-0.58	41.96	12.1068	-0.0118	-0.1164
292	SLE FR 2	0.36	-0.59	41.96	12.1068	-0.0118	-0.1173
292	SLE FR 3	0.36	-0.59	42.12	12.1534	-0.0118	-0.1168
292	SLE FR 4	0.37	-0.59	43.34	12.5058	-0.0118	-0.119
292	SLE FR 5	0.37	-0.59	43.5	12.5525	-0.0119	-0.1185
292	SLE FR 6	0.37	-0.59	44.26	12.7718	-0.0118	-0.1192
292	SLE QP 1	0.36	-0.58	41.96	12.1068	-0.0118	-0.1164
292	SLE QP 2	0.36	-0.59	43.34	12.5058	-0.0118	-0.1181
292	SLD 1	4.51	0.42	41.96	12.162	-0.0021	-1.3872
292	SLD 2	4.88	0.58	42.14	12.21	-0.0026	-1.5001
292	SLD 3	4.26	-0.77	41.41	12.0822	-0.0027	-1.3116
292	SLD 4	4.64	-0.61	41.59	12.1303	-0.0033	-1.4245
292	SLD 5	1.92	1.49	43.73	12.5151	-0.0078	-0.5933
292	SLD 6	2.16	1.6	43.84	12.5466	-0.0082	-0.6675
292	SLD 7	1.09	-2.47	41.9	12.2492	-0.01	-0.3413
292	SLD 8	1.34	-2.37	42.02	12.2807	-0.0103	-0.4156
292	SLD 9	-0.61	1.2	44.66	12.7308	-0.0133	0.1794
292	SLD 10	-0.37	1.3	44.78	12.7624	-0.0137	0.1052
292	SLD 11	-1.43	-2.77	42.84	12.4649	-0.0155	0.4313
292	SLD 12	-1.19	-2.66	42.96	12.4965	-0.0158	0.3571
292	SLD 13	-3.91	-0.56	45.09	12.8813	-0.0204	1.1883
292	SLD 14	-3.53	-0.4	45.27	12.9293	-0.0209	1.0754
292	SLD 15	-4.15	-1.75	44.54	12.8015	-0.021	1.2639
292	SLD 16	-3.78	-1.59	44.72	12.8496	-0.0215	1.151
292	SLV 1	10.06	1.72	40.1	11.7	0.0109	-3.0874
292	SLV 2	10.93	2.1	40.51	11.8119	0.0097	-3.3504
292	SLV 3	9.49	-0.97	38.85	11.5168	0.0094	-2.9112
292	SLV 4	10.36	-0.59	39.27	11.6287	0.0082	-3.1742
292	SLV 5	4	4.12	44.18	12.5225	-0.0024	-1.2307
292	SLV 6	4.56	4.37	44.45	12.5947	-0.0032	-1.4006
292	SLV 7	2.08	-4.85	40.03	11.912	-0.0076	-0.6433
292	SLV 8	2.64	-4.61	40.3	11.9843	-0.0084	-0.8131



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
292	SLV 9	-1.91	3.44	46.38	13.0273	-0.0153	0.5769
292	SLV 10	-1.35	3.68	46.65	13.0996	-0.0161	0.4071
292	SLV 11	-3.83	-5.54	42.23	12.4169	-0.0204	1.1644
292	SLV 12	-3.27	-5.3	42.5	12.4891	-0.0212	0.9945
292	SLV 13	-9.63	-0.58	47.41	13.3828	-0.0318	2.938
292	SLV 14	-8.76	-0.2	47.83	13.4947	-0.033	2.675
292	SLV 15	-10.2	-3.27	46.17	13.1997	-0.0334	3.1142
292	SLV 16	-9.34	-2.89	46.59	13.3116	-0.0346	2.8512
292	CRTFP Ux+	0	0	0	0	0	0
292	CRTFP Ux-	0	0	0	0	0	0
292	CRTFP Uy+	0	0	0	0	0	0
292	CRTFP Uy-	0	0	0	0	0	0
293	SLU 1	0.35	-0.68	41.23	11.9295	-0.0221	-0.1135
293	SLU 2	0.37	-0.71	41.22	11.9303	-0.0221	-0.1201
293	SLU 3	0.36	-0.69	42.15	12.198	-0.0226	-0.1172
293	SLU 4	0.38	-0.71	42.15	12.1985	-0.0226	-0.1211
293	SLU 5	0.38	-0.73	41.84	12.1083	-0.0225	-0.1217
293	SLU 6	0.37	-0.7	42.77	12.376	-0.0229	-0.1188
293	SLU 7	0.38	-0.72	42.77	12.3765	-0.023	-0.1227
293	SLU 8	0.36	-0.71	42.47	12.2855	-0.0228	-0.1168
293	SLU 9	0.37	-0.73	42.46	12.286	-0.0228	-0.1207
293	SLU 10	0.39	-0.73	46.08	13.336	-0.0238	-0.1261
293	SLU 11	0.38	-0.71	47.02	13.6037	-0.0243	-0.1231
293	SLU 12	0.39	-0.73	47.01	13.6042	-0.0243	-0.1271
293	SLU 13	0.39	-0.75	46.7	13.514	-0.0242	-0.1277
293	SLU 14	0.38	-0.72	47.64	13.7817	-0.0246	-0.1248
293	SLU 15	0.4	-0.74	47.63	13.7822	-0.0247	-0.1287
293	SLU 16	0.38	-0.73	47.33	13.6912	-0.0245	-0.1227
293	SLU 17	0.39	-0.75	47.32	13.6916	-0.0245	-0.1267
293	SLU 18	0.38	-0.71	48.17	13.9376	-0.0245	-0.122
293	SLU 19	0.39	-0.73	48.17	13.9381	-0.0245	-0.126
293	SLU 20	0.38	-0.72	48.79	14.1156	-0.0249	-0.1237
293	SLU 21	0.39	-0.74	48.79	14.1161	-0.0249	-0.1276
293	SLU 22	0.41	-0.66	45.62	13.2093	-0.0246	-0.1318
293	SLU 23	0.43	-0.69	45.61	13.2101	-0.0247	-0.1384
293	SLU 24	0.42	-0.67	46.55	13.4778	-0.0252	-0.1355
293	SLU 25	0.43	-0.69	46.54	13.4783	-0.0252	-0.1395
293	SLU 26	0.44	-0.71	46.23	13.3881	-0.025	-0.1401
293	SLU 27	0.42	-0.68	47.17	13.6558	-0.0255	-0.1372
293	SLU 28	0.44	-0.7	47.16	13.6563	-0.0255	-0.1411
293	SLU 29	0.42	-0.69	46.86	13.5653	-0.0254	-0.1351
293	SLU 30	0.43	-0.71	46.85	13.5658	-0.0254	-0.1391
293	SLU 31	0.45	-0.71	50.47	14.6158	-0.0264	-0.1444
293	SLU 32	0.44	-0.69	51.41	14.8835	-0.0268	-0.1415
293	SLU 33	0.45	-0.7	51.4	14.8839	-0.0269	-0.1455
293	SLU 34	0.45	-0.72	51.09	14.7937	-0.0267	-0.1461
293	SLU 35	0.44	-0.7	52.03	15.0615	-0.0272	-0.1431
293	SLU 36	0.45	-0.72	52.02	15.0619	-0.0272	-0.1471
293	SLU 37	0.44	-0.71	51.72	14.9709	-0.0271	-0.1411
293	SLU 38	0.45	-0.72	51.72	14.9714	-0.0271	-0.1451
293	SLU 39	0.43	-0.69	52.57	15.2174	-0.0271	-0.1404
293	SLU 40	0.45	-0.71	52.56	15.2179	-0.0271	-0.1444
293	SLU 41	0.44	-0.7	53.19	15.3954	-0.0274	-0.142
293	SLU 42	0.45	-0.72	53.18	15.3958	-0.0274	-0.146
293	SLU 43	0.44	-0.9	52.09	15.0696	-0.0278	-0.1412
293	SLU 44	0.46	-0.93	52.08	15.0704	-0.0279	-0.1478
293	SLU 45	0.45	-0.9	53.02	15.3381	-0.0283	-0.1449
293	SLU 46	0.46	-0.92	53.01	15.3386	-0.0283	-0.1489
293	SLU 47	0.46	-0.94	52.7	15.2484	-0.0282	-0.1495
293	SLU 48	0.45	-0.92	53.63	15.5161	-0.0287	-0.1465
293	SLU 49	0.47	-0.93	53.63	15.5166	-0.0287	-0.1505
293	SLU 50	0.45	-0.92	53.33	15.4256	-0.0285	-0.1445
293	SLU 51	0.46	-0.94	53.32	15.4261	-0.0286	-0.1485
293	SLU 52	0.48	-0.95	56.94	16.4761	-0.0295	-0.1538
293	SLU 53	0.47	-0.92	57.88	16.7438	-0.03	-0.1509
293	SLU 54	0.48	-0.94	57.87	16.7442	-0.03	-0.1548
293	SLU 55	0.48	-0.96	57.56	16.654	-0.0299	-0.1554
293	SLU 56	0.47	-0.93	58.5	16.9218	-0.0304	-0.1525
293	SLU 57	0.48	-0.95	58.49	16.9222	-0.0304	-0.1565
293	SLU 58	0.46	-0.94	58.19	16.8312	-0.0302	-0.1505
293	SLU 59	0.48	-0.96	58.19	16.8317	-0.0302	-0.1545
293	SLU 60	0.46	-0.92	59.04	17.0777	-0.0302	-0.1498
293	SLU 61	0.47	-0.94	59.03	17.0782	-0.0303	-0.1537
293	SLU 62	0.47	-0.94	59.65	17.2557	-0.0306	-0.1514
293	SLU 63	0.48	-0.95	59.65	17.2561	-0.0306	-0.1554
293	SLU 64	0.49	-0.88	56.48	16.3494	-0.0304	-0.1596
293	SLU 65	0.52	-0.91	56.47	16.3502	-0.0304	-0.1662
293	SLU 66	0.51	-0.88	57.41	16.6179	-0.0309	-0.1633
293	SLU 67	0.52	-0.9	57.4	16.6184	-0.0309	-0.1672
293	SLU 68	0.52	-0.92	57.09	16.5282	-0.0308	-0.1678
293	SLU 69	0.51	-0.89	58.03	16.7959	-0.0313	-0.1649
293	SLU 70	0.52	-0.91	58.02	16.7964	-0.0313	-0.1689
293	SLU 71	0.5	-0.9	57.72	16.7054	-0.0311	-0.1629
293	SLU 72	0.52	-0.92	57.72	16.7058	-0.0311	-0.1668
293	SLU 73	0.53	-0.92	61.34	17.7558	-0.0321	-0.1722
293	SLU 74	0.52	-0.9	62.27	18.0236	-0.0326	-0.1693
293	SLU 75	0.54	-0.92	62.27	18.024	-0.0326	-0.1732
293	SLU 76	0.54	-0.94	61.96	17.9338	-0.0325	-0.1738
293	SLU 77	0.53	-0.91	62.89	18.2015	-0.0329	-0.1709
293	SLU 78	0.54	-0.93	62.89	18.202	-0.033	-0.1748



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
293	SLU 79	0.52	-0.92	62.58	18.111	-0.0328	-0.1689
293	SLU 80	0.53	-0.94	62.58	18.1115	-0.0328	-0.1728
293	SLU 81	0.52	-0.9	63.43	18.3575	-0.0328	-0.1681
293	SLU 82	0.53	-0.92	63.42	18.3579	-0.0328	-0.1721
293	SLU 83	0.52	-0.92	64.05	18.5354	-0.0332	-0.1698
293	SLU 84	0.54	-0.93	64.04	18.5359	-0.0332	-0.1737
293	SLE RA 1	0.37	-0.68	42.48	12.2952	-0.0228	-0.1187
293	SLE RA 2	0.38	-0.7	42.48	12.2957	-0.0228	-0.1231
293	SLE RA 3	0.37	-0.68	43.1	12.4742	-0.0231	-0.1212
293	SLE RA 4	0.38	-0.69	43.1	12.4745	-0.0232	-0.1238
293	SLE RA 5	0.39	-0.71	42.89	12.4144	-0.0231	-0.1242
293	SLE RA 6	0.38	-0.69	43.51	12.5928	-0.0234	-0.1223
293	SLE RA 7	0.39	-0.7	43.51	12.5932	-0.0234	-0.1249
293	SLE RA 8	0.37	-0.7	43.31	12.5325	-0.0233	-0.1209
293	SLE RA 9	0.38	-0.71	43.3	12.5328	-0.0233	-0.1236
293	SLE RA 10	0.39	-0.71	45.72	13.2328	-0.024	-0.1271
293	SLE RA 11	0.39	-0.69	46.34	13.4113	-0.0243	-0.1252
293	SLE RA 12	0.4	-0.71	46.34	13.4116	-0.0243	-0.1278
293	SLE RA 13	0.4	-0.72	46.13	13.3515	-0.0242	-0.1282
293	SLE RA 14	0.39	-0.7	46.75	13.5299	-0.0245	-0.1263
293	SLE RA 15	0.4	-0.72	46.75	13.5303	-0.0245	-0.1289
293	SLE RA 16	0.39	-0.71	46.55	13.4696	-0.0244	-0.1249
293	SLE RA 17	0.39	-0.72	46.55	13.4699	-0.0244	-0.1275
293	SLE RA 18	0.38	-0.7	47.11	13.6339	-0.0244	-0.1244
293	SLE RA 19	0.39	-0.71	47.11	13.6342	-0.0244	-0.1271
293	SLE RA 20	0.39	-0.7	47.53	13.7526	-0.0247	-0.1255
293	SLE RA 21	0.4	-0.72	47.52	13.7529	-0.0247	-0.1282
293	SLE FR 1	0.37	-0.68	42.48	12.2952	-0.0228	-0.1187
293	SLE FR 2	0.37	-0.68	42.48	12.2953	-0.0228	-0.1196
293	SLE FR 3	0.37	-0.68	42.65	12.3426	-0.0229	-0.1192
293	SLE FR 4	0.38	-0.69	43.87	12.6969	-0.0233	-0.1213
293	SLE FR 5	0.37	-0.69	44.04	12.7443	-0.0234	-0.1209
293	SLE FR 6	0.38	-0.69	44.8	12.9645	-0.0236	-0.1216
293	SLE QP 1	0.37	-0.68	42.48	12.2952	-0.0228	-0.1187
293	SLE QP 2	0.37	-0.68	43.87	12.6968	-0.0233	-0.1204
293	SLD 1	4.51	0.36	42.13	12.2483	-0.0127	-1.3923
293	SLD 2	4.89	0.54	42.33	12.3027	-0.0133	-1.5057
293	SLD 3	4.27	-0.82	41.58	12.1675	-0.012	-1.3166
293	SLD 4	4.64	-0.64	41.78	12.2218	-0.0126	-1.4299
293	SLD 5	1.92	1.38	44.15	12.6752	-0.0211	-0.5966
293	SLD 6	2.17	1.5	44.28	12.711	-0.0215	-0.6711
293	SLD 7	1.1	-2.54	42.31	12.4056	-0.0187	-0.3442
293	SLD 8	1.35	-2.42	42.44	12.4413	-0.0191	-0.4187
293	SLD 9	-0.6	1.05	45.3	12.9523	-0.0275	0.1778
293	SLD 10	-0.36	1.17	45.43	12.988	-0.0279	0.1033
293	SLD 11	-1.42	-2.86	43.46	12.6826	-0.0251	0.4302
293	SLD 12	-1.18	-2.74	43.59	12.7184	-0.0255	0.3558
293	SLD 13	-3.9	-0.73	45.97	13.1718	-0.034	1.189
293	SLD 14	-3.52	-0.55	46.16	13.2261	-0.0346	1.0757
293	SLD 15	-4.14	-1.9	45.42	13.0909	-0.0333	1.2648
293	SLD 16	-3.77	-1.72	45.61	13.1453	-0.0339	1.1515
293	SLV 1	10.06	1.7	39.77	11.6463	0.0015	-3.0964
293	SLV 2	10.93	2.13	40.24	11.7729	0.0001	-3.3603
293	SLV 3	9.49	-0.95	38.52	11.4601	0.0031	-2.9198
293	SLV 4	10.36	-0.53	38.98	11.5867	0.0017	-3.1837
293	SLV 5	4	3.99	44.46	12.6422	-0.0181	-1.2354
293	SLV 6	4.56	4.26	44.76	12.7239	-0.019	-1.4059
293	SLV 7	2.09	-4.87	40.29	12.0215	-0.0126	-0.6468
293	SLV 8	2.65	-4.6	40.58	12.1033	-0.0135	-0.8172
293	SLV 9	-1.9	3.23	47.16	13.2903	-0.0331	0.5763
293	SLV 10	-1.34	3.5	47.46	13.3721	-0.034	0.4059
293	SLV 11	-3.82	-5.63	42.98	12.6697	-0.0276	1.165
293	SLV 12	-3.26	-5.36	43.28	12.7514	-0.0285	0.9945
293	SLV 13	-9.61	-0.84	48.76	13.8069	-0.0483	2.9428
293	SLV 14	-8.74	-0.41	49.22	13.9335	-0.0497	2.6789
293	SLV 15	-10.19	-3.49	47.5	13.6207	-0.0467	3.1194
293	SLV 16	-9.32	-3.07	47.97	13.7473	-0.0481	2.8555
293	CRTFP Ux+	0	0	0	0	0	0
293	CRTFP Ux-	0	0	0	0	0	0
293	CRTFP Uy+	0	0	0	0	0	0
293	CRTFP Uy-	0	0	0	0	0	0
294	SLU 1	0.31	-0.65	36.08	10.29	0.8965	-0.0797
294	SLU 2	0.33	-0.68	36.07	10.291	0.8963	-0.0847
294	SLU 3	0.32	-0.66	36.89	10.5219	0.9166	-0.0827
294	SLU 4	0.33	-0.67	36.89	10.5225	0.9165	-0.0857
294	SLU 5	0.33	-0.69	36.62	10.4449	0.9098	-0.0858
294	SLU 6	0.32	-0.67	37.43	10.6759	0.9301	-0.0838
294	SLU 7	0.33	-0.69	37.43	10.6765	0.93	-0.0868
294	SLU 8	0.32	-0.68	37.17	10.5979	0.9234	-0.0819
294	SLU 9	0.33	-0.69	37.16	10.5985	0.9233	-0.0849
294	SLU 10	0.34	-0.7	40.3	11.4961	1.0019	-0.089
294	SLU 11	0.33	-0.68	41.12	11.7271	1.0222	-0.0869
294	SLU 12	0.34	-0.7	41.12	11.7277	1.0221	-0.0899
294	SLU 13	0.34	-0.71	40.85	11.6501	1.0153	-0.0901
294	SLU 14	0.34	-0.7	41.67	11.881	1.0356	-0.088
294	SLU 15	0.35	-0.71	41.66	11.8816	1.0355	-0.091
294	SLU 16	0.33	-0.7	41.4	11.803	1.029	-0.0862
294	SLU 17	0.34	-0.71	41.39	11.8036	1.0289	-0.0891
294	SLU 18	0.33	-0.69	42.12	12.0116	1.0473	-0.0858
294	SLU 19	0.34	-0.7	42.12	12.0122	1.0472	-0.0888



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
294	SLU 20	0.33	-0.7	42.67	12.1656	1.0607	-0.0869
294	SLU 21	0.34	-0.71	42.66	12.1662	1.0606	-0.0899
294	SLU 22	0.36	-0.64	39.93	11.3964	0.9921	-0.0957
294	SLU 23	0.38	-0.67	39.92	11.3973	0.9919	-0.1007
294	SLU 24	0.37	-0.65	40.74	11.6283	1.0122	-0.0986
294	SLU 25	0.38	-0.66	40.74	11.6289	1.0121	-0.1016
294	SLU 26	0.38	-0.68	40.47	11.5513	1.0054	-0.1018
294	SLU 27	0.37	-0.66	41.29	11.7823	1.0257	-0.0997
294	SLU 28	0.38	-0.68	41.28	11.7829	1.0256	-0.1027
294	SLU 29	0.37	-0.67	41.02	11.7043	1.019	-0.0979
294	SLU 30	0.38	-0.68	41.01	11.7048	1.0189	-0.1009
294	SLU 31	0.39	-0.69	44.16	12.6025	1.0975	-0.1049
294	SLU 32	0.38	-0.67	44.98	12.8335	1.1178	-0.1029
294	SLU 33	0.39	-0.69	44.97	12.8341	1.1177	-0.1059
294	SLU 34	0.39	-0.7	44.7	12.7564	1.1109	-0.106
294	SLU 35	0.39	-0.69	45.52	12.9874	1.1312	-0.104
294	SLU 36	0.4	-0.7	45.51	12.988	1.1311	-0.107
294	SLU 37	0.38	-0.69	45.25	12.9094	1.1245	-0.1021
294	SLU 38	0.39	-0.7	45.25	12.91	1.1244	-0.1051
294	SLU 39	0.38	-0.68	45.98	13.118	1.1428	-0.1018
294	SLU 40	0.39	-0.69	45.97	13.1186	1.1428	-0.1048
294	SLU 41	0.38	-0.69	46.52	13.2719	1.1563	-0.1028
294	SLU 42	0.39	-0.7	46.52	13.2725	1.1562	-0.1058
294	SLU 43	0.38	-0.85	45.58	12.9977	1.1327	-0.0982
294	SLU 44	0.4	-0.87	45.57	12.9986	1.1325	-0.1032
294	SLU 45	0.39	-0.86	46.39	13.2296	1.1528	-0.1011
294	SLU 46	0.4	-0.87	46.39	13.2302	1.1527	-0.1041
294	SLU 47	0.4	-0.89	46.12	13.1526	1.146	-0.1042
294	SLU 48	0.4	-0.87	46.94	13.3836	1.1663	-0.1022
294	SLU 49	0.41	-0.88	46.93	13.3842	1.1662	-0.1052
294	SLU 50	0.39	-0.87	46.67	13.3056	1.1596	-0.1003
294	SLU 51	0.4	-0.89	46.66	13.3061	1.1595	-0.1033
294	SLU 52	0.42	-0.9	49.81	14.2038	1.2381	-0.1074
294	SLU 53	0.41	-0.88	50.63	14.4348	1.2584	-0.1054
294	SLU 54	0.42	-0.9	50.62	14.4354	1.2583	-0.1084
294	SLU 55	0.42	-0.91	50.35	14.3577	1.2515	-0.1085
294	SLU 56	0.41	-0.89	51.17	14.5887	1.2718	-0.1065
294	SLU 57	0.42	-0.91	51.16	14.5893	1.2717	-0.1095
294	SLU 58	0.41	-0.9	50.9	14.5107	1.2651	-0.1046
294	SLU 59	0.42	-0.91	50.9	14.5113	1.265	-0.1076
294	SLU 60	0.4	-0.89	51.63	14.7193	1.2834	-0.1042
294	SLU 61	0.41	-0.9	51.62	14.7199	1.2834	-0.1072
294	SLU 62	0.41	-0.9	52.17	14.8732	1.2969	-0.1053
294	SLU 63	0.42	-0.91	52.17	14.8738	1.2968	-0.1083
294	SLU 64	0.43	-0.84	49.43	14.104	1.2282	-0.1141
294	SLU 65	0.45	-0.86	49.43	14.105	1.2281	-0.1191
294	SLU 66	0.44	-0.85	50.25	14.336	1.2484	-0.1171
294	SLU 67	0.45	-0.86	50.24	14.3366	1.2483	-0.1201
294	SLU 68	0.45	-0.88	49.97	14.2589	1.2415	-0.1202
294	SLU 69	0.45	-0.86	50.79	14.4899	1.2618	-0.1182
294	SLU 70	0.46	-0.87	50.79	14.4905	1.2617	-0.1212
294	SLU 71	0.44	-0.86	50.52	14.4119	1.2552	-0.1163
294	SLU 72	0.45	-0.88	50.52	14.4125	1.2551	-0.1193
294	SLU 73	0.47	-0.89	53.66	15.3101	1.3336	-0.1234
294	SLU 74	0.46	-0.87	54.48	15.5411	1.3539	-0.1213
294	SLU 75	0.47	-0.89	54.47	15.5417	1.3538	-0.1243
294	SLU 76	0.47	-0.9	54.2	15.4641	1.3471	-0.1245
294	SLU 77	0.46	-0.88	55.02	15.6951	1.3674	-0.1224
294	SLU 78	0.47	-0.9	55.02	15.6957	1.3673	-0.1254
294	SLU 79	0.46	-0.89	54.75	15.6171	1.3607	-0.1206
294	SLU 80	0.47	-0.9	54.75	15.6177	1.3606	-0.1236
294	SLU 81	0.45	-0.88	55.48	15.8257	1.379	-0.1202
294	SLU 82	0.46	-0.89	55.48	15.8262	1.3789	-0.1232
294	SLU 83	0.46	-0.89	56.02	15.9796	1.3925	-0.1213
294	SLU 84	0.47	-0.9	56.02	15.9802	1.3924	-0.1243
294	SLE RA 1	0.32	-0.65	37.18	10.6061	0.9238	-0.0843
294	SLE RA 2	0.33	-0.66	37.17	10.6067	0.9237	-0.0876
294	SLE RA 3	0.33	-0.65	37.72	10.7607	0.9372	-0.0863
294	SLE RA 4	0.34	-0.66	37.72	10.7611	0.9372	-0.0883
294	SLE RA 5	0.34	-0.67	37.54	10.7094	0.9327	-0.0883
294	SLE RA 6	0.33	-0.66	38.08	10.8634	0.9462	-0.087
294	SLE RA 7	0.34	-0.67	38.08	10.8638	0.9461	-0.089
294	SLE RA 8	0.33	-0.66	37.9	10.8114	0.9417	-0.0857
294	SLE RA 9	0.33	-0.67	37.9	10.8117	0.9417	-0.0877
294	SLE RA 10	0.34	-0.68	40	11.4102	0.9941	-0.0904
294	SLE RA 11	0.34	-0.67	40.54	11.5642	1.0076	-0.0891
294	SLE RA 12	0.35	-0.68	40.54	11.5646	1.0075	-0.0911
294	SLE RA 13	0.35	-0.69	40.36	11.5128	1.003	-0.0912
294	SLE RA 14	0.34	-0.68	40.9	11.6668	1.0166	-0.0898
294	SLE RA 15	0.35	-0.69	40.9	11.6672	1.0165	-0.0918
294	SLE RA 16	0.34	-0.68	40.73	11.6148	1.0121	-0.0886
294	SLE RA 17	0.34	-0.69	40.72	11.6152	1.012	-0.0906
294	SLE RA 18	0.34	-0.67	41.21	11.7538	1.0243	-0.0883
294	SLE RA 19	0.34	-0.68	41.21	11.7542	1.0243	-0.0903
294	SLE RA 20	0.34	-0.68	41.57	11.8565	1.0333	-0.0891
294	SLE RA 21	0.35	-0.69	41.57	11.8569	1.0332	-0.0911
294	SLE FR 1	0.32	-0.65	37.18	10.6061	0.9238	-0.0843
294	SLE FR 2	0.32	-0.65	37.18	10.6062	0.9238	-0.0849
294	SLE FR 3	0.32	-0.65	37.32	10.6471	0.9274	-0.0846
294	SLE FR 4	0.33	-0.66	38.39	10.9505	0.9539	-0.0862



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
294	SLE FR 5	0.33	-0.66	38.53	10.9915	0.9575	-0.0858
294	SLE FR 6	0.33	-0.66	39.19	11.18	0.9741	-0.0863
294	SLE QP 1	0.32	-0.65	37.18	10.6061	0.9238	-0.0843
294	SLE QP 2	0.33	-0.66	38.39	10.9504	0.9539	-0.0855
294	SLD 1	3.88	0.26	36.56	10.477	0.9154	-1.1778
294	SLD 2	4.2	0.43	36.75	10.5287	0.9198	-1.2785
294	SLD 3	3.67	-0.74	36.07	10.4032	0.9041	-1.1055
294	SLD 4	3.99	-0.57	36.26	10.4548	0.9084	-1.2061
294	SLD 5	1.66	1.1	38.55	10.9112	0.9588	-0.5049
294	SLD 6	1.87	1.21	38.68	10.9452	0.9616	-0.5711
294	SLD 7	0.95	-2.22	36.91	10.665	0.9211	-0.2638
294	SLD 8	1.16	-2.11	37.03	10.6989	0.9239	-0.33
294	SLD 9	-0.51	0.8	39.74	11.2019	0.984	0.159
294	SLD 10	-0.3	0.91	39.87	11.2359	0.9868	0.0928
294	SLD 11	-1.22	-2.52	38.1	10.9556	0.9463	0.4001
294	SLD 12	-1	-2.41	38.22	10.9896	0.9491	0.3339
294	SLD 13	-3.34	-0.74	40.52	11.446	0.9994	1.0351
294	SLD 14	-3.02	-0.57	40.71	11.4977	1.0038	0.9345
294	SLD 15	-3.55	-1.74	40.03	11.3721	0.9881	1.1075
294	SLD 16	-3.23	-1.57	40.21	11.4238	0.9925	1.0068
294	SLV 1	8.64	1.44	34.1	9.8417	0.8634	-2.6407
294	SLV 2	9.39	1.84	34.54	9.962	0.8736	-2.8751
294	SLV 3	8.15	-0.82	32.98	9.6715	0.8377	-2.4731
294	SLV 4	8.9	-0.42	33.42	9.7918	0.8478	-2.7075
294	SLV 5	3.44	3.33	38.73	10.8551	0.9641	-1.0657
294	SLV 6	3.92	3.59	39.01	10.9328	0.9707	-1.217
294	SLV 7	1.8	-4.2	34.98	10.2878	0.8782	-0.5071
294	SLV 8	2.28	-3.94	35.27	10.3655	0.8848	-0.6585
294	SLV 9	-1.63	2.63	41.51	11.5353	1.0231	0.4875
294	SLV 10	-1.15	2.89	41.79	11.613	1.0297	0.3361
294	SLV 11	-3.27	-4.9	37.76	10.968	0.9372	1.0461
294	SLV 12	-2.79	-4.64	38.05	11.0457	0.9438	0.8947
294	SLV 13	-8.25	-0.89	43.36	12.109	1.0601	2.5365
294	SLV 14	-7.5	-0.49	43.8	12.2293	1.0702	2.3022
294	SLV 15	-8.74	-3.15	42.24	11.9388	1.0343	2.7041
294	SLV 16	-7.99	-2.75	42.68	12.0591	1.0445	2.4697
294	CRTFP Ux+	0	0	0	0	0	0
294	CRTFP Ux-	0	0	0	0	0	0
294	CRTFP Uy+	0	0	0	0	0	0
294	CRTFP Uy-	0	0	0	0	0	0
295	SLU 1	0.21	-0.46	24.59	6.7265	0.5638	-0.051
295	SLU 2	0.22	-0.47	24.59	6.7272	0.5637	-0.0543
295	SLU 3	0.21	-0.46	25.15	6.8785	0.5765	-0.0529
295	SLU 4	0.22	-0.47	25.14	6.8789	0.5765	-0.0548
295	SLU 5	0.22	-0.48	24.96	6.8281	0.5722	-0.0549
295	SLU 6	0.22	-0.47	25.52	6.9794	0.585	-0.0536
295	SLU 7	0.23	-0.48	25.52	6.9798	0.5849	-0.0555
295	SLU 8	0.21	-0.47	25.34	6.9283	0.5808	-0.0524
295	SLU 9	0.22	-0.48	25.33	6.9288	0.5807	-0.0543
295	SLU 10	0.23	-0.49	27.47	7.5124	0.6297	-0.0568
295	SLU 11	0.22	-0.48	28.02	7.6636	0.6425	-0.0554
295	SLU 12	0.23	-0.49	28.02	7.6641	0.6425	-0.0574
295	SLU 13	0.23	-0.5	27.84	7.6133	0.6382	-0.0575
295	SLU 14	0.23	-0.49	28.4	7.7646	0.651	-0.0561
295	SLU 15	0.23	-0.5	28.39	7.765	0.651	-0.0581
295	SLU 16	0.22	-0.49	28.21	7.7135	0.6468	-0.0549
295	SLU 17	0.23	-0.5	28.21	7.7139	0.6468	-0.0569
295	SLU 18	0.22	-0.48	28.7	7.8482	0.6581	-0.0546
295	SLU 19	0.23	-0.49	28.7	7.8486	0.6581	-0.0566
295	SLU 20	0.22	-0.49	29.07	7.9491	0.6666	-0.0553
295	SLU 21	0.23	-0.5	29.07	7.9495	0.6666	-0.0573
295	SLU 22	0.24	-0.45	27.22	7.4514	0.6241	-0.0612
295	SLU 23	0.25	-0.47	27.22	7.4521	0.624	-0.0645
295	SLU 24	0.25	-0.46	27.78	7.6034	0.6368	-0.0631
295	SLU 25	0.26	-0.47	27.78	7.6038	0.6368	-0.0651
295	SLU 26	0.26	-0.48	27.59	7.553	0.6325	-0.0652
295	SLU 27	0.25	-0.47	28.15	7.7043	0.6453	-0.0638
295	SLU 28	0.26	-0.48	28.15	7.7047	0.6453	-0.0657
295	SLU 29	0.25	-0.47	27.97	7.6532	0.6411	-0.0626
295	SLU 30	0.26	-0.48	27.96	7.6536	0.6411	-0.0645
295	SLU 31	0.26	-0.49	30.1	8.2373	0.69	-0.067
295	SLU 32	0.26	-0.48	30.66	8.3885	0.7028	-0.0656
295	SLU 33	0.27	-0.49	30.65	8.389	0.7028	-0.0676
295	SLU 34	0.27	-0.5	30.47	8.3382	0.6985	-0.0677
295	SLU 35	0.26	-0.49	31.03	8.4894	0.7113	-0.0663
295	SLU 36	0.27	-0.5	31.02	8.4899	0.7113	-0.0683
295	SLU 37	0.26	-0.49	30.84	8.4384	0.7071	-0.0651
295	SLU 38	0.27	-0.5	30.84	8.4388	0.7071	-0.0671
295	SLU 39	0.26	-0.48	31.33	8.5731	0.7184	-0.0648
295	SLU 40	0.26	-0.49	31.33	8.5735	0.7184	-0.0668
295	SLU 41	0.26	-0.49	31.71	8.674	0.7269	-0.0655
295	SLU 42	0.27	-0.5	31.7	8.6744	0.7269	-0.0675
295	SLU 43	0.26	-0.6	31.07	8.4959	0.7123	-0.0628
295	SLU 44	0.27	-0.61	31.06	8.4966	0.7122	-0.066
295	SLU 45	0.27	-0.6	31.62	8.6479	0.725	-0.0647
295	SLU 46	0.27	-0.61	31.62	8.6483	0.7249	-0.0666
295	SLU 47	0.27	-0.62	31.44	8.5975	0.7207	-0.0667
295	SLU 48	0.27	-0.61	31.99	8.7488	0.7335	-0.0654
295	SLU 49	0.28	-0.62	31.99	8.7492	0.7334	-0.0673
295	SLU 50	0.26	-0.61	31.81	8.6977	0.7293	-0.0642



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
295	SLU 51	0.27	-0.62	31.81	8.6982	0.7292	-0.0661
295	SLU 52	0.28	-0.63	33.94	9.2818	0.7782	-0.0686
295	SLU 53	0.27	-0.62	34.5	9.4331	0.791	-0.0672
295	SLU 54	0.28	-0.63	34.5	9.4335	0.7909	-0.0692
295	SLU 55	0.28	-0.64	34.31	9.3827	0.7867	-0.0693
295	SLU 56	0.28	-0.63	34.87	9.534	0.7995	-0.0679
295	SLU 57	0.29	-0.64	34.87	9.5344	0.7994	-0.0699
295	SLU 58	0.27	-0.63	34.69	9.4829	0.7953	-0.0667
295	SLU 59	0.28	-0.64	34.69	9.4833	0.7952	-0.0687
295	SLU 60	0.27	-0.62	35.18	9.6176	0.8066	-0.0664
295	SLU 61	0.28	-0.63	35.18	9.618	0.8065	-0.0684
295	SLU 62	0.28	-0.63	35.55	9.7185	0.8151	-0.0671
295	SLU 63	0.28	-0.64	35.55	9.7189	0.815	-0.0691
295	SLU 64	0.29	-0.59	33.7	9.2208	0.7726	-0.073
295	SLU 65	0.31	-0.61	33.7	9.2215	0.7725	-0.0763
295	SLU 66	0.3	-0.6	34.25	9.3728	0.7853	-0.0749
295	SLU 67	0.31	-0.61	34.25	9.3732	0.7852	-0.0768
295	SLU 68	0.31	-0.62	34.07	9.3224	0.781	-0.077
295	SLU 69	0.3	-0.61	34.63	9.4737	0.7938	-0.0756
295	SLU 70	0.31	-0.62	34.62	9.4741	0.7937	-0.0775
295	SLU 71	0.3	-0.61	34.44	9.4226	0.7896	-0.0744
295	SLU 72	0.31	-0.62	34.44	9.4231	0.7895	-0.0763
295	SLU 73	0.31	-0.63	36.57	10.0067	0.8385	-0.0788
295	SLU 74	0.31	-0.62	37.13	10.158	0.8513	-0.0774
295	SLU 75	0.32	-0.63	37.13	10.1584	0.8512	-0.0794
295	SLU 76	0.32	-0.64	36.94	10.1076	0.847	-0.0795
295	SLU 77	0.31	-0.63	37.5	10.2589	0.8598	-0.0781
295	SLU 78	0.32	-0.64	37.5	10.2593	0.8597	-0.0801
295	SLU 79	0.31	-0.63	37.32	10.2078	0.8556	-0.0769
295	SLU 80	0.32	-0.64	37.32	10.2082	0.8555	-0.0789
295	SLU 81	0.31	-0.62	37.81	10.3425	0.8669	-0.0766
295	SLU 82	0.31	-0.63	37.81	10.3429	0.8668	-0.0786
295	SLU 83	0.31	-0.63	38.18	10.4434	0.8754	-0.0773
295	SLU 84	0.32	-0.64	38.18	10.4438	0.8753	-0.0793
295	SLE RA 1	0.22	-0.46	25.34	6.9336	0.581	-0.0539
295	SLE RA 2	0.23	-0.47	25.34	6.9341	0.581	-0.0561
295	SLE RA 3	0.22	-0.46	25.71	7.0349	0.5895	-0.0552
295	SLE RA 4	0.23	-0.47	25.71	7.0352	0.5895	-0.0565
295	SLE RA 5	0.23	-0.47	25.59	7.0014	0.5866	-0.0565
295	SLE RA 6	0.22	-0.47	25.96	7.1022	0.5952	-0.0556
295	SLE RA 7	0.23	-0.47	25.96	7.1025	0.5951	-0.0569
295	SLE RA 8	0.22	-0.47	25.84	7.0682	0.5924	-0.0548
295	SLE RA 9	0.23	-0.47	25.84	7.0684	0.5923	-0.0561
295	SLE RA 10	0.23	-0.48	27.26	7.4575	0.625	-0.0578
295	SLE RA 11	0.23	-0.47	27.63	7.5584	0.6335	-0.0569
295	SLE RA 12	0.23	-0.48	27.63	7.5587	0.6335	-0.0582
295	SLE RA 13	0.23	-0.49	27.51	7.5248	0.6307	-0.0582
295	SLE RA 14	0.23	-0.48	27.88	7.6256	0.6392	-0.0573
295	SLE RA 15	0.24	-0.49	27.88	7.6259	0.6391	-0.0586
295	SLE RA 16	0.23	-0.48	27.76	7.5916	0.6364	-0.0565
295	SLE RA 17	0.23	-0.49	27.76	7.5919	0.6363	-0.0578
295	SLE RA 18	0.23	-0.47	28.08	7.6814	0.6439	-0.0563
295	SLE RA 19	0.23	-0.48	28.08	7.6817	0.6439	-0.0576
295	SLE RA 20	0.23	-0.48	28.33	7.7487	0.6496	-0.0568
295	SLE RA 21	0.23	-0.49	28.33	7.749	0.6495	-0.0581
295	SLE FR 1	0.22	-0.46	25.34	6.9336	0.581	-0.0539
295	SLE FR 2	0.22	-0.46	25.34	6.9337	0.581	-0.0543
295	SLE FR 3	0.22	-0.46	25.44	6.9605	0.5833	-0.0541
295	SLE FR 4	0.22	-0.46	26.17	7.158	0.5999	-0.0551
295	SLE FR 5	0.22	-0.46	26.27	7.1849	0.6022	-0.0548
295	SLE FR 6	0.22	-0.47	26.71	7.3075	0.6125	-0.0551
295	SLE QP 1	0.22	-0.46	25.34	6.9336	0.581	-0.0539
295	SLE QP 2	0.22	-0.46	26.17	7.1579	0.5999	-0.0546
295	SLD 1	2.6	0.15	24.76	6.8032	0.5698	-0.759
295	SLD 2	2.82	0.27	24.9	6.8395	0.5728	-0.8241
295	SLD 3	2.46	-0.51	24.41	6.7512	0.5624	-0.7128
295	SLD 4	2.68	-0.39	24.55	6.7875	0.5654	-0.7779
295	SLD 5	1.11	0.71	26.25	7.1239	0.6016	-0.3244
295	SLD 6	1.25	0.79	26.34	7.1477	0.6036	-0.3672
295	SLD 7	0.64	-1.51	25.08	6.9506	0.5768	-0.1704
295	SLD 8	0.78	-1.43	25.17	6.9745	0.5788	-0.2132
295	SLD 9	-0.34	0.5	27.16	7.3414	0.621	0.1039
295	SLD 10	-0.2	0.58	27.25	7.3653	0.623	0.0611
295	SLD 11	-0.81	-1.71	25.99	7.1682	0.5962	0.2579
295	SLD 12	-0.67	-1.63	26.08	7.192	0.5982	0.2151
295	SLD 13	-2.24	-0.53	27.79	7.5284	0.6344	0.6687
295	SLD 14	-2.02	-0.41	27.92	7.5647	0.6374	0.6036
295	SLD 15	-2.38	-1.2	27.44	7.4764	0.627	0.7149
295	SLD 16	-2.16	-1.08	27.57	7.5127	0.63	0.6498
295	SLV 1	5.79	0.95	22.86	6.327	0.5292	-1.7025
295	SLV 2	6.29	1.23	23.18	6.4116	0.5363	-1.8541
295	SLV 3	5.46	-0.55	22.07	6.2074	0.5123	-1.5954
295	SLV 4	5.96	-0.27	22.38	6.292	0.5194	-1.747
295	SLV 5	2.31	2.19	26.33	7.0754	0.6031	-0.6852
295	SLV 6	2.63	2.38	26.54	7.13	0.6077	-0.7831
295	SLV 7	1.21	-2.82	23.67	6.6768	0.5467	-0.3282
295	SLV 8	1.53	-2.64	23.87	6.7314	0.5513	-0.4261
295	SLV 9	-1.09	1.71	28.46	7.5845	0.6485	0.3169
295	SLV 10	-0.77	1.89	28.66	7.6391	0.6531	0.2189
295	SLV 11	-2.19	-3.3	25.79	7.1859	0.5921	0.6739



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
295	SLV 12	-1.87	-3.12	26	7.2404	0.5966	0.5759
295	SLV 13	-5.52	-0.65	29.95	8.0239	0.6804	1.6377
295	SLV 14	-5.02	-0.37	30.27	8.1085	0.6875	1.4861
295	SLV 15	-5.85	-2.16	29.15	7.9043	0.6635	1.7448
295	SLV 16	-5.35	-1.88	29.47	7.9889	0.6706	1.5932
295	CRTFP Ux+	0	0	0	0	0	0
295	CRTFP Ux-	0	0	0	0	0	0
295	CRTFP Uy+	0	0	0	0	0	0
295	CRTFP Uy-	0	0	0	0	0	0
296	SLU 1	0.38	-0.82	44.39	13.9415	-1.0741	-0.1454
296	SLU 2	0.4	-0.85	44.38	13.943	-1.074	-0.1535
296	SLU 3	0.39	-0.83	45.39	14.2575	-1.0986	-0.1499
296	SLU 4	0.4	-0.85	45.39	14.2584	-1.0985	-0.1548
296	SLU 5	0.41	-0.86	45.06	14.1529	-1.0903	-0.1558
296	SLU 6	0.4	-0.85	46.07	14.4674	-1.1149	-0.1522
296	SLU 7	0.41	-0.87	46.06	14.4683	-1.1148	-0.157
296	SLU 8	0.39	-0.85	45.73	14.3613	-1.1068	-0.1499
296	SLU 9	0.4	-0.87	45.73	14.3622	-1.1068	-0.1548
296	SLU 10	0.42	-0.88	49.56	15.5651	-1.1987	-0.1604
296	SLU 11	0.41	-0.87	50.57	15.8796	-1.2232	-0.1568
296	SLU 12	0.42	-0.89	50.57	15.8805	-1.2232	-0.1616
296	SLU 13	0.42	-0.9	50.23	15.7749	-1.215	-0.1626
296	SLU 14	0.41	-0.88	51.24	16.0894	-1.2396	-0.159
296	SLU 15	0.43	-0.9	51.24	16.0903	-1.2395	-0.1639
296	SLU 16	0.41	-0.89	50.91	15.9833	-1.2315	-0.1568
296	SLU 17	0.42	-0.91	50.91	15.9842	-1.2314	-0.1616
296	SLU 18	0.4	-0.87	51.79	16.2587	-1.2522	-0.1552
296	SLU 19	0.42	-0.89	51.78	16.2596	-1.2522	-0.1601
296	SLU 20	0.41	-0.89	52.46	16.4686	-1.2686	-0.1575
296	SLU 21	0.42	-0.91	52.46	16.4695	-1.2685	-0.1623
296	SLU 22	0.44	-0.82	49.16	15.448	-1.1901	-0.1664
296	SLU 23	0.46	-0.85	49.15	15.4495	-1.19	-0.1744
296	SLU 24	0.45	-0.83	50.16	15.764	-1.2146	-0.1709
296	SLU 25	0.47	-0.85	50.16	15.7649	-1.2145	-0.1757
296	SLU 26	0.47	-0.86	49.82	15.6594	-1.2063	-0.1767
296	SLU 27	0.46	-0.85	50.83	15.9739	-1.2309	-0.1731
296	SLU 28	0.47	-0.86	50.83	15.9748	-1.2308	-0.1779
296	SLU 29	0.45	-0.85	50.5	15.8678	-1.2228	-0.1709
296	SLU 30	0.46	-0.87	50.5	15.8687	-1.2228	-0.1757
296	SLU 31	0.48	-0.88	54.33	17.0716	-1.3147	-0.1813
296	SLU 32	0.47	-0.87	55.34	17.3861	-1.3392	-0.1777
296	SLU 33	0.48	-0.88	55.33	17.387	-1.3392	-0.1825
296	SLU 34	0.49	-0.9	55	17.2815	-1.331	-0.1835
296	SLU 35	0.48	-0.88	56.01	17.596	-1.3556	-0.1799
296	SLU 36	0.49	-0.9	56.01	17.5969	-1.3555	-0.1848
296	SLU 37	0.47	-0.89	55.68	17.4899	-1.3475	-0.1777
296	SLU 38	0.48	-0.9	55.67	17.4908	-1.3474	-0.1825
296	SLU 39	0.47	-0.87	56.55	17.7653	-1.3682	-0.1761
296	SLU 40	0.48	-0.89	56.55	17.7662	-1.3682	-0.181
296	SLU 41	0.47	-0.89	57.23	17.9751	-1.3846	-0.1784
296	SLU 42	0.48	-0.9	57.22	17.976	-1.3845	-0.1832
296	SLU 43	0.47	-1.07	56.07	17.6074	-1.3566	-0.1819
296	SLU 44	0.49	-1.1	56.07	17.6089	-1.3565	-0.19
296	SLU 45	0.48	-1.08	57.08	17.9234	-1.381	-0.1864
296	SLU 46	0.5	-1.1	57.07	17.9243	-1.3809	-0.1912
296	SLU 47	0.5	-1.11	56.74	17.8188	-1.3728	-0.1922
296	SLU 48	0.49	-1.1	57.75	18.1333	-1.3974	-0.1886
296	SLU 49	0.5	-1.11	57.75	18.1342	-1.3973	-0.1935
296	SLU 50	0.48	-1.1	57.42	18.0272	-1.3893	-0.1864
296	SLU 51	0.49	-1.12	57.41	18.0281	-1.3892	-0.1912
296	SLU 52	0.51	-1.13	61.24	19.231	-1.4811	-0.1968
296	SLU 53	0.5	-1.12	62.25	19.5455	-1.5057	-0.1932
296	SLU 54	0.51	-1.13	62.25	19.5464	-1.5056	-0.1981
296	SLU 55	0.52	-1.15	61.92	19.4409	-1.4975	-0.1991
296	SLU 56	0.51	-1.13	62.93	19.7554	-1.5221	-0.1955
296	SLU 57	0.52	-1.15	62.92	19.7563	-1.522	-0.2003
296	SLU 58	0.5	-1.14	62.59	19.6493	-1.514	-0.1932
296	SLU 59	0.51	-1.15	62.59	19.6502	-1.5139	-0.1981
296	SLU 60	0.5	-1.12	63.47	19.9247	-1.5347	-0.1917
296	SLU 61	0.51	-1.14	63.47	19.9256	-1.5346	-0.1965
296	SLU 62	0.5	-1.14	64.14	20.1345	-1.5511	-0.1939
296	SLU 63	0.51	-1.15	64.14	20.1354	-1.551	-0.1988
296	SLU 64	0.53	-1.07	60.84	19.114	-1.4726	-0.2028
296	SLU 65	0.55	-1.09	60.83	19.1155	-1.4725	-0.2109
296	SLU 66	0.55	-1.08	61.84	19.43	-1.497	-0.2073
296	SLU 67	0.56	-1.09	61.84	19.4309	-1.4969	-0.2122
296	SLU 68	0.56	-1.11	61.51	19.3254	-1.4888	-0.2131
296	SLU 69	0.55	-1.09	62.52	19.6399	-1.5134	-0.2096
296	SLU 70	0.56	-1.11	62.51	19.6408	-1.5133	-0.2144
296	SLU 71	0.54	-1.1	62.18	19.5338	-1.5053	-0.2073
296	SLU 72	0.56	-1.11	62.18	19.5346	-1.5052	-0.2122
296	SLU 73	0.57	-1.13	66.01	20.7375	-1.5971	-0.2177
296	SLU 74	0.56	-1.11	67.02	21.052	-1.6217	-0.2142
296	SLU 75	0.58	-1.13	67.02	21.0529	-1.6216	-0.219
296	SLU 76	0.58	-1.15	66.68	20.9474	-1.6135	-0.22
296	SLU 77	0.57	-1.13	67.69	21.2619	-1.6381	-0.2164
296	SLU 78	0.58	-1.15	67.69	21.2628	-1.638	-0.2213
296	SLU 79	0.56	-1.13	67.36	21.1558	-1.63	-0.2142
296	SLU 80	0.57	-1.15	67.36	21.1567	-1.6299	-0.219
296	SLU 81	0.56	-1.12	68.24	21.4312	-1.6507	-0.2126





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
296	SLU 82	0.57	-1.13	68.23	21.4321	-1.6506	-0.2174
296	SLU 83	0.56	-1.13	68.91	21.6411	-1.6671	-0.2148
296	SLU 84	0.58	-1.15	68.9	21.642	-1.667	-0.2197
296	SLE RA 1	0.4	-0.82	45.75	14.372	-1.1073	-0.1514
296	SLE RA 2	0.41	-0.84	45.75	14.373	-1.1072	-0.1568
296	SLE RA 3	0.4	-0.83	46.42	14.5826	-1.1236	-0.1544
296	SLE RA 4	0.41	-0.84	46.42	14.5832	-1.1235	-0.1576
296	SLE RA 5	0.41	-0.85	46.2	14.5129	-1.1181	-0.1583
296	SLE RA 6	0.41	-0.84	46.87	14.7225	-1.1345	-0.1559
296	SLE RA 7	0.42	-0.85	46.87	14.7231	-1.1344	-0.1591
296	SLE RA 8	0.4	-0.84	46.65	14.6518	-1.1291	-0.1544
296	SLE RA 9	0.41	-0.85	46.65	14.6524	-1.129	-0.1576
296	SLE RA 10	0.42	-0.86	49.2	15.4543	-1.1903	-0.1614
296	SLE RA 11	0.42	-0.85	49.87	15.664	-1.2067	-0.159
296	SLE RA 12	0.43	-0.86	49.87	15.6646	-1.2066	-0.1622
296	SLE RA 13	0.43	-0.87	49.65	15.5942	-1.2012	-0.1629
296	SLE RA 14	0.42	-0.86	50.32	15.8039	-1.2176	-0.1605
296	SLE RA 15	0.43	-0.87	50.32	15.8045	-1.2175	-0.1637
296	SLE RA 16	0.42	-0.87	50.1	15.7332	-1.2122	-0.159
296	SLE RA 17	0.42	-0.88	50.1	15.7338	-1.2121	-0.1622
296	SLE RA 18	0.41	-0.85	50.68	15.9168	-1.226	-0.1579
296	SLE RA 19	0.42	-0.87	50.68	15.9174	-1.226	-0.1612
296	SLE RA 20	0.42	-0.87	51.13	16.0567	-1.2369	-0.1594
296	SLE RA 21	0.43	-0.88	51.13	16.0573	-1.2369	-0.1627
296	SLE FR 1	0.4	-0.82	45.75	14.372	-1.1073	-0.1514
296	SLE FR 2	0.4	-0.82	45.75	14.3722	-1.1072	-0.1525
296	SLE FR 3	0.4	-0.82	45.93	14.4279	-1.1116	-0.152
296	SLE FR 4	0.4	-0.83	47.23	14.8356	-1.1429	-0.1545
296	SLE FR 5	0.4	-0.83	47.41	14.8914	-1.1473	-0.154
296	SLE FR 6	0.4	-0.84	48.22	15.1444	-1.1666	-0.1547
296	SLE QP 1	0.4	-0.82	45.75	14.372	-1.1073	-0.1514
296	SLE QP 2	0.4	-0.83	47.23	14.8354	-1.1429	-0.1534
296	SLD 1	4.66	0.25	44.36	13.9818	-1.0577	-1.4825
296	SLD 2	5.04	0.48	44.63	14.064	-1.065	-1.6044
296	SLD 3	4.4	-0.93	43.72	13.8585	-1.0405	-1.5679
296	SLD 4	4.79	-0.7	43.99	13.9407	-1.0478	-1.6899
296	SLD 5	1.99	1.24	47.3	14.7516	-1.1422	-0.4007
296	SLD 6	2.24	1.39	47.47	14.8056	-1.147	-0.4809
296	SLD 7	1.15	-2.69	45.15	14.3407	-1.0847	-0.6855
296	SLD 8	1.4	-2.54	45.33	14.3947	-1.0895	-0.7657
296	SLD 9	-0.6	0.88	49.13	15.2761	-1.1962	0.4589
296	SLD 10	-0.35	1.03	49.31	15.3301	-1.2011	0.3788
296	SLD 11	-1.44	-3.05	46.99	14.8652	-1.1388	0.1741
296	SLD 12	-1.19	-2.9	47.16	14.9192	-1.1436	0.094
296	SLD 13	-3.98	-0.96	50.48	15.7301	-1.238	1.3831
296	SLD 14	-3.6	-0.73	50.74	15.8123	-1.2453	1.2612
296	SLD 15	-4.24	-2.14	49.83	15.6068	-1.2207	1.2977
296	SLD 16	-3.85	-1.91	50.1	15.689	-1.2281	1.1757
296	SLV 1	10.36	1.65	40.5	12.8355	-0.9431	-3.2637
296	SLV 2	11.25	2.18	41.12	13.027	-0.9601	-3.5477
296	SLV 3	9.77	-1.02	39.04	12.5525	-0.9038	-3.463
296	SLV 4	10.66	-0.49	39.65	12.744	-0.9209	-3.747
296	SLV 5	4.13	3.88	47.33	14.6316	-1.1396	-0.7352
296	SLV 6	4.7	4.22	47.73	14.7552	-1.1506	-0.9186
296	SLV 7	2.16	-5.03	42.44	13.6882	-1.0087	-1.3993
296	SLV 8	2.74	-4.69	42.84	13.8118	-1.0197	-1.5828
296	SLV 9	-1.93	3.03	51.62	15.859	-1.2661	1.276
296	SLV 10	-1.36	3.37	52.02	15.9826	-1.2771	1.0926
296	SLV 11	-3.9	-5.88	46.73	14.9156	-1.1352	0.6119
296	SLV 12	-3.33	-5.54	47.13	15.0392	-1.1462	0.4284
296	SLV 13	-9.85	-1.17	54.81	16.9268	-1.3649	3.4402
296	SLV 14	-8.96	-0.64	55.43	17.1183	-1.382	3.1562
296	SLV 15	-10.45	-3.84	53.34	16.6438	-1.3256	3.241
296	SLV 16	-9.55	-3.32	53.96	16.8353	-1.3427	2.957
296	CRTFP Ux+	0	0	0	0	0	0
296	CRTFP Ux-	0	0	0	0	0	0
296	CRTFP Uy+	0	0	0	0	0	0
296	CRTFP Uy-	0	0	0	0	0	0
297	SLU 1	0.27	-0.54	30.99	10.0235	-0.8729	-0.1076
297	SLU 2	0.28	-0.56	30.99	10.0242	-0.8728	-0.1135
297	SLU 3	0.28	-0.55	31.69	10.2509	-0.8928	-0.1109
297	SLU 4	0.29	-0.56	31.69	10.2513	-0.8927	-0.1145
297	SLU 5	0.29	-0.57	31.46	10.1753	-0.8861	-0.1152
297	SLU 6	0.28	-0.56	32.17	10.402	-0.9061	-0.1126
297	SLU 7	0.29	-0.57	32.16	10.4024	-0.906	-0.1161
297	SLU 8	0.28	-0.56	31.93	10.3257	-0.8995	-0.111
297	SLU 9	0.28	-0.57	31.93	10.3261	-0.8995	-0.1145
297	SLU 10	0.3	-0.58	34.59	11.1825	-0.9742	-0.1185
297	SLU 11	0.29	-0.57	35.3	11.4092	-0.9941	-0.1159
297	SLU 12	0.3	-0.58	35.3	11.4096	-0.9941	-0.1194
297	SLU 13	0.3	-0.59	35.06	11.3336	-0.9875	-0.1201
297	SLU 14	0.29	-0.58	35.77	11.5603	-1.0075	-0.1176
297	SLU 15	0.3	-0.59	35.77	11.5607	-1.0074	-0.1211
297	SLU 16	0.29	-0.58	35.54	11.484	-1.0009	-0.1159
297	SLU 17	0.3	-0.6	35.53	11.4844	-1.0008	-0.1195
297	SLU 18	0.29	-0.57	36.14	11.6782	-1.0177	-0.1147
297	SLU 19	0.29	-0.58	36.14	11.6786	-1.0176	-0.1182
297	SLU 20	0.29	-0.58	36.61	11.8293	-1.031	-0.1164
297	SLU 21	0.3	-0.59	36.61	11.8297	-1.0309	-0.1199
297	SLU 22	0.31	-0.54	34.33	11.1061	-0.9672	-0.1229



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
297	SLU 23	0.33	-0.56	34.33	11.1068	-0.9671	-0.1288
297	SLU 24	0.32	-0.55	35.03	11.3335	-0.9871	-0.1262
297	SLU 25	0.33	-0.56	35.03	11.334	-0.987	-0.1297
297	SLU 26	0.33	-0.57	34.8	11.258	-0.9804	-0.1305
297	SLU 27	0.32	-0.56	35.5	11.4846	-1.0004	-0.1279
297	SLU 28	0.33	-0.57	35.5	11.4851	-1.0003	-0.1314
297	SLU 29	0.32	-0.56	35.27	11.4083	-0.9938	-0.1263
297	SLU 30	0.33	-0.57	35.27	11.4088	-0.9938	-0.1298
297	SLU 31	0.34	-0.58	37.93	12.2652	-1.0685	-0.1337
297	SLU 32	0.33	-0.57	38.64	12.4918	-1.0885	-0.1312
297	SLU 33	0.34	-0.58	38.64	12.4923	-1.0884	-0.1347
297	SLU 34	0.34	-0.59	38.4	12.4163	-1.0818	-0.1354
297	SLU 35	0.34	-0.58	39.11	12.6429	-1.1018	-0.1329
297	SLU 36	0.35	-0.59	39.11	12.6434	-1.1017	-0.1364
297	SLU 37	0.33	-0.58	38.88	12.5666	-1.0952	-0.1312
297	SLU 38	0.34	-0.59	38.87	12.5671	-1.0951	-0.1348
297	SLU 39	0.33	-0.57	39.48	12.7608	-1.112	-0.13
297	SLU 40	0.34	-0.58	39.48	12.7613	-1.112	-0.1335
297	SLU 41	0.33	-0.58	39.95	12.9119	-1.1253	-0.1317
297	SLU 42	0.34	-0.59	39.95	12.9124	-1.1253	-0.1352
297	SLU 43	0.33	-0.7	39.14	12.6593	-1.1025	-0.1346
297	SLU 44	0.35	-0.72	39.14	12.66	-1.1023	-0.1405
297	SLU 45	0.34	-0.71	39.85	12.8867	-1.1223	-0.138
297	SLU 46	0.35	-0.72	39.84	12.8871	-1.1223	-0.1415
297	SLU 47	0.35	-0.73	39.61	12.8111	-1.1156	-0.1422
297	SLU 48	0.35	-0.72	40.32	13.0378	-1.1356	-0.1396
297	SLU 49	0.35	-0.73	40.31	13.0382	-1.1356	-0.1432
297	SLU 50	0.34	-0.72	40.08	12.9615	-1.1291	-0.138
297	SLU 51	0.35	-0.74	40.08	12.9619	-1.129	-0.1415
297	SLU 52	0.36	-0.74	42.74	13.8183	-1.2037	-0.1455
297	SLU 53	0.35	-0.73	43.45	14.045	-1.2237	-0.1429
297	SLU 54	0.36	-0.74	43.45	14.0454	-1.2236	-0.1465
297	SLU 55	0.36	-0.75	43.21	13.9694	-1.217	-0.1472
297	SLU 56	0.36	-0.74	43.92	14.1961	-1.237	-0.1446
297	SLU 57	0.37	-0.76	43.92	14.1965	-1.2369	-0.1481
297	SLU 58	0.35	-0.75	43.69	14.1198	-1.2304	-0.143
297	SLU 59	0.36	-0.76	43.69	14.1202	-1.2303	-0.1465
297	SLU 60	0.35	-0.74	44.29	14.314	-1.2472	-0.1417
297	SLU 61	0.36	-0.75	44.29	14.3144	-1.2472	-0.1453
297	SLU 62	0.35	-0.75	44.76	14.4651	-1.2605	-0.1434
297	SLU 63	0.36	-0.76	44.76	14.4655	-1.2605	-0.1469
297	SLU 64	0.38	-0.7	42.48	13.742	-1.1968	-0.1499
297	SLU 65	0.39	-0.72	42.48	13.7427	-1.1967	-0.1558
297	SLU 66	0.39	-0.71	43.19	13.9694	-1.2166	-0.1532
297	SLU 67	0.39	-0.72	43.18	13.9698	-1.2166	-0.1568
297	SLU 68	0.4	-0.73	42.95	13.8938	-1.21	-0.1575
297	SLU 69	0.39	-0.72	43.66	14.1205	-1.23	-0.1549
297	SLU 70	0.4	-0.73	43.65	14.1209	-1.2299	-0.1585
297	SLU 71	0.38	-0.72	43.42	14.0442	-1.2234	-0.1533
297	SLU 72	0.39	-0.73	43.42	14.0446	-1.2233	-0.1568
297	SLU 73	0.4	-0.74	46.08	14.901	-1.298	-0.1608
297	SLU 74	0.4	-0.73	46.79	15.1277	-1.318	-0.1582
297	SLU 75	0.41	-0.74	46.79	15.1281	-1.3179	-0.1618
297	SLU 76	0.41	-0.75	46.55	15.0521	-1.3113	-0.1625
297	SLU 77	0.4	-0.74	47.26	15.2788	-1.3313	-0.1599
297	SLU 78	0.41	-0.75	47.26	15.2792	-1.3312	-0.1634
297	SLU 79	0.4	-0.75	47.03	15.2025	-1.3247	-0.1583
297	SLU 80	0.41	-0.76	47.03	15.2029	-1.3247	-0.1618
297	SLU 81	0.39	-0.73	47.63	15.3967	-1.3416	-0.157
297	SLU 82	0.4	-0.74	47.63	15.3971	-1.3415	-0.1606
297	SLU 83	0.4	-0.74	48.1	15.5478	-1.3549	-0.1587
297	SLU 84	0.41	-0.76	48.1	15.5482	-1.3548	-0.1622
297	SLE RA 1	0.28	-0.54	31.94	10.3328	-0.8999	-0.112
297	SLE RA 2	0.29	-0.55	31.94	10.3333	-0.8998	-0.1159
297	SLE RA 3	0.29	-0.54	32.41	10.4844	-0.9131	-0.1142
297	SLE RA 4	0.29	-0.55	32.41	10.4847	-0.9131	-0.1165
297	SLE RA 5	0.29	-0.56	32.26	10.434	-0.9087	-0.117
297	SLE RA 6	0.29	-0.55	32.73	10.5851	-0.922	-0.1153
297	SLE RA 7	0.29	-0.56	32.73	10.5854	-0.9219	-0.1177
297	SLE RA 8	0.29	-0.55	32.57	10.5343	-0.9176	-0.1142
297	SLE RA 9	0.29	-0.56	32.57	10.5346	-0.9176	-0.1166
297	SLE RA 10	0.3	-0.57	34.35	11.1055	-0.9674	-0.1192
297	SLE RA 11	0.29	-0.56	34.82	11.2566	-0.9807	-0.1175
297	SLE RA 12	0.3	-0.57	34.82	11.2569	-0.9806	-0.1198
297	SLE RA 13	0.3	-0.57	34.66	11.2062	-0.9762	-0.1203
297	SLE RA 14	0.3	-0.57	35.13	11.3573	-0.9896	-0.1186
297	SLE RA 15	0.3	-0.57	35.13	11.3576	-0.9895	-0.121
297	SLE RA 16	0.29	-0.57	34.98	11.3065	-0.9852	-0.1175
297	SLE RA 17	0.3	-0.58	34.97	11.3068	-0.9851	-0.1199
297	SLE RA 18	0.29	-0.56	35.38	11.4359	-0.9964	-0.1167
297	SLE RA 19	0.3	-0.57	35.38	11.4362	-0.9963	-0.1191
297	SLE RA 20	0.29	-0.57	35.69	11.5367	-1.0053	-0.1178
297	SLE RA 21	0.3	-0.58	35.69	11.537	-1.0052	-0.1202
297	SLE FR 1	0.28	-0.54	31.94	10.3328	-0.8999	-0.112
297	SLE FR 2	0.28	-0.54	31.94	10.3329	-0.8998	-0.1127
297	SLE FR 3	0.28	-0.54	32.07	10.3731	-0.9034	-0.1124
297	SLE FR 4	0.29	-0.55	32.97	10.6638	-0.9288	-0.1142
297	SLE FR 5	0.28	-0.55	33.1	10.704	-0.9324	-0.1138
297	SLE FR 6	0.29	-0.55	33.66	10.8844	-0.9481	-0.1143
297	SLE QP 1	0.28	-0.54	31.94	10.3328	-0.8999	-0.112



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
297	SLE QP 2	0.28	-0.55	32.97	10.6637	-0.9288	-0.1134
297	SLD 1	3.21	0.17	30.7	9.9442	-0.8591	-1.0694
297	SLD 2	3.47	0.33	30.9	10.0084	-0.8652	-1.1567
297	SLD 3	3.04	-0.64	30.22	9.8353	-0.8447	-1.1314
297	SLD 4	3.3	-0.48	30.42	9.8995	-0.8507	-1.2188
297	SLD 5	1.38	0.87	32.98	10.6016	-0.9287	-0.2905
297	SLD 6	1.55	0.98	33.12	10.6437	-0.9327	-0.3479
297	SLD 7	0.8	-1.83	31.38	10.2386	-0.8806	-0.4973
297	SLD 8	0.97	-1.72	31.52	10.2808	-0.8846	-0.5547
297	SLD 9	-0.4	0.63	34.43	11.0467	-0.9731	0.328
297	SLD 10	-0.23	0.74	34.57	11.0889	-0.977	0.2706
297	SLD 11	-0.98	-2.07	32.83	10.6837	-0.9249	0.1211
297	SLD 12	-0.81	-1.96	32.96	10.7259	-0.9289	0.0637
297	SLD 13	-2.73	-0.62	35.53	11.428	-1.0069	0.992
297	SLD 14	-2.47	-0.45	35.73	11.4921	-1.0129	0.9047
297	SLD 15	-2.91	-1.43	35.05	11.3191	-0.9925	0.9299
297	SLD 16	-2.64	-1.26	35.25	11.3832	-0.9985	0.8426
297	SLV 1	7.13	1.1	27.64	8.9774	-0.7653	-2.3506
297	SLV 2	7.75	1.48	28.11	9.1268	-0.7794	-2.554
297	SLV 3	6.73	-0.73	26.54	8.7282	-0.7324	-2.4953
297	SLV 4	7.34	-0.35	27.01	8.8776	-0.7465	-2.6987
297	SLV 5	2.85	2.66	32.95	10.51	-0.9272	-0.53
297	SLV 6	3.25	2.91	33.26	10.6065	-0.9363	-0.6613
297	SLV 7	1.49	-3.45	29.3	9.6793	-0.8176	-1.0122
297	SLV 8	1.89	-3.2	29.61	9.7757	-0.8267	-1.1436
297	SLV 9	-1.32	2.11	36.34	11.5517	-1.0309	0.9168
297	SLV 10	-0.93	2.36	36.65	11.6482	-1.04	0.7854
297	SLV 11	-2.68	-4	32.69	10.721	-0.9213	0.4346
297	SLV 12	-2.28	-3.75	33	10.8175	-0.9304	0.3032
297	SLV 13	-6.77	-0.74	38.94	12.4499	-1.1111	2.4719
297	SLV 14	-6.16	-0.36	39.41	12.5992	-1.1252	2.2685
297	SLV 15	-7.18	-2.57	37.84	12.2006	-1.0782	2.3273
297	SLV 16	-6.57	-2.19	38.31	12.35	-1.0923	2.1238
297	CRTFP Ux+	0	0	0	0	0	0
297	CRTFP Ux-	0	0	0	0	0	0
297	CRTFP Uy+	0	0	0	0	0	0
297	CRTFP Uy-	0	0	0	0	0	0
298	SLU 1	0.33	-0.57	36.92	11.9449	-0.0039	-0.1119
298	SLU 2	0.35	-0.59	36.91	11.9453	-0.0039	-0.1182
298	SLU 3	0.34	-0.57	37.76	12.2165	-0.0041	-0.1157
298	SLU 4	0.35	-0.59	37.76	12.2168	-0.0041	-0.1195
298	SLU 5	0.35	-0.6	37.48	12.1259	-0.004	-0.1199
298	SLU 6	0.34	-0.59	38.32	12.3972	-0.0042	-0.1174
298	SLU 7	0.35	-0.6	38.32	12.3974	-0.0042	-0.1212
298	SLU 8	0.34	-0.59	38.05	12.3061	-0.0041	-0.1153
298	SLU 9	0.35	-0.6	38.04	12.3064	-0.0041	-0.1191
298	SLU 10	0.36	-0.61	41.2	13.3221	-0.004	-0.1235
298	SLU 11	0.35	-0.59	42.05	13.5934	-0.0042	-0.1209
298	SLU 12	0.36	-0.61	42.04	13.5936	-0.0042	-0.1247
298	SLU 13	0.37	-0.62	41.76	13.5028	-0.0042	-0.1251
298	SLU 14	0.36	-0.61	42.61	13.774	-0.0044	-0.1226
298	SLU 15	0.37	-0.62	42.61	13.7743	-0.0044	-0.1264
298	SLU 16	0.35	-0.61	42.33	13.683	-0.0043	-0.1205
298	SLU 17	0.36	-0.62	42.33	13.6832	-0.0043	-0.1243
298	SLU 18	0.35	-0.59	43.04	13.9118	-0.0041	-0.1193
298	SLU 19	0.36	-0.61	43.04	13.912	-0.0041	-0.1232
298	SLU 20	0.35	-0.61	43.6	14.0924	-0.0043	-0.121
298	SLU 21	0.37	-0.62	43.6	14.0927	-0.0042	-0.1248
298	SLU 22	0.38	-0.56	40.91	13.2373	-0.0047	-0.1304
298	SLU 23	0.4	-0.58	40.91	13.2377	-0.0047	-0.1368
298	SLU 24	0.39	-0.57	41.75	13.509	-0.0049	-0.1342
298	SLU 25	0.4	-0.58	41.75	13.5092	-0.0049	-0.138
298	SLU 26	0.4	-0.59	41.47	13.4183	-0.0048	-0.1385
298	SLU 27	0.4	-0.58	42.32	13.6896	-0.005	-0.1359
298	SLU 28	0.41	-0.59	42.31	13.6899	-0.005	-0.1397
298	SLU 29	0.39	-0.58	42.04	13.5986	-0.0049	-0.1338
298	SLU 30	0.4	-0.6	42.03	13.5988	-0.0049	-0.1376
298	SLU 31	0.41	-0.6	45.19	14.6146	-0.0048	-0.142
298	SLU 32	0.41	-0.59	46.04	14.8858	-0.0051	-0.1394
298	SLU 33	0.42	-0.6	46.03	14.8861	-0.005	-0.1432
298	SLU 34	0.42	-0.61	45.75	14.7952	-0.005	-0.1437
298	SLU 35	0.41	-0.6	46.6	15.0665	-0.0052	-0.1411
298	SLU 36	0.42	-0.61	46.6	15.0667	-0.0052	-0.1449
298	SLU 37	0.41	-0.6	46.32	14.9754	-0.0051	-0.139
298	SLU 38	0.42	-0.62	46.32	14.9757	-0.0051	-0.1428
298	SLU 39	0.4	-0.59	47.03	15.2042	-0.0049	-0.1379
298	SLU 40	0.41	-0.6	47.03	15.2045	-0.0049	-0.1417
298	SLU 41	0.41	-0.6	47.6	15.3848	-0.0051	-0.1396
298	SLU 42	0.42	-0.61	47.59	15.3851	-0.0051	-0.1434
298	SLU 43	0.41	-0.74	46.63	15.0852	-0.0048	-0.1391
298	SLU 44	0.43	-0.76	46.62	15.0856	-0.0048	-0.1455
298	SLU 45	0.42	-0.75	47.47	15.3569	-0.005	-0.1429
298	SLU 46	0.43	-0.76	47.47	15.3571	-0.0049	-0.1467
298	SLU 47	0.43	-0.77	47.19	15.2663	-0.0049	-0.1471
298	SLU 48	0.42	-0.76	48.03	15.5375	-0.0051	-0.1446
298	SLU 49	0.43	-0.77	48.03	15.5378	-0.0051	-0.1484
298	SLU 50	0.42	-0.76	47.75	15.4465	-0.005	-0.1425
298	SLU 51	0.43	-0.78	47.75	15.4467	-0.005	-0.1463
298	SLU 52	0.44	-0.78	50.91	16.4625	-0.0049	-0.1507
298	SLU 53	0.43	-0.77	51.75	16.7337	-0.0051	-0.1481



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
298	SLU 54	0.44	-0.78	51.75	16.734	-0.0051	-0.1519
298	SLU 55	0.45	-0.79	51.47	16.6431	-0.0051	-0.1524
298	SLU 56	0.44	-0.78	52.32	16.9144	-0.0053	-0.1498
298	SLU 57	0.45	-0.79	52.31	16.9146	-0.0052	-0.1536
298	SLU 58	0.43	-0.78	52.04	16.8233	-0.0052	-0.1477
298	SLU 59	0.44	-0.8	52.04	16.8236	-0.0052	-0.1515
298	SLU 60	0.43	-0.77	52.75	17.0521	-0.005	-0.1466
298	SLU 61	0.44	-0.78	52.75	17.0524	-0.005	-0.1504
298	SLU 62	0.43	-0.78	53.31	17.2328	-0.0051	-0.1483
298	SLU 63	0.45	-0.79	53.31	17.233	-0.0051	-0.1521
298	SLU 64	0.46	-0.73	50.62	16.3776	-0.0056	-0.1577
298	SLU 65	0.48	-0.75	50.61	16.378	-0.0056	-0.164
298	SLU 66	0.47	-0.74	51.46	16.6493	-0.0058	-0.1614
298	SLU 67	0.48	-0.75	51.46	16.6496	-0.0058	-0.1652
298	SLU 68	0.48	-0.76	51.18	16.5587	-0.0057	-0.1657
298	SLU 69	0.48	-0.75	52.02	16.8299	-0.0059	-0.1631
298	SLU 70	0.49	-0.76	52.02	16.8302	-0.0059	-0.1669
298	SLU 71	0.47	-0.76	51.74	16.7389	-0.0058	-0.161
298	SLU 72	0.48	-0.77	51.74	16.7392	-0.0058	-0.1648
298	SLU 73	0.49	-0.77	54.9	17.7549	-0.0057	-0.1692
298	SLU 74	0.49	-0.76	55.75	18.0262	-0.0059	-0.1666
298	SLU 75	0.5	-0.77	55.74	18.0264	-0.0059	-0.1705
298	SLU 76	0.5	-0.78	55.46	17.9355	-0.0059	-0.1709
298	SLU 77	0.49	-0.77	56.31	18.2068	-0.0061	-0.1683
298	SLU 78	0.5	-0.78	56.31	18.2071	-0.0061	-0.1721
298	SLU 79	0.49	-0.77	56.03	18.1157	-0.006	-0.1662
298	SLU 80	0.5	-0.79	56.03	18.116	-0.006	-0.17
298	SLU 81	0.48	-0.76	56.74	18.3445	-0.0058	-0.1651
298	SLU 82	0.49	-0.77	56.74	18.3448	-0.0058	-0.1689
298	SLU 83	0.49	-0.77	57.3	18.5252	-0.006	-0.1668
298	SLU 84	0.5	-0.78	57.3	18.5254	-0.0059	-0.1706
298	SLE RA 1	0.34	-0.56	38.06	12.3141	-0.0041	-0.1172
298	SLE RA 2	0.35	-0.58	38.06	12.3144	-0.0041	-0.1214
298	SLE RA 3	0.35	-0.57	38.62	12.4952	-0.0042	-0.1197
298	SLE RA 4	0.36	-0.58	38.62	12.4954	-0.0042	-0.1223
298	SLE RA 5	0.36	-0.59	38.43	12.4348	-0.0042	-0.1226
298	SLE RA 6	0.35	-0.58	39	12.6157	-0.0043	-0.1208
298	SLE RA 7	0.36	-0.59	38.99	12.6158	-0.0043	-0.1234
298	SLE RA 8	0.35	-0.58	38.81	12.555	-0.0043	-0.1195
298	SLE RA 9	0.36	-0.59	38.81	12.5551	-0.0043	-0.122
298	SLE RA 10	0.37	-0.59	40.91	13.2323	-0.0042	-0.1249
298	SLE RA 11	0.36	-0.58	41.48	13.4131	-0.0044	-0.1232
298	SLE RA 12	0.37	-0.59	41.48	13.4133	-0.0043	-0.1257
298	SLE RA 13	0.37	-0.6	41.29	13.3527	-0.0043	-0.126
298	SLE RA 14	0.36	-0.59	41.85	13.5336	-0.0044	-0.1243
298	SLE RA 15	0.37	-0.6	41.85	13.5337	-0.0044	-0.1269
298	SLE RA 16	0.36	-0.59	41.67	13.4729	-0.0044	-0.1229
298	SLE RA 17	0.37	-0.6	41.67	13.473	-0.0044	-0.1255
298	SLE RA 18	0.36	-0.58	42.14	13.6254	-0.0043	-0.1222
298	SLE RA 19	0.36	-0.59	42.14	13.6256	-0.0043	-0.1247
298	SLE RA 20	0.36	-0.59	42.52	13.7458	-0.0044	-0.1233
298	SLE RA 21	0.37	-0.6	42.51	13.746	-0.0044	-0.1258
298	SLE FR 1	0.34	-0.56	38.06	12.3141	-0.0041	-0.1172
298	SLE FR 2	0.35	-0.57	38.06	12.3142	-0.0041	-0.118
298	SLE FR 3	0.34	-0.57	38.21	12.3623	-0.0041	-0.1177
298	SLE FR 4	0.35	-0.57	39.28	12.7076	-0.0042	-0.1195
298	SLE FR 5	0.35	-0.57	39.43	12.7557	-0.0042	-0.1191
298	SLE FR 6	0.35	-0.57	40.1	12.9698	-0.0042	-0.1197
298	SLE QP 1	0.34	-0.56	38.06	12.3141	-0.0041	-0.1172
298	SLE QP 2	0.35	-0.57	39.28	12.7075	-0.0042	-0.1187
298	SLD 1	3.8	0.23	36.3	11.7575	0.0044	-1.3299
298	SLD 2	4.11	0.43	36.56	11.8375	0.0038	-1.4385
298	SLD 3	3.6	-0.73	35.68	11.608	0.0062	-1.2577
298	SLD 4	3.91	-0.53	35.94	11.688	0.0056	-1.3663
298	SLD 5	1.64	1.09	39.29	12.635	-0.0042	-0.5721
298	SLD 6	1.85	1.22	39.46	12.6876	-0.0046	-0.6435
298	SLD 7	0.95	-2.1	37.21	12.1365	0.0018	-0.3316
298	SLD 8	1.16	-1.97	37.38	12.1891	0.0014	-0.4029
298	SLD 9	-0.46	0.83	41.19	13.2259	-0.0097	0.1655
298	SLD 10	-0.26	0.97	41.36	13.2785	-0.0101	0.0942
298	SLD 11	-1.15	-2.36	39.11	12.7274	-0.0037	0.4061
298	SLD 12	-0.95	-2.23	39.28	12.78	-0.0041	0.3347
298	SLD 13	-3.21	-0.61	42.63	13.727	-0.0139	1.1289
298	SLD 14	-2.9	-0.41	42.89	13.807	-0.0145	1.0203
298	SLD 15	-3.42	-1.57	42.01	13.5775	-0.0121	1.2011
298	SLD 16	-3.11	-1.37	42.27	13.6575	-0.0127	1.0925
298	SLV 1	8.43	1.27	32.28	10.4806	0.0159	-2.9526
298	SLV 2	9.16	1.74	32.88	10.6669	0.0144	-3.2054
298	SLV 3	7.95	-0.9	30.86	10.1389	0.02	-2.7843
298	SLV 4	8.68	-0.43	31.47	10.3252	0.0185	-3.0371
298	SLV 5	3.38	3.19	39.23	12.5255	-0.0041	-1.1804
298	SLV 6	3.84	3.49	39.62	12.6458	-0.005	-1.3437
298	SLV 7	1.78	-4.04	34.5	11.3864	0.0095	-0.6194
298	SLV 8	2.24	-3.74	34.89	11.5067	0.0086	-0.7827
298	SLV 9	-1.55	2.6	43.68	13.9083	-0.0169	0.5453
298	SLV 10	-1.08	2.9	44.07	14.0286	-0.0179	0.382
298	SLV 11	-3.15	-4.63	38.95	12.7692	-0.0033	1.1063
298	SLV 12	-2.68	-4.33	39.34	12.8895	-0.0042	0.943
298	SLV 13	-7.98	-0.71	47.1	15.0898	-0.0268	2.7997
298	SLV 14	-7.26	-0.24	47.71	15.2761	-0.0283	2.5469



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
298	SLV 15	-8.46	-2.88	45.68	14.7481	-0.0228	2.968
298	SLV 16	-7.74	-2.41	46.29	14.9344	-0.0242	2.7152
298	CRTFP Ux+	0	0	0	0	0	0
298	CRTFP Ux-	0	0	0	0	0	0
298	CRTFP Uy+	0	0	0	0	0	0
298	CRTFP Uy-	0	0	0	0	0	0
299	SLU 1	0.22	-0.32	24.21	7.8597	1.504	-0.0573
299	SLU 2	0.23	-0.34	24.21	7.8597	1.5038	-0.0606
299	SLU 3	0.23	-0.33	24.77	8.0389	1.5384	-0.0596
299	SLU 4	0.24	-0.33	24.77	8.0389	1.5383	-0.0616
299	SLU 5	0.24	-0.34	24.58	7.9789	1.5268	-0.0613
299	SLU 6	0.23	-0.33	25.14	8.1581	1.5614	-0.0603
299	SLU 7	0.24	-0.34	25.14	8.1581	1.5613	-0.0623
299	SLU 8	0.23	-0.34	24.96	8.0982	1.55	-0.0587
299	SLU 9	0.24	-0.34	24.95	8.0981	1.5499	-0.0607
299	SLU 10	0.25	-0.34	27.02	8.7652	1.6782	-0.0639
299	SLU 11	0.24	-0.33	27.57	8.9444	1.7128	-0.0629
299	SLU 12	0.25	-0.34	27.57	8.9444	1.7126	-0.0648
299	SLU 13	0.25	-0.35	27.39	8.8845	1.7012	-0.0646
299	SLU 14	0.24	-0.34	27.94	9.0637	1.7357	-0.0636
299	SLU 15	0.25	-0.35	27.94	9.0637	1.7356	-0.0656
299	SLU 16	0.24	-0.34	27.76	9.0037	1.7244	-0.062
299	SLU 17	0.25	-0.35	27.76	9.0037	1.7242	-0.064
299	SLU 18	0.24	-0.33	28.22	9.1534	1.7531	-0.062
299	SLU 19	0.25	-0.34	28.22	9.1533	1.753	-0.0639
299	SLU 20	0.24	-0.34	28.59	9.2726	1.7761	-0.0627
299	SLU 21	0.25	-0.35	28.59	9.2726	1.776	-0.0647
299	SLU 22	0.26	-0.31	26.84	8.7122	1.667	-0.0705
299	SLU 23	0.27	-0.33	26.84	8.7122	1.6667	-0.0738
299	SLU 24	0.27	-0.32	27.39	8.8914	1.7013	-0.0728
299	SLU 25	0.27	-0.33	27.39	8.8914	1.7012	-0.0747
299	SLU 26	0.27	-0.33	27.21	8.8314	1.6897	-0.0745
299	SLU 27	0.27	-0.32	27.76	9.0106	1.7243	-0.0735
299	SLU 28	0.28	-0.33	27.76	9.0106	1.7242	-0.0755
299	SLU 29	0.27	-0.33	27.58	8.9507	1.7129	-0.0719
299	SLU 30	0.27	-0.34	27.58	8.9507	1.7128	-0.0739
299	SLU 31	0.28	-0.33	29.64	9.6177	1.8411	-0.077
299	SLU 32	0.28	-0.32	30.2	9.797	1.8757	-0.076
299	SLU 33	0.28	-0.33	30.2	9.7969	1.8755	-0.078
299	SLU 34	0.29	-0.34	30.01	9.737	1.8641	-0.0778
299	SLU 35	0.28	-0.33	30.57	9.9162	1.8987	-0.0768
299	SLU 36	0.29	-0.34	30.57	9.9162	1.8985	-0.0787
299	SLU 37	0.28	-0.33	30.39	9.8562	1.8873	-0.0752
299	SLU 38	0.28	-0.34	30.38	9.8562	1.8872	-0.0772
299	SLU 39	0.27	-0.32	30.85	10.0059	1.916	-0.0751
299	SLU 40	0.28	-0.33	30.85	10.0058	1.9159	-0.0771
299	SLU 41	0.28	-0.33	31.22	10.1251	1.939	-0.0759
299	SLU 42	0.29	-0.34	31.22	10.1251	1.9389	-0.0778
299	SLU 43	0.28	-0.42	30.58	9.9253	1.8994	-0.07
299	SLU 44	0.29	-0.44	30.58	9.9253	1.8992	-0.0733
299	SLU 45	0.28	-0.43	31.13	10.1045	1.9338	-0.0723
299	SLU 46	0.29	-0.43	31.13	10.1045	1.9336	-0.0743
299	SLU 47	0.29	-0.44	30.95	10.0445	1.9222	-0.074
299	SLU 48	0.29	-0.43	31.5	10.2237	1.9567	-0.073
299	SLU 49	0.3	-0.44	31.5	10.2237	1.9566	-0.075
299	SLU 50	0.28	-0.44	31.32	10.1638	1.9454	-0.0714
299	SLU 51	0.29	-0.44	31.32	10.1638	1.9452	-0.0734
299	SLU 52	0.3	-0.44	33.38	10.8309	2.0735	-0.0765
299	SLU 53	0.3	-0.43	33.94	11.0101	2.1081	-0.0755
299	SLU 54	0.3	-0.44	33.94	11.01	2.108	-0.0775
299	SLU 55	0.3	-0.45	33.75	10.9501	2.0965	-0.0773
299	SLU 56	0.3	-0.44	34.31	11.1293	2.1311	-0.0763
299	SLU 57	0.31	-0.45	34.31	11.1293	2.131	-0.0782
299	SLU 58	0.29	-0.44	34.13	11.0693	2.1197	-0.0747
299	SLU 59	0.3	-0.45	34.12	11.0693	2.1196	-0.0767
299	SLU 60	0.29	-0.43	34.59	11.219	2.1485	-0.0746
299	SLU 61	0.3	-0.44	34.59	11.219	2.1483	-0.0766
299	SLU 62	0.3	-0.44	34.96	11.3382	2.1715	-0.0754
299	SLU 63	0.3	-0.45	34.96	11.3382	2.1713	-0.0773
299	SLU 64	0.31	-0.41	33.2	10.7778	2.0623	-0.0832
299	SLU 65	0.33	-0.43	33.2	10.7778	2.0621	-0.0864
299	SLU 66	0.32	-0.42	33.76	10.957	2.0967	-0.0855
299	SLU 67	0.33	-0.42	33.76	10.957	2.0965	-0.0874
299	SLU 68	0.33	-0.43	33.57	10.897	2.0851	-0.0872
299	SLU 69	0.32	-0.42	34.13	11.0763	2.1197	-0.0862
299	SLU 70	0.33	-0.43	34.13	11.0762	2.1195	-0.0881
299	SLU 71	0.32	-0.43	33.94	11.0163	2.1083	-0.0846
299	SLU 72	0.33	-0.43	33.94	11.0163	2.1082	-0.0866
299	SLU 73	0.34	-0.43	36.01	11.6834	2.2364	-0.0897
299	SLU 74	0.33	-0.42	36.56	11.8626	2.271	-0.0887
299	SLU 75	0.34	-0.43	36.56	11.8626	2.2709	-0.0907
299	SLU 76	0.34	-0.44	36.38	11.8026	2.2594	-0.0904
299	SLU 77	0.34	-0.43	36.93	11.9818	2.294	-0.0894
299	SLU 78	0.34	-0.44	36.93	11.9818	2.2939	-0.0914
299	SLU 79	0.33	-0.43	36.75	11.9219	2.2826	-0.0879
299	SLU 80	0.34	-0.44	36.75	11.9218	2.2825	-0.0898
299	SLU 81	0.33	-0.42	37.21	12.0715	2.3114	-0.0878
299	SLU 82	0.34	-0.43	37.21	12.0715	2.3113	-0.0898
299	SLU 83	0.33	-0.43	37.58	12.1907	2.3344	-0.0885
299	SLU 84	0.34	-0.44	37.58	12.1907	2.3342	-0.0905



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
299	SLE RA 1	0.23	-0.32	24.96	8.1033	1.5506	-0.0611
299	SLE RA 2	0.24	-0.33	24.96	8.1033	1.5504	-0.0633
299	SLE RA 3	0.24	-0.32	25.33	8.2227	1.5735	-0.0626
299	SLE RA 4	0.24	-0.33	25.33	8.2227	1.5734	-0.0639
299	SLE RA 5	0.24	-0.33	25.21	8.1828	1.5658	-0.0637
299	SLE RA 6	0.24	-0.33	25.58	8.3022	1.5888	-0.0631
299	SLE RA 7	0.25	-0.33	25.58	8.3022	1.5887	-0.0644
299	SLE RA 8	0.24	-0.33	25.46	8.2623	1.5812	-0.062
299	SLE RA 9	0.24	-0.33	25.46	8.2622	1.5812	-0.0633
299	SLE RA 10	0.25	-0.33	26.83	8.707	1.6667	-0.0654
299	SLE RA 11	0.25	-0.33	27.2	8.8264	1.6897	-0.0648
299	SLE RA 12	0.25	-0.33	27.2	8.8264	1.6896	-0.0661
299	SLE RA 13	0.25	-0.34	27.08	8.7865	1.682	-0.0659
299	SLE RA 14	0.25	-0.33	27.45	8.9059	1.7051	-0.0653
299	SLE RA 15	0.25	-0.34	27.45	8.9059	1.705	-0.0666
299	SLE RA 16	0.24	-0.33	27.33	8.866	1.6975	-0.0642
299	SLE RA 17	0.25	-0.34	27.33	8.8659	1.6974	-0.0655
299	SLE RA 18	0.24	-0.33	27.64	8.9657	1.7166	-0.0642
299	SLE RA 19	0.25	-0.33	27.64	8.9657	1.7166	-0.0655
299	SLE RA 20	0.25	-0.33	27.88	9.0452	1.732	-0.0647
299	SLE RA 21	0.25	-0.34	27.88	9.0452	1.7319	-0.066
299	SLE FR 1	0.23	-0.32	24.96	8.1033	1.5506	-0.0611
299	SLE FR 2	0.23	-0.32	24.96	8.1033	1.5506	-0.0615
299	SLE FR 3	0.23	-0.32	25.06	8.1351	1.5567	-0.0613
299	SLE FR 4	0.24	-0.32	25.77	8.362	1.6004	-0.0624
299	SLE FR 5	0.24	-0.32	25.86	8.3938	1.6065	-0.0622
299	SLE FR 6	0.24	-0.32	26.3	8.5345	1.6336	-0.0626
299	SLE QP 1	0.23	-0.32	24.96	8.1033	1.5506	-0.0611
299	SLE QP 2	0.24	-0.32	25.77	8.362	1.6004	-0.062
299	SLD 1	2.5	0.18	23.67	7.6999	1.4721	-0.8738
299	SLD 2	2.7	0.32	23.85	7.7536	1.4831	-0.9535
299	SLD 3	2.36	-0.44	23.23	7.5912	1.4453	-0.8084
299	SLD 4	2.57	-0.31	23.41	7.6449	1.4563	-0.888
299	SLD 5	1.08	0.76	25.77	8.3187	1.6005	-0.3905
299	SLD 6	1.22	0.85	25.89	8.354	1.6078	-0.4429
299	SLD 7	0.63	-1.34	24.31	7.9562	1.5113	-0.1725
299	SLD 8	0.77	-1.25	24.43	7.9915	1.5186	-0.2248
299	SLD 9	-0.29	0.6	27.1	8.7325	1.6823	0.1008
299	SLD 10	-0.16	0.69	27.22	8.7678	1.6895	0.0485
299	SLD 11	-0.74	-1.49	25.64	8.37	1.593	0.3189
299	SLD 12	-0.61	-1.4	25.76	8.4053	1.6003	0.2665
299	SLD 13	-2.1	-0.33	28.12	9.0791	1.7445	0.764
299	SLD 14	-1.89	-0.2	28.3	9.1329	1.7555	0.6844
299	SLD 15	-2.23	-0.96	27.68	8.9704	1.7177	0.8295
299	SLD 16	-2.03	-0.83	27.86	9.0241	1.7288	0.7498
299	SLV 1	5.53	0.84	20.85	6.8097	1.2992	-1.9603
299	SLV 2	6.01	1.16	21.27	6.9348	1.325	-2.1458
299	SLV 3	5.22	-0.58	19.85	6.5614	1.2383	-1.8099
299	SLV 4	5.69	-0.27	20.27	6.6865	1.264	-1.9955
299	SLV 5	2.22	2.13	25.73	8.2512	1.5981	-0.8274
299	SLV 6	2.53	2.34	26	8.332	1.6147	-0.9472
299	SLV 7	1.17	-2.61	22.41	7.4237	1.3948	-0.3263
299	SLV 8	1.48	-2.41	22.68	7.5044	1.4115	-0.4461
299	SLV 9	-1	1.77	28.86	9.2196	1.7893	0.3221
299	SLV 10	-0.7	1.97	29.13	9.3004	1.806	0.2023
299	SLV 11	-2.05	-2.98	25.53	8.392	1.5861	0.8232
299	SLV 12	-1.75	-2.77	25.8	8.4728	1.6027	0.7034
299	SLV 13	-5.22	-0.37	31.26	10.0375	1.9368	1.8715
299	SLV 14	-4.74	-0.06	31.68	10.1626	1.9625	1.6859
299	SLV 15	-5.53	-1.8	30.27	9.7893	1.8758	2.0218
299	SLV 16	-5.06	-1.48	30.69	9.9143	1.9016	1.8363
299	CRTFP Ux+	0	0	0	0	0	0
299	CRTFP Ux-	0	0	0	0	0	0
299	CRTFP Uy+	0	0	0	0	0	0
299	CRTFP Uy-	0	0	0	0	0	0
301	SLU 1	0.6	-0.61	57.72	9.9982	-0.4243	-0.0896
301	SLU 2	0.63	-0.64	57.71	9.9966	-0.4238	-0.0948
301	SLU 3	0.62	-0.61	59.05	10.2271	-0.435	-0.0926
301	SLU 4	0.64	-0.63	59.04	10.2262	-0.4347	-0.0957
301	SLU 5	0.64	-0.65	58.6	10.1497	-0.4311	-0.0963
301	SLU 6	0.63	-0.63	59.93	10.3802	-0.4423	-0.094
301	SLU 7	0.65	-0.65	59.93	10.3793	-0.442	-0.0972
301	SLU 8	0.62	-0.64	59.5	10.3044	-0.4389	-0.0925
301	SLU 9	0.64	-0.66	59.49	10.3034	-0.4386	-0.0956
301	SLU 10	0.66	-0.64	64.38	11.1505	-0.4661	-0.0981
301	SLU 11	0.65	-0.62	65.72	11.3809	-0.4773	-0.0959
301	SLU 12	0.67	-0.64	65.71	11.38	-0.477	-0.0991
301	SLU 13	0.67	-0.66	65.27	11.3036	-0.4734	-0.0996
301	SLU 14	0.66	-0.63	66.6	11.534	-0.4846	-0.0974
301	SLU 15	0.68	-0.65	66.6	11.5331	-0.4843	-0.1005
301	SLU 16	0.65	-0.64	66.17	11.4582	-0.4812	-0.0958
301	SLU 17	0.67	-0.66	66.16	11.4573	-0.4809	-0.099
301	SLU 18	0.65	-0.61	67.25	11.6465	-0.4848	-0.0943
301	SLU 19	0.66	-0.63	67.24	11.6456	-0.4845	-0.0975
301	SLU 20	0.66	-0.63	68.14	11.7996	-0.492	-0.0958
301	SLU 21	0.67	-0.64	68.13	11.7987	-0.4917	-0.0989
301	SLU 22	0.69	-0.57	63.99	11.0851	-0.4759	-0.1032
301	SLU 23	0.72	-0.6	63.97	11.0835	-0.4754	-0.1085
301	SLU 24	0.71	-0.58	65.31	11.314	-0.4866	-0.1063
301	SLU 25	0.73	-0.6	65.3	11.3131	-0.4863	-0.1094



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
301	SLU 26	0.73	-0.62	64.86	11.2366	-0.4827	-0.11
301	SLU 27	0.72	-0.59	66.2	11.4671	-0.4938	-0.1077
301	SLU 28	0.74	-0.61	66.19	11.4662	-0.4935	-0.1109
301	SLU 29	0.71	-0.6	65.76	11.3913	-0.4904	-0.1062
301	SLU 30	0.73	-0.62	65.75	11.3903	-0.4901	-0.1093
301	SLU 31	0.75	-0.6	70.64	12.2374	-0.5177	-0.1118
301	SLU 32	0.74	-0.58	71.98	12.4678	-0.5289	-0.1096
301	SLU 33	0.76	-0.6	71.97	12.4669	-0.5286	-0.1127
301	SLU 34	0.76	-0.62	71.53	12.3905	-0.525	-0.1133
301	SLU 35	0.75	-0.6	72.87	12.6209	-0.5361	-0.111
301	SLU 36	0.77	-0.61	72.86	12.62	-0.5358	-0.1142
301	SLU 37	0.74	-0.6	72.43	12.5451	-0.5327	-0.1095
301	SLU 38	0.76	-0.62	72.42	12.5442	-0.5324	-0.1126
301	SLU 39	0.74	-0.57	73.52	12.7334	-0.5363	-0.108
301	SLU 40	0.76	-0.59	73.51	12.7325	-0.536	-0.1111
301	SLU 41	0.75	-0.59	74.4	12.8865	-0.5436	-0.1094
301	SLU 42	0.77	-0.61	74.4	12.8856	-0.5433	-0.1126
301	SLU 43	0.75	-0.8	72.89	12.6249	-0.5339	-0.1117
301	SLU 44	0.78	-0.83	72.88	12.6234	-0.5334	-0.117
301	SLU 45	0.77	-0.81	74.21	12.8539	-0.5446	-0.1148
301	SLU 46	0.78	-0.83	74.21	12.8529	-0.5443	-0.1179
301	SLU 47	0.79	-0.85	73.77	12.7765	-0.5407	-0.1185
301	SLU 48	0.78	-0.82	75.1	13.007	-0.5519	-0.1162
301	SLU 49	0.79	-0.84	75.09	13.0061	-0.5516	-0.1194
301	SLU 50	0.77	-0.83	74.67	12.9312	-0.5485	-0.1147
301	SLU 51	0.78	-0.85	74.66	12.9302	-0.5482	-0.1178
301	SLU 52	0.81	-0.84	79.55	13.7772	-0.5758	-0.1203
301	SLU 53	0.8	-0.81	80.88	14.0077	-0.5869	-0.1181
301	SLU 54	0.82	-0.83	80.88	14.0068	-0.5866	-0.1212
301	SLU 55	0.82	-0.85	80.44	13.9304	-0.583	-0.1218
301	SLU 56	0.81	-0.83	81.77	14.1608	-0.5942	-0.1195
301	SLU 57	0.83	-0.85	81.76	14.1599	-0.5939	-0.1227
301	SLU 58	0.8	-0.83	81.34	14.085	-0.5908	-0.118
301	SLU 59	0.82	-0.85	81.33	14.0841	-0.5905	-0.1211
301	SLU 60	0.79	-0.81	82.42	14.2733	-0.5944	-0.1165
301	SLU 61	0.81	-0.82	82.41	14.2724	-0.5941	-0.1196
301	SLU 62	0.8	-0.82	83.31	14.4264	-0.6016	-0.1179
301	SLU 63	0.82	-0.84	83.3	14.4255	-0.6014	-0.1211
301	SLU 64	0.84	-0.77	79.15	13.7118	-0.5855	-0.1254
301	SLU 65	0.87	-0.8	79.14	13.7103	-0.585	-0.1307
301	SLU 66	0.86	-0.77	80.48	13.9408	-0.5962	-0.1284
301	SLU 67	0.88	-0.79	80.47	13.9399	-0.5959	-0.1316
301	SLU 68	0.88	-0.81	80.03	13.8634	-0.5923	-0.1321
301	SLU 69	0.87	-0.79	81.37	14.0939	-0.6035	-0.1299
301	SLU 70	0.89	-0.81	81.36	14.093	-0.6032	-0.1331
301	SLU 71	0.86	-0.8	80.93	14.0181	-0.6	-0.1283
301	SLU 72	0.88	-0.81	80.92	14.0171	-0.5997	-0.1315
301	SLU 73	0.9	-0.8	85.81	14.8642	-0.6273	-0.134
301	SLU 74	0.89	-0.78	87.15	15.0946	-0.6385	-0.1318
301	SLU 75	0.91	-0.79	87.14	15.0937	-0.6382	-0.1349
301	SLU 76	0.91	-0.81	86.7	15.0173	-0.6346	-0.1355
301	SLU 77	0.9	-0.79	88.04	15.2477	-0.6458	-0.1332
301	SLU 78	0.92	-0.81	88.03	15.2468	-0.6455	-0.1364
301	SLU 79	0.89	-0.8	87.6	15.1719	-0.6423	-0.1317
301	SLU 80	0.91	-0.82	87.59	15.171	-0.6421	-0.1348
301	SLU 81	0.89	-0.77	88.68	15.3602	-0.6459	-0.1301
301	SLU 82	0.91	-0.79	88.68	15.3593	-0.6456	-0.1333
301	SLU 83	0.9	-0.78	89.57	15.5133	-0.6532	-0.1316
301	SLU 84	0.91	-0.8	89.56	15.5124	-0.6529	-0.1348
301	SLE RA 1	0.63	-0.6	59.51	10.3087	-0.439	-0.0935
301	SLE RA 2	0.65	-0.62	59.5	10.3077	-0.4387	-0.097
301	SLE RA 3	0.64	-0.6	60.39	10.4613	-0.4462	-0.0955
301	SLE RA 4	0.65	-0.61	60.39	10.4607	-0.446	-0.0976
301	SLE RA 5	0.65	-0.63	60.09	10.4097	-0.4436	-0.098
301	SLE RA 6	0.65	-0.61	60.99	10.5634	-0.451	-0.0965
301	SLE RA 7	0.66	-0.62	60.98	10.5628	-0.4508	-0.0986
301	SLE RA 8	0.64	-0.62	60.69	10.5128	-0.4487	-0.0954
301	SLE RA 9	0.65	-0.63	60.69	10.5122	-0.4485	-0.0975
301	SLE RA 10	0.67	-0.62	63.95	11.0769	-0.4669	-0.0992
301	SLE RA 11	0.66	-0.6	64.84	11.2305	-0.4744	-0.0977
301	SLE RA 12	0.67	-0.62	64.84	11.2299	-0.4742	-0.0998
301	SLE RA 13	0.67	-0.63	64.54	11.179	-0.4718	-0.1002
301	SLE RA 14	0.67	-0.61	65.43	11.3326	-0.4792	-0.0987
301	SLE RA 15	0.68	-0.63	65.43	11.332	-0.479	-0.1008
301	SLE RA 16	0.66	-0.62	65.14	11.2821	-0.4769	-0.0976
301	SLE RA 17	0.67	-0.63	65.14	11.2815	-0.4768	-0.0997
301	SLE RA 18	0.66	-0.6	65.86	11.4076	-0.4793	-0.0966
301	SLE RA 19	0.67	-0.61	65.86	11.407	-0.4791	-0.0987
301	SLE RA 20	0.66	-0.61	66.46	11.5097	-0.4842	-0.0976
301	SLE RA 21	0.68	-0.62	66.45	11.5091	-0.484	-0.0997
301	SLE FR 1	0.63	-0.6	59.51	10.3087	-0.439	-0.0935
301	SLE FR 2	0.63	-0.6	59.51	10.3085	-0.439	-0.0942
301	SLE FR 3	0.63	-0.6	59.75	10.3495	-0.441	-0.0939
301	SLE FR 4	0.64	-0.6	61.42	10.6382	-0.4511	-0.0951
301	SLE FR 5	0.64	-0.6	61.65	10.6792	-0.4531	-0.0948
301	SLE FR 6	0.64	-0.6	62.69	10.8581	-0.4592	-0.095
301	SLE QP 1	0.63	-0.6	59.51	10.3087	-0.439	-0.0935
301	SLE QP 2	0.64	-0.6	61.42	10.6384	-0.4511	-0.0944
301	SLD 1	5.98	0.59	55.95	9.7218	-0.2988	-0.9949
301	SLD 2	6.48	0.94	56.44	9.7995	-0.3114	-1.0742



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
301	SLD 3	5.66	-0.9	54.73	9.533	-0.2613	-1.0524
301	SLD 4	6.16	-0.55	55.21	9.6107	-0.2739	-1.1317
301	SLD 5	2.64	1.95	61.55	10.6359	-0.46	-0.2632
301	SLD 6	2.96	2.18	61.87	10.6869	-0.4684	-0.3153
301	SLD 7	1.57	-3	57.47	10.0066	-0.335	-0.4549
301	SLD 8	1.89	-2.78	57.79	10.0576	-0.3433	-0.507
301	SLD 9	-0.62	1.58	65.05	11.2191	-0.5589	0.3182
301	SLD 10	-0.3	1.81	65.37	11.2702	-0.5672	0.266
301	SLD 11	-1.69	-3.37	60.97	10.5898	-0.4339	0.1265
301	SLD 12	-1.37	-3.15	61.29	10.6409	-0.4422	0.0744
301	SLD 13	-4.88	-0.64	67.62	11.666	-0.6284	0.9429
301	SLD 14	-4.39	-0.3	68.11	11.7437	-0.641	0.8636
301	SLD 15	-5.2	-2.13	66.4	11.4772	-0.5909	0.8854
301	SLD 16	-4.71	-1.78	66.88	11.5549	-0.6035	0.8061
301	SLV 1	13.15	2.12	48.59	8.4879	-0.0935	-2.2017
301	SLV 2	14.29	2.93	49.72	8.6688	-0.1229	-2.3864
301	SLV 3	12.4	-1.24	45.81	8.058	-0.0079	-2.3358
301	SLV 4	13.55	-0.43	46.93	8.2389	-0.0374	-2.5204
301	SLV 5	5.32	5.18	61.6	10.614	-0.4685	-0.4913
301	SLV 6	6.06	5.7	62.33	10.7308	-0.4875	-0.6106
301	SLV 7	2.84	-6.03	52.32	9.1809	-0.1833	-0.9382
301	SLV 8	3.58	-5.51	53.04	9.2978	-0.2023	-1.0575
301	SLV 9	-2.31	4.32	69.79	11.9789	-0.6999	0.8687
301	SLV 10	-1.57	4.84	70.52	12.0958	-0.7189	0.7494
301	SLV 11	-4.79	-6.9	60.51	10.5459	-0.4147	0.4217
301	SLV 12	-4.05	-6.38	61.24	10.6628	-0.4337	0.3025
301	SLV 13	-12.28	-0.76	75.9	13.0379	-0.8649	2.3316
301	SLV 14	-11.13	0.05	77.03	13.2188	-0.8943	2.1469
301	SLV 15	-13.02	-4.13	73.12	12.608	-0.7793	2.1975
301	SLV 16	-11.88	-3.32	74.24	12.7889	-0.8088	2.0129
301	CRTFP Ux+	0	0	0	0	0	0
301	CRTFP Ux-	0	0	0	0	0	0
301	CRTFP Uy+	0	0	0	0	0	0
301	CRTFP Uy-	0	0	0	0	0	0
303	SLU 1	0.28	-0.23	27.85	8.3685	-1.7134	-0.111
303	SLU 2	0.29	-0.24	27.85	8.3671	-1.713	-0.1169
303	SLU 3	0.29	-0.23	28.49	8.5586	-1.7527	-0.1144
303	SLU 4	0.3	-0.24	28.49	8.5578	-1.7525	-0.1179
303	SLU 5	0.3	-0.25	28.28	8.4942	-1.7394	-0.1188
303	SLU 6	0.29	-0.24	28.92	8.6856	-1.7791	-0.1163
303	SLU 7	0.3	-0.24	28.92	8.6848	-1.7789	-0.1198
303	SLU 8	0.29	-0.24	28.71	8.6226	-1.7661	-0.1148
303	SLU 9	0.3	-0.25	28.71	8.6218	-1.7659	-0.1183
303	SLU 10	0.31	-0.23	31.05	9.3213	-1.91	-0.1214
303	SLU 11	0.3	-0.22	31.7	9.5127	-1.9497	-0.1189
303	SLU 12	0.31	-0.23	31.69	9.5119	-1.9495	-0.1224
303	SLU 13	0.31	-0.24	31.48	9.4483	-1.9363	-0.1232
303	SLU 14	0.31	-0.23	32.13	9.6398	-1.976	-0.1207
303	SLU 15	0.32	-0.24	32.12	9.6389	-1.9758	-0.1243
303	SLU 16	0.3	-0.23	31.91	9.5767	-1.963	-0.1192
303	SLU 17	0.31	-0.24	31.91	9.5759	-1.9628	-0.1228
303	SLU 18	0.3	-0.22	32.43	9.7316	-1.9947	-0.1174
303	SLU 19	0.31	-0.23	32.43	9.7307	-1.9945	-0.1209
303	SLU 20	0.31	-0.22	32.86	9.8586	-2.0211	-0.1193
303	SLU 21	0.31	-0.23	32.86	9.8578	-2.0209	-0.1228
303	SLU 22	0.33	-0.2	30.89	9.2754	-1.9	-0.125
303	SLU 23	0.34	-0.22	30.88	9.274	-1.8997	-0.1309
303	SLU 24	0.33	-0.2	31.53	9.4655	-1.9394	-0.1284
303	SLU 25	0.34	-0.21	31.52	9.4646	-1.9392	-0.1319
303	SLU 26	0.34	-0.22	31.31	9.401	-1.926	-0.1328
303	SLU 27	0.34	-0.21	31.95	9.5925	-1.9657	-0.1303
303	SLU 28	0.35	-0.22	31.95	9.5917	-1.9655	-0.1338
303	SLU 29	0.33	-0.21	31.74	9.5295	-1.9527	-0.1288
303	SLU 30	0.34	-0.22	31.74	9.5286	-1.9525	-0.1323
303	SLU 31	0.35	-0.21	34.09	10.2281	-2.0966	-0.1354
303	SLU 32	0.35	-0.2	34.73	10.4196	-2.1363	-0.1329
303	SLU 33	0.36	-0.21	34.73	10.4188	-2.1361	-0.1364
303	SLU 34	0.36	-0.22	34.51	10.3552	-2.123	-0.1372
303	SLU 35	0.35	-0.2	35.16	10.5466	-2.1627	-0.1347
303	SLU 36	0.36	-0.21	35.16	10.5458	-2.1625	-0.1383
303	SLU 37	0.35	-0.21	34.95	10.4836	-2.1497	-0.1332
303	SLU 38	0.36	-0.22	34.95	10.4827	-2.1495	-0.1368
303	SLU 39	0.35	-0.19	35.47	10.6384	-2.1814	-0.1314
303	SLU 40	0.35	-0.2	35.46	10.6376	-2.1812	-0.1349
303	SLU 41	0.35	-0.2	35.89	10.7655	-2.2077	-0.1333
303	SLU 42	0.36	-0.21	35.89	10.7646	-2.2075	-0.1368
303	SLU 43	0.35	-0.3	35.17	10.5682	-2.1634	-0.1395
303	SLU 44	0.36	-0.32	35.16	10.5668	-2.1631	-0.1454
303	SLU 45	0.36	-0.31	35.81	10.7582	-2.2027	-0.1429
303	SLU 46	0.37	-0.32	35.8	10.7574	-2.2025	-0.1464
303	SLU 47	0.37	-0.33	35.59	10.6938	-2.1894	-0.1473
303	SLU 48	0.36	-0.31	36.24	10.8853	-2.2291	-0.1448
303	SLU 49	0.37	-0.32	36.23	10.8844	-2.2289	-0.1483
303	SLU 50	0.36	-0.32	36.02	10.8222	-2.2161	-0.1433
303	SLU 51	0.37	-0.33	36.02	10.8214	-2.2159	-0.1468
303	SLU 52	0.38	-0.31	38.37	11.5209	-2.36	-0.1499
303	SLU 53	0.37	-0.3	39.01	11.7124	-2.3997	-0.1474
303	SLU 54	0.38	-0.31	39.01	11.7115	-2.3995	-0.1509
303	SLU 55	0.38	-0.32	38.8	11.6479	-2.3863	-0.1517
303	SLU 56	0.38	-0.31	39.44	11.8394	-2.426	-0.1492





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
303	SLU 57	0.39	-0.31	39.44	11.8386	-2.4258	-0.1528
303	SLU 58	0.37	-0.31	39.23	11.7764	-2.413	-0.1477
303	SLU 59	0.38	-0.32	39.23	11.7755	-2.4128	-0.1513
303	SLU 60	0.37	-0.29	39.75	11.9312	-2.4447	-0.1459
303	SLU 61	0.38	-0.3	39.74	11.9304	-2.4445	-0.1494
303	SLU 62	0.37	-0.3	40.18	12.0582	-2.4711	-0.1478
303	SLU 63	0.38	-0.31	40.17	12.0574	-2.4709	-0.1513
303	SLU 64	0.39	-0.28	38.2	11.475	-2.35	-0.1535
303	SLU 65	0.41	-0.29	38.2	11.4736	-2.3497	-0.1594
303	SLU 66	0.4	-0.28	38.84	11.6651	-2.3894	-0.1569
303	SLU 67	0.41	-0.29	38.84	11.6643	-2.3892	-0.1604
303	SLU 68	0.41	-0.3	38.63	11.6007	-2.3761	-0.1613
303	SLU 69	0.41	-0.29	39.27	11.7921	-2.4157	-0.1588
303	SLU 70	0.42	-0.3	39.27	11.7913	-2.4155	-0.1623
303	SLU 71	0.4	-0.29	39.06	11.7291	-2.4027	-0.1573
303	SLU 72	0.41	-0.3	39.06	11.7283	-2.4025	-0.1608
303	SLU 73	0.42	-0.29	41.4	12.4278	-2.5466	-0.1639
303	SLU 74	0.42	-0.27	42.05	12.6192	-2.5863	-0.1614
303	SLU 75	0.43	-0.28	42.04	12.6184	-2.5861	-0.1649
303	SLU 76	0.43	-0.29	41.83	12.5548	-2.573	-0.1657
303	SLU 77	0.42	-0.28	42.48	12.7463	-2.6127	-0.1632
303	SLU 78	0.43	-0.29	42.47	12.7454	-2.6125	-0.1668
303	SLU 79	0.42	-0.28	42.26	12.6832	-2.5997	-0.1617
303	SLU 80	0.43	-0.29	42.26	12.6824	-2.5995	-0.1653
303	SLU 81	0.41	-0.27	42.78	12.8381	-2.6314	-0.1599
303	SLU 82	0.42	-0.28	42.78	12.8372	-2.6312	-0.1634
303	SLU 83	0.42	-0.27	43.21	12.9651	-2.6577	-0.1618
303	SLU 84	0.43	-0.28	43.21	12.9643	-2.6575	-0.1653
303	SLE RA 1	0.29	-0.22	28.72	8.6276	-1.7667	-0.115
303	SLE RA 2	0.3	-0.23	28.72	8.6267	-1.7665	-0.1189
303	SLE RA 3	0.3	-0.22	29.15	8.7544	-1.7929	-0.1173
303	SLE RA 4	0.31	-0.23	29.14	8.7538	-1.7928	-0.1196
303	SLE RA 5	0.31	-0.23	29	8.7114	-1.784	-0.1202
303	SLE RA 6	0.3	-0.23	29.43	8.839	-1.8105	-0.1185
303	SLE RA 7	0.31	-0.23	29.43	8.8385	-1.8104	-0.1209
303	SLE RA 8	0.3	-0.23	29.29	8.797	-1.8018	-0.1175
303	SLE RA 9	0.3	-0.23	29.29	8.7965	-1.8017	-0.1199
303	SLE RA 10	0.31	-0.22	30.85	9.2628	-1.8978	-0.1219
303	SLE RA 11	0.31	-0.22	31.28	9.3904	-1.9242	-0.1202
303	SLE RA 12	0.31	-0.22	31.28	9.3899	-1.9241	-0.1226
303	SLE RA 13	0.32	-0.23	31.14	9.3475	-1.9153	-0.1232
303	SLE RA 14	0.31	-0.22	31.57	9.4751	-1.9418	-0.1215
303	SLE RA 15	0.32	-0.23	31.57	9.4746	-1.9417	-0.1238
303	SLE RA 16	0.31	-0.22	31.43	9.4331	-1.9331	-0.1205
303	SLE RA 17	0.31	-0.23	31.43	9.4325	-1.933	-0.1228
303	SLE RA 18	0.31	-0.21	31.77	9.5363	-1.9543	-0.1193
303	SLE RA 19	0.31	-0.22	31.77	9.5358	-1.9541	-0.1216
303	SLE RA 20	0.31	-0.22	32.06	9.621	-1.9718	-0.1205
303	SLE RA 21	0.32	-0.22	32.06	9.6205	-1.9717	-0.1229
303	SLE FR 1	0.29	-0.22	28.72	8.6276	-1.7667	-0.115
303	SLE FR 2	0.3	-0.22	28.72	8.6275	-1.7667	-0.1158
303	SLE FR 3	0.29	-0.22	28.83	8.6615	-1.7737	-0.1155
303	SLE FR 4	0.3	-0.22	29.63	8.9001	-1.8229	-0.1171
303	SLE FR 5	0.3	-0.22	29.75	8.9341	-1.83	-0.1168
303	SLE FR 6	0.3	-0.22	30.25	9.082	-1.8605	-0.1171
303	SLE QP 1	0.29	-0.22	28.72	8.6276	-1.7667	-0.115
303	SLE QP 2	0.3	-0.22	29.64	8.9002	-1.823	-0.1163
303	SLD 1	2.99	0.38	26.86	8.1999	-1.649	-0.9852
303	SLD 2	3.23	0.57	27.09	8.26	-1.6638	-1.0585
303	SLD 3	2.83	-0.37	26.27	8.0493	-1.6122	-1.0524
303	SLD 4	3.07	-0.18	26.5	8.1094	-1.627	-1.1257
303	SLD 5	1.31	1.06	29.65	8.9078	-1.8239	-0.262
303	SLD 6	1.47	1.18	29.81	8.9473	-1.8336	-0.3102
303	SLD 7	0.77	-1.43	27.69	8.4058	-1.7014	-0.4859
303	SLD 8	0.93	-1.3	27.84	8.4453	-1.711	-0.5341
303	SLD 9	-0.34	0.87	31.43	9.3552	-1.9349	0.3015
303	SLD 10	-0.18	0.99	31.58	9.3947	-1.9446	0.2533
303	SLD 11	-0.87	-1.62	29.46	8.8532	-1.8123	0.0776
303	SLD 12	-0.71	-1.49	29.62	8.8927	-1.822	0.0294
303	SLD 13	-2.48	-0.26	32.77	9.6911	-2.019	0.8931
303	SLD 14	-2.24	-0.07	33.01	9.7512	-2.0337	0.8198
303	SLD 15	-2.64	-1	32.18	9.5405	-1.9822	0.826
303	SLD 16	-2.4	-0.81	32.41	9.6006	-1.9969	0.7527
303	SLV 1	6.6	1.15	23.11	7.2568	-1.4148	-2.1504
303	SLV 2	7.17	1.59	23.66	7.3969	-1.4491	-2.3211
303	SLV 3	6.22	-0.54	21.77	6.9138	-1.3311	-2.3057
303	SLV 4	6.79	-0.1	22.32	7.0539	-1.3654	-2.4764
303	SLV 5	2.66	2.68	29.62	8.9032	-1.8215	-0.4614
303	SLV 6	3.02	2.96	29.98	8.9936	-1.8437	-0.5716
303	SLV 7	1.41	-2.95	25.14	7.7599	-1.5425	-0.9792
303	SLV 8	1.78	-2.67	25.5	7.8504	-1.5647	-1.0895
303	SLV 9	-1.18	2.23	33.77	9.9501	-2.0813	0.8569
303	SLV 10	-0.81	2.51	34.13	10.0406	-2.1034	0.7467
303	SLV 11	-2.43	-3.39	29.29	8.8069	-1.8022	0.3391
303	SLV 12	-2.06	-3.11	29.65	8.8973	-1.8244	0.2288
303	SLV 13	-6.2	-0.33	36.95	10.7466	-2.2806	2.2439
303	SLV 14	-5.63	0.11	37.5	10.8867	-2.3149	2.0732
303	SLV 15	-6.57	-2.02	35.61	10.4036	-2.1969	2.0885
303	SLV 16	-6	-1.58	36.16	10.5437	-2.2312	1.9178
303	CRTFP Ux+	0	0	0	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
303	CRTFP Ux-	0	0	0	0	0	0
303	CRTFP Uy+	0	0	0	0	0	0
303	CRTFP Uy-	0	0	0	0	0	0
304	SLU 1	0.41	-0.24	38.8	10.707	0.0576	-0.1417
304	SLU 2	0.44	-0.26	38.79	10.7045	0.0576	-0.1488
304	SLU 3	0.43	-0.24	39.69	10.948	0.059	-0.1464
304	SLU 4	0.44	-0.25	39.68	10.9465	0.059	-0.1507
304	SLU 5	0.44	-0.27	39.38	10.8659	0.0585	-0.151
304	SLU 6	0.43	-0.25	40.28	11.1094	0.0599	-0.1486
304	SLU 7	0.45	-0.26	40.28	11.1079	0.0599	-0.1529
304	SLU 8	0.43	-0.25	39.99	11.0298	0.0594	-0.146
304	SLU 9	0.44	-0.27	39.98	11.0282	0.0594	-0.1503
304	SLU 10	0.46	-0.24	43.23	11.9097	0.0651	-0.156
304	SLU 11	0.45	-0.22	44.13	12.1532	0.0665	-0.1536
304	SLU 12	0.46	-0.23	44.13	12.1517	0.0665	-0.1579
304	SLU 13	0.46	-0.25	43.83	12.071	0.066	-0.1581
304	SLU 14	0.46	-0.23	44.73	12.3146	0.0674	-0.1557
304	SLU 15	0.47	-0.24	44.72	12.313	0.0674	-0.16
304	SLU 16	0.45	-0.23	44.43	12.2349	0.067	-0.1532
304	SLU 17	0.46	-0.25	44.43	12.2334	0.067	-0.1574
304	SLU 18	0.45	-0.21	45.14	12.4287	0.0683	-0.1519
304	SLU 19	0.46	-0.22	45.14	12.4272	0.0683	-0.1562
304	SLU 20	0.45	-0.22	45.74	12.5901	0.0693	-0.154
304	SLU 21	0.46	-0.23	45.74	12.5885	0.0693	-0.1583
304	SLU 22	0.48	-0.19	43.02	11.8568	0.0642	-0.1645
304	SLU 23	0.5	-0.21	43.01	11.8542	0.0641	-0.1717
304	SLU 24	0.49	-0.19	43.91	12.0978	0.0655	-0.1693
304	SLU 25	0.51	-0.21	43.9	12.0962	0.0655	-0.1736
304	SLU 26	0.51	-0.22	43.61	12.0156	0.0651	-0.1738
304	SLU 27	0.5	-0.2	44.5	12.2591	0.0664	-0.1714
304	SLU 28	0.51	-0.21	44.5	12.2576	0.0664	-0.1757
304	SLU 29	0.49	-0.21	44.21	12.1795	0.066	-0.1688
304	SLU 30	0.51	-0.22	44.21	12.178	0.066	-0.1731
304	SLU 31	0.52	-0.19	47.46	13.0594	0.0717	-0.1788
304	SLU 32	0.52	-0.17	48.35	13.3029	0.073	-0.1764
304	SLU 33	0.53	-0.19	48.35	13.3014	0.073	-0.1807
304	SLU 34	0.53	-0.2	48.05	13.2208	0.0726	-0.181
304	SLU 35	0.52	-0.18	48.95	13.4643	0.074	-0.1786
304	SLU 36	0.53	-0.2	48.94	13.4628	0.074	-0.1829
304	SLU 37	0.51	-0.19	48.65	13.3847	0.0735	-0.176
304	SLU 38	0.53	-0.2	48.65	13.3831	0.0735	-0.1803
304	SLU 39	0.51	-0.16	49.37	13.5784	0.0749	-0.1747
304	SLU 40	0.52	-0.18	49.36	13.5769	0.0749	-0.179
304	SLU 41	0.52	-0.17	49.96	13.7398	0.0758	-0.1769
304	SLU 42	0.53	-0.19	49.96	13.7383	0.0758	-0.1812
304	SLU 43	0.52	-0.32	48.99	13.525	0.0726	-0.1763
304	SLU 44	0.54	-0.35	48.98	13.5224	0.0726	-0.1835
304	SLU 45	0.53	-0.33	49.88	13.7659	0.074	-0.1811
304	SLU 46	0.54	-0.34	49.87	13.7644	0.074	-0.1854
304	SLU 47	0.54	-0.35	49.58	13.6838	0.0735	-0.1856
304	SLU 48	0.54	-0.33	50.47	13.9273	0.0749	-0.1833
304	SLU 49	0.55	-0.35	50.47	13.9258	0.0749	-0.1876
304	SLU 50	0.53	-0.34	50.18	13.8477	0.0745	-0.1807
304	SLU 51	0.54	-0.35	50.17	13.8462	0.0745	-0.185
304	SLU 52	0.56	-0.33	53.42	14.7276	0.0801	-0.1906
304	SLU 53	0.55	-0.31	54.32	14.9711	0.0815	-0.1883
304	SLU 54	0.56	-0.32	54.32	14.9696	0.0815	-0.1925
304	SLU 55	0.56	-0.33	54.02	14.8889	0.0811	-0.1928
304	SLU 56	0.56	-0.32	54.92	15.1325	0.0824	-0.1904
304	SLU 57	0.57	-0.33	54.91	15.1309	0.0824	-0.1947
304	SLU 58	0.55	-0.32	54.62	15.0529	0.082	-0.1878
304	SLU 59	0.56	-0.33	54.62	15.0513	0.082	-0.1921
304	SLU 60	0.55	-0.3	55.34	15.2466	0.0834	-0.1866
304	SLU 61	0.56	-0.31	55.33	15.2451	0.0834	-0.1908
304	SLU 62	0.55	-0.31	55.93	15.408	0.0843	-0.1887
304	SLU 63	0.57	-0.32	55.93	15.4065	0.0843	-0.193
304	SLU 64	0.58	-0.28	53.21	14.6747	0.0792	-0.1992
304	SLU 65	0.6	-0.3	53.2	14.6721	0.0792	-0.2063
304	SLU 66	0.6	-0.28	54.1	14.9157	0.0806	-0.2039
304	SLU 67	0.61	-0.29	54.1	14.9141	0.0806	-0.2082
304	SLU 68	0.61	-0.31	53.8	14.8335	0.0801	-0.2085
304	SLU 69	0.6	-0.29	54.7	15.077	0.0815	-0.2061
304	SLU 70	0.61	-0.3	54.69	15.0755	0.0815	-0.2104
304	SLU 71	0.59	-0.3	54.4	14.9974	0.081	-0.2035
304	SLU 72	0.61	-0.31	54.4	14.9959	0.081	-0.2078
304	SLU 73	0.62	-0.28	57.65	15.8773	0.0867	-0.2135
304	SLU 74	0.62	-0.26	58.54	16.1208	0.0881	-0.2111
304	SLU 75	0.63	-0.27	58.54	16.1193	0.0881	-0.2154
304	SLU 76	0.63	-0.29	58.24	16.0387	0.0876	-0.2156
304	SLU 77	0.62	-0.27	59.14	16.2822	0.089	-0.2133
304	SLU 78	0.64	-0.28	59.14	16.2807	0.089	-0.2175
304	SLU 79	0.62	-0.28	58.85	16.2026	0.0886	-0.2107
304	SLU 80	0.63	-0.29	58.84	16.2011	0.0885	-0.2149
304	SLU 81	0.61	-0.25	59.56	16.3964	0.0899	-0.2094
304	SLU 82	0.63	-0.26	59.55	16.3948	0.0899	-0.2137
304	SLU 83	0.62	-0.26	60.15	16.5577	0.0909	-0.2116
304	SLU 84	0.63	-0.27	60.15	16.5562	0.0908	-0.2158
304	SLE RA 1	0.43	-0.22	40	11.0355	0.0595	-0.1482
304	SLE RA 2	0.45	-0.24	40	11.0338	0.0595	-0.153
304	SLE RA 3	0.44	-0.23	40.6	11.1962	0.0604	-0.1514



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
304	SLE RA 4	0.45	-0.23	40.59	11.1952	0.0604	-0.1542
304	SLE RA 5	0.45	-0.24	40.39	11.1414	0.0601	-0.1544
304	SLE RA 6	0.45	-0.23	40.99	11.3038	0.061	-0.1528
304	SLE RA 7	0.45	-0.24	40.99	11.3027	0.061	-0.1557
304	SLE RA 8	0.44	-0.24	40.8	11.2507	0.0607	-0.1511
304	SLE RA 9	0.45	-0.24	40.79	11.2497	0.0607	-0.1539
304	SLE RA 10	0.46	-0.23	42.96	11.8373	0.0645	-0.1577
304	SLE RA 11	0.46	-0.21	43.56	11.9996	0.0654	-0.1561
304	SLE RA 12	0.47	-0.22	43.56	11.9986	0.0654	-0.159
304	SLE RA 13	0.47	-0.23	43.36	11.9449	0.0651	-0.1592
304	SLE RA 14	0.46	-0.22	43.96	12.1072	0.066	-0.1576
304	SLE RA 15	0.47	-0.23	43.95	12.1062	0.066	-0.1604
304	SLE RA 16	0.46	-0.22	43.76	12.0541	0.0657	-0.1558
304	SLE RA 17	0.46	-0.23	43.76	12.0531	0.0657	-0.1587
304	SLE RA 18	0.45	-0.21	44.23	12.1833	0.0666	-0.155
304	SLE RA 19	0.46	-0.21	44.23	12.1823	0.0666	-0.1579
304	SLE RA 20	0.46	-0.21	44.63	12.2909	0.0673	-0.1564
304	SLE RA 21	0.47	-0.22	44.63	12.2899	0.0672	-0.1593
304	SLE FR 1	0.43	-0.22	40	11.0355	0.0595	-0.1482
304	SLE FR 2	0.44	-0.23	40	11.0352	0.0595	-0.1491
304	SLE FR 3	0.44	-0.23	40.16	11.0786	0.0597	-0.1488
304	SLE FR 4	0.44	-0.22	41.27	11.3795	0.0616	-0.1512
304	SLE FR 5	0.44	-0.22	41.43	11.4229	0.0619	-0.1508
304	SLE FR 6	0.44	-0.22	42.12	11.6094	0.0631	-0.1516
304	SLE QP 1	0.43	-0.22	40	11.0355	0.0595	-0.1482
304	SLE QP 2	0.44	-0.22	41.27	11.3799	0.0616	-0.1502
304	SLD 1	4.31	0.62	37.16	10.5333	0.066	-1.5066
304	SLD 2	4.66	0.9	37.5	10.612	0.066	-1.629
304	SLD 3	4.08	-0.45	36.31	10.3248	0.0652	-1.4257
304	SLD 4	4.43	-0.16	36.65	10.4034	0.0653	-1.5481
304	SLD 5	1.89	1.59	41.26	11.4281	0.0641	-0.658
304	SLD 6	2.12	1.78	41.49	11.4798	0.0641	-0.7384
304	SLD 7	1.12	-1.95	38.44	10.733	0.0615	-0.3883
304	SLD 8	1.35	-1.76	38.66	10.7847	0.0616	-0.4688
304	SLD 9	-0.47	1.32	43.88	11.975	0.0617	0.1683
304	SLD 10	-0.24	1.51	44.11	12.0267	0.0617	0.0879
304	SLD 11	-1.24	-2.22	41.06	11.2799	0.0591	0.4379
304	SLD 12	-1.01	-2.03	41.28	11.3316	0.0592	0.3575
304	SLD 13	-3.55	-0.27	45.89	12.3563	0.058	1.2476
304	SLD 14	-3.2	0.01	46.23	12.435	0.058	1.1253
304	SLD 15	-3.78	-1.34	45.04	12.1478	0.0572	1.3285
304	SLD 16	-3.43	-1.05	45.38	12.2264	0.0573	1.2062
304	SLV 1	9.5	1.7	31.62	9.3925	0.0719	-3.3238
304	SLV 2	10.32	2.35	32.42	9.5757	0.0719	-3.6087
304	SLV 3	8.96	-0.71	29.69	8.9177	0.0701	-3.1352
304	SLV 4	9.78	-0.05	30.49	9.1009	0.0702	-3.4201
304	SLV 5	3.83	3.89	41.17	11.4721	0.0674	-1.339
304	SLV 6	4.36	4.31	41.68	11.5905	0.0674	-1.5231
304	SLV 7	2.04	-4.13	34.73	9.8894	0.0615	-0.7104
304	SLV 8	2.57	-3.7	35.25	10.0077	0.0615	-0.8945
304	SLV 9	-1.69	3.26	47.29	12.752	0.0617	0.594
304	SLV 10	-1.16	3.69	47.81	12.8703	0.0618	0.4099
304	SLV 11	-3.48	-4.75	40.86	11.1693	0.0559	1.2226
304	SLV 12	-2.95	-4.33	41.38	11.2876	0.0559	1.0386
304	SLV 13	-8.9	-0.39	52.05	13.6588	0.0531	3.1197
304	SLV 14	-8.08	0.27	52.85	13.842	0.0532	2.8347
304	SLV 15	-9.44	-2.79	50.12	13.184	0.0513	3.3083
304	SLV 16	-8.62	-2.13	50.92	13.3672	0.0514	3.0233
304	CRTFP Ux+	0	0	0	0	0	0
304	CRTFP Ux-	0	0	0	0	0	0
304	CRTFP Uy+	0	0	0	0	0	0
304	CRTFP Uy-	0	0	0	0	0	0
305	SLU 1	0.42	-0.14	36.93	9.0563	0.0649	-0.1453
305	SLU 2	0.44	-0.16	36.92	9.0536	0.0649	-0.1525
305	SLU 3	0.44	-0.14	37.78	9.2568	0.0665	-0.1502
305	SLU 4	0.45	-0.15	37.77	9.2552	0.0664	-0.1545
305	SLU 5	0.45	-0.17	37.49	9.1881	0.0659	-0.1547
305	SLU 6	0.44	-0.15	38.34	9.3913	0.0675	-0.1524
305	SLU 7	0.46	-0.16	38.34	9.3897	0.0675	-0.1567
305	SLU 8	0.44	-0.16	38.06	9.3253	0.067	-0.1497
305	SLU 9	0.45	-0.17	38.06	9.3237	0.067	-0.1541
305	SLU 10	0.47	-0.13	41.13	10.0509	0.0733	-0.1598
305	SLU 11	0.46	-0.11	41.98	10.254	0.0749	-0.1576
305	SLU 12	0.47	-0.13	41.97	10.2524	0.0749	-0.1619
305	SLU 13	0.47	-0.14	41.69	10.1853	0.0744	-0.1621
305	SLU 14	0.47	-0.12	42.54	10.3885	0.076	-0.1598
305	SLU 15	0.48	-0.13	42.54	10.3869	0.076	-0.1641
305	SLU 16	0.46	-0.13	42.26	10.3225	0.0755	-0.1571
305	SLU 17	0.47	-0.14	42.26	10.3209	0.0755	-0.1614
305	SLU 18	0.46	-0.1	42.93	10.4809	0.077	-0.1558
305	SLU 19	0.47	-0.11	42.93	10.4793	0.077	-0.1601
305	SLU 20	0.46	-0.11	43.5	10.6154	0.078	-0.1581
305	SLU 21	0.47	-0.12	43.49	10.6138	0.078	-0.1624
305	SLU 22	0.49	-0.09	40.94	10.0117	0.0725	-0.1686
305	SLU 23	0.51	-0.11	40.93	10.0091	0.0724	-0.1758
305	SLU 24	0.5	-0.09	41.78	10.2122	0.074	-0.1735
305	SLU 25	0.52	-0.1	41.78	10.2106	0.074	-0.1778
305	SLU 26	0.52	-0.12	41.5	10.1435	0.0735	-0.178
305	SLU 27	0.51	-0.1	42.35	10.3467	0.0751	-0.1757
305	SLU 28	0.52	-0.11	42.35	10.3451	0.0751	-0.18



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
305	SLU 29	0.5	-0.1	42.07	10.2807	0.0746	-0.1731
305	SLU 30	0.52	-0.11	42.07	10.2791	0.0746	-0.1774
305	SLU 31	0.53	-0.08	45.13	11.0063	0.0809	-0.1831
305	SLU 32	0.53	-0.06	45.99	11.2094	0.0825	-0.1809
305	SLU 33	0.54	-0.07	45.98	11.2078	0.0825	-0.1852
305	SLU 34	0.54	-0.09	45.7	11.1408	0.0819	-0.1854
305	SLU 35	0.53	-0.07	46.55	11.3439	0.0835	-0.1831
305	SLU 36	0.55	-0.08	46.55	11.3423	0.0835	-0.1874
305	SLU 37	0.53	-0.07	46.27	11.2779	0.083	-0.1804
305	SLU 38	0.54	-0.08	46.27	11.2763	0.083	-0.1847
305	SLU 39	0.52	-0.05	46.94	11.4363	0.0845	-0.1791
305	SLU 40	0.53	-0.06	46.94	11.4347	0.0845	-0.1834
305	SLU 41	0.53	-0.05	47.51	11.5708	0.0856	-0.1814
305	SLU 42	0.54	-0.07	47.5	11.5692	0.0856	-0.1857
305	SLU 43	0.53	-0.2	46.64	11.4456	0.0818	-0.1809
305	SLU 44	0.55	-0.22	46.63	11.443	0.0817	-0.1881
305	SLU 45	0.54	-0.2	47.48	11.6461	0.0833	-0.1858
305	SLU 46	0.55	-0.22	47.48	11.6445	0.0833	-0.1901
305	SLU 47	0.55	-0.23	47.2	11.5774	0.0828	-0.1903
305	SLU 48	0.55	-0.21	48.05	11.7806	0.0844	-0.188
305	SLU 49	0.56	-0.22	48.04	11.779	0.0844	-0.1923
305	SLU 50	0.54	-0.22	47.77	11.7146	0.0839	-0.1853
305	SLU 51	0.55	-0.23	47.76	11.713	0.0839	-0.1897
305	SLU 52	0.57	-0.19	50.83	12.4402	0.0902	-0.1954
305	SLU 53	0.56	-0.17	51.68	12.6433	0.0918	-0.1932
305	SLU 54	0.58	-0.19	51.68	12.6417	0.0918	-0.1975
305	SLU 55	0.58	-0.2	51.4	12.5747	0.0913	-0.1977
305	SLU 56	0.57	-0.18	52.25	12.7778	0.0929	-0.1954
305	SLU 57	0.58	-0.19	52.25	12.7762	0.0928	-0.1997
305	SLU 58	0.56	-0.19	51.97	12.7118	0.0924	-0.1927
305	SLU 59	0.57	-0.2	51.97	12.7102	0.0923	-0.197
305	SLU 60	0.56	-0.16	52.64	12.8702	0.0939	-0.1914
305	SLU 61	0.57	-0.17	52.63	12.8686	0.0938	-0.1957
305	SLU 62	0.57	-0.17	53.2	13.0047	0.0949	-0.1937
305	SLU 63	0.58	-0.18	53.2	13.0031	0.0949	-0.198
305	SLU 64	0.59	-0.15	50.64	12.401	0.0893	-0.2042
305	SLU 65	0.62	-0.17	50.64	12.3984	0.0893	-0.2114
305	SLU 66	0.61	-0.15	51.49	12.6015	0.0909	-0.2091
305	SLU 67	0.62	-0.16	51.49	12.5999	0.0909	-0.2134
305	SLU 68	0.62	-0.18	51.2	12.5328	0.0904	-0.2136
305	SLU 69	0.62	-0.16	52.06	12.736	0.092	-0.2113
305	SLU 70	0.63	-0.17	52.05	12.7344	0.092	-0.2156
305	SLU 71	0.61	-0.16	51.78	12.67	0.0915	-0.2087
305	SLU 72	0.62	-0.18	51.77	12.6684	0.0914	-0.213
305	SLU 73	0.64	-0.14	54.84	13.3956	0.0978	-0.2187
305	SLU 74	0.63	-0.12	55.69	13.5987	0.0994	-0.2165
305	SLU 75	0.64	-0.13	55.69	13.5971	0.0993	-0.2208
305	SLU 76	0.64	-0.15	55.4	13.5301	0.0988	-0.221
305	SLU 77	0.64	-0.13	56.26	13.7332	0.1004	-0.2187
305	SLU 78	0.65	-0.14	56.25	13.7316	0.1004	-0.223
305	SLU 79	0.63	-0.13	55.98	13.6672	0.0999	-0.216
305	SLU 80	0.64	-0.15	55.97	13.6656	0.0999	-0.2203
305	SLU 81	0.63	-0.11	56.65	13.8256	0.1014	-0.2147
305	SLU 82	0.64	-0.12	56.64	13.8241	0.1014	-0.219
305	SLU 83	0.63	-0.11	57.21	13.9601	0.1025	-0.217
305	SLU 84	0.65	-0.13	57.21	13.9585	0.1025	-0.2213
305	SLE RA 1	0.44	-0.13	38.08	9.3293	0.0671	-0.1519
305	SLE RA 2	0.46	-0.14	38.07	9.3275	0.067	-0.1567
305	SLE RA 3	0.45	-0.13	38.64	9.4629	0.0681	-0.1552
305	SLE RA 4	0.46	-0.14	38.64	9.4619	0.0681	-0.1581
305	SLE RA 5	0.46	-0.14	38.45	9.4172	0.0677	-0.1582
305	SLE RA 6	0.46	-0.13	39.02	9.5526	0.0688	-0.1567
305	SLE RA 7	0.46	-0.14	39.01	9.5515	0.0688	-0.1596
305	SLE RA 8	0.45	-0.14	38.83	9.5086	0.0685	-0.1549
305	SLE RA 9	0.46	-0.14	38.83	9.5075	0.0685	-0.1578
305	SLE RA 10	0.47	-0.12	40.87	9.9923	0.0727	-0.1616
305	SLE RA 11	0.47	-0.11	41.44	10.1278	0.0737	-0.1601
305	SLE RA 12	0.48	-0.12	41.44	10.1267	0.0737	-0.163
305	SLE RA 13	0.48	-0.13	41.25	10.082	0.0734	-0.1631
305	SLE RA 14	0.47	-0.11	41.82	10.2174	0.0745	-0.1616
305	SLE RA 15	0.48	-0.12	41.82	10.2163	0.0744	-0.1645
305	SLE RA 16	0.47	-0.12	41.63	10.1734	0.0741	-0.1598
305	SLE RA 17	0.47	-0.12	41.63	10.1723	0.0741	-0.1627
305	SLE RA 18	0.46	-0.1	42.08	10.279	0.0751	-0.159
305	SLE RA 19	0.47	-0.11	42.07	10.278	0.0751	-0.1618
305	SLE RA 20	0.47	-0.1	42.45	10.3687	0.0758	-0.1605
305	SLE RA 21	0.48	-0.11	42.45	10.3676	0.0758	-0.1633
305	SLE FR 1	0.44	-0.13	38.08	9.3293	0.0671	-0.1519
305	SLE FR 2	0.45	-0.13	38.08	9.3289	0.0671	-0.1529
305	SLE FR 3	0.44	-0.13	38.23	9.3651	0.0673	-0.1525
305	SLE FR 4	0.45	-0.12	39.28	9.6138	0.0695	-0.155
305	SLE FR 5	0.45	-0.12	39.43	9.6501	0.0698	-0.1547
305	SLE FR 6	0.45	-0.11	40.08	9.8041	0.0711	-0.1555
305	SLE QP 1	0.44	-0.13	38.08	9.3293	0.0671	-0.1519
305	SLE QP 2	0.45	-0.12	39.28	9.6142	0.0695	-0.1541
305	SLD 1	4.32	0.68	35.03	8.9452	0.0742	-1.51
305	SLD 2	4.67	0.97	35.37	9.0128	0.0744	-1.6327
305	SLD 3	4.09	-0.37	34.22	8.7619	0.0727	-1.4291
305	SLD 4	4.44	-0.08	34.56	8.8295	0.0729	-1.5518
305	SLD 5	1.9	1.65	39.19	9.6795	0.073	-0.6615



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
305	SLD 6	2.13	1.85	39.41	9.7239	0.0732	-0.7422
305	SLD 7	1.13	-1.83	36.46	9.0684	0.0682	-0.3921
305	SLD 8	1.36	-1.64	36.68	9.1128	0.0683	-0.4727
305	SLD 9	-0.46	1.4	41.87	10.1156	0.0706	0.1646
305	SLD 10	-0.23	1.6	42.1	10.16	0.0707	0.0839
305	SLD 11	-1.23	-2.08	39.14	9.5045	0.0658	0.4341
305	SLD 12	-1	-1.89	39.37	9.5489	0.0659	0.3534
305	SLD 13	-3.54	-0.16	44	10.3989	0.066	1.2437
305	SLD 14	-3.19	0.13	44.34	10.4665	0.0662	1.121
305	SLD 15	-3.77	-1.21	43.18	10.2156	0.0646	1.3246
305	SLD 16	-3.42	-0.91	43.52	10.2832	0.0648	1.2019
305	SLV 1	9.5	1.7	29.33	8.0434	0.0805	-3.3265
305	SLV 2	10.32	2.38	30.12	8.2009	0.0808	-3.6122
305	SLV 3	8.97	-0.67	27.46	7.6255	0.0772	-3.138
305	SLV 4	9.79	0.01	28.25	7.783	0.0776	-3.4237
305	SLV 5	3.84	3.9	38.99	9.7495	0.0777	-1.3422
305	SLV 6	4.37	4.34	39.5	9.8512	0.0779	-1.5268
305	SLV 7	2.05	-3.99	32.76	8.3566	0.0667	-0.714
305	SLV 8	2.58	-3.55	33.27	8.4583	0.067	-0.8985
305	SLV 9	-1.68	3.32	45.28	10.7701	0.072	0.5904
305	SLV 10	-1.15	3.76	45.79	10.8718	0.0722	0.4059
305	SLV 11	-3.47	-4.58	39.06	9.3772	0.061	1.2186
305	SLV 12	-2.94	-4.14	39.57	9.4789	0.0613	1.0341
305	SLV 13	-8.89	-0.25	50.3	11.4454	0.0614	3.1156
305	SLV 14	-8.07	0.43	51.09	11.6029	0.0618	2.8299
305	SLV 15	-9.43	-2.62	48.44	11.0275	0.0581	3.3041
305	SLV 16	-8.61	-1.94	49.23	11.185	0.0585	3.0184
305	CRTFP Ux+	0	0	0	0	0	0
305	CRTFP Ux-	0	0	0	0	0	0
305	CRTFP Uy+	0	0	0	0	0	0
305	CRTFP Uy-	0	0	0	0	0	0
306	SLU 1	0.43	-0.06	35.01	7.449	0.0618	-0.1481
306	SLU 2	0.45	-0.08	35.01	7.4465	0.0618	-0.1553
306	SLU 3	0.44	-0.06	35.81	7.6098	0.0633	-0.1531
306	SLU 4	0.46	-0.07	35.81	7.6083	0.0633	-0.1574
306	SLU 5	0.46	-0.09	35.54	7.5546	0.0628	-0.1576
306	SLU 6	0.45	-0.07	36.35	7.7179	0.0644	-0.1554
306	SLU 7	0.46	-0.08	36.34	7.7164	0.0643	-0.1597
306	SLU 8	0.44	-0.07	36.08	7.6651	0.0639	-0.1526
306	SLU 9	0.46	-0.08	36.08	7.6636	0.0639	-0.157
306	SLU 10	0.47	-0.04	38.96	8.241	0.0699	-0.1628
306	SLU 11	0.47	-0.02	39.76	8.4043	0.0714	-0.1606
306	SLU 12	0.48	-0.03	39.76	8.4028	0.0714	-0.1649
306	SLU 13	0.48	-0.05	39.49	8.349	0.0709	-0.1651
306	SLU 14	0.47	-0.03	40.3	8.5123	0.0724	-0.1629
306	SLU 15	0.49	-0.04	40.29	8.5108	0.0724	-0.1672
306	SLU 16	0.47	-0.03	40.03	8.4595	0.072	-0.1601
306	SLU 17	0.48	-0.05	40.03	8.458	0.0719	-0.1645
306	SLU 18	0.46	-0.01	40.66	8.5839	0.0734	-0.1588
306	SLU 19	0.47	-0.02	40.65	8.5824	0.0734	-0.1631
306	SLU 20	0.47	-0.01	41.19	8.6919	0.0744	-0.1611
306	SLU 21	0.48	-0.02	41.19	8.6905	0.0744	-0.1654
306	SLU 22	0.5	0	38.8	8.2135	0.0691	-0.1717
306	SLU 23	0.52	-0.02	38.79	8.211	0.0691	-0.1789
306	SLU 24	0.51	0	39.59	8.3743	0.0706	-0.1767
306	SLU 25	0.53	-0.01	39.59	8.3729	0.0706	-0.1811
306	SLU 26	0.53	-0.03	39.32	8.3191	0.0701	-0.1812
306	SLU 27	0.52	-0.01	40.13	8.4824	0.0717	-0.179
306	SLU 28	0.53	-0.02	40.13	8.4809	0.0716	-0.1833
306	SLU 29	0.51	-0.01	39.86	8.4296	0.0712	-0.1763
306	SLU 30	0.52	-0.02	39.86	8.4281	0.0711	-0.1806
306	SLU 31	0.54	0.02	42.74	9.0055	0.0772	-0.1864
306	SLU 32	0.54	0.04	43.55	9.1688	0.0787	-0.1843
306	SLU 33	0.55	0.03	43.54	9.1673	0.0787	-0.1886
306	SLU 34	0.55	0.01	43.28	9.1135	0.0782	-0.1887
306	SLU 35	0.54	0.03	44.08	9.2768	0.0797	-0.1865
306	SLU 36	0.55	0.02	44.08	9.2754	0.0797	-0.1909
306	SLU 37	0.53	0.03	43.81	9.224	0.0793	-0.1838
306	SLU 38	0.55	0.01	43.81	9.2226	0.0792	-0.1881
306	SLU 39	0.53	0.05	44.44	9.3484	0.0807	-0.1824
306	SLU 40	0.54	0.04	44.44	9.3469	0.0806	-0.1868
306	SLU 41	0.54	0.05	44.97	9.4565	0.0817	-0.1847
306	SLU 42	0.55	0.04	44.97	9.455	0.0817	-0.189
306	SLU 43	0.54	-0.1	44.22	9.4215	0.0779	-0.1844
306	SLU 44	0.56	-0.12	44.21	9.4191	0.0778	-0.1916
306	SLU 45	0.55	-0.1	45.02	9.5824	0.0794	-0.1894
306	SLU 46	0.56	-0.11	45.02	9.5809	0.0794	-0.1937
306	SLU 47	0.56	-0.12	44.75	9.5271	0.0789	-0.1939
306	SLU 48	0.56	-0.11	45.55	9.6904	0.0804	-0.1917
306	SLU 49	0.57	-0.12	45.55	9.689	0.0804	-0.196
306	SLU 50	0.55	-0.11	45.29	9.6376	0.0799	-0.189
306	SLU 51	0.56	-0.12	45.28	9.6361	0.0799	-0.1933
306	SLU 52	0.58	-0.08	48.17	10.2135	0.0859	-0.1991
306	SLU 53	0.57	-0.06	48.97	10.3768	0.0875	-0.1969
306	SLU 54	0.59	-0.07	48.97	10.3753	0.0874	-0.2013
306	SLU 55	0.59	-0.09	48.7	10.3216	0.087	-0.2014
306	SLU 56	0.58	-0.07	49.5	10.4849	0.0885	-0.1992
306	SLU 57	0.59	-0.08	49.5	10.4834	0.0885	-0.2035
306	SLU 58	0.57	-0.07	49.24	10.4321	0.088	-0.1965
306	SLU 59	0.58	-0.08	49.24	10.4306	0.088	-0.2008



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
306	SLU 60	0.57	-0.04	49.86	10.5564	0.0894	-0.1951
306	SLU 61	0.58	-0.06	49.86	10.555	0.0894	-0.1995
306	SLU 62	0.57	-0.05	50.4	10.6645	0.0905	-0.1974
306	SLU 63	0.59	-0.06	50.39	10.663	0.0904	-0.2017
306	SLU 64	0.6	-0.04	48	10.1861	0.0852	-0.208
306	SLU 65	0.62	-0.06	48	10.1836	0.0851	-0.2152
306	SLU 66	0.62	-0.04	48.8	10.3469	0.0867	-0.2131
306	SLU 67	0.63	-0.05	48.8	10.3454	0.0867	-0.2174
306	SLU 68	0.63	-0.07	48.53	10.2916	0.0862	-0.2175
306	SLU 69	0.63	-0.05	49.34	10.455	0.0877	-0.2153
306	SLU 70	0.64	-0.06	49.33	10.4535	0.0877	-0.2197
306	SLU 71	0.62	-0.05	49.07	10.4022	0.0872	-0.2126
306	SLU 72	0.63	-0.06	49.07	10.4007	0.0872	-0.2169
306	SLU 73	0.65	-0.02	51.95	10.978	0.0932	-0.2228
306	SLU 74	0.64	0	52.75	11.1414	0.0948	-0.2206
306	SLU 75	0.65	-0.01	52.75	11.1399	0.0947	-0.2249
306	SLU 76	0.65	-0.03	52.48	11.0861	0.0942	-0.225
306	SLU 77	0.65	-0.01	53.29	11.2494	0.0958	-0.2229
306	SLU 78	0.66	-0.02	53.28	11.2479	0.0958	-0.2272
306	SLU 79	0.64	-0.01	53.02	11.1966	0.0953	-0.2201
306	SLU 80	0.65	-0.02	53.02	11.1951	0.0953	-0.2244
306	SLU 81	0.64	0.02	53.65	11.321	0.0967	-0.2188
306	SLU 82	0.65	0	53.64	11.3195	0.0967	-0.2231
306	SLU 83	0.64	0.01	54.18	11.429	0.0977	-0.221
306	SLU 84	0.65	0	54.18	11.4275	0.0977	-0.2254
306	SLE RA 1	0.45	-0.04	36.09	7.6674	0.0639	-0.1548
306	SLE RA 2	0.46	-0.06	36.09	7.6658	0.0639	-0.1596
306	SLE RA 3	0.46	-0.04	36.63	7.7746	0.0649	-0.1582
306	SLE RA 4	0.47	-0.05	36.62	7.7737	0.0649	-0.1611
306	SLE RA 5	0.47	-0.06	36.45	7.7378	0.0646	-0.1612
306	SLE RA 6	0.46	-0.05	36.98	7.8467	0.0656	-0.1597
306	SLE RA 7	0.47	-0.06	36.98	7.8457	0.0656	-0.1626
306	SLE RA 8	0.46	-0.05	36.81	7.8115	0.0653	-0.1579
306	SLE RA 9	0.47	-0.06	36.8	7.8105	0.0653	-0.1608
306	SLE RA 10	0.48	-0.03	38.72	8.1954	0.0693	-0.1646
306	SLE RA 11	0.47	-0.02	39.26	8.3043	0.0703	-0.1632
306	SLE RA 12	0.48	-0.03	39.26	8.3033	0.0703	-0.1661
306	SLE RA 13	0.48	-0.03	39.08	8.2674	0.07	-0.1662
306	SLE RA 14	0.48	-0.02	39.62	8.3763	0.071	-0.1647
306	SLE RA 15	0.49	-0.03	39.61	8.3753	0.071	-0.1676
306	SLE RA 16	0.47	-0.03	39.44	8.3411	0.0707	-0.1629
306	SLE RA 17	0.48	-0.03	39.44	8.3401	0.0707	-0.1658
306	SLE RA 18	0.47	-0.01	39.86	8.424	0.0716	-0.162
306	SLE RA 19	0.48	-0.01	39.85	8.423	0.0716	-0.1649
306	SLE RA 20	0.48	-0.01	40.21	8.496	0.0723	-0.1635
306	SLE RA 21	0.48	-0.02	40.21	8.4951	0.0723	-0.1664
306	SLE FR 1	0.45	-0.04	36.09	7.6674	0.0639	-0.1548
306	SLE FR 2	0.45	-0.05	36.09	7.6671	0.0639	-0.1558
306	SLE FR 3	0.45	-0.05	36.24	7.6962	0.0642	-0.1554
306	SLE FR 4	0.46	-0.04	37.22	7.8941	0.0662	-0.1579
306	SLE FR 5	0.46	-0.03	37.36	7.9232	0.0665	-0.1576
306	SLE FR 6	0.46	-0.03	37.97	8.0457	0.0678	-0.1584
306	SLE QP 1	0.45	-0.04	36.09	7.6674	0.0639	-0.1548
306	SLE QP 2	0.46	-0.03	37.22	7.8944	0.0662	-0.157
306	SLD 1	4.32	0.71	32.83	7.3838	0.0722	-1.5121
306	SLD 2	4.68	1.01	33.16	7.4396	0.0724	-1.635
306	SLD 3	4.09	-0.32	32.05	7.2338	0.0705	-1.4314
306	SLD 4	4.44	-0.02	32.38	7.2897	0.0707	-1.5543
306	SLD 5	1.9	1.7	37.02	7.9586	0.0705	-0.664
306	SLD 6	2.13	1.9	37.24	7.9954	0.0706	-0.7448
306	SLD 7	1.13	-1.74	34.43	7.4588	0.065	-0.3949
306	SLD 8	1.37	-1.54	34.65	7.4955	0.0651	-0.4757
306	SLD 9	-0.45	1.48	39.79	8.2932	0.0674	0.1617
306	SLD 10	-0.22	1.67	40.01	8.33	0.0675	0.0809
306	SLD 11	-1.22	-1.97	37.2	7.7934	0.0618	0.4308
306	SLD 12	-0.99	-1.77	37.42	7.8301	0.0619	0.3501
306	SLD 13	-3.53	-0.05	42.06	8.4991	0.0618	1.2403
306	SLD 14	-3.18	0.25	42.4	8.555	0.0619	1.1174
306	SLD 15	-3.76	-1.08	41.28	8.3491	0.0601	1.3211
306	SLD 16	-3.41	-0.78	41.62	8.405	0.0603	1.1981
306	SLV 1	9.5	1.67	26.92	6.6956	0.0801	-3.3275
306	SLV 2	10.32	2.38	27.69	6.8257	0.0805	-3.6137
306	SLV 3	8.97	-0.67	25.14	6.3526	0.0764	-3.1393
306	SLV 4	9.79	0.04	25.92	6.4828	0.0768	-3.4255
306	SLV 5	3.84	3.9	36.69	8.0323	0.0761	-1.3441
306	SLV 6	4.37	4.36	37.19	8.1164	0.0763	-1.529
306	SLV 7	2.05	-3.89	30.77	6.8893	0.0635	-0.7167
306	SLV 8	2.58	-3.44	31.27	6.9733	0.0637	-0.9016
306	SLV 9	-1.67	3.37	43.17	8.8155	0.0687	0.5876
306	SLV 10	-1.14	3.83	43.67	8.8995	0.069	0.4027
306	SLV 11	-3.46	-4.42	37.25	7.6724	0.0561	1.215
306	SLV 12	-2.93	-3.97	37.76	7.7565	0.0564	1.0301
306	SLV 13	-8.87	-0.1	48.53	9.306	0.0557	3.1115
306	SLV 14	-8.05	0.6	49.3	9.4361	0.0561	2.8253
306	SLV 15	-9.41	-2.44	46.75	8.9631	0.0519	3.2997
306	SLV 16	-8.59	-1.74	47.53	9.0932	0.0523	3.0135
306	CRTFP Ux+	0	0	0	0	0	0
306	CRTFP Ux-	0	0	0	0	0	0
306	CRTFP Uy+	0	0	0	0	0	0
306	CRTFP Uy-	0	0	0	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
307	SLU 1	0.44	0.01	33.29	6.0309	0.0522	-0.1503
307	SLU 2	0.46	-0.01	33.29	6.0289	0.0522	-0.1575
307	SLU 3	0.45	0.01	34.05	6.1567	0.0535	-0.1554
307	SLU 4	0.46	0	34.05	6.1555	0.0534	-0.1598
307	SLU 5	0.46	-0.02	33.79	6.1134	0.053	-0.1599
307	SLU 6	0.46	0	34.55	6.2413	0.0544	-0.1578
307	SLU 7	0.47	-0.01	34.55	6.24	0.0543	-0.1621
307	SLU 8	0.45	0	34.3	6.2001	0.054	-0.155
307	SLU 9	0.46	-0.01	34.3	6.1988	0.0539	-0.1593
307	SLU 10	0.48	0.04	37.01	6.6441	0.059	-0.1651
307	SLU 11	0.47	0.06	37.77	6.7719	0.0604	-0.163
307	SLU 12	0.49	0.05	37.77	6.7707	0.0603	-0.1674
307	SLU 13	0.49	0.03	37.52	6.7287	0.0599	-0.1674
307	SLU 14	0.48	0.05	38.28	6.8565	0.0612	-0.1653
307	SLU 15	0.49	0.04	38.28	6.8553	0.0612	-0.1697
307	SLU 16	0.47	0.04	38.03	6.8153	0.0608	-0.1625
307	SLU 17	0.48	0.03	38.02	6.8141	0.0608	-0.1669
307	SLU 18	0.47	0.08	38.61	6.9098	0.062	-0.1611
307	SLU 19	0.48	0.06	38.61	6.9086	0.062	-0.1655
307	SLU 20	0.47	0.07	39.12	6.9944	0.0629	-0.1635
307	SLU 21	0.49	0.06	39.12	6.9932	0.0629	-0.1678
307	SLU 22	0.5	0.07	36.87	6.6261	0.0584	-0.1742
307	SLU 23	0.52	0.05	36.87	6.624	0.0584	-0.1814
307	SLU 24	0.52	0.07	37.63	6.7518	0.0597	-0.1793
307	SLU 25	0.53	0.06	37.62	6.7506	0.0596	-0.1837
307	SLU 26	0.53	0.05	37.37	6.7086	0.0592	-0.1837
307	SLU 27	0.53	0.07	38.13	6.8364	0.0605	-0.1816
307	SLU 28	0.54	0.06	38.13	6.8352	0.0605	-0.186
307	SLU 29	0.52	0.06	37.88	6.7952	0.0601	-0.1788
307	SLU 30	0.53	0.05	37.88	6.794	0.0601	-0.1832
307	SLU 31	0.55	0.1	40.59	7.2392	0.0652	-0.189
307	SLU 32	0.54	0.12	41.35	7.3671	0.0666	-0.1869
307	SLU 33	0.55	0.11	41.35	7.3658	0.0665	-0.1912
307	SLU 34	0.55	0.1	41.1	7.3238	0.0661	-0.1913
307	SLU 35	0.55	0.11	41.86	7.4516	0.0674	-0.1892
307	SLU 36	0.56	0.1	41.86	7.4504	0.0674	-0.1936
307	SLU 37	0.54	0.11	41.61	7.4104	0.067	-0.1864
307	SLU 38	0.55	0.1	41.6	7.4092	0.067	-0.1908
307	SLU 39	0.54	0.14	42.19	7.505	0.0682	-0.185
307	SLU 40	0.55	0.13	42.19	7.5037	0.0682	-0.1894
307	SLU 41	0.54	0.13	42.7	7.5895	0.0691	-0.1874
307	SLU 42	0.56	0.12	42.69	7.5883	0.0691	-0.1917
307	SLU 43	0.54	-0.01	42.05	7.6362	0.0657	-0.1872
307	SLU 44	0.56	-0.03	42.05	7.6341	0.0657	-0.1944
307	SLU 45	0.56	-0.01	42.81	7.7619	0.067	-0.1923
307	SLU 46	0.57	-0.02	42.81	7.7607	0.067	-0.1967
307	SLU 47	0.57	-0.04	42.55	7.7187	0.0666	-0.1968
307	SLU 48	0.56	-0.02	43.31	7.8465	0.0679	-0.1947
307	SLU 49	0.58	-0.03	43.31	7.8453	0.0679	-0.199
307	SLU 50	0.56	-0.02	43.06	7.8053	0.0675	-0.1919
307	SLU 51	0.57	-0.03	43.06	7.8041	0.0675	-0.1962
307	SLU 52	0.59	0.02	45.77	8.2493	0.0726	-0.202
307	SLU 53	0.58	0.04	46.53	8.3772	0.0739	-0.1999
307	SLU 54	0.59	0.03	46.53	8.3759	0.0739	-0.2043
307	SLU 55	0.59	0.01	46.28	8.3339	0.0735	-0.2043
307	SLU 56	0.59	0.03	47.04	8.4617	0.0748	-0.2022
307	SLU 57	0.6	0.02	47.04	8.4605	0.0747	-0.2066
307	SLU 58	0.58	0.02	46.79	8.4205	0.0744	-0.1994
307	SLU 59	0.59	0.01	46.78	8.4193	0.0743	-0.2038
307	SLU 60	0.57	0.06	47.37	8.5151	0.0756	-0.198
307	SLU 61	0.59	0.04	47.37	8.5138	0.0756	-0.2024
307	SLU 62	0.58	0.05	47.88	8.5996	0.0765	-0.2004
307	SLU 63	0.59	0.04	47.88	8.5984	0.0764	-0.2047
307	SLU 64	0.61	0.05	45.63	8.2313	0.0719	-0.2111
307	SLU 65	0.63	0.03	45.63	8.2292	0.0719	-0.2183
307	SLU 66	0.63	0.05	46.39	8.3571	0.0732	-0.2162
307	SLU 67	0.64	0.04	46.38	8.3558	0.0732	-0.2206
307	SLU 68	0.64	0.03	46.13	8.3138	0.0728	-0.2206
307	SLU 69	0.63	0.05	46.89	8.4416	0.0741	-0.2185
307	SLU 70	0.65	0.04	46.89	8.4404	0.0741	-0.2229
307	SLU 71	0.62	0.04	46.64	8.4004	0.0737	-0.2157
307	SLU 72	0.64	0.03	46.64	8.3992	0.0737	-0.2201
307	SLU 73	0.65	0.08	49.35	8.8445	0.0788	-0.2259
307	SLU 74	0.65	0.1	50.11	8.9723	0.0801	-0.2238
307	SLU 75	0.66	0.09	50.11	8.9711	0.0801	-0.2281
307	SLU 76	0.66	0.08	49.86	8.929	0.0796	-0.2282
307	SLU 77	0.66	0.1	50.62	9.0569	0.081	-0.2261
307	SLU 78	0.67	0.08	50.62	9.0556	0.0809	-0.2305
307	SLU 79	0.65	0.09	50.37	9.0157	0.0806	-0.2233
307	SLU 80	0.66	0.08	50.36	9.0144	0.0805	-0.2277
307	SLU 81	0.64	0.12	50.95	9.1102	0.0818	-0.2219
307	SLU 82	0.66	0.11	50.95	9.109	0.0817	-0.2263
307	SLU 83	0.65	0.11	51.46	9.1948	0.0826	-0.2243
307	SLU 84	0.66	0.1	51.45	9.1935	0.0826	-0.2286
307	SLE RA 1	0.46	0.03	34.31	6.201	0.054	-0.1571
307	SLE RA 2	0.47	0.01	34.31	6.1996	0.0539	-0.162
307	SLE RA 3	0.46	0.03	34.82	6.2848	0.0548	-0.1606
307	SLE RA 4	0.47	0.02	34.82	6.284	0.0548	-0.1634
307	SLE RA 5	0.47	0.01	34.65	6.256	0.0545	-0.1635
307	SLE RA 6	0.47	0.02	35.16	6.3412	0.0554	-0.1621



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
307	SLE RA 7	0.48	0.02	35.15	6.3404	0.0554	-0.165
307	SLE RA 8	0.46	0.02	34.99	6.3137	0.0551	-0.1602
307	SLE RA 9	0.47	0.01	34.99	6.3129	0.0551	-0.1631
307	SLE RA 10	0.48	0.05	36.79	6.6097	0.0585	-0.167
307	SLE RA 11	0.48	0.06	37.3	6.695	0.0594	-0.1656
307	SLE RA 12	0.49	0.05	37.3	6.6941	0.0594	-0.1685
307	SLE RA 13	0.49	0.04	37.13	6.6661	0.0591	-0.1686
307	SLE RA 14	0.48	0.05	37.64	6.7514	0.06	-0.1672
307	SLE RA 15	0.49	0.05	37.64	6.7505	0.06	-0.17
307	SLE RA 16	0.48	0.05	37.47	6.7239	0.0597	-0.1653
307	SLE RA 17	0.49	0.04	37.47	6.7231	0.0597	-0.1682
307	SLE RA 18	0.48	0.07	37.86	6.7869	0.0605	-0.1644
307	SLE RA 19	0.48	0.06	37.86	6.7861	0.0605	-0.1672
307	SLE RA 20	0.48	0.07	38.2	6.8433	0.0611	-0.1659
307	SLE RA 21	0.49	0.06	38.2	6.8425	0.0611	-0.1688
307	SLE FR 1	0.46	0.03	34.31	6.201	0.054	-0.1571
307	SLE FR 2	0.46	0.02	34.31	6.2007	0.054	-0.1581
307	SLE FR 3	0.46	0.02	34.45	6.2235	0.0542	-0.1578
307	SLE FR 4	0.46	0.04	35.38	6.3765	0.0559	-0.1603
307	SLE FR 5	0.46	0.04	35.51	6.3993	0.0562	-0.1599
307	SLE FR 6	0.47	0.05	36.09	6.4939	0.0573	-0.1607
307	SLE QP 1	0.46	0.03	34.31	6.201	0.054	-0.1571
307	SLE QP 2	0.46	0.04	35.38	6.3767	0.0559	-0.1593
307	SLD 1	4.32	0.73	30.78	5.989	0.0639	-1.5133
307	SLD 2	4.68	1.05	31.11	6.034	0.0639	-1.6363
307	SLD 3	4.09	-0.29	30.04	5.8721	0.0623	-1.4327
307	SLD 4	4.45	0.02	30.37	5.9171	0.0624	-1.5557
307	SLD 5	1.91	1.75	35.06	6.4296	0.0606	-0.6658
307	SLD 6	2.14	1.95	35.28	6.4592	0.0607	-0.7466
307	SLD 7	1.14	-1.67	32.6	6.0401	0.0555	-0.3971
307	SLD 8	1.37	-1.47	32.82	6.0697	0.0556	-0.4779
307	SLD 9	-0.45	1.55	37.94	6.6838	0.0563	0.1593
307	SLD 10	-0.22	1.75	38.16	6.7134	0.0564	0.0785
307	SLD 11	-1.22	-1.88	35.48	6.2943	0.0512	0.428
307	SLD 12	-0.98	-1.67	35.7	6.3239	0.0513	0.3472
307	SLD 13	-3.52	0.06	40.38	6.8363	0.0495	1.2371
307	SLD 14	-3.17	0.37	40.71	6.8814	0.0496	1.1141
307	SLD 15	-3.75	-0.97	39.64	6.7195	0.048	1.3177
307	SLD 16	-3.4	-0.65	39.97	6.7645	0.048	1.1947
307	SLV 1	9.5	1.62	24.6	5.4671	0.0744	-3.3271
307	SLV 2	10.32	2.35	25.37	5.5719	0.0746	-3.6135
307	SLV 3	8.96	-0.7	22.92	5.1979	0.0709	-3.1392
307	SLV 4	9.78	0.03	23.69	5.3027	0.0711	-3.4257
307	SLV 5	3.84	3.91	34.57	6.494	0.0667	-1.345
307	SLV 6	4.38	4.38	35.07	6.5617	0.0669	-1.5301
307	SLV 7	2.06	-3.83	28.95	5.5967	0.0551	-0.7188
307	SLV 8	2.59	-3.36	29.44	5.6644	0.0552	-0.9038
307	SLV 9	-1.66	3.44	41.31	7.0891	0.0567	0.5852
307	SLV 10	-1.13	3.91	41.81	7.1568	0.0568	0.4002
307	SLV 11	-3.45	-4.31	35.69	6.1918	0.045	1.2114
307	SLV 12	-2.92	-3.84	36.18	6.2595	0.0451	1.0264
307	SLV 13	-8.86	0.05	47.07	7.4507	0.0408	3.1071
307	SLV 14	-8.04	0.78	47.84	7.5556	0.041	2.8206
307	SLV 15	-9.4	-2.27	45.38	7.1816	0.0373	3.2949
307	SLV 16	-8.58	-1.55	46.15	7.2864	0.0375	3.0085
307	CRTFP Ux+	0	0	0	0	0	0
307	CRTFP Ux-	0	0	0	0	0	0
307	CRTFP Uy+	0	0	0	0	0	0
307	CRTFP Uy-	0	0	0	0	0	0
308	SLU 1	0.44	0.07	31.92	4.8963	0.0385	-0.1521
308	SLU 2	0.46	0.05	31.92	4.8947	0.0385	-0.1594
308	SLU 3	0.45	0.07	32.65	4.994	0.0394	-0.1573
308	SLU 4	0.47	0.06	32.65	4.993	0.0394	-0.1617
308	SLU 5	0.47	0.04	32.4	4.9604	0.0391	-0.1617
308	SLU 6	0.46	0.06	33.13	5.0597	0.0401	-0.1597
308	SLU 7	0.47	0.05	33.13	5.0587	0.0401	-0.164
308	SLU 8	0.45	0.06	32.89	5.0277	0.0398	-0.1568
308	SLU 9	0.47	0.05	32.89	5.0267	0.0398	-0.1612
308	SLU 10	0.48	0.1	35.46	5.3662	0.0436	-0.167
308	SLU 11	0.48	0.12	36.19	5.4655	0.0446	-0.1649
308	SLU 12	0.49	0.11	36.19	5.4645	0.0446	-0.1693
308	SLU 13	0.49	0.1	35.95	5.4319	0.0443	-0.1693
308	SLU 14	0.48	0.12	36.67	5.5312	0.0453	-0.1673
308	SLU 15	0.5	0.11	36.67	5.5302	0.0452	-0.1717
308	SLU 16	0.48	0.11	36.43	5.4992	0.045	-0.1645
308	SLU 17	0.49	0.1	36.43	5.4982	0.045	-0.1688
308	SLU 18	0.47	0.15	36.98	5.5699	0.0459	-0.163
308	SLU 19	0.48	0.14	36.98	5.5689	0.0459	-0.1673
308	SLU 20	0.48	0.14	37.47	5.6356	0.0466	-0.1654
308	SLU 21	0.49	0.13	37.47	5.6346	0.0465	-0.1697
308	SLU 22	0.51	0.13	35.34	5.3553	0.0431	-0.1762
308	SLU 23	0.53	0.12	35.34	5.3537	0.043	-0.1834
308	SLU 24	0.52	0.14	36.06	5.453	0.044	-0.1814
308	SLU 25	0.54	0.13	36.06	5.452	0.044	-0.1857
308	SLU 26	0.54	0.11	35.82	5.4194	0.0437	-0.1858
308	SLU 27	0.53	0.13	36.55	5.5186	0.0447	-0.1837
308	SLU 28	0.54	0.12	36.54	5.5177	0.0446	-0.1881
308	SLU 29	0.52	0.13	36.3	5.4867	0.0444	-0.1809
308	SLU 30	0.54	0.11	36.3	5.4857	0.0444	-0.1852
308	SLU 31	0.55	0.17	38.88	5.8252	0.0482	-0.191





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
308	SLU 32	0.55	0.19	39.61	5.9245	0.0492	-0.189
308	SLU 33	0.56	0.18	39.61	5.9235	0.0492	-0.1934
308	SLU 34	0.56	0.17	39.36	5.8909	0.0489	-0.1934
308	SLU 35	0.55	0.19	40.09	5.9901	0.0498	-0.1914
308	SLU 36	0.57	0.18	40.09	5.9892	0.0498	-0.1957
308	SLU 37	0.55	0.18	39.85	5.9582	0.0496	-0.1885
308	SLU 38	0.56	0.17	39.85	5.9572	0.0495	-0.1929
308	SLU 39	0.54	0.21	40.4	6.0289	0.0505	-0.1871
308	SLU 40	0.55	0.2	40.4	6.0279	0.0505	-0.1914
308	SLU 41	0.55	0.21	40.88	6.0946	0.0511	-0.1894
308	SLU 42	0.56	0.2	40.88	6.0936	0.0511	-0.1938
308	SLU 43	0.55	0.06	40.33	6.2079	0.0485	-0.1895
308	SLU 44	0.57	0.05	40.33	6.2063	0.0484	-0.1967
308	SLU 45	0.56	0.07	41.05	6.3055	0.0494	-0.1947
308	SLU 46	0.58	0.05	41.05	6.3046	0.0494	-0.1991
308	SLU 47	0.58	0.04	40.81	6.272	0.0491	-0.1991
308	SLU 48	0.57	0.06	41.53	6.3712	0.0501	-0.1971
308	SLU 49	0.58	0.05	41.53	6.3703	0.05	-0.2014
308	SLU 50	0.56	0.05	41.29	6.3393	0.0498	-0.1942
308	SLU 51	0.57	0.04	41.29	6.3383	0.0498	-0.1986
308	SLU 52	0.59	0.1	43.87	6.6778	0.0536	-0.2044
308	SLU 53	0.59	0.12	44.6	6.777	0.0546	-0.2023
308	SLU 54	0.6	0.11	44.59	6.7761	0.0546	-0.2067
308	SLU 55	0.6	0.1	44.35	6.7435	0.0543	-0.2067
308	SLU 56	0.59	0.12	45.08	6.8427	0.0552	-0.2047
308	SLU 57	0.61	0.11	45.08	6.8418	0.0552	-0.209
308	SLU 58	0.58	0.11	44.84	6.8108	0.055	-0.2018
308	SLU 59	0.6	0.1	44.84	6.8098	0.0549	-0.2062
308	SLU 60	0.58	0.14	45.39	6.8814	0.0559	-0.2004
308	SLU 61	0.59	0.13	45.39	6.8805	0.0559	-0.2047
308	SLU 62	0.59	0.14	45.87	6.9471	0.0565	-0.2027
308	SLU 63	0.6	0.13	45.87	6.9462	0.0565	-0.2071
308	SLU 64	0.62	0.13	43.75	6.6668	0.0531	-0.2136
308	SLU 65	0.64	0.11	43.74	6.6652	0.053	-0.2208
308	SLU 66	0.63	0.13	44.47	6.7645	0.054	-0.2188
308	SLU 67	0.64	0.12	44.47	6.7635	0.054	-0.2231
308	SLU 68	0.64	0.11	44.23	6.7309	0.0537	-0.2232
308	SLU 69	0.64	0.13	44.95	6.8302	0.0546	-0.2211
308	SLU 70	0.65	0.12	44.95	6.8292	0.0546	-0.2255
308	SLU 71	0.63	0.12	44.71	6.7982	0.0544	-0.2183
308	SLU 72	0.64	0.11	44.71	6.7973	0.0543	-0.2226
308	SLU 73	0.66	0.17	47.29	7.1367	0.0582	-0.2284
308	SLU 74	0.65	0.19	48.01	7.236	0.0592	-0.2264
308	SLU 75	0.67	0.18	48.01	7.235	0.0591	-0.2307
308	SLU 76	0.67	0.16	47.77	7.2024	0.0589	-0.2308
308	SLU 77	0.66	0.18	48.49	7.3017	0.0598	-0.2288
308	SLU 78	0.67	0.17	48.49	7.3007	0.0598	-0.2331
308	SLU 79	0.65	0.18	48.25	7.2697	0.0596	-0.2259
308	SLU 80	0.67	0.17	48.25	7.2688	0.0595	-0.2302
308	SLU 81	0.65	0.21	48.81	7.3404	0.0605	-0.2244
308	SLU 82	0.66	0.2	48.81	7.3394	0.0604	-0.2288
308	SLU 83	0.66	0.21	49.29	7.4061	0.0611	-0.2268
308	SLU 84	0.67	0.2	49.29	7.4051	0.0611	-0.2312
308	SLE RA 1	0.46	0.09	32.9	5.0275	0.0398	-0.159
308	SLE RA 2	0.47	0.07	32.9	5.0264	0.0398	-0.1638
308	SLE RA 3	0.47	0.09	33.38	5.0926	0.0404	-0.1625
308	SLE RA 4	0.48	0.08	33.38	5.0919	0.0404	-0.1654
308	SLE RA 5	0.48	0.07	33.22	5.0702	0.0402	-0.1654
308	SLE RA 6	0.47	0.08	33.7	5.1364	0.0409	-0.164
308	SLE RA 7	0.48	0.08	33.7	5.1357	0.0408	-0.1669
308	SLE RA 8	0.47	0.08	33.54	5.1151	0.0407	-0.1621
308	SLE RA 9	0.48	0.07	33.54	5.1144	0.0407	-0.165
308	SLE RA 10	0.49	0.11	35.26	5.3407	0.0432	-0.1689
308	SLE RA 11	0.48	0.12	35.74	5.4069	0.0439	-0.1675
308	SLE RA 12	0.49	0.12	35.74	5.4063	0.0439	-0.1704
308	SLE RA 13	0.49	0.11	35.58	5.3845	0.0437	-0.1705
308	SLE RA 14	0.49	0.12	36.07	5.4507	0.0443	-0.1691
308	SLE RA 15	0.5	0.11	36.06	5.4501	0.0443	-0.172
308	SLE RA 16	0.48	0.12	35.9	5.4294	0.0441	-0.1672
308	SLE RA 17	0.49	0.11	35.9	5.4287	0.0441	-0.1701
308	SLE RA 18	0.48	0.14	36.27	5.4765	0.0447	-0.1662
308	SLE RA 19	0.49	0.13	36.27	5.4759	0.0447	-0.1691
308	SLE RA 20	0.49	0.14	36.6	5.5203	0.0452	-0.1678
308	SLE RA 21	0.49	0.13	36.59	5.5197	0.0452	-0.1707
308	SLE FR 1	0.46	0.09	32.9	5.0275	0.0398	-0.159
308	SLE FR 2	0.46	0.08	32.9	5.0273	0.0398	-0.16
308	SLE FR 3	0.46	0.09	33.03	5.045	0.04	-0.1596
308	SLE FR 4	0.47	0.1	33.91	5.162	0.0413	-0.1621
308	SLE FR 5	0.47	0.1	34.04	5.1797	0.0415	-0.1618
308	SLE FR 6	0.47	0.11	34.59	5.252	0.0423	-0.1626
308	SLE QP 1	0.46	0.09	32.9	5.0275	0.0398	-0.159
308	SLE QP 2	0.47	0.1	33.91	5.1622	0.0413	-0.1612
308	SLD 1	4.32	0.75	29.05	4.8478	0.0518	-1.5136
308	SLD 2	4.68	1.08	29.38	4.884	0.0517	-1.6367
308	SLD 3	4.09	-0.28	28.34	4.7572	0.0505	-1.4332
308	SLD 4	4.45	0.04	28.67	4.7935	0.0505	-1.5562
308	SLD 5	1.91	1.8	33.47	5.1988	0.0463	-0.6669
308	SLD 6	2.14	2.02	33.69	5.2226	0.0462	-0.7478
308	SLD 7	1.14	-1.64	31.1	4.8969	0.0423	-0.3988
308	SLD 8	1.38	-1.42	31.32	4.9207	0.0422	-0.4797



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
308	SLD 9	-0.44	1.62	36.5	5.4037	0.0404	0.1574
308	SLD 10	-0.21	1.84	36.72	5.4275	0.0403	0.0765
308	SLD 11	-1.21	-1.81	34.14	5.1018	0.0364	0.4254
308	SLD 12	-0.98	-1.6	34.35	5.1256	0.0363	0.3446
308	SLD 13	-3.52	0.16	39.15	5.5309	0.0321	1.2339
308	SLD 14	-3.16	0.49	39.48	5.5671	0.032	1.1109
308	SLD 15	-3.75	-0.87	38.44	5.4403	0.0309	1.3143
308	SLD 16	-3.39	-0.54	38.77	5.4766	0.0308	1.1913
308	SLV 1	9.49	1.57	22.51	4.4258	0.0657	-3.3254
308	SLV 2	10.32	2.34	23.28	4.5102	0.0655	-3.6119
308	SLV 3	8.96	-0.76	20.89	4.2146	0.063	-3.1379
308	SLV 4	9.78	0	21.66	4.2989	0.0628	-3.4244
308	SLV 5	3.84	3.95	32.82	5.2471	0.0528	-1.3452
308	SLV 6	4.38	4.44	33.32	5.3016	0.0527	-1.5302
308	SLV 7	2.06	-3.83	27.41	4.5429	0.0437	-0.7203
308	SLV 8	2.59	-3.34	27.91	4.5974	0.0435	-0.9054
308	SLV 9	-1.66	3.54	39.91	5.7269	0.039	0.5831
308	SLV 10	-1.13	4.03	40.41	5.7814	0.0389	0.398
308	SLV 11	-3.44	-4.24	34.51	5.0228	0.0299	1.2079
308	SLV 12	-2.91	-3.75	35	5.0773	0.0298	1.0228
308	SLV 13	-8.85	0.2	46.16	6.0254	0.0198	3.1021
308	SLV 14	-8.03	0.96	46.93	6.1098	0.0196	2.8156
308	SLV 15	-9.38	-2.13	44.54	5.8142	0.0171	3.2896
308	SLV 16	-8.56	-1.37	45.31	5.8986	0.0168	3.003
308	CRTFP Ux+	0	0	0	0	0	0
308	CRTFP Ux-	0	0	0	0	0	0
308	CRTFP Uy+	0	0	0	0	0	0
308	CRTFP Uy-	0	0	0	0	0	0
309	SLU 1	0.44	0.12	31.01	4.103	0.0222	-0.1535
309	SLU 2	0.46	0.1	31.01	4.1019	0.0221	-0.1608
309	SLU 3	0.46	0.12	31.71	4.181	0.0227	-0.1588
309	SLU 4	0.47	0.11	31.71	4.1803	0.0227	-0.1632
309	SLU 5	0.47	0.1	31.47	4.1543	0.0225	-0.1632
309	SLU 6	0.47	0.12	32.18	4.2334	0.0231	-0.1612
309	SLU 7	0.48	0.11	32.18	4.2327	0.023	-0.1656
309	SLU 8	0.46	0.11	31.94	4.2078	0.0229	-0.1583
309	SLU 9	0.47	0.1	31.94	4.2071	0.0229	-0.1627
309	SLU 10	0.49	0.17	34.42	4.4722	0.0253	-0.1684
309	SLU 11	0.48	0.19	35.13	4.5514	0.0259	-0.1665
309	SLU 12	0.49	0.18	35.13	4.5507	0.0258	-0.1708
309	SLU 13	0.49	0.16	34.89	4.5246	0.0257	-0.1708
309	SLU 14	0.49	0.18	35.59	4.6038	0.0262	-0.1688
309	SLU 15	0.5	0.17	35.59	4.6031	0.0262	-0.1732
309	SLU 16	0.48	0.18	35.36	4.5782	0.0261	-0.1659
309	SLU 17	0.49	0.17	35.36	4.5775	0.0261	-0.1703
309	SLU 18	0.48	0.21	35.89	4.6321	0.0267	-0.1644
309	SLU 19	0.49	0.2	35.89	4.6314	0.0267	-0.1688
309	SLU 20	0.48	0.21	36.36	4.6845	0.0271	-0.1668
309	SLU 21	0.5	0.2	36.36	4.6838	0.027	-0.1712
309	SLU 22	0.51	0.19	34.32	4.4663	0.0248	-0.1777
309	SLU 23	0.53	0.17	34.31	4.4651	0.0248	-0.185
309	SLU 24	0.53	0.19	35.02	4.5443	0.0253	-0.183
309	SLU 25	0.54	0.18	35.02	4.5436	0.0253	-0.1874
309	SLU 26	0.54	0.17	34.78	4.5175	0.0252	-0.1874
309	SLU 27	0.54	0.19	35.48	4.5966	0.0257	-0.1854
309	SLU 28	0.55	0.18	35.48	4.596	0.0257	-0.1897
309	SLU 29	0.53	0.18	35.25	4.571	0.0256	-0.1825
309	SLU 30	0.54	0.17	35.25	4.5704	0.0256	-0.1868
309	SLU 31	0.56	0.24	37.73	4.8355	0.0279	-0.1926
309	SLU 32	0.55	0.26	38.44	4.9146	0.0285	-0.1906
309	SLU 33	0.56	0.25	38.43	4.9139	0.0285	-0.195
309	SLU 34	0.56	0.23	38.2	4.8879	0.0283	-0.195
309	SLU 35	0.56	0.26	38.9	4.967	0.0289	-0.193
309	SLU 36	0.57	0.24	38.9	4.9663	0.0288	-0.1974
309	SLU 37	0.55	0.25	38.67	4.9414	0.0287	-0.1901
309	SLU 38	0.56	0.24	38.67	4.9407	0.0287	-0.1945
309	SLU 39	0.55	0.29	39.2	4.9954	0.0293	-0.1886
309	SLU 40	0.56	0.27	39.2	4.9947	0.0293	-0.193
309	SLU 41	0.55	0.28	39.66	5.0477	0.0297	-0.191
309	SLU 42	0.56	0.27	39.66	5.0471	0.0297	-0.1954
309	SLU 43	0.55	0.13	39.18	5.2094	0.0279	-0.1913
309	SLU 44	0.57	0.11	39.17	5.2083	0.0279	-0.1986
309	SLU 45	0.57	0.13	39.88	5.2874	0.0284	-0.1966
309	SLU 46	0.58	0.12	39.88	5.2867	0.0284	-0.2009
309	SLU 47	0.58	0.11	39.64	5.2606	0.0283	-0.201
309	SLU 48	0.58	0.13	40.35	5.3398	0.0288	-0.199
309	SLU 49	0.59	0.12	40.34	5.3391	0.0288	-0.2033
309	SLU 50	0.57	0.12	40.11	5.3142	0.0287	-0.1961
309	SLU 51	0.58	0.11	40.11	5.3135	0.0287	-0.2004
309	SLU 52	0.6	0.18	42.59	5.5786	0.031	-0.2062
309	SLU 53	0.59	0.2	43.3	5.6577	0.0316	-0.2042
309	SLU 54	0.6	0.19	43.3	5.6571	0.0316	-0.2086
309	SLU 55	0.6	0.17	43.06	5.631	0.0314	-0.2086
309	SLU 56	0.6	0.19	43.76	5.7101	0.032	-0.2066
309	SLU 57	0.61	0.18	43.76	5.7094	0.0319	-0.211
309	SLU 58	0.59	0.19	43.53	5.6845	0.0318	-0.2037
309	SLU 59	0.6	0.18	43.53	5.6838	0.0318	-0.2081
309	SLU 60	0.59	0.22	44.06	5.7385	0.0324	-0.2022
309	SLU 61	0.6	0.21	44.06	5.7378	0.0324	-0.2066
309	SLU 62	0.59	0.22	44.53	5.7909	0.0328	-0.2046



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
309	SLU 63	0.6	0.21	44.52	5.7902	0.0328	-0.209
309	SLU 64	0.62	0.2	42.48	5.5727	0.0306	-0.2155
309	SLU 65	0.64	0.19	42.48	5.5715	0.0305	-0.2227
309	SLU 66	0.64	0.21	43.19	5.6506	0.0311	-0.2208
309	SLU 67	0.65	0.2	43.19	5.6499	0.0311	-0.2251
309	SLU 68	0.65	0.18	42.95	5.6239	0.0309	-0.2251
309	SLU 69	0.64	0.2	43.65	5.703	0.0315	-0.2232
309	SLU 70	0.66	0.19	43.65	5.7023	0.0314	-0.2275
309	SLU 71	0.64	0.2	43.42	5.6774	0.0313	-0.2203
309	SLU 72	0.65	0.19	43.42	5.6767	0.0313	-0.2246
309	SLU 73	0.67	0.25	45.9	5.9419	0.0337	-0.2304
309	SLU 74	0.66	0.27	46.6	6.021	0.0342	-0.2284
309	SLU 75	0.67	0.26	46.6	6.0203	0.0342	-0.2328
309	SLU 76	0.67	0.25	46.37	5.9942	0.0341	-0.2328
309	SLU 77	0.67	0.27	47.07	6.0734	0.0346	-0.2308
309	SLU 78	0.68	0.26	47.07	6.0727	0.0346	-0.2351
309	SLU 79	0.66	0.26	46.84	6.0478	0.0345	-0.2279
309	SLU 80	0.67	0.25	46.83	6.0471	0.0345	-0.2323
309	SLU 81	0.65	0.3	47.37	6.1017	0.0351	-0.2264
309	SLU 82	0.67	0.29	47.37	6.101	0.0351	-0.2307
309	SLU 83	0.66	0.29	47.83	6.1541	0.0355	-0.2288
309	SLU 84	0.67	0.28	47.83	6.1534	0.0354	-0.2331
309	SLE RA 1	0.46	0.14	31.95	4.2068	0.0229	-0.1604
309	SLE RA 2	0.48	0.13	31.95	4.2061	0.0229	-0.1653
309	SLE RA 3	0.47	0.14	32.42	4.2588	0.0233	-0.164
309	SLE RA 4	0.48	0.14	32.42	4.2583	0.0233	-0.1669
309	SLE RA 5	0.48	0.13	32.26	4.241	0.0232	-0.1669
309	SLE RA 6	0.48	0.14	32.73	4.2937	0.0235	-0.1656
309	SLE RA 7	0.49	0.13	32.73	4.2933	0.0235	-0.1685
309	SLE RA 8	0.47	0.14	32.58	4.2767	0.0234	-0.1636
309	SLE RA 9	0.48	0.13	32.57	4.2762	0.0234	-0.1665
309	SLE RA 10	0.49	0.17	34.23	4.453	0.025	-0.1704
309	SLE RA 11	0.49	0.19	34.7	4.5057	0.0254	-0.169
309	SLE RA 12	0.5	0.18	34.7	4.5053	0.0254	-0.172
309	SLE RA 13	0.5	0.17	34.54	4.4879	0.0253	-0.172
309	SLE RA 14	0.49	0.18	35.01	4.5406	0.0256	-0.1706
309	SLE RA 15	0.5	0.18	35.01	4.5402	0.0256	-0.1736
309	SLE RA 16	0.49	0.18	34.85	4.5236	0.0255	-0.1687
309	SLE RA 17	0.5	0.17	34.85	4.5231	0.0255	-0.1716
309	SLE RA 18	0.49	0.2	35.21	4.5595	0.0259	-0.1677
309	SLE RA 19	0.49	0.2	35.21	4.5591	0.0259	-0.1706
309	SLE RA 20	0.49	0.2	35.52	4.5945	0.0262	-0.1693
309	SLE RA 21	0.5	0.19	35.52	4.594	0.0262	-0.1722
309	SLE FR 1	0.46	0.14	31.95	4.2068	0.0229	-0.1604
309	SLE FR 2	0.47	0.14	31.95	4.2067	0.0229	-0.1614
309	SLE FR 3	0.47	0.14	32.08	4.2208	0.023	-0.1611
309	SLE FR 4	0.47	0.16	32.93	4.3125	0.0238	-0.1636
309	SLE FR 5	0.47	0.16	33.05	4.3266	0.0239	-0.1633
309	SLE FR 6	0.47	0.17	33.58	4.3832	0.0244	-0.1641
309	SLE QP 1	0.46	0.14	31.95	4.2068	0.0229	-0.1604
309	SLE QP 2	0.47	0.16	32.93	4.3126	0.0238	-0.1626
309	SLD 1	4.32	0.77	27.72	4.0098	0.0375	-1.5132
309	SLD 2	4.68	1.11	28.05	4.0403	0.0372	-1.6362
309	SLD 3	4.09	-0.28	27.02	3.9353	0.0367	-1.433
309	SLD 4	4.45	0.07	27.36	3.9659	0.0363	-1.5559
309	SLD 5	1.91	1.87	32.36	4.3293	0.0294	-0.6675
309	SLD 6	2.14	2.1	32.58	4.3494	0.0292	-0.7483
309	SLD 7	1.15	-1.62	30.04	4.081	0.0264	-0.4001
309	SLD 8	1.38	-1.4	30.26	4.1011	0.0262	-0.4809
309	SLD 9	-0.44	1.72	35.6	4.5242	0.0215	0.1557
309	SLD 10	-0.21	1.94	35.82	4.5442	0.0213	0.0749
309	SLD 11	-1.2	-1.78	33.27	4.2759	0.0185	0.4231
309	SLD 12	-0.97	-1.55	33.49	4.296	0.0183	0.3423
309	SLD 13	-3.51	0.25	38.5	4.6594	0.0113	1.2307
309	SLD 14	-3.15	0.6	38.84	4.69	0.011	1.1078
309	SLD 15	-3.74	-0.79	37.8	4.585	0.0105	1.3109
309	SLD 16	-3.38	-0.45	38.14	4.6155	0.0101	1.188
309	SLV 1	9.48	1.54	20.71	3.6044	0.0559	-3.3224
309	SLV 2	10.31	2.35	21.5	3.6755	0.0552	-3.6088
309	SLV 3	8.95	-0.83	19.12	3.4283	0.0539	-3.1354
309	SLV 4	9.77	-0.02	19.9	3.4994	0.0531	-3.4218
309	SLV 5	3.84	4.03	31.55	4.355	0.0367	-1.3446
309	SLV 6	4.37	4.56	32.06	4.401	0.0363	-1.5296
309	SLV 7	2.06	-3.87	26.23	3.7679	0.0298	-0.7214
309	SLV 8	2.59	-3.35	26.73	3.8138	0.0294	-0.9063
309	SLV 9	-1.65	3.67	39.12	4.8115	0.0183	0.5811
309	SLV 10	-1.12	4.19	39.63	4.8574	0.0178	0.3961
309	SLV 11	-3.43	-4.24	33.8	4.2243	0.0114	1.2043
309	SLV 12	-2.9	-3.71	34.31	4.2702	0.011	1.0194
309	SLV 13	-8.83	0.34	45.96	5.1259	-0.0054	3.0966
309	SLV 14	-8.01	1.15	46.74	5.197	-0.0062	2.8102
309	SLV 15	-9.37	-2.03	44.36	4.9498	-0.0075	3.2835
309	SLV 16	-8.54	-1.22	45.14	5.0208	-0.0082	2.9972
309	CRTFP Ux+	0	0	0	0	0	0
309	CRTFP Ux-	0	0	0	0	0	0
309	CRTFP Uy+	0	0	0	0	0	0
309	CRTFP Uy-	0	0	0	0	0	0
310	SLU 1	0.45	0.17	30.61	3.6905	0.0039	-0.1545
310	SLU 2	0.47	0.15	30.61	3.6897	0.0039	-0.1618
310	SLU 3	0.46	0.18	31.3	3.7582	0.004	-0.1599



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
310	SLU 4	0.47	0.16	31.31	3.7578	0.004	-0.1643
310	SLU 5	0.47	0.15	31.07	3.7351	0.004	-0.1642
310	SLU 6	0.47	0.17	31.77	3.8036	0.0041	-0.1623
310	SLU 7	0.48	0.16	31.77	3.8031	0.004	-0.1667
310	SLU 8	0.46	0.17	31.53	3.7811	0.0041	-0.1594
310	SLU 9	0.47	0.15	31.53	3.7807	0.0041	-0.1638
310	SLU 10	0.49	0.23	33.97	4.0063	0.0048	-0.1694
310	SLU 11	0.48	0.25	34.66	4.0748	0.0049	-0.1675
310	SLU 12	0.5	0.24	34.66	4.0743	0.0049	-0.1719
310	SLU 13	0.5	0.22	34.43	4.0516	0.0049	-0.1719
310	SLU 14	0.49	0.25	35.12	4.1201	0.005	-0.1699
310	SLU 15	0.5	0.23	35.12	4.1197	0.0049	-0.1743
310	SLU 16	0.48	0.24	34.89	4.0976	0.005	-0.167
310	SLU 17	0.5	0.23	34.89	4.0972	0.005	-0.1714
310	SLU 18	0.48	0.28	35.41	4.1426	0.0052	-0.1654
310	SLU 19	0.49	0.27	35.41	4.1422	0.0052	-0.1698
310	SLU 20	0.49	0.27	35.87	4.188	0.0053	-0.1679
310	SLU 21	0.5	0.26	35.87	4.1875	0.0053	-0.1722
310	SLU 22	0.52	0.25	33.87	4.0033	0.0044	-0.1788
310	SLU 23	0.54	0.23	33.87	4.0026	0.0044	-0.1861
310	SLU 24	0.53	0.25	34.57	4.0711	0.0045	-0.1841
310	SLU 25	0.54	0.24	34.57	4.0707	0.0044	-0.1885
310	SLU 26	0.54	0.23	34.33	4.0479	0.0044	-0.1885
310	SLU 27	0.54	0.25	35.03	4.1164	0.0045	-0.1866
310	SLU 28	0.55	0.24	35.03	4.116	0.0045	-0.1909
310	SLU 29	0.53	0.24	34.79	4.094	0.0046	-0.1836
310	SLU 30	0.54	0.23	34.79	4.0936	0.0045	-0.188
310	SLU 31	0.56	0.3	37.23	4.3191	0.0053	-0.1937
310	SLU 32	0.55	0.33	37.92	4.3876	0.0054	-0.1918
310	SLU 33	0.57	0.31	37.92	4.3872	0.0053	-0.1961
310	SLU 34	0.57	0.3	37.69	4.3645	0.0053	-0.1961
310	SLU 35	0.56	0.32	38.38	4.433	0.0054	-0.1942
310	SLU 36	0.57	0.31	38.38	4.4325	0.0054	-0.1985
310	SLU 37	0.55	0.32	38.15	4.4105	0.0055	-0.1913
310	SLU 38	0.57	0.3	38.15	4.4101	0.0054	-0.1956
310	SLU 39	0.55	0.35	38.67	4.4555	0.0057	-0.1897
310	SLU 40	0.56	0.34	38.67	4.4551	0.0057	-0.194
310	SLU 41	0.56	0.35	39.13	4.5008	0.0058	-0.1921
310	SLU 42	0.57	0.34	39.13	4.5004	0.0057	-0.1965
310	SLU 43	0.56	0.2	38.68	4.6903	0.005	-0.1926
310	SLU 44	0.58	0.18	38.68	4.6896	0.0049	-0.1999
310	SLU 45	0.57	0.2	39.37	4.7581	0.005	-0.198
310	SLU 46	0.58	0.19	39.37	4.7577	0.005	-0.2023
310	SLU 47	0.58	0.18	39.14	4.7349	0.005	-0.2023
310	SLU 48	0.58	0.2	39.83	4.8034	0.0051	-0.2004
310	SLU 49	0.59	0.19	39.83	4.803	0.0051	-0.2047
310	SLU 50	0.57	0.19	39.6	4.781	0.0051	-0.1974
310	SLU 51	0.58	0.18	39.6	4.7805	0.0051	-0.2018
310	SLU 52	0.6	0.25	42.03	5.0061	0.0058	-0.2075
310	SLU 53	0.59	0.28	42.73	5.0746	0.0059	-0.2056
310	SLU 54	0.61	0.26	42.73	5.0742	0.0059	-0.2099
310	SLU 55	0.61	0.25	42.49	5.0514	0.0059	-0.2099
310	SLU 56	0.6	0.27	43.19	5.1199	0.006	-0.208
310	SLU 57	0.61	0.26	43.19	5.1195	0.006	-0.2124
310	SLU 58	0.59	0.27	42.95	5.0975	0.006	-0.2051
310	SLU 59	0.61	0.25	42.95	5.0971	0.006	-0.2094
310	SLU 60	0.59	0.3	43.47	5.1425	0.0063	-0.2035
310	SLU 61	0.6	0.29	43.47	5.1421	0.0062	-0.2078
310	SLU 62	0.6	0.3	43.93	5.1878	0.0063	-0.2059
310	SLU 63	0.61	0.29	43.93	5.1874	0.0063	-0.2103
310	SLU 64	0.63	0.28	41.94	5.0032	0.0054	-0.2168
310	SLU 65	0.65	0.26	41.94	5.0025	0.0054	-0.2241
310	SLU 66	0.64	0.28	42.63	5.071	0.0055	-0.2222
310	SLU 67	0.65	0.27	42.63	5.0706	0.0055	-0.2266
310	SLU 68	0.65	0.25	42.4	5.0478	0.0055	-0.2265
310	SLU 69	0.65	0.27	43.09	5.1163	0.0056	-0.2246
310	SLU 70	0.66	0.26	43.09	5.1159	0.0055	-0.229
310	SLU 71	0.64	0.27	42.86	5.0939	0.0056	-0.2217
310	SLU 72	0.65	0.26	42.86	5.0934	0.0056	-0.226
310	SLU 73	0.67	0.33	45.29	5.319	0.0063	-0.2317
310	SLU 74	0.66	0.35	45.99	5.3875	0.0064	-0.2298
310	SLU 75	0.68	0.34	45.99	5.3871	0.0063	-0.2342
310	SLU 76	0.68	0.33	45.75	5.3643	0.0064	-0.2342
310	SLU 77	0.67	0.35	46.45	5.4328	0.0065	-0.2322
310	SLU 78	0.68	0.34	46.45	5.4324	0.0064	-0.2366
310	SLU 79	0.66	0.34	46.21	5.4104	0.0065	-0.2293
310	SLU 80	0.68	0.33	46.21	5.4099	0.0065	-0.2337
310	SLU 81	0.66	0.38	46.73	5.4554	0.0067	-0.2277
310	SLU 82	0.67	0.37	46.73	5.4549	0.0067	-0.2321
310	SLU 83	0.67	0.38	47.19	5.5007	0.0068	-0.2301
310	SLU 84	0.68	0.37	47.19	5.5003	0.0068	-0.2345
310	SLE RA 1	0.47	0.2	31.54	3.7799	0.0041	-0.1615
310	SLE RA 2	0.48	0.18	31.54	3.7794	0.004	-0.1663
310	SLE RA 3	0.48	0.2	32.01	3.825	0.0041	-0.165
310	SLE RA 4	0.49	0.19	32.01	3.8248	0.0041	-0.1679
310	SLE RA 5	0.48	0.18	31.85	3.8096	0.0041	-0.1679
310	SLE RA 6	0.48	0.19	32.31	3.8553	0.0042	-0.1667
310	SLE RA 7	0.49	0.19	32.31	3.855	0.0041	-0.1696
310	SLE RA 8	0.48	0.19	32.16	3.8403	0.0042	-0.1647
310	SLE RA 9	0.48	0.18	32.16	3.84	0.0042	-0.1676



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
310	SLE RA 10	0.5	0.23	33.78	3.9904	0.0046	-0.1714
310	SLE RA 11	0.49	0.25	34.24	4.0361	0.0047	-0.1701
310	SLE RA 12	0.5	0.24	34.24	4.0358	0.0047	-0.173
310	SLE RA 13	0.5	0.23	34.09	4.0206	0.0047	-0.173
310	SLE RA 14	0.5	0.24	34.55	4.0663	0.0048	-0.1717
310	SLE RA 15	0.5	0.24	34.55	4.066	0.0047	-0.1746
310	SLE RA 16	0.49	0.24	34.39	4.0513	0.0048	-0.1698
310	SLE RA 17	0.5	0.23	34.39	4.051	0.0048	-0.1727
310	SLE RA 18	0.49	0.27	34.74	4.0813	0.0049	-0.1687
310	SLE RA 19	0.5	0.26	34.74	4.081	0.0049	-0.1716
310	SLE RA 20	0.49	0.26	35.05	4.1115	0.005	-0.1703
310	SLE RA 21	0.5	0.26	35.05	4.1112	0.005	-0.1733
310	SLE FR 1	0.47	0.2	31.54	3.7799	0.0041	-0.1615
310	SLE FR 2	0.47	0.19	31.54	3.7798	0.0041	-0.1624
310	SLE FR 3	0.47	0.19	31.67	3.7919	0.0041	-0.1621
310	SLE FR 4	0.48	0.21	32.5	3.8702	0.0043	-0.1646
310	SLE FR 5	0.47	0.22	32.62	3.8824	0.0044	-0.1643
310	SLE FR 6	0.48	0.23	33.14	3.9306	0.0045	-0.1651
310	SLE QP 1	0.47	0.2	31.54	3.7799	0.0041	-0.1615
310	SLE QP 2	0.47	0.22	32.5	3.8703	0.0043	-0.1636
310	SLD 1	4.32	0.8	26.84	3.503	0.0212	-1.512
310	SLD 2	4.67	1.18	27.19	3.5317	0.0206	-1.6348
310	SLD 3	4.09	-0.27	26.13	3.4349	0.0223	-1.432
310	SLD 4	4.44	0.1	26.48	3.4637	0.0217	-1.5548
310	SLD 5	1.91	1.96	31.81	3.8581	0.008	-0.6676
310	SLD 6	2.14	2.21	32.04	3.8771	0.0076	-0.7483
310	SLD 7	1.15	-1.63	29.46	3.6314	0.0114	-0.4009
310	SLD 8	1.38	-1.39	29.69	3.6503	0.011	-0.4816
310	SLD 9	-0.43	1.82	35.32	4.0903	-0.0023	0.1543
310	SLD 10	-0.2	2.07	35.55	4.1092	-0.0027	0.0736
310	SLD 11	-1.2	-1.77	32.96	3.8635	0.0011	0.421
310	SLD 12	-0.96	-1.53	33.19	3.8824	0.0007	0.3403
310	SLD 13	-3.5	0.33	38.52	4.2769	-0.013	1.2275
310	SLD 14	-3.14	0.71	38.87	4.3057	-0.0136	1.1047
310	SLD 15	-3.73	-0.74	37.82	4.2088	-0.012	1.3075
310	SLD 16	-3.37	-0.37	38.17	4.2376	-0.0126	1.1847
310	SLV 1	9.47	1.55	19.23	3.0116	0.0439	-3.3182
310	SLV 2	10.3	2.42	20.04	3.0786	0.0425	-3.6042
310	SLV 3	8.94	-0.89	17.61	2.8497	0.0463	-3.1317
310	SLV 4	9.76	-0.02	18.42	2.9167	0.0449	-3.4178
310	SLV 5	3.84	4.17	30.84	3.8466	0.0128	-1.3433
310	SLV 6	4.37	4.73	31.36	3.8899	0.0119	-1.5281
310	SLV 7	2.06	-3.97	25.44	3.307	0.0208	-0.7218
310	SLV 8	2.59	-3.41	25.96	3.3502	0.0199	-0.9066
310	SLV 9	-1.65	3.84	39.04	4.3903	-0.0113	0.5793
310	SLV 10	-1.12	4.4	39.57	4.4336	-0.0121	0.3945
310	SLV 11	-3.43	-4.3	33.64	3.8507	-0.0033	1.2008
310	SLV 12	-2.89	-3.74	34.17	3.8939	-0.0041	1.016
310	SLV 13	-8.82	0.46	46.58	4.8239	-0.0363	3.0905
310	SLV 14	-7.99	1.32	47.39	4.8909	-0.0376	2.8044
310	SLV 15	-9.35	-1.99	44.96	4.662	-0.0339	3.2769
310	SLV 16	-8.53	-1.12	45.77	4.729	-0.0352	2.9909
310	CRTFP Ux+	0	0	0	0	0	0
310	CRTFP Ux-	0	0	0	0	0	0
310	CRTFP Uy+	0	0	0	0	0	0
310	CRTFP Uy-	0	0	0	0	0	0
311	SLU 1	0.45	0.23	30.79	3.6939	-0.016	-0.1551
311	SLU 2	0.47	0.21	30.79	3.6936	-0.0161	-0.1624
311	SLU 3	0.46	0.23	31.49	3.7619	-0.0165	-0.1605
311	SLU 4	0.48	0.22	31.49	3.7618	-0.0165	-0.1649
311	SLU 5	0.48	0.2	31.25	3.7388	-0.0163	-0.1648
311	SLU 6	0.47	0.23	31.95	3.8071	-0.0167	-0.163
311	SLU 7	0.48	0.21	31.95	3.8069	-0.0168	-0.1673
311	SLU 8	0.46	0.22	31.71	3.7842	-0.0165	-0.16
311	SLU 9	0.47	0.21	31.71	3.784	-0.0166	-0.1644
311	SLU 10	0.49	0.29	34.16	4.0077	-0.0176	-0.17
311	SLU 11	0.49	0.31	34.85	4.076	-0.018	-0.1681
311	SLU 12	0.5	0.3	34.85	4.0758	-0.0181	-0.1725
311	SLU 13	0.5	0.29	34.62	4.0528	-0.0179	-0.1724
311	SLU 14	0.49	0.31	35.32	4.1211	-0.0183	-0.1705
311	SLU 15	0.51	0.3	35.32	4.1209	-0.0183	-0.1749
311	SLU 16	0.48	0.3	35.08	4.0982	-0.0181	-0.1676
311	SLU 17	0.5	0.29	35.08	4.0981	-0.0181	-0.172
311	SLU 18	0.48	0.34	35.6	4.1426	-0.0182	-0.1659
311	SLU 19	0.49	0.33	35.6	4.1424	-0.0183	-0.1703
311	SLU 20	0.49	0.34	36.06	4.1877	-0.0185	-0.1684
311	SLU 21	0.5	0.33	36.06	4.1875	-0.0185	-0.1728
311	SLU 22	0.52	0.31	34.07	4.0062	-0.0179	-0.1794
311	SLU 23	0.54	0.29	34.07	4.0059	-0.018	-0.1866
311	SLU 24	0.53	0.31	34.77	4.0742	-0.0184	-0.1848
311	SLU 25	0.55	0.3	34.77	4.074	-0.0184	-0.1891
311	SLU 26	0.55	0.29	34.53	4.051	-0.0182	-0.1891
311	SLU 27	0.54	0.31	35.23	4.1193	-0.0187	-0.1872
311	SLU 28	0.55	0.3	35.23	4.1191	-0.0187	-0.1916
311	SLU 29	0.53	0.3	35	4.0965	-0.0185	-0.1842
311	SLU 30	0.54	0.29	35	4.0963	-0.0185	-0.1886
311	SLU 31	0.56	0.37	37.44	4.3199	-0.0196	-0.1942
311	SLU 32	0.56	0.39	38.14	4.3882	-0.02	-0.1923
311	SLU 33	0.57	0.38	38.14	4.388	-0.02	-0.1967
311	SLU 34	0.57	0.37	37.9	4.365	-0.0198	-0.1967



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
311	SLU 35	0.56	0.39	38.6	4.4334	-0.0202	-0.1948
311	SLU 36	0.58	0.38	38.6	4.4332	-0.0203	-0.1991
311	SLU 37	0.55	0.38	38.36	4.4105	-0.02	-0.1918
311	SLU 38	0.57	0.37	38.36	4.4103	-0.0201	-0.1962
311	SLU 39	0.55	0.43	38.88	4.4548	-0.0202	-0.1902
311	SLU 40	0.56	0.41	38.88	4.4546	-0.0202	-0.1945
311	SLU 41	0.56	0.42	39.34	4.4999	-0.0204	-0.1926
311	SLU 42	0.57	0.41	39.34	4.4998	-0.0205	-0.197
311	SLU 43	0.56	0.26	38.9	4.6951	-0.0201	-0.1933
311	SLU 44	0.58	0.25	38.9	4.6948	-0.0202	-0.2006
311	SLU 45	0.57	0.27	39.6	4.7631	-0.0206	-0.1987
311	SLU 46	0.59	0.26	39.6	4.7629	-0.0206	-0.2031
311	SLU 47	0.59	0.24	39.36	4.7399	-0.0204	-0.2031
311	SLU 48	0.58	0.26	40.06	4.8082	-0.0209	-0.2012
311	SLU 49	0.59	0.25	40.06	4.808	-0.0209	-0.2056
311	SLU 50	0.57	0.26	39.82	4.7853	-0.0207	-0.1982
311	SLU 51	0.59	0.25	39.83	4.7852	-0.0207	-0.2026
311	SLU 52	0.6	0.33	42.27	5.0088	-0.0218	-0.2082
311	SLU 53	0.6	0.35	42.96	5.0771	-0.0222	-0.2063
311	SLU 54	0.61	0.34	42.97	5.0769	-0.0222	-0.2107
311	SLU 55	0.61	0.33	42.73	5.0539	-0.022	-0.2106
311	SLU 56	0.6	0.35	43.43	5.1222	-0.0224	-0.2088
311	SLU 57	0.62	0.34	43.43	5.1221	-0.0225	-0.2131
311	SLU 58	0.6	0.34	43.19	5.0994	-0.0222	-0.2058
311	SLU 59	0.61	0.33	43.19	5.0992	-0.0223	-0.2102
311	SLU 60	0.59	0.38	43.71	5.1437	-0.0224	-0.2042
311	SLU 61	0.6	0.37	43.71	5.1435	-0.0224	-0.2085
311	SLU 62	0.6	0.38	44.17	5.1888	-0.0226	-0.2066
311	SLU 63	0.61	0.37	44.17	5.1886	-0.0227	-0.211
311	SLU 64	0.63	0.35	42.18	5.0073	-0.0221	-0.2176
311	SLU 65	0.65	0.33	42.18	5.007	-0.0221	-0.2249
311	SLU 66	0.64	0.35	42.88	5.0753	-0.0225	-0.223
311	SLU 67	0.66	0.34	42.88	5.0751	-0.0226	-0.2273
311	SLU 68	0.66	0.32	42.65	5.0521	-0.0224	-0.2273
311	SLU 69	0.65	0.35	43.34	5.1205	-0.0228	-0.2254
311	SLU 70	0.66	0.34	43.34	5.1203	-0.0228	-0.2298
311	SLU 71	0.64	0.34	43.11	5.0976	-0.0226	-0.2225
311	SLU 72	0.66	0.33	43.11	5.0974	-0.0226	-0.2268
311	SLU 73	0.67	0.41	45.55	5.321	-0.0237	-0.2324
311	SLU 74	0.67	0.43	46.25	5.3893	-0.0241	-0.2306
311	SLU 75	0.68	0.42	46.25	5.3892	-0.0241	-0.2349
311	SLU 76	0.68	0.41	46.01	5.3662	-0.024	-0.2349
311	SLU 77	0.67	0.43	46.71	5.4345	-0.0244	-0.233
311	SLU 78	0.69	0.42	46.71	5.4343	-0.0244	-0.2374
311	SLU 79	0.67	0.42	46.47	5.4116	-0.0242	-0.2301
311	SLU 80	0.68	0.41	46.47	5.4114	-0.0242	-0.2344
311	SLU 81	0.66	0.47	46.99	5.4559	-0.0243	-0.2284
311	SLU 82	0.67	0.45	46.99	5.4557	-0.0244	-0.2328
311	SLU 83	0.67	0.46	47.45	5.5011	-0.0246	-0.2309
311	SLU 84	0.68	0.45	47.45	5.5009	-0.0246	-0.2352
311	SLE RA 1	0.47	0.25	31.73	3.7832	-0.0166	-0.162
311	SLE RA 2	0.48	0.24	31.73	3.783	-0.0166	-0.1669
311	SLE RA 3	0.48	0.25	32.19	3.8285	-0.0169	-0.1656
311	SLE RA 4	0.49	0.24	32.19	3.8284	-0.0169	-0.1686
311	SLE RA 5	0.49	0.23	32.04	3.813	-0.0168	-0.1685
311	SLE RA 6	0.48	0.25	32.5	3.8586	-0.017	-0.1673
311	SLE RA 7	0.49	0.24	32.5	3.8585	-0.0171	-0.1702
311	SLE RA 8	0.48	0.24	32.34	3.8433	-0.0169	-0.1653
311	SLE RA 9	0.49	0.24	32.34	3.8432	-0.0169	-0.1682
311	SLE RA 10	0.5	0.29	33.97	3.9923	-0.0176	-0.1719
311	SLE RA 11	0.49	0.31	34.44	4.0378	-0.0179	-0.1707
311	SLE RA 12	0.5	0.3	34.44	4.0377	-0.0179	-0.1736
311	SLE RA 13	0.5	0.29	34.28	4.0224	-0.0178	-0.1736
311	SLE RA 14	0.5	0.3	34.74	4.0679	-0.0181	-0.1723
311	SLE RA 15	0.51	0.3	34.75	4.0678	-0.0181	-0.1752
311	SLE RA 16	0.49	0.3	34.59	4.0527	-0.018	-0.1704
311	SLE RA 17	0.5	0.29	34.59	4.0526	-0.018	-0.1733
311	SLE RA 18	0.49	0.33	34.93	4.0822	-0.0181	-0.1693
311	SLE RA 19	0.5	0.32	34.93	4.0821	-0.0181	-0.1722
311	SLE RA 20	0.49	0.33	35.24	4.1123	-0.0182	-0.1709
311	SLE RA 21	0.5	0.32	35.24	4.1122	-0.0182	-0.1738
311	SLE FR 1	0.47	0.25	31.73	3.7832	-0.0166	-0.162
311	SLE FR 2	0.47	0.25	31.73	3.7831	-0.0166	-0.163
311	SLE FR 3	0.47	0.25	31.85	3.7952	-0.0166	-0.1627
311	SLE FR 4	0.48	0.27	32.69	3.8728	-0.017	-0.1652
311	SLE FR 5	0.48	0.27	32.81	3.8849	-0.0171	-0.1649
311	SLE FR 6	0.48	0.29	33.33	3.9327	-0.0173	-0.1657
311	SLE QP 1	0.47	0.25	31.73	3.7832	-0.0166	-0.162
311	SLE QP 2	0.47	0.27	32.69	3.8729	-0.017	-0.1642
311	SLD 1	4.31	0.86	26.45	3.3492	0.0046	-1.5099
311	SLD 2	4.67	1.26	26.82	3.3812	0.0037	-1.6326
311	SLD 3	4.09	-0.26	25.71	3.2794	0.0062	-1.4301
311	SLD 4	4.44	0.14	26.08	3.3115	0.0053	-1.5528
311	SLD 5	1.91	2.08	31.87	3.8159	-0.0129	-0.667
311	SLD 6	2.14	2.34	32.12	3.8369	-0.0135	-0.7477
311	SLD 7	1.15	-1.66	29.4	3.5833	-0.0074	-0.4011
311	SLD 8	1.38	-1.4	29.65	3.6044	-0.008	-0.4817
311	SLD 9	-0.43	1.94	35.73	4.1414	-0.026	0.1533
311	SLD 10	-0.2	2.21	35.97	4.1625	-0.0266	0.0726
311	SLD 11	-1.19	-1.8	33.26	3.9088	-0.0206	0.4192



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
311	SLD 12	-0.96	-1.54	33.5	3.9299	-0.0211	0.3386
311	SLD 13	-3.49	0.4	39.3	4.4343	-0.0393	1.2244
311	SLD 14	-3.14	0.81	39.67	4.4663	-0.0402	1.1017
311	SLD 15	-3.72	-0.72	38.56	4.3645	-0.0377	1.3042
311	SLD 16	-3.36	-0.32	38.93	4.3966	-0.0386	1.1815
311	SLV 1	9.46	1.61	18.06	2.6479	0.0335	-3.3126
311	SLV 2	10.28	2.55	18.93	2.7225	0.0315	-3.5983
311	SLV 3	8.92	-0.94	16.37	2.4826	0.0373	-3.1266
311	SLV 4	9.75	0	17.23	2.5573	0.0353	-3.4123
311	SLV 5	3.83	4.37	30.72	3.7431	-0.0073	-1.3413
311	SLV 6	4.37	4.97	31.28	3.7913	-0.0086	-1.5258
311	SLV 7	2.06	-4.11	25.07	3.1923	0.0054	-0.7215
311	SLV 8	2.59	-3.5	25.63	3.2405	0.0041	-0.906
311	SLV 9	-1.64	4.05	39.75	4.5053	-0.0381	0.5776
311	SLV 10	-1.11	4.65	40.31	4.5535	-0.0394	0.3931
311	SLV 11	-3.42	-4.43	34.09	3.9545	-0.0254	1.1974
311	SLV 12	-2.88	-3.82	34.65	4.0027	-0.0267	1.0129
311	SLV 13	-8.8	0.54	48.14	5.1885	-0.0693	3.0839
311	SLV 14	-7.98	1.48	49.01	5.2631	-0.0713	2.7982
311	SLV 15	-9.33	-2	46.45	5.0233	-0.0655	3.2698
311	SLV 16	-8.51	-1.06	47.31	5.0979	-0.0675	2.9842
311	CRTFP Ux+	0	0	0	0	0	0
311	CRTFP Ux-	0	0	0	0	0	0
311	CRTFP Uy+	0	0	0	0	0	0
311	CRTFP Uy-	0	0	0	0	0	0
312	SLU 1	0.45	0.28	31.59	4.154	-0.0377	-0.1552
312	SLU 2	0.47	0.26	31.59	4.1542	-0.0378	-0.1625
312	SLU 3	0.46	0.28	32.31	4.2338	-0.0387	-0.1606
312	SLU 4	0.48	0.27	32.31	4.2339	-0.0388	-0.165
312	SLU 5	0.48	0.25	32.07	4.2067	-0.0384	-0.1649
312	SLU 6	0.47	0.28	32.79	4.2863	-0.0394	-0.1631
312	SLU 7	0.48	0.27	32.79	4.2864	-0.0394	-0.1674
312	SLU 8	0.46	0.27	32.54	4.259	-0.039	-0.1601
312	SLU 9	0.47	0.26	32.54	4.2591	-0.039	-0.1645
312	SLU 10	0.49	0.35	35.04	4.5218	-0.042	-0.17
312	SLU 11	0.49	0.38	35.76	4.6014	-0.043	-0.1681
312	SLU 12	0.5	0.36	35.77	4.6015	-0.043	-0.1725
312	SLU 13	0.5	0.35	35.52	4.5743	-0.0426	-0.1724
312	SLU 14	0.49	0.37	36.24	4.6539	-0.0436	-0.1706
312	SLU 15	0.51	0.36	36.24	4.654	-0.0436	-0.175
312	SLU 16	0.48	0.37	35.99	4.6266	-0.0432	-0.1676
312	SLU 17	0.5	0.35	36	4.6267	-0.0432	-0.172
312	SLU 18	0.48	0.41	36.52	4.6792	-0.0438	-0.1659
312	SLU 19	0.49	0.4	36.52	4.6793	-0.0438	-0.1703
312	SLU 20	0.49	0.41	37	4.7317	-0.0444	-0.1684
312	SLU 21	0.5	0.4	37	4.7318	-0.0444	-0.1727
312	SLU 22	0.52	0.37	34.97	4.5204	-0.0423	-0.1794
312	SLU 23	0.54	0.35	34.97	4.5206	-0.0423	-0.1866
312	SLU 24	0.53	0.37	35.69	4.6002	-0.0433	-0.1848
312	SLU 25	0.55	0.36	35.69	4.6002	-0.0433	-0.1892
312	SLU 26	0.55	0.34	35.45	4.573	-0.0429	-0.1891
312	SLU 27	0.54	0.37	36.17	4.6527	-0.0439	-0.1873
312	SLU 28	0.55	0.36	36.17	4.6527	-0.0439	-0.1916
312	SLU 29	0.53	0.36	35.92	4.6254	-0.0435	-0.1843
312	SLU 30	0.54	0.35	35.92	4.6255	-0.0435	-0.1886
312	SLU 31	0.56	0.44	38.42	4.8882	-0.0465	-0.1941
312	SLU 32	0.56	0.46	39.14	4.9678	-0.0475	-0.1923
312	SLU 33	0.57	0.45	39.14	4.9679	-0.0476	-0.1967
312	SLU 34	0.57	0.44	38.9	4.9407	-0.0472	-0.1966
312	SLU 35	0.56	0.46	39.62	5.0203	-0.0481	-0.1948
312	SLU 36	0.58	0.45	39.62	5.0204	-0.0482	-0.1991
312	SLU 37	0.55	0.45	39.37	4.993	-0.0478	-0.1918
312	SLU 38	0.57	0.44	39.37	4.9931	-0.0478	-0.1962
312	SLU 39	0.55	0.5	39.9	5.0456	-0.0483	-0.1901
312	SLU 40	0.56	0.49	39.9	5.0457	-0.0483	-0.1944
312	SLU 41	0.56	0.5	40.38	5.0981	-0.0489	-0.1926
312	SLU 42	0.57	0.49	40.38	5.0982	-0.049	-0.1969
312	SLU 43	0.56	0.33	39.91	5.2746	-0.0475	-0.1935
312	SLU 44	0.58	0.31	39.91	5.2748	-0.0475	-0.2007
312	SLU 45	0.57	0.33	40.63	5.3544	-0.0485	-0.1989
312	SLU 46	0.59	0.32	40.63	5.3545	-0.0485	-0.2033
312	SLU 47	0.59	0.31	40.39	5.3273	-0.0481	-0.2032
312	SLU 48	0.58	0.33	41.1	5.4069	-0.0491	-0.2014
312	SLU 49	0.59	0.32	41.11	5.4069	-0.0491	-0.2057
312	SLU 50	0.57	0.32	40.86	5.3796	-0.0487	-0.1984
312	SLU 51	0.59	0.31	40.86	5.3797	-0.0487	-0.2027
312	SLU 52	0.6	0.4	43.36	5.6424	-0.0517	-0.2082
312	SLU 53	0.6	0.43	44.08	5.722	-0.0527	-0.2064
312	SLU 54	0.61	0.42	44.08	5.7221	-0.0528	-0.2108
312	SLU 55	0.61	0.4	43.84	5.6949	-0.0524	-0.2107
312	SLU 56	0.6	0.43	44.56	5.7745	-0.0533	-0.2089
312	SLU 57	0.62	0.41	44.56	5.7746	-0.0534	-0.2132
312	SLU 58	0.6	0.42	44.31	5.7472	-0.053	-0.2059
312	SLU 59	0.61	0.41	44.31	5.7473	-0.053	-0.2102
312	SLU 60	0.59	0.46	44.84	5.7998	-0.0535	-0.2042
312	SLU 61	0.6	0.45	44.84	5.7999	-0.0535	-0.2085
312	SLU 62	0.6	0.46	45.32	5.8523	-0.0541	-0.2066
312	SLU 63	0.61	0.45	45.32	5.8524	-0.0542	-0.211
312	SLU 64	0.63	0.42	43.29	5.641	-0.052	-0.2176
312	SLU 65	0.65	0.4	43.29	5.6411	-0.0521	-0.2249



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
312	SLU 66	0.64	0.42	44.01	5.7208	-0.053	-0.2231
312	SLU 67	0.66	0.41	44.01	5.7208	-0.0531	-0.2274
312	SLU 68	0.66	0.4	43.77	5.6936	-0.0527	-0.2274
312	SLU 69	0.65	0.42	44.48	5.7733	-0.0537	-0.2255
312	SLU 70	0.66	0.41	44.49	5.7733	-0.0537	-0.2299
312	SLU 71	0.64	0.41	44.24	5.746	-0.0533	-0.2226
312	SLU 72	0.66	0.4	44.24	5.7461	-0.0533	-0.2269
312	SLU 73	0.67	0.49	46.74	6.0088	-0.0563	-0.2324
312	SLU 74	0.67	0.52	47.46	6.0884	-0.0573	-0.2306
312	SLU 75	0.68	0.5	47.46	6.0885	-0.0573	-0.2349
312	SLU 76	0.68	0.49	47.22	6.0613	-0.0569	-0.2349
312	SLU 77	0.67	0.51	47.94	6.1409	-0.0579	-0.233
312	SLU 78	0.69	0.5	47.94	6.1409	-0.0579	-0.2374
312	SLU 79	0.67	0.51	47.69	6.1136	-0.0575	-0.2301
312	SLU 80	0.68	0.5	47.69	6.1137	-0.0575	-0.2344
312	SLU 81	0.66	0.55	48.22	6.1662	-0.0581	-0.2284
312	SLU 82	0.67	0.54	48.22	6.1663	-0.0581	-0.2327
312	SLU 83	0.67	0.55	48.69	6.2187	-0.0587	-0.2308
312	SLU 84	0.68	0.54	48.7	6.2187	-0.0587	-0.2352
312	SLE RA 1	0.47	0.3	32.55	4.2587	-0.039	-0.1621
312	SLE RA 2	0.48	0.29	32.56	4.2588	-0.039	-0.1669
312	SLE RA 3	0.48	0.3	33.04	4.3119	-0.0397	-0.1657
312	SLE RA 4	0.49	0.3	33.04	4.3119	-0.0397	-0.1686
312	SLE RA 5	0.49	0.29	32.87	4.2938	-0.0395	-0.1686
312	SLE RA 6	0.48	0.3	33.35	4.3469	-0.0401	-0.1674
312	SLE RA 7	0.49	0.3	33.35	4.3469	-0.0401	-0.1703
312	SLE RA 8	0.48	0.3	33.19	4.3287	-0.0398	-0.1654
312	SLE RA 9	0.49	0.29	33.19	4.3288	-0.0399	-0.1683
312	SLE RA 10	0.5	0.35	34.86	4.5039	-0.0419	-0.1719
312	SLE RA 11	0.49	0.37	35.34	4.557	-0.0425	-0.1707
312	SLE RA 12	0.5	0.36	35.34	4.557	-0.0425	-0.1736
312	SLE RA 13	0.5	0.35	35.18	4.5389	-0.0423	-0.1736
312	SLE RA 14	0.5	0.37	35.65	4.592	-0.0429	-0.1724
312	SLE RA 15	0.51	0.36	35.66	4.592	-0.043	-0.1753
312	SLE RA 16	0.49	0.36	35.49	4.5738	-0.0427	-0.1704
312	SLE RA 17	0.5	0.35	35.49	4.5738	-0.0427	-0.1733
312	SLE RA 18	0.49	0.39	35.84	4.6088	-0.0431	-0.1692
312	SLE RA 19	0.5	0.38	35.84	4.6089	-0.0431	-0.1722
312	SLE RA 20	0.49	0.39	36.16	4.6438	-0.0435	-0.1709
312	SLE RA 21	0.5	0.38	36.16	4.6439	-0.0435	-0.1738
312	SLE FR 1	0.47	0.3	32.55	4.2587	-0.039	-0.1621
312	SLE FR 2	0.47	0.3	32.55	4.2587	-0.039	-0.1631
312	SLE FR 3	0.47	0.3	32.68	4.2727	-0.0392	-0.1628
312	SLE FR 4	0.48	0.33	33.54	4.3638	-0.0402	-0.1652
312	SLE FR 5	0.48	0.33	33.67	4.3777	-0.0404	-0.1649
312	SLE FR 6	0.48	0.35	34.2	4.4338	-0.041	-0.1657
312	SLE QP 1	0.47	0.3	32.55	4.2587	-0.039	-0.1621
312	SLE QP 2	0.47	0.33	33.54	4.3637	-0.0402	-0.1642
312	SLD 1	4.31	0.94	26.57	3.5762	-0.0132	-1.507
312	SLD 2	4.66	1.38	26.97	3.6177	-0.0144	-1.6295
312	SLD 3	4.08	-0.24	25.77	3.4933	-0.0107	-1.4274
312	SLD 4	4.43	0.2	26.18	3.5348	-0.0119	-1.5499
312	SLD 5	1.91	2.22	32.59	4.2458	-0.0356	-0.6659
312	SLD 6	2.14	2.51	32.85	4.273	-0.0364	-0.7464
312	SLD 7	1.15	-1.71	29.93	3.9695	-0.0274	-0.4006
312	SLD 8	1.38	-1.42	30.19	3.9968	-0.0282	-0.4811
312	SLD 9	-0.43	2.08	36.89	4.7307	-0.0522	0.1526
312	SLD 10	-0.2	2.37	37.16	4.758	-0.053	0.0721
312	SLD 11	-1.19	-1.85	34.23	4.4545	-0.044	0.4179
312	SLD 12	-0.96	-1.56	34.49	4.4817	-0.0448	0.3374
312	SLD 13	-3.48	0.46	40.91	5.1927	-0.0685	1.2214
312	SLD 14	-3.13	0.9	41.31	5.2342	-0.0697	1.0989
312	SLD 15	-3.71	-0.72	40.11	5.1098	-0.0661	1.301
312	SLD 16	-3.36	-0.28	40.51	5.1513	-0.0673	1.1785
312	SLV 1	9.44	1.71	17.21	2.5203	0.0232	-3.3057
312	SLV 2	10.26	2.73	18.15	2.6168	0.0203	-3.5909
312	SLV 3	8.91	-0.96	15.38	2.3263	0.0288	-3.1202
312	SLV 4	9.73	0.06	16.32	2.4228	0.026	-3.4055
312	SLV 5	3.83	4.62	31.26	4.0883	-0.0293	-1.3386
312	SLV 6	4.36	5.28	31.87	4.1506	-0.0312	-1.5229
312	SLV 7	2.06	-4.29	25.15	3.4416	-0.0104	-0.7204
312	SLV 8	2.59	-3.63	25.76	3.5039	-0.0122	-0.9047
312	SLV 9	-1.64	4.28	41.33	5.2236	-0.0682	0.5762
312	SLV 10	-1.11	4.95	41.93	5.2859	-0.0701	0.392
312	SLV 11	-3.41	-4.62	35.22	4.5769	-0.0493	1.1944
312	SLV 12	-2.88	-3.96	35.82	4.6392	-0.0511	1.0101
312	SLV 13	-8.78	0.6	50.77	6.3047	-0.1065	3.077
312	SLV 14	-7.96	1.62	51.7	6.4012	-0.1093	2.7918
312	SLV 15	-9.31	-2.08	48.93	6.1107	-0.1008	3.2624
312	SLV 16	-8.49	-1.05	49.87	6.2072	-0.1036	2.9772
312	CRTFP Ux+	0	0	0	0	0	0
312	CRTFP Ux-	0	0	0	0	0	0
312	CRTFP Uy+	0	0	0	0	0	0
312	CRTFP Uy-	0	0	0	0	0	0
313	SLU 1	0.45	0.33	33.07	5.1179	-0.0612	-0.1548
313	SLU 2	0.47	0.31	33.07	5.1186	-0.0612	-0.162
313	SLU 3	0.46	0.33	33.83	5.2222	-0.0628	-0.1602
313	SLU 4	0.47	0.32	33.83	5.2226	-0.0628	-0.1645
313	SLU 5	0.47	0.3	33.57	5.1868	-0.0623	-0.1645
313	SLU 6	0.47	0.33	34.33	5.2904	-0.0638	-0.1627





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
313	SLU 7	0.48	0.32	34.33	5.2908	-0.0639	-0.167
313	SLU 8	0.46	0.32	34.07	5.2543	-0.0632	-0.1597
313	SLU 9	0.47	0.31	34.07	5.2547	-0.0633	-0.164
313	SLU 10	0.49	0.41	36.69	5.6014	-0.0684	-0.1694
313	SLU 11	0.48	0.44	37.45	5.705	-0.0699	-0.1676
313	SLU 12	0.5	0.42	37.45	5.7054	-0.07	-0.1719
313	SLU 13	0.5	0.41	37.2	5.6696	-0.0694	-0.1719
313	SLU 14	0.49	0.43	37.95	5.7732	-0.071	-0.1701
313	SLU 15	0.5	0.42	37.95	5.7736	-0.071	-0.1744
313	SLU 16	0.48	0.43	37.69	5.7372	-0.0703	-0.1671
313	SLU 17	0.5	0.41	37.69	5.7376	-0.0704	-0.1714
313	SLU 18	0.48	0.48	38.24	5.8077	-0.0714	-0.1653
313	SLU 19	0.49	0.46	38.25	5.8081	-0.0714	-0.1697
313	SLU 20	0.49	0.47	38.74	5.8759	-0.0724	-0.1678
313	SLU 21	0.5	0.46	38.75	5.8763	-0.0724	-0.1721
313	SLU 22	0.52	0.42	36.62	5.5991	-0.0686	-0.1788
313	SLU 23	0.54	0.4	36.63	5.5997	-0.0686	-0.186
313	SLU 24	0.53	0.43	37.39	5.7034	-0.0702	-0.1842
313	SLU 25	0.54	0.42	37.39	5.7037	-0.0702	-0.1886
313	SLU 26	0.54	0.4	37.13	5.6679	-0.0696	-0.1885
313	SLU 27	0.54	0.43	37.89	5.7716	-0.0712	-0.1867
313	SLU 28	0.55	0.41	37.89	5.7719	-0.0712	-0.1911
313	SLU 29	0.53	0.42	37.63	5.7355	-0.0706	-0.1837
313	SLU 30	0.54	0.41	37.63	5.7359	-0.0706	-0.1881
313	SLU 31	0.56	0.51	40.25	6.0826	-0.0757	-0.1934
313	SLU 32	0.55	0.53	41.01	6.1862	-0.0773	-0.1916
313	SLU 33	0.57	0.52	41.01	6.1866	-0.0773	-0.196
313	SLU 34	0.57	0.5	40.75	6.1508	-0.0768	-0.1959
313	SLU 35	0.56	0.53	41.51	6.2544	-0.0783	-0.1941
313	SLU 36	0.57	0.52	41.51	6.2548	-0.0784	-0.1985
313	SLU 37	0.55	0.52	41.25	6.2183	-0.0777	-0.1911
313	SLU 38	0.56	0.51	41.25	6.2187	-0.0778	-0.1955
313	SLU 39	0.55	0.57	41.8	6.2888	-0.0787	-0.1894
313	SLU 40	0.56	0.56	41.8	6.2892	-0.0788	-0.1937
313	SLU 41	0.55	0.57	42.3	6.357	-0.0798	-0.1918
313	SLU 42	0.57	0.56	42.3	6.3574	-0.0798	-0.1962
313	SLU 43	0.56	0.39	41.77	6.4883	-0.077	-0.1929
313	SLU 44	0.58	0.37	41.77	6.489	-0.0771	-0.2002
313	SLU 45	0.57	0.4	42.53	6.5926	-0.0786	-0.1984
313	SLU 46	0.59	0.38	42.53	6.593	-0.0787	-0.2027
313	SLU 47	0.58	0.37	42.27	6.5572	-0.0781	-0.2026
313	SLU 48	0.58	0.39	43.03	6.6608	-0.0797	-0.2008
313	SLU 49	0.59	0.38	43.03	6.6612	-0.0797	-0.2052
313	SLU 50	0.57	0.39	42.77	6.6247	-0.0791	-0.1979
313	SLU 51	0.58	0.38	42.77	6.6251	-0.0791	-0.2022
313	SLU 52	0.6	0.48	45.4	6.9718	-0.0842	-0.2076
313	SLU 53	0.59	0.5	46.15	7.0754	-0.0858	-0.2058
313	SLU 54	0.61	0.49	46.15	7.0758	-0.0858	-0.2101
313	SLU 55	0.61	0.47	45.9	7.04	-0.0852	-0.21
313	SLU 56	0.6	0.5	46.65	7.1436	-0.0868	-0.2082
313	SLU 57	0.61	0.49	46.66	7.144	-0.0868	-0.2126
313	SLU 58	0.59	0.49	46.39	7.1076	-0.0862	-0.2053
313	SLU 59	0.61	0.48	46.39	7.108	-0.0862	-0.2096
313	SLU 60	0.59	0.54	46.94	7.1781	-0.0872	-0.2035
313	SLU 61	0.6	0.53	46.95	7.1785	-0.0872	-0.2079
313	SLU 62	0.6	0.54	47.44	7.2463	-0.0882	-0.206
313	SLU 63	0.61	0.53	47.45	7.2467	-0.0882	-0.2103
313	SLU 64	0.63	0.49	45.33	6.9695	-0.0844	-0.217
313	SLU 65	0.65	0.47	45.33	6.9701	-0.0844	-0.2242
313	SLU 66	0.64	0.49	46.09	7.0738	-0.086	-0.2224
313	SLU 67	0.65	0.48	46.09	7.0741	-0.086	-0.2268
313	SLU 68	0.65	0.46	45.83	7.0383	-0.0855	-0.2267
313	SLU 69	0.65	0.49	46.59	7.142	-0.087	-0.2249
313	SLU 70	0.66	0.48	46.59	7.1424	-0.0871	-0.2292
313	SLU 71	0.64	0.48	46.33	7.1059	-0.0864	-0.2219
313	SLU 72	0.65	0.47	46.33	7.1063	-0.0865	-0.2263
313	SLU 73	0.67	0.57	48.95	7.453	-0.0916	-0.2316
313	SLU 74	0.66	0.6	49.71	7.5566	-0.0931	-0.2298
313	SLU 75	0.68	0.58	49.71	7.557	-0.0932	-0.2342
313	SLU 76	0.68	0.57	49.45	7.5212	-0.0926	-0.2341
313	SLU 77	0.67	0.59	50.21	7.6248	-0.0942	-0.2323
313	SLU 78	0.68	0.58	50.21	7.6252	-0.0942	-0.2366
313	SLU 79	0.66	0.59	49.95	7.5887	-0.0936	-0.2293
313	SLU 80	0.68	0.58	49.95	7.5891	-0.0936	-0.2337
313	SLU 81	0.66	0.64	50.5	7.6593	-0.0946	-0.2276
313	SLU 82	0.67	0.62	50.5	7.6596	-0.0946	-0.2319
313	SLU 83	0.67	0.63	51	7.7275	-0.0956	-0.23
313	SLU 84	0.68	0.62	51	7.7278	-0.0956	-0.2344
313	SLE RA 1	0.47	0.35	34.08	5.2554	-0.0633	-0.1616
313	SLE RA 2	0.48	0.34	34.09	5.2558	-0.0633	-0.1665
313	SLE RA 3	0.48	0.36	34.59	5.3249	-0.0644	-0.1653
313	SLE RA 4	0.49	0.35	34.59	5.3252	-0.0644	-0.1682
313	SLE RA 5	0.49	0.34	34.42	5.3013	-0.064	-0.1681
313	SLE RA 6	0.48	0.36	34.93	5.3704	-0.0651	-0.1669
313	SLE RA 7	0.49	0.35	34.93	5.3706	-0.0651	-0.1698
313	SLE RA 8	0.48	0.35	34.75	5.3463	-0.0647	-0.1649
313	SLE RA 9	0.48	0.34	34.75	5.3466	-0.0647	-0.1678
313	SLE RA 10	0.5	0.41	36.5	5.5777	-0.0681	-0.1714
313	SLE RA 11	0.49	0.43	37.01	5.6468	-0.0691	-0.1702
313	SLE RA 12	0.5	0.42	37.01	5.6471	-0.0691	-0.1731



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
313	SLE RA 13	0.5	0.41	36.84	5.6232	-0.0688	-0.173
313	SLE RA 14	0.5	0.43	37.34	5.6923	-0.0698	-0.1718
313	SLE RA 15	0.5	0.42	37.34	5.6925	-0.0698	-0.1747
313	SLE RA 16	0.49	0.42	37.17	5.6682	-0.0694	-0.1698
313	SLE RA 17	0.5	0.41	37.17	5.6685	-0.0694	-0.1727
313	SLE RA 18	0.49	0.45	37.53	5.7152	-0.0701	-0.1687
313	SLE RA 19	0.5	0.44	37.54	5.7155	-0.0701	-0.1716
313	SLE RA 20	0.49	0.45	37.87	5.7607	-0.0708	-0.1703
313	SLE RA 21	0.5	0.44	37.87	5.761	-0.0708	-0.1732
313	SLE FR 1	0.47	0.35	34.08	5.2554	-0.0633	-0.1616
313	SLE FR 2	0.47	0.35	34.08	5.2555	-0.0633	-0.1626
313	SLE FR 3	0.47	0.35	34.22	5.2736	-0.0636	-0.1623
313	SLE FR 4	0.48	0.38	35.12	5.3934	-0.0653	-0.1647
313	SLE FR 5	0.47	0.38	35.25	5.4115	-0.0656	-0.1644
313	SLE FR 6	0.48	0.4	35.81	5.4853	-0.0667	-0.1651
313	SLE QP 1	0.47	0.35	34.08	5.2554	-0.0633	-0.1616
313	SLE QP 2	0.47	0.38	35.12	5.3933	-0.0653	-0.1637
313	SLD 1	4.3	1.02	27.25	4.2184	-0.0319	-1.5033
313	SLD 2	4.65	1.51	27.69	4.2765	-0.0335	-1.6256
313	SLD 3	4.07	-0.22	26.36	4.1048	-0.0286	-1.4239
313	SLD 4	4.42	0.26	26.8	4.1629	-0.0301	-1.5462
313	SLD 5	1.9	2.38	34.02	5.2028	-0.0602	-0.6642
313	SLD 6	2.13	2.7	34.31	5.241	-0.0612	-0.7446
313	SLD 7	1.14	-1.78	31.07	4.8241	-0.0489	-0.3995
313	SLD 8	1.38	-1.46	31.36	4.8623	-0.0499	-0.4799
313	SLD 9	-0.43	2.23	38.88	5.9244	-0.0807	0.1524
313	SLD 10	-0.2	2.54	39.17	5.9626	-0.0818	0.072
313	SLD 11	-1.19	-1.93	35.93	5.5457	-0.0695	0.4171
313	SLD 12	-0.96	-1.61	36.22	5.5839	-0.0705	0.3367
313	SLD 13	-3.48	0.51	43.43	6.6238	-0.1005	1.2187
313	SLD 14	-3.12	0.99	43.88	6.6819	-0.1021	1.0964
313	SLD 15	-3.7	-0.74	42.55	6.5102	-0.0972	1.2981
313	SLD 16	-3.35	-0.26	42.99	6.5683	-0.0987	1.1758
313	SLV 1	9.42	1.84	16.67	2.6417	0.0129	-3.2976
313	SLV 2	10.24	2.96	17.7	2.777	0.0093	-3.5824
313	SLV 3	8.89	-0.99	14.64	2.3784	0.0207	-3.1126
313	SLV 4	9.71	0.14	15.67	2.5137	0.017	-3.3974
313	SLV 5	3.82	4.91	32.49	4.9437	-0.053	-1.3353
313	SLV 6	4.35	5.63	33.16	5.0311	-0.0553	-1.5192
313	SLV 7	2.05	-4.5	25.71	4.0662	-0.0271	-0.7186
313	SLV 8	2.58	-3.78	26.38	4.1536	-0.0295	-0.9025
313	SLV 9	-1.64	4.54	43.86	6.6331	-0.1012	0.575
313	SLV 10	-1.1	5.27	44.52	6.7205	-0.1035	0.3911
313	SLV 11	-3.41	-4.87	37.08	5.7556	-0.0753	1.1917
313	SLV 12	-2.87	-4.14	37.75	5.8429	-0.0777	1.0078
313	SLV 13	-8.77	0.63	54.56	8.273	-0.1477	3.07
313	SLV 14	-7.94	1.75	55.6	8.4083	-0.1513	2.7852
313	SLV 15	-9.3	-2.19	52.53	8.0097	-0.1399	3.255
313	SLV 16	-8.47	-1.07	53.57	8.145	-0.1436	2.9702
313	CRTFP Ux+	0	0	0	0	0	0
313	CRTFP Ux-	0	0	0	0	0	0
313	CRTFP Uy+	0	0	0	0	0	0
313	CRTFP Uy-	0	0	0	0	0	0
314	SLU 1	0.44	0.37	35.27	6.6359	-0.0861	-0.1538
314	SLU 2	0.46	0.35	35.28	6.6372	-0.0862	-0.1611
314	SLU 3	0.46	0.38	36.09	6.7789	-0.0884	-0.1593
314	SLU 4	0.47	0.36	36.1	6.7797	-0.0884	-0.1636
314	SLU 5	0.47	0.35	35.82	6.7304	-0.0876	-0.1635
314	SLU 6	0.47	0.38	36.63	6.872	-0.0898	-0.1617
314	SLU 7	0.48	0.36	36.63	6.8728	-0.0899	-0.1661
314	SLU 8	0.46	0.37	36.35	6.8222	-0.089	-0.1587
314	SLU 9	0.47	0.35	36.35	6.823	-0.089	-0.1631
314	SLU 10	0.49	0.46	39.16	7.303	-0.0964	-0.1683
314	SLU 11	0.48	0.49	39.97	7.4446	-0.0986	-0.1665
314	SLU 12	0.49	0.48	39.98	7.4454	-0.0986	-0.1709
314	SLU 13	0.49	0.46	39.7	7.3961	-0.0978	-0.1708
314	SLU 14	0.49	0.49	40.51	7.5378	-0.1	-0.169
314	SLU 15	0.5	0.48	40.52	7.5385	-0.1	-0.1733
314	SLU 16	0.48	0.48	40.23	7.488	-0.0992	-0.166
314	SLU 17	0.49	0.47	40.23	7.4887	-0.0992	-0.1703
314	SLU 18	0.47	0.53	40.82	7.587	-0.1007	-0.1642
314	SLU 19	0.49	0.52	40.82	7.5878	-0.1007	-0.1686
314	SLU 20	0.48	0.53	41.36	7.6801	-0.1021	-0.1667
314	SLU 21	0.49	0.52	41.36	7.6809	-0.1021	-0.171
314	SLU 22	0.51	0.47	39.1	7.2987	-0.0965	-0.1777
314	SLU 23	0.53	0.45	39.1	7.3	-0.0966	-0.1849
314	SLU 24	0.53	0.48	39.92	7.4417	-0.0988	-0.1831
314	SLU 25	0.54	0.47	39.92	7.4424	-0.0988	-0.1875
314	SLU 26	0.54	0.45	39.64	7.3931	-0.098	-0.1874
314	SLU 27	0.54	0.48	40.45	7.5348	-0.1002	-0.1856
314	SLU 28	0.55	0.47	40.46	7.5356	-0.1003	-0.1899
314	SLU 29	0.53	0.47	40.17	7.485	-0.0994	-0.1826
314	SLU 30	0.54	0.46	40.18	7.4858	-0.0994	-0.1869
314	SLU 31	0.55	0.57	42.98	7.9657	-0.1067	-0.1922
314	SLU 32	0.55	0.59	43.8	8.1074	-0.109	-0.1904
314	SLU 33	0.56	0.58	43.8	8.1082	-0.109	-0.1947
314	SLU 34	0.56	0.57	43.52	8.0589	-0.1082	-0.1947
314	SLU 35	0.56	0.59	44.34	8.2005	-0.1104	-0.1929
314	SLU 36	0.57	0.58	44.34	8.2013	-0.1104	-0.1972
314	SLU 37	0.55	0.58	44.05	8.1507	-0.1096	-0.1899



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
314	SLU 38	0.56	0.57	44.06	8.1515	-0.1096	-0.1942
314	SLU 39	0.54	0.64	44.64	8.2498	-0.1111	-0.1881
314	SLU 40	0.56	0.62	44.65	8.2505	-0.1111	-0.1924
314	SLU 41	0.55	0.64	45.18	8.3429	-0.1125	-0.1905
314	SLU 42	0.56	0.62	45.18	8.3437	-0.1125	-0.1949
314	SLU 43	0.55	0.45	44.54	8.3995	-0.1084	-0.1918
314	SLU 44	0.57	0.42	44.55	8.4008	-0.1085	-0.199
314	SLU 45	0.57	0.45	45.36	8.5424	-0.1107	-0.1972
314	SLU 46	0.58	0.44	45.37	8.5432	-0.1107	-0.2016
314	SLU 47	0.58	0.42	45.09	8.4939	-0.1099	-0.2015
314	SLU 48	0.58	0.45	45.9	8.6356	-0.1121	-0.1997
314	SLU 49	0.59	0.44	45.9	8.6363	-0.1122	-0.204
314	SLU 50	0.57	0.44	45.62	8.5858	-0.1113	-0.1967
314	SLU 51	0.58	0.43	45.62	8.5865	-0.1113	-0.201
314	SLU 52	0.6	0.54	48.43	9.0665	-0.1186	-0.2063
314	SLU 53	0.59	0.57	49.25	9.2082	-0.1209	-0.2045
314	SLU 54	0.6	0.55	49.25	9.209	-0.1209	-0.2088
314	SLU 55	0.6	0.54	48.97	9.1596	-0.1201	-0.2087
314	SLU 56	0.6	0.57	49.78	9.3013	-0.1223	-0.207
314	SLU 57	0.61	0.55	49.79	9.3021	-0.1223	-0.2113
314	SLU 58	0.59	0.56	49.5	9.2515	-0.1215	-0.204
314	SLU 59	0.6	0.55	49.5	9.2523	-0.1215	-0.2083
314	SLU 60	0.58	0.61	50.09	9.3506	-0.1229	-0.2022
314	SLU 61	0.6	0.6	50.09	9.3513	-0.123	-0.2065
314	SLU 62	0.59	0.61	50.63	9.4437	-0.1244	-0.2046
314	SLU 63	0.6	0.6	50.63	9.4445	-0.1244	-0.209
314	SLU 64	0.62	0.55	48.37	9.0623	-0.1188	-0.2157
314	SLU 65	0.64	0.53	48.37	9.0635	-0.1189	-0.2229
314	SLU 66	0.64	0.56	49.19	9.2052	-0.1211	-0.2211
314	SLU 67	0.65	0.54	49.19	9.206	-0.1211	-0.2254
314	SLU 68	0.65	0.53	48.91	9.1567	-0.1203	-0.2253
314	SLU 69	0.64	0.55	49.72	9.2983	-0.1225	-0.2236
314	SLU 70	0.66	0.54	49.73	9.2991	-0.1225	-0.2279
314	SLU 71	0.64	0.55	49.44	9.2485	-0.1217	-0.2206
314	SLU 72	0.65	0.53	49.45	9.2493	-0.1217	-0.2249
314	SLU 73	0.66	0.64	52.26	9.7293	-0.129	-0.2302
314	SLU 74	0.66	0.67	53.07	9.871	-0.1312	-0.2284
314	SLU 75	0.67	0.66	53.07	9.8717	-0.1313	-0.2327
314	SLU 76	0.67	0.64	52.79	9.8224	-0.1305	-0.2326
314	SLU 77	0.67	0.67	53.61	9.9641	-0.1327	-0.2308
314	SLU 78	0.68	0.66	53.61	9.9649	-0.1327	-0.2352
314	SLU 79	0.66	0.66	53.32	9.9143	-0.1319	-0.2279
314	SLU 80	0.67	0.65	53.33	9.915	-0.1319	-0.2322
314	SLU 81	0.65	0.71	53.91	10.0133	-0.1333	-0.2261
314	SLU 82	0.67	0.7	53.92	10.0141	-0.1334	-0.2304
314	SLU 83	0.66	0.71	54.45	10.1065	-0.1348	-0.2285
314	SLU 84	0.67	0.7	54.45	10.1072	-0.1348	-0.2328
314	SLE RA 1	0.46	0.4	36.37	6.8253	-0.0891	-0.1607
314	SLE RA 2	0.48	0.39	36.37	6.8262	-0.0891	-0.1655
314	SLE RA 3	0.47	0.4	36.91	6.9206	-0.0906	-0.1643
314	SLE RA 4	0.48	0.4	36.91	6.9211	-0.0906	-0.1672
314	SLE RA 5	0.48	0.38	36.73	6.8882	-0.0901	-0.1671
314	SLE RA 6	0.48	0.4	37.27	6.9827	-0.0916	-0.1659
314	SLE RA 7	0.49	0.39	37.27	6.9832	-0.0916	-0.1688
314	SLE RA 8	0.47	0.4	37.08	6.9495	-0.091	-0.1639
314	SLE RA 9	0.48	0.39	37.08	6.95	-0.091	-0.1668
314	SLE RA 10	0.49	0.46	38.96	7.27	-0.0959	-0.1703
314	SLE RA 11	0.49	0.48	39.5	7.3644	-0.0974	-0.1691
314	SLE RA 12	0.5	0.47	39.5	7.3649	-0.0974	-0.172
314	SLE RA 13	0.5	0.46	39.32	7.3321	-0.0969	-0.172
314	SLE RA 14	0.49	0.48	39.86	7.4265	-0.0984	-0.1708
314	SLE RA 15	0.5	0.47	39.86	7.427	-0.0984	-0.1737
314	SLE RA 16	0.49	0.47	39.67	7.3933	-0.0978	-0.1688
314	SLE RA 17	0.5	0.47	39.67	7.3938	-0.0978	-0.1717
314	SLE RA 18	0.48	0.51	40.06	7.4593	-0.0988	-0.1676
314	SLE RA 19	0.49	0.5	40.06	7.4599	-0.0988	-0.1705
314	SLE RA 20	0.49	0.51	40.42	7.5214	-0.0998	-0.1692
314	SLE RA 21	0.5	0.5	40.42	7.522	-0.0998	-0.1721
314	SLE FR 1	0.46	0.4	36.37	6.8253	-0.0891	-0.1607
314	SLE FR 2	0.47	0.4	36.37	6.8255	-0.0891	-0.1616
314	SLE FR 3	0.47	0.4	36.51	6.8501	-0.0895	-0.1613
314	SLE FR 4	0.47	0.43	37.48	7.0157	-0.092	-0.1637
314	SLE FR 5	0.47	0.43	37.62	7.0404	-0.0924	-0.1634
314	SLE FR 6	0.47	0.45	38.21	7.1423	-0.0939	-0.1641
314	SLE QP 1	0.46	0.4	36.37	6.8253	-0.0891	-0.1607
314	SLE QP 2	0.47	0.43	37.47	7.0155	-0.092	-0.1627
314	SLD 1	4.28	1.11	28.5	5.3099	-0.0515	-1.4989
314	SLD 2	4.64	1.64	28.99	5.3928	-0.0535	-1.621
314	SLD 3	4.06	-0.21	27.5	5.1448	-0.0472	-1.4196
314	SLD 4	4.41	0.32	27.99	5.2277	-0.0492	-1.5418
314	SLD 5	1.9	2.54	36.21	6.7395	-0.086	-0.662
314	SLD 6	2.13	2.89	36.54	6.7939	-0.0873	-0.7422
314	SLD 7	1.14	-1.86	32.88	6.1891	-0.0717	-0.3978
314	SLD 8	1.37	-1.51	33.2	6.2435	-0.073	-0.478
314	SLD 9	-0.43	2.37	41.75	7.7875	-0.111	0.1526
314	SLD 10	-0.2	2.72	42.07	7.8419	-0.1123	0.0723
314	SLD 11	-1.19	-2.03	38.41	7.2371	-0.0967	0.4168
314	SLD 12	-0.96	-1.68	38.74	7.2916	-0.098	0.3365
314	SLD 13	-3.47	0.54	46.96	8.8034	-0.1349	1.2163
314	SLD 14	-3.12	1.07	47.45	8.8862	-0.1368	1.0941



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
314	SLD 15	-3.7	-0.78	45.96	8.6383	-0.1306	1.2955
314	SLD 16	-3.35	-0.25	46.45	8.7211	-0.1325	1.1734
314	SLV 1	9.4	1.97	16.44	3.0201	0.0029	-3.2886
314	SLV 2	10.22	3.2	17.59	3.2131	-0.0017	-3.5731
314	SLV 3	8.87	-1.02	14.14	2.6395	0.0127	-3.104
314	SLV 4	9.69	0.21	15.3	2.8324	0.0082	-3.3884
314	SLV 5	3.81	5.21	34.44	6.3608	-0.0777	-1.3314
314	SLV 6	4.34	6.01	35.19	6.4854	-0.0807	-1.5151
314	SLV 7	2.04	-4.75	26.8	5.0921	-0.0448	-0.7159
314	SLV 8	2.57	-3.95	27.54	5.2167	-0.0478	-0.8996
314	SLV 9	-1.64	4.82	47.41	8.8144	-0.1363	0.5741
314	SLV 10	-1.1	5.61	48.15	8.939	-0.1392	0.3904
314	SLV 11	-3.4	-5.15	39.76	7.5456	-0.1034	1.1896
314	SLV 12	-2.87	-4.35	40.51	7.6702	-0.1063	1.0059
314	SLV 13	-8.75	0.65	59.65	11.1986	-0.1922	3.0629
314	SLV 14	-7.93	1.89	60.81	11.3915	-0.1968	2.7785
314	SLV 15	-9.28	-2.34	57.36	10.818	-0.1824	3.2476
314	SLV 16	-8.46	-1.1	58.51	11.0109	-0.1869	2.9632
314	CRTFP Ux+	0	0	0	0	0	0
314	CRTFP Ux-	0	0	0	0	0	0
314	CRTFP Uy+	0	0	0	0	0	0
314	CRTFP Uy-	0	0	0	0	0	0
315	SLU 1	0.44	0.4	38.24	8.7552	-0.1116	-0.1526
315	SLU 2	0.46	0.38	38.25	8.7573	-0.1117	-0.1597
315	SLU 3	0.45	0.41	39.14	8.9523	-0.1146	-0.158
315	SLU 4	0.47	0.4	39.14	8.9535	-0.1146	-0.1623
315	SLU 5	0.47	0.38	38.83	8.8854	-0.1136	-0.1622
315	SLU 6	0.46	0.41	39.72	9.0804	-0.1164	-0.1604
315	SLU 7	0.47	0.4	39.73	9.0816	-0.1165	-0.1647
315	SLU 8	0.45	0.4	39.41	9.0114	-0.1154	-0.1574
315	SLU 9	0.47	0.39	39.42	9.0127	-0.1154	-0.1617
315	SLU 10	0.48	0.51	42.48	9.6792	-0.125	-0.1669
315	SLU 11	0.48	0.54	43.37	9.8742	-0.1278	-0.1651
315	SLU 12	0.49	0.52	43.37	9.8754	-0.1279	-0.1694
315	SLU 13	0.49	0.51	43.07	9.8073	-0.1268	-0.1693
315	SLU 14	0.48	0.54	43.95	10.0023	-0.1297	-0.1675
315	SLU 15	0.49	0.52	43.96	10.0035	-0.1297	-0.1719
315	SLU 16	0.47	0.53	43.64	9.9334	-0.1286	-0.1646
315	SLU 17	0.49	0.51	43.65	9.9346	-0.1287	-0.1689
315	SLU 18	0.47	0.58	44.28	10.0723	-0.1306	-0.1627
315	SLU 19	0.48	0.57	44.29	10.0735	-0.1306	-0.1671
315	SLU 20	0.48	0.58	44.87	10.2004	-0.1325	-0.1652
315	SLU 21	0.49	0.57	44.88	10.2016	-0.1325	-0.1695
315	SLU 22	0.51	0.51	42.42	9.6721	-0.1251	-0.1762
315	SLU 23	0.53	0.49	42.43	9.6742	-0.1251	-0.1834
315	SLU 24	0.52	0.52	43.32	9.8692	-0.128	-0.1816
315	SLU 25	0.53	0.51	43.32	9.8704	-0.128	-0.1859
315	SLU 26	0.53	0.49	43.01	9.8023	-0.127	-0.1858
315	SLU 27	0.53	0.52	43.9	9.9973	-0.1299	-0.1841
315	SLU 28	0.54	0.51	43.91	9.9985	-0.1299	-0.1884
315	SLU 29	0.52	0.51	43.59	9.9284	-0.1288	-0.1811
315	SLU 30	0.53	0.5	43.6	9.9296	-0.1289	-0.1854
315	SLU 31	0.55	0.62	46.66	10.5961	-0.1384	-0.1905
315	SLU 32	0.54	0.65	47.55	10.7911	-0.1413	-0.1888
315	SLU 33	0.56	0.63	47.55	10.7923	-0.1413	-0.1931
315	SLU 34	0.56	0.62	47.25	10.7242	-0.1403	-0.193
315	SLU 35	0.55	0.65	48.14	10.9192	-0.1432	-0.1912
315	SLU 36	0.56	0.63	48.14	10.9204	-0.1432	-0.1955
315	SLU 37	0.54	0.64	47.83	10.8503	-0.1421	-0.1882
315	SLU 38	0.55	0.62	47.83	10.8515	-0.1421	-0.1925
315	SLU 39	0.54	0.69	48.47	10.9892	-0.1441	-0.1864
315	SLU 40	0.55	0.68	48.47	10.9904	-0.1441	-0.1907
315	SLU 41	0.54	0.69	49.05	11.1173	-0.1459	-0.1888
315	SLU 42	0.56	0.68	49.06	11.1185	-0.146	-0.1932
315	SLU 43	0.55	0.49	48.28	11.0674	-0.1405	-0.1902
315	SLU 44	0.57	0.47	48.28	11.0695	-0.1406	-0.1974
315	SLU 45	0.56	0.5	49.17	11.2644	-0.1434	-0.1956
315	SLU 46	0.57	0.48	49.18	11.2657	-0.1435	-0.1999
315	SLU 47	0.57	0.47	48.87	11.1976	-0.1424	-0.1998
315	SLU 48	0.57	0.5	49.76	11.3926	-0.1453	-0.1981
315	SLU 49	0.58	0.48	49.76	11.3938	-0.1453	-0.2024
315	SLU 50	0.56	0.49	49.45	11.3236	-0.1442	-0.1951
315	SLU 51	0.57	0.47	49.45	11.3249	-0.1443	-0.1994
315	SLU 52	0.59	0.59	52.52	11.9914	-0.1538	-0.2045
315	SLU 53	0.58	0.62	53.41	12.1864	-0.1567	-0.2028
315	SLU 54	0.6	0.61	53.41	12.1876	-0.1567	-0.2071
315	SLU 55	0.6	0.59	53.1	12.1195	-0.1557	-0.207
315	SLU 56	0.59	0.62	53.99	12.3145	-0.1586	-0.2052
315	SLU 57	0.6	0.61	54	12.3157	-0.1586	-0.2095
315	SLU 58	0.58	0.61	53.68	12.2456	-0.1575	-0.2022
315	SLU 59	0.59	0.6	53.69	12.2468	-0.1575	-0.2065
315	SLU 60	0.58	0.66	54.32	12.3845	-0.1595	-0.2004
315	SLU 61	0.59	0.65	54.33	12.3857	-0.1595	-0.2047
315	SLU 62	0.58	0.66	54.91	12.5126	-0.1613	-0.2028
315	SLU 63	0.6	0.65	54.91	12.5138	-0.1614	-0.2072
315	SLU 64	0.62	0.6	52.46	11.9843	-0.154	-0.2139
315	SLU 65	0.64	0.58	52.46	11.9864	-0.154	-0.2211
315	SLU 66	0.63	0.61	53.35	12.1814	-0.1569	-0.2193
315	SLU 67	0.64	0.59	53.36	12.1826	-0.1569	-0.2236
315	SLU 68	0.64	0.58	53.05	12.1145	-0.1559	-0.2235



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
315	SLU 69	0.64	0.61	53.94	12.3095	-0.1588	-0.2217
315	SLU 70	0.65	0.59	53.95	12.3107	-0.1588	-0.226
315	SLU 71	0.63	0.6	53.63	12.2406	-0.1577	-0.2187
315	SLU 72	0.64	0.58	53.64	12.2418	-0.1577	-0.2231
315	SLU 73	0.66	0.7	56.7	12.9083	-0.1673	-0.2282
315	SLU 74	0.65	0.73	57.59	13.1033	-0.1702	-0.2264
315	SLU 75	0.66	0.72	57.59	13.1045	-0.1702	-0.2307
315	SLU 76	0.66	0.7	57.28	13.0364	-0.1692	-0.2306
315	SLU 77	0.66	0.73	58.17	13.2314	-0.172	-0.2289
315	SLU 78	0.67	0.72	58.18	13.2326	-0.1721	-0.2332
315	SLU 79	0.65	0.72	57.86	13.1625	-0.171	-0.2259
315	SLU 80	0.66	0.71	57.87	13.1637	-0.171	-0.2302
315	SLU 81	0.65	0.77	58.5	13.3014	-0.1729	-0.2241
315	SLU 82	0.66	0.76	58.51	13.3026	-0.173	-0.2284
315	SLU 83	0.65	0.77	59.09	13.4295	-0.1748	-0.2265
315	SLU 84	0.66	0.76	59.1	13.4307	-0.1748	-0.2308
315	SLE RA 1	0.46	0.44	39.43	9.0172	-0.1155	-0.1593
315	SLE RA 2	0.47	0.42	39.44	9.0186	-0.1155	-0.1641
315	SLE RA 3	0.47	0.44	40.03	9.1486	-0.1174	-0.1629
315	SLE RA 4	0.48	0.43	40.03	9.1494	-0.1174	-0.1658
315	SLE RA 5	0.48	0.42	39.83	9.104	-0.1168	-0.1657
315	SLE RA 6	0.47	0.44	40.42	9.234	-0.1187	-0.1646
315	SLE RA 7	0.48	0.43	40.42	9.2348	-0.1187	-0.1674
315	SLE RA 8	0.47	0.44	40.21	9.188	-0.118	-0.1626
315	SLE RA 9	0.48	0.43	40.22	9.1888	-0.118	-0.1654
315	SLE RA 10	0.49	0.5	42.26	9.6332	-0.1244	-0.1689
315	SLE RA 11	0.48	0.52	42.85	9.7632	-0.1263	-0.1677
315	SLE RA 12	0.49	0.52	42.86	9.764	-0.1263	-0.1706
315	SLE RA 13	0.49	0.5	42.65	9.7186	-0.1256	-0.1705
315	SLE RA 14	0.49	0.52	43.24	9.8486	-0.1275	-0.1693
315	SLE RA 15	0.5	0.51	43.25	9.8494	-0.1275	-0.1722
315	SLE RA 16	0.48	0.52	43.04	9.8026	-0.1268	-0.1673
315	SLE RA 17	0.49	0.51	43.04	9.8035	-0.1268	-0.1702
315	SLE RA 18	0.48	0.55	43.46	9.8952	-0.1281	-0.1661
315	SLE RA 19	0.49	0.55	43.47	9.896	-0.1281	-0.169
315	SLE RA 20	0.48	0.55	43.85	9.9806	-0.1294	-0.1677
315	SLE RA 21	0.49	0.54	43.86	9.9815	-0.1294	-0.1706
315	SLE FR 1	0.46	0.44	39.43	9.0172	-0.1155	-0.1593
315	SLE FR 2	0.46	0.43	39.43	9.0175	-0.1155	-0.1603
315	SLE FR 3	0.46	0.44	39.59	9.0514	-0.116	-0.16
315	SLE FR 4	0.47	0.47	40.64	9.2809	-0.1193	-0.1623
315	SLE FR 5	0.47	0.47	40.8	9.3148	-0.1198	-0.162
315	SLE FR 6	0.47	0.49	41.45	9.4562	-0.1218	-0.1627
315	SLE QP 1	0.46	0.44	39.43	9.0172	-0.1155	-0.1593
315	SLE QP 2	0.46	0.47	40.64	9.2806	-0.1193	-0.1614
315	SLD 1	4.27	1.18	30.34	6.8797	-0.0713	-1.4939
315	SLD 2	4.63	1.76	30.9	6.9959	-0.0736	-1.616
315	SLD 3	4.04	-0.21	29.2	6.6421	-0.0661	-1.4148
315	SLD 4	4.4	0.37	29.76	6.7584	-0.0684	-1.5368
315	SLD 5	1.89	2.69	39.18	8.8998	-0.1123	-0.6594
315	SLD 6	2.12	3.07	39.55	8.9762	-0.1139	-0.7396
315	SLD 7	1.13	-1.95	35.38	8.1081	-0.095	-0.3955
315	SLD 8	1.36	-1.57	35.74	8.1845	-0.0966	-0.4757
315	SLD 9	-0.43	2.51	45.54	10.3767	-0.142	0.153
315	SLD 10	-0.2	2.89	45.91	10.4531	-0.1435	0.0728
315	SLD 11	-1.19	-2.13	41.73	9.5851	-0.1247	0.4169
315	SLD 12	-0.96	-1.75	42.1	9.6614	-0.1262	0.3367
315	SLD 13	-3.47	0.57	51.53	11.8028	-0.1701	1.2141
315	SLD 14	-3.12	1.15	52.09	11.9191	-0.1724	1.0921
315	SLD 15	-3.7	-0.82	50.39	11.5653	-0.1649	1.2933
315	SLD 16	-3.34	-0.24	50.95	11.6816	-0.1672	1.1712
315	SLV 1	9.37	2.08	16.5	3.6556	-0.0069	-3.2789
315	SLV 2	10.2	3.43	17.8	3.9263	-0.0123	-3.5631
315	SLV 3	8.84	-1.07	13.88	3.1092	0.005	-3.0945
315	SLV 4	9.67	0.28	15.18	3.3799	-0.0004	-3.3787
315	SLV 5	3.8	5.51	37.15	8.3749	-0.1027	-1.3272
315	SLV 6	4.33	6.38	37.99	8.5498	-0.1062	-1.5108
315	SLV 7	2.03	-5.01	28.41	6.5537	-0.063	-0.7124
315	SLV 8	2.56	-4.14	29.26	6.7286	-0.0665	-0.896
315	SLV 9	-1.64	5.08	52.03	11.8326	-0.1721	0.5733
315	SLV 10	-1.1	5.95	52.87	12.0075	-0.1755	0.3897
315	SLV 11	-3.4	-5.44	43.29	10.0114	-0.1324	1.1881
315	SLV 12	-2.87	-4.56	44.14	10.1863	-0.1359	1.0045
315	SLV 13	-8.74	0.66	66.1	15.1813	-0.2382	3.056
315	SLV 14	-7.91	2.02	67.41	15.452	-0.2436	2.7718
315	SLV 15	-9.27	-2.49	63.48	14.6349	-0.2262	3.2404
315	SLV 16	-8.44	-1.14	64.79	14.9056	-0.2316	2.9562
315	CRTFP Ux+	0	0	0	0	0	0
315	CRTFP Ux-	0	0	0	0	0	0
315	CRTFP Uy+	0	0	0	0	0	0
315	CRTFP Uy-	0	0	0	0	0	0
316	SLU 1	0.37	0.37	35.95	9.7863	0.9173	-0.1409
316	SLU 2	0.39	0.35	35.95	9.7887	0.9174	-0.1465
316	SLU 3	0.39	0.38	36.8	10.0133	0.9388	-0.1457
316	SLU 4	0.4	0.37	36.8	10.0148	0.9389	-0.1491
316	SLU 5	0.4	0.35	36.51	9.9362	0.9315	-0.1486
316	SLU 6	0.39	0.38	37.35	10.1608	0.9529	-0.1478
316	SLU 7	0.4	0.36	37.36	10.1623	0.953	-0.1512
316	SLU 8	0.39	0.37	37.06	10.0812	0.9454	-0.145
316	SLU 9	0.4	0.36	37.06	10.0827	0.9455	-0.1484



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
316	SLU 10	0.41	0.46	39.96	10.8545	1.0189	-0.1558
316	SLU 11	0.41	0.49	40.8	11.0791	1.0403	-0.155
316	SLU 12	0.42	0.48	40.81	11.0806	1.0404	-0.1584
316	SLU 13	0.42	0.46	40.51	11.002	1.033	-0.1579
316	SLU 14	0.41	0.49	41.36	11.2266	1.0544	-0.1571
316	SLU 15	0.42	0.48	41.36	11.228	1.0545	-0.1605
316	SLU 16	0.4	0.48	41.06	11.147	1.0469	-0.1543
316	SLU 17	0.41	0.47	41.07	11.1485	1.047	-0.1577
316	SLU 18	0.4	0.53	41.67	11.3088	1.0623	-0.1541
316	SLU 19	0.41	0.52	41.67	11.3103	1.0624	-0.1575
316	SLU 20	0.41	0.53	42.22	11.4563	1.0763	-0.1562
316	SLU 21	0.42	0.52	42.23	11.4578	1.0764	-0.1596
316	SLU 22	0.43	0.47	39.91	10.8454	1.0175	-0.164
316	SLU 23	0.45	0.45	39.92	10.8479	1.0177	-0.1696
316	SLU 24	0.45	0.48	40.76	11.0724	1.039	-0.1688
316	SLU 25	0.46	0.47	40.77	11.0739	1.0392	-0.1722
316	SLU 26	0.46	0.45	40.47	10.9954	1.0318	-0.1717
316	SLU 27	0.45	0.48	41.32	11.2199	1.0531	-0.1709
316	SLU 28	0.46	0.47	41.32	11.2214	1.0532	-0.1743
316	SLU 29	0.44	0.47	41.02	11.1404	1.0457	-0.1681
316	SLU 30	0.46	0.46	41.03	11.1418	1.0458	-0.1715
316	SLU 31	0.47	0.56	43.92	11.9137	1.1192	-0.1789
316	SLU 32	0.46	0.59	44.77	12.1382	1.1405	-0.1781
316	SLU 33	0.47	0.58	44.77	12.1397	1.1406	-0.1815
316	SLU 34	0.47	0.56	44.48	12.0611	1.1333	-0.1809
316	SLU 35	0.47	0.59	45.32	12.2857	1.1546	-0.1801
316	SLU 36	0.48	0.58	45.33	12.2872	1.1547	-0.1835
316	SLU 37	0.46	0.58	45.03	12.2062	1.1472	-0.1774
316	SLU 38	0.47	0.57	45.03	12.2076	1.1473	-0.1808
316	SLU 39	0.46	0.63	45.63	12.368	1.1625	-0.1772
316	SLU 40	0.47	0.62	45.64	12.3694	1.1626	-0.1806
316	SLU 41	0.46	0.63	46.19	12.5154	1.1766	-0.1792
316	SLU 42	0.47	0.62	46.19	12.5169	1.1767	-0.1826
316	SLU 43	0.47	0.44	45.37	12.359	1.1581	-0.1752
316	SLU 44	0.48	0.43	45.38	12.3615	1.1583	-0.1809
316	SLU 45	0.48	0.45	46.22	12.5861	1.1796	-0.1801
316	SLU 46	0.49	0.44	46.23	12.5875	1.1797	-0.1835
316	SLU 47	0.49	0.43	45.94	12.509	1.1723	-0.183
316	SLU 48	0.49	0.45	46.78	12.7335	1.1937	-0.1822
316	SLU 49	0.5	0.44	46.78	12.735	1.1938	-0.1856
316	SLU 50	0.48	0.44	46.48	12.654	1.1862	-0.1794
316	SLU 51	0.49	0.43	46.49	12.6555	1.1863	-0.1828
316	SLU 52	0.5	0.54	49.38	13.4273	1.2597	-0.1901
316	SLU 53	0.5	0.56	50.23	13.6518	1.2811	-0.1893
316	SLU 54	0.51	0.55	50.23	13.6533	1.2812	-0.1927
316	SLU 55	0.51	0.54	49.94	13.5748	1.2738	-0.1922
316	SLU 56	0.5	0.56	50.78	13.7993	1.2952	-0.1914
316	SLU 57	0.51	0.55	50.79	13.8008	1.2953	-0.1948
316	SLU 58	0.5	0.56	50.49	13.7198	1.2877	-0.1886
316	SLU 59	0.51	0.54	50.49	13.7212	1.2878	-0.192
316	SLU 60	0.49	0.6	51.09	13.8816	1.3031	-0.1884
316	SLU 61	0.5	0.59	51.1	13.8831	1.3032	-0.1918
316	SLU 62	0.5	0.6	51.65	14.0291	1.3171	-0.1905
316	SLU 63	0.51	0.59	51.65	14.0305	1.3172	-0.1939
316	SLU 64	0.52	0.54	49.34	13.4182	1.2583	-0.1983
316	SLU 65	0.54	0.53	49.34	13.4206	1.2585	-0.204
316	SLU 66	0.54	0.55	50.19	13.6452	1.2799	-0.2032
316	SLU 67	0.55	0.54	50.19	13.6467	1.28	-0.2066
316	SLU 68	0.55	0.53	49.9	13.5681	1.2726	-0.2061
316	SLU 69	0.54	0.55	50.74	13.7927	1.2939	-0.2053
316	SLU 70	0.55	0.54	50.75	13.7942	1.294	-0.2087
316	SLU 71	0.54	0.54	50.45	13.7131	1.2865	-0.2025
316	SLU 72	0.55	0.53	50.45	13.7146	1.2866	-0.2059
316	SLU 73	0.56	0.64	53.35	14.4864	1.36	-0.2132
316	SLU 74	0.56	0.66	54.19	14.711	1.3813	-0.2124
316	SLU 75	0.57	0.65	54.2	14.7125	1.3815	-0.2158
316	SLU 76	0.57	0.64	53.9	14.6339	1.3741	-0.2153
316	SLU 77	0.56	0.66	54.75	14.8585	1.3954	-0.2145
316	SLU 78	0.57	0.65	54.75	14.8599	1.3955	-0.2179
316	SLU 79	0.55	0.66	54.45	14.7789	1.388	-0.2117
316	SLU 80	0.57	0.65	54.46	14.7804	1.3881	-0.2151
316	SLU 81	0.55	0.7	55.06	14.9407	1.4033	-0.2115
316	SLU 82	0.56	0.69	55.06	14.9422	1.4034	-0.2149
316	SLU 83	0.56	0.7	55.61	15.0882	1.4174	-0.2136
316	SLU 84	0.57	0.69	55.62	15.0897	1.4175	-0.217
316	SLE RA 1	0.39	0.4	37.08	10.0889	0.9459	-0.1475
316	SLE RA 2	0.4	0.38	37.08	10.0905	0.946	-0.1513
316	SLE RA 3	0.4	0.4	37.65	10.2402	0.9603	-0.1507
316	SLE RA 4	0.41	0.39	37.65	10.2412	0.9603	-0.153
316	SLE RA 5	0.41	0.38	37.45	10.1889	0.9554	-0.1526
316	SLE RA 6	0.4	0.4	38.02	10.3386	0.9696	-0.1521
316	SLE RA 7	0.41	0.39	38.02	10.3395	0.9697	-0.1544
316	SLE RA 8	0.4	0.4	37.82	10.2855	0.9647	-0.1502
316	SLE RA 9	0.41	0.39	37.82	10.2865	0.9648	-0.1525
316	SLE RA 10	0.41	0.46	39.75	10.8011	1.0137	-0.1574
316	SLE RA 11	0.41	0.48	40.32	10.9508	1.0279	-0.1569
316	SLE RA 12	0.42	0.47	40.32	10.9517	1.028	-0.1591
316	SLE RA 13	0.42	0.46	40.12	10.8994	1.0231	-0.1588
316	SLE RA 14	0.42	0.48	40.69	11.0491	1.0373	-0.1583
316	SLE RA 15	0.42	0.47	40.69	11.0501	1.0374	-0.1605



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
316	SLE RA 16	0.41	0.47	40.49	10.996	1.0323	-0.1564
316	SLE RA 17	0.42	0.46	40.49	10.997	1.0324	-0.1587
316	SLE RA 18	0.41	0.5	40.89	11.1039	1.0426	-0.1563
316	SLE RA 19	0.42	0.5	40.9	11.1049	1.0426	-0.1585
316	SLE RA 20	0.41	0.5	41.26	11.2022	1.052	-0.1577
316	SLE RA 21	0.42	0.5	41.27	11.2032	1.052	-0.1599
316	SLE FR 1	0.39	0.4	37.08	10.0889	0.9459	-0.1475
316	SLE FR 2	0.39	0.39	37.08	10.0892	0.9459	-0.1482
316	SLE FR 3	0.39	0.4	37.23	10.1282	0.9497	-0.148
316	SLE FR 4	0.4	0.43	38.22	10.3937	0.9749	-0.1509
316	SLE FR 5	0.4	0.43	38.37	10.4327	0.9787	-0.1507
316	SLE FR 6	0.4	0.45	38.99	10.5964	0.9942	-0.1519
316	SLE QP 1	0.39	0.4	37.08	10.0889	0.9459	-0.1475
316	SLE QP 2	0.4	0.43	38.22	10.3934	0.9749	-0.1501
316	SLD 1	3.68	1.06	28.1	7.6122	0.7274	-1.2967
316	SLD 2	3.98	1.6	28.64	7.7466	0.7409	-1.4174
316	SLD 3	3.48	-0.19	26.98	7.3324	0.7	-1.2137
316	SLD 4	3.78	0.35	27.52	7.4667	0.7134	-1.3345
316	SLD 5	1.62	2.43	36.79	9.9596	0.9399	-0.5983
316	SLD 6	1.82	2.78	37.14	10.0478	0.9487	-0.6776
316	SLD 7	0.97	-1.76	33.06	9.0266	0.8484	-0.3219
316	SLD 8	1.17	-1.4	33.41	9.1149	0.8573	-0.4013
316	SLD 9	-0.38	2.26	43.03	11.6719	1.0926	0.101
316	SLD 10	-0.18	2.62	43.39	11.7602	1.1014	0.0217
316	SLD 11	-1.03	-1.92	39.3	10.739	1.0011	0.3774
316	SLD 12	-0.83	-1.57	39.66	10.8272	1.01	0.298
316	SLD 13	-2.99	0.51	48.92	13.3202	1.2364	1.0343
316	SLD 14	-2.69	1.05	49.47	13.4545	1.2499	0.9135
316	SLD 15	-3.19	-0.75	47.8	13.0403	1.209	1.1172
316	SLD 16	-2.88	-0.2	48.35	13.1746	1.2224	0.9964
316	SLV 1	8.07	1.87	14.5	3.8773	0.3949	-2.8315
316	SLV 2	8.78	3.13	15.76	4.19	0.4263	-3.1128
316	SLV 3	7.61	-0.98	11.93	3.2339	0.332	-2.6403
316	SLV 4	8.32	0.28	13.2	3.5467	0.3633	-2.9216
316	SLV 5	3.27	4.95	34.78	9.3602	0.891	-1.1959
316	SLV 6	3.73	5.77	35.6	9.5622	0.9112	-1.3776
316	SLV 7	1.74	-4.52	26.22	7.2158	0.6811	-0.5585
316	SLV 8	2.2	-3.71	27.04	7.4178	0.7014	-0.7402
316	SLV 9	-1.41	4.56	49.41	13.369	1.2484	0.4399
316	SLV 10	-0.95	5.38	50.22	13.5711	1.2687	0.2587
316	SLV 11	-2.93	-4.91	40.85	11.2246	1.0386	1.0774
316	SLV 12	-2.48	-4.1	41.67	11.4266	1.0589	0.8957
316	SLV 13	-7.53	0.57	63.25	17.2401	1.5865	2.6213
316	SLV 14	-6.82	1.83	64.51	17.5529	1.6178	2.34
316	SLV 15	-7.99	-2.27	60.68	16.5968	1.5236	2.8126
316	SLV 16	-7.28	-1.01	61.95	16.9095	1.5549	2.5313
316	CRTFP Ux+	0	0	0	0	0	0
316	CRTFP Ux-	0	0	0	0	0	0
316	CRTFP Uy+	0	0	0	0	0	0
316	CRTFP Uy-	0	0	0	0	0	0
318	SLU 1	0.54	0.55	55.92	12.5156	12.1463	-0.2596
318	SLU 2	0.57	0.52	55.93	12.5186	12.1487	-0.2596
318	SLU 3	0.56	0.56	57.26	12.8124	12.4332	-0.267
318	SLU 4	0.58	0.54	57.26	12.8142	12.4346	-0.2671
318	SLU 5	0.58	0.52	56.8	12.7117	12.3365	-0.2616
318	SLU 6	0.57	0.56	58.13	13.0055	12.6209	-0.269
318	SLU 7	0.59	0.54	58.13	13.0073	12.6224	-0.269
318	SLU 8	0.56	0.54	57.66	12.9018	12.5217	-0.2635
318	SLU 9	0.58	0.53	57.67	12.9036	12.5232	-0.2635
318	SLU 10	0.6	0.69	62.19	13.9144	13.4974	-0.3054
318	SLU 11	0.59	0.72	63.51	14.2081	13.7819	-0.3128
318	SLU 12	0.61	0.71	63.52	14.2099	13.7833	-0.3128
318	SLU 13	0.61	0.69	63.06	14.1074	13.6852	-0.3074
318	SLU 14	0.6	0.72	64.38	14.4012	13.9696	-0.3148
318	SLU 15	0.61	0.71	64.39	14.403	13.971	-0.3148
318	SLU 16	0.59	0.71	63.92	14.2975	13.8704	-0.3093
318	SLU 17	0.6	0.7	63.92	14.2993	13.8719	-0.3093
318	SLU 18	0.58	0.78	64.86	14.5095	14.073	-0.325
318	SLU 19	0.6	0.77	64.86	14.5113	14.0745	-0.325
318	SLU 20	0.59	0.78	65.73	14.7026	14.2607	-0.3269
318	SLU 21	0.61	0.77	65.73	14.7044	14.2622	-0.327
318	SLU 22	0.63	0.69	62.12	13.9002	13.4795	-0.3153
318	SLU 23	0.66	0.67	62.13	13.9032	13.482	-0.3154
318	SLU 24	0.65	0.71	63.45	14.197	13.7664	-0.3228
318	SLU 25	0.67	0.69	63.46	14.1988	13.7679	-0.3228
318	SLU 26	0.66	0.67	63	14.0963	13.6697	-0.3173
318	SLU 27	0.66	0.71	64.32	14.3901	13.9541	-0.3248
318	SLU 28	0.67	0.69	64.33	14.3919	13.9556	-0.3248
318	SLU 29	0.65	0.69	63.86	14.2864	13.855	-0.3193
318	SLU 30	0.66	0.68	63.87	14.2882	13.8564	-0.3193
318	SLU 31	0.68	0.84	68.38	15.299	14.8307	-0.3612
318	SLU 32	0.68	0.87	69.71	15.5927	15.1151	-0.3686
318	SLU 33	0.69	0.86	69.71	15.5945	15.1166	-0.3686
318	SLU 34	0.69	0.84	69.25	15.492	15.0184	-0.3631
318	SLU 35	0.69	0.87	70.58	15.7858	15.3028	-0.3706
318	SLU 36	0.7	0.86	70.58	15.7876	15.3043	-0.3706
318	SLU 37	0.67	0.86	70.11	15.6821	15.2037	-0.365
318	SLU 38	0.69	0.85	70.12	15.6839	15.2051	-0.3651
318	SLU 39	0.67	0.93	71.05	15.8941	15.4062	-0.3807
318	SLU 40	0.68	0.92	71.06	15.8959	15.4077	-0.3808



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
318	SLU 41	0.68	0.93	71.92	16.0872	15.594	-0.3827
318	SLU 42	0.69	0.92	71.93	16.089	15.5954	-0.3827
318	SLU 43	0.68	0.66	70.58	15.7956	15.3331	-0.3183
318	SLU 44	0.7	0.63	70.59	15.7986	15.3355	-0.3183
318	SLU 45	0.7	0.67	71.91	16.0924	15.6199	-0.3258
318	SLU 46	0.71	0.65	71.92	16.0942	15.6214	-0.3258
318	SLU 47	0.71	0.63	71.46	15.9917	15.5232	-0.3203
318	SLU 48	0.71	0.67	72.78	16.2854	15.8077	-0.3277
318	SLU 49	0.72	0.65	72.79	16.2872	15.8091	-0.3278
318	SLU 50	0.7	0.66	72.32	16.1817	15.7085	-0.3222
318	SLU 51	0.71	0.64	72.32	16.1835	15.71	-0.3223
318	SLU 52	0.73	0.8	76.84	17.1943	16.6842	-0.3641
318	SLU 53	0.72	0.84	78.16	17.4881	16.9686	-0.3716
318	SLU 54	0.74	0.82	78.17	17.4899	16.9701	-0.3716
318	SLU 55	0.74	0.8	77.71	17.3874	16.8719	-0.3661
318	SLU 56	0.73	0.84	79.03	17.6812	17.1564	-0.3735
318	SLU 57	0.75	0.82	79.04	17.683	17.1578	-0.3736
318	SLU 58	0.72	0.82	78.57	17.5775	17.0572	-0.368
318	SLU 59	0.74	0.81	78.58	17.5793	17.0587	-0.3681
318	SLU 60	0.72	0.9	79.51	17.7895	17.2598	-0.3837
318	SLU 61	0.73	0.88	79.52	17.7913	17.2612	-0.3837
318	SLU 62	0.72	0.9	80.38	17.9826	17.4475	-0.3857
318	SLU 63	0.74	0.88	80.39	17.9844	17.449	-0.3857
318	SLU 64	0.76	0.81	76.77	17.1802	16.6663	-0.3741
318	SLU 65	0.79	0.78	76.78	17.1832	16.6688	-0.3741
318	SLU 66	0.78	0.82	78.1	17.477	16.9532	-0.3815
318	SLU 67	0.8	0.8	78.11	17.4788	16.9547	-0.3816
318	SLU 68	0.8	0.78	77.65	17.3763	16.8565	-0.3761
318	SLU 69	0.79	0.82	78.97	17.67	17.1409	-0.3835
318	SLU 70	0.81	0.8	78.98	17.6718	17.1424	-0.3835
318	SLU 71	0.78	0.81	78.51	17.5663	17.0418	-0.378
318	SLU 72	0.8	0.79	78.52	17.5681	17.0432	-0.378
318	SLU 73	0.82	0.95	83.04	18.5789	18.0175	-0.4199
318	SLU 74	0.81	0.99	84.36	18.8727	18.3019	-0.4273
318	SLU 75	0.83	0.97	84.37	18.8745	18.3033	-0.4274
318	SLU 76	0.83	0.95	83.91	18.772	18.2052	-0.4219
318	SLU 77	0.82	0.99	85.23	19.0658	18.4896	-0.4293
318	SLU 78	0.83	0.97	85.24	19.0676	18.4911	-0.4293
318	SLU 79	0.81	0.97	84.77	18.9621	18.3904	-0.4238
318	SLU 80	0.82	0.96	84.77	18.9639	18.3919	-0.4238
318	SLU 81	0.8	1.05	85.71	19.1741	18.593	-0.4395
318	SLU 82	0.82	1.03	85.71	19.1759	18.5945	-0.4395
318	SLU 83	0.81	1.04	86.58	19.3672	18.7807	-0.4414
318	SLU 84	0.83	1.03	86.58	19.369	18.7822	-0.4415
318	SLE RA 1	0.57	0.59	57.69	12.9112	12.5272	-0.2755
318	SLE RA 2	0.59	0.57	57.7	12.9132	12.5289	-0.2755
318	SLE RA 3	0.58	0.6	58.58	13.1091	12.7185	-0.2805
318	SLE RA 4	0.59	0.59	58.59	13.1103	12.7195	-0.2805
318	SLE RA 5	0.59	0.57	58.28	13.042	12.654	-0.2768
318	SLE RA 6	0.59	0.6	59.16	13.2378	12.8436	-0.2818
318	SLE RA 7	0.6	0.59	59.17	13.239	12.8446	-0.2818
318	SLE RA 8	0.58	0.59	58.85	13.1687	12.7775	-0.2781
318	SLE RA 9	0.59	0.58	58.86	13.1699	12.7785	-0.2781
318	SLE RA 10	0.6	0.68	61.87	13.8437	13.428	-0.306
318	SLE RA 11	0.6	0.71	62.75	14.0396	13.6176	-0.311
318	SLE RA 12	0.61	0.7	62.76	14.0408	13.6186	-0.311
318	SLE RA 13	0.61	0.68	62.45	13.9724	13.5531	-0.3074
318	SLE RA 14	0.61	0.71	63.33	14.1683	13.7427	-0.3123
318	SLE RA 15	0.62	0.7	63.34	14.1695	13.7437	-0.3123
318	SLE RA 16	0.6	0.7	63.02	14.0991	13.6766	-0.3086
318	SLE RA 17	0.61	0.69	63.03	14.1003	13.6776	-0.3087
318	SLE RA 18	0.59	0.75	63.65	14.2405	13.8117	-0.3191
318	SLE RA 19	0.6	0.74	63.65	14.2417	13.8127	-0.3191
318	SLE RA 20	0.6	0.75	64.23	14.3692	13.9368	-0.3204
318	SLE RA 21	0.61	0.74	64.23	14.3704	13.9378	-0.3204
318	SLE FR 1	0.57	0.59	57.69	12.9112	12.5272	-0.2755
318	SLE FR 2	0.57	0.58	57.69	12.9116	12.5276	-0.2755
318	SLE FR 3	0.57	0.59	57.92	12.9627	12.5773	-0.276
318	SLE FR 4	0.58	0.63	59.48	13.3104	12.9129	-0.2886
318	SLE FR 5	0.58	0.64	59.71	13.3615	12.9626	-0.2891
318	SLE FR 6	0.58	0.67	60.67	13.5759	13.1695	-0.2973
318	SLE QP 1	0.57	0.59	57.69	12.9112	12.5272	-0.2755
318	SLE QP 2	0.58	0.64	59.48	13.31	12.9126	-0.2886
318	SLD 1	5.36	1.57	43.39	9.7029	9.5409	-1.5414
318	SLD 2	5.82	2.39	44.27	9.8839	9.7307	-1.8425
318	SLD 3	5.07	-0.29	41.58	9.3234	9.1545	-1.0775
318	SLD 4	5.53	0.53	42.46	9.5045	9.3443	-1.3786
318	SLD 5	2.37	3.59	57.24	12.771	12.4532	-1.3141
318	SLD 6	2.67	4.13	57.82	12.8899	12.578	-1.512
318	SLD 7	1.4	-2.61	51.21	11.5063	11.1652	0.232
318	SLD 8	1.7	-2.07	51.78	11.6252	11.29	0.0341
318	SLD 9	-0.55	3.35	67.18	14.9948	14.5352	-0.6113
318	SLD 10	-0.25	3.88	67.75	15.1138	14.66	-0.8092
318	SLD 11	-1.52	-2.86	61.14	13.7301	13.2472	0.9349
318	SLD 12	-1.22	-2.32	61.72	13.849	13.3719	0.737
318	SLD 13	-4.38	0.74	76.5	17.1156	16.4808	0.8015
318	SLD 14	-3.92	1.56	77.38	17.2966	16.6707	0.5004
318	SLD 15	-4.67	-1.12	74.69	16.7362	16.0944	1.2653
318	SLD 16	-4.21	-0.3	75.57	16.9172	16.2843	0.9642
318	SLV 1	11.77	2.76	21.77	4.8579	5.0109	-3.2036





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
318	SLV 2	12.84	4.67	23.82	5.2794	5.4531	-3.9049
318	SLV 3	11.1	-1.46	17.62	3.9868	4.1252	-2.1529
318	SLV 4	12.17	0.45	19.67	4.4083	4.5674	-2.8541
318	SLV 5	4.77	7.34	54.11	12.0227	11.809	-2.6354
318	SLV 6	5.47	8.57	55.43	12.2949	12.0946	-3.0884
318	SLV 7	2.52	-6.72	40.27	9.1189	8.8565	0.867
318	SLV 8	3.21	-5.49	41.59	9.3912	9.1421	0.4141
318	SLV 9	-2.06	6.76	77.37	17.2288	16.6831	-0.9913
318	SLV 10	-1.37	7.99	78.69	17.5011	16.9687	-1.4442
318	SLV 11	-4.31	-7.3	63.53	14.3251	13.7305	2.5112
318	SLV 12	-3.62	-6.07	64.85	14.5974	14.0161	2.0583
318	SLV 13	-11.01	0.82	99.29	22.2117	21.2578	2.277
318	SLV 14	-9.94	2.73	101.34	22.6333	21.7	1.5758
318	SLV 15	-11.69	-3.4	95.14	21.3406	20.372	3.3278
318	SLV 16	-10.62	-1.49	97.19	21.7621	20.8142	2.6265
318	CRTFP Ux+	0	0	0	0	0	0
318	CRTFP Ux-	0	0	0	0	0	0
318	CRTFP Uy+	0	0	0	0	0	0
318	CRTFP Uy-	0	0	0	0	0	0
380	SLU 1	0.2	-0.01	28.97	0.7918	9.0329	-0.0008
380	SLU 2	0.21	-0.04	28.95	0.7915	9.0273	0.0089
380	SLU 3	0.2	0	29.63	0.8101	9.2395	-0.0049
380	SLU 4	0.21	-0.02	29.62	0.8099	9.2362	0.0009
380	SLU 5	0.22	-0.04	29.39	0.8035	9.1643	0.0085
380	SLU 6	0.21	0	30.08	0.8222	9.3765	-0.0054
380	SLU 7	0.22	-0.02	30.07	0.8219	9.3732	0.0005
380	SLU 8	0.2	-0.01	29.85	0.8159	9.3069	-0.0017
380	SLU 9	0.21	-0.03	29.84	0.8157	9.3035	0.0041
380	SLU 10	0.22	0	32.62	0.8922	10.1686	-0.0078
380	SLU 11	0.21	0.04	33.3	0.9108	10.3808	-0.0216
380	SLU 12	0.22	0.03	33.29	0.9106	10.3774	-0.0158
380	SLU 13	0.23	0	33.06	0.9042	10.3056	-0.0082
380	SLU 14	0.22	0.04	33.75	0.9229	10.5178	-0.022
380	SLU 15	0.23	0.03	33.74	0.9227	10.5144	-0.0162
380	SLU 16	0.21	0.03	33.52	0.9167	10.4481	-0.0183
380	SLU 17	0.22	0.02	33.51	0.9164	10.4448	-0.0125
380	SLU 18	0.21	0.05	34.21	0.9357	10.6632	-0.0246
380	SLU 19	0.22	0.04	34.2	0.9355	10.6599	-0.0188
380	SLU 20	0.22	0.05	34.65	0.9478	10.8002	-0.025
380	SLU 21	0.22	0.04	34.64	0.9476	10.7969	-0.0192
380	SLU 22	0.23	0.06	32.1	0.8779	9.9996	-0.0274
380	SLU 23	0.25	0.03	32.08	0.8775	9.994	-0.0177
380	SLU 24	0.24	0.07	32.77	0.8962	10.2062	-0.0315
380	SLU 25	0.25	0.05	32.76	0.8959	10.2029	-0.0257
380	SLU 26	0.25	0.03	32.53	0.8896	10.131	-0.0181
380	SLU 27	0.24	0.07	33.21	0.9082	10.3432	-0.032
380	SLU 28	0.25	0.05	33.2	0.908	10.3399	-0.0261
380	SLU 29	0.24	0.06	32.99	0.902	10.2736	-0.0283
380	SLU 30	0.25	0.04	32.98	0.9018	10.2702	-0.0224
380	SLU 31	0.26	0.08	35.75	0.9782	11.1353	-0.0343
380	SLU 32	0.25	0.12	36.44	0.9969	11.3475	-0.0482
380	SLU 33	0.26	0.1	36.43	0.9967	11.3442	-0.0423
380	SLU 34	0.26	0.08	36.2	0.9903	11.2723	-0.0348
380	SLU 35	0.25	0.12	36.88	1.0089	11.4845	-0.0486
380	SLU 36	0.26	0.1	36.87	1.0087	11.4812	-0.0428
380	SLU 37	0.25	0.11	36.66	1.0027	11.4148	-0.0449
380	SLU 38	0.26	0.09	36.65	1.0025	11.4115	-0.0391
380	SLU 39	0.25	0.13	37.34	1.0218	11.63	-0.0512
380	SLU 40	0.25	0.11	37.33	1.0215	11.6266	-0.0454
380	SLU 41	0.25	0.13	37.79	1.0338	11.767	-0.0516
380	SLU 42	0.26	0.11	37.78	1.0336	11.7636	-0.0458
380	SLU 43	0.25	-0.04	36.58	0.9999	11.4113	0.0081
380	SLU 44	0.26	-0.07	36.56	0.9995	11.4057	0.0178
380	SLU 45	0.25	-0.03	37.25	1.0181	11.618	0.0039
380	SLU 46	0.26	-0.05	37.24	1.0179	11.6146	0.0098
380	SLU 47	0.26	-0.07	37.01	1.0115	11.5427	0.0173
380	SLU 48	0.26	-0.03	37.69	1.0302	11.7549	0.0035
380	SLU 49	0.26	-0.05	37.68	1.03	11.7516	0.0093
380	SLU 50	0.25	-0.04	37.47	1.024	11.6853	0.0072
380	SLU 51	0.26	-0.06	37.46	1.0237	11.6819	0.013
380	SLU 52	0.27	-0.03	40.23	1.1002	12.547	0.0011
380	SLU 53	0.26	0.01	40.92	1.1189	12.7592	-0.0127
380	SLU 54	0.27	0	40.91	1.1187	12.7559	-0.0069
380	SLU 55	0.27	-0.02	40.68	1.1123	12.684	0.0007
380	SLU 56	0.27	0.02	41.36	1.1309	12.8962	-0.0132
380	SLU 57	0.27	0	41.35	1.1307	12.8929	-0.0073
380	SLU 58	0.26	0	41.14	1.1247	12.8266	-0.0095
380	SLU 59	0.27	-0.01	41.13	1.1245	12.8232	-0.0036
380	SLU 60	0.26	0.02	41.82	1.1438	13.0417	-0.0157
380	SLU 61	0.27	0.01	41.81	1.1435	13.0383	-0.0099
380	SLU 62	0.26	0.02	42.27	1.1558	13.1787	-0.0162
380	SLU 63	0.27	0.01	42.26	1.1556	13.1753	-0.0103
380	SLU 64	0.28	0.03	39.71	1.0859	12.378	-0.0185
380	SLU 65	0.29	0	39.7	1.0855	12.3724	-0.0088
380	SLU 66	0.29	0.04	40.38	1.1042	12.5847	-0.0227
380	SLU 67	0.29	0.02	40.37	1.104	12.5813	-0.0168
380	SLU 68	0.3	0	40.14	1.0976	12.5094	-0.0092
380	SLU 69	0.29	0.04	40.83	1.1162	12.7217	-0.0231
380	SLU 70	0.3	0.02	40.82	1.116	12.7183	-0.0173
380	SLU 71	0.29	0.03	40.6	1.11	12.652	-0.0194



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
380	SLU 72	0.29	0.01	40.59	1.1098	12.6487	-0.0136
380	SLU 73	0.3	0.05	43.37	1.1863	13.5137	-0.0255
380	SLU 74	0.3	0.09	44.05	1.2049	13.7259	-0.0393
380	SLU 75	0.3	0.07	44.04	1.2047	13.7226	-0.0335
380	SLU 76	0.31	0.05	43.81	1.1983	13.6507	-0.0259
380	SLU 77	0.3	0.09	44.5	1.217	13.8629	-0.0397
380	SLU 78	0.31	0.07	44.49	1.2168	13.8596	-0.0339
380	SLU 79	0.3	0.08	44.27	1.2107	13.7933	-0.0361
380	SLU 80	0.3	0.06	44.26	1.2105	13.7899	-0.0302
380	SLU 81	0.29	0.1	44.96	1.2298	14.0084	-0.0423
380	SLU 82	0.3	0.08	44.95	1.2296	14.005	-0.0365
380	SLU 83	0.3	0.1	45.4	1.2419	14.1454	-0.0428
380	SLU 84	0.3	0.08	45.39	1.2416	14.142	-0.0369
380	SLE RA 1	0.21	0.01	29.86	0.8164	9.3091	-0.0084
380	SLE RA 2	0.22	-0.01	29.85	0.8162	9.3054	-0.0019
380	SLE RA 3	0.21	0.01	30.31	0.8286	9.4469	-0.0112
380	SLE RA 4	0.22	0	30.3	0.8284	9.4446	-0.0073
380	SLE RA 5	0.22	-0.01	30.15	0.8242	9.3967	-0.0022
380	SLE RA 6	0.21	0.01	30.6	0.8366	9.5382	-0.0114
380	SLE RA 7	0.22	0	30.6	0.8365	9.536	-0.0076
380	SLE RA 8	0.21	0.01	30.45	0.8325	9.4917	-0.009
380	SLE RA 9	0.22	0	30.45	0.8323	9.4895	-0.0051
380	SLE RA 10	0.22	0.02	32.3	0.8833	10.0662	-0.013
380	SLE RA 11	0.22	0.05	32.75	0.8957	10.2077	-0.0223
380	SLE RA 12	0.22	0.03	32.75	0.8956	10.2055	-0.0184
380	SLE RA 13	0.23	0.02	32.59	0.8913	10.1575	-0.0133
380	SLE RA 14	0.22	0.05	33.05	0.9038	10.299	-0.0226
380	SLE RA 15	0.23	0.03	33.04	0.9036	10.2968	-0.0187
380	SLE RA 16	0.22	0.04	32.9	0.8996	10.2526	-0.0201
380	SLE RA 17	0.22	0.03	32.89	0.8995	10.2504	-0.0162
380	SLE RA 18	0.22	0.05	33.36	0.9123	10.396	-0.0243
380	SLE RA 19	0.22	0.04	33.35	0.9122	10.3938	-0.0204
380	SLE RA 20	0.22	0.05	33.65	0.9204	10.4873	-0.0246
380	SLE RA 21	0.22	0.04	33.65	0.9202	10.4851	-0.0207
380	SLE FR 1	0.21	0.01	29.86	0.8164	9.3091	-0.0084
380	SLE FR 2	0.21	0	29.86	0.8164	9.3083	-0.0071
380	SLE FR 3	0.21	0.01	29.98	0.8196	9.3456	-0.0085
380	SLE FR 4	0.21	0.02	30.91	0.8451	9.6344	-0.0119
380	SLE FR 5	0.21	0.02	31.03	0.8484	9.6717	-0.0133
380	SLE FR 6	0.21	0.03	31.61	0.8644	9.8525	-0.0163
380	SLE QP 1	0.21	0.01	29.86	0.8164	9.3091	-0.0084
380	SLE QP 2	0.21	0.02	30.91	0.8452	9.6352	-0.0132
380	SLD 1	3.01	0.32	30.98	0.8463	9.7654	-0.2468
380	SLD 2	3.25	0.34	31.03	0.8476	9.7776	-0.2598
380	SLD 3	2.84	-0.57	30.49	0.8351	9.6098	0.0641
380	SLD 4	3.09	-0.55	30.54	0.8365	9.6219	0.0511
380	SLD 5	1.26	1.45	31.66	0.8622	9.9082	-0.5525
380	SLD 6	1.42	1.46	31.69	0.8631	9.9161	-0.561
380	SLD 7	0.7	-1.5	30.04	0.825	9.3893	0.4839
380	SLD 8	0.87	-1.49	30.07	0.8259	9.3973	0.4753
380	SLD 9	-0.44	1.53	31.75	0.8644	9.873	-0.5017
380	SLD 10	-0.28	1.54	31.78	0.8653	9.881	-0.5102
380	SLD 11	-1	-1.42	30.13	0.8273	9.3542	0.5347
380	SLD 12	-0.84	-1.41	30.16	0.8282	9.3622	0.5261
380	SLD 13	-2.67	0.59	31.27	0.8539	9.6484	-0.0774
380	SLD 14	-2.42	0.61	31.33	0.8552	9.6605	-0.0904
380	SLD 15	-2.83	-0.3	30.79	0.8427	9.4927	0.2335
380	SLD 16	-2.59	-0.28	30.84	0.8441	9.5049	0.2205
380	SLV 1	6.75	0.69	31.05	0.8474	9.9344	-0.5478
380	SLV 2	7.33	0.74	31.17	0.8506	9.9628	-0.5781
380	SLV 3	6.37	-1.32	29.95	0.8221	9.5811	0.156
380	SLV 4	6.94	-1.27	30.07	0.8253	9.6094	0.1257
380	SLV 5	2.66	3.26	32.6	0.8837	10.256	-1.2357
380	SLV 6	3.03	3.29	32.68	0.8857	10.2742	-1.2553
380	SLV 7	1.37	-3.43	28.93	0.7993	9.0781	1.1102
380	SLV 8	1.74	-3.4	29.01	0.8014	9.0964	1.0907
380	SLV 9	-1.32	3.44	32.81	0.889	10.1739	-1.117
380	SLV 10	-0.95	3.47	32.89	0.891	10.1922	-1.1366
380	SLV 11	-2.61	-3.25	29.14	0.8046	8.9961	1.229
380	SLV 12	-2.24	-3.22	29.22	0.8067	9.0144	1.2094
380	SLV 13	-6.52	1.31	31.75	0.8651	9.6609	-0.152
380	SLV 14	-5.95	1.36	31.87	0.8683	9.6892	-0.1824
380	SLV 15	-6.9	-0.7	30.64	0.8398	9.3076	0.5518
380	SLV 16	-6.33	-0.65	30.77	0.843	9.3359	0.5214
380	CRTFP Ux+	0	0	0	0	0	0
380	CRTFP Ux-	0	0	0	0	0	0
380	CRTFP Uy+	0	0	0	0	0	0
380	CRTFP Uy-	0	0	0	0	0	0
383	SLU 1	-1.11	-0.96	56.89	1.5336	-0.3069	0.0004
383	SLU 2	-1.08	-1.03	56.82	1.5322	-0.308	0
383	SLU 3	-1.14	-0.97	58.19	1.5687	-0.3132	0.0006
383	SLU 4	-1.13	-1.01	58.15	1.5679	-0.3138	0.0003
383	SLU 5	-1.1	-1.04	57.7	1.5557	-0.3126	0
383	SLU 6	-1.16	-0.98	59.07	1.5923	-0.3177	0.0006
383	SLU 7	-1.14	-1.02	59.03	1.5914	-0.3184	0.0003
383	SLU 8	-1.15	-0.99	58.64	1.5807	-0.316	0.0006
383	SLU 9	-1.13	-1.03	58.6	1.5799	-0.3167	0.0003
383	SLU 10	-1.16	-1.06	63.45	1.7112	-0.3518	-0.0013
383	SLU 11	-1.22	-1	64.82	1.7478	-0.357	-0.0007
383	SLU 12	-1.2	-1.04	64.78	1.7469	-0.3577	-0.001



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
383	SLU 13	-1.18	-1.08	64.33	1.7348	-0.3564	-0.0013
383	SLU 14	-1.24	-1.02	65.7	1.7713	-0.3615	-0.0006
383	SLU 15	-1.22	-1.06	65.66	1.7705	-0.3622	-0.0009
383	SLU 16	-1.22	-1.02	65.27	1.7598	-0.3598	-0.0007
383	SLU 17	-1.21	-1.06	65.23	1.7589	-0.3605	-0.001
383	SLU 18	-1.22	-1.01	66.36	1.7894	-0.3695	-0.0014
383	SLU 19	-1.2	-1.05	66.32	1.7885	-0.3702	-0.0017
383	SLU 20	-1.24	-1.02	67.24	1.813	-0.374	-0.0013
383	SLU 21	-1.22	-1.06	67.2	1.8121	-0.3747	-0.0016
383	SLU 22	-1.25	-0.96	63.09	1.7016	-0.3363	0.0007
383	SLU 23	-1.22	-1.03	63.02	1.7001	-0.3375	0.0002
383	SLU 24	-1.29	-0.97	64.39	1.7367	-0.3426	0.0008
383	SLU 25	-1.27	-1.01	64.35	1.7358	-0.3433	0.0005
383	SLU 26	-1.24	-1.04	63.9	1.7237	-0.3421	0.0003
383	SLU 27	-1.3	-0.98	65.27	1.7603	-0.3472	0.0009
383	SLU 28	-1.29	-1.03	65.23	1.7594	-0.3479	0.0006
383	SLU 29	-1.29	-0.99	64.84	1.7487	-0.3455	0.0008
383	SLU 30	-1.27	-1.03	64.8	1.7478	-0.3462	0.0005
383	SLU 31	-1.3	-1.06	69.65	1.8792	-0.3813	-0.0011
383	SLU 32	-1.36	-1	71.02	1.9158	-0.3864	-0.0005
383	SLU 33	-1.34	-1.04	70.98	1.9149	-0.3871	-0.0007
383	SLU 34	-1.32	-1.08	70.53	1.9027	-0.3859	-0.001
383	SLU 35	-1.38	-1.02	71.9	1.9393	-0.391	-0.0004
383	SLU 36	-1.36	-1.06	71.86	1.9384	-0.3917	-0.0007
383	SLU 37	-1.37	-1.02	71.47	1.9278	-0.3893	-0.0005
383	SLU 38	-1.35	-1.06	71.43	1.9269	-0.39	-0.0008
383	SLU 39	-1.36	-1.01	72.56	1.9574	-0.3989	-0.0011
383	SLU 40	-1.34	-1.05	72.52	1.9565	-0.3996	-0.0014
383	SLU 41	-1.38	-1.02	73.44	1.9809	-0.4035	-0.0011
383	SLU 42	-1.36	-1.06	73.4	1.9801	-0.4042	-0.0014
383	SLU 43	-1.39	-1.25	71.83	1.9361	-0.3889	0.0005
383	SLU 44	-1.36	-1.32	71.76	1.9347	-0.39	0
383	SLU 45	-1.43	-1.25	73.13	1.9712	-0.3951	0.0006
383	SLU 46	-1.41	-1.3	73.09	1.9703	-0.3958	0.0003
383	SLU 47	-1.38	-1.33	72.64	1.9582	-0.3946	0.0001
383	SLU 48	-1.45	-1.27	74.01	1.9948	-0.3997	0.0007
383	SLU 49	-1.43	-1.31	73.97	1.9939	-0.4004	0.0004
383	SLU 50	-1.43	-1.27	73.58	1.9832	-0.398	0.0006
383	SLU 51	-1.41	-1.32	73.55	1.9824	-0.3987	0.0003
383	SLU 52	-1.44	-1.35	78.39	2.1137	-0.4338	-0.0013
383	SLU 53	-1.51	-1.29	79.76	2.1503	-0.4389	-0.0006
383	SLU 54	-1.49	-1.33	79.72	2.1494	-0.4396	-0.0009
383	SLU 55	-1.46	-1.36	79.27	2.1373	-0.4384	-0.0012
383	SLU 56	-1.52	-1.3	80.64	2.1738	-0.4435	-0.0006
383	SLU 57	-1.51	-1.35	80.6	2.173	-0.4442	-0.0009
383	SLU 58	-1.51	-1.31	80.21	2.1623	-0.4418	-0.0007
383	SLU 59	-1.49	-1.35	80.17	2.1614	-0.4425	-0.001
383	SLU 60	-1.51	-1.29	81.3	2.1919	-0.4514	-0.0013
383	SLU 61	-1.49	-1.34	81.26	2.191	-0.4521	-0.0016
383	SLU 62	-1.52	-1.31	82.18	2.2155	-0.456	-0.0013
383	SLU 63	-1.51	-1.35	82.14	2.2146	-0.4567	-0.0016
383	SLU 64	-1.54	-1.25	78.03	2.1041	-0.4183	0.0007
383	SLU 65	-1.5	-1.32	77.96	2.1026	-0.4195	0.0002
383	SLU 66	-1.57	-1.26	79.33	2.1392	-0.4246	0.0009
383	SLU 67	-1.55	-1.3	79.29	2.1383	-0.4253	0.0006
383	SLU 68	-1.52	-1.33	78.84	2.1262	-0.424	0.0003
383	SLU 69	-1.59	-1.27	80.21	2.1627	-0.4292	0.0009
383	SLU 70	-1.57	-1.31	80.17	2.1619	-0.4298	0.0006
383	SLU 71	-1.57	-1.27	79.78	2.1512	-0.4275	0.0008
383	SLU 72	-1.55	-1.32	79.75	2.1503	-0.4281	0.0006
383	SLU 73	-1.58	-1.35	84.59	2.2817	-0.4633	-0.001
383	SLU 74	-1.65	-1.29	85.96	2.3183	-0.4684	-0.0004
383	SLU 75	-1.63	-1.33	85.92	2.3174	-0.4691	-0.0007
383	SLU 76	-1.6	-1.36	85.47	2.3052	-0.4678	-0.001
383	SLU 77	-1.67	-1.3	86.84	2.3418	-0.473	-0.0003
383	SLU 78	-1.65	-1.35	86.8	2.3409	-0.4737	-0.0006
383	SLU 79	-1.65	-1.31	86.41	2.3303	-0.4713	-0.0004
383	SLU 80	-1.63	-1.35	86.38	2.3294	-0.472	-0.0007
383	SLU 81	-1.65	-1.29	87.5	2.3599	-0.4809	-0.0011
383	SLU 82	-1.63	-1.34	87.46	2.359	-0.4816	-0.0014
383	SLU 83	-1.67	-1.31	88.38	2.3834	-0.4855	-0.001
383	SLU 84	-1.65	-1.35	88.34	2.3826	-0.4862	-0.0013
383	SLE RA 1	-1.15	-0.96	58.66	1.5816	-0.3153	0.0005
383	SLE RA 2	-1.13	-1.01	58.62	1.5806	-0.3161	0.0002
383	SLE RA 3	-1.17	-0.96	59.53	1.605	-0.3195	0.0006
383	SLE RA 4	-1.16	-0.99	59.5	1.6044	-0.3199	0.0004
383	SLE RA 5	-1.14	-1.02	59.2	1.5963	-0.3191	0.0002
383	SLE RA 6	-1.19	-0.97	60.11	1.6207	-0.3225	0.0006
383	SLE RA 7	-1.17	-1	60.09	1.6201	-0.323	0.0004
383	SLE RA 8	-1.18	-0.98	59.83	1.613	-0.3214	0.0006
383	SLE RA 9	-1.16	-1.01	59.8	1.6124	-0.3219	0.0004
383	SLE RA 10	-1.18	-1.03	63.04	1.7	-0.3453	-0.0007
383	SLE RA 11	-1.22	-0.99	63.95	1.7244	-0.3487	-0.0002
383	SLE RA 12	-1.21	-1.02	63.92	1.7238	-0.3491	-0.0004
383	SLE RA 13	-1.19	-1.04	63.62	1.7157	-0.3483	-0.0006
383	SLE RA 14	-1.24	-1	64.53	1.7401	-0.3517	-0.0002
383	SLE RA 15	-1.22	-1.02	64.51	1.7395	-0.3522	-0.0004
383	SLE RA 16	-1.23	-1	64.25	1.7324	-0.3506	-0.0003
383	SLE RA 17	-1.21	-1.03	64.22	1.7318	-0.3511	-0.0005
383	SLE RA 18	-1.22	-0.99	64.97	1.7521	-0.357	-0.0007



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
383	SLE RA 19	-1.21	-1.02	64.95	1.7516	-0.3575	-0.0009
383	SLE RA 20	-1.24	-1	65.56	1.7679	-0.3601	-0.0007
383	SLE RA 21	-1.22	-1.03	65.53	1.7673	-0.3605	-0.0009
383	SLE FR 1	-1.15	-0.96	58.66	1.5816	-0.3153	0.0005
383	SLE FR 2	-1.15	-0.97	58.65	1.5814	-0.3155	0.0004
383	SLE FR 3	-1.16	-0.96	58.89	1.5879	-0.3165	0.0005
383	SLE FR 4	-1.17	-0.98	60.55	1.6326	-0.328	0.0001
383	SLE FR 5	-1.18	-0.97	60.79	1.6391	-0.329	0.0002
383	SLE FR 6	-1.19	-0.97	61.82	1.6669	-0.3362	-0.0001
383	SLE QP 1	-1.15	-0.96	58.66	1.5816	-0.3153	0.0005
383	SLE QP 2	-1.17	-0.97	60.55	1.6328	-0.3278	0.0001
383	SLD 1	3.64	-0.72	66.57	1.7884	-0.1424	-0.1274
383	SLD 2	4.11	-1.05	66.16	1.7787	-0.149	-0.134
383	SLD 3	3.98	-2.21	65.39	1.7615	-0.1678	-0.136
383	SLD 4	4.45	-2.54	64.98	1.7518	-0.1745	-0.1426
383	SLD 5	-0.32	1.44	64.23	1.722	-0.2323	-0.0238
383	SLD 6	-0.01	1.22	63.96	1.7157	-0.2367	-0.0282
383	SLD 7	0.8	-3.55	60.28	1.6323	-0.3173	-0.0526
383	SLD 8	1.11	-3.77	60.01	1.6259	-0.3217	-0.057
383	SLD 9	-3.45	1.84	61.09	1.6396	-0.334	0.0573
383	SLD 10	-3.14	1.62	60.83	1.6333	-0.3384	0.0529
383	SLD 11	-2.33	-3.16	57.15	1.5499	-0.4189	0.0285
383	SLD 12	-2.02	-3.37	56.88	1.5436	-0.4233	0.0241
383	SLD 13	-6.79	0.61	56.13	1.5137	-0.4811	0.1429
383	SLD 14	-6.32	0.28	55.72	1.5041	-0.4878	0.1363
383	SLD 15	-6.46	-0.89	54.94	1.4868	-0.5066	0.1343
383	SLD 16	-5.99	-1.22	54.54	1.4772	-0.5133	0.1276
383	SLV 1	10.09	-0.44	74.59	1.9959	0.1058	-0.2983
383	SLV 2	11.19	-1.21	73.65	1.9735	0.0903	-0.3137
383	SLV 3	10.87	-3.83	71.9	1.9349	0.0472	-0.3184
383	SLV 4	11.97	-4.6	70.96	1.9125	0.0316	-0.3338
383	SLV 5	0.83	4.46	69	1.8382	-0.1061	-0.0562
383	SLV 6	1.54	3.97	68.39	1.8237	-0.1162	-0.0662
383	SLV 7	3.44	-6.83	60.05	1.6347	-0.3016	-0.1232
383	SLV 8	4.15	-7.33	59.44	1.6202	-0.3116	-0.1332
383	SLV 9	-6.49	5.39	61.66	1.6453	-0.344	0.1335
383	SLV 10	-5.78	4.9	61.06	1.6308	-0.3541	0.1235
383	SLV 11	-3.88	-5.9	52.72	1.4419	-0.5395	0.0665
383	SLV 12	-3.17	-6.4	52.11	1.4274	-0.5495	0.0565
383	SLV 13	-14.32	2.66	50.15	1.3531	-0.6873	0.3341
383	SLV 14	-13.22	1.89	49.2	1.3306	-0.7028	0.3186
383	SLV 15	-13.53	-0.73	47.46	1.2921	-0.7459	0.314
383	SLV 16	-12.44	-1.5	46.52	1.2696	-0.7614	0.2985
383	CRTFP Ux+	0	0	0	0	0	0
383	CRTFP Ux-	0	0	0	0	0	0
383	CRTFP Uy+	0	0	0	0	0	0
383	CRTFP Uy-	0	0	0	0	0	0
387	SLU 1	0.54	-0.6	56.89	1.5366	0.3332	0.0028
387	SLU 2	0.57	-0.63	56.89	1.5365	0.3337	0.0024
387	SLU 3	0.56	-0.61	58.2	1.5718	0.3398	0.0027
387	SLU 4	0.57	-0.63	58.19	1.5717	0.3401	0.0024
387	SLU 5	0.58	-0.65	57.76	1.5599	0.3379	0.0024
387	SLU 6	0.57	-0.62	59.07	1.5953	0.344	0.0027
387	SLU 7	0.58	-0.64	59.07	1.5952	0.3443	0.0024
387	SLU 8	0.56	-0.63	58.64	1.5835	0.3417	0.0028
387	SLU 9	0.57	-0.65	58.63	1.5834	0.3419	0.0025
387	SLU 10	0.59	-0.63	63.46	1.7141	0.3795	0.0033
387	SLU 11	0.58	-0.61	64.77	1.7494	0.3856	0.0036
387	SLU 12	0.6	-0.63	64.77	1.7494	0.3858	0.0034
387	SLU 13	0.6	-0.65	64.33	1.7376	0.3837	0.0033
387	SLU 14	0.59	-0.63	65.65	1.7729	0.3898	0.0036
387	SLU 15	0.61	-0.64	65.64	1.7728	0.39	0.0034
387	SLU 16	0.58	-0.63	65.21	1.7611	0.3874	0.0037
387	SLU 17	0.6	-0.65	65.21	1.7611	0.3877	0.0035
387	SLU 18	0.58	-0.6	66.29	1.7903	0.3987	0.0041
387	SLU 19	0.6	-0.62	66.28	1.7903	0.3989	0.0039
387	SLU 20	0.59	-0.62	67.16	1.8138	0.4029	0.0041
387	SLU 21	0.6	-0.64	67.15	1.8137	0.4031	0.0039
387	SLU 22	0.63	-0.56	63.09	1.7045	0.3628	0.0024
387	SLU 23	0.65	-0.6	63.08	1.7043	0.3633	0.002
387	SLU 24	0.64	-0.57	64.39	1.7397	0.3694	0.0023
387	SLU 25	0.66	-0.59	64.38	1.7396	0.3696	0.002
387	SLU 26	0.66	-0.61	63.95	1.7278	0.3675	0.002
387	SLU 27	0.65	-0.59	65.26	1.7632	0.3736	0.0023
387	SLU 28	0.67	-0.61	65.26	1.7631	0.3738	0.002
387	SLU 29	0.64	-0.59	64.83	1.7514	0.3712	0.0024
387	SLU 30	0.66	-0.61	64.82	1.7513	0.3715	0.0021
387	SLU 31	0.68	-0.6	69.65	1.882	0.4091	0.0029
387	SLU 32	0.67	-0.57	70.97	1.9173	0.4152	0.0032
387	SLU 33	0.69	-0.59	70.96	1.9173	0.4154	0.003
387	SLU 34	0.69	-0.61	70.52	1.9054	0.4133	0.0029
387	SLU 35	0.68	-0.59	71.84	1.9408	0.4194	0.0032
387	SLU 36	0.7	-0.61	71.83	1.9407	0.4196	0.003
387	SLU 37	0.67	-0.59	71.41	1.929	0.417	0.0033
387	SLU 38	0.69	-0.61	71.4	1.929	0.4173	0.0031
387	SLU 39	0.67	-0.56	72.48	1.9582	0.4282	0.0037
387	SLU 40	0.68	-0.58	72.47	1.9582	0.4285	0.0035
387	SLU 41	0.67	-0.58	73.35	1.9817	0.4324	0.0037
387	SLU 42	0.69	-0.6	73.35	1.9816	0.4327	0.0035
387	SLU 43	0.67	-0.8	71.84	1.94	0.4231	0.0037



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
387	SLU 44	0.7	-0.83	71.83	1.9399	0.4235	0.0034
387	SLU 45	0.69	-0.8	73.14	1.9752	0.4296	0.0036
387	SLU 46	0.71	-0.82	73.14	1.9751	0.4299	0.0034
387	SLU 47	0.71	-0.84	72.7	1.9633	0.4277	0.0034
387	SLU 48	0.7	-0.82	74.02	1.9987	0.4338	0.0036
387	SLU 49	0.72	-0.84	74.01	1.9986	0.4341	0.0034
387	SLU 50	0.69	-0.83	73.59	1.9869	0.4315	0.0037
387	SLU 51	0.71	-0.84	73.58	1.9868	0.4318	0.0035
387	SLU 52	0.73	-0.83	78.41	2.1175	0.4693	0.0043
387	SLU 53	0.72	-0.8	79.72	2.1529	0.4754	0.0046
387	SLU 54	0.73	-0.82	79.71	2.1528	0.4757	0.0044
387	SLU 55	0.74	-0.84	79.28	2.141	0.4735	0.0043
387	SLU 56	0.73	-0.82	80.59	2.1763	0.4796	0.0046
387	SLU 57	0.74	-0.84	80.59	2.1762	0.4799	0.0044
387	SLU 58	0.72	-0.83	80.16	2.1646	0.4773	0.0047
387	SLU 59	0.73	-0.85	80.16	2.1645	0.4775	0.0045
387	SLU 60	0.71	-0.8	81.23	2.1938	0.4885	0.0051
387	SLU 61	0.73	-0.82	81.23	2.1937	0.4888	0.0049
387	SLU 62	0.72	-0.81	82.11	2.2172	0.4927	0.0051
387	SLU 63	0.74	-0.83	82.1	2.2172	0.493	0.0049
387	SLU 64	0.76	-0.76	78.03	2.1079	0.4527	0.0033
387	SLU 65	0.79	-0.79	78.02	2.1078	0.4531	0.003
387	SLU 66	0.78	-0.76	79.34	2.1431	0.4592	0.0032
387	SLU 67	0.79	-0.78	79.33	2.143	0.4595	0.003
387	SLU 68	0.8	-0.8	78.89	2.1312	0.4573	0.003
387	SLU 69	0.79	-0.78	80.21	2.1666	0.4634	0.0032
387	SLU 70	0.8	-0.8	80.2	2.1665	0.4637	0.003
387	SLU 71	0.78	-0.79	79.78	2.1548	0.4611	0.0033
387	SLU 72	0.79	-0.81	79.77	2.1547	0.4613	0.0031
387	SLU 73	0.81	-0.79	84.6	2.2854	0.4989	0.0039
387	SLU 74	0.8	-0.77	85.91	2.3207	0.505	0.0042
387	SLU 75	0.82	-0.78	85.91	2.3207	0.5053	0.004
387	SLU 76	0.82	-0.8	85.47	2.3089	0.5031	0.0039
387	SLU 77	0.81	-0.78	86.78	2.3442	0.5092	0.0042
387	SLU 78	0.83	-0.8	86.78	2.3441	0.5095	0.004
387	SLU 79	0.8	-0.79	86.35	2.3324	0.5069	0.0043
387	SLU 80	0.82	-0.81	86.35	2.3324	0.5071	0.0041
387	SLU 81	0.8	-0.76	87.42	2.3616	0.5181	0.0047
387	SLU 82	0.81	-0.78	87.42	2.3616	0.5183	0.0045
387	SLU 83	0.81	-0.77	88.3	2.3851	0.5223	0.0047
387	SLU 84	0.82	-0.79	88.29	2.385	0.5225	0.0045
387	SLE RA 1	0.56	-0.59	58.66	1.5845	0.3417	0.0027
387	SLE RA 2	0.58	-0.61	58.66	1.5845	0.342	0.0024
387	SLE RA 3	0.58	-0.6	59.53	1.608	0.3461	0.0026
387	SLE RA 4	0.59	-0.61	59.53	1.608	0.3462	0.0024
387	SLE RA 5	0.59	-0.62	59.24	1.6001	0.3448	0.0024
387	SLE RA 6	0.58	-0.61	60.11	1.6237	0.3489	0.0026
387	SLE RA 7	0.59	-0.62	60.11	1.6236	0.349	0.0024
387	SLE RA 8	0.58	-0.61	59.83	1.6158	0.3473	0.0027
387	SLE RA 9	0.59	-0.62	59.82	1.6158	0.3475	0.0025
387	SLE RA 10	0.6	-0.61	63.04	1.7029	0.3725	0.003
387	SLE RA 11	0.59	-0.6	63.92	1.7265	0.3766	0.0032
387	SLE RA 12	0.61	-0.61	63.91	1.7264	0.3768	0.0031
387	SLE RA 13	0.61	-0.62	63.62	1.7185	0.3753	0.003
387	SLE RA 14	0.6	-0.61	64.5	1.7421	0.3794	0.0032
387	SLE RA 15	0.61	-0.62	64.49	1.7421	0.3796	0.0031
387	SLE RA 16	0.59	-0.61	64.21	1.7343	0.3778	0.0033
387	SLE RA 17	0.6	-0.62	64.21	1.7342	0.378	0.0031
387	SLE RA 18	0.59	-0.59	64.93	1.7537	0.3853	0.0036
387	SLE RA 19	0.6	-0.6	64.92	1.7537	0.3855	0.0034
387	SLE RA 20	0.6	-0.6	65.51	1.7694	0.3881	0.0036
387	SLE RA 21	0.61	-0.61	65.5	1.7693	0.3883	0.0034
387	SLE FR 1	0.56	-0.59	58.66	1.5845	0.3417	0.0027
387	SLE FR 2	0.57	-0.59	58.66	1.5845	0.3418	0.0026
387	SLE FR 3	0.57	-0.59	58.9	1.5908	0.3428	0.0027
387	SLE FR 4	0.58	-0.6	60.54	1.6353	0.3548	0.0029
387	SLE FR 5	0.57	-0.6	60.77	1.6416	0.3559	0.0029
387	SLE FR 6	0.58	-0.59	61.79	1.6691	0.3635	0.0031
387	SLE QP 1	0.56	-0.59	58.66	1.5845	0.3417	0.0027
387	SLE QP 2	0.57	-0.59	60.54	1.6353	0.3548	0.0029
387	SLD 1	5.94	0.6	55.29	1.498	0.4451	-0.1347
387	SLD 2	6.42	0.95	55.73	1.5089	0.4374	-0.1419
387	SLD 3	5.62	-0.91	54.2	1.4732	0.4724	-0.1267
387	SLD 4	6.1	-0.56	54.65	1.4841	0.4648	-0.134
387	SLD 5	2.58	1.98	60.53	1.6298	0.3417	-0.0491
387	SLD 6	2.9	2.21	60.83	1.6369	0.3367	-0.0539
387	SLD 7	1.52	-3.03	56.91	1.5471	0.4329	-0.0226
387	SLD 8	1.83	-2.8	57.21	1.5542	0.4279	-0.0274
387	SLD 9	-0.69	1.62	63.88	1.7164	0.2816	0.0333
387	SLD 10	-0.37	1.85	64.17	1.7235	0.2766	0.0285
387	SLD 11	-1.75	-3.4	60.26	1.6337	0.3728	0.0597
387	SLD 12	-1.44	-3.17	60.55	1.6408	0.3678	0.055
387	SLD 13	-4.96	-0.62	66.44	1.7865	0.2447	0.1399
387	SLD 14	-4.48	-0.28	66.88	1.7974	0.2371	0.1326
387	SLD 15	-5.28	-2.13	65.35	1.7617	0.2721	0.1478
387	SLD 16	-4.8	-1.78	65.8	1.7726	0.2645	0.1405
387	SLV 1	13.14	2.13	48.21	1.3134	0.5668	-0.319
387	SLV 2	14.25	2.95	49.25	1.3386	0.549	-0.336
387	SLV 3	12.39	-1.27	45.74	1.2568	0.6294	-0.3005
387	SLV 4	13.5	-0.46	46.78	1.282	0.6116	-0.3174



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
387	SLV 5	5.28	5.25	60.41	1.6201	0.3265	-0.1188
387	SLV 6	6	5.77	61.08	1.6364	0.315	-0.1297
387	SLV 7	2.79	-6.1	52.17	1.4316	0.5352	-0.0571
387	SLV 8	3.51	-5.57	52.84	1.4479	0.5238	-0.068
387	SLV 9	-2.37	4.39	68.24	1.8227	0.1858	0.0739
387	SLV 10	-1.65	4.92	68.91	1.839	0.1743	0.063
387	SLV 11	-4.85	-6.96	60	1.6342	0.3946	0.1356
387	SLV 12	-4.14	-6.43	60.67	1.6505	0.3831	0.1247
387	SLV 13	-12.36	-0.72	74.31	1.9886	0.0979	0.3233
387	SLV 14	-11.25	0.09	75.34	2.0138	0.0802	0.3064
387	SLV 15	-13.1	-4.13	71.83	1.932	0.1606	0.3418
387	SLV 16	-11.99	-3.32	72.87	1.9572	0.1428	0.3249
387	CRTFP Ux+	0	0	0	0	0	0
387	CRTFP Ux-	0	0	0	0	0	0
387	CRTFP Uy+	0	0	0	0	0	0
387	CRTFP Uy-	0	0	0	0	0	0
388	SLU 1	0.36	0.35	34.63	0.9142	9.4605	-0.1336
388	SLU 2	0.37	0.34	34.64	0.9144	9.4625	-0.128
388	SLU 3	0.37	0.36	35.45	0.9357	9.6788	-0.1365
388	SLU 4	0.38	0.35	35.46	0.9359	9.68	-0.1332
388	SLU 5	0.38	0.34	35.17	0.9284	9.6053	-0.1281
388	SLU 6	0.37	0.36	35.99	0.9498	9.8216	-0.1366
388	SLU 7	0.38	0.35	35.99	0.9499	9.8228	-0.1333
388	SLU 8	0.37	0.35	35.7	0.9422	9.7461	-0.1336
388	SLU 9	0.38	0.34	35.71	0.9424	9.7473	-0.1303
388	SLU 10	0.39	0.44	38.5	1.0162	10.4957	-0.1664
388	SLU 11	0.39	0.47	39.31	1.0376	10.712	-0.1749
388	SLU 12	0.39	0.46	39.32	1.0377	10.7132	-0.1716
388	SLU 13	0.39	0.44	39.04	1.0302	10.6385	-0.1664
388	SLU 14	0.39	0.47	39.85	1.0516	10.8548	-0.1749
388	SLU 15	0.4	0.46	39.85	1.0517	10.856	-0.1716
388	SLU 16	0.38	0.46	39.56	1.044	10.7792	-0.172
388	SLU 17	0.39	0.45	39.57	1.0442	10.7805	-0.1686
388	SLU 18	0.38	0.51	40.15	1.0596	10.9364	-0.1883
388	SLU 19	0.39	0.5	40.15	1.0597	10.9376	-0.185
388	SLU 20	0.39	0.51	40.68	1.0736	11.0792	-0.1884
388	SLU 21	0.4	0.5	40.69	1.0738	11.0804	-0.185
388	SLU 22	0.41	0.45	38.46	1.0151	10.4805	-0.1688
388	SLU 23	0.43	0.43	38.46	1.0153	10.4825	-0.1633
388	SLU 24	0.42	0.46	39.28	1.0367	10.6988	-0.1718
388	SLU 25	0.43	0.45	39.28	1.0368	10.7	-0.1685
388	SLU 26	0.43	0.43	39	1.0294	10.6253	-0.1633
388	SLU 27	0.43	0.46	39.81	1.0507	10.8416	-0.1718
388	SLU 28	0.44	0.45	39.82	1.0508	10.8428	-0.1685
388	SLU 29	0.42	0.45	39.53	1.0432	10.7661	-0.1689
388	SLU 30	0.43	0.44	39.53	1.0433	10.7673	-0.1655
388	SLU 31	0.44	0.54	42.33	1.1171	11.5156	-0.2016
388	SLU 32	0.44	0.57	43.14	1.1385	11.7319	-0.2101
388	SLU 33	0.45	0.56	43.14	1.1386	11.7331	-0.2068
388	SLU 34	0.45	0.54	42.86	1.1312	11.6584	-0.2016
388	SLU 35	0.45	0.57	43.67	1.1525	11.8747	-0.2102
388	SLU 36	0.46	0.56	43.68	1.1526	11.876	-0.2068
388	SLU 37	0.44	0.56	43.39	1.145	11.7992	-0.2072
388	SLU 38	0.45	0.55	43.39	1.1451	11.8004	-0.2039
388	SLU 39	0.43	0.6	43.97	1.1605	11.9564	-0.2236
388	SLU 40	0.44	0.59	43.98	1.1607	11.9576	-0.2203
388	SLU 41	0.44	0.6	44.51	1.1746	12.0992	-0.2236
388	SLU 42	0.45	0.59	44.51	1.1747	12.1004	-0.2203
388	SLU 43	0.44	0.43	43.71	1.1538	11.9489	-0.1616
388	SLU 44	0.46	0.41	43.71	1.154	11.951	-0.156
388	SLU 45	0.46	0.43	44.53	1.1754	12.1672	-0.1645
388	SLU 46	0.47	0.42	44.53	1.1755	12.1685	-0.1612
388	SLU 47	0.47	0.41	44.25	1.1681	12.0938	-0.1561
388	SLU 48	0.46	0.43	45.06	1.1894	12.31	-0.1646
388	SLU 49	0.47	0.42	45.07	1.1895	12.3113	-0.1612
388	SLU 50	0.45	0.43	44.78	1.1819	12.2345	-0.1616
388	SLU 51	0.46	0.42	44.78	1.182	12.2358	-0.1583
388	SLU 52	0.48	0.52	47.58	1.2558	12.9841	-0.1944
388	SLU 53	0.47	0.54	48.39	1.2772	13.2004	-0.2029
388	SLU 54	0.48	0.53	48.39	1.2773	13.2016	-0.1996
388	SLU 55	0.48	0.52	48.11	1.2699	13.1269	-0.1944
388	SLU 56	0.48	0.54	48.93	1.2912	13.3432	-0.2029
388	SLU 57	0.49	0.53	48.93	1.2914	13.3444	-0.1996
388	SLU 58	0.47	0.53	48.64	1.2837	13.2677	-0.2
388	SLU 59	0.48	0.52	48.64	1.2838	13.2689	-0.1966
388	SLU 60	0.47	0.58	49.22	1.2993	13.4248	-0.2163
388	SLU 61	0.48	0.57	49.23	1.2994	13.4261	-0.213
388	SLU 62	0.47	0.58	49.76	1.3133	13.5677	-0.2164
388	SLU 63	0.48	0.57	49.76	1.3134	13.5689	-0.213
388	SLU 64	0.5	0.52	47.53	1.2548	12.9689	-0.1968
388	SLU 65	0.51	0.51	47.54	1.255	12.9709	-0.1913
388	SLU 66	0.51	0.53	48.35	1.2763	13.1872	-0.1998
388	SLU 67	0.52	0.52	48.36	1.2765	13.1884	-0.1965
388	SLU 68	0.52	0.51	48.08	1.269	13.1137	-0.1913
388	SLU 69	0.52	0.53	48.89	1.2903	13.33	-0.1998
388	SLU 70	0.53	0.52	48.89	1.2905	13.3312	-0.1965
388	SLU 71	0.51	0.52	48.6	1.2828	13.2545	-0.1968
388	SLU 72	0.52	0.51	48.61	1.2829	13.2557	-0.1935
388	SLU 73	0.53	0.61	51.4	1.3568	14.0041	-0.2296
388	SLU 74	0.53	0.64	52.22	1.3781	14.2204	-0.2381



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
388	SLU 75	0.54	0.63	52.22	1.3783	14.2216	-0.2348
388	SLU 76	0.54	0.61	51.94	1.3708	14.1469	-0.2296
388	SLU 77	0.53	0.64	52.75	1.3922	14.3632	-0.2381
388	SLU 78	0.54	0.63	52.76	1.3923	14.3644	-0.2348
388	SLU 79	0.53	0.63	52.47	1.3846	14.2877	-0.2352
388	SLU 80	0.54	0.62	52.47	1.3847	14.2889	-0.2319
388	SLU 81	0.52	0.68	53.05	1.4002	14.4448	-0.2516
388	SLU 82	0.53	0.67	53.05	1.4003	14.446	-0.2482
388	SLU 83	0.53	0.68	53.59	1.4142	14.5876	-0.2516
388	SLU 84	0.54	0.67	53.59	1.4143	14.5888	-0.2483
388	SLE RA 1	0.37	0.38	35.72	0.943	9.7519	-0.1436
388	SLE RA 2	0.38	0.37	35.73	0.9432	9.7533	-0.1399
388	SLE RA 3	0.38	0.39	36.27	0.9574	9.8974	-0.1456
388	SLE RA 4	0.39	0.38	36.27	0.9575	9.8983	-0.1434
388	SLE RA 5	0.39	0.37	36.08	0.9525	9.8485	-0.14
388	SLE RA 6	0.38	0.39	36.63	0.9667	9.9927	-0.1456
388	SLE RA 7	0.39	0.38	36.63	0.9668	9.9935	-0.1434
388	SLE RA 8	0.38	0.38	36.44	0.9617	9.9423	-0.1437
388	SLE RA 9	0.39	0.37	36.44	0.9618	9.9431	-0.1415
388	SLE RA 10	0.39	0.44	38.3	1.011	10.442	-0.1655
388	SLE RA 11	0.39	0.46	38.84	1.0253	10.5862	-0.1712
388	SLE RA 12	0.4	0.45	38.85	1.0254	10.587	-0.169
388	SLE RA 13	0.4	0.44	38.66	1.0204	10.5372	-0.1655
388	SLE RA 14	0.39	0.46	39.2	1.0346	10.6814	-0.1712
388	SLE RA 15	0.4	0.45	39.2	1.0347	10.6822	-0.169
388	SLE RA 16	0.39	0.45	39.01	1.0296	10.6311	-0.1692
388	SLE RA 17	0.4	0.45	39.01	1.0297	10.6319	-0.167
388	SLE RA 18	0.39	0.48	39.4	1.04	10.7359	-0.1801
388	SLE RA 19	0.39	0.48	39.4	1.0401	10.7367	-0.1779
388	SLE RA 20	0.39	0.48	39.76	1.0493	10.8311	-0.1802
388	SLE RA 21	0.4	0.48	39.76	1.0494	10.8319	-0.178
388	SLE FR 1	0.37	0.38	35.72	0.943	9.7519	-0.1436
388	SLE FR 2	0.37	0.38	35.72	0.943	9.7522	-0.1429
388	SLE FR 3	0.37	0.38	35.87	0.9468	9.79	-0.1436
388	SLE FR 4	0.38	0.41	36.83	0.9721	10.0474	-0.1538
388	SLE FR 5	0.38	0.41	36.97	0.9758	10.0852	-0.1546
388	SLE FR 6	0.38	0.43	37.56	0.9915	10.2439	-0.1619
388	SLE QP 1	0.37	0.38	35.72	0.943	9.7519	-0.1436
388	SLE QP 2	0.38	0.41	36.83	0.9721	10.0471	-0.1546
388	SLD 1	3.48	1.02	27	0.7142	7.5132	-0.3986
388	SLD 2	3.77	1.55	27.52	0.7266	7.654	-0.5901
388	SLD 3	3.3	-0.19	25.93	0.688	7.2308	0.027
388	SLD 4	3.58	0.34	26.44	0.7004	7.3716	-0.1646
388	SLD 5	1.54	2.34	35.41	0.9323	9.6901	-0.839
388	SLD 6	1.73	2.69	35.75	0.9404	9.7826	-0.9649
388	SLD 7	0.92	-1.7	31.84	0.8449	8.7487	0.5795
388	SLD 8	1.11	-1.36	32.18	0.8531	8.8413	0.4536
388	SLD 9	-0.35	2.18	41.47	1.0911	11.2529	-0.7628
388	SLD 10	-0.17	2.53	41.81	1.0993	11.3454	-0.8887
388	SLD 11	-0.97	-1.87	37.9	1.0038	10.3115	0.6557
388	SLD 12	-0.79	-1.52	38.24	1.012	10.4041	0.5298
388	SLD 13	-2.83	0.49	47.21	1.2438	12.7226	-0.1446
388	SLD 14	-2.54	1.01	47.73	1.2562	12.8634	-0.3361
388	SLD 15	-3.01	-0.73	46.14	1.2176	12.4401	0.281
388	SLD 16	-2.73	-0.2	46.65	1.23	12.581	0.0894
388	SLV 1	7.64	1.8	13.8	0.3679	4.1093	-0.7103
388	SLV 2	8.3	3.03	15	0.3968	4.4372	-1.1563
388	SLV 3	7.21	-0.95	11.34	0.3077	3.4616	0.2535
388	SLV 4	7.87	0.28	12.54	0.3366	3.7895	-0.1926
388	SLV 5	3.1	4.79	33.44	0.8771	9.1914	-1.7058
388	SLV 6	3.53	5.58	34.21	0.8958	9.4032	-1.9939
388	SLV 7	1.65	-4.38	25.24	0.6765	7.0324	1.5066
388	SLV 8	2.08	-3.59	26.02	0.6951	7.2442	1.2185
388	SLV 9	-1.33	4.41	47.63	1.2491	12.85	-1.5277
388	SLV 10	-0.9	5.2	48.41	1.2677	13.0618	-1.8158
388	SLV 11	-2.77	-4.76	39.44	1.0484	10.691	1.6847
388	SLV 12	-2.35	-3.96	40.22	1.0671	10.9028	1.3967
388	SLV 13	-7.12	0.55	61.11	1.6077	16.3047	-0.1166
388	SLV 14	-6.45	1.77	62.31	1.6366	16.6326	-0.5626
388	SLV 15	-7.55	-2.2	58.65	1.5475	15.6569	0.8472
388	SLV 16	-6.89	-0.98	59.86	1.5764	15.9849	0.4011
388	CRTFP Ux+	0	0	0	0	0	0
388	CRTFP Ux-	0	0	0	0	0	0
388	CRTFP Uy+	0	0	0	0	0	0
388	CRTFP Uy-	0	0	0	0	0	0
390	SLU 1	-0.63	0.11	33.18	0.8614	-6.1381	0.0438
390	SLU 2	-0.61	0.04	33.13	0.8602	-6.1281	0.0247
390	SLU 3	-0.65	0.12	33.97	0.8819	-6.2802	0.0462
390	SLU 4	-0.64	0.07	33.94	0.8812	-6.2741	0.0348
390	SLU 5	-0.62	0.04	33.64	0.8735	-6.2209	0.0262
390	SLU 6	-0.66	0.12	34.49	0.8952	-6.373	0.0477
390	SLU 7	-0.65	0.08	34.46	0.8944	-6.367	0.0362
390	SLU 8	-0.65	0.12	34.21	0.888	-6.3239	0.0467
390	SLU 9	-0.64	0.07	34.18	0.8873	-6.3178	0.0353
390	SLU 10	-0.66	0.1	36.87	0.9573	-6.8046	0.0432
390	SLU 11	-0.69	0.19	37.71	0.9789	-6.9567	0.0647
390	SLU 12	-0.68	0.14	37.68	0.9782	-6.9507	0.0532
390	SLU 13	-0.67	0.11	37.39	0.9705	-6.8975	0.0447
390	SLU 14	-0.7	0.19	38.23	0.9922	-7.0496	0.0662
390	SLU 15	-0.69	0.15	38.2	0.9915	-7.0436	0.0547



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
390	SLU 16	-0.69	0.19	37.95	0.9851	-7.0004	0.0652
390	SLU 17	-0.69	0.14	37.92	0.9843	-6.9944	0.0538
390	SLU 18	-0.69	0.21	38.53	1.0001	-7.1046	0.0702
390	SLU 19	-0.68	0.16	38.5	0.9993	-7.0986	0.0588
390	SLU 20	-0.7	0.21	39.04	1.0134	-7.1975	0.0717
390	SLU 21	-0.69	0.17	39.01	1.0126	-7.1915	0.0602
390	SLU 22	-0.71	0.17	36.92	0.9585	-6.8115	0.0609
390	SLU 23	-0.69	0.1	36.87	0.9573	-6.8014	0.0418
390	SLU 24	-0.73	0.18	37.71	0.979	-6.9535	0.0633
390	SLU 25	-0.72	0.13	37.68	0.9782	-6.9474	0.0518
390	SLU 26	-0.7	0.1	37.38	0.9706	-6.8943	0.0432
390	SLU 27	-0.74	0.18	38.23	0.9923	-7.0464	0.0648
390	SLU 28	-0.73	0.14	38.2	0.9915	-7.0403	0.0533
390	SLU 29	-0.73	0.18	37.95	0.9851	-6.9972	0.0638
390	SLU 30	-0.72	0.13	37.92	0.9844	-6.9912	0.0524
390	SLU 31	-0.74	0.16	40.61	1.0543	-7.4779	0.0603
390	SLU 32	-0.77	0.25	41.45	1.076	-7.63	0.0818
390	SLU 33	-0.76	0.2	41.42	1.0753	-7.624	0.0703
390	SLU 34	-0.75	0.17	41.13	1.0676	-7.5708	0.0617
390	SLU 35	-0.78	0.25	41.97	1.0893	-7.7229	0.0832
390	SLU 36	-0.77	0.21	41.94	1.0886	-7.7169	0.0718
390	SLU 37	-0.78	0.25	41.69	1.0821	-7.6738	0.0823
390	SLU 38	-0.77	0.2	41.66	1.0814	-7.6677	0.0708
390	SLU 39	-0.77	0.27	42.27	1.0971	-7.778	0.0873
390	SLU 40	-0.76	0.22	42.24	1.0964	-7.7719	0.0758
390	SLU 41	-0.78	0.27	42.78	1.1104	-7.8708	0.0887
390	SLU 42	-0.77	0.23	42.75	1.1097	-7.8648	0.0773
390	SLU 43	-0.79	0.12	41.85	1.0866	-7.7487	0.0511
390	SLU 44	-0.77	0.05	41.8	1.0854	-7.7387	0.032
390	SLU 45	-0.81	0.13	42.64	1.107	-7.8908	0.0535
390	SLU 46	-0.8	0.09	42.61	1.1063	-7.8847	0.042
390	SLU 47	-0.78	0.05	42.32	1.0986	-7.8315	0.0335
390	SLU 48	-0.82	0.13	43.16	1.1203	-7.9836	0.055
390	SLU 49	-0.81	0.09	43.13	1.1196	-7.9776	0.0435
390	SLU 50	-0.81	0.13	42.88	1.1132	-7.9345	0.054
390	SLU 51	-0.8	0.09	42.85	1.1124	-7.9284	0.0426
390	SLU 52	-0.82	0.12	45.54	1.1824	-8.4152	0.0505
390	SLU 53	-0.85	0.2	46.39	1.2041	-8.5673	0.072
390	SLU 54	-0.84	0.15	46.35	1.2033	-8.5613	0.0605
390	SLU 55	-0.83	0.12	46.06	1.1957	-8.5081	0.052
390	SLU 56	-0.87	0.2	46.9	1.2174	-8.6602	0.0735
390	SLU 57	-0.86	0.16	46.87	1.2166	-8.6541	0.062
390	SLU 58	-0.86	0.2	46.63	1.2102	-8.611	0.0725
390	SLU 59	-0.85	0.16	46.59	1.2095	-8.605	0.0611
390	SLU 60	-0.85	0.22	47.2	1.2252	-8.7152	0.0775
390	SLU 61	-0.84	0.18	47.17	1.2245	-8.7092	0.066
390	SLU 62	-0.86	0.23	47.71	1.2385	-8.8081	0.079
390	SLU 63	-0.85	0.18	47.68	1.2378	-8.8021	0.0675
390	SLU 64	-0.87	0.18	45.59	1.1836	-8.422	0.0682
390	SLU 65	-0.85	0.11	45.54	1.1824	-8.412	0.0491
390	SLU 66	-0.89	0.19	46.38	1.2041	-8.5641	0.0706
390	SLU 67	-0.88	0.15	46.35	1.2034	-8.558	0.0591
390	SLU 68	-0.87	0.11	46.06	1.1957	-8.5048	0.0505
390	SLU 69	-0.9	0.2	46.9	1.2174	-8.657	0.072
390	SLU 70	-0.89	0.15	46.87	1.2167	-8.6509	0.0606
390	SLU 71	-0.89	0.19	46.62	1.2102	-8.6078	0.0711
390	SLU 72	-0.88	0.15	46.59	1.2095	-8.6018	0.0596
390	SLU 73	-0.9	0.18	49.28	1.2795	-9.0885	0.0675
390	SLU 74	-0.93	0.26	50.13	1.3012	-9.2406	0.0891
390	SLU 75	-0.92	0.21	50.09	1.3004	-9.2346	0.0776
390	SLU 76	-0.91	0.18	49.8	1.2928	-9.1814	0.069
390	SLU 77	-0.95	0.26	50.64	1.3144	-9.3335	0.0905
390	SLU 78	-0.94	0.22	50.61	1.3137	-9.3275	0.0791
390	SLU 79	-0.94	0.26	50.37	1.3073	-9.2844	0.0896
390	SLU 80	-0.93	0.22	50.33	1.3065	-9.2783	0.0781
390	SLU 81	-0.93	0.28	50.94	1.3223	-9.3886	0.0946
390	SLU 82	-0.92	0.24	50.91	1.3216	-9.3825	0.0831
390	SLU 83	-0.94	0.29	51.45	1.3356	-9.4814	0.096
390	SLU 84	-0.93	0.24	51.42	1.3348	-9.4754	0.0846
390	SLE RA 1	-0.65	0.13	34.25	0.8892	-6.3305	0.0487
390	SLE RA 2	-0.64	0.08	34.21	0.8884	-6.3238	0.0359
390	SLE RA 3	-0.67	0.13	34.78	0.9028	-6.4252	0.0503
390	SLE RA 4	-0.66	0.1	34.76	0.9023	-6.4212	0.0426
390	SLE RA 5	-0.65	0.08	34.56	0.8972	-6.3857	0.0369
390	SLE RA 6	-0.67	0.14	35.12	0.9117	-6.4871	0.0513
390	SLE RA 7	-0.67	0.11	35.1	0.9112	-6.4831	0.0436
390	SLE RA 8	-0.67	0.13	34.94	0.9069	-6.4543	0.0506
390	SLE RA 9	-0.66	0.1	34.92	0.9064	-6.4503	0.043
390	SLE RA 10	-0.67	0.12	36.71	0.953	-6.7748	0.0483
390	SLE RA 11	-0.69	0.18	37.27	0.9675	-6.8762	0.0626
390	SLE RA 12	-0.69	0.15	37.25	0.967	-6.8722	0.055
390	SLE RA 13	-0.68	0.13	37.05	0.9619	-6.8368	0.0493
390	SLE RA 14	-0.7	0.18	37.62	0.9764	-6.9382	0.0636
390	SLE RA 15	-0.7	0.15	37.59	0.9759	-6.9341	0.056
390	SLE RA 16	-0.7	0.18	37.43	0.9716	-6.9054	0.063
390	SLE RA 17	-0.69	0.15	37.41	0.9711	-6.9014	0.0553
390	SLE RA 18	-0.69	0.19	37.81	0.9816	-6.9749	0.0663
390	SLE RA 19	-0.69	0.16	37.79	0.9811	-6.9708	0.0586
390	SLE RA 20	-0.7	0.2	38.16	0.9904	-7.0368	0.0673
390	SLE RA 21	-0.69	0.17	38.14	0.99	-7.0327	0.0596





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
390	SLE FR 1	-0.65	0.13	34.25	0.8892	-6.3305	0.0487
390	SLE FR 2	-0.65	0.12	34.24	0.889	-6.3292	0.0461
390	SLE FR 3	-0.65	0.13	34.39	0.8927	-6.3553	0.0491
390	SLE FR 4	-0.66	0.14	35.31	0.9167	-6.5225	0.0514
390	SLE FR 5	-0.67	0.15	35.46	0.9204	-6.5486	0.0544
390	SLE FR 6	-0.67	0.16	36.03	0.9354	-6.6527	0.0575
390	SLE QP 1	-0.65	0.13	34.25	0.8892	-6.3305	0.0487
390	SLE QP 2	-0.66	0.15	35.32	0.9169	-6.5238	0.054
390	SLD 1	1.82	0.63	45.77	1.1856	-8.3588	0.1182
390	SLD 2	2.07	0.17	45.32	1.1752	-8.2737	-0.0033
390	SLD 3	2	-0.51	44.77	1.1617	-8.1755	-0.1704
390	SLD 4	2.25	-0.98	44.32	1.1513	-8.0905	-0.2919
390	SLD 5	-0.24	2.12	40.05	1.0356	-7.3674	0.5327
390	SLD 6	-0.07	1.82	39.76	1.0287	-7.3115	0.4529
390	SLD 7	0.37	-1.71	36.71	0.956	-6.7566	-0.4294
390	SLD 8	0.53	-2.02	36.42	0.9491	-6.7007	-0.5093
390	SLD 9	-1.86	2.31	34.22	0.8846	-6.3469	0.6172
390	SLD 10	-1.69	2.01	33.92	0.8778	-6.291	0.5374
390	SLD 11	-1.26	-1.52	30.88	0.805	-5.7361	-0.345
390	SLD 12	-1.09	-1.82	30.58	0.7982	-5.6802	-0.4248
390	SLD 13	-3.58	1.27	26.32	0.6825	-4.9571	0.3998
390	SLD 14	-3.33	0.81	25.87	0.672	-4.8721	0.2783
390	SLD 15	-3.4	0.12	25.32	0.6586	-4.7739	0.1112
390	SLD 16	-3.15	-0.34	24.87	0.6482	-4.6889	-0.0103
390	SLV 1	5.15	1.24	59.76	1.5454	-10.8139	0.1926
390	SLV 2	5.74	0.16	58.71	1.5211	-10.616	-0.0903
390	SLV 3	5.57	-1.36	57.47	1.4907	-10.3957	-0.4607
390	SLV 4	6.16	-2.44	56.42	1.4665	-10.1978	-0.7436
390	SLV 5	0.34	4.61	46.3	1.1925	-8.4794	1.1354
390	SLV 6	0.72	3.91	45.62	1.1768	-8.3515	0.9527
390	SLV 7	1.74	-4.06	38.68	1.0104	-7.0854	-1.0424
390	SLV 8	2.12	-4.76	38	0.9947	-6.9575	-1.2251
390	SLV 9	-3.45	5.05	32.64	0.8391	-6.0901	1.333
390	SLV 10	-3.07	4.36	31.96	0.8234	-5.9623	1.1503
390	SLV 11	-2.05	-3.62	25.01	0.657	-4.6961	-0.8447
390	SLV 12	-1.67	-4.31	24.34	0.6413	-4.5683	-1.0274
390	SLV 13	-7.49	2.73	14.22	0.3673	-2.8499	0.8515
390	SLV 14	-6.9	1.66	13.17	0.343	-2.6519	0.5687
390	SLV 15	-7.07	0.13	11.93	0.3127	-2.4317	0.1982
390	SLV 16	-6.48	-0.95	10.88	0.2884	-2.2337	-0.0847
390	CRTFP Ux+	0	0	0	0	0	0
390	CRTFP Ux-	0	0	0	0	0	0
390	CRTFP Uy+	0	0	0	0	0	0
390	CRTFP Uy-	0	0	0	0	0	0
394	SLU 1	0.23	-0.01	33.65	-0.0179	9.8767	0.0059
394	SLU 2	0.25	-0.05	33.64	-0.0177	9.8721	0.0179
394	SLU 3	0.24	0	34.43	-0.0183	10.1008	0.0012
394	SLU 4	0.25	-0.02	34.42	-0.0182	10.098	0.0085
394	SLU 5	0.25	-0.05	34.15	-0.0182	10.0192	0.0175
394	SLU 6	0.24	0	34.94	-0.0187	10.2479	0.0008
394	SLU 7	0.25	-0.02	34.93	-0.0186	10.2451	0.008
394	SLU 8	0.24	-0.01	34.68	-0.0187	10.1709	0.0051
394	SLU 9	0.25	-0.03	34.67	-0.0186	10.1681	0.0123
394	SLU 10	0.26	0.01	37.93	-0.0193	11.1192	-0.0012
394	SLU 11	0.25	0.05	38.72	-0.0199	11.3479	-0.0179
394	SLU 12	0.26	0.03	38.71	-0.0198	11.3451	-0.0107
394	SLU 13	0.26	0.01	38.44	-0.0197	11.2663	-0.0016
394	SLU 14	0.26	0.05	39.23	-0.0203	11.495	-0.0183
394	SLU 15	0.27	0.03	39.22	-0.0202	11.4922	-0.0111
394	SLU 16	0.25	0.04	38.96	-0.0203	11.418	-0.0141
394	SLU 17	0.26	0.02	38.95	-0.0202	11.4152	-0.0068
394	SLU 18	0.25	0.06	39.78	-0.0201	11.6582	-0.0214
394	SLU 19	0.26	0.04	39.77	-0.02	11.6555	-0.0142
394	SLU 20	0.26	0.06	40.29	-0.0205	11.8053	-0.0218
394	SLU 21	0.26	0.04	40.28	-0.0204	11.8026	-0.0146
394	SLU 22	0.27	0.07	37.32	-0.0192	10.9318	-0.0244
394	SLU 23	0.28	0.04	37.3	-0.019	10.9272	-0.0124
394	SLU 24	0.28	0.09	38.09	-0.0196	11.1559	-0.0291
394	SLU 25	0.29	0.06	38.08	-0.0195	11.1531	-0.0219
394	SLU 26	0.29	0.04	37.81	-0.0195	11.0743	-0.0128
394	SLU 27	0.28	0.09	38.6	-0.02	11.303	-0.0295
394	SLU 28	0.29	0.07	38.6	-0.0199	11.3002	-0.0223
394	SLU 29	0.28	0.07	38.34	-0.02	11.226	-0.0253
394	SLU 30	0.29	0.05	38.33	-0.0199	11.2233	-0.0181
394	SLU 31	0.3	0.09	41.59	-0.0206	12.1743	-0.0315
394	SLU 32	0.29	0.14	42.38	-0.0212	12.403	-0.0482
394	SLU 33	0.3	0.12	42.37	-0.0211	12.4002	-0.041
394	SLU 34	0.3	0.09	42.1	-0.021	12.3214	-0.0319
394	SLU 35	0.29	0.14	42.89	-0.0216	12.5501	-0.0486
394	SLU 36	0.3	0.12	42.88	-0.0215	12.5473	-0.0414
394	SLU 37	0.29	0.13	42.63	-0.0216	12.4731	-0.0444
394	SLU 38	0.3	0.11	42.62	-0.0215	12.4704	-0.0372
394	SLU 39	0.29	0.15	43.44	-0.0214	12.7134	-0.0518
394	SLU 40	0.3	0.13	43.43	-0.0213	12.7106	-0.0445
394	SLU 41	0.29	0.15	43.95	-0.0218	12.8605	-0.0522
394	SLU 42	0.3	0.13	43.94	-0.0217	12.8577	-0.0449
394	SLU 43	0.29	-0.05	42.5	-0.0228	12.4779	0.018
394	SLU 44	0.3	-0.08	42.48	-0.0227	12.4733	0.0301
394	SLU 45	0.29	-0.04	43.27	-0.0232	12.702	0.0134
394	SLU 46	0.3	-0.06	43.26	-0.0231	12.6992	0.0206



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
394	SLU 47	0.31	-0.08	42.99	-0.0231	12.6204	0.0297
394	SLU 48	0.3	-0.03	43.78	-0.0236	12.8491	0.013
394	SLU 49	0.31	-0.06	43.78	-0.0235	12.8463	0.0202
394	SLU 50	0.29	-0.05	43.52	-0.0236	12.7721	0.0172
394	SLU 51	0.3	-0.07	43.51	-0.0235	12.7693	0.0244
394	SLU 52	0.32	-0.03	46.77	-0.0242	13.7204	0.011
394	SLU 53	0.31	0.02	47.56	-0.0248	13.9491	-0.0057
394	SLU 54	0.32	0	47.55	-0.0247	13.9463	0.0015
394	SLU 55	0.32	-0.03	47.28	-0.0246	13.8675	0.0105
394	SLU 56	0.31	0.02	48.07	-0.0252	14.0962	-0.0061
394	SLU 57	0.32	0	48.06	-0.0251	14.0934	0.0011
394	SLU 58	0.31	0.01	47.8	-0.0252	14.0192	-0.0019
394	SLU 59	0.32	-0.01	47.8	-0.0251	14.0164	0.0053
394	SLU 60	0.31	0.03	48.62	-0.025	14.2595	-0.0093
394	SLU 61	0.32	0.01	48.61	-0.0249	14.2567	-0.002
394	SLU 62	0.31	0.03	49.13	-0.0254	14.4066	-0.0097
394	SLU 63	0.32	0.01	49.12	-0.0253	14.4038	-0.0025
394	SLU 64	0.32	0.04	46.16	-0.0241	13.5331	-0.0123
394	SLU 65	0.34	0	46.14	-0.024	13.5284	-0.0002
394	SLU 66	0.33	0.05	46.93	-0.0245	13.7571	-0.0169
394	SLU 67	0.34	0.03	46.93	-0.0244	13.7544	-0.0097
394	SLU 68	0.34	0	46.65	-0.0244	13.6755	-0.0007
394	SLU 69	0.34	0.05	47.45	-0.0249	13.9042	-0.0173
394	SLU 70	0.35	0.03	47.44	-0.0249	13.9015	-0.0101
394	SLU 71	0.33	0.04	47.18	-0.0249	13.8273	-0.0131
394	SLU 72	0.34	0.02	47.17	-0.0248	13.8245	-0.0059
394	SLU 73	0.35	0.06	50.43	-0.0255	14.7755	-0.0194
394	SLU 74	0.35	0.11	51.22	-0.0261	15.0042	-0.036
394	SLU 75	0.36	0.08	51.21	-0.026	15.0015	-0.0288
394	SLU 76	0.36	0.06	50.94	-0.0259	14.9226	-0.0198
394	SLU 77	0.35	0.11	51.73	-0.0265	15.1513	-0.0365
394	SLU 78	0.36	0.09	51.72	-0.0264	15.1486	-0.0292
394	SLU 79	0.35	0.09	51.47	-0.0265	15.0744	-0.0322
394	SLU 80	0.36	0.07	51.46	-0.0264	15.0716	-0.025
394	SLU 81	0.35	0.12	52.28	-0.0263	15.3146	-0.0396
394	SLU 82	0.35	0.09	52.27	-0.0262	15.3119	-0.0324
394	SLU 83	0.35	0.12	52.79	-0.0267	15.4617	-0.04
394	SLU 84	0.36	0.1	52.78	-0.0266	15.459	-0.0328
394	SLE RA 1	0.24	0.01	34.7	-0.0183	10.1781	-0.0028
394	SLE RA 2	0.25	-0.01	34.69	-0.0182	10.1751	0.0052
394	SLE RA 3	0.25	0.02	35.22	-0.0185	10.3275	-0.0059
394	SLE RA 4	0.25	0.01	35.21	-0.0185	10.3257	-0.0011
394	SLE RA 5	0.25	-0.01	35.03	-0.0184	10.2731	0.005
394	SLE RA 6	0.25	0.02	35.56	-0.0188	10.4256	-0.0062
394	SLE RA 7	0.26	0.01	35.55	-0.0188	10.4238	-0.0013
394	SLE RA 8	0.25	0.01	35.38	-0.0188	10.3743	-0.0033
394	SLE RA 9	0.25	0	35.38	-0.0187	10.3724	0.0015
394	SLE RA 10	0.26	0.02	37.55	-0.0192	11.0065	-0.0075
394	SLE RA 11	0.26	0.06	38.08	-0.0196	11.1589	-0.0186
394	SLE RA 12	0.26	0.04	38.07	-0.0195	11.1571	-0.0138
394	SLE RA 13	0.26	0.02	37.89	-0.0195	11.1045	-0.0078
394	SLE RA 14	0.26	0.06	38.42	-0.0198	11.257	-0.0189
394	SLE RA 15	0.26	0.04	38.41	-0.0198	11.2552	-0.0141
394	SLE RA 16	0.26	0.05	38.24	-0.0198	11.2057	-0.0161
394	SLE RA 17	0.26	0.03	38.23	-0.0198	11.2038	-0.0113
394	SLE RA 18	0.26	0.06	38.78	-0.0197	11.3659	-0.021
394	SLE RA 19	0.26	0.05	38.78	-0.0197	11.364	-0.0162
394	SLE RA 20	0.26	0.06	39.12	-0.02	11.4639	-0.0213
394	SLE RA 21	0.26	0.05	39.12	-0.0199	11.4621	-0.0165
394	SLE FR 1	0.24	0.01	34.7	-0.0183	10.1781	-0.0028
394	SLE FR 2	0.24	0.01	34.7	-0.0182	10.1775	-0.0012
394	SLE FR 3	0.24	0.01	34.84	-0.0184	10.2174	-0.0029
394	SLE FR 4	0.25	0.02	35.92	-0.0187	10.5338	-0.0066
394	SLE FR 5	0.25	0.03	36.06	-0.0188	10.5737	-0.0084
394	SLE FR 6	0.25	0.04	36.74	-0.019	10.772	-0.0119
394	SLE QP 1	0.24	0.01	34.7	-0.0183	10.1781	-0.0028
394	SLE QP 2	0.25	0.03	35.93	-0.0187	10.5345	-0.0082
394	SLD 1	3.46	0.38	35.96	-0.019	10.6729	-0.1332
394	SLD 2	3.72	0.41	36.02	-0.0192	10.6845	-0.1403
394	SLD 3	3.27	-0.67	35.51	-0.0156	10.5385	0.2357
394	SLD 4	3.53	-0.65	35.56	-0.0157	10.5501	0.2286
394	SLD 5	1.45	1.73	36.62	-0.024	10.7778	-0.6039
394	SLD 6	1.63	1.74	36.66	-0.0241	10.7854	-0.6085
394	SLD 7	0.82	-1.79	35.09	-0.0125	10.3298	0.6256
394	SLD 8	0.99	-1.77	35.13	-0.0126	10.3374	0.621
394	SLD 9	-0.5	1.82	36.72	-0.0248	10.7315	-0.6374
394	SLD 10	-0.32	1.84	36.76	-0.0249	10.7392	-0.6421
394	SLD 11	-1.13	-1.69	35.19	-0.0133	10.2835	0.5921
394	SLD 12	-0.96	-1.68	35.23	-0.0134	10.2911	0.5874
394	SLD 13	-3.04	0.7	36.29	-0.0217	10.5188	-0.245
394	SLD 14	-2.77	0.72	36.35	-0.0218	10.5304	-0.2521
394	SLD 15	-3.23	-0.35	35.83	-0.0182	10.3844	0.1238
394	SLD 16	-2.96	-0.33	35.89	-0.0184	10.396	0.1167
394	SLV 1	7.76	0.82	36	-0.0193	10.8539	-0.2873
394	SLV 2	8.37	0.88	36.14	-0.0197	10.8809	-0.3038
394	SLV 3	7.31	-1.56	34.96	-0.0115	10.5484	0.5477
394	SLV 4	7.93	-1.51	35.1	-0.0119	10.5754	0.5312
394	SLV 5	3.07	3.87	37.51	-0.0307	11.0889	-1.3555
394	SLV 6	3.47	3.91	37.59	-0.0309	11.1063	-1.3662
394	SLV 7	1.59	-4.08	34.03	-0.0046	10.0707	1.4278



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
394	SLV 8	1.98	-4.04	34.12	-0.0049	10.0882	1.4171
394	SLV 9	-1.49	4.09	37.73	-0.0325	10.9808	-1.4336
394	SLV 10	-1.09	4.13	37.82	-0.0328	10.9982	-1.4443
394	SLV 11	-2.97	-3.86	34.26	-0.0065	9.9626	1.3497
394	SLV 12	-2.58	-3.82	34.34	-0.0067	9.98	1.339
394	SLV 13	-7.44	1.56	36.76	-0.0255	10.4935	-0.5477
394	SLV 14	-6.82	1.61	36.89	-0.0259	10.5205	-0.5642
394	SLV 15	-7.88	-0.83	35.71	-0.0177	10.1881	0.2873
394	SLV 16	-7.27	-0.77	35.85	-0.0181	10.215	0.2708
394	CRTFP Ux+	0	0	0	0	0	0
394	CRTFP Ux-	0	0	0	0	0	0
394	CRTFP Uy+	0	0	0	0	0	0
394	CRTFP Uy-	0	0	0	0	0	0
397	SLU 1	-1.12	-1.09	64.24	-0.0627	-0.3305	-0.0327
397	SLU 2	-1.09	-1.17	64.18	-0.0622	-0.3318	-0.0321
397	SLU 3	-1.16	-1.1	65.71	-0.064	-0.3373	-0.0337
397	SLU 4	-1.14	-1.15	65.67	-0.0637	-0.3381	-0.0333
397	SLU 5	-1.11	-1.19	65.16	-0.0633	-0.3367	-0.0326
397	SLU 6	-1.18	-1.12	66.7	-0.0651	-0.3422	-0.0341
397	SLU 7	-1.16	-1.17	66.66	-0.0648	-0.343	-0.0338
397	SLU 8	-1.16	-1.12	66.21	-0.0649	-0.3403	-0.0337
397	SLU 9	-1.14	-1.17	66.18	-0.0646	-0.3411	-0.0333
397	SLU 10	-1.16	-1.21	71.69	-0.0686	-0.3795	-0.0358
397	SLU 11	-1.23	-1.13	73.22	-0.0704	-0.385	-0.0374
397	SLU 12	-1.21	-1.18	73.18	-0.0701	-0.3858	-0.037
397	SLU 13	-1.18	-1.22	72.67	-0.0697	-0.3845	-0.0363
397	SLU 14	-1.25	-1.15	74.2	-0.0715	-0.39	-0.0379
397	SLU 15	-1.23	-1.2	74.17	-0.0712	-0.3908	-0.0375
397	SLU 16	-1.23	-1.16	73.72	-0.0714	-0.388	-0.0374
397	SLU 17	-1.21	-1.21	73.68	-0.071	-0.3888	-0.0371
397	SLU 18	-1.23	-1.14	74.96	-0.0719	-0.3987	-0.038
397	SLU 19	-1.21	-1.19	74.93	-0.0716	-0.3995	-0.0377
397	SLU 20	-1.25	-1.16	75.95	-0.073	-0.4036	-0.0385
397	SLU 21	-1.23	-1.21	75.91	-0.0727	-0.4044	-0.0382
397	SLU 22	-1.27	-1.09	71.28	-0.0679	-0.3621	-0.0371
397	SLU 23	-1.23	-1.17	71.22	-0.0674	-0.3634	-0.0365
397	SLU 24	-1.3	-1.1	72.75	-0.0692	-0.3689	-0.038
397	SLU 25	-1.28	-1.15	72.72	-0.0689	-0.3697	-0.0377
397	SLU 26	-1.25	-1.19	72.21	-0.0685	-0.3683	-0.037
397	SLU 27	-1.32	-1.11	73.74	-0.0703	-0.3738	-0.0385
397	SLU 28	-1.3	-1.16	73.7	-0.07	-0.3746	-0.0381
397	SLU 29	-1.31	-1.12	73.26	-0.0701	-0.3719	-0.0381
397	SLU 30	-1.29	-1.17	73.22	-0.0698	-0.3727	-0.0377
397	SLU 31	-1.31	-1.2	78.73	-0.0738	-0.4111	-0.0402
397	SLU 32	-1.37	-1.13	80.26	-0.0756	-0.4166	-0.0418
397	SLU 33	-1.35	-1.18	80.22	-0.0753	-0.4174	-0.0414
397	SLU 34	-1.32	-1.22	79.72	-0.0749	-0.416	-0.0407
397	SLU 35	-1.39	-1.15	81.25	-0.0768	-0.4216	-0.0422
397	SLU 36	-1.37	-1.2	81.21	-0.0764	-0.4224	-0.0419
397	SLU 37	-1.38	-1.15	80.76	-0.0766	-0.4196	-0.0418
397	SLU 38	-1.36	-1.2	80.73	-0.0762	-0.4204	-0.0414
397	SLU 39	-1.37	-1.14	82.01	-0.0771	-0.4303	-0.0424
397	SLU 40	-1.35	-1.19	81.97	-0.0768	-0.4311	-0.0421
397	SLU 41	-1.39	-1.15	82.99	-0.0782	-0.4352	-0.0429
397	SLU 42	-1.37	-1.2	82.96	-0.0779	-0.436	-0.0425
397	SLU 43	-1.41	-1.42	81.09	-0.0797	-0.4188	-0.041
397	SLU 44	-1.38	-1.5	81.03	-0.0792	-0.4201	-0.0404
397	SLU 45	-1.45	-1.43	82.57	-0.081	-0.4256	-0.042
397	SLU 46	-1.43	-1.48	82.53	-0.0807	-0.4264	-0.0416
397	SLU 47	-1.4	-1.52	82.02	-0.0803	-0.425	-0.0409
397	SLU 48	-1.47	-1.44	83.55	-0.0821	-0.4306	-0.0425
397	SLU 49	-1.45	-1.49	83.52	-0.0818	-0.4314	-0.0421
397	SLU 50	-1.45	-1.45	83.07	-0.082	-0.4286	-0.042
397	SLU 51	-1.43	-1.5	83.03	-0.0816	-0.4294	-0.0416
397	SLU 52	-1.45	-1.53	88.54	-0.0856	-0.4679	-0.0442
397	SLU 53	-1.52	-1.46	90.07	-0.0875	-0.4734	-0.0457
397	SLU 54	-1.5	-1.51	90.04	-0.0871	-0.4742	-0.0453
397	SLU 55	-1.47	-1.55	89.53	-0.0867	-0.4728	-0.0446
397	SLU 56	-1.54	-1.48	91.06	-0.0886	-0.4783	-0.0462
397	SLU 57	-1.52	-1.53	91.02	-0.0882	-0.4791	-0.0458
397	SLU 58	-1.52	-1.48	90.57	-0.0884	-0.4763	-0.0457
397	SLU 59	-1.5	-1.53	90.54	-0.0881	-0.4771	-0.0454
397	SLU 60	-1.51	-1.47	91.82	-0.0889	-0.487	-0.0464
397	SLU 61	-1.49	-1.52	91.78	-0.0886	-0.4878	-0.046
397	SLU 62	-1.53	-1.48	92.81	-0.09	-0.4919	-0.0468
397	SLU 63	-1.51	-1.53	92.77	-0.0897	-0.4927	-0.0465
397	SLU 64	-1.56	-1.41	88.14	-0.085	-0.4504	-0.0454
397	SLU 65	-1.52	-1.5	88.08	-0.0844	-0.4517	-0.0448
397	SLU 66	-1.59	-1.42	89.61	-0.0862	-0.4572	-0.0463
397	SLU 67	-1.57	-1.47	89.57	-0.0859	-0.458	-0.046
397	SLU 68	-1.54	-1.51	89.07	-0.0855	-0.4566	-0.0453
397	SLU 69	-1.61	-1.44	90.6	-0.0874	-0.4621	-0.0468
397	SLU 70	-1.59	-1.49	90.56	-0.087	-0.4629	-0.0465
397	SLU 71	-1.59	-1.45	90.11	-0.0872	-0.4602	-0.0464
397	SLU 72	-1.57	-1.5	90.08	-0.0868	-0.461	-0.046
397	SLU 73	-1.59	-1.53	95.59	-0.0908	-0.4994	-0.0485
397	SLU 74	-1.66	-1.46	97.12	-0.0927	-0.5049	-0.0501
397	SLU 75	-1.64	-1.51	97.08	-0.0923	-0.5058	-0.0497
397	SLU 76	-1.61	-1.55	96.57	-0.092	-0.5044	-0.049
397	SLU 77	-1.68	-1.48	98.1	-0.0938	-0.5099	-0.0506



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
397	SLU 78	-1.66	-1.53	98.07	-0.0935	-0.5107	-0.0502
397	SLU 79	-1.67	-1.48	97.62	-0.0936	-0.5079	-0.0501
397	SLU 80	-1.65	-1.53	97.58	-0.0933	-0.5087	-0.0497
397	SLU 81	-1.66	-1.46	98.86	-0.0941	-0.5186	-0.0507
397	SLU 82	-1.64	-1.51	98.83	-0.0938	-0.5194	-0.0504
397	SLU 83	-1.68	-1.48	99.85	-0.0952	-0.5235	-0.0512
397	SLU 84	-1.66	-1.53	99.81	-0.0949	-0.5243	-0.0509
397	SLE RA 1	-1.17	-1.09	66.25	-0.0642	-0.3395	-0.034
397	SLE RA 2	-1.14	-1.14	66.21	-0.0638	-0.3404	-0.0336
397	SLE RA 3	-1.19	-1.09	67.23	-0.0651	-0.3441	-0.0346
397	SLE RA 4	-1.18	-1.13	67.21	-0.0648	-0.3446	-0.0344
397	SLE RA 5	-1.16	-1.15	66.87	-0.0646	-0.3437	-0.0339
397	SLE RA 6	-1.2	-1.11	67.89	-0.0658	-0.3473	-0.0349
397	SLE RA 7	-1.19	-1.14	67.87	-0.0656	-0.3479	-0.0347
397	SLE RA 8	-1.19	-1.11	67.57	-0.0657	-0.3461	-0.0346
397	SLE RA 9	-1.18	-1.14	67.54	-0.0655	-0.3466	-0.0344
397	SLE RA 10	-1.19	-1.17	71.22	-0.0681	-0.3722	-0.036
397	SLE RA 11	-1.24	-1.12	72.24	-0.0693	-0.3759	-0.0371
397	SLE RA 12	-1.22	-1.15	72.21	-0.0691	-0.3764	-0.0368
397	SLE RA 13	-1.2	-1.18	71.87	-0.0689	-0.3755	-0.0364
397	SLE RA 14	-1.25	-1.13	72.89	-0.0701	-0.3792	-0.0374
397	SLE RA 15	-1.24	-1.16	72.87	-0.0699	-0.3797	-0.0372
397	SLE RA 16	-1.24	-1.13	72.57	-0.07	-0.3779	-0.0371
397	SLE RA 17	-1.23	-1.17	72.55	-0.0697	-0.3784	-0.0369
397	SLE RA 18	-1.23	-1.12	73.4	-0.0703	-0.385	-0.0375
397	SLE RA 19	-1.22	-1.15	73.38	-0.0701	-0.3855	-0.0373
397	SLE RA 20	-1.25	-1.13	74.06	-0.0711	-0.3882	-0.0378
397	SLE RA 21	-1.23	-1.17	74.03	-0.0708	-0.3888	-0.0376
397	SLE FR 1	-1.17	-1.09	66.25	-0.0642	-0.3395	-0.034
397	SLE FR 2	-1.16	-1.1	66.24	-0.0641	-0.3397	-0.0339
397	SLE FR 3	-1.17	-1.09	66.51	-0.0645	-0.3408	-0.0341
397	SLE FR 4	-1.18	-1.11	68.39	-0.066	-0.3533	-0.035
397	SLE FR 5	-1.19	-1.1	68.66	-0.0663	-0.3545	-0.0352
397	SLE FR 6	-1.2	-1.1	69.83	-0.0673	-0.3622	-0.0357
397	SLE QP 1	-1.17	-1.09	66.25	-0.0642	-0.3395	-0.034
397	SLE QP 2	-1.19	-1.1	68.4	-0.066	-0.3531	-0.035
397	SLD 1	4.36	-0.79	74.91	-0.0823	-0.1394	-0.02
397	SLD 2	4.87	-1.17	74.51	-0.0799	-0.1468	-0.01
397	SLD 3	4.75	-2.54	73.79	-0.0732	-0.1701	-0.0171
397	SLD 4	5.25	-2.92	73.4	-0.0708	-0.1775	-0.0072
397	SLD 5	-0.19	1.72	72.11	-0.0852	-0.2411	-0.0366
397	SLD 6	0.14	1.46	71.85	-0.0836	-0.2459	-0.0301
397	SLD 7	1.09	-4.11	68.4	-0.0548	-0.3435	-0.0271
397	SLD 8	1.42	-4.37	68.14	-0.0532	-0.3484	-0.0206
397	SLD 9	-3.79	2.17	68.65	-0.0789	-0.3579	-0.0495
397	SLD 10	-3.46	1.92	68.39	-0.0773	-0.3628	-0.043
397	SLD 11	-2.51	-3.66	64.95	-0.0485	-0.4603	-0.04
397	SLD 12	-2.18	-3.91	64.68	-0.0469	-0.4652	-0.0335
397	SLD 13	-7.63	0.73	63.4	-0.0613	-0.5288	-0.0629
397	SLD 14	-7.12	0.34	63	-0.0589	-0.5362	-0.053
397	SLD 15	-7.24	-1.02	62.28	-0.0522	-0.5595	-0.0601
397	SLD 16	-6.74	-1.41	61.88	-0.0498	-0.5669	-0.0501
397	SLV 1	11.8	-0.45	83.59	-0.1038	0.1465	0.0002
397	SLV 2	12.98	-1.34	82.66	-0.0981	0.1293	0.0234
397	SLV 3	12.7	-4.4	81.07	-0.0831	0.076	0.0069
397	SLV 4	13.87	-5.3	80.14	-0.0775	0.0588	0.0301
397	SLV 5	1.15	5.26	76.94	-0.1096	-0.0932	-0.0386
397	SLV 6	1.91	4.68	76.34	-0.106	-0.1043	-0.0236
397	SLV 7	4.13	-7.94	68.53	-0.0408	-0.3285	-0.0163
397	SLV 8	4.89	-8.52	67.93	-0.0372	-0.3396	-0.0014
397	SLV 9	-7.26	6.32	68.86	-0.0949	-0.3667	-0.0687
397	SLV 10	-6.5	5.74	68.26	-0.0912	-0.3778	-0.0538
397	SLV 11	-4.28	-6.87	60.45	-0.0261	-0.6019	-0.0465
397	SLV 12	-3.52	-7.45	59.85	-0.0224	-0.6131	-0.0315
397	SLV 13	-16.25	3.1	56.65	-0.0546	-0.7651	-0.1002
397	SLV 14	-15.07	2.21	55.72	-0.0489	-0.7823	-0.077
397	SLV 15	-15.35	-0.85	54.13	-0.0339	-0.8356	-0.0935
397	SLV 16	-14.18	-1.75	53.2	-0.0283	-0.8528	-0.0703
397	CRTFP Ux+	0	0	0	0	0	0
397	CRTFP Ux-	0	0	0	0	0	0
401	SLU 1	0.55	-0.67	64.35	-0.0598	0.3488	0.0132
401	SLU 2	0.58	-0.71	64.35	-0.0596	0.3495	0.0137
401	SLU 3	0.57	-0.68	65.83	-0.0611	0.3556	0.0135
401	SLU 4	0.59	-0.7	65.82	-0.061	0.3559	0.0138
401	SLU 5	0.59	-0.73	65.33	-0.0606	0.3537	0.0139
401	SLU 6	0.58	-0.7	66.81	-0.0621	0.3598	0.0136
401	SLU 7	0.59	-0.72	66.81	-0.062	0.3602	0.014
401	SLU 8	0.57	-0.71	66.32	-0.0618	0.3573	0.0135
401	SLU 9	0.58	-0.73	66.31	-0.0617	0.3576	0.0138
401	SLU 10	0.6	-0.71	71.79	-0.066	0.3974	0.0149
401	SLU 11	0.59	-0.68	73.27	-0.0676	0.4036	0.0146
401	SLU 12	0.61	-0.7	73.27	-0.0674	0.4039	0.015
401	SLU 13	0.61	-0.72	72.77	-0.0671	0.4017	0.015
401	SLU 14	0.6	-0.7	74.25	-0.0686	0.4078	0.0147
401	SLU 15	0.62	-0.72	74.25	-0.0685	0.4081	0.0151
401	SLU 16	0.59	-0.7	73.76	-0.0683	0.4052	0.0146
401	SLU 17	0.61	-0.73	73.76	-0.0682	0.4056	0.0149
401	SLU 18	0.58	-0.67	74.99	-0.069	0.4174	0.0147
401	SLU 19	0.6	-0.69	74.98	-0.0689	0.4178	0.0151
401	SLU 20	0.59	-0.69	75.97	-0.0701	0.4216	0.0149



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
401	SLU 21	0.61	-0.71	75.97	-0.0699	0.422	0.0153
401	SLU 22	0.64	-0.62	71.39	-0.0649	0.3779	0.0151
401	SLU 23	0.67	-0.66	71.38	-0.0647	0.3785	0.0157
401	SLU 24	0.66	-0.63	72.87	-0.0662	0.3846	0.0154
401	SLU 25	0.68	-0.66	72.86	-0.0661	0.385	0.0158
401	SLU 26	0.68	-0.68	72.37	-0.0657	0.3827	0.0158
401	SLU 27	0.67	-0.65	73.85	-0.0672	0.3888	0.0156
401	SLU 28	0.68	-0.67	73.85	-0.0671	0.3892	0.0159
401	SLU 29	0.66	-0.66	73.36	-0.067	0.3863	0.0154
401	SLU 30	0.67	-0.68	73.35	-0.0669	0.3867	0.0157
401	SLU 31	0.69	-0.66	78.83	-0.0712	0.4265	0.0168
401	SLU 32	0.68	-0.63	80.31	-0.0727	0.4326	0.0165
401	SLU 33	0.7	-0.65	80.31	-0.0726	0.433	0.0169
401	SLU 34	0.7	-0.68	79.81	-0.0722	0.4307	0.0169
401	SLU 35	0.69	-0.65	81.29	-0.0737	0.4368	0.0167
401	SLU 36	0.71	-0.67	81.29	-0.0736	0.4372	0.017
401	SLU 37	0.68	-0.66	80.8	-0.0735	0.4343	0.0165
401	SLU 38	0.7	-0.68	80.8	-0.0733	0.4347	0.0169
401	SLU 39	0.67	-0.62	82.02	-0.0742	0.4464	0.0167
401	SLU 40	0.69	-0.64	82.02	-0.074	0.4468	0.017
401	SLU 41	0.68	-0.64	83.01	-0.0752	0.4506	0.0168
401	SLU 42	0.7	-0.66	83	-0.0751	0.451	0.0172
401	SLU 43	0.68	-0.89	81.24	-0.0759	0.4435	0.0164
401	SLU 44	0.71	-0.93	81.24	-0.0757	0.4442	0.017
401	SLU 45	0.7	-0.9	82.72	-0.0773	0.4503	0.0168
401	SLU 46	0.72	-0.92	82.72	-0.0771	0.4506	0.0171
401	SLU 47	0.72	-0.94	82.22	-0.0768	0.4484	0.0172
401	SLU 48	0.71	-0.92	83.7	-0.0783	0.4545	0.0169
401	SLU 49	0.73	-0.94	83.7	-0.0782	0.4549	0.0173
401	SLU 50	0.7	-0.92	83.21	-0.078	0.452	0.0167
401	SLU 51	0.72	-0.95	83.21	-0.0779	0.4523	0.0171
401	SLU 52	0.74	-0.93	88.68	-0.0822	0.4921	0.0181
401	SLU 53	0.72	-0.9	90.16	-0.0837	0.4983	0.0179
401	SLU 54	0.74	-0.92	90.16	-0.0836	0.4986	0.0182
401	SLU 55	0.74	-0.94	89.67	-0.0833	0.4964	0.0183
401	SLU 56	0.73	-0.91	91.15	-0.0848	0.5025	0.018
401	SLU 57	0.75	-0.94	91.14	-0.0847	0.5028	0.0184
401	SLU 58	0.72	-0.92	90.65	-0.0845	0.4999	0.0179
401	SLU 59	0.74	-0.94	90.65	-0.0844	0.5003	0.0182
401	SLU 60	0.72	-0.89	91.88	-0.0852	0.5121	0.018
401	SLU 61	0.73	-0.91	91.88	-0.0851	0.5125	0.0184
401	SLU 62	0.72	-0.9	92.86	-0.0862	0.5163	0.0182
401	SLU 63	0.74	-0.93	92.86	-0.0861	0.5167	0.0185
401	SLU 64	0.77	-0.84	88.28	-0.0811	0.4726	0.0184
401	SLU 65	0.8	-0.88	88.28	-0.0809	0.4732	0.019
401	SLU 66	0.79	-0.85	89.76	-0.0824	0.4793	0.0187
401	SLU 67	0.81	-0.87	89.76	-0.0823	0.4797	0.0191
401	SLU 68	0.81	-0.9	89.26	-0.0819	0.4774	0.0191
401	SLU 69	0.8	-0.87	90.74	-0.0834	0.4835	0.0188
401	SLU 70	0.82	-0.89	90.74	-0.0833	0.4839	0.0192
401	SLU 71	0.79	-0.88	90.25	-0.0831	0.481	0.0187
401	SLU 72	0.81	-0.9	90.24	-0.083	0.4814	0.019
401	SLU 73	0.83	-0.88	95.72	-0.0873	0.5212	0.0201
401	SLU 74	0.82	-0.85	97.2	-0.0889	0.5273	0.0198
401	SLU 75	0.83	-0.87	97.2	-0.0887	0.5277	0.0202
401	SLU 76	0.83	-0.89	96.7	-0.0884	0.5254	0.0202
401	SLU 77	0.82	-0.87	98.19	-0.0899	0.5315	0.02
401	SLU 78	0.84	-0.89	98.18	-0.0898	0.5319	0.0203
401	SLU 79	0.81	-0.87	97.69	-0.0896	0.529	0.0198
401	SLU 80	0.83	-0.9	97.69	-0.0895	0.5294	0.0201
401	SLU 81	0.81	-0.84	98.92	-0.0903	0.5411	0.02
401	SLU 82	0.82	-0.86	98.91	-0.0902	0.5415	0.0203
401	SLU 83	0.82	-0.86	99.9	-0.0914	0.5453	0.0201
401	SLU 84	0.83	-0.88	99.9	-0.0912	0.5457	0.0205
401	SLE RA 1	0.57	-0.66	66.36	-0.0612	0.3571	0.0137
401	SLE RA 2	0.59	-0.68	66.36	-0.0611	0.3576	0.0141
401	SLE RA 3	0.59	-0.66	67.35	-0.0621	0.3616	0.0139
401	SLE RA 4	0.6	-0.68	67.34	-0.062	0.3619	0.0142
401	SLE RA 5	0.6	-0.7	67.01	-0.0618	0.3604	0.0142
401	SLE RA 6	0.59	-0.68	68	-0.0628	0.3644	0.014
401	SLE RA 7	0.6	-0.69	68	-0.0627	0.3647	0.0143
401	SLE RA 8	0.59	-0.68	67.67	-0.0626	0.3628	0.0139
401	SLE RA 9	0.6	-0.7	67.67	-0.0625	0.363	0.0141
401	SLE RA 10	0.61	-0.68	71.32	-0.0654	0.3895	0.0148
401	SLE RA 11	0.6	-0.66	72.31	-0.0664	0.3936	0.0147
401	SLE RA 12	0.61	-0.68	72.31	-0.0664	0.3939	0.0149
401	SLE RA 13	0.62	-0.69	71.98	-0.0661	0.3923	0.0149
401	SLE RA 14	0.61	-0.67	72.96	-0.0671	0.3964	0.0148
401	SLE RA 15	0.62	-0.69	72.96	-0.067	0.3967	0.015
401	SLE RA 16	0.6	-0.68	72.64	-0.0669	0.3947	0.0147
401	SLE RA 17	0.61	-0.7	72.63	-0.0669	0.395	0.0149
401	SLE RA 18	0.6	-0.66	73.45	-0.0674	0.4028	0.0148
401	SLE RA 19	0.61	-0.67	73.45	-0.0673	0.4031	0.015
401	SLE RA 20	0.6	-0.67	74.11	-0.0681	0.4056	0.0149
401	SLE RA 21	0.61	-0.68	74.11	-0.068	0.4059	0.0151
401	SLE FR 1	0.57	-0.66	66.36	-0.0612	0.3571	0.0137
401	SLE FR 2	0.58	-0.66	66.36	-0.0612	0.3572	0.0138
401	SLE FR 3	0.58	-0.66	66.62	-0.0615	0.3583	0.0137
401	SLE FR 4	0.58	-0.66	68.49	-0.0631	0.3709	0.0141
401	SLE FR 5	0.58	-0.66	68.75	-0.0634	0.372	0.0141



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
401	SLE FR 6	0.59	-0.66	69.91	-0.0643	0.38	0.0142
401	SLE QP 1	0.57	-0.66	66.36	-0.0612	0.3571	0.0137
401	SLE QP 2	0.58	-0.66	68.49	-0.0631	0.3708	0.014
401	SLD 1	6.73	0.71	62.74	-0.0515	0.4624	0.0417
401	SLD 2	7.25	1.12	63.19	-0.0537	0.4538	0.0511
401	SLD 3	6.37	-1.04	61.72	-0.0434	0.4961	0.0393
401	SLD 4	6.88	-0.64	62.17	-0.0456	0.4874	0.0486
401	SLD 5	2.89	2.35	68.24	-0.0714	0.3489	0.0244
401	SLD 6	3.23	2.61	68.54	-0.0729	0.3432	0.0305
401	SLD 7	1.67	-3.51	64.82	-0.0445	0.4609	0.0162
401	SLD 8	2.01	-3.24	65.11	-0.046	0.4553	0.0224
401	SLD 9	-0.85	1.93	71.86	-0.0802	0.2864	0.0057
401	SLD 10	-0.51	2.2	72.16	-0.0817	0.2807	0.0118
401	SLD 11	-2.06	-3.93	68.44	-0.0532	0.3985	-0.0025
401	SLD 12	-1.72	-3.66	68.74	-0.0547	0.3928	0.0037
401	SLD 13	-5.72	-0.68	74.81	-0.0805	0.2543	-0.0206
401	SLD 14	-5.21	-0.27	75.26	-0.0828	0.2456	-0.0112
401	SLD 15	-6.09	-2.44	73.79	-0.0724	0.2879	-0.023
401	SLD 16	-5.57	-2.03	74.24	-0.0747	0.2793	-0.0137
401	SLV 1	14.97	2.48	55.01	-0.0356	0.5861	0.0789
401	SLV 2	16.17	3.43	56.06	-0.0409	0.5659	0.1007
401	SLV 3	14.12	-1.49	52.67	-0.0173	0.6629	0.0731
401	SLV 4	15.32	-0.55	53.72	-0.0225	0.6427	0.0949
401	SLV 5	5.98	6.15	67.82	-0.0817	0.3224	0.0385
401	SLV 6	6.75	6.76	68.49	-0.0851	0.3094	0.0526
401	SLV 7	3.15	-7.1	60.01	-0.0206	0.5784	0.0192
401	SLV 8	3.92	-6.49	60.69	-0.024	0.5654	0.0333
401	SLV 9	-2.76	5.18	76.29	-0.1021	0.1763	-0.0052
401	SLV 10	-1.99	5.79	76.97	-0.1055	0.1633	0.0089
401	SLV 11	-5.59	-8.08	68.48	-0.041	0.4323	-0.0245
401	SLV 12	-4.82	-7.47	69.16	-0.0444	0.4193	-0.0105
401	SLV 13	-14.16	-0.77	83.26	-0.1036	0.099	-0.0668
401	SLV 14	-12.96	0.18	84.31	-0.1089	0.0788	-0.045
401	SLV 15	-15.01	-4.75	80.92	-0.0853	0.1758	-0.0726
401	SLV 16	-13.81	-3.8	81.97	-0.0906	0.1556	-0.0508
401	CRTFP Ux+	0	0	0	0	0	0
401	CRTFP Ux-	0	0	0	0	0	0
401	CRTFP Uy+	0	0	0	0	0	0
401	CRTFP Uy-	0	0	0	0	0	0
402	SLU 1	0.42	0.41	38.31	-0.0621	9.3341	-0.1431
402	SLU 2	0.44	0.39	38.31	-0.0621	9.3364	-0.1361
402	SLU 3	0.43	0.42	39.21	-0.0637	9.5447	-0.1462
402	SLU 4	0.44	0.4	39.21	-0.0637	9.5461	-0.1419
402	SLU 5	0.44	0.39	38.9	-0.0632	9.4736	-0.1359
402	SLU 6	0.44	0.42	39.8	-0.0648	9.6819	-0.146
402	SLU 7	0.45	0.4	39.8	-0.0648	9.6832	-0.1418
402	SLU 8	0.43	0.41	39.48	-0.0643	9.6085	-0.1428
402	SLU 9	0.44	0.4	39.49	-0.0643	9.6099	-0.1386
402	SLU 10	0.46	0.51	42.58	-0.069	10.3432	-0.1802
402	SLU 11	0.45	0.54	43.48	-0.0706	10.5515	-0.1903
402	SLU 12	0.46	0.53	43.48	-0.0706	10.5529	-0.1861
402	SLU 13	0.46	0.51	43.17	-0.0701	10.4804	-0.1801
402	SLU 14	0.46	0.54	44.07	-0.0717	10.6887	-0.1901
402	SLU 15	0.47	0.53	44.07	-0.0717	10.69	-0.1859
402	SLU 16	0.45	0.53	43.75	-0.0712	10.6153	-0.1869
402	SLU 17	0.46	0.52	43.75	-0.0712	10.6167	-0.1827
402	SLU 18	0.45	0.59	44.4	-0.072	10.7724	-0.2062
402	SLU 19	0.46	0.58	44.41	-0.072	10.7738	-0.202
402	SLU 20	0.45	0.59	44.99	-0.0731	10.9096	-0.206
402	SLU 21	0.46	0.58	45	-0.0731	10.911	-0.2018
402	SLU 22	0.48	0.52	42.54	-0.0688	10.3279	-0.1823
402	SLU 23	0.5	0.5	42.55	-0.0688	10.3302	-0.1753
402	SLU 24	0.49	0.53	43.44	-0.0704	10.5384	-0.1853
402	SLU 25	0.5	0.52	43.45	-0.0704	10.5398	-0.1811
402	SLU 26	0.5	0.5	43.13	-0.0699	10.4674	-0.1751
402	SLU 27	0.5	0.53	44.03	-0.0715	10.6756	-0.1852
402	SLU 28	0.51	0.52	44.03	-0.0715	10.677	-0.1809
402	SLU 29	0.49	0.52	43.71	-0.071	10.6022	-0.182
402	SLU 30	0.5	0.51	43.72	-0.071	10.6036	-0.1777
402	SLU 31	0.52	0.63	46.82	-0.0757	11.337	-0.2194
402	SLU 32	0.51	0.66	47.71	-0.0773	11.5453	-0.2295
402	SLU 33	0.52	0.64	47.72	-0.0773	11.5466	-0.2253
402	SLU 34	0.52	0.63	47.4	-0.0768	11.4742	-0.2192
402	SLU 35	0.52	0.65	48.3	-0.0784	11.6824	-0.2293
402	SLU 36	0.53	0.64	48.3	-0.0784	11.6838	-0.2251
402	SLU 37	0.51	0.65	47.98	-0.078	11.6091	-0.2261
402	SLU 38	0.52	0.63	47.99	-0.0779	11.6104	-0.2219
402	SLU 39	0.51	0.7	48.64	-0.0787	11.7662	-0.2454
402	SLU 40	0.52	0.69	48.64	-0.0787	11.7676	-0.2412
402	SLU 41	0.51	0.7	49.22	-0.0798	11.9034	-0.2452
402	SLU 42	0.52	0.69	49.23	-0.0798	11.9048	-0.241
402	SLU 43	0.52	0.49	48.35	-0.0784	11.7936	-0.1727
402	SLU 44	0.54	0.47	48.36	-0.0784	11.7959	-0.1656
402	SLU 45	0.54	0.5	49.25	-0.08	12.0042	-0.1757
402	SLU 46	0.55	0.49	49.26	-0.08	12.0056	-0.1714
402	SLU 47	0.55	0.47	48.94	-0.0795	11.9331	-0.1654
402	SLU 48	0.55	0.5	49.84	-0.0811	12.1414	-0.1755
402	SLU 49	0.56	0.49	49.84	-0.0811	12.1427	-0.1713
402	SLU 50	0.54	0.49	49.52	-0.0806	12.068	-0.1723
402	SLU 51	0.55	0.48	49.53	-0.0806	12.0694	-0.1681



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
402	SLU 52	0.56	0.6	52.62	-0.0853	12.8027	-0.2097
402	SLU 53	0.56	0.63	53.52	-0.0869	13.011	-0.2198
402	SLU 54	0.57	0.61	53.52	-0.0869	13.0124	-0.2156
402	SLU 55	0.57	0.6	53.21	-0.0864	12.9399	-0.2096
402	SLU 56	0.56	0.63	54.11	-0.0881	13.1482	-0.2196
402	SLU 57	0.57	0.61	54.11	-0.0888	13.1496	-0.2154
402	SLU 58	0.56	0.62	53.79	-0.0876	13.0748	-0.2164
402	SLU 59	0.57	0.61	53.79	-0.0876	13.0762	-0.2122
402	SLU 60	0.55	0.67	54.44	-0.0883	13.2319	-0.2357
402	SLU 61	0.56	0.66	54.45	-0.0883	13.2333	-0.2315
402	SLU 62	0.56	0.67	55.03	-0.0894	13.3691	-0.2355
402	SLU 63	0.57	0.66	55.04	-0.0894	13.3705	-0.2313
402	SLU 64	0.58	0.6	52.58	-0.0851	12.7874	-0.2118
402	SLU 65	0.6	0.58	52.59	-0.0851	12.7897	-0.2048
402	SLU 66	0.6	0.61	53.48	-0.0867	12.9979	-0.2149
402	SLU 67	0.61	0.6	53.49	-0.0867	12.9993	-0.2106
402	SLU 68	0.61	0.58	53.17	-0.0862	12.9269	-0.2046
402	SLU 69	0.61	0.61	54.07	-0.0878	13.1351	-0.2147
402	SLU 70	0.62	0.6	54.08	-0.0878	13.1365	-0.2104
402	SLU 71	0.6	0.6	53.75	-0.0874	13.0618	-0.2115
402	SLU 72	0.61	0.59	53.76	-0.0874	13.0631	-0.2072
402	SLU 73	0.62	0.71	56.86	-0.092	13.7965	-0.2489
402	SLU 74	0.62	0.74	57.75	-0.0936	14.0048	-0.259
402	SLU 75	0.63	0.73	57.76	-0.0936	14.0061	-0.2548
402	SLU 76	0.63	0.71	57.44	-0.0931	13.9337	-0.2487
402	SLU 77	0.62	0.74	58.34	-0.0948	14.1419	-0.2588
402	SLU 78	0.63	0.73	58.34	-0.0948	14.1433	-0.2546
402	SLU 79	0.62	0.73	58.02	-0.0943	14.0686	-0.2556
402	SLU 80	0.63	0.72	58.03	-0.0943	14.07	-0.2514
402	SLU 81	0.61	0.78	58.68	-0.095	14.2257	-0.2749
402	SLU 82	0.62	0.77	58.68	-0.095	14.2271	-0.2707
402	SLU 83	0.62	0.78	59.26	-0.0961	14.3629	-0.2747
402	SLU 84	0.63	0.77	59.27	-0.0961	14.3643	-0.2705
402	SLE RA 1	0.44	0.44	39.51	-0.064	9.618	-0.1543
402	SLE RA 2	0.45	0.43	39.52	-0.064	9.6196	-0.1496
402	SLE RA 3	0.45	0.45	40.12	-0.0651	9.7584	-0.1564
402	SLE RA 4	0.45	0.44	40.12	-0.0651	9.7593	-0.1535
402	SLE RA 5	0.45	0.43	39.91	-0.0647	9.711	-0.1495
402	SLE RA 6	0.45	0.45	40.51	-0.0658	9.8499	-0.1562
402	SLE RA 7	0.46	0.44	40.51	-0.0658	9.8508	-0.1534
402	SLE RA 8	0.45	0.44	40.3	-0.0655	9.801	-0.1541
402	SLE RA 9	0.45	0.43	40.3	-0.0655	9.8019	-0.1513
402	SLE RA 10	0.46	0.51	42.37	-0.0686	10.2908	-0.1791
402	SLE RA 11	0.46	0.53	42.96	-0.0697	10.4296	-0.1858
402	SLE RA 12	0.47	0.52	42.97	-0.0697	10.4305	-0.183
402	SLE RA 13	0.47	0.51	42.76	-0.0694	10.3822	-0.1789
402	SLE RA 14	0.46	0.53	43.35	-0.0704	10.5211	-0.1857
402	SLE RA 15	0.47	0.52	43.36	-0.0704	10.522	-0.1828
402	SLE RA 16	0.46	0.52	43.14	-0.0701	10.4722	-0.1835
402	SLE RA 17	0.46	0.52	43.15	-0.0701	10.4731	-0.1807
402	SLE RA 18	0.45	0.56	43.58	-0.0706	10.5769	-0.1964
402	SLE RA 19	0.46	0.55	43.58	-0.0706	10.5778	-0.1936
402	SLE RA 20	0.46	0.56	43.97	-0.0713	10.6684	-0.1963
402	SLE RA 21	0.47	0.55	43.98	-0.0713	10.6693	-0.1934
402	SLE FR 1	0.44	0.44	39.51	-0.064	9.618	-0.1543
402	SLE FR 2	0.44	0.44	39.52	-0.064	9.6183	-0.1534
402	SLE FR 3	0.44	0.44	39.67	-0.0643	9.6546	-0.1543
402	SLE FR 4	0.44	0.47	40.74	-0.066	9.906	-0.166
402	SLE FR 5	0.44	0.48	40.89	-0.0663	9.9423	-0.1669
402	SLE FR 6	0.45	0.5	41.55	-0.0673	10.0975	-0.1754
402	SLE QP 1	0.44	0.44	39.51	-0.064	9.618	-0.1543
402	SLE QP 2	0.44	0.48	40.73	-0.066	9.9057	-0.1669
402	SLD 1	3.97	1.19	29.93	-0.0462	7.4577	-0.418
402	SLD 2	4.27	1.81	30.45	-0.0491	7.5813	-0.6321
402	SLD 3	3.76	-0.23	28.84	-0.0405	7.2083	0.0784
402	SLD 4	4.06	0.39	29.36	-0.0434	7.332	-0.1358
402	SLD 5	1.77	2.73	39.05	-0.0681	9.5274	-0.9568
402	SLD 6	1.96	3.14	39.39	-0.07	9.6087	-1.0975
402	SLD 7	1.07	-2	35.42	-0.0493	8.6962	0.6977
402	SLD 8	1.26	-1.59	35.76	-0.0512	8.7775	0.5569
402	SLD 9	-0.38	2.55	45.71	-0.0808	11.0339	-0.8908
402	SLD 10	-0.19	2.95	46.04	-0.0827	11.1152	-1.0316
402	SLD 11	-1.07	-2.19	42.08	-0.062	10.2027	0.7636
402	SLD 12	-0.88	-1.78	42.41	-0.0639	10.284	0.6229
402	SLD 13	-3.17	0.56	52.11	-0.0885	12.4794	-0.1981
402	SLD 14	-2.88	1.18	52.62	-0.0914	12.6031	-0.4123
402	SLD 15	-3.38	-0.86	51.02	-0.0829	12.2301	0.2982
402	SLD 16	-3.09	-0.24	51.53	-0.0858	12.3537	0.0841
402	SLV 1	8.7	2.1	15.43	-0.0194	4.17	-0.7363
402	SLV 2	9.39	3.53	16.63	-0.0262	4.458	-1.235
402	SLV 3	8.21	-1.11	12.93	-0.0066	3.5971	0.3878
402	SLV 4	8.9	0.32	14.12	-0.0134	3.8851	-0.111
402	SLV 5	3.54	5.59	36.73	-0.0703	9.0041	-1.9563
402	SLV 6	3.98	6.52	37.51	-0.0747	9.1901	-2.2784
402	SLV 7	1.92	-5.12	28.39	-0.0275	7.0944	1.7905
402	SLV 8	2.36	-4.2	29.16	-0.0319	7.2804	1.4684
402	SLV 9	-1.48	5.15	52.31	-0.1001	12.5309	-1.8023
402	SLV 10	-1.03	6.08	53.08	-0.1044	12.717	-2.1244
402	SLV 11	-3.1	-5.57	43.96	-0.0573	10.6213	1.9445
402	SLV 12	-2.66	-4.64	44.74	-0.0617	10.8073	1.6224



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
402	SLV 13	-8.02	0.63	67.34	-0.1186	15.9263	-0.2229
402	SLV 14	-7.33	2.07	68.54	-0.1254	16.2143	-0.7217
402	SLV 15	-8.5	-2.58	64.84	-0.1058	15.3534	0.9011
402	SLV 16	-7.82	-1.15	66.04	-0.1126	15.6414	0.4024
402	CRTFP Ux+	0	0	0	0	0	0
402	CRTFP Ux-	0	0	0	0	0	0
402	CRTFP Uy+	0	0	0	0	0	0
402	CRTFP Uy-	0	0	0	0	0	0
404	SLU 1	-0.67	0.12	35.99	-0.0742	-5.5417	0.0275
404	SLU 2	-0.65	0.03	35.94	-0.0738	-5.5338	0.0058
404	SLU 3	-0.69	0.13	36.84	-0.0761	-5.6662	0.0295
404	SLU 4	-0.68	0.08	36.81	-0.0758	-5.6614	0.0165
404	SLU 5	-0.66	0.04	36.49	-0.0751	-5.6149	0.0071
404	SLU 6	-0.7	0.13	37.4	-0.0773	-5.7473	0.0308
404	SLU 7	-0.69	0.08	37.37	-0.0771	-5.7425	0.0178
404	SLU 8	-0.69	0.13	37.1	-0.0768	-5.7039	0.0301
404	SLU 9	-0.68	0.08	37.07	-0.0765	-5.6991	0.0171
404	SLU 10	-0.7	0.11	40	-0.0821	-6.1341	0.0256
404	SLU 11	-0.73	0.21	40.9	-0.0843	-6.2665	0.0492
404	SLU 12	-0.72	0.16	40.87	-0.0841	-6.2618	0.0363
404	SLU 13	-0.71	0.12	40.55	-0.0834	-6.2152	0.0269
404	SLU 14	-0.74	0.21	41.46	-0.0856	-6.3476	0.0506
404	SLU 15	-0.73	0.16	41.43	-0.0854	-6.3429	0.0376
404	SLU 16	-0.73	0.21	41.16	-0.085	-6.3043	0.0498
404	SLU 17	-0.72	0.16	41.13	-0.0848	-6.2995	0.0368
404	SLU 18	-0.73	0.23	41.78	-0.086	-6.3994	0.0557
404	SLU 19	-0.72	0.18	41.75	-0.0858	-6.3946	0.0427
404	SLU 20	-0.74	0.24	42.34	-0.0873	-6.4805	0.057
404	SLU 21	-0.73	0.19	42.31	-0.0871	-6.4757	0.044
404	SLU 22	-0.75	0.19	40.05	-0.0824	-6.1383	0.0443
404	SLU 23	-0.74	0.1	40	-0.082	-6.1303	0.0226
404	SLU 24	-0.77	0.2	40.9	-0.0842	-6.2627	0.0463
404	SLU 25	-0.76	0.14	40.87	-0.084	-6.258	0.0333
404	SLU 26	-0.75	0.11	40.55	-0.0832	-6.2114	0.0239
404	SLU 27	-0.78	0.2	41.46	-0.0855	-6.3438	0.0476
404	SLU 28	-0.77	0.15	41.43	-0.0853	-6.339	0.0346
404	SLU 29	-0.77	0.2	41.16	-0.0849	-6.3004	0.0469
404	SLU 30	-0.76	0.15	41.13	-0.0847	-6.2957	0.0339
404	SLU 31	-0.78	0.18	44.05	-0.0902	-6.7307	0.0424
404	SLU 32	-0.82	0.28	44.96	-0.0925	-6.8631	0.0661
404	SLU 33	-0.81	0.22	44.93	-0.0923	-6.8583	0.0531
404	SLU 34	-0.79	0.19	44.61	-0.0915	-6.8118	0.0437
404	SLU 35	-0.83	0.28	45.52	-0.0938	-6.9442	0.0674
404	SLU 36	-0.82	0.23	45.48	-0.0935	-6.9394	0.0544
404	SLU 37	-0.82	0.28	45.22	-0.0932	-6.9008	0.0666
404	SLU 38	-0.81	0.23	45.19	-0.093	-6.896	0.0536
404	SLU 39	-0.81	0.3	45.84	-0.0942	-6.9959	0.0725
404	SLU 40	-0.81	0.25	45.81	-0.0939	-6.9911	0.0595
404	SLU 41	-0.83	0.31	46.4	-0.0954	-7.077	0.0738
404	SLU 42	-0.82	0.26	46.37	-0.0952	-7.0722	0.0608
404	SLU 43	-0.84	0.13	45.39	-0.0937	-6.9997	0.0299
404	SLU 44	-0.82	0.04	45.34	-0.0933	-6.9918	0.0083
404	SLU 45	-0.86	0.14	46.25	-0.0955	-7.1242	0.032
404	SLU 46	-0.85	0.09	46.22	-0.0953	-7.1194	0.019
404	SLU 47	-0.83	0.05	45.9	-0.0946	-7.0729	0.0096
404	SLU 48	-0.87	0.15	46.8	-0.0968	-7.2053	0.0333
404	SLU 49	-0.86	0.09	46.77	-0.0966	-7.2005	0.0203
404	SLU 50	-0.86	0.14	46.5	-0.0962	-7.1619	0.0325
404	SLU 51	-0.85	0.09	46.47	-0.096	-7.1571	0.0196
404	SLU 52	-0.87	0.12	49.4	-0.1016	-7.5921	0.028
404	SLU 53	-0.9	0.22	50.31	-0.1038	-7.7245	0.0517
404	SLU 54	-0.89	0.17	50.28	-0.1036	-7.7198	0.0387
404	SLU 55	-0.88	0.13	49.96	-0.1028	-7.6732	0.0293
404	SLU 56	-0.91	0.23	50.86	-0.1051	-7.8056	0.053
404	SLU 57	-0.91	0.17	50.83	-0.1049	-7.8008	0.04
404	SLU 58	-0.91	0.22	50.56	-0.1045	-7.7623	0.0523
404	SLU 59	-0.9	0.17	50.53	-0.1043	-7.7575	0.0393
404	SLU 60	-0.9	0.25	51.19	-0.1055	-7.8574	0.0581
404	SLU 61	-0.89	0.19	51.16	-0.1053	-7.8526	0.0451
404	SLU 62	-0.91	0.25	51.74	-0.1068	-7.9385	0.0594
404	SLU 63	-0.9	0.2	51.71	-0.1065	-7.9337	0.0465
404	SLU 64	-0.92	0.2	49.45	-0.1018	-7.5963	0.0467
404	SLU 65	-0.91	0.11	49.4	-0.1014	-7.5883	0.0251
404	SLU 66	-0.94	0.21	50.31	-0.1037	-7.7207	0.0488
404	SLU 67	-0.93	0.16	50.28	-0.1034	-7.7159	0.0358
404	SLU 68	-0.92	0.12	49.96	-0.1027	-7.6694	0.0264
404	SLU 69	-0.95	0.21	50.86	-0.105	-7.8018	0.0501
404	SLU 70	-0.95	0.16	50.83	-0.1047	-7.797	0.0371
404	SLU 71	-0.94	0.21	50.56	-0.1044	-7.7584	0.0494
404	SLU 72	-0.94	0.16	50.53	-0.1042	-7.7537	0.0364
404	SLU 73	-0.95	0.19	53.46	-0.1097	-8.1887	0.0448
404	SLU 74	-0.99	0.29	54.36	-0.1119	-8.3211	0.0685
404	SLU 75	-0.98	0.24	54.33	-0.1117	-8.3163	0.0556
404	SLU 76	-0.96	0.2	54.01	-0.111	-8.2697	0.0462
404	SLU 77	-1	0.29	54.92	-0.1132	-8.4022	0.0698
404	SLU 78	-0.99	0.24	54.89	-0.113	-8.3974	0.0569
404	SLU 79	-0.99	0.29	54.62	-0.1127	-8.3588	0.0691
404	SLU 80	-0.98	0.24	54.59	-0.1124	-8.354	0.0561
404	SLU 81	-0.99	0.31	55.25	-0.1136	-8.4539	0.0749
404	SLU 82	-0.98	0.26	55.22	-0.1134	-8.4491	0.062





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
404	SLU 83	-1	0.32	55.8	-0.1149	-8.535	0.0762
404	SLU 84	-0.99	0.27	55.77	-0.1147	-8.5302	0.0633
404	SLE RA 1	-0.69	0.14	37.15	-0.0765	-5.7122	0.0323
404	SLE RA 2	-0.68	0.08	37.11	-0.0763	-5.7069	0.0178
404	SLE RA 3	-0.7	0.14	37.72	-0.0778	-5.7951	0.0336
404	SLE RA 4	-0.7	0.11	37.7	-0.0776	-5.792	0.025
404	SLE RA 5	-0.69	0.08	37.48	-0.0771	-5.7609	0.0187
404	SLE RA 6	-0.71	0.15	38.09	-0.0786	-5.8492	0.0345
404	SLE RA 7	-0.71	0.11	38.07	-0.0785	-5.846	0.0258
404	SLE RA 8	-0.71	0.15	37.89	-0.0782	-5.8203	0.034
404	SLE RA 9	-0.7	0.11	37.87	-0.0781	-5.8171	0.0254
404	SLE RA 10	-0.71	0.13	39.82	-0.0818	-6.1071	0.031
404	SLE RA 11	-0.73	0.2	40.42	-0.0833	-6.1954	0.0468
404	SLE RA 12	-0.73	0.16	40.4	-0.0831	-6.1922	0.0381
404	SLE RA 13	-0.72	0.14	40.19	-0.0826	-6.1612	0.0319
404	SLE RA 14	-0.74	0.2	40.79	-0.0841	-6.2494	0.0477
404	SLE RA 15	-0.74	0.17	40.77	-0.084	-6.2463	0.039
404	SLE RA 16	-0.74	0.2	40.59	-0.0838	-6.2205	0.0472
404	SLE RA 17	-0.73	0.16	40.57	-0.0836	-6.2173	0.0385
404	SLE RA 18	-0.73	0.22	41.01	-0.0844	-6.2839	0.0511
404	SLE RA 19	-0.73	0.18	40.99	-0.0843	-6.2808	0.0424
404	SLE RA 20	-0.74	0.22	41.38	-0.0853	-6.338	0.0519
404	SLE RA 21	-0.73	0.18	41.36	-0.0851	-6.3348	0.0433
404	SLE FR 1	-0.69	0.14	37.15	-0.0765	-5.7122	0.0323
404	SLE FR 2	-0.69	0.13	37.14	-0.0765	-5.7111	0.0294
404	SLE FR 3	-0.69	0.14	37.3	-0.0769	-5.7338	0.0326
404	SLE FR 4	-0.7	0.15	38.3	-0.0788	-5.8826	0.035
404	SLE FR 5	-0.71	0.16	38.45	-0.0792	-5.9053	0.0383
404	SLE FR 6	-0.71	0.18	39.08	-0.0805	-5.9981	0.0417
404	SLE QP 1	-0.69	0.14	37.15	-0.0765	-5.7122	0.0323
404	SLE QP 2	-0.7	0.16	38.31	-0.0789	-5.8837	0.0379
404	SLD 1	2.09	0.73	49.53	-0.1066	-7.4987	0.1817
404	SLD 2	2.34	0.19	49.1	-0.1036	-7.4304	0.0492
404	SLD 3	2.28	-0.61	48.54	-0.1005	-7.3481	-0.1507
404	SLD 4	2.53	-1.14	48.1	-0.0975	-7.2799	-0.2831
404	SLD 5	-0.19	2.45	43.26	-0.0969	-6.6087	0.6088
404	SLD 6	-0.03	2.1	42.98	-0.0949	-6.5638	0.5217
404	SLD 7	0.43	-1.99	39.94	-0.0768	-6.1069	-0.4991
404	SLD 8	0.6	-2.35	39.66	-0.0748	-6.0621	-0.5861
404	SLD 9	-2	2.67	36.95	-0.083	-5.7053	0.6619
404	SLD 10	-1.84	2.32	36.67	-0.081	-5.6605	0.5749
404	SLD 11	-1.38	-1.77	33.64	-0.0629	-5.2036	-0.4459
404	SLD 12	-1.21	-2.13	33.35	-0.0609	-5.1587	-0.533
404	SLD 13	-3.94	1.46	28.51	-0.0603	-4.4875	0.3589
404	SLD 14	-3.69	0.93	28.08	-0.0572	-4.4193	0.2265
404	SLD 15	-3.75	0.13	27.52	-0.0542	-4.337	0.0266
404	SLD 16	-3.5	-0.4	27.08	-0.0512	-4.2688	-0.1059
404	SLV 1	5.84	1.43	64.56	-0.1435	-9.6602	0.3605
404	SLV 2	6.42	0.18	63.55	-0.1364	-9.5013	0.0522
404	SLV 3	6.27	-1.59	62.28	-0.1298	-9.3162	-0.3917
404	SLV 4	6.86	-2.83	61.27	-0.1228	-9.1573	-0.7001
404	SLV 5	0.49	5.33	49.81	-0.1202	-7.5659	1.3289
404	SLV 6	0.87	4.53	49.15	-0.1157	-7.4632	1.1297
404	SLV 7	1.95	-4.72	42.22	-0.0746	-6.4192	-1.1785
404	SLV 8	2.33	-5.53	41.57	-0.0701	-6.3166	-1.3777
404	SLV 9	-3.74	5.85	35.04	-0.0877	-5.4508	1.4535
404	SLV 10	-3.36	5.05	34.39	-0.0832	-5.3482	1.2543
404	SLV 11	-2.28	-4.21	27.46	-0.0421	-4.3042	-1.0539
404	SLV 12	-1.9	-5.01	26.81	-0.0376	-4.2015	-1.2531
404	SLV 13	-8.26	3.16	15.34	-0.035	-2.6101	0.7759
404	SLV 14	-7.68	1.91	14.33	-0.028	-2.4512	0.4675
404	SLV 15	-7.83	0.14	13.07	-0.0213	-2.2661	0.0236
404	SLV 16	-7.25	-1.11	12.06	-0.0143	-2.1072	-0.2847
404	CRTFP Ux+	0	0	0	0	0	0
404	CRTFP Ux-	0	0	0	0	0	0
404	CRTFP Uy+	0	0	0	0	0	0
404	CRTFP Uy-	0	0	0	0	0	0
408	SLU 1	0.2	-0.02	33.24	-0.0061	9.4699	0.0065
408	SLU 2	0.21	-0.05	33.23	-0.006	9.4669	0.0186
408	SLU 3	0.2	0	34.01	-0.0063	9.6834	0.0019
408	SLU 4	0.21	-0.02	34	-0.0062	9.6816	0.0091
408	SLU 5	0.21	-0.05	33.73	-0.0063	9.6055	0.0182
408	SLU 6	0.21	0	34.51	-0.0065	9.822	0.0015
408	SLU 7	0.22	-0.02	34.5	-0.0065	9.8202	0.0087
408	SLU 8	0.21	-0.01	34.24	-0.0066	9.7471	0.0057
408	SLU 9	0.21	-0.03	34.24	-0.0065	9.7453	0.0129
408	SLU 10	0.23	0	37.49	-0.006	10.6678	0
408	SLU 11	0.22	0.05	38.27	-0.0063	10.8843	-0.0167
408	SLU 12	0.23	0.03	38.26	-0.0062	10.8825	-0.0095
408	SLU 13	0.23	0	37.99	-0.0062	10.8064	-0.0004
408	SLU 14	0.22	0.05	38.77	-0.0065	11.0229	-0.0171
408	SLU 15	0.23	0.03	38.76	-0.0064	11.0211	-0.0099
408	SLU 16	0.22	0.04	38.5	-0.0066	10.948	-0.0129
408	SLU 17	0.23	0.02	38.5	-0.0065	10.9462	-0.0056
408	SLU 18	0.22	0.06	39.33	-0.0061	11.1855	-0.02
408	SLU 19	0.23	0.04	39.32	-0.006	11.1837	-0.0128
408	SLU 20	0.22	0.06	39.83	-0.0063	11.3241	-0.0204
408	SLU 21	0.23	0.04	39.82	-0.0063	11.3223	-0.0132
408	SLU 22	0.23	0.07	36.88	-0.0061	10.484	-0.0236
408	SLU 23	0.24	0.04	36.87	-0.006	10.4811	-0.0116



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
408	SLU 24	0.24	0.08	37.65	-0.0063	10.6975	-0.0282
408	SLU 25	0.24	0.06	37.64	-0.0062	10.6958	-0.021
408	SLU 26	0.25	0.04	37.37	-0.0062	10.6197	-0.012
408	SLU 27	0.24	0.09	38.15	-0.0065	10.8361	-0.0286
408	SLU 28	0.25	0.07	38.14	-0.0064	10.8344	-0.0214
408	SLU 29	0.24	0.07	37.88	-0.0066	10.7612	-0.0244
408	SLU 30	0.25	0.05	37.88	-0.0065	10.7595	-0.0172
408	SLU 31	0.26	0.09	41.13	-0.006	11.682	-0.0302
408	SLU 32	0.25	0.14	41.91	-0.0063	11.8985	-0.0468
408	SLU 33	0.26	0.12	41.9	-0.0062	11.8967	-0.0396
408	SLU 34	0.26	0.09	41.63	-0.0062	11.8206	-0.0306
408	SLU 35	0.26	0.14	42.41	-0.0065	12.0371	-0.0472
408	SLU 36	0.26	0.12	42.4	-0.0064	12.0353	-0.04
408	SLU 37	0.25	0.13	42.14	-0.0066	11.9622	-0.043
408	SLU 38	0.26	0.11	42.14	-0.0065	11.9604	-0.0358
408	SLU 39	0.25	0.15	42.97	-0.0061	12.1997	-0.0502
408	SLU 40	0.26	0.13	42.96	-0.006	12.1979	-0.043
408	SLU 41	0.26	0.15	43.47	-0.0063	12.3383	-0.0506
408	SLU 42	0.26	0.13	43.46	-0.0063	12.3365	-0.0434
408	SLU 43	0.25	-0.05	41.97	-0.008	11.9631	0.0188
408	SLU 44	0.26	-0.08	41.96	-0.0079	11.9601	0.0309
408	SLU 45	0.25	-0.04	42.73	-0.0081	12.1766	0.0142
408	SLU 46	0.26	-0.06	42.73	-0.0081	12.1748	0.0214
408	SLU 47	0.26	-0.08	42.46	-0.0081	12.0987	0.0305
408	SLU 48	0.26	-0.03	43.23	-0.0084	12.3152	0.0138
408	SLU 49	0.26	-0.06	43.23	-0.0083	12.3134	0.021
408	SLU 50	0.25	-0.05	42.97	-0.0085	12.2403	0.018
408	SLU 51	0.26	-0.07	42.96	-0.0084	12.2385	0.0252
408	SLU 52	0.27	-0.03	46.22	-0.0078	13.1611	0.0123
408	SLU 53	0.27	0.02	46.99	-0.0081	13.3776	-0.0044
408	SLU 54	0.28	0	46.99	-0.008	13.3758	0.0028
408	SLU 55	0.28	-0.03	46.72	-0.0081	13.2997	0.0119
408	SLU 56	0.27	0.02	47.49	-0.0084	13.5162	-0.0048
408	SLU 57	0.28	0	47.49	-0.0083	13.5144	0.0024
408	SLU 58	0.27	0.01	47.23	-0.0084	13.4412	-0.0006
408	SLU 59	0.28	-0.01	47.22	-0.0084	13.4395	0.0066
408	SLU 60	0.27	0.03	48.05	-0.008	13.6787	-0.0077
408	SLU 61	0.28	0.01	48.05	-0.0079	13.677	-0.0005
408	SLU 62	0.27	0.03	48.55	-0.0082	13.8173	-0.0081
408	SLU 63	0.28	0.01	48.55	-0.0081	13.8156	-0.0009
408	SLU 64	0.28	0.04	45.61	-0.008	12.9773	-0.0113
408	SLU 65	0.29	0	45.6	-0.0079	12.9743	0.0007
408	SLU 66	0.28	0.05	46.37	-0.0081	13.1908	-0.0159
408	SLU 67	0.29	0.03	46.37	-0.0081	13.189	-0.0087
408	SLU 68	0.29	0	46.1	-0.0081	13.1129	0.0003
408	SLU 69	0.29	0.05	46.87	-0.0084	13.3294	-0.0163
408	SLU 70	0.3	0.03	46.87	-0.0083	13.3276	-0.0091
408	SLU 71	0.29	0.04	46.61	-0.0084	13.2545	-0.0121
408	SLU 72	0.29	0.02	46.6	-0.0084	13.2527	-0.0049
408	SLU 73	0.31	0.06	49.86	-0.0078	14.1753	-0.0179
408	SLU 74	0.3	0.1	50.63	-0.0081	14.3917	-0.0345
408	SLU 75	0.31	0.08	50.63	-0.008	14.39	-0.0273
408	SLU 76	0.31	0.06	50.36	-0.0081	14.3139	-0.0183
408	SLU 77	0.3	0.1	51.13	-0.0083	14.5303	-0.0349
408	SLU 78	0.31	0.08	51.13	-0.0083	14.5286	-0.0277
408	SLU 79	0.3	0.09	50.87	-0.0084	14.4554	-0.0307
408	SLU 80	0.31	0.07	50.86	-0.0083	14.4536	-0.0235
408	SLU 81	0.3	0.11	51.69	-0.0079	14.6929	-0.0379
408	SLU 82	0.31	0.09	51.69	-0.0079	14.6911	-0.0307
408	SLU 83	0.3	0.11	52.19	-0.0082	14.8315	-0.0383
408	SLU 84	0.31	0.09	52.19	-0.0081	14.8297	-0.0311
408	SLE RA 1	0.21	0.01	34.28	-0.0061	9.7596	-0.0021
408	SLE RA 2	0.22	-0.01	34.27	-0.0061	9.7576	0.0059
408	SLE RA 3	0.21	0.02	34.79	-0.0062	9.902	-0.0052
408	SLE RA 4	0.22	0	34.79	-0.0062	9.9008	-0.0003
408	SLE RA 5	0.22	-0.01	34.61	-0.0062	9.85	0.0057
408	SLE RA 6	0.21	0.02	35.13	-0.0064	9.9944	-0.0054
408	SLE RA 7	0.22	0.01	35.12	-0.0064	9.9932	-0.0006
408	SLE RA 8	0.21	0.01	34.95	-0.0065	9.9444	-0.0026
408	SLE RA 9	0.22	0	34.94	-0.0064	9.9432	0.0022
408	SLE RA 10	0.23	0.02	37.11	-0.006	10.5583	-0.0065
408	SLE RA 11	0.22	0.05	37.63	-0.0062	10.7026	-0.0176
408	SLE RA 12	0.23	0.04	37.63	-0.0062	10.7014	-0.0127
408	SLE RA 13	0.23	0.02	37.45	-0.0062	10.6507	-0.0067
408	SLE RA 14	0.22	0.05	37.97	-0.0064	10.795	-0.0178
408	SLE RA 15	0.23	0.04	37.96	-0.0063	10.7938	-0.013
408	SLE RA 16	0.22	0.05	37.79	-0.0064	10.745	-0.015
408	SLE RA 17	0.23	0.03	37.78	-0.0064	10.7439	-0.0102
408	SLE RA 18	0.22	0.06	38.34	-0.0061	10.9034	-0.0198
408	SLE RA 19	0.23	0.05	38.33	-0.0061	10.9022	-0.015
408	SLE RA 20	0.22	0.06	38.67	-0.0063	10.9958	-0.0201
408	SLE RA 21	0.23	0.05	38.67	-0.0062	10.9946	-0.0152
408	SLE FR 1	0.21	0.01	34.28	-0.0061	9.7596	-0.0021
408	SLE FR 2	0.21	0.01	34.28	-0.0061	9.7592	-0.0005
408	SLE FR 3	0.21	0.01	34.41	-0.0062	9.7966	-0.0022
408	SLE FR 4	0.21	0.02	35.5	-0.0061	10.1023	-0.0058
408	SLE FR 5	0.21	0.03	35.63	-0.0062	10.1397	-0.0075
408	SLE FR 6	0.21	0.04	36.31	-0.0061	10.3315	-0.0109
408	SLE QP 1	0.21	0.01	34.28	-0.0061	9.7596	-0.0021
408	SLE QP 2	0.21	0.02	35.5	-0.0061	10.1027	-0.0074



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
408	SLD 1	3.29	0.38	35.49	-0.0082	10.2123	-0.1326
408	SLD 2	3.52	0.41	35.54	-0.0084	10.2222	-0.1398
408	SLD 3	3.1	-0.67	35.13	-0.0053	10.116	0.2366
408	SLD 4	3.34	-0.65	35.19	-0.0054	10.1259	0.2295
408	SLD 5	1.37	1.73	36.02	-0.0112	10.2799	-0.6037
408	SLD 6	1.52	1.74	36.06	-0.0112	10.2864	-0.6084
408	SLD 7	0.76	-1.79	34.84	-0.0015	9.9589	0.6271
408	SLD 8	0.91	-1.77	34.88	-0.0015	9.9654	0.6224
408	SLD 9	-0.49	1.82	36.12	-0.0107	10.2401	-0.6372
408	SLD 10	-0.34	1.84	36.15	-0.0108	10.2466	-0.6419
408	SLD 11	-1.1	-1.69	34.94	-0.001	9.9191	0.5936
408	SLD 12	-0.95	-1.68	34.98	-0.0011	9.9256	0.5889
408	SLD 13	-2.91	0.7	35.81	-0.0068	10.0796	-0.2443
408	SLD 14	-2.68	0.72	35.86	-0.0069	10.0895	-0.2514
408	SLD 15	-3.1	-0.36	35.46	-0.0039	9.9833	0.125
408	SLD 16	-2.86	-0.33	35.51	-0.004	9.9932	0.1178
408	SLV 1	7.4	0.82	35.46	-0.011	10.3559	-0.287
408	SLV 2	7.94	0.88	35.58	-0.0112	10.3791	-0.3037
408	SLV 3	6.98	-1.56	34.66	-0.0044	10.1366	0.5489
408	SLV 4	7.52	-1.51	34.78	-0.0046	10.1598	0.5322
408	SLV 5	2.92	3.88	36.68	-0.0175	10.5073	-1.3562
408	SLV 6	3.27	3.91	36.76	-0.0177	10.5223	-1.3669
408	SLV 7	1.51	-4.08	34.01	0.0044	9.7763	1.4301
408	SLV 8	1.85	-4.05	34.09	0.0043	9.7912	1.4194
408	SLV 9	-1.43	4.1	36.91	-0.0165	10.4143	-1.4342
408	SLV 10	-1.08	4.13	36.99	-0.0167	10.4292	-1.4449
408	SLV 11	-2.84	-3.86	34.23	0.0054	9.6832	1.3521
408	SLV 12	-2.5	-3.83	34.31	0.0053	9.6982	1.3413
408	SLV 13	-7.1	1.56	36.22	-0.0076	10.0457	-0.547
408	SLV 14	-6.56	1.61	36.34	-0.0079	10.0688	-0.5637
408	SLV 15	-7.52	-0.83	35.41	-0.0011	9.8264	0.2889
408	SLV 16	-6.98	-0.77	35.54	-0.0013	9.8495	0.2722
408	CRTFP Ux+	0	0	0	0	0	0
408	CRTFP Ux-	0	0	0	0	0	0
408	CRTFP Uy+	0	0	0	0	0	0
408	CRTFP Uy-	0	0	0	0	0	0
411	SLU 1	-0.97	-1.05	62.57	-0.045	-0.3026	-0.0277
411	SLU 2	-0.94	-1.14	62.53	-0.0444	-0.304	-0.0269
411	SLU 3	-1	-1.06	64.01	-0.0458	-0.309	-0.0285
411	SLU 4	-0.98	-1.11	63.98	-0.0455	-0.3098	-0.0281
411	SLU 5	-0.95	-1.15	63.49	-0.0453	-0.3084	-0.0273
411	SLU 6	-1.01	-1.08	64.97	-0.0466	-0.3135	-0.0289
411	SLU 7	-1	-1.13	64.94	-0.0463	-0.3143	-0.0285
411	SLU 8	-1	-1.09	64.49	-0.0466	-0.3116	-0.0285
411	SLU 9	-0.98	-1.14	64.46	-0.0463	-0.3124	-0.028
411	SLU 10	-0.99	-1.17	69.87	-0.0484	-0.3483	-0.0301
411	SLU 11	-1.05	-1.09	71.36	-0.0498	-0.3533	-0.0317
411	SLU 12	-1.03	-1.14	71.33	-0.0495	-0.3541	-0.0313
411	SLU 13	-1.01	-1.18	70.83	-0.0493	-0.3528	-0.0305
411	SLU 14	-1.07	-1.11	72.31	-0.0506	-0.3578	-0.0321
411	SLU 15	-1.05	-1.16	72.29	-0.0503	-0.3586	-0.0317
411	SLU 16	-1.05	-1.12	71.83	-0.0506	-0.3559	-0.0317
411	SLU 17	-1.04	-1.17	71.81	-0.0503	-0.3567	-0.0312
411	SLU 18	-1.04	-1.1	73.07	-0.0507	-0.366	-0.0322
411	SLU 19	-1.02	-1.15	73.04	-0.0503	-0.3668	-0.0318
411	SLU 20	-1.06	-1.11	74.02	-0.0515	-0.3704	-0.0326
411	SLU 21	-1.04	-1.16	74	-0.0512	-0.3713	-0.0322
411	SLU 22	-1.09	-1.05	69.49	-0.048	-0.3314	-0.0318
411	SLU 23	-1.06	-1.13	69.45	-0.0475	-0.3327	-0.031
411	SLU 24	-1.12	-1.06	70.93	-0.0488	-0.3378	-0.0326
411	SLU 25	-1.1	-1.11	70.9	-0.0485	-0.3386	-0.0322
411	SLU 26	-1.07	-1.15	70.4	-0.0483	-0.3372	-0.0314
411	SLU 27	-1.13	-1.07	71.88	-0.0496	-0.3422	-0.033
411	SLU 28	-1.12	-1.12	71.86	-0.0493	-0.343	-0.0326
411	SLU 29	-1.12	-1.08	71.4	-0.0496	-0.3404	-0.0326
411	SLU 30	-1.1	-1.13	71.38	-0.0493	-0.3412	-0.0321
411	SLU 31	-1.11	-1.16	76.79	-0.0514	-0.3771	-0.0342
411	SLU 32	-1.17	-1.09	78.27	-0.0528	-0.3821	-0.0358
411	SLU 33	-1.15	-1.14	78.25	-0.0525	-0.3829	-0.0354
411	SLU 34	-1.13	-1.18	77.75	-0.0523	-0.3816	-0.0346
411	SLU 35	-1.19	-1.1	79.23	-0.0536	-0.3866	-0.0362
411	SLU 36	-1.17	-1.15	79.2	-0.0533	-0.3874	-0.0358
411	SLU 37	-1.17	-1.11	78.75	-0.0536	-0.3847	-0.0358
411	SLU 38	-1.16	-1.16	78.72	-0.0533	-0.3855	-0.0353
411	SLU 39	-1.16	-1.09	79.98	-0.0537	-0.3947	-0.0363
411	SLU 40	-1.14	-1.14	79.96	-0.0534	-0.3955	-0.0359
411	SLU 41	-1.18	-1.11	80.94	-0.0545	-0.3992	-0.0367
411	SLU 42	-1.16	-1.16	80.91	-0.0542	-0.4	-0.0363
411	SLU 43	-1.21	-1.37	78.97	-0.0574	-0.3835	-0.0345
411	SLU 44	-1.18	-1.45	78.93	-0.0569	-0.3849	-0.0338
411	SLU 45	-1.24	-1.38	80.41	-0.0583	-0.3899	-0.0354
411	SLU 46	-1.23	-1.43	80.38	-0.058	-0.3907	-0.035
411	SLU 47	-1.2	-1.47	79.89	-0.0577	-0.3894	-0.0342
411	SLU 48	-1.26	-1.4	81.37	-0.0591	-0.3944	-0.0358
411	SLU 49	-1.24	-1.45	81.34	-0.0588	-0.3952	-0.0354
411	SLU 50	-1.25	-1.4	80.89	-0.0591	-0.3925	-0.0354
411	SLU 51	-1.23	-1.45	80.86	-0.0588	-0.3933	-0.0349
411	SLU 52	-1.24	-1.49	86.28	-0.0609	-0.4292	-0.037
411	SLU 53	-1.3	-1.41	87.76	-0.0623	-0.4342	-0.0386
411	SLU 54	-1.28	-1.46	87.73	-0.0619	-0.435	-0.0382



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
411	SLU 55	-1.25	-1.5	87.23	-0.0617	-0.4337	-0.0374
411	SLU 56	-1.31	-1.43	88.71	-0.0631	-0.4387	-0.039
411	SLU 57	-1.3	-1.48	88.69	-0.0628	-0.4395	-0.0386
411	SLU 58	-1.3	-1.44	88.23	-0.063	-0.4369	-0.0386
411	SLU 59	-1.28	-1.48	88.21	-0.0627	-0.4377	-0.0381
411	SLU 60	-1.29	-1.42	89.47	-0.0631	-0.4469	-0.0391
411	SLU 61	-1.27	-1.47	89.44	-0.0628	-0.4477	-0.0387
411	SLU 62	-1.31	-1.43	90.42	-0.0639	-0.4514	-0.0395
411	SLU 63	-1.29	-1.48	90.4	-0.0636	-0.4522	-0.0391
411	SLU 64	-1.34	-1.37	85.89	-0.0604	-0.4123	-0.0386
411	SLU 65	-1.31	-1.45	85.85	-0.0599	-0.4137	-0.0379
411	SLU 66	-1.37	-1.38	87.33	-0.0613	-0.4187	-0.0395
411	SLU 67	-1.35	-1.42	87.3	-0.061	-0.4195	-0.0391
411	SLU 68	-1.32	-1.46	86.8	-0.0607	-0.4181	-0.0383
411	SLU 69	-1.38	-1.39	88.29	-0.0621	-0.4232	-0.0399
411	SLU 70	-1.36	-1.44	88.26	-0.0618	-0.424	-0.0395
411	SLU 71	-1.37	-1.4	87.8	-0.0621	-0.4213	-0.0395
411	SLU 72	-1.35	-1.45	87.78	-0.0618	-0.4221	-0.039
411	SLU 73	-1.36	-1.48	93.19	-0.0639	-0.458	-0.0411
411	SLU 74	-1.42	-1.41	94.67	-0.0653	-0.463	-0.0427
411	SLU 75	-1.4	-1.46	94.65	-0.065	-0.4638	-0.0423
411	SLU 76	-1.38	-1.5	94.15	-0.0647	-0.4625	-0.0415
411	SLU 77	-1.44	-1.42	95.63	-0.0661	-0.4675	-0.0431
411	SLU 78	-1.42	-1.47	95.6	-0.0658	-0.4683	-0.0427
411	SLU 79	-1.42	-1.43	95.15	-0.0661	-0.4656	-0.0427
411	SLU 80	-1.4	-1.48	95.12	-0.0658	-0.4664	-0.0422
411	SLU 81	-1.41	-1.41	96.38	-0.0661	-0.4757	-0.0432
411	SLU 82	-1.39	-1.46	96.36	-0.0658	-0.4765	-0.0428
411	SLU 83	-1.43	-1.43	97.34	-0.0669	-0.4801	-0.0436
411	SLU 84	-1.41	-1.48	97.31	-0.0666	-0.4809	-0.0432
411	SLE RA 1	-1	-1.05	64.55	-0.0458	-0.3108	-0.0288
411	SLE RA 2	-0.98	-1.11	64.52	-0.0455	-0.3117	-0.0283
411	SLE RA 3	-1.02	-1.06	65.51	-0.0464	-0.3151	-0.0294
411	SLE RA 4	-1.01	-1.09	65.49	-0.0462	-0.3156	-0.0291
411	SLE RA 5	-0.99	-1.12	65.16	-0.046	-0.3147	-0.0286
411	SLE RA 6	-1.03	-1.07	66.15	-0.0469	-0.3181	-0.0297
411	SLE RA 7	-1.02	-1.1	66.13	-0.0467	-0.3186	-0.0294
411	SLE RA 8	-1.02	-1.07	65.82	-0.0469	-0.3168	-0.0294
411	SLE RA 9	-1.01	-1.11	65.81	-0.0467	-0.3174	-0.0291
411	SLE RA 10	-1.02	-1.13	69.42	-0.0481	-0.3413	-0.0305
411	SLE RA 11	-1.06	-1.08	70.41	-0.049	-0.3446	-0.0315
411	SLE RA 12	-1.04	-1.11	70.39	-0.0488	-0.3452	-0.0312
411	SLE RA 13	-1.03	-1.14	70.06	-0.0487	-0.3443	-0.0307
411	SLE RA 14	-1.07	-1.09	71.04	-0.0496	-0.3476	-0.0318
411	SLE RA 15	-1.06	-1.12	71.03	-0.0494	-0.3482	-0.0315
411	SLE RA 16	-1.06	-1.09	70.72	-0.0496	-0.3464	-0.0315
411	SLE RA 17	-1.05	-1.13	70.7	-0.0494	-0.3469	-0.0312
411	SLE RA 18	-1.05	-1.08	71.55	-0.0496	-0.3531	-0.0319
411	SLE RA 19	-1.04	-1.11	71.53	-0.0494	-0.3536	-0.0316
411	SLE RA 20	-1.06	-1.09	72.18	-0.0502	-0.3561	-0.0321
411	SLE RA 21	-1.05	-1.13	72.17	-0.05	-0.3566	-0.0319
411	SLE FR 1	-1	-1.05	64.55	-0.0458	-0.3108	-0.0288
411	SLE FR 2	-1	-1.06	64.54	-0.0457	-0.311	-0.0287
411	SLE FR 3	-1	-1.06	64.8	-0.046	-0.312	-0.0289
411	SLE FR 4	-1.01	-1.07	66.64	-0.0469	-0.3237	-0.0296
411	SLE FR 5	-1.02	-1.07	66.9	-0.0472	-0.3247	-0.0298
411	SLE FR 6	-1.03	-1.07	68.05	-0.0477	-0.332	-0.0303
411	SLE QP 1	-1	-1.05	64.55	-0.0458	-0.3108	-0.0288
411	SLE QP 2	-1.02	-1.06	66.65	-0.047	-0.3235	-0.0297
411	SLD 1	4.44	-0.74	72.72	-0.0604	-0.111	-0.0106
411	SLD 2	4.89	-1.12	72.39	-0.0581	-0.118	0.0008
411	SLD 3	4.81	-2.49	71.87	-0.0518	-0.1431	-0.0068
411	SLD 4	5.26	-2.87	71.54	-0.0495	-0.1501	0.0046
411	SLD 5	-0.02	1.76	69.81	-0.0644	-0.2098	-0.0318
411	SLD 6	0.27	1.51	69.6	-0.0628	-0.2144	-0.0243
411	SLD 7	1.21	-4.08	66.99	-0.0359	-0.3169	-0.0191
411	SLD 8	1.51	-4.33	66.77	-0.0343	-0.3215	-0.0116
411	SLD 9	-3.54	2.21	66.52	-0.0596	-0.3255	-0.0478
411	SLD 10	-3.25	1.95	66.31	-0.058	-0.3301	-0.0403
411	SLD 11	-2.3	-3.63	63.7	-0.0311	-0.4326	-0.0352
411	SLD 12	-2.01	-3.88	63.48	-0.0295	-0.4372	-0.0277
411	SLD 13	-7.29	0.75	61.75	-0.0444	-0.4969	-0.0641
411	SLD 14	-6.84	0.37	61.43	-0.0421	-0.5039	-0.0527
411	SLD 15	-6.92	-1	60.9	-0.0358	-0.529	-0.0603
411	SLD 16	-6.47	-1.38	60.58	-0.0335	-0.536	-0.0489
411	SLV 1	11.75	-0.37	80.83	-0.0781	0.1731	0.0151
411	SLV 2	12.79	-1.26	80.07	-0.0727	0.1568	0.0417
411	SLV 3	12.61	-4.33	78.9	-0.0587	0.0995	0.0238
411	SLV 4	13.65	-5.23	78.14	-0.0533	0.0832	0.0505
411	SLV 5	1.32	5.31	73.96	-0.0866	-0.06	-0.0342
411	SLV 6	2	4.73	73.47	-0.0831	-0.0705	-0.017
411	SLV 7	4.2	-7.9	67.53	-0.022	-0.3055	-0.005
411	SLV 8	4.87	-8.47	67.04	-0.0186	-0.316	0.0122
411	SLV 9	-6.91	6.35	66.25	-0.0753	-0.331	-0.0717
411	SLV 10	-6.23	5.78	65.76	-0.0719	-0.3415	-0.0545
411	SLV 11	-4.03	-6.85	59.83	-0.0108	-0.5765	-0.0425
411	SLV 12	-3.35	-7.43	59.34	-0.0073	-0.587	-0.0253
411	SLV 13	-15.68	3.1	55.16	-0.0406	-0.7302	-0.11
411	SLV 14	-14.64	2.21	54.4	-0.0352	-0.7465	-0.0833
411	SLV 15	-14.82	-0.86	53.23	-0.0212	-0.8038	-0.1012



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
411	SLV 16	-13.78	-1.75	52.47	-0.0158	-0.8201	-0.0746
411	CRTFP Ux+	0	0	0	0	0	0
411	CRTFP Ux-	0	0	0	0	0	0
415	SLU 1	0.5	-0.64	62.76	-0.0434	0.3074	0.0053
415	SLU 2	0.53	-0.67	62.76	-0.0432	0.3081	0.006
415	SLU 3	0.52	-0.64	64.2	-0.0444	0.3132	0.0055
415	SLU 4	0.54	-0.67	64.2	-0.0442	0.3136	0.0059
415	SLU 5	0.54	-0.69	63.71	-0.044	0.3116	0.006
415	SLU 6	0.53	-0.66	65.15	-0.0451	0.3167	0.0055
415	SLU 7	0.54	-0.68	65.15	-0.045	0.3171	0.0059
415	SLU 8	0.52	-0.67	64.67	-0.045	0.3143	0.0053
415	SLU 9	0.54	-0.69	64.67	-0.0449	0.3148	0.0057
415	SLU 10	0.55	-0.67	70.04	-0.0475	0.3505	0.0062
415	SLU 11	0.54	-0.64	71.48	-0.0486	0.3555	0.0057
415	SLU 12	0.56	-0.66	71.48	-0.0485	0.356	0.0061
415	SLU 13	0.56	-0.68	70.99	-0.0483	0.354	0.0063
415	SLU 14	0.55	-0.65	72.43	-0.0494	0.359	0.0058
415	SLU 15	0.57	-0.68	72.43	-0.0493	0.3594	0.0062
415	SLU 16	0.54	-0.66	71.94	-0.0492	0.3567	0.0056
415	SLU 17	0.56	-0.69	71.95	-0.0491	0.3571	0.006
415	SLU 18	0.53	-0.63	73.16	-0.0495	0.3679	0.0057
415	SLU 19	0.55	-0.65	73.16	-0.0494	0.3683	0.0061
415	SLU 20	0.54	-0.64	74.11	-0.0503	0.3714	0.0057
415	SLU 21	0.56	-0.67	74.11	-0.0502	0.3718	0.0061
415	SLU 22	0.59	-0.59	69.67	-0.0465	0.3306	0.0067
415	SLU 23	0.61	-0.62	69.67	-0.0464	0.3314	0.0074
415	SLU 24	0.6	-0.59	71.11	-0.0475	0.3364	0.0069
415	SLU 25	0.62	-0.62	71.11	-0.0474	0.3368	0.0073
415	SLU 26	0.62	-0.64	70.62	-0.0471	0.3348	0.0074
415	SLU 27	0.61	-0.61	72.06	-0.0483	0.3399	0.0069
415	SLU 28	0.63	-0.63	72.06	-0.0482	0.3403	0.0073
415	SLU 29	0.6	-0.62	71.58	-0.0481	0.3376	0.0068
415	SLU 30	0.62	-0.64	71.58	-0.048	0.338	0.0072
415	SLU 31	0.63	-0.62	76.95	-0.0506	0.3737	0.0076
415	SLU 32	0.62	-0.59	78.39	-0.0517	0.3788	0.0072
415	SLU 33	0.64	-0.61	78.39	-0.0516	0.3792	0.0076
415	SLU 34	0.64	-0.63	77.9	-0.0514	0.3772	0.0077
415	SLU 35	0.63	-0.6	79.34	-0.0525	0.3822	0.0072
415	SLU 36	0.65	-0.63	79.34	-0.0524	0.3827	0.0076
415	SLU 37	0.62	-0.61	78.86	-0.0524	0.3799	0.007
415	SLU 38	0.64	-0.63	78.86	-0.0522	0.3804	0.0074
415	SLU 39	0.61	-0.58	80.07	-0.0526	0.3911	0.0071
415	SLU 40	0.63	-0.6	80.07	-0.0525	0.3916	0.0075
415	SLU 41	0.62	-0.59	81.02	-0.0534	0.3946	0.0071
415	SLU 42	0.64	-0.62	81.02	-0.0533	0.395	0.0075
415	SLU 43	0.63	-0.85	79.21	-0.0554	0.3916	0.0064
415	SLU 44	0.65	-0.88	79.21	-0.0552	0.3924	0.007
415	SLU 45	0.64	-0.85	80.65	-0.0563	0.3974	0.0066
415	SLU 46	0.66	-0.88	80.66	-0.0562	0.3979	0.007
415	SLU 47	0.66	-0.9	80.17	-0.056	0.3959	0.0071
415	SLU 48	0.65	-0.87	81.61	-0.0571	0.4009	0.0066
415	SLU 49	0.67	-0.89	81.61	-0.057	0.4014	0.007
415	SLU 50	0.64	-0.88	81.12	-0.057	0.3986	0.0064
415	SLU 51	0.66	-0.9	81.12	-0.0568	0.399	0.0068
415	SLU 52	0.67	-0.88	86.49	-0.0594	0.4347	0.0073
415	SLU 53	0.66	-0.85	87.93	-0.0606	0.4398	0.0068
415	SLU 54	0.68	-0.87	87.93	-0.0604	0.4402	0.0072
415	SLU 55	0.68	-0.89	87.45	-0.0602	0.4382	0.0074
415	SLU 56	0.67	-0.86	88.89	-0.0613	0.4433	0.0069
415	SLU 57	0.69	-0.89	88.89	-0.0612	0.4437	0.0073
415	SLU 58	0.66	-0.87	88.4	-0.0612	0.4409	0.0067
415	SLU 59	0.68	-0.89	88.4	-0.0611	0.4414	0.0071
415	SLU 60	0.66	-0.84	89.61	-0.0614	0.4521	0.0068
415	SLU 61	0.67	-0.86	89.61	-0.0613	0.4526	0.0072
415	SLU 62	0.66	-0.85	90.57	-0.0622	0.4556	0.0068
415	SLU 63	0.68	-0.88	90.57	-0.0621	0.4561	0.0072
415	SLU 64	0.71	-0.79	86.12	-0.0585	0.4149	0.0078
415	SLU 65	0.73	-0.83	86.13	-0.0583	0.4156	0.0085
415	SLU 66	0.73	-0.8	87.57	-0.0594	0.4207	0.008
415	SLU 67	0.74	-0.82	87.57	-0.0593	0.4211	0.0084
415	SLU 68	0.74	-0.85	87.08	-0.0591	0.4191	0.0085
415	SLU 69	0.73	-0.82	88.52	-0.0602	0.4241	0.008
415	SLU 70	0.75	-0.84	88.52	-0.0601	0.4246	0.0084
415	SLU 71	0.72	-0.83	88.03	-0.0601	0.4218	0.0079
415	SLU 72	0.74	-0.85	88.03	-0.06	0.4223	0.0083
415	SLU 73	0.76	-0.82	93.41	-0.0626	0.458	0.0087
415	SLU 74	0.75	-0.8	94.85	-0.0637	0.463	0.0083
415	SLU 75	0.76	-0.82	94.85	-0.0636	0.4635	0.0087
415	SLU 76	0.76	-0.84	94.36	-0.0633	0.4614	0.0088
415	SLU 77	0.75	-0.81	95.8	-0.0645	0.4665	0.0083
415	SLU 78	0.77	-0.83	95.8	-0.0643	0.4669	0.0087
415	SLU 79	0.75	-0.82	95.31	-0.0643	0.4642	0.0081
415	SLU 80	0.76	-0.84	95.31	-0.0642	0.4646	0.0085
415	SLU 81	0.74	-0.78	96.52	-0.0646	0.4754	0.0082
415	SLU 82	0.75	-0.81	96.52	-0.0644	0.4758	0.0086
415	SLU 83	0.75	-0.8	97.48	-0.0653	0.4788	0.0082
415	SLU 84	0.76	-0.82	97.48	-0.0652	0.4793	0.0086
415	SLE RA 1	0.53	-0.62	64.73	-0.0443	0.314	0.0057
415	SLE RA 2	0.54	-0.65	64.73	-0.0442	0.3145	0.0061
415	SLE RA 3	0.54	-0.63	65.69	-0.0449	0.3179	0.0058



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
415	SLE RA 4	0.55	-0.64	65.69	-0.0449	0.3182	0.0061
415	SLE RA 5	0.55	-0.66	65.37	-0.0447	0.3168	0.0062
415	SLE RA 6	0.54	-0.64	66.33	-0.0455	0.3202	0.0058
415	SLE RA 7	0.55	-0.65	66.33	-0.0454	0.3205	0.0061
415	SLE RA 8	0.54	-0.64	66	-0.0454	0.3187	0.0057
415	SLE RA 9	0.55	-0.66	66	-0.0453	0.319	0.006
415	SLE RA 10	0.56	-0.64	69.58	-0.047	0.3428	0.0063
415	SLE RA 11	0.55	-0.62	70.54	-0.0478	0.3461	0.006
415	SLE RA 12	0.56	-0.64	70.55	-0.0477	0.3464	0.0063
415	SLE RA 13	0.56	-0.65	70.22	-0.0475	0.3451	0.0063
415	SLE RA 14	0.56	-0.63	71.18	-0.0483	0.3484	0.006
415	SLE RA 15	0.57	-0.65	71.18	-0.0482	0.3487	0.0063
415	SLE RA 16	0.55	-0.64	70.86	-0.0482	0.3469	0.0059
415	SLE RA 17	0.56	-0.65	70.86	-0.0481	0.3472	0.0062
415	SLE RA 18	0.55	-0.62	71.66	-0.0483	0.3544	0.0059
415	SLE RA 19	0.56	-0.63	71.66	-0.0483	0.3547	0.0062
415	SLE RA 20	0.55	-0.63	72.3	-0.0489	0.3567	0.006
415	SLE RA 21	0.56	-0.64	72.3	-0.0488	0.357	0.0062
415	SLE FR 1	0.53	-0.62	64.73	-0.0443	0.314	0.0057
415	SLE FR 2	0.53	-0.63	64.73	-0.0443	0.3141	0.0058
415	SLE FR 3	0.53	-0.63	64.99	-0.0445	0.315	0.0057
415	SLE FR 4	0.54	-0.63	66.81	-0.0455	0.3262	0.0059
415	SLE FR 5	0.53	-0.62	67.07	-0.0457	0.3271	0.0058
415	SLE FR 6	0.54	-0.62	68.2	-0.0463	0.3342	0.0058
415	SLE QP 1	0.53	-0.62	64.73	-0.0443	0.314	0.0057
415	SLE QP 2	0.53	-0.62	66.81	-0.0455	0.3261	0.0058
415	SLD 1	6.51	0.73	61.39	-0.0364	0.4036	0.0417
415	SLD 2	6.97	1.14	61.77	-0.0385	0.3951	0.0526
415	SLD 3	6.16	-1.03	60.59	-0.029	0.4393	0.0388
415	SLD 4	6.62	-0.62	60.97	-0.0311	0.4309	0.0496
415	SLD 5	2.78	2.38	66.33	-0.0536	0.2966	0.0191
415	SLD 6	3.08	2.65	66.58	-0.055	0.291	0.0262
415	SLD 7	1.6	-3.48	63.67	-0.0289	0.4159	0.0093
415	SLD 8	1.91	-3.22	63.92	-0.0303	0.4103	0.0164
415	SLD 9	-0.84	1.98	69.7	-0.0607	0.2419	-0.0049
415	SLD 10	-0.54	2.24	69.95	-0.0621	0.2364	0.0023
415	SLD 11	-2.01	-3.89	67.04	-0.036	0.3612	-0.0147
415	SLD 12	-1.71	-3.62	67.3	-0.0374	0.3557	-0.0075
415	SLD 13	-5.55	-0.62	72.65	-0.0599	0.2214	-0.0381
415	SLD 14	-5.09	-0.21	73.03	-0.062	0.2129	-0.0273
415	SLD 15	-5.9	-2.38	71.85	-0.0525	0.2572	-0.0411
415	SLD 16	-5.44	-1.97	72.23	-0.0546	0.2487	-0.0302
415	SLV 1	14.51	2.48	54.1	-0.024	0.5083	0.0899
415	SLV 2	15.59	3.42	54.99	-0.0289	0.4886	0.1152
415	SLV 3	13.69	-1.5	52.28	-0.0072	0.5899	0.083
415	SLV 4	14.77	-0.56	53.17	-0.0121	0.5702	0.1084
415	SLV 5	5.78	6.19	65.61	-0.0637	0.2604	0.0371
415	SLV 6	6.48	6.8	66.18	-0.0669	0.2477	0.0534
415	SLV 7	3.05	-7.09	59.53	-0.0077	0.5324	0.0141
415	SLV 8	3.75	-6.48	60.11	-0.0109	0.5197	0.0305
415	SLV 9	-2.68	5.24	73.51	-0.0802	0.1325	-0.0189
415	SLV 10	-1.99	5.85	74.09	-0.0834	0.1198	-0.0026
415	SLV 11	-5.41	-8.04	67.44	-0.0242	0.4046	-0.0419
415	SLV 12	-4.72	-7.43	68.01	-0.0274	0.3919	-0.0256
415	SLV 13	-13.7	-0.68	80.45	-0.0789	0.0821	-0.0968
415	SLV 14	-12.63	0.26	81.34	-0.0839	0.0624	-0.0715
415	SLV 15	-14.52	-4.66	78.63	-0.0621	0.1637	-0.1037
415	SLV 16	-13.45	-3.72	79.52	-0.0671	0.144	-0.0784
415	CRTFP Ux+	0	0	0	0	0	0
415	CRTFP Ux-	0	0	0	0	0	0
416	SLU 1	0.44	0.4	36.76	-0.0371	8.1389	-0.142
416	SLU 2	0.45	0.38	36.77	-0.0371	8.1413	-0.1349
416	SLU 3	0.45	0.41	37.63	-0.0381	8.3184	-0.145
416	SLU 4	0.46	0.4	37.63	-0.0381	8.3198	-0.1407
416	SLU 5	0.46	0.38	37.33	-0.0378	8.2575	-0.1347
416	SLU 6	0.46	0.41	38.19	-0.0388	8.4346	-0.1448
416	SLU 7	0.47	0.4	38.19	-0.0388	8.436	-0.1405
416	SLU 8	0.45	0.4	37.88	-0.0385	8.3713	-0.1416
416	SLU 9	0.46	0.39	37.89	-0.0385	8.3727	-0.1373
416	SLU 10	0.47	0.51	40.87	-0.0409	9.0121	-0.179
416	SLU 11	0.47	0.54	41.73	-0.0419	9.1891	-0.1891
416	SLU 12	0.48	0.53	41.73	-0.0419	9.1906	-0.1848
416	SLU 13	0.48	0.51	41.43	-0.0416	9.1282	-0.1788
416	SLU 14	0.48	0.54	42.29	-0.0426	9.3053	-0.1889
416	SLU 15	0.49	0.53	42.29	-0.0426	9.3067	-0.1846
416	SLU 16	0.47	0.53	41.98	-0.0424	9.2421	-0.1857
416	SLU 17	0.48	0.52	41.99	-0.0424	9.2435	-0.1814
416	SLU 18	0.47	0.58	42.62	-0.0426	9.3829	-0.205
416	SLU 19	0.48	0.57	42.63	-0.0426	9.3843	-0.2007
416	SLU 20	0.47	0.58	43.18	-0.0433	9.4991	-0.2048
416	SLU 21	0.48	0.57	43.19	-0.0433	9.5005	-0.2005
416	SLU 22	0.5	0.52	40.83	-0.0408	8.9983	-0.181
416	SLU 23	0.51	0.5	40.84	-0.0408	9.0007	-0.1739
416	SLU 24	0.51	0.52	41.7	-0.0418	9.1778	-0.184
416	SLU 25	0.52	0.51	41.7	-0.0417	9.1792	-0.1798
416	SLU 26	0.52	0.49	41.4	-0.0415	9.1169	-0.1737
416	SLU 27	0.52	0.52	42.26	-0.0425	9.2939	-0.1838
416	SLU 28	0.53	0.51	42.26	-0.0424	9.2954	-0.1796
416	SLU 29	0.51	0.51	41.95	-0.0422	9.2307	-0.1806
416	SLU 30	0.52	0.5	41.96	-0.0422	9.2321	-0.1764



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
416	SLU 31	0.53	0.62	44.94	-0.0446	9.8714	-0.2181
416	SLU 32	0.53	0.65	45.8	-0.0456	10.0485	-0.2281
416	SLU 33	0.54	0.64	45.8	-0.0456	10.0499	-0.2239
416	SLU 34	0.54	0.62	45.5	-0.0453	9.9876	-0.2179
416	SLU 35	0.54	0.65	46.36	-0.0463	10.1647	-0.2279
416	SLU 36	0.55	0.64	46.36	-0.0463	10.1661	-0.2237
416	SLU 37	0.53	0.64	46.05	-0.046	10.1014	-0.2247
416	SLU 38	0.54	0.63	46.06	-0.046	10.1028	-0.2205
416	SLU 39	0.52	0.69	46.69	-0.0463	10.2423	-0.2441
416	SLU 40	0.53	0.68	46.7	-0.0462	10.2437	-0.2398
416	SLU 41	0.53	0.69	47.25	-0.047	10.3584	-0.2439
416	SLU 42	0.54	0.68	47.26	-0.047	10.3598	-0.2396
416	SLU 43	0.55	0.49	46.4	-0.047	10.286	-0.1712
416	SLU 44	0.57	0.47	46.41	-0.047	10.2883	-0.1641
416	SLU 45	0.56	0.49	47.26	-0.048	10.4654	-0.1742
416	SLU 46	0.57	0.48	47.27	-0.048	10.4668	-0.1699
416	SLU 47	0.57	0.47	46.96	-0.0477	10.4045	-0.1639
416	SLU 48	0.57	0.49	47.82	-0.0487	10.5816	-0.174
416	SLU 49	0.58	0.48	47.82	-0.0487	10.583	-0.1697
416	SLU 50	0.56	0.48	47.51	-0.0484	10.5184	-0.1708
416	SLU 51	0.57	0.47	47.52	-0.0484	10.5198	-0.1665
416	SLU 52	0.59	0.59	50.51	-0.0508	11.1591	-0.2082
416	SLU 53	0.58	0.62	51.36	-0.0518	11.3362	-0.2183
416	SLU 54	0.59	0.61	51.37	-0.0518	11.3376	-0.214
416	SLU 55	0.59	0.59	51.07	-0.0515	11.2753	-0.208
416	SLU 56	0.59	0.62	51.92	-0.0525	11.4524	-0.2181
416	SLU 57	0.6	0.61	51.93	-0.0525	11.4538	-0.2138
416	SLU 58	0.58	0.61	51.61	-0.0522	11.3891	-0.2149
416	SLU 59	0.59	0.6	51.62	-0.0522	11.3905	-0.2106
416	SLU 60	0.58	0.67	52.25	-0.0525	11.5299	-0.2342
416	SLU 61	0.59	0.65	52.26	-0.0525	11.5313	-0.2299
416	SLU 62	0.59	0.67	52.81	-0.0532	11.6461	-0.234
416	SLU 63	0.59	0.65	52.82	-0.0532	11.6475	-0.2297
416	SLU 64	0.61	0.6	50.47	-0.0507	11.1454	-0.2103
416	SLU 65	0.62	0.58	50.48	-0.0506	11.1477	-0.2032
416	SLU 66	0.62	0.61	51.33	-0.0516	11.3248	-0.2132
416	SLU 67	0.63	0.59	51.34	-0.0516	11.3262	-0.209
416	SLU 68	0.63	0.58	51.04	-0.0514	11.2639	-0.2029
416	SLU 69	0.63	0.61	51.89	-0.0523	11.441	-0.213
416	SLU 70	0.64	0.59	51.9	-0.0523	11.4424	-0.2088
416	SLU 71	0.62	0.6	51.58	-0.0521	11.3777	-0.2098
416	SLU 72	0.63	0.58	51.59	-0.0521	11.3791	-0.2056
416	SLU 73	0.64	0.7	54.58	-0.0545	12.0185	-0.2473
416	SLU 74	0.64	0.73	55.43	-0.0555	12.1956	-0.2573
416	SLU 75	0.65	0.72	55.44	-0.0555	12.197	-0.2531
416	SLU 76	0.65	0.7	55.14	-0.0552	12.1347	-0.2471
416	SLU 77	0.65	0.73	55.99	-0.0562	12.3117	-0.2571
416	SLU 78	0.66	0.72	56	-0.0562	12.3131	-0.2529
416	SLU 79	0.64	0.72	55.69	-0.0559	12.2485	-0.254
416	SLU 80	0.65	0.71	55.69	-0.0559	12.2499	-0.2497
416	SLU 81	0.64	0.78	56.33	-0.0561	12.3893	-0.2733
416	SLU 82	0.65	0.77	56.33	-0.0561	12.3907	-0.269
416	SLU 83	0.64	0.78	56.88	-0.0568	12.5055	-0.2731
416	SLU 84	0.65	0.76	56.89	-0.0568	12.5069	-0.2688
416	SLE RA 1	0.45	0.44	37.93	-0.0382	8.3845	-0.1532
416	SLE RA 2	0.46	0.42	37.93	-0.0382	8.3861	-0.1484
416	SLE RA 3	0.46	0.44	38.5	-0.0388	8.5041	-0.1551
416	SLE RA 4	0.47	0.43	38.51	-0.0388	8.5051	-0.1523
416	SLE RA 5	0.47	0.42	38.3	-0.0386	8.4635	-0.1483
416	SLE RA 6	0.47	0.44	38.87	-0.0393	8.5816	-0.155
416	SLE RA 7	0.47	0.43	38.88	-0.0393	8.5825	-0.1522
416	SLE RA 8	0.46	0.43	38.67	-0.0391	8.5394	-0.1529
416	SLE RA 9	0.47	0.43	38.67	-0.0391	8.5403	-0.15
416	SLE RA 10	0.48	0.51	40.67	-0.0407	8.9666	-0.1778
416	SLE RA 11	0.48	0.52	41.24	-0.0414	9.0846	-0.1845
416	SLE RA 12	0.48	0.52	41.24	-0.0414	9.0856	-0.1817
416	SLE RA 13	0.48	0.51	41.04	-0.0412	9.044	-0.1777
416	SLE RA 14	0.48	0.52	41.61	-0.0418	9.1621	-0.1844
416	SLE RA 15	0.49	0.52	41.61	-0.0418	9.163	-0.1816
416	SLE RA 16	0.48	0.52	41.41	-0.0417	9.1199	-0.1823
416	SLE RA 17	0.48	0.51	41.41	-0.0417	9.1208	-0.1794
416	SLE RA 18	0.47	0.56	41.83	-0.0418	9.2138	-0.1952
416	SLE RA 19	0.48	0.55	41.84	-0.0418	9.2147	-0.1923
416	SLE RA 20	0.48	0.55	42.2	-0.0423	9.2912	-0.195
416	SLE RA 21	0.48	0.55	42.21	-0.0423	9.2922	-0.1922
416	SLE FR 1	0.45	0.44	37.93	-0.0382	8.3845	-0.1532
416	SLE FR 2	0.46	0.43	37.93	-0.0382	8.3848	-0.1522
416	SLE FR 3	0.46	0.44	38.07	-0.0384	8.4155	-0.1531
416	SLE FR 4	0.46	0.47	39.1	-0.0393	8.6336	-0.1648
416	SLE FR 5	0.46	0.47	39.25	-0.0395	8.6643	-0.1657
416	SLE FR 6	0.46	0.5	39.88	-0.04	8.7991	-0.1742
416	SLE QP 1	0.45	0.44	37.93	-0.0382	8.3845	-0.1532
416	SLE QP 2	0.46	0.47	39.1	-0.0393	8.6333	-0.1658
416	SLD 1	3.88	1.19	28.81	-0.0267	6.549	-0.4175
416	SLD 2	4.13	1.81	29.24	-0.0293	6.6371	-0.6321
416	SLD 3	3.68	-0.23	27.87	-0.0218	6.3662	0.0801
416	SLD 4	3.93	0.38	28.3	-0.0243	6.4543	-0.1344
416	SLD 5	1.74	2.73	37.36	-0.0426	8.2694	-0.9577
416	SLD 6	1.91	3.14	37.65	-0.0443	8.3273	-1.0987
416	SLD 7	1.07	-2.01	34.22	-0.026	7.6603	0.7011



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
416	SLD 8	1.24	-1.6	34.51	-0.0277	7.7181	0.5601
416	SLD 9	-0.32	2.54	43.69	-0.0508	9.5484	-0.8916
416	SLD 10	-0.15	2.95	43.97	-0.0525	9.6063	-1.0326
416	SLD 11	-0.99	-2.2	40.55	-0.0342	8.9392	0.7672
416	SLD 12	-0.82	-1.79	40.83	-0.0359	8.9971	0.6262
416	SLD 13	-3.01	0.56	49.9	-0.0542	10.8122	-0.1971
416	SLD 14	-2.75	1.18	50.33	-0.0568	10.9003	-0.4116
416	SLD 15	-3.21	-0.86	48.96	-0.0492	10.6295	0.3006
416	SLD 16	-2.96	-0.25	49.39	-0.0518	10.7175	0.086
416	SLV 1	8.45	2.1	15	-0.0098	3.7512	-0.7369
416	SLV 2	9.05	3.53	16	-0.0158	3.9563	-1.2365
416	SLV 3	7.98	-1.12	12.83	0.0015	3.3299	0.3901
416	SLV 4	8.58	0.31	13.83	-0.0045	3.535	-0.1095
416	SLV 5	3.47	5.6	34.99	-0.0465	7.7722	-1.96
416	SLV 6	3.85	6.52	35.63	-0.0504	7.9047	-2.2827
416	SLV 7	1.9	-5.14	27.75	-0.0088	6.3678	1.7967
416	SLV 8	2.29	-4.21	28.4	-0.0127	6.5002	1.474
416	SLV 9	-1.37	5.16	49.8	-0.0658	10.7663	-1.8055
416	SLV 10	-0.98	6.08	50.44	-0.0697	10.8988	-2.1282
416	SLV 11	-2.93	-5.58	42.56	-0.0281	9.3619	1.9512
416	SLV 12	-2.55	-4.65	43.21	-0.032	9.4943	1.6285
416	SLV 13	-7.66	0.63	64.37	-0.0741	13.7316	-0.222
416	SLV 14	-7.06	2.06	65.37	-0.0801	13.9367	-0.7216
416	SLV 15	-8.13	-2.59	62.2	-0.0628	13.3103	0.905
416	SLV 16	-7.53	-1.16	63.2	-0.0688	13.5153	0.4054
416	CRTFP Ux+	0	0	0	0	0	0
416	CRTFP Ux-	0	0	0	0	0	0
416	CRTFP Uy+	0	0	0	0	0	0
416	CRTFP Uy-	0	0	0	0	0	0
418	SLU 1	-0.6	0.11	34.2	-0.0464	-4.4528	0.025
418	SLU 2	-0.58	0.02	34.16	-0.0461	-4.448	0.0032
418	SLU 3	-0.61	0.12	35.01	-0.0476	-4.5494	0.027
418	SLU 4	-0.61	0.07	34.99	-0.0474	-4.5465	0.0139
418	SLU 5	-0.59	0.03	34.68	-0.0469	-4.5105	0.0045
418	SLU 6	-0.62	0.12	35.53	-0.0484	-4.6119	0.0282
418	SLU 7	-0.62	0.07	35.51	-0.0482	-4.609	0.0152
418	SLU 8	-0.62	0.12	35.25	-0.0481	-4.5778	0.0275
418	SLU 9	-0.61	0.07	35.22	-0.0479	-4.5749	0.0145
418	SLU 10	-0.62	0.1	38.02	-0.0509	-4.9239	0.0228
418	SLU 11	-0.65	0.2	38.87	-0.0524	-5.0253	0.0465
418	SLU 12	-0.64	0.14	38.85	-0.0522	-5.0224	0.0335
418	SLU 13	-0.63	0.11	38.55	-0.0517	-4.9864	0.0241
418	SLU 14	-0.66	0.2	39.4	-0.0532	-5.0878	0.0478
418	SLU 15	-0.65	0.15	39.37	-0.053	-5.0849	0.0347
418	SLU 16	-0.65	0.2	39.11	-0.0529	-5.0537	0.0471
418	SLU 17	-0.65	0.15	39.09	-0.0527	-5.0508	0.034
418	SLU 18	-0.65	0.22	39.72	-0.0533	-5.1327	0.0529
418	SLU 19	-0.64	0.17	39.7	-0.0531	-5.1298	0.0398
418	SLU 20	-0.66	0.23	40.24	-0.0542	-5.1952	0.0542
418	SLU 21	-0.65	0.18	40.22	-0.0539	-5.1923	0.0411
418	SLU 22	-0.67	0.18	38.07	-0.0512	-4.9245	0.0415
418	SLU 23	-0.66	0.09	38.03	-0.0508	-4.9197	0.0198
418	SLU 24	-0.69	0.19	38.88	-0.0523	-5.0211	0.0435
418	SLU 25	-0.68	0.13	38.85	-0.0521	-5.0182	0.0305
418	SLU 26	-0.67	0.1	38.55	-0.0516	-4.9822	0.0211
418	SLU 27	-0.7	0.19	39.4	-0.0532	-5.0836	0.0448
418	SLU 28	-0.69	0.14	39.38	-0.0529	-5.0807	0.0317
418	SLU 29	-0.69	0.19	39.12	-0.0528	-5.0495	0.0441
418	SLU 30	-0.68	0.14	39.09	-0.0526	-5.0466	0.031
418	SLU 31	-0.69	0.17	41.89	-0.0557	-5.3956	0.0393
418	SLU 32	-0.72	0.26	42.74	-0.0572	-5.497	0.063
418	SLU 33	-0.72	0.21	42.72	-0.0569	-5.4942	0.05
418	SLU 34	-0.7	0.17	42.42	-0.0565	-5.4582	0.0406
418	SLU 35	-0.73	0.27	43.27	-0.058	-5.5595	0.0643
418	SLU 36	-0.73	0.22	43.24	-0.0578	-5.5567	0.0513
418	SLU 37	-0.73	0.27	42.98	-0.0576	-5.5254	0.0636
418	SLU 38	-0.72	0.21	42.96	-0.0574	-5.5226	0.0506
418	SLU 39	-0.72	0.29	43.59	-0.0581	-5.6044	0.0694
418	SLU 40	-0.72	0.24	43.56	-0.0579	-5.6015	0.0564
418	SLU 41	-0.73	0.3	44.11	-0.0589	-5.6669	0.0707
418	SLU 42	-0.72	0.24	44.09	-0.0587	-5.664	0.0577
418	SLU 43	-0.75	0.12	43.13	-0.0587	-5.6269	0.0268
418	SLU 44	-0.74	0.03	43.09	-0.0584	-5.6221	0.0051
418	SLU 45	-0.77	0.13	43.94	-0.0599	-5.7235	0.0288
418	SLU 46	-0.76	0.08	43.92	-0.0597	-5.7206	0.0157
418	SLU 47	-0.75	0.04	43.62	-0.0592	-5.6846	0.0063
418	SLU 48	-0.78	0.13	44.47	-0.0607	-5.786	0.03
418	SLU 49	-0.77	0.08	44.44	-0.0605	-5.7831	0.017
418	SLU 50	-0.77	0.13	44.18	-0.0604	-5.7519	0.0293
418	SLU 51	-0.76	0.08	44.16	-0.0602	-5.749	0.0163
418	SLU 52	-0.78	0.11	46.96	-0.0632	-6.098	0.0246
418	SLU 53	-0.81	0.21	47.81	-0.0647	-6.1994	0.0483
418	SLU 54	-0.8	0.15	47.78	-0.0645	-6.1965	0.0353
418	SLU 55	-0.78	0.12	47.48	-0.064	-6.1605	0.0259
418	SLU 56	-0.81	0.21	48.33	-0.0656	-6.2619	0.0496
418	SLU 57	-0.81	0.16	48.31	-0.0653	-6.259	0.0365
418	SLU 58	-0.81	0.21	48.05	-0.0652	-6.2278	0.0489
418	SLU 59	-0.8	0.16	48.02	-0.065	-6.2249	0.0358
418	SLU 60	-0.8	0.23	48.65	-0.0656	-6.3068	0.0547
418	SLU 61	-0.8	0.18	48.63	-0.0654	-6.3039	0.0417





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
418	SLU 62	-0.81	0.24	49.18	-0.0665	-6.3693	0.056
418	SLU 63	-0.81	0.19	49.15	-0.0663	-6.3664	0.0429
418	SLU 64	-0.82	0.19	47	-0.0635	-6.0986	0.0433
418	SLU 65	-0.81	0.1	46.96	-0.0631	-6.0938	0.0216
418	SLU 66	-0.84	0.19	47.81	-0.0646	-6.1952	0.0453
418	SLU 67	-0.83	0.14	47.79	-0.0644	-6.1923	0.0323
418	SLU 68	-0.82	0.1	47.49	-0.064	-6.1563	0.0229
418	SLU 69	-0.85	0.2	48.34	-0.0655	-6.2577	0.0466
418	SLU 70	-0.84	0.15	48.31	-0.0653	-6.2548	0.0335
418	SLU 71	-0.84	0.2	48.05	-0.0651	-6.2236	0.0459
418	SLU 72	-0.84	0.14	48.03	-0.0649	-6.2207	0.0328
418	SLU 73	-0.85	0.18	50.83	-0.068	-6.5697	0.0411
418	SLU 74	-0.88	0.27	51.68	-0.0695	-6.6711	0.0648
418	SLU 75	-0.87	0.22	51.65	-0.0693	-6.6682	0.0518
418	SLU 76	-0.86	0.18	51.35	-0.0688	-6.6322	0.0424
418	SLU 77	-0.89	0.28	52.2	-0.0703	-6.7336	0.0661
418	SLU 78	-0.88	0.23	52.18	-0.0701	-6.7308	0.0531
418	SLU 79	-0.88	0.28	51.91	-0.07	-6.6995	0.0654
418	SLU 80	-0.87	0.22	51.89	-0.0697	-6.6967	0.0524
418	SLU 81	-0.88	0.3	52.52	-0.0704	-6.7785	0.0712
418	SLU 82	-0.87	0.25	52.5	-0.0702	-6.7756	0.0582
418	SLU 83	-0.89	0.31	53.05	-0.0712	-6.841	0.0725
418	SLU 84	-0.88	0.25	53.02	-0.071	-6.8381	0.0595
418	SLE RA 1	-0.62	0.13	35.31	-0.0478	-4.5876	0.0297
418	SLE RA 2	-0.61	0.07	35.28	-0.0476	-4.5844	0.0152
418	SLE RA 3	-0.63	0.13	35.85	-0.0486	-4.6519	0.031
418	SLE RA 4	-0.62	0.1	35.83	-0.0484	-4.65	0.0223
418	SLE RA 5	-0.62	0.07	35.63	-0.0481	-4.626	0.0161
418	SLE RA 6	-0.64	0.14	36.2	-0.0491	-4.6936	0.0319
418	SLE RA 7	-0.63	0.1	36.18	-0.049	-4.6917	0.0232
418	SLE RA 8	-0.63	0.14	36	-0.0489	-4.6709	0.0314
418	SLE RA 9	-0.63	0.1	35.99	-0.0488	-4.669	0.0227
418	SLE RA 10	-0.63	0.12	37.85	-0.0508	-4.9016	0.0282
418	SLE RA 11	-0.65	0.19	38.42	-0.0518	-4.9692	0.044
418	SLE RA 12	-0.65	0.15	38.41	-0.0516	-4.9673	0.0354
418	SLE RA 13	-0.64	0.13	38.2	-0.0513	-4.9433	0.0291
418	SLE RA 14	-0.66	0.19	38.77	-0.0523	-5.0109	0.0449
418	SLE RA 15	-0.66	0.16	38.76	-0.0522	-5.009	0.0362
418	SLE RA 16	-0.65	0.19	38.58	-0.0521	-4.9882	0.0444
418	SLE RA 17	-0.65	0.15	38.56	-0.052	-4.9863	0.0357
418	SLE RA 18	-0.65	0.2	38.99	-0.0524	-5.0408	0.0483
418	SLE RA 19	-0.65	0.17	38.97	-0.0522	-5.0389	0.0396
418	SLE RA 20	-0.66	0.21	39.33	-0.0529	-5.0825	0.0492
418	SLE RA 21	-0.65	0.17	39.32	-0.0528	-5.0806	0.0405
418	SLE FR 1	-0.62	0.13	35.31	-0.0478	-4.5876	0.0297
418	SLE FR 2	-0.62	0.12	35.3	-0.0477	-4.5869	0.0268
418	SLE FR 3	-0.62	0.13	35.45	-0.048	-4.6042	0.03
418	SLE FR 4	-0.63	0.14	36.4	-0.0491	-4.7229	0.0324
418	SLE FR 5	-0.63	0.14	36.55	-0.0494	-4.7402	0.0356
418	SLE FR 6	-0.63	0.17	37.15	-0.0501	-4.8142	0.039
418	SLE QP 1	-0.62	0.13	35.31	-0.0478	-4.5876	0.0297
418	SLE QP 2	-0.63	0.15	36.41	-0.0492	-4.7235	0.0353
418	SLD 1	2.06	0.72	46.95	-0.068	-5.9797	0.1797
418	SLD 2	2.27	0.18	46.6	-0.0653	-5.9372	0.047
418	SLD 3	2.23	-0.62	46.11	-0.0626	-5.8789	-0.154
418	SLD 4	2.45	-1.15	45.76	-0.0599	-5.8364	-0.2867
418	SLD 5	-0.12	2.44	40.92	-0.0635	-5.2609	0.6084
418	SLD 6	0.02	2.09	40.69	-0.0617	-5.233	0.5212
418	SLD 7	0.46	-2.01	38.1	-0.0455	-4.9248	-0.5039
418	SLD 8	0.6	-2.36	37.87	-0.0438	-4.8969	-0.5911
418	SLD 9	-1.85	2.66	34.95	-0.0546	-4.5502	0.6617
418	SLD 10	-1.71	2.31	34.72	-0.0528	-4.5223	0.5744
418	SLD 11	-1.27	-1.79	32.13	-0.0366	-4.2141	-0.4506
418	SLD 12	-1.13	-2.14	31.9	-0.0349	-4.1862	-0.5378
418	SLD 13	-3.7	1.46	27.06	-0.0384	-3.6106	0.3573
418	SLD 14	-3.49	0.92	26.71	-0.0357	-3.5682	0.2246
418	SLD 15	-3.53	0.12	26.21	-0.033	-3.5098	0.0236
418	SLD 16	-3.32	-0.42	25.86	-0.0303	-3.4674	-0.1091
418	SLV 1	5.66	1.42	61.08	-0.093	-7.662	0.3594
418	SLV 2	6.15	0.18	60.26	-0.0868	-7.5632	0.0503
418	SLV 3	6.07	-1.6	59.14	-0.0808	-7.4307	-0.3958
418	SLV 4	6.56	-2.85	58.32	-0.0746	-7.3319	-0.7049
418	SLV 5	0.56	5.33	46.89	-0.0819	-5.973	1.3313
418	SLV 6	0.88	4.53	46.37	-0.0779	-5.9092	1.1317
418	SLV 7	1.91	-4.74	40.43	-0.0412	-5.2019	-1.186
418	SLV 8	2.23	-5.55	39.9	-0.0372	-5.1381	-1.3856
418	SLV 9	-3.49	5.85	32.92	-0.0611	-4.309	1.4562
418	SLV 10	-3.17	5.05	32.39	-0.0571	-4.2451	1.2565
418	SLV 11	-2.13	-4.23	26.45	-0.0205	-3.5379	-1.0612
418	SLV 12	-1.81	-5.03	25.93	-0.0164	-3.474	-1.2608
418	SLV 13	-7.82	3.15	14.5	-0.0238	-2.1152	0.7754
418	SLV 14	-7.32	1.9	13.68	-0.0175	-2.0163	0.4664
418	SLV 15	-7.41	0.13	12.56	-0.0116	-1.8839	0.0202
418	SLV 16	-6.92	-1.12	11.74	-0.0053	-1.785	-0.2888
418	CRTFP Ux+	0	0	0	0	0	0
418	CRTFP Ux-	0	0	0	0	0	0
418	CRTFP Uy+	0	0	0	0	0	0
418	CRTFP Uy-	0	0	0	0	0	0
422	SLU 1	0.15	-0.02	33.22	0.0046	9.4838	0.0069
422	SLU 2	0.16	-0.05	33.21	0.0047	9.4822	0.019



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
422	SLU 3	0.15	0	33.99	0.0047	9.6972	0.0023
422	SLU 4	0.16	-0.02	33.98	0.0047	9.6962	0.0096
422	SLU 5	0.16	-0.05	33.71	0.0046	9.6193	0.0186
422	SLU 6	0.16	0	34.48	0.0046	9.8344	0.0019
422	SLU 7	0.16	-0.02	34.48	0.0047	9.8334	0.0092
422	SLU 8	0.16	-0.01	34.21	0.0045	9.7582	0.0061
422	SLU 9	0.16	-0.03	34.21	0.0045	9.7572	0.0134
422	SLU 10	0.18	0	37.5	0.0062	10.6956	0.001
422	SLU 11	0.17	0.05	38.27	0.0062	10.9106	-0.0156
422	SLU 12	0.18	0.03	38.27	0.0062	10.9096	-0.0084
422	SLU 13	0.18	0	38	0.0061	10.8327	0.0006
422	SLU 14	0.17	0.05	38.77	0.0061	11.0478	-0.016
422	SLU 15	0.18	0.03	38.76	0.0062	11.0468	-0.0088
422	SLU 16	0.17	0.04	38.5	0.0059	10.9716	-0.0118
422	SLU 17	0.18	0.02	38.49	0.006	10.9706	-0.0046
422	SLU 18	0.17	0.06	39.34	0.0067	11.2173	-0.0188
422	SLU 19	0.18	0.04	39.34	0.0068	11.2163	-0.0115
422	SLU 20	0.18	0.06	39.84	0.0066	11.3544	-0.0192
422	SLU 21	0.18	0.04	39.83	0.0067	11.3534	-0.0119
422	SLU 22	0.17	0.07	36.88	0.0058	10.5064	-0.0231
422	SLU 23	0.18	0.04	36.87	0.0059	10.5047	-0.011
422	SLU 24	0.18	0.08	37.65	0.0059	10.7198	-0.0276
422	SLU 25	0.19	0.06	37.64	0.006	10.7188	-0.0204
422	SLU 26	0.19	0.04	37.37	0.0059	10.6419	-0.0114
422	SLU 27	0.18	0.09	38.14	0.0059	10.8569	-0.028
422	SLU 28	0.19	0.06	38.14	0.0059	10.8559	-0.0208
422	SLU 29	0.18	0.07	37.87	0.0057	10.7807	-0.0238
422	SLU 30	0.19	0.05	37.87	0.0058	10.7797	-0.0166
422	SLU 31	0.2	0.09	41.16	0.0074	11.7181	-0.029
422	SLU 32	0.2	0.14	41.93	0.0074	11.9332	-0.0456
422	SLU 33	0.2	0.11	41.93	0.0075	11.9322	-0.0384
422	SLU 34	0.2	0.09	41.66	0.0074	11.8553	-0.0294
422	SLU 35	0.2	0.14	42.43	0.0073	12.0703	-0.046
422	SLU 36	0.21	0.12	42.42	0.0074	12.0693	-0.0388
422	SLU 37	0.2	0.12	42.16	0.0072	11.9941	-0.0418
422	SLU 38	0.2	0.1	42.15	0.0072	11.9931	-0.0346
422	SLU 39	0.2	0.14	43	0.0079	12.2398	-0.0488
422	SLU 40	0.2	0.12	43	0.008	12.2388	-0.0415
422	SLU 41	0.2	0.15	43.5	0.0079	12.377	-0.0491
422	SLU 42	0.21	0.12	43.5	0.0079	12.376	-0.0419
422	SLU 43	0.18	-0.05	41.93	0.0055	11.9784	0.0193
422	SLU 44	0.2	-0.08	41.92	0.0056	11.9767	0.0313
422	SLU 45	0.19	-0.04	42.7	0.0056	12.1918	0.0147
422	SLU 46	0.2	-0.06	42.69	0.0057	12.1908	0.0219
422	SLU 47	0.2	-0.08	42.42	0.0056	12.1139	0.0309
422	SLU 48	0.19	-0.04	43.19	0.0056	12.3289	0.0143
422	SLU 49	0.2	-0.06	43.19	0.0056	12.3279	0.0215
422	SLU 50	0.19	-0.05	42.92	0.0054	12.2527	0.0185
422	SLU 51	0.2	-0.07	42.92	0.0055	12.2517	0.0257
422	SLU 52	0.21	-0.03	46.21	0.0071	13.1901	0.0133
422	SLU 53	0.21	0.01	46.98	0.0071	13.4052	-0.0033
422	SLU 54	0.21	-0.01	46.98	0.0072	13.4042	0.0039
422	SLU 55	0.22	-0.03	46.71	0.0071	13.3273	0.0129
422	SLU 56	0.21	0.02	47.48	0.007	13.5423	-0.0037
422	SLU 57	0.22	0	47.47	0.0071	13.5413	0.0035
422	SLU 58	0.21	0	47.21	0.0069	13.4661	0.0005
422	SLU 59	0.22	-0.02	47.2	0.007	13.4651	0.0077
422	SLU 60	0.21	0.02	48.05	0.0076	13.7118	-0.0064
422	SLU 61	0.21	0	48.05	0.0077	13.7108	0.0008
422	SLU 62	0.21	0.02	48.55	0.0076	13.849	-0.0068
422	SLU 63	0.22	0	48.55	0.0076	13.848	0.0004
422	SLU 64	0.21	0.04	45.59	0.0068	13.0009	-0.0107
422	SLU 65	0.22	0	45.58	0.0069	12.9993	0.0013
422	SLU 66	0.22	0.05	46.36	0.0069	13.2143	-0.0153
422	SLU 67	0.22	0.03	46.35	0.0069	13.2133	-0.0081
422	SLU 68	0.22	0	46.08	0.0068	13.1365	0.0009
422	SLU 69	0.22	0.05	46.85	0.0068	13.3515	-0.0157
422	SLU 70	0.23	0.03	46.85	0.0069	13.3505	-0.0085
422	SLU 71	0.22	0.04	46.58	0.0067	13.2753	-0.0115
422	SLU 72	0.22	0.02	46.58	0.0067	13.2743	-0.0043
422	SLU 73	0.24	0.05	49.87	0.0084	14.2127	-0.0167
422	SLU 74	0.23	0.1	50.64	0.0083	14.4277	-0.0333
422	SLU 75	0.24	0.08	50.64	0.0084	14.4267	-0.0261
422	SLU 76	0.24	0.05	50.37	0.0083	14.3499	-0.017
422	SLU 77	0.24	0.1	51.14	0.0083	14.5649	-0.0337
422	SLU 78	0.24	0.08	51.14	0.0084	14.5639	-0.0264
422	SLU 79	0.23	0.09	50.87	0.0081	14.4887	-0.0295
422	SLU 80	0.24	0.07	50.86	0.0082	14.4877	-0.0223
422	SLU 81	0.23	0.11	51.71	0.0089	14.7344	-0.0364
422	SLU 82	0.24	0.09	51.71	0.0089	14.7334	-0.0292
422	SLU 83	0.24	0.11	52.21	0.0088	14.8715	-0.0368
422	SLU 84	0.24	0.09	52.21	0.0089	14.8705	-0.0296
422	SLE RA 1	0.16	0.01	34.27	0.0049	9.776	-0.0016
422	SLE RA 2	0.16	-0.01	34.26	0.005	9.7749	0.0064
422	SLE RA 3	0.16	0.02	34.78	0.005	9.9182	-0.0047
422	SLE RA 4	0.16	0	34.77	0.005	9.9176	0.0001
422	SLE RA 5	0.17	-0.01	34.59	0.005	9.8663	0.0061
422	SLE RA 6	0.16	0.02	35.11	0.005	10.0097	-0.005
422	SLE RA 7	0.17	0.01	35.1	0.005	10.009	-0.0001
422	SLE RA 8	0.16	0.01	34.93	0.0049	9.9589	-0.0022



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
422	SLE RA 9	0.17	0	34.92	0.0049	9.9582	0.0026
422	SLE RA 10	0.17	0.02	37.12	0.006	10.5838	-0.0056
422	SLE RA 11	0.17	0.05	37.63	0.006	10.7272	-0.0167
422	SLE RA 12	0.17	0.04	37.63	0.006	10.7265	-0.0119
422	SLE RA 13	0.18	0.02	37.45	0.006	10.6753	-0.0059
422	SLE RA 14	0.17	0.05	37.96	0.0059	10.8186	-0.017
422	SLE RA 15	0.18	0.04	37.96	0.006	10.818	-0.0121
422	SLE RA 16	0.17	0.04	37.78	0.0058	10.7678	-0.0142
422	SLE RA 17	0.18	0.03	37.78	0.0059	10.7672	-0.0093
422	SLE RA 18	0.17	0.06	38.35	0.0063	10.9316	-0.0188
422	SLE RA 19	0.18	0.04	38.35	0.0064	10.9309	-0.014
422	SLE RA 20	0.17	0.06	38.68	0.0063	11.0231	-0.019
422	SLE RA 21	0.18	0.05	38.68	0.0063	11.0224	-0.0142
422	SLE FR 1	0.16	0.01	34.27	0.0049	9.776	-0.0016
422	SLE FR 2	0.16	0	34.26	0.005	9.7758	0
422	SLE FR 3	0.16	0.01	34.4	0.0049	9.8126	-0.0017
422	SLE FR 4	0.16	0.02	35.49	0.0054	10.1224	-0.0052
422	SLE FR 5	0.16	0.02	35.62	0.0053	10.1592	-0.0069
422	SLE FR 6	0.16	0.03	36.31	0.0056	10.3538	-0.0102
422	SLE QP 1	0.16	0.01	34.27	0.0049	9.776	-0.0016
422	SLE QP 2	0.16	0.02	35.49	0.0054	10.1227	-0.0068
422	SLD 1	3.1	0.38	35.43	0.0029	10.1996	-0.1322
422	SLD 2	3.29	0.41	35.48	0.0028	10.2089	-0.1396
422	SLD 3	2.93	-0.67	35.17	0.0055	10.1293	0.2373
422	SLD 4	3.12	-0.65	35.22	0.0054	10.1385	0.2299
422	SLD 5	1.27	1.73	35.86	0.0008	10.2507	-0.6035
422	SLD 6	1.4	1.75	35.9	0.0007	10.2568	-0.6084
422	SLD 7	0.69	-1.79	34.98	0.0093	10.0163	0.6282
422	SLD 8	0.82	-1.78	35.02	0.0092	10.0224	0.6234
422	SLD 9	-0.5	1.82	35.96	0.0015	10.2229	-0.6369
422	SLD 10	-0.37	1.84	36	0.0014	10.229	-0.6417
422	SLD 11	-1.08	-1.7	35.08	0.01	9.9885	0.5948
422	SLD 12	-0.95	-1.68	35.12	0.01	9.9946	0.59
422	SLD 13	-2.8	0.7	35.76	0.0053	10.1068	-0.2435
422	SLD 14	-2.6	0.72	35.81	0.0052	10.1161	-0.2508
422	SLD 15	-2.97	-0.36	35.5	0.0079	10.0365	0.126
422	SLD 16	-2.78	-0.33	35.55	0.0078	10.0458	0.1187
422	SLV 1	7.03	0.82	35.35	-0.0002	10.3006	-0.287
422	SLV 2	7.49	0.88	35.46	-0.0005	10.3222	-0.304
422	SLV 3	6.63	-1.57	34.74	0.0056	10.1397	0.5495
422	SLV 4	7.09	-1.51	34.86	0.0053	10.1614	0.5324
422	SLV 5	2.75	3.88	36.34	-0.0051	10.4163	-1.3565
422	SLV 6	3.05	3.92	36.42	-0.0052	10.4303	-1.3676
422	SLV 7	1.41	-4.09	34.33	0.0143	9.8801	1.4317
422	SLV 8	1.71	-4.05	34.4	0.0141	9.894	1.4207
422	SLV 9	-1.39	4.1	36.58	-0.0034	10.3513	-1.4343
422	SLV 10	-1.09	4.14	36.65	-0.0035	10.3653	-1.4453
422	SLV 11	-2.73	-3.87	34.56	0.0159	9.8151	1.354
422	SLV 12	-2.43	-3.83	34.64	0.0158	9.8291	1.343
422	SLV 13	-6.77	1.56	36.12	0.0054	10.084	-0.546
422	SLV 14	-6.31	1.61	36.24	0.0052	10.1056	-0.5631
422	SLV 15	-7.17	-0.83	35.52	0.0112	9.9231	0.2905
422	SLV 16	-6.71	-0.78	35.63	0.0109	9.9448	0.2734
422	CRTFP Ux+	0	0	0	0	0	0
422	CRTFP Ux-	0	0	0	0	0	0
422	CRTFP Uy+	0	0	0	0	0	0
422	CRTFP Uy-	0	0	0	0	0	0
423	SLU 1	-1.89	-0.3	119.72	2.4007	-0.5337	-0.1022
423	SLU 2	-1.84	-0.45	119.72	2.4123	-0.533	-0.0987
423	SLU 3	-1.94	-0.25	122.44	2.4572	-0.5464	-0.106
423	SLU 4	-1.91	-0.34	122.44	2.4642	-0.5459	-0.1039
423	SLU 5	-1.87	-0.45	121.55	2.4425	-0.5414	-0.1009
423	SLU 6	-1.96	-0.26	124.27	2.4875	-0.5548	-0.1082
423	SLU 7	-1.94	-0.35	124.27	2.4944	-0.5544	-0.1061
423	SLU 8	-1.94	-0.31	123.38	2.4612	-0.5506	-0.1066
423	SLU 9	-1.91	-0.4	123.38	2.4681	-0.5502	-0.1045
423	SLU 10	-1.98	-0.34	134.93	2.7867	-0.6211	-0.108
423	SLU 11	-2.07	-0.15	137.65	2.8316	-0.6345	-0.1153
423	SLU 12	-2.05	-0.24	137.65	2.8385	-0.634	-0.1132
423	SLU 13	-2.01	-0.35	136.76	2.8169	-0.6295	-0.1102
423	SLU 14	-2.1	-0.15	139.48	2.8618	-0.6429	-0.1175
423	SLU 15	-2.07	-0.24	139.48	2.8687	-0.6425	-0.1154
423	SLU 16	-2.08	-0.21	138.59	2.8355	-0.6387	-0.1159
423	SLU 17	-2.05	-0.29	138.59	2.8425	-0.6383	-0.1138
423	SLU 18	-2.08	-0.15	141.45	2.9355	-0.6595	-0.1155
423	SLU 19	-2.06	-0.24	141.45	2.9424	-0.6591	-0.1134
423	SLU 20	-2.11	-0.16	143.28	2.9657	-0.668	-0.1177
423	SLU 21	-2.08	-0.24	143.28	2.9727	-0.6675	-0.1156
423	SLU 22	-2.11	0.03	132.56	2.7068	-0.5955	-0.1172
423	SLU 23	-2.06	-0.12	132.55	2.7184	-0.5948	-0.1137
423	SLU 24	-2.16	0.08	135.27	2.7633	-0.6082	-0.121
423	SLU 25	-2.13	-0.01	135.27	2.7703	-0.6077	-0.1189
423	SLU 26	-2.09	-0.12	134.38	2.7486	-0.6032	-0.1159
423	SLU 27	-2.19	0.08	137.1	2.7936	-0.6166	-0.1232
423	SLU 28	-2.16	-0.01	137.1	2.8005	-0.6162	-0.1211
423	SLU 29	-2.16	0.02	136.22	2.7673	-0.6124	-0.1216
423	SLU 30	-2.14	-0.07	136.22	2.7742	-0.612	-0.1195
423	SLU 31	-2.2	-0.01	147.77	3.0928	-0.6828	-0.1231
423	SLU 32	-2.3	0.19	150.49	3.1377	-0.6962	-0.1303
423	SLU 33	-2.27	0.1	150.48	3.1446	-0.6958	-0.1282



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
423	SLU 34	-2.23	-0.01	149.6	3.123	-0.6913	-0.1253
423	SLU 35	-2.32	0.18	152.32	3.1679	-0.7047	-0.1325
423	SLU 36	-2.3	0.09	152.31	3.1748	-0.7042	-0.1304
423	SLU 37	-2.3	0.13	151.43	3.1416	-0.7005	-0.1309
423	SLU 38	-2.27	0.04	151.43	3.1486	-0.7	-0.1288
423	SLU 39	-2.31	0.18	154.29	3.2416	-0.7213	-0.1305
423	SLU 40	-2.28	0.09	154.28	3.2485	-0.7209	-0.1284
423	SLU 41	-2.33	0.18	156.12	3.2718	-0.7298	-0.1327
423	SLU 42	-2.31	0.09	156.11	3.2788	-0.7293	-0.1306
423	SLU 43	-2.38	-0.51	151.23	3.016	-0.6727	-0.1277
423	SLU 44	-2.33	-0.65	151.23	3.0276	-0.6719	-0.1242
423	SLU 45	-2.43	-0.46	153.95	3.0725	-0.6853	-0.1315
423	SLU 46	-2.4	-0.55	153.95	3.0795	-0.6849	-0.1294
423	SLU 47	-2.36	-0.66	153.06	3.0578	-0.6804	-0.1264
423	SLU 48	-2.45	-0.46	155.78	3.1027	-0.6938	-0.1337
423	SLU 49	-2.43	-0.55	155.78	3.1097	-0.6933	-0.1316
423	SLU 50	-2.43	-0.52	154.89	3.0764	-0.6896	-0.1321
423	SLU 51	-2.4	-0.6	154.89	3.0834	-0.6891	-0.13
423	SLU 52	-2.47	-0.55	166.44	3.4019	-0.76	-0.1335
423	SLU 53	-2.56	-0.35	169.16	3.4468	-0.7734	-0.1408
423	SLU 54	-2.54	-0.44	169.16	3.4538	-0.7729	-0.1387
423	SLU 55	-2.5	-0.55	168.27	3.4321	-0.7684	-0.1357
423	SLU 56	-2.59	-0.36	170.99	3.4771	-0.7818	-0.143
423	SLU 57	-2.56	-0.44	170.99	3.484	-0.7814	-0.1409
423	SLU 58	-2.57	-0.41	170.1	3.4508	-0.7776	-0.1414
423	SLU 59	-2.54	-0.5	170.1	3.4577	-0.7772	-0.1393
423	SLU 60	-2.57	-0.36	172.96	3.5508	-0.7985	-0.141
423	SLU 61	-2.55	-0.44	172.96	3.5577	-0.798	-0.1389
423	SLU 62	-2.6	-0.36	174.79	3.581	-0.8069	-0.1432
423	SLU 63	-2.57	-0.45	174.79	3.5879	-0.8065	-0.1411
423	SLU 64	-2.6	-0.18	164.07	3.3221	-0.7345	-0.1427
423	SLU 65	-2.55	-0.32	164.07	3.3337	-0.7337	-0.1392
423	SLU 66	-2.65	-0.13	166.79	3.3786	-0.7471	-0.1465
423	SLU 67	-2.62	-0.21	166.79	3.3856	-0.7467	-0.1444
423	SLU 68	-2.58	-0.33	165.9	3.3639	-0.7422	-0.1414
423	SLU 69	-2.68	-0.13	168.62	3.4088	-0.7556	-0.1487
423	SLU 70	-2.65	-0.22	168.62	3.4158	-0.7551	-0.1466
423	SLU 71	-2.65	-0.18	167.73	3.3825	-0.7514	-0.1471
423	SLU 72	-2.63	-0.27	167.73	3.3895	-0.7509	-0.145
423	SLU 73	-2.69	-0.22	179.28	3.708	-0.8218	-0.1486
423	SLU 74	-2.79	-0.02	182	3.7529	-0.8352	-0.1558
423	SLU 75	-2.76	-0.11	182	3.7599	-0.8347	-0.1537
423	SLU 76	-2.72	-0.22	181.11	3.7382	-0.8302	-0.1508
423	SLU 77	-2.81	-0.02	183.83	3.7832	-0.8436	-0.158
423	SLU 78	-2.79	-0.11	183.83	3.7901	-0.8432	-0.1559
423	SLU 79	-2.79	-0.08	182.94	3.7569	-0.8394	-0.1564
423	SLU 80	-2.76	-0.17	182.94	3.7638	-0.839	-0.1543
423	SLU 81	-2.8	-0.02	185.8	3.8569	-0.8603	-0.156
423	SLU 82	-2.77	-0.11	185.8	3.8638	-0.8598	-0.1539
423	SLU 83	-2.82	-0.03	187.63	3.8871	-0.8687	-0.1582
423	SLU 84	-2.8	-0.12	187.63	3.894	-0.8683	-0.1561
423	SLE RA 1	-1.95	-0.21	123.39	2.4882	-0.5514	-0.1065
423	SLE RA 2	-1.92	-0.31	123.38	2.4959	-0.5509	-0.1042
423	SLE RA 3	-1.98	-0.17	125.2	2.5259	-0.5598	-0.109
423	SLE RA 4	-1.97	-0.23	125.2	2.5305	-0.5595	-0.1076
423	SLE RA 5	-1.94	-0.31	124.6	2.5161	-0.5565	-0.1056
423	SLE RA 6	-2	-0.18	126.42	2.546	-0.5655	-0.1105
423	SLE RA 7	-1.98	-0.24	126.42	2.5506	-0.5652	-0.1091
423	SLE RA 8	-1.99	-0.21	125.83	2.5285	-0.5627	-0.1094
423	SLE RA 9	-1.97	-0.27	125.83	2.5331	-0.5624	-0.108
423	SLE RA 10	-2.01	-0.23	133.53	2.7455	-0.6096	-0.1104
423	SLE RA 11	-2.08	-0.1	135.34	2.7754	-0.6185	-0.1152
423	SLE RA 12	-2.06	-0.16	135.34	2.78	-0.6182	-0.1138
423	SLE RA 13	-2.03	-0.24	134.75	2.7656	-0.6152	-0.1118
423	SLE RA 14	-2.09	-0.11	136.56	2.7956	-0.6242	-0.1167
423	SLE RA 15	-2.08	-0.17	136.56	2.8002	-0.6239	-0.1153
423	SLE RA 16	-2.08	-0.14	135.97	2.778	-0.6214	-0.1156
423	SLE RA 17	-2.06	-0.2	135.97	2.7827	-0.6211	-0.1142
423	SLE RA 18	-2.08	-0.11	137.87	2.8447	-0.6353	-0.1153
423	SLE RA 19	-2.06	-0.17	137.87	2.8493	-0.635	-0.1139
423	SLE RA 20	-2.1	-0.11	139.09	2.8648	-0.6409	-0.1168
423	SLE RA 21	-2.08	-0.17	139.09	2.8695	-0.6406	-0.1154
423	SLE FR 1	-1.95	-0.21	123.39	2.4882	-0.5514	-0.1065
423	SLE FR 2	-1.94	-0.23	123.39	2.4897	-0.5513	-0.106
423	SLE FR 3	-1.96	-0.21	123.87	2.4962	-0.5536	-0.1071
423	SLE FR 4	-1.98	-0.2	127.73	2.5967	-0.5764	-0.1087
423	SLE FR 5	-2	-0.18	128.22	2.6032	-0.5788	-0.1097
423	SLE FR 6	-2.02	-0.16	130.63	2.6664	-0.5933	-0.1109
423	SLE QP 1	-1.95	-0.21	123.39	2.4882	-0.5514	-0.1065
423	SLE QP 2	-1.99	-0.18	127.73	2.5951	-0.5765	-0.1091
423	SLD 1	8.71	1.36	124.66	2.2475	-0.5335	-0.2635
423	SLD 2	9.48	1.12	124.64	2.2712	-0.5342	-0.2231
423	SLD 3	9.4	-2.7	124.14	2.4571	-0.514	-0.2341
423	SLD 4	10.17	-2.95	124.12	2.4809	-0.5147	-0.1937
423	SLD 5	0.04	6.49	127.61	2.1686	-0.5931	-0.2072
423	SLD 6	0.54	6.33	127.6	2.1842	-0.5935	-0.1807
423	SLD 7	2.34	-7.05	125.86	2.8674	-0.5281	-0.1093
423	SLD 8	2.84	-7.22	125.84	2.8831	-0.5286	-0.0827
423	SLD 9	-6.82	6.86	129.62	2.3072	-0.6245	-0.1355
423	SLD 10	-6.32	6.7	129.6	2.3228	-0.625	-0.109



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
423	SLD 11	-4.52	-6.69	127.86	3.006	-0.5595	-0.0376
423	SLD 12	-4.02	-6.85	127.85	3.0216	-0.56	-0.011
423	SLD 13	-14.15	2.59	131.35	2.7094	-0.6384	-0.0246
423	SLD 14	-13.38	2.35	131.32	2.7332	-0.6391	0.0159
423	SLD 15	-13.46	-1.47	130.82	2.919	-0.6189	0.0048
423	SLD 16	-12.69	-1.72	130.8	2.9428	-0.6196	0.0452
423	SLV 1	23.06	3.28	120.54	1.7896	-0.4751	-0.4692
423	SLV 2	24.83	2.7	120.49	1.8449	-0.4768	-0.3751
423	SLV 3	24.66	-5.92	119.33	2.2639	-0.4308	-0.4025
423	SLV 4	26.44	-6.5	119.28	2.3192	-0.4325	-0.3083
423	SLV 5	2.78	14.91	127.42	1.6245	-0.613	-0.3346
423	SLV 6	3.93	14.54	127.39	1.6603	-0.6141	-0.2738
423	SLV 7	8.14	-15.75	123.38	3.2055	-0.4653	-0.1122
423	SLV 8	9.28	-16.12	123.35	3.2413	-0.4664	-0.0514
423	SLV 9	-13.26	15.77	132.12	1.949	-0.6867	-0.1668
423	SLV 10	-12.12	15.4	132.08	1.9847	-0.6878	-0.106
423	SLV 11	-7.91	-14.89	128.07	3.53	-0.539	0.0556
423	SLV 12	-6.76	-15.27	128.04	3.5657	-0.5401	0.1164
423	SLV 13	-30.42	6.14	136.18	2.8711	-0.7206	0.0901
423	SLV 14	-28.65	5.57	136.13	2.9264	-0.7223	0.1842
423	SLV 15	-28.81	-3.06	134.97	3.3454	-0.6763	0.1568
423	SLV 16	-27.04	-3.63	134.92	3.4007	-0.678	0.251
423	CRTFP Ux+	0	0	0	0	0	0
423	CRTFP Ux-	0	0	0	0	0	0
423	CRTFP Uy+	0	0	0	0	0	0
423	CRTFP Uy-	0	0	0	0	0	0
426	SLU 1	-0.83	-1.02	61.37	-0.0325	-0.2751	-0.0226
426	SLU 2	-0.81	-1.1	61.35	-0.032	-0.2764	-0.0218
426	SLU 3	-0.86	-1.02	62.79	-0.0331	-0.281	-0.0233
426	SLU 4	-0.84	-1.07	62.77	-0.0328	-0.2818	-0.0228
426	SLU 5	-0.82	-1.11	62.28	-0.0327	-0.2805	-0.0221
426	SLU 6	-0.88	-1.04	63.72	-0.0337	-0.285	-0.0236
426	SLU 7	-0.86	-1.09	63.71	-0.0334	-0.2858	-0.0231
426	SLU 8	-0.86	-1.05	63.24	-0.0338	-0.2832	-0.0232
426	SLU 9	-0.85	-1.1	63.22	-0.0335	-0.284	-0.0227
426	SLU 10	-0.85	-1.13	68.6	-0.0342	-0.3174	-0.0244
426	SLU 11	-0.9	-1.05	70.04	-0.0352	-0.322	-0.026
426	SLU 12	-0.88	-1.1	70.02	-0.0349	-0.3228	-0.0255
426	SLU 13	-0.86	-1.14	69.53	-0.0348	-0.3215	-0.0248
426	SLU 14	-0.91	-1.07	70.97	-0.0359	-0.326	-0.0263
426	SLU 15	-0.9	-1.12	70.96	-0.0356	-0.3269	-0.0258
426	SLU 16	-0.9	-1.07	70.49	-0.036	-0.3242	-0.0259
426	SLU 17	-0.89	-1.12	70.47	-0.0357	-0.325	-0.0254
426	SLU 18	-0.89	-1.05	71.73	-0.0356	-0.3337	-0.0264
426	SLU 19	-0.87	-1.1	71.71	-0.0353	-0.3345	-0.0259
426	SLU 20	-0.9	-1.07	72.67	-0.0363	-0.3377	-0.0267
426	SLU 21	-0.89	-1.12	72.65	-0.036	-0.3385	-0.0262
426	SLU 22	-0.93	-1.01	68.22	-0.0339	-0.3011	-0.0263
426	SLU 23	-0.91	-1.09	68.19	-0.0334	-0.3024	-0.0254
426	SLU 24	-0.96	-1.01	69.64	-0.0345	-0.3069	-0.027
426	SLU 25	-0.94	-1.06	69.62	-0.0342	-0.3078	-0.0265
426	SLU 26	-0.92	-1.1	69.13	-0.0341	-0.3065	-0.0258
426	SLU 27	-0.98	-1.03	70.57	-0.0351	-0.311	-0.0273
426	SLU 28	-0.96	-1.08	70.56	-0.0348	-0.3118	-0.0268
426	SLU 29	-0.96	-1.04	70.09	-0.0352	-0.3092	-0.0269
426	SLU 30	-0.95	-1.09	70.07	-0.0349	-0.31	-0.0264
426	SLU 31	-0.95	-1.12	75.45	-0.0356	-0.3434	-0.0281
426	SLU 32	-1	-1.04	76.89	-0.0367	-0.348	-0.0297
426	SLU 33	-0.98	-1.09	76.87	-0.0364	-0.3488	-0.0292
426	SLU 34	-0.96	-1.13	76.38	-0.0362	-0.3475	-0.0284
426	SLU 35	-1.01	-1.06	77.82	-0.0373	-0.352	-0.03
426	SLU 36	-1	-1.11	77.81	-0.037	-0.3528	-0.0295
426	SLU 37	-1	-1.06	77.34	-0.0374	-0.3502	-0.0296
426	SLU 38	-0.99	-1.11	77.32	-0.0371	-0.351	-0.0291
426	SLU 39	-0.99	-1.04	78.58	-0.037	-0.3596	-0.0301
426	SLU 40	-0.97	-1.09	78.56	-0.0367	-0.3604	-0.0296
426	SLU 41	-1	-1.06	79.51	-0.0377	-0.3637	-0.0304
426	SLU 42	-0.99	-1.11	79.5	-0.0374	-0.3645	-0.0299
426	SLU 43	-1.05	-1.32	77.44	-0.0418	-0.3487	-0.0281
426	SLU 44	-1.02	-1.41	77.41	-0.0413	-0.35	-0.0273
426	SLU 45	-1.08	-1.33	78.85	-0.0423	-0.3546	-0.0288
426	SLU 46	-1.06	-1.38	78.84	-0.042	-0.3554	-0.0283
426	SLU 47	-1.04	-1.42	78.34	-0.0419	-0.3541	-0.0276
426	SLU 48	-1.09	-1.35	79.79	-0.043	-0.3586	-0.0291
426	SLU 49	-1.08	-1.4	79.77	-0.0427	-0.3595	-0.0286
426	SLU 50	-1.08	-1.36	79.3	-0.0431	-0.3568	-0.0287
426	SLU 51	-1.07	-1.4	79.29	-0.0428	-0.3576	-0.0282
426	SLU 52	-1.06	-1.43	84.66	-0.0435	-0.391	-0.0299
426	SLU 53	-1.11	-1.36	86.1	-0.0445	-0.3956	-0.0315
426	SLU 54	-1.1	-1.41	86.09	-0.0442	-0.3964	-0.031
426	SLU 55	-1.08	-1.45	85.59	-0.0441	-0.3951	-0.0302
426	SLU 56	-1.13	-1.38	87.04	-0.0452	-0.3997	-0.0318
426	SLU 57	-1.11	-1.42	87.02	-0.0449	-0.4005	-0.0313
426	SLU 58	-1.12	-1.38	86.56	-0.0452	-0.3978	-0.0314
426	SLU 59	-1.1	-1.43	86.54	-0.0449	-0.3986	-0.0309
426	SLU 60	-1.1	-1.36	87.8	-0.0449	-0.4073	-0.0319
426	SLU 61	-1.09	-1.41	87.78	-0.0446	-0.4081	-0.0314
426	SLU 62	-1.12	-1.38	88.73	-0.0455	-0.4113	-0.0322
426	SLU 63	-1.1	-1.43	88.71	-0.0452	-0.4121	-0.0317
426	SLU 64	-1.15	-1.31	84.29	-0.0432	-0.3747	-0.0317



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
426	SLU 65	-1.12	-1.4	84.26	-0.0427	-0.376	-0.0309
426	SLU 66	-1.18	-1.32	85.7	-0.0438	-0.3806	-0.0325
426	SLU 67	-1.16	-1.37	85.69	-0.0435	-0.3814	-0.032
426	SLU 68	-1.14	-1.41	85.19	-0.0433	-0.3801	-0.0313
426	SLU 69	-1.19	-1.34	86.64	-0.0444	-0.3846	-0.0328
426	SLU 70	-1.18	-1.39	86.62	-0.0441	-0.3854	-0.0323
426	SLU 71	-1.18	-1.35	86.15	-0.0445	-0.3828	-0.0324
426	SLU 72	-1.17	-1.39	86.14	-0.0442	-0.3836	-0.0319
426	SLU 73	-1.16	-1.42	91.51	-0.0449	-0.417	-0.0336
426	SLU 74	-1.21	-1.35	92.95	-0.0459	-0.4216	-0.0352
426	SLU 75	-1.2	-1.4	92.94	-0.0456	-0.4224	-0.0347
426	SLU 76	-1.18	-1.44	92.44	-0.0455	-0.4211	-0.0339
426	SLU 77	-1.23	-1.37	93.89	-0.0466	-0.4256	-0.0355
426	SLU 78	-1.21	-1.41	93.87	-0.0463	-0.4264	-0.035
426	SLU 79	-1.22	-1.37	93.4	-0.0466	-0.4238	-0.0351
426	SLU 80	-1.2	-1.42	93.39	-0.0463	-0.4246	-0.0346
426	SLU 81	-1.2	-1.35	94.64	-0.0463	-0.4332	-0.0356
426	SLU 82	-1.19	-1.4	94.63	-0.046	-0.4341	-0.0351
426	SLU 83	-1.22	-1.37	95.58	-0.0469	-0.4373	-0.0359
426	SLU 84	-1.2	-1.42	95.56	-0.0466	-0.4381	-0.0354
426	SLE RA 1	-0.86	-1.01	63.33	-0.0329	-0.2825	-0.0236
426	SLE RA 2	-0.85	-1.07	63.31	-0.0326	-0.2834	-0.0231
426	SLE RA 3	-0.88	-1.02	64.27	-0.0333	-0.2864	-0.0241
426	SLE RA 4	-0.87	-1.05	64.26	-0.0331	-0.287	-0.0238
426	SLE RA 5	-0.86	-1.08	63.93	-0.033	-0.2861	-0.0233
426	SLE RA 6	-0.89	-1.03	64.9	-0.0337	-0.2891	-0.0243
426	SLE RA 7	-0.88	-1.06	64.89	-0.0335	-0.2897	-0.024
426	SLE RA 8	-0.88	-1.03	64.58	-0.0338	-0.2879	-0.024
426	SLE RA 9	-0.87	-1.07	64.56	-0.0336	-0.2885	-0.0237
426	SLE RA 10	-0.87	-1.09	68.15	-0.034	-0.3107	-0.0249
426	SLE RA 11	-0.91	-1.04	69.11	-0.0347	-0.3138	-0.0259
426	SLE RA 12	-0.9	-1.07	69.1	-0.0345	-0.3143	-0.0256
426	SLE RA 13	-0.88	-1.1	68.77	-0.0345	-0.3134	-0.0251
426	SLE RA 14	-0.92	-1.05	69.73	-0.0352	-0.3165	-0.0261
426	SLE RA 15	-0.91	-1.08	69.72	-0.035	-0.317	-0.0258
426	SLE RA 16	-0.91	-1.05	69.41	-0.0352	-0.3153	-0.0258
426	SLE RA 17	-0.9	-1.08	69.4	-0.035	-0.3158	-0.0255
426	SLE RA 18	-0.9	-1.04	70.24	-0.035	-0.3215	-0.0262
426	SLE RA 19	-0.89	-1.07	70.22	-0.0348	-0.3221	-0.0258
426	SLE RA 20	-0.91	-1.05	70.86	-0.0354	-0.3243	-0.0264
426	SLE RA 21	-0.9	-1.08	70.85	-0.0352	-0.3248	-0.0261
426	SLE FR 1	-0.86	-1.01	63.33	-0.0329	-0.2825	-0.0236
426	SLE FR 2	-0.86	-1.02	63.33	-0.0329	-0.2827	-0.0235
426	SLE FR 3	-0.87	-1.02	63.58	-0.0331	-0.2836	-0.0237
426	SLE FR 4	-0.87	-1.03	65.4	-0.0335	-0.2944	-0.0243
426	SLE FR 5	-0.88	-1.03	65.65	-0.0337	-0.2953	-0.0245
426	SLE FR 6	-0.88	-1.03	66.78	-0.034	-0.302	-0.0249
426	SLE QP 1	-0.86	-1.01	63.33	-0.0329	-0.2825	-0.0236
426	SLE QP 2	-0.87	-1.02	65.4	-0.0335	-0.2942	-0.0244
426	SLD 1	4.47	-0.68	71.11	-0.045	-0.0826	-0.0041
426	SLD 2	4.85	-1.06	70.86	-0.0427	-0.0892	0.0083
426	SLD 3	4.82	-2.43	70.5	-0.0368	-0.1163	0.0004
426	SLD 4	5.21	-2.81	70.25	-0.0345	-0.1229	0.0127
426	SLD 5	0.12	1.8	68.08	-0.0498	-0.1785	-0.0272
426	SLD 6	0.37	1.55	67.92	-0.0483	-0.1829	-0.0191
426	SLD 7	1.31	-4.03	66.05	-0.0225	-0.2907	-0.0124
426	SLD 8	1.56	-4.28	65.89	-0.021	-0.295	-0.0043
426	SLD 9	-3.31	2.24	64.92	-0.0461	-0.2934	-0.0444
426	SLD 10	-3.05	1.99	64.75	-0.0446	-0.2977	-0.0363
426	SLD 11	-2.12	-3.6	62.89	-0.0188	-0.4056	-0.0296
426	SLD 12	-1.87	-3.85	62.72	-0.0173	-0.4099	-0.0215
426	SLD 13	-6.96	0.77	60.56	-0.0326	-0.4655	-0.0615
426	SLD 14	-6.57	0.39	60.3	-0.0303	-0.4722	-0.0491
426	SLD 15	-6.6	-0.98	59.95	-0.0244	-0.4992	-0.057
426	SLD 16	-6.22	-1.36	59.69	-0.0221	-0.5058	-0.0447
426	SLV 1	11.63	-0.3	78.75	-0.06	0.2002	0.0233
426	SLV 2	12.52	-1.19	78.15	-0.0547	0.1847	0.052
426	SLV 3	12.46	-4.26	77.36	-0.0414	0.1231	0.0335
426	SLV 4	13.35	-5.15	76.77	-0.0362	0.1077	0.0622
426	SLV 5	1.47	5.36	71.61	-0.0705	-0.0264	-0.0304
426	SLV 6	2.04	4.79	71.23	-0.0671	-0.0363	-0.0119
426	SLV 7	4.23	-7.85	66.99	-0.0087	-0.2832	0.0034
426	SLV 8	4.8	-8.42	66.6	-0.0053	-0.2932	0.022
426	SLV 9	-6.55	6.38	64.2	-0.0618	-0.2952	-0.0707
426	SLV 10	-5.97	5.81	63.82	-0.0583	-0.3052	-0.0522
426	SLV 11	-3.79	-6.83	59.57	0	-0.5521	-0.0368
426	SLV 12	-3.21	-7.4	59.19	0.0034	-0.5621	-0.0183
426	SLV 13	-15.1	3.11	54.04	-0.0309	-0.6961	-0.1109
426	SLV 14	-14.2	2.22	53.45	-0.0256	-0.7116	-0.0822
426	SLV 15	-14.27	-0.86	52.65	-0.0124	-0.7732	-0.1008
426	SLV 16	-13.37	-1.74	52.06	-0.0071	-0.7886	-0.0721
426	CRTFP Ux+	0	0	0	0	0	0
426	CRTFP Ux-	0	0	0	0	0	0
430	SLU 1	0.5	-0.6	61.58	-0.0327	0.2664	-0.001
430	SLU 2	0.52	-0.64	61.59	-0.0326	0.2673	-0.0003
430	SLU 3	0.51	-0.6	62.99	-0.0334	0.2712	-0.001
430	SLU 4	0.53	-0.63	63	-0.0333	0.2718	-0.0005
430	SLU 5	0.53	-0.65	62.52	-0.0332	0.27	-0.0004
430	SLU 6	0.52	-0.62	63.93	-0.0341	0.274	-0.001
430	SLU 7	0.53	-0.64	63.93	-0.034	0.2745	-0.0006



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
430	SLU 8	0.51	-0.63	63.44	-0.034	0.2719	-0.0012
430	SLU 9	0.53	-0.65	63.45	-0.0339	0.2724	-0.0007
430	SLU 10	0.54	-0.62	68.76	-0.0352	0.304	-0.0007
430	SLU 11	0.53	-0.59	70.17	-0.0361	0.308	-0.0013
430	SLU 12	0.55	-0.62	70.17	-0.036	0.3085	-0.0009
430	SLU 13	0.55	-0.64	69.69	-0.0358	0.3068	-0.0007
430	SLU 14	0.54	-0.61	71.1	-0.0367	0.3108	-0.0014
430	SLU 15	0.56	-0.63	71.1	-0.0366	0.3113	-0.001
430	SLU 16	0.53	-0.62	70.62	-0.0367	0.3087	-0.0015
430	SLU 17	0.55	-0.64	70.62	-0.0366	0.3092	-0.0011
430	SLU 18	0.53	-0.58	71.83	-0.0365	0.3189	-0.0016
430	SLU 19	0.54	-0.6	71.83	-0.0364	0.3195	-0.0011
430	SLU 20	0.53	-0.6	72.76	-0.0371	0.3217	-0.0016
430	SLU 21	0.55	-0.62	72.76	-0.037	0.3222	-0.0012
430	SLU 22	0.57	-0.54	68.41	-0.0345	0.2839	-0.0001
430	SLU 23	0.59	-0.58	68.42	-0.0343	0.2847	0.0007
430	SLU 24	0.59	-0.55	69.83	-0.0352	0.2887	0
430	SLU 25	0.6	-0.57	69.84	-0.0351	0.2892	0.0005
430	SLU 26	0.6	-0.6	69.35	-0.0349	0.2875	0.0006
430	SLU 27	0.6	-0.57	70.76	-0.0358	0.2914	0
430	SLU 28	0.61	-0.59	70.77	-0.0357	0.292	0.0004
430	SLU 29	0.59	-0.58	70.28	-0.0358	0.2893	-0.0002
430	SLU 30	0.6	-0.6	70.28	-0.0357	0.2899	0.0003
430	SLU 31	0.62	-0.57	75.59	-0.0369	0.3215	0.0003
430	SLU 32	0.61	-0.54	77	-0.0378	0.3255	-0.0003
430	SLU 33	0.62	-0.56	77.01	-0.0377	0.326	0.0001
430	SLU 34	0.62	-0.59	76.53	-0.0376	0.3242	0.0002
430	SLU 35	0.62	-0.55	77.94	-0.0385	0.3282	-0.0004
430	SLU 36	0.63	-0.58	77.94	-0.0384	0.3287	0
430	SLU 37	0.61	-0.56	77.45	-0.0384	0.3261	-0.0005
430	SLU 38	0.62	-0.59	77.46	-0.0383	0.3266	-0.0001
430	SLU 39	0.6	-0.53	78.66	-0.0383	0.3364	-0.0006
430	SLU 40	0.62	-0.55	78.67	-0.0381	0.3369	-0.0002
430	SLU 41	0.61	-0.54	79.59	-0.0389	0.3391	-0.0006
430	SLU 42	0.62	-0.57	79.6	-0.0388	0.3397	-0.0002
430	SLU 43	0.62	-0.8	77.71	-0.0419	0.3403	-0.0017
430	SLU 44	0.64	-0.83	77.71	-0.0418	0.3412	-0.001
430	SLU 45	0.64	-0.8	79.12	-0.0426	0.3452	-0.0016
430	SLU 46	0.65	-0.83	79.13	-0.0425	0.3457	-0.0012
430	SLU 47	0.65	-0.85	78.65	-0.0424	0.3439	-0.001
430	SLU 48	0.64	-0.82	80.06	-0.0433	0.3479	-0.0017
430	SLU 49	0.66	-0.84	80.06	-0.0432	0.3484	-0.0012
430	SLU 50	0.63	-0.83	79.57	-0.0432	0.3458	-0.0018
430	SLU 51	0.65	-0.85	79.58	-0.0431	0.3463	-0.0014
430	SLU 52	0.66	-0.82	84.89	-0.0444	0.378	-0.0013
430	SLU 53	0.66	-0.79	86.3	-0.0453	0.382	-0.002
430	SLU 54	0.67	-0.81	86.3	-0.0452	0.3825	-0.0015
430	SLU 55	0.67	-0.84	85.82	-0.0451	0.3807	-0.0014
430	SLU 56	0.66	-0.81	87.23	-0.0459	0.3847	-0.002
430	SLU 57	0.68	-0.83	87.23	-0.0458	0.3852	-0.0016
430	SLU 58	0.66	-0.82	86.75	-0.0459	0.3826	-0.0022
430	SLU 59	0.67	-0.84	86.75	-0.0458	0.3831	-0.0017
430	SLU 60	0.65	-0.78	87.96	-0.0457	0.3929	-0.0022
430	SLU 61	0.66	-0.8	87.96	-0.0456	0.3934	-0.0018
430	SLU 62	0.66	-0.8	88.89	-0.0464	0.3956	-0.0023
430	SLU 63	0.67	-0.82	88.89	-0.0463	0.3961	-0.0018
430	SLU 64	0.69	-0.74	84.54	-0.0437	0.3578	-0.0007
430	SLU 65	0.72	-0.78	84.55	-0.0435	0.3586	0
430	SLU 66	0.71	-0.75	85.96	-0.0444	0.3626	-0.0006
430	SLU 67	0.72	-0.77	85.96	-0.0443	0.3632	-0.0002
430	SLU 68	0.73	-0.8	85.48	-0.0442	0.3614	0
430	SLU 69	0.72	-0.76	86.89	-0.045	0.3654	-0.0007
430	SLU 70	0.73	-0.79	86.9	-0.0449	0.3659	-0.0003
430	SLU 71	0.71	-0.77	86.41	-0.045	0.3633	-0.0008
430	SLU 72	0.72	-0.8	86.41	-0.0449	0.3638	-0.0004
430	SLU 73	0.74	-0.77	91.72	-0.0462	0.3954	-0.0004
430	SLU 74	0.73	-0.74	93.13	-0.047	0.3994	-0.001
430	SLU 75	0.75	-0.76	93.14	-0.0469	0.3999	-0.0006
430	SLU 76	0.75	-0.78	92.66	-0.0468	0.3982	-0.0004
430	SLU 77	0.74	-0.75	94.07	-0.0477	0.4022	-0.0011
430	SLU 78	0.75	-0.78	94.07	-0.0476	0.4027	-0.0006
430	SLU 79	0.73	-0.76	93.58	-0.0476	0.4001	-0.0012
430	SLU 80	0.75	-0.78	93.59	-0.0475	0.4006	-0.0008
430	SLU 81	0.72	-0.73	94.79	-0.0475	0.4103	-0.0012
430	SLU 82	0.74	-0.75	94.8	-0.0474	0.4108	-0.0008
430	SLU 83	0.73	-0.74	95.72	-0.0481	0.4131	-0.0013
430	SLU 84	0.75	-0.76	95.73	-0.048	0.4136	-0.0009
430	SLE RA 1	0.52	-0.58	63.53	-0.0332	0.2714	-0.0008
430	SLE RA 2	0.53	-0.61	63.54	-0.0331	0.272	-0.0003
430	SLE RA 3	0.53	-0.59	64.48	-0.0337	0.2746	-0.0007
430	SLE RA 4	0.54	-0.6	64.48	-0.0336	0.275	-0.0004
430	SLE RA 5	0.54	-0.62	64.16	-0.0335	0.2738	-0.0003
430	SLE RA 6	0.53	-0.6	65.1	-0.0341	0.2764	-0.0007
430	SLE RA 7	0.54	-0.61	65.1	-0.034	0.2768	-0.0005
430	SLE RA 8	0.53	-0.6	64.77	-0.0341	0.275	-0.0008
430	SLE RA 9	0.54	-0.62	64.78	-0.034	0.2754	-0.0006
430	SLE RA 10	0.55	-0.6	68.32	-0.0349	0.2965	-0.0005
430	SLE RA 11	0.54	-0.58	69.26	-0.0355	0.2991	-0.001
430	SLE RA 12	0.55	-0.59	69.26	-0.0354	0.2995	-0.0007
430	SLE RA 13	0.55	-0.61	68.94	-0.0353	0.2983	-0.0006



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
430	SLE RA 14	0.55	-0.59	69.88	-0.0359	0.301	-0.001
430	SLE RA 15	0.56	-0.61	69.88	-0.0358	0.3013	-0.0007
430	SLE RA 16	0.54	-0.6	69.56	-0.0358	0.2996	-0.0011
430	SLE RA 17	0.55	-0.61	69.56	-0.0358	0.2999	-0.0008
430	SLE RA 18	0.54	-0.57	70.36	-0.0357	0.3064	-0.0011
430	SLE RA 19	0.55	-0.59	70.37	-0.0357	0.3068	-0.0008
430	SLE RA 20	0.54	-0.58	70.98	-0.0362	0.3082	-0.0012
430	SLE RA 21	0.55	-0.6	70.99	-0.0361	0.3086	-0.0009
430	SLE FR 1	0.52	-0.58	63.53	-0.0332	0.2714	-0.0008
430	SLE FR 2	0.52	-0.59	63.53	-0.0332	0.2715	-0.0007
430	SLE FR 3	0.52	-0.59	63.78	-0.0334	0.2721	-0.0008
430	SLE FR 4	0.53	-0.58	65.58	-0.034	0.282	-0.0008
430	SLE FR 5	0.53	-0.58	65.83	-0.0341	0.2826	-0.0009
430	SLE FR 6	0.53	-0.58	66.95	-0.0345	0.2889	-0.0009
430	SLE QP 1	0.52	-0.58	63.53	-0.0332	0.2714	-0.0008
430	SLE QP 2	0.52	-0.58	65.58	-0.034	0.2819	-0.0009
430	SLD 1	6.29	0.76	60.42	-0.0267	0.3457	0.0389
430	SLD 2	6.69	1.16	60.74	-0.0288	0.3374	0.0507
430	SLD 3	5.96	-1	59.83	-0.0198	0.3837	0.0356
430	SLD 4	6.36	-0.6	60.14	-0.0219	0.3755	0.0474
430	SLD 5	2.69	2.42	64.88	-0.0419	0.2448	0.0139
430	SLD 6	2.96	2.68	65.09	-0.0433	0.2393	0.0216
430	SLD 7	1.57	-3.45	62.9	-0.0189	0.3717	0.003
430	SLD 8	1.83	-3.18	63.11	-0.0202	0.3662	0.0108
430	SLD 9	-0.79	2.03	68.06	-0.0477	0.1976	-0.0125
430	SLD 10	-0.53	2.29	68.26	-0.0491	0.1921	-0.0048
430	SLD 11	-1.91	-3.84	66.08	-0.0247	0.3245	-0.0234
430	SLD 12	-1.65	-3.58	66.28	-0.026	0.319	-0.0156
430	SLD 13	-5.31	-0.56	71.02	-0.0461	0.1883	-0.0492
430	SLD 14	-4.91	-0.15	71.33	-0.0481	0.1801	-0.0374
430	SLD 15	-5.65	-2.32	70.42	-0.0392	0.2264	-0.0524
430	SLD 16	-5.25	-1.91	70.74	-0.0412	0.2181	-0.0406
430	SLV 1	14.02	2.48	53.5	-0.0168	0.4321	0.0921
430	SLV 2	14.96	3.42	54.23	-0.0215	0.4129	0.1196
430	SLV 3	13.24	-1.51	52.13	-0.0011	0.5188	0.0846
430	SLV 4	14.17	-0.57	52.87	-0.0059	0.4995	0.1121
430	SLV 5	5.6	6.22	63.9	-0.0517	0.1988	0.0337
430	SLV 6	6.2	6.83	64.37	-0.0548	0.1864	0.0515
430	SLV 7	2.99	-7.06	59.35	0.0004	0.4878	0.0086
430	SLV 8	3.59	-6.46	59.83	-0.0026	0.4753	0.0263
430	SLV 9	-2.54	5.3	71.34	-0.0653	0.0884	-0.0281
430	SLV 10	-1.94	5.9	71.81	-0.0684	0.076	-0.0103
430	SLV 11	-5.16	-7.98	66.79	-0.0131	0.3774	-0.0532
430	SLV 12	-4.56	-7.38	67.27	-0.0162	0.365	-0.0355
430	SLV 13	-13.12	-0.59	78.29	-0.0621	0.0642	-0.1138
430	SLV 14	-12.19	0.35	79.03	-0.0668	0.045	-0.0863
430	SLV 15	-13.91	-4.58	76.93	-0.0464	0.1509	-0.1214
430	SLV 16	-12.98	-3.64	77.67	-0.0512	0.1317	-0.0939
430	CRTFP Ux+	0	0	0	0	0	0
430	CRTFP Ux-	0	0	0	0	0	0
431	SLU 1	0.47	0.4	36	-0.012	7.5654	-0.141
431	SLU 2	0.49	0.38	36.01	-0.012	7.568	-0.1339
431	SLU 3	0.49	0.41	36.85	-0.0123	7.7297	-0.1439
431	SLU 4	0.49	0.4	36.85	-0.0123	7.7312	-0.1397
431	SLU 5	0.49	0.38	36.56	-0.0123	7.6735	-0.1336
431	SLU 6	0.49	0.41	37.39	-0.0126	7.8352	-0.1437
431	SLU 7	0.5	0.39	37.4	-0.0126	7.8367	-0.1394
431	SLU 8	0.49	0.4	37.09	-0.0126	7.7765	-0.1406
431	SLU 9	0.49	0.39	37.1	-0.0126	7.778	-0.1363
431	SLU 10	0.51	0.5	40.05	-0.0127	8.3786	-0.1779
431	SLU 11	0.51	0.53	40.88	-0.013	8.5403	-0.188
431	SLU 12	0.52	0.52	40.89	-0.013	8.5419	-0.1837
431	SLU 13	0.52	0.5	40.59	-0.013	8.4841	-0.1777
431	SLU 14	0.52	0.53	41.42	-0.0133	8.6459	-0.1878
431	SLU 15	0.52	0.52	41.43	-0.0133	8.6474	-0.1835
431	SLU 16	0.51	0.52	41.12	-0.0133	8.5871	-0.1846
431	SLU 17	0.52	0.51	41.13	-0.0133	8.5887	-0.1803
431	SLU 18	0.51	0.58	41.76	-0.013	8.7235	-0.204
431	SLU 19	0.51	0.57	41.77	-0.013	8.725	-0.1997
431	SLU 20	0.51	0.58	42.31	-0.0133	8.829	-0.2037
431	SLU 21	0.52	0.57	42.31	-0.0133	8.8306	-0.1994
431	SLU 22	0.53	0.51	40.01	-0.0126	8.3656	-0.18
431	SLU 23	0.54	0.49	40.02	-0.0126	8.3682	-0.1728
431	SLU 24	0.54	0.52	40.85	-0.0129	8.5299	-0.1829
431	SLU 25	0.55	0.51	40.86	-0.0129	8.5314	-0.1786
431	SLU 26	0.55	0.49	40.56	-0.0129	8.4737	-0.1726
431	SLU 27	0.55	0.52	41.4	-0.0132	8.6354	-0.1827
431	SLU 28	0.56	0.51	41.4	-0.0132	8.637	-0.1784
431	SLU 29	0.54	0.51	41.1	-0.0132	8.5767	-0.1795
431	SLU 30	0.55	0.5	41.1	-0.0132	8.5782	-0.1752
431	SLU 31	0.56	0.62	44.05	-0.0133	9.1788	-0.2169
431	SLU 32	0.57	0.64	44.89	-0.0136	9.3406	-0.227
431	SLU 33	0.57	0.63	44.89	-0.0136	9.3421	-0.2227
431	SLU 34	0.57	0.62	44.6	-0.0136	9.2844	-0.2167
431	SLU 35	0.57	0.64	45.43	-0.0139	9.4461	-0.2267
431	SLU 36	0.58	0.63	45.44	-0.0139	9.4476	-0.2225
431	SLU 37	0.57	0.63	45.13	-0.0139	9.3873	-0.2236
431	SLU 38	0.57	0.62	45.13	-0.0139	9.3889	-0.2193
431	SLU 39	0.56	0.69	45.77	-0.0136	9.5237	-0.2429
431	SLU 40	0.57	0.68	45.78	-0.0136	9.5252	-0.2386





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
431	SLU 41	0.57	0.69	46.31	-0.0139	9.6292	-0.2427
431	SLU 42	0.58	0.68	46.32	-0.0139	9.6308	-0.2384
431	SLU 43	0.59	0.48	45.43	-0.0154	9.5607	-0.17
431	SLU 44	0.61	0.46	45.44	-0.0154	9.5632	-0.1628
431	SLU 45	0.61	0.49	46.28	-0.0157	9.7249	-0.1729
431	SLU 46	0.62	0.48	46.28	-0.0157	9.7265	-0.1686
431	SLU 47	0.61	0.46	45.99	-0.0157	9.6687	-0.1626
431	SLU 48	0.62	0.49	46.82	-0.016	9.8305	-0.1727
431	SLU 49	0.62	0.48	46.83	-0.016	9.832	-0.1684
431	SLU 50	0.61	0.48	46.52	-0.016	9.7717	-0.1695
431	SLU 51	0.62	0.47	46.53	-0.016	9.7732	-0.1652
431	SLU 52	0.63	0.59	49.47	-0.0161	10.3739	-0.2069
431	SLU 53	0.63	0.61	50.31	-0.0164	10.5356	-0.217
431	SLU 54	0.64	0.6	50.31	-0.0164	10.5371	-0.2127
431	SLU 55	0.64	0.59	50.02	-0.0164	10.4794	-0.2066
431	SLU 56	0.64	0.61	50.85	-0.0167	10.6411	-0.2167
431	SLU 57	0.65	0.6	50.86	-0.0167	10.6427	-0.2124
431	SLU 58	0.63	0.6	50.55	-0.0167	10.5824	-0.2136
431	SLU 59	0.64	0.59	50.56	-0.0167	10.5839	-0.2093
431	SLU 60	0.63	0.66	51.19	-0.0164	10.7187	-0.2329
431	SLU 61	0.64	0.65	51.2	-0.0164	10.7203	-0.2286
431	SLU 62	0.63	0.66	51.74	-0.0167	10.8243	-0.2327
431	SLU 63	0.64	0.65	51.74	-0.0167	10.8258	-0.2284
431	SLU 64	0.65	0.59	49.44	-0.016	10.3609	-0.2089
431	SLU 65	0.66	0.57	49.45	-0.016	10.3634	-0.2018
431	SLU 66	0.67	0.6	50.28	-0.0163	10.5252	-0.2118
431	SLU 67	0.67	0.59	50.29	-0.0163	10.5267	-0.2076
431	SLU 68	0.67	0.57	49.99	-0.0163	10.469	-0.2015
431	SLU 69	0.67	0.6	50.83	-0.0166	10.6307	-0.2116
431	SLU 70	0.68	0.59	50.83	-0.0166	10.6322	-0.2073
431	SLU 71	0.67	0.59	50.53	-0.0166	10.5719	-0.2084
431	SLU 72	0.67	0.58	50.53	-0.0166	10.5735	-0.2042
431	SLU 73	0.69	0.7	53.48	-0.0167	11.1741	-0.2458
431	SLU 74	0.69	0.73	54.31	-0.017	11.3358	-0.2559
431	SLU 75	0.7	0.71	54.32	-0.017	11.3374	-0.2516
431	SLU 76	0.69	0.7	54.02	-0.017	11.2796	-0.2456
431	SLU 77	0.7	0.73	54.86	-0.0173	11.4414	-0.2557
431	SLU 78	0.7	0.71	54.86	-0.0173	11.4429	-0.2514
431	SLU 79	0.69	0.72	54.56	-0.0173	11.3826	-0.2525
431	SLU 80	0.7	0.7	54.56	-0.0173	11.3841	-0.2482
431	SLU 81	0.68	0.77	55.2	-0.017	11.519	-0.2719
431	SLU 82	0.69	0.76	55.2	-0.017	11.5205	-0.2676
431	SLU 83	0.69	0.77	55.74	-0.0173	11.6245	-0.2716
431	SLU 84	0.7	0.76	55.75	-0.0173	11.626	-0.2673
431	SLE RA 1	0.49	0.43	37.15	-0.0122	7.794	-0.1521
431	SLE RA 2	0.5	0.42	37.16	-0.0122	7.7957	-0.1474
431	SLE RA 3	0.5	0.44	37.71	-0.0124	7.9036	-0.1541
431	SLE RA 4	0.5	0.43	37.72	-0.0124	7.9046	-0.1512
431	SLE RA 5	0.5	0.42	37.52	-0.0124	7.8661	-0.1472
431	SLE RA 6	0.5	0.44	38.07	-0.0126	7.9739	-0.1539
431	SLE RA 7	0.51	0.43	38.08	-0.0126	7.9749	-0.1511
431	SLE RA 8	0.5	0.43	37.87	-0.0126	7.9347	-0.1518
431	SLE RA 9	0.5	0.42	37.88	-0.0126	7.9358	-0.149
431	SLE RA 10	0.51	0.5	39.84	-0.0126	8.3362	-0.1767
431	SLE RA 11	0.51	0.52	40.4	-0.0129	8.444	-0.1835
431	SLE RA 12	0.52	0.51	40.4	-0.0129	8.445	-0.1806
431	SLE RA 13	0.52	0.5	40.21	-0.0128	8.4065	-0.1766
431	SLE RA 14	0.52	0.52	40.76	-0.0131	8.5143	-0.1833
431	SLE RA 15	0.52	0.51	40.77	-0.013	8.5154	-0.1805
431	SLE RA 16	0.51	0.51	40.56	-0.013	8.4752	-0.1812
431	SLE RA 17	0.52	0.51	40.57	-0.013	8.4762	-0.1784
431	SLE RA 18	0.51	0.55	40.99	-0.0128	8.5661	-0.1941
431	SLE RA 19	0.52	0.54	40.99	-0.0128	8.5671	-0.1912
431	SLE RA 20	0.52	0.55	41.35	-0.013	8.6364	-0.194
431	SLE RA 21	0.52	0.54	41.35	-0.013	8.6375	-0.1911
431	SLE FR 1	0.49	0.43	37.15	-0.0122	7.794	-0.1521
431	SLE FR 2	0.49	0.43	37.15	-0.0122	7.7944	-0.1512
431	SLE FR 3	0.49	0.43	37.29	-0.0123	7.8222	-0.1521
431	SLE FR 4	0.5	0.46	38.3	-0.0124	8.026	-0.1638
431	SLE FR 5	0.5	0.47	38.45	-0.0125	8.0538	-0.1647
431	SLE FR 6	0.5	0.49	39.07	-0.0125	8.1801	-0.1731
431	SLE QP 1	0.49	0.43	37.15	-0.0122	7.794	-0.1521
431	SLE QP 2	0.5	0.47	38.3	-0.0124	8.0257	-0.1647
431	SLD 1	3.79	1.19	28.3	-0.0072	6.1286	-0.4171
431	SLD 2	4.01	1.8	28.65	-0.0095	6.1886	-0.632
431	SLD 3	3.6	-0.24	27.47	-0.0029	5.9917	0.0816
431	SLD 4	3.82	0.38	27.83	-0.0051	6.0517	-0.1333
431	SLD 5	1.74	2.73	36.49	-0.017	7.6534	-0.9584
431	SLD 6	1.89	3.14	36.72	-0.0185	7.6929	-1.0996
431	SLD 7	1.09	-2.02	33.74	-0.0026	7.1971	0.7039
431	SLD 8	1.24	-1.61	33.97	-0.004	7.2366	0.5626
431	SLD 9	-0.25	2.54	42.63	-0.0207	8.8147	-0.8921
431	SLD 10	-0.1	2.95	42.86	-0.0222	8.8542	-1.0333
431	SLD 11	-0.89	-2.2	39.88	-0.0063	8.3584	0.7701
431	SLD 12	-0.75	-1.8	40.11	-0.0078	8.3979	0.6289
431	SLD 13	-2.83	0.56	48.77	-0.0196	9.9996	-0.1962
431	SLD 14	-2.61	1.17	49.13	-0.0219	10.0596	-0.411
431	SLD 15	-3.02	-0.87	47.95	-0.0153	9.8627	0.3025
431	SLD 16	-2.8	-0.25	48.3	-0.0175	9.9227	0.0876
431	SLV 1	8.21	2.1	14.88	-0.0001	3.5835	-0.7372



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
431	SLV 2	8.72	3.53	15.7	-0.0054	3.7234	-1.2375
431	SLV 3	7.76	-1.13	12.97	0.0097	3.2661	0.3922
431	SLV 4	8.27	0.31	13.79	0.0044	3.4059	-0.1082
431	SLV 5	3.41	5.6	34.02	-0.0227	7.1503	-1.9628
431	SLV 6	3.74	6.53	34.55	-0.0261	7.2407	-2.2859
431	SLV 7	1.9	-5.15	27.67	0.0101	6.0921	1.8017
431	SLV 8	2.23	-4.23	28.2	0.0067	6.1824	1.4785
431	SLV 9	-1.24	5.16	48.4	-0.0314	9.8689	-1.808
431	SLV 10	-0.91	6.09	48.93	-0.0348	9.9592	-2.1312
431	SLV 11	-2.75	-5.6	42.05	0.0013	8.8106	1.9565
431	SLV 12	-2.42	-4.67	42.58	-0.002	8.901	1.6333
431	SLV 13	-7.28	0.63	62.81	-0.0292	12.6454	-0.2213
431	SLV 14	-6.77	2.06	63.63	-0.0344	12.7853	-0.7216
431	SLV 15	-7.73	-2.6	60.9	-0.0193	12.3279	0.9081
431	SLV 16	-7.22	-1.16	61.73	-0.0246	12.4678	0.4077
431	CRTFP Ux+	0	0	0	0	0	0
431	CRTFP Ux-	0	0	0	0	0	0
431	CRTFP Uy+	0	0	0	0	0	0
431	CRTFP Uy-	0	0	0	0	0	0
433	SLU 1	-0.53	0.1	33.21	-0.0206	-3.8964	0.0226
433	SLU 2	-0.52	0.01	33.18	-0.0203	-3.8942	0.0008
433	SLU 3	-0.54	0.11	34	-0.0211	-3.9787	0.0245
433	SLU 4	-0.54	0.05	33.98	-0.0209	-3.9774	0.0114
433	SLU 5	-0.53	0.02	33.69	-0.0207	-3.9469	0.002
433	SLU 6	-0.55	0.11	34.5	-0.0215	-4.0314	0.0257
433	SLU 7	-0.55	0.06	34.48	-0.0213	-4.0301	0.0126
433	SLU 8	-0.55	0.11	34.22	-0.0214	-4.0018	0.0251
433	SLU 9	-0.54	0.06	34.21	-0.0212	-4.0005	0.012
433	SLU 10	-0.55	0.09	36.95	-0.0219	-4.3109	0.0201
433	SLU 11	-0.57	0.19	37.77	-0.0227	-4.3954	0.0438
433	SLU 12	-0.57	0.13	37.75	-0.0225	-4.3941	0.0307
433	SLU 13	-0.56	0.09	37.46	-0.0223	-4.3636	0.0213
433	SLU 14	-0.58	0.19	38.27	-0.0231	-4.4481	0.045
433	SLU 15	-0.58	0.14	38.25	-0.0229	-4.4468	0.032
433	SLU 16	-0.58	0.19	37.99	-0.023	-4.4186	0.0444
433	SLU 17	-0.57	0.13	37.97	-0.0228	-4.4172	0.0313
433	SLU 18	-0.57	0.21	38.6	-0.0229	-4.4917	0.0502
433	SLU 19	-0.57	0.16	38.58	-0.0227	-4.4904	0.0371
433	SLU 20	-0.58	0.22	39.1	-0.0233	-4.5444	0.0514
433	SLU 21	-0.57	0.16	39.08	-0.0231	-4.5431	0.0383
433	SLU 22	-0.59	0.17	36.99	-0.0221	-4.3083	0.0389
433	SLU 23	-0.58	0.08	36.96	-0.0218	-4.3061	0.017
433	SLU 24	-0.61	0.17	37.77	-0.0226	-4.3906	0.0408
433	SLU 25	-0.6	0.12	37.75	-0.0224	-4.3893	0.0277
433	SLU 26	-0.59	0.08	37.46	-0.0222	-4.3588	0.0183
433	SLU 27	-0.62	0.18	38.28	-0.023	-4.4433	0.042
433	SLU 28	-0.61	0.13	38.26	-0.0228	-4.442	0.0289
433	SLU 29	-0.61	0.18	38	-0.0229	-4.4138	0.0413
433	SLU 30	-0.6	0.12	37.98	-0.0227	-4.4124	0.0282
433	SLU 31	-0.61	0.16	40.73	-0.0234	-4.7228	0.0364
433	SLU 32	-0.64	0.25	41.54	-0.0242	-4.8073	0.0601
433	SLU 33	-0.63	0.2	41.52	-0.024	-4.806	0.047
433	SLU 34	-0.62	0.16	41.23	-0.0238	-4.7755	0.0376
433	SLU 35	-0.65	0.26	42.05	-0.0246	-4.8601	0.0613
433	SLU 36	-0.64	0.2	42.03	-0.0244	-4.8587	0.0482
433	SLU 37	-0.64	0.25	41.77	-0.0245	-4.8305	0.0606
433	SLU 38	-0.63	0.2	41.75	-0.0243	-4.8291	0.0476
433	SLU 39	-0.63	0.28	42.37	-0.0244	-4.9036	0.0664
433	SLU 40	-0.63	0.22	42.35	-0.0242	-4.9023	0.0534
433	SLU 41	-0.64	0.28	42.88	-0.0248	-4.9564	0.0677
433	SLU 42	-0.64	0.23	42.86	-0.0246	-4.955	0.0546
433	SLU 43	-0.67	0.11	41.88	-0.0262	-4.9241	0.0238
433	SLU 44	-0.66	0.02	41.85	-0.0259	-4.9218	0.002
433	SLU 45	-0.68	0.11	42.67	-0.0267	-5.0064	0.0257
433	SLU 46	-0.68	0.06	42.65	-0.0265	-5.005	0.0126
433	SLU 47	-0.66	0.02	42.36	-0.0263	-4.9746	0.0032
433	SLU 48	-0.69	0.12	43.17	-0.0271	-5.0591	0.0269
433	SLU 49	-0.68	0.07	43.15	-0.0269	-5.0578	0.0139
433	SLU 50	-0.68	0.12	42.89	-0.027	-5.0295	0.0263
433	SLU 51	-0.68	0.06	42.87	-0.0268	-5.0282	0.0132
433	SLU 52	-0.69	0.1	45.62	-0.0275	-5.3386	0.0213
433	SLU 53	-0.71	0.19	46.43	-0.0283	-5.4231	0.045
433	SLU 54	-0.71	0.14	46.42	-0.0281	-5.4218	0.0319
433	SLU 55	-0.69	0.1	46.12	-0.0279	-5.3913	0.0225
433	SLU 56	-0.72	0.2	46.94	-0.0287	-5.4758	0.0462
433	SLU 57	-0.71	0.14	46.92	-0.0285	-5.4745	0.0332
433	SLU 58	-0.71	0.19	46.66	-0.0286	-5.4462	0.0456
433	SLU 59	-0.71	0.14	46.64	-0.0284	-5.4449	0.0325
433	SLU 60	-0.71	0.22	47.26	-0.0285	-5.5194	0.0514
433	SLU 61	-0.7	0.17	47.25	-0.0283	-5.518	0.0383
433	SLU 62	-0.72	0.22	47.77	-0.0289	-5.5721	0.0526
433	SLU 63	-0.71	0.17	47.75	-0.0287	-5.5708	0.0395
433	SLU 64	-0.73	0.17	45.65	-0.0278	-5.336	0.0401
433	SLU 65	-0.72	0.08	45.63	-0.0274	-5.3338	0.0183
433	SLU 66	-0.74	0.18	46.44	-0.0283	-5.4183	0.042
433	SLU 67	-0.74	0.13	46.42	-0.0281	-5.417	0.0289
433	SLU 68	-0.73	0.09	46.13	-0.0278	-5.3865	0.0195
433	SLU 69	-0.75	0.19	46.95	-0.0287	-5.471	0.0432
433	SLU 70	-0.75	0.13	46.93	-0.0285	-5.4697	0.0301
433	SLU 71	-0.75	0.18	46.67	-0.0286	-5.4414	0.0425



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
433	SLU 72	-0.74	0.13	46.65	-0.0284	-5.4401	0.0294
433	SLU 73	-0.75	0.16	49.39	-0.029	-5.7505	0.0376
433	SLU 74	-0.77	0.26	50.21	-0.0299	-5.835	0.0613
433	SLU 75	-0.77	0.21	50.19	-0.0297	-5.8337	0.0482
433	SLU 76	-0.76	0.17	49.9	-0.0294	-5.8032	0.0388
433	SLU 77	-0.78	0.26	50.72	-0.0303	-5.8877	0.0625
433	SLU 78	-0.78	0.21	50.7	-0.0301	-5.8864	0.0494
433	SLU 79	-0.78	0.26	50.44	-0.0302	-5.8582	0.0618
433	SLU 80	-0.77	0.21	50.42	-0.03	-5.8568	0.0488
433	SLU 81	-0.77	0.28	51.04	-0.03	-5.9313	0.0677
433	SLU 82	-0.77	0.23	51.02	-0.0298	-5.93	0.0546
433	SLU 83	-0.78	0.29	51.55	-0.0304	-5.984	0.0689
433	SLU 84	-0.77	0.24	51.53	-0.0303	-5.9827	0.0558
433	SLE RA 1	-0.55	0.12	34.29	-0.021	-4.0141	0.0272
433	SLE RA 2	-0.54	0.06	34.27	-0.0208	-4.0126	0.0127
433	SLE RA 3	-0.56	0.12	34.81	-0.0214	-4.0689	0.0285
433	SLE RA 4	-0.55	0.09	34.8	-0.0212	-4.0681	0.0198
433	SLE RA 5	-0.55	0.06	34.61	-0.0211	-4.0477	0.0135
433	SLE RA 6	-0.56	0.13	35.15	-0.0216	-4.1041	0.0293
433	SLE RA 7	-0.56	0.09	35.14	-0.0215	-4.1032	0.0206
433	SLE RA 8	-0.56	0.12	34.96	-0.0216	-4.0844	0.0289
433	SLE RA 9	-0.55	0.09	34.95	-0.0214	-4.0835	0.0202
433	SLE RA 10	-0.56	0.11	36.78	-0.0219	-4.2904	0.0256
433	SLE RA 11	-0.58	0.18	37.33	-0.0224	-4.3468	0.0414
433	SLE RA 12	-0.57	0.14	37.31	-0.0223	-4.3459	0.0327
433	SLE RA 13	-0.57	0.12	37.12	-0.0221	-4.3256	0.0264
433	SLE RA 14	-0.58	0.18	37.66	-0.0227	-4.3819	0.0422
433	SLE RA 15	-0.58	0.14	37.65	-0.0226	-4.381	0.0335
433	SLE RA 16	-0.58	0.18	37.48	-0.0226	-4.3622	0.0418
433	SLE RA 17	-0.57	0.14	37.47	-0.0225	-4.3613	0.033
433	SLE RA 18	-0.58	0.19	37.88	-0.0225	-4.411	0.0456
433	SLE RA 19	-0.57	0.16	37.87	-0.0224	-4.4101	0.0369
433	SLE RA 20	-0.58	0.2	38.22	-0.0228	-4.4461	0.0465
433	SLE RA 21	-0.58	0.16	38.2	-0.0227	-4.4452	0.0377
433	SLE FR 1	-0.55	0.12	34.29	-0.021	-4.0141	0.0272
433	SLE FR 2	-0.55	0.11	34.29	-0.021	-4.0138	0.0243
433	SLE FR 3	-0.55	0.12	34.42	-0.0211	-4.0281	0.0276
433	SLE FR 4	-0.55	0.13	35.36	-0.0214	-4.1328	0.0299
433	SLE FR 5	-0.56	0.14	35.5	-0.0216	-4.1472	0.0331
433	SLE FR 6	-0.56	0.16	36.08	-0.0218	-4.2125	0.0364
433	SLE QP 1	-0.55	0.12	34.29	-0.021	-4.0141	0.0272
433	SLE QP 2	-0.56	0.14	35.37	-0.0215	-4.1331	0.0328
433	SLD 1	2.03	0.71	45.5	-0.0319	-5.2012	0.177
433	SLD 2	2.21	0.17	45.22	-0.0295	-5.179	0.0441
433	SLD 3	2.2	-0.63	44.77	-0.0271	-5.1324	-0.1575
433	SLD 4	2.37	-1.17	44.5	-0.0247	-5.1102	-0.2905
433	SLD 5	-0.06	2.44	39.55	-0.0324	-4.562	0.6072
433	SLD 6	0.05	2.08	39.37	-0.0308	-4.5474	0.5198
433	SLD 7	0.49	-2.02	37.14	-0.0162	-4.3324	-0.508
433	SLD 8	0.61	-2.38	36.96	-0.0147	-4.3179	-0.5954
433	SLD 9	-1.72	2.66	33.78	-0.0283	-3.9484	0.6609
433	SLD 10	-1.6	2.3	33.6	-0.0267	-3.9338	0.5735
433	SLD 11	-1.16	-1.8	31.36	-0.0121	-3.7189	-0.4543
433	SLD 12	-1.05	-2.16	31.18	-0.0105	-3.7043	-0.5417
433	SLD 13	-3.48	1.45	26.24	-0.0183	-3.1561	0.356
433	SLD 14	-3.31	0.91	25.96	-0.0159	-3.1339	0.223
433	SLD 15	-3.32	0.11	25.51	-0.0134	-3.0872	0.0215
433	SLD 16	-3.14	-0.43	25.24	-0.011	-3.065	-0.1115
433	SLV 1	5.5	1.41	59.07	-0.0458	-6.6329	0.3565
433	SLV 2	5.91	0.17	58.43	-0.0402	-6.5813	0.0469
433	SLV 3	5.88	-1.61	57.39	-0.0348	-6.4734	-0.4007
433	SLV 4	6.3	-2.86	56.76	-0.0292	-6.4217	-0.7103
433	SLV 5	0.6	5.33	45.12	-0.0464	-5.134	1.3318
433	SLV 6	0.87	4.52	44.71	-0.0428	-5.1006	1.1318
433	SLV 7	1.89	-4.76	39.55	-0.0098	-4.6022	-1.1921
433	SLV 8	2.16	-5.57	39.14	-0.0061	-4.5688	-1.3921
433	SLV 9	-3.27	5.85	31.59	-0.0368	-3.6975	1.4576
433	SLV 10	-3	5.04	31.18	-0.0332	-3.6641	1.2576
433	SLV 11	-1.98	-4.24	26.02	-0.0001	-3.1656	-1.0663
433	SLV 12	-1.71	-5.05	25.61	0.0035	-3.1323	-1.2663
433	SLV 13	-7.41	3.14	13.98	-0.0137	-1.8446	0.7758
433	SLV 14	-6.99	1.89	13.34	-0.0081	-1.7929	0.4662
433	SLV 15	-7.02	0.11	12.31	-0.0027	-1.685	0.0187
433	SLV 16	-6.61	-1.13	11.67	0.0029	-1.6333	-0.291
433	CRTFP Ux+	0	0	0	0	0	0
433	CRTFP Ux-	0	0	0	0	0	0
433	CRTFP Uy+	0	0	0	0	0	0
433	CRTFP Uy-	0	0	0	0	0	0
437	SLU 1	0.1	-0.02	33.52	0.0123	9.8611	0.0068
437	SLU 2	0.11	-0.05	33.52	0.0124	9.8606	0.0188
437	SLU 3	0.1	0	34.29	0.0126	10.0837	0.0022
437	SLU 4	0.11	-0.02	34.29	0.0127	10.0834	0.0094
437	SLU 5	0.11	-0.05	34.01	0.0125	10.0029	0.0184
437	SLU 6	0.1	0	34.79	0.0127	10.226	0.0018
437	SLU 7	0.11	-0.02	34.79	0.0127	10.2257	0.009
437	SLU 8	0.1	-0.01	34.51	0.0125	10.1457	0.006
437	SLU 9	0.11	-0.03	34.51	0.0125	10.1454	0.0132
437	SLU 10	0.12	0	37.87	0.0149	11.1379	0.0014
437	SLU 11	0.12	0.05	38.65	0.0151	11.3611	-0.0152
437	SLU 12	0.12	0.03	38.65	0.0152	11.3607	-0.0079



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
437	SLU 13	0.13	0	38.37	0.015	11.2802	0.001
437	SLU 14	0.12	0.05	39.14	0.0152	11.5034	-0.0156
437	SLU 15	0.13	0.03	39.14	0.0153	11.503	-0.0083
437	SLU 16	0.12	0.04	38.87	0.015	11.4231	-0.0114
437	SLU 17	0.13	0.02	38.87	0.015	11.4227	-0.0042
437	SLU 18	0.12	0.06	39.74	0.0159	11.6859	-0.018
437	SLU 19	0.13	0.04	39.74	0.016	11.6855	-0.0108
437	SLU 20	0.12	0.06	40.24	0.016	11.8282	-0.0184
437	SLU 21	0.13	0.04	40.24	0.016	11.8278	-0.0112
437	SLU 22	0.11	0.07	37.24	0.0145	10.9359	-0.0231
437	SLU 23	0.12	0.04	37.24	0.0146	10.9353	-0.0111
437	SLU 24	0.12	0.08	38.01	0.0147	11.1585	-0.0277
437	SLU 25	0.12	0.06	38.01	0.0148	11.1581	-0.0205
437	SLU 26	0.13	0.04	37.73	0.0146	11.0776	-0.0115
437	SLU 27	0.12	0.09	38.51	0.0148	11.3008	-0.0281
437	SLU 28	0.13	0.06	38.51	0.0149	11.3004	-0.0209
437	SLU 29	0.12	0.07	38.23	0.0146	11.2204	-0.0239
437	SLU 30	0.13	0.05	38.23	0.0147	11.2201	-0.0167
437	SLU 31	0.14	0.09	41.59	0.0171	12.2126	-0.0285
437	SLU 32	0.13	0.13	42.37	0.0173	12.4358	-0.0451
437	SLU 33	0.14	0.11	42.37	0.0173	12.4354	-0.0379
437	SLU 34	0.14	0.09	42.09	0.0172	12.3549	-0.0289
437	SLU 35	0.14	0.13	42.86	0.0173	12.5781	-0.0455
437	SLU 36	0.14	0.11	42.86	0.0174	12.5777	-0.0383
437	SLU 37	0.14	0.12	42.59	0.0171	12.4978	-0.0413
437	SLU 38	0.14	0.1	42.59	0.0172	12.4974	-0.0341
437	SLU 39	0.14	0.14	43.46	0.0181	12.7606	-0.0479
437	SLU 40	0.14	0.12	43.46	0.0181	12.7603	-0.0407
437	SLU 41	0.14	0.14	43.96	0.0181	12.9029	-0.0483
437	SLU 42	0.15	0.12	43.96	0.0182	12.9026	-0.0411
437	SLU 43	0.12	-0.05	42.3	0.0153	12.451	0.0191
437	SLU 44	0.13	-0.08	42.3	0.0154	12.4504	0.0311
437	SLU 45	0.12	-0.04	43.07	0.0156	12.6736	0.0145
437	SLU 46	0.13	-0.06	43.07	0.0156	12.6733	0.0217
437	SLU 47	0.13	-0.08	42.79	0.0155	12.5927	0.0307
437	SLU 48	0.13	-0.03	43.57	0.0156	12.8159	0.0141
437	SLU 49	0.13	-0.06	43.57	0.0157	12.8156	0.0213
437	SLU 50	0.13	-0.05	43.29	0.0154	12.7356	0.0183
437	SLU 51	0.13	-0.07	43.29	0.0155	12.7353	0.0255
437	SLU 52	0.14	-0.03	46.65	0.0179	13.7278	0.0137
437	SLU 53	0.14	0.01	47.43	0.0181	13.9509	-0.0029
437	SLU 54	0.15	-0.01	47.43	0.0181	13.9506	0.0043
437	SLU 55	0.15	-0.03	47.15	0.018	13.8701	0.0133
437	SLU 56	0.14	0.01	47.92	0.0181	14.0932	-0.0033
437	SLU 57	0.15	-0.01	47.92	0.0182	14.0929	0.0039
437	SLU 58	0.14	0	47.65	0.0179	14.0129	0.0009
437	SLU 59	0.15	-0.02	47.65	0.018	14.0126	0.0081
437	SLU 60	0.14	0.02	48.52	0.0189	14.2757	-0.0057
437	SLU 61	0.15	0	48.52	0.0189	14.2754	0.0015
437	SLU 62	0.15	0.02	49.02	0.0189	14.418	-0.0061
437	SLU 63	0.15	0	49.02	0.019	14.4177	0.0011
437	SLU 64	0.14	0.04	46.02	0.0174	13.5257	-0.0108
437	SLU 65	0.15	0	46.02	0.0175	13.5251	0.0012
437	SLU 66	0.14	0.05	46.79	0.0177	13.7483	-0.0154
437	SLU 67	0.15	0.03	46.79	0.0178	13.748	-0.0082
437	SLU 68	0.15	0	46.51	0.0176	13.6674	0.0008
437	SLU 69	0.14	0.05	47.29	0.0178	13.8906	-0.0158
437	SLU 70	0.15	0.03	47.29	0.0178	13.8903	-0.0086
437	SLU 71	0.14	0.04	47.01	0.0176	13.8103	-0.0116
437	SLU 72	0.15	0.02	47.01	0.0176	13.81	-0.0044
437	SLU 73	0.16	0.05	50.37	0.02	14.8025	-0.0162
437	SLU 74	0.16	0.1	51.15	0.0202	15.0256	-0.0328
437	SLU 75	0.16	0.08	51.15	0.0203	15.0253	-0.0256
437	SLU 76	0.17	0.05	50.87	0.0201	14.9448	-0.0166
437	SLU 77	0.16	0.1	51.64	0.0203	15.1679	-0.0332
437	SLU 78	0.17	0.08	51.64	0.0204	15.1676	-0.026
437	SLU 79	0.16	0.09	51.37	0.0201	15.0876	-0.029
437	SLU 80	0.17	0.07	51.37	0.0202	15.0873	-0.0218
437	SLU 81	0.16	0.11	52.24	0.021	15.3505	-0.0356
437	SLU 82	0.17	0.09	52.24	0.0211	15.3501	-0.0284
437	SLU 83	0.16	0.11	52.74	0.0211	15.4928	-0.036
437	SLU 84	0.17	0.09	52.74	0.0212	15.4924	-0.0288
437	SLE RA 1	0.1	0.01	34.58	0.0129	10.1682	-0.0018
437	SLE RA 2	0.11	-0.01	34.58	0.013	10.1678	0.0062
437	SLE RA 3	0.1	0.02	35.1	0.0131	10.3166	-0.0048
437	SLE RA 4	0.11	0	35.1	0.0132	10.3164	0
437	SLE RA 5	0.11	-0.01	34.91	0.013	10.2627	0.006
437	SLE RA 6	0.11	0.02	35.43	0.0132	10.4115	-0.0051
437	SLE RA 7	0.11	0.01	35.43	0.0132	10.4112	-0.0003
437	SLE RA 8	0.11	0.01	35.24	0.013	10.3579	-0.0023
437	SLE RA 9	0.11	0	35.24	0.0131	10.3577	0.0025
437	SLE RA 10	0.12	0.02	37.48	0.0147	11.0194	-0.0053
437	SLE RA 11	0.12	0.05	38	0.0148	11.1681	-0.0164
437	SLE RA 12	0.12	0.04	38	0.0148	11.1679	-0.0116
437	SLE RA 13	0.12	0.02	37.82	0.0147	11.1142	-0.0056
437	SLE RA 14	0.12	0.05	38.33	0.0148	11.263	-0.0167
437	SLE RA 15	0.12	0.04	38.33	0.0149	11.2628	-0.0119
437	SLE RA 16	0.12	0.04	38.15	0.0147	11.2095	-0.0139
437	SLE RA 17	0.12	0.03	38.15	0.0147	11.2092	-0.0091
437	SLE RA 18	0.12	0.06	38.73	0.0153	11.3847	-0.0183



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
437	SLE RA 19	0.12	0.04	38.73	0.0154	11.3845	-0.0135
437	SLE RA 20	0.12	0.06	39.06	0.0154	11.4796	-0.0186
437	SLE RA 21	0.12	0.04	39.06	0.0154	11.4793	-0.0138
437	SLE FR 1	0.1	0.01	34.58	0.0129	10.1682	-0.0018
437	SLE FR 2	0.1	0	34.58	0.0129	10.1681	-0.0002
437	SLE FR 3	0.1	0.01	34.71	0.0129	10.2061	-0.0019
437	SLE FR 4	0.11	0.02	35.83	0.0137	10.5331	-0.0051
437	SLE FR 5	0.11	0.02	35.96	0.0137	10.5711	-0.0068
437	SLE FR 6	0.11	0.03	36.66	0.0141	10.7764	-0.01
437	SLE QP 1	0.1	0.01	34.58	0.0129	10.1682	-0.0018
437	SLE QP 2	0.11	0.02	35.83	0.0136	10.5331	-0.0067
437	SLD 1	2.92	0.38	35.72	0.0107	10.4994	-0.1324
437	SLD 2	3.08	0.41	35.76	0.0106	10.5085	-0.14
437	SLD 3	2.76	-0.67	35.53	0.0131	10.4471	0.2373
437	SLD 4	2.92	-0.65	35.58	0.013	10.4562	0.2297
437	SLD 5	1.17	1.73	36.07	0.0091	10.6007	-0.6037
437	SLD 6	1.27	1.75	36.1	0.0091	10.6068	-0.6087
437	SLD 7	0.62	-1.79	35.44	0.0172	10.4263	0.6285
437	SLD 8	0.73	-1.78	35.47	0.0171	10.4324	0.6235
437	SLD 9	-0.52	1.82	36.18	0.0102	10.6339	-0.6369
437	SLD 10	-0.41	1.84	36.21	0.0101	10.64	-0.6419
437	SLD 11	-1.06	-1.7	35.55	0.0182	10.4595	0.5953
437	SLD 12	-0.96	-1.68	35.58	0.0182	10.4656	0.5903
437	SLD 13	-2.71	0.7	36.08	0.0143	10.6101	-0.2431
437	SLD 14	-2.54	0.72	36.12	0.0142	10.6192	-0.2507
437	SLD 15	-2.87	-0.36	35.89	0.0167	10.5577	0.1265
437	SLD 16	-2.71	-0.34	35.94	0.0166	10.5669	0.1189
437	SLV 1	6.69	0.82	35.57	0.0069	10.4536	-0.2874
437	SLV 2	7.06	0.88	35.68	0.0066	10.4749	-0.3051
437	SLV 3	6.31	-1.57	35.14	0.0123	10.3329	0.5494
437	SLV 4	6.68	-1.51	35.24	0.0121	10.3543	0.5317
437	SLV 5	2.59	3.88	36.39	0.0034	10.6886	-1.357
437	SLV 6	2.84	3.92	36.46	0.0032	10.7024	-1.3684
437	SLV 7	1.32	-4.09	34.94	0.0216	10.2864	1.4323
437	SLV 8	1.57	-4.06	35.01	0.0214	10.3002	1.4209
437	SLV 9	-1.35	4.1	36.64	0.0059	10.7661	-1.4343
437	SLV 10	-1.11	4.14	36.71	0.0057	10.7799	-1.4458
437	SLV 11	-2.62	-3.87	35.2	0.0241	10.3639	1.355
437	SLV 12	-2.38	-3.84	35.26	0.0239	10.3777	1.3435
437	SLV 13	-6.47	1.56	36.41	0.0152	10.712	-0.5452
437	SLV 14	-6.09	1.61	36.52	0.015	10.7334	-0.5629
437	SLV 15	-6.85	-0.83	35.98	0.0207	10.5914	0.2916
437	SLV 16	-6.48	-0.78	36.08	0.0204	10.6127	0.2739
437	CRTFP Ux+	0	0	0	0	0	0
437	CRTFP Ux-	0	0	0	0	0	0
437	CRTFP Uy+	0	0	0	0	0	0
437	CRTFP Uy-	0	0	0	0	0	0
440	SLU 1	-0.73	-0.98	60.51	-0.0233	-0.2478	-0.0175
440	SLU 2	-0.71	-1.06	60.5	-0.0228	-0.2491	-0.0167
440	SLU 3	-0.75	-0.98	61.91	-0.0236	-0.2532	-0.0182
440	SLU 4	-0.74	-1.03	61.9	-0.0233	-0.254	-0.0177
440	SLU 5	-0.72	-1.07	61.41	-0.0233	-0.2528	-0.0169
440	SLU 6	-0.77	-1	62.83	-0.0241	-0.2568	-0.0184
440	SLU 7	-0.75	-1.05	62.82	-0.0238	-0.2577	-0.0179
440	SLU 8	-0.76	-1.01	62.34	-0.0243	-0.2551	-0.018
440	SLU 9	-0.74	-1.06	62.33	-0.024	-0.2559	-0.0175
440	SLU 10	-0.73	-1.08	67.7	-0.0235	-0.2868	-0.0188
440	SLU 11	-0.78	-1.01	69.12	-0.0243	-0.2909	-0.0203
440	SLU 12	-0.76	-1.06	69.11	-0.024	-0.2917	-0.0198
440	SLU 13	-0.75	-1.1	68.62	-0.024	-0.2905	-0.0191
440	SLU 14	-0.79	-1.02	70.03	-0.0248	-0.2946	-0.0206
440	SLU 15	-0.78	-1.07	70.03	-0.0245	-0.2954	-0.0201
440	SLU 16	-0.78	-1.03	69.55	-0.025	-0.2928	-0.0202
440	SLU 17	-0.77	-1.08	69.54	-0.0247	-0.2936	-0.0197
440	SLU 18	-0.77	-1.01	70.8	-0.0243	-0.3016	-0.0206
440	SLU 19	-0.75	-1.06	70.8	-0.024	-0.3025	-0.0201
440	SLU 20	-0.78	-1.02	71.72	-0.0248	-0.3053	-0.0208
440	SLU 21	-0.77	-1.07	71.71	-0.0245	-0.3061	-0.0203
440	SLU 22	-0.81	-0.96	67.33	-0.0234	-0.271	-0.0207
440	SLU 23	-0.79	-1.05	67.32	-0.0229	-0.2723	-0.0199
440	SLU 24	-0.83	-0.97	68.74	-0.0238	-0.2764	-0.0214
440	SLU 25	-0.82	-1.02	68.73	-0.0235	-0.2772	-0.0209
440	SLU 26	-0.8	-1.06	68.24	-0.0235	-0.276	-0.0201
440	SLU 27	-0.85	-0.99	69.65	-0.0243	-0.28	-0.0216
440	SLU 28	-0.83	-1.03	69.64	-0.024	-0.2809	-0.0211
440	SLU 29	-0.84	-0.99	69.17	-0.0244	-0.2783	-0.0212
440	SLU 30	-0.83	-1.04	69.16	-0.0242	-0.2791	-0.0207
440	SLU 31	-0.82	-1.07	74.53	-0.0237	-0.3101	-0.022
440	SLU 32	-0.86	-0.99	75.94	-0.0245	-0.3141	-0.0235
440	SLU 33	-0.85	-1.04	75.93	-0.0242	-0.3149	-0.023
440	SLU 34	-0.83	-1.08	75.44	-0.0242	-0.3137	-0.0223
440	SLU 35	-0.87	-1.01	76.86	-0.025	-0.3178	-0.0238
440	SLU 36	-0.86	-1.06	76.85	-0.0247	-0.3186	-0.0232
440	SLU 37	-0.86	-1.01	76.37	-0.0251	-0.316	-0.0234
440	SLU 38	-0.85	-1.06	76.36	-0.0249	-0.3168	-0.0229
440	SLU 39	-0.85	-0.99	77.63	-0.0244	-0.3248	-0.0238
440	SLU 40	-0.83	-1.04	77.62	-0.0241	-0.3257	-0.0233
440	SLU 41	-0.86	-1.01	78.54	-0.0249	-0.3285	-0.024
440	SLU 42	-0.85	-1.06	78.54	-0.0247	-0.3293	-0.0235
440	SLU 43	-0.92	-1.28	76.32	-0.0302	-0.3141	-0.0217



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
440	SLU 44	-0.9	-1.36	76.31	-0.0297	-0.3155	-0.0208
440	SLU 45	-0.94	-1.28	77.72	-0.0306	-0.3196	-0.0223
440	SLU 46	-0.93	-1.33	77.71	-0.0303	-0.3204	-0.0218
440	SLU 47	-0.91	-1.37	77.22	-0.0302	-0.3191	-0.0211
440	SLU 48	-0.96	-1.3	78.64	-0.0311	-0.3232	-0.0226
440	SLU 49	-0.94	-1.35	78.63	-0.0308	-0.324	-0.0221
440	SLU 50	-0.95	-1.3	78.15	-0.0312	-0.3214	-0.0222
440	SLU 51	-0.94	-1.35	78.14	-0.0309	-0.3222	-0.0217
440	SLU 52	-0.92	-1.38	83.51	-0.0304	-0.3532	-0.023
440	SLU 53	-0.97	-1.31	84.93	-0.0313	-0.3573	-0.0245
440	SLU 54	-0.96	-1.35	84.92	-0.031	-0.3581	-0.024
440	SLU 55	-0.94	-1.39	84.43	-0.0309	-0.3569	-0.0232
440	SLU 56	-0.98	-1.32	85.85	-0.0318	-0.3609	-0.0247
440	SLU 57	-0.97	-1.37	85.84	-0.0315	-0.3617	-0.0242
440	SLU 58	-0.97	-1.33	85.36	-0.0319	-0.3591	-0.0243
440	SLU 59	-0.96	-1.38	85.35	-0.0316	-0.36	-0.0238
440	SLU 60	-0.96	-1.31	86.62	-0.0312	-0.368	-0.0247
440	SLU 61	-0.94	-1.36	86.61	-0.0309	-0.3688	-0.0242
440	SLU 62	-0.97	-1.32	87.53	-0.0317	-0.3717	-0.025
440	SLU 63	-0.96	-1.37	87.52	-0.0314	-0.3725	-0.0245
440	SLU 64	-1	-1.26	83.15	-0.0304	-0.3373	-0.0249
440	SLU 65	-0.98	-1.34	83.13	-0.0299	-0.3387	-0.024
440	SLU 66	-1.02	-1.27	84.55	-0.0307	-0.3428	-0.0255
440	SLU 67	-1.01	-1.32	84.54	-0.0304	-0.3436	-0.025
440	SLU 68	-0.99	-1.36	84.05	-0.0304	-0.3423	-0.0243
440	SLU 69	-1.04	-1.28	85.46	-0.0312	-0.3464	-0.0258
440	SLU 70	-1.03	-1.33	85.46	-0.0309	-0.3472	-0.0253
440	SLU 71	-1.03	-1.29	84.98	-0.0314	-0.3446	-0.0254
440	SLU 72	-1.02	-1.34	84.97	-0.0311	-0.3454	-0.0249
440	SLU 73	-1.01	-1.37	90.34	-0.0306	-0.3764	-0.0262
440	SLU 74	-1.05	-1.29	91.75	-0.0314	-0.3805	-0.0277
440	SLU 75	-1.04	-1.34	91.75	-0.0311	-0.3813	-0.0272
440	SLU 76	-1.02	-1.38	91.26	-0.0311	-0.3801	-0.0264
440	SLU 77	-1.06	-1.31	92.67	-0.0319	-0.3841	-0.0279
440	SLU 78	-1.05	-1.36	92.66	-0.0316	-0.385	-0.0274
440	SLU 79	-1.05	-1.31	92.18	-0.0321	-0.3823	-0.0275
440	SLU 80	-1.04	-1.36	92.18	-0.0318	-0.3832	-0.027
440	SLU 81	-1.04	-1.29	93.44	-0.0314	-0.3912	-0.0279
440	SLU 82	-1.03	-1.34	93.43	-0.0311	-0.392	-0.0274
440	SLU 83	-1.05	-1.31	94.36	-0.0319	-0.3949	-0.0282
440	SLU 84	-1.04	-1.36	94.35	-0.0316	-0.3957	-0.0277
440	SLE RA 1	-0.75	-0.97	62.46	-0.0233	-0.2544	-0.0184
440	SLE RA 2	-0.74	-1.03	62.45	-0.023	-0.2553	-0.0179
440	SLE RA 3	-0.77	-0.98	63.39	-0.0236	-0.258	-0.0189
440	SLE RA 4	-0.76	-1.01	63.39	-0.0234	-0.2586	-0.0185
440	SLE RA 5	-0.75	-1.04	63.06	-0.0233	-0.2577	-0.018
440	SLE RA 6	-0.78	-0.99	64	-0.0239	-0.2604	-0.019
440	SLE RA 7	-0.77	-1.02	64	-0.0237	-0.261	-0.0187
440	SLE RA 8	-0.77	-0.99	63.68	-0.024	-0.2593	-0.0188
440	SLE RA 9	-0.76	-1.03	63.67	-0.0238	-0.2598	-0.0184
440	SLE RA 10	-0.76	-1.04	67.25	-0.0235	-0.2804	-0.0193
440	SLE RA 11	-0.78	-0.99	68.2	-0.024	-0.2832	-0.0203
440	SLE RA 12	-0.78	-1.03	68.19	-0.0238	-0.2837	-0.02
440	SLE RA 13	-0.76	-1.05	67.86	-0.0238	-0.2829	-0.0195
440	SLE RA 14	-0.79	-1	68.81	-0.0244	-0.2856	-0.0205
440	SLE RA 15	-0.79	-1.04	68.8	-0.0242	-0.2861	-0.0201
440	SLE RA 16	-0.79	-1.01	68.48	-0.0245	-0.2844	-0.0202
440	SLE RA 17	-0.78	-1.04	68.48	-0.0243	-0.2849	-0.0199
440	SLE RA 18	-0.78	-0.99	69.32	-0.024	-0.2903	-0.0205
440	SLE RA 19	-0.77	-1.03	69.32	-0.0238	-0.2909	-0.0201
440	SLE RA 20	-0.79	-1	69.93	-0.0243	-0.2927	-0.0206
440	SLE RA 21	-0.78	-1.04	69.93	-0.0241	-0.2933	-0.0203
440	SLE FR 1	-0.75	-0.97	62.46	-0.0233	-0.2544	-0.0184
440	SLE FR 2	-0.75	-0.98	62.46	-0.0233	-0.2546	-0.0183
440	SLE FR 3	-0.76	-0.99	62.7	-0.0235	-0.2554	-0.0185
440	SLE FR 4	-0.76	-0.98	64.52	-0.0235	-0.2653	-0.0189
440	SLE FR 5	-0.76	-0.98	64.76	-0.0237	-0.2661	-0.0191
440	SLE FR 6	-0.76	-0.98	65.89	-0.0237	-0.2724	-0.0195
440	SLE QP 1	-0.75	-0.97	62.46	-0.0233	-0.2544	-0.0184
440	SLE QP 2	-0.76	-0.98	64.52	-0.0235	-0.2652	-0.019
440	SLD 1	4.47	-0.63	69.93	-0.0335	-0.0541	0.0004
440	SLD 2	4.79	-1.01	69.75	-0.0312	-0.0604	0.013
440	SLD 3	4.81	-2.38	69.52	-0.0256	-0.0894	0.0051
440	SLD 4	5.13	-2.76	69.34	-0.0234	-0.0957	0.0177
440	SLD 5	0.24	1.85	66.79	-0.0388	-0.1472	-0.0226
440	SLD 6	0.45	1.6	66.67	-0.0374	-0.1513	-0.0143
440	SLD 7	1.37	-3.99	65.43	-0.0126	-0.2649	-0.0069
440	SLD 8	1.58	-4.23	65.31	-0.0112	-0.269	0.0014
440	SLD 9	-3.1	2.28	63.72	-0.0359	-0.2613	-0.0395
440	SLD 10	-2.89	2.03	63.6	-0.0344	-0.2655	-0.0312
440	SLD 11	-1.97	-3.56	62.36	-0.0097	-0.379	-0.0237
440	SLD 12	-1.76	-3.81	62.24	-0.0082	-0.3831	-0.0154
440	SLD 13	-6.65	0.8	59.7	-0.0237	-0.4346	-0.0558
440	SLD 14	-6.33	0.42	59.51	-0.0214	-0.4409	-0.0432
440	SLD 15	-6.31	-0.95	59.29	-0.0158	-0.4699	-0.0511
440	SLD 16	-5.99	-1.33	59.11	-0.0135	-0.4762	-0.0385
440	SLV 1	11.48	-0.22	77.18	-0.0466	0.2278	0.0265
440	SLV 2	12.22	-1.11	76.75	-0.0413	0.2132	0.056
440	SLV 3	12.27	-4.19	76.24	-0.0288	0.1471	0.0373
440	SLV 4	13.01	-5.07	75.81	-0.0235	0.1324	0.0667



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
440	SLV 5	1.58	5.41	69.81	-0.0583	0.0077	-0.0268
440	SLV 6	2.06	4.84	69.53	-0.0549	-0.0017	-0.0078
440	SLV 7	4.22	-7.8	66.69	0.001	-0.2614	0.0091
440	SLV 8	4.7	-8.37	66.41	0.0044	-0.2709	0.0281
440	SLV 9	-6.22	6.41	62.62	-0.0514	-0.2595	-0.0662
440	SLV 10	-5.74	5.84	62.35	-0.048	-0.2689	-0.0472
440	SLV 11	-3.58	-6.8	59.5	0.0079	-0.5286	-0.0303
440	SLV 12	-3.1	-7.37	59.22	0.0113	-0.538	-0.0113
440	SLV 13	-14.53	3.11	53.22	-0.0235	-0.6628	-0.1048
440	SLV 14	-13.79	2.23	52.8	-0.0183	-0.6774	-0.0754
440	SLV 15	-13.74	-0.85	52.29	-0.0057	-0.7435	-0.0941
440	SLV 16	-13	-1.73	51.86	-0.0005	-0.7581	-0.0646
440	CRTFP Ux+	0	0	0	0	0	0
440	CRTFP Ux-	0	0	0	0	0	0
444	SLU 1	0.52	-0.56	60.67	-0.0257	0.2258	-0.0057
444	SLU 2	0.54	-0.6	60.69	-0.0255	0.2268	-0.005
444	SLU 3	0.53	-0.56	62.07	-0.0263	0.2297	-0.0058
444	SLU 4	0.55	-0.59	62.08	-0.0262	0.2303	-0.0053
444	SLU 5	0.54	-0.61	61.6	-0.0261	0.2288	-0.0051
444	SLU 6	0.54	-0.58	62.98	-0.0268	0.2317	-0.0059
444	SLU 7	0.55	-0.6	62.99	-0.0267	0.2323	-0.0054
444	SLU 8	0.53	-0.59	62.5	-0.0268	0.2298	-0.006
444	SLU 9	0.55	-0.61	62.51	-0.0267	0.2304	-0.0056
444	SLU 10	0.56	-0.58	67.79	-0.027	0.258	-0.0058
444	SLU 11	0.56	-0.55	69.18	-0.0277	0.261	-0.0065
444	SLU 12	0.57	-0.57	69.19	-0.0276	0.2616	-0.0061
444	SLU 13	0.57	-0.59	68.71	-0.0276	0.2601	-0.0059
444	SLU 14	0.57	-0.56	70.09	-0.0283	0.263	-0.0067
444	SLU 15	0.58	-0.59	70.1	-0.0282	0.2636	-0.0062
444	SLU 16	0.56	-0.57	69.61	-0.0283	0.2611	-0.0068
444	SLU 17	0.57	-0.59	69.62	-0.0282	0.2617	-0.0063
444	SLU 18	0.55	-0.53	70.83	-0.0278	0.2705	-0.0069
444	SLU 19	0.56	-0.56	70.84	-0.0277	0.271	-0.0064
444	SLU 20	0.56	-0.55	71.74	-0.0284	0.2725	-0.007
444	SLU 21	0.57	-0.57	71.75	-0.0283	0.2731	-0.0066
444	SLU 22	0.59	-0.5	67.47	-0.0265	0.2375	-0.0051
444	SLU 23	0.61	-0.54	67.48	-0.0263	0.2385	-0.0044
444	SLU 24	0.61	-0.5	68.87	-0.027	0.2414	-0.0051
444	SLU 25	0.62	-0.53	68.87	-0.027	0.242	-0.0047
444	SLU 26	0.62	-0.55	68.4	-0.0269	0.2405	-0.0045
444	SLU 27	0.61	-0.52	69.78	-0.0276	0.2434	-0.0053
444	SLU 28	0.63	-0.54	69.79	-0.0275	0.244	-0.0048
444	SLU 29	0.61	-0.53	69.3	-0.0276	0.2415	-0.0054
444	SLU 30	0.62	-0.55	69.31	-0.0275	0.2421	-0.0049
444	SLU 31	0.63	-0.52	74.59	-0.0278	0.2697	-0.0052
444	SLU 32	0.63	-0.49	75.98	-0.0285	0.2727	-0.0059
444	SLU 33	0.64	-0.51	75.98	-0.0284	0.2733	-0.0055
444	SLU 34	0.64	-0.53	75.51	-0.0284	0.2718	-0.0053
444	SLU 35	0.64	-0.5	76.89	-0.0291	0.2747	-0.006
444	SLU 36	0.65	-0.53	76.9	-0.029	0.2753	-0.0056
444	SLU 37	0.63	-0.51	76.41	-0.0291	0.2728	-0.0062
444	SLU 38	0.64	-0.54	76.41	-0.029	0.2734	-0.0057
444	SLU 39	0.62	-0.47	77.63	-0.0286	0.2822	-0.0062
444	SLU 40	0.64	-0.5	77.63	-0.0285	0.2828	-0.0058
444	SLU 41	0.63	-0.49	78.54	-0.0291	0.2842	-0.0064
444	SLU 42	0.64	-0.51	78.55	-0.0291	0.2848	-0.0059
444	SLU 43	0.65	-0.74	76.54	-0.0331	0.2895	-0.0077
444	SLU 44	0.67	-0.78	76.56	-0.033	0.2905	-0.007
444	SLU 45	0.66	-0.75	77.94	-0.0337	0.2934	-0.0077
444	SLU 46	0.68	-0.77	77.95	-0.0336	0.294	-0.0073
444	SLU 47	0.67	-0.8	77.47	-0.0336	0.2925	-0.0071
444	SLU 48	0.67	-0.77	78.86	-0.0343	0.2955	-0.0078
444	SLU 49	0.68	-0.79	78.86	-0.0342	0.296	-0.0074
444	SLU 50	0.66	-0.78	78.37	-0.0343	0.2936	-0.0079
444	SLU 51	0.68	-0.8	78.38	-0.0342	0.2941	-0.0075
444	SLU 52	0.69	-0.77	83.67	-0.0345	0.3218	-0.0077
444	SLU 53	0.69	-0.73	85.05	-0.0352	0.3247	-0.0085
444	SLU 54	0.7	-0.76	85.06	-0.0351	0.3253	-0.008
444	SLU 55	0.7	-0.78	84.58	-0.035	0.3238	-0.0079
444	SLU 56	0.7	-0.75	85.96	-0.0357	0.3267	-0.0086
444	SLU 57	0.71	-0.77	85.97	-0.0356	0.3273	-0.0082
444	SLU 58	0.69	-0.76	85.48	-0.0357	0.3248	-0.0087
444	SLU 59	0.7	-0.78	85.49	-0.0356	0.3254	-0.0083
444	SLU 60	0.68	-0.72	86.7	-0.0352	0.3342	-0.0088
444	SLU 61	0.69	-0.74	86.71	-0.0351	0.3348	-0.0084
444	SLU 62	0.69	-0.74	87.61	-0.0358	0.3362	-0.0089
444	SLU 63	0.7	-0.76	87.62	-0.0357	0.3368	-0.0085
444	SLU 64	0.72	-0.69	83.34	-0.0339	0.3012	-0.0071
444	SLU 65	0.74	-0.72	83.35	-0.0338	0.3022	-0.0063
444	SLU 66	0.74	-0.69	84.74	-0.0345	0.3051	-0.0071
444	SLU 67	0.75	-0.71	84.75	-0.0344	0.3057	-0.0066
444	SLU 68	0.75	-0.74	84.27	-0.0343	0.3042	-0.0064
444	SLU 69	0.74	-0.71	85.65	-0.0351	0.3072	-0.0072
444	SLU 70	0.76	-0.73	85.66	-0.035	0.3077	-0.0068
444	SLU 71	0.74	-0.72	85.17	-0.0351	0.3053	-0.0073
444	SLU 72	0.75	-0.74	85.18	-0.035	0.3058	-0.0069
444	SLU 73	0.76	-0.71	90.46	-0.0352	0.3335	-0.0071
444	SLU 74	0.76	-0.68	91.85	-0.036	0.3364	-0.0079
444	SLU 75	0.77	-0.7	91.86	-0.0359	0.337	-0.0074
444	SLU 76	0.77	-0.72	91.38	-0.0358	0.3355	-0.0072



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
444	SLU 77	0.77	-0.69	92.76	-0.0365	0.3384	-0.008
444	SLU 78	0.78	-0.71	92.77	-0.0364	0.339	-0.0075
444	SLU 79	0.76	-0.7	92.28	-0.0365	0.3365	-0.0081
444	SLU 80	0.77	-0.72	92.29	-0.0364	0.3371	-0.0077
444	SLU 81	0.75	-0.66	93.5	-0.036	0.3459	-0.0082
444	SLU 82	0.77	-0.69	93.51	-0.0359	0.3465	-0.0077
444	SLU 83	0.76	-0.68	94.41	-0.0366	0.3479	-0.0083
444	SLU 84	0.77	-0.7	94.42	-0.0365	0.3485	-0.0079
444	SLE RA 1	0.54	-0.54	62.62	-0.0259	0.2291	-0.0056
444	SLE RA 2	0.55	-0.57	62.62	-0.0258	0.2298	-0.0051
444	SLE RA 3	0.55	-0.54	63.55	-0.0263	0.2318	-0.0056
444	SLE RA 4	0.56	-0.56	63.55	-0.0262	0.2321	-0.0053
444	SLE RA 5	0.56	-0.58	63.23	-0.0262	0.2311	-0.0052
444	SLE RA 6	0.55	-0.55	64.16	-0.0267	0.2331	-0.0057
444	SLE RA 7	0.56	-0.57	64.16	-0.0266	0.2335	-0.0054
444	SLE RA 8	0.55	-0.56	63.83	-0.0267	0.2318	-0.0057
444	SLE RA 9	0.56	-0.58	63.84	-0.0266	0.2322	-0.0054
444	SLE RA 10	0.57	-0.55	67.36	-0.0268	0.2506	-0.0056
444	SLE RA 11	0.57	-0.53	68.29	-0.0273	0.2526	-0.0061
444	SLE RA 12	0.57	-0.55	68.29	-0.0272	0.253	-0.0058
444	SLE RA 13	0.57	-0.57	67.97	-0.0272	0.252	-0.0057
444	SLE RA 14	0.57	-0.54	68.9	-0.0277	0.2539	-0.0062
444	SLE RA 15	0.58	-0.56	68.9	-0.0276	0.2543	-0.0059
444	SLE RA 16	0.57	-0.55	68.57	-0.0277	0.2527	-0.0063
444	SLE RA 17	0.57	-0.57	68.58	-0.0276	0.2531	-0.006
444	SLE RA 18	0.56	-0.53	69.39	-0.0273	0.2589	-0.0063
444	SLE RA 19	0.57	-0.54	69.39	-0.0273	0.2593	-0.006
444	SLE RA 20	0.57	-0.54	70	-0.0277	0.2603	-0.0064
444	SLE RA 21	0.57	-0.55	70	-0.0276	0.2607	-0.0061
444	SLE FR 1	0.54	-0.54	62.62	-0.0259	0.2291	-0.0056
444	SLE FR 2	0.54	-0.55	62.62	-0.0259	0.2293	-0.0055
444	SLE FR 3	0.54	-0.54	62.86	-0.0261	0.2297	-0.0056
444	SLE FR 4	0.55	-0.54	64.65	-0.0263	0.2382	-0.0057
444	SLE FR 5	0.55	-0.54	64.89	-0.0265	0.2386	-0.0058
444	SLE FR 6	0.55	-0.53	66	-0.0266	0.244	-0.0059
444	SLE QP 1	0.54	-0.54	62.62	-0.0259	0.2291	-0.0056
444	SLE QP 2	0.54	-0.54	64.65	-0.0263	0.2381	-0.0058
444	SLD 1	6.1	0.78	59.71	-0.0206	0.2889	0.0339
444	SLD 2	6.44	1.18	59.96	-0.0226	0.2808	0.0462
444	SLD 3	5.78	-0.98	59.28	-0.0141	0.3294	0.0306
444	SLD 4	6.12	-0.58	59.54	-0.0161	0.3213	0.0429
444	SLD 5	2.64	2.46	63.76	-0.0341	0.1934	0.009
444	SLD 6	2.86	2.72	63.93	-0.0354	0.1881	0.017
444	SLD 7	1.57	-3.41	62.35	-0.0125	0.3282	-0.0021
444	SLD 8	1.79	-3.15	62.52	-0.0138	0.3229	0.006
444	SLD 9	-0.7	2.08	66.78	-0.0389	0.1532	-0.0175
444	SLD 10	-0.48	2.34	66.94	-0.0402	0.1479	-0.0095
444	SLD 11	-1.77	-3.79	65.37	-0.0173	0.288	-0.0286
444	SLD 12	-1.55	-3.53	65.53	-0.0186	0.2827	-0.0206
444	SLD 13	-5.03	-0.49	69.76	-0.0366	0.1549	-0.0545
444	SLD 14	-4.69	-0.09	70.01	-0.0386	0.1468	-0.0422
444	SLD 15	-5.35	-2.25	69.33	-0.0301	0.1953	-0.0578
444	SLD 16	-5.01	-1.85	69.59	-0.0321	0.1872	-0.0455
444	SLV 1	13.54	2.48	53.08	-0.0126	0.3581	0.0872
444	SLV 2	14.33	3.41	53.67	-0.0172	0.3392	0.1157
444	SLV 3	12.8	-1.51	52.1	0.0021	0.4501	0.0794
444	SLV 4	13.58	-0.57	52.7	-0.0025	0.4312	0.108
444	SLV 5	5.45	6.25	62.56	-0.0437	0.1378	0.0288
444	SLV 6	5.95	6.86	62.94	-0.0467	0.1256	0.0473
444	SLV 7	2.95	-7.03	59.3	0.0053	0.4445	0.0032
444	SLV 8	3.45	-6.43	59.68	0.0023	0.4323	0.0216
444	SLV 9	-2.36	5.36	69.61	-0.055	0.0438	-0.0332
444	SLV 10	-1.86	5.96	69.99	-0.058	0.0317	-0.0147
444	SLV 11	-4.86	-7.93	66.35	-0.006	0.3505	-0.0589
444	SLV 12	-4.36	-7.32	66.74	-0.009	0.3384	-0.0404
444	SLV 13	-12.49	-0.5	76.6	-0.0502	0.0449	-0.1196
444	SLV 14	-11.71	0.44	77.19	-0.0548	0.0261	-0.091
444	SLV 15	-13.24	-4.49	75.62	-0.0355	0.1369	-0.1273
444	SLV 16	-12.46	-3.55	76.21	-0.0401	0.1181	-0.0987
444	CRTFP Ux+	0	0	0	0	0	0
444	CRTFP Ux-	0	0	0	0	0	0
445	SLU 1	0.52	0.4	36.01	0.0116	7.5822	-0.1402
445	SLU 2	0.53	0.38	36.02	0.0116	7.5851	-0.133
445	SLU 3	0.54	0.4	36.85	0.0118	7.7464	-0.1431
445	SLU 4	0.54	0.39	36.86	0.0118	7.7482	-0.1388
445	SLU 5	0.54	0.37	36.56	0.0117	7.6898	-0.1328
445	SLU 6	0.54	0.4	37.39	0.0119	7.8511	-0.1429
445	SLU 7	0.55	0.39	37.4	0.0119	7.8529	-0.1386
445	SLU 8	0.54	0.39	37.09	0.0117	7.7915	-0.1397
445	SLU 9	0.54	0.38	37.1	0.0118	7.7933	-0.1354
445	SLU 10	0.56	0.5	40.08	0.0138	8.4081	-0.1771
445	SLU 11	0.56	0.53	40.91	0.0141	8.5694	-0.1872
445	SLU 12	0.57	0.52	40.92	0.0141	8.5712	-0.1828
445	SLU 13	0.57	0.5	40.62	0.0139	8.5127	-0.1768
445	SLU 14	0.57	0.53	41.45	0.0142	8.6741	-0.1869
445	SLU 15	0.58	0.52	41.46	0.0142	8.6758	-0.1826
445	SLU 16	0.56	0.52	41.15	0.014	8.6145	-0.1838
445	SLU 17	0.57	0.51	41.15	0.014	8.6162	-0.1794
445	SLU 18	0.56	0.57	41.8	0.0147	8.7579	-0.2031
445	SLU 19	0.57	0.56	41.81	0.0148	8.7596	-0.1988





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
445	SLU 20	0.57	0.57	42.34	0.0148	8.8625	-0.2029
445	SLU 21	0.57	0.56	42.35	0.0149	8.8643	-0.1986
445	SLU 22	0.58	0.51	40.04	0.0139	8.395	-0.1791
445	SLU 23	0.59	0.49	40.05	0.0139	8.3979	-0.1719
445	SLU 24	0.59	0.51	40.89	0.0141	8.5593	-0.182
445	SLU 25	0.6	0.5	40.89	0.0142	8.5611	-0.1777
445	SLU 26	0.6	0.49	40.6	0.014	8.5026	-0.1716
445	SLU 27	0.6	0.51	41.43	0.0142	8.664	-0.1817
445	SLU 28	0.61	0.5	41.43	0.0143	8.6657	-0.1774
445	SLU 29	0.59	0.51	41.12	0.0141	8.6044	-0.1786
445	SLU 30	0.6	0.49	41.13	0.0141	8.6061	-0.1743
445	SLU 31	0.61	0.61	44.11	0.0161	9.2209	-0.2159
445	SLU 32	0.62	0.64	44.94	0.0164	9.3823	-0.226
445	SLU 33	0.63	0.63	44.95	0.0164	9.384	-0.2217
445	SLU 34	0.62	0.61	44.65	0.0162	9.3256	-0.2157
445	SLU 35	0.63	0.64	45.48	0.0165	9.487	-0.2258
445	SLU 36	0.63	0.63	45.49	0.0165	9.4887	-0.2215
445	SLU 37	0.62	0.63	45.18	0.0163	9.4274	-0.2226
445	SLU 38	0.63	0.62	45.19	0.0163	9.4291	-0.2183
445	SLU 39	0.62	0.69	45.84	0.0171	9.5707	-0.242
445	SLU 40	0.62	0.67	45.84	0.0171	9.5725	-0.2377
445	SLU 41	0.62	0.69	46.38	0.0172	9.6754	-0.2417
445	SLU 42	0.63	0.67	46.39	0.0172	9.6772	-0.2374
445	SLU 43	0.66	0.48	45.43	0.0142	9.5781	-0.169
445	SLU 44	0.67	0.46	45.44	0.0143	9.581	-0.1618
445	SLU 45	0.67	0.48	46.27	0.0145	9.7424	-0.1719
445	SLU 46	0.68	0.47	46.28	0.0145	9.7441	-0.1675
445	SLU 47	0.67	0.46	45.98	0.0143	9.6857	-0.1615
445	SLU 48	0.68	0.48	46.81	0.0146	9.8471	-0.1716
445	SLU 49	0.69	0.47	46.82	0.0146	9.8488	-0.1673
445	SLU 50	0.67	0.47	46.51	0.0144	9.7875	-0.1685
445	SLU 51	0.68	0.46	46.52	0.0144	9.7892	-0.1641
445	SLU 52	0.69	0.58	49.5	0.0165	10.404	-0.2058
445	SLU 53	0.7	0.61	50.33	0.0167	10.5654	-0.2159
445	SLU 54	0.7	0.6	50.34	0.0167	10.5671	-0.2116
445	SLU 55	0.7	0.58	50.04	0.0166	10.5087	-0.2056
445	SLU 56	0.71	0.61	50.87	0.0168	10.67	-0.2156
445	SLU 57	0.71	0.6	50.88	0.0168	10.6718	-0.2113
445	SLU 58	0.7	0.6	50.57	0.0166	10.6105	-0.2125
445	SLU 59	0.71	0.59	50.57	0.0167	10.6122	-0.2082
445	SLU 60	0.7	0.66	51.22	0.0174	10.7538	-0.2319
445	SLU 61	0.7	0.64	51.23	0.0174	10.7556	-0.2275
445	SLU 62	0.7	0.65	51.76	0.0175	10.8585	-0.2316
445	SLU 63	0.71	0.64	51.77	0.0175	10.8602	-0.2273
445	SLU 64	0.71	0.59	49.46	0.0165	10.391	-0.2078
445	SLU 65	0.72	0.57	49.47	0.0166	10.3939	-0.2006
445	SLU 66	0.73	0.6	50.31	0.0168	10.5553	-0.2107
445	SLU 67	0.73	0.58	50.31	0.0168	10.557	-0.2064
445	SLU 68	0.73	0.57	50.01	0.0167	10.4986	-0.2004
445	SLU 69	0.74	0.59	50.85	0.0169	10.6599	-0.2105
445	SLU 70	0.74	0.58	50.85	0.0169	10.6617	-0.2062
445	SLU 71	0.73	0.59	50.54	0.0167	10.6003	-0.2073
445	SLU 72	0.74	0.57	50.55	0.0167	10.6021	-0.203
445	SLU 73	0.75	0.69	53.53	0.0188	11.2169	-0.2447
445	SLU 74	0.76	0.72	54.36	0.019	11.3782	-0.2548
445	SLU 75	0.76	0.71	54.37	0.0191	11.38	-0.2504
445	SLU 76	0.76	0.69	54.07	0.0189	11.3216	-0.2444
445	SLU 77	0.76	0.72	54.9	0.0191	11.4829	-0.2545
445	SLU 78	0.77	0.71	54.91	0.0192	11.4847	-0.2502
445	SLU 79	0.76	0.71	54.6	0.019	11.4233	-0.2514
445	SLU 80	0.76	0.7	54.61	0.019	11.4251	-0.247
445	SLU 81	0.75	0.77	55.26	0.0197	11.5667	-0.2707
445	SLU 82	0.76	0.75	55.26	0.0198	11.5684	-0.2664
445	SLU 83	0.76	0.77	55.8	0.0198	11.6714	-0.2705
445	SLU 84	0.77	0.75	55.81	0.0198	11.6731	-0.2662
445	SLE RA 1	0.54	0.43	37.16	0.0122	7.8144	-0.1513
445	SLE RA 2	0.54	0.41	37.17	0.0122	7.8164	-0.1465
445	SLE RA 3	0.55	0.43	37.72	0.0124	7.9239	-0.1532
445	SLE RA 4	0.55	0.42	37.73	0.0124	7.9251	-0.1504
445	SLE RA 5	0.55	0.41	37.53	0.0123	7.8861	-0.1464
445	SLE RA 6	0.55	0.43	38.08	0.0125	7.9937	-0.1531
445	SLE RA 7	0.56	0.42	38.09	0.0125	7.9949	-0.1502
445	SLE RA 8	0.55	0.43	37.88	0.0123	7.954	-0.151
445	SLE RA 9	0.55	0.42	37.89	0.0124	7.9551	-0.1481
445	SLE RA 10	0.56	0.5	39.87	0.0137	8.365	-0.1759
445	SLE RA 11	0.56	0.52	40.43	0.0139	8.4726	-0.1826
445	SLE RA 12	0.57	0.51	40.43	0.0139	8.4737	-0.1797
445	SLE RA 13	0.57	0.5	40.23	0.0138	8.4348	-0.1757
445	SLE RA 14	0.57	0.52	40.79	0.0139	8.5424	-0.1824
445	SLE RA 15	0.57	0.51	40.79	0.014	8.5435	-0.1796
445	SLE RA 16	0.57	0.51	40.59	0.0138	8.5026	-0.1803
445	SLE RA 17	0.57	0.5	40.59	0.0138	8.5038	-0.1775
445	SLE RA 18	0.56	0.55	41.02	0.0143	8.5982	-0.1933
445	SLE RA 19	0.57	0.54	41.03	0.0144	8.5994	-0.1904
445	SLE RA 20	0.57	0.55	41.39	0.0144	8.668	-0.1931
445	SLE RA 21	0.57	0.54	41.39	0.0144	8.6692	-0.1902
445	SLE FR 1	0.54	0.43	37.16	0.0122	7.8144	-0.1513
445	SLE FR 2	0.54	0.42	37.16	0.0122	7.8148	-0.1504
445	SLE FR 3	0.54	0.43	37.31	0.0122	7.8423	-0.1512
445	SLE FR 4	0.55	0.46	38.32	0.0129	8.0499	-0.1629



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
445	SLE FR 5	0.55	0.46	38.46	0.0129	8.0775	-0.1638
445	SLE FR 6	0.55	0.49	39.09	0.0133	8.2063	-0.1723
445	SLE QP 1	0.54	0.43	37.16	0.0122	7.8144	-0.1513
445	SLE QP 2	0.54	0.46	38.32	0.0129	8.0495	-0.1639
445	SLD 1	3.73	1.18	28.38	0.0106	6.1748	-0.4166
445	SLD 2	3.92	1.8	28.67	0.0086	6.2137	-0.6318
445	SLD 3	3.54	-0.24	27.65	0.0143	6.0604	0.0828
445	SLD 4	3.73	0.37	27.93	0.0123	6.0993	-0.1324
445	SLD 5	1.75	2.73	36.41	0.0068	7.6537	-0.9587
445	SLD 6	1.88	3.14	36.6	0.0055	7.6793	-1.1001
445	SLD 7	1.12	-2.02	33.95	0.0193	7.2723	0.7059
445	SLD 8	1.25	-1.62	34.14	0.018	7.2979	0.5646
445	SLD 9	-0.16	2.54	42.51	0.0077	8.8012	-0.8924
445	SLD 10	-0.04	2.95	42.69	0.0064	8.8268	-1.0337
445	SLD 11	-0.79	-2.21	40.04	0.0202	8.4198	0.7723
445	SLD 12	-0.67	-1.81	40.23	0.0189	8.4454	0.6309
445	SLD 13	-2.64	0.55	48.71	0.0134	9.9998	-0.1954
445	SLD 14	-2.45	1.17	49	0.0114	10.0387	-0.4105
445	SLD 15	-2.83	-0.87	47.97	0.0171	9.8854	0.304
445	SLD 16	-2.64	-0.26	48.26	0.0152	9.9243	0.0888
445	SLV 1	8	2.1	15.05	0.0076	3.661	-0.7372
445	SLV 2	8.44	3.53	15.73	0.003	3.7515	-1.2382
445	SLV 3	7.56	-1.13	13.34	0.0161	3.3939	0.3938
445	SLV 4	8	0.3	14.01	0.0115	3.4844	-0.1072
445	SLV 5	3.37	5.6	33.82	-0.0008	7.1224	-1.9646
445	SLV 6	3.65	6.53	34.26	-0.0038	7.1808	-2.2882
445	SLV 7	1.91	-5.16	28.11	0.0275	6.2321	1.8054
445	SLV 8	2.19	-4.23	28.55	0.0245	6.2906	1.4818
445	SLV 9	-1.1	5.16	48.09	0.0012	9.8085	-1.8096
445	SLV 10	-0.82	6.09	48.53	-0.0018	9.867	-2.1332
445	SLV 11	-2.57	-5.61	42.39	0.0295	8.9183	1.9604
445	SLV 12	-2.29	-4.68	42.82	0.0265	8.9767	1.6368
445	SLV 13	-6.91	0.62	62.63	0.0142	12.6147	-0.2206
445	SLV 14	-6.47	2.06	63.3	0.0096	12.7052	-0.7216
445	SLV 15	-7.35	-2.61	60.92	0.0227	12.3476	0.9104
445	SLV 16	-6.91	-1.17	61.59	0.0181	12.4381	0.4094
445	CRTFP Ux+	0	0	0	0	0	0
445	CRTFP Ux-	0	0	0	0	0	0
445	CRTFP Uy+	0	0	0	0	0	0
445	CRTFP Uy-	0	0	0	0	0	0
447	SLU 1	-0.47	0.09	32.95	0.0024	-3.8195	0.0203
447	SLU 2	-0.46	0	32.93	0.0027	-3.8194	-0.0016
447	SLU 3	-0.49	0.1	33.73	0.0025	-3.8998	0.0221
447	SLU 4	-0.48	0.04	33.71	0.0026	-3.8997	0.009
447	SLU 5	-0.47	0	33.43	0.0027	-3.8702	-0.0004
447	SLU 6	-0.49	0.1	34.23	0.0024	-3.9506	0.0233
447	SLU 7	-0.49	0.05	34.21	0.0026	-3.9505	0.0102
447	SLU 8	-0.49	0.1	33.95	0.0023	-3.9212	0.0227
447	SLU 9	-0.48	0.04	33.93	0.0025	-3.9211	0.0095
447	SLU 10	-0.49	0.08	36.69	0.004	-4.2359	0.0174
447	SLU 11	-0.51	0.17	37.49	0.0038	-4.3163	0.0411
447	SLU 12	-0.5	0.12	37.48	0.0039	-4.3162	0.028
447	SLU 13	-0.49	0.08	37.19	0.004	-4.2867	0.0186
447	SLU 14	-0.52	0.18	37.99	0.0037	-4.3671	0.0423
447	SLU 15	-0.51	0.12	37.98	0.0039	-4.367	0.0292
447	SLU 16	-0.51	0.17	37.71	0.0036	-4.3377	0.0417
447	SLU 17	-0.51	0.12	37.7	0.0038	-4.3376	0.0286
447	SLU 18	-0.51	0.2	38.33	0.0043	-4.4146	0.0475
447	SLU 19	-0.5	0.15	38.31	0.0044	-4.4145	0.0344
447	SLU 20	-0.51	0.2	38.83	0.0042	-4.4654	0.0487
447	SLU 21	-0.51	0.15	38.81	0.0044	-4.4653	0.0356
447	SLU 22	-0.52	0.15	36.72	0.0037	-4.2305	0.0362
447	SLU 23	-0.52	0.07	36.7	0.004	-4.2303	0.0144
447	SLU 24	-0.54	0.16	37.5	0.0038	-4.3107	0.0381
447	SLU 25	-0.53	0.11	37.49	0.004	-4.3106	0.0249
447	SLU 26	-0.52	0.07	37.2	0.004	-4.2812	0.0156
447	SLU 27	-0.55	0.17	38	0.0038	-4.3616	0.0393
447	SLU 28	-0.54	0.11	37.99	0.004	-4.3615	0.0261
447	SLU 29	-0.54	0.16	37.72	0.0037	-4.3322	0.0386
447	SLU 30	-0.54	0.11	37.71	0.0038	-4.3321	0.0255
447	SLU 31	-0.54	0.14	40.47	0.0053	-4.6469	0.0334
447	SLU 32	-0.56	0.24	41.27	0.0051	-4.7272	0.0571
447	SLU 33	-0.56	0.18	41.25	0.0053	-4.7271	0.044
447	SLU 34	-0.55	0.15	40.97	0.0053	-4.6977	0.0346
447	SLU 35	-0.57	0.24	41.77	0.0051	-4.7781	0.0583
447	SLU 36	-0.56	0.19	41.75	0.0053	-4.778	0.0452
447	SLU 37	-0.56	0.24	41.49	0.005	-4.7487	0.0577
447	SLU 38	-0.56	0.19	41.47	0.0051	-4.7486	0.0446
447	SLU 39	-0.56	0.26	42.1	0.0056	-4.8255	0.0635
447	SLU 40	-0.55	0.21	42.09	0.0058	-4.8254	0.0503
447	SLU 41	-0.57	0.27	42.6	0.0056	-4.8764	0.0647
447	SLU 42	-0.56	0.22	42.59	0.0057	-4.8763	0.0515
447	SLU 43	-0.6	0.09	41.54	0.0027	-4.8245	0.0209
447	SLU 44	-0.59	0	41.52	0.0029	-4.8243	-0.001
447	SLU 45	-0.61	0.1	42.32	0.0027	-4.9047	0.0227
447	SLU 46	-0.6	0.05	42.31	0.0029	-4.9046	0.0096
447	SLU 47	-0.6	0.01	42.02	0.0029	-4.8751	0.0002
447	SLU 48	-0.62	0.1	42.82	0.0027	-4.9555	0.0239
447	SLU 49	-0.61	0.05	42.81	0.0029	-4.9554	0.0108
447	SLU 50	-0.61	0.1	42.54	0.0026	-4.9261	0.0233



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
447	SLU 51	-0.61	0.05	42.53	0.0028	-4.926	0.0101
447	SLU 52	-0.61	0.08	45.28	0.0042	-5.2408	0.018
447	SLU 53	-0.63	0.18	46.08	0.004	-5.3212	0.0417
447	SLU 54	-0.63	0.12	46.07	0.0042	-5.3211	0.0286
447	SLU 55	-0.62	0.09	45.78	0.0042	-5.2917	0.0192
447	SLU 56	-0.64	0.18	46.58	0.004	-5.3721	0.0429
447	SLU 57	-0.64	0.13	46.57	0.0042	-5.372	0.0298
447	SLU 58	-0.64	0.18	46.3	0.0039	-5.3427	0.0423
447	SLU 59	-0.63	0.13	46.29	0.0041	-5.3426	0.0292
447	SLU 60	-0.63	0.2	46.92	0.0045	-5.4195	0.0481
447	SLU 61	-0.62	0.15	46.9	0.0047	-5.4194	0.035
447	SLU 62	-0.64	0.21	47.42	0.0045	-5.4703	0.0493
447	SLU 63	-0.63	0.15	47.4	0.0047	-5.4702	0.0362
447	SLU 64	-0.65	0.16	45.31	0.004	-5.2355	0.0368
447	SLU 65	-0.64	0.07	45.29	0.0043	-5.2353	0.015
447	SLU 66	-0.66	0.16	46.09	0.0041	-5.3157	0.0387
447	SLU 67	-0.66	0.11	46.08	0.0042	-5.3156	0.0255
447	SLU 68	-0.65	0.07	45.79	0.0043	-5.2861	0.0162
447	SLU 69	-0.67	0.17	46.59	0.004	-5.3665	0.0399
447	SLU 70	-0.66	0.12	46.58	0.0042	-5.3664	0.0267
447	SLU 71	-0.66	0.17	46.31	0.0039	-5.3371	0.0392
447	SLU 72	-0.66	0.11	46.3	0.0041	-5.337	0.0261
447	SLU 73	-0.66	0.15	49.06	0.0056	-5.6518	0.034
447	SLU 74	-0.69	0.24	49.86	0.0054	-5.7322	0.0577
447	SLU 75	-0.68	0.19	49.84	0.0055	-5.7321	0.0446
447	SLU 76	-0.67	0.15	49.56	0.0056	-5.7026	0.0352
447	SLU 77	-0.69	0.25	50.36	0.0053	-5.783	0.0589
447	SLU 78	-0.69	0.19	50.34	0.0055	-5.7829	0.0458
447	SLU 79	-0.69	0.24	50.08	0.0052	-5.7536	0.0583
447	SLU 80	-0.68	0.19	50.06	0.0054	-5.7535	0.0452
447	SLU 81	-0.68	0.27	50.69	0.0058	-5.8305	0.0641
447	SLU 82	-0.68	0.21	50.68	0.006	-5.8304	0.0509
447	SLU 83	-0.69	0.27	51.19	0.0058	-5.8813	0.0653
447	SLU 84	-0.68	0.22	51.18	0.006	-5.8812	0.0521
447	SLE RA 1	-0.49	0.11	34.03	0.0028	-3.937	0.0248
447	SLE RA 2	-0.48	0.05	34.01	0.003	-3.9368	0.0102
447	SLE RA 3	-0.5	0.11	34.55	0.0028	-3.9904	0.026
447	SLE RA 4	-0.49	0.08	34.54	0.0029	-3.9904	0.0173
447	SLE RA 5	-0.49	0.05	34.35	0.003	-3.9707	0.011
447	SLE RA 6	-0.5	0.11	34.88	0.0028	-4.0243	0.0268
447	SLE RA 7	-0.5	0.08	34.87	0.0029	-4.0243	0.0181
447	SLE RA 8	-0.5	0.11	34.69	0.0027	-4.0047	0.0264
447	SLE RA 9	-0.49	0.08	34.68	0.0029	-4.0047	0.0177
447	SLE RA 10	-0.5	0.1	36.52	0.0038	-4.2145	0.0229
447	SLE RA 11	-0.51	0.16	37.06	0.0037	-4.2681	0.0387
447	SLE RA 12	-0.51	0.13	37.05	0.0038	-4.268	0.03
447	SLE RA 13	-0.5	0.1	36.86	0.0038	-4.2484	0.0237
447	SLE RA 14	-0.52	0.17	37.39	0.0037	-4.302	0.0395
447	SLE RA 15	-0.51	0.13	37.38	0.0038	-4.3019	0.0308
447	SLE RA 16	-0.51	0.16	37.2	0.0036	-4.2824	0.0391
447	SLE RA 17	-0.51	0.13	37.19	0.0037	-4.2823	0.0304
447	SLE RA 18	-0.51	0.18	37.61	0.004	-4.3336	0.043
447	SLE RA 19	-0.51	0.14	37.6	0.0041	-4.3336	0.0342
447	SLE RA 20	-0.51	0.18	37.95	0.004	-4.3675	0.0438
447	SLE RA 21	-0.51	0.15	37.94	0.0041	-4.3675	0.035
447	SLE FR 1	-0.49	0.11	34.03	0.0028	-3.937	0.0248
447	SLE FR 2	-0.49	0.09	34.02	0.0028	-3.9369	0.0219
447	SLE FR 3	-0.49	0.11	34.16	0.0028	-3.9505	0.0251
447	SLE FR 4	-0.49	0.12	35.1	0.0032	-4.0559	0.0274
447	SLE FR 5	-0.5	0.13	35.23	0.0031	-4.0695	0.0306
447	SLE FR 6	-0.5	0.14	35.82	0.0034	-4.1353	0.0339
447	SLE QP 1	-0.49	0.11	34.03	0.0028	-3.937	0.0248
447	SLE QP 2	-0.49	0.13	35.1	0.0031	-4.056	0.0303
447	SLD 1	2.01	0.7	45.06	0.0009	-5.0933	0.1738
447	SLD 2	2.16	0.16	44.85	0.0031	-5.0867	0.0407
447	SLD 3	2.18	-0.64	44.42	0.0053	-5.0325	-0.1612
447	SLD 4	2.32	-1.18	44.22	0.0075	-5.026	-0.2943
447	SLD 5	-0.01	2.42	39.09	-0.0046	-4.4605	0.6051
447	SLD 6	0.08	2.07	38.96	-0.0032	-4.4562	0.5176
447	SLD 7	0.53	-2.04	36.97	0.0101	-4.2579	-0.5114
447	SLD 8	0.62	-2.39	36.83	0.0116	-4.2536	-0.5989
447	SLD 9	-1.61	2.65	33.37	-0.0053	-3.8583	0.6594
447	SLD 10	-1.52	2.29	33.24	-0.0038	-3.854	0.5719
447	SLD 11	-1.07	-1.82	31.25	0.0095	-3.6557	-0.4571
447	SLD 12	-0.97	-2.17	31.11	0.0109	-3.6514	-0.5446
447	SLD 13	-3.31	1.44	25.99	-0.0012	-3.086	0.3548
447	SLD 14	-3.16	0.9	25.78	0.001	-3.0794	0.2217
447	SLD 15	-3.15	0.1	25.35	0.0032	-3.0252	0.0199
447	SLD 16	-3	-0.44	25.14	0.0054	-3.0186	-0.1132
447	SLV 1	5.37	1.4	58.41	-0.0019	-6.4845	0.3523
447	SLV 2	5.71	0.15	57.93	0.0031	-6.4692	0.0422
447	SLV 3	5.75	-1.63	56.93	0.0081	-6.3422	-0.4058
447	SLV 4	6.09	-2.88	56.45	0.0132	-6.327	-0.7159
447	SLV 5	0.64	5.32	44.41	-0.0145	-5.0029	1.3303
447	SLV 6	0.85	4.51	44.1	-0.0112	-4.9931	1.13
447	SLV 7	1.89	-4.78	39.5	0.019	-4.5287	-1.1967
447	SLV 8	2.11	-5.58	39.18	0.0223	-4.5188	-1.397
447	SLV 9	-3.1	5.84	31.02	-0.016	-3.5931	1.4575
447	SLV 10	-2.88	5.03	30.71	-0.0127	-3.5832	1.2573
447	SLV 11	-1.84	-4.26	26.1	0.0175	-3.1188	-1.0695



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
447	SLV 12	-1.62	-5.07	25.79	0.0208	-3.109	-1.2697
447	SLV 13	-7.08	3.13	13.75	-0.0069	-1.7849	0.7764
447	SLV 14	-6.74	1.88	13.27	-0.0018	-1.7697	0.4664
447	SLV 15	-6.7	0.1	12.28	0.0032	-1.6427	0.0183
447	SLV 16	-6.36	-1.15	11.8	0.0082	-1.6274	-0.2917
447	CRTFP Ux+	0	0	0	0	0	0
447	CRTFP Ux-	0	0	0	0	0	0
447	CRTFP Uy+	0	0	0	0	0	0
447	CRTFP Uy-	0	0	0	0	0	0
451	SLU 1	0.05	-0.01	31.61	-0.3801	9.8032	0.0058
451	SLU 2	0.05	-0.04	31.61	-0.38	9.8036	0.017
451	SLU 3	0.05	0	32.33	-0.3888	10.0267	0.0015
451	SLU 4	0.05	-0.02	32.33	-0.3888	10.027	0.0082
451	SLU 5	0.06	-0.04	32.07	-0.3856	9.9467	0.0166
451	SLU 6	0.05	0	32.8	-0.3945	10.1698	0.0011
451	SLU 7	0.06	-0.02	32.8	-0.3944	10.17	0.0079
451	SLU 8	0.05	-0.01	32.53	-0.3914	10.0893	0.005
451	SLU 9	0.06	-0.03	32.54	-0.3913	10.0896	0.0118
451	SLU 10	0.07	0	35.74	-0.429	11.092	0.0016
451	SLU 11	0.06	0.05	36.47	-0.4378	11.3152	-0.0139
451	SLU 12	0.07	0.03	36.47	-0.4378	11.3154	-0.0072
451	SLU 13	0.07	0	36.21	-0.4347	11.2351	0.0012
451	SLU 14	0.07	0.05	36.93	-0.4435	11.4582	-0.0143
451	SLU 15	0.07	0.03	36.94	-0.4434	11.4585	-0.0075
451	SLU 16	0.07	0.04	36.67	-0.4404	11.3777	-0.0104
451	SLU 17	0.07	0.02	36.67	-0.4403	11.378	-0.0036
451	SLU 18	0.07	0.05	37.51	-0.4501	11.6438	-0.0163
451	SLU 19	0.07	0.03	37.51	-0.4501	11.6441	-0.0095
451	SLU 20	0.07	0.05	37.98	-0.4557	11.7869	-0.0166
451	SLU 21	0.07	0.03	37.98	-0.4557	11.7871	-0.0099
451	SLU 22	0.06	0.07	35.14	-0.4219	10.8869	-0.022
451	SLU 23	0.06	0.04	35.14	-0.4218	10.8873	-0.0108
451	SLU 24	0.06	0.08	35.87	-0.4306	11.1104	-0.0263
451	SLU 25	0.06	0.06	35.87	-0.4306	11.1107	-0.0195
451	SLU 26	0.07	0.04	35.6	-0.4275	11.0304	-0.0112
451	SLU 27	0.06	0.08	36.33	-0.4363	11.2535	-0.0266
451	SLU 28	0.07	0.06	36.33	-0.4363	11.2537	-0.0199
451	SLU 29	0.06	0.07	36.07	-0.4332	11.173	-0.0227
451	SLU 30	0.07	0.05	36.07	-0.4331	11.1733	-0.016
451	SLU 31	0.08	0.08	39.27	-0.4708	12.1757	-0.0262
451	SLU 32	0.07	0.13	40	-0.4797	12.3988	-0.0417
451	SLU 33	0.08	0.11	40	-0.4796	12.3991	-0.035
451	SLU 34	0.08	0.08	39.74	-0.4765	12.3188	-0.0266
451	SLU 35	0.08	0.13	40.47	-0.4853	12.5419	-0.0421
451	SLU 36	0.08	0.11	40.47	-0.4853	12.5422	-0.0353
451	SLU 37	0.08	0.12	40.2	-0.4822	12.4614	-0.0381
451	SLU 38	0.08	0.1	40.2	-0.4822	12.4617	-0.0314
451	SLU 39	0.08	0.13	41.05	-0.4919	12.7275	-0.044
451	SLU 40	0.08	0.11	41.05	-0.4919	12.7277	-0.0373
451	SLU 41	0.08	0.13	41.51	-0.4976	12.8705	-0.0444
451	SLU 42	0.08	0.11	41.51	-0.4975	12.8708	-0.0377
451	SLU 43	0.06	-0.04	39.88	-0.4797	12.3726	0.017
451	SLU 44	0.06	-0.07	39.88	-0.4797	12.373	0.0282
451	SLU 45	0.06	-0.03	40.6	-0.4885	12.5961	0.0127
451	SLU 46	0.06	-0.05	40.61	-0.4885	12.5964	0.0195
451	SLU 47	0.07	-0.07	40.34	-0.4853	12.5161	0.0279
451	SLU 48	0.06	-0.03	41.07	-0.4941	12.7392	0.0124
451	SLU 49	0.07	-0.05	41.07	-0.4941	12.7395	0.0191
451	SLU 50	0.06	-0.04	40.8	-0.491	12.6587	0.0163
451	SLU 51	0.07	-0.06	40.81	-0.491	12.659	0.023
451	SLU 52	0.08	-0.03	44.01	-0.5287	13.6614	0.0128
451	SLU 53	0.07	0.01	44.74	-0.5375	13.8846	-0.0027
451	SLU 54	0.08	0	44.74	-0.5375	13.8848	0.0041
451	SLU 55	0.08	-0.03	44.48	-0.5343	13.8045	0.0125
451	SLU 56	0.08	0.02	45.21	-0.5432	14.0276	-0.003
451	SLU 57	0.08	0	45.21	-0.5431	14.0279	0.0037
451	SLU 58	0.08	0	44.94	-0.5401	13.9471	0.0009
451	SLU 59	0.08	-0.01	44.94	-0.54	13.9474	0.0076
451	SLU 60	0.08	0.02	45.78	-0.5498	14.2132	-0.005
451	SLU 61	0.08	0	45.78	-0.5497	14.2135	0.0017
451	SLU 62	0.08	0.02	46.25	-0.5554	14.3563	-0.0054
451	SLU 63	0.09	0	46.25	-0.5554	14.3565	0.0014
451	SLU 64	0.07	0.04	43.41	-0.5216	13.4563	-0.0108
451	SLU 65	0.07	0.01	43.41	-0.5215	13.4567	0.0005
451	SLU 66	0.07	0.05	44.14	-0.5303	13.6798	-0.015
451	SLU 67	0.07	0.03	44.14	-0.5303	13.6801	-0.0083
451	SLU 68	0.08	0.01	43.87	-0.5271	13.5998	0.0001
451	SLU 69	0.07	0.05	44.6	-0.536	13.8229	-0.0154
451	SLU 70	0.08	0.03	44.6	-0.5359	13.8231	-0.0087
451	SLU 71	0.07	0.04	44.34	-0.5329	13.7424	-0.0115
451	SLU 72	0.08	0.02	44.34	-0.5328	13.7427	-0.0048
451	SLU 73	0.09	0.05	47.55	-0.5705	14.7451	-0.015
451	SLU 74	0.08	0.09	48.27	-0.5793	14.9683	-0.0304
451	SLU 75	0.09	0.08	48.27	-0.5793	14.9685	-0.0237
451	SLU 76	0.09	0.05	48.01	-0.5762	14.8882	-0.0153
451	SLU 77	0.09	0.1	48.74	-0.585	15.1113	-0.0308
451	SLU 78	0.09	0.08	48.74	-0.585	15.1116	-0.0241
451	SLU 79	0.09	0.08	48.47	-0.5819	15.0308	-0.0269
451	SLU 80	0.09	0.07	48.47	-0.5818	15.0311	-0.0202
451	SLU 81	0.09	0.1	49.32	-0.5916	15.2969	-0.0328



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
451	SLU 82	0.09	0.08	49.32	-0.5916	15.2971	-0.0261
451	SLU 83	0.09	0.1	49.78	-0.5972	15.44	-0.0331
451	SLU 84	0.09	0.08	49.78	-0.5972	15.4402	-0.0264
451	SLE RA 1	0.05	0.01	32.61	-0.392	10.1128	-0.0022
451	SLE RA 2	0.05	-0.01	32.62	-0.392	10.1131	0.0053
451	SLE RA 3	0.05	0.02	33.1	-0.3978	10.2618	-0.005
451	SLE RA 4	0.05	0.01	33.1	-0.3978	10.262	-0.0005
451	SLE RA 5	0.06	-0.01	32.92	-0.3957	10.2085	0.0051
451	SLE RA 6	0.05	0.02	33.41	-0.4016	10.3572	-0.0053
451	SLE RA 7	0.06	0.01	33.41	-0.4016	10.3574	-0.0008
451	SLE RA 8	0.05	0.01	33.23	-0.3995	10.3036	-0.0027
451	SLE RA 9	0.06	0	33.23	-0.3995	10.3037	0.0018
451	SLE RA 10	0.06	0.02	35.37	-0.4246	10.972	-0.005
451	SLE RA 11	0.06	0.05	35.86	-0.4305	11.1208	-0.0153
451	SLE RA 12	0.06	0.04	35.86	-0.4305	11.121	-0.0108
451	SLE RA 13	0.07	0.02	35.68	-0.4284	11.0674	-0.0052
451	SLE RA 14	0.06	0.05	36.17	-0.4343	11.2162	-0.0155
451	SLE RA 15	0.07	0.04	36.17	-0.4343	11.2163	-0.011
451	SLE RA 16	0.06	0.04	35.99	-0.4322	11.1625	-0.0129
451	SLE RA 17	0.07	0.03	35.99	-0.4322	11.1627	-0.0084
451	SLE RA 18	0.06	0.05	36.55	-0.4387	11.3399	-0.0169
451	SLE RA 19	0.07	0.04	36.55	-0.4387	11.3401	-0.0124
451	SLE RA 20	0.07	0.05	36.86	-0.4425	11.4353	-0.0171
451	SLE RA 21	0.07	0.04	36.86	-0.4424	11.4354	-0.0126
451	SLE FR 1	0.05	0.01	32.61	-0.392	10.1128	-0.0022
451	SLE FR 2	0.05	0.01	32.61	-0.392	10.1129	-0.0007
451	SLE FR 3	0.05	0.01	32.74	-0.3935	10.151	-0.0023
451	SLE FR 4	0.05	0.02	33.8	-0.406	10.481	-0.0051
451	SLE FR 5	0.05	0.02	33.92	-0.4075	10.5191	-0.0067
451	SLE FR 6	0.06	0.03	34.58	-0.4154	10.7263	-0.0095
451	SLE QP 1	0.05	0.01	32.61	-0.392	10.1128	-0.0022
451	SLE QP 2	0.05	0.02	33.8	-0.406	10.4809	-0.0066
451	SLD 1	2.58	0.36	33.64	-0.4053	10.4078	-0.1139
451	SLD 2	2.7	0.38	33.68	-0.4059	10.4163	-0.1199
451	SLD 3	2.44	-0.63	33.52	-0.4021	10.3705	0.2299
451	SLD 4	2.56	-0.6	33.56	-0.4027	10.379	0.2239
451	SLD 5	1.01	1.61	33.92	-0.4104	10.514	-0.5591
451	SLD 6	1.09	1.63	33.95	-0.4108	10.5196	-0.5631
451	SLD 7	0.53	-1.67	33.53	-0.4	10.3897	0.5868
451	SLD 8	0.61	-1.65	33.55	-0.4004	10.3953	0.5829
451	SLD 9	-0.5	1.7	34.04	-0.4117	10.5665	-0.5961
451	SLD 10	-0.42	1.71	34.07	-0.4121	10.5722	-0.6
451	SLD 11	-0.98	-1.58	33.65	-0.4012	10.4422	0.5499
451	SLD 12	-0.9	-1.56	33.67	-0.4016	10.4478	0.546
451	SLD 13	-2.45	0.65	34.03	-0.4093	10.5828	-0.237
451	SLD 14	-2.33	0.67	34.07	-0.4099	10.5914	-0.2431
451	SLD 15	-2.6	-0.33	33.91	-0.4062	10.5455	0.1067
451	SLD 16	-2.48	-0.31	33.95	-0.4068	10.5541	0.1007
451	SLV 1	5.97	0.77	33.43	-0.4042	10.3099	-0.2451
451	SLV 2	6.25	0.82	33.52	-0.4056	10.3299	-0.2591
451	SLV 3	5.63	-1.46	33.15	-0.397	10.2228	0.5331
451	SLV 4	5.91	-1.4	33.24	-0.3984	10.2427	0.5191
451	SLV 5	2.29	3.61	34.09	-0.4161	10.5583	-1.2561
451	SLV 6	2.48	3.65	34.15	-0.417	10.5712	-1.2651
451	SLV 7	1.16	-3.8	33.17	-0.3922	10.2679	1.3381
451	SLV 8	1.34	-3.77	33.23	-0.3931	10.2808	1.3291
451	SLV 9	-1.24	3.82	34.36	-0.4189	10.6811	-1.3422
451	SLV 10	-1.06	3.85	34.42	-0.4198	10.694	-1.3513
451	SLV 11	-2.37	-3.6	33.45	-0.395	10.3906	1.2519
451	SLV 12	-2.19	-3.56	33.51	-0.396	10.4035	1.2429
451	SLV 13	-5.81	1.45	34.35	-0.4136	10.7191	-0.5323
451	SLV 14	-5.52	1.5	34.44	-0.415	10.7391	-0.5463
451	SLV 15	-6.15	-0.78	34.07	-0.4065	10.632	0.2459
451	SLV 16	-5.86	-0.72	34.16	-0.4079	10.6519	0.232
451	CRTFP Ux+	0	0	0	0	0	0
451	CRTFP Ux-	0	0	0	0	0	0
451	CRTFP Uy+	0	0	0	0	0	0
451	CRTFP Uy-	0	0	0	0	0	0
454	SLU 1	-0.65	-0.94	59.9	-0.0158	-0.2206	-0.0126
454	SLU 2	-0.63	-1.02	59.9	-0.0154	-0.222	-0.0118
454	SLU 3	-0.67	-0.94	61.3	-0.016	-0.2256	-0.0131
454	SLU 4	-0.66	-0.99	61.3	-0.0157	-0.2264	-0.0126
454	SLU 5	-0.65	-1.03	60.8	-0.0158	-0.2252	-0.012
454	SLU 6	-0.68	-0.96	62.2	-0.0164	-0.2288	-0.0133
454	SLU 7	-0.67	-1.01	62.2	-0.0161	-0.2296	-0.0128
454	SLU 8	-0.68	-0.97	61.7	-0.0166	-0.2271	-0.013
454	SLU 9	-0.67	-1.01	61.71	-0.0164	-0.2279	-0.0125
454	SLU 10	-0.65	-1.04	67.11	-0.0148	-0.2565	-0.0134
454	SLU 11	-0.69	-0.96	68.5	-0.0154	-0.26	-0.0148
454	SLU 12	-0.68	-1.01	68.5	-0.0152	-0.2609	-0.0143
454	SLU 13	-0.66	-1.05	68.01	-0.0152	-0.2597	-0.0136
454	SLU 14	-0.7	-0.98	69.4	-0.0158	-0.2633	-0.0149
454	SLU 15	-0.69	-1.03	69.4	-0.0156	-0.2641	-0.0144
454	SLU 16	-0.69	-0.98	68.91	-0.0161	-0.2615	-0.0146
454	SLU 17	-0.68	-1.03	68.91	-0.0158	-0.2624	-0.0141
454	SLU 18	-0.67	-0.96	70.19	-0.015	-0.2698	-0.0149
454	SLU 19	-0.66	-1.01	70.19	-0.0148	-0.2707	-0.0144
454	SLU 20	-0.69	-0.98	71.09	-0.0154	-0.2731	-0.0151
454	SLU 21	-0.68	-1.03	71.1	-0.0152	-0.2739	-0.0146
454	SLU 22	-0.72	-0.92	66.74	-0.0149	-0.2411	-0.0152



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
454	SLU 23	-0.7	-1	66.74	-0.0144	-0.2424	-0.0144
454	SLU 24	-0.74	-0.93	68.13	-0.0151	-0.246	-0.0157
454	SLU 25	-0.73	-0.98	68.13	-0.0148	-0.2469	-0.0152
454	SLU 26	-0.71	-1.02	67.64	-0.0148	-0.2457	-0.0146
454	SLU 27	-0.75	-0.94	69.03	-0.0155	-0.2493	-0.0159
454	SLU 28	-0.74	-0.99	69.04	-0.0152	-0.2501	-0.0154
454	SLU 29	-0.74	-0.95	68.54	-0.0157	-0.2475	-0.0156
454	SLU 30	-0.73	-1	68.54	-0.0154	-0.2483	-0.0151
454	SLU 31	-0.72	-1.02	73.95	-0.0139	-0.2769	-0.016
454	SLU 32	-0.75	-0.94	75.34	-0.0145	-0.2805	-0.0174
454	SLU 33	-0.74	-0.99	75.34	-0.0142	-0.2813	-0.0169
454	SLU 34	-0.73	-1.03	74.85	-0.0143	-0.2801	-0.0162
454	SLU 35	-0.76	-0.96	76.24	-0.0149	-0.2837	-0.0175
454	SLU 36	-0.75	-1.01	76.24	-0.0146	-0.2845	-0.017
454	SLU 37	-0.76	-0.97	75.75	-0.0151	-0.282	-0.0172
454	SLU 38	-0.75	-1.01	75.75	-0.0149	-0.2828	-0.0167
454	SLU 39	-0.74	-0.95	77.03	-0.0141	-0.2903	-0.0175
454	SLU 40	-0.73	-0.99	77.03	-0.0138	-0.2911	-0.017
454	SLU 41	-0.75	-0.96	77.93	-0.0145	-0.2935	-0.0177
454	SLU 42	-0.74	-1.01	77.93	-0.0142	-0.2943	-0.0172
454	SLU 43	-0.82	-1.22	75.53	-0.0209	-0.2798	-0.0155
454	SLU 44	-0.81	-1.31	75.53	-0.0204	-0.2812	-0.0147
454	SLU 45	-0.84	-1.23	76.92	-0.0211	-0.2848	-0.016
454	SLU 46	-0.83	-1.28	76.92	-0.0208	-0.2856	-0.0155
454	SLU 47	-0.82	-1.32	76.43	-0.0208	-0.2844	-0.0149
454	SLU 48	-0.86	-1.25	77.82	-0.0215	-0.288	-0.0162
454	SLU 49	-0.85	-1.29	77.82	-0.0212	-0.2888	-0.0157
454	SLU 50	-0.85	-1.25	77.33	-0.0217	-0.2862	-0.0159
454	SLU 51	-0.84	-1.3	77.33	-0.0214	-0.2871	-0.0154
454	SLU 52	-0.82	-1.32	82.73	-0.0199	-0.3156	-0.0163
454	SLU 53	-0.86	-1.25	84.13	-0.0205	-0.3192	-0.0177
454	SLU 54	-0.85	-1.3	84.13	-0.0202	-0.3201	-0.0172
454	SLU 55	-0.83	-1.34	83.64	-0.0203	-0.3189	-0.0165
454	SLU 56	-0.87	-1.26	85.03	-0.0209	-0.3225	-0.0178
454	SLU 57	-0.86	-1.31	85.03	-0.0206	-0.3233	-0.0173
454	SLU 58	-0.86	-1.27	84.54	-0.0211	-0.3207	-0.0175
454	SLU 59	-0.85	-1.32	84.54	-0.0209	-0.3215	-0.017
454	SLU 60	-0.85	-1.25	85.82	-0.0201	-0.329	-0.0178
454	SLU 61	-0.84	-1.3	85.82	-0.0198	-0.3299	-0.0173
454	SLU 62	-0.86	-1.26	86.72	-0.0205	-0.3322	-0.018
454	SLU 63	-0.85	-1.31	86.72	-0.0202	-0.3331	-0.0175
454	SLU 64	-0.89	-1.21	82.36	-0.02	-0.3002	-0.0181
454	SLU 65	-0.87	-1.29	82.37	-0.0195	-0.3016	-0.0173
454	SLU 66	-0.91	-1.21	83.76	-0.0201	-0.3052	-0.0186
454	SLU 67	-0.9	-1.26	83.76	-0.0199	-0.306	-0.0181
454	SLU 68	-0.89	-1.3	83.27	-0.0199	-0.3048	-0.0175
454	SLU 69	-0.92	-1.23	84.66	-0.0205	-0.3084	-0.0188
454	SLU 70	-0.91	-1.28	84.66	-0.0203	-0.3093	-0.0183
454	SLU 71	-0.91	-1.23	84.17	-0.0208	-0.3067	-0.0185
454	SLU 72	-0.9	-1.28	84.17	-0.0205	-0.3075	-0.018
454	SLU 73	-0.89	-1.31	89.57	-0.0189	-0.3361	-0.0189
454	SLU 74	-0.92	-1.23	90.96	-0.0196	-0.3397	-0.0203
454	SLU 75	-0.91	-1.28	90.96	-0.0193	-0.3405	-0.0198
454	SLU 76	-0.9	-1.32	90.47	-0.0193	-0.3393	-0.0191
454	SLU 77	-0.94	-1.25	91.87	-0.02	-0.3429	-0.0204
454	SLU 78	-0.93	-1.29	91.87	-0.0197	-0.3437	-0.0199
454	SLU 79	-0.93	-1.25	91.37	-0.0202	-0.3411	-0.0201
454	SLU 80	-0.92	-1.3	91.37	-0.0199	-0.342	-0.0196
454	SLU 81	-0.91	-1.23	92.66	-0.0192	-0.3495	-0.0204
454	SLU 82	-0.9	-1.28	92.66	-0.0189	-0.3503	-0.0199
454	SLU 83	-0.92	-1.25	93.56	-0.0196	-0.3527	-0.0206
454	SLU 84	-0.91	-1.3	93.56	-0.0193	-0.3535	-0.0201
454	SLE RA 1	-0.67	-0.93	61.85	-0.0156	-0.2265	-0.0134
454	SLE RA 2	-0.66	-0.99	61.86	-0.0153	-0.2274	-0.0128
454	SLE RA 3	-0.68	-0.94	62.78	-0.0157	-0.2298	-0.0137
454	SLE RA 4	-0.68	-0.97	62.78	-0.0155	-0.2303	-0.0134
454	SLE RA 5	-0.67	-1	62.46	-0.0155	-0.2295	-0.0129
454	SLE RA 6	-0.69	-0.95	63.39	-0.0159	-0.2319	-0.0138
454	SLE RA 7	-0.68	-0.98	63.39	-0.0158	-0.2325	-0.0135
454	SLE RA 8	-0.69	-0.95	63.06	-0.0161	-0.2308	-0.0136
454	SLE RA 9	-0.68	-0.98	63.06	-0.0159	-0.2313	-0.0133
454	SLE RA 10	-0.67	-1	66.66	-0.0149	-0.2504	-0.0139
454	SLE RA 11	-0.69	-0.95	67.59	-0.0153	-0.2527	-0.0148
454	SLE RA 12	-0.69	-0.98	67.59	-0.0151	-0.2533	-0.0145
454	SLE RA 13	-0.68	-1.01	67.26	-0.0151	-0.2525	-0.014
454	SLE RA 14	-0.7	-0.96	68.19	-0.0156	-0.2549	-0.0149
454	SLE RA 15	-0.69	-0.99	68.19	-0.0154	-0.2554	-0.0146
454	SLE RA 16	-0.7	-0.96	67.86	-0.0157	-0.2537	-0.0147
454	SLE RA 17	-0.69	-1	67.86	-0.0155	-0.2543	-0.0144
454	SLE RA 18	-0.68	-0.95	68.72	-0.015	-0.2593	-0.0149
454	SLE RA 19	-0.68	-0.98	68.72	-0.0148	-0.2598	-0.0146
454	SLE RA 20	-0.69	-0.96	69.32	-0.0153	-0.2614	-0.015
454	SLE RA 21	-0.69	-0.99	69.32	-0.0151	-0.262	-0.0147
454	SLE FR 1	-0.67	-0.93	61.85	-0.0156	-0.2265	-0.0134
454	SLE FR 2	-0.67	-0.94	61.85	-0.0155	-0.2266	-0.0133
454	SLE FR 3	-0.67	-0.94	62.09	-0.0157	-0.2273	-0.0134
454	SLE FR 4	-0.67	-0.95	63.91	-0.0153	-0.2365	-0.0137
454	SLE FR 5	-0.68	-0.94	64.15	-0.0155	-0.2372	-0.0139
454	SLE FR 6	-0.68	-0.94	65.29	-0.0153	-0.2429	-0.0141
454	SLE QP 1	-0.67	-0.93	61.85	-0.0156	-0.2265	-0.0134



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
454	SLE QP 2	-0.67	-0.94	63.91	-0.0154	-0.2363	-0.0138
454	SLD 1	4.45	-0.57	69.1	-0.0243	-0.0255	0.0032
454	SLD 2	4.71	-0.95	68.99	-0.0221	-0.0314	0.0157
454	SLD 3	4.78	-2.32	68.81	-0.0169	-0.0626	0.0079
454	SLD 4	5.03	-2.7	68.69	-0.0146	-0.0685	0.0203
454	SLD 5	0.33	1.89	65.94	-0.0297	-0.1158	-0.018
454	SLD 6	0.49	1.64	65.86	-0.0283	-0.1197	-0.0098
454	SLD 7	1.41	-3.94	64.95	-0.005	-0.2393	-0.0025
454	SLD 8	1.58	-4.18	64.88	-0.0035	-0.2432	0.0057
454	SLD 9	-2.92	2.31	62.95	-0.0273	-0.2294	-0.0333
454	SLD 10	-2.76	2.06	62.87	-0.0258	-0.2333	-0.0252
454	SLD 11	-1.84	-3.52	61.96	-0.0026	-0.3529	-0.0179
454	SLD 12	-1.67	-3.77	61.89	-0.0011	-0.3568	-0.0097
454	SLD 13	-6.38	0.82	59.13	-0.0162	-0.4041	-0.048
454	SLD 14	-6.13	0.45	59.02	-0.0139	-0.41	-0.0355
454	SLD 15	-6.05	-0.92	58.84	-0.0088	-0.4412	-0.0433
454	SLD 16	-5.8	-1.3	58.72	-0.0065	-0.4471	-0.0309
454	SLV 1	11.32	-0.15	76.06	-0.0359	0.256	0.0263
454	SLV 2	11.91	-1.03	75.8	-0.0307	0.2422	0.0552
454	SLV 3	12.08	-4.11	75.37	-0.0191	0.1713	0.0368
454	SLV 4	12.67	-4.99	75.1	-0.0139	0.1575	0.0658
454	SLV 5	1.67	5.45	68.66	-0.0479	0.0422	-0.0228
454	SLV 6	2.05	4.88	68.48	-0.0446	0.0333	-0.0041
454	SLV 7	4.2	-7.74	66.34	0.0081	-0.2401	0.0124
454	SLV 8	4.58	-8.31	66.17	0.0114	-0.249	0.0311
454	SLV 9	-5.93	6.43	61.65	-0.0422	-0.2236	-0.0588
454	SLV 10	-5.55	5.86	61.48	-0.0389	-0.2325	-0.0401
454	SLV 11	-3.4	-6.76	59.34	0.0138	-0.5059	-0.0235
454	SLV 12	-3.02	-7.33	59.17	0.0171	-0.5148	-0.0048
454	SLV 13	-14.02	3.11	52.72	-0.0169	-0.6301	-0.0935
454	SLV 14	-13.43	2.23	52.46	-0.0117	-0.6439	-0.0645
454	SLV 15	-13.26	-0.84	52.03	-0.0001	-0.7148	-0.0829
454	SLV 16	-12.67	-1.72	51.76	0.0051	-0.7286	-0.0539
454	CRTFP Ux+	0	0	0	0	0	0
454	CRTFP Ux-	0	0	0	0	0	0
458	SLU 1	0.56	-0.51	59.95	-0.0208	0.1855	-0.0088
458	SLU 2	0.57	-0.55	59.97	-0.0207	0.1866	-0.0081
458	SLU 3	0.58	-0.52	61.33	-0.0213	0.1885	-0.0089
458	SLU 4	0.58	-0.54	61.34	-0.0212	0.1892	-0.0084
458	SLU 5	0.58	-0.57	60.86	-0.0212	0.1879	-0.0082
458	SLU 6	0.59	-0.53	62.23	-0.0218	0.1898	-0.009
458	SLU 7	0.59	-0.56	62.24	-0.0217	0.1905	-0.0086
458	SLU 8	0.58	-0.54	61.74	-0.0219	0.1881	-0.0091
458	SLU 9	0.59	-0.57	61.75	-0.0218	0.1888	-0.0087
458	SLU 10	0.6	-0.53	67.05	-0.0212	0.2124	-0.009
458	SLU 11	0.61	-0.5	68.41	-0.0218	0.2143	-0.0098
458	SLU 12	0.61	-0.52	68.42	-0.0217	0.215	-0.0094
458	SLU 13	0.61	-0.55	67.94	-0.0217	0.2137	-0.0092
458	SLU 14	0.62	-0.51	69.31	-0.0223	0.2156	-0.01
458	SLU 15	0.62	-0.54	69.32	-0.0222	0.2163	-0.0096
458	SLU 16	0.61	-0.52	68.82	-0.0224	0.2139	-0.0101
458	SLU 17	0.62	-0.55	68.83	-0.0223	0.2146	-0.0097
458	SLU 18	0.6	-0.48	70.06	-0.0215	0.2224	-0.0102
458	SLU 19	0.61	-0.51	70.07	-0.0215	0.223	-0.0098
458	SLU 20	0.61	-0.5	70.96	-0.0221	0.2237	-0.0104
458	SLU 21	0.62	-0.52	70.97	-0.022	0.2243	-0.0099
458	SLU 22	0.63	-0.45	66.74	-0.0209	0.1915	-0.0084
458	SLU 23	0.64	-0.49	66.75	-0.0207	0.1926	-0.0077
458	SLU 24	0.64	-0.46	68.12	-0.0213	0.1945	-0.0085
458	SLU 25	0.65	-0.48	68.13	-0.0212	0.1951	-0.008
458	SLU 26	0.65	-0.5	67.65	-0.0212	0.1939	-0.0078
458	SLU 27	0.65	-0.47	69.01	-0.0219	0.1958	-0.0086
458	SLU 28	0.66	-0.49	69.02	-0.0218	0.1964	-0.0082
458	SLU 29	0.65	-0.48	68.53	-0.0219	0.1941	-0.0087
458	SLU 30	0.66	-0.5	68.54	-0.0218	0.1947	-0.0083
458	SLU 31	0.67	-0.47	73.83	-0.0212	0.2184	-0.0087
458	SLU 32	0.67	-0.43	75.2	-0.0218	0.2203	-0.0095
458	SLU 33	0.68	-0.46	75.21	-0.0218	0.2209	-0.009
458	SLU 34	0.68	-0.48	74.73	-0.0217	0.2197	-0.0088
458	SLU 35	0.68	-0.45	76.09	-0.0224	0.2216	-0.0096
458	SLU 36	0.69	-0.47	76.1	-0.0223	0.2222	-0.0092
458	SLU 37	0.68	-0.46	75.61	-0.0224	0.2199	-0.0097
458	SLU 38	0.69	-0.48	75.62	-0.0223	0.2205	-0.0093
458	SLU 39	0.67	-0.42	76.85	-0.0216	0.2284	-0.0098
458	SLU 40	0.68	-0.44	76.86	-0.0215	0.229	-0.0094
458	SLU 41	0.68	-0.44	77.75	-0.0221	0.2296	-0.01
458	SLU 42	0.69	-0.46	77.76	-0.022	0.2303	-0.0096
458	SLU 43	0.7	-0.69	75.61	-0.027	0.2391	-0.0115
458	SLU 44	0.72	-0.73	75.63	-0.0269	0.2402	-0.0108
458	SLU 45	0.72	-0.7	76.99	-0.0275	0.2421	-0.0116
458	SLU 46	0.73	-0.72	77	-0.0274	0.2428	-0.0112
458	SLU 47	0.73	-0.74	76.52	-0.0274	0.2415	-0.011
458	SLU 48	0.73	-0.71	77.89	-0.028	0.2434	-0.0118
458	SLU 49	0.74	-0.73	77.9	-0.028	0.2441	-0.0113
458	SLU 50	0.72	-0.72	77.4	-0.0281	0.2417	-0.0119
458	SLU 51	0.73	-0.74	77.41	-0.028	0.2424	-0.0114
458	SLU 52	0.75	-0.71	82.71	-0.0274	0.266	-0.0118
458	SLU 53	0.75	-0.67	84.07	-0.028	0.2679	-0.0126
458	SLU 54	0.76	-0.7	84.08	-0.0279	0.2686	-0.0122
458	SLU 55	0.76	-0.72	83.6	-0.0279	0.2673	-0.012



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
458	SLU 56	0.76	-0.69	84.97	-0.0286	0.2692	-0.0128
458	SLU 57	0.77	-0.71	84.98	-0.0285	0.2699	-0.0123
458	SLU 58	0.75	-0.7	84.48	-0.0286	0.2675	-0.0129
458	SLU 59	0.76	-0.72	84.49	-0.0285	0.2682	-0.0124
458	SLU 60	0.75	-0.66	85.72	-0.0278	0.276	-0.013
458	SLU 61	0.75	-0.68	85.73	-0.0277	0.2766	-0.0125
458	SLU 62	0.75	-0.68	86.62	-0.0283	0.2773	-0.0131
458	SLU 63	0.76	-0.7	86.63	-0.0282	0.2779	-0.0127
458	SLU 64	0.77	-0.63	82.39	-0.0271	0.2451	-0.0112
458	SLU 65	0.79	-0.66	82.41	-0.0269	0.2462	-0.0104
458	SLU 66	0.79	-0.63	83.78	-0.0276	0.2481	-0.0112
458	SLU 67	0.8	-0.65	83.79	-0.0275	0.2487	-0.0108
458	SLU 68	0.8	-0.68	83.31	-0.0275	0.2475	-0.0106
458	SLU 69	0.8	-0.65	84.67	-0.0281	0.2494	-0.0114
458	SLU 70	0.81	-0.67	84.68	-0.028	0.25	-0.011
458	SLU 71	0.79	-0.66	84.19	-0.0281	0.2477	-0.0115
458	SLU 72	0.8	-0.68	84.2	-0.0281	0.2483	-0.0111
458	SLU 73	0.82	-0.64	89.49	-0.0274	0.272	-0.0114
458	SLU 74	0.82	-0.61	90.85	-0.0281	0.2739	-0.0122
458	SLU 75	0.83	-0.63	90.86	-0.028	0.2745	-0.0118
458	SLU 76	0.83	-0.66	90.39	-0.028	0.2733	-0.0116
458	SLU 77	0.83	-0.63	91.75	-0.0286	0.2752	-0.0124
458	SLU 78	0.84	-0.65	91.76	-0.0285	0.2758	-0.012
458	SLU 79	0.82	-0.64	91.27	-0.0286	0.2735	-0.0125
458	SLU 80	0.83	-0.66	91.28	-0.0286	0.2741	-0.0121
458	SLU 81	0.81	-0.6	92.51	-0.0278	0.282	-0.0126
458	SLU 82	0.82	-0.62	92.52	-0.0277	0.2826	-0.0122
458	SLU 83	0.82	-0.61	93.4	-0.0283	0.2832	-0.0128
458	SLU 84	0.83	-0.63	93.41	-0.0283	0.2839	-0.0123
458	SLE RA 1	0.58	-0.5	61.89	-0.0208	0.1872	-0.0087
458	SLE RA 2	0.59	-0.52	61.9	-0.0207	0.1879	-0.0082
458	SLE RA 3	0.59	-0.5	62.81	-0.0211	0.1892	-0.0087
458	SLE RA 4	0.6	-0.51	62.82	-0.0211	0.1897	-0.0084
458	SLE RA 5	0.59	-0.53	62.5	-0.0211	0.1888	-0.0083
458	SLE RA 6	0.6	-0.51	63.41	-0.0215	0.1901	-0.0088
458	SLE RA 7	0.6	-0.52	63.41	-0.0214	0.1905	-0.0085
458	SLE RA 8	0.59	-0.52	63.08	-0.0215	0.1889	-0.0089
458	SLE RA 9	0.6	-0.53	63.09	-0.0215	0.1894	-0.0086
458	SLE RA 10	0.61	-0.51	66.62	-0.0211	0.2052	-0.0089
458	SLE RA 11	0.61	-0.49	67.53	-0.0215	0.2064	-0.0094
458	SLE RA 12	0.62	-0.5	67.54	-0.0214	0.2069	-0.0091
458	SLE RA 13	0.61	-0.52	67.22	-0.0214	0.206	-0.009
458	SLE RA 14	0.62	-0.5	68.13	-0.0218	0.2073	-0.0095
458	SLE RA 15	0.62	-0.51	68.13	-0.0218	0.2077	-0.0092
458	SLE RA 16	0.61	-0.5	67.8	-0.0219	0.2061	-0.0096
458	SLE RA 17	0.62	-0.52	67.81	-0.0218	0.2066	-0.0093
458	SLE RA 18	0.61	-0.48	68.63	-0.0213	0.2118	-0.0096
458	SLE RA 19	0.61	-0.49	68.64	-0.0213	0.2122	-0.0093
458	SLE RA 20	0.61	-0.49	69.23	-0.0217	0.2127	-0.0097
458	SLE RA 21	0.62	-0.5	69.24	-0.0216	0.2131	-0.0094
458	SLE FR 1	0.58	-0.5	61.89	-0.0208	0.1872	-0.0087
458	SLE FR 2	0.58	-0.5	61.89	-0.0208	0.1874	-0.0086
458	SLE FR 3	0.58	-0.5	62.13	-0.021	0.1876	-0.0087
458	SLE FR 4	0.59	-0.5	63.91	-0.021	0.1947	-0.0089
458	SLE FR 5	0.59	-0.49	64.15	-0.0211	0.1949	-0.009
458	SLE FR 6	0.59	-0.49	65.26	-0.0211	0.1995	-0.0091
458	SLE QP 1	0.58	-0.5	61.89	-0.0208	0.1872	-0.0087
458	SLE QP 2	0.59	-0.49	63.91	-0.021	0.1946	-0.009
458	SLD 1	5.94	0.81	59.17	-0.0165	0.2337	0.0276
458	SLD 2	6.21	1.21	59.36	-0.0185	0.2258	0.0399
458	SLD 3	5.63	-0.95	58.86	-0.0104	0.2766	0.0245
458	SLD 4	5.9	-0.55	59.05	-0.0124	0.2687	0.0367
458	SLD 5	2.61	2.5	62.92	-0.0285	0.1427	0.0047
458	SLD 6	2.79	2.76	63.05	-0.0298	0.1375	0.0127
458	SLD 7	1.59	-3.37	61.9	-0.0082	0.2857	-0.0059
458	SLD 8	1.76	-3.11	62.02	-0.0095	0.2805	0.0021
458	SLD 9	-0.59	2.13	65.8	-0.0325	0.1087	-0.02
458	SLD 10	-0.41	2.39	65.93	-0.0337	0.1035	-0.012
458	SLD 11	-1.61	-3.74	64.78	-0.0121	0.2517	-0.0306
458	SLD 12	-1.44	-3.48	64.9	-0.0134	0.2465	-0.0226
458	SLD 13	-4.73	-0.43	68.77	-0.0296	0.1205	-0.0546
458	SLD 14	-4.46	-0.03	68.96	-0.0315	0.1125	-0.0424
458	SLD 15	-5.04	-2.19	68.46	-0.0235	0.1634	-0.0578
458	SLD 16	-4.77	-1.79	68.66	-0.0254	0.1555	-0.0456
458	SLV 1	13.11	2.48	52.81	-0.0104	0.2871	0.0767
458	SLV 2	13.74	3.41	53.26	-0.0149	0.2687	0.1052
458	SLV 3	12.39	-1.5	52.1	0.0035	0.3847	0.0693
458	SLV 4	13.02	-0.57	52.54	-0.0011	0.3663	0.0979
458	SLV 5	5.32	6.28	61.59	-0.038	0.0776	0.023
458	SLV 6	5.73	6.88	61.88	-0.0409	0.0657	0.0414
458	SLV 7	2.93	-7	59.2	0.0082	0.4028	-0.0016
458	SLV 8	3.34	-6.4	59.49	0.0052	0.3909	0.0169
458	SLV 9	-2.17	5.41	68.33	-0.0472	-0.0017	-0.0348
458	SLV 10	-1.76	6.02	68.62	-0.0501	-0.0136	-0.0164
458	SLV 11	-4.56	-7.86	65.94	-0.001	0.3235	-0.0593
458	SLV 12	-4.15	-7.26	66.23	-0.004	0.3116	-0.0409
458	SLV 13	-11.85	-0.41	75.28	-0.0409	0.0229	-0.1158
458	SLV 14	-11.22	0.52	75.73	-0.0454	0.0045	-0.0872
458	SLV 15	-12.57	-4.39	74.57	-0.027	0.1205	-0.1231
458	SLV 16	-11.94	-3.46	75.01	-0.0316	0.102	-0.0946





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
458	CRTFP Ux+	0	0	0	0	0	0
458	CRTFP Ux-	0	0	0	0	0	0
458	CRTFP Uy+	0	0	0	0	0	0
458	CRTFP Uy-	0	0	0	0	0	0
459	SLU 1	0.58	0.39	36.7	0.0318	8.1325	-0.1396
459	SLU 2	0.59	0.37	36.71	0.0319	8.1359	-0.1324
459	SLU 3	0.6	0.4	37.56	0.0326	8.3105	-0.1425
459	SLU 4	0.6	0.39	37.57	0.0326	8.3125	-0.1382
459	SLU 5	0.6	0.37	37.26	0.0323	8.2486	-0.1321
459	SLU 6	0.6	0.4	38.11	0.033	8.4232	-0.1423
459	SLU 7	0.61	0.39	38.12	0.0331	8.4252	-0.1379
459	SLU 8	0.6	0.39	37.8	0.0327	8.3579	-0.1391
459	SLU 9	0.6	0.38	37.81	0.0327	8.3599	-0.1348
459	SLU 10	0.62	0.5	40.88	0.0366	9.0368	-0.1764
459	SLU 11	0.63	0.53	41.73	0.0374	9.2114	-0.1865
459	SLU 12	0.63	0.51	41.74	0.0374	9.2134	-0.1822
459	SLU 13	0.63	0.5	41.43	0.0371	9.1495	-0.1762
459	SLU 14	0.64	0.53	42.28	0.0378	9.324	-0.1863
459	SLU 15	0.64	0.51	42.29	0.0378	9.3261	-0.1819
459	SLU 16	0.63	0.52	41.97	0.0375	9.2587	-0.1831
459	SLU 17	0.64	0.5	41.98	0.0375	9.2608	-0.1788
459	SLU 18	0.63	0.57	42.66	0.0387	9.4195	-0.2025
459	SLU 19	0.63	0.56	42.66	0.0387	9.4215	-0.1982
459	SLU 20	0.63	0.57	43.2	0.0391	9.5322	-0.2022
459	SLU 21	0.64	0.56	43.21	0.0391	9.5342	-0.1979
459	SLU 22	0.64	0.5	40.85	0.0367	9.0231	-0.1784
459	SLU 23	0.65	0.48	40.86	0.0367	9.0265	-0.1712
459	SLU 24	0.65	0.51	41.71	0.0374	9.2011	-0.1813
459	SLU 25	0.66	0.5	41.72	0.0375	9.2031	-0.177
459	SLU 26	0.66	0.48	41.41	0.0371	9.1392	-0.1709
459	SLU 27	0.66	0.51	42.26	0.0379	9.3138	-0.181
459	SLU 28	0.67	0.5	42.27	0.0379	9.3158	-0.1767
459	SLU 29	0.66	0.5	41.95	0.0375	9.2485	-0.1779
459	SLU 30	0.66	0.49	41.95	0.0375	9.2505	-0.1736
459	SLU 31	0.68	0.61	45.03	0.0415	9.9274	-0.2152
459	SLU 32	0.69	0.64	45.88	0.0422	10.102	-0.2253
459	SLU 33	0.69	0.62	45.88	0.0422	10.104	-0.221
459	SLU 34	0.69	0.61	45.58	0.0419	10.0401	-0.2149
459	SLU 35	0.7	0.64	46.43	0.0426	10.2146	-0.225
459	SLU 36	0.7	0.62	46.43	0.0427	10.2167	-0.2207
459	SLU 37	0.69	0.63	46.11	0.0423	10.1493	-0.2219
459	SLU 38	0.69	0.62	46.12	0.0423	10.1514	-0.2176
459	SLU 39	0.68	0.68	46.8	0.0435	10.3101	-0.2413
459	SLU 40	0.69	0.67	46.81	0.0435	10.3121	-0.2369
459	SLU 41	0.69	0.68	47.35	0.0439	10.4227	-0.241
459	SLU 42	0.7	0.67	47.36	0.0439	10.4248	-0.2367
459	SLU 43	0.73	0.47	46.29	0.0397	10.2669	-0.1682
459	SLU 44	0.74	0.45	46.3	0.0398	10.2703	-0.161
459	SLU 45	0.75	0.48	47.15	0.0405	10.4449	-0.1711
459	SLU 46	0.75	0.47	47.16	0.0405	10.4469	-0.1668
459	SLU 47	0.75	0.45	46.85	0.0402	10.383	-0.1607
459	SLU 48	0.76	0.48	47.7	0.0409	10.5576	-0.1708
459	SLU 49	0.76	0.47	47.71	0.041	10.5596	-0.1665
459	SLU 50	0.75	0.47	47.39	0.0406	10.4923	-0.1677
459	SLU 51	0.76	0.46	47.4	0.0406	10.4943	-0.1634
459	SLU 52	0.77	0.58	50.47	0.0445	11.1712	-0.205
459	SLU 53	0.78	0.61	51.32	0.0453	11.3458	-0.2151
459	SLU 54	0.79	0.59	51.33	0.0453	11.3478	-0.2108
459	SLU 55	0.78	0.58	51.02	0.045	11.2839	-0.2047
459	SLU 56	0.79	0.61	51.87	0.0457	11.4584	-0.2148
459	SLU 57	0.8	0.59	51.87	0.0457	11.4605	-0.2105
459	SLU 58	0.78	0.6	51.56	0.0454	11.3931	-0.2117
459	SLU 59	0.79	0.58	51.56	0.0454	11.3952	-0.2074
459	SLU 60	0.78	0.65	52.24	0.0466	11.5539	-0.2311
459	SLU 61	0.78	0.64	52.25	0.0466	11.5559	-0.2268
459	SLU 62	0.79	0.65	52.79	0.047	11.6666	-0.2308
459	SLU 63	0.79	0.64	52.8	0.047	11.6686	-0.2265
459	SLU 64	0.79	0.58	50.44	0.0446	11.1575	-0.207
459	SLU 65	0.8	0.56	50.45	0.0446	11.1609	-0.1998
459	SLU 66	0.81	0.59	51.3	0.0453	11.3355	-0.2099
459	SLU 67	0.81	0.58	51.31	0.0454	11.3375	-0.2055
459	SLU 68	0.81	0.56	51	0.045	11.2736	-0.1995
459	SLU 69	0.82	0.59	51.85	0.0458	11.4482	-0.2096
459	SLU 70	0.82	0.58	51.85	0.0458	11.4502	-0.2053
459	SLU 71	0.81	0.58	51.54	0.0454	11.3829	-0.2065
459	SLU 72	0.81	0.57	51.54	0.0454	11.3849	-0.2022
459	SLU 73	0.83	0.69	54.62	0.0494	12.0618	-0.2438
459	SLU 74	0.84	0.72	55.47	0.0501	12.2364	-0.2539
459	SLU 75	0.84	0.7	55.47	0.0501	12.2384	-0.2496
459	SLU 76	0.84	0.69	55.17	0.0498	12.1745	-0.2435
459	SLU 77	0.85	0.72	56.01	0.0505	12.349	-0.2536
459	SLU 78	0.85	0.7	56.02	0.0506	12.3511	-0.2493
459	SLU 79	0.84	0.71	55.7	0.0502	12.2837	-0.2505
459	SLU 80	0.85	0.7	55.71	0.0502	12.2858	-0.2462
459	SLU 81	0.84	0.76	56.39	0.0514	12.4445	-0.2699
459	SLU 82	0.84	0.75	56.4	0.0514	12.4465	-0.2655
459	SLU 83	0.85	0.76	56.94	0.0518	12.5572	-0.2696
459	SLU 84	0.85	0.75	56.95	0.0518	12.5592	-0.2653
459	SLE RA 1	0.6	0.42	37.89	0.0332	8.387	-0.1507
459	SLE RA 2	0.6	0.41	37.9	0.0332	8.3892	-0.1459



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
459	SLE RA 3	0.61	0.43	38.46	0.0337	8.5056	-0.1526
459	SLE RA 4	0.61	0.42	38.47	0.0338	8.507	-0.1497
459	SLE RA 5	0.61	0.41	38.26	0.0335	8.4644	-0.1457
459	SLE RA 6	0.61	0.43	38.83	0.034	8.5807	-0.1525
459	SLE RA 7	0.62	0.42	38.83	0.034	8.5821	-0.1496
459	SLE RA 8	0.61	0.42	38.62	0.0338	8.5372	-0.1504
459	SLE RA 9	0.61	0.42	38.62	0.0338	8.5386	-0.1475
459	SLE RA 10	0.62	0.49	40.67	0.0364	8.9898	-0.1752
459	SLE RA 11	0.63	0.51	41.24	0.0369	9.1062	-0.182
459	SLE RA 12	0.63	0.51	41.24	0.0369	9.1076	-0.1791
459	SLE RA 13	0.63	0.49	41.04	0.0367	9.0649	-0.1751
459	SLE RA 14	0.63	0.51	41.6	0.0372	9.1813	-0.1818
459	SLE RA 15	0.64	0.5	41.61	0.0372	9.1827	-0.1789
459	SLE RA 16	0.63	0.51	41.4	0.037	9.1378	-0.1797
459	SLE RA 17	0.63	0.5	41.4	0.037	9.1391	-0.1768
459	SLE RA 18	0.63	0.54	41.86	0.0378	9.2449	-0.1926
459	SLE RA 19	0.63	0.54	41.86	0.0378	9.2463	-0.1897
459	SLE RA 20	0.63	0.54	42.22	0.038	9.3201	-0.1925
459	SLE RA 21	0.64	0.54	42.23	0.0381	9.3214	-0.1896
459	SLE FR 1	0.6	0.42	37.89	0.0332	8.387	-0.1507
459	SLE FR 2	0.6	0.42	37.89	0.0332	8.3874	-0.1498
459	SLE FR 3	0.6	0.42	38.03	0.0333	8.417	-0.1507
459	SLE FR 4	0.61	0.46	39.08	0.0346	8.6448	-0.1623
459	SLE FR 5	0.61	0.46	39.22	0.0347	8.6744	-0.1632
459	SLE FR 6	0.61	0.48	39.87	0.0355	8.816	-0.1717
459	SLE QP 1	0.6	0.42	37.89	0.0332	8.387	-0.1507
459	SLE QP 2	0.61	0.46	39.08	0.0346	8.6444	-0.1633
459	SLD 1	3.7	1.18	29.01	0.0265	6.6444	-0.4162
459	SLD 2	3.85	1.8	29.24	0.0248	6.6681	-0.6315
459	SLD 3	3.51	-0.25	28.33	0.0297	6.5299	0.0836
459	SLD 4	3.67	0.37	28.56	0.028	6.5536	-0.1317
459	SLD 5	1.78	2.73	37.05	0.0276	8.2138	-0.9587
459	SLD 6	1.89	3.14	37.21	0.0264	8.2294	-1.1003
459	SLD 7	1.17	-2.03	34.77	0.0383	7.8322	0.7073
459	SLD 8	1.27	-1.62	34.93	0.0372	7.8477	0.5658
459	SLD 9	-0.06	2.54	43.23	0.032	9.441	-0.8923
459	SLD 10	0.04	2.95	43.38	0.0308	9.4566	-1.0339
459	SLD 11	-0.68	-2.22	40.95	0.0427	9.0594	0.7737
459	SLD 12	-0.57	-1.81	41.1	0.0416	9.0749	0.6322
459	SLD 13	-2.46	0.55	49.6	0.0411	10.7352	-0.1949
459	SLD 14	-2.3	1.17	49.83	0.0394	10.7588	-0.4102
459	SLD 15	-2.64	-0.88	48.91	0.0444	10.6206	0.3049
459	SLD 16	-2.49	-0.26	49.15	0.0426	10.6443	0.0896
459	SLV 1	7.83	2.09	15.51	0.0158	3.9631	-0.7369
459	SLV 2	8.2	3.53	16.04	0.0118	4.0182	-1.2384
459	SLV 3	7.41	-1.14	13.91	0.0231	3.6952	0.395
459	SLV 4	7.77	0.3	14.45	0.0191	3.7503	-0.1065
459	SLV 5	3.36	5.61	34.33	0.0185	7.6368	-1.9654
459	SLV 6	3.6	6.54	34.67	0.016	7.6724	-2.2893
459	SLV 7	1.93	-5.17	29.02	0.0429	6.7437	1.8076
459	SLV 8	2.16	-4.24	29.37	0.0403	6.7793	1.4837
459	SLV 9	-0.95	5.16	48.79	0.0288	10.5094	-1.8103
459	SLV 10	-0.72	6.09	49.13	0.0262	10.545	-2.1342
459	SLV 11	-2.39	-5.61	43.48	0.0532	9.6163	1.9627
459	SLV 12	-2.15	-4.68	43.83	0.0506	9.6519	1.6388
459	SLV 13	-6.56	0.62	63.7	0.05	13.5385	-0.2201
459	SLV 14	-6.2	2.06	64.24	0.046	13.5935	-0.7216
459	SLV 15	-6.98	-2.61	62.11	0.0573	13.2705	0.9118
459	SLV 16	-6.62	-1.17	62.65	0.0533	13.3256	0.4103
459	CRTFP Ux+	0	0	0	0	0	0
459	CRTFP Ux-	0	0	0	0	0	0
459	CRTFP Uy+	0	0	0	0	0	0
459	CRTFP Uy-	0	0	0	0	0	0
466	SLU 1	-0.43	0.08	33.31	0.0215	-4.1634	0.0179
466	SLU 2	-0.43	-0.01	33.3	0.0218	-4.1648	-0.004
466	SLU 3	-0.45	0.08	34.1	0.0221	-4.2523	0.0196
466	SLU 4	-0.44	0.03	34.09	0.0223	-4.2531	0.0065
466	SLU 5	-0.43	-0.01	33.8	0.0221	-4.2207	-0.0029
466	SLU 6	-0.45	0.09	34.6	0.0224	-4.3081	0.0208
466	SLU 7	-0.45	0.03	34.6	0.0225	-4.309	0.0077
466	SLU 8	-0.45	0.08	34.32	0.0221	-4.2751	0.0202
466	SLU 9	-0.44	0.03	34.31	0.0223	-4.276	0.0071
466	SLU 10	-0.44	0.06	37.14	0.0255	-4.633	0.0148
466	SLU 11	-0.46	0.16	37.94	0.0258	-4.7204	0.0384
466	SLU 12	-0.46	0.11	37.93	0.026	-4.7213	0.0253
466	SLU 13	-0.45	0.07	37.64	0.0258	-4.6889	0.0159
466	SLU 14	-0.47	0.16	38.45	0.0261	-4.7763	0.0396
466	SLU 15	-0.47	0.11	38.44	0.0263	-4.7772	0.0264
466	SLU 16	-0.47	0.16	38.16	0.0258	-4.7433	0.039
466	SLU 17	-0.46	0.11	38.15	0.026	-4.7441	0.0258
466	SLU 18	-0.46	0.18	38.8	0.0269	-4.8322	0.0447
466	SLU 19	-0.46	0.13	38.79	0.027	-4.8331	0.0316
466	SLU 20	-0.47	0.19	39.3	0.0271	-4.8881	0.0459
466	SLU 21	-0.46	0.14	39.3	0.0273	-4.8889	0.0327
466	SLU 22	-0.48	0.14	37.16	0.0253	-4.6252	0.0336
466	SLU 23	-0.47	0.05	37.15	0.0255	-4.6267	0.0117
466	SLU 24	-0.49	0.15	37.95	0.0258	-4.7141	0.0353
466	SLU 25	-0.49	0.09	37.94	0.026	-4.715	0.0222
466	SLU 26	-0.48	0.06	37.65	0.0258	-4.6825	0.0128
466	SLU 27	-0.5	0.15	38.45	0.0261	-4.7699	0.0365



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
466	SLU 28	-0.49	0.1	38.45	0.0263	-4.7708	0.0233
466	SLU 29	-0.49	0.15	38.17	0.0258	-4.7369	0.0359
466	SLU 30	-0.49	0.1	38.16	0.026	-4.7378	0.0228
466	SLU 31	-0.49	0.13	40.99	0.0293	-5.0949	0.0304
466	SLU 32	-0.51	0.22	41.79	0.0296	-5.1823	0.0541
466	SLU 33	-0.5	0.17	41.78	0.0297	-5.1831	0.041
466	SLU 34	-0.5	0.13	41.49	0.0295	-5.1507	0.0316
466	SLU 35	-0.52	0.23	42.3	0.0298	-5.2381	0.0553
466	SLU 36	-0.51	0.17	42.29	0.03	-5.239	0.0421
466	SLU 37	-0.51	0.22	42.01	0.0296	-5.2051	0.0547
466	SLU 38	-0.51	0.17	42	0.0297	-5.206	0.0415
466	SLU 39	-0.5	0.25	42.65	0.0306	-5.294	0.0604
466	SLU 40	-0.5	0.19	42.64	0.0308	-5.2949	0.0473
466	SLU 41	-0.51	0.25	43.15	0.0309	-5.3499	0.0616
466	SLU 42	-0.51	0.2	43.15	0.031	-5.3508	0.0484
466	SLU 43	-0.55	0.08	41.99	0.0267	-5.2541	0.0179
466	SLU 44	-0.54	-0.01	41.97	0.027	-5.2555	-0.004
466	SLU 45	-0.56	0.08	42.77	0.0273	-5.3429	0.0196
466	SLU 46	-0.56	0.03	42.77	0.0274	-5.3438	0.0065
466	SLU 47	-0.55	-0.01	42.48	0.0273	-5.3114	-0.0029
466	SLU 48	-0.57	0.09	43.28	0.0276	-5.3988	0.0208
466	SLU 49	-0.56	0.04	43.27	0.0277	-5.3997	0.0076
466	SLU 50	-0.57	0.09	42.99	0.0273	-5.3658	0.0202
466	SLU 51	-0.56	0.03	42.99	0.0275	-5.3666	0.0071
466	SLU 52	-0.56	0.06	45.81	0.0307	-5.7237	0.0147
466	SLU 53	-0.58	0.16	46.62	0.031	-5.8111	0.0384
466	SLU 54	-0.58	0.11	46.61	0.0312	-5.812	0.0253
466	SLU 55	-0.57	0.07	46.32	0.031	-5.7795	0.0159
466	SLU 56	-0.59	0.16	47.12	0.0313	-5.867	0.0396
466	SLU 57	-0.58	0.11	47.11	0.0314	-5.8678	0.0264
466	SLU 58	-0.58	0.16	46.83	0.031	-5.8339	0.039
466	SLU 59	-0.58	0.11	46.83	0.0312	-5.8348	0.0258
466	SLU 60	-0.58	0.18	47.47	0.032	-5.9229	0.0447
466	SLU 61	-0.57	0.13	47.47	0.0322	-5.9237	0.0316
466	SLU 62	-0.58	0.19	47.98	0.0323	-5.9787	0.0459
466	SLU 63	-0.58	0.14	47.97	0.0325	-5.9796	0.0327
466	SLU 64	-0.59	0.14	45.84	0.0305	-5.7159	0.0336
466	SLU 65	-0.59	0.05	45.82	0.0307	-5.7174	0.0117
466	SLU 66	-0.61	0.15	46.62	0.031	-5.8048	0.0353
466	SLU 67	-0.6	0.09	46.62	0.0312	-5.8056	0.0222
466	SLU 68	-0.59	0.06	46.33	0.031	-5.7732	0.0128
466	SLU 69	-0.61	0.15	47.13	0.0313	-5.8606	0.0365
466	SLU 70	-0.61	0.1	47.12	0.0315	-5.8615	0.0233
466	SLU 71	-0.61	0.15	46.84	0.031	-5.8276	0.0359
466	SLU 72	-0.6	0.1	46.84	0.0312	-5.8285	0.0227
466	SLU 73	-0.6	0.13	49.66	0.0344	-6.1855	0.0304
466	SLU 74	-0.62	0.22	50.47	0.0347	-6.2729	0.0541
466	SLU 75	-0.62	0.17	50.46	0.0349	-6.2738	0.041
466	SLU 76	-0.61	0.13	50.17	0.0347	-6.2414	0.0316
466	SLU 77	-0.63	0.23	50.97	0.035	-6.3288	0.0553
466	SLU 78	-0.63	0.17	50.96	0.0352	-6.3297	0.0421
466	SLU 79	-0.63	0.22	50.68	0.0347	-6.2958	0.0547
466	SLU 80	-0.62	0.17	50.68	0.0349	-6.2966	0.0415
466	SLU 81	-0.62	0.25	51.32	0.0358	-6.3847	0.0604
466	SLU 82	-0.61	0.2	51.32	0.0359	-6.3856	0.0473
466	SLU 83	-0.63	0.25	51.83	0.0361	-6.4406	0.0616
466	SLU 84	-0.62	0.2	51.82	0.0362	-6.4414	0.0484
466	SLE RA 1	-0.45	0.09	34.41	0.0226	-4.2953	0.0224
466	SLE RA 2	-0.44	0.03	34.4	0.0228	-4.2963	0.0078
466	SLE RA 3	-0.46	0.1	34.94	0.023	-4.3546	0.0235
466	SLE RA 4	-0.45	0.06	34.93	0.0231	-4.3552	0.0148
466	SLE RA 5	-0.45	0.04	34.74	0.023	-4.3335	0.0085
466	SLE RA 6	-0.46	0.1	35.27	0.0232	-4.3918	0.0243
466	SLE RA 7	-0.46	0.07	35.27	0.0233	-4.3924	0.0156
466	SLE RA 8	-0.46	0.1	35.08	0.023	-4.3698	0.0239
466	SLE RA 9	-0.45	0.06	35.08	0.0231	-4.3704	0.0152
466	SLE RA 10	-0.45	0.09	36.96	0.0253	-4.6084	0.0203
466	SLE RA 11	-0.47	0.15	37.5	0.0255	-4.6667	0.0361
466	SLE RA 12	-0.46	0.11	37.49	0.0256	-4.6673	0.0273
466	SLE RA 13	-0.46	0.09	37.3	0.0255	-4.6457	0.0211
466	SLE RA 14	-0.47	0.15	37.83	0.0257	-4.7039	0.0368
466	SLE RA 15	-0.47	0.12	37.83	0.0258	-4.7045	0.0281
466	SLE RA 16	-0.47	0.15	37.64	0.0255	-4.6819	0.0364
466	SLE RA 17	-0.47	0.12	37.64	0.0256	-4.6825	0.0277
466	SLE RA 18	-0.46	0.17	38.07	0.0262	-4.7412	0.0403
466	SLE RA 19	-0.46	0.13	38.06	0.0263	-4.7418	0.0315
466	SLE RA 20	-0.47	0.17	38.41	0.0263	-4.7785	0.041
466	SLE RA 21	-0.47	0.13	38.4	0.0264	-4.779	0.0323
466	SLE FR 1	-0.45	0.09	34.41	0.0226	-4.2953	0.0224
466	SLE FR 2	-0.45	0.08	34.41	0.0226	-4.2955	0.0195
466	SLE FR 3	-0.45	0.09	34.55	0.0227	-4.3102	0.0227
466	SLE FR 4	-0.45	0.1	35.51	0.0237	-4.4293	0.0248
466	SLE FR 5	-0.45	0.12	35.64	0.0237	-4.444	0.0281
466	SLE FR 6	-0.46	0.13	36.24	0.0244	-4.5183	0.0313
466	SLE QP 1	-0.45	0.09	34.41	0.0226	-4.2953	0.0224
466	SLE QP 2	-0.45	0.12	35.51	0.0237	-4.4291	0.0277
466	SLD 1	2.01	0.68	45.52	0.0272	-5.4991	0.1701
466	SLD 2	2.13	0.15	45.37	0.0292	-5.5044	0.0369
466	SLD 3	2.17	-0.66	44.93	0.0313	-5.573	-0.1648
466	SLD 4	2.29	-1.19	44.79	0.0333	-5.5783	-0.298



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
466	SLD 5	0.02	2.41	39.42	0.0182	-4.6371	0.6022
466	SLD 6	0.1	2.06	39.33	0.0195	-4.6405	0.5146
466	SLD 7	0.56	-2.05	37.47	0.0318	-4.8834	-0.5142
466	SLD 8	0.64	-2.4	37.38	0.0331	-4.8869	-0.6017
466	SLD 9	-1.54	2.63	33.64	0.0143	-3.9713	0.6572
466	SLD 10	-1.46	2.28	33.54	0.0156	-3.9748	0.5697
466	SLD 11	-1	-1.83	31.69	0.0278	-4.2177	-0.4592
466	SLD 12	-0.92	-2.18	31.59	0.0291	-4.2211	-0.5467
466	SLD 13	-3.19	1.42	26.23	0.0141	-3.2799	0.3535
466	SLD 14	-3.07	0.89	26.09	0.0161	-3.2852	0.2203
466	SLD 15	-3.03	0.08	25.65	0.0181	-3.3538	0.0186
466	SLD 16	-2.91	-0.45	25.5	0.0201	-3.3591	-0.1146
466	SLV 1	5.3	1.39	58.93	0.0321	-6.9342	0.347
466	SLV 2	5.58	0.14	58.59	0.0367	-6.9465	0.0369
466	SLV 3	5.68	-1.64	57.57	0.0413	-7.1068	-0.4109
466	SLV 4	5.95	-2.89	57.23	0.046	-7.1191	-0.7211
466	SLV 5	0.66	5.31	44.66	0.0114	-4.9167	1.3268
466	SLV 6	0.83	4.5	44.44	0.0144	-4.9246	1.1264
466	SLV 7	1.91	-4.79	40.12	0.0422	-5.4921	-1.1998
466	SLV 8	2.09	-5.6	39.9	0.0452	-5.5	-1.4001
466	SLV 9	-2.99	5.83	31.11	0.0022	-3.3582	1.4556
466	SLV 10	-2.82	5.02	30.9	0.0051	-3.3661	1.2553
466	SLV 11	-1.74	-4.27	26.58	0.033	-3.9336	-1.0709
466	SLV 12	-1.56	-5.08	26.36	0.036	-3.9415	-1.2713
466	SLV 13	-6.86	3.12	13.79	0.0014	-1.7391	0.7766
466	SLV 14	-6.59	1.87	13.45	0.006	-1.7514	0.4664
466	SLV 15	-6.48	0.09	12.43	0.0106	-1.9117	0.0186
466	SLV 16	-6.21	-1.16	12.09	0.0152	-1.924	-0.2915
466	CRTFP Ux+	0	0	0	0	0	0
466	CRTFP Ux-	0	0	0	0	0	0
466	CRTFP Uy+	0	0	0	0	0	0
466	CRTFP Uy-	0	0	0	0	0	0
469	SLU 1	0.01	-0.01	33	-1.0531	11.0903	0.0039
469	SLU 2	0.01	-0.04	33.01	-1.0532	11.092	0.0155
469	SLU 3	0.01	0.01	33.76	-1.0774	11.3486	-0.0005
469	SLU 4	0.01	-0.01	33.77	-1.0774	11.3496	0.0064
469	SLU 5	0.02	-0.04	33.49	-1.0686	11.2592	0.0151
469	SLU 6	0.01	0.01	34.25	-1.0929	11.5158	-0.0009
469	SLU 7	0.02	-0.01	34.25	-1.0929	11.5168	0.0061
469	SLU 8	0.01	0	33.97	-1.084	11.4248	0.0031
469	SLU 9	0.02	-0.02	33.97	-1.0841	11.4258	0.0101
469	SLU 10	0.03	0.01	37.35	-1.1911	12.5757	0.0003
469	SLU 11	0.02	0.05	38.11	-1.2154	12.8323	-0.0158
469	SLU 12	0.03	0.03	38.11	-1.2154	12.8333	-0.0088
469	SLU 13	0.03	0.01	37.84	-1.2066	12.7429	-0.0001
469	SLU 14	0.03	0.05	38.59	-1.2308	12.9995	-0.0162
469	SLU 15	0.03	0.03	38.6	-1.2308	13.0005	-0.0092
469	SLU 16	0.03	0.04	38.32	-1.222	12.9085	-0.0121
469	SLU 17	0.03	0.02	38.32	-1.222	12.9095	-0.0051
469	SLU 18	0.03	0.06	39.21	-1.2502	13.2099	-0.0179
469	SLU 19	0.03	0.04	39.21	-1.2502	13.2109	-0.0109
469	SLU 20	0.03	0.06	39.69	-1.2656	13.3771	-0.0183
469	SLU 21	0.03	0.04	39.7	-1.2657	13.3781	-0.0113
469	SLU 22	0.01	0.08	36.72	-1.1709	12.3404	-0.0249
469	SLU 23	0.02	0.04	36.72	-1.171	12.3421	-0.0133
469	SLU 24	0.01	0.09	37.48	-1.1952	12.5987	-0.0293
469	SLU 25	0.02	0.07	37.48	-1.1952	12.5997	-0.0223
469	SLU 26	0.02	0.04	37.21	-1.1864	12.5093	-0.0136
469	SLU 27	0.02	0.09	37.96	-1.2107	12.7659	-0.0297
469	SLU 28	0.02	0.07	37.97	-1.2107	12.767	-0.0227
469	SLU 29	0.02	0.08	37.68	-1.2018	12.6749	-0.0256
469	SLU 30	0.02	0.06	37.69	-1.2019	12.6759	-0.0187
469	SLU 31	0.03	0.09	41.07	-1.3089	13.8258	-0.0285
469	SLU 32	0.03	0.13	41.83	-1.3332	14.0824	-0.0445
469	SLU 33	0.03	0.11	41.83	-1.3332	14.0834	-0.0376
469	SLU 34	0.03	0.09	41.55	-1.3244	13.993	-0.0289
469	SLU 35	0.03	0.13	42.31	-1.3486	14.2496	-0.0449
469	SLU 36	0.03	0.12	42.31	-1.3486	14.2506	-0.0379
469	SLU 37	0.03	0.12	42.03	-1.3398	14.1586	-0.0409
469	SLU 38	0.03	0.1	42.03	-1.3398	14.1596	-0.0339
469	SLU 39	0.03	0.14	42.93	-1.368	14.46	-0.0466
469	SLU 40	0.04	0.12	42.93	-1.368	14.461	-0.0397
469	SLU 41	0.04	0.14	43.41	-1.3834	14.6272	-0.047
469	SLU 42	0.04	0.12	43.41	-1.3835	14.6282	-0.04
469	SLU 43	0.01	-0.04	41.63	-1.3287	13.9888	0.0149
469	SLU 44	0.02	-0.07	41.63	-1.3287	13.9905	0.0265
469	SLU 45	0.01	-0.02	42.39	-1.353	14.2471	0.0105
469	SLU 46	0.02	-0.04	42.39	-1.353	14.2481	0.0175
469	SLU 47	0.02	-0.07	42.12	-1.3442	14.1577	0.0262
469	SLU 48	0.01	-0.02	42.88	-1.3684	14.4143	0.0101
469	SLU 49	0.02	-0.04	42.88	-1.3684	14.4153	0.0171
469	SLU 50	0.01	-0.04	42.6	-1.3596	14.3233	0.0142
469	SLU 51	0.02	-0.05	42.6	-1.3596	14.3243	0.0211
469	SLU 52	0.03	-0.03	45.98	-1.4667	15.4742	0.0113
469	SLU 53	0.03	0.02	46.74	-1.4909	15.7308	-0.0048
469	SLU 54	0.03	0	46.74	-1.4909	15.7318	0.0022
469	SLU 55	0.03	-0.02	46.46	-1.4821	15.6414	0.0109
469	SLU 56	0.03	0.02	47.22	-1.5064	15.898	-0.0051
469	SLU 57	0.03	0	47.22	-1.5064	15.899	0.0018
469	SLU 58	0.03	0.01	46.94	-1.4975	15.807	-0.0011



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
469	SLU 59	0.03	-0.01	46.95	-1.4976	15.808	0.0059
469	SLU 60	0.03	0.03	47.84	-1.5257	16.1084	-0.0069
469	SLU 61	0.03	0.01	47.84	-1.5258	16.1094	0.0001
469	SLU 62	0.03	0.03	48.32	-1.5412	16.2756	-0.0072
469	SLU 63	0.04	0.01	48.32	-1.5412	16.2766	-0.0003
469	SLU 64	0.01	0.05	45.35	-1.4465	15.2389	-0.0138
469	SLU 65	0.02	0.01	45.35	-1.4465	15.2406	-0.0022
469	SLU 66	0.02	0.06	46.11	-1.4708	15.4972	-0.0183
469	SLU 67	0.02	0.04	46.11	-1.4708	15.4982	-0.0113
469	SLU 68	0.02	0.01	45.83	-1.462	15.4078	-0.0026
469	SLU 69	0.02	0.06	46.59	-1.4862	15.6644	-0.0187
469	SLU 70	0.02	0.04	46.59	-1.4862	15.6654	-0.0117
469	SLU 71	0.02	0.05	46.31	-1.4774	15.5734	-0.0146
469	SLU 72	0.02	0.03	46.31	-1.4774	15.5744	-0.0076
469	SLU 73	0.03	0.06	49.69	-1.5845	16.7243	-0.0175
469	SLU 74	0.03	0.1	50.45	-1.6087	16.9809	-0.0335
469	SLU 75	0.03	0.08	50.45	-1.6087	16.9819	-0.0265
469	SLU 76	0.04	0.06	50.18	-1.5999	16.8915	-0.0178
469	SLU 77	0.03	0.1	50.94	-1.6242	17.1481	-0.0339
469	SLU 78	0.04	0.08	50.94	-1.6242	17.1491	-0.0269
469	SLU 79	0.03	0.09	50.66	-1.6153	17.0571	-0.0298
469	SLU 80	0.04	0.07	50.66	-1.6154	17.0581	-0.0229
469	SLU 81	0.03	0.11	51.55	-1.6435	17.3585	-0.0356
469	SLU 82	0.04	0.09	51.56	-1.6436	17.3595	-0.0286
469	SLU 83	0.04	0.11	52.04	-1.659	17.5257	-0.036
469	SLU 84	0.04	0.09	52.04	-1.659	17.5267	-0.029
469	SLE RA 1	0.01	0.02	34.06	-1.0868	11.4475	-0.0043
469	SLE RA 2	0.01	-0.01	34.07	-1.0868	11.4486	0.0034
469	SLE RA 3	0.01	0.03	34.57	-1.103	11.6197	-0.0073
469	SLE RA 4	0.01	0.01	34.57	-1.103	11.6203	-0.0026
469	SLE RA 5	0.02	0	34.39	-1.0971	11.5601	0.0032
469	SLE RA 6	0.01	0.03	34.89	-1.1133	11.7312	-0.0075
469	SLE RA 7	0.01	0.01	34.9	-1.1133	11.7318	-0.0029
469	SLE RA 8	0.01	0.02	34.71	-1.1074	11.6705	-0.0048
469	SLE RA 9	0.02	0.01	34.71	-1.1074	11.6711	-0.0002
469	SLE RA 10	0.02	0.02	36.96	-1.1788	12.4377	-0.0067
469	SLE RA 11	0.02	0.06	37.47	-1.1949	12.6088	-0.0174
469	SLE RA 12	0.02	0.04	37.47	-1.195	12.6095	-0.0128
469	SLE RA 13	0.02	0.03	37.29	-1.1891	12.5492	-0.007
469	SLE RA 14	0.02	0.06	37.79	-1.2052	12.7203	-0.0177
469	SLE RA 15	0.02	0.04	37.79	-1.2053	12.721	-0.013
469	SLE RA 16	0.02	0.05	37.61	-1.1994	12.6596	-0.015
469	SLE RA 17	0.02	0.04	37.61	-1.1994	12.6603	-0.0103
469	SLE RA 18	0.02	0.06	38.2	-1.2182	12.8605	-0.0188
469	SLE RA 19	0.03	0.05	38.2	-1.2182	12.8612	-0.0142
469	SLE RA 20	0.02	0.06	38.53	-1.2285	12.972	-0.0191
469	SLE RA 21	0.03	0.05	38.53	-1.2285	12.9727	-0.0144
469	SLE FR 1	0.01	0.02	34.06	-1.0868	11.4475	-0.0043
469	SLE FR 2	0.01	0.01	34.06	-1.0868	11.4477	-0.0028
469	SLE FR 3	0.01	0.02	34.19	-1.0909	11.4921	-0.0044
469	SLE FR 4	0.01	0.02	35.31	-1.1262	11.8716	-0.0071
469	SLE FR 5	0.01	0.03	35.43	-1.1303	11.916	-0.0088
469	SLE FR 6	0.02	0.04	36.13	-1.1525	12.154	-0.0116
469	SLE QP 1	0.01	0.02	34.06	-1.0868	11.4475	-0.0043
469	SLE QP 2	0.01	0.03	35.31	-1.1262	11.8714	-0.0087
469	SLD 1	2.56	0.37	35.09	-1.1207	11.7695	-0.0857
469	SLD 2	2.66	0.4	35.12	-1.122	11.7786	-0.0905
469	SLD 3	2.42	-0.64	35	-1.1169	11.7291	0.2686
469	SLD 4	2.52	-0.62	35.03	-1.1182	11.7382	0.2638
469	SLD 5	0.98	1.66	35.37	-1.1302	11.9005	-0.5683
469	SLD 6	1.05	1.68	35.39	-1.131	11.9064	-0.5715
469	SLD 7	0.5	-1.71	35.07	-1.1174	11.7659	0.6128
469	SLD 8	0.56	1.59	35.09	-1.1182	11.7718	0.6096
469	SLD 9	-0.53	1.75	35.52	-1.1342	11.971	-0.627
469	SLD 10	-0.47	1.77	35.54	-1.135	11.9769	-0.6301
469	SLD 11	-1.02	-1.62	35.22	-1.1214	11.8364	0.5541
469	SLD 12	-0.95	-1.6	35.24	-1.1222	11.8423	0.551
469	SLD 13	-2.49	0.67	35.58	-1.1342	12.0046	-0.2812
469	SLD 14	-2.39	0.7	35.62	-1.1355	12.0137	-0.286
469	SLD 15	-2.64	-0.34	35.49	-1.1303	11.9642	0.0731
469	SLD 16	-2.54	-0.31	35.53	-1.1316	11.9733	0.0683
469	SLV 1	5.98	0.8	34.79	-1.1135	11.6329	-0.1758
469	SLV 2	6.21	0.85	34.87	-1.1165	11.654	-0.187
469	SLV 3	5.64	-1.5	34.58	-1.1045	11.5391	0.6263
469	SLV 4	5.87	-1.44	34.66	-1.1075	11.5602	0.6152
469	SLV 5	2.28	3.72	35.46	-1.1354	11.9384	-1.2735
469	SLV 6	2.43	3.76	35.51	-1.1373	11.9521	-1.2807
469	SLV 7	1.14	-3.91	34.75	-1.1056	11.6258	1.4003
469	SLV 8	1.3	-3.88	34.8	-1.1076	11.6394	1.3931
469	SLV 9	-1.27	3.94	35.81	-1.1448	12.1034	-1.4105
469	SLV 10	-1.12	3.97	35.86	-1.1468	12.117	-1.4177
469	SLV 11	-2.4	-3.7	35.1	-1.115	11.7907	1.2633
469	SLV 12	-2.25	-3.67	35.15	-1.117	11.8043	1.2561
469	SLV 13	-5.85	1.5	35.95	-1.1448	12.1826	-0.6325
469	SLV 14	-5.61	1.55	36.03	-1.1478	12.2037	-0.6437
469	SLV 15	-6.19	-0.79	35.74	-1.1359	12.0888	0.1696
469	SLV 16	-5.95	-0.74	35.82	-1.1389	12.1099	0.1584
469	CRTFP Ux+	0	0	0	0	0	0
469	CRTFP Ux-	0	0	0	0	0	0
469	CRTFP Uy+	0	0	0	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
469	CRTP Uy-	0	0	0	0	0	0
473	SLU 1	-0.01	0	19.67	0.2454	6.6496	0.0011
473	SLU 2	-0.01	-0.02	19.68	0.2454	6.6507	0.0078
473	SLU 3	-0.01	0.01	20.13	0.251	6.8027	-0.0016
473	SLU 4	-0.01	-0.01	20.13	0.2511	6.8034	0.0024
473	SLU 5	-0.01	-0.02	19.97	0.249	6.7487	0.0075
473	SLU 6	-0.01	0.01	20.42	0.2546	6.9006	-0.0019
473	SLU 7	-0.01	-0.01	20.42	0.2547	6.9014	0.0021
473	SLU 8	-0.01	0	20.25	0.2525	6.8454	0.0005
473	SLU 9	-0.01	-0.01	20.25	0.2526	6.8461	0.0045
473	SLU 10	0	0	22.28	0.278	7.5411	-0.0014
473	SLU 11	0	0.03	22.73	0.2836	7.6931	-0.0108
473	SLU 12	0	0.02	22.73	0.2837	7.6938	-0.0068
473	SLU 13	0	0.01	22.57	0.2816	7.639	-0.0017
473	SLU 14	0	0.03	23.02	0.2872	7.791	-0.0112
473	SLU 15	0	0.02	23.02	0.2873	7.7917	-0.0071
473	SLU 16	0	0.03	22.85	0.2851	7.7358	-0.0088
473	SLU 17	0	0.01	22.85	0.2852	7.7365	-0.0047
473	SLU 18	0	0.03	23.39	0.2919	7.9215	-0.0121
473	SLU 19	0	0.02	23.39	0.292	7.9222	-0.0081
473	SLU 20	0	0.04	23.68	0.2955	8.0194	-0.0124
473	SLU 21	0	0.02	23.68	0.2955	8.0202	-0.0084
473	SLU 22	-0.01	0.05	21.9	0.2733	7.3988	-0.0161
473	SLU 23	-0.01	0.03	21.91	0.2734	7.4	-0.0094
473	SLU 24	-0.01	0.05	22.36	0.279	7.552	-0.0188
473	SLU 25	-0.01	0.04	22.36	0.279	7.5527	-0.0148
473	SLU 26	-0.01	0.03	22.19	0.2769	7.4979	-0.0097
473	SLU 27	-0.01	0.06	22.64	0.2826	7.6499	-0.0191
473	SLU 28	-0.01	0.04	22.65	0.2826	7.6506	-0.0151
473	SLU 29	-0.01	0.05	22.48	0.2805	7.5947	-0.0167
473	SLU 30	-0.01	0.04	22.48	0.2805	7.5954	-0.0127
473	SLU 31	0	0.05	24.51	0.3059	8.2904	-0.0187
473	SLU 32	0	0.08	24.96	0.3116	8.4423	-0.0281
473	SLU 33	0	0.07	24.96	0.3116	8.4431	-0.0241
473	SLU 34	0	0.05	24.8	0.3095	8.3883	-0.019
473	SLU 35	0	0.08	25.25	0.3151	8.5403	-0.0284
473	SLU 36	0	0.07	25.25	0.3152	8.541	-0.0244
473	SLU 37	0	0.07	25.08	0.313	8.4851	-0.026
473	SLU 38	0	0.06	25.08	0.3131	8.4858	-0.022
473	SLU 39	0	0.08	25.62	0.3198	8.6708	-0.0293
473	SLU 40	0	0.07	25.62	0.3199	8.6715	-0.0253
473	SLU 41	0	0.09	25.91	0.3234	8.7687	-0.0297
473	SLU 42	0	0.07	25.91	0.3235	8.7694	-0.0256
473	SLU 43	-0.01	-0.02	24.81	0.3094	8.3875	0.0074
473	SLU 44	-0.01	-0.04	24.82	0.3095	8.3887	0.0141
473	SLU 45	-0.01	-0.01	25.27	0.3151	8.5407	0.0047
473	SLU 46	-0.01	-0.02	25.27	0.3151	8.5414	0.0087
473	SLU 47	-0.01	-0.04	25.11	0.3131	8.4867	0.0138
473	SLU 48	-0.01	-0.01	25.56	0.3187	8.6386	0.0043
473	SLU 49	-0.01	-0.02	25.56	0.3187	8.6393	0.0084
473	SLU 50	-0.01	-0.02	25.39	0.3166	8.5834	0.0067
473	SLU 51	-0.01	-0.03	25.39	0.3166	8.5841	0.0108
473	SLU 52	0	-0.01	27.42	0.3421	9.2791	0.0048
473	SLU 53	0	0.01	27.87	0.3477	9.431	-0.0046
473	SLU 54	0	0	27.87	0.3477	9.4318	-0.0006
473	SLU 55	0	-0.01	27.71	0.3456	9.377	0.0045
473	SLU 56	0	0.01	28.16	0.3512	9.529	-0.0049
473	SLU 57	0	0	28.16	0.3513	9.5297	-0.0009
473	SLU 58	0	0.01	27.99	0.3492	9.4738	-0.0025
473	SLU 59	0	0	27.99	0.3492	9.4745	0.0015
473	SLU 60	0	0.02	28.53	0.356	9.6595	-0.0059
473	SLU 61	0	0.01	28.53	0.356	9.6602	-0.0018
473	SLU 62	0	0.02	28.82	0.3595	9.7574	-0.0062
473	SLU 63	0	0.01	28.82	0.3596	9.7581	-0.0021
473	SLU 64	-0.01	0.03	27.04	0.3373	9.1368	-0.0099
473	SLU 65	-0.01	0.01	27.04	0.3374	9.138	-0.0032
473	SLU 66	-0.01	0.04	27.49	0.343	9.2899	-0.0126
473	SLU 67	-0.01	0.03	27.5	0.3431	9.2907	-0.0086
473	SLU 68	-0.01	0.01	27.33	0.341	9.2359	-0.0035
473	SLU 69	-0.01	0.04	27.78	0.3466	9.3879	-0.0129
473	SLU 70	-0.01	0.03	27.78	0.3466	9.3886	-0.0089
473	SLU 71	-0.01	0.03	27.62	0.3445	9.3327	-0.0105
473	SLU 72	-0.01	0.02	27.62	0.3445	9.3334	-0.0065
473	SLU 73	0	0.04	29.65	0.37	10.0284	-0.0124
473	SLU 74	0	0.06	30.1	0.3756	10.1803	-0.0218
473	SLU 75	0	0.05	30.1	0.3756	10.181	-0.0178
473	SLU 76	0	0.04	29.93	0.3736	10.1263	-0.0127
473	SLU 77	0	0.06	30.38	0.3792	10.2782	-0.0221
473	SLU 78	0	0.05	30.39	0.3792	10.279	-0.0181
473	SLU 79	0	0.06	30.22	0.3771	10.223	-0.0198
473	SLU 80	0	0.05	30.22	0.3771	10.2237	-0.0157
473	SLU 81	0	0.07	30.76	0.3839	10.4087	-0.0231
473	SLU 82	0	0.06	30.76	0.3839	10.4095	-0.0191
473	SLU 83	0	0.07	31.05	0.3875	10.5067	-0.0234
473	SLU 84	0	0.06	31.05	0.3875	10.5074	-0.0194
473	SLE RA 1	-0.01	0.01	20.31	0.2534	6.8636	-0.0038
473	SLE RA 2	-0.01	0	20.31	0.2534	6.8644	0.0007
473	SLE RA 3	-0.01	0.02	20.61	0.2571	6.9657	-0.0056
473	SLE RA 4	-0.01	0.01	20.62	0.2572	6.9662	-0.0029
473	SLE RA 5	-0.01	0	20.51	0.2558	6.9297	0.0005



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
473	SLE RA 6	-0.01	0.02	20.81	0.2595	7.031	-0.0058
473	SLE RA 7	-0.01	0.01	20.81	0.2595	7.0315	-0.0031
473	SLE RA 8	-0.01	0.01	20.69	0.2581	6.9942	-0.0042
473	SLE RA 9	-0.01	0	20.7	0.2582	6.9947	-0.0015
473	SLE RA 10	0	0.02	22.05	0.2751	7.458	-0.0055
473	SLE RA 11	0	0.03	22.35	0.2789	7.5593	-0.0118
473	SLE RA 12	0	0.03	22.35	0.2789	7.5598	-0.0091
473	SLE RA 13	0	0.02	22.24	0.2775	7.5233	-0.0057
473	SLE RA 14	0	0.03	22.54	0.2812	7.6246	-0.012
473	SLE RA 15	0	0.03	22.54	0.2813	7.6251	-0.0093
473	SLE RA 16	0	0.03	22.43	0.2798	7.5878	-0.0104
473	SLE RA 17	0	0.02	22.43	0.2799	7.5883	-0.0077
473	SLE RA 18	0	0.04	22.79	0.2844	7.7116	-0.0126
473	SLE RA 19	0	0.03	22.79	0.2844	7.7121	-0.0099
473	SLE RA 20	0	0.04	22.98	0.2868	7.7769	-0.0128
473	SLE RA 21	0	0.03	22.98	0.2868	7.7774	-0.0101
473	SLE FR 1	-0.01	0.01	20.31	0.2534	6.8636	-0.0038
473	SLE FR 2	-0.01	0.01	20.31	0.2534	6.8638	-0.0029
473	SLE FR 3	-0.01	0.01	20.39	0.2543	6.8897	-0.0039
473	SLE FR 4	-0.01	0.02	21.05	0.2627	7.1182	-0.0056
473	SLE FR 5	-0.01	0.02	21.13	0.2636	7.1441	-0.0065
473	SLE FR 6	-0.01	0.02	21.55	0.2689	7.2876	-0.0082
473	SLE QP 1	-0.01	0.01	20.31	0.2534	6.8636	-0.0038
473	SLE QP 2	-0.01	0.02	21.05	0.2627	7.118	-0.0065
473	SLD 1	1.49	0.22	20.91	0.2596	7.01	-0.1451
473	SLD 2	1.53	0.24	20.93	0.2598	7.0139	-0.1508
473	SLD 3	1.4	-0.38	20.84	0.2608	6.9856	0.0645
473	SLD 4	1.45	-0.36	20.86	0.261	6.9895	0.0587
473	SLD 5	0.56	0.99	21.11	0.2599	7.122	-0.3648
473	SLD 6	0.59	1	21.12	0.26	7.1245	-0.3686
473	SLD 7	0.28	-1.01	20.89	0.2639	7.0406	0.3337
473	SLD 8	0.31	-1	20.9	0.264	7.0431	0.3299
473	SLD 9	-0.32	1.04	21.21	0.2613	7.1929	-0.3428
473	SLD 10	-0.29	1.05	21.22	0.2614	7.1955	-0.3466
473	SLD 11	-0.61	-0.96	20.99	0.2653	7.1115	0.3557
473	SLD 12	-0.58	-0.95	21	0.2654	7.1141	0.3519
473	SLD 13	-1.46	0.4	21.25	0.2643	7.2465	-0.0716
473	SLD 14	-1.41	0.42	21.27	0.2645	7.2504	-0.0774
473	SLD 15	-1.55	-0.2	21.18	0.2655	7.2221	0.1379
473	SLD 16	-1.5	-0.18	21.2	0.2657	7.226	0.1321
473	SLV 1	3.48	0.47	20.71	0.2556	6.8651	-0.3225
473	SLV 2	3.6	0.51	20.75	0.256	6.8742	-0.3359
473	SLV 3	3.29	-0.88	20.56	0.2583	6.8086	0.1519
473	SLV 4	3.4	-0.85	20.6	0.2587	6.8177	0.1384
473	SLV 5	1.32	2.2	21.18	0.2563	7.1264	-0.8183
473	SLV 6	1.4	2.23	21.2	0.2566	7.1322	-0.827
473	SLV 7	0.66	-2.31	20.67	0.2654	6.9378	0.7628
473	SLV 8	0.73	-2.29	20.69	0.2657	6.9437	0.7541
473	SLV 9	-0.75	2.33	21.41	0.2596	7.2923	-0.767
473	SLV 10	-0.67	2.35	21.44	0.2599	7.2982	-0.7757
473	SLV 11	-1.41	-2.19	20.91	0.2688	7.1038	0.8141
473	SLV 12	-1.34	-2.17	20.93	0.269	7.1097	0.8054
473	SLV 13	-3.42	0.89	21.51	0.2666	7.4184	-0.1513
473	SLV 14	-3.3	0.92	21.55	0.267	7.4275	-0.1648
473	SLV 15	-3.61	-0.47	21.36	0.2694	7.3618	0.323
473	SLV 16	-3.5	-0.43	21.39	0.2697	7.3709	0.3096
473	CRTFP Ux+	0	0	0	0	0	0
473	CRTFP Ux-	0	0	0	0	0	0
473	CRTFP Uy+	0	0	0	0	0	0
473	CRTFP Uy-	0	0	0	0	0	0
475	SLU 1	-0.6	-0.9	59.51	-0.0094	-0.1936	-0.0079
475	SLU 2	-0.59	-0.98	59.52	-0.009	-0.195	-0.0071
475	SLU 3	-0.61	-0.9	60.9	-0.0094	-0.1981	-0.0083
475	SLU 4	-0.61	-0.95	60.91	-0.0092	-0.1989	-0.0078
475	SLU 5	-0.6	-0.99	60.42	-0.0093	-0.1978	-0.0073
475	SLU 6	-0.63	-0.92	61.79	-0.0097	-0.2009	-0.0084
475	SLU 7	-0.62	-0.97	61.8	-0.0095	-0.2018	-0.008
475	SLU 8	-0.62	-0.92	61.29	-0.01	-0.1992	-0.0082
475	SLU 9	-0.61	-0.97	61.3	-0.0098	-0.2001	-0.0077
475	SLU 10	-0.59	-0.99	66.76	-0.0073	-0.2262	-0.0082
475	SLU 11	-0.62	-0.92	68.14	-0.0077	-0.2293	-0.0094
475	SLU 12	-0.61	-0.97	68.15	-0.0075	-0.2302	-0.0089
475	SLU 13	-0.6	-1.01	67.66	-0.0076	-0.229	-0.0084
475	SLU 14	-0.63	-0.93	69.03	-0.0081	-0.2321	-0.0095
475	SLU 15	-0.63	-0.98	69.04	-0.0078	-0.233	-0.0091
475	SLU 16	-0.63	-0.94	68.53	-0.0083	-0.2304	-0.0093
475	SLU 17	-0.62	-0.99	68.54	-0.0081	-0.2313	-0.0088
475	SLU 18	-0.61	-0.92	69.85	-0.007	-0.2382	-0.0095
475	SLU 19	-0.6	-0.97	69.86	-0.0068	-0.239	-0.009
475	SLU 20	-0.62	-0.93	70.74	-0.0073	-0.241	-0.0096
475	SLU 21	-0.61	-0.98	70.75	-0.0071	-0.2419	-0.0092
475	SLU 22	-0.65	-0.88	66.39	-0.0075	-0.2113	-0.0099
475	SLU 23	-0.64	-0.96	66.41	-0.007	-0.2127	-0.0091
475	SLU 24	-0.67	-0.88	67.78	-0.0075	-0.2158	-0.0102
475	SLU 25	-0.66	-0.93	67.79	-0.0072	-0.2166	-0.0098
475	SLU 26	-0.65	-0.97	67.3	-0.0074	-0.2155	-0.0092
475	SLU 27	-0.68	-0.9	68.67	-0.0078	-0.2186	-0.0104
475	SLU 28	-0.67	-0.94	68.68	-0.0075	-0.2194	-0.0099
475	SLU 29	-0.68	-0.9	68.17	-0.0081	-0.2169	-0.0101
475	SLU 30	-0.67	-0.95	68.18	-0.0078	-0.2177	-0.0096



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
475	SLU 31	-0.65	-0.97	73.65	-0.0054	-0.2439	-0.0102
475	SLU 32	-0.68	-0.9	75.02	-0.0058	-0.247	-0.0113
475	SLU 33	-0.67	-0.94	75.03	-0.0056	-0.2478	-0.0108
475	SLU 34	-0.66	-0.99	74.54	-0.0057	-0.2467	-0.0103
475	SLU 35	-0.69	-0.91	75.91	-0.0061	-0.2498	-0.0115
475	SLU 36	-0.68	-0.96	75.92	-0.0059	-0.2507	-0.011
475	SLU 37	-0.68	-0.92	75.41	-0.0064	-0.2481	-0.0112
475	SLU 38	-0.68	-0.97	75.42	-0.0062	-0.249	-0.0107
475	SLU 39	-0.66	-0.9	76.73	-0.0051	-0.2559	-0.0114
475	SLU 40	-0.66	-0.94	76.74	-0.0048	-0.2567	-0.0109
475	SLU 41	-0.68	-0.91	77.62	-0.0054	-0.2587	-0.0116
475	SLU 42	-0.67	-0.96	77.63	-0.0051	-0.2595	-0.0111
475	SLU 43	-0.76	-1.17	75	-0.0129	-0.2456	-0.0097
475	SLU 44	-0.75	-1.26	75.02	-0.0125	-0.247	-0.0089
475	SLU 45	-0.77	-1.18	76.39	-0.0129	-0.2501	-0.01
475	SLU 46	-0.77	-1.23	76.4	-0.0126	-0.251	-0.0096
475	SLU 47	-0.76	-1.27	75.91	-0.0128	-0.2498	-0.009
475	SLU 48	-0.79	-1.19	77.28	-0.0132	-0.2529	-0.0102
475	SLU 49	-0.78	-1.24	77.29	-0.013	-0.2538	-0.0097
475	SLU 50	-0.78	-1.2	76.78	-0.0135	-0.2512	-0.0099
475	SLU 51	-0.77	-1.25	76.79	-0.0132	-0.2521	-0.0094
475	SLU 52	-0.75	-1.27	82.26	-0.0108	-0.2782	-0.01
475	SLU 53	-0.78	-1.19	83.63	-0.0112	-0.2813	-0.0111
475	SLU 54	-0.78	-1.24	83.64	-0.011	-0.2822	-0.0107
475	SLU 55	-0.77	-1.28	83.15	-0.0111	-0.281	-0.0101
475	SLU 56	-0.79	-1.21	84.52	-0.0115	-0.2842	-0.0113
475	SLU 57	-0.79	-1.26	84.53	-0.0113	-0.285	-0.0108
475	SLU 58	-0.79	-1.22	84.02	-0.0118	-0.2825	-0.011
475	SLU 59	-0.78	-1.26	84.03	-0.0116	-0.2833	-0.0105
475	SLU 60	-0.77	-1.19	85.34	-0.0105	-0.2902	-0.0112
475	SLU 61	-0.76	-1.24	85.35	-0.0102	-0.2911	-0.0108
475	SLU 62	-0.78	-1.21	86.23	-0.0108	-0.293	-0.0114
475	SLU 63	-0.77	-1.26	86.24	-0.0105	-0.2939	-0.0109
475	SLU 64	-0.81	-1.15	81.88	-0.011	-0.2633	-0.0116
475	SLU 65	-0.8	-1.23	81.9	-0.0105	-0.2647	-0.0108
475	SLU 66	-0.83	-1.16	83.28	-0.011	-0.2678	-0.012
475	SLU 67	-0.82	-1.21	83.29	-0.0107	-0.2686	-0.0115
475	SLU 68	-0.81	-1.25	82.79	-0.0108	-0.2675	-0.0109
475	SLU 69	-0.84	-1.17	84.17	-0.0113	-0.2706	-0.0121
475	SLU 70	-0.83	-1.22	84.18	-0.011	-0.2714	-0.0116
475	SLU 71	-0.84	-1.18	83.67	-0.0116	-0.2689	-0.0118
475	SLU 72	-0.83	-1.23	83.68	-0.0113	-0.2697	-0.0113
475	SLU 73	-0.81	-1.25	89.14	-0.0089	-0.2959	-0.0119
475	SLU 74	-0.84	-1.17	90.52	-0.0093	-0.299	-0.0131
475	SLU 75	-0.83	-1.22	90.53	-0.009	-0.2999	-0.0126
475	SLU 76	-0.82	-1.26	90.03	-0.0092	-0.2987	-0.012
475	SLU 77	-0.85	-1.19	91.41	-0.0096	-0.3018	-0.0132
475	SLU 78	-0.84	-1.24	91.42	-0.0094	-0.3027	-0.0127
475	SLU 79	-0.84	-1.19	90.91	-0.0099	-0.3001	-0.0129
475	SLU 80	-0.84	-1.24	90.92	-0.0096	-0.301	-0.0124
475	SLU 81	-0.82	-1.17	92.23	-0.0086	-0.3079	-0.0132
475	SLU 82	-0.82	-1.22	92.24	-0.0083	-0.3087	-0.0127
475	SLU 83	-0.84	-1.19	93.12	-0.0089	-0.3107	-0.0133
475	SLU 84	-0.83	-1.24	93.13	-0.0086	-0.3115	-0.0128
475	SLE RA 1	-0.61	-0.89	61.48	-0.0089	-0.1986	-0.0085
475	SLE RA 2	-0.6	-0.95	61.49	-0.0086	-0.1996	-0.008
475	SLE RA 3	-0.62	-0.9	62.4	-0.0089	-0.2017	-0.0087
475	SLE RA 4	-0.62	-0.93	62.41	-0.0087	-0.2022	-0.0084
475	SLE RA 5	-0.61	-0.96	62.08	-0.0088	-0.2014	-0.008
475	SLE RA 6	-0.63	-0.9	63	-0.0091	-0.2035	-0.0088
475	SLE RA 7	-0.63	-0.94	63	-0.0089	-0.2041	-0.0085
475	SLE RA 8	-0.63	-0.91	62.66	-0.0093	-0.2024	-0.0087
475	SLE RA 9	-0.62	-0.94	62.67	-0.0091	-0.2029	-0.0083
475	SLE RA 10	-0.61	-0.96	66.31	-0.0074	-0.2204	-0.0087
475	SLE RA 11	-0.63	-0.9	67.23	-0.0077	-0.2225	-0.0095
475	SLE RA 12	-0.62	-0.94	67.24	-0.0076	-0.2223	-0.0091
475	SLE RA 13	-0.62	-0.96	66.91	-0.0077	-0.2223	-0.0088
475	SLE RA 14	-0.64	-0.91	67.82	-0.008	-0.2243	-0.0096
475	SLE RA 15	-0.63	-0.95	67.83	-0.0078	-0.2249	-0.0092
475	SLE RA 16	-0.63	-0.92	67.49	-0.0081	-0.2232	-0.0094
475	SLE RA 17	-0.63	-0.95	67.5	-0.008	-0.2238	-0.0091
475	SLE RA 18	-0.62	-0.9	68.37	-0.0073	-0.2284	-0.0095
475	SLE RA 19	-0.62	-0.94	68.38	-0.0071	-0.2289	-0.0092
475	SLE RA 20	-0.63	-0.91	68.96	-0.0075	-0.2303	-0.0096
475	SLE RA 21	-0.62	-0.95	68.97	-0.0073	-0.2308	-0.0093
475	SLE FR 1	-0.61	-0.89	61.48	-0.0089	-0.1986	-0.0085
475	SLE FR 2	-0.61	-0.9	61.48	-0.0088	-0.1988	-0.0084
475	SLE FR 3	-0.62	-0.9	61.71	-0.0089	-0.1994	-0.0085
475	SLE FR 4	-0.61	-0.91	63.55	-0.0083	-0.2078	-0.0087
475	SLE FR 5	-0.62	-0.9	63.78	-0.0085	-0.2083	-0.0088
475	SLE FR 6	-0.62	-0.9	64.92	-0.0081	-0.2135	-0.009
475	SLE QP 1	-0.61	-0.89	61.48	-0.0089	-0.1986	-0.0085
475	SLE QP 2	-0.62	-0.9	63.54	-0.0084	-0.2076	-0.0088
475	SLD 1	4.42	-0.52	68.27	-0.0163	0.0033	0.0052
475	SLD 2	4.61	-0.9	68.23	-0.0141	-0.0023	0.0169
475	SLD 3	4.74	-2.26	68.62	-0.0096	-0.0356	0.0094
475	SLD 4	4.93	-2.64	68.57	-0.0075	-0.0412	0.0211
475	SLD 5	0.39	1.93	64.45	-0.0213	-0.0843	-0.0131
475	SLD 6	0.51	1.68	64.42	-0.0199	-0.0879	-0.0054
475	SLD 7	1.43	-3.89	65.59	0.001	-0.214	0.0009





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
475	SLD 8	1.56	-4.13	65.56	0.0024	-0.2177	0.0087
475	SLD 9	-2.79	2.34	61.52	-0.0192	-0.1974	-0.0263
475	SLD 10	-2.66	2.1	61.49	-0.0178	-0.2011	-0.0185
475	SLD 11	-1.74	-3.48	62.67	0.0031	-0.3272	-0.0122
475	SLD 12	-1.62	-3.72	62.64	0.0045	-0.3309	-0.0045
475	SLD 13	-6.16	0.85	58.52	-0.0093	-0.3739	-0.0387
475	SLD 14	-5.97	0.47	58.47	-0.0072	-0.3795	-0.027
475	SLD 15	-5.84	-0.9	58.86	-0.0026	-0.4129	-0.0345
475	SLD 16	-5.66	-1.27	58.82	-0.0005	-0.4184	-0.0228
475	SLV 1	11.18	-0.08	74.61	-0.0266	0.2848	0.024
475	SLV 2	11.61	-0.96	74.51	-0.0217	0.2718	0.0514
475	SLV 3	11.91	-4.03	75.41	-0.0115	0.1959	0.0336
475	SLV 4	12.35	-4.91	75.31	-0.0065	0.1829	0.061
475	SLV 5	1.74	5.49	65.67	-0.0377	0.0773	-0.0182
475	SLV 6	2.02	4.93	65.6	-0.0345	0.0689	-0.0005
475	SLV 7	4.18	-7.68	68.34	0.0128	-0.2191	0.0137
475	SLV 8	4.46	-8.24	68.27	0.016	-0.2275	0.0314
475	SLV 9	-5.69	6.45	58.82	-0.0328	-0.1876	-0.049
475	SLV 10	-5.41	5.89	58.75	-0.0296	-0.196	-0.0313
475	SLV 11	-3.25	-6.72	61.49	0.0177	-0.484	-0.0171
475	SLV 12	-2.97	-7.28	61.42	0.021	-0.4924	0.0006
475	SLV 13	-13.58	3.12	51.78	-0.0102	-0.5981	-0.0786
475	SLV 14	-13.14	2.24	51.67	-0.0053	-0.6111	-0.0512
475	SLV 15	-12.85	-0.83	52.58	0.0049	-0.687	-0.0691
475	SLV 16	-12.41	-1.71	52.48	0.0099	-0.7	-0.0416
475	CRTFP Ux+	0	0	0	0	0	0
475	CRTFP Ux-	0	0	0	0	0	0
479	SLU 1	0.61	-0.47	59.36	-0.0169	0.1455	-0.0101
479	SLU 2	0.62	-0.51	59.39	-0.0167	0.1467	-0.0094
479	SLU 3	0.63	-0.47	60.73	-0.0173	0.1476	-0.0102
479	SLU 4	0.64	-0.5	60.74	-0.0172	0.1483	-0.0098
479	SLU 5	0.63	-0.52	60.27	-0.0172	0.1473	-0.0095
479	SLU 6	0.64	-0.49	61.61	-0.0178	0.1481	-0.0103
479	SLU 7	0.65	-0.51	61.62	-0.0177	0.1489	-0.0099
479	SLU 8	0.63	-0.5	61.13	-0.0179	0.1466	-0.0104
479	SLU 9	0.64	-0.52	61.14	-0.0178	0.1474	-0.01
479	SLU 10	0.66	-0.48	66.46	-0.0164	0.1671	-0.0104
479	SLU 11	0.66	-0.45	67.81	-0.0169	0.1679	-0.0112
479	SLU 12	0.67	-0.47	67.82	-0.0168	0.1687	-0.0108
479	SLU 13	0.67	-0.5	67.34	-0.0169	0.1677	-0.0105
479	SLU 14	0.68	-0.46	68.69	-0.0174	0.1685	-0.0113
479	SLU 15	0.68	-0.48	68.7	-0.0173	0.1692	-0.0109
479	SLU 16	0.67	-0.47	68.2	-0.0175	0.167	-0.0114
479	SLU 17	0.68	-0.5	68.21	-0.0174	0.1677	-0.0111
479	SLU 18	0.66	-0.43	69.47	-0.0164	0.1746	-0.0115
479	SLU 19	0.67	-0.46	69.49	-0.0163	0.1753	-0.0111
479	SLU 20	0.67	-0.45	70.35	-0.0169	0.1752	-0.0116
479	SLU 21	0.68	-0.47	70.37	-0.0168	0.1759	-0.0112
479	SLU 22	0.68	-0.4	66.16	-0.0163	0.1458	-0.0098
479	SLU 23	0.69	-0.44	66.18	-0.0161	0.147	-0.0092
479	SLU 24	0.7	-0.41	67.53	-0.0167	0.1478	-0.01
479	SLU 25	0.7	-0.43	67.54	-0.0166	0.1486	-0.0095
479	SLU 26	0.7	-0.45	67.06	-0.0166	0.1475	-0.0093
479	SLU 27	0.71	-0.42	68.41	-0.0172	0.1484	-0.0101
479	SLU 28	0.71	-0.44	68.42	-0.0171	0.1491	-0.0097
479	SLU 29	0.7	-0.43	67.92	-0.0173	0.1469	-0.0102
479	SLU 30	0.71	-0.45	67.93	-0.0172	0.1476	-0.0098
479	SLU 31	0.73	-0.41	73.26	-0.0158	0.1673	-0.0101
479	SLU 32	0.73	-0.38	74.6	-0.0163	0.1682	-0.0109
479	SLU 33	0.74	-0.4	74.61	-0.0162	0.1689	-0.0105
479	SLU 34	0.74	-0.43	74.14	-0.0163	0.1679	-0.0103
479	SLU 35	0.74	-0.39	75.48	-0.0168	0.1688	-0.0111
479	SLU 36	0.75	-0.42	75.5	-0.0167	0.1695	-0.0107
479	SLU 37	0.74	-0.4	75	-0.0169	0.1673	-0.0112
479	SLU 38	0.74	-0.43	75.01	-0.0168	0.168	-0.0108
479	SLU 39	0.73	-0.37	76.27	-0.0158	0.1749	-0.0112
479	SLU 40	0.74	-0.39	76.28	-0.0157	0.1756	-0.0108
479	SLU 41	0.74	-0.38	77.15	-0.0163	0.1754	-0.0114
479	SLU 42	0.75	-0.4	77.16	-0.0162	0.1762	-0.011
479	SLU 43	0.77	-0.63	74.84	-0.0221	0.189	-0.0132
479	SLU 44	0.78	-0.67	74.87	-0.022	0.1903	-0.0125
479	SLU 45	0.79	-0.64	76.21	-0.0225	0.1911	-0.0133
479	SLU 46	0.8	-0.66	76.22	-0.0224	0.1919	-0.0129
479	SLU 47	0.79	-0.69	75.75	-0.0225	0.1908	-0.0126
479	SLU 48	0.8	-0.65	77.09	-0.023	0.1917	-0.0134
479	SLU 49	0.81	-0.67	77.1	-0.0229	0.1924	-0.013
479	SLU 50	0.79	-0.66	76.61	-0.0231	0.1902	-0.0135
479	SLU 51	0.8	-0.69	76.62	-0.023	0.1909	-0.0131
479	SLU 52	0.82	-0.65	81.94	-0.0216	0.2106	-0.0135
479	SLU 53	0.83	-0.61	83.29	-0.0222	0.2115	-0.0143
479	SLU 54	0.83	-0.63	83.3	-0.0221	0.2122	-0.0138
479	SLU 55	0.83	-0.66	82.82	-0.0221	0.2112	-0.0136
479	SLU 56	0.84	-0.63	84.17	-0.0227	0.2121	-0.0144
479	SLU 57	0.84	-0.65	84.18	-0.0226	0.2128	-0.014
479	SLU 58	0.83	-0.64	83.68	-0.0228	0.2106	-0.0145
479	SLU 59	0.84	-0.66	83.69	-0.0227	0.2113	-0.0141
479	SLU 60	0.82	-0.6	84.95	-0.0216	0.2182	-0.0146
479	SLU 61	0.83	-0.62	84.97	-0.0215	0.2189	-0.0141
479	SLU 62	0.83	-0.61	85.83	-0.0221	0.2187	-0.0147
479	SLU 63	0.84	-0.63	85.85	-0.022	0.2195	-0.0143



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
479	SLU 64	0.84	-0.57	81.64	-0.0215	0.1893	-0.0129
479	SLU 65	0.85	-0.6	81.66	-0.0214	0.1905	-0.0123
479	SLU 66	0.86	-0.57	83.01	-0.0219	0.1914	-0.013
479	SLU 67	0.86	-0.59	83.02	-0.0218	0.1921	-0.0126
479	SLU 68	0.86	-0.62	82.54	-0.0219	0.1911	-0.0124
479	SLU 69	0.87	-0.58	83.89	-0.0224	0.192	-0.0132
479	SLU 70	0.87	-0.61	83.9	-0.0223	0.1927	-0.0128
479	SLU 71	0.86	-0.59	83.4	-0.0225	0.1905	-0.0133
479	SLU 72	0.87	-0.62	83.41	-0.0224	0.1912	-0.0129
479	SLU 73	0.89	-0.58	88.74	-0.021	0.2109	-0.0132
479	SLU 74	0.89	-0.54	90.08	-0.0216	0.2118	-0.014
479	SLU 75	0.9	-0.57	90.09	-0.0215	0.2125	-0.0136
479	SLU 76	0.9	-0.59	89.62	-0.0215	0.2115	-0.0134
479	SLU 77	0.9	-0.56	90.96	-0.0221	0.2123	-0.0142
479	SLU 78	0.91	-0.58	90.98	-0.022	0.2131	-0.0138
479	SLU 79	0.9	-0.57	90.48	-0.0222	0.2108	-0.0143
479	SLU 80	0.9	-0.59	90.49	-0.0221	0.2116	-0.0138
479	SLU 81	0.89	-0.53	91.75	-0.021	0.2184	-0.0143
479	SLU 82	0.9	-0.55	91.76	-0.0209	0.2192	-0.0139
479	SLU 83	0.9	-0.54	92.63	-0.0215	0.219	-0.0145
479	SLU 84	0.91	-0.57	92.64	-0.0214	0.2197	-0.0141
479	SLE RA 1	0.63	-0.45	61.31	-0.0167	0.1456	-0.01
479	SLE RA 2	0.64	-0.48	61.32	-0.0166	0.1464	-0.0095
479	SLE RA 3	0.64	-0.45	62.22	-0.017	0.147	-0.0101
479	SLE RA 4	0.65	-0.47	62.23	-0.0169	0.1474	-0.0098
479	SLE RA 5	0.65	-0.49	61.91	-0.0169	0.1468	-0.0097
479	SLE RA 6	0.65	-0.46	62.8	-0.0173	0.1473	-0.0102
479	SLE RA 7	0.65	-0.48	62.81	-0.0172	0.1478	-0.0099
479	SLE RA 8	0.65	-0.47	62.48	-0.0174	0.1463	-0.0102
479	SLE RA 9	0.65	-0.48	62.49	-0.0173	0.1468	-0.0099
479	SLE RA 10	0.66	-0.46	66.04	-0.0164	0.16	-0.0102
479	SLE RA 11	0.67	-0.44	66.93	-0.0167	0.1605	-0.0107
479	SLE RA 12	0.67	-0.45	66.94	-0.0167	0.161	-0.0105
479	SLE RA 13	0.67	-0.47	66.62	-0.0167	0.1603	-0.0103
479	SLE RA 14	0.67	-0.45	67.52	-0.0171	0.1609	-0.0108
479	SLE RA 15	0.68	-0.46	67.53	-0.017	0.1614	-0.0106
479	SLE RA 16	0.67	-0.45	67.2	-0.0171	0.1599	-0.0109
479	SLE RA 17	0.67	-0.47	67.21	-0.0171	0.1604	-0.0106
479	SLE RA 18	0.66	-0.43	68.05	-0.0164	0.165	-0.0109
479	SLE RA 19	0.67	-0.44	68.05	-0.0163	0.1655	-0.0107
479	SLE RA 20	0.67	-0.44	68.63	-0.0167	0.1654	-0.011
479	SLE RA 21	0.68	-0.45	68.64	-0.0166	0.1658	-0.0108
479	SLE FR 1	0.63	-0.45	61.31	-0.0167	0.1456	-0.01
479	SLE FR 2	0.63	-0.46	61.31	-0.0167	0.1457	-0.0099
479	SLE FR 3	0.63	-0.45	61.54	-0.0168	0.1457	-0.01
479	SLE FR 4	0.64	-0.45	63.33	-0.0166	0.1516	-0.0102
479	SLE FR 5	0.64	-0.45	63.56	-0.0167	0.1515	-0.0103
479	SLE FR 6	0.65	-0.44	64.68	-0.0165	0.1553	-0.0105
479	SLE QP 1	0.63	-0.45	61.31	-0.0167	0.1456	-0.01
479	SLE QP 2	0.64	-0.44	63.33	-0.0166	0.1514	-0.0103
479	SLD 1	5.82	0.83	58.78	-0.0136	0.1808	0.0208
479	SLD 2	6.02	1.23	58.91	-0.0155	0.1731	0.0326
479	SLD 3	5.52	-0.92	58.49	-0.0078	0.2263	0.0179
479	SLD 4	5.73	-0.53	58.62	-0.0097	0.2185	0.0298
479	SLD 5	2.6	2.53	62.38	-0.0241	0.0927	0.0012
479	SLD 6	2.74	2.8	62.47	-0.0253	0.0876	0.009
479	SLD 7	1.62	-3.32	61.41	-0.0049	0.2442	-0.0082
479	SLD 8	1.76	-3.06	61.5	-0.0062	0.2391	-0.0005
479	SLD 9	-0.47	2.18	65.16	-0.027	0.0637	-0.0201
479	SLD 10	-0.34	2.44	65.25	-0.0283	0.0586	-0.0123
479	SLD 11	-1.46	-3.68	64.18	-0.0079	0.2152	-0.0296
479	SLD 12	-1.32	-3.42	64.27	-0.0091	0.2101	-0.0218
479	SLD 13	-4.44	-0.36	68.03	-0.0234	0.0843	-0.0503
479	SLD 14	-4.24	0.04	68.17	-0.0254	0.0765	-0.0385
479	SLD 15	-4.74	-2.12	67.74	-0.0177	0.1297	-0.0532
479	SLD 16	-4.53	-1.72	67.87	-0.0196	0.122	-0.0413
479	SLV 1	12.75	2.48	52.69	-0.0093	0.2211	0.0624
479	SLV 2	13.23	3.41	52.99	-0.0138	0.2031	0.0899
479	SLV 3	12.06	-1.5	52.01	0.0037	0.3244	0.0558
479	SLV 4	12.54	-0.57	52.31	-0.0007	0.3064	0.0834
479	SLV 5	5.23	6.31	61.12	-0.0334	0.0188	0.0167
479	SLV 6	5.54	6.91	61.31	-0.0363	0.0071	0.0345
479	SLV 7	2.94	-6.95	58.85	0.0101	0.3631	-0.0052
479	SLV 8	3.25	-6.36	59.04	0.0072	0.3514	0.0126
479	SLV 9	-1.97	5.47	67.61	-0.0404	-0.0486	-0.0332
479	SLV 10	-1.66	6.07	67.81	-0.0432	-0.0603	-0.0154
479	SLV 11	-4.26	-7.79	65.34	0.0031	0.2957	-0.0551
479	SLV 12	-3.95	-7.19	65.54	0.0002	0.284	-0.0373
479	SLV 13	-11.26	-0.32	74.34	-0.0325	-0.0036	-0.1039
479	SLV 14	-10.78	0.61	74.65	-0.0369	-0.0217	-0.0764
479	SLV 15	-11.94	-4.29	73.66	-0.0194	0.0997	-0.1105
479	SLV 16	-11.46	-3.37	73.97	-0.0239	0.0816	-0.0829
479	CRTFP Ux+	0	0	0	0	0	0
479	CRTFP Ux-	0	0	0	0	0	0
479	CRTFP Uy+	0	0	0	0	0	0
479	CRTFP Uy-	0	0	0	0	0	0
480	SLU 1	0.65	0.39	37.95	0.0468	9.1255	-0.1393
480	SLU 2	0.65	0.37	37.96	0.0468	9.1294	-0.1321
480	SLU 3	0.66	0.4	38.84	0.048	9.3285	-0.1422
480	SLU 4	0.67	0.39	38.85	0.048	9.3309	-0.1378



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
480	SLU 5	0.66	0.37	38.53	0.0475	9.2574	-0.1318
480	SLU 6	0.67	0.4	39.41	0.0486	9.4565	-0.1419
480	SLU 7	0.68	0.39	39.42	0.0487	9.4589	-0.1375
480	SLU 8	0.67	0.39	39.08	0.0482	9.3815	-0.1388
480	SLU 9	0.67	0.38	39.09	0.0482	9.3839	-0.1344
480	SLU 10	0.69	0.5	42.31	0.0535	10.1624	-0.176
480	SLU 11	0.7	0.52	43.19	0.0546	10.3615	-0.1861
480	SLU 12	0.71	0.51	43.2	0.0546	10.3639	-0.1818
480	SLU 13	0.7	0.5	42.88	0.0542	10.2904	-0.1758
480	SLU 14	0.71	0.52	43.76	0.0553	10.4895	-0.1859
480	SLU 15	0.72	0.51	43.76	0.0553	10.4919	-0.1815
480	SLU 16	0.71	0.52	43.43	0.0548	10.4145	-0.1828
480	SLU 17	0.71	0.5	43.44	0.0548	10.4168	-0.1784
480	SLU 18	0.7	0.57	44.16	0.0563	10.6011	-0.2021
480	SLU 19	0.7	0.56	44.17	0.0563	10.6035	-0.1978
480	SLU 20	0.71	0.57	44.73	0.057	10.7292	-0.2019
480	SLU 21	0.71	0.56	44.74	0.057	10.7315	-0.1975
480	SLU 22	0.71	0.5	42.28	0.0535	10.1477	-0.1781
480	SLU 23	0.71	0.48	42.29	0.0535	10.1517	-0.1708
480	SLU 24	0.73	0.51	43.17	0.0546	10.3508	-0.1809
480	SLU 25	0.73	0.5	43.18	0.0547	10.3531	-0.1765
480	SLU 26	0.72	0.48	42.86	0.0542	10.2797	-0.1705
480	SLU 27	0.74	0.51	43.74	0.0553	10.4788	-0.1806
480	SLU 28	0.74	0.5	43.74	0.0553	10.4812	-0.1763
480	SLU 29	0.73	0.5	43.41	0.0548	10.4038	-0.1775
480	SLU 30	0.73	0.49	43.42	0.0548	10.4061	-0.1732
480	SLU 31	0.75	0.61	46.64	0.0601	11.1846	-0.2148
480	SLU 32	0.76	0.64	47.52	0.0613	11.3838	-0.2249
480	SLU 33	0.77	0.62	47.53	0.0613	11.3861	-0.2205
480	SLU 34	0.76	0.61	47.21	0.0608	11.3127	-0.2145
480	SLU 35	0.77	0.63	48.09	0.0619	11.5118	-0.2246
480	SLU 36	0.78	0.62	48.09	0.062	11.5141	-0.2202
480	SLU 37	0.77	0.63	47.76	0.0615	11.4367	-0.2215
480	SLU 38	0.77	0.61	47.77	0.0615	11.4391	-0.2171
480	SLU 39	0.76	0.68	48.49	0.063	11.6234	-0.2409
480	SLU 40	0.77	0.67	48.5	0.063	11.6258	-0.2365
480	SLU 41	0.77	0.68	49.06	0.0636	11.7514	-0.2406
480	SLU 42	0.78	0.67	49.07	0.0636	11.7538	-0.2362
480	SLU 43	0.82	0.47	47.85	0.0586	11.5126	-0.1679
480	SLU 44	0.82	0.45	47.86	0.0586	11.5165	-0.1606
480	SLU 45	0.84	0.48	48.74	0.0597	11.7156	-0.1707
480	SLU 46	0.84	0.47	48.75	0.0597	11.718	-0.1663
480	SLU 47	0.84	0.45	48.43	0.0593	11.6446	-0.1603
480	SLU 48	0.85	0.48	49.31	0.0604	11.8437	-0.1704
480	SLU 49	0.85	0.47	49.32	0.0604	11.846	-0.1661
480	SLU 50	0.84	0.47	48.98	0.0599	11.7686	-0.1673
480	SLU 51	0.84	0.46	48.99	0.0599	11.771	-0.163
480	SLU 52	0.86	0.58	52.21	0.0652	12.5495	-0.2045
480	SLU 53	0.87	0.6	53.09	0.0664	12.7486	-0.2147
480	SLU 54	0.88	0.59	53.1	0.0664	12.751	-0.2103
480	SLU 55	0.87	0.58	52.78	0.0659	12.6775	-0.2043
480	SLU 56	0.89	0.6	53.66	0.067	12.8767	-0.2144
480	SLU 57	0.89	0.59	53.67	0.0671	12.879	-0.21
480	SLU 58	0.88	0.59	53.33	0.0665	12.8016	-0.2113
480	SLU 59	0.88	0.58	53.34	0.0666	12.804	-0.2069
480	SLU 60	0.87	0.65	54.06	0.068	12.9883	-0.2307
480	SLU 61	0.88	0.64	54.07	0.0681	12.9907	-0.2263
480	SLU 62	0.88	0.65	54.63	0.0687	13.1163	-0.2304
480	SLU 63	0.89	0.64	54.64	0.0687	13.1187	-0.226
480	SLU 64	0.88	0.58	52.18	0.0652	12.5349	-0.2066
480	SLU 65	0.89	0.56	52.19	0.0653	12.5388	-0.1993
480	SLU 66	0.9	0.59	53.07	0.0664	12.7379	-0.2094
480	SLU 67	0.9	0.58	53.08	0.0664	12.7403	-0.2051
480	SLU 68	0.9	0.56	52.76	0.0659	12.6668	-0.199
480	SLU 69	0.91	0.59	53.64	0.0671	12.8659	-0.2092
480	SLU 70	0.91	0.58	53.65	0.0671	12.8683	-0.2048
480	SLU 71	0.9	0.58	53.31	0.0666	12.7909	-0.206
480	SLU 72	0.9	0.57	53.32	0.0666	12.7933	-0.2017
480	SLU 73	0.92	0.69	56.54	0.0719	13.5718	-0.2433
480	SLU 74	0.94	0.71	57.42	0.073	13.7709	-0.2534
480	SLU 75	0.94	0.7	57.43	0.073	13.7733	-0.249
480	SLU 76	0.93	0.69	57.11	0.0726	13.6998	-0.243
480	SLU 77	0.95	0.71	57.99	0.0737	13.8989	-0.2531
480	SLU 78	0.95	0.7	57.99	0.0737	13.9013	-0.2488
480	SLU 79	0.94	0.71	57.66	0.0732	13.8239	-0.25
480	SLU 80	0.94	0.69	57.67	0.0732	13.8263	-0.2457
480	SLU 81	0.93	0.76	58.39	0.0747	14.0106	-0.2694
480	SLU 82	0.94	0.75	58.4	0.0747	14.0129	-0.265
480	SLU 83	0.95	0.76	58.96	0.0754	14.1386	-0.2691
480	SLU 84	0.95	0.75	58.97	0.0754	14.1409	-0.2648
480	SLE RA 1	0.66	0.42	39.19	0.0487	9.4175	-0.1504
480	SLE RA 2	0.67	0.41	39.2	0.0487	9.4202	-0.1455
480	SLE RA 3	0.68	0.43	39.78	0.0495	9.5529	-0.1523
480	SLE RA 4	0.68	0.42	39.79	0.0495	9.5545	-0.1494
480	SLE RA 5	0.67	0.41	39.57	0.0492	9.5055	-0.1454
480	SLE RA 6	0.68	0.43	40.16	0.0499	9.6382	-0.1521
480	SLE RA 7	0.68	0.42	40.16	0.0499	9.6398	-0.1492
480	SLE RA 8	0.68	0.42	39.94	0.0496	9.5882	-0.15
480	SLE RA 9	0.68	0.41	39.95	0.0496	9.5898	-0.1471
480	SLE RA 10	0.69	0.49	42.1	0.0532	10.1088	-0.1749



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
480	SLE RA 11	0.7	0.51	42.68	0.0539	10.2416	-0.1816
480	SLE RA 12	0.7	0.5	42.69	0.0539	10.2431	-0.1787
480	SLE RA 13	0.7	0.49	42.47	0.0536	10.1942	-0.1747
480	SLE RA 14	0.71	0.51	43.06	0.0544	10.3269	-0.1814
480	SLE RA 15	0.71	0.5	43.06	0.0544	10.3285	-0.1785
480	SLE RA 16	0.7	0.51	42.84	0.054	10.2769	-0.1794
480	SLE RA 17	0.71	0.5	42.85	0.054	10.2785	-0.1764
480	SLE RA 18	0.7	0.54	43.33	0.055	10.4013	-0.1923
480	SLE RA 19	0.7	0.53	43.33	0.055	10.4029	-0.1894
480	SLE RA 20	0.71	0.54	43.71	0.0555	10.4867	-0.1921
480	SLE RA 21	0.71	0.53	43.71	0.0555	10.4882	-0.1892
480	SLE FR 1	0.66	0.42	39.19	0.0487	9.4175	-0.1504
480	SLE FR 2	0.66	0.42	39.19	0.0487	9.4181	-0.1494
480	SLE FR 3	0.67	0.42	39.34	0.0489	9.4517	-0.1503
480	SLE FR 4	0.68	0.46	40.43	0.0506	9.7132	-0.162
480	SLE FR 5	0.68	0.46	40.58	0.0508	9.7468	-0.1629
480	SLE FR 6	0.68	0.48	41.26	0.0519	9.9094	-0.1713
480	SLE QP 1	0.66	0.42	39.19	0.0487	9.4175	-0.1504
480	SLE QP 2	0.67	0.46	40.43	0.0506	9.7127	-0.163
480	SLD 1	3.68	1.18	30.07	0.038	7.3346	-0.4158
480	SLD 2	3.81	1.8	30.25	0.0365	7.3481	-0.6313
480	SLD 3	3.5	-0.25	29.41	0.0408	7.4639	0.084
480	SLD 4	3.63	0.37	29.59	0.0393	7.4775	-0.1314
480	SLD 5	1.83	2.73	38.29	0.0429	8.8007	-0.9585
480	SLD 6	1.91	3.14	38.41	0.042	8.8096	-1.1001
480	SLD 7	1.23	-2.03	36.09	0.0521	9.2318	0.7078
480	SLD 8	1.31	-1.62	36.21	0.0511	9.2407	0.5662
480	SLD 9	0.04	2.54	44.65	0.0501	10.1847	-0.8921
480	SLD 10	0.12	2.95	44.77	0.0491	10.1936	-1.0337
480	SLD 11	-0.56	-2.22	42.45	0.0592	10.6158	0.7742
480	SLD 12	-0.48	-1.81	42.57	0.0583	10.6247	0.6326
480	SLD 13	-2.28	0.55	51.27	0.0619	11.9479	-0.1945
480	SLD 14	-2.15	1.17	51.45	0.0604	11.9614	-0.41
480	SLD 15	-2.46	-0.88	50.61	0.0647	12.0772	0.3054
480	SLD 16	-2.33	-0.26	50.79	0.0632	12.0908	0.0899
480	SLV 1	7.71	2.09	16.18	0.0213	4.1466	-0.7365
480	SLV 2	8	3.53	16.6	0.0178	4.1782	-1.2383
480	SLV 3	7.29	-1.14	14.64	0.0275	4.449	0.3956
480	SLV 4	7.58	0.3	15.06	0.0241	4.4806	-0.1062
480	SLV 5	3.37	5.61	35.41	0.033	7.5788	-1.9652
480	SLV 6	3.56	6.54	35.68	0.0307	7.5992	-2.2893
480	SLV 7	1.97	-5.18	30.29	0.0537	8.5867	1.8083
480	SLV 8	-2.16	-4.25	30.56	0.0515	8.6071	1.4842
480	SLV 9	-0.81	5.16	50.3	0.0497	10.8182	-1.8101
480	SLV 10	-0.62	6.09	50.57	0.0475	10.8386	-2.1342
480	SLV 11	-2.21	-5.62	45.18	0.0705	11.8262	1.9633
480	SLV 12	-2.02	-4.69	45.45	0.0682	11.8466	1.6393
480	SLV 13	-6.23	0.62	65.8	0.0771	14.9447	-0.2197
480	SLV 14	-5.94	2.06	66.22	0.0737	14.9763	-0.7215
480	SLV 15	-6.65	-2.62	64.26	0.0834	15.2471	0.9123
480	SLV 16	-6.36	-1.18	64.68	0.0799	15.2787	0.4106
480	CRTFP Ux+	0	0	0	0	0	0
480	CRTFP Ux-	0	0	0	0	0	0
480	CRTFP Uy+	0	0	0	0	0	0
480	CRTFP Uy-	0	0	0	0	0	0
483	SLU 1	-0.42	0.06	34.17	0.0355	-4.858	0.0155
483	SLU 2	-0.41	-0.03	34.17	0.0357	-4.8607	-0.0065
483	SLU 3	-0.43	0.07	34.98	0.0364	-4.9645	0.0171
483	SLU 4	-0.43	0.02	34.98	0.0365	-4.9661	0.004
483	SLU 5	-0.42	-0.02	34.68	0.0362	-4.9273	-0.0054
483	SLU 6	-0.44	0.07	35.5	0.0369	-5.0312	0.0183
483	SLU 7	-0.44	0.02	35.49	0.0371	-5.0328	0.0051
483	SLU 8	-0.44	0.07	35.2	0.0365	-4.9914	0.0177
483	SLU 9	-0.43	0.02	35.2	0.0367	-4.993	0.0045
483	SLU 10	-0.43	0.05	38.14	0.0412	-5.4234	0.012
483	SLU 11	-0.45	0.14	38.96	0.0419	-5.5273	0.0356
483	SLU 12	-0.44	0.09	38.96	0.042	-5.5289	0.0224
483	SLU 13	-0.44	0.05	38.66	0.0417	-5.4901	0.0131
483	SLU 14	-0.45	0.15	39.48	0.0424	-5.594	0.0367
483	SLU 15	-0.45	0.09	39.47	0.0425	-5.5956	0.0235
483	SLU 16	-0.45	0.14	39.18	0.042	-5.5541	0.0362
483	SLU 17	-0.45	0.09	39.18	0.0421	-5.5557	0.023
483	SLU 18	-0.44	0.17	39.86	0.0433	-5.662	0.0418
483	SLU 19	-0.44	0.12	39.85	0.0435	-5.6636	0.0287
483	SLU 20	-0.45	0.17	40.37	0.0438	-5.7287	0.0429
483	SLU 21	-0.44	0.12	40.37	0.044	-5.7303	0.0298
483	SLU 22	-0.46	0.12	38.16	0.041	-5.4138	0.0309
483	SLU 23	-0.45	0.04	38.15	0.0412	-5.4165	0.0089
483	SLU 24	-0.47	0.13	38.97	0.0419	-5.5203	0.0325
483	SLU 25	-0.47	0.08	38.97	0.042	-5.5219	0.0194
483	SLU 26	-0.46	0.04	38.67	0.0417	-5.4831	0.01
483	SLU 27	-0.48	0.13	39.49	0.0424	-5.587	0.0336
483	SLU 28	-0.47	0.08	39.48	0.0425	-5.5886	0.0205
483	SLU 29	-0.47	0.13	39.19	0.042	-5.5472	0.0331
483	SLU 30	-0.47	0.08	39.19	0.0421	-5.5488	0.0199
483	SLU 31	-0.47	0.11	42.13	0.0467	-5.9793	0.0274
483	SLU 32	-0.49	0.2	42.95	0.0474	-6.0831	0.051
483	SLU 33	-0.48	0.15	42.95	0.0475	-6.0847	0.0378
483	SLU 34	-0.47	0.11	42.65	0.0472	-6.0459	0.0285
483	SLU 35	-0.49	0.21	43.47	0.0479	-6.1498	0.0521



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
483	SLU 36	-0.49	0.16	43.46	0.048	-6.1514	0.0389
483	SLU 37	-0.49	0.21	43.17	0.0475	-6.1099	0.0515
483	SLU 38	-0.48	0.15	43.17	0.0476	-6.1116	0.0384
483	SLU 39	-0.48	0.23	43.84	0.0488	-6.2178	0.0572
483	SLU 40	-0.48	0.18	43.84	0.0489	-6.2194	0.044
483	SLU 41	-0.49	0.23	44.36	0.0493	-6.2845	0.0583
483	SLU 42	-0.48	0.18	44.36	0.0494	-6.2861	0.0452
483	SLU 43	-0.53	0.06	43.05	0.0443	-6.1248	0.0148
483	SLU 44	-0.53	-0.03	43.05	0.0445	-6.1275	-0.0071
483	SLU 45	-0.55	0.07	43.87	0.0452	-6.2313	0.0165
483	SLU 46	-0.54	0.01	43.86	0.0453	-6.2329	0.0033
483	SLU 47	-0.54	-0.02	43.57	0.045	-6.1942	-0.006
483	SLU 48	-0.55	0.07	44.38	0.0457	-6.298	0.0176
483	SLU 49	-0.55	0.02	44.38	0.0458	-6.2996	0.0045
483	SLU 50	-0.55	0.07	44.09	0.0453	-6.2582	0.0171
483	SLU 51	-0.55	0.02	44.08	0.0454	-6.2598	0.0039
483	SLU 52	-0.54	0.05	47.03	0.05	-6.6903	0.0114
483	SLU 53	-0.56	0.14	47.85	0.0506	-6.7941	0.035
483	SLU 54	-0.56	0.09	47.84	0.0508	-6.7957	0.0218
483	SLU 55	-0.55	0.05	47.54	0.0505	-6.757	0.0125
483	SLU 56	-0.57	0.14	48.36	0.0512	-6.8608	0.0361
483	SLU 57	-0.56	0.09	48.36	0.0513	-6.8624	0.0229
483	SLU 58	-0.56	0.14	48.07	0.0508	-6.821	0.0355
483	SLU 59	-0.56	0.09	48.06	0.0509	-6.8226	0.0224
483	SLU 60	-0.55	0.17	48.74	0.0521	-6.9288	0.0412
483	SLU 61	-0.55	0.11	48.74	0.0522	-6.9304	0.028
483	SLU 62	-0.56	0.17	49.26	0.0526	-6.9955	0.0423
483	SLU 63	-0.56	0.12	49.25	0.0527	-6.9971	0.0292
483	SLU 64	-0.57	0.12	47.04	0.0497	-6.6806	0.0302
483	SLU 65	-0.57	0.03	47.04	0.05	-6.6833	0.0083
483	SLU 66	-0.58	0.13	47.85	0.0507	-6.7871	0.0319
483	SLU 67	-0.58	0.08	47.85	0.0508	-6.7887	0.0187
483	SLU 68	-0.57	0.04	47.55	0.0505	-6.75	0.0094
483	SLU 69	-0.59	0.13	48.37	0.0512	-6.8538	0.033
483	SLU 70	-0.59	0.08	48.37	0.0513	-6.8554	0.0198
483	SLU 71	-0.59	0.13	48.07	0.0508	-6.814	0.0325
483	SLU 72	-0.58	0.08	48.07	0.0509	-6.8156	0.0193
483	SLU 73	-0.58	0.11	51.02	0.0555	-7.2461	0.0267
483	SLU 74	-0.6	0.2	51.83	0.0561	-7.3499	0.0503
483	SLU 75	-0.59	0.15	51.83	0.0563	-7.3515	0.0372
483	SLU 76	-0.59	0.11	51.53	0.056	-7.3128	0.0278
483	SLU 77	-0.61	0.21	52.35	0.0566	-7.4166	0.0515
483	SLU 78	-0.6	0.15	52.35	0.0568	-7.4182	0.0383
483	SLU 79	-0.6	0.2	52.05	0.0562	-7.3768	0.0509
483	SLU 80	-0.6	0.15	52.05	0.0564	-7.3784	0.0377
483	SLU 81	-0.59	0.23	52.73	0.0576	-7.4846	0.0566
483	SLU 82	-0.59	0.17	52.72	0.0577	-7.4862	0.0434
483	SLU 83	-0.6	0.23	53.24	0.0581	-7.5513	0.0577
483	SLU 84	-0.6	0.18	53.24	0.0582	-7.5529	0.0445
483	SLE RA 1	-0.43	0.08	35.31	0.0371	-5.0168	0.0199
483	SLE RA 2	-0.43	0.02	35.31	0.0372	-5.0186	0.0052
483	SLE RA 3	-0.44	0.08	35.85	0.0377	-5.0878	0.021
483	SLE RA 4	-0.44	0.05	35.85	0.0378	-5.0889	0.0122
483	SLE RA 5	-0.43	0.02	35.65	0.0376	-5.063	0.006
483	SLE RA 6	-0.45	0.09	36.19	0.038	-5.1323	0.0217
483	SLE RA 7	-0.44	0.05	36.19	0.0381	-5.1333	0.0129
483	SLE RA 8	-0.44	0.09	36	0.0377	-5.1057	0.0214
483	SLE RA 9	-0.44	0.05	36	0.0378	-5.1068	0.0126
483	SLE RA 10	-0.44	0.07	37.96	0.0409	-5.3938	0.0175
483	SLE RA 11	-0.45	0.13	38.5	0.0413	-5.463	0.0333
483	SLE RA 12	-0.45	0.1	38.5	0.0414	-5.4641	0.0245
483	SLE RA 13	-0.44	0.07	38.3	0.0412	-5.4382	0.0183
483	SLE RA 14	-0.45	0.14	38.85	0.0417	-5.5074	0.034
483	SLE RA 15	-0.45	0.1	38.85	0.0418	-5.5085	0.0252
483	SLE RA 16	-0.45	0.13	38.65	0.0414	-5.4809	0.0337
483	SLE RA 17	-0.45	0.1	38.65	0.0415	-5.482	0.0249
483	SLE RA 18	-0.45	0.15	39.1	0.0423	-5.5528	0.0374
483	SLE RA 19	-0.44	0.12	39.1	0.0424	-5.5538	0.0287
483	SLE RA 20	-0.45	0.15	39.44	0.0426	-5.5972	0.0382
483	SLE RA 21	-0.45	0.12	39.44	0.0427	-5.5983	0.0294
483	SLE FR 1	-0.43	0.08	35.31	0.0371	-5.0168	0.0199
483	SLE FR 2	-0.43	0.07	35.31	0.0371	-5.0171	0.0169
483	SLE FR 3	-0.43	0.08	35.45	0.0372	-5.0346	0.0202
483	SLE FR 4	-0.44	0.09	36.45	0.0387	-5.1779	0.0222
483	SLE FR 5	-0.44	0.1	36.58	0.0388	-5.1954	0.0254
483	SLE FR 6	-0.44	0.11	37.21	0.0397	-5.2848	0.0287
483	SLE QP 1	-0.43	0.08	35.31	0.0371	-5.0168	0.0199
483	SLE QP 2	-0.44	0.1	36.45	0.0386	-5.1776	0.0251
483	SLD 1	2.01	0.67	46.68	0.0468	-6.4409	0.1661
483	SLD 2	2.1	0.13	46.59	0.0487	-6.4545	0.033
483	SLD 3	2.17	-0.67	46.11	0.0505	-6.5354	-0.1683
483	SLD 4	2.26	-1.21	46.02	0.0523	-6.5489	-0.3014
483	SLD 5	0.03	2.39	40.39	0.0352	-5.4109	0.5983
483	SLD 6	0.09	2.04	40.33	0.0364	-5.4198	0.5109
483	SLD 7	0.58	-2.06	38.5	0.0474	-5.7258	-0.5162
483	SLD 8	0.64	-2.42	38.44	0.0486	-5.7347	-0.6037
483	SLD 9	-1.51	2.62	34.45	0.0286	-4.6205	0.654
483	SLD 10	-1.45	2.26	34.39	0.0298	-4.6294	0.5665
483	SLD 11	-0.97	-1.84	32.56	0.0409	-4.9354	-0.4606
483	SLD 12	-0.91	-2.19	32.5	0.042	-4.9443	-0.5481



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
483	SLD 13	-3.14	1.41	26.87	0.0249	-3.8062	0.3517
483	SLD 14	-3.04	0.87	26.78	0.0267	-3.8197	0.2185
483	SLD 15	-2.97	0.07	26.31	0.0286	-3.9007	0.0173
483	SLD 16	-2.88	-0.46	26.22	0.0304	-3.9142	-0.1158
483	SLV 1	5.29	1.37	60.39	0.058	-8.1355	0.3413
483	SLV 2	5.5	0.12	60.19	0.0622	-8.167	0.0313
483	SLV 3	5.66	-1.66	59.07	0.0663	-8.3554	-0.4155
483	SLV 4	5.88	-2.91	58.86	0.0705	-8.387	-0.7255
483	SLV 5	0.67	5.28	45.67	0.031	-5.7259	1.3214
483	SLV 6	0.81	4.48	45.54	0.0338	-5.7463	1.1211
483	SLV 7	1.93	-4.8	41.26	0.0589	-6.4591	-1.2012
483	SLV 8	2.07	-5.61	41.13	0.0616	-6.4794	-1.4014
483	SLV 9	-2.94	5.81	31.76	0.0157	-3.8757	1.4517
483	SLV 10	-2.81	5	31.63	0.0184	-3.8961	1.2515
483	SLV 11	-1.68	-4.28	27.35	0.0435	-4.6089	-1.0709
483	SLV 12	-1.54	-5.08	27.22	0.0462	-4.6292	-1.2711
483	SLV 13	-6.75	3.11	14.03	0.0067	-1.9682	0.7758
483	SLV 14	-6.54	1.86	13.82	0.0109	-1.9997	0.4658
483	SLV 15	-6.37	0.08	12.71	0.015	-2.1881	0.019
483	SLV 16	-6.16	-1.16	12.5	0.0193	-2.2197	-0.291
483	CRTFP Ux+	0	0	0	0	0	0
483	CRTFP Ux-	0	0	0	0	0	0
483	CRTFP Uy+	0	0	0	0	0	0
483	CRTFP Uy-	0	0	0	0	0	0
487	SLU 1	-0.8	-0.36	152.14	-5.5999	33.5696	-0.0453
487	SLU 2	-0.78	-0.53	152.23	-5.5973	33.5937	0.0004
487	SLU 3	-0.81	-0.3	155.65	-5.7179	34.3501	-0.0625
487	SLU 4	-0.8	-0.4	155.7	-5.7164	34.3646	-0.0351
487	SLU 5	-0.78	-0.54	154.5	-5.6824	34.101	0.0003
487	SLU 6	-0.82	-0.3	157.93	-5.8029	34.8574	-0.0626
487	SLU 7	-0.81	-0.41	157.98	-5.8014	34.8718	-0.0352
487	SLU 8	-0.81	-0.37	156.69	-5.77	34.5841	-0.0455
487	SLU 9	-0.8	-0.47	156.74	-5.7685	34.5986	-0.0181
487	SLU 10	-0.79	-0.43	172.36	-6.326	37.9305	-0.0406
487	SLU 11	-0.82	-0.19	175.79	-6.4465	38.6869	-0.1035
487	SLU 12	-0.81	-0.29	175.84	-6.445	38.7013	-0.0761
487	SLU 13	-0.8	-0.43	174.63	-6.411	38.4377	-0.0407
487	SLU 14	-0.83	-0.19	178.06	-6.5316	39.1941	-0.1036
487	SLU 15	-0.82	-0.3	178.11	-6.53	39.2086	-0.0762
487	SLU 16	-0.82	-0.26	176.82	-6.4986	38.9209	-0.0864
487	SLU 17	-0.81	-0.37	176.87	-6.4971	38.9354	-0.0591
487	SLU 18	-0.81	-0.2	180.91	-6.6407	39.765	-0.1038
487	SLU 19	-0.8	-0.31	180.96	-6.6392	39.7794	-0.0764
487	SLU 20	-0.82	-0.21	183.18	-6.7258	40.2722	-0.1039
487	SLU 21	-0.81	-0.31	183.23	-6.7243	40.2867	-0.0765
487	SLU 22	-0.87	0.05	169.22	-6.1392	37.3347	-0.1567
487	SLU 23	-0.85	-0.13	169.3	-6.1366	37.3588	-0.1111
487	SLU 24	-0.88	0.11	172.73	-6.2572	38.1152	-0.1739
487	SLU 25	-0.87	0	172.78	-6.2557	38.1297	-0.1465
487	SLU 26	-0.86	-0.13	171.58	-6.2217	37.8661	-0.1112
487	SLU 27	-0.89	0.1	175	-6.3422	38.6225	-0.174
487	SLU 28	-0.88	0	175.05	-6.3407	38.637	-0.1466
487	SLU 29	-0.88	0.04	173.77	-6.3093	38.3492	-0.1569
487	SLU 30	-0.87	-0.07	173.82	-6.3078	38.3637	-0.1295
487	SLU 31	-0.86	-0.02	189.44	-6.8653	41.6956	-0.1521
487	SLU 32	-0.89	0.22	192.86	-6.9858	42.452	-0.2149
487	SLU 33	-0.88	0.11	192.91	-6.9843	42.4665	-0.1875
487	SLU 34	-0.87	-0.03	191.71	-6.9503	42.2029	-0.1522
487	SLU 35	-0.9	0.21	195.13	-7.0709	42.9593	-0.215
487	SLU 36	-0.89	0.1	195.19	-7.0693	42.9737	-0.1876
487	SLU 37	-0.89	0.14	193.9	-7.0379	42.686	-0.1979
487	SLU 38	-0.88	0.04	193.95	-7.0364	42.7005	-0.1705
487	SLU 39	-0.88	0.2	197.98	-7.1801	43.5301	-0.2153
487	SLU 40	-0.87	0.1	198.03	-7.1785	43.5446	-0.1879
487	SLU 41	-0.89	0.2	200.26	-7.2651	44.0374	-0.2154
487	SLU 42	-0.88	0.09	200.31	-7.2636	44.0518	-0.188
487	SLU 43	-1.01	-0.6	191.93	-7.0949	42.3495	-0.0206
487	SLU 44	-0.99	-0.78	192.02	-7.0924	42.3736	0.025
487	SLU 45	-1.02	-0.54	195.44	-7.2129	43.1301	-0.0378
487	SLU 46	-1.01	-0.65	195.49	-7.2114	43.1445	-0.0104
487	SLU 47	-1	-0.78	194.29	-7.1774	42.8809	0.0249
487	SLU 48	-1.03	-0.55	197.71	-7.298	43.6373	-0.0379
487	SLU 49	-1.02	-0.65	197.76	-7.2965	43.6518	-0.0105
487	SLU 50	-1.02	-0.61	196.48	-7.265	43.3641	-0.0208
487	SLU 51	-1.01	-0.72	196.53	-7.2635	43.3785	0.0066
487	SLU 52	-1	-0.67	212.15	-7.821	46.7104	-0.016
487	SLU 53	-1.04	-0.43	215.57	-7.9416	47.4668	-0.0788
487	SLU 54	-1.02	-0.54	215.62	-7.94	47.4813	-0.0514
487	SLU 55	-1.01	-0.68	214.42	-7.9061	47.2177	-0.0161
487	SLU 56	-1.04	-0.44	217.85	-8.0266	47.9741	-0.0789
487	SLU 57	-1.03	-0.54	217.9	-8.0251	47.9886	-0.0515
487	SLU 58	-1.04	-0.5	216.61	-7.9936	47.7009	-0.0618
487	SLU 59	-1.02	-0.61	216.66	-7.9921	47.7153	-0.0344
487	SLU 60	-1.03	-0.45	220.69	-8.1358	48.5449	-0.0792
487	SLU 61	-1.02	-0.55	220.74	-8.1343	48.5594	-0.0518
487	SLU 62	-1.03	-0.45	222.97	-8.2209	49.0522	-0.0793
487	SLU 63	-1.02	-0.56	223.02	-8.2193	49.0667	-0.0519
487	SLU 64	-1.08	-0.2	209.01	-7.6342	46.1147	-0.1321
487	SLU 65	-1.06	-0.37	209.09	-7.6317	46.1388	-0.0864
487	SLU 66	-1.1	-0.14	212.52	-7.7522	46.8952	-0.1493



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
487	SLU 67	-1.09	-0.24	212.57	-7.7507	46.9097	-0.1219
487	SLU 68	-1.07	-0.38	211.37	-7.7167	46.6461	-0.0865
487	SLU 69	-1.1	-0.14	214.79	-7.8373	47.4025	-0.1494
487	SLU 70	-1.09	-0.25	214.84	-7.8358	47.4169	-0.122
487	SLU 71	-1.1	-0.21	213.56	-7.8043	47.1292	-0.1323
487	SLU 72	-1.08	-0.31	213.61	-7.8028	47.1437	-0.1049
487	SLU 73	-1.08	-0.27	229.22	-8.3603	50.4756	-0.1274
487	SLU 74	-1.11	-0.03	232.65	-8.4809	51.232	-0.1903
487	SLU 75	-1.1	-0.14	232.7	-8.4793	51.2464	-0.1629
487	SLU 76	-1.08	-0.27	231.5	-8.4454	50.9828	-0.1275
487	SLU 77	-1.11	-0.03	234.92	-8.5659	51.7392	-0.1904
487	SLU 78	-1.1	-0.14	234.97	-8.5644	51.7537	-0.163
487	SLU 79	-1.11	-0.1	233.69	-8.533	51.466	-0.1733
487	SLU 80	-1.1	-0.21	233.74	-8.5314	51.4805	-0.1459
487	SLU 81	-1.1	-0.04	237.77	-8.6751	52.3101	-0.1907
487	SLU 82	-1.09	-0.15	237.82	-8.6736	52.3245	-0.1633
487	SLU 83	-1.11	-0.05	240.04	-8.7602	52.8173	-0.1907
487	SLU 84	-1.09	-0.16	240.09	-8.7586	52.8318	-0.1634
487	SLE RA 1	-0.82	-0.24	157.02	-5.754	34.6453	-0.0771
487	SLE RA 2	-0.8	-0.36	157.08	-5.7523	34.6614	-0.0467
487	SLE RA 3	-0.83	-0.2	159.36	-5.8326	35.1657	-0.0886
487	SLE RA 4	-0.82	-0.27	159.39	-5.8316	35.1753	-0.0703
487	SLE RA 5	-0.81	-0.36	158.59	-5.809	34.9996	-0.0467
487	SLE RA 6	-0.83	-0.2	160.88	-5.8893	35.5038	-0.0886
487	SLE RA 7	-0.82	-0.27	160.91	-5.8883	35.5135	-0.0704
487	SLE RA 8	-0.83	-0.25	160.05	-5.8674	35.3217	-0.0772
487	SLE RA 9	-0.82	-0.32	160.09	-5.8663	35.3313	-0.059
487	SLE RA 10	-0.81	-0.29	170.5	-6.238	37.5526	-0.074
487	SLE RA 11	-0.83	-0.13	172.78	-6.3184	38.0569	-0.1159
487	SLE RA 12	-0.83	-0.2	172.82	-6.3174	38.0665	-0.0976
487	SLE RA 13	-0.82	-0.29	172.02	-6.2947	37.8908	-0.0741
487	SLE RA 14	-0.84	-0.13	174.3	-6.3751	38.395	-0.116
487	SLE RA 15	-0.83	-0.2	174.33	-6.3741	38.4047	-0.0977
487	SLE RA 16	-0.83	-0.18	173.48	-6.3531	38.2129	-0.1046
487	SLE RA 17	-0.83	-0.25	173.51	-6.3521	38.2225	-0.0863
487	SLE RA 18	-0.83	-0.14	176.2	-6.4479	38.7756	-0.1161
487	SLE RA 19	-0.82	-0.21	176.23	-6.4469	38.7852	-0.0979
487	SLE RA 20	-0.83	-0.14	177.71	-6.5046	39.1138	-0.1162
487	SLE RA 21	-0.82	-0.21	177.75	-6.5036	39.1234	-0.098
487	SLE FR 1	-0.82	-0.24	157.02	-5.754	34.6453	-0.0771
487	SLE FR 2	-0.81	-0.26	157.03	-5.7536	34.6485	-0.071
487	SLE FR 3	-0.82	-0.24	157.63	-5.7766	34.7806	-0.0771
487	SLE FR 4	-0.82	-0.23	162.79	-5.9618	35.8876	-0.0827
487	SLE FR 5	-0.82	-0.21	163.38	-5.9848	36.0197	-0.0888
487	SLE FR 6	-0.82	-0.19	166.61	-6.1009	36.7104	-0.0966
487	SLE QP 1	-0.82	-0.24	157.02	-5.754	34.6453	-0.0771
487	SLE QP 2	-0.82	-0.21	162.77	-5.9621	35.8844	-0.0888
487	SLD 1	12.02	1.67	156.44	-5.9182	34.396	-0.1436
487	SLD 2	12.4	1.38	156.58	-5.9166	34.4361	-0.012
487	SLD 3	11.29	-3.29	157.69	-5.8257	34.7708	1.0424
487	SLD 4	11.67	-3.58	157.83	-5.8241	34.8109	1.174
487	SLD 5	4.08	7.94	158.95	-6.0895	34.8623	-1.9275
487	SLD 6	4.33	7.75	159.04	-6.0885	34.8887	-1.841
487	SLD 7	1.63	-8.61	163.13	-5.7812	36.1115	2.0257
487	SLD 8	1.88	-8.8	163.22	-5.7802	36.1379	2.1122
487	SLD 9	-3.52	8.38	162.33	-6.1441	35.6309	-2.2899
487	SLD 10	-3.27	8.19	162.42	-6.143	35.6572	-2.2034
487	SLD 11	-5.97	-8.16	166.51	-5.8358	36.8801	1.6633
487	SLD 12	-5.71	-8.35	166.6	-5.8347	36.9064	1.7498
487	SLD 13	-13.31	3.16	167.72	-6.1001	36.9579	-1.3516
487	SLD 14	-12.93	2.88	167.85	-6.0985	36.998	-1.22
487	SLD 15	-14.04	-1.8	168.97	-6.0076	37.3326	-0.1656
487	SLD 16	-13.66	-2.09	169.11	-6.006	37.3727	-0.034
487	SLV 1	29.22	4.01	148	-5.8565	32.4151	-0.1716
487	SLV 2	30.11	3.34	148.31	-5.8528	32.5084	0.1348
487	SLV 3	27.51	-7.23	150.84	-5.6462	33.2632	2.5132
487	SLV 4	28.4	-7.9	151.16	-5.6425	33.3566	2.8196
487	SLV 5	10.63	18.22	153.98	-6.25	33.5411	-4.2386
487	SLV 6	11.21	17.78	154.18	-6.2476	33.6014	-4.0407
487	SLV 7	4.93	-19.24	163.45	-5.5491	36.3683	4.7107
487	SLV 8	5.51	-19.68	163.65	-5.5467	36.4286	4.9087
487	SLV 9	-7.15	19.26	161.9	-6.3776	35.3402	-5.0863
487	SLV 10	-6.57	18.83	162.1	-6.3752	35.4005	-4.8884
487	SLV 11	-12.85	-18.2	171.37	-5.6766	38.1674	3.8631
487	SLV 12	-12.27	-18.63	171.57	-5.6743	38.2277	4.061
487	SLV 13	-30.04	7.48	174.39	-6.2818	38.4122	-2.9973
487	SLV 14	-29.15	6.81	174.71	-6.2781	38.5056	-2.6908
487	SLV 15	-31.75	-3.75	177.23	-6.0715	39.2603	-0.3124
487	SLV 16	-30.86	-4.42	177.55	-6.0678	39.3537	-0.006
487	CRTFP Ux+	0	0	0	0	0	0
487	CRTFP Ux-	0	0	0	0	0	0
487	CRTFP Uy+	0	0	0	0	0	0
487	CRTFP Uy-	0	0	0	0	0	0
488	SLU 1	-0.17	-0.21	56.33	-1.0847	-0.085	0.003
488	SLU 2	-0.17	-0.27	56.35	-1.081	-0.0847	0.0031
488	SLU 3	-0.18	-0.19	57.62	-1.0886	-0.0867	0.0031
488	SLU 4	-0.17	-0.23	57.63	-1.0864	-0.0865	0.0031
488	SLU 5	-0.17	-0.27	57.18	-1.0852	-0.0856	0.0031
488	SLU 6	-0.18	-0.19	58.44	-1.0928	-0.0877	0.0032
488	SLU 7	-0.17	-0.23	58.45	-1.0905	-0.0875	0.0032



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
488	SLU 8	-0.17	-0.22	57.99	-1.093	-0.0869	0.0032
488	SLU 9	-0.17	-0.25	58	-1.0908	-0.0867	0.0032
488	SLU 10	-0.16	-0.25	64.03	-1.466	-0.0988	0.0035
488	SLU 11	-0.17	-0.17	65.3	-1.4736	-0.1009	0.0036
488	SLU 12	-0.17	-0.21	65.31	-1.4714	-0.1007	0.0036
488	SLU 13	-0.16	-0.25	64.86	-1.4702	-0.0998	0.0036
488	SLU 14	-0.17	-0.18	66.12	-1.4778	-0.1018	0.0037
488	SLU 15	-0.17	-0.21	66.13	-1.4756	-0.1016	0.0037
488	SLU 16	-0.17	-0.2	65.67	-1.478	-0.101	0.0036
488	SLU 17	-0.17	-0.23	65.68	-1.4758	-0.1008	0.0036
488	SLU 18	-0.17	-0.18	67.3	-1.6347	-0.1052	0.0037
488	SLU 19	-0.16	-0.22	67.31	-1.6325	-0.105	0.0037
488	SLU 20	-0.17	-0.19	68.13	-1.6389	-0.1062	0.0038
488	SLU 21	-0.16	-0.22	68.14	-1.6367	-0.106	0.0038
488	SLU 22	-0.19	-0.09	62.67	-1.214	-0.0947	0.0034
488	SLU 23	-0.18	-0.14	62.68	-1.2103	-0.0944	0.0035
488	SLU 24	-0.19	-0.07	63.95	-1.2178	-0.0964	0.0035
488	SLU 25	-0.19	-0.1	63.96	-1.2156	-0.0962	0.0035
488	SLU 26	-0.18	-0.14	63.51	-1.2144	-0.0953	0.0035
488	SLU 27	-0.19	-0.07	64.78	-1.222	-0.0973	0.0036
488	SLU 28	-0.19	-0.1	64.79	-1.2198	-0.0971	0.0036
488	SLU 29	-0.19	-0.09	64.32	-1.2222	-0.0965	0.0036
488	SLU 30	-0.19	-0.12	64.33	-1.22	-0.0963	0.0036
488	SLU 31	-0.18	-0.12	70.36	-1.5953	-0.1085	0.0039
488	SLU 32	-0.18	-0.05	71.63	-1.6029	-0.1105	0.004
488	SLU 33	-0.18	-0.08	71.64	-1.6007	-0.1103	0.004
488	SLU 34	-0.18	-0.13	71.19	-1.5994	-0.1094	0.004
488	SLU 35	-0.19	-0.05	72.46	-1.607	-0.1115	0.004
488	SLU 36	-0.18	-0.08	72.47	-1.6048	-0.1113	0.0041
488	SLU 37	-0.18	-0.07	72	-1.6073	-0.1107	0.004
488	SLU 38	-0.18	-0.11	72.01	-1.6051	-0.1105	0.004
488	SLU 39	-0.18	-0.06	73.64	-1.764	-0.1149	0.0041
488	SLU 40	-0.18	-0.09	73.65	-1.7618	-0.1147	0.0041
488	SLU 41	-0.18	-0.06	74.46	-1.7681	-0.1158	0.0042
488	SLU 42	-0.18	-0.1	74.47	-1.7659	-0.1156	0.0042
488	SLU 43	-0.22	-0.32	71.06	-1.3658	-0.1072	0.0038
488	SLU 44	-0.21	-0.37	71.08	-1.3621	-0.1069	0.0038
488	SLU 45	-0.22	-0.3	72.35	-1.3697	-0.1089	0.0039
488	SLU 46	-0.22	-0.33	72.36	-1.3675	-0.1087	0.0039
488	SLU 47	-0.22	-0.38	71.91	-1.3663	-0.1078	0.0039
488	SLU 48	-0.22	-0.3	73.17	-1.3739	-0.1099	0.004
488	SLU 49	-0.22	-0.33	73.18	-1.3716	-0.1097	0.004
488	SLU 50	-0.22	-0.32	72.72	-1.3741	-0.1091	0.0039
488	SLU 51	-0.22	-0.36	72.73	-1.3719	-0.1089	0.004
488	SLU 52	-0.21	-0.35	78.76	-1.7471	-0.121	0.0043
488	SLU 53	-0.22	-0.28	80.02	-1.7547	-0.1231	0.0044
488	SLU 54	-0.21	-0.31	80.03	-1.7525	-0.1229	0.0044
488	SLU 55	-0.21	-0.36	79.58	-1.7513	-0.122	0.0044
488	SLU 56	-0.22	-0.28	80.85	-1.7589	-0.124	0.0044
488	SLU 57	-0.21	-0.32	80.86	-1.7567	-0.1238	0.0044
488	SLU 58	-0.22	-0.3	80.39	-1.7591	-0.1232	0.0044
488	SLU 59	-0.21	-0.34	80.4	-1.7569	-0.123	0.0044
488	SLU 60	-0.21	-0.29	82.03	-1.9159	-0.1274	0.0045
488	SLU 61	-0.21	-0.32	82.04	-1.9136	-0.1272	0.0045
488	SLU 62	-0.21	-0.29	82.86	-1.92	-0.1283	0.0046
488	SLU 63	-0.21	-0.33	82.87	-1.9178	-0.1282	0.0046
488	SLU 64	-0.23	-0.19	77.4	-1.4951	-0.1169	0.0042
488	SLU 65	-0.23	-0.25	77.41	-1.4914	-0.1166	0.0042
488	SLU 66	-0.24	-0.17	78.68	-1.4989	-0.1186	0.0043
488	SLU 67	-0.23	-0.21	78.69	-1.4967	-0.1184	0.0043
488	SLU 68	-0.23	-0.25	78.24	-1.4955	-0.1175	0.0043
488	SLU 69	-0.24	-0.18	79.51	-1.5031	-0.1195	0.0044
488	SLU 70	-0.23	-0.21	79.52	-1.5009	-0.1193	0.0044
488	SLU 71	-0.24	-0.2	79.05	-1.5034	-0.1187	0.0043
488	SLU 72	-0.23	-0.23	79.06	-1.5011	-0.1185	0.0043
488	SLU 73	-0.22	-0.23	85.09	-1.8764	-0.1307	0.0047
488	SLU 74	-0.23	-0.15	86.36	-1.884	-0.1327	0.0048
488	SLU 75	-0.23	-0.19	86.37	-1.8818	-0.1325	0.0048
488	SLU 76	-0.22	-0.23	85.92	-1.8805	-0.1316	0.0048
488	SLU 77	-0.23	-0.16	87.19	-1.8881	-0.1337	0.0048
488	SLU 78	-0.23	-0.19	87.2	-1.8859	-0.1335	0.0048
488	SLU 79	-0.23	-0.18	86.73	-1.8884	-0.1329	0.0048
488	SLU 80	-0.23	-0.21	86.74	-1.8862	-0.1327	0.0048
488	SLU 81	-0.23	-0.16	88.36	-2.0451	-0.1371	0.0049
488	SLU 82	-0.22	-0.2	88.37	-2.0429	-0.1369	0.0049
488	SLU 83	-0.23	-0.17	89.19	-2.0492	-0.138	0.0049
488	SLU 84	-0.22	-0.2	89.2	-2.047	-0.1378	0.005
488	SLE RA 1	-0.18	-0.17	58.14	-1.1216	-0.0878	0.0032
488	SLE RA 2	-0.17	-0.21	58.15	-1.1192	-0.0876	0.0032
488	SLE RA 3	-0.18	-0.16	59	-1.1242	-0.0889	0.0032
488	SLE RA 4	-0.18	-0.19	59.01	-1.1228	-0.0888	0.0032
488	SLE RA 5	-0.17	-0.21	58.71	-1.1219	-0.0882	0.0032
488	SLE RA 6	-0.18	-0.16	59.55	-1.127	-0.0895	0.0033
488	SLE RA 7	-0.18	-0.19	59.56	-1.1255	-0.0894	0.0033
488	SLE RA 8	-0.18	-0.18	59.25	-1.1272	-0.089	0.0032
488	SLE RA 9	-0.18	-0.2	59.25	-1.1257	-0.0889	0.0032
488	SLE RA 10	-0.17	-0.2	63.27	-1.3759	-0.097	0.0035
488	SLE RA 11	-0.18	-0.15	64.12	-1.3809	-0.0984	0.0035
488	SLE RA 12	-0.17	-0.17	64.12	-1.3794	-0.0982	0.0035
488	SLE RA 13	-0.17	-0.2	63.82	-1.3786	-0.0976	0.0035





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
488	SLE RA 14	-0.18	-0.15	64.67	-1.3837	-0.099	0.0036
488	SLE RA 15	-0.17	-0.17	64.68	-1.3822	-0.0988	0.0036
488	SLE RA 16	-0.17	-0.17	64.37	-1.3839	-0.0985	0.0035
488	SLE RA 17	-0.17	-0.19	64.37	-1.3824	-0.0983	0.0036
488	SLE RA 18	-0.17	-0.16	65.46	-1.4883	-0.1013	0.0036
488	SLE RA 19	-0.17	-0.18	65.46	-1.4869	-0.1011	0.0036
488	SLE RA 20	-0.17	-0.16	66.01	-1.4911	-0.1019	0.0036
488	SLE RA 21	-0.17	-0.18	66.01	-1.4896	-0.1017	0.0036
488	SLE FR 1	-0.18	-0.17	58.14	-1.1216	-0.0878	0.0032
488	SLE FR 2	-0.18	-0.18	58.15	-1.1211	-0.0878	0.0032
488	SLE FR 3	-0.18	-0.18	58.36	-1.1227	-0.088	0.0032
488	SLE FR 4	-0.17	-0.18	60.34	-1.2312	-0.0918	0.0033
488	SLE FR 5	-0.18	-0.17	60.56	-1.2328	-0.0921	0.0033
488	SLE FR 6	-0.17	-0.17	61.8	-1.305	-0.0945	0.0034
488	SLE QP 1	-0.18	-0.17	58.14	-1.1216	-0.0878	0.0032
488	SLE QP 2	-0.18	-0.17	60.34	-1.2316	-0.0918	0.0033
488	SLD 1	4.07	0.94	58.06	-1.2632	-0.0815	0.0066
488	SLD 2	4.19	0.9	58.08	-1.2611	-0.0805	0.0079
488	SLD 3	3.83	-0.74	58.31	-1.1751	-0.0755	0.0055
488	SLD 4	3.95	-0.77	58.34	-1.1731	-0.0745	0.0068
488	SLD 5	1.44	2.71	59.26	-1.375	-0.098	0.0057
488	SLD 6	1.52	2.69	59.27	-1.3737	-0.0974	0.0066
488	SLD 7	0.64	-2.87	60.12	-1.0815	-0.078	0.002
488	SLD 8	0.72	-2.9	60.13	-1.0801	-0.0774	0.0029
488	SLD 9	-1.07	2.56	60.54	-1.3832	-0.1063	0.0037
488	SLD 10	-0.99	2.54	60.56	-1.3818	-0.1057	0.0046
488	SLD 11	-1.87	-3.03	61.4	-1.0896	-0.0863	0
488	SLD 12	-1.79	-3.05	61.41	-1.0882	-0.0857	0.0009
488	SLD 13	-4.3	0.43	62.34	-1.2902	-0.1091	-0.0002
488	SLD 14	-4.18	0.4	62.36	-1.2881	-0.1082	0.0011
488	SLD 15	-4.54	-1.24	62.59	-1.2021	-0.1031	-0.0013
488	SLD 16	-4.42	-1.28	62.62	-1.2001	-0.1022	0
488	SLV 1	9.76	2.36	55.01	-1.3021	-0.0674	0.0109
488	SLV 2	10.04	2.28	55.06	-1.2973	-0.0652	0.0141
488	SLV 3	9.19	-1.44	55.6	-1.1027	-0.0538	0.0084
488	SLV 4	9.47	-1.52	55.65	-1.0979	-0.0516	0.0116
488	SLV 5	3.61	6.36	57.83	-1.556	-0.1055	0.0089
488	SLV 6	3.79	6.3	57.87	-1.5528	-0.1041	0.0109
488	SLV 7	1.73	-6.29	59.8	-0.8915	-0.0601	0.0005
488	SLV 8	1.91	-6.34	59.84	-0.8884	-0.0587	0.0025
488	SLV 9	-2.26	6	60.84	-1.5749	-0.1249	0.0041
488	SLV 10	-2.08	5.95	60.87	-1.5718	-0.1235	0.0061
488	SLV 11	-4.14	-6.64	62.81	-0.9104	-0.0796	-0.0043
488	SLV 12	-3.96	-6.7	62.84	-0.9073	-0.0781	-0.0023
488	SLV 13	-9.83	1.18	65.02	-1.3654	-0.1321	-0.005
488	SLV 14	-9.54	1.1	65.07	-1.3606	-0.1299	-0.0018
488	SLV 15	-10.39	-2.62	65.61	-1.166	-0.1185	-0.0075
488	SLV 16	-10.11	-2.7	65.66	-1.1612	-0.1163	-0.0044
488	CRTFP Ux+	0	0	0	0	0	0
488	CRTFP Ux-	0	0	0	0	0	0
488	CRTFP Uy+	0	0	0	0	0	0
488	CRTFP Uy-	0	0	0	0	0	0
489	SLU 1	-0.18	-0.13	90.33	-1.442	-8.3318	0.0069
489	SLU 2	-0.17	-0.22	90.35	-1.4399	-8.3331	-0.0014
489	SLU 3	-0.18	-0.09	92.39	-1.4676	-8.5226	0.0104
489	SLU 4	-0.18	-0.15	92.4	-1.4663	-8.5234	0.0054
489	SLU 5	-0.17	-0.22	91.67	-1.4564	-8.4541	-0.001
489	SLU 6	-0.18	-0.09	93.71	-1.484	-8.6435	0.0108
489	SLU 7	-0.17	-0.15	93.72	-1.4827	-8.6443	0.0059
489	SLU 8	-0.18	-0.13	92.97	-1.4749	-8.5737	0.0078
489	SLU 9	-0.17	-0.18	92.98	-1.4737	-8.5745	0.0028
489	SLU 10	-0.15	-0.15	102.63	-1.6978	-9.4537	0.0093
489	SLU 11	-0.16	-0.02	104.67	-1.7255	-9.6431	0.0211
489	SLU 12	-0.16	-0.08	104.69	-1.7242	-9.6439	0.0161
489	SLU 13	-0.15	-0.15	103.95	-1.7143	-9.5746	0.0097
489	SLU 14	-0.16	-0.02	105.99	-1.742	-9.764	0.0215
489	SLU 15	-0.16	-0.08	106	-1.7407	-9.7649	0.0166
489	SLU 16	-0.16	-0.06	105.25	-1.7329	-9.6942	0.0185
489	SLU 17	-0.15	-0.11	105.26	-1.7316	-9.695	0.0135
489	SLU 18	-0.16	-0.03	107.88	-1.8105	-9.9325	0.0222
489	SLU 19	-0.15	-0.08	107.89	-1.8092	-9.9333	0.0172
489	SLU 20	-0.15	-0.03	109.2	-1.827	-10.0535	0.0226
489	SLU 21	-0.15	-0.08	109.21	-1.8257	-10.0543	0.0176
489	SLU 22	-0.19	0.09	100.51	-1.5914	-9.2731	0.0286
489	SLU 23	-0.18	0	100.53	-1.5893	-9.2745	0.0203
489	SLU 24	-0.19	0.13	102.57	-1.6169	-9.4639	0.0321
489	SLU 25	-0.19	0.07	102.58	-1.6157	-9.4647	0.0272
489	SLU 26	-0.18	0	101.84	-1.6057	-9.3954	0.0208
489	SLU 27	-0.19	0.13	103.89	-1.6334	-9.5849	0.0326
489	SLU 28	-0.19	0.07	103.9	-1.6321	-9.5857	0.0276
489	SLU 29	-0.19	0.09	103.14	-1.6243	-9.515	0.0295
489	SLU 30	-0.19	0.04	103.15	-1.623	-9.5158	0.0245
489	SLU 31	-0.17	0.07	112.81	-1.8472	-10.395	0.031
489	SLU 32	-0.18	0.19	114.85	-1.8749	-10.5844	0.0428
489	SLU 33	-0.17	0.14	114.86	-1.8736	-10.5852	0.0378
489	SLU 34	-0.17	0.07	114.12	-1.8637	-10.5159	0.0315
489	SLU 35	-0.18	0.2	116.17	-1.8913	-10.7054	0.0433
489	SLU 36	-0.17	0.14	116.18	-1.8901	-10.7062	0.0383
489	SLU 37	-0.17	0.16	115.42	-1.8823	-10.6355	0.0402
489	SLU 38	-0.17	0.11	115.43	-1.881	-10.6364	0.0352



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
489	SLU 39	-0.17	0.19	118.05	-1.9599	-10.8739	0.0439
489	SLU 40	-0.16	0.14	118.06	-1.9586	-10.8747	0.0389
489	SLU 41	-0.17	0.19	119.37	-1.9763	-10.9948	0.0443
489	SLU 42	-0.16	0.14	119.38	-1.9751	-10.9956	0.0394
489	SLU 43	-0.23	-0.24	113.95	-1.8234	-10.5086	0.0015
489	SLU 44	-0.22	-0.33	113.96	-1.8213	-10.5099	-0.0068
489	SLU 45	-0.23	-0.21	116.01	-1.849	-10.6994	0.005
489	SLU 46	-0.22	-0.26	116.02	-1.8477	-10.7002	0
489	SLU 47	-0.22	-0.33	115.28	-1.8378	-10.6309	-0.0064
489	SLU 48	-0.23	-0.21	117.32	-1.8654	-10.8203	0.0054
489	SLU 49	-0.22	-0.26	117.33	-1.8641	-10.8211	0.0005
489	SLU 50	-0.23	-0.24	116.58	-1.8563	-10.7505	0.0024
489	SLU 51	-0.22	-0.29	116.59	-1.8551	-10.7513	-0.0026
489	SLU 52	-0.2	-0.26	126.24	-2.0792	-11.6305	0.0039
489	SLU 53	-0.21	-0.14	128.29	-2.1069	-11.8199	0.0157
489	SLU 54	-0.21	-0.19	128.3	-2.1056	-11.8207	0.0107
489	SLU 55	-0.2	-0.26	127.56	-2.0957	-11.7514	0.0043
489	SLU 56	-0.21	-0.14	129.6	-2.1234	-11.9408	0.0161
489	SLU 57	-0.21	-0.19	129.61	-2.1221	-11.9416	0.0112
489	SLU 58	-0.21	-0.17	128.86	-2.1143	-11.871	0.0131
489	SLU 59	-0.2	-0.22	128.87	-2.113	-11.8718	0.0081
489	SLU 60	-0.2	-0.14	131.49	-2.1919	-12.1093	0.0168
489	SLU 61	-0.2	-0.2	131.5	-2.1906	-12.1101	0.0118
489	SLU 62	-0.2	-0.14	132.81	-2.2084	-12.2303	0.0172
489	SLU 63	-0.2	-0.19	132.82	-2.2071	-12.2311	0.0122
489	SLU 64	-0.24	-0.02	124.12	-1.9728	-11.4499	0.0232
489	SLU 65	-0.23	-0.11	124.14	-1.9707	-11.4513	0.0149
489	SLU 66	-0.24	0.01	126.18	-1.9983	-11.6407	0.0267
489	SLU 67	-0.24	-0.04	126.19	-1.9971	-11.6415	0.0218
489	SLU 68	-0.23	-0.11	125.46	-1.9871	-11.5722	0.0154
489	SLU 69	-0.24	0.01	127.5	-2.0148	-11.7617	0.0272
489	SLU 70	-0.24	-0.04	127.51	-2.0135	-11.7625	0.0222
489	SLU 71	-0.24	-0.02	126.75	-2.0057	-11.6918	0.0241
489	SLU 72	-0.23	-0.07	126.77	-2.0044	-11.6926	0.0191
489	SLU 73	-0.22	-0.04	136.42	-2.2286	-12.5718	0.0256
489	SLU 74	-0.23	0.08	138.46	-2.2563	-12.7612	0.0374
489	SLU 75	-0.22	0.03	138.47	-2.255	-12.762	0.0325
489	SLU 76	-0.21	-0.04	137.74	-2.2451	-12.6927	0.0261
489	SLU 77	-0.23	0.08	139.78	-2.2727	-12.8822	0.0379
489	SLU 78	-0.22	0.03	139.79	-2.2714	-12.883	0.0329
489	SLU 79	-0.22	0.05	139.04	-2.2637	-12.8123	0.0348
489	SLU 80	-0.22	-0.01	139.05	-2.2624	-12.8132	0.0298
489	SLU 81	-0.22	0.08	141.66	-2.3413	-13.0507	0.0385
489	SLU 82	-0.21	0.02	141.68	-2.34	-13.0515	0.0335
489	SLU 83	-0.22	0.08	142.98	-2.3577	-13.1716	0.0389
489	SLU 84	-0.21	0.02	142.99	-2.3565	-13.1724	0.034
489	SLE RA 1	-0.18	-0.06	93.24	-1.4847	-8.6007	0.0131
489	SLE RA 2	-0.18	-0.12	93.25	-1.4833	-8.6016	0.0076
489	SLE RA 3	-0.18	-0.04	94.61	-1.5017	-8.7279	0.0154
489	SLE RA 4	-0.18	-0.08	94.62	-1.5009	-8.7285	0.0121
489	SLE RA 5	-0.18	-0.12	94.13	-1.4943	-8.6823	0.0079
489	SLE RA 6	-0.18	-0.04	95.49	-1.5127	-8.8086	0.0157
489	SLE RA 7	-0.18	-0.08	95.5	-1.5119	-8.8091	0.0124
489	SLE RA 8	-0.18	-0.06	95	-1.5067	-8.762	0.0137
489	SLE RA 9	-0.18	-0.1	95	-1.5058	-8.7626	0.0104
489	SLE RA 10	-0.17	-0.08	101.44	-1.6553	-9.3487	0.0147
489	SLE RA 11	-0.17	0	102.8	-1.6737	-9.4749	0.0226
489	SLE RA 12	-0.17	-0.03	102.81	-1.6728	-9.4755	0.0192
489	SLE RA 13	-0.16	-0.08	102.32	-1.6662	-9.4293	0.015
489	SLE RA 14	-0.17	0	103.68	-1.6847	-9.5556	0.0228
489	SLE RA 15	-0.17	-0.03	103.69	-1.6838	-9.5561	0.0195
489	SLE RA 16	-0.17	-0.02	103.18	-1.6786	-9.509	0.0208
489	SLE RA 17	-0.17	-0.05	103.19	-1.6778	-9.5096	0.0175
489	SLE RA 18	-0.17	0	104.94	-1.7304	-9.6679	0.0233
489	SLE RA 19	-0.16	-0.03	104.94	-1.7295	-9.6684	0.02
489	SLE RA 20	-0.17	0	105.82	-1.7413	-9.7485	0.0236
489	SLE RA 21	-0.16	-0.03	105.82	-1.7405	-9.7491	0.0203
489	SLE FR 1	-0.18	-0.06	93.24	-1.4847	-8.6007	0.0131
489	SLE FR 2	-0.18	-0.08	93.24	-1.4844	-8.6009	0.012
489	SLE FR 3	-0.18	-0.06	93.59	-1.4891	-8.633	0.0132
489	SLE FR 4	-0.18	-0.06	96.75	-1.5581	-8.9211	0.015
489	SLE FR 5	-0.18	-0.04	97.1	-1.5628	-8.9531	0.0163
489	SLE FR 6	-0.18	-0.03	99.09	-1.6075	-9.1343	0.0182
489	SLE QP 1	-0.18	-0.06	93.24	-1.4847	-8.6007	0.0131
489	SLE QP 2	-0.18	-0.04	96.75	-1.5584	-8.9209	0.0161
489	SLD 1	6.54	1.71	93.68	-1.5527	-8.7077	0.103
489	SLD 2	6.74	1.7	93.7	-1.5616	-8.7104	0.1058
489	SLD 3	6.16	-0.97	93.33	-1.4689	-8.6783	-0.1482
489	SLD 4	6.35	-0.98	93.35	-1.4778	-8.681	-0.1454
489	SLD 5	2.39	4.56	96.35	-1.6823	-8.901	0.4227
489	SLD 6	2.51	4.55	96.36	-1.6882	-8.9028	0.4245
489	SLD 7	1.11	-4.4	95.2	-1.4028	-8.8031	-0.4146
489	SLD 8	1.23	-4.4	95.21	-1.4087	-8.8048	-0.4128
489	SLD 9	-1.59	4.31	98.29	-1.7082	-9.0369	0.4451
489	SLD 10	-1.46	4.31	98.3	-1.714	-9.0387	0.4469
489	SLD 11	-2.87	-4.64	97.14	-1.4287	-8.939	-0.3922
489	SLD 12	-2.74	-4.65	97.15	-1.4345	-8.9408	-0.3904
489	SLD 13	-6.71	0.89	100.15	-1.639	-9.1608	0.1777
489	SLD 14	-6.52	0.89	100.17	-1.648	-9.1635	0.1804
489	SLD 15	-7.09	-1.79	99.8	-1.5552	-9.1314	-0.0735



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
489	SLD 16	-6.9	-1.8	99.82	-1.5641	-9.1341	-0.0708
489	SLV 1	15.55	3.96	89.55	-1.5421	-8.4218	0.2103
489	SLV 2	16		89.6	-1.5628	-8.4281	0.2167
489	SLV 3	14.66	-2.12	88.75	-1.3523	-8.3534	-0.3583
489	SLV 4	15.1	-2.15	88.8	-1.3731	-8.3598	-0.3519
489	SLV 5	5.82	10.38	95.8	-1.8377	-8.8738	0.9357
489	SLV 6	6.11	10.37	95.83	-1.8512	-8.8779	0.9398
489	SLV 7	2.84	-9.88	93.13	-1.2052	-8.6459	-0.9597
489	SLV 8	3.13	-9.9	93.16	-1.2186	-8.6499	-0.9556
489	SLV 9	-3.49	9.81	100.34	-1.8982	-9.1919	0.9879
489	SLV 10	-3.2	9.79	100.37	-1.9117	-9.1959	0.992
489	SLV 11	-6.46	-10.45	97.67	-1.2657	-8.9639	-0.9075
489	SLV 12	-6.17	-10.47	97.7	-1.2791	-8.968	-0.9034
489	SLV 13	-15.46	2.06	104.7	-1.7438	-9.482	0.3842
489	SLV 14	-15.01	2.03	104.75	-1.7645	-9.4883	0.3906
489	SLV 15	-16.36	-4.02	103.9	-1.554	-9.4137	-0.1844
489	SLV 16	-15.91	-4.05	103.95	-1.5748	-9.42	-0.1781
489	CRTFP Ux+	0	0	0	0	0	0
489	CRTFP Ux-	0	0	0	0	0	0
489	CRTFP Uy+	0	0	0	0	0	0
489	CRTFP Uy-	0	0	0	0	0	0
491	SLU 1	-0.07	0	81.49	0.645	43.1014	0.002
491	SLU 2	-0.06	-0.08	81.51	0.6472	43.1111	0.0445
491	SLU 3	-0.06	0.03	83.37	0.6611	44.0915	-0.0152
491	SLU 4	-0.06	-0.02	83.38	0.6624	44.0973	0.0103
491	SLU 5	-0.05	-0.08	82.7	0.6567	43.739	0.0427
491	SLU 6	-0.06	0.03	84.56	0.6707	44.7194	-0.017
491	SLU 7	-0.06	-0.01	84.57	0.6719	44.7252	0.0085
491	SLU 8	-0.06	0	83.87	0.6641	44.3572	-0.0016
491	SLU 9	-0.06	-0.04	83.88	0.6654	44.363	0.0239
491	SLU 10	-0.03	0.02	92.38	0.7372	48.8842	-0.0086
491	SLU 11	-0.04	0.13	94.24	0.7512	49.8646	-0.0683
491	SLU 12	-0.04	0.08	94.25	0.7524	49.8704	-0.0428
491	SLU 13	-0.03	0.02	93.57	0.7468	49.5121	-0.0104
491	SLU 14	-0.04	0.14	95.43	0.7607	50.4925	-0.0701
491	SLU 15	-0.03	0.09	95.44	0.762	50.4983	-0.0446
491	SLU 16	-0.04	0.11	94.74	0.7542	50.1303	-0.0547
491	SLU 17	-0.03	0.06	94.75	0.7555	50.1361	-0.0292
491	SLU 18	-0.03	0.14	97.02	0.7737	51.3487	-0.0739
491	SLU 19	-0.03	0.09	97.03	0.7749	51.3545	-0.0484
491	SLU 20	-0.03	0.15	98.21	0.7832	51.9766	-0.0756
491	SLU 21	-0.03	0.1	98.22	0.7845	51.9824	-0.0501
491	SLU 22	-0.07	0.2	90.73	0.7329	47.9793	-0.1066
491	SLU 23	-0.06	0.12	90.76	0.735	47.989	-0.0641
491	SLU 24	-0.07	0.23	92.61	0.7489	48.9695	-0.1238
491	SLU 25	-0.06	0.19	92.63	0.7502	48.9753	-0.0983
491	SLU 26	-0.06	0.13	91.94	0.7445	48.6169	-0.0659
491	SLU 27	-0.06	0.24	93.8	0.7585	49.5974	-0.1256
491	SLU 28	-0.06	0.19	93.81	0.7597	49.6032	-0.1001
491	SLU 29	-0.06	0.21	93.11	0.752	49.2352	-0.1102
491	SLU 30	-0.06	0.16	93.12	0.7532	49.241	-0.0847
491	SLU 31	-0.04	0.22	101.62	0.825	53.7621	-0.1172
491	SLU 32	-0.04	0.34	103.48	0.839	54.7426	-0.1769
491	SLU 33	-0.04	0.29	103.49	0.8402	54.7484	-0.1514
491	SLU 34	-0.03	0.23	102.81	0.8346	54.3901	-0.119
491	SLU 35	-0.04	0.34	104.67	0.8485	55.3705	-0.1787
491	SLU 36	-0.04	0.29	104.68	0.8498	55.3763	-0.1532
491	SLU 37	-0.04	0.31	103.98	0.842	55.0083	-0.1632
491	SLU 38	-0.03	0.26	103.99	0.8433	55.0141	-0.1377
491	SLU 39	-0.04	0.35	106.26	0.8615	56.2266	-0.1825
491	SLU 40	-0.03	0.3	106.27	0.8628	56.2325	-0.1569
491	SLU 41	-0.03	0.35	107.45	0.871	56.8546	-0.1842
491	SLU 42	-0.03	0.3	107.46	0.8723	56.8604	-0.1587
491	SLU 43	-0.09	-0.07	102.77	0.8084	54.3593	0.0398
491	SLU 44	-0.08	-0.15	102.79	0.8106	54.369	0.0823
491	SLU 45	-0.08	-0.04	104.65	0.8245	55.3495	0.0226
491	SLU 46	-0.08	-0.09	104.66	0.8258	55.3553	0.0481
491	SLU 47	-0.07	-0.15	103.98	0.8201	54.997	0.0805
491	SLU 48	-0.08	-0.04	105.84	0.8341	55.9774	0.0208
491	SLU 49	-0.08	-0.09	105.85	0.8353	55.9832	0.0463
491	SLU 50	-0.08	-0.07	105.15	0.8275	55.6152	0.0362
491	SLU 51	-0.07	-0.11	105.16	0.8288	55.621	0.0617
491	SLU 52	-0.05	-0.05	113.66	0.9006	60.1421	0.0292
491	SLU 53	-0.06	0.06	115.52	0.9146	61.1226	-0.0305
491	SLU 54	-0.06	0.01	115.53	0.9158	61.1284	-0.005
491	SLU 55	-0.05	-0.05	114.85	0.9102	60.7701	0.0274
491	SLU 56	-0.06	0.06	116.7	0.9241	61.7505	-0.0323
491	SLU 57	-0.05	0.02	116.72	0.9254	61.7563	-0.0068
491	SLU 58	-0.06	0.04	116.01	0.9176	61.3883	-0.0168
491	SLU 59	-0.05	-0.01	116.03	0.9189	61.3941	0.0087
491	SLU 60	-0.05	0.07	118.3	0.9371	62.6067	-0.0361
491	SLU 61	-0.05	0.02	118.31	0.9384	62.6125	-0.0105
491	SLU 62	-0.05	0.08	119.48	0.9466	63.2346	-0.0378
491	SLU 63	-0.04	0.03	119.5	0.9479	63.2404	-0.0123
491	SLU 64	-0.09	0.13	112.01	0.8963	59.2373	-0.0688
491	SLU 65	-0.08	0.05	112.03	0.8984	59.247	-0.0263
491	SLU 66	-0.09	0.16	113.89	0.9123	60.2274	-0.086
491	SLU 67	-0.08	0.12	113.9	0.9136	60.2332	-0.0605
491	SLU 68	-0.08	0.05	113.22	0.9079	59.8749	-0.0281
491	SLU 69	-0.08	0.17	115.08	0.9219	60.8554	-0.0878



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
491	SLU 70	-0.08	0.12	115.09	0.9231	60.8612	-0.0623
491	SLU 71	-0.08	0.14	114.39	0.9154	60.4931	-0.0724
491	SLU 72	-0.08	0.09	114.4	0.9166	60.499	-0.0468
491	SLU 73	-0.06	0.15	122.9	0.9884	65.0201	-0.0794
491	SLU 74	-0.06	0.27	124.76	1.0024	66.0005	-0.1391
491	SLU 75	-0.06	0.22	124.77	1.0036	66.0064	-0.1136
491	SLU 76	-0.05	0.16	124.09	0.998	65.648	-0.0811
491	SLU 77	-0.06	0.27	125.95	1.0119	66.6285	-0.1409
491	SLU 78	-0.05	0.22	125.96	1.0132	66.6343	-0.1153
491	SLU 79	-0.06	0.24	125.26	1.0054	66.2663	-0.1254
491	SLU 80	-0.05	0.19	125.27	1.0067	66.2721	-0.0999
491	SLU 81	-0.06	0.28	127.54	1.0249	67.4846	-0.1446
491	SLU 82	-0.05	0.23	127.55	1.0262	67.4904	-0.1191
491	SLU 83	-0.05	0.28	128.73	1.0344	68.1125	-0.1464
491	SLU 84	-0.05	0.23	128.74	1.0357	68.1183	-0.1209
491	SLE RA 1	-0.07	0.06	84.13	0.6701	44.4951	-0.0291
491	SLE RA 2	-0.06	0	84.15	0.6715	44.5015	-0.0007
491	SLE RA 3	-0.07	0.08	85.38	0.6808	45.1552	-0.0405
491	SLE RA 4	-0.06	0.05	85.39	0.6817	45.159	-0.0235
491	SLE RA 5	-0.06	0.01	84.94	0.6779	44.9202	-0.0019
491	SLE RA 6	-0.06	0.08	86.18	0.6872	45.5738	-0.0417
491	SLE RA 7	-0.06	0.05	86.18	0.6881	45.5776	-0.0247
491	SLE RA 8	-0.06	0.06	85.72	0.6829	45.3323	-0.0314
491	SLE RA 9	-0.06	0.03	85.72	0.6837	45.3362	-0.0144
491	SLE RA 10	-0.05	0.07	91.39	0.7316	48.3503	-0.0361
491	SLE RA 11	-0.05	0.15	92.63	0.7409	49.0039	-0.0759
491	SLE RA 12	-0.05	0.11	92.64	0.7417	49.0078	-0.0589
491	SLE RA 13	-0.04	0.07	92.18	0.7379	48.7689	-0.0373
491	SLE RA 14	-0.05	0.15	93.42	0.7472	49.4225	-0.0771
491	SLE RA 15	-0.05	0.12	93.43	0.7481	49.4264	-0.0601
491	SLE RA 16	-0.05	0.13	92.96	0.7429	49.1811	-0.0668
491	SLE RA 17	-0.04	0.1	92.97	0.7437	49.1849	-0.0498
491	SLE RA 18	-0.05	0.15	94.48	0.7559	49.9933	-0.0796
491	SLE RA 19	-0.04	0.12	94.49	0.7567	49.9972	-0.0626
491	SLE RA 20	-0.04	0.16	95.28	0.7623	50.4119	-0.0808
491	SLE RA 21	-0.04	0.12	95.28	0.7631	50.4158	-0.0638
491	SLE FR 1	-0.07	0.06	84.13	0.6701	44.4951	-0.0291
491	SLE FR 2	-0.07	0.05	84.13	0.6704	44.4964	-0.0234
491	SLE FR 3	-0.07	0.06	84.45	0.6727	44.6625	-0.0295
491	SLE FR 4	-0.06	0.07	87.24	0.6961	46.1458	-0.0386
491	SLE FR 5	-0.06	0.09	87.55	0.6984	46.312	-0.0447
491	SLE FR 6	-0.06	0.1	89.31	0.713	47.2442	-0.0543
491	SLE QP 1	-0.07	0.06	84.13	0.6701	44.4951	-0.0291
491	SLE QP 2	-0.06	0.09	87.24	0.6959	46.1445	-0.0442
491	SLD 1	6.08	0.93	85.81	0.6557	45.1683	-0.893
491	SLD 2	6.25	0.97	85.85	0.6515	45.1888	-0.9157
491	SLD 3	5.73	-1.54	86.15	0.7142	45.3376	0.4141
491	SLD 4	5.9	-1.49	86.2	0.71	45.358	0.3915
491	SLD 5	2.28	4.07	86.28	0.5958	45.5914	-2.2774
491	SLD 6	2.4	4.1	86.31	0.5931	45.6048	-2.2922
491	SLD 7	1.11	-4.15	87.43	0.7909	46.1554	2.0799
491	SLD 8	1.23	-4.12	87.46	0.7881	46.1689	2.065
491	SLD 9	-1.35	4.29	87.02	0.6036	46.1202	-2.1535
491	SLD 10	-1.23	4.32	87.05	0.6008	46.1336	-2.1683
491	SLD 11	-2.52	-3.93	88.17	0.7987	46.6843	2.2038
491	SLD 12	-2.4	-3.9	88.2	0.7959	46.6977	2.1889
491	SLD 13	-6.03	1.66	88.28	0.6817	46.9311	-0.48
491	SLD 14	-5.85	1.71	88.32	0.6775	46.9515	-0.5026
491	SLD 15	-6.38	-0.8	88.62	0.7402	47.1003	0.8272
491	SLD 16	-6.2	-0.76	88.67	0.736	47.1207	0.8045
491	SLV 1	14.3	1.97	83.9	0.6042	43.864	-1.9784
491	SLV 2	14.71	2.08	84.01	0.5944	43.9116	-2.0312
491	SLV 3	13.48	-3.62	84.69	0.7367	44.2529	0.9805
491	SLV 4	13.89	-3.51	84.8	0.7269	44.3005	0.9278
491	SLV 5	5.42	9.1	85.02	0.4692	44.8623	-5.1032
491	SLV 6	5.68	9.17	85.09	0.4629	44.893	-5.1372
491	SLV 7	2.69	-9.52	87.65	0.9106	46.1587	4.7601
491	SLV 8	2.96	-9.45	87.72	0.9043	46.1895	4.726
491	SLV 9	-3.08	9.62	86.76	0.4874	46.0996	-4.8145
491	SLV 10	-2.82	9.69	86.83	0.4811	46.1304	-4.8486
491	SLV 11	-5.8	-9	89.38	0.9288	47.3961	5.0487
491	SLV 12	-5.54	-8.93	89.45	0.9225	47.4268	5.0147
491	SLV 13	-14.01	3.68	89.68	0.6649	47.9885	-1.0163
491	SLV 14	-13.61	3.79	89.79	0.6551	48.0361	-1.069
491	SLV 15	-14.83	-1.91	90.47	0.7973	48.3775	1.9427
491	SLV 16	-14.42	-1.8	90.57	0.7875	48.4251	1.89
491	CRTFP Ux+	0	0	0	0	0	0
491	CRTFP Ux-	0	0	0	0	0	0
491	CRTFP Uy+	0	0	0	0	0	0
491	CRTFP Uy-	0	0	0	0	0	0
493	SLU 1	-0.57	-0.86	59.3	-0.0039	-0.1667	-0.0035
493	SLU 2	-0.56	-0.94	59.33	-0.0035	-0.1681	-0.0028
493	SLU 3	-0.58	-0.86	60.7	-0.0038	-0.1707	-0.0037
493	SLU 4	-0.58	-0.91	60.71	-0.0035	-0.1716	-0.0033
493	SLU 5	-0.57	-0.95	60.22	-0.0037	-0.1705	-0.0028
493	SLU 6	-0.59	-0.88	61.58	-0.004	-0.1731	-0.0038
493	SLU 7	-0.59	-0.93	61.6	-0.0038	-0.174	-0.0034
493	SLU 8	-0.59	-0.88	61.07	-0.0043	-0.1714	-0.0037
493	SLU 9	-0.59	-0.93	61.09	-0.0041	-0.1723	-0.0032
493	SLU 10	-0.56	-0.95	66.64	-0.0009	-0.1961	-0.0033



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
493	SLU 11	-0.59	-0.87	68	-0.0011	-0.1987	-0.0043
493	SLU 12	-0.58	-0.92	68.02	-0.0009	-0.1996	-0.0039
493	SLU 13	-0.57	-0.96	67.52	-0.0011	-0.1985	-0.0034
493	SLU 14	-0.6	-0.89	68.89	-0.0014	-0.2011	-0.0044
493	SLU 15	-0.59	-0.94	68.9	-0.0011	-0.202	-0.0039
493	SLU 16	-0.59	-0.89	68.38	-0.0017	-0.1995	-0.0042
493	SLU 17	-0.59	-0.94	68.39	-0.0015	-0.2003	-0.0038
493	SLU 18	-0.57	-0.87	69.74	-0.0001	-0.2067	-0.0043
493	SLU 19	-0.57	-0.92	69.76	0.0001	-0.2075	-0.0039
493	SLU 20	-0.58	-0.89	70.63	-0.0004	-0.2091	-0.0044
493	SLU 21	-0.58	-0.93	70.64	-0.0001	-0.2099	-0.004
493	SLU 22	-0.61	-0.83	66.26	-0.0011	-0.1816	-0.0047
493	SLU 23	-0.61	-0.91	66.29	-0.0007	-0.183	-0.0039
493	SLU 24	-0.63	-0.84	67.65	-0.0009	-0.1856	-0.0049
493	SLU 25	-0.62	-0.89	67.67	-0.0007	-0.1865	-0.0045
493	SLU 26	-0.62	-0.93	67.17	-0.0009	-0.1854	-0.004
493	SLU 27	-0.64	-0.85	68.54	-0.0012	-0.188	-0.005
493	SLU 28	-0.64	-0.9	68.55	-0.001	-0.1889	-0.0045
493	SLU 29	-0.64	-0.86	68.03	-0.0015	-0.1864	-0.0048
493	SLU 30	-0.63	-0.91	68.04	-0.0013	-0.1872	-0.0044
493	SLU 31	-0.61	-0.93	73.6	0.0019	-0.211	-0.0045
493	SLU 32	-0.63	-0.85	74.96	0.0017	-0.2137	-0.0055
493	SLU 33	-0.63	-0.9	74.98	0.0019	-0.2145	-0.005
493	SLU 34	-0.62	-0.94	74.48	0.0017	-0.2134	-0.0046
493	SLU 35	-0.64	-0.86	75.84	0.0014	-0.216	-0.0055
493	SLU 36	-0.64	-0.91	75.86	0.0017	-0.2169	-0.0051
493	SLU 37	-0.64	-0.87	75.33	0.0011	-0.2144	-0.0054
493	SLU 38	-0.64	-0.92	75.35	0.0013	-0.2152	-0.0049
493	SLU 39	-0.62	-0.85	76.7	0.0027	-0.2216	-0.0055
493	SLU 40	-0.61	-0.9	76.72	0.0029	-0.2225	-0.005
493	SLU 41	-0.63	-0.86	77.58	0.0024	-0.224	-0.0056
493	SLU 42	-0.63	-0.91	77.6	0.0027	-0.2248	-0.0051
493	SLU 43	-0.72	-1.12	74.71	-0.006	-0.2115	-0.0042
493	SLU 44	-0.71	-1.21	74.74	-0.0056	-0.213	-0.0034
493	SLU 45	-0.74	-1.13	76.1	-0.0059	-0.2156	-0.0044
493	SLU 46	-0.73	-1.18	76.12	-0.0057	-0.2164	-0.004
493	SLU 47	-0.73	-1.22	75.62	-0.0058	-0.2154	-0.0035
493	SLU 48	-0.75	-1.14	76.99	-0.0061	-0.218	-0.0045
493	SLU 49	-0.74	-1.19	77	-0.0059	-0.2188	-0.004
493	SLU 50	-0.75	-1.15	76.48	-0.0064	-0.2163	-0.0043
493	SLU 51	-0.74	-1.2	76.49	-0.0062	-0.2172	-0.0039
493	SLU 52	-0.72	-1.22	82.05	-0.003	-0.241	-0.004
493	SLU 53	-0.74	-1.14	83.41	-0.0033	-0.2436	-0.005
493	SLU 54	-0.74	-1.19	83.43	-0.003	-0.2445	-0.0045
493	SLU 55	-0.73	-1.23	82.93	-0.0032	-0.2434	-0.0041
493	SLU 56	-0.75	-1.15	84.29	-0.0035	-0.246	-0.005
493	SLU 57	-0.75	-1.2	84.31	-0.0033	-0.2469	-0.0046
493	SLU 58	-0.75	-1.16	83.78	-0.0038	-0.2443	-0.0049
493	SLU 59	-0.74	-1.21	83.8	-0.0036	-0.2452	-0.0044
493	SLU 60	-0.73	-1.14	85.15	-0.0023	-0.2516	-0.005
493	SLU 61	-0.72	-1.19	85.17	-0.002	-0.2524	-0.0046
493	SLU 62	-0.74	-1.15	86.03	-0.0025	-0.254	-0.0051
493	SLU 63	-0.73	-1.2	86.05	-0.0023	-0.2548	-0.0046
493	SLU 64	-0.77	-1.1	81.67	-0.0032	-0.2265	-0.0053
493	SLU 65	-0.76	-1.18	81.7	-0.0028	-0.2279	-0.0046
493	SLU 66	-0.78	-1.1	83.06	-0.0031	-0.2305	-0.0056
493	SLU 67	-0.78	-1.15	83.08	-0.0028	-0.2314	-0.0051
493	SLU 68	-0.77	-1.19	82.58	-0.003	-0.2303	-0.0047
493	SLU 69	-0.8	-1.12	83.94	-0.0033	-0.2329	-0.0056
493	SLU 70	-0.79	-1.17	83.96	-0.0031	-0.2338	-0.0052
493	SLU 71	-0.79	-1.12	83.43	-0.0036	-0.2312	-0.0055
493	SLU 72	-0.79	-1.17	83.45	-0.0034	-0.2321	-0.005
493	SLU 73	-0.76	-1.19	89	-0.0002	-0.2559	-0.0052
493	SLU 74	-0.79	-1.11	90.37	-0.0005	-0.2585	-0.0061
493	SLU 75	-0.78	-1.16	90.38	-0.0002	-0.2594	-0.0057
493	SLU 76	-0.78	-1.2	89.89	-0.0004	-0.2583	-0.0052
493	SLU 77	-0.8	-1.13	91.25	-0.0007	-0.2609	-0.0062
493	SLU 78	-0.79	-1.18	91.27	-0.0005	-0.2618	-0.0058
493	SLU 79	-0.79	-1.14	90.74	-0.001	-0.2593	-0.0061
493	SLU 80	-0.79	-1.18	90.76	-0.0008	-0.2601	-0.0056
493	SLU 81	-0.77	-1.11	92.11	0.0005	-0.2665	-0.0062
493	SLU 82	-0.77	-1.16	92.12	0.0008	-0.2673	-0.0057
493	SLU 83	-0.79	-1.13	92.99	0.0003	-0.2689	-0.0062
493	SLU 84	-0.78	-1.18	93.01	0.0005	-0.2697	-0.0058
493	SLE RA 1	-0.58	-0.85	61.29	-0.0031	-0.1709	-0.0039
493	SLE RA 2	-0.58	-0.91	61.31	-0.0028	-0.1719	-0.0034
493	SLE RA 3	-0.59	-0.85	62.22	-0.003	-0.1736	-0.004
493	SLE RA 4	-0.59	-0.89	62.23	-0.0028	-0.1742	-0.0037
493	SLE RA 5	-0.58	-0.91	61.9	-0.003	-0.1735	-0.0034
493	SLE RA 6	-0.6	-0.86	62.81	-0.0031	-0.1752	-0.004
493	SLE RA 7	-0.6	-0.9	62.82	-0.003	-0.1758	-0.0038
493	SLE RA 8	-0.6	-0.87	62.47	-0.0034	-0.1741	-0.0039
493	SLE RA 9	-0.59	-0.9	62.48	-0.0032	-0.1747	-0.0036
493	SLE RA 10	-0.58	-0.91	66.18	-0.0011	-0.1906	-0.0037
493	SLE RA 11	-0.59	-0.86	67.09	-0.0012	-0.1923	-0.0044
493	SLE RA 12	-0.59	-0.89	67.1	-0.0011	-0.1929	-0.0041
493	SLE RA 13	-0.59	-0.92	66.77	-0.0012	-0.1921	-0.0038
493	SLE RA 14	-0.6	-0.87	67.68	-0.0014	-0.1939	-0.0044
493	SLE RA 15	-0.6	-0.9	67.69	-0.0013	-0.1945	-0.0041
493	SLE RA 16	-0.6	-0.88	67.34	-0.0016	-0.1928	-0.0043



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
493	SLE RA 17	-0.6	-0.91	67.35	-0.0015	-0.1934	-0.004
493	SLE RA 18	-0.58	-0.86	68.25	-0.0006	-0.1976	-0.0044
493	SLE RA 19	-0.58	-0.89	68.26	-0.0004	-0.1982	-0.0041
493	SLE RA 20	-0.59	-0.87	68.84	-0.0007	-0.1992	-0.0044
493	SLE RA 21	-0.59	-0.9	68.85	-0.0006	-0.1998	-0.0041
493	SLE FR 1	-0.58	-0.85	61.29	-0.0031	-0.1709	-0.0039
493	SLE FR 2	-0.58	-0.86	61.3	-0.003	-0.1711	-0.0038
493	SLE FR 3	-0.58	-0.85	61.53	-0.0031	-0.1716	-0.0039
493	SLE FR 4	-0.58	-0.87	63.38	-0.0023	-0.1791	-0.0039
493	SLE FR 5	-0.59	-0.86	63.61	-0.0024	-0.1796	-0.004
493	SLE FR 6	-0.58	-0.86	64.77	-0.0018	-0.1843	-0.0041
493	SLE QP 1	-0.58	-0.85	61.29	-0.0031	-0.1709	-0.0039
493	SLE QP 2	-0.58	-0.85	63.38	-0.0023	-0.1789	-0.004
493	SLD 1	4.39	-0.47	67.93	-0.0091	0.0324	0.0067
493	SLD 2	4.52	-0.84	67.94	-0.0071	0.0271	0.0174
493	SLD 3	4.69	-2.21	68.4	-0.0036	-0.0085	0.0102
493	SLD 4	4.82	-2.58	68.42	-0.0017	-0.0138	0.0208
493	SLD 5	0.42	1.97	64.02	-0.0129	-0.0526	-0.0079
493	SLD 6	0.51	1.72	64.04	-0.0116	-0.056	-0.0009
493	SLD 7	1.44	-3.83	65.6	0.0052	-0.1889	0.0035
493	SLD 8	1.52	-4.08	65.61	0.0064	-0.1924	0.0105
493	SLD 9	-2.69	2.37	61.15	-0.0111	-0.1655	-0.0186
493	SLD 10	-2.61	2.13	61.16	-0.0098	-0.169	-0.0116
493	SLD 11	-1.67	-3.43	62.72	0.007	-0.3018	-0.0071
493	SLD 12	-1.59	-3.68	62.74	0.0083	-0.3053	-0.0001
493	SLD 13	-5.99	0.87	58.34	-0.0029	-0.3441	-0.0289
493	SLD 14	-5.86	0.5	58.36	-0.001	-0.3493	-0.0182
493	SLD 15	-5.68	-0.87	58.81	0.0025	-0.385	-0.0254
493	SLD 16	-5.55	-1.24	58.83	0.0044	-0.3902	-0.0148
493	SLV 1	11.05	-0.02	74.03	-0.0179	0.3144	0.0213
493	SLV 2	11.35	-0.89	74.07	-0.0134	0.3022	0.0461
493	SLV 3	11.76	-3.96	75.12	-0.0056	0.221	0.0291
493	SLV 4	12.06	-4.83	75.16	-0.0011	0.2088	0.0539
493	SLV 5	1.78	5.52	64.92	-0.0265	0.1128	-0.0126
493	SLV 6	1.97	4.96	64.94	-0.0235	0.1049	0.0035
493	SLV 7	4.15	-7.61	68.55	0.0146	-0.1985	0.0135
493	SLV 8	4.34	-8.17	68.57	0.0175	-0.2064	0.0295
493	SLV 9	-5.5	6.47	58.19	-0.0221	-0.1515	-0.0375
493	SLV 10	-5.31	5.9	58.21	-0.0192	-0.1594	-0.0215
493	SLV 11	-3.13	-6.67	61.82	0.0189	-0.4628	-0.0115
493	SLV 12	-2.94	-7.23	61.84	0.0218	-0.4707	0.0045
493	SLV 13	-13.22	3.12	51.6	-0.0035	-0.5666	-0.062
493	SLV 14	-12.92	2.25	51.64	0.001	-0.5789	-0.0372
493	SLV 15	-12.51	-0.82	52.69	0.0088	-0.66	-0.0542
493	SLV 16	-12.21	-1.69	52.73	0.0133	-0.6723	-0.0293
493	CRTFP Ux+	0	0	0	0	0	0
493	CRTFP Ux-	0	0	0	0	0	0
497	SLU 1	0.67	-0.42	58.9	-0.0129	0.1057	-0.0095
497	SLU 2	0.67	-0.46	58.93	-0.0127	0.107	-0.0089
497	SLU 3	0.69	-0.43	60.26	-0.0132	0.1068	-0.0096
497	SLU 4	0.69	-0.45	60.27	-0.0131	0.1076	-0.0093
497	SLU 5	0.69	-0.47	59.79	-0.0132	0.1069	-0.0091
497	SLU 6	0.7	-0.44	61.12	-0.0137	0.1067	-0.0098
497	SLU 7	0.7	-0.46	61.14	-0.0136	0.1075	-0.0094
497	SLU 8	0.69	-0.45	60.63	-0.0138	0.1054	-0.0098
497	SLU 9	0.69	-0.47	60.65	-0.0137	0.1062	-0.0094
497	SLU 10	0.72	-0.43	66.03	-0.0115	0.122	-0.0097
497	SLU 11	0.73	-0.4	67.36	-0.012	0.1218	-0.0104
497	SLU 12	0.73	-0.42	67.37	-0.0119	0.1226	-0.01
497	SLU 13	0.73	-0.44	66.89	-0.012	0.1218	-0.0098
497	SLU 14	0.74	-0.41	68.22	-0.0125	0.1217	-0.0105
497	SLU 15	0.74	-0.43	68.24	-0.0124	0.1225	-0.0102
497	SLU 16	0.73	-0.42	67.73	-0.0126	0.1204	-0.0106
497	SLU 17	0.74	-0.44	67.75	-0.0125	0.1212	-0.0102
497	SLU 18	0.72	-0.38	69.04	-0.0112	0.1271	-0.0106
497	SLU 19	0.73	-0.4	69.06	-0.0111	0.1279	-0.0102
497	SLU 20	0.74	-0.39	69.91	-0.0116	0.1269	-0.0107
497	SLU 21	0.74	-0.42	69.92	-0.0116	0.1277	-0.0104
497	SLU 22	0.73	-0.35	65.72	-0.0116	0.1002	-0.0093
497	SLU 23	0.74	-0.39	65.75	-0.0115	0.1016	-0.0087
497	SLU 24	0.75	-0.35	67.08	-0.012	0.1014	-0.0095
497	SLU 25	0.76	-0.38	67.09	-0.0119	0.1022	-0.0091
497	SLU 26	0.75	-0.4	66.61	-0.012	0.1014	-0.0089
497	SLU 27	0.76	-0.37	67.94	-0.0124	0.1012	-0.0096
497	SLU 28	0.77	-0.39	67.96	-0.0123	0.102	-0.0092
497	SLU 29	0.76	-0.38	67.45	-0.0126	0.0999	-0.0096
497	SLU 30	0.76	-0.4	67.47	-0.0125	0.1007	-0.0093
497	SLU 31	0.78	-0.36	72.85	-0.0103	0.1166	-0.0095
497	SLU 32	0.79	-0.32	74.18	-0.0108	0.1164	-0.0102
497	SLU 33	0.8	-0.35	74.19	-0.0107	0.1172	-0.0098
497	SLU 34	0.79	-0.37	73.71	-0.0108	0.1164	-0.0096
497	SLU 35	0.8	-0.34	75.04	-0.0112	0.1162	-0.0104
497	SLU 36	0.81	-0.36	75.06	-0.0112	0.117	-0.01
497	SLU 37	0.8	-0.35	74.55	-0.0114	0.1149	-0.0104
497	SLU 38	0.8	-0.37	74.57	-0.0113	0.1157	-0.01
497	SLU 39	0.79	-0.31	75.87	-0.0099	0.1216	-0.0104
497	SLU 40	0.8	-0.33	75.88	-0.0098	0.1224	-0.01
497	SLU 41	0.8	-0.32	76.73	-0.0104	0.1215	-0.0106
497	SLU 42	0.81	-0.34	76.75	-0.0103	0.1223	-0.0102
497	SLU 43	0.84	-0.58	74.23	-0.0172	0.1393	-0.0124



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
497	SLU 44	0.85	-0.61	74.26	-0.017	0.1406	-0.0118
497	SLU 45	0.86	-0.58	75.59	-0.0175	0.1404	-0.0126
497	SLU 46	0.87	-0.6	75.6	-0.0174	0.1412	-0.0122
497	SLU 47	0.86	-0.63	75.12	-0.0175	0.1404	-0.012
497	SLU 48	0.87	-0.59	76.45	-0.018	0.1403	-0.0127
497	SLU 49	0.88	-0.61	76.47	-0.0179	0.1411	-0.0123
497	SLU 50	0.87	-0.6	75.96	-0.0181	0.1389	-0.0127
497	SLU 51	0.87	-0.62	75.98	-0.018	0.1398	-0.0124
497	SLU 52	0.89	-0.58	81.36	-0.0158	0.1556	-0.0126
497	SLU 53	0.9	-0.55	82.69	-0.0163	0.1554	-0.0133
497	SLU 54	0.91	-0.57	82.7	-0.0162	0.1562	-0.0129
497	SLU 55	0.9	-0.6	82.22	-0.0163	0.1554	-0.0127
497	SLU 56	0.91	-0.56	83.55	-0.0168	0.1552	-0.0135
497	SLU 57	0.92	-0.58	83.57	-0.0167	0.156	-0.0131
497	SLU 58	0.91	-0.57	83.06	-0.0169	0.1539	-0.0135
497	SLU 59	0.91	-0.59	83.08	-0.0168	0.1547	-0.0131
497	SLU 60	0.9	-0.53	84.37	-0.0154	0.1607	-0.0135
497	SLU 61	0.91	-0.55	84.39	-0.0154	0.1615	-0.0131
497	SLU 62	0.91	-0.55	85.24	-0.0159	0.1605	-0.0137
497	SLU 63	0.92	-0.57	85.26	-0.0158	0.1613	-0.0133
497	SLU 64	0.91	-0.5	81.05	-0.0159	0.1338	-0.0123
497	SLU 65	0.92	-0.54	81.08	-0.0158	0.1351	-0.0116
497	SLU 66	0.93	-0.51	82.41	-0.0162	0.135	-0.0124
497	SLU 67	0.93	-0.53	82.42	-0.0162	0.1358	-0.012
497	SLU 68	0.93	-0.55	81.94	-0.0162	0.135	-0.0118
497	SLU 69	0.94	-0.52	83.27	-0.0167	0.1348	-0.0125
497	SLU 70	0.95	-0.54	83.29	-0.0166	0.1356	-0.0122
497	SLU 71	0.93	-0.53	82.78	-0.0169	0.1335	-0.0126
497	SLU 72	0.94	-0.55	82.8	-0.0168	0.1343	-0.0122
497	SLU 73	0.96	-0.51	88.18	-0.0146	0.1501	-0.0124
497	SLU 74	0.97	-0.48	89.51	-0.015	0.1499	-0.0131
497	SLU 75	0.97	-0.5	89.52	-0.015	0.1507	-0.0128
497	SLU 76	0.97	-0.52	89.04	-0.015	0.15	-0.0125
497	SLU 77	0.98	-0.49	90.37	-0.0155	0.1498	-0.0133
497	SLU 78	0.99	-0.51	90.39	-0.0154	0.1506	-0.0129
497	SLU 79	0.97	-0.5	89.88	-0.0157	0.1485	-0.0133
497	SLU 80	0.98	-0.52	89.9	-0.0156	0.1493	-0.0129
497	SLU 81	0.97	-0.46	91.2	-0.0142	0.1552	-0.0133
497	SLU 82	0.97	-0.48	91.21	-0.0141	0.156	-0.013
497	SLU 83	0.98	-0.47	92.06	-0.0147	0.1551	-0.0135
497	SLU 84	0.99	-0.5	92.08	-0.0146	0.1559	-0.0131
497	SLE RA 1	0.69	-0.4	60.85	-0.0125	0.1041	-0.0095
497	SLE RA 2	0.69	-0.43	60.87	-0.0124	0.105	-0.0091
497	SLE RA 3	0.7	-0.41	61.75	-0.0127	0.1049	-0.0096
497	SLE RA 4	0.7	-0.42	61.76	-0.0127	0.1054	-0.0093
497	SLE RA 5	0.7	-0.44	61.44	-0.0127	0.1049	-0.0092
497	SLE RA 6	0.71	-0.41	62.33	-0.0131	0.1048	-0.0096
497	SLE RA 7	0.71	-0.43	62.34	-0.013	0.1053	-0.0094
497	SLE RA 8	0.7	-0.42	62	-0.0131	0.1039	-0.0097
497	SLE RA 9	0.7	-0.44	62.01	-0.0131	0.1045	-0.0094
497	SLE RA 10	0.72	-0.41	65.6	-0.0116	0.115	-0.0096
497	SLE RA 11	0.73	-0.38	66.49	-0.0119	0.1149	-0.0101
497	SLE RA 12	0.73	-0.4	66.5	-0.0119	0.1154	-0.0098
497	SLE RA 13	0.73	-0.42	66.18	-0.0119	0.1149	-0.0097
497	SLE RA 14	0.73	-0.39	67.06	-0.0123	0.1148	-0.0102
497	SLE RA 15	0.74	-0.41	67.07	-0.0122	0.1153	-0.0099
497	SLE RA 16	0.73	-0.4	66.74	-0.0123	0.1139	-0.0102
497	SLE RA 17	0.73	-0.42	66.75	-0.0123	0.1144	-0.0099
497	SLE RA 18	0.72	-0.37	67.61	-0.0114	0.1184	-0.0102
497	SLE RA 19	0.73	-0.39	67.62	-0.0113	0.1189	-0.0099
497	SLE RA 20	0.73	-0.38	68.19	-0.0117	0.1183	-0.0103
497	SLE RA 21	0.74	-0.4	68.2	-0.0116	0.1188	-0.01
497	SLE FR 1	0.69	-0.4	60.85	-0.0125	0.1041	-0.0095
497	SLE FR 2	0.69	-0.41	60.85	-0.0125	0.1043	-0.0094
497	SLE FR 3	0.69	-0.41	61.08	-0.0126	0.1041	-0.0095
497	SLE FR 4	0.7	-0.4	62.88	-0.0122	0.1086	-0.0096
497	SLE FR 5	0.7	-0.4	63.11	-0.0123	0.1084	-0.0097
497	SLE FR 6	0.71	-0.39	64.23	-0.0119	0.1113	-0.0098
497	SLE QP 1	0.69	-0.4	60.85	-0.0125	0.1041	-0.0095
497	SLE QP 2	0.7	-0.39	62.88	-0.0122	0.1084	-0.0097
497	SLD 1	5.73	0.86	58.15	-0.0108	0.1313	0.0141
497	SLD 2	5.87	1.26	58.22	-0.0126	0.1237	0.0251
497	SLD 3	5.44	-0.89	58.52	-0.0053	0.1794	0.0117
497	SLD 4	5.59	-0.5	58.59	-0.0072	0.1718	0.0228
497	SLD 5	2.61	2.57	60.88	-0.0197	0.0437	-0.001
497	SLD 6	2.71	2.83	60.92	-0.0209	0.0387	0.0063
497	SLD 7	1.66	-3.28	62.13	-0.0015	0.204	-0.0088
497	SLD 8	1.76	-3.02	62.17	-0.0028	0.199	-0.0015
497	SLD 9	-0.36	2.23	63.58	-0.0216	0.0178	-0.0178
497	SLD 10	-0.27	2.49	63.63	-0.0228	0.0128	-0.0106
497	SLD 11	-1.31	-3.62	64.83	-0.0035	0.1781	-0.0256
497	SLD 12	-1.22	-3.36	64.88	-0.0047	0.1731	-0.0184
497	SLD 13	-4.19	-0.29	67.16	-0.0171	0.045	-0.0421
497	SLD 14	-4.05	0.1	67.23	-0.019	0.0374	-0.0311
497	SLD 15	-4.48	-2.05	67.54	-0.0117	0.0931	-0.0444
497	SLD 16	-4.33	-1.65	67.61	-0.0136	0.0855	-0.0334
497	SLV 1	12.47	2.48	51.81	-0.0087	0.1629	0.0459
497	SLV 2	12.8	3.4	51.98	-0.0131	0.1451	0.0716
497	SLV 3	11.8	-1.49	52.67	0.0036	0.2721	0.0405
497	SLV 4	12.14	-0.57	52.84	-0.0007	0.2544	0.0662



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
497	SLV 5	5.18	6.33	58.22	-0.0291	-0.0379	0.0107
497	SLV 6	5.4	6.93	58.33	-0.0319	-0.0493	0.0273
497	SLV 7	2.96	-6.91	61.09	0.0121	0.3263	-0.0072
497	SLV 8	3.18	-6.31	61.2	0.0093	0.3148	0.0094
497	SLV 9	-1.78	5.52	64.55	-0.0336	-0.098	-0.0287
497	SLV 10	-1.56	6.12	64.66	-0.0364	-0.1095	-0.0121
497	SLV 11	-4	-7.72	67.42	0.0076	0.2662	-0.0466
497	SLV 12	-3.78	-7.12	67.53	0.0048	0.2547	-0.0301
497	SLV 13	-10.74	-0.22	72.91	-0.0236	-0.0376	-0.0855
497	SLV 14	-10.4	0.7	73.08	-0.028	-0.0553	-0.0599
497	SLV 15	-11.41	-4.19	73.77	-0.0113	0.0717	-0.0909
497	SLV 16	-11.07	-3.27	73.94	-0.0156	0.0539	-0.0652
497	CRTFP Ux+	0	0	0	0	0	0
497	CRTFP Ux-	0	0	0	0	0	0
497	CRTFP Uy+	0	0	0	0	0	0
497	CRTFP Uy-	0	0	0	0	0	0
498	SLU 1	0.72	0.39	39.55	0.0537	10.4242	-0.1394
498	SLU 2	0.72	0.37	39.56	0.0537	10.4286	-0.1321
498	SLU 3	0.74	0.4	40.48	0.055	10.6603	-0.1422
498	SLU 4	0.74	0.39	40.49	0.0551	10.6629	-0.1379
498	SLU 5	0.73	0.37	40.15	0.0545	10.5772	-0.1318
498	SLU 6	0.75	0.4	41.07	0.0558	10.8088	-0.142
498	SLU 7	0.75	0.39	41.08	0.0559	10.8115	-0.1376
498	SLU 8	0.74	0.39	40.73	0.0553	10.7212	-0.1389
498	SLU 9	0.74	0.38	40.74	0.0553	10.7239	-0.1345
498	SLU 10	0.76	0.5	44.13	0.0612	11.6307	-0.176
498	SLU 11	0.78	0.53	45.05	0.0625	11.8623	-0.1862
498	SLU 12	0.78	0.51	45.06	0.0625	11.865	-0.1818
498	SLU 13	0.78	0.5	44.72	0.062	11.7792	-0.1758
498	SLU 14	0.79	0.52	45.64	0.0633	12.0108	-0.1859
498	SLU 15	0.79	0.51	45.65	0.0633	12.0135	-0.1815
498	SLU 16	0.78	0.52	45.3	0.0628	11.9232	-0.1828
498	SLU 17	0.79	0.5	45.31	0.0628	11.9259	-0.1784
498	SLU 18	0.78	0.57	46.08	0.0644	12.1414	-0.2022
498	SLU 19	0.78	0.56	46.09	0.0644	12.144	-0.1978
498	SLU 20	0.79	0.57	46.67	0.0652	12.2899	-0.2019
498	SLU 21	0.79	0.56	46.68	0.0652	12.2925	-0.1975
498	SLU 22	0.78	0.5	44.1	0.0612	11.615	-0.1781
498	SLU 23	0.78	0.48	44.12	0.0612	11.6195	-0.1708
498	SLU 24	0.8	0.51	45.03	0.0625	11.8511	-0.1809
498	SLU 25	0.8	0.5	45.04	0.0625	11.8538	-0.1765
498	SLU 26	0.8	0.48	44.71	0.062	11.768	-0.1705
498	SLU 27	0.81	0.51	45.62	0.0633	11.9996	-0.1807
498	SLU 28	0.81	0.5	45.63	0.0633	12.0023	-0.1763
498	SLU 29	0.8	0.5	45.28	0.0628	11.912	-0.1776
498	SLU 30	0.81	0.49	45.29	0.0628	11.9147	-0.1732
498	SLU 31	0.83	0.61	48.69	0.0687	12.8215	-0.2147
498	SLU 32	0.84	0.64	49.6	0.07	13.0531	-0.2249
498	SLU 33	0.85	0.62	49.61	0.07	13.0558	-0.2205
498	SLU 34	0.84	0.61	49.28	0.0695	12.97	-0.2145
498	SLU 35	0.86	0.63	50.19	0.0708	13.2016	-0.2246
498	SLU 36	0.86	0.62	50.2	0.0708	13.2043	-0.2202
498	SLU 37	0.85	0.63	49.85	0.0703	13.1141	-0.2215
498	SLU 38	0.85	0.61	49.86	0.0703	13.1167	-0.2171
498	SLU 39	0.84	0.68	50.63	0.0719	13.3322	-0.2409
498	SLU 40	0.85	0.67	50.64	0.0719	13.3349	-0.2365
498	SLU 41	0.86	0.68	51.22	0.0727	13.4807	-0.2406
498	SLU 42	0.86	0.67	51.23	0.0727	13.4834	-0.2362
498	SLU 43	0.91	0.47	49.85	0.0672	13.1431	-0.168
498	SLU 44	0.91	0.45	49.87	0.0673	13.1476	-0.1607
498	SLU 45	0.93	0.48	50.78	0.0686	13.3792	-0.1708
498	SLU 46	0.93	0.47	50.79	0.0686	13.3819	-0.1664
498	SLU 47	0.92	0.45	50.46	0.0681	13.2961	-0.1604
498	SLU 48	0.94	0.48	51.37	0.0694	13.5277	-0.1705
498	SLU 49	0.94	0.47	51.38	0.0694	13.5304	-0.1661
498	SLU 50	0.93	0.47	51.03	0.0688	13.4402	-0.1674
498	SLU 51	0.93	0.46	51.04	0.0688	13.4429	-0.163
498	SLU 52	0.96	0.58	54.44	0.0747	14.3496	-0.2046
498	SLU 53	0.97	0.6	55.35	0.0761	14.5812	-0.2147
498	SLU 54	0.97	0.59	55.36	0.0761	14.5839	-0.2104
498	SLU 55	0.97	0.58	55.03	0.0755	14.4981	-0.2043
498	SLU 56	0.98	0.6	55.94	0.0769	14.7298	-0.2145
498	SLU 57	0.99	0.59	55.95	0.0769	14.7324	-0.2101
498	SLU 58	0.98	0.6	55.6	0.0763	14.6422	-0.2114
498	SLU 59	0.98	0.58	55.61	0.0763	14.6449	-0.207
498	SLU 60	0.97	0.65	56.38	0.0779	14.8603	-0.2307
498	SLU 61	0.97	0.64	56.39	0.0779	14.863	-0.2264
498	SLU 62	0.98	0.65	56.97	0.0787	15.0088	-0.2305
498	SLU 63	0.98	0.64	56.98	0.0787	15.0115	-0.2261
498	SLU 64	0.97	0.58	54.4	0.0747	14.334	-0.2067
498	SLU 65	0.98	0.56	54.42	0.0748	14.3384	-0.1993
498	SLU 66	0.99	0.59	55.34	0.0761	14.5701	-0.2095
498	SLU 67	0.99	0.58	55.34	0.0761	14.5727	-0.2051
498	SLU 68	0.99	0.56	55.01	0.0755	14.487	-0.1991
498	SLU 69	1	0.59	55.93	0.0769	14.7186	-0.2092
498	SLU 70	1.01	0.58	55.93	0.0769	14.7213	-0.2048
498	SLU 71	1	0.58	55.58	0.0763	14.631	-0.2061
498	SLU 72	1	0.57	55.59	0.0763	14.6337	-0.2017
498	SLU 73	1.02	0.69	58.99	0.0822	15.5405	-0.2433
498	SLU 74	1.04	0.72	59.91	0.0836	15.7721	-0.2534





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
498	SLU 75	1.04	0.7	59.92	0.0836	15.7748	-0.249
498	SLU 76	1.03	0.69	59.58	0.083	15.689	-0.243
498	SLU 77	1.05	0.71	60.5	0.0843	15.9206	-0.2532
498	SLU 78	1.05	0.7	60.51	0.0844	15.9233	-0.2488
498	SLU 79	1.04	0.71	60.16	0.0838	15.833	-0.2501
498	SLU 80	1.04	0.69	60.16	0.0838	15.8357	-0.2457
498	SLU 81	1.04	0.76	60.94	0.0854	16.0511	-0.2694
498	SLU 82	1.04	0.75	60.94	0.0854	16.0538	-0.265
498	SLU 83	1.05	0.76	61.53	0.0862	16.1997	-0.2692
498	SLU 84	1.05	0.75	61.53	0.0862	16.2023	-0.2648
498	SLE RA 1	0.73	0.42	40.85	0.0558	10.7644	-0.1505
498	SLE RA 2	0.74	0.41	40.86	0.0559	10.7674	-0.1456
498	SLE RA 3	0.75	0.43	41.47	0.0567	10.9218	-0.1524
498	SLE RA 4	0.75	0.42	41.47	0.0567	10.9236	-0.1494
498	SLE RA 5	0.74	0.41	41.25	0.0564	10.8664	-0.1454
498	SLE RA 6	0.76	0.43	41.86	0.0573	11.0208	-0.1522
498	SLE RA 7	0.76	0.42	41.87	0.0573	11.0226	-0.1493
498	SLE RA 8	0.75	0.42	41.64	0.0569	10.9624	-0.1501
498	SLE RA 9	0.75	0.41	41.64	0.0569	10.9642	-0.1472
498	SLE RA 10	0.77	0.49	43.91	0.0608	11.5687	-0.1749
498	SLE RA 11	0.78	0.51	44.52	0.0617	11.7231	-0.1816
498	SLE RA 12	0.78	0.5	44.52	0.0617	11.7249	-0.1787
498	SLE RA 13	0.77	0.49	44.3	0.0614	11.6677	-0.1747
498	SLE RA 14	0.78	0.51	44.91	0.0622	11.8222	-0.1815
498	SLE RA 15	0.79	0.5	44.92	0.0623	11.8239	-0.1785
498	SLE RA 16	0.78	0.51	44.68	0.0619	11.7638	-0.1794
498	SLE RA 17	0.78	0.5	44.69	0.0619	11.7656	-0.1765
498	SLE RA 18	0.78	0.54	45.2	0.063	11.9092	-0.1923
498	SLE RA 19	0.78	0.53	45.21	0.063	11.911	-0.1894
498	SLE RA 20	0.78	0.54	45.6	0.0635	12.0082	-0.1921
498	SLE RA 21	0.79	0.53	45.6	0.0635	12.01	-0.1892
498	SLE FR 1	0.73	0.42	40.85	0.0558	10.7644	-0.1505
498	SLE FR 2	0.73	0.42	40.85	0.0558	10.765	-0.1495
498	SLE FR 3	0.74	0.42	41.01	0.056	10.804	-0.1504
498	SLE FR 4	0.75	0.46	42.16	0.058	11.1084	-0.162
498	SLE FR 5	0.75	0.46	42.31	0.0582	11.1475	-0.1629
498	SLE FR 6	0.75	0.48	43.03	0.0594	11.3368	-0.1714
498	SLE QP 1	0.73	0.42	40.85	0.0558	10.7644	-0.1505
498	SLE QP 2	0.75	0.46	42.15	0.058	11.1078	-0.163
498	SLD 1	3.69	1.18	31.4	0.0433	8.3732	-0.4156
498	SLD 2	3.78	1.8	31.54	0.042	8.381	-0.6311
498	SLD 3	3.51	-0.25	30.75	0.0456	8.5235	0.0839
498	SLD 4	3.61	0.37	30.88	0.0443	8.5313	-0.1316
498	SLD 5	1.88	2.73	39.9	0.0504	10.0581	-0.958
498	SLD 6	1.94	3.14	39.99	0.0495	10.0633	-1.0997
498	SLD 7	1.29	-2.03	37.71	0.0579	10.5591	0.7073
498	SLD 8	1.36	-1.62	37.8	0.0571	10.5642	0.5656
498	SLD 9	0.14	2.54	46.51	0.0589	11.6515	-0.8917
498	SLD 10	0.2	2.95	46.6	0.058	11.6566	-1.0333
498	SLD 11	-0.45	-2.22	44.32	0.0664	12.1524	0.7736
498	SLD 12	-0.39	-1.81	44.41	0.0656	12.1576	0.632
498	SLD 13	-2.11	0.55	53.43	0.0717	13.6844	-0.1945
498	SLD 14	-2.02	1.17	53.56	0.0704	13.6922	-0.41
498	SLD 15	-2.29	-0.88	52.77	0.0739	13.8347	0.3051
498	SLD 16	-2.19	-0.26	52.91	0.0726	13.8425	0.0896
498	SLV 1	7.63	2.09	16.98	0.0237	4.7076	-0.736
498	SLV 2	7.85	3.53	17.3	0.0207	4.7257	-1.2379
498	SLV 3	7.22	-1.14	15.45	0.0289	5.0587	0.3954
498	SLV 4	7.44	0.3	15.77	0.0258	5.0769	-0.1064
498	SLV 5	3.39	5.61	36.87	0.0404	8.6521	-1.9641
498	SLV 6	3.53	6.54	37.08	0.0385	8.6638	-2.2882
498	SLV 7	2.03	-5.17	31.77	0.0576	9.8225	1.8073
498	SLV 8	2.17	-4.24	31.97	0.0556	9.8343	1.4831
498	SLV 9	-0.68	5.16	52.34	0.0604	12.3814	-1.8092
498	SLV 10	-0.54	6.09	52.54	0.0584	12.3932	-2.1333
498	SLV 11	-2.04	-5.62	47.23	0.0775	13.5519	1.9622
498	SLV 12	-1.9	-4.69	47.44	0.0755	13.5636	1.6381
498	SLV 13	-5.95	0.62	68.54	0.0901	17.1388	-0.2196
498	SLV 14	-5.73	2.06	68.86	0.0871	17.157	-0.7215
498	SLV 15	-6.35	-2.62	67.01	0.0953	17.49	0.9118
498	SLV 16	-6.13	-1.17	67.33	0.0922	17.5081	0.41
498	CRTFP Ux+	0	0	0	0	0	0
498	CRTFP Ux-	0	0	0	0	0	0
498	CRTFP Uy+	0	0	0	0	0	0
498	CRTFP Uy-	0	0	0	0	0	0
504	SLU 1	0.01	0	33.3	-0.0087	11.0829	-0.0028
504	SLU 2	0.01	-0.03	33.31	-0.0086	11.0865	0.0086
504	SLU 3	0.01	0.02	34.07	-0.0089	11.3362	-0.0075
504	SLU 4	0.02	0	34.08	-0.0088	11.3384	-0.0006
504	SLU 5	0.02	-0.03	33.8	-0.0088	11.2465	0.008
504	SLU 6	0.01	0.02	34.56	-0.009	11.4962	-0.0081
504	SLU 7	0.02	0	34.57	-0.009	11.4984	-0.0012
504	SLU 8	0.01	0.01	34.27	-0.009	11.4029	-0.004
504	SLU 9	0.02	-0.01	34.28	-0.0089	11.4051	0.0028
504	SLU 10	0.02	0.01	37.75	-0.0095	12.5697	-0.0065
504	SLU 11	0.02	0.06	38.5	-0.0098	12.8194	-0.0226
504	SLU 12	0.02	0.04	38.51	-0.0097	12.8216	-0.0158
504	SLU 13	0.03	0.02	38.23	-0.0096	12.7298	-0.0071
504	SLU 14	0.02	0.06	38.99	-0.0099	12.9794	-0.0232
504	SLU 15	0.03	0.04	39	-0.0098	12.9816	-0.0164



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
504	SLU 16	0.02	0.05	38.7	-0.0098	12.8862	-0.0191
504	SLU 17	0.03	0.03	38.71	-0.0098	12.8883	-0.0123
504	SLU 18	0.03	0.07	39.63	-0.01	13.2018	-0.0244
504	SLU 19	0.03	0.05	39.64	-0.0099	13.2039	-0.0176
504	SLU 20	0.03	0.07	40.12	-0.0101	13.3618	-0.025
504	SLU 21	0.03	0.05	40.13	-0.01	13.364	-0.0182
504	SLU 22	0.01	0.09	37.11	-0.0089	12.3374	-0.0323
504	SLU 23	0.02	0.06	37.13	-0.0088	12.341	-0.0209
504	SLU 24	0.02	0.1	37.89	-0.0091	12.5907	-0.037
504	SLU 25	0.02	0.08	37.89	-0.009	12.5929	-0.0302
504	SLU 26	0.02	0.06	37.61	-0.009	12.5011	-0.0215
504	SLU 27	0.02	0.1	38.37	-0.0092	12.7507	-0.0376
504	SLU 28	0.02	0.08	38.38	-0.0092	12.7529	-0.0308
504	SLU 29	0.02	0.09	38.09	-0.0092	12.6575	-0.0335
504	SLU 30	0.02	0.07	38.09	-0.0091	12.6596	-0.0267
504	SLU 31	0.03	0.1	41.56	-0.0097	13.8242	-0.0361
504	SLU 32	0.02	0.14	42.32	-0.01	14.0739	-0.0522
504	SLU 33	0.03	0.13	42.33	-0.0099	14.0761	-0.0453
504	SLU 34	0.03	0.1	42.04	-0.0098	13.9843	-0.0367
504	SLU 35	0.03	0.15	42.8	-0.0101	14.2339	-0.0528
504	SLU 36	0.03	0.13	42.81	-0.01	14.2361	-0.0459
504	SLU 37	0.03	0.13	42.52	-0.01	14.1407	-0.0487
504	SLU 38	0.03	0.12	42.53	-0.01	14.1429	-0.0418
504	SLU 39	0.03	0.15	43.44	-0.0102	14.4563	-0.054
504	SLU 40	0.03	0.13	43.45	-0.0101	14.4585	-0.0471
504	SLU 41	0.03	0.15	43.93	-0.0103	14.6163	-0.0546
504	SLU 42	0.03	0.13	43.94	-0.0102	14.6185	-0.0477
504	SLU 43	0.01	-0.02	41.98	-0.0113	13.9776	0.0065
504	SLU 44	0.02	-0.06	42	-0.0112	13.9813	0.0179
504	SLU 45	0.02	-0.01	42.76	-0.0114	14.2309	0.0018
504	SLU 46	0.02	-0.03	42.76	-0.0114	14.2331	0.0086
504	SLU 47	0.02	-0.05	42.48	-0.0113	14.1413	0.0173
504	SLU 48	0.02	-0.01	43.24	-0.0116	14.391	0.0012
504	SLU 49	0.02	-0.03	43.25	-0.0115	14.3931	0.008
504	SLU 50	0.02	-0.02	42.96	-0.0115	14.2977	0.0053
504	SLU 51	0.02	-0.04	42.96	-0.0115	14.2999	0.0121
504	SLU 52	0.03	-0.01	46.43	-0.012	15.4645	0.0028
504	SLU 53	0.03	0.03	47.19	-0.0123	15.7141	-0.0133
504	SLU 54	0.03	0.01	47.19	-0.0122	15.7163	-0.0065
504	SLU 55	0.03	-0.01	46.91	-0.0122	15.6245	0.0022
504	SLU 56	0.03	0.03	47.67	-0.0124	15.8742	-0.0139
504	SLU 57	0.03	0.01	47.68	-0.0124	15.8763	-0.0071
504	SLU 58	0.03	0.02	47.39	-0.0124	15.7809	-0.0099
504	SLU 59	0.03	0	47.4	-0.0123	15.7831	-0.003
504	SLU 60	0.03	0.04	48.31	-0.0125	16.0965	-0.0151
504	SLU 61	0.03	0.02	48.32	-0.0125	16.0987	-0.0083
504	SLU 62	0.03	0.04	48.8	-0.0126	16.2565	-0.0157
504	SLU 63	0.03	0.02	48.81	-0.0126	16.2587	-0.0089
504	SLU 64	0.02	0.06	45.8	-0.0115	15.2322	-0.023
504	SLU 65	0.02	0.03	45.81	-0.0114	15.2358	-0.0116
504	SLU 66	0.02	0.07	46.57	-0.0116	15.4854	-0.0277
504	SLU 67	0.02	0.05	46.58	-0.0116	15.4876	-0.0209
504	SLU 68	0.02	0.03	46.3	-0.0115	15.3958	-0.0122
504	SLU 69	0.02	0.08	47.06	-0.0118	15.6455	-0.0283
504	SLU 70	0.02	0.06	47.06	-0.0117	15.6476	-0.0215
504	SLU 71	0.02	0.06	46.77	-0.0117	15.5522	-0.0242
504	SLU 72	0.02	0.04	46.78	-0.0117	15.5544	-0.0174
504	SLU 73	0.03	0.07	50.24	-0.0122	16.719	-0.0268
504	SLU 74	0.03	0.12	51	-0.0125	16.9687	-0.0429
504	SLU 75	0.03	0.1	51.01	-0.0124	16.9708	-0.036
504	SLU 76	0.03	0.07	50.73	-0.0124	16.879	-0.0274
504	SLU 77	0.03	0.12	51.49	-0.0126	17.1287	-0.0435
504	SLU 78	0.03	0.1	51.49	-0.0126	17.1309	-0.0366
504	SLU 79	0.03	0.11	51.2	-0.0126	17.0354	-0.0394
504	SLU 80	0.03	0.09	51.21	-0.0125	17.0376	-0.0325
504	SLU 81	0.03	0.12	52.13	-0.0127	17.351	-0.0447
504	SLU 82	0.03	0.1	52.14	-0.0127	17.3532	-0.0378
504	SLU 83	0.03	0.12	52.61	-0.0128	17.5111	-0.0453
504	SLU 84	0.03	0.1	52.62	-0.0128	17.5132	-0.0384
504	SLE RA 1	0.01	0.03	34.39	-0.0088	11.4413	-0.0112
504	SLE RA 2	0.01	0.01	34.4	-0.0087	11.4437	-0.0036
504	SLE RA 3	0.01	0.04	34.91	-0.0089	11.6102	-0.0144
504	SLE RA 4	0.01	0.02	34.91	-0.0089	11.6116	-0.0098
504	SLE RA 5	0.02	0.01	34.72	-0.0088	11.5504	-0.004
504	SLE RA 6	0.01	0.04	35.23	-0.009	11.7169	-0.0148
504	SLE RA 7	0.02	0.02	35.23	-0.0089	11.7183	-0.0102
504	SLE RA 8	0.01	0.03	35.04	-0.009	11.6547	-0.012
504	SLE RA 9	0.02	0.02	35.04	-0.0089	11.6561	-0.0075
504	SLE RA 10	0.02	0.04	37.35	-0.0093	12.4326	-0.0137
504	SLE RA 11	0.02	0.07	37.86	-0.0095	12.599	-0.0245
504	SLE RA 12	0.02	0.05	37.86	-0.0094	12.6004	-0.0199
504	SLE RA 13	0.02	0.04	37.68	-0.0094	12.5392	-0.0141
504	SLE RA 14	0.02	0.07	38.18	-0.0096	12.7057	-0.0249
504	SLE RA 15	0.02	0.05	38.19	-0.0095	12.7071	-0.0203
504	SLE RA 16	0.02	0.06	37.99	-0.0095	12.6435	-0.0221
504	SLE RA 17	0.02	0.05	38	-0.0095	12.645	-0.0176
504	SLE RA 18	0.02	0.07	38.61	-0.0096	12.8539	-0.0257
504	SLE RA 19	0.02	0.06	38.62	-0.0096	12.8554	-0.0211
504	SLE RA 20	0.02	0.07	38.93	-0.0097	12.9606	-0.0261
504	SLE RA 21	0.02	0.06	38.94	-0.0097	12.962	-0.0215



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
504	SLE FR 1	0.01	0.03	34.39	-0.0088	11.4413	-0.0112
504	SLE FR 2	0.01	0.02	34.39	-0.0088	11.4418	-0.0097
504	SLE FR 3	0.01	0.03	34.52	-0.0088	11.484	-0.0114
504	SLE FR 4	0.02	0.04	35.66	-0.009	11.8656	-0.014
504	SLE FR 5	0.02	0.04	35.79	-0.0091	11.9078	-0.0157
504	SLE FR 6	0.02	0.05	36.5	-0.0092	12.1476	-0.0184
504	SLE QP 1	0.01	0.03	34.39	-0.0088	11.4413	-0.0112
504	SLE QP 2	0.01	0.04	35.66	-0.009	11.8651	-0.0156
504	SLD 1	2.54	0.69	35.24	-0.0091	11.5889	-0.1358
504	SLD 2	2.59	0.71	35.25	-0.0093	11.592	-0.1446
504	SLD 3	2.39	-0.33	35.49	-0.0059	11.6567	0.2195
504	SLD 4	2.45	-0.3	35.5	-0.0061	11.6598	0.2107
504	SLD 5	0.98	1.77	35.15	-0.0139	11.6789	-0.5889
504	SLD 6	1.02	1.79	35.16	-0.014	11.6809	-0.5946
504	SLD 7	0.5	-1.62	35.98	-0.0032	11.9048	0.5953
504	SLD 8	0.54	-1.6	35.99	-0.0033	11.9069	0.5896
504	SLD 9	-0.51	1.68	35.32	-0.0148	11.8233	-0.6207
504	SLD 10	-0.47	1.7	35.33	-0.0149	11.8254	-0.6264
504	SLD 11	-0.99	-1.71	36.15	-0.0041	12.0493	0.5635
504	SLD 12	-0.95	-1.69	36.16	-0.0042	12.0513	0.5578
504	SLD 13	-2.42	0.38	35.81	-0.012	12.0704	-0.2418
504	SLD 14	-2.36	0.41	35.83	-0.0122	12.0735	-0.2506
504	SLD 15	-2.56	-0.63	36.06	-0.0088	12.1382	0.1134
504	SLD 16	-2.51	-0.61	36.08	-0.009	12.1413	0.1047
504	SLV 1	5.91	1.51	34.69	-0.009	11.2211	-0.284
504	SLV 2	6.04	1.57	34.72	-0.0095	11.2283	-0.3044
504	SLV 3	5.58	-0.79	35.25	-0.0018	11.3752	0.5202
504	SLV 4	5.71	-0.73	35.29	-0.0022	11.3824	0.4998
504	SLV 5	2.27	3.96	34.5	-0.02	11.4369	-1.3123
504	SLV 6	2.35	4	34.53	-0.0203	11.4416	-1.3255
504	SLV 7	1.15	-3.7	36.38	0.0042	11.9506	1.3684
504	SLV 8	1.24	-3.66	36.41	0.0039	11.9553	1.3552
504	SLV 9	-1.21	3.75	34.91	-0.022	11.7749	-1.3863
504	SLV 10	-1.12	3.79	34.93	-0.0223	11.7796	-1.3995
504	SLV 11	-2.32	-3.92	36.79	0.0022	12.2886	1.2943
504	SLV 12	-2.24	-3.88	36.81	0.0019	12.2933	1.2812
504	SLV 13	-5.68	0.81	36.03	-0.0158	12.3478	-0.5309
504	SLV 14	-5.55	0.87	36.06	-0.0163	12.355	-0.5513
504	SLV 15	-6.01	-1.49	36.59	-0.0086	12.5019	0.2733
504	SLV 16	-5.88	-1.43	36.63	-0.0091	12.5091	0.2529
504	CRTFP Ux+	0	0	0	0	0	0
504	CRTFP Ux-	0	0	0	0	0	0
504	CRTFP Uy+	0	0	0	0	0	0
504	CRTFP Uy-	0	0	0	0	0	0
505	SLU 1	-0.44	0.05	35.34	0.0419	-5.8107	0.013
505	SLU 2	-0.43	-0.04	35.34	0.0421	-5.8142	-0.009
505	SLU 3	-0.45	0.05	36.18	0.043	-5.9417	0.0146
505	SLU 4	-0.44	0	36.18	0.0431	-5.9437	0.0014
505	SLU 5	-0.44	-0.04	35.87	0.0428	-5.8961	-0.0079
505	SLU 6	-0.46	0.06	36.71	0.0436	-6.0236	0.0156
505	SLU 7	-0.45	0.01	36.71	0.0437	-6.0256	0.0025
505	SLU 8	-0.45	0.06	36.4	0.0432	-5.9746	0.0151
505	SLU 9	-0.45	0	36.41	0.0433	-5.9766	0.002
505	SLU 10	-0.44	0.03	39.49	0.0483	-6.5023	0.0091
505	SLU 11	-0.46	0.13	40.33	0.0492	-6.6298	0.0327
505	SLU 12	-0.46	0.07	40.34	0.0493	-6.6318	0.0195
505	SLU 13	-0.45	0.04	40.03	0.049	-6.5842	0.0102
505	SLU 14	-0.47	0.13	40.87	0.0498	-6.7117	0.0337
505	SLU 15	-0.47	0.08	40.87	0.05	-6.7137	0.0206
505	SLU 16	-0.47	0.13	40.56	0.0494	-6.6627	0.0332
505	SLU 17	-0.46	0.08	40.56	0.0495	-6.6647	0.0201
505	SLU 18	-0.45	0.15	41.27	0.0508	-6.7938	0.0388
505	SLU 19	-0.45	0.1	41.28	0.0509	-6.7958	0.0257
505	SLU 20	-0.46	0.16	41.81	0.0514	-6.8757	0.0399
505	SLU 21	-0.46	0.1	41.81	0.0516	-6.8777	0.0267
505	SLU 22	-0.47	0.11	39.5	0.0482	-6.4917	0.028
505	SLU 23	-0.47	0.02	39.5	0.0484	-6.4951	0.0061
505	SLU 24	-0.48	0.11	40.34	0.0492	-6.6226	0.0296
505	SLU 25	-0.48	0.06	40.34	0.0494	-6.6247	0.0164
505	SLU 26	-0.47	0.02	40.04	0.049	-6.577	0.0071
505	SLU 27	-0.49	0.12	40.88	0.0499	-6.7045	0.0307
505	SLU 28	-0.49	0.07	40.88	0.05	-6.7066	0.0175
505	SLU 29	-0.49	0.12	40.57	0.0494	-6.6555	0.0302
505	SLU 30	-0.49	0.06	40.57	0.0495	-6.6576	0.017
505	SLU 31	-0.48	0.09	43.66	0.0546	-7.1832	0.0242
505	SLU 32	-0.5	0.19	44.5	0.0555	-7.3107	0.0477
505	SLU 33	-0.49	0.13	44.5	0.0556	-7.3128	0.0345
505	SLU 34	-0.49	0.1	44.19	0.0552	-7.2652	0.0252
505	SLU 35	-0.5	0.19	45.03	0.0561	-7.3927	0.0488
505	SLU 36	-0.5	0.14	45.03	0.0562	-7.3947	0.0356
505	SLU 37	-0.5	0.19	44.72	0.0556	-7.3436	0.0483
505	SLU 38	-0.5	0.14	44.73	0.0558	-7.3457	0.0351
505	SLU 39	-0.49	0.21	45.44	0.057	-7.4747	0.0539
505	SLU 40	-0.49	0.16	45.44	0.0572	-7.4768	0.0407
505	SLU 41	-0.5	0.22	45.97	0.0577	-7.5566	0.0549
505	SLU 42	-0.49	0.16	45.97	0.0578	-7.5587	0.0418
505	SLU 43	-0.56	0.04	44.51	0.0523	-7.3205	0.0117
505	SLU 44	-0.55	-0.05	44.51	0.0526	-7.3239	-0.0102
505	SLU 45	-0.57	0.05	45.35	0.0534	-7.4514	0.0133
505	SLU 46	-0.56	0	45.35	0.0536	-7.4535	0.0001



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
505	SLU 47	-0.56	-0.04	45.05	0.0532	-7.4058	-0.0091
505	SLU 48	-0.58	0.05	45.89	0.0541	-7.5333	0.0144
505	SLU 49	-0.57	0	45.89	0.0542	-7.5354	0.0012
505	SLU 50	-0.57	0.05	45.58	0.0536	-7.4843	0.0139
505	SLU 51	-0.57	0	45.58	0.0537	-7.4864	0.0007
505	SLU 52	-0.56	0.03	48.67	0.0588	-8.012	0.0079
505	SLU 53	-0.58	0.12	49.51	0.0596	-8.1395	0.0314
505	SLU 54	-0.58	0.07	49.51	0.0598	-8.1416	0.0182
505	SLU 55	-0.57	0.03	49.2	0.0594	-8.0939	0.0089
505	SLU 56	-0.59	0.12	50.04	0.0603	-8.2214	0.0325
505	SLU 57	-0.58	0.07	50.04	0.0604	-8.2235	0.0193
505	SLU 58	-0.58	0.12	49.73	0.0598	-8.1724	0.032
505	SLU 59	-0.58	0.07	49.73	0.06	-8.1745	0.0188
505	SLU 60	-0.57	0.15	50.45	0.0612	-8.3035	0.0376
505	SLU 61	-0.57	0.09	50.45	0.0614	-8.3056	0.0244
505	SLU 62	-0.58	0.15	50.98	0.0619	-8.3854	0.0387
505	SLU 63	-0.58	0.1	50.98	0.062	-8.3875	0.0255
505	SLU 64	-0.59	0.1	48.68	0.0586	-8.0015	0.0268
505	SLU 65	-0.59	0.01	48.68	0.0588	-8.0049	0.0048
505	SLU 66	-0.6	0.11	49.52	0.0597	-8.1324	0.0284
505	SLU 67	-0.6	0.06	49.52	0.0598	-8.1344	0.0152
505	SLU 68	-0.59	0.02	49.21	0.0594	-8.0868	0.0059
505	SLU 69	-0.61	0.11	50.05	0.0603	-8.2143	0.0294
505	SLU 70	-0.61	0.06	50.05	0.0604	-8.2164	0.0163
505	SLU 71	-0.61	0.11	49.74	0.0598	-8.1653	0.0289
505	SLU 72	-0.6	0.06	49.74	0.06	-8.1673	0.0157
505	SLU 73	-0.6	0.09	52.83	0.065	-8.693	0.0229
505	SLU 74	-0.62	0.18	53.67	0.0659	-8.8205	0.0464
505	SLU 75	-0.61	0.13	53.67	0.066	-8.8226	0.0333
505	SLU 76	-0.61	0.09	53.37	0.0656	-8.7749	0.024
505	SLU 77	-0.62	0.18	54.21	0.0665	-8.9024	0.0475
505	SLU 78	-0.62	0.13	54.21	0.0666	-8.9045	0.0343
505	SLU 79	-0.62	0.18	53.9	0.0661	-8.8534	0.047
505	SLU 80	-0.62	0.13	53.9	0.0662	-8.8555	0.0338
505	SLU 81	-0.61	0.21	54.61	0.0675	-8.9845	0.0526
505	SLU 82	-0.61	0.15	54.61	0.0676	-8.9865	0.0395
505	SLU 83	-0.62	0.21	55.15	0.0681	-9.0664	0.0537
505	SLU 84	-0.61	0.16	55.15	0.0682	-9.0684	0.0405
505	SLE RA 1	-0.45	0.07	36.53	0.0437	-6.0053	0.0173
505	SLE RA 2	-0.44	0.01	36.53	0.0438	-6.0076	0.0027
505	SLE RA 3	-0.45	0.07	37.09	0.0444	-6.0926	0.0183
505	SLE RA 4	-0.45	0.03	37.09	0.0445	-6.094	0.0096
505	SLE RA 5	-0.45	0.01	36.88	0.0443	-6.0622	0.0034
505	SLE RA 6	-0.46	0.07	37.44	0.0448	-6.1472	0.0191
505	SLE RA 7	-0.46	0.04	37.44	0.0449	-6.1486	0.0103
505	SLE RA 8	-0.46	0.07	37.24	0.0445	-6.1145	0.0187
505	SLE RA 9	-0.46	0.04	37.24	0.0446	-6.1159	0.0099
505	SLE RA 10	-0.45	0.05	39.3	0.048	-6.4663	0.0147
505	SLE RA 11	-0.46	0.12	39.86	0.0486	-6.5513	0.0304
505	SLE RA 12	-0.46	0.08	39.86	0.0486	-6.5527	0.0216
505	SLE RA 13	-0.46	0.06	39.65	0.0484	-6.5209	0.0154
505	SLE RA 14	-0.47	0.12	40.21	0.049	-6.6059	0.0311
505	SLE RA 15	-0.47	0.09	40.22	0.0491	-6.6073	0.0223
505	SLE RA 16	-0.47	0.12	40.01	0.0487	-6.5733	0.0308
505	SLE RA 17	-0.46	0.08	40.01	0.0488	-6.5746	0.022
505	SLE RA 18	-0.46	0.13	40.49	0.0496	-6.6607	0.0345
505	SLE RA 19	-0.46	0.1	40.49	0.0497	-6.662	0.0257
505	SLE RA 20	-0.46	0.14	40.84	0.05	-6.7153	0.0352
505	SLE RA 21	-0.46	0.1	40.84	0.0501	-6.7166	0.0265
505	SLE FR 1	-0.45	0.07	36.53	0.0437	-6.0053	0.0173
505	SLE FR 2	-0.45	0.05	36.53	0.0437	-6.0058	0.0144
505	SLE FR 3	-0.45	0.07	36.67	0.0439	-6.0272	0.0176
505	SLE FR 4	-0.45	0.07	37.72	0.0455	-6.2024	0.0195
505	SLE FR 5	-0.45	0.09	37.86	0.0456	-6.2238	0.0227
505	SLE FR 6	-0.45	0.1	38.51	0.0467	-6.333	0.0259
505	SLE QP 1	-0.45	0.07	36.53	0.0437	-6.0053	0.0173
505	SLE QP 2	-0.45	0.09	37.71	0.0455	-6.2019	0.0225
505	SLD 1	2.01	0.65	48.28	0.056	-7.7317	0.1621
505	SLD 2	2.07	0.11	48.24	0.0576	-7.7497	0.0292
505	SLD 3	2.17	-0.69	47.71	0.0591	-7.8449	-0.1713
505	SLD 4	2.24	-1.22	47.67	0.0607	-7.8629	-0.3042
505	SLD 5	0.03	2.37	41.77	0.0436	-6.4859	0.5937
505	SLD 6	0.07	2.02	41.74	0.0447	-6.4977	0.5063
505	SLD 7	0.57	-2.07	39.84	0.054	-6.8634	-0.5175
505	SLD 8	0.62	-2.43	39.82	0.055	-6.8752	-0.6049
505	SLD 9	-1.52	2.6	35.61	0.0359	-5.5286	0.6498
505	SLD 10	-1.47	2.25	35.59	0.037	-5.5405	0.5625
505	SLD 11	-0.97	-1.85	33.69	0.0462	-5.9061	-0.4614
505	SLD 12	-0.93	-2.2	33.66	0.0473	-5.918	-0.5488
505	SLD 13	-3.14	1.39	27.76	0.0302	-4.5409	0.3491
505	SLD 14	-3.07	0.86	27.72	0.0318	-4.5589	0.2162
505	SLD 15	-2.97	0.06	27.18	0.0333	-4.6542	0.0158
505	SLD 16	-2.91	-0.48	27.15	0.0349	-4.6722	-0.1172
505	SLV 1	5.3	1.34	62.45	0.0702	-9.7833	0.3354
505	SLV 2	5.45	0.1	62.36	0.074	-9.8253	0.0259
505	SLV 3	5.68	-1.67	61.1	0.0773	-10.0469	-0.419
505	SLV 4	5.83	-2.92	61.02	0.081	-10.0889	-0.7286
505	SLV 5	0.67	5.26	47.2	0.0415	-6.8693	1.3142
505	SLV 6	0.77	4.45	47.14	0.044	-6.8964	1.1143
505	SLV 7	1.94	-4.81	42.7	0.0651	-7.748	-1.2008



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
505	SLV 8	2.04	-5.61	42.64	0.0675	-7.775	-1.4007
505	SLV 9	-2.94	5.78	32.79	0.0235	-4.6288	1.4456
505	SLV 10	-2.84	4.98	32.73	0.0259	-4.6559	1.2457
505	SLV 11	-1.67	-4.28	28.29	0.047	-5.5074	-1.0693
505	SLV 12	-1.57	-5.09	28.23	0.0494	-5.5345	-1.2693
505	SLV 13	-6.74	3.09	14.41	0.0099	-2.315	0.7735
505	SLV 14	-6.58	1.85	14.33	0.0137	-2.3569	0.464
505	SLV 15	-6.35	0.07	13.07	0.017	-2.5786	0.019
505	SLV 16	-6.2	-1.17	12.98	0.0207	-2.6205	-0.2905
505	CRTFP Ux+	0	0	0	0	0	0
505	CRTFP Ux-	0	0	0	0	0	0
505	CRTFP Uy+	0	0	0	0	0	0
505	CRTFP Uy-	0	0	0	0	0	0
510	SLU 1	-0.56	-0.82	59.25	0.0003	-0.1398	0.0006
510	SLU 2	-0.56	-0.9	59.29	0.0006	-0.1413	0.0012
510	SLU 3	-0.58	-0.82	60.65	0.0005	-0.1434	0.0005
510	SLU 4	-0.57	-0.87	60.67	0.0007	-0.1443	0.0009
510	SLU 5	-0.57	-0.91	60.17	0.0004	-0.1432	0.0012
510	SLU 6	-0.59	-0.84	61.53	0.0004	-0.1454	0.0005
510	SLU 7	-0.58	-0.89	61.55	0.0005	-0.1463	0.0009
510	SLU 8	-0.58	-0.84	61.01	0	-0.1438	0.0005
510	SLU 9	-0.58	-0.89	61.03	0.0002	-0.1446	0.0009
510	SLU 10	-0.56	-0.91	66.69	0.0038	-0.1661	0.0012
510	SLU 11	-0.58	-0.83	68.05	0.0037	-0.1682	0.0005
510	SLU 12	-0.57	-0.88	68.07	0.0039	-0.1691	0.0009
510	SLU 13	-0.57	-0.92	67.57	0.0036	-0.1681	0.0012
510	SLU 14	-0.59	-0.84	68.93	0.0036	-0.1702	0.0005
510	SLU 15	-0.59	-0.89	68.95	0.0037	-0.1711	0.0008
510	SLU 16	-0.59	-0.85	68.4	0.0032	-0.1686	0.0005
510	SLU 17	-0.58	-0.9	68.43	0.0034	-0.1695	0.0009
510	SLU 18	-0.56	-0.83	69.82	0.0049	-0.1753	0.0005
510	SLU 19	-0.56	-0.88	69.84	0.005	-0.1762	0.0009
510	SLU 20	-0.57	-0.84	70.7	0.0047	-0.1773	0.0005
510	SLU 21	-0.57	-0.89	70.72	0.0049	-0.1781	0.0009
510	SLU 22	-0.6	-0.79	66.31	0.0038	-0.152	0.0003
510	SLU 23	-0.6	-0.87	66.35	0.004	-0.1534	0.0009
510	SLU 24	-0.62	-0.8	67.71	0.004	-0.1556	0.0002
510	SLU 25	-0.61	-0.84	67.73	0.0041	-0.1564	0.0006
510	SLU 26	-0.61	-0.89	67.22	0.0039	-0.1554	0.0009
510	SLU 27	-0.63	-0.81	68.58	0.0038	-0.1576	0.0002
510	SLU 28	-0.63	-0.86	68.61	0.004	-0.1584	0.0006
510	SLU 29	-0.63	-0.82	68.06	0.0035	-0.1559	0.0002
510	SLU 30	-0.62	-0.86	68.08	0.0036	-0.1568	0.0006
510	SLU 31	-0.6	-0.88	73.74	0.0072	-0.1783	0.0009
510	SLU 32	-0.62	-0.8	75.1	0.0072	-0.1804	0.0002
510	SLU 33	-0.62	-0.85	75.13	0.0073	-0.1813	0.0006
510	SLU 34	-0.61	-0.89	74.62	0.0071	-0.1802	0.0009
510	SLU 35	-0.63	-0.82	75.98	0.007	-0.1824	0.0001
510	SLU 36	-0.63	-0.86	76	0.0072	-0.1832	0.0005
510	SLU 37	-0.63	-0.82	75.46	0.0067	-0.1808	0.0002
510	SLU 38	-0.62	-0.87	75.48	0.0068	-0.1816	0.0006
510	SLU 39	-0.61	-0.8	76.88	0.0083	-0.1875	0.0002
510	SLU 40	-0.6	-0.85	76.9	0.0085	-0.1883	0.0006
510	SLU 41	-0.62	-0.81	77.75	0.0082	-0.1894	0.0002
510	SLU 42	-0.61	-0.86	77.78	0.0084	-0.1903	0.0006
510	SLU 43	-0.71	-1.08	74.61	-0.0007	-0.1776	0.0009
510	SLU 44	-0.71	-1.16	74.65	-0.0005	-0.179	0.0015
510	SLU 45	-0.73	-1.08	76.01	-0.0006	-0.1812	0.0008
510	SLU 46	-0.73	-1.13	76.03	-0.0004	-0.1821	0.0012
510	SLU 47	-0.72	-1.17	75.52	-0.0006	-0.181	0.0015
510	SLU 48	-0.74	-1.09	76.88	-0.0007	-0.1832	0.0008
510	SLU 49	-0.74	-1.14	76.91	-0.0005	-0.184	0.0012
510	SLU 50	-0.74	-1.1	76.36	-0.001	-0.1815	0.0008
510	SLU 51	-0.73	-1.15	76.39	-0.0009	-0.1824	0.0012
510	SLU 52	-0.71	-1.16	82.05	0.0027	-0.2039	0.0015
510	SLU 53	-0.73	-1.09	83.41	0.0026	-0.206	0.0008
510	SLU 54	-0.73	-1.14	83.43	0.0028	-0.2069	0.0012
510	SLU 55	-0.72	-1.18	82.92	0.0026	-0.2058	0.0015
510	SLU 56	-0.74	-1.1	84.28	0.0025	-0.208	0.0007
510	SLU 57	-0.74	-1.15	84.31	0.0026	-0.2089	0.0011
510	SLU 58	-0.74	-1.11	83.76	0.0022	-0.2064	0.0008
510	SLU 59	-0.74	-1.16	83.78	0.0023	-0.2072	0.0012
510	SLU 60	-0.72	-1.09	85.18	0.0038	-0.2131	0.0008
510	SLU 61	-0.72	-1.13	85.2	0.004	-0.2139	0.0012
510	SLU 62	-0.73	-1.1	86.06	0.0037	-0.215	0.0008
510	SLU 63	-0.73	-1.15	86.08	0.0038	-0.2159	0.0012
510	SLU 64	-0.76	-1.05	81.66	0.0027	-0.1898	0.0006
510	SLU 65	-0.75	-1.13	81.7	0.003	-0.1912	0.0012
510	SLU 66	-0.77	-1.05	83.06	0.0029	-0.1934	0.0005
510	SLU 67	-0.77	-1.1	83.09	0.003	-0.1942	0.0009
510	SLU 68	-0.76	-1.14	82.58	0.0028	-0.1932	0.0012
510	SLU 69	-0.78	-1.06	83.94	0.0028	-0.1953	0.0005
510	SLU 70	-0.78	-1.11	83.96	0.0029	-0.1962	0.0009
510	SLU 71	-0.78	-1.07	83.42	0.0024	-0.1937	0.0005
510	SLU 72	-0.78	-1.12	83.44	0.0026	-0.1946	0.0009
510	SLU 73	-0.75	-1.14	89.1	0.0061	-0.216	0.0012
510	SLU 74	-0.77	-1.06	90.46	0.0061	-0.2182	0.0004
510	SLU 75	-0.77	-1.11	90.48	0.0062	-0.2191	0.0008
510	SLU 76	-0.77	-1.15	89.98	0.006	-0.218	0.0011
510	SLU 77	-0.78	-1.07	91.34	0.0059	-0.2202	0.0004



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
510	SLU 78	-0.78	-1.12	91.36	0.0061	-0.221	0.0008
510	SLU 79	-0.78	-1.08	90.82	0.0056	-0.2185	0.0005
510	SLU 80	-0.78	-1.13	90.84	0.0058	-0.2194	0.0009
510	SLU 81	-0.76	-1.06	92.23	0.0073	-0.2252	0.0005
510	SLU 82	-0.76	-1.11	92.26	0.0074	-0.2261	0.0009
510	SLU 83	-0.77	-1.07	93.11	0.0071	-0.2272	0.0005
510	SLU 84	-0.77	-1.12	93.13	0.0073	-0.2281	0.0009
510	SLE RA 1	-0.57	-0.81	61.27	0.0013	-0.1433	0.0005
510	SLE RA 2	-0.57	-0.87	61.29	0.0015	-0.1443	0.0009
510	SLE RA 3	-0.58	-0.81	62.2	0.0014	-0.1457	0.0004
510	SLE RA 4	-0.58	-0.85	62.22	0.0016	-0.1463	0.0007
510	SLE RA 5	-0.58	-0.87	61.88	0.0014	-0.1456	0.0009
510	SLE RA 6	-0.59	-0.82	62.78	0.0014	-0.147	0.0004
510	SLE RA 7	-0.59	-0.86	62.8	0.0015	-0.1476	0.0007
510	SLE RA 8	-0.59	-0.83	62.44	0.0011	-0.1459	0.0005
510	SLE RA 9	-0.59	-0.86	62.45	0.0012	-0.1465	0.0007
510	SLE RA 10	-0.57	-0.87	66.23	0.0036	-0.1608	0.0009
510	SLE RA 11	-0.58	-0.82	67.13	0.0036	-0.1622	0.0004
510	SLE RA 12	-0.58	-0.85	67.15	0.0037	-0.1628	0.0007
510	SLE RA 13	-0.58	-0.88	66.81	0.0035	-0.1621	0.0009
510	SLE RA 14	-0.59	-0.83	67.72	0.0035	-0.1636	0.0004
510	SLE RA 15	-0.59	-0.86	67.73	0.0036	-0.1641	0.0007
510	SLE RA 16	-0.59	-0.83	67.37	0.0033	-0.1625	0.0004
510	SLE RA 17	-0.59	-0.87	67.39	0.0034	-0.1631	0.0007
510	SLE RA 18	-0.58	-0.82	68.31	0.0044	-0.1669	0.0005
510	SLE RA 19	-0.57	-0.85	68.33	0.0045	-0.1675	0.0007
510	SLE RA 20	-0.58	-0.83	68.9	0.0043	-0.1683	0.0004
510	SLE RA 21	-0.58	-0.86	68.91	0.0044	-0.1688	0.0007
510	SLE FR 1	-0.57	-0.81	61.27	0.0013	-0.1433	0.0005
510	SLE FR 2	-0.57	-0.82	61.27	0.0014	-0.1435	0.0006
510	SLE FR 3	-0.58	-0.82	61.5	0.0013	-0.1438	0.0005
510	SLE FR 4	-0.57	-0.82	63.39	0.0023	-0.1506	0.0006
510	SLE FR 5	-0.58	-0.82	63.62	0.0022	-0.1509	0.0005
510	SLE FR 6	-0.57	-0.82	64.79	0.0028	-0.1551	0.0005
510	SLE QP 1	-0.57	-0.81	61.27	0.0013	-0.1433	0.0005
510	SLE QP 2	-0.57	-0.81	63.38	0.0022	-0.1504	0.0005
510	SLD 1	4.64	-0.42	67.79	0.0024	0.0617	0.0086
510	SLD 2	4.72	-0.79	67.86	0.004	0.0568	0.0177
510	SLD 3	4.35	-2.15	68.38	0.0058	0.0187	0.0109
510	SLD 4	4.42	-2.53	68.45	0.0074	0.0138	0.02
510	SLD 5	1.43	2	63.8	-0.0032	-0.0207	-0.0023
510	SLD 6	1.48	1.76	63.85	-0.0022	-0.0239	0.0037
510	SLD 7	0.44	-3.78	65.76	0.0082	-0.164	0.0055
510	SLD 8	0.48	-4.03	65.81	0.0093	-0.1672	0.0115
510	SLD 9	-1.63	2.4	60.96	-0.0048	-0.1336	-0.0106
510	SLD 10	-1.58	2.15	61	-0.0037	-0.1368	-0.0046
510	SLD 11	-2.63	-3.39	62.92	0.0066	-0.2768	-0.0028
510	SLD 12	-2.58	-3.63	62.97	0.0077	-0.2801	0.0032
510	SLD 13	-5.57	0.9	58.31	-0.0029	-0.3146	-0.0191
510	SLD 14	-5.49	0.53	58.39	-0.0013	-0.3195	-0.01
510	SLD 15	-5.87	-0.84	58.9	0.0005	-0.3575	-0.0167
510	SLD 16	-5.79	-1.21	58.98	0.0021	-0.3625	-0.0076
510	SLV 1	11.63	0.04	73.7	0.0027	0.3447	0.0196
510	SLV 2	11.81	-0.82	73.88	0.0064	0.3332	0.0408
510	SLV 3	10.94	-3.88	75.06	0.0105	0.2465	0.0249
510	SLV 4	11.11	-4.75	75.23	0.0142	0.2351	0.0461
510	SLV 5	4.12	5.55	64.4	-0.0101	0.1489	-0.0056
510	SLV 6	4.23	4.99	64.51	-0.0077	0.1415	0.0081
510	SLV 7	1.79	-7.54	68.9	0.0159	-0.1781	0.0122
510	SLV 8	1.9	-8.1	69.02	0.0183	-0.1855	0.0259
510	SLV 9	-3.05	6.48	57.75	-0.0138	-0.1153	-0.025
510	SLV 10	-2.94	5.92	57.86	-0.0114	-0.1227	-0.0113
510	SLV 11	-5.38	-6.62	62.25	0.0122	-0.4423	-0.0072
510	SLV 12	-5.26	-7.18	62.36	0.0146	-0.4497	0.0065
510	SLV 13	-12.26	3.12	51.54	-0.0097	-0.5359	-0.0452
510	SLV 14	-12.08	2.26	51.71	-0.006	-0.5473	-0.0239
510	SLV 15	-12.96	-0.81	52.89	-0.002	-0.634	-0.0398
510	SLV 16	-12.78	-1.67	53.06	0.0018	-0.6454	-0.0186
510	CRTFP Ux+	0	0	0	0	0	0
510	CRTFP Ux-	0	0	0	0	0	0
514	SLU 1	0.71	-0.38	58.57	-0.0079	0.066	-0.0071
514	SLU 2	0.72	-0.41	58.6	-0.0078	0.0675	-0.0066
514	SLU 3	0.73	-0.38	59.92	-0.0081	0.0663	-0.0072
514	SLU 4	0.74	-0.4	59.94	-0.0081	0.0671	-0.0069
514	SLU 5	0.73	-0.43	59.45	-0.0082	0.0666	-0.0067
514	SLU 6	0.75	-0.39	60.77	-0.0086	0.0654	-0.0073
514	SLU 7	0.75	-0.41	60.79	-0.0085	0.0663	-0.007
514	SLU 8	0.74	-0.4	60.28	-0.0088	0.0643	-0.0073
514	SLU 9	0.74	-0.42	60.29	-0.0087	0.0651	-0.007
514	SLU 10	0.76	-0.38	65.75	-0.0057	0.0771	-0.0069
514	SLU 11	0.78	-0.34	67.07	-0.006	0.0759	-0.0075
514	SLU 12	0.78	-0.37	67.09	-0.006	0.0768	-0.0072
514	SLU 13	0.78	-0.39	66.61	-0.0061	0.0762	-0.0069
514	SLU 14	0.79	-0.36	67.92	-0.0065	0.075	-0.0076
514	SLU 15	0.79	-0.38	67.94	-0.0064	0.0759	-0.0073
514	SLU 16	0.78	-0.37	67.43	-0.0067	0.0739	-0.0076
514	SLU 17	0.79	-0.39	67.45	-0.0066	0.0748	-0.0072
514	SLU 18	0.78	-0.33	68.79	-0.0049	0.0798	-0.0075
514	SLU 19	0.78	-0.35	68.81	-0.0048	0.0806	-0.0072
514	SLU 20	0.79	-0.34	69.64	-0.0053	0.0789	-0.0076



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
514	SLU 21	0.79	-0.36	69.66	-0.0053	0.0798	-0.0073
514	SLU 22	0.78	-0.3	65.45	-0.0059	0.0549	-0.0068
514	SLU 23	0.79	-0.34	65.48	-0.0058	0.0563	-0.0063
514	SLU 24	0.8	-0.3	66.79	-0.0062	0.0551	-0.0069
514	SLU 25	0.8	-0.32	66.81	-0.0061	0.056	-0.0066
514	SLU 26	0.8	-0.35	66.33	-0.0062	0.0554	-0.0064
514	SLU 27	0.81	-0.31	67.64	-0.0066	0.0542	-0.007
514	SLU 28	0.81	-0.34	67.66	-0.0065	0.0551	-0.0067
514	SLU 29	0.8	-0.33	67.15	-0.0068	0.0531	-0.007
514	SLU 30	0.81	-0.35	67.17	-0.0067	0.054	-0.0067
514	SLU 31	0.83	-0.3	72.63	-0.0037	0.0659	-0.0066
514	SLU 32	0.84	-0.27	73.94	-0.0041	0.0647	-0.0072
514	SLU 33	0.85	-0.29	73.96	-0.004	0.0656	-0.0069
514	SLU 34	0.84	-0.32	73.48	-0.0041	0.0651	-0.0067
514	SLU 35	0.86	-0.28	74.8	-0.0045	0.0638	-0.0073
514	SLU 36	0.86	-0.3	74.81	-0.0044	0.0647	-0.007
514	SLU 37	0.85	-0.29	74.3	-0.0047	0.0627	-0.0073
514	SLU 38	0.85	-0.31	74.32	-0.0046	0.0636	-0.007
514	SLU 39	0.84	-0.25	75.66	-0.0029	0.0686	-0.0072
514	SLU 40	0.85	-0.27	75.68	-0.0029	0.0695	-0.0069
514	SLU 41	0.86	-0.26	76.51	-0.0034	0.0677	-0.0073
514	SLU 42	0.86	-0.29	76.53	-0.0033	0.0686	-0.007
514	SLU 43	0.91	-0.52	73.79	-0.011	0.0897	-0.0093
514	SLU 44	0.91	-0.55	73.82	-0.0108	0.0911	-0.0088
514	SLU 45	0.93	-0.52	75.13	-0.0112	0.0899	-0.0094
514	SLU 46	0.93	-0.54	75.15	-0.0111	0.0908	-0.0091
514	SLU 47	0.92	-0.57	74.67	-0.0112	0.0902	-0.0089
514	SLU 48	0.94	-0.53	75.99	-0.0116	0.089	-0.0095
514	SLU 49	0.94	-0.55	76	-0.0115	0.0899	-0.0092
514	SLU 50	0.93	-0.54	75.49	-0.0118	0.0879	-0.0095
514	SLU 51	0.93	-0.56	75.51	-0.0117	0.0888	-0.0092
514	SLU 52	0.95	-0.52	80.97	-0.0087	0.1007	-0.0091
514	SLU 53	0.97	-0.48	82.29	-0.0091	0.0995	-0.0097
514	SLU 54	0.97	-0.5	82.3	-0.009	0.1004	-0.0094
514	SLU 55	0.97	-0.53	81.82	-0.0092	0.0999	-0.0092
514	SLU 56	0.98	-0.49	83.14	-0.0095	0.0986	-0.0098
514	SLU 57	0.98	-0.52	83.16	-0.0094	0.0995	-0.0095
514	SLU 58	0.97	-0.51	82.64	-0.0097	0.0975	-0.0098
514	SLU 59	0.98	-0.53	82.66	-0.0096	0.0984	-0.0095
514	SLU 60	0.97	-0.47	84.01	-0.008	0.1034	-0.0097
514	SLU 61	0.97	-0.49	84.02	-0.0079	0.1043	-0.0094
514	SLU 62	0.98	-0.48	84.86	-0.0084	0.1025	-0.0098
514	SLU 63	0.98	-0.5	84.87	-0.0083	0.1034	-0.0095
514	SLU 64	0.97	-0.44	80.66	-0.009	0.0785	-0.009
514	SLU 65	0.98	-0.48	80.69	-0.0089	0.08	-0.0085
514	SLU 66	0.99	-0.44	82.01	-0.0092	0.0787	-0.0091
514	SLU 67	0.99	-0.46	82.03	-0.0091	0.0796	-0.0088
514	SLU 68	0.99	-0.49	81.54	-0.0093	0.0791	-0.0086
514	SLU 69	1	-0.45	82.86	-0.0096	0.0779	-0.0092
514	SLU 70	1.01	-0.48	82.88	-0.0096	0.0787	-0.0089
514	SLU 71	1	-0.46	82.36	-0.0098	0.0767	-0.0092
514	SLU 72	1	-0.49	82.38	-0.0098	0.0776	-0.0089
514	SLU 73	1.02	-0.44	87.84	-0.0068	0.0896	-0.0088
514	SLU 74	1.03	-0.41	89.16	-0.0071	0.0883	-0.0094
514	SLU 75	1.04	-0.43	89.18	-0.007	0.0892	-0.0091
514	SLU 76	1.03	-0.45	88.69	-0.0072	0.0887	-0.0089
514	SLU 77	1.05	-0.42	90.01	-0.0075	0.0875	-0.0095
514	SLU 78	1.05	-0.44	90.03	-0.0075	0.0883	-0.0092
514	SLU 79	1.04	-0.43	89.52	-0.0077	0.0863	-0.0095
514	SLU 80	1.04	-0.45	89.53	-0.0077	0.0872	-0.0092
514	SLU 81	1.03	-0.39	90.88	-0.006	0.0922	-0.0094
514	SLU 82	1.04	-0.41	90.9	-0.0059	0.0931	-0.0091
514	SLU 83	1.05	-0.4	91.73	-0.0064	0.0913	-0.0095
514	SLU 84	1.05	-0.42	91.75	-0.0063	0.0922	-0.0092
514	SLE RA 1	0.73	-0.35	60.54	-0.0074	0.0628	-0.007
514	SLE RA 2	0.74	-0.38	60.56	-0.0073	0.0638	-0.0067
514	SLE RA 3	0.75	-0.36	61.43	-0.0075	0.063	-0.0071
514	SLE RA 4	0.75	-0.37	61.45	-0.0075	0.0636	-0.0069
514	SLE RA 5	0.74	-0.39	61.12	-0.0075	0.0632	-0.0067
514	SLE RA 6	0.75	-0.36	62	-0.0078	0.0624	-0.0071
514	SLE RA 7	0.76	-0.38	62.01	-0.0077	0.063	-0.0069
514	SLE RA 8	0.75	-0.37	61.67	-0.0079	0.0617	-0.0071
514	SLE RA 9	0.75	-0.39	61.68	-0.0079	0.0622	-0.0069
514	SLE RA 10	0.77	-0.36	65.32	-0.0059	0.0702	-0.0069
514	SLE RA 11	0.78	-0.33	66.2	-0.0061	0.0694	-0.0073
514	SLE RA 12	0.78	-0.35	66.21	-0.0061	0.07	-0.0071
514	SLE RA 13	0.77	-0.36	65.89	-0.0061	0.0696	-0.0069
514	SLE RA 14	0.78	-0.34	66.77	-0.0064	0.0688	-0.0073
514	SLE RA 15	0.79	-0.36	66.78	-0.0063	0.0694	-0.0071
514	SLE RA 16	0.78	-0.35	66.44	-0.0065	0.0681	-0.0073
514	SLE RA 17	0.78	-0.36	66.45	-0.0065	0.0687	-0.0071
514	SLE RA 18	0.77	-0.32	67.35	-0.0054	0.072	-0.0073
514	SLE RA 19	0.78	-0.34	67.36	-0.0053	0.0726	-0.0071
514	SLE RA 20	0.78	-0.33	67.92	-0.0056	0.0714	-0.0073
514	SLE RA 21	0.79	-0.34	67.93	-0.0056	0.072	-0.0071
514	SLE FR 1	0.73	-0.35	60.54	-0.0074	0.0628	-0.007
514	SLE FR 2	0.73	-0.36	60.54	-0.0073	0.063	-0.0069
514	SLE FR 3	0.74	-0.36	60.76	-0.0075	0.0626	-0.007
514	SLE FR 4	0.75	-0.35	62.58	-0.0067	0.0658	-0.007
514	SLE FR 5	0.75	-0.35	62.81	-0.0069	0.0653	-0.0071



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
514	SLE FR 6	0.75	-0.34	63.94	-0.0064	0.0674	-0.0071
514	SLE QP 1	0.73	-0.35	60.54	-0.0074	0.0628	-0.007
514	SLE QP 2	0.75	-0.34	62.58	-0.0068	0.0656	-0.0071
514	SLD 1	5.67	0.89	57.87	-0.0068	0.0865	0.0082
514	SLD 2	5.76	1.29	57.88	-0.0086	0.079	0.0181
514	SLD 3	5.4	-0.86	58.37	-0.0015	0.1373	0.0065
514	SLD 4	5.49	-0.46	58.38	-0.0033	0.1298	0.0164
514	SLD 5	2.63	2.61	60.4	-0.0144	-0.0039	-0.0017
514	SLD 6	2.69	2.87	60.41	-0.0156	-0.0088	0.0048
514	SLD 7	1.7	-3.22	62.07	0.0032	0.1655	-0.0073
514	SLD 8	1.76	-2.96	62.08	0.002	0.1606	-0.0008
514	SLD 9	-0.27	2.28	63.08	-0.0155	-0.0294	-0.0133
514	SLD 10	-0.21	2.53	63.09	-0.0167	-0.0344	-0.0069
514	SLD 11	-1.2	-3.56	64.75	0.0021	0.14	-0.0189
514	SLD 12	-1.14	-3.3	64.76	0.0009	0.1351	-0.0125
514	SLD 13	-3.99	-0.23	66.78	-0.0102	0.0013	-0.0306
514	SLD 14	-3.9	0.17	66.79	-0.012	-0.0061	-0.0207
514	SLD 15	-4.27	-1.98	67.28	-0.0049	0.0522	-0.0322
514	SLD 16	-4.18	-1.58	67.29	-0.0067	0.0447	-0.0224
514	SLV 1	12.28	2.48	51.56	-0.0067	0.1152	0.0287
514	SLV 2	12.49	3.4	51.6	-0.0109	0.0978	0.0517
514	SLV 3	11.63	-1.48	52.71	0.0054	0.2307	0.0249
514	SLV 4	11.84	-0.56	52.74	0.0011	0.2132	0.0478
514	SLV 5	5.15	6.35	57.53	-0.0242	-0.0916	0.0056
514	SLV 6	5.29	6.95	57.56	-0.027	-0.1028	0.0204
514	SLV 7	2.99	-6.85	61.35	0.0158	0.2932	-0.0073
514	SLV 8	3.12	-6.26	61.37	0.0131	0.2819	0.0075
514	SLV 9	-1.63	5.57	63.79	-0.0266	-0.1508	-0.0217
514	SLV 10	-1.5	6.16	63.81	-0.0293	-0.162	-0.0068
514	SLV 11	-3.8	-7.64	67.6	0.0135	0.234	-0.0346
514	SLV 12	-3.66	-7.04	67.63	0.0107	0.2227	-0.0197
514	SLV 13	-10.34	-0.13	72.42	-0.0146	-0.0821	-0.062
514	SLV 14	-10.13	0.79	72.45	-0.0189	-0.0995	-0.039
514	SLV 15	-10.99	-4.09	73.56	-0.0026	0.0334	-0.0659
514	SLV 16	-10.78	-3.17	73.6	-0.0068	0.0159	-0.0429
514	CRTFP Ux+	0	0	0	0	0	0
514	CRTFP Ux-	0	0	0	0	0	0
514	CRTFP Uy+	0	0	0	0	0	0
514	CRTFP Uy-	0	0	0	0	0	0
515	SLU 1	0.78	0.4	41.19	0.0488	11.8368	-0.1401
515	SLU 2	0.78	0.37	41.2	0.0488	11.8417	-0.1328
515	SLU 3	0.8	0.4	42.16	0.05	12.1091	-0.143
515	SLU 4	0.8	0.39	42.17	0.05	12.112	-0.1385
515	SLU 5	0.79	0.37	41.82	0.0495	12.0128	-0.1325
515	SLU 6	0.81	0.4	42.77	0.0508	12.2802	-0.1427
515	SLU 7	0.81	0.39	42.78	0.0508	12.2831	-0.1383
515	SLU 8	0.81	0.39	42.41	0.0503	12.179	-0.1396
515	SLU 9	0.81	0.38	42.42	0.0503	12.1819	-0.1352
515	SLU 10	0.83	0.5	46	0.0556	13.2251	-0.1767
515	SLU 11	0.85	0.53	46.96	0.0568	13.4925	-0.1869
515	SLU 12	0.85	0.52	46.97	0.0568	13.4954	-0.1825
515	SLU 13	0.84	0.5	46.62	0.0563	13.3962	-0.1765
515	SLU 14	0.86	0.53	47.57	0.0575	13.6636	-0.1867
515	SLU 15	0.86	0.52	47.58	0.0576	13.6665	-0.1823
515	SLU 16	0.85	0.52	47.21	0.057	13.5625	-0.1836
515	SLU 17	0.86	0.51	47.22	0.0571	13.5654	-0.1792
515	SLU 18	0.85	0.57	48.04	0.0585	13.8132	-0.2029
515	SLU 19	0.85	0.56	48.05	0.0585	13.8161	-0.1985
515	SLU 20	0.86	0.57	48.66	0.0592	13.9843	-0.2027
515	SLU 21	0.86	0.56	48.67	0.0592	13.9872	-0.1983
515	SLU 22	0.85	0.51	45.97	0.0556	13.209	-0.1788
515	SLU 23	0.85	0.48	45.98	0.0556	13.2138	-0.1715
515	SLU 24	0.87	0.51	46.94	0.0568	13.4812	-0.1817
515	SLU 25	0.87	0.5	46.95	0.0569	13.4841	-0.1773
515	SLU 26	0.86	0.48	46.6	0.0564	13.3849	-0.1712
515	SLU 27	0.88	0.51	47.55	0.0576	13.6523	-0.1814
515	SLU 28	0.88	0.5	47.56	0.0576	13.6552	-0.177
515	SLU 29	0.87	0.5	47.2	0.0571	13.5512	-0.1783
515	SLU 30	0.87	0.49	47.21	0.0571	13.5541	-0.1739
515	SLU 31	0.9	0.61	50.78	0.0624	14.5973	-0.2155
515	SLU 32	0.92	0.64	51.74	0.0636	14.8647	-0.2256
515	SLU 33	0.92	0.63	51.75	0.0636	14.8676	-0.2212
515	SLU 34	0.91	0.61	51.4	0.0631	14.7684	-0.2152
515	SLU 35	0.93	0.64	52.35	0.0644	15.0358	-0.2254
515	SLU 36	0.93	0.63	52.36	0.0644	15.0387	-0.221
515	SLU 37	0.92	0.63	52	0.0639	14.9346	-0.2223
515	SLU 38	0.92	0.62	52.01	0.0639	14.9375	-0.2179
515	SLU 39	0.92	0.68	52.82	0.0653	15.1853	-0.2416
515	SLU 40	0.92	0.67	52.83	0.0653	15.1882	-0.2372
515	SLU 41	0.93	0.68	53.44	0.066	15.3564	-0.2414
515	SLU 42	0.93	0.67	53.45	0.0661	15.3593	-0.237
515	SLU 43	0.99	0.48	51.9	0.0611	14.9174	-0.1689
515	SLU 44	0.99	0.46	51.92	0.0611	14.9223	-0.1615
515	SLU 45	1.01	0.48	52.88	0.0623	15.1897	-0.1717
515	SLU 46	1.01	0.47	52.88	0.0623	15.1926	-0.1673
515	SLU 47	1	0.45	52.53	0.0618	15.0934	-0.1613
515	SLU 48	1.02	0.48	53.49	0.0631	15.3608	-0.1715
515	SLU 49	1.02	0.47	53.5	0.0631	15.3637	-0.1671
515	SLU 50	1.02	0.47	53.13	0.0626	15.2596	-0.1684
515	SLU 51	1.02	0.46	53.14	0.0626	15.2625	-0.164





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
515	SLU 52	1.04	0.58	56.72	0.0679	16.3057	-0.2055
515	SLU 53	1.06	0.61	57.68	0.0691	16.5731	-0.2157
515	SLU 54	1.06	0.6	57.68	0.0691	16.576	-0.2113
515	SLU 55	1.05	0.58	57.33	0.0686	16.4768	-0.2052
515	SLU 56	1.07	0.61	58.29	0.0699	16.7442	-0.2154
515	SLU 57	1.07	0.6	58.3	0.0699	16.7471	-0.211
515	SLU 58	1.06	0.6	57.93	0.0694	16.6431	-0.2123
515	SLU 59	1.07	0.59	57.94	0.0694	16.646	-0.2079
515	SLU 60	1.06	0.65	58.76	0.0708	16.8938	-0.2317
515	SLU 61	1.06	0.64	58.77	0.0708	16.8967	-0.2273
515	SLU 62	1.07	0.65	59.37	0.0715	17.0649	-0.2314
515	SLU 63	1.07	0.64	59.38	0.0715	17.0678	-0.227
515	SLU 64	1.06	0.59	56.68	0.0679	16.2896	-0.2076
515	SLU 65	1.06	0.57	56.7	0.0679	16.2944	-0.2003
515	SLU 66	1.08	0.59	57.66	0.0692	16.5618	-0.2104
515	SLU 67	1.08	0.58	57.67	0.0692	16.5647	-0.206
515	SLU 68	1.07	0.56	57.31	0.0687	16.4655	-0.2
515	SLU 69	1.09	0.59	58.27	0.0699	16.7329	-0.2102
515	SLU 70	1.09	0.58	58.28	0.0699	16.7358	-0.2058
515	SLU 71	1.08	0.58	57.91	0.0694	16.6318	-0.2071
515	SLU 72	1.09	0.57	57.92	0.0694	16.6347	-0.2027
515	SLU 73	1.11	0.69	61.5	0.0747	17.6779	-0.2442
515	SLU 74	1.13	0.72	62.46	0.0759	17.9453	-0.2544
515	SLU 75	1.13	0.71	62.47	0.076	17.9482	-0.25
515	SLU 76	1.12	0.69	62.11	0.0755	17.849	-0.244
515	SLU 77	1.14	0.72	63.07	0.0767	18.1164	-0.2541
515	SLU 78	1.14	0.71	63.08	0.0767	18.1193	-0.2497
515	SLU 79	1.13	0.71	62.71	0.0762	18.0152	-0.2511
515	SLU 80	1.13	0.7	62.72	0.0762	18.0181	-0.2467
515	SLU 81	1.13	0.77	63.54	0.0776	18.2659	-0.2704
515	SLU 82	1.13	0.75	63.55	0.0776	18.2688	-0.266
515	SLU 83	1.14	0.76	64.16	0.0784	18.437	-0.2701
515	SLU 84	1.14	0.75	64.16	0.0784	18.4399	-0.2657
515	SLE RA 1	0.8	0.43	42.55	0.0508	12.2289	-0.1512
515	SLE RA 2	0.8	0.41	42.56	0.0508	12.2321	-0.1463
515	SLE RA 3	0.81	0.43	43.2	0.0516	12.4104	-0.1531
515	SLE RA 4	0.81	0.42	43.21	0.0516	12.4123	-0.1501
515	SLE RA 5	0.81	0.41	42.97	0.0512	12.3462	-0.1461
515	SLE RA 6	0.82	0.43	43.61	0.0521	12.5244	-0.1529
515	SLE RA 7	0.82	0.42	43.62	0.0521	12.5264	-0.15
515	SLE RA 8	0.82	0.43	43.37	0.0517	12.457	-0.1509
515	SLE RA 9	0.82	0.42	43.38	0.0517	12.4589	-0.1479
515	SLE RA 10	0.83	0.5	45.76	0.0553	13.1544	-0.1756
515	SLE RA 11	0.84	0.52	46.4	0.0561	13.3327	-0.1824
515	SLE RA 12	0.85	0.51	46.41	0.0561	13.3346	-0.1794
515	SLE RA 13	0.84	0.5	46.17	0.0558	13.2685	-0.1754
515	SLE RA 14	0.85	0.52	46.81	0.0566	13.4467	-0.1822
515	SLE RA 15	0.85	0.51	46.82	0.0566	13.4487	-0.1793
515	SLE RA 16	0.85	0.51	46.57	0.0562	13.3793	-0.1802
515	SLE RA 17	0.85	0.5	46.58	0.0563	13.3812	-0.1772
515	SLE RA 18	0.84	0.55	47.12	0.0572	13.5464	-0.193
515	SLE RA 19	0.85	0.54	47.13	0.0572	13.5484	-0.1901
515	SLE RA 20	0.85	0.55	47.53	0.0577	13.6605	-0.1929
515	SLE RA 21	0.85	0.54	47.54	0.0577	13.6624	-0.1899
515	SLE FR 1	0.8	0.43	42.55	0.0508	12.2289	-0.1512
515	SLE FR 2	0.8	0.42	42.55	0.0508	12.2295	-0.1502
515	SLE FR 3	0.8	0.43	42.72	0.0509	12.2745	-0.1511
515	SLE FR 4	0.81	0.46	43.93	0.0527	12.6248	-0.1628
515	SLE FR 5	0.82	0.46	44.09	0.0529	12.6698	-0.1637
515	SLE FR 6	0.82	0.49	44.84	0.054	12.8877	-0.1721
515	SLE QP 1	0.8	0.43	42.55	0.0508	12.2289	-0.1512
515	SLE QP 2	0.81	0.46	43.92	0.0527	12.6242	-0.1637
515	SLD 1	3.7	1.18	32.76	0.0394	9.4998	-0.416
515	SLD 2	3.76	1.8	32.86	0.0383	9.5055	-0.6314
515	SLD 3	3.53	-0.24	32.09	0.0411	9.6717	0.083
515	SLD 4	3.59	0.37	32.19	0.04	9.6774	-0.1324
515	SLD 5	1.92	2.73	41.57	0.0464	11.4251	-0.9577
515	SLD 6	1.96	3.14	41.63	0.0456	11.4288	-1.0993
515	SLD 7	1.36	-2.02	39.35	0.052	11.9981	0.7055
515	SLD 8	1.4	-1.62	39.41	0.0512	12.0019	0.5639
515	SLD 9	0.22	2.54	48.44	0.0541	13.2464	-0.8914
515	SLD 10	0.26	2.95	48.5	0.0534	13.2502	-1.033
515	SLD 11	-0.34	-2.21	46.22	0.0598	13.8195	0.7718
515	SLD 12	-0.3	-1.81	46.28	0.059	13.8232	0.6302
515	SLD 13	-1.97	0.55	55.65	0.0654	15.5709	-0.195
515	SLD 14	-1.9	1.17	55.75	0.0642	15.5766	-0.4105
515	SLD 15	-2.14	-0.88	54.99	0.0671	15.7428	0.3039
515	SLD 16	-2.07	-0.26	55.09	0.0659	15.7485	0.0885
515	SLV 1	7.56	2.1	17.79	0.0217	5.3118	-0.7358
515	SLV 2	7.71	3.54	18.02	0.019	5.3251	-1.2375
515	SLV 3	7.17	-1.14	16.24	0.0256	5.7135	0.3942
515	SLV 4	7.32	0.3	16.47	0.0229	5.7268	-0.1075
515	SLV 5	3.41	5.61	38.41	0.038	9.8188	-1.9624
515	SLV 6	3.5	6.54	38.55	0.0363	9.8274	-2.2865
515	SLV 7	2.1	-5.17	33.22	0.0509	11.158	1.8042
515	SLV 8	2.19	-4.24	33.37	0.0491	11.1666	1.4802
515	SLV 9	-0.57	5.16	54.48	0.0562	14.0817	-1.8077
515	SLV 10	-0.47	6.09	54.63	0.0545	14.0903	-2.1317
515	SLV 11	-1.88	-5.61	49.29	0.0691	15.4209	1.959
515	SLV 12	-1.78	-4.68	49.44	0.0674	15.4295	1.6349



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
515	SLV 13	-5.7	0.62	71.38	0.0825	19.5215	-0.22
515	SLV 14	-5.55	2.06	71.61	0.0798	19.5348	-0.7217
515	SLV 15	-6.09	-2.61	69.83	0.0863	19.9232	0.91
515	SLV 16	-5.94	-1.17	70.06	0.0836	19.9365	0.4083
515	CRTFP Ux+	0	0	0	0	0	0
515	CRTFP Ux-	0	0	0	0	0	0
515	CRTFP Uy+	0	0	0	0	0	0
515	CRTFP Uy-	0	0	0	0	0	0
520	SLU 1	0.07	0.01	32.87	-0.0149	10.7947	-0.0046
520	SLU 2	0.07	-0.02	32.89	-0.0148	10.7998	0.0068
520	SLU 3	0.07	0.02	33.64	-0.0152	11.042	-0.0093
520	SLU 4	0.07	0	33.65	-0.0151	11.045	-0.0025
520	SLU 5	0.07	-0.02	33.37	-0.015	10.9556	0.0061
520	SLU 6	0.08	0.02	34.12	-0.0154	11.1978	-0.01
520	SLU 7	0.08	0	34.13	-0.0153	11.2008	-0.0032
520	SLU 8	0.07	0.01	33.84	-0.0153	11.1064	-0.0059
520	SLU 9	0.08	-0.01	33.85	-0.0152	11.1094	0.0009
520	SLU 10	0.08	0.02	37.27	-0.0166	12.2427	-0.0081
520	SLU 11	0.08	0.06	38.02	-0.017	12.4848	-0.0242
520	SLU 12	0.09	0.04	38.03	-0.0169	12.4879	-0.0174
520	SLU 13	0.09	0.02	37.75	-0.0168	12.3985	-0.0088
520	SLU 14	0.09	0.07	38.5	-0.0172	12.6406	-0.0249
520	SLU 15	0.09	0.05	38.51	-0.0171	12.6437	-0.0181
520	SLU 16	0.09	0.05	38.22	-0.0171	12.5492	-0.0208
520	SLU 17	0.09	0.03	38.23	-0.017	12.5523	-0.014
520	SLU 18	0.09	0.07	39.14	-0.0175	12.8559	-0.0259
520	SLU 19	0.09	0.05	39.15	-0.0174	12.859	-0.0191
520	SLU 20	0.09	0.07	39.62	-0.0177	13.0118	-0.0265
520	SLU 21	0.09	0.05	39.63	-0.0176	13.0148	-0.0197
520	SLU 22	0.08	0.09	36.67	-0.0158	12.0245	-0.0341
520	SLU 23	0.08	0.06	36.69	-0.0157	12.0296	-0.0227
520	SLU 24	0.08	0.11	37.43	-0.0161	12.2717	-0.0389
520	SLU 25	0.08	0.09	37.44	-0.016	12.2748	-0.032
520	SLU 26	0.08	0.06	37.17	-0.0159	12.1854	-0.0234
520	SLU 27	0.08	0.11	37.91	-0.0163	12.4275	-0.0395
520	SLU 28	0.08	0.09	37.92	-0.0162	12.4306	-0.0327
520	SLU 29	0.08	0.1	37.63	-0.0162	12.3361	-0.0354
520	SLU 30	0.08	0.08	37.64	-0.0161	12.3392	-0.0286
520	SLU 31	0.09	0.1	41.07	-0.0174	13.4724	-0.0377
520	SLU 32	0.09	0.15	41.81	-0.0179	13.7146	-0.0538
520	SLU 33	0.09	0.13	41.83	-0.0178	13.7176	-0.0469
520	SLU 34	0.09	0.1	41.55	-0.0177	13.6282	-0.0383
520	SLU 35	0.09	0.15	42.29	-0.0181	13.8704	-0.0544
520	SLU 36	0.09	0.13	42.31	-0.018	13.8734	-0.0476
520	SLU 37	0.09	0.14	42.01	-0.018	13.779	-0.0503
520	SLU 38	0.09	0.12	42.02	-0.0179	13.782	-0.0435
520	SLU 39	0.09	0.15	42.93	-0.0183	14.0857	-0.0554
520	SLU 40	0.09	0.13	42.94	-0.0183	14.0888	-0.0486
520	SLU 41	0.1	0.15	43.41	-0.0185	14.2415	-0.0561
520	SLU 42	0.1	0.14	43.42	-0.0185	14.2446	-0.0492
520	SLU 43	0.09	-0.02	41.44	-0.0191	13.6115	0.0041
520	SLU 44	0.09	-0.05	41.45	-0.0189	13.6166	0.0155
520	SLU 45	0.09	0	42.2	-0.0194	13.8588	-0.0006
520	SLU 46	0.09	-0.02	42.21	-0.0193	13.8618	0.0062
520	SLU 47	0.09	-0.05	41.93	-0.0191	13.7724	0.0149
520	SLU 48	0.09	0	42.68	-0.0196	14.0146	-0.0012
520	SLU 49	0.1	-0.02	42.69	-0.0195	14.0176	0.0056
520	SLU 50	0.09	-0.01	42.4	-0.0195	13.9231	0.0028
520	SLU 51	0.09	-0.03	42.41	-0.0194	13.9262	0.0097
520	SLU 52	0.1	-0.01	45.84	-0.0207	15.0595	0.0006
520	SLU 53	0.1	0.04	46.58	-0.0211	15.3016	-0.0155
520	SLU 54	0.1	0.02	46.59	-0.0211	15.3047	-0.0087
520	SLU 55	0.11	-0.01	46.32	-0.0209	15.2153	0
520	SLU 56	0.11	0.04	47.06	-0.0214	15.4574	-0.0162
520	SLU 57	0.11	0.02	47.07	-0.0213	15.4605	-0.0093
520	SLU 58	0.1	0.03	46.78	-0.0213	15.366	-0.0121
520	SLU 59	0.11	0.01	46.79	-0.0212	15.369	-0.0052
520	SLU 60	0.11	0.04	47.7	-0.0216	15.6727	-0.0172
520	SLU 61	0.11	0.02	47.71	-0.0216	15.6758	-0.0103
520	SLU 62	0.11	0.04	48.18	-0.0218	15.8285	-0.0178
520	SLU 63	0.11	0.02	48.19	-0.0218	15.8316	-0.011
520	SLU 64	0.1	0.07	45.23	-0.0199	14.8413	-0.0254
520	SLU 65	0.1	0.03	45.25	-0.0198	14.8464	-0.014
520	SLU 66	0.1	0.08	45.99	-0.0202	15.0885	-0.0301
520	SLU 67	0.1	0.06	46	-0.0202	15.0916	-0.0233
520	SLU 68	0.1	0.04	45.73	-0.02	15.0022	-0.0146
520	SLU 69	0.1	0.08	46.47	-0.0204	15.2443	-0.0308
520	SLU 70	0.1	0.06	46.48	-0.0204	15.2474	-0.0239
520	SLU 71	0.1	0.07	46.19	-0.0203	15.1529	-0.0267
520	SLU 72	0.1	0.05	46.2	-0.0203	15.156	-0.0198
520	SLU 73	0.11	0.08	49.63	-0.0216	16.2892	-0.0289
520	SLU 74	0.11	0.12	50.38	-0.022	16.5314	-0.045
520	SLU 75	0.11	0.1	50.39	-0.022	16.5344	-0.0382
520	SLU 76	0.11	0.08	50.11	-0.0218	16.445	-0.0296
520	SLU 77	0.11	0.12	50.86	-0.0222	16.6872	-0.0457
520	SLU 78	0.11	0.1	50.87	-0.0222	16.6902	-0.0388
520	SLU 79	0.11	0.11	50.57	-0.0221	16.5957	-0.0416
520	SLU 80	0.11	0.09	50.58	-0.0221	16.5988	-0.0348
520	SLU 81	0.11	0.13	51.49	-0.0225	16.9025	-0.0467
520	SLU 82	0.11	0.11	51.5	-0.0224	16.9056	-0.0399



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
520	SLU 83	0.11	0.13	51.97	-0.0227	17.0583	-0.0473
520	SLU 84	0.12	0.11	51.98	-0.0226	17.0614	-0.0405
520	SLE RA 1	0.07	0.03	33.96	-0.0151	11.1461	-0.013
520	SLE RA 2	0.07	0.01	33.97	-0.0151	11.1495	-0.0055
520	SLE RA 3	0.07	0.04	34.47	-0.0153	11.3109	-0.0162
520	SLE RA 4	0.07	0.03	34.47	-0.0153	11.313	-0.0116
520	SLE RA 5	0.08	0.01	34.29	-0.0152	11.2534	-0.0059
520	SLE RA 6	0.08	0.04	34.79	-0.0155	11.4148	-0.0166
520	SLE RA 7	0.08	0.03	34.79	-0.0154	11.4168	-0.0121
520	SLE RA 8	0.07	0.03	34.6	-0.0154	11.3538	-0.0139
520	SLE RA 9	0.08	0.02	34.61	-0.0154	11.3559	-0.0093
520	SLE RA 10	0.08	0.04	36.89	-0.0163	12.1114	-0.0154
520	SLE RA 11	0.08	0.07	37.39	-0.0165	12.2728	-0.0261
520	SLE RA 12	0.08	0.06	37.4	-0.0165	12.2749	-0.0216
520	SLE RA 13	0.08	0.04	37.21	-0.0164	12.2153	-0.0158
520	SLE RA 14	0.08	0.07	37.71	-0.0167	12.3767	-0.0266
520	SLE RA 15	0.08	0.06	37.72	-0.0166	12.3787	-0.022
520	SLE RA 16	0.08	0.06	37.52	-0.0166	12.3157	-0.0238
520	SLE RA 17	0.08	0.05	37.53	-0.0166	12.3178	-0.0193
520	SLE RA 18	0.08	0.07	38.13	-0.0168	12.5202	-0.0272
520	SLE RA 19	0.08	0.06	38.14	-0.0168	12.5223	-0.0227
520	SLE RA 20	0.08	0.07	38.45	-0.017	12.6241	-0.0277
520	SLE RA 21	0.09	0.06	38.46	-0.0169	12.6261	-0.0231
520	SLE FR 1	0.07	0.03	33.96	-0.0151	11.1461	-0.013
520	SLE FR 2	0.07	0.03	33.96	-0.0151	11.1468	-0.0115
520	SLE FR 3	0.07	0.03	34.09	-0.0152	11.1876	-0.0132
520	SLE FR 4	0.08	0.04	35.21	-0.0156	11.559	-0.0158
520	SLE FR 5	0.08	0.04	35.34	-0.0157	11.5999	-0.0175
520	SLE FR 6	0.08	0.05	36.05	-0.016	11.8332	-0.0201
520	SLE QP 1	0.07	0.03	33.96	-0.0151	11.1461	-0.013
520	SLE QP 2	0.08	0.04	35.21	-0.0157	11.5583	-0.0173
520	SLD 1	2.6	0.69	34.79	-0.0152	11.3036	-0.2433
520	SLD 2	2.64	0.72	34.8	-0.0153	11.3053	-0.2521
520	SLD 3	2.45	-0.32	35.15	-0.0118	11.4077	0.1116
520	SLD 4	2.49	-0.3	35.16	-0.012	11.4094	0.1028
520	SLD 5	1.04	1.77	34.54	-0.0206	11.3237	-0.6218
520	SLD 6	1.07	1.79	34.54	-0.0207	11.3248	-0.6276
520	SLD 7	0.56	-1.61	35.74	-0.0094	11.6708	0.5612
520	SLD 8	0.59	-1.59	35.74	-0.0095	11.6719	0.5554
520	SLD 9	-0.44	1.68	34.68	-0.0218	11.4448	-0.59
520	SLD 10	-0.41	1.7	34.69	-0.0219	11.4459	-0.5958
520	SLD 11	-0.92	-1.7	35.88	-0.0106	11.7919	0.593
520	SLD 12	-0.89	-1.68	35.88	-0.0108	11.793	0.5872
520	SLD 13	-2.34	0.39	35.26	-0.0193	11.7073	-0.1374
520	SLD 14	-2.3	0.41	35.27	-0.0195	11.7089	-0.1462
520	SLD 15	-2.48	-0.63	35.62	-0.016	11.8114	0.2175
520	SLD 16	-2.45	-0.6	35.63	-0.0161	11.8131	0.2087
520	SLV 1	5.97	1.51	34.24	-0.0144	10.9663	-0.5321
520	SLV 2	6.06	1.58	34.26	-0.0148	10.9703	-0.5526
520	SLV 3	5.64	-0.78	35.05	-0.0068	11.2021	0.2713
520	SLV 4	5.73	-0.72	35.08	-0.0072	11.206	0.2508
520	SLV 5	2.34	3.96	33.68	-0.0267	11.0225	-1.3866
520	SLV 6	2.39	4	33.7	-0.027	11.0251	-1.3999
520	SLV 7	1.22	-3.7	36.39	-0.0014	11.8083	1.2913
520	SLV 8	1.28	-3.66	36.41	-0.0017	11.8108	1.278
520	SLV 9	-1.13	3.75	34.01	-0.0296	11.3058	-1.3126
520	SLV 10	-1.07	3.79	34.03	-0.0299	11.3084	-1.3259
520	SLV 11	-2.24	-3.91	36.73	-0.0043	12.0916	1.3653
520	SLV 12	-2.19	-3.87	36.74	-0.0046	12.0941	1.352
520	SLV 13	-5.58	0.81	35.35	-0.0241	11.9107	-0.2854
520	SLV 14	-5.49	0.87	35.37	-0.0245	11.9146	-0.3059
520	SLV 15	-5.91	-1.49	36.16	-0.0165	12.1464	0.518
520	SLV 16	-5.82	-1.43	36.18	-0.0169	12.1503	0.4975
520	CRTFP Ux+	0	0	0	0	0	0
520	CRTFP Ux-	0	0	0	0	0	0
520	CRTFP Uy+	0	0	0	0	0	0
520	CRTFP Uy-	0	0	0	0	0	0
521	SLU 1	-0.48	0.04	36.54	0.037	-6.8968	0.0106
521	SLU 2	-0.47	-0.05	36.54	0.0372	-6.9004	-0.0114
521	SLU 3	-0.49	0.04	37.41	0.038	-7.0559	0.0121
521	SLU 4	-0.49	-0.01	37.41	0.0381	-7.058	-0.0011
521	SLU 5	-0.48	-0.05	37.1	0.0378	-7.0001	-0.0104
521	SLU 6	-0.5	0.05	37.96	0.0386	-7.1555	0.0131
521	SLU 7	-0.5	-0.01	37.97	0.0387	-7.1577	-0.0001
521	SLU 8	-0.5	0.04	37.64	0.0382	-7.0961	0.0126
521	SLU 9	-0.49	-0.01	37.64	0.0383	-7.0983	-0.0006
521	SLU 10	-0.49	0.02	40.88	0.0427	-7.7276	0.0063
521	SLU 11	-0.5	0.11	41.74	0.0435	-7.8831	0.0298
521	SLU 12	-0.5	0.06	41.75	0.0436	-7.8852	0.0166
521	SLU 13	-0.5	0.02	41.43	0.0432	-7.8272	0.0074
521	SLU 14	-0.51	0.12	42.29	0.044	-7.9827	0.0308
521	SLU 15	-0.51	0.06	42.3	0.0441	-7.9848	0.0176
521	SLU 16	-0.51	0.11	41.97	0.0436	-7.9233	0.0303
521	SLU 17	-0.51	0.06	41.98	0.0437	-7.9254	0.0172
521	SLU 18	-0.5	0.14	42.73	0.0448	-8.0785	0.0359
521	SLU 19	-0.49	0.08	42.73	0.0449	-8.0807	0.0227
521	SLU 20	-0.51	0.14	43.28	0.0454	-8.1781	0.0369
521	SLU 21	-0.5	0.09	43.28	0.0455	-8.1803	0.0237
521	SLU 22	-0.51	0.09	40.88	0.0426	-7.7177	0.0253
521	SLU 23	-0.51	0.01	40.89	0.0427	-7.7213	0.0033



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
521	SLU 24	-0.53	0.1	41.75	0.0435	-7.8768	0.0267
521	SLU 25	-0.52	0.05	41.76	0.0436	-7.8789	0.0136
521	SLU 26	-0.52	0.01	41.44	0.0433	-7.8209	0.0043
521	SLU 27	-0.54	0.1	42.3	0.0441	-7.9764	0.0278
521	SLU 28	-0.53	0.05	42.31	0.0442	-7.9786	0.0146
521	SLU 29	-0.53	0.1	41.98	0.0437	-7.917	0.0273
521	SLU 30	-0.53	0.05	41.99	0.0438	-7.9191	0.0141
521	SLU 31	-0.52	0.08	45.22	0.0482	-8.5485	0.021
521	SLU 32	-0.54	0.17	46.08	0.049	-8.7039	0.0445
521	SLU 33	-0.54	0.12	46.09	0.0491	-8.7061	0.0313
521	SLU 34	-0.53	0.08	45.77	0.0488	-8.6481	0.0221
521	SLU 35	-0.55	0.17	46.64	0.0496	-8.8036	0.0455
521	SLU 36	-0.55	0.12	46.64	0.0497	-8.8057	0.0323
521	SLU 37	-0.55	0.17	46.32	0.0492	-8.7442	0.045
521	SLU 38	-0.54	0.12	46.32	0.0493	-8.7463	0.0318
521	SLU 39	-0.53	0.19	47.07	0.0504	-8.8994	0.0506
521	SLU 40	-0.53	0.14	47.07	0.0505	-8.9015	0.0374
521	SLU 41	-0.54	0.2	47.62	0.0509	-8.999	0.0516
521	SLU 42	-0.54	0.15	47.62	0.051	-9.0012	0.0384
521	SLU 43	-0.61	0.03	46.01	0.0463	-8.6844	0.0087
521	SLU 44	-0.6	-0.06	46.02	0.0464	-8.688	-0.0132
521	SLU 45	-0.62	0.03	46.88	0.0472	-8.8435	0.0102
521	SLU 46	-0.62	-0.02	46.89	0.0473	-8.8456	-0.003
521	SLU 47	-0.61	-0.06	46.57	0.047	-8.7877	-0.0122
521	SLU 48	-0.63	0.04	47.43	0.0478	-8.9431	0.0112
521	SLU 49	-0.63	-0.02	47.44	0.0479	-8.9453	-0.002
521	SLU 50	-0.63	0.03	47.11	0.0474	-8.8837	0.0107
521	SLU 51	-0.62	-0.02	47.12	0.0475	-8.8859	-0.0024
521	SLU 52	-0.62	0.01	50.35	0.0519	-9.5152	0.0045
521	SLU 53	-0.63	0.1	51.21	0.0527	-9.6707	0.0279
521	SLU 54	-0.63	0.05	51.22	0.0528	-9.6728	0.0147
521	SLU 55	-0.63	0.01	50.9	0.0525	-9.6148	0.0055
521	SLU 56	-0.64	0.11	51.77	0.0533	-9.7703	0.0289
521	SLU 57	-0.64	0.05	51.77	0.0534	-9.7724	0.0158
521	SLU 58	-0.64	0.1	51.44	0.0529	-9.7109	0.0284
521	SLU 59	-0.64	0.05	51.45	0.053	-9.713	0.0153
521	SLU 60	-0.63	0.13	52.2	0.0541	-9.8661	0.034
521	SLU 61	-0.62	0.07	52.2	0.0542	-9.8683	0.0208
521	SLU 62	-0.64	0.13	52.75	0.0546	-9.9657	0.035
521	SLU 63	-0.63	0.08	52.75	0.0547	-9.9679	0.0219
521	SLU 64	-0.64	0.08	50.35	0.0518	-9.5053	0.0234
521	SLU 65	-0.64	0	50.36	0.052	-9.5089	0.0015
521	SLU 66	-0.66	0.09	51.22	0.0528	-9.6644	0.0249
521	SLU 67	-0.66	0.04	51.23	0.0529	-9.6665	0.0117
521	SLU 68	-0.65	0	50.91	0.0525	-9.6085	0.0025
521	SLU 69	-0.67	0.09	51.78	0.0533	-9.764	0.0259
521	SLU 70	-0.66	0.04	51.78	0.0534	-9.7662	0.0127
521	SLU 71	-0.66	0.09	51.46	0.0529	-9.7046	0.0254
521	SLU 72	-0.66	0.04	51.46	0.053	-9.7067	0.0123
521	SLU 73	-0.65	0.07	54.69	0.0574	-10.3361	0.0192
521	SLU 74	-0.67	0.16	55.56	0.0582	-10.4915	0.0426
521	SLU 75	-0.67	0.11	55.56	0.0583	-10.4937	0.0294
521	SLU 76	-0.66	0.07	55.24	0.058	-10.4357	0.0202
521	SLU 77	-0.68	0.16	56.11	0.0588	-10.5912	0.0436
521	SLU 78	-0.68	0.11	56.11	0.0589	-10.5933	0.0304
521	SLU 79	-0.68	0.16	55.79	0.0584	-10.5318	0.0431
521	SLU 80	-0.67	0.11	55.79	0.0585	-10.5339	0.03
521	SLU 81	-0.66	0.19	56.54	0.0596	-10.687	0.0487
521	SLU 82	-0.66	0.13	56.55	0.0597	-10.6891	0.0355
521	SLU 83	-0.67	0.19	57.09	0.0601	-10.7866	0.0497
521	SLU 84	-0.67	0.14	57.1	0.0602	-10.7888	0.0365
521	SLE RA 1	-0.49	0.05	37.78	0.0386	-7.1314	0.0148
521	SLE RA 2	-0.49	-0.01	37.78	0.0387	-7.1338	0.0001
521	SLE RA 3	-0.5	0.06	38.36	0.0393	-7.2374	0.0158
521	SLE RA 4	-0.49	0.02	38.36	0.0393	-7.2388	0.007
521	SLE RA 5	-0.49	0	38.15	0.0391	-7.2002	0.0008
521	SLE RA 6	-0.5	0.06	38.73	0.0396	-7.3038	0.0164
521	SLE RA 7	-0.5	0.02	38.73	0.0397	-7.3053	0.0077
521	SLE RA 8	-0.5	0.06	38.51	0.0394	-7.2642	0.0161
521	SLE RA 9	-0.5	0.02	38.52	0.0394	-7.2657	0.0073
521	SLE RA 10	-0.49	0.04	40.67	0.0424	-7.6852	0.0119
521	SLE RA 11	-0.51	0.1	41.25	0.0429	-7.7889	0.0276
521	SLE RA 12	-0.5	0.07	41.25	0.043	-7.7903	0.0188
521	SLE RA 13	-0.5	0.04	41.04	0.0427	-7.7516	0.0126
521	SLE RA 14	-0.51	0.11	41.62	0.0433	-7.8553	0.0282
521	SLE RA 15	-0.51	0.07	41.62	0.0434	-7.8567	0.0195
521	SLE RA 16	-0.51	0.1	41.4	0.043	-7.8157	0.0279
521	SLE RA 17	-0.51	0.07	41.4	0.0431	-7.8171	0.0192
521	SLE RA 18	-0.5	0.12	41.9	0.0438	-7.9191	0.0316
521	SLE RA 19	-0.5	0.08	41.91	0.0439	-7.9206	0.0229
521	SLE RA 20	-0.51	0.12	42.27	0.0442	-7.9856	0.0323
521	SLE RA 21	-0.5	0.09	42.27	0.0443	-7.987	0.0235
521	SLE FR 1	-0.49	0.05	37.78	0.0386	-7.1314	0.0148
521	SLE FR 2	-0.49	0.04	37.78	0.0386	-7.1318	0.0118
521	SLE FR 3	-0.49	0.05	37.93	0.0388	-7.1579	0.015
521	SLE FR 4	-0.49	0.06	39.02	0.0402	-7.3682	0.0169
521	SLE FR 5	-0.49	0.07	39.16	0.0403	-7.3943	0.0201
521	SLE FR 6	-0.49	0.09	39.84	0.0412	-7.5253	0.0232
521	SLE QP 1	-0.49	0.05	37.78	0.0386	-7.1314	0.0148
521	SLE QP 2	-0.49	0.07	39.02	0.0402	-7.3677	0.0198



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
521	SLD 1	1.99	0.63	49.94	0.0495	-9.1964	0.1583
521	SLD 2	2.03	0.1	49.94	0.0508	-9.2144	0.0258
521	SLD 3	2.16	-0.7	49.34	0.0517	-9.3218	-0.1736
521	SLD 4	2.19	-1.23	49.34	0.053	-9.3398	-0.3061
521	SLD 5	0	2.35	43.2	0.0394	-7.7229	0.5884
521	SLD 6	0.03	2	43.21	0.0403	-7.7348	0.5013
521	SLD 7	0.54	-2.08	41.2	0.0467	-8.1409	-0.5179
521	SLD 8	0.57	-2.43	41.2	0.0476	-8.1527	-0.605
521	SLD 9	-1.55	2.58	36.83	0.0328	-6.5827	0.6446
521	SLD 10	-1.52	2.23	36.83	0.0337	-6.5945	0.5575
521	SLD 11	-1.01	-1.86	34.83	0.04	-7.0007	-0.4616
521	SLD 12	-0.99	-2.21	34.83	0.0409	-7.0125	-0.5488
521	SLD 13	-3.18	1.38	28.69	0.0273	-5.3956	0.3458
521	SLD 14	-3.14	0.84	28.7	0.0287	-5.4136	0.2132
521	SLD 15	-3.02	0.05	28.09	0.0295	-5.521	0.0139
521	SLD 16	-2.98	-0.49	28.1	0.0309	-5.539	-0.1187
521	SLV 1	5.33	1.32	64.58	0.062	-11.6486	0.3303
521	SLV 2	5.42	0.08	64.59	0.0652	-11.6904	0.0216
521	SLV 3	5.7	-1.69	63.17	0.067	-11.9409	-0.4208
521	SLV 4	5.79	-2.93	63.19	0.0702	-11.9828	-0.7296
521	SLV 5	0.67	5.23	48.81	0.0387	-8.2013	1.3056
521	SLV 6	0.73	4.43	48.82	0.0407	-8.2283	1.1062
521	SLV 7	1.92	-4.81	44.13	0.0552	-9.1759	-1.1982
521	SLV 8	1.98	-5.61	44.14	0.0573	-9.2029	-1.3976
521	SLV 9	-2.96	5.75	33.89	0.0231	-5.5325	1.4372
521	SLV 10	-2.9	4.95	33.9	0.0251	-5.5595	1.2378
521	SLV 11	-1.71	-4.28	29.21	0.0397	-6.5071	-1.0665
521	SLV 12	-1.65	-5.08	29.22	0.0417	-6.5341	-1.2659
521	SLV 13	-6.78	3.07	14.84	0.0102	-2.7526	0.7692
521	SLV 14	-6.68	1.83	14.86	0.0134	-2.7945	0.4605
521	SLV 15	-6.4	0.06	13.44	0.0152	-3.045	0.0181
521	SLV 16	-6.31	-1.18	13.45	0.0183	-3.0869	-0.2906
521	CRTFP Ux+	0	0	0	0	0	0
521	CRTFP Ux-	0	0	0	0	0	0
521	CRTFP Uy+	0	0	0	0	0	0
521	CRTFP Uy-	0	0	0	0	0	0
527	SLU 1	-0.49	-0.67	50.82	-1.4173	-0.0996	-0.0104
527	SLU 2	-0.49	-0.74	50.86	-1.4182	-0.1008	-0.0099
527	SLU 3	-0.5	-0.68	52.02	-1.4507	-0.1023	-0.0106
527	SLU 4	-0.5	-0.72	52.04	-1.4513	-0.1031	-0.0104
527	SLU 5	-0.5	-0.75	51.6	-1.4392	-0.1022	-0.0101
527	SLU 6	-0.51	-0.69	52.77	-1.4717	-0.1037	-0.0109
527	SLU 7	-0.51	-0.73	52.79	-1.4723	-0.1045	-0.0106
527	SLU 8	-0.51	-0.69	52.32	-1.4592	-0.1023	-0.0109
527	SLU 9	-0.51	-0.73	52.34	-1.4598	-0.1031	-0.0106
527	SLU 10	-0.49	-0.75	57.28	-1.5955	-0.1198	-0.0096
527	SLU 11	-0.51	-0.68	58.44	-1.628	-0.1212	-0.0103
527	SLU 12	-0.51	-0.72	58.47	-1.6286	-0.122	-0.0101
527	SLU 13	-0.5	-0.76	58.03	-1.6165	-0.1211	-0.0098
527	SLU 14	-0.52	-0.69	59.19	-1.6489	-0.1226	-0.0106
527	SLU 15	-0.51	-0.73	59.21	-1.6495	-0.1234	-0.0103
527	SLU 16	-0.51	-0.7	58.74	-1.6364	-0.1213	-0.0106
527	SLU 17	-0.51	-0.74	58.76	-1.637	-0.122	-0.0103
527	SLU 18	-0.49	-0.68	59.99	-1.6705	-0.1266	-0.0099
527	SLU 19	-0.49	-0.72	60.01	-1.6711	-0.1274	-0.0096
527	SLU 20	-0.5	-0.69	60.74	-1.6914	-0.128	-0.0102
527	SLU 21	-0.5	-0.73	60.76	-1.692	-0.1287	-0.0099
527	SLU 22	-0.53	-0.65	56.95	-1.5862	-0.1079	-0.0109
527	SLU 23	-0.53	-0.72	56.99	-1.5872	-0.1092	-0.0105
527	SLU 24	-0.54	-0.65	58.16	-1.6197	-0.1107	-0.0112
527	SLU 25	-0.54	-0.69	58.18	-1.6203	-0.1114	-0.0109
527	SLU 26	-0.54	-0.73	57.74	-1.6082	-0.1106	-0.0107
527	SLU 27	-0.55	-0.66	58.91	-1.6407	-0.112	-0.0115
527	SLU 28	-0.55	-0.7	58.93	-1.6412	-0.1128	-0.0112
527	SLU 29	-0.55	-0.67	58.45	-1.6281	-0.1107	-0.0115
527	SLU 30	-0.55	-0.71	58.47	-1.6287	-0.1114	-0.0112
527	SLU 31	-0.53	-0.72	63.41	-1.7645	-0.1281	-0.0102
527	SLU 32	-0.54	-0.65	64.58	-1.7969	-0.1296	-0.0109
527	SLU 33	-0.54	-0.69	64.6	-1.7975	-0.1303	-0.0106
527	SLU 34	-0.54	-0.73	64.16	-1.7854	-0.1295	-0.0104
527	SLU 35	-0.55	-0.66	65.33	-1.8179	-0.1309	-0.0112
527	SLU 36	-0.55	-0.7	65.35	-1.8185	-0.1317	-0.0109
527	SLU 37	-0.55	-0.67	64.87	-1.8054	-0.1296	-0.0112
527	SLU 38	-0.55	-0.71	64.9	-1.806	-0.1303	-0.0109
527	SLU 39	-0.53	-0.65	66.13	-1.8395	-0.1349	-0.0105
527	SLU 40	-0.53	-0.69	66.15	-1.84	-0.1357	-0.0102
527	SLU 41	-0.54	-0.66	66.88	-1.8604	-0.1363	-0.0108
527	SLU 42	-0.54	-0.7	66.9	-1.861	-0.1371	-0.0105
527	SLU 43	-0.63	-0.88	63.96	-1.7845	-0.1266	-0.0133
527	SLU 44	-0.62	-0.95	64	-1.7855	-0.1279	-0.0128
527	SLU 45	-0.64	-0.89	65.16	-1.818	-0.1293	-0.0136
527	SLU 46	-0.64	-0.93	65.19	-1.8185	-0.1301	-0.0133
527	SLU 47	-0.63	-0.96	64.75	-1.8064	-0.1292	-0.0131
527	SLU 48	-0.65	-0.9	65.91	-1.8389	-0.1307	-0.0138
527	SLU 49	-0.65	-0.94	65.94	-1.8395	-0.1315	-0.0135
527	SLU 50	-0.64	-0.9	65.46	-1.8264	-0.1293	-0.0138
527	SLU 51	-0.64	-0.94	65.48	-1.827	-0.1301	-0.0135
527	SLU 52	-0.63	-0.96	70.42	-1.9627	-0.1468	-0.0125
527	SLU 53	-0.64	-0.89	71.59	-1.9952	-0.1483	-0.0133
527	SLU 54	-0.64	-0.93	71.61	-1.9958	-0.149	-0.013



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
527	SLU 55	-0.64	-0.97	71.17	-1.9837	-0.1482	-0.0128
527	SLU 56	-0.65	-0.9	72.33	-2.0162	-0.1496	-0.0135
527	SLU 57	-0.65	-0.94	72.36	-2.0168	-0.1504	-0.0132
527	SLU 58	-0.65	-0.91	71.88	-2.0037	-0.1483	-0.0135
527	SLU 59	-0.65	-0.95	71.9	-2.0043	-0.149	-0.0132
527	SLU 60	-0.63	-0.89	73.13	-2.0377	-0.1536	-0.0129
527	SLU 61	-0.63	-0.93	73.16	-2.0383	-0.1544	-0.0126
527	SLU 62	-0.64	-0.9	73.88	-2.0587	-0.155	-0.0131
527	SLU 63	-0.64	-0.94	73.91	-2.0593	-0.1558	-0.0128
527	SLU 64	-0.66	-0.86	70.1	-1.9535	-0.1349	-0.0139
527	SLU 65	-0.66	-0.93	70.13	-1.9545	-0.1362	-0.0134
527	SLU 66	-0.67	-0.86	71.3	-1.9869	-0.1377	-0.0141
527	SLU 67	-0.67	-0.9	71.32	-1.9875	-0.1384	-0.0138
527	SLU 68	-0.67	-0.94	70.88	-1.9754	-0.1376	-0.0136
527	SLU 69	-0.68	-0.87	72.05	-2.0079	-0.139	-0.0144
527	SLU 70	-0.68	-0.91	72.07	-2.0085	-0.1398	-0.0141
527	SLU 71	-0.68	-0.88	71.59	-1.9954	-0.1377	-0.0144
527	SLU 72	-0.68	-0.92	71.62	-1.996	-0.1384	-0.0141
527	SLU 73	-0.66	-0.93	76.55	-2.1317	-0.1551	-0.0131
527	SLU 74	-0.68	-0.86	77.72	-2.1642	-0.1566	-0.0138
527	SLU 75	-0.68	-0.91	77.74	-2.1648	-0.1574	-0.0135
527	SLU 76	-0.67	-0.94	77.3	-2.1527	-0.1565	-0.0133
527	SLU 77	-0.69	-0.87	78.47	-2.1851	-0.158	-0.0141
527	SLU 78	-0.69	-0.92	78.49	-2.1857	-0.1587	-0.0138
527	SLU 79	-0.68	-0.88	78.02	-2.1726	-0.1566	-0.0141
527	SLU 80	-0.68	-0.92	78.04	-2.1732	-0.1574	-0.0138
527	SLU 81	-0.67	-0.86	79.27	-2.2067	-0.162	-0.0134
527	SLU 82	-0.67	-0.9	79.29	-2.2073	-0.1627	-0.0131
527	SLU 83	-0.68	-0.87	80.02	-2.2277	-0.1633	-0.0137
527	SLU 84	-0.67	-0.91	80.04	-2.2282	-0.1641	-0.0134
527	SLE RA 1	-0.5	-0.67	52.57	-1.4655	-0.102	-0.0105
527	SLE RA 2	-0.5	-0.71	52.6	-1.4662	-0.1028	-0.0102
527	SLE RA 3	-0.51	-0.67	53.37	-1.4878	-0.1038	-0.0107
527	SLE RA 4	-0.51	-0.7	53.39	-1.4882	-0.1043	-0.0105
527	SLE RA 5	-0.51	-0.72	53.1	-1.4802	-0.1037	-0.0104
527	SLE RA 6	-0.52	-0.67	53.87	-1.5018	-0.1047	-0.0109
527	SLE RA 7	-0.52	-0.7	53.89	-1.5022	-0.1052	-0.0107
527	SLE RA 8	-0.51	-0.68	53.57	-1.4935	-0.1038	-0.0109
527	SLE RA 9	-0.51	-0.71	53.59	-1.4939	-0.1043	-0.0107
527	SLE RA 10	-0.5	-0.71	56.88	-1.5844	-0.1154	-0.01
527	SLE RA 11	-0.51	-0.67	57.65	-1.606	-0.1164	-0.0105
527	SLE RA 12	-0.51	-0.7	57.67	-1.6064	-0.1169	-0.0103
527	SLE RA 13	-0.51	-0.72	57.38	-1.5983	-0.1163	-0.0102
527	SLE RA 14	-0.52	-0.68	58.15	-1.62	-0.1173	-0.0107
527	SLE RA 15	-0.52	-0.7	58.17	-1.6204	-0.1178	-0.0105
527	SLE RA 16	-0.52	-0.68	57.85	-1.6116	-0.1164	-0.0107
527	SLE RA 17	-0.52	-0.71	57.87	-1.612	-0.1169	-0.0105
527	SLE RA 18	-0.5	-0.67	58.69	-1.6344	-0.12	-0.0102
527	SLE RA 19	-0.5	-0.7	58.7	-1.6347	-0.1205	-0.0101
527	SLE RA 20	-0.51	-0.68	59.19	-1.6483	-0.1209	-0.0104
527	SLE RA 21	-0.51	-0.7	59.2	-1.6487	-0.1214	-0.0102
527	SLE FR 1	-0.5	-0.67	52.57	-1.4655	-0.102	-0.0105
527	SLE FR 2	-0.5	-0.67	52.58	-1.4657	-0.1021	-0.0105
527	SLE FR 3	-0.5	-0.67	52.77	-1.4711	-0.1023	-0.0106
527	SLE FR 4	-0.5	-0.68	54.41	-1.5163	-0.1075	-0.0104
527	SLE FR 5	-0.5	-0.67	54.61	-1.5218	-0.1077	-0.0105
527	SLE FR 6	-0.5	-0.67	55.63	-1.5499	-0.111	-0.0104
527	SLE QP 1	-0.5	-0.67	52.57	-1.4655	-0.102	-0.0105
527	SLE QP 2	-0.5	-0.67	54.41	-1.5162	-0.1074	-0.0105
527	SLD 1	3.94	-0.32	58.13	-1.6204	0.0762	0.1118
527	SLD 2	3.97	-0.64	58.23	-1.6224	0.0722	0.1186
527	SLD 3	3.68	-1.8	58.68	-1.6354	0.0375	0.1195
527	SLD 4	3.71	-2.12	58.78	-1.6374	0.0335	0.1263
527	SLD 5	1.21	1.74	54.67	-1.5243	0.0072	0.0134
527	SLD 6	1.23	1.53	54.73	-1.5257	0.0045	0.0179
527	SLD 7	0.36	-3.2	56.51	-1.5743	-0.1219	0.0389
527	SLD 8	0.38	-3.41	56.57	-1.5757	-0.1246	0.0434
527	SLD 9	-1.39	2.07	52.24	-1.4567	-0.0902	-0.0643
527	SLD 10	-1.37	1.87	52.3	-1.458	-0.0928	-0.0598
527	SLD 11	-2.23	-2.87	54.08	-1.5067	-0.2193	-0.0388
527	SLD 12	-2.21	-3.07	54.15	-1.508	-0.2219	-0.0343
527	SLD 13	-4.72	0.79	50.03	-1.395	-0.2483	-0.1472
527	SLD 14	-4.69	0.47	50.13	-1.397	-0.2523	-0.1404
527	SLD 15	-4.97	-0.7	50.59	-1.41	-0.287	-0.1395
527	SLD 16	-4.94	-1.01	50.68	-1.412	-0.291	-0.1327
527	SLV 1	9.88	0.08	63.14	-1.7605	0.3212	0.2756
527	SLV 2	9.95	-0.65	63.36	-1.7652	0.3119	0.2915
527	SLV 3	9.29	-3.27	64.4	-1.7948	0.2328	0.2935
527	SLV 4	9.36	-4.01	64.63	-1.7995	0.2235	0.3093
527	SLV 5	3.5	4.78	55.06	-1.5365	0.1569	0.0456
527	SLV 6	3.54	4.3	55.21	-1.5396	0.1508	0.0558
527	SLV 7	1.53	-6.41	59.29	-1.6511	-0.1378	0.105
527	SLV 8	1.57	-6.89	59.43	-1.6541	-0.1438	0.1153
527	SLV 9	-2.58	5.55	49.38	-1.3783	-0.071	-0.1362
527	SLV 10	-2.53	5.08	49.53	-1.3813	-0.077	-0.1259
527	SLV 11	-4.55	-5.63	53.6	-1.4928	-0.3656	-0.0767
527	SLV 12	-4.5	-6.11	53.75	-1.4958	-0.3716	-0.0665
527	SLV 13	-10.37	2.68	44.18	-1.2328	-0.4382	-0.3302
527	SLV 14	-10.3	1.94	44.41	-1.2376	-0.4475	-0.3144
527	SLV 15	-10.96	-0.68	45.45	-1.2672	-0.5266	-0.3124



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
527	SLV 16	-10.89	-1.42	45.68	-1.2719	-0.5359	-0.2965
527	CRTFP Ux+	0	0	0	0	0	0
527	CRTFP Ux-	0	0	0	0	0	0
530	SLU 1	0.64	-0.28	50.08	-1.3988	0.026	0.0153
530	SLU 2	0.64	-0.32	50.11	-1.3996	0.0274	0.0157
530	SLU 3	0.65	-0.28	51.23	-1.431	0.0255	0.0157
530	SLU 4	0.66	-0.3	51.25	-1.4314	0.0263	0.0159
530	SLU 5	0.65	-0.33	50.83	-1.4199	0.0261	0.016
530	SLU 6	0.66	-0.29	51.95	-1.4513	0.0242	0.016
530	SLU 7	0.67	-0.31	51.97	-1.4517	0.025	0.0162
530	SLU 8	0.66	-0.3	51.52	-1.4395	0.0234	0.0159
530	SLU 9	0.66	-0.32	51.54	-1.4399	0.0242	0.0161
530	SLU 10	0.68	-0.28	56.3	-1.5705	0.0315	0.017
530	SLU 11	0.69	-0.25	57.42	-1.602	0.0296	0.017
530	SLU 12	0.69	-0.27	57.44	-1.6024	0.0304	0.0173
530	SLU 13	0.69	-0.29	57.02	-1.5908	0.0302	0.0173
530	SLU 14	0.7	-0.26	58.14	-1.6223	0.0283	0.0173
530	SLU 15	0.7	-0.28	58.16	-1.6227	0.0291	0.0176
530	SLU 16	0.7	-0.27	57.71	-1.6104	0.0275	0.0172
530	SLU 17	0.7	-0.29	57.73	-1.6109	0.0283	0.0174
530	SLU 18	0.69	-0.24	58.93	-1.6431	0.0319	0.0172
530	SLU 19	0.69	-0.26	58.94	-1.6435	0.0327	0.0174
530	SLU 20	0.7	-0.25	59.65	-1.6634	0.0306	0.0175
530	SLU 21	0.7	-0.27	59.66	-1.6638	0.0314	0.0177
530	SLU 22	0.69	-0.22	56.03	-1.5631	0.0119	0.0172
530	SLU 23	0.69	-0.25	56.06	-1.5639	0.0133	0.0176
530	SLU 24	0.71	-0.22	57.18	-1.5953	0.0114	0.0176
530	SLU 25	0.71	-0.23	57.2	-1.5957	0.0122	0.0179
530	SLU 26	0.71	-0.26	56.78	-1.5842	0.012	0.0179
530	SLU 27	0.72	-0.23	57.9	-1.6156	0.0101	0.0179
530	SLU 28	0.72	-0.25	57.92	-1.616	0.0109	0.0182
530	SLU 29	0.71	-0.24	57.47	-1.6038	0.0093	0.0178
530	SLU 30	0.72	-0.25	57.49	-1.6042	0.0101	0.018
530	SLU 31	0.73	-0.21	62.25	-1.7348	0.0174	0.0189
530	SLU 32	0.75	-0.18	63.37	-1.7663	0.0155	0.019
530	SLU 33	0.75	-0.2	63.39	-1.7667	0.0164	0.0192
530	SLU 34	0.74	-0.22	62.97	-1.7551	0.0161	0.0192
530	SLU 35	0.76	-0.19	64.09	-1.7866	0.0142	0.0192
530	SLU 36	0.76	-0.21	64.11	-1.787	0.015	0.0195
530	SLU 37	0.75	-0.2	63.66	-1.7747	0.0134	0.0191
530	SLU 38	0.75	-0.22	63.68	-1.7752	0.0142	0.0194
530	SLU 39	0.75	-0.17	64.88	-1.8074	0.0178	0.0191
530	SLU 40	0.75	-0.19	64.89	-1.8078	0.0186	0.0193
530	SLU 41	0.76	-0.18	65.6	-1.8277	0.0165	0.0194
530	SLU 42	0.76	-0.2	65.61	-1.8281	0.0173	0.0196
530	SLU 43	0.81	-0.39	63.06	-1.7622	0.0387	0.0192
530	SLU 44	0.81	-0.42	63.09	-1.7629	0.04	0.0196
530	SLU 45	0.83	-0.39	64.21	-1.7943	0.0382	0.0196
530	SLU 46	0.83	-0.41	64.23	-1.7948	0.039	0.0199
530	SLU 47	0.82	-0.43	63.81	-1.7832	0.0387	0.0199
530	SLU 48	0.84	-0.4	64.93	-1.8146	0.0368	0.0199
530	SLU 49	0.84	-0.42	64.95	-1.8151	0.0377	0.0202
530	SLU 50	0.83	-0.41	64.5	-1.8028	0.036	0.0198
530	SLU 51	0.83	-0.43	64.52	-1.8032	0.0369	0.02
530	SLU 52	0.85	-0.39	69.29	-1.9339	0.0441	0.021
530	SLU 53	0.86	-0.36	70.41	-1.9653	0.0423	0.021
530	SLU 54	0.86	-0.38	70.42	-1.9657	0.0431	0.0212
530	SLU 55	0.86	-0.4	70.01	-1.9542	0.0428	0.0212
530	SLU 56	0.87	-0.37	71.13	-1.9856	0.041	0.0213
530	SLU 57	0.88	-0.39	71.14	-1.986	0.0418	0.0215
530	SLU 58	0.87	-0.38	70.7	-1.9738	0.0401	0.0211
530	SLU 59	0.87	-0.4	70.72	-1.9742	0.041	0.0214
530	SLU 60	0.86	-0.34	71.91	-2.0064	0.0445	0.0211
530	SLU 61	0.86	-0.36	71.93	-2.0068	0.0454	0.0214
530	SLU 62	0.87	-0.35	72.63	-2.0267	0.0432	0.0214
530	SLU 63	0.88	-0.37	72.65	-2.0272	0.044	0.0217
530	SLU 64	0.86	-0.32	69.01	-1.9265	0.0246	0.0211
530	SLU 65	0.87	-0.36	69.04	-1.9272	0.0259	0.0215
530	SLU 66	0.88	-0.32	70.16	-1.9586	0.0241	0.0216
530	SLU 67	0.88	-0.34	70.18	-1.9591	0.0249	0.0218
530	SLU 68	0.88	-0.37	69.76	-1.9475	0.0246	0.0218
530	SLU 69	0.89	-0.33	70.88	-1.9789	0.0228	0.0218
530	SLU 70	0.89	-0.35	70.9	-1.9794	0.0236	0.0221
530	SLU 71	0.89	-0.34	70.45	-1.9671	0.0219	0.0217
530	SLU 72	0.89	-0.36	70.47	-1.9675	0.0228	0.0219
530	SLU 73	0.9	-0.32	75.24	-2.0982	0.03	0.0229
530	SLU 74	0.92	-0.29	76.36	-2.1296	0.0282	0.0229
530	SLU 75	0.92	-0.31	76.37	-2.13	0.029	0.0231
530	SLU 76	0.92	-0.33	75.96	-2.1185	0.0287	0.0232
530	SLU 77	0.93	-0.3	77.08	-2.1499	0.0269	0.0232
530	SLU 78	0.93	-0.32	77.09	-2.1503	0.0277	0.0234
530	SLU 79	0.92	-0.31	76.65	-2.1381	0.026	0.023
530	SLU 80	0.92	-0.33	76.66	-2.1385	0.0269	0.0233
530	SLU 81	0.92	-0.28	77.86	-2.1707	0.0304	0.023
530	SLU 82	0.92	-0.3	77.88	-2.1711	0.0313	0.0233
530	SLU 83	0.93	-0.29	78.58	-2.191	0.0291	0.0233
530	SLU 84	0.93	-0.31	78.6	-2.1915	0.0299	0.0236
530	SLE RA 1	0.65	-0.26	51.78	-1.4458	0.022	0.0158
530	SLE RA 2	0.65	-0.29	51.8	-1.4463	0.0229	0.0161
530	SLE RA 3	0.66	-0.26	52.55	-1.4672	0.0217	0.0161



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
530	SLE RA 4	0.66	-0.28	52.56	-1.4675	0.0222	0.0163
530	SLE RA 5	0.66	-0.29	52.28	-1.4598	0.022	0.0163
530	SLE RA 6	0.67	-0.27	53.03	-1.4808	0.0208	0.0163
530	SLE RA 7	0.67	-0.28	53.04	-1.4811	0.0213	0.0165
530	SLE RA 8	0.67	-0.28	52.74	-1.4729	0.0202	0.0162
530	SLE RA 9	0.67	-0.29	52.75	-1.4732	0.0208	0.0164
530	SLE RA 10	0.68	-0.26	55.93	-1.5602	0.0257	0.017
530	SLE RA 11	0.69	-0.24	56.67	-1.5812	0.0244	0.017
530	SLE RA 12	0.69	-0.25	56.69	-1.5815	0.0249	0.0172
530	SLE RA 13	0.69	-0.27	56.41	-1.5738	0.0248	0.0172
530	SLE RA 14	0.7	-0.25	57.16	-1.5947	0.0235	0.0172
530	SLE RA 15	0.7	-0.26	57.17	-1.595	0.0241	0.0174
530	SLE RA 16	0.69	-0.26	56.87	-1.5869	0.023	0.0171
530	SLE RA 17	0.69	-0.27	56.88	-1.5871	0.0235	0.0173
530	SLE RA 18	0.69	-0.23	57.68	-1.6086	0.0259	0.0171
530	SLE RA 19	0.69	-0.25	57.69	-1.6089	0.0265	0.0173
530	SLE RA 20	0.7	-0.24	58.16	-1.6222	0.025	0.0173
530	SLE RA 21	0.7	-0.25	58.17	-1.6224	0.0256	0.0175
530	SLE FR 1	0.65	-0.26	51.78	-1.4458	0.022	0.0158
530	SLE FR 2	0.65	-0.27	51.78	-1.4459	0.0222	0.0159
530	SLE FR 3	0.66	-0.27	51.97	-1.4512	0.0217	0.0159
530	SLE FR 4	0.66	-0.26	53.55	-1.4947	0.0234	0.0163
530	SLE FR 5	0.67	-0.26	53.74	-1.5001	0.0228	0.0163
530	SLE FR 6	0.67	-0.25	54.73	-1.5272	0.024	0.0165
530	SLE QP 1	0.65	-0.26	51.78	-1.4458	0.022	0.0158
530	SLE QP 2	0.66	-0.25	53.55	-1.4946	0.0232	0.0162
530	SLD 1	4.61	0.79	49.46	-1.3825	0.0431	0.1384
530	SLD 2	4.64	1.13	49.43	-1.3827	0.0367	0.1464
530	SLD 3	4.84	-0.71	50.01	-1.3947	0.0891	0.1313
530	SLD 4	4.88	-0.37	49.97	-1.3949	0.0827	0.1393
530	SLD 5	1.48	2.27	51.5	-1.4425	-0.0395	0.0622
530	SLD 6	1.51	2.49	51.48	-1.4426	-0.0437	0.0674
530	SLD 7	2.27	-2.72	53.32	-1.4831	0.1139	0.0385
530	SLD 8	2.29	-2.5	53.3	-1.4832	0.1097	0.0438
530	SLD 9	-0.97	1.99	53.8	-1.506	-0.0633	-0.0114
530	SLD 10	-0.94	2.21	53.78	-1.5062	-0.0675	-0.0061
530	SLD 11	-0.18	-3	55.62	-1.5466	0.09	-0.035
530	SLD 12	-0.16	-2.78	55.6	-1.5468	0.0858	-0.0298
530	SLD 13	-3.55	-0.14	57.12	-1.5944	-0.0364	-0.1068
530	SLD 14	-3.52	0.2	57.09	-1.5946	-0.0427	-0.0988
530	SLD 15	-3.32	-1.63	57.67	-1.6065	0.0096	-0.1139
530	SLD 16	-3.28	-1.3	57.64	-1.6068	0.0033	-0.1059
530	SLV 1	9.89	2.13	44	-1.2325	0.0705	0.302
530	SLV 2	9.98	2.91	43.92	-1.2331	0.0557	0.3206
530	SLV 3	10.44	-1.26	45.24	-1.2603	0.1749	0.2855
530	SLV 4	10.53	-0.47	45.17	-1.2609	0.1601	0.3041
530	SLV 5	2.58	5.46	48.81	-1.3737	-0.1185	0.1238
530	SLV 6	2.64	5.97	48.77	-1.3741	-0.128	0.1358
530	SLV 7	4.41	-5.83	52.95	-1.4664	0.2297	0.0687
530	SLV 8	4.47	-5.32	52.9	-1.4668	0.2201	0.0807
530	SLV 9	-3.14	4.81	54.19	-1.5225	-0.1738	-0.0483
530	SLV 10	-3.09	5.32	54.14	-1.5228	-0.1833	-0.0362
530	SLV 11	-1.31	-6.48	58.33	-1.6152	0.1744	-0.1034
530	SLV 12	-1.26	-5.97	58.28	-1.6156	0.1648	-0.0914
530	SLV 13	-9.2	-0.04	61.93	-1.7284	-0.1138	-0.2716
530	SLV 14	-9.11	0.75	61.86	-1.7289	-0.1286	-0.253
530	SLV 15	-8.65	-3.42	63.17	-1.7562	-0.0093	-0.2882
530	SLV 16	-8.56	-2.64	63.1	-1.7568	-0.0241	-0.2696
530	CRTFP Ux+	0	0	0	0	0	0
530	CRTFP Ux-	0	0	0	0	0	0
530	CRTFP Uy+	0	0	0	0	0	0
530	CRTFP Uy-	0	0	0	0	0	0
531	SLU 1	0.7	0.35	36.32	-0.9952	11.1973	-0.1018
531	SLU 2	0.7	0.33	36.33	-0.9956	11.2015	-0.0954
531	SLU 3	0.72	0.35	37.18	-1.0187	11.4578	-0.1037
531	SLU 4	0.72	0.34	37.18	-1.0189	11.4603	-0.0999
531	SLU 5	0.72	0.33	36.87	-1.0104	11.3652	-0.0949
531	SLU 6	0.73	0.35	37.72	-1.0335	11.6215	-0.1032
531	SLU 7	0.73	0.34	37.73	-1.0338	11.624	-0.0994
531	SLU 8	0.73	0.34	37.4	-1.0249	11.5247	-0.1007
531	SLU 9	0.73	0.33	37.41	-1.0251	11.5272	-0.0969
531	SLU 10	0.75	0.44	40.59	-1.1117	12.5206	-0.132
531	SLU 11	0.76	0.46	41.43	-1.1349	12.7769	-0.1402
531	SLU 12	0.77	0.45	41.44	-1.1351	12.7794	-0.1364
531	SLU 13	0.76	0.43	41.13	-1.1266	12.6843	-0.1315
531	SLU 14	0.78	0.46	41.97	-1.1497	12.9406	-0.1397
531	SLU 15	0.78	0.45	41.98	-1.1499	12.9431	-0.1359
531	SLU 16	0.77	0.45	41.66	-1.141	12.8438	-0.1373
531	SLU 17	0.77	0.44	41.66	-1.1413	12.8463	-0.1335
531	SLU 18	0.76	0.5	42.4	-1.1611	13.0817	-0.154
531	SLU 19	0.77	0.49	42.41	-1.1613	13.0842	-0.1502
531	SLU 20	0.78	0.5	42.94	-1.176	13.2454	-0.1535
531	SLU 21	0.78	0.49	42.95	-1.1762	13.2479	-0.1497
531	SLU 22	0.76	0.44	40.56	-1.1109	12.5072	-0.1334
531	SLU 23	0.76	0.42	40.57	-1.1113	12.5114	-0.1271
531	SLU 24	0.78	0.45	41.42	-1.1344	12.7677	-0.1353
531	SLU 25	0.78	0.44	41.43	-1.1346	12.7702	-0.1315
531	SLU 26	0.78	0.42	41.11	-1.1261	12.6751	-0.1265
531	SLU 27	0.79	0.45	41.96	-1.1492	12.9314	-0.1348
531	SLU 28	0.79	0.44	41.97	-1.1495	12.9339	-0.131





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
531	SLU 29	0.79	0.44	41.64	-1.1406	12.8346	-0.1324
531	SLU 30	0.79	0.43	41.65	-1.1408	12.8371	-0.1285
531	SLU 31	0.81	0.53	44.83	-1.2274	13.8305	-0.1636
531	SLU 32	0.82	0.56	45.67	-1.2505	14.0868	-0.1719
531	SLU 33	0.83	0.54	45.68	-1.2508	14.0893	-0.1681
531	SLU 34	0.82	0.53	45.37	-1.2423	13.9942	-0.1631
531	SLU 35	0.84	0.55	46.22	-1.2654	14.2505	-0.1713
531	SLU 36	0.84	0.54	46.22	-1.2656	14.253	-0.1675
531	SLU 37	0.83	0.55	45.9	-1.2567	14.1537	-0.1689
531	SLU 38	0.83	0.54	45.91	-1.257	14.1562	-0.1651
531	SLU 39	0.82	0.59	46.64	-1.2768	14.3916	-0.1856
531	SLU 40	0.83	0.58	46.65	-1.277	14.3941	-0.1818
531	SLU 41	0.84	0.59	47.18	-1.2917	14.5553	-0.1851
531	SLU 42	0.84	0.58	47.19	-1.2919	14.5578	-0.1813
531	SLU 43	0.89	0.42	45.76	-1.2541	14.1074	-0.1215
531	SLU 44	0.89	0.4	45.77	-1.2545	14.1116	-0.1151
531	SLU 45	0.91	0.42	46.62	-1.2776	14.3679	-0.1234
531	SLU 46	0.91	0.41	46.62	-1.2778	14.3704	-0.1196
531	SLU 47	0.91	0.4	46.31	-1.2693	14.2753	-0.1146
531	SLU 48	0.92	0.42	47.16	-1.2924	14.5316	-0.1229
531	SLU 49	0.92	0.41	47.17	-1.2927	14.5341	-0.1191
531	SLU 50	0.92	0.42	46.84	-1.2838	14.4348	-0.1204
531	SLU 51	0.92	0.4	46.85	-1.284	14.4373	-0.1166
531	SLU 52	0.94	0.51	50.03	-1.3706	15.4307	-0.1517
531	SLU 53	0.95	0.53	50.87	-1.3937	15.687	-0.1599
531	SLU 54	0.96	0.52	50.88	-1.394	15.6895	-0.1561
531	SLU 55	0.95	0.51	50.57	-1.3855	15.5944	-0.1511
531	SLU 56	0.97	0.53	51.42	-1.4086	15.8506	-0.1594
531	SLU 57	0.97	0.52	51.42	-1.4088	15.8532	-0.1556
531	SLU 58	0.96	0.52	51.1	-1.3999	15.7539	-0.157
531	SLU 59	0.96	0.51	51.11	-1.4002	15.7564	-0.1532
531	SLU 60	0.95	0.57	51.84	-1.42	15.9918	-0.1737
531	SLU 61	0.96	0.56	51.85	-1.4202	15.9943	-0.1699
531	SLU 62	0.97	0.57	52.38	-1.4349	16.1555	-0.1732
531	SLU 63	0.97	0.56	52.39	-1.4351	16.158	-0.1693
531	SLU 64	0.95	0.51	50	-1.3698	15.4173	-0.1531
531	SLU 65	0.95	0.49	50.01	-1.3702	15.4215	-0.1468
531	SLU 66	0.97	0.52	50.86	-1.3933	15.6778	-0.155
531	SLU 67	0.97	0.51	50.87	-1.3935	15.6803	-0.1512
531	SLU 68	0.97	0.49	50.55	-1.385	15.5852	-0.1462
531	SLU 69	0.98	0.52	51.4	-1.4081	15.8415	-0.1545
531	SLU 70	0.98	0.51	51.41	-1.4084	15.844	-0.1507
531	SLU 71	0.98	0.51	51.08	-1.3995	15.7447	-0.152
531	SLU 72	0.98	0.5	51.09	-1.3997	15.7472	-0.1482
531	SLU 73	1	0.6	54.27	-1.4863	16.7406	-0.1833
531	SLU 74	1.01	0.63	55.12	-1.5094	16.9969	-0.1916
531	SLU 75	1.02	0.62	55.12	-1.5097	16.9994	-0.1878
531	SLU 76	1.01	0.6	54.81	-1.5012	16.9043	-0.1828
531	SLU 77	1.03	0.63	55.66	-1.5243	17.1606	-0.191
531	SLU 78	1.03	0.61	55.66	-1.5245	17.1631	-0.1872
531	SLU 79	1.02	0.62	55.34	-1.5156	17.0638	-0.1886
531	SLU 80	1.02	0.61	55.35	-1.5159	17.0663	-0.1848
531	SLU 81	1.01	0.67	56.08	-1.5357	17.3017	-0.2053
531	SLU 82	1.02	0.65	56.09	-1.5359	17.3042	-0.2015
531	SLU 83	1.03	0.66	56.62	-1.5506	17.4654	-0.2048
531	SLU 84	1.03	0.65	56.63	-1.5508	17.4679	-0.201
531	SLE RA 1	0.72	0.37	37.53	-1.0283	11.5716	-0.1108
531	SLE RA 2	0.72	0.36	37.54	-1.0285	11.5744	-0.1066
531	SLE RA 3	0.73	0.38	38.1	-1.0439	11.7453	-0.1121
531	SLE RA 4	0.73	0.37	38.11	-1.0441	11.7469	-0.1096
531	SLE RA 5	0.73	0.36	37.9	-1.0384	11.6835	-0.1062
531	SLE RA 6	0.74	0.38	38.46	-1.0538	11.8544	-0.1118
531	SLE RA 7	0.74	0.37	38.47	-1.054	11.8561	-0.1092
531	SLE RA 8	0.74	0.37	38.25	-1.048	11.7899	-0.1101
531	SLE RA 9	0.74	0.36	38.26	-1.0482	11.7915	-0.1076
531	SLE RA 10	0.75	0.43	40.38	-1.1059	12.4538	-0.131
531	SLE RA 11	0.76	0.45	40.94	-1.1214	12.6246	-0.1365
531	SLE RA 12	0.76	0.44	40.94	-1.1215	12.6263	-0.1339
531	SLE RA 13	0.76	0.43	40.74	-1.1158	12.5629	-0.1306
531	SLE RA 14	0.77	0.45	41.3	-1.1313	12.7337	-0.1361
531	SLE RA 15	0.77	0.44	41.31	-1.1314	12.7354	-0.1336
531	SLE RA 16	0.76	0.44	41.09	-1.1255	12.6692	-0.1345
531	SLE RA 17	0.77	0.44	41.09	-1.1256	12.6709	-0.1319
531	SLE RA 18	0.76	0.48	41.58	-1.1389	12.8278	-0.1456
531	SLE RA 19	0.76	0.47	41.59	-1.139	12.8295	-0.1431
531	SLE RA 20	0.77	0.47	41.94	-1.1488	12.937	-0.1453
531	SLE RA 21	0.77	0.47	41.95	-1.1489	12.9386	-0.1427
531	SLE FR 1	0.72	0.37	37.53	-1.0283	11.5716	-0.1108
531	SLE FR 2	0.72	0.37	37.53	-1.0283	11.5722	-0.11
531	SLE FR 3	0.72	0.37	37.67	-1.0322	11.6153	-0.1107
531	SLE FR 4	0.73	0.4	38.75	-1.0615	11.949	-0.1204
531	SLE FR 5	0.73	0.4	38.89	-1.0654	11.9921	-0.1211
531	SLE FR 6	0.74	0.42	39.56	-1.0836	12.1997	-0.1282
531	SLE QP 1	0.72	0.37	37.53	-1.0283	11.5716	-0.1108
531	SLE QP 2	0.73	0.4	38.75	-1.0614	11.9485	-0.1213
531	SLD 1	3.17	1.02	28.93	-0.7917	8.9849	-0.1232
531	SLD 2	3.2	1.55	28.99	-0.794	8.9908	-0.3071
531	SLD 3	3.03	-0.2	28.35	-0.7757	9.1478	0.3035
531	SLD 4	3.06	0.33	28.41	-0.778	9.1538	0.1196
531	SLD 5	1.67	2.35	36.67	-1.0044	10.8112	-0.7363



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
531	SLD 6	1.69	2.7	36.71	-1.0059	10.8151	-0.8571
531	SLD 7	1.2	-1.73	34.73	-0.951	11.3543	0.6863
531	SLD 8	1.22	-1.38	34.77	-0.9525	11.3582	0.5654
531	SLD 9	0.24	2.19	42.72	-1.1704	12.5387	-0.8079
531	SLD 10	0.26	2.53	42.76	-1.1719	12.5426	-0.9288
531	SLD 11	-0.22	-1.89	40.78	-1.117	13.0818	0.6146
531	SLD 12	-0.2	-1.54	40.82	-1.1184	13.0857	0.4937
531	SLD 13	-1.6	0.48	49.08	-1.3449	14.7432	-0.3621
531	SLD 14	-1.57	1.01	49.14	-1.3472	14.7491	-0.5461
531	SLD 15	-1.73	-0.74	48.5	-1.3289	14.9061	0.0646
531	SLD 16	-1.7	-0.21	48.56	-1.3311	14.9121	-0.1193
531	SLV 1	6.43	1.8	15.77	-0.4301	5.0122	-0.1113
531	SLV 2	6.5	3.04	15.9	-0.4354	5.0261	-0.5396
531	SLV 3	6.1	-0.97	14.41	-0.3927	5.3932	0.8552
531	SLV 4	6.18	0.27	14.54	-0.3979	5.4071	0.4269
531	SLV 5	2.92	4.81	33.89	-0.928	9.2874	-1.51
531	SLV 6	2.97	5.6	33.98	-0.9314	9.2964	-1.7867
531	SLV 7	1.84	-4.42	29.36	-0.8031	10.5572	1.7116
531	SLV 8	1.89	-3.62	29.45	-0.8065	10.5662	1.4349
531	SLV 9	-0.42	4.43	48.04	-1.3164	13.3307	-1.6775
531	SLV 10	-0.38	5.23	48.13	-1.3198	13.3397	-1.9541
531	SLV 11	-1.5	-4.8	43.51	-1.1915	14.6005	1.5441
531	SLV 12	-1.46	-4	43.6	-1.1949	14.6095	1.2675
531	SLV 13	-4.71	0.54	62.95	-1.725	18.4899	-0.6694
531	SLV 14	-4.64	1.77	63.08	-1.7302	18.5038	-1.0977
531	SLV 15	-5.04	-2.23	61.59	-1.6875	18.8708	0.2971
531	SLV 16	-4.97	-1	61.72	-1.6927	18.8847	-0.1312
531	CRTFP Ux+	0	0	0	0	0	0
531	CRTFP Ux-	0	0	0	0	0	0
531	CRTFP Uy+	0	0	0	0	0	0
531	CRTFP Uy-	0	0	0	0	0	0
536	SLU 1	0.1	0.01	27.02	-0.7658	8.9282	-0.0018
536	SLU 2	0.1	-0.02	27.04	-0.7663	8.9339	0.0078
536	SLU 3	0.1	0.02	27.65	-0.7836	9.134	-0.0057
536	SLU 4	0.1	0.01	27.66	-0.7839	9.1374	0
536	SLU 5	0.1	-0.01	27.43	-0.7775	9.0634	0.0072
536	SLU 6	0.1	0.02	28.05	-0.7948	9.2635	-0.0062
536	SLU 7	0.1	0.01	28.06	-0.7951	9.2669	-0.0005
536	SLU 8	0.1	0.01	27.81	-0.7882	9.1872	-0.0028
536	SLU 9	0.1	0	27.82	-0.7885	9.1906	0.0029
536	SLU 10	0.11	0.02	30.65	-0.8684	10.127	-0.0042
536	SLU 11	0.11	0.06	31.26	-0.8858	10.3271	-0.0176
536	SLU 12	0.11	0.04	31.27	-0.886	10.3305	-0.0119
536	SLU 13	0.11	0.02	31.04	-0.8796	10.2565	-0.0047
536	SLU 14	0.12	0.06	31.65	-0.897	10.4566	-0.0181
536	SLU 15	0.12	0.04	31.66	-0.8972	10.46	-0.0124
536	SLU 16	0.11	0.05	31.42	-0.8904	10.3803	-0.0148
536	SLU 17	0.11	0.03	31.43	-0.8906	10.3837	-0.009
536	SLU 18	0.11	0.06	32.17	-0.9118	10.6327	-0.0189
536	SLU 19	0.12	0.05	32.18	-0.912	10.6361	-0.0131
536	SLU 20	0.12	0.06	32.57	-0.9229	10.7622	-0.0194
536	SLU 21	0.12	0.05	32.58	-0.9232	10.7656	-0.0136
536	SLU 22	0.11	0.08	30.16	-0.8544	9.9546	-0.0262
536	SLU 23	0.11	0.05	30.18	-0.8548	9.9603	-0.0167
536	SLU 24	0.11	0.09	30.79	-0.8722	10.1604	-0.0301
536	SLU 25	0.11	0.08	30.8	-0.8724	10.1638	-0.0244
536	SLU 26	0.11	0.06	30.58	-0.866	10.0898	-0.0172
536	SLU 27	0.11	0.09	31.19	-0.8834	10.2899	-0.0306
536	SLU 28	0.11	0.08	31.2	-0.8836	10.2933	-0.0249
536	SLU 29	0.11	0.08	30.95	-0.8767	10.2136	-0.0272
536	SLU 30	0.11	0.07	30.96	-0.877	10.217	-0.0215
536	SLU 31	0.12	0.09	33.79	-0.9569	11.1534	-0.0286
536	SLU 32	0.12	0.13	34.4	-0.9743	11.3535	-0.042
536	SLU 33	0.12	0.11	34.41	-0.9746	11.3569	-0.0363
536	SLU 34	0.12	0.09	34.18	-0.9681	11.2829	-0.0291
536	SLU 35	0.12	0.13	34.79	-0.9855	11.483	-0.0426
536	SLU 36	0.12	0.11	34.8	-0.9858	11.4864	-0.0368
536	SLU 37	0.12	0.12	34.56	-0.9789	11.4067	-0.0392
536	SLU 38	0.12	0.1	34.57	-0.9791	11.4102	-0.0334
536	SLU 39	0.12	0.13	35.32	-1.0003	11.6591	-0.0433
536	SLU 40	0.12	0.12	35.33	-1.0005	11.6625	-0.0376
536	SLU 41	0.13	0.13	35.71	-1.0115	11.7886	-0.0438
536	SLU 42	0.13	0.12	35.72	-1.0117	11.792	-0.0381
536	SLU 43	0.13	-0.01	34.05	-0.9652	11.2548	0.0061
536	SLU 44	0.13	-0.04	34.07	-0.9657	11.2605	0.0156
536	SLU 45	0.13	0	34.68	-0.983	11.4605	0.0022
536	SLU 46	0.13	-0.01	34.69	-0.9833	11.464	0.0079
536	SLU 47	0.13	-0.03	34.46	-0.9769	11.39	0.0151
536	SLU 48	0.13	0	35.08	-0.9942	11.59	0.0016
536	SLU 49	0.13	-0.01	35.09	-0.9945	11.5934	0.0074
536	SLU 50	0.13	-0.01	34.84	-0.9876	11.5138	0.005
536	SLU 51	0.13	-0.02	34.85	-0.9879	11.5172	0.0108
536	SLU 52	0.14	0	37.68	-1.0678	12.4536	0.0036
536	SLU 53	0.14	0.04	38.29	-1.0852	12.6537	-0.0098
536	SLU 54	0.14	0.02	38.3	-1.0854	12.6571	-0.0041
536	SLU 55	0.14	0	38.07	-1.079	12.5831	0.0031
536	SLU 56	0.14	0.04	38.68	-1.0964	12.7832	-0.0103
536	SLU 57	0.14	0.02	38.69	-1.0966	12.7866	-0.0046
536	SLU 58	0.14	0.03	38.45	-1.0898	12.7069	-0.0069
536	SLU 59	0.14	0.01	38.46	-1.09	12.7103	-0.0012



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
536	SLU 60	0.14	0.04	39.2	-1.1112	12.9592	-0.011
536	SLU 61	0.14	0.02	39.21	-1.1114	12.9627	-0.0053
536	SLU 62	0.14	0.04	39.6	-1.1223	13.0887	-0.0115
536	SLU 63	0.14	0.03	39.61	-1.1226	13.0921	-0.0058
536	SLU 64	0.13	0.06	37.19	-1.0538	12.2812	-0.0184
536	SLU 65	0.14	0.03	37.21	-1.0542	12.2869	-0.0088
536	SLU 66	0.14	0.07	37.82	-1.0716	12.487	-0.0223
536	SLU 67	0.14	0.06	37.83	-1.0718	12.4904	-0.0165
536	SLU 68	0.14	0.04	37.6	-1.0654	12.4164	-0.0093
536	SLU 69	0.14	0.07	38.22	-1.0828	12.6164	-0.0228
536	SLU 70	0.14	0.06	38.23	-1.083	12.6199	-0.017
536	SLU 71	0.14	0.06	37.98	-1.0761	12.5402	-0.0194
536	SLU 72	0.14	0.05	37.99	-1.0764	12.5436	-0.0137
536	SLU 73	0.15	0.07	40.82	-1.1563	13.48	-0.0208
536	SLU 74	0.15	0.11	41.43	-1.1737	13.6801	-0.0342
536	SLU 75	0.15	0.09	41.44	-1.174	13.6835	-0.0285
536	SLU 76	0.15	0.07	41.21	-1.1675	13.6095	-0.0213
536	SLU 77	0.15	0.11	41.82	-1.1849	13.8096	-0.0347
536	SLU 78	0.15	0.09	41.83	-1.1852	13.813	-0.029
536	SLU 79	0.15	0.1	41.59	-1.1783	13.7333	-0.0313
536	SLU 80	0.15	0.08	41.6	-1.1785	13.7367	-0.0256
536	SLU 81	0.15	0.11	42.35	-1.1997	13.9857	-0.0354
536	SLU 82	0.15	0.09	42.36	-1.1999	13.9891	-0.0297
536	SLU 83	0.15	0.11	42.74	-1.2109	14.1151	-0.0359
536	SLU 84	0.15	0.1	42.75	-1.2111	14.1186	-0.0302
536	SLE RA 1	0.1	0.03	27.92	-0.7911	9.2215	-0.0088
536	SLE RA 2	0.1	0.01	27.93	-0.7914	9.2253	-0.0024
536	SLE RA 3	0.1	0.04	28.34	-0.803	9.3587	-0.0114
536	SLE RA 4	0.1	0.03	28.35	-0.8032	9.3609	-0.0075
536	SLE RA 5	0.1	0.01	28.19	-0.7989	9.3116	-0.0027
536	SLE RA 6	0.1	0.04	28.6	-0.8105	9.445	-0.0117
536	SLE RA 7	0.1	0.03	28.61	-0.8106	9.4473	-0.0079
536	SLE RA 8	0.1	0.03	28.45	-0.8061	9.3941	-0.0094
536	SLE RA 9	0.1	0.02	28.45	-0.8062	9.3964	-0.0056
536	SLE RA 10	0.11	0.04	30.34	-0.8595	10.0207	-0.0104
536	SLE RA 11	0.11	0.06	30.74	-0.8711	10.1541	-0.0193
536	SLE RA 12	0.11	0.05	30.75	-0.8713	10.1563	-0.0155
536	SLE RA 13	0.11	0.04	30.6	-0.867	10.107	-0.0107
536	SLE RA 14	0.11	0.06	31.01	-0.8786	10.2404	-0.0197
536	SLE RA 15	0.11	0.05	31.01	-0.8787	10.2427	-0.0158
536	SLE RA 16	0.11	0.06	30.85	-0.8741	10.1896	-0.0174
536	SLE RA 17	0.11	0.05	30.86	-0.8743	10.1918	-0.0136
536	SLE RA 18	0.11	0.06	31.35	-0.8884	10.3578	-0.0201
536	SLE RA 19	0.11	0.05	31.36	-0.8886	10.3601	-0.0163
536	SLE RA 20	0.11	0.07	31.62	-0.8959	10.4441	-0.0205
536	SLE RA 21	0.11	0.05	31.62	-0.896	10.4464	-0.0167
536	SLE FR 1	0.1	0.03	27.92	-0.7911	9.2215	-0.0088
536	SLE FR 2	0.1	0.03	27.92	-0.7912	9.2222	-0.0075
536	SLE FR 3	0.1	0.03	28.02	-0.7941	9.256	-0.0089
536	SLE FR 4	0.1	0.04	28.95	-0.8204	9.5631	-0.0109
536	SLE FR 5	0.1	0.04	29.06	-0.8233	9.5969	-0.0123
536	SLE FR 6	0.11	0.05	29.64	-0.8398	9.7896	-0.0144
536	SLE QP 1	0.1	0.03	27.92	-0.7911	9.2215	-0.0088
536	SLE QP 2	0.1	0.04	28.95	-0.8203	9.5624	-0.0122
536	SLD 1	2.1	0.58	28.59	-0.8105	9.372	-0.0875
536	SLD 2	2.12	0.6	28.59	-0.8107	9.3727	-0.0945
536	SLD 3	2.22	-0.27	28.98	-0.8195	9.4954	0.2094
536	SLD 4	2.24	-0.24	28.98	-0.8197	9.4962	0.2024
536	SLD 5	0.52	1.48	28.25	-0.8037	9.3179	-0.4838
536	SLD 6	0.53	1.5	28.25	-0.8038	9.3184	-0.4884
536	SLD 7	0.92	-1.34	29.55	-0.8337	9.7294	0.5059
536	SLD 8	0.93	-1.33	29.55	-0.8338	9.7299	0.5013
536	SLD 9	-0.72	1.41	28.35	-0.8068	9.3949	-0.5256
536	SLD 10	-0.71	1.42	28.35	-0.8069	9.3954	-0.5302
536	SLD 11	-0.32	-1.42	29.65	-0.8368	9.8064	0.4641
536	SLD 12	-0.31	-1.4	29.65	-0.837	9.8069	0.4595
536	SLD 13	-2.03	0.33	28.92	-0.8209	9.6286	-0.2268
536	SLD 14	-2.01	0.35	28.92	-0.8211	9.6293	-0.2338
536	SLD 15	-1.91	-0.52	29.31	-0.8299	9.752	0.0701
536	SLD 16	-1.89	-0.5	29.31	-0.8301	9.7528	0.0632
536	SLV 1	4.77	1.27	28.13	-0.7978	9.1218	-0.1775
536	SLV 2	4.81	1.32	28.13	-0.7982	9.1236	-0.1938
536	SLV 3	5.05	-0.65	29.01	-0.8182	9.401	0.4947
536	SLV 4	5.09	-0.6	29.01	-0.8186	9.4028	0.4784
536	SLV 5	1.07	3.31	27.37	-0.7826	9.0064	-1.0784
536	SLV 6	1.1	3.34	27.37	-0.7829	9.0076	-1.0889
536	SLV 7	2	-3.08	30.3	-0.8505	9.9371	1.1621
536	SLV 8	2.03	-3.05	30.3	-0.8508	9.9383	1.1516
536	SLV 9	-1.82	3.13	27.6	-0.7899	9.1865	-1.1759
536	SLV 10	-1.8	3.17	27.6	-0.7901	9.1877	-1.1865
536	SLV 11	-0.89	-3.26	30.53	-0.8578	10.1171	1.0645
536	SLV 12	-0.86	-3.23	30.53	-0.858	10.1183	1.054
536	SLV 13	-4.89	0.68	28.89	-0.822	9.722	-0.5027
536	SLV 14	-4.84	0.73	28.89	-0.8225	9.7238	-0.519
536	SLV 15	-4.61	-1.24	29.77	-0.8424	10.0012	0.1694
536	SLV 16	-4.56	-1.19	29.77	-0.8428	10.003	0.1531
536	CRTFP Ux+	0	0	0	0	0	0
536	CRTFP Ux-	0	0	0	0	0	0
536	CRTFP Uy+	0	0	0	0	0	0
536	CRTFP Uy-	0	0	0	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
585	SLU 1	-0.38	0.02	27.17	-1.5092	-5.7263	-0.0154
585	SLU 2	-0.38	-0.04	27.18	-1.5096	-5.7286	-0.0314
585	SLU 3	-0.39	0.02	27.82	-1.5453	-5.8607	-0.015
585	SLU 4	-0.39	-0.01	27.83	-1.5456	-5.8621	-0.0245
585	SLU 5	-0.39	-0.04	27.59	-1.5324	-5.813	-0.0311
585	SLU 6	-0.4	0.03	28.23	-1.5681	-5.9451	-0.0147
585	SLU 7	-0.4	-0.01	28.24	-1.5683	-5.9464	-0.0242
585	SLU 8	-0.39	0.03	27.99	-1.5548	-5.895	-0.0148
585	SLU 9	-0.39	-0.01	28	-1.555	-5.8964	-0.0244
585	SLU 10	-0.39	0.01	30.42	-1.6893	-6.4182	-0.0193
585	SLU 11	-0.4	0.08	31.06	-1.7249	-6.5503	-0.0029
585	SLU 12	-0.4	0.04	31.06	-1.7252	-6.5517	-0.0125
585	SLU 13	-0.4	0.01	30.83	-1.712	-6.5026	-0.019
585	SLU 14	-0.41	0.08	31.47	-1.7477	-6.6347	-0.0026
585	SLU 15	-0.41	0.04	31.47	-1.748	-6.636	-0.0122
585	SLU 16	-0.4	0.08	31.23	-1.7344	-6.5847	-0.0028
585	SLU 17	-0.4	0.04	31.23	-1.7347	-6.586	-0.0123
585	SLU 18	-0.39	0.09	31.8	-1.7658	-6.7115	0.0018
585	SLU 19	-0.39	0.05	31.8	-1.7661	-6.7129	-0.0078
585	SLU 20	-0.4	0.1	32.21	-1.7886	-6.7959	0.0021
585	SLU 21	-0.4	0.06	32.21	-1.7889	-6.7972	-0.0075
585	SLU 22	-0.41	0.06	30.42	-1.6893	-6.4129	-0.0065
585	SLU 23	-0.41	0	30.43	-1.6897	-6.4152	-0.0225
585	SLU 24	-0.42	0.07	31.07	-1.7254	-6.5473	-0.0061
585	SLU 25	-0.42	0.03	31.07	-1.7256	-6.5487	-0.0157
585	SLU 26	-0.41	0	30.84	-1.7125	-6.4996	-0.0222
585	SLU 27	-0.43	0.07	31.48	-1.7482	-6.6317	-0.0058
585	SLU 28	-0.42	0.03	31.48	-1.7484	-6.633	-0.0153
585	SLU 29	-0.42	0.07	31.24	-1.7349	-6.5816	-0.0059
585	SLU 30	-0.42	0.03	31.24	-1.7351	-6.583	-0.0155
585	SLU 31	-0.42	0.05	33.66	-1.8693	-7.1048	-0.0104
585	SLU 32	-0.43	0.12	34.31	-1.905	-7.2369	0.006
585	SLU 33	-0.43	0.08	34.31	-1.9053	-7.2383	-0.0036
585	SLU 34	-0.42	0.05	34.07	-1.8921	-7.1892	-0.0101
585	SLU 35	-0.44	0.12	34.72	-1.9278	-7.3213	0.0063
585	SLU 36	-0.44	0.08	34.72	-1.9281	-7.3227	-0.0033
585	SLU 37	-0.43	0.12	34.48	-1.9145	-7.2713	0.0061
585	SLU 38	-0.43	0.08	34.48	-1.9148	-7.2726	-0.0035
585	SLU 39	-0.42	0.13	35.04	-1.9459	-7.3981	0.0107
585	SLU 40	-0.42	0.1	35.05	-1.9462	-7.3995	0.0011
585	SLU 41	-0.43	0.14	35.45	-1.9687	-7.4825	0.011
585	SLU 42	-0.43	0.1	35.46	-1.969	-7.4838	0.0014
585	SLU 43	-0.48	0.01	34.21	-1.9002	-7.2088	-0.0231
585	SLU 44	-0.48	-0.05	34.22	-1.9006	-7.2111	-0.039
585	SLU 45	-0.49	0.02	34.86	-1.9363	-7.3432	-0.0226
585	SLU 46	-0.49	-0.02	34.86	-1.9366	-7.3446	-0.0322
585	SLU 47	-0.49	-0.05	34.63	-1.9234	-7.2955	-0.0387
585	SLU 48	-0.5	0.02	35.27	-1.9591	-7.4276	-0.0223
585	SLU 49	-0.5	-0.02	35.27	-1.9594	-7.4289	-0.0319
585	SLU 50	-0.5	0.02	35.03	-1.9458	-7.3775	-0.0225
585	SLU 51	-0.5	-0.02	35.03	-1.9461	-7.3789	-0.0321
585	SLU 52	-0.49	0	37.45	-2.0803	-7.9007	-0.027
585	SLU 53	-0.5	0.07	38.1	-2.116	-8.0328	-0.0106
585	SLU 54	-0.5	0.03	38.1	-2.1162	-8.0342	-0.0201
585	SLU 55	-0.5	0	37.86	-2.1031	-7.9851	-0.0267
585	SLU 56	-0.51	0.07	38.51	-2.1387	-8.1172	-0.0103
585	SLU 57	-0.51	0.03	38.51	-2.139	-8.1185	-0.0198
585	SLU 58	-0.51	0.07	38.27	-2.1254	-8.0671	-0.0104
585	SLU 59	-0.51	0.03	38.27	-2.1257	-8.0685	-0.02
585	SLU 60	-0.5	0.08	38.83	-2.1568	-8.194	-0.0059
585	SLU 61	-0.5	0.05	38.84	-2.1571	-8.1954	-0.0154
585	SLU 62	-0.51	0.09	39.24	-2.1796	-8.2783	-0.0056
585	SLU 63	-0.51	0.05	39.25	-2.1799	-8.2797	-0.0151
585	SLU 64	-0.51	0.05	37.46	-2.0803	-7.8954	-0.0142
585	SLU 65	-0.51	-0.01	37.46	-2.0807	-7.8977	-0.0302
585	SLU 66	-0.52	0.06	38.11	-2.1164	-8.0298	-0.0138
585	SLU 67	-0.52	0.02	38.11	-2.1167	-8.0312	-0.0233
585	SLU 68	-0.52	-0.01	37.87	-2.1035	-7.9821	-0.0299
585	SLU 69	-0.53	0.06	38.52	-2.1392	-8.1142	-0.0135
585	SLU 70	-0.53	0.02	38.52	-2.1395	-8.1155	-0.023
585	SLU 71	-0.53	0.06	38.28	-2.1259	-8.0641	-0.0136
585	SLU 72	-0.53	0.02	38.28	-2.1261	-8.0655	-0.0232
585	SLU 73	-0.52	0.04	40.7	-2.2604	-8.5873	-0.0181
585	SLU 74	-0.53	0.11	41.34	-2.296	-8.7194	-0.0017
585	SLU 75	-0.53	0.07	41.35	-2.2963	-8.7208	-0.0113
585	SLU 76	-0.53	0.04	41.11	-2.2832	-8.6717	-0.0178
585	SLU 77	-0.54	0.11	41.75	-2.3188	-8.8038	-0.0014
585	SLU 78	-0.54	0.07	41.76	-2.3191	-8.8051	-0.011
585	SLU 79	-0.54	0.11	41.51	-2.3055	-8.7538	-0.0016
585	SLU 80	-0.54	0.07	41.52	-2.3058	-8.7551	-0.0111
585	SLU 81	-0.53	0.13	42.08	-2.3369	-8.8806	0.003
585	SLU 82	-0.53	0.09	42.09	-2.3372	-8.882	-0.0066
585	SLU 83	-0.53	0.13	42.49	-2.3597	-8.965	0.0033
585	SLU 84	-0.53	0.09	42.5	-2.36	-8.9663	-0.0063
585	SLE RA 1	-0.39	0.03	28.1	-1.5607	-5.9225	-0.0129
585	SLE RA 2	-0.39	-0.01	28.1	-1.5609	-5.924	-0.0235
585	SLE RA 3	-0.39	0.04	28.53	-1.5847	-6.0121	-0.0126
585	SLE RA 4	-0.39	0.01	28.53	-1.5849	-6.013	-0.019
585	SLE RA 5	-0.39	-0.01	28.38	-1.5761	-5.9803	-0.0233
585	SLE RA 6	-0.4	0.04	28.81	-1.5999	-6.0683	-0.0124



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
585	SLE RA 7	-0.4	0.01	28.81	-1.6001	-6.0692	-0.0188
585	SLE RA 8	-0.4	0.04	28.65	-1.5911	-6.035	-0.0125
585	SLE RA 9	-0.4	0.01	28.65	-1.5912	-6.0359	-0.0189
585	SLE RA 10	-0.39	0.02	30.26	-1.6807	-6.3838	-0.0155
585	SLE RA 11	-0.4	0.07	30.69	-1.7045	-6.4718	-0.0045
585	SLE RA 12	-0.4	0.04	30.69	-1.7047	-6.4728	-0.0109
585	SLE RA 13	-0.4	0.03	30.54	-1.6959	-6.44	-0.0153
585	SLE RA 14	-0.41	0.07	30.96	-1.7197	-6.5281	-0.0043
585	SLE RA 15	-0.41	0.05	30.97	-1.7198	-6.529	-0.0107
585	SLE RA 16	-0.4	0.07	30.8	-1.7108	-6.4947	-0.0044
585	SLE RA 17	-0.4	0.04	30.81	-1.711	-6.4956	-0.0108
585	SLE RA 18	-0.4	0.08	31.18	-1.7317	-6.5793	-0.0014
585	SLE RA 19	-0.4	0.05	31.19	-1.7319	-6.5802	-0.0078
585	SLE RA 20	-0.4	0.08	31.46	-1.7469	-6.6355	-0.0012
585	SLE RA 21	-0.4	0.06	31.46	-1.7471	-6.6364	-0.0076
585	SLE FR 1	-0.39	0.03	28.1	-1.5607	-5.9225	-0.0129
585	SLE FR 2	-0.39	0.02	28.1	-1.5607	-5.9228	-0.015
585	SLE FR 3	-0.39	0.03	28.21	-1.5667	-5.945	-0.0128
585	SLE FR 4	-0.39	0.04	29.02	-1.612	-6.1198	-0.0116
585	SLE FR 5	-0.39	0.05	29.13	-1.6181	-6.142	-0.0094
585	SLE FR 6	-0.39	0.06	29.64	-1.6462	-6.2509	-0.0071
585	SLE QP 1	-0.39	0.03	28.1	-1.5607	-5.9225	-0.0129
585	SLE QP 2	-0.39	0.05	29.02	-1.612	-6.1195	-0.0094
585	SLD 1	1.44	0.45	36.68	-2.0379	-7.636	0.2333
585	SLD 2	1.45	0.06	36.71	-2.039	-7.6457	0.1373
585	SLD 3	1.55	-0.51	37.13	-2.0628	-7.7306	-0.0066
585	SLD 4	1.56	-0.9	37.16	-2.0639	-7.7402	-0.1026
585	SLD 5	-0.02	1.7	30.63	-1.7017	-6.4293	0.4443
585	SLD 6	-0.01	1.45	30.65	-1.7024	-6.4357	0.3812
585	SLD 7	0.36	-1.52	32.13	-1.7849	-6.7446	-0.3552
585	SLD 8	0.37	-1.77	32.15	-1.7856	-6.7509	-0.4184
585	SLD 9	-1.15	1.87	25.9	-1.4384	-5.8882	0.3995
585	SLD 10	-1.14	1.61	25.91	-1.4391	-5.8945	0.3364
585	SLD 11	-0.77	-1.35	27.39	-1.5215	-5.8034	-0.4001
585	SLD 12	-0.77	-1.61	27.41	-1.5223	-5.8098	-0.4632
585	SLD 13	-2.34	1	20.89	-1.1601	-4.4988	0.0837
585	SLD 14	-2.33	0.61	20.92	-1.1612	-4.5085	-0.0123
585	SLD 15	-2.23	0.03	21.34	-1.185	-4.5934	-0.1561
585	SLD 16	-2.22	-0.36	21.36	-1.1861	-4.6031	-0.2522
585	SLV 1	3.89	0.96	46.95	-2.6089	-9.6691	0.549
585	SLV 2	3.91	0.05	47.01	-2.6115	-9.6917	0.3253
585	SLV 3	4.15	-1.23	48	-2.6672	-9.8902	0.0062
585	SLV 4	4.18	-2.13	48.07	-2.6698	-9.9127	-0.2175
585	SLV 5	0.49	3.79	32.8	-1.8221	-6.8453	1.02
585	SLV 6	0.5	3.21	32.84	-1.8238	-6.8598	0.8756
585	SLV 7	1.37	-3.5	36.3	-2.0166	-7.5821	-0.7893
585	SLV 8	1.39	-4.08	36.34	-2.0183	-7.5966	-0.9338
585	SLV 9	-2.17	4.17	21.71	-1.2057	-4.6424	0.9149
585	SLV 10	-2.15	3.59	21.75	-1.2074	-4.657	0.7705
585	SLV 11	-1.28	-3.11	25.21	-1.4002	-5.3793	-0.8944
585	SLV 12	-1.27	-3.7	25.25	-1.4019	-5.3938	-1.0389
585	SLV 13	-4.96	2.23	9.98	-0.5542	-2.3264	0.1986
585	SLV 14	-4.94	1.32	10.04	-0.5568	-2.3489	-0.0251
585	SLV 15	-4.69	0.04	11.03	-0.6125	-2.5474	-0.3442
585	SLV 16	-4.67	-0.86	11.1	-0.6151	-2.5699	-0.5679
585	CRTFP Ux+	0	0	0	0	0	0
585	CRTFP Ux-	0	0	0	0	0	0
585	CRTFP Uy+	0	0	0	0	0	0
585	CRTFP Uy-	0	0	0	0	0	0
595	SLU 1	-0.86	0.05	59.36	-0.0101	-1.638	0.0028
595	SLU 2	-0.87	-0.09	59.38	-0.0087	-1.6385	0.0003
595	SLU 3	-0.89	0.06	60.78	-0.009	-1.6771	0.0003
595	SLU 4	-0.89	-0.03	60.79	-0.0082	-1.6774	0.0016
595	SLU 5	-0.88	-0.08	60.27	-0.0084	-1.6631	0.0004
595	SLU 6	-0.9	0.06	61.68	-0.0087	-1.7017	0.0032
595	SLU 7	-0.9	-0.02	61.69	-0.0079	-1.702	0.0017
595	SLU 8	-0.9	0.06	61.15	-0.0095	-1.6872	0.0031
595	SLU 9	-0.9	-0.02	61.16	-0.0087	-1.6875	0.0016
595	SLU 10	-0.89	0.02	66.49	-0.0049	-1.8363	0.0023
595	SLU 11	-0.91	0.16	67.9	-0.0053	-1.8749	0.0051
595	SLU 12	-0.91	0.08	67.91	-0.0044	-1.8752	0.0036
595	SLU 13	-0.91	0.02	67.39	-0.0046	-1.8609	0.0025
595	SLU 14	-0.93	0.17	68.79	-0.005	-1.8995	0.0052
595	SLU 15	-0.93	0.09	68.8	-0.0041	-1.8998	0.0038
595	SLU 16	-0.92	0.17	68.26	-0.0058	-1.885	0.0051
595	SLU 17	-0.92	0.09	68.28	-0.0049	-1.8853	0.0036
595	SLU 18	-0.9	0.2	69.52	-0.0048	-1.9205	0.0057
595	SLU 19	-0.9	0.12	69.54	-0.0039	-1.9208	0.0042
595	SLU 20	-0.91	0.21	70.42	-0.0045	-1.9451	0.0059
595	SLU 21	-0.92	0.13	70.43	-0.0036	-1.9454	0.0044
595	SLU 22	-0.93	0.14	66.49	-0.0021	-1.8355	0.0049
595	SLU 23	-0.93	0	66.51	-0.0006	-1.8361	0.0024
595	SLU 24	-0.95	0.15	67.91	-0.001	-1.8747	0.0052
595	SLU 25	-0.95	0.06	67.92	-0.0001	-1.875	0.0037
595	SLU 26	-0.95	0.01	67.4	-0.0003	-1.8607	0.0026
595	SLU 27	-0.97	0.15	68.81	-0.0007	-1.8993	0.0053
595	SLU 28	-0.97	0.07	68.82	0.0002	-1.8996	0.0038
595	SLU 29	-0.96	0.15	68.28	-0.0015	-1.8848	0.0052
595	SLU 30	-0.96	0.07	68.29	-0.0006	-1.8851	0.0037
595	SLU 31	-0.95	0.11	73.62	0.0031	-2.0338	0.0045



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
595	SLU 32	-0.98	0.25	75.03	0.0028	-2.0724	0.0072
595	SLU 33	-0.98	0.17	75.04	0.0036	-2.0728	0.0057
595	SLU 34	-0.97	0.11	74.52	0.0034	-2.0585	0.0046
595	SLU 35	-0.99	0.26	75.92	0.0031	-2.0971	0.0074
595	SLU 36	-0.99	0.18	75.93	0.004	-2.0974	0.0059
595	SLU 37	-0.98	0.26	75.39	0.0023	-2.0825	0.0072
595	SLU 38	-0.99	0.18	75.41	0.0032	-2.0829	0.0057
595	SLU 39	-0.96	0.29	76.65	0.0033	-2.1181	0.0078
595	SLU 40	-0.96	0.21	76.67	0.0042	-2.1184	0.0063
595	SLU 41	-0.98	0.3	77.55	0.0036	-2.1427	0.008
595	SLU 42	-0.98	0.22	77.56	0.0045	-2.143	0.0065
595	SLU 43	-1.1	0.03	74.72	-0.0159	-2.0616	0.0029
595	SLU 44	-1.1	-0.1	74.74	-0.0145	-2.0621	0.0004
595	SLU 45	-1.12	0.04	76.14	-0.0148	-2.1007	0.0032
595	SLU 46	-1.13	-0.04	76.16	-0.014	-2.101	0.0017
595	SLU 47	-1.12	-0.1	75.64	-0.0142	-2.0867	0.0006
595	SLU 48	-1.14	0.05	77.04	-0.0145	-2.1253	0.0033
595	SLU 49	-1.14	-0.04	77.05	-0.0137	-2.1257	0.0018
595	SLU 50	-1.13	0.04	76.51	-0.0153	-2.1108	0.0032
595	SLU 51	-1.14	-0.04	76.52	-0.0145	-2.1111	0.0017
595	SLU 52	-1.13	0	81.86	-0.0108	-2.2599	0.0025
595	SLU 53	-1.15	0.15	83.26	-0.0111	-2.2985	0.0052
595	SLU 54	-1.15	0.07	83.27	-0.0102	-2.2988	0.0037
595	SLU 55	-1.14	0.01	82.75	-0.0104	-2.2845	0.0026
595	SLU 56	-1.16	0.15	84.15	-0.0108	-2.3231	0.0054
595	SLU 57	-1.17	0.07	84.17	-0.0099	-2.3234	0.0039
595	SLU 58	-1.16	0.15	83.63	-0.0116	-2.3086	0.0052
595	SLU 59	-1.16	0.07	83.64	-0.0107	-2.3089	0.0038
595	SLU 60	-1.14	0.19	84.89	-0.0106	-2.3441	0.0058
595	SLU 61	-1.14	0.1	84.9	-0.0097	-2.3444	0.0043
595	SLU 62	-1.15	0.19	85.78	-0.0103	-2.3687	0.006
595	SLU 63	-1.15	0.11	85.79	-0.0094	-2.3691	0.0045
595	SLU 64	-1.17	0.12	81.85	-0.0079	-2.2592	0.005
595	SLU 65	-1.17	-0.02	81.87	-0.0064	-2.2597	0.0025
595	SLU 66	-1.19	0.13	83.27	-0.0068	-2.2983	0.0053
595	SLU 67	-1.19	0.05	83.29	-0.0059	-2.2986	0.0038
595	SLU 68	-1.18	-0.01	82.77	-0.0061	-2.2843	0.0027
595	SLU 69	-1.2	0.14	84.17	-0.0065	-2.3229	0.0054
595	SLU 70	-1.21	0.05	84.18	-0.0056	-2.3232	0.0039
595	SLU 71	-1.2	0.13	83.64	-0.0073	-2.3084	0.0053
595	SLU 72	-1.2	0.05	83.65	-0.0064	-2.3087	0.0038
595	SLU 73	-1.19	0.09	88.99	-0.0027	-2.4575	0.0046
595	SLU 74	-1.21	0.24	90.39	-0.003	-2.4961	0.0073
595	SLU 75	-1.21	0.16	90.4	-0.0022	-2.4964	0.0058
595	SLU 76	-1.21	0.1	89.88	-0.0024	-2.4821	0.0047
595	SLU 77	-1.23	0.24	91.28	-0.0027	-2.5207	0.0075
595	SLU 78	-1.23	0.16	91.3	-0.0019	-2.521	0.006
595	SLU 79	-1.22	0.24	90.76	-0.0035	-2.5062	0.0073
595	SLU 80	-1.22	0.16	90.77	-0.0027	-2.5065	0.0059
595	SLU 81	-1.2	0.28	92.02	-0.0025	-2.5417	0.0079
595	SLU 82	-1.2	0.19	92.03	-0.0017	-2.542	0.0064
595	SLU 83	-1.22	0.28	92.91	-0.0022	-2.5663	0.0081
595	SLU 84	-1.22	0.2	92.92	-0.0014	-2.5666	0.0066
595	SLE RA 1	-0.88	0.07	61.4	-0.0078	-1.6944	0.0034
595	SLE RA 2	-0.88	-0.02	61.41	-0.0069	-1.6948	0.0017
595	SLE RA 3	-0.9	0.08	62.34	-0.0071	-1.7205	0.0036
595	SLE RA 4	-0.9	0.02	62.35	-0.0065	-1.7207	0.0026
595	SLE RA 5	-0.89	-0.01	62.01	-0.0067	-1.7112	0.0018
595	SLE RA 6	-0.91	0.08	62.94	-0.0069	-1.7369	0.0037
595	SLE RA 7	-0.91	0.03	62.95	-0.0063	-1.7371	0.0027
595	SLE RA 8	-0.9	0.08	62.59	-0.0074	-1.7272	0.0036
595	SLE RA 9	-0.9	0.03	62.6	-0.0068	-1.7274	0.0026
595	SLE RA 10	-0.9	0.05	66.15	-0.0044	-1.8266	0.0031
595	SLE RA 11	-0.91	0.15	67.09	-0.0046	-1.8523	0.0049
595	SLE RA 12	-0.91	0.1	67.1	-0.004	-1.8526	0.0039
595	SLE RA 13	-0.91	0.06	66.75	-0.0042	-1.843	0.0032
595	SLE RA 14	-0.92	0.16	67.68	-0.0044	-1.8688	0.005
595	SLE RA 15	-0.93	0.1	67.69	-0.0038	-1.869	0.004
595	SLE RA 16	-0.92	0.15	67.33	-0.0049	-1.8591	0.0049
595	SLE RA 17	-0.92	0.1	67.34	-0.0043	-1.8593	0.004
595	SLE RA 18	-0.91	0.18	68.17	-0.0043	-1.8828	0.0053
595	SLE RA 19	-0.91	0.12	68.18	-0.0037	-1.883	0.0043
595	SLE RA 20	-0.92	0.18	68.77	-0.0041	-1.8992	0.0054
595	SLE RA 21	-0.92	0.13	68.78	-0.0035	-1.8994	0.0044
595	SLE FR 1	-0.88	0.07	61.4	-0.0078	-1.6944	0.0034
595	SLE FR 2	-0.88	0.06	61.4	-0.0076	-1.6945	0.003
595	SLE FR 3	-0.89	0.08	61.63	-0.0078	-1.701	0.0034
595	SLE FR 4	-0.89	0.09	63.43	-0.0066	-1.751	0.0036
595	SLE FR 5	-0.89	0.11	63.67	-0.0067	-1.7575	0.004
595	SLE FR 6	-0.89	0.13	64.78	-0.006	-1.7886	0.0043
595	SLE QP 1	-0.88	0.07	61.4	-0.0078	-1.6944	0.0034
595	SLE QP 2	-0.89	0.1	63.43	-0.0068	-1.7509	0.004
595	SLD 1	3.37	0.97	79.71	-0.0611	-2.1777	0.0184
595	SLD 2	3.36	0.14	79.79	-0.0467	-2.1797	0.0052
595	SLD 3	3.13	-1.1	80.67	-0.0511	-2.203	-0.0223
595	SLD 4	3.12	-1.92	80.75	-0.0367	-2.205	-0.0355
595	SLD 5	0.76	3.64	66.84	-0.0407	-1.8401	0.0725
595	SLD 6	0.76	3.1	66.9	-0.0313	-1.8415	0.0638
595	SLD 7	-0.05	-3.24	70.04	-0.0075	-1.9246	-0.0634
595	SLD 8	-0.06	-3.78	70.09	0.002	-1.9259	-0.0721



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
595	SLD 9	-1.72	3.99	56.77	-0.0155	-1.5759	0.08
595	SLD 10	-1.73	3.45	56.82	-0.006	-1.5772	0.0713
595	SLD 11	-2.54	-2.89	59.96	0.0178	-1.6604	-0.0559
595	SLD 12	-2.54	-3.43	60.01	0.0272	-1.6617	-0.0645
595	SLD 13	-4.9	2.13	46.11	0.0232	-1.2968	0.0435
595	SLD 14	-4.91	1.31	46.19	0.0376	-1.2988	0.0302
595	SLD 15	-5.14	0.07	47.07	0.0331	-1.3222	0.0027
595	SLD 16	-5.15	-0.76	47.15	0.0476	-1.3242	-0.0105
595	SLV 1	9.08	2.04	101.53	-0.1342	-2.7498	0.0362
595	SLV 2	9.06	0.12	101.72	-0.1006	-2.7545	0.0054
595	SLV 3	8.51	-2.64	103.78	-0.1107	-2.8091	-0.056
595	SLV 4	8.49	-4.56	103.96	-0.0771	-2.8137	-0.0868
595	SLV 5	2.97	8.11	71.43	-0.0864	-1.9599	0.1588
595	SLV 6	2.96	6.87	71.55	-0.0647	-1.9629	0.1389
595	SLV 7	1.07	-7.48	78.9	-0.0081	-2.1574	-0.1486
595	SLV 8	1.06	-8.72	79.02	0.0136	-2.1604	-0.1685
595	SLV 9	-2.84	8.93	47.84	-0.0271	-1.3414	0.1764
595	SLV 10	-2.85	7.69	47.96	-0.0054	-1.3444	0.1565
595	SLV 11	-4.74	-6.66	55.31	0.0512	-1.5389	-0.131
595	SLV 12	-4.75	-7.9	55.43	0.0729	-1.5419	-0.1509
595	SLV 13	-10.27	4.77	22.89	0.0636	-0.6881	0.0948
595	SLV 14	-10.29	2.85	23.08	0.0972	-0.6928	0.064
595	SLV 15	-10.84	0.09	25.13	0.0871	-0.7474	0.0025
595	SLV 16	-10.86	-1.83	25.32	0.1206	-0.752	-0.0283
595	CRTFP Ux+	0	0	0	0	0	0
595	CRTFP Ux-	0	0	0	0	0	0
595	CRTFP Uy+	0	0	0	0	0	0
595	CRTFP Uy-	0	0	0	0	0	0
596	SLU 1	-1.01	0.05	68.74	-0.0128	0.022	-0.0026
596	SLU 2	-1.01	-0.1	68.76	-0.0112	0.0221	-0.0008
596	SLU 3	-1.04	0.06	70.38	-0.0115	0.0227	-0.0026
596	SLU 4	-1.04	-0.03	70.39	-0.0105	0.0227	-0.0016
596	SLU 5	-1.03	-0.09	69.79	-0.0108	0.0226	-0.0009
596	SLU 6	-1.05	0.07	71.41	-0.0111	0.0232	-0.0027
596	SLU 7	-1.06	-0.02	71.42	-0.0101	0.0232	-0.0017
596	SLU 8	-1.05	0.07	70.8	-0.0121	0.023	-0.0028
596	SLU 9	-1.05	-0.02	70.81	-0.0111	0.023	-0.0017
596	SLU 10	-1.04	0.02	77.07	-0.0065	0.0224	-0.0026
596	SLU 11	-1.06	0.18	78.69	-0.0067	0.023	-0.0044
596	SLU 12	-1.06	0.09	78.7	-0.0058	0.0231	-0.0033
596	SLU 13	-1.06	0.03	78.1	-0.0061	0.0229	-0.0027
596	SLU 14	-1.08	0.19	79.72	-0.0063	0.0235	-0.0045
596	SLU 15	-1.08	0.1	79.73	-0.0054	0.0235	-0.0034
596	SLU 16	-1.07	0.18	79.11	-0.0073	0.0233	-0.0045
596	SLU 17	-1.08	0.09	79.12	-0.0064	0.0234	-0.0035
596	SLU 18	-1.05	0.22	80.6	-0.006	0.0225	-0.0051
596	SLU 19	-1.05	0.13	80.62	-0.0051	0.0225	-0.004
596	SLU 20	-1.07	0.23	81.64	-0.0057	0.023	-0.0052
596	SLU 21	-1.07	0.14	81.65	-0.0047	0.023	-0.0041
596	SLU 22	-1.08	0.15	77.03	-0.0028	0.0233	-0.0036
596	SLU 23	-1.09	0	77.06	-0.0012	0.0233	-0.0018
596	SLU 24	-1.11	0.16	78.68	-0.0015	0.024	-0.0036
596	SLU 25	-1.11	0.07	78.69	-0.0005	0.024	-0.0026
596	SLU 26	-1.1	0.01	78.09	-0.0008	0.0238	-0.0019
596	SLU 27	-1.13	0.17	79.71	-0.0011	0.0244	-0.0037
596	SLU 28	-1.13	0.08	79.72	-0.0001	0.0245	-0.0027
596	SLU 29	-1.12	0.17	79.1	-0.002	0.0243	-0.0037
596	SLU 30	-1.12	0.08	79.11	-0.0011	0.0243	-0.0027
596	SLU 31	-1.11	0.12	85.36	0.0035	0.0237	-0.0036
596	SLU 32	-1.14	0.28	86.98	0.0033	0.0243	-0.0054
596	SLU 33	-1.14	0.19	87	0.0042	0.0243	-0.0043
596	SLU 34	-1.13	0.13	86.4	0.0039	0.0242	-0.0037
596	SLU 35	-1.16	0.29	88.02	0.0037	0.0248	-0.0055
596	SLU 36	-1.16	0.2	88.03	0.0046	0.0248	-0.0044
596	SLU 37	-1.15	0.29	87.41	0.0027	0.0246	-0.0055
596	SLU 38	-1.15	0.19	87.42	0.0037	0.0246	-0.0045
596	SLU 39	-1.12	0.32	88.9	0.004	0.0238	-0.0061
596	SLU 40	-1.12	0.23	88.92	0.0049	0.0238	-0.005
596	SLU 41	-1.14	0.33	89.93	0.0043	0.0242	-0.0062
596	SLU 42	-1.14	0.24	89.95	0.0053	0.0243	-0.0051
596	SLU 43	-1.29	0.03	86.51	-0.0201	0.0282	-0.003
596	SLU 44	-1.29	-0.12	86.53	-0.0185	0.0283	-0.0012
596	SLU 45	-1.31	0.04	88.15	-0.0188	0.0289	-0.0031
596	SLU 46	-1.31	-0.05	88.17	-0.0178	0.0289	-0.002
596	SLU 47	-1.31	-0.11	87.57	-0.0181	0.0287	-0.0013
596	SLU 48	-1.33	0.05	89.19	-0.0184	0.0294	-0.0032
596	SLU 49	-1.33	-0.04	89.2	-0.0174	0.0294	-0.0021
596	SLU 50	-1.32	0.05	88.58	-0.0193	0.0292	-0.0032
596	SLU 51	-1.32	-0.04	88.59	-0.0184	0.0292	-0.0021
596	SLU 52	-1.32	0	94.84	-0.0138	0.0286	-0.003
596	SLU 53	-1.34	0.16	96.46	-0.014	0.0292	-0.0048
596	SLU 54	-1.34	0.07	96.48	-0.013	0.0292	-0.0038
596	SLU 55	-1.33	0.01	95.88	-0.0134	0.0291	-0.0031
596	SLU 56	-1.36	0.17	97.49	-0.0136	0.0297	-0.0049
596	SLU 57	-1.36	0.08	97.51	-0.0127	0.0297	-0.0039
596	SLU 58	-1.35	0.17	96.89	-0.0146	0.0295	-0.005
596	SLU 59	-1.35	0.07	96.9	-0.0136	0.0295	-0.0039
596	SLU 60	-1.33	0.2	98.38	-0.0133	0.0287	-0.0055
596	SLU 61	-1.33	0.11	98.39	-0.0124	0.0287	-0.0045
596	SLU 62	-1.34	0.21	99.41	-0.0129	0.0292	-0.0056



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
596	SLU 63	-1.35	0.12	99.43	-0.012	0.0292	-0.0046
596	SLU 64	-1.36	0.14	94.81	-0.0101	0.0295	-0.004
596	SLU 65	-1.36	-0.02	94.83	-0.0085	0.0295	-0.0022
596	SLU 66	-1.39	0.15	96.45	-0.0087	0.0301	-0.004
596	SLU 67	-1.39	0.05	96.46	-0.0078	0.0302	-0.003
596	SLU 68	-1.38	-0.01	95.86	-0.0081	0.03	-0.0023
596	SLU 69	-1.41	0.15	97.48	-0.0084	0.0306	-0.0041
596	SLU 70	-1.41	0.06	97.5	-0.0074	0.0307	-0.0031
596	SLU 71	-1.4	0.15	96.87	-0.0093	0.0304	-0.0042
596	SLU 72	-1.4	0.06	96.89	-0.0084	0.0305	-0.0031
596	SLU 73	-1.39	0.1	103.14	-0.0037	0.0299	-0.004
596	SLU 74	-1.41	0.26	104.76	-0.004	0.0305	-0.0058
596	SLU 75	-1.42	0.17	104.77	-0.003	0.0305	-0.0048
596	SLU 76	-1.41	0.11	104.17	-0.0034	0.0303	-0.0041
596	SLU 77	-1.43	0.27	105.79	-0.0036	0.0309	-0.0059
596	SLU 78	-1.43	0.18	105.81	-0.0027	0.031	-0.0049
596	SLU 79	-1.43	0.27	105.18	-0.0046	0.0308	-0.0059
596	SLU 80	-1.43	0.18	105.2	-0.0036	0.0308	-0.0049
596	SLU 81	-1.4	0.3	106.68	-0.0033	0.03	-0.0065
596	SLU 82	-1.4	0.21	106.69	-0.0024	0.03	-0.0055
596	SLU 83	-1.42	0.31	107.71	-0.0029	0.0304	-0.0066
596	SLU 84	-1.42	0.22	107.72	-0.002	0.0305	-0.0055
596	SLE RA 1	-1.03	0.08	71.11	-0.01	0.0224	-0.0028
596	SLE RA 2	-1.03	-0.02	71.12	-0.0089	0.0224	-0.0017
596	SLE RA 3	-1.05	0.09	72.2	-0.0091	0.0228	-0.0029
596	SLE RA 4	-1.05	0.03	72.21	-0.0084	0.0229	-0.0022
596	SLE RA 5	-1.04	-0.02	71.81	-0.0086	0.0228	-0.0017
596	SLE RA 6	-1.06	0.09	72.89	-0.0088	0.0232	-0.003
596	SLE RA 7	-1.06	0.03	72.9	-0.0082	0.0232	-0.0023
596	SLE RA 8	-1.06	0.09	72.48	-0.0095	0.023	-0.003
596	SLE RA 9	-1.06	0.03	72.49	-0.0088	0.0231	-0.0023
596	SLE RA 10	-1.05	0.06	76.66	-0.0057	0.0227	-0.0029
596	SLE RA 11	-1.07	0.17	77.74	-0.0059	0.0231	-0.0041
596	SLE RA 12	-1.07	0.11	77.75	-0.0053	0.0231	-0.0034
596	SLE RA 13	-1.06	0.06	77.35	-0.0055	0.023	-0.0029
596	SLE RA 14	-1.08	0.17	78.43	-0.0056	0.0234	-0.0041
596	SLE RA 15	-1.08	0.11	78.44	-0.005	0.0234	-0.0034
596	SLE RA 16	-1.07	0.17	78.02	-0.0063	0.0233	-0.0042
596	SLE RA 17	-1.07	0.11	78.03	-0.0057	0.0233	-0.0034
596	SLE RA 18	-1.06	0.19	79.02	-0.0054	0.0227	-0.0045
596	SLE RA 19	-1.06	0.13	79.03	-0.0048	0.0227	-0.0038
596	SLE RA 20	-1.07	0.2	79.71	-0.0052	0.023	-0.0046
596	SLE RA 21	-1.07	0.14	79.72	-0.0045	0.0231	-0.0039
596	SLE FR 1	-1.03	0.08	71.11	-0.01	0.0224	-0.0028
596	SLE FR 2	-1.03	0.06	71.11	-0.0097	0.0224	-0.0026
596	SLE FR 3	-1.04	0.08	71.38	-0.0099	0.0225	-0.0029
596	SLE FR 4	-1.04	0.1	73.48	-0.0084	0.0225	-0.0031
596	SLE FR 5	-1.04	0.12	73.76	-0.0085	0.0226	-0.0034
596	SLE FR 6	-1.04	0.14	75.06	-0.0077	0.0226	-0.0037
596	SLE QP 1	-1.03	0.08	71.11	-0.01	0.0224	-0.0028
596	SLE QP 2	-1.04	0.12	73.48	-0.0086	0.0225	-0.0034
596	SLD 1	3.96	1.06	91.27	-0.0709	0.0637	-0.0154
596	SLD 2	3.95	0.16	91.36	-0.0543	0.064	-0.0033
596	SLD 3	3.67	-1.25	92.33	-0.0584	0.0667	0.0066
596	SLD 4	3.66	-2.16	92.42	-0.0418	0.067	0.0187
596	SLD 5	0.9	4.07	77.2	-0.0492	0.0303	-0.0425
596	SLD 6	0.89	3.47	77.25	-0.0383	0.0304	-0.0346
596	SLD 7	-0.06	-3.64	80.73	-0.0076	0.0403	0.0309
596	SLD 8	-0.06	-4.24	80.78	0.0033	0.0405	0.0388
596	SLD 9	-2.01	4.47	66.18	-0.0205	0.0045	-0.0456
596	SLD 10	-2.02	3.87	66.23	-0.0096	0.0047	-0.0376
596	SLD 11	-2.97	-3.24	69.71	0.0211	0.0145	0.0279
596	SLD 12	-2.97	-3.84	69.76	0.032	0.0147	0.0358
596	SLD 13	-5.74	2.39	54.54	0.0246	-0.022	-0.0254
596	SLD 14	-5.75	1.48	54.63	0.0412	-0.0217	-0.0133
596	SLD 15	-6.03	0.07	55.6	0.0371	-0.019	-0.0034
596	SLD 16	-6.04	-0.83	55.69	0.0537	-0.0187	0.0087
596	SLV 1	10.65	2.24	115.13	-0.1547	0.119	-0.0307
596	SLV 2	10.63	0.13	115.33	-0.1161	0.1197	-0.0024
596	SLV 3	9.98	-3	117.61	-0.1254	0.126	0.0192
596	SLV 4	9.96	-5.11	117.8	-0.0867	0.1267	0.0475
596	SLV 5	3.49	9.06	82.19	-0.1037	0.0407	-0.092
596	SLV 6	3.47	7.69	82.31	-0.0787	0.0412	-0.0738
596	SLV 7	1.26	-8.39	90.44	-0.0058	0.064	0.0741
596	SLV 8	1.24	-9.76	90.57	0.0192	0.0645	0.0924
596	SLV 9	-3.32	9.99	56.4	-0.0364	-0.0195	-0.0991
596	SLV 10	-3.33	8.63	56.52	-0.0114	-0.019	-0.0808
596	SLV 11	-5.55	-7.46	64.65	0.0615	0.0038	0.0671
596	SLV 12	-5.56	-8.83	64.77	0.0864	0.0043	0.0853
596	SLV 13	-12.04	5.34	29.16	0.0695	-0.0817	-0.0542
596	SLV 14	-12.06	3.23	29.35	0.1082	-0.081	-0.0259
596	SLV 15	-12.71	0.1	31.63	0.0989	-0.0747	-0.0043
596	SLV 16	-12.73	-2	31.83	0.1375	-0.074	0.024
596	CRTFP Ux+	0	0	0	0	0	0
596	CRTFP Ux-	0	0	0	0	0	0
596	CRTFP Uy+	0	0	0	0	0	0
596	CRTFP Uy-	0	0	0	0	0	0
597	SLU 1	-1	0.03	68.08	-0.0141	0.0197	-0.0064
597	SLU 2	-1	-0.11	68.1	-0.0126	0.0198	-0.0047
597	SLU 3	-1.03	0.04	69.7	-0.0127	0.0203	-0.0066





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
597	SLU 4	-1.03	-0.05	69.72	-0.0118	0.0203	-0.0055
597	SLU 5	-1.02	-0.11	69.12	-0.0122	0.0202	-0.0048
597	SLU 6	-1.05	0.04	70.72	-0.0123	0.0207	-0.0067
597	SLU 7	-1.05	-0.04	70.73	-0.0114	0.0208	-0.0057
597	SLU 8	-1.04	0.04	70.12	-0.0133	0.0206	-0.0068
597	SLU 9	-1.04	-0.05	70.13	-0.0124	0.0206	-0.0057
597	SLU 10	-1.03	-0.01	76.4	-0.0074	0.0199	-0.0069
597	SLU 11	-1.06	0.15	78.01	-0.0075	0.0204	-0.0088
597	SLU 12	-1.06	0.06	78.02	-0.0066	0.0205	-0.0078
597	SLU 13	-1.05	0	77.42	-0.007	0.0203	-0.0071
597	SLU 14	-1.07	0.15	79.02	-0.0071	0.0209	-0.009
597	SLU 15	-1.08	0.07	79.04	-0.0062	0.0209	-0.0079
597	SLU 16	-1.07	0.15	78.42	-0.0081	0.0207	-0.009
597	SLU 17	-1.07	0.06	78.43	-0.0072	0.0207	-0.0079
597	SLU 18	-1.04	0.18	79.94	-0.0067	0.0199	-0.0096
597	SLU 19	-1.04	0.1	79.95	-0.0058	0.0199	-0.0086
597	SLU 20	-1.06	0.19	80.96	-0.0063	0.0203	-0.0098
597	SLU 21	-1.06	0.1	80.97	-0.0054	0.0203	-0.0087
597	SLU 22	-1.08	0.12	76.34	-0.0034	0.0207	-0.0078
597	SLU 23	-1.08	-0.02	76.36	-0.0019	0.0208	-0.006
597	SLU 24	-1.1	0.13	77.97	-0.002	0.0213	-0.008
597	SLU 25	-1.1	0.05	77.98	-0.0011	0.0214	-0.0069
597	SLU 26	-1.1	-0.01	77.38	-0.0015	0.0212	-0.0062
597	SLU 27	-1.12	0.14	78.98	-0.0016	0.0218	-0.0081
597	SLU 28	-1.12	0.05	79	-0.0007	0.0218	-0.007
597	SLU 29	-1.11	0.14	78.38	-0.0026	0.0216	-0.0081
597	SLU 30	-1.11	0.05	78.39	-0.0017	0.0216	-0.0071
597	SLU 31	-1.11	0.09	84.67	0.0033	0.0209	-0.0083
597	SLU 32	-1.13	0.24	86.27	0.0032	0.0215	-0.0102
597	SLU 33	-1.13	0.15	86.28	0.0041	0.0215	-0.0091
597	SLU 34	-1.12	0.09	85.68	0.0037	0.0213	-0.0084
597	SLU 35	-1.15	0.25	87.29	0.0036	0.0219	-0.0104
597	SLU 36	-1.15	0.16	87.3	0.0045	0.0219	-0.0093
597	SLU 37	-1.14	0.24	86.68	0.0025	0.0217	-0.0104
597	SLU 38	-1.14	0.16	86.69	0.0035	0.0218	-0.0093
597	SLU 39	-1.12	0.28	88.2	0.0039	0.0209	-0.011
597	SLU 40	-1.12	0.19	88.22	0.0049	0.0209	-0.0099
597	SLU 41	-1.13	0.28	89.22	0.0044	0.0214	-0.0112
597	SLU 42	-1.14	0.2	89.23	0.0053	0.0214	-0.0101
597	SLU 43	-1.28	0	85.67	-0.022	0.0253	-0.0079
597	SLU 44	-1.28	-0.14	85.69	-0.0205	0.0253	-0.0061
597	SLU 45	-1.3	0.01	87.3	-0.0206	0.0259	-0.008
597	SLU 46	-1.3	-0.07	87.31	-0.0197	0.0259	-0.007
597	SLU 47	-1.3	-0.13	86.71	-0.0201	0.0257	-0.0063
597	SLU 48	-1.32	0.02	88.31	-0.0202	0.0263	-0.0082
597	SLU 49	-1.32	-0.07	88.33	-0.0193	0.0263	-0.0071
597	SLU 50	-1.31	0.02	87.71	-0.0212	0.0261	-0.0082
597	SLU 51	-1.32	-0.07	87.72	-0.0203	0.0262	-0.0071
597	SLU 52	-1.31	-0.03	94	-0.0153	0.0254	-0.0084
597	SLU 53	-1.33	0.12	95.6	-0.0154	0.026	-0.0103
597	SLU 54	-1.33	0.04	95.61	-0.0145	0.026	-0.0092
597	SLU 55	-1.32	-0.02	95.01	-0.0149	0.0259	-0.0085
597	SLU 56	-1.35	0.13	96.62	-0.015	0.0264	-0.0104
597	SLU 57	-1.35	0.04	96.63	-0.0141	0.0265	-0.0094
597	SLU 58	-1.34	0.12	96.01	-0.016	0.0263	-0.0105
597	SLU 59	-1.34	0.04	96.02	-0.0151	0.0263	-0.0094
597	SLU 60	-1.32	0.16	97.53	-0.0146	0.0255	-0.0111
597	SLU 61	-1.32	0.07	97.55	-0.0137	0.0255	-0.01
597	SLU 62	-1.34	0.16	98.55	-0.0142	0.0259	-0.0113
597	SLU 63	-1.34	0.08	98.56	-0.0133	0.0259	-0.0102
597	SLU 64	-1.35	0.1	93.94	-0.0113	0.0263	-0.0093
597	SLU 65	-1.35	-0.04	93.96	-0.0098	0.0263	-0.0075
597	SLU 66	-1.38	0.11	95.56	-0.0099	0.0269	-0.0094
597	SLU 67	-1.38	0.02	95.57	-0.009	0.0269	-0.0083
597	SLU 68	-1.37	-0.04	94.97	-0.0094	0.0268	-0.0076
597	SLU 69	-1.4	0.11	96.58	-0.0095	0.0273	-0.0096
597	SLU 70	-1.4	0.03	96.59	-0.0086	0.0274	-0.0085
597	SLU 71	-1.39	0.11	95.97	-0.0105	0.0272	-0.0096
597	SLU 72	-1.39	0.03	95.98	-0.0096	0.0272	-0.0085
597	SLU 73	-1.38	0.06	102.26	-0.0046	0.0265	-0.0097
597	SLU 74	-1.41	0.22	103.86	-0.0047	0.027	-0.0117
597	SLU 75	-1.41	0.13	103.87	-0.0038	0.027	-0.0106
597	SLU 76	-1.4	0.07	103.28	-0.0042	0.0269	-0.0099
597	SLU 77	-1.42	0.22	104.88	-0.0043	0.0275	-0.0118
597	SLU 78	-1.43	0.14	104.89	-0.0034	0.0275	-0.0107
597	SLU 79	-1.42	0.22	104.27	-0.0053	0.0273	-0.0118
597	SLU 80	-1.42	0.13	104.29	-0.0044	0.0273	-0.0108
597	SLU 81	-1.39	0.25	105.8	-0.0039	0.0265	-0.0125
597	SLU 82	-1.39	0.17	105.81	-0.003	0.0265	-0.0114
597	SLU 83	-1.41	0.26	106.81	-0.0035	0.0269	-0.0126
597	SLU 84	-1.41	0.17	106.83	-0.0026	0.0269	-0.0116
597	SLE RA 1	-1.02	0.06	70.44	-0.011	0.02	-0.0068
597	SLE RA 2	-1.02	-0.04	70.46	-0.01	0.02	-0.0056
597	SLE RA 3	-1.04	0.06	71.52	-0.0101	0.0204	-0.0069
597	SLE RA 4	-1.04	0	71.53	-0.0095	0.0204	-0.0062
597	SLE RA 5	-1.04	-0.04	71.13	-0.0098	0.0203	-0.0057
597	SLE RA 6	-1.05	0.07	72.2	-0.0098	0.0207	-0.007
597	SLE RA 7	-1.05	0.01	72.21	-0.0092	0.0207	-0.0063
597	SLE RA 8	-1.05	0.06	71.8	-0.0105	0.0206	-0.007
597	SLE RA 9	-1.05	0.01	71.81	-0.0099	0.0206	-0.0063



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
597	SLE RA 10	-1.04	0.03	75.99	-0.0066	0.0201	-0.0071
597	SLE RA 11	-1.06	0.13	77.06	-0.0067	0.0205	-0.0084
597	SLE RA 12	-1.06	0.08	77.07	-0.0061	0.0205	-0.0077
597	SLE RA 13	-1.06	0.04	76.67	-0.0063	0.0204	-0.0072
597	SLE RA 14	-1.07	0.14	77.74	-0.0064	0.0208	-0.0085
597	SLE RA 15	-1.07	0.08	77.75	-0.0058	0.0208	-0.0078
597	SLE RA 16	-1.07	0.14	77.33	-0.0071	0.0207	-0.0085
597	SLE RA 17	-1.07	0.08	77.34	-0.0065	0.0207	-0.0078
597	SLE RA 18	-1.05	0.16	78.35	-0.0061	0.0201	-0.009
597	SLE RA 19	-1.05	0.1	78.36	-0.0055	0.0201	-0.0083
597	SLE RA 20	-1.06	0.16	79.03	-0.0059	0.0204	-0.0091
597	SLE RA 21	-1.06	0.1	79.04	-0.0053	0.0204	-0.0084
597	SLE FR 1	-1.02	0.06	70.44	-0.011	0.02	-0.0068
597	SLE FR 2	-1.02	0.04	70.44	-0.0108	0.02	-0.0066
597	SLE FR 3	-1.03	0.06	70.71	-0.0109	0.0201	-0.0069
597	SLE FR 4	-1.03	0.07	72.82	-0.0094	0.0201	-0.0072
597	SLE FR 5	-1.04	0.09	73.09	-0.0095	0.0202	-0.0075
597	SLE FR 6	-1.04	0.11	74.4	-0.0086	0.0201	-0.0079
597	SLE QP 1	-1.02	0.06	70.44	-0.011	0.02	-0.0068
597	SLE QP 2	-1.03	0.09	72.81	-0.0096	0.02	-0.0075
597	SLD 1	3.98	0.96	89.31	-0.0712	0.06	-0.0193
597	SLD 2	3.97	0.12	89.38	-0.0547	0.0602	-0.0073
597	SLD 3	3.69	-1.24	90.3	-0.0575	0.0628	0.0028
597	SLD 4	3.68	-2.08	90.38	-0.0411	0.063	0.0148
597	SLD 5	0.91	3.83	76.23	-0.0517	0.0278	-0.0467
597	SLD 6	0.9	3.28	76.28	-0.0409	0.0279	-0.0388
597	SLD 7	-0.05	-3.49	79.56	-0.0061	0.037	0.027
597	SLD 8	-0.05	-4.05	79.61	0.0046	0.0372	0.0349
597	SLD 9	-2.01	4.22	66.01	-0.0238	0.0029	-0.0498
597	SLD 10	-2.01	3.67	66.06	-0.013	0.0031	-0.042
597	SLD 11	-2.96	-3.1	69.35	0.0218	0.0122	0.0239
597	SLD 12	-2.97	-3.66	69.4	0.0326	0.0123	0.0317
597	SLD 13	-5.74	2.25	55.25	0.0219	-0.0229	-0.0297
597	SLD 14	-5.75	1.41	55.32	0.0383	-0.0227	-0.0178
597	SLD 15	-6.03	0.06	56.25	0.0356	-0.0201	-0.0076
597	SLD 16	-6.04	-0.79	56.32	0.052	-0.0199	0.0043
597	SLV 1	10.68	2.04	111.41	-0.154	0.1136	-0.0341
597	SLV 2	10.66	0.07	111.59	-0.1158	0.1141	-0.0063
597	SLV 3	10.01	-2.94	113.75	-0.1219	0.1201	0.0159
597	SLV 4	9.99	-4.9	113.93	-0.0837	0.1205	0.0438
597	SLV 5	3.5	8.55	80.82	-0.1082	0.0383	-0.0962
597	SLV 6	3.49	7.28	80.93	-0.0835	0.0386	-0.0782
597	SLV 7	1.27	-8.02	88.61	-0.0012	0.0598	0.0706
597	SLV 8	1.26	-9.29	88.72	0.0235	0.06	0.0886
597	SLV 9	-3.32	9.46	56.9	-0.0427	-0.0199	-0.1035
597	SLV 10	-3.33	8.19	57.02	-0.018	-0.0197	-0.0856
597	SLV 11	-5.55	-7.11	64.69	0.0644	0.0015	0.0632
597	SLV 12	-5.56	-8.38	64.81	0.0891	0.0018	0.0812
597	SLV 13	-12.05	5.07	31.7	0.0645	-0.0804	-0.0587
597	SLV 14	-12.07	3.11	31.88	0.1028	-0.08	-0.0309
597	SLV 15	-12.72	0.1	34.04	0.0966	-0.074	-0.0087
597	SLV 16	-12.74	-1.86	34.21	0.1349	-0.0735	0.0192
597	CRTFP Ux+	0	0	0	0	0	0
597	CRTFP Ux-	0	0	0	0	0	0
597	CRTFP Uy+	0	0	0	0	0	0
597	CRTFP Uy-	0	0	0	0	0	0
598	SLU 1	-0.99	-0.01	67.44	-0.0157	0.0205	-0.0095
598	SLU 2	-0.99	-0.15	67.46	-0.0142	0.0205	-0.0078
598	SLU 3	-1.02	-0.01	69.05	-0.0142	0.0211	-0.0097
598	SLU 4	-1.02	-0.09	69.06	-0.0133	0.0211	-0.0087
598	SLU 5	-1.01	-0.14	68.47	-0.0138	0.021	-0.008
598	SLU 6	-1.04	0	70.05	-0.0138	0.0215	-0.0099
598	SLU 7	-1.04	-0.08	70.06	-0.0129	0.0216	-0.0089
598	SLU 8	-1.03	0	69.45	-0.0148	0.0214	-0.0099
598	SLU 9	-1.03	-0.08	69.47	-0.014	0.0214	-0.0089
598	SLU 10	-1.02	-0.05	75.76	-0.0087	0.0209	-0.0103
598	SLU 11	-1.04	0.09	77.34	-0.0087	0.0215	-0.0123
598	SLU 12	-1.05	0.01	77.35	-0.0078	0.0215	-0.0112
598	SLU 13	-1.04	-0.05	76.76	-0.0083	0.0213	-0.0105
598	SLU 14	-1.06	0.09	78.35	-0.0082	0.0219	-0.0125
598	SLU 15	-1.06	0.01	78.36	-0.0074	0.0219	-0.0114
598	SLU 16	-1.06	0.09	77.75	-0.0093	0.0217	-0.0125
598	SLU 17	-1.06	0.01	77.76	-0.0084	0.0218	-0.0115
598	SLU 18	-1.03	0.12	79.29	-0.0078	0.021	-0.0132
598	SLU 19	-1.03	0.04	79.31	-0.0069	0.021	-0.0121
598	SLU 20	-1.05	0.13	80.3	-0.0073	0.0215	-0.0134
598	SLU 21	-1.05	0.05	80.31	-0.0065	0.0215	-0.0123
598	SLU 22	-1.07	0.07	75.67	-0.0043	0.0217	-0.0111
598	SLU 23	-1.07	-0.06	75.69	-0.0029	0.0218	-0.0094
598	SLU 24	-1.09	0.08	77.27	-0.0029	0.0223	-0.0113
598	SLU 25	-1.09	0	77.29	-0.002	0.0224	-0.0103
598	SLU 26	-1.09	-0.06	76.7	-0.0025	0.0222	-0.0096
598	SLU 27	-1.11	0.09	78.28	-0.0024	0.0228	-0.0116
598	SLU 28	-1.11	0.01	78.29	-0.0016	0.0228	-0.0105
598	SLU 29	-1.1	0.08	77.68	-0.0035	0.0226	-0.0116
598	SLU 30	-1.1	0	77.69	-0.0026	0.0226	-0.0105
598	SLU 31	-1.09	0.03	83.99	0.0026	0.0221	-0.012
598	SLU 32	-1.12	0.18	85.57	0.0027	0.0227	-0.0139
598	SLU 33	-1.12	0.1	85.58	0.0035	0.0227	-0.0129
598	SLU 34	-1.11	0.04	84.99	0.0031	0.0226	-0.0122



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
598	SLU 35	-1.14	0.18	86.57	0.0031	0.0231	-0.0141
598	SLU 36	-1.14	0.1	86.59	0.004	0.0231	-0.0131
598	SLU 37	-1.13	0.18	85.98	0.0021	0.023	-0.0141
598	SLU 38	-1.13	0.1	85.99	0.0029	0.023	-0.0131
598	SLU 39	-1.1	0.21	87.52	0.0036	0.0223	-0.0148
598	SLU 40	-1.11	0.13	87.53	0.0044	0.0223	-0.0138
598	SLU 41	-1.12	0.21	88.53	0.004	0.0227	-0.015
598	SLU 42	-1.12	0.13	88.54	0.0049	0.0227	-0.014
598	SLU 43	-1.26	-0.05	84.86	-0.0243	0.0263	-0.0118
598	SLU 44	-1.26	-0.18	84.88	-0.0228	0.0263	-0.0101
598	SLU 45	-1.29	-0.04	86.46	-0.0228	0.0269	-0.012
598	SLU 46	-1.29	-0.12	86.47	-0.0219	0.0269	-0.011
598	SLU 47	-1.28	-0.18	85.88	-0.0224	0.0267	-0.0103
598	SLU 48	-1.31	-0.04	87.47	-0.0223	0.0273	-0.0122
598	SLU 49	-1.31	-0.12	87.48	-0.0215	0.0273	-0.0112
598	SLU 50	-1.3	-0.04	86.87	-0.0234	0.0271	-0.0122
598	SLU 51	-1.3	-0.12	86.88	-0.0225	0.0271	-0.0112
598	SLU 52	-1.29	-0.09	93.17	-0.0173	0.0266	-0.0126
598	SLU 53	-1.32	0.06	94.76	-0.0172	0.0272	-0.0146
598	SLU 54	-1.32	-0.03	94.77	-0.0164	0.0272	-0.0135
598	SLU 55	-1.31	-0.08	94.18	-0.0169	0.0271	-0.0129
598	SLU 56	-1.34	0.06	95.76	-0.0168	0.0276	-0.0148
598	SLU 57	-1.34	-0.02	95.77	-0.016	0.0277	-0.0138
598	SLU 58	-1.33	0.06	95.16	-0.0179	0.0275	-0.0148
598	SLU 59	-1.33	-0.02	95.17	-0.017	0.0275	-0.0138
598	SLU 60	-1.3	0.09	96.71	-0.0163	0.0268	-0.0155
598	SLU 61	-1.3	0.01	96.72	-0.0155	0.0268	-0.0144
598	SLU 62	-1.32	0.09	97.71	-0.0159	0.0272	-0.0157
598	SLU 63	-1.32	0.01	97.72	-0.0151	0.0272	-0.0146
598	SLU 64	-1.34	0.04	93.08	-0.0129	0.0275	-0.0134
598	SLU 65	-1.34	-0.1	93.1	-0.0115	0.0275	-0.0117
598	SLU 66	-1.36	0.05	94.69	-0.0114	0.0281	-0.0137
598	SLU 67	-1.36	-0.03	94.7	-0.0106	0.0281	-0.0126
598	SLU 68	-1.36	-0.09	94.11	-0.0111	0.0279	-0.0119
598	SLU 69	-1.38	0.05	95.69	-0.011	0.0285	-0.0139
598	SLU 70	-1.38	-0.03	95.7	-0.0102	0.0285	-0.0128
598	SLU 71	-1.37	0.05	95.09	-0.0121	0.0283	-0.0139
598	SLU 72	-1.37	-0.03	95.11	-0.0112	0.0284	-0.0128
598	SLU 73	-1.37	0	101.4	-0.006	0.0279	-0.0143
598	SLU 74	-1.39	0.14	102.98	-0.0059	0.0284	-0.0162
598	SLU 75	-1.39	0.06	102.99	-0.0051	0.0284	-0.0152
598	SLU 76	-1.39	0	102.4	-0.0055	0.0283	-0.0145
598	SLU 77	-1.41	0.15	103.99	-0.0055	0.0289	-0.0164
598	SLU 78	-1.41	0.07	104	-0.0046	0.0289	-0.0154
598	SLU 79	-1.4	0.14	103.39	-0.0065	0.0287	-0.0164
598	SLU 80	-1.4	0.06	103.4	-0.0057	0.0287	-0.0154
598	SLU 81	-1.38	0.17	104.93	-0.005	0.028	-0.0171
598	SLU 82	-1.38	0.09	104.95	-0.0042	0.028	-0.0161
598	SLU 83	-1.4	0.18	105.94	-0.0046	0.0284	-0.0173
598	SLU 84	-1.4	0.1	105.95	-0.0037	0.0284	-0.0163
598	SLE RA 1	-1.01	0.01	69.8	-0.0124	0.0209	-0.01
598	SLE RA 2	-1.01	-0.08	69.81	-0.0115	0.0209	-0.0088
598	SLE RA 3	-1.03	0.02	70.86	-0.0114	0.0213	-0.0101
598	SLE RA 4	-1.03	-0.04	70.87	-0.0109	0.0213	-0.0094
598	SLE RA 5	-1.03	-0.08	70.48	-0.0112	0.0212	-0.009
598	SLE RA 6	-1.04	0.02	71.53	-0.0112	0.0216	-0.0103
598	SLE RA 7	-1.04	-0.03	71.54	-0.0106	0.0216	-0.0096
598	SLE RA 8	-1.04	0.02	71.13	-0.0119	0.0214	-0.0103
598	SLE RA 9	-1.04	-0.04	71.14	-0.0113	0.0215	-0.0096
598	SLE RA 10	-1.03	-0.02	75.34	-0.0078	0.0211	-0.0105
598	SLE RA 11	-1.05	0.08	76.39	-0.0078	0.0215	-0.0118
598	SLE RA 12	-1.05	0.03	76.4	-0.0072	0.0215	-0.0111
598	SLE RA 13	-1.04	-0.01	76.01	-0.0075	0.0214	-0.0107
598	SLE RA 14	-1.06	0.08	77.06	-0.0075	0.0218	-0.012
598	SLE RA 15	-1.06	0.03	77.07	-0.0069	0.0218	-0.0113
598	SLE RA 16	-1.06	0.08	76.66	-0.0082	0.0217	-0.012
598	SLE RA 17	-1.06	0.03	76.67	-0.0076	0.0217	-0.0113
598	SLE RA 18	-1.04	0.1	77.7	-0.0072	0.0212	-0.0124
598	SLE RA 19	-1.04	0.05	77.7	-0.0066	0.0212	-0.0117
598	SLE RA 20	-1.05	0.1	78.36	-0.0069	0.0215	-0.0126
598	SLE RA 21	-1.05	0.05	78.37	-0.0063	0.0215	-0.0119
598	SLE FR 1	-1.01	0.01	69.8	-0.0124	0.0209	-0.01
598	SLE FR 2	-1.01	-0.01	69.8	-0.0122	0.0209	-0.0098
598	SLE FR 3	-1.02	0.01	70.06	-0.0123	0.021	-0.01
598	SLE FR 4	-1.02	0.02	72.17	-0.0107	0.021	-0.0105
598	SLE FR 5	-1.02	0.04	72.43	-0.0107	0.0211	-0.0108
598	SLE FR 6	-1.03	0.06	73.75	-0.0098	0.021	-0.0112
598	SLE QP 1	-1.01	0.01	69.8	-0.0124	0.0209	-0.01
598	SLE QP 2	-1.02	0.04	72.17	-0.0108	0.021	-0.0107
598	SLD 1	4	0.83	87.38	-0.0721	0.0605	-0.0326
598	SLD 2	3.99	0.05	87.45	-0.0558	0.0606	-0.0212
598	SLD 3	3.71	-1.25	88.33	-0.057	0.063	-0.0116
598	SLD 4	3.7	-2.04	88.4	-0.0408	0.0631	-0.0002
598	SLD 5	0.92	3.57	75.28	-0.055	0.0289	-0.0513
598	SLD 6	0.92	3.06	75.33	-0.0443	0.0289	-0.0438
598	SLD 7	-0.04	-3.37	78.43	-0.0047	0.0375	0.019
598	SLD 8	-0.04	-3.88	78.48	0.006	0.0376	0.0265
598	SLD 9	-2	3.96	65.85	-0.0277	0.0044	-0.0479
598	SLD 10	-2	3.45	65.9	-0.017	0.0044	-0.0404
598	SLD 11	-2.96	-2.99	69	0.0226	0.013	0.0224



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
598	SLD 12	-2.96	-3.5	69.05	0.0333	0.0131	0.0299
598	SLD 13	-5.74	2.11	55.93	0.0191	-0.0212	-0.0213
598	SLD 14	-5.75	1.33	56	0.0353	-0.0211	-0.0099
598	SLD 15	-6.03	0.03	56.88	0.0341	-0.0186	-0.0002
598	SLD 16	-6.04	-0.76	56.95	0.0504	-0.0185	0.0112
598	SLV 1	10.71	1.81	107.78	-0.1545	0.1134	-0.0612
598	SLV 2	10.69	-0.01	107.95	-0.1167	0.1137	-0.0346
598	SLV 3	10.04	-2.91	109.99	-0.1192	0.1195	-0.0135
598	SLV 4	10.02	-4.73	110.16	-0.0813	0.1197	0.0131
598	SLV 5	3.52	8.03	79.47	-0.1141	0.0395	-0.1028
598	SLV 6	3.51	6.86	79.58	-0.0896	0.0397	-0.0857
598	SLV 7	1.29	-7.68	86.83	0.0037	0.0596	0.0562
598	SLV 8	1.27	-8.86	86.94	0.0281	0.0598	0.0734
598	SLV 9	-3.31	8.93	57.39	-0.0498	-0.0178	-0.0948
598	SLV 10	-3.33	7.76	57.5	-0.0254	-0.0177	-0.0776
598	SLV 11	-5.55	-6.78	64.75	0.0679	0.0023	0.0642
598	SLV 12	-5.56	-7.96	64.86	0.0924	0.0024	0.0814
598	SLV 13	-12.06	4.8	34.17	0.0596	-0.0778	-0.0345
598	SLV 14	-12.08	2.98	34.34	0.0975	-0.0775	-0.0079
598	SLV 15	-12.73	0.09	36.38	0.095	-0.0717	0.0132
598	SLV 16	-12.75	-1.73	36.55	0.1328	-0.0715	0.0398
598	CRTFP Ux+	0	0	0	0	0	0
598	CRTFP Ux-	0	0	0	0	0	0
598	CRTFP Uy+	0	0	0	0	0	0
598	CRTFP Uy-	0	0	0	0	0	0
599	SLU 1	-0.98	-0.07	66.76	-0.0176	0.0224	-0.0119
599	SLU 2	-0.98	-0.2	66.78	-0.0163	0.0224	-0.0102
599	SLU 3	-1	-0.06	68.35	-0.0161	0.023	-0.0121
599	SLU 4	-1	-0.14	68.36	-0.0153	0.023	-0.0111
599	SLU 5	-1	-0.19	67.77	-0.0158	0.0228	-0.0105
599	SLU 6	-1.02	-0.06	69.34	-0.0157	0.0234	-0.0124
599	SLU 7	-1.02	-0.13	69.35	-0.0149	0.0234	-0.0114
599	SLU 8	-1.01	-0.06	68.74	-0.0167	0.0232	-0.0124
599	SLU 9	-1.01	-0.14	68.76	-0.0159	0.0233	-0.0114
599	SLU 10	-1.01	-0.11	75.06	-0.0104	0.0231	-0.0129
599	SLU 11	-1.03	0.02	76.62	-0.0102	0.0237	-0.0148
599	SLU 12	-1.03	-0.06	76.64	-0.0094	0.0237	-0.0138
599	SLU 13	-1.02	-0.11	76.05	-0.01	0.0236	-0.0132
599	SLU 14	-1.05	0.02	77.62	-0.0098	0.0242	-0.0151
599	SLU 15	-1.05	-0.05	77.63	-0.009	0.0242	-0.0141
599	SLU 16	-1.04	0.02	77.02	-0.0109	0.024	-0.0151
599	SLU 17	-1.04	-0.06	77.03	-0.0101	0.024	-0.0141
599	SLU 18	-1.02	0.04	78.59	-0.0092	0.0234	-0.0157
599	SLU 19	-1.02	-0.03	78.6	-0.0084	0.0234	-0.0148
599	SLU 20	-1.03	0.05	79.58	-0.0088	0.0239	-0.016
599	SLU 21	-1.04	-0.03	79.59	-0.008	0.0239	-0.015
599	SLU 22	-1.05	0.01	74.95	-0.0057	0.0239	-0.0136
599	SLU 23	-1.05	-0.12	74.96	-0.0043	0.0239	-0.012
599	SLU 24	-1.08	0.01	76.53	-0.0042	0.0245	-0.0139
599	SLU 25	-1.08	-0.06	76.54	-0.0034	0.0246	-0.0129
599	SLU 26	-1.07	-0.11	75.96	-0.0039	0.0244	-0.0122
599	SLU 27	-1.09	0.02	77.52	-0.0037	0.025	-0.0141
599	SLU 28	-1.1	-0.06	77.53	-0.0029	0.025	-0.0131
599	SLU 29	-1.09	0.01	76.93	-0.0048	0.0248	-0.0141
599	SLU 30	-1.09	-0.06	76.94	-0.004	0.0248	-0.0131
599	SLU 31	-1.08	-0.04	83.24	0.0015	0.0247	-0.0147
599	SLU 32	-1.1	0.1	84.81	0.0017	0.0253	-0.0166
599	SLU 33	-1.1	0.02	84.82	0.0025	0.0253	-0.0156
599	SLU 34	-1.1	-0.03	84.23	0.002	0.0251	-0.0149
599	SLU 35	-1.12	0.1	85.8	0.0022	0.0257	-0.0168
599	SLU 36	-1.12	0.02	85.81	0.003	0.0258	-0.0158
599	SLU 37	-1.11	0.1	85.2	0.0011	0.0256	-0.0168
599	SLU 38	-1.12	0.02	85.22	0.0019	0.0256	-0.0158
599	SLU 39	-1.09	0.12	86.77	0.0027	0.025	-0.0175
599	SLU 40	-1.09	0.05	86.78	0.0035	0.025	-0.0165
599	SLU 41	-1.11	0.13	87.76	0.0032	0.0254	-0.0177
599	SLU 42	-1.11	0.05	87.77	0.004	0.0254	-0.0167
599	SLU 43	-1.24	-0.12	83.99	-0.027	0.0285	-0.0148
599	SLU 44	-1.25	-0.24	84.01	-0.0257	0.0285	-0.0132
599	SLU 45	-1.27	-0.11	85.57	-0.0255	0.0291	-0.0151
599	SLU 46	-1.27	-0.19	85.58	-0.0247	0.0292	-0.0141
599	SLU 47	-1.26	-0.24	85	-0.0252	0.029	-0.0134
599	SLU 48	-1.29	-0.11	86.56	-0.025	0.0296	-0.0153
599	SLU 49	-1.29	-0.18	86.57	-0.0242	0.0296	-0.0143
599	SLU 50	-1.28	-0.11	85.97	-0.0261	0.0294	-0.0153
599	SLU 51	-1.28	-0.19	85.98	-0.0253	0.0294	-0.0143
599	SLU 52	-1.27	-0.16	92.28	-0.0198	0.0293	-0.0159
599	SLU 53	-1.3	-0.03	93.85	-0.0196	0.0299	-0.0178
599	SLU 54	-1.3	-0.11	93.86	-0.0188	0.0299	-0.0168
599	SLU 55	-1.29	-0.16	93.27	-0.0194	0.0297	-0.0161
599	SLU 56	-1.32	-0.03	94.84	-0.0192	0.0303	-0.018
599	SLU 57	-1.32	-0.1	94.85	-0.0184	0.0304	-0.017
599	SLU 58	-1.31	-0.03	94.25	-0.0203	0.0302	-0.018
599	SLU 59	-1.31	-0.11	94.26	-0.0194	0.0302	-0.017
599	SLU 60	-1.28	0	95.81	-0.0186	0.0296	-0.0187
599	SLU 61	-1.28	-0.08	95.82	-0.0178	0.0296	-0.0177
599	SLU 62	-1.3	0	96.8	-0.0182	0.03	-0.0189
599	SLU 63	-1.3	-0.07	96.81	-0.0174	0.03	-0.018
599	SLU 64	-1.32	-0.04	92.17	-0.0151	0.0301	-0.0166
599	SLU 65	-1.32	-0.17	92.19	-0.0137	0.0301	-0.0149



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
599	SLU 66	-1.34	-0.03	93.75	-0.0135	0.0307	-0.0168
599	SLU 67	-1.34	-0.11	93.76	-0.0127	0.0307	-0.0158
599	SLU 68	-1.34	-0.16	93.18	-0.0133	0.0306	-0.0152
599	SLU 69	-1.36	-0.03	94.74	-0.0131	0.0312	-0.0171
599	SLU 70	-1.36	-0.1	94.76	-0.0123	0.0312	-0.0161
599	SLU 71	-1.35	-0.03	94.15	-0.0142	0.031	-0.0171
599	SLU 72	-1.36	-0.11	94.16	-0.0134	0.031	-0.0161
599	SLU 73	-1.35	-0.08	100.47	-0.0078	0.0309	-0.0177
599	SLU 74	-1.37	0.05	102.03	-0.0077	0.0315	-0.0195
599	SLU 75	-1.37	-0.03	102.04	-0.0069	0.0315	-0.0185
599	SLU 76	-1.37	-0.08	101.46	-0.0074	0.0313	-0.0179
599	SLU 77	-1.39	0.05	103.02	-0.0072	0.0319	-0.0198
599	SLU 78	-1.39	-0.02	103.03	-0.0064	0.0319	-0.0188
599	SLU 79	-1.38	0.05	102.43	-0.0083	0.0317	-0.0198
599	SLU 80	-1.38	-0.03	102.44	-0.0075	0.0317	-0.0188
599	SLU 81	-1.36	0.07	103.99	-0.0067	0.0312	-0.0204
599	SLU 82	-1.36	0	104.01	-0.0059	0.0312	-0.0195
599	SLU 83	-1.38	0.08	104.98	-0.0062	0.0316	-0.0207
599	SLU 84	-1.38	0	105	-0.0054	0.0316	-0.0197
599	SLE RA 1	-1	-0.05	69.1	-0.0142	0.0228	-0.0124
599	SLE RA 2	-1	-0.13	69.11	-0.0133	0.0228	-0.0113
599	SLE RA 3	-1.01	-0.04	70.16	-0.0132	0.0232	-0.0125
599	SLE RA 4	-1.02	-0.09	70.16	-0.0127	0.0232	-0.0119
599	SLE RA 5	-1.01	-0.13	69.77	-0.013	0.0231	-0.0114
599	SLE RA 6	-1.03	-0.04	70.82	-0.0129	0.0235	-0.0127
599	SLE RA 7	-1.03	-0.09	70.83	-0.0124	0.0235	-0.012
599	SLE RA 8	-1.02	-0.04	70.42	-0.0136	0.0234	-0.0127
599	SLE RA 9	-1.02	-0.09	70.43	-0.0131	0.0234	-0.012
599	SLE RA 10	-1.02	-0.08	74.63	-0.0094	0.0233	-0.0131
599	SLE RA 11	-1.03	0.01	75.68	-0.0093	0.0237	-0.0143
599	SLE RA 12	-1.03	-0.04	75.68	-0.0087	0.0237	-0.0137
599	SLE RA 13	-1.03	-0.08	75.29	-0.0091	0.0236	-0.0132
599	SLE RA 14	-1.05	0.01	76.34	-0.009	0.024	-0.0145
599	SLE RA 15	-1.05	-0.04	76.34	-0.0084	0.024	-0.0138
599	SLE RA 16	-1.04	0.01	75.94	-0.0097	0.0239	-0.0145
599	SLE RA 17	-1.04	-0.04	75.95	-0.0092	0.0239	-0.0138
599	SLE RA 18	-1.02	0.03	76.98	-0.0086	0.0235	-0.0149
599	SLE RA 19	-1.02	-0.02	76.99	-0.0081	0.0235	-0.0143
599	SLE RA 20	-1.04	0.03	77.64	-0.0083	0.0238	-0.0151
599	SLE RA 21	-1.04	-0.02	77.65	-0.0078	0.0238	-0.0145
599	SLE FR 1	-1	-0.05	69.1	-0.0142	0.0228	-0.0124
599	SLE FR 2	-1	-0.07	69.1	-0.014	0.0228	-0.0121
599	SLE FR 3	-1	-0.05	69.37	-0.0141	0.0229	-0.0124
599	SLE FR 4	-1.01	-0.04	71.47	-0.0124	0.023	-0.0129
599	SLE FR 5	-1.01	-0.02	71.73	-0.0124	0.0231	-0.0132
599	SLE FR 6	-1.01	-0.01	73.04	-0.0114	0.0232	-0.0137
599	SLE QP 1	-1	-0.05	69.1	-0.0142	0.0228	-0.0124
599	SLE QP 2	-1.01	-0.03	71.47	-0.0125	0.023	-0.0131
599	SLD 1	4.02	0.69	85.42	-0.0738	0.0623	-0.0342
599	SLD 2	4.01	-0.04	85.49	-0.0577	0.0623	-0.0235
599	SLD 3	3.73	-1.29	86.31	-0.0572	0.0647	-0.015
599	SLD 4	3.72	-2.02	86.38	-0.041	0.0647	-0.0043
599	SLD 5	0.94	3.32	74.29	-0.0591	0.0311	-0.0504
599	SLD 6	0.93	2.84	74.33	-0.0485	0.0311	-0.0435
599	SLD 7	-0.02	-3.28	77.26	-0.0035	0.0392	0.0135
599	SLD 8	-0.02	-3.75	77.31	0.007	0.0392	0.0205
599	SLD 9	-1.99	3.7	65.63	-0.0321	0.0068	-0.0468
599	SLD 10	-1.99	3.23	65.67	-0.0215	0.0068	-0.0398
599	SLD 11	-2.94	-2.89	68.6	0.0234	0.0149	0.0172
599	SLD 12	-2.95	-3.37	68.65	0.034	0.015	0.0242
599	SLD 13	-5.73	1.97	56.55	0.016	-0.0187	-0.0219
599	SLD 14	-5.74	1.24	56.62	0.0321	-0.0187	-0.0113
599	SLD 15	-6.02	-0.01	57.44	0.0326	-0.0163	-0.0028
599	SLD 16	-6.03	-0.74	57.51	0.0487	-0.0162	0.0079
599	SLV 1	10.74	1.56	104.12	-0.1563	0.1149	-0.0616
599	SLV 2	10.72	-0.13	104.28	-0.1188	0.115	-0.0368
599	SLV 3	10.07	-2.92	106.21	-0.1174	0.1206	-0.0182
599	SLV 4	10.05	-4.6	106.37	-0.0798	0.1207	0.0066
599	SLV 5	3.54	7.53	78.07	-0.1212	0.0419	-0.0978
599	SLV 6	3.53	6.44	78.17	-0.0969	0.042	-0.0818
599	SLV 7	1.31	-7.39	85.03	0.0085	0.0609	0.0469
599	SLV 8	1.29	-8.48	85.13	0.0328	0.061	0.0629
599	SLV 9	-3.3	8.43	57.8	-0.0579	-0.0149	-0.0892
599	SLV 10	-3.32	7.34	57.91	-0.0336	-0.0149	-0.0732
599	SLV 11	-5.54	-6.49	64.76	0.0719	0.004	0.0555
599	SLV 12	-5.55	-7.58	64.86	0.0961	0.0041	0.0715
599	SLV 13	-12.07	4.55	36.56	0.0548	-0.0747	-0.0329
599	SLV 14	-12.08	2.87	36.72	0.0923	-0.0746	-0.0081
599	SLV 15	-12.74	0.08	38.65	0.0937	-0.069	0.0105
599	SLV 16	-12.75	-1.61	38.81	0.1312	-0.0689	0.0353
599	CRTFP Ux+	0	0	0	0	0	0
599	CRTFP Ux-	0	0	0	0	0	0
599	CRTFP Uy+	0	0	0	0	0	0
599	CRTFP Uy-	0	0	0	0	0	0
600	SLU 1	-0.96	-0.14	66.02	-0.0201	0.0244	-0.0135
600	SLU 2	-0.96	-0.25	66.04	-0.0188	0.0245	-0.012
600	SLU 3	-0.98	-0.13	67.58	-0.0185	0.0251	-0.0138
600	SLU 4	-0.98	-0.2	67.59	-0.0178	0.0251	-0.0129
600	SLU 5	-0.98	-0.25	67.01	-0.0184	0.0249	-0.0123
600	SLU 6	-1	-0.13	68.56	-0.0181	0.0255	-0.014



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
600	SLU 7	-1	-0.2	68.57	-0.0173	0.0256	-0.0131
600	SLU 8	-0.99	-0.13	67.97	-0.0192	0.0254	-0.014
600	SLU 9	-1	-0.2	67.98	-0.0184	0.0254	-0.0131
600	SLU 10	-0.99	-0.19	74.28	-0.0126	0.0257	-0.0148
600	SLU 11	-1.01	-0.07	75.83	-0.0123	0.0263	-0.0165
600	SLU 12	-1.01	-0.14	75.84	-0.0116	0.0263	-0.0156
600	SLU 13	-1.01	-0.19	75.26	-0.0122	0.0261	-0.015
600	SLU 14	-1.03	-0.06	76.81	-0.0119	0.0267	-0.0168
600	SLU 15	-1.03	-0.13	76.82	-0.0111	0.0268	-0.0159
600	SLU 16	-1.02	-0.07	76.22	-0.013	0.0266	-0.0168
600	SLU 17	-1.02	-0.14	76.23	-0.0122	0.0266	-0.0159
600	SLU 18	-1	-0.04	77.8	-0.0112	0.0261	-0.0174
600	SLU 19	-1	-0.11	77.81	-0.0105	0.0262	-0.0165
600	SLU 20	-1.02	-0.04	78.78	-0.0108	0.0266	-0.0177
600	SLU 21	-1.02	-0.11	78.79	-0.01	0.0266	-0.0168
600	SLU 22	-1.03	-0.07	74.15	-0.0076	0.0264	-0.0153
600	SLU 23	-1.03	-0.19	74.16	-0.0063	0.0264	-0.0138
600	SLU 24	-1.06	-0.06	75.71	-0.006	0.0271	-0.0155
600	SLU 25	-1.06	-0.13	75.72	-0.0052	0.0271	-0.0146
600	SLU 26	-1.05	-0.18	75.14	-0.0058	0.0269	-0.014
600	SLU 27	-1.07	-0.06	76.68	-0.0055	0.0275	-0.0158
600	SLU 28	-1.08	-0.13	76.7	-0.0048	0.0275	-0.0149
600	SLU 29	-1.07	-0.06	76.1	-0.0067	0.0273	-0.0158
600	SLU 30	-1.07	-0.13	76.11	-0.0059	0.0273	-0.0149
600	SLU 31	-1.06	-0.12	82.41	-0.0001	0.0276	-0.0165
600	SLU 32	-1.08	0	83.96	0.0002	0.0283	-0.0183
600	SLU 33	-1.08	-0.07	83.97	0.0009	0.0283	-0.0174
600	SLU 34	-1.08	-0.12	83.39	0.0003	0.0281	-0.0168
600	SLU 35	-1.1	0.01	84.93	0.0006	0.0287	-0.0185
600	SLU 36	-1.1	-0.06	84.94	0.0014	0.0287	-0.0176
600	SLU 37	-1.09	0	84.34	-0.0005	0.0285	-0.0185
600	SLU 38	-1.1	-0.07	84.36	0.0003	0.0285	-0.0176
600	SLU 39	-1.07	0.03	85.93	0.0013	0.0281	-0.0192
600	SLU 40	-1.07	-0.04	85.94	0.002	0.0281	-0.0183
600	SLU 41	-1.09	0.03	86.9	0.0017	0.0286	-0.0195
600	SLU 42	-1.09	-0.04	86.91	0.0025	0.0286	-0.0186
600	SLU 43	-1.22	-0.2	83.04	-0.0304	0.0311	-0.017
600	SLU 44	-1.22	-0.32	83.06	-0.0291	0.0311	-0.0155
600	SLU 45	-1.25	-0.2	84.6	-0.0288	0.0317	-0.0172
600	SLU 46	-1.25	-0.27	84.61	-0.0281	0.0318	-0.0163
600	SLU 47	-1.24	-0.32	84.03	-0.0287	0.0316	-0.0157
600	SLU 48	-1.26	-0.19	85.58	-0.0284	0.0322	-0.0175
600	SLU 49	-1.26	-0.26	85.59	-0.0276	0.0322	-0.0166
600	SLU 50	-1.26	-0.2	84.99	-0.0295	0.032	-0.0175
600	SLU 51	-1.26	-0.27	85	-0.0287	0.032	-0.0166
600	SLU 52	-1.25	-0.25	91.3	-0.0229	0.0323	-0.0182
600	SLU 53	-1.27	-0.13	92.85	-0.0226	0.0329	-0.02
600	SLU 54	-1.27	-0.2	92.86	-0.0219	0.033	-0.0191
600	SLU 55	-1.27	-0.25	92.28	-0.0225	0.0328	-0.0185
600	SLU 56	-1.29	-0.13	93.82	-0.0222	0.0334	-0.0202
600	SLU 57	-1.29	-0.2	93.84	-0.0214	0.0334	-0.0193
600	SLU 58	-1.28	-0.13	93.24	-0.0233	0.0332	-0.0202
600	SLU 59	-1.29	-0.2	93.25	-0.0226	0.0332	-0.0193
600	SLU 60	-1.26	-0.11	94.82	-0.0216	0.0328	-0.0209
600	SLU 61	-1.26	-0.18	94.83	-0.0208	0.0328	-0.02
600	SLU 62	-1.28	-0.1	95.8	-0.0211	0.0333	-0.0211
600	SLU 63	-1.28	-0.17	95.81	-0.0204	0.0333	-0.0202
600	SLU 64	-1.29	-0.13	91.16	-0.0179	0.0331	-0.0187
600	SLU 65	-1.3	-0.25	91.18	-0.0166	0.0331	-0.0172
600	SLU 66	-1.32	-0.13	92.73	-0.0163	0.0337	-0.019
600	SLU 67	-1.32	-0.2	92.74	-0.0156	0.0337	-0.0181
600	SLU 68	-1.31	-0.25	92.16	-0.0162	0.0335	-0.0175
600	SLU 69	-1.34	-0.13	93.7	-0.0159	0.0342	-0.0192
600	SLU 70	-1.34	-0.2	93.72	-0.0151	0.0342	-0.0184
600	SLU 71	-1.33	-0.13	93.12	-0.017	0.034	-0.0193
600	SLU 72	-1.33	-0.2	93.13	-0.0162	0.034	-0.0184
600	SLU 73	-1.32	-0.18	99.43	-0.0104	0.0343	-0.02
600	SLU 74	-1.35	-0.06	100.97	-0.0101	0.0349	-0.0217
600	SLU 75	-1.35	-0.13	100.99	-0.0094	0.0349	-0.0208
600	SLU 76	-1.34	-0.18	100.41	-0.01	0.0347	-0.0202
600	SLU 77	-1.36	-0.06	101.95	-0.0097	0.0354	-0.022
600	SLU 78	-1.37	-0.13	101.96	-0.0089	0.0354	-0.0211
600	SLU 79	-1.36	-0.06	101.36	-0.0108	0.0352	-0.022
600	SLU 80	-1.36	-0.13	101.37	-0.01	0.0352	-0.0211
600	SLU 81	-1.33	-0.04	102.95	-0.009	0.0348	-0.0226
600	SLU 82	-1.33	-0.11	102.96	-0.0083	0.0348	-0.0217
600	SLU 83	-1.35	-0.04	103.92	-0.0086	0.0352	-0.0229
600	SLU 84	-1.35	-0.11	103.93	-0.0078	0.0352	-0.022
600	SLE RA 1	-0.98	-0.12	68.34	-0.0165	0.025	-0.014
600	SLE RA 2	-0.98	-0.2	68.35	-0.0157	0.025	-0.013
600	SLE RA 3	-1	-0.11	69.38	-0.0155	0.0254	-0.0142
600	SLE RA 4	-1	-0.16	69.39	-0.015	0.0254	-0.0136
600	SLE RA 5	-0.99	-0.19	69	-0.0154	0.0253	-0.0132
600	SLE RA 6	-1.01	-0.11	70.03	-0.0152	0.0257	-0.0144
600	SLE RA 7	-1.01	-0.16	70.04	-0.0147	0.0257	-0.0138
600	SLE RA 8	-1	-0.12	69.64	-0.0159	0.0256	-0.0144
600	SLE RA 9	-1	-0.16	69.65	-0.0154	0.0256	-0.0138
600	SLE RA 10	-1	-0.15	73.85	-0.0115	0.0258	-0.0148
600	SLE RA 11	-1.01	-0.07	74.88	-0.0113	0.0262	-0.016
600	SLE RA 12	-1.01	-0.12	74.89	-0.0108	0.0262	-0.0154



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
600	SLE RA 13	-1.01	-0.15	74.5	-0.0112	0.0261	-0.015
600	SLE RA 14	-1.03	-0.07	75.53	-0.011	0.0265	-0.0162
600	SLE RA 15	-1.03	-0.11	75.54	-0.0105	0.0265	-0.0156
600	SLE RA 16	-1.02	-0.07	75.14	-0.0118	0.0264	-0.0162
600	SLE RA 17	-1.02	-0.12	75.15	-0.0113	0.0264	-0.0156
600	SLE RA 18	-1.01	-0.05	76.19	-0.0106	0.0261	-0.0166
600	SLE RA 19	-1.01	-0.1	76.2	-0.0101	0.0261	-0.016
600	SLE RA 20	-1.02	-0.05	76.85	-0.0103	0.0264	-0.0168
600	SLE RA 21	-1.02	-0.1	76.85	-0.0098	0.0265	-0.0162
600	SLE FR 1	-0.98	-0.12	68.34	-0.0165	0.025	-0.014
600	SLE FR 2	-0.98	-0.13	68.34	-0.0163	0.025	-0.0138
600	SLE FR 3	-0.98	-0.12	68.6	-0.0164	0.0251	-0.0141
600	SLE FR 4	-0.99	-0.11	70.7	-0.0146	0.0253	-0.0146
600	SLE FR 5	-0.99	-0.1	70.96	-0.0146	0.0255	-0.0149
600	SLE FR 6	-0.99	-0.09	72.27	-0.0136	0.0256	-0.0153
600	SLE QP 1	-0.98	-0.12	68.34	-0.0165	0.025	-0.014
600	SLE QP 2	-0.99	-0.1	70.7	-0.0147	0.0253	-0.0148
600	SLD 1	4.04	0.53	83.4	-0.0764	0.0644	-0.0343
600	SLD 2	4.03	-0.14	83.46	-0.0604	0.0644	-0.0246
600	SLD 3	3.75	-1.35	84.24	-0.058	0.0667	-0.0177
600	SLD 4	3.75	-2.02	84.3	-0.042	0.0667	-0.008
600	SLD 5	0.96	3.07	73.22	-0.064	0.0335	-0.0477
600	SLD 6	0.95	2.63	73.27	-0.0534	0.0335	-0.0413
600	SLD 7	0	-3.21	76.02	-0.0027	0.0413	0.0079
600	SLD 8	0	-3.65	76.07	0.0078	0.0413	0.0143
600	SLD 9	-1.97	3.46	65.33	-0.0373	0.0094	-0.0439
600	SLD 10	-1.98	3.02	65.37	-0.0268	0.0094	-0.0375
600	SLD 11	-2.93	-2.83	68.13	0.024	0.0172	0.0117
600	SLD 12	-2.93	-3.27	68.17	0.0345	0.0172	0.0181
600	SLD 13	-5.72	1.82	57.09	0.0126	-0.016	-0.0216
600	SLD 14	-5.73	1.15	57.16	0.0286	-0.016	-0.0119
600	SLD 15	-6.01	-0.06	57.93	0.0309	-0.0137	-0.0049
600	SLD 16	-6.02	-0.73	58	0.0469	-0.0137	0.0048
600	SLV 1	10.78	1.3	100.42	-0.1594	0.1167	-0.0599
600	SLV 2	10.76	-0.26	100.58	-0.1222	0.1167	-0.0373
600	SLV 3	10.11	-2.96	102.38	-0.1166	0.1221	-0.0222
600	SLV 4	10.09	-4.53	102.54	-0.0794	0.1221	0.0004
600	SLV 5	3.56	7.06	76.61	-0.1295	0.0445	-0.0895
600	SLV 6	3.55	6.05	76.71	-0.1055	0.0445	-0.0749
600	SLV 7	1.33	-7.16	83.15	0.0132	0.0626	0.0363
600	SLV 8	1.32	-8.17	83.26	0.0373	0.0626	0.0509
600	SLV 9	-3.29	7.97	58.14	-0.0667	-0.0119	-0.0805
600	SLV 10	-3.3	6.96	58.24	-0.0427	-0.0119	-0.0659
600	SLV 11	-5.52	-6.25	64.68	0.076	0.0062	0.0453
600	SLV 12	-5.54	-7.26	64.79	0.1001	0.0062	0.0599
600	SLV 13	-12.06	4.33	38.85	0.0499	-0.0715	-0.03
600	SLV 14	-12.08	2.76	39.01	0.0871	-0.0714	-0.0074
600	SLV 15	-12.73	0.06	40.81	0.0927	-0.066	0.0077
600	SLV 16	-12.75	-1.5	40.98	0.13	-0.066	0.0303
600	CRTFP Ux+	0	0	0	0	0	0
600	CRTFP Ux-	0	0	0	0	0	0
600	CRTFP Uy+	0	0	0	0	0	0
600	CRTFP Uy-	0	0	0	0	0	0
601	SLU 1	-0.94	-0.21	65.21	-0.023	0.0267	-0.0145
601	SLU 2	-0.94	-0.32	65.22	-0.0219	0.0267	-0.0132
601	SLU 3	-0.96	-0.21	66.75	-0.0215	0.0274	-0.0148
601	SLU 4	-0.96	-0.27	66.76	-0.0207	0.0274	-0.014
601	SLU 5	-0.96	-0.32	66.18	-0.0214	0.0272	-0.0135
601	SLU 6	-0.98	-0.21	67.71	-0.021	0.0279	-0.015
601	SLU 7	-0.98	-0.27	67.72	-0.0203	0.0279	-0.0143
601	SLU 8	-0.97	-0.21	67.13	-0.0222	0.0277	-0.0151
601	SLU 9	-0.97	-0.28	67.14	-0.0214	0.0277	-0.0143
601	SLU 10	-0.97	-0.27	73.42	-0.0154	0.0284	-0.0158
601	SLU 11	-0.99	-0.15	74.95	-0.015	0.0291	-0.0174
601	SLU 12	-0.99	-0.22	74.96	-0.0143	0.0291	-0.0166
601	SLU 13	-0.98	-0.27	74.39	-0.015	0.0289	-0.0161
601	SLU 14	-1.01	-0.15	75.91	-0.0146	0.0296	-0.0177
601	SLU 15	-1.01	-0.22	75.92	-0.0139	0.0296	-0.0169
601	SLU 16	-1	-0.16	75.33	-0.0157	0.0294	-0.0177
601	SLU 17	-1	-0.22	75.34	-0.015	0.0294	-0.0169
601	SLU 18	-0.98	-0.14	76.92	-0.0139	0.0292	-0.0183
601	SLU 19	-0.98	-0.2	76.93	-0.0132	0.0292	-0.0175
601	SLU 20	-0.99	-0.14	77.88	-0.0134	0.0296	-0.0186
601	SLU 21	-0.99	-0.2	77.89	-0.0127	0.0296	-0.0178
601	SLU 22	-1.01	-0.15	73.26	-0.01	0.0291	-0.0162
601	SLU 23	-1.01	-0.26	73.28	-0.0088	0.0291	-0.0149
601	SLU 24	-1.03	-0.15	74.8	-0.0084	0.0298	-0.0165
601	SLU 25	-1.03	-0.21	74.82	-0.0077	0.0298	-0.0157
601	SLU 26	-1.03	-0.26	74.24	-0.0084	0.0296	-0.0151
601	SLU 27	-1.05	-0.15	75.77	-0.008	0.0303	-0.0167
601	SLU 28	-1.05	-0.21	75.78	-0.0073	0.0303	-0.0159
601	SLU 29	-1.04	-0.15	75.18	-0.0091	0.0301	-0.0167
601	SLU 30	-1.04	-0.22	75.2	-0.0084	0.0301	-0.016
601	SLU 31	-1.04	-0.21	81.48	-0.0024	0.0309	-0.0175
601	SLU 32	-1.06	-0.09	83.01	-0.002	0.0315	-0.0191
601	SLU 33	-1.06	-0.16	83.02	-0.0013	0.0315	-0.0183
601	SLU 34	-1.05	-0.21	82.44	-0.002	0.0313	-0.0178
601	SLU 35	-1.08	-0.09	83.97	-0.0015	0.032	-0.0194
601	SLU 36	-1.08	-0.16	83.98	-0.0008	0.032	-0.0186
601	SLU 37	-1.07	-0.1	83.39	-0.0027	0.0318	-0.0194



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
601	SLU 38	-1.07	-0.16	83.4	-0.002	0.0318	-0.0186
601	SLU 39	-1.05	-0.08	84.98	-0.0008	0.0316	-0.02
601	SLU 40	-1.05	-0.14	84.99	-0.0001	0.0316	-0.0192
601	SLU 41	-1.06	-0.08	85.94	-0.0004	0.032	-0.0203
601	SLU 42	-1.07	-0.14	85.95	0.0003	0.0321	-0.0195
601	SLU 43	-1.19	-0.3	82.01	-0.0344	0.0339	-0.0183
601	SLU 44	-1.19	-0.4	82.02	-0.0332	0.0339	-0.0169
601	SLU 45	-1.22	-0.29	83.55	-0.0328	0.0346	-0.0185
601	SLU 46	-1.22	-0.36	83.56	-0.0321	0.0346	-0.0177
601	SLU 47	-1.21	-0.4	82.98	-0.0328	0.0344	-0.0172
601	SLU 48	-1.23	-0.29	84.51	-0.0324	0.0351	-0.0188
601	SLU 49	-1.24	-0.36	84.52	-0.0317	0.0351	-0.018
601	SLU 50	-1.23	-0.29	83.93	-0.0335	0.0349	-0.0188
601	SLU 51	-1.23	-0.36	83.94	-0.0328	0.0349	-0.018
601	SLU 52	-1.22	-0.35	90.22	-0.0268	0.0356	-0.0196
601	SLU 53	-1.24	-0.24	91.75	-0.0264	0.0363	-0.0212
601	SLU 54	-1.25	-0.3	91.76	-0.0257	0.0363	-0.0204
601	SLU 55	-1.24	-0.35	91.18	-0.0264	0.0361	-0.0199
601	SLU 56	-1.26	-0.24	92.71	-0.026	0.0368	-0.0215
601	SLU 57	-1.26	-0.3	92.72	-0.0253	0.0368	-0.0207
601	SLU 58	-1.25	-0.24	92.13	-0.0271	0.0366	-0.0215
601	SLU 59	-1.26	-0.31	92.14	-0.0264	0.0366	-0.0207
601	SLU 60	-1.23	-0.22	93.72	-0.0252	0.0363	-0.0221
601	SLU 61	-1.23	-0.29	93.73	-0.0245	0.0363	-0.0213
601	SLU 62	-1.25	-0.22	94.68	-0.0248	0.0368	-0.0223
601	SLU 63	-1.25	-0.28	94.69	-0.0241	0.0368	-0.0215
601	SLU 64	-1.27	-0.24	90.06	-0.0214	0.0363	-0.02
601	SLU 65	-1.27	-0.35	90.08	-0.0202	0.0363	-0.0186
601	SLU 66	-1.29	-0.23	91.6	-0.0198	0.037	-0.0202
601	SLU 67	-1.29	-0.3	91.61	-0.0191	0.037	-0.0194
601	SLU 68	-1.28	-0.34	91.04	-0.0198	0.0368	-0.0189
601	SLU 69	-1.31	-0.23	92.56	-0.0194	0.0375	-0.0205
601	SLU 70	-1.31	-0.3	92.58	-0.0186	0.0375	-0.0197
601	SLU 71	-1.3	-0.23	91.98	-0.0205	0.0373	-0.0205
601	SLU 72	-1.3	-0.3	91.99	-0.0198	0.0373	-0.0197
601	SLU 73	-1.29	-0.29	98.28	-0.0138	0.038	-0.0213
601	SLU 74	-1.32	-0.18	99.8	-0.0134	0.0387	-0.0229
601	SLU 75	-1.32	-0.24	99.82	-0.0127	0.0387	-0.0221
601	SLU 76	-1.31	-0.29	99.24	-0.0133	0.0385	-0.0216
601	SLU 77	-1.33	-0.18	100.77	-0.0129	0.0392	-0.0232
601	SLU 78	-1.33	-0.24	100.78	-0.0122	0.0392	-0.0224
601	SLU 79	-1.33	-0.18	100.18	-0.0141	0.039	-0.0232
601	SLU 80	-1.33	-0.25	100.2	-0.0134	0.039	-0.0224
601	SLU 81	-1.3	-0.16	101.78	-0.0122	0.0388	-0.0237
601	SLU 82	-1.3	-0.23	101.79	-0.0115	0.0388	-0.0229
601	SLU 83	-1.32	-0.16	102.74	-0.0118	0.0392	-0.024
601	SLU 84	-1.32	-0.23	102.75	-0.0111	0.0392	-0.0232
601	SLE RA 1	-0.96	-0.19	67.51	-0.0193	0.0274	-0.015
601	SLE RA 2	-0.96	-0.27	67.52	-0.0185	0.0274	-0.0141
601	SLE RA 3	-0.97	-0.19	68.54	-0.0183	0.0279	-0.0152
601	SLE RA 4	-0.97	-0.24	68.54	-0.0178	0.0279	-0.0146
601	SLE RA 5	-0.97	-0.27	68.16	-0.0182	0.0277	-0.0143
601	SLE RA 6	-0.99	-0.19	69.18	-0.018	0.0282	-0.0153
601	SLE RA 7	-0.99	-0.23	69.18	-0.0175	0.0282	-0.0148
601	SLE RA 8	-0.98	-0.19	68.79	-0.0187	0.028	-0.0154
601	SLE RA 9	-0.98	-0.24	68.8	-0.0183	0.028	-0.0148
601	SLE RA 10	-0.98	-0.23	72.99	-0.0142	0.0286	-0.0159
601	SLE RA 11	-0.99	-0.16	74	-0.014	0.029	-0.0169
601	SLE RA 12	-0.99	-0.2	74.01	-0.0135	0.029	-0.0164
601	SLE RA 13	-0.99	-0.23	73.63	-0.014	0.0289	-0.0161
601	SLE RA 14	-1	-0.16	74.64	-0.0137	0.0293	-0.0171
601	SLE RA 15	-1	-0.2	74.65	-0.0132	0.0293	-0.0166
601	SLE RA 16	-1	-0.16	74.26	-0.0144	0.0292	-0.0171
601	SLE RA 17	-1	-0.2	74.26	-0.014	0.0292	-0.0166
601	SLE RA 18	-0.98	-0.14	75.32	-0.0132	0.029	-0.0175
601	SLE RA 19	-0.98	-0.19	75.32	-0.0127	0.029	-0.017
601	SLE RA 20	-0.99	-0.14	75.96	-0.0129	0.0293	-0.0177
601	SLE RA 21	-1	-0.19	75.97	-0.0124	0.0294	-0.0172
601	SLE FR 1	-0.96	-0.19	67.51	-0.0193	0.0274	-0.015
601	SLE FR 2	-0.96	-0.21	67.51	-0.0192	0.0274	-0.0148
601	SLE FR 3	-0.96	-0.19	67.76	-0.0192	0.0275	-0.0151
601	SLE FR 4	-0.97	-0.19	69.85	-0.0173	0.0279	-0.0156
601	SLE FR 5	-0.97	-0.18	70.11	-0.0174	0.028	-0.0158
601	SLE FR 6	-0.97	-0.17	71.41	-0.0163	0.0282	-0.0162
601	SLE QP 1	-0.96	-0.19	67.51	-0.0193	0.0274	-0.015
601	SLE QP 2	-0.97	-0.18	69.85	-0.0175	0.0279	-0.0157
601	SLD 1	4.07	0.38	82.09	-0.0799	0.0666	-0.0333
601	SLD 2	4.06	-0.25	82.16	-0.064	0.0665	-0.0246
601	SLD 3	3.78	-1.43	81.31	-0.0597	0.0688	-0.0196
601	SLD 4	3.77	-2.05	81.38	-0.0438	0.0688	-0.0108
601	SLD 5	0.98	2.84	74.7	-0.0697	0.0361	-0.0434
601	SLD 6	0.98	2.43	74.75	-0.0593	0.0361	-0.0377
601	SLD 7	0.02	-3.18	72.08	-0.0023	0.0436	0.0024
601	SLD 8	0.02	-3.59	72.13	0.0081	0.0436	0.0081
601	SLD 9	-1.95	3.23	67.57	-0.0431	0.0122	-0.0396
601	SLD 10	-1.95	2.82	67.62	-0.0326	0.0122	-0.0339
601	SLD 11	-2.91	-2.79	64.95	0.0243	0.0197	0.0062
601	SLD 12	-2.91	-3.2	65	0.0347	0.0197	0.0119
601	SLD 13	-5.7	1.69	58.33	0.0089	-0.013	-0.0206
601	SLD 14	-5.71	1.07	58.39	0.0247	-0.013	-0.0119





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
601	SLD 15	-5.99	-0.11	57.54	0.0291	-0.0108	-0.0069
601	SLD 16	-6	-0.74	57.61	0.0449	-0.0108	0.0018
601	SLV 1	10.81	1.05	98.5	-0.164	0.1184	-0.0563
601	SLV 2	10.79	-0.4	98.66	-0.127	0.1184	-0.036
601	SLV 3	10.14	-3.03	96.66	-0.117	0.1237	-0.0252
601	SLV 4	10.12	-4.49	96.83	-0.08	0.1236	-0.0049
601	SLV 5	3.59	6.64	81.2	-0.1392	0.0471	-0.0786
601	SLV 6	3.58	5.7	81.3	-0.1153	0.047	-0.0655
601	SLV 7	1.35	-6.98	75.08	0.0176	0.0646	0.0251
601	SLV 8	1.34	-7.92	75.19	0.0415	0.0646	0.0382
601	SLV 9	-3.27	7.56	64.51	-0.0764	-0.0088	-0.0697
601	SLV 10	-3.28	6.62	64.62	-0.0526	-0.0088	-0.0566
601	SLV 11	-5.51	-6.06	58.4	0.0803	0.0087	0.034
601	SLV 12	-5.52	-7	58.5	0.1042	0.0087	0.0471
601	SLV 13	-12.05	4.13	42.88	0.045	-0.0679	-0.0266
601	SLV 14	-12.07	2.68	43.04	0.082	-0.0679	-0.0063
601	SLV 15	-12.72	0.04	41.04	0.0921	-0.0626	0.0046
601	SLV 16	-12.74	-1.41	41.2	0.129	-0.0627	0.0249
601	CRTFP Ux+	0	0	0	0	0	0
601	CRTFP Ux-	0	0	0	0	0	0
601	CRTFP Uy+	0	0	0	0	0	0
601	CRTFP Uy-	0	0	0	0	0	0
602	SLU 1	-0.91	-0.29	64.31	-0.0265	0.0295	-0.0149
602	SLU 2	-0.91	-0.39	64.33	-0.0254	0.0295	-0.0137
602	SLU 3	-0.93	-0.29	65.83	-0.0249	0.0302	-0.0151
602	SLU 4	-0.94	-0.35	65.84	-0.0243	0.0302	-0.0145
602	SLU 5	-0.93	-0.39	65.28	-0.025	0.03	-0.014
602	SLU 6	-0.95	-0.29	66.78	-0.0245	0.0307	-0.0154
602	SLU 7	-0.95	-0.35	66.79	-0.0239	0.0307	-0.0147
602	SLU 8	-0.94	-0.29	66.2	-0.0257	0.0305	-0.0155
602	SLU 9	-0.95	-0.35	66.21	-0.025	0.0305	-0.0148
602	SLU 10	-0.94	-0.35	72.47	-0.0188	0.0318	-0.0162
602	SLU 11	-0.96	-0.25	73.97	-0.0183	0.0325	-0.0176
602	SLU 12	-0.96	-0.31	73.98	-0.0177	0.0325	-0.0169
602	SLU 13	-0.96	-0.35	73.41	-0.0184	0.0323	-0.0165
602	SLU 14	-0.98	-0.25	74.92	-0.0179	0.033	-0.0179
602	SLU 15	-0.98	-0.31	74.93	-0.0172	0.033	-0.0172
602	SLU 16	-0.97	-0.25	74.34	-0.0191	0.0328	-0.0179
602	SLU 17	-0.97	-0.31	74.35	-0.0184	0.0328	-0.0172
602	SLU 18	-0.95	-0.23	75.94	-0.0171	0.0328	-0.0184
602	SLU 19	-0.95	-0.29	75.95	-0.0164	0.0328	-0.0177
602	SLU 20	-0.97	-0.23	76.88	-0.0167	0.0333	-0.0187
602	SLU 21	-0.97	-0.29	76.89	-0.016	0.0333	-0.018
602	SLU 22	-0.98	-0.24	72.28	-0.013	0.0324	-0.0164
602	SLU 23	-0.98	-0.34	72.3	-0.0119	0.0324	-0.0153
602	SLU 24	-1.01	-0.23	73.8	-0.0114	0.0331	-0.0167
602	SLU 25	-1.01	-0.3	73.81	-0.0108	0.0332	-0.016
602	SLU 26	-1	-0.34	73.25	-0.0115	0.0329	-0.0156
602	SLU 27	-1.02	-0.23	74.75	-0.011	0.0336	-0.017
602	SLU 28	-1.02	-0.3	74.76	-0.0103	0.0337	-0.0163
602	SLU 29	-1.02	-0.24	74.18	-0.0122	0.0334	-0.017
602	SLU 30	-1.02	-0.3	74.19	-0.0115	0.0334	-0.0163
602	SLU 31	-1.01	-0.3	80.44	-0.0053	0.0347	-0.0177
602	SLU 32	-1.03	-0.19	81.94	-0.0048	0.0355	-0.0191
602	SLU 33	-1.03	-0.26	81.95	-0.0042	0.0355	-0.0184
602	SLU 34	-1.03	-0.3	81.38	-0.0049	0.0352	-0.018
602	SLU 35	-1.05	-0.2	82.89	-0.0044	0.036	-0.0194
602	SLU 36	-1.05	-0.26	82.9	-0.0037	0.036	-0.0187
602	SLU 37	-1.04	-0.2	82.31	-0.0056	0.0357	-0.0194
602	SLU 38	-1.04	-0.26	82.32	-0.0049	0.0357	-0.0188
602	SLU 39	-1.02	-0.18	83.91	-0.0036	0.0357	-0.0199
602	SLU 40	-1.02	-0.24	83.92	-0.0029	0.0357	-0.0192
602	SLU 41	-1.04	-0.18	84.85	-0.0032	0.0362	-0.0202
602	SLU 42	-1.04	-0.24	84.86	-0.0025	0.0362	-0.0195
602	SLU 43	-1.16	-0.39	80.87	-0.0391	0.0373	-0.0188
602	SLU 44	-1.16	-0.5	80.89	-0.038	0.0373	-0.0177
602	SLU 45	-1.18	-0.39	82.39	-0.0375	0.038	-0.0191
602	SLU 46	-1.18	-0.45	82.4	-0.0369	0.038	-0.0184
602	SLU 47	-1.18	-0.5	81.84	-0.0376	0.0378	-0.018
602	SLU 48	-1.2	-0.39	83.34	-0.0371	0.0385	-0.0194
602	SLU 49	-1.2	-0.45	83.35	-0.0365	0.0385	-0.0187
602	SLU 50	-1.19	-0.39	82.77	-0.0383	0.0383	-0.0194
602	SLU 51	-1.19	-0.46	82.78	-0.0376	0.0383	-0.0187
602	SLU 52	-1.19	-0.46	89.03	-0.0314	0.0396	-0.0201
602	SLU 53	-1.21	-0.35	90.53	-0.0309	0.0403	-0.0215
602	SLU 54	-1.21	-0.41	90.54	-0.0303	0.0403	-0.0208
602	SLU 55	-1.21	-0.46	89.97	-0.031	0.0401	-0.0204
602	SLU 56	-1.23	-0.35	91.48	-0.0305	0.0408	-0.0218
602	SLU 57	-1.23	-0.41	91.49	-0.0298	0.0408	-0.0211
602	SLU 58	-1.22	-0.35	90.9	-0.0317	0.0406	-0.0218
602	SLU 59	-1.22	-0.42	90.91	-0.031	0.0406	-0.0212
602	SLU 60	-1.2	-0.34	92.5	-0.0297	0.0406	-0.0223
602	SLU 61	-1.2	-0.4	92.51	-0.029	0.0406	-0.0216
602	SLU 62	-1.21	-0.34	93.44	-0.0293	0.0411	-0.0226
602	SLU 63	-1.22	-0.4	93.45	-0.0286	0.0411	-0.0219
602	SLU 64	-1.23	-0.34	88.85	-0.0256	0.0402	-0.0204
602	SLU 65	-1.23	-0.44	88.86	-0.0245	0.0402	-0.0192
602	SLU 66	-1.25	-0.34	90.36	-0.024	0.041	-0.0206
602	SLU 67	-1.26	-0.4	90.38	-0.0234	0.041	-0.0199
602	SLU 68	-1.25	-0.45	89.81	-0.0241	0.0407	-0.0195



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
602	SLU 69	-1.27	-0.34	91.31	-0.0236	0.0415	-0.0209
602	SLU 70	-1.27	-0.4	91.32	-0.0229	0.0415	-0.0202
602	SLU 71	-1.26	-0.34	90.74	-0.0248	0.0412	-0.0209
602	SLU 72	-1.27	-0.4	90.75	-0.0241	0.0412	-0.0202
602	SLU 73	-1.26	-0.41	97	-0.0179	0.0426	-0.0217
602	SLU 74	-1.28	-0.3	98.5	-0.0174	0.0433	-0.0231
602	SLU 75	-1.28	-0.36	98.51	-0.0168	0.0433	-0.0224
602	SLU 76	-1.28	-0.41	97.95	-0.0175	0.0431	-0.022
602	SLU 77	-1.3	-0.3	99.45	-0.017	0.0438	-0.0234
602	SLU 78	-1.3	-0.36	99.46	-0.0163	0.0438	-0.0227
602	SLU 79	-1.29	-0.3	98.87	-0.0182	0.0436	-0.0234
602	SLU 80	-1.29	-0.36	98.88	-0.0175	0.0436	-0.0227
602	SLU 81	-1.27	-0.29	100.47	-0.0162	0.0436	-0.0239
602	SLU 82	-1.27	-0.35	100.48	-0.0155	0.0436	-0.0232
602	SLU 83	-1.29	-0.29	101.41	-0.0158	0.0441	-0.0241
602	SLU 84	-1.29	-0.35	101.43	-0.0151	0.0441	-0.0235
602	SLE RA 1	-0.93	-0.27	66.59	-0.0227	0.0303	-0.0153
602	SLE RA 2	-0.93	-0.34	66.6	-0.022	0.0303	-0.0146
602	SLE RA 3	-0.95	-0.27	67.6	-0.0216	0.0308	-0.0155
602	SLE RA 4	-0.95	-0.31	67.61	-0.0212	0.0308	-0.015
602	SLE RA 5	-0.94	-0.34	67.23	-0.0217	0.0306	-0.0147
602	SLE RA 6	-0.96	-0.27	68.23	-0.0213	0.0311	-0.0157
602	SLE RA 7	-0.96	-0.31	68.24	-0.0209	0.0311	-0.0152
602	SLE RA 8	-0.95	-0.27	67.85	-0.0221	0.031	-0.0157
602	SLE RA 9	-0.95	-0.32	67.86	-0.0217	0.031	-0.0152
602	SLE RA 10	-0.95	-0.32	72.03	-0.0175	0.0319	-0.0162
602	SLE RA 11	-0.96	-0.25	73.03	-0.0172	0.0323	-0.0171
602	SLE RA 12	-0.97	-0.29	73.04	-0.0168	0.0323	-0.0167
602	SLE RA 13	-0.96	-0.32	72.66	-0.0173	0.0322	-0.0164
602	SLE RA 14	-0.98	-0.25	73.66	-0.0169	0.0327	-0.0173
602	SLE RA 15	-0.98	-0.29	73.67	-0.0165	0.0327	-0.0169
602	SLE RA 16	-0.97	-0.25	73.28	-0.0177	0.0325	-0.0173
602	SLE RA 17	-0.97	-0.29	73.28	-0.0173	0.0325	-0.0169
602	SLE RA 18	-0.96	-0.24	74.34	-0.0164	0.0325	-0.0177
602	SLE RA 19	-0.96	-0.28	74.35	-0.0159	0.0325	-0.0172
602	SLE RA 20	-0.97	-0.24	74.97	-0.0161	0.0328	-0.0178
602	SLE RA 21	-0.97	-0.28	74.98	-0.0157	0.0328	-0.0174
602	SLE FR 1	-0.93	-0.27	66.59	-0.0227	0.0303	-0.0153
602	SLE FR 2	-0.93	-0.29	66.59	-0.0225	0.0303	-0.0152
602	SLE FR 3	-0.94	-0.27	66.84	-0.0226	0.0304	-0.0154
602	SLE FR 4	-0.94	-0.28	68.92	-0.0206	0.031	-0.0159
602	SLE FR 5	-0.94	-0.26	69.17	-0.0207	0.0311	-0.0161
602	SLE FR 6	-0.94	-0.26	70.47	-0.0195	0.0314	-0.0165
602	SLE QP 1	-0.93	-0.27	66.59	-0.0227	0.0303	-0.0153
602	SLE QP 2	-0.94	-0.26	68.92	-0.0208	0.031	-0.016
602	SLD 1	4.1	0.23	79.87	-0.0844	0.069	-0.0312
602	SLD 2	4.09	-0.35	79.94	-0.0686	0.069	-0.0234
602	SLD 3	3.81	-1.52	79.15	-0.0622	0.0712	-0.0205
602	SLD 4	3.81	-2.1	79.22	-0.0464	0.0712	-0.0128
602	SLD 5	1.01	2.63	73.29	-0.0763	0.039	-0.0381
602	SLD 6	1	2.25	73.34	-0.066	0.039	-0.033
602	SLD 7	0.05	-3.18	70.87	-0.0024	0.0464	-0.0026
602	SLD 8	0.05	-3.56	70.92	0.008	0.0464	0.0025
602	SLD 9	-1.93	3.03	66.91	-0.0496	0.0156	-0.0345
602	SLD 10	-1.93	2.65	66.96	-0.0392	0.0155	-0.0294
602	SLD 11	-2.88	-2.78	64.49	0.0244	0.0229	0.0009
602	SLD 12	-2.89	-3.16	64.54	0.0347	0.0229	0.006
602	SLD 13	-5.68	1.57	58.61	0.0048	-0.0092	-0.0193
602	SLD 14	-5.69	0.99	58.68	0.0206	-0.0093	-0.0115
602	SLD 15	-5.97	-0.17	57.89	0.027	-0.007	-0.0086
602	SLD 16	-5.98	-0.75	57.96	0.0428	-0.0071	-0.0009
602	SLV 1	10.85	0.81	94.56	-0.17	0.12	-0.051
602	SLV 2	10.83	-0.54	94.72	-0.1333	0.1199	-0.033
602	SLV 3	10.18	-3.13	92.86	-0.1186	0.1252	-0.0269
602	SLV 4	10.16	-4.48	93.03	-0.0818	0.1251	-0.0089
602	SLV 5	3.62	6.28	79.15	-0.15	0.0498	-0.0662
602	SLV 6	3.61	5.4	79.26	-0.1263	0.0498	-0.0545
602	SLV 7	1.38	-6.87	73.5	0.0216	0.0671	0.0141
602	SLV 8	1.37	-7.75	73.6	0.0454	0.067	0.0257
602	SLV 9	-3.25	7.22	64.23	-0.087	-0.0051	-0.0578
602	SLV 10	-3.26	6.35	64.33	-0.0632	-0.0052	-0.0461
602	SLV 11	-5.48	-5.93	58.57	0.0847	0.0122	0.0225
602	SLV 12	-5.49	-6.8	58.68	0.1084	0.0121	0.0341
602	SLV 13	-12.04	3.96	44.8	0.0402	-0.0631	-0.0231
602	SLV 14	-12.06	2.61	44.97	0.077	-0.0633	-0.0051
602	SLV 15	-12.71	0.01	43.11	0.0917	-0.058	0.001
602	SLV 16	-12.72	-1.34	43.27	0.1285	-0.0581	0.019
602	CRTFP Ux+	0	0	0	0	0	0
602	CRTFP Ux-	0	0	0	0	0	0
602	CRTFP Uy+	0	0	0	0	0	0
602	CRTFP Uy-	0	0	0	0	0	0
603	SLU 1	-0.88	-0.37	63.32	-0.0306	0.0328	-0.0147
603	SLU 2	-0.88	-0.46	63.34	-0.0295	0.0328	-0.0137
603	SLU 3	-0.9	-0.36	64.82	-0.029	0.0336	-0.0149
603	SLU 4	-0.91	-0.42	64.83	-0.0284	0.0336	-0.0143
603	SLU 5	-0.9	-0.47	64.27	-0.0291	0.0333	-0.014
603	SLU 6	-0.92	-0.37	65.75	-0.0286	0.0341	-0.0152
603	SLU 7	-0.92	-0.42	65.76	-0.028	0.0341	-0.0146
603	SLU 8	-0.91	-0.37	65.18	-0.0298	0.0339	-0.0152
603	SLU 9	-0.92	-0.43	65.19	-0.0291	0.0339	-0.0147



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
603	SLU 10	-0.91	-0.44	71.39	-0.0228	0.0359	-0.0159
603	SLU 11	-0.93	-0.34	72.87	-0.0222	0.0367	-0.0171
603	SLU 12	-0.93	-0.4	72.88	-0.0216	0.0367	-0.0165
603	SLU 13	-0.93	-0.44	72.32	-0.0224	0.0364	-0.0162
603	SLU 14	-0.95	-0.34	73.8	-0.0218	0.0372	-0.0174
603	SLU 15	-0.95	-0.4	73.81	-0.0212	0.0372	-0.0168
603	SLU 16	-0.94	-0.34	73.23	-0.023	0.0369	-0.0174
603	SLU 17	-0.94	-0.4	73.24	-0.0224	0.0369	-0.0168
603	SLU 18	-0.92	-0.33	74.83	-0.0209	0.0372	-0.0178
603	SLU 19	-0.92	-0.39	74.84	-0.0203	0.0372	-0.0172
603	SLU 20	-0.93	-0.33	75.75	-0.0205	0.0377	-0.0181
603	SLU 21	-0.94	-0.39	75.77	-0.0199	0.0377	-0.0175
603	SLU 22	-0.95	-0.32	71.19	-0.0166	0.0364	-0.016
603	SLU 23	-0.95	-0.42	71.21	-0.0156	0.0364	-0.0151
603	SLU 24	-0.97	-0.32	72.69	-0.015	0.0372	-0.0163
603	SLU 25	-0.97	-0.38	72.7	-0.0144	0.0372	-0.0157
603	SLU 26	-0.97	-0.42	72.14	-0.0152	0.037	-0.0153
603	SLU 27	-0.99	-0.32	73.61	-0.0146	0.0378	-0.0165
603	SLU 28	-0.99	-0.38	73.63	-0.014	0.0378	-0.016
603	SLU 29	-0.98	-0.33	73.05	-0.0158	0.0375	-0.0166
603	SLU 30	-0.98	-0.38	73.06	-0.0152	0.0375	-0.016
603	SLU 31	-0.98	-0.39	79.26	-0.0088	0.0395	-0.0172
603	SLU 32	-1	-0.29	80.74	-0.0083	0.0403	-0.0184
603	SLU 33	-1	-0.35	80.75	-0.0077	0.0403	-0.0178
603	SLU 34	-0.99	-0.39	80.19	-0.0084	0.04	-0.0175
603	SLU 35	-1.02	-0.3	81.67	-0.0079	0.0408	-0.0187
603	SLU 36	-1.02	-0.35	81.68	-0.0073	0.0408	-0.0181
603	SLU 37	-1.01	-0.3	81.1	-0.0091	0.0406	-0.0188
603	SLU 38	-1.01	-0.36	81.11	-0.0084	0.0406	-0.0182
603	SLU 39	-0.99	-0.28	82.69	-0.007	0.0408	-0.0191
603	SLU 40	-0.99	-0.34	82.7	-0.0064	0.0408	-0.0185
603	SLU 41	-1	-0.29	83.62	-0.0066	0.0414	-0.0194
603	SLU 42	-1	-0.34	83.63	-0.006	0.0414	-0.0188
603	SLU 43	-1.12	-0.49	79.62	-0.0445	0.0414	-0.0186
603	SLU 44	-1.12	-0.59	79.64	-0.0435	0.0414	-0.0177
603	SLU 45	-1.15	-0.49	81.12	-0.0429	0.0422	-0.0189
603	SLU 46	-1.15	-0.55	81.13	-0.0423	0.0422	-0.0183
603	SLU 47	-1.14	-0.59	80.57	-0.0431	0.0419	-0.0179
603	SLU 48	-1.16	-0.49	82.05	-0.0425	0.0427	-0.0192
603	SLU 49	-1.16	-0.55	82.06	-0.0419	0.0427	-0.0186
603	SLU 50	-1.16	-0.49	81.48	-0.0437	0.0425	-0.0192
603	SLU 51	-1.16	-0.55	81.49	-0.0431	0.0425	-0.0186
603	SLU 52	-1.15	-0.56	87.69	-0.0367	0.0445	-0.0198
603	SLU 53	-1.17	-0.46	89.17	-0.0362	0.0453	-0.021
603	SLU 54	-1.17	-0.52	89.18	-0.0356	0.0453	-0.0205
603	SLU 55	-1.17	-0.56	88.62	-0.0363	0.045	-0.0201
603	SLU 56	-1.19	-0.46	90.1	-0.0358	0.0458	-0.0213
603	SLU 57	-1.19	-0.52	90.11	-0.0351	0.0458	-0.0207
603	SLU 58	-1.18	-0.47	89.53	-0.0369	0.0455	-0.0214
603	SLU 59	-1.18	-0.53	89.54	-0.0363	0.0455	-0.0208
603	SLU 60	-1.16	-0.45	91.13	-0.0349	0.0458	-0.0217
603	SLU 61	-1.16	-0.51	91.14	-0.0342	0.0458	-0.0212
603	SLU 62	-1.18	-0.45	92.05	-0.0345	0.0463	-0.022
603	SLU 63	-1.18	-0.51	92.07	-0.0338	0.0463	-0.0214
603	SLU 64	-1.19	-0.45	87.49	-0.0306	0.045	-0.02
603	SLU 65	-1.19	-0.55	87.51	-0.0296	0.045	-0.019
603	SLU 66	-1.21	-0.45	88.99	-0.029	0.0458	-0.0202
603	SLU 67	-1.22	-0.5	89	-0.0284	0.0458	-0.0196
603	SLU 68	-1.21	-0.55	88.44	-0.0292	0.0456	-0.0193
603	SLU 69	-1.23	-0.45	89.91	-0.0286	0.0464	-0.0205
603	SLU 70	-1.23	-0.51	89.92	-0.028	0.0464	-0.0199
603	SLU 71	-1.22	-0.45	89.35	-0.0298	0.0461	-0.0205
603	SLU 72	-1.23	-0.51	89.36	-0.0292	0.0461	-0.02
603	SLU 73	-1.22	-0.52	95.56	-0.0228	0.0481	-0.0212
603	SLU 74	-1.24	-0.42	97.04	-0.0222	0.0489	-0.0224
603	SLU 75	-1.24	-0.48	97.05	-0.0216	0.0489	-0.0218
603	SLU 76	-1.24	-0.52	96.49	-0.0224	0.0486	-0.0215
603	SLU 77	-1.26	-0.42	97.97	-0.0218	0.0494	-0.0227
603	SLU 78	-1.26	-0.48	97.98	-0.0212	0.0494	-0.0221
603	SLU 79	-1.25	-0.42	97.4	-0.023	0.0492	-0.0227
603	SLU 80	-1.25	-0.48	97.41	-0.0224	0.0492	-0.0221
603	SLU 81	-1.23	-0.41	98.99	-0.0209	0.0494	-0.0231
603	SLU 82	-1.23	-0.47	99	-0.0203	0.0494	-0.0225
603	SLU 83	-1.24	-0.41	99.92	-0.0205	0.05	-0.0233
603	SLU 84	-1.25	-0.47	99.93	-0.0199	0.05	-0.0228
603	SLE RA 1	-0.9	-0.35	65.57	-0.0266	0.0338	-0.0151
603	SLE RA 2	-0.9	-0.42	65.58	-0.0259	0.0338	-0.0144
603	SLE RA 3	-0.92	-0.35	66.57	-0.0255	0.0344	-0.0152
603	SLE RA 4	-0.92	-0.39	66.57	-0.0251	0.0344	-0.0148
603	SLE RA 5	-0.91	-0.42	66.2	-0.0256	0.0342	-0.0146
603	SLE RA 6	-0.93	-0.35	67.19	-0.0253	0.0347	-0.0154
603	SLE RA 7	-0.93	-0.39	67.19	-0.0248	0.0347	-0.015
603	SLE RA 8	-0.92	-0.36	66.81	-0.026	0.0346	-0.0154
603	SLE RA 9	-0.92	-0.4	66.82	-0.0256	0.0346	-0.0151
603	SLE RA 10	-0.92	-0.4	70.95	-0.0214	0.0359	-0.0159
603	SLE RA 11	-0.93	-0.33	71.94	-0.021	0.0364	-0.0167
603	SLE RA 12	-0.93	-0.37	71.94	-0.0206	0.0364	-0.0163
603	SLE RA 13	-0.93	-0.4	71.57	-0.0211	0.0362	-0.0161
603	SLE RA 14	-0.94	-0.34	72.56	-0.0207	0.0368	-0.0169
603	SLE RA 15	-0.95	-0.37	72.56	-0.0203	0.0368	-0.0165



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
603	SLE RA 16	-0.94	-0.34	72.18	-0.0215	0.0366	-0.0169
603	SLE RA 17	-0.94	-0.38	72.18	-0.0211	0.0366	-0.0165
603	SLE RA 18	-0.93	-0.33	73.24	-0.0201	0.0368	-0.0171
603	SLE RA 19	-0.93	-0.37	73.25	-0.0197	0.0368	-0.0167
603	SLE RA 20	-0.94	-0.33	73.86	-0.0199	0.0371	-0.0173
603	SLE RA 21	-0.94	-0.37	73.87	-0.0195	0.0371	-0.0169
603	SLE FR 1	-0.9	-0.35	65.57	-0.0266	0.0338	-0.0151
603	SLE FR 2	-0.9	-0.37	65.57	-0.0264	0.0338	-0.0149
603	SLE FR 3	-0.91	-0.35	65.82	-0.0265	0.034	-0.0151
603	SLE FR 4	-0.91	-0.36	67.87	-0.0245	0.0347	-0.0156
603	SLE FR 5	-0.91	-0.35	68.12	-0.0245	0.0349	-0.0158
603	SLE FR 6	-0.91	-0.34	69.41	-0.0234	0.0353	-0.0161
603	SLE QP 1	-0.9	-0.35	65.57	-0.0266	0.0338	-0.0151
603	SLE QP 2	-0.91	-0.35	67.87	-0.0247	0.0347	-0.0157
603	SLD 1	4.13	0.09	77.57	-0.0897	0.0715	-0.028
603	SLD 2	4.13	-0.46	77.65	-0.074	0.0714	-0.0211
603	SLD 3	3.84	-1.61	76.91	-0.0655	0.0737	-0.0204
603	SLD 4	3.84	-2.15	76.98	-0.0497	0.0736	-0.0136
603	SLD 5	1.04	2.45	71.78	-0.0838	0.0424	-0.032
603	SLD 6	1.04	2.1	71.82	-0.0735	0.0424	-0.0275
603	SLD 7	0.08	-3.2	69.56	-0.0029	0.0498	-0.0069
603	SLD 8	0.08	-3.56	69.61	0.0075	0.0497	-0.0024
603	SLD 9	-1.9	2.87	66.13	-0.0568	0.0197	-0.029
603	SLD 10	-1.9	2.51	66.18	-0.0464	0.0197	-0.0245
603	SLD 11	-2.85	-2.79	63.92	0.0242	0.0271	-0.0038
603	SLD 12	-2.86	-3.15	63.97	0.0345	0.027	0.0007
603	SLD 13	-5.66	1.46	58.76	0.0004	-0.0041	-0.0178
603	SLD 14	-5.66	0.92	58.83	0.0161	-0.0042	-0.0109
603	SLD 15	-5.94	-0.23	58.1	0.0247	-0.0019	-0.0102
603	SLD 16	-5.95	-0.78	58.17	0.0404	-0.002	-0.0034
603	SLV 1	10.88	0.6	90.58	-0.1775	0.1207	-0.0442
603	SLV 2	10.87	-0.67	90.75	-0.1409	0.1205	-0.0283
603	SLV 3	10.21	-3.24	89.03	-0.1213	0.1258	-0.0271
603	SLV 4	10.2	-4.51	89.2	-0.0847	0.1256	-0.0112
603	SLV 5	3.65	5.98	77	-0.1621	0.0527	-0.0529
603	SLV 6	3.64	5.16	77.11	-0.1385	0.0526	-0.0426
603	SLV 7	1.41	-6.82	71.84	0.0253	0.0699	0.004
603	SLV 8	1.41	-7.64	71.95	0.049	0.0698	0.0143
603	SLV 9	-3.22	6.95	63.79	-0.0983	-0.0003	-0.0457
603	SLV 10	-3.23	6.13	63.9	-0.0746	-0.0005	-0.0354
603	SLV 11	-5.45	-5.85	58.63	0.0892	0.0168	0.0112
603	SLV 12	-5.46	-6.67	58.74	0.1128	0.0167	0.0215
603	SLV 13	-12.02	3.82	46.55	0.0354	-0.0562	-0.0202
603	SLV 14	-12.03	2.55	46.72	0.072	-0.0564	-0.0042
603	SLV 15	-12.69	-0.02	45	0.0916	-0.051	-0.0031
603	SLV 16	-12.7	-1.29	45.17	0.1282	-0.0513	0.0128
603	CRTFP Ux+	0	0	0	0	0	0
603	CRTFP Ux-	0	0	0	0	0	0
603	CRTFP Uy+	0	0	0	0	0	0
603	CRTFP Uy-	0	0	0	0	0	0
604	SLU 1	-0.85	-0.44	62.22	-0.0351	0.0364	-0.0139
604	SLU 2	-0.85	-0.53	62.24	-0.0341	0.0363	-0.0131
604	SLU 3	-0.87	-0.44	63.69	-0.0335	0.0372	-0.0141
604	SLU 4	-0.87	-0.5	63.7	-0.0329	0.0372	-0.0137
604	SLU 5	-0.87	-0.54	63.15	-0.0337	0.0369	-0.0134
604	SLU 6	-0.89	-0.44	64.6	-0.0331	0.0378	-0.0144
604	SLU 7	-0.89	-0.5	64.61	-0.0325	0.0378	-0.0139
604	SLU 8	-0.88	-0.45	64.05	-0.0343	0.0375	-0.0145
604	SLU 9	-0.88	-0.5	64.06	-0.0337	0.0375	-0.014
604	SLU 10	-0.87	-0.52	70.18	-0.0273	0.0403	-0.0149
604	SLU 11	-0.89	-0.42	71.63	-0.0266	0.0411	-0.0159
604	SLU 12	-0.9	-0.48	71.64	-0.0261	0.0411	-0.0155
604	SLU 13	-0.89	-0.52	71.09	-0.0269	0.0408	-0.0152
604	SLU 14	-0.91	-0.43	72.54	-0.0262	0.0417	-0.0162
604	SLU 15	-0.91	-0.48	72.55	-0.0257	0.0417	-0.0157
604	SLU 16	-0.9	-0.43	71.99	-0.0274	0.0414	-0.0163
604	SLU 17	-0.9	-0.49	72	-0.0269	0.0414	-0.0158
604	SLU 18	-0.88	-0.42	73.57	-0.0253	0.042	-0.0165
604	SLU 19	-0.88	-0.47	73.58	-0.0247	0.0419	-0.016
604	SLU 20	-0.9	-0.42	74.48	-0.0249	0.0425	-0.0168
604	SLU 21	-0.9	-0.48	74.49	-0.0243	0.0425	-0.0163
604	SLU 22	-0.92	-0.4	69.96	-0.0207	0.0408	-0.015
604	SLU 23	-0.92	-0.5	69.98	-0.0198	0.0407	-0.0142
604	SLU 24	-0.94	-0.4	71.43	-0.0191	0.0416	-0.0152
604	SLU 25	-0.94	-0.46	71.44	-0.0186	0.0416	-0.0147
604	SLU 26	-0.93	-0.5	70.89	-0.0194	0.0413	-0.0145
604	SLU 27	-0.95	-0.41	72.34	-0.0188	0.0422	-0.0155
604	SLU 28	-0.95	-0.46	72.35	-0.0182	0.0422	-0.015
604	SLU 29	-0.95	-0.41	71.78	-0.02	0.0419	-0.0156
604	SLU 30	-0.95	-0.47	71.8	-0.0194	0.0419	-0.0151
604	SLU 31	-0.94	-0.48	77.92	-0.0129	0.0446	-0.016
604	SLU 32	-0.96	-0.39	79.37	-0.0123	0.0455	-0.017
604	SLU 33	-0.96	-0.44	79.38	-0.0117	0.0455	-0.0165
604	SLU 34	-0.96	-0.48	78.83	-0.0125	0.0452	-0.0163
604	SLU 35	-0.98	-0.39	80.28	-0.0119	0.0461	-0.0173
604	SLU 36	-0.98	-0.45	80.29	-0.0113	0.0461	-0.0168
604	SLU 37	-0.97	-0.39	79.73	-0.0131	0.0458	-0.0174
604	SLU 38	-0.97	-0.45	79.74	-0.0125	0.0458	-0.0169
604	SLU 39	-0.95	-0.38	81.3	-0.0109	0.0463	-0.0176
604	SLU 40	-0.95	-0.44	81.32	-0.0104	0.0463	-0.0171



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
604	SLU 41	-0.97	-0.38	82.22	-0.0105	0.0469	-0.0179
604	SLU 42	-0.97	-0.44	82.23	-0.01	0.0469	-0.0174
604	SLU 43	-1.08	-0.59	78.24	-0.0505	0.0458	-0.0177
604	SLU 44	-1.08	-0.68	78.25	-0.0495	0.0458	-0.0169
604	SLU 45	-1.1	-0.59	79.7	-0.0489	0.0466	-0.0179
604	SLU 46	-1.1	-0.64	79.72	-0.0483	0.0466	-0.0175
604	SLU 47	-1.1	-0.68	79.16	-0.0492	0.0463	-0.0172
604	SLU 48	-1.12	-0.59	80.62	-0.0485	0.0472	-0.0182
604	SLU 49	-1.12	-0.64	80.63	-0.048	0.0472	-0.0177
604	SLU 50	-1.11	-0.59	80.06	-0.0497	0.0469	-0.0183
604	SLU 51	-1.11	-0.65	80.07	-0.0492	0.0469	-0.0178
604	SLU 52	-1.11	-0.66	86.19	-0.0427	0.0497	-0.0187
604	SLU 53	-1.13	-0.57	87.65	-0.042	0.0505	-0.0198
604	SLU 54	-1.13	-0.62	87.66	-0.0415	0.0505	-0.0193
604	SLU 55	-1.12	-0.67	87.11	-0.0423	0.0502	-0.019
604	SLU 56	-1.14	-0.57	88.56	-0.0417	0.0511	-0.02
604	SLU 57	-1.14	-0.63	88.57	-0.0411	0.0511	-0.0195
604	SLU 58	-1.14	-0.58	88	-0.0429	0.0508	-0.0201
604	SLU 59	-1.14	-0.63	88.01	-0.0423	0.0508	-0.0196
604	SLU 60	-1.11	-0.56	89.58	-0.0407	0.0514	-0.0203
604	SLU 61	-1.12	-0.62	89.59	-0.0401	0.0513	-0.0198
604	SLU 62	-1.13	-0.57	90.49	-0.0403	0.0519	-0.0206
604	SLU 63	-1.13	-0.62	90.5	-0.0397	0.0519	-0.0201
604	SLU 64	-1.15	-0.55	85.97	-0.0362	0.0502	-0.0188
604	SLU 65	-1.15	-0.64	85.99	-0.0352	0.0501	-0.018
604	SLU 66	-1.17	-0.55	87.44	-0.0346	0.051	-0.019
604	SLU 67	-1.17	-0.6	87.45	-0.034	0.051	-0.0185
604	SLU 68	-1.16	-0.65	86.9	-0.0348	0.0507	-0.0183
604	SLU 69	-1.18	-0.55	88.36	-0.0342	0.0516	-0.0193
604	SLU 70	-1.19	-0.61	88.37	-0.0336	0.0516	-0.0188
604	SLU 71	-1.18	-0.56	87.8	-0.0354	0.0513	-0.0194
604	SLU 72	-1.18	-0.61	87.81	-0.0348	0.0513	-0.0189
604	SLU 73	-1.17	-0.63	93.93	-0.0284	0.0541	-0.0198
604	SLU 74	-1.19	-0.53	95.38	-0.0277	0.0549	-0.0208
604	SLU 75	-1.19	-0.59	95.39	-0.0272	0.0549	-0.0204
604	SLU 76	-1.19	-0.63	94.84	-0.028	0.0546	-0.0201
604	SLU 77	-1.21	-0.53	96.3	-0.0273	0.0555	-0.0211
604	SLU 78	-1.21	-0.59	96.31	-0.0268	0.0555	-0.0206
604	SLU 79	-1.2	-0.54	95.74	-0.0285	0.0552	-0.0212
604	SLU 80	-1.2	-0.59	95.75	-0.028	0.0552	-0.0207
604	SLU 81	-1.18	-0.53	97.32	-0.0264	0.0557	-0.0214
604	SLU 82	-1.18	-0.58	97.33	-0.0258	0.0557	-0.0209
604	SLU 83	-1.2	-0.53	98.23	-0.026	0.0563	-0.0217
604	SLU 84	-1.2	-0.58	98.24	-0.0254	0.0563	-0.0212
604	SLE RA 1	-0.87	-0.43	64.43	-0.031	0.0376	-0.0142
604	SLE RA 2	-0.87	-0.49	64.44	-0.0303	0.0376	-0.0137
604	SLE RA 3	-0.88	-0.43	65.41	-0.0299	0.0382	-0.0144
604	SLE RA 4	-0.88	-0.47	65.42	-0.0295	0.0382	-0.0141
604	SLE RA 5	-0.88	-0.49	65.05	-0.0301	0.038	-0.0139
604	SLE RA 6	-0.89	-0.43	66.02	-0.0297	0.0386	-0.0146
604	SLE RA 7	-0.89	-0.47	66.03	-0.0293	0.0386	-0.0142
604	SLE RA 8	-0.89	-0.43	65.65	-0.0305	0.0384	-0.0146
604	SLE RA 9	-0.89	-0.47	65.66	-0.0301	0.0384	-0.0143
604	SLE RA 10	-0.89	-0.48	69.74	-0.0258	0.0402	-0.0149
604	SLE RA 11	-0.9	-0.42	70.71	-0.0253	0.0408	-0.0156
604	SLE RA 12	-0.9	-0.46	70.71	-0.025	0.0408	-0.0153
604	SLE RA 13	-0.9	-0.48	70.35	-0.0255	0.0406	-0.0151
604	SLE RA 14	-0.91	-0.42	71.31	-0.0251	0.0412	-0.0158
604	SLE RA 15	-0.91	-0.46	71.32	-0.0247	0.0412	-0.0154
604	SLE RA 16	-0.9	-0.42	70.94	-0.0259	0.041	-0.0158
604	SLE RA 17	-0.91	-0.46	70.95	-0.0255	0.041	-0.0155
604	SLE RA 18	-0.89	-0.41	72	-0.0244	0.0413	-0.016
604	SLE RA 19	-0.89	-0.45	72	-0.0241	0.0413	-0.0156
604	SLE RA 20	-0.9	-0.42	72.6	-0.0242	0.0417	-0.0161
604	SLE RA 21	-0.9	-0.45	72.61	-0.0238	0.0417	-0.0158
604	SLE FR 1	-0.87	-0.43	64.43	-0.031	0.0376	-0.0142
604	SLE FR 2	-0.87	-0.44	64.44	-0.0308	0.0376	-0.0141
604	SLE FR 3	-0.87	-0.43	64.68	-0.0309	0.0378	-0.0143
604	SLE FR 4	-0.88	-0.44	66.7	-0.0289	0.0387	-0.0146
604	SLE FR 5	-0.88	-0.43	66.95	-0.0289	0.0389	-0.0148
604	SLE FR 6	-0.88	-0.42	68.21	-0.0277	0.0395	-0.0151
604	SLE QP 1	-0.87	-0.43	64.43	-0.031	0.0376	-0.0142
604	SLE QP 2	-0.87	-0.43	66.7	-0.029	0.0387	-0.0147
604	SLD 1	4.17	-0.04	75.21	-0.0695	0.075	-0.024
604	SLD 2	4.16	-0.55	75.28	-0.0538	0.0749	-0.0179
604	SLD 3	3.88	-1.7	74.61	-0.0959	0.0728	-0.0193
604	SLD 4	3.87	-2.21	74.69	-0.0803	0.0726	-0.0132
604	SLD 5	1.07	2.31	70.14	-0.0038	0.0531	-0.0257
604	SLD 6	1.07	1.97	70.19	0.0065	0.053	-0.0217
604	SLD 7	0.12	-3.25	68.16	-0.0921	0.0456	-0.0101
604	SLD 8	0.11	-3.58	68.21	-0.0818	0.0455	-0.0061
604	SLD 9	-1.86	2.73	65.2	0.0238	0.032	-0.0234
604	SLD 10	-1.87	2.39	65.25	0.0341	0.0319	-0.0194
604	SLD 11	-2.82	-2.82	63.21	-0.0645	0.0245	-0.0078
604	SLD 12	-2.82	-3.16	63.26	-0.0542	0.0244	-0.0038
604	SLD 13	-5.62	1.36	58.71	0.0223	0.0048	-0.0163
604	SLD 14	-5.63	0.85	58.79	0.0379	0.0047	-0.0102
604	SLD 15	-5.91	-0.3	58.12	-0.0042	0.0026	-0.0116
604	SLD 16	-5.92	-0.81	58.2	0.0115	0.0025	-0.0055
604	SLV 1	10.92	0.42	86.61	-0.125	0.1236	-0.0362



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
604	SLV 2	10.9	-0.77	86.79	-0.0886	0.1233	-0.022
604	SLV 3	10.25	-3.36	85.22	-0.1863	0.1184	-0.0256
604	SLV 4	10.23	-4.54	85.39	-0.1498	0.1181	-0.0114
604	SLV 5	3.68	5.75	74.75	0.0288	0.0722	-0.0397
604	SLV 6	3.67	4.98	74.87	0.0523	0.072	-0.0305
604	SLV 7	1.45	-6.82	70.12	-0.1754	0.0547	-0.0044
604	SLV 8	1.44	-7.59	70.23	-0.1519	0.0545	0.0048
604	SLV 9	-3.19	6.73	63.17	0.0939	0.0229	-0.0343
604	SLV 10	-3.2	5.97	63.29	0.1174	0.0227	-0.0251
604	SLV 11	-5.42	-5.83	58.54	-0.1103	0.0055	0.001
604	SLV 12	-5.43	-6.6	58.65	-0.0868	0.0053	0.0102
604	SLV 13	-11.98	3.69	48.01	0.0918	-0.0406	-0.0181
604	SLV 14	-12	2.5	48.19	0.1283	-0.0409	-0.0039
604	SLV 15	-12.65	-0.08	46.62	0.0306	-0.0458	-0.0075
604	SLV 16	-12.67	-1.27	46.8	0.067	-0.0462	-0.0067
604	CRTFP Ux+	0	0	0	0	0	0
604	CRTFP Ux-	0	0	0	0	0	0
604	CRTFP Uy+	0	0	0	0	0	0
604	CRTFP Uy-	0	0	0	0	0	0
605	SLU 1	-0.81	-0.51	61.02	-0.0399	0.0386	-0.0126
605	SLU 2	-0.81	-0.6	61.04	-0.0391	0.0385	-0.012
605	SLU 3	-0.83	-0.51	62.47	-0.0384	0.0395	-0.0128
605	SLU 4	-0.83	-0.56	62.48	-0.0379	0.0394	-0.0124
605	SLU 5	-0.83	-0.6	61.94	-0.0387	0.0391	-0.0122
605	SLU 6	-0.85	-0.52	63.36	-0.038	0.04	-0.013
605	SLU 7	-0.85	-0.57	63.37	-0.0375	0.04	-0.0126
605	SLU 8	-0.84	-0.52	62.81	-0.0392	0.0397	-0.0131
605	SLU 9	-0.84	-0.57	62.82	-0.0387	0.0397	-0.0127
605	SLU 10	-0.83	-0.59	68.85	-0.0321	0.0431	-0.0133
605	SLU 11	-0.85	-0.5	70.27	-0.0314	0.0441	-0.0142
605	SLU 12	-0.85	-0.56	70.28	-0.0309	0.044	-0.0138
605	SLU 13	-0.85	-0.6	69.74	-0.0318	0.0437	-0.0136
605	SLU 14	-0.87	-0.51	71.16	-0.0311	0.0446	-0.0144
605	SLU 15	-0.87	-0.56	71.17	-0.0306	0.0446	-0.014
605	SLU 16	-0.86	-0.51	70.62	-0.0323	0.0443	-0.0145
605	SLU 17	-0.86	-0.57	70.63	-0.0318	0.0443	-0.0141
605	SLU 18	-0.84	-0.5	72.17	-0.03	0.0452	-0.0146
605	SLU 19	-0.84	-0.55	72.18	-0.0295	0.0451	-0.0142
605	SLU 20	-0.86	-0.5	73.07	-0.0297	0.0457	-0.0148
605	SLU 21	-0.86	-0.56	73.08	-0.0292	0.0457	-0.0144
605	SLU 22	-0.88	-0.48	68.61	-0.0252	0.0436	-0.0134
605	SLU 23	-0.88	-0.57	68.63	-0.0244	0.0435	-0.0127
605	SLU 24	-0.9	-0.48	70.05	-0.0237	0.0445	-0.0136
605	SLU 25	-0.9	-0.53	70.07	-0.0232	0.0444	-0.0132
605	SLU 26	-0.89	-0.57	69.53	-0.024	0.0441	-0.013
605	SLU 27	-0.91	-0.48	70.95	-0.0233	0.0451	-0.0138
605	SLU 28	-0.91	-0.54	70.96	-0.0228	0.045	-0.0134
605	SLU 29	-0.91	-0.49	70.4	-0.0246	0.0447	-0.0139
605	SLU 30	-0.91	-0.54	70.41	-0.024	0.0447	-0.0135
605	SLU 31	-0.9	-0.56	76.44	-0.0174	0.0481	-0.0141
605	SLU 32	-0.92	-0.47	77.86	-0.0168	0.0491	-0.0149
605	SLU 33	-0.92	-0.52	77.87	-0.0162	0.0491	-0.0146
605	SLU 34	-0.91	-0.56	77.33	-0.0171	0.0487	-0.0144
605	SLU 35	-0.93	-0.47	78.75	-0.0164	0.0497	-0.0152
605	SLU 36	-0.93	-0.53	78.76	-0.0159	0.0496	-0.0148
605	SLU 37	-0.93	-0.48	78.2	-0.0176	0.0494	-0.0153
605	SLU 38	-0.93	-0.53	78.22	-0.0171	0.0493	-0.0149
605	SLU 39	-0.91	-0.47	79.76	-0.0153	0.0502	-0.0154
605	SLU 40	-0.91	-0.52	79.77	-0.0148	0.0501	-0.015
605	SLU 41	-0.92	-0.47	80.66	-0.015	0.0508	-0.0156
605	SLU 42	-0.92	-0.52	80.67	-0.0145	0.0507	-0.0152
605	SLU 43	-1.03	-0.68	76.73	-0.0569	0.0484	-0.0161
605	SLU 44	-1.03	-0.76	76.75	-0.0561	0.0484	-0.0155
605	SLU 45	-1.05	-0.68	78.17	-0.0554	0.0493	-0.0163
605	SLU 46	-1.05	-0.73	78.18	-0.0549	0.0493	-0.0159
605	SLU 47	-1.05	-0.77	77.64	-0.0557	0.0489	-0.0157
605	SLU 48	-1.07	-0.68	79.06	-0.055	0.0499	-0.0165
605	SLU 49	-1.07	-0.73	79.08	-0.0545	0.0498	-0.0162
605	SLU 50	-1.06	-0.68	78.52	-0.0563	0.0496	-0.0166
605	SLU 51	-1.06	-0.74	78.53	-0.0557	0.0495	-0.0162
605	SLU 52	-1.06	-0.76	84.55	-0.0492	0.053	-0.0168
605	SLU 53	-1.07	-0.67	85.97	-0.0485	0.0539	-0.0177
605	SLU 54	-1.08	-0.72	85.99	-0.0479	0.0539	-0.0173
605	SLU 55	-1.07	-0.76	85.45	-0.0488	0.0535	-0.0171
605	SLU 56	-1.09	-0.67	86.87	-0.0481	0.0545	-0.0179
605	SLU 57	-1.09	-0.73	86.88	-0.0476	0.0545	-0.0175
605	SLU 58	-1.08	-0.68	86.32	-0.0493	0.0542	-0.018
605	SLU 59	-1.08	-0.73	86.33	-0.0488	0.0541	-0.0176
605	SLU 60	-1.06	-0.66	87.88	-0.047	0.055	-0.0181
605	SLU 61	-1.06	-0.72	87.89	-0.0465	0.055	-0.0177
605	SLU 62	-1.08	-0.67	88.77	-0.0467	0.0556	-0.0183
605	SLU 63	-1.08	-0.72	88.78	-0.0462	0.0555	-0.018
605	SLU 64	-1.1	-0.64	84.32	-0.0422	0.0534	-0.0169
605	SLU 65	-1.1	-0.73	84.34	-0.0414	0.0534	-0.0163
605	SLU 66	-1.12	-0.64	85.76	-0.0407	0.0543	-0.0171
605	SLU 67	-1.12	-0.7	85.77	-0.0402	0.0543	-0.0167
605	SLU 68	-1.11	-0.74	85.23	-0.041	0.054	-0.0165
605	SLU 69	-1.13	-0.65	86.65	-0.0404	0.0549	-0.0173
605	SLU 70	-1.13	-0.7	86.66	-0.0398	0.0549	-0.0169
605	SLU 71	-1.13	-0.65	86.11	-0.0416	0.0546	-0.0174



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
605	SLU 72	-1.13	-0.71	86.12	-0.0411	0.0546	-0.017
605	SLU 73	-1.12	-0.72	92.14	-0.0345	0.058	-0.0176
605	SLU 74	-1.14	-0.63	93.56	-0.0338	0.0589	-0.0185
605	SLU 75	-1.14	-0.69	93.57	-0.0333	0.0589	-0.0181
605	SLU 76	-1.14	-0.73	93.03	-0.0341	0.0586	-0.0179
605	SLU 77	-1.15	-0.64	94.46	-0.0334	0.0595	-0.0187
605	SLU 78	-1.16	-0.69	94.47	-0.0329	0.0595	-0.0183
605	SLU 79	-1.15	-0.64	93.91	-0.0346	0.0592	-0.0188
605	SLU 80	-1.15	-0.7	93.92	-0.0341	0.0592	-0.0184
605	SLU 81	-1.13	-0.63	95.47	-0.0324	0.06	-0.0189
605	SLU 82	-1.13	-0.68	95.48	-0.0318	0.06	-0.0185
605	SLU 83	-1.14	-0.64	96.36	-0.032	0.0606	-0.0191
605	SLU 84	-1.14	-0.69	96.37	-0.0315	0.0606	-0.0187
605	SLE RA 1	-0.83	-0.5	63.19	-0.0357	0.04	-0.0128
605	SLE RA 2	-0.83	-0.56	63.2	-0.0352	0.04	-0.0124
605	SLE RA 3	-0.84	-0.5	64.15	-0.0347	0.0406	-0.0129
605	SLE RA 4	-0.84	-0.54	64.16	-0.0343	0.0406	-0.0127
605	SLE RA 5	-0.84	-0.56	63.8	-0.0349	0.0403	-0.0126
605	SLE RA 6	-0.85	-0.5	64.75	-0.0345	0.041	-0.0131
605	SLE RA 7	-0.85	-0.54	64.76	-0.0341	0.041	-0.0129
605	SLE RA 8	-0.85	-0.51	64.38	-0.0353	0.0408	-0.0132
605	SLE RA 9	-0.85	-0.54	64.39	-0.0349	0.0407	-0.0129
605	SLE RA 10	-0.85	-0.56	68.41	-0.0305	0.043	-0.0133
605	SLE RA 11	-0.86	-0.5	69.36	-0.0301	0.0437	-0.0139
605	SLE RA 12	-0.86	-0.53	69.36	-0.0297	0.0436	-0.0136
605	SLE RA 13	-0.86	-0.56	69	-0.0303	0.0434	-0.0135
605	SLE RA 14	-0.87	-0.5	69.95	-0.0298	0.0441	-0.014
605	SLE RA 15	-0.87	-0.53	69.96	-0.0295	0.044	-0.0138
605	SLE RA 16	-0.86	-0.5	69.59	-0.0307	0.0438	-0.0141
605	SLE RA 17	-0.86	-0.54	69.59	-0.0303	0.0438	-0.0138
605	SLE RA 18	-0.85	-0.49	70.62	-0.0291	0.0444	-0.0141
605	SLE RA 19	-0.85	-0.53	70.63	-0.0288	0.0444	-0.0139
605	SLE RA 20	-0.86	-0.5	71.22	-0.0289	0.0448	-0.0143
605	SLE RA 21	-0.86	-0.53	71.23	-0.0286	0.0448	-0.0141
605	SLE FR 1	-0.83	-0.5	63.19	-0.0357	0.04	-0.0128
605	SLE FR 2	-0.83	-0.51	63.19	-0.0356	0.04	-0.0127
605	SLE FR 3	-0.83	-0.5	63.43	-0.0356	0.0402	-0.0129
605	SLE FR 4	-0.84	-0.51	65.42	-0.0336	0.0413	-0.0131
605	SLE FR 5	-0.84	-0.5	65.66	-0.0337	0.0415	-0.0133
605	SLE FR 6	-0.84	-0.5	66.91	-0.0324	0.0422	-0.0135
605	SLE QP 1	-0.83	-0.5	63.19	-0.0357	0.04	-0.0128
605	SLE QP 2	-0.84	-0.5	65.42	-0.0337	0.0413	-0.0132
605	SLD 1	4.2	-0.14	72.32	-0.0741	0.0728	-0.0196
605	SLD 2	4.2	-0.62	72.41	-0.0585	0.0726	-0.014
605	SLD 3	3.92	-1.79	72.85	-0.1029	0.0702	-0.0173
605	SLD 4	3.91	-2.27	72.93	-0.0873	0.07	-0.0117
605	SLD 5	1.11	2.2	66.68	-0.0049	0.0547	-0.0196
605	SLD 6	1.11	1.88	66.74	0.0054	0.0545	-0.0159
605	SLD 7	0.16	-3.3	68.43	-0.101	0.0462	-0.012
605	SLD 8	0.15	-3.62	68.49	-0.0907	0.046	-0.0083
605	SLD 9	-1.82	2.62	62.36	0.0233	0.0366	-0.0181
605	SLD 10	-1.83	2.31	62.41	0.0335	0.0365	-0.0145
605	SLD 11	-2.78	-2.88	64.11	-0.0729	0.0281	-0.0105
605	SLD 12	-2.78	-3.2	64.16	-0.0626	0.028	-0.0069
605	SLD 13	-5.58	1.27	57.91	0.0198	0.0126	-0.0147
605	SLD 14	-5.59	0.79	57.99	0.0354	0.0124	-0.0092
605	SLD 15	-5.87	-0.38	58.44	-0.009	0.0101	-0.0125
605	SLD 16	-5.87	-0.86	58.52	0.0066	0.0099	-0.0069
605	SLV 1	10.95	0.27	81.58	-0.1298	0.1149	-0.028
605	SLV 2	10.94	-0.85	81.77	-0.0934	0.1144	-0.015
605	SLV 3	10.28	-3.46	82.8	-0.1963	0.109	-0.0228
605	SLV 4	10.27	-4.58	82.99	-0.1599	0.1085	-0.0098
605	SLV 5	3.72	5.59	68.37	0.0321	0.0724	-0.0278
605	SLV 6	3.71	4.87	68.5	0.0556	0.0721	-0.0194
605	SLV 7	1.49	-6.86	72.46	-0.1898	0.0528	-0.0105
605	SLV 8	1.48	-7.58	72.59	-0.1663	0.0525	-0.0021
605	SLV 9	-3.15	6.58	58.26	0.0988	0.0302	-0.0244
605	SLV 10	-3.16	5.86	58.38	0.1223	0.0299	-0.016
605	SLV 11	-5.38	-5.87	62.35	-0.1231	0.0105	-0.007
605	SLV 12	-5.39	-6.59	62.47	-0.0996	0.0102	0.0014
605	SLV 13	-11.94	3.58	47.85	0.0924	-0.0259	-0.0166
605	SLV 14	-11.95	2.46	48.04	0.1288	-0.0263	-0.0036
605	SLV 15	-12.61	-0.15	49.08	0.0259	-0.0318	-0.0114
605	SLV 16	-12.62	-1.27	49.27	0.0623	-0.0322	0.0016
605	CRTFP Ux+	0	0	0	0	0	0
605	CRTFP Ux-	0	0	0	0	0	0
605	CRTFP Uy+	0	0	0	0	0	0
605	CRTFP Uy-	0	0	0	0	0	0
606	SLU 1	-0.71	-0.53	55.6	-0.0417	0.7876	-0.0026
606	SLU 2	-0.72	-0.61	55.62	-0.041	0.7878	-0.001
606	SLU 3	-0.73	-0.53	56.91	-0.0403	0.8062	-0.0027
606	SLU 4	-0.73	-0.58	56.92	-0.0399	0.8063	-0.0017
606	SLU 5	-0.73	-0.62	56.43	-0.0407	0.7994	-0.0011
606	SLU 6	-0.75	-0.54	57.72	-0.04	0.8178	-0.0028
606	SLU 7	-0.75	-0.58	57.74	-0.0396	0.8179	-0.0019
606	SLU 8	-0.74	-0.54	57.22	-0.0412	0.8107	-0.0028
606	SLU 9	-0.74	-0.59	57.24	-0.0407	0.8108	-0.0019
606	SLU 10	-0.73	-0.61	62.73	-0.0345	0.8887	-0.0018
606	SLU 11	-0.75	-0.53	64.02	-0.0338	0.9071	-0.0035
606	SLU 12	-0.75	-0.58	64.03	-0.0334	0.9072	-0.0026



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
606	SLU 13	-0.75	-0.61	63.54	-0.0342	0.9002	-0.002
606	SLU 14	-0.76	-0.53	64.84	-0.0335	0.9186	-0.0037
606	SLU 15	-0.76	-0.58	64.85	-0.0331	0.9187	-0.0027
606	SLU 16	-0.76	-0.54	64.34	-0.0347	0.9115	-0.0037
606	SLU 17	-0.76	-0.59	64.35	-0.0342	0.9116	-0.0027
606	SLU 18	-0.74	-0.53	65.76	-0.0324	0.9317	-0.0038
606	SLU 19	-0.74	-0.57	65.77	-0.032	0.9318	-0.0028
606	SLU 20	-0.75	-0.53	66.57	-0.0322	0.9432	-0.0039
606	SLU 21	-0.75	-0.58	66.58	-0.0317	0.9433	-0.003
606	SLU 22	-0.77	-0.5	62.5	-0.0277	0.8859	-0.0034
606	SLU 23	-0.77	-0.58	62.52	-0.027	0.8861	-0.0018
606	SLU 24	-0.79	-0.5	63.81	-0.0263	0.9045	-0.0035
606	SLU 25	-0.79	-0.55	63.82	-0.0259	0.9046	-0.0025
606	SLU 26	-0.79	-0.59	63.33	-0.0267	0.8976	-0.0019
606	SLU 27	-0.8	-0.51	64.63	-0.026	0.916	-0.0036
606	SLU 28	-0.8	-0.56	64.64	-0.0256	0.9161	-0.0027
606	SLU 29	-0.8	-0.51	64.13	-0.0272	0.9089	-0.0036
606	SLU 30	-0.8	-0.56	64.14	-0.0267	0.9091	-0.0027
606	SLU 31	-0.79	-0.58	69.63	-0.0205	0.9869	-0.0026
606	SLU 32	-0.81	-0.5	70.92	-0.0198	1.0053	-0.0043
606	SLU 33	-0.81	-0.55	70.94	-0.0194	1.0054	-0.0034
606	SLU 34	-0.8	-0.59	70.45	-0.0202	0.9984	-0.0028
606	SLU 35	-0.82	-0.51	71.74	-0.0195	1.0168	-0.0045
606	SLU 36	-0.82	-0.55	71.75	-0.0191	1.0169	-0.0035
606	SLU 37	-0.82	-0.51	71.24	-0.0207	1.0098	-0.0045
606	SLU 38	-0.82	-0.56	71.25	-0.0202	1.0099	-0.0035
606	SLU 39	-0.8	-0.5	72.66	-0.0184	1.0299	-0.0046
606	SLU 40	-0.8	-0.55	72.67	-0.018	1.03	-0.0036
606	SLU 41	-0.81	-0.5	73.47	-0.0182	1.0415	-0.0047
606	SLU 42	-0.81	-0.55	73.49	-0.0177	1.0416	-0.0038
606	SLU 43	-0.91	-0.7	69.91	-0.059	0.9903	-0.0031
606	SLU 44	-0.91	-0.78	69.93	-0.0583	0.9904	-0.0015
606	SLU 45	-0.93	-0.7	71.22	-0.0576	1.0088	-0.0032
606	SLU 46	-0.93	-0.75	71.23	-0.0572	1.0089	-0.0022
606	SLU 47	-0.92	-0.78	70.74	-0.058	1.002	-0.0016
606	SLU 48	-0.94	-0.7	72.04	-0.0574	1.0204	-0.0033
606	SLU 49	-0.94	-0.75	72.05	-0.0569	1.0205	-0.0024
606	SLU 50	-0.93	-0.71	71.54	-0.0585	1.0133	-0.0033
606	SLU 51	-0.94	-0.76	71.55	-0.058	1.0134	-0.0024
606	SLU 52	-0.93	-0.78	77.04	-0.0518	1.0913	-0.0023
606	SLU 53	-0.95	-0.7	78.33	-0.0511	1.1097	-0.004
606	SLU 54	-0.95	-0.74	78.35	-0.0507	1.1098	-0.0031
606	SLU 55	-0.94	-0.78	77.86	-0.0515	1.1028	-0.0025
606	SLU 56	-0.96	-0.7	79.15	-0.0509	1.1212	-0.0042
606	SLU 57	-0.96	-0.75	79.16	-0.0504	1.1213	-0.0032
606	SLU 58	-0.95	-0.71	78.65	-0.052	1.1141	-0.0042
606	SLU 59	-0.95	-0.75	78.66	-0.0515	1.1142	-0.0032
606	SLU 60	-0.94	-0.69	80.07	-0.0498	1.1343	-0.0043
606	SLU 61	-0.94	-0.74	80.08	-0.0493	1.1344	-0.0033
606	SLU 62	-0.95	-0.7	80.88	-0.0495	1.1458	-0.0044
606	SLU 63	-0.95	-0.75	80.9	-0.049	1.1459	-0.0035
606	SLU 64	-0.97	-0.67	76.81	-0.045	1.0885	-0.0039
606	SLU 65	-0.97	-0.75	76.83	-0.0443	1.0887	-0.0023
606	SLU 66	-0.98	-0.67	78.12	-0.0436	1.1071	-0.004
606	SLU 67	-0.99	-0.72	78.14	-0.0432	1.1072	-0.003
606	SLU 68	-0.98	-0.76	77.64	-0.044	1.1002	-0.0024
606	SLU 69	-1	-0.68	78.94	-0.0434	1.1186	-0.0041
606	SLU 70	-1	-0.73	78.95	-0.0429	1.1187	-0.0032
606	SLU 71	-0.99	-0.68	78.44	-0.0445	1.1116	-0.0041
606	SLU 72	-0.99	-0.73	78.45	-0.044	1.1117	-0.0032
606	SLU 73	-0.99	-0.75	83.94	-0.0378	1.1895	-0.0031
606	SLU 74	-1	-0.67	85.24	-0.0371	1.2079	-0.0048
606	SLU 75	-1	-0.72	85.25	-0.0367	1.208	-0.0039
606	SLU 76	-1	-0.75	84.76	-0.0375	1.201	-0.0033
606	SLU 77	-1.02	-0.67	86.05	-0.0369	1.2194	-0.005
606	SLU 78	-1.02	-0.72	86.06	-0.0364	1.2195	-0.004
606	SLU 79	-1.01	-0.68	85.55	-0.038	1.2124	-0.005
606	SLU 80	-1.01	-0.73	85.56	-0.0375	1.2125	-0.004
606	SLU 81	-0.99	-0.67	86.97	-0.0358	1.2325	-0.0051
606	SLU 82	-0.99	-0.72	86.98	-0.0353	1.2326	-0.0041
606	SLU 83	-1.01	-0.67	87.79	-0.0355	1.2441	-0.0052
606	SLU 84	-1.01	-0.72	87.8	-0.035	1.2442	-0.0043
606	SLE RA 1	-0.73	-0.52	57.57	-0.0377	0.8157	-0.0028
606	SLE RA 2	-0.73	-0.58	57.58	-0.0372	0.8158	-0.0017
606	SLE RA 3	-0.74	-0.52	58.44	-0.0368	0.8281	-0.0029
606	SLE RA 4	-0.74	-0.55	58.45	-0.0365	0.8282	-0.0022
606	SLE RA 5	-0.74	-0.58	58.12	-0.0371	0.8235	-0.0018
606	SLE RA 6	-0.75	-0.53	58.99	-0.0366	0.8358	-0.003
606	SLE RA 7	-0.75	-0.56	58.99	-0.0363	0.8359	-0.0023
606	SLE RA 8	-0.75	-0.53	58.65	-0.0374	0.8311	-0.003
606	SLE RA 9	-0.75	-0.56	58.66	-0.0371	0.8312	-0.0023
606	SLE RA 10	-0.74	-0.57	62.32	-0.0329	0.8831	-0.0023
606	SLE RA 11	-0.76	-0.52	63.19	-0.0325	0.8953	-0.0034
606	SLE RA 12	-0.76	-0.55	63.19	-0.0322	0.8954	-0.0028
606	SLE RA 13	-0.75	-0.58	62.87	-0.0327	0.8907	-0.0024
606	SLE RA 14	-0.76	-0.52	63.73	-0.0323	0.903	-0.0035
606	SLE RA 15	-0.76	-0.56	63.74	-0.032	0.9031	-0.0029
606	SLE RA 16	-0.76	-0.53	63.4	-0.033	0.8983	-0.0035
606	SLE RA 17	-0.76	-0.56	63.4	-0.0327	0.8984	-0.0029
606	SLE RA 18	-0.75	-0.52	64.34	-0.0315	0.9117	-0.0036





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
606	SLE RA 19	-0.75	-0.55	64.35	-0.0312	0.9118	-0.003
606	SLE RA 20	-0.76	-0.52	64.88	-0.0314	0.9194	-0.0037
606	SLE RA 21	-0.76	-0.56	64.89	-0.0311	0.9195	-0.0031
606	SLE FR 1	-0.73	-0.52	57.57	-0.0377	0.8157	-0.0028
606	SLE FR 2	-0.73	-0.53	57.57	-0.0376	0.8157	-0.0026
606	SLE FR 3	-0.73	-0.52	57.78	-0.0377	0.8188	-0.0028
606	SLE FR 4	-0.74	-0.53	59.6	-0.0358	0.8445	-0.0028
606	SLE FR 5	-0.74	-0.52	59.82	-0.0358	0.8476	-0.0031
606	SLE FR 6	-0.74	-0.52	60.95	-0.0346	0.8637	-0.0032
606	SLE QP 1	-0.73	-0.52	57.57	-0.0377	0.8157	-0.0028
606	SLE QP 2	-0.74	-0.52	59.6	-0.0359	0.8445	-0.003
606	SLD 1	3.94	-0.2	65.28	-0.0735	0.9468	-0.008
606	SLD 2	3.94	-0.62	65.37	-0.059	0.9477	0.0026
606	SLD 3	3.67	-1.73	65.71	-0.1025	0.9392	0.013
606	SLD 4	3.67	-2.15	65.79	-0.088	0.9401	0.0236
606	SLD 5	1.07	1.97	60.64	-0.0057	0.8866	-0.0383
606	SLD 6	1.07	1.69	60.69	0.0038	0.8872	-0.0313
606	SLD 7	0.18	-3.13	62.07	-0.1025	0.8612	0.0318
606	SLD 8	0.18	-3.4	62.12	-0.0929	0.8618	0.0387
606	SLD 9	-1.65	2.36	57.08	0.0212	0.8272	-0.0448
606	SLD 10	-1.66	2.08	57.13	0.0307	0.8278	-0.0378
606	SLD 11	-2.54	-2.73	58.51	-0.0756	0.8019	0.0253
606	SLD 12	-2.54	-3.01	58.56	-0.066	0.8025	0.0322
606	SLD 13	-5.14	1.11	53.41	0.0163	0.749	-0.0297
606	SLD 14	-5.15	0.69	53.49	0.0308	0.7499	-0.0191
606	SLD 15	-5.41	-0.42	53.83	-0.0128	0.7414	-0.0087
606	SLD 16	-5.41	-0.84	53.92	0.0018	0.7423	0.0019
606	SLV 1	10.2	0.17	72.9	-0.1257	1.0838	-0.0138
606	SLV 2	10.19	-0.81	73.09	-0.0919	1.0859	0.0109
606	SLV 3	9.58	-3.29	73.9	-0.1926	1.066	0.0338
606	SLV 4	9.57	-4.27	74.1	-0.1588	1.0682	0.0584
606	SLV 5	3.49	5.1	62.03	0.0328	0.9428	-0.0826
606	SLV 6	3.48	4.47	62.16	0.0547	0.9442	-0.0667
606	SLV 7	1.42	-6.43	65.38	-0.1903	0.8837	0.0759
606	SLV 8	1.42	-7.06	65.51	-0.1684	0.8851	0.0918
606	SLV 9	-2.89	6.02	53.69	0.0966	0.804	-0.0979
606	SLV 10	-2.89	5.39	53.82	0.1185	0.8053	-0.0819
606	SLV 11	-4.95	-5.51	57.04	-0.1264	0.7448	0.0606
606	SLV 12	-4.96	-6.15	57.17	-0.1046	0.7462	0.0766
606	SLV 13	-11.05	3.23	45.1	0.087	0.6209	-0.0645
606	SLV 14	-11.05	2.25	45.3	0.1209	0.623	-0.0398
606	SLV 15	-11.67	-0.23	46.11	0.0201	0.6032	-0.017
606	SLV 16	-11.67	-1.21	46.3	0.054	0.6053	0.0077
606	CRTFP Ux+	0	0	0	0	0	0
606	CRTFP Ux-	0	0	0	0	0	0
606	CRTFP Uy+	0	0	0	0	0	0
606	CRTFP Uy-	0	0	0	0	0	0
611	SLU 1	-1.51	-1.87	146.19	-8.51	-9.9021	-0.1976
611	SLU 2	-1.51	-2.08	146.29	-8.5181	-9.9117	-0.2096
611	SLU 3	-1.55	-1.88	149.66	-8.7093	-10.1374	-0.1997
611	SLU 4	-1.55	-2	149.72	-8.7141	-10.1432	-0.2069
611	SLU 5	-1.54	-2.1	148.44	-8.6442	-10.0575	-0.2131
611	SLU 6	-1.58	-1.91	151.81	-8.8355	-10.2831	-0.2032
611	SLU 7	-1.58	-2.03	151.87	-8.8403	-10.2889	-0.2104
611	SLU 8	-1.57	-1.93	150.48	-8.7624	-10.1936	-0.2046
611	SLU 9	-1.57	-2.05	150.55	-8.7672	-10.1993	-0.2118
611	SLU 10	-1.53	-2.08	164.94	-9.5574	-11.1726	-0.2085
611	SLU 11	-1.57	-1.89	168.3	-9.7486	-11.3983	-0.1986
611	SLU 12	-1.57	-2.01	168.37	-9.7535	-11.4041	-0.2058
611	SLU 13	-1.56	-2.11	167.08	-9.6835	-11.3183	-0.212
611	SLU 14	-1.6	-1.92	170.45	-9.8748	-11.544	-0.2021
611	SLU 15	-1.6	-2.04	170.51	-9.8796	-11.5498	-0.2093
611	SLU 16	-1.59	-1.94	169.13	-9.8017	-11.4545	-0.2035
611	SLU 17	-1.59	-2.06	169.19	-9.8065	-11.4602	-0.2107
611	SLU 18	-1.54	-1.89	172.82	-9.9948	-11.7034	-0.1961
611	SLU 19	-1.54	-2.01	172.89	-9.9996	-11.7092	-0.2033
611	SLU 20	-1.57	-1.91	174.97	-10.1209	-11.8491	-0.1996
611	SLU 21	-1.57	-2.03	175.03	-10.1257	-11.8549	-0.2068
611	SLU 22	-1.63	-1.8	164.09	-9.4829	-11.0918	-0.1951
611	SLU 23	-1.63	-2	164.2	-9.4909	-11.1014	-0.2071
611	SLU 24	-1.67	-1.81	167.56	-9.6822	-11.3271	-0.1972
611	SLU 25	-1.67	-1.93	167.62	-9.687	-11.3328	-0.2044
611	SLU 26	-1.66	-2.03	166.34	-9.6171	-11.2471	-0.2105
611	SLU 27	-1.7	-1.83	169.71	-9.8084	-11.4728	-0.2007
611	SLU 28	-1.7	-1.96	169.77	-9.8132	-11.4785	-0.2079
611	SLU 29	-1.69	-1.85	168.39	-9.7352	-11.3832	-0.2021
611	SLU 30	-1.69	-1.97	168.45	-9.74	-11.389	-0.2092
611	SLU 31	-1.65	-2.01	182.84	-10.5302	-12.3623	-0.206
611	SLU 32	-1.69	-1.82	186.21	-10.7215	-12.5879	-0.1961
611	SLU 33	-1.69	-1.94	186.27	-10.7263	-12.5937	-0.2033
611	SLU 34	-1.68	-2.04	184.99	-10.6564	-12.508	-0.2095
611	SLU 35	-1.72	-1.84	188.35	-10.8477	-12.7337	-0.1996
611	SLU 36	-1.72	-1.96	188.42	-10.8525	-12.7394	-0.2068
611	SLU 37	-1.71	-1.86	187.03	-10.7745	-12.6441	-0.201
611	SLU 38	-1.71	-1.98	187.09	-10.7793	-12.6499	-0.2082
611	SLU 39	-1.66	-1.81	190.73	-10.9676	-12.8931	-0.1936
611	SLU 40	-1.66	-1.93	190.79	-10.9724	-12.8988	-0.2008
611	SLU 41	-1.69	-1.84	192.87	-11.0938	-13.0388	-0.1971
611	SLU 42	-1.69	-1.96	192.94	-11.0986	-13.0445	-0.2043
611	SLU 43	-1.93	-2.46	183.91	-10.7295	-12.4649	-0.2577



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
	N.br.	x	y	z	x	y	z
611	SLU 44	-1.93	-2.66	184.01	-10.7375	-12.4745	-0.2697
611	SLU 45	-1.96	-2.47	187.38	-10.9288	-12.7002	-0.2598
611	SLU 46	-1.97	-2.59	187.44	-10.9336	-12.7059	-0.267
611	SLU 47	-1.96	-2.69	186.16	-10.8637	-12.6202	-0.2732
611	SLU 48	-1.99	-2.5	189.53	-11.055	-12.8459	-0.2633
611	SLU 49	-1.99	-2.62	189.59	-11.0598	-12.8516	-0.2705
611	SLU 50	-1.98	-2.52	188.2	-10.9818	-12.7563	-0.2647
611	SLU 51	-1.98	-2.64	188.27	-10.9866	-12.7621	-0.2719
611	SLU 52	-1.95	-2.67	202.66	-11.7768	-13.7354	-0.2686
611	SLU 53	-1.98	-2.48	206.02	-11.9681	-13.9611	-0.2588
611	SLU 54	-1.98	-2.6	206.08	-11.9729	-13.9668	-0.266
611	SLU 55	-1.97	-2.7	204.8	-11.903	-13.8811	-0.2721
611	SLU 56	-2.01	-2.51	208.17	-12.0943	-14.1068	-0.2623
611	SLU 57	-2.01	-2.63	208.23	-12.0991	-14.1125	-0.2694
611	SLU 58	-2	-2.52	206.85	-12.0211	-14.0172	-0.2637
611	SLU 59	-2	-2.65	206.91	-12.0259	-14.023	-0.2708
611	SLU 60	-1.95	-2.48	210.54	-12.2142	-14.2662	-0.2562
611	SLU 61	-1.95	-2.6	210.6	-12.219	-14.2719	-0.2634
611	SLU 62	-1.98	-2.5	212.69	-12.3404	-14.4119	-0.2597
611	SLU 63	-1.98	-2.62	212.75	-12.3452	-14.4176	-0.2669
611	SLU 64	-2.04	-2.39	201.81	-11.7023	-13.6545	-0.2552
611	SLU 65	-2.05	-2.59	201.91	-11.7104	-13.6641	-0.2672
611	SLU 66	-2.08	-2.4	205.28	-11.9016	-13.8898	-0.2573
611	SLU 67	-2.08	-2.52	205.34	-11.9065	-13.8956	-0.2645
611	SLU 68	-2.07	-2.62	204.06	-11.8365	-13.8099	-0.2707
611	SLU 69	-2.11	-2.42	207.43	-12.0278	-14.0355	-0.2608
611	SLU 70	-2.11	-2.54	207.49	-12.0326	-14.0413	-0.268
611	SLU 71	-2.1	-2.44	206.11	-11.9547	-13.946	-0.2622
611	SLU 72	-2.1	-2.56	206.17	-11.9595	-13.9517	-0.2694
611	SLU 73	-2.06	-2.6	220.56	-12.7497	-14.925	-0.2661
611	SLU 74	-2.1	-2.41	223.93	-12.941	-15.1507	-0.2563
611	SLU 75	-2.1	-2.53	223.99	-12.9458	-15.1565	-0.2635
611	SLU 76	-2.09	-2.62	222.71	-12.8758	-15.0708	-0.2696
611	SLU 77	-2.13	-2.43	226.07	-13.0671	-15.2964	-0.2598
611	SLU 78	-2.13	-2.55	226.13	-13.0719	-15.3022	-0.2669
611	SLU 79	-2.12	-2.45	224.75	-12.994	-15.2069	-0.2612
611	SLU 80	-2.12	-2.57	224.81	-12.9988	-15.2126	-0.2683
611	SLU 81	-2.07	-2.4	228.45	-13.1871	-15.4558	-0.2537
611	SLU 82	-2.07	-2.52	228.51	-13.1919	-15.4616	-0.2609
611	SLU 83	-2.1	-2.43	230.59	-13.3132	-15.6015	-0.2572
611	SLU 84	-2.1	-2.55	230.65	-13.318	-15.6073	-0.2644
611	SLE RA 1	-1.55	-1.85	151.3	-8.788	-10.242	-0.1969
611	SLE RA 2	-1.55	-1.99	151.37	-8.7933	-10.2484	-0.2049
611	SLE RA 3	-1.57	-1.86	153.62	-8.9209	-10.3989	-0.1983
611	SLE RA 4	-1.57	-1.94	153.66	-8.9241	-10.4027	-0.2031
611	SLE RA 5	-1.57	-2.01	152.8	-8.8774	-10.3456	-0.2072
611	SLE RA 6	-1.59	-1.88	155.05	-9.005	-10.496	-0.2006
611	SLE RA 7	-1.59	-1.96	155.09	-9.0082	-10.4999	-0.2054
611	SLE RA 8	-1.58	-1.89	154.17	-8.9562	-10.4363	-0.2015
611	SLE RA 9	-1.58	-1.97	154.21	-8.9594	-10.4402	-0.2063
611	SLE RA 10	-1.56	-1.99	163.8	-9.4862	-11.089	-0.2042
611	SLE RA 11	-1.58	-1.86	166.05	-9.6137	-11.2395	-0.1976
611	SLE RA 12	-1.59	-1.95	166.09	-9.6169	-11.2433	-0.2024
611	SLE RA 13	-1.58	-2.01	165.23	-9.5703	-11.1862	-0.2065
611	SLE RA 14	-1.6	-1.88	167.48	-9.6978	-11.3366	-0.1999
611	SLE RA 15	-1.6	-1.96	167.52	-9.701	-11.3405	-0.2047
611	SLE RA 16	-1.6	-1.89	166.6	-9.6491	-11.2769	-0.2008
611	SLE RA 17	-1.6	-1.98	166.64	-9.6523	-11.2808	-0.2056
611	SLE RA 18	-1.56	-1.86	169.06	-9.7778	-11.4429	-0.1959
611	SLE RA 19	-1.56	-1.94	169.1	-9.781	-11.4467	-0.2007
611	SLE RA 20	-1.58	-1.88	170.49	-9.8619	-11.54	-0.1982
611	SLE RA 21	-1.58	-1.96	170.53	-9.8651	-11.5439	-0.203
611	SLE FR 1	-1.55	-1.85	151.3	-8.788	-10.242	-0.1969
611	SLE FR 2	-1.55	-1.88	151.32	-8.7891	-10.2433	-0.1985
611	SLE FR 3	-1.55	-1.86	151.88	-8.8216	-10.2809	-0.1978
611	SLE FR 4	-1.55	-1.88	156.65	-9.086	-10.6036	-0.1982
611	SLE FR 5	-1.56	-1.86	157.2	-9.1186	-10.6411	-0.1975
611	SLE FR 6	-1.56	-1.86	160.18	-9.2829	-10.8425	-0.1964
611	SLE QP 1	-1.55	-1.85	151.3	-8.788	-10.242	-0.1969
611	SLE QP 2	-1.55	-1.86	156.63	-9.0849	-10.6023	-0.1966
611	SLD 1	11.15	-0.88	168	-9.6201	-11.0556	0.6176
611	SLD 2	11.15	-1.82	168.33	-9.626	-11.0816	0.576
611	SLD 3	10.43	-5.12	169.46	-9.759	-11.2189	0.3291
611	SLD 4	10.43	-6.06	169.78	-9.7649	-11.245	0.2875
611	SLD 5	3.35	5.04	157.78	-9.0338	-10.4859	0.4926
611	SLD 6	3.36	4.42	157.99	-9.0376	-10.503	0.4652
611	SLD 7	0.95	-9.1	162.63	-9.4968	-11.0304	-0.4689
611	SLD 8	0.95	-9.72	162.84	-9.5006	-11.0475	-0.4962
611	SLD 9	-4.05	6.01	150.42	-8.6692	-10.1571	0.1031
611	SLD 10	-4.05	5.39	150.63	-8.6731	-10.1742	0.0757
611	SLD 11	-6.46	-8.14	155.27	-9.1322	-10.7016	-0.8584
611	SLD 12	-6.45	-8.75	155.49	-9.1361	-10.7187	-0.8857
611	SLD 13	-13.54	2.35	143.48	-8.405	-9.9596	-0.6807
611	SLD 14	-13.53	1.41	143.81	-8.4109	-9.9856	-0.7223
611	SLD 15	-14.26	-1.9	144.94	-8.5439	-10.123	-0.9692
611	SLD 16	-14.25	-2.83	145.26	-8.5498	-10.149	-1.0108
611	SLV 1	28.15	0.26	183.28	-10.3412	-11.6684	1.6968
611	SLV 2	28.17	-1.92	184.04	-10.3549	-11.729	1.5999
611	SLV 3	26.47	-9.34	186.62	-10.6579	-12.0407	1.044
611	SLV 4	26.49	-11.52	187.38	-10.6717	-12.1014	0.9471



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
611	SLV 5	9.91	13.72	159.42	-8.9791	-10.3469	1.3782
611	SLV 6	9.92	12.31	159.91	-8.9879	-10.386	1.3157
611	SLV 7	4.3	-18.29	170.57	-10.0348	-11.5881	-0.7977
611	SLV 8	4.31	-19.7	171.06	-10.0437	-11.6272	-0.8603
611	SLV 9	-7.41	15.99	142.21	-8.1262	-9.5773	0.4671
611	SLV 10	-7.4	14.58	142.7	-8.135	-9.6165	0.4045
611	SLV 11	-13.02	-16.03	153.35	-9.1819	-10.8185	-1.7088
611	SLV 12	-13.01	-17.43	153.84	-9.1908	-10.8577	-1.7714
611	SLV 13	-29.59	7.81	125.88	-7.4982	-9.1032	-1.3403
611	SLV 14	-29.58	5.63	126.64	-7.5119	-9.1638	-1.4372
611	SLV 15	-31.27	-1.8	129.23	-7.8149	-9.4756	-1.9931
611	SLV 16	-31.26	-3.97	129.99	-7.8286	-9.5362	-2.09
611	CRTFP Ux+	0	0	0	0	0	0
611	CRTFP Ux-	0	0	0	0	0	0
611	CRTFP Uy+	0	0	0	0	0	0
611	CRTFP Uy-	0	0	0	0	0	0
613	SLU 1	-0.25	-0.29	23.02	5.5148	-0.9444	0.0502
613	SLU 2	-0.25	-0.32	23.03	5.518	-0.945	0.0492
613	SLU 3	-0.25	-0.29	23.57	5.6457	-0.9668	0.0517
613	SLU 4	-0.25	-0.3	23.57	5.6476	-0.9672	0.0511
613	SLU 5	-0.25	-0.32	23.37	5.5984	-0.9588	0.0501
613	SLU 6	-0.26	-0.29	23.9	5.7262	-0.9807	0.0526
613	SLU 7	-0.26	-0.31	23.91	5.7281	-0.981	0.052
613	SLU 8	-0.25	-0.29	23.69	5.6757	-0.972	0.052
613	SLU 9	-0.25	-0.31	23.7	5.6776	-0.9724	0.0514
613	SLU 10	-0.25	-0.32	25.99	6.2309	-1.0666	0.0503
613	SLU 11	-0.26	-0.29	26.53	6.3586	-1.0885	0.0528
613	SLU 12	-0.26	-0.3	26.54	6.3605	-1.0888	0.0522
613	SLU 13	-0.25	-0.32	26.33	6.3113	-1.0805	0.0512
613	SLU 14	-0.26	-0.29	26.86	6.4391	-1.1023	0.0537
613	SLU 15	-0.26	-0.31	26.87	6.441	-1.1027	0.0531
613	SLU 16	-0.26	-0.29	26.65	6.3886	-1.0937	0.0531
613	SLU 17	-0.26	-0.31	26.66	6.3905	-1.0941	0.0525
613	SLU 18	-0.25	-0.29	27.25	6.5332	-1.1181	0.0517
613	SLU 19	-0.25	-0.3	27.26	6.5351	-1.1185	0.0511
613	SLU 20	-0.26	-0.29	27.59	6.6137	-1.132	0.0526
613	SLU 21	-0.26	-0.31	27.59	6.6156	-1.1324	0.052
613	SLU 22	-0.27	-0.27	25.86	6.2043	-1.0612	0.056
613	SLU 23	-0.27	-0.3	25.88	6.2075	-1.0618	0.055
613	SLU 24	-0.27	-0.27	26.41	6.3352	-1.0836	0.0575
613	SLU 25	-0.27	-0.29	26.42	6.3371	-1.084	0.057
613	SLU 26	-0.27	-0.31	26.22	6.2879	-1.0756	0.0559
613	SLU 27	-0.28	-0.28	26.75	6.4157	-1.0975	0.0585
613	SLU 28	-0.28	-0.29	26.76	6.4176	-1.0979	0.0579
613	SLU 29	-0.27	-0.28	26.54	6.3652	-1.0889	0.0578
613	SLU 30	-0.28	-0.3	26.55	6.3671	-1.0892	0.0572
613	SLU 31	-0.27	-0.3	28.84	6.9204	-1.1834	0.0561
613	SLU 32	-0.28	-0.27	29.37	7.0481	-1.2053	0.0586
613	SLU 33	-0.28	-0.29	29.38	7.05	-1.2057	0.058
613	SLU 34	-0.28	-0.31	29.18	7.0008	-1.1973	0.057
613	SLU 35	-0.28	-0.28	29.71	7.1286	-1.2191	0.0595
613	SLU 36	-0.28	-0.3	29.72	7.1305	-1.2195	0.059
613	SLU 37	-0.28	-0.28	29.5	7.0781	-1.2105	0.0589
613	SLU 38	-0.28	-0.3	29.51	7.08	-1.2109	0.0583
613	SLU 39	-0.27	-0.27	30.09	7.2227	-1.235	0.0575
613	SLU 40	-0.27	-0.29	30.1	7.2246	-1.2353	0.0569
613	SLU 41	-0.28	-0.28	30.43	7.3032	-1.2488	0.0585
613	SLU 42	-0.28	-0.29	30.44	7.3051	-1.2492	0.0579
613	SLU 43	-0.31	-0.38	28.95	6.9328	-1.1876	0.0632
613	SLU 44	-0.31	-0.41	28.96	6.936	-1.1882	0.0622
613	SLU 45	-0.32	-0.38	29.49	7.0638	-1.2101	0.0648
613	SLU 46	-0.32	-0.39	29.5	7.0657	-1.2104	0.0642
613	SLU 47	-0.32	-0.41	29.3	7.0165	-1.2021	0.0631
613	SLU 48	-0.32	-0.38	29.83	7.1442	-1.2239	0.0657
613	SLU 49	-0.32	-0.4	29.84	7.1461	-1.2243	0.0651
613	SLU 50	-0.32	-0.38	29.62	7.0938	-1.2153	0.065
613	SLU 51	-0.32	-0.4	29.63	7.0957	-1.2157	0.0645
613	SLU 52	-0.32	-0.41	31.92	7.6489	-1.3099	0.0633
613	SLU 53	-0.32	-0.38	32.46	7.7767	-1.3317	0.0659
613	SLU 54	-0.32	-0.39	32.46	7.7786	-1.3321	0.0653
613	SLU 55	-0.32	-0.41	32.26	7.7294	-1.3237	0.0642
613	SLU 56	-0.33	-0.38	32.79	7.8571	-1.3456	0.0668
613	SLU 57	-0.33	-0.4	32.8	7.859	-1.3459	0.0662
613	SLU 58	-0.32	-0.38	32.58	7.8067	-1.3369	0.0661
613	SLU 59	-0.33	-0.4	32.59	7.8086	-1.3373	0.0655
613	SLU 60	-0.32	-0.38	33.18	7.9513	-1.3614	0.0648
613	SLU 61	-0.32	-0.39	33.19	7.9532	-1.3618	0.0642
613	SLU 62	-0.32	-0.38	33.51	8.0317	-1.3752	0.0657
613	SLU 63	-0.32	-0.4	33.52	8.0336	-1.3756	0.0651
613	SLU 64	-0.33	-0.36	31.79	7.6223	-1.3044	0.069
613	SLU 65	-0.33	-0.39	31.81	7.6255	-1.305	0.0681
613	SLU 66	-0.34	-0.36	32.34	7.7533	-1.3269	0.0706
613	SLU 67	-0.34	-0.38	32.35	7.7552	-1.3273	0.07
613	SLU 68	-0.34	-0.4	32.15	7.706	-1.3189	0.069
613	SLU 69	-0.34	-0.37	32.68	7.8337	-1.3407	0.0715
613	SLU 70	-0.34	-0.39	32.69	7.8356	-1.3411	0.0709
613	SLU 71	-0.34	-0.37	32.47	7.7833	-1.3321	0.0709
613	SLU 72	-0.34	-0.39	32.48	7.7852	-1.3325	0.0703
613	SLU 73	-0.34	-0.39	34.77	8.3384	-1.4267	0.0691
613	SLU 74	-0.34	-0.36	35.3	8.4662	-1.4485	0.0717



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
613	SLU 75	-0.34	-0.38	35.31	8.4681	-1.4489	0.0711
613	SLU 76	-0.34	-0.4	35.11	8.4189	-1.4405	0.0701
613	SLU 77	-0.35	-0.37	35.64	8.5466	-1.4624	0.0726
613	SLU 78	-0.35	-0.39	35.65	8.5485	-1.4628	0.072
613	SLU 79	-0.35	-0.37	35.43	8.4962	-1.4538	0.072
613	SLU 80	-0.35	-0.39	35.44	8.4981	-1.4541	0.0714
613	SLU 81	-0.34	-0.36	36.02	8.6408	-1.4782	0.0706
613	SLU 82	-0.34	-0.38	36.03	8.6427	-1.4786	0.07
613	SLU 83	-0.34	-0.37	36.36	8.7212	-1.4921	0.0715
613	SLU 84	-0.34	-0.38	36.37	8.7231	-1.4924	0.0709
613	SLE RA 1	-0.25	-0.28	23.83	5.7118	-0.9777	0.0518
613	SLE RA 2	-0.25	-0.3	23.84	5.7139	-0.9781	0.0512
613	SLE RA 3	-0.26	-0.28	24.2	5.7991	-0.9927	0.0529
613	SLE RA 4	-0.26	-0.29	24.2	5.8003	-0.993	0.0525
613	SLE RA 5	-0.25	-0.3	24.07	5.7675	-0.9874	0.0518
613	SLE RA 6	-0.26	-0.28	24.42	5.8527	-1.0019	0.0535
613	SLE RA 7	-0.26	-0.3	24.43	5.854	-1.0022	0.0531
613	SLE RA 8	-0.26	-0.29	24.28	5.8191	-0.9962	0.0531
613	SLE RA 9	-0.26	-0.3	24.29	5.8203	-0.9964	0.0527
613	SLE RA 10	-0.25	-0.3	25.82	6.1892	-1.0592	0.0519
613	SLE RA 11	-0.26	-0.28	26.17	6.2744	-1.0738	0.0536
613	SLE RA 12	-0.26	-0.29	26.18	6.2756	-1.0741	0.0532
613	SLE RA 13	-0.26	-0.3	26.04	6.2428	-1.0685	0.0525
613	SLE RA 14	-0.26	-0.28	26.4	6.328	-1.083	0.0542
613	SLE RA 15	-0.26	-0.3	26.4	6.3293	-1.0833	0.0538
613	SLE RA 16	-0.26	-0.29	26.25	6.2944	-1.0773	0.0538
613	SLE RA 17	-0.26	-0.3	26.26	6.2956	-1.0775	0.0534
613	SLE RA 18	-0.26	-0.28	26.65	6.3908	-1.0936	0.0529
613	SLE RA 19	-0.26	-0.29	26.66	6.392	-1.0938	0.0525
613	SLE RA 20	-0.26	-0.28	26.88	6.4444	-1.1028	0.0535
613	SLE RA 21	-0.26	-0.3	26.88	6.4457	-1.1031	0.0531
613	SLE FR 1	-0.25	-0.28	23.83	5.7118	-0.9777	0.0518
613	SLE FR 2	-0.25	-0.29	23.83	5.7122	-0.9778	0.0517
613	SLE FR 3	-0.25	-0.28	23.92	5.7333	-0.9814	0.0521
613	SLE FR 4	-0.25	-0.29	24.68	5.9159	-1.0126	0.052
613	SLE FR 5	-0.25	-0.28	24.77	5.9369	-1.0162	0.0524
613	SLE FR 6	-0.25	-0.28	25.24	6.0513	-1.0357	0.0523
613	SLE QP 1	-0.25	-0.28	23.83	5.7118	-0.9777	0.0518
613	SLE QP 2	-0.25	-0.28	24.68	5.9155	-1.0125	0.0521
613	SLD 1	1.73	-0.12	26.37	6.2711	-1.0787	-0.4149
613	SLD 2	1.72	-0.26	26.43	6.2859	-1.0809	-0.4187
613	SLD 3	1.62	-0.79	26.6	6.3111	-1.088	-0.4554
613	SLD 4	1.61	-0.93	26.66	6.3259	-1.0903	-0.4592
613	SLD 5	0.51	0.8	24.83	5.9588	-1.0177	-0.0259
613	SLD 6	0.51	0.71	24.87	5.9685	-1.0192	-0.0284
613	SLD 7	0.14	-1.42	25.59	6.0922	-1.049	-0.1609
613	SLD 8	0.13	-1.51	25.62	6.1019	-1.0504	-0.1633
613	SLD 9	-0.64	0.95	23.73	5.729	-0.9745	0.2676
613	SLD 10	-0.64	0.86	23.77	5.7388	-0.976	0.2652
613	SLD 11	-1.01	-1.28	24.48	5.8624	-1.0058	0.1326
613	SLD 12	-1.02	-1.37	24.52	5.8722	-1.0072	0.1302
613	SLD 13	-2.12	0.36	22.7	5.5051	-0.9347	0.5634
613	SLD 14	-2.12	0.22	22.75	5.5199	-0.9369	0.5597
613	SLD 15	-2.23	-0.3	22.92	5.5451	-0.9441	0.523
613	SLD 16	-2.24	-0.44	22.98	5.5599	-0.9463	0.5192
613	SLV 1	4.39	0.07	28.65	6.7488	-1.1676	-1.0413
613	SLV 2	4.37	-0.25	28.79	6.7832	-1.1729	-1.0501
613	SLV 3	4.12	-1.44	29.17	6.8411	-1.1891	-1.1346
613	SLV 4	4.11	-1.76	29.31	6.8755	-1.1944	-1.1433
613	SLV 5	1.54	2.17	25.06	6.0195	-1.0255	-0.133
613	SLV 6	1.53	1.96	25.14	6.0418	-1.0289	-0.1386
613	SLV 7	0.67	-2.86	26.79	6.3272	-1.0972	-0.4438
613	SLV 8	0.66	-3.07	26.88	6.3494	-1.1006	-0.4494
613	SLV 9	-1.16	2.51	22.48	5.4816	-0.9244	0.5537
613	SLV 10	-1.17	2.3	22.56	5.5038	-0.9278	0.5481
613	SLV 11	-2.03	-2.52	24.21	5.7892	-0.9961	0.2429
613	SLV 12	-2.04	-2.73	24.3	5.8114	-0.9995	0.2373
613	SLV 13	-4.61	1.2	20.05	4.9555	-0.8306	1.2476
613	SLV 14	-4.63	0.88	20.18	4.9899	-0.8358	1.2389
613	SLV 15	-4.87	-0.31	20.57	5.0478	-0.8521	1.1544
613	SLV 16	-4.89	-0.63	20.7	5.0822	-0.8573	1.1456
613	CRTFP Ux+	0	0	0	0	0	0
613	CRTFP Ux-	0	0	0	0	0	0
613	CRTFP Uy+	0	0	0	0	0	0
613	CRTFP Uy-	0	0	0	0	0	0
615	SLU 1	-0.55	-0.63	57.73	0.2063	-0.2037	0.0235
615	SLU 2	-0.55	-0.7	57.77	0.2035	-0.2038	0.0237
615	SLU 3	-0.56	-0.63	59.1	0.2121	-0.2086	0.0242
615	SLU 4	-0.56	-0.67	59.12	0.2104	-0.2087	0.0243
615	SLU 5	-0.56	-0.71	58.61	0.2056	-0.2068	0.024
615	SLU 6	-0.57	-0.64	59.94	0.2143	-0.2116	0.0245
615	SLU 7	-0.57	-0.68	59.97	0.2126	-0.2116	0.0246
615	SLU 8	-0.57	-0.65	59.42	0.2106	-0.2097	0.0241
615	SLU 9	-0.57	-0.69	59.44	0.2089	-0.2097	0.0242
615	SLU 10	-0.55	-0.7	65.18	0.2561	-0.231	0.0259
615	SLU 11	-0.56	-0.62	66.51	0.2647	-0.2357	0.0264
615	SLU 12	-0.57	-0.67	66.53	0.263	-0.2358	0.0265
615	SLU 13	-0.56	-0.71	66.02	0.2583	-0.2339	0.0262
615	SLU 14	-0.57	-0.63	67.35	0.2669	-0.2387	0.0267
615	SLU 15	-0.58	-0.68	67.38	0.2652	-0.2388	0.0269



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
615	SLU 16	-0.57	-0.64	66.83	0.2632	-0.2368	0.0263
615	SLU 17	-0.57	-0.68	66.85	0.2615	-0.2368	0.0265
615	SLU 18	-0.55	-0.62	68.31	0.2814	-0.2425	0.0267
615	SLU 19	-0.55	-0.66	68.33	0.2797	-0.2425	0.0268
615	SLU 20	-0.56	-0.63	69.16	0.2836	-0.2454	0.027
615	SLU 21	-0.56	-0.67	69.18	0.2819	-0.2455	0.0271
615	SLU 22	-0.59	-0.58	64.81	0.2725	-0.2288	0.0269
615	SLU 23	-0.59	-0.66	64.85	0.2697	-0.2289	0.0271
615	SLU 24	-0.6	-0.58	66.18	0.2783	-0.2337	0.0276
615	SLU 25	-0.6	-0.63	66.2	0.2766	-0.2337	0.0277
615	SLU 26	-0.6	-0.67	65.69	0.2719	-0.2319	0.0274
615	SLU 27	-0.61	-0.59	67.03	0.2805	-0.2366	0.0279
615	SLU 28	-0.61	-0.64	67.05	0.2788	-0.2367	0.028
615	SLU 29	-0.61	-0.6	66.5	0.2769	-0.2347	0.0275
615	SLU 30	-0.61	-0.65	66.53	0.2752	-0.2348	0.0276
615	SLU 31	-0.6	-0.65	72.26	0.3223	-0.256	0.0293
615	SLU 32	-0.61	-0.57	73.59	0.3309	-0.2608	0.0298
615	SLU 33	-0.61	-0.62	73.61	0.3293	-0.2609	0.0299
615	SLU 34	-0.61	-0.66	73.1	0.3245	-0.259	0.0296
615	SLU 35	-0.62	-0.58	74.44	0.3331	-0.2638	0.0301
615	SLU 36	-0.62	-0.63	74.46	0.3314	-0.2638	0.0302
615	SLU 37	-0.61	-0.59	73.91	0.3295	-0.2619	0.0297
615	SLU 38	-0.62	-0.64	73.93	0.3278	-0.2619	0.0298
615	SLU 39	-0.6	-0.57	75.39	0.3477	-0.2675	0.03
615	SLU 40	-0.6	-0.62	75.42	0.346	-0.2676	0.0302
615	SLU 41	-0.61	-0.58	76.24	0.3498	-0.2705	0.0304
615	SLU 42	-0.61	-0.63	76.26	0.3482	-0.2706	0.0305
615	SLU 43	-0.7	-0.83	72.61	0.2454	-0.2563	0.0294
615	SLU 44	-0.7	-0.91	72.66	0.2426	-0.2564	0.0296
615	SLU 45	-0.71	-0.83	73.99	0.2512	-0.2611	0.0301
615	SLU 46	-0.71	-0.88	74.01	0.2496	-0.2612	0.0302
615	SLU 47	-0.71	-0.92	73.5	0.2448	-0.2593	0.0299
615	SLU 48	-0.72	-0.84	74.83	0.2534	-0.2641	0.0304
615	SLU 49	-0.72	-0.89	74.86	0.2517	-0.2642	0.0305
615	SLU 50	-0.72	-0.85	74.31	0.2498	-0.2622	0.03
615	SLU 51	-0.72	-0.9	74.33	0.2481	-0.2622	0.0301
615	SLU 52	-0.7	-0.9	80.07	0.2952	-0.2835	0.0318
615	SLU 53	-0.71	-0.82	81.4	0.3039	-0.2883	0.0323
615	SLU 54	-0.71	-0.87	81.42	0.3022	-0.2883	0.0325
615	SLU 55	-0.71	-0.91	80.91	0.2974	-0.2864	0.0321
615	SLU 56	-0.72	-0.83	82.24	0.306	-0.2912	0.0326
615	SLU 57	-0.72	-0.88	82.27	0.3044	-0.2913	0.0328
615	SLU 58	-0.72	-0.84	81.72	0.3024	-0.2893	0.0323
615	SLU 59	-0.72	-0.89	81.74	0.3007	-0.2894	0.0324
615	SLU 60	-0.7	-0.82	83.2	0.3206	-0.295	0.0326
615	SLU 61	-0.7	-0.87	83.22	0.3189	-0.2951	0.0327
615	SLU 62	-0.71	-0.83	84.05	0.3228	-0.298	0.0329
615	SLU 63	-0.71	-0.88	84.07	0.3211	-0.298	0.033
615	SLU 64	-0.74	-0.79	79.7	0.3117	-0.2813	0.0328
615	SLU 65	-0.74	-0.86	79.74	0.3089	-0.2814	0.033
615	SLU 66	-0.75	-0.79	81.07	0.3175	-0.2862	0.0335
615	SLU 67	-0.75	-0.83	81.09	0.3158	-0.2863	0.0336
615	SLU 68	-0.75	-0.87	80.58	0.311	-0.2844	0.0333
615	SLU 69	-0.76	-0.8	81.92	0.3197	-0.2892	0.0338
615	SLU 70	-0.76	-0.84	81.94	0.318	-0.2892	0.0339
615	SLU 71	-0.76	-0.81	81.39	0.316	-0.2873	0.0334
615	SLU 72	-0.76	-0.85	81.41	0.3143	-0.2873	0.0335
615	SLU 73	-0.74	-0.85	87.15	0.3615	-0.3086	0.0352
615	SLU 74	-0.76	-0.78	88.48	0.3701	-0.3133	0.0357
615	SLU 75	-0.76	-0.82	88.5	0.3684	-0.3134	0.0358
615	SLU 76	-0.75	-0.86	87.99	0.3637	-0.3115	0.0355
615	SLU 77	-0.77	-0.79	89.33	0.3723	-0.3163	0.036
615	SLU 78	-0.77	-0.83	89.35	0.3706	-0.3164	0.0361
615	SLU 79	-0.76	-0.8	88.8	0.3686	-0.3144	0.0356
615	SLU 80	-0.76	-0.84	88.82	0.367	-0.3144	0.0357
615	SLU 81	-0.75	-0.78	90.28	0.3868	-0.3201	0.0359
615	SLU 82	-0.75	-0.82	90.31	0.3852	-0.3201	0.0361
615	SLU 83	-0.76	-0.79	91.13	0.389	-0.323	0.0363
615	SLU 84	-0.76	-0.83	91.15	0.3873	-0.3231	0.0364
615	SLE RA 1	-0.56	-0.62	59.75	0.2252	-0.2109	0.0245
615	SLE RA 2	-0.56	-0.67	59.78	0.2233	-0.211	0.0246
615	SLE RA 3	-0.57	-0.62	60.66	0.2291	-0.2141	0.0249
615	SLE RA 4	-0.57	-0.65	60.68	0.2279	-0.2142	0.025
615	SLE RA 5	-0.57	-0.67	60.34	0.2248	-0.2129	0.0248
615	SLE RA 6	-0.57	-0.62	61.23	0.2305	-0.2161	0.0251
615	SLE RA 7	-0.58	-0.65	61.24	0.2294	-0.2162	0.0252
615	SLE RA 8	-0.57	-0.63	60.88	0.2281	-0.2148	0.0249
615	SLE RA 9	-0.57	-0.66	60.89	0.227	-0.2149	0.0249
615	SLE RA 10	-0.56	-0.66	64.72	0.2584	-0.229	0.0261
615	SLE RA 11	-0.57	-0.61	65.6	0.2641	-0.2322	0.0264
615	SLE RA 12	-0.57	-0.64	65.62	0.263	-0.2323	0.0265
615	SLE RA 13	-0.57	-0.67	65.28	0.2598	-0.231	0.0263
615	SLE RA 14	-0.58	-0.62	66.17	0.2656	-0.2342	0.0266
615	SLE RA 15	-0.58	-0.65	66.18	0.2645	-0.2342	0.0267
615	SLE RA 16	-0.58	-0.62	65.82	0.2632	-0.2329	0.0264
615	SLE RA 17	-0.58	-0.65	65.83	0.262	-0.233	0.0264
615	SLE RA 18	-0.56	-0.61	66.81	0.2753	-0.2367	0.0266
615	SLE RA 19	-0.56	-0.64	66.82	0.2742	-0.2368	0.0267
615	SLE RA 20	-0.57	-0.61	67.37	0.2767	-0.2387	0.0268
615	SLE RA 21	-0.57	-0.64	67.39	0.2756	-0.2387	0.0269



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
615	SLE FR 1	-0.56	-0.62	59.75	0.2252	-0.2109	0.0245
615	SLE FR 2	-0.56	-0.63	59.75	0.2248	-0.2109	0.0245
615	SLE FR 3	-0.56	-0.62	59.97	0.2258	-0.2117	0.0245
615	SLE FR 4	-0.56	-0.62	61.87	0.2398	-0.2187	0.0251
615	SLE FR 5	-0.56	-0.62	62.09	0.2408	-0.2194	0.0252
615	SLE FR 6	-0.56	-0.61	63.28	0.2502	-0.2238	0.0255
615	SLE QP 1	-0.56	-0.62	59.75	0.2252	-0.2109	0.0245
615	SLE QP 2	-0.56	-0.61	61.87	0.2402	-0.2186	0.0251
615	SLD 1	4.42	-0.17	65.53	0.3316	-0.2103	0.015
615	SLD 2	4.41	-0.5	65.66	0.3325	-0.2106	0.0183
615	SLD 3	4.13	-1.84	66.15	0.2853	-0.2129	0.0097
615	SLD 4	4.13	-2.16	66.28	0.2862	-0.2132	0.013
615	SLD 5	1.36	2.1	62	0.3377	-0.212	0.0295
615	SLD 6	1.36	1.89	62.08	0.3383	-0.2122	0.0317
615	SLD 7	0.42	-3.45	64.07	0.1833	-0.221	0.0118
615	SLD 8	0.42	-3.66	64.16	0.1839	-0.2211	0.014
615	SLD 9	-1.54	2.43	59.57	0.2965	-0.2161	0.0362
615	SLD 10	-1.54	2.22	59.66	0.2971	-0.2163	0.0384
615	SLD 11	-2.48	-3.11	61.65	0.1421	-0.2251	0.0185
615	SLD 12	-2.48	-3.33	61.74	0.1427	-0.2253	0.0207
615	SLD 13	-5.25	0.94	57.45	0.1943	-0.224	0.0372
615	SLD 14	-5.25	0.61	57.58	0.1952	-0.2243	0.0405
615	SLD 15	-5.53	-0.73	58.07	0.1479	-0.2267	0.0319
615	SLD 16	-5.54	-1.06	58.2	0.1488	-0.227	0.0352
615	SLV 1	11.08	0.36	70.45	0.454	-0.1991	0.0012
615	SLV 2	11.08	-0.4	70.76	0.4562	-0.1998	0.009
615	SLV 3	10.42	-3.41	71.88	0.349	-0.2053	-0.0109
615	SLV 4	10.42	-4.17	72.19	0.3511	-0.2059	-0.003
615	SLV 5	3.93	5.22	62.22	0.4633	-0.2033	0.0348
615	SLV 6	3.93	5.03	62.42	0.4646	-0.2037	0.0399
615	SLV 7	1.74	-7.04	66.98	0.1132	-0.2239	-0.0053
615	SLV 8	1.73	-7.53	67.18	0.1146	-0.2243	-0.0002
615	SLV 9	-2.85	6.3	56.55	0.3659	-0.213	0.0504
615	SLV 10	-2.86	5.81	56.75	0.3672	-0.2134	0.0555
615	SLV 11	-5.05	-6.26	61.31	0.0158	-0.2336	0.0103
615	SLV 12	-5.05	-6.75	61.51	0.0172	-0.234	0.0154
615	SLV 13	-11.54	2.94	51.54	0.1293	-0.2313	0.0532
615	SLV 14	-11.54	2.18	51.85	0.1314	-0.232	0.0611
615	SLV 15	-12.2	-0.82	52.97	0.0243	-0.2375	0.0412
615	SLV 16	-12.2	-1.58	53.28	0.0264	-0.2382	0.0491
615	CRTFP Ux+	0	0	0	0	0	0
615	CRTFP Ux-	0	0	0	0	0	0
615	CRTFP Uy+	0	0	0	0	0	0
615	CRTFP Uy-	0	0	0	0	0	0
616	SLU 1	-0.51	-0.48	59.06	-0.0247	-0.0074	0.0354
616	SLU 2	-0.51	-0.55	59.1	-0.0284	-0.0073	0.0359
616	SLU 3	-0.52	-0.47	60.47	-0.0245	-0.0076	0.0364
616	SLU 4	-0.53	-0.52	60.49	-0.0267	-0.0075	0.0366
616	SLU 5	-0.52	-0.56	59.97	-0.0296	-0.0074	0.0364
616	SLU 6	-0.53	-0.48	61.33	-0.0257	-0.0077	0.0369
616	SLU 7	-0.53	-0.53	61.36	-0.0279	-0.0076	0.0371
616	SLU 8	-0.53	-0.49	60.79	-0.027	-0.0075	0.0364
616	SLU 9	-0.53	-0.54	60.82	-0.0292	-0.0075	0.0367
616	SLU 10	-0.51	-0.53	66.72	-0.0062	-0.0096	0.039
616	SLU 11	-0.53	-0.45	68.09	-0.0023	-0.0099	0.0395
616	SLU 12	-0.53	-0.49	68.11	-0.0045	-0.0099	0.0398
616	SLU 13	-0.52	-0.54	67.59	-0.0073	-0.0097	0.0395
616	SLU 14	-0.54	-0.46	68.96	-0.0034	-0.01	0.04
616	SLU 15	-0.54	-0.5	68.98	-0.0057	-0.0099	0.0403
616	SLU 16	-0.53	-0.47	68.42	-0.0048	-0.0099	0.0396
616	SLU 17	-0.53	-0.51	68.44	-0.007	-0.0098	0.0398
616	SLU 18	-0.51	-0.44	69.95	0.0071	-0.0107	0.0399
616	SLU 19	-0.52	-0.49	69.98	0.0048	-0.0107	0.0402
616	SLU 20	-0.52	-0.45	70.82	0.0059	-0.0108	0.0404
616	SLU 21	-0.52	-0.5	70.84	0.0037	-0.0107	0.0407
616	SLU 22	-0.55	-0.41	66.32	0.0147	-0.0088	0.0397
616	SLU 23	-0.55	-0.49	66.36	0.0109	-0.0087	0.0402
616	SLU 24	-0.57	-0.41	67.73	0.0149	-0.009	0.0407
616	SLU 25	-0.57	-0.45	67.75	0.0126	-0.0089	0.0409
616	SLU 26	-0.56	-0.49	67.23	0.0098	-0.0087	0.0407
616	SLU 27	-0.58	-0.41	68.59	0.0137	-0.009	0.0412
616	SLU 28	-0.58	-0.46	68.62	0.0115	-0.009	0.0414
616	SLU 29	-0.57	-0.43	68.05	0.0124	-0.0089	0.0407
616	SLU 30	-0.57	-0.47	68.08	0.0101	-0.0088	0.041
616	SLU 31	-0.56	-0.46	73.98	0.0332	-0.011	0.0433
616	SLU 32	-0.57	-0.38	75.35	0.0371	-0.0113	0.0438
616	SLU 33	-0.57	-0.43	75.37	0.0349	-0.0112	0.0441
616	SLU 34	-0.57	-0.47	74.85	0.032	-0.0111	0.0438
616	SLU 35	-0.58	-0.39	76.21	0.036	-0.0114	0.0443
616	SLU 36	-0.58	-0.44	76.24	0.0337	-0.0113	0.0446
616	SLU 37	-0.57	-0.4	75.67	0.0346	-0.0112	0.0439
616	SLU 38	-0.57	-0.45	75.7	0.0324	-0.0112	0.0441
616	SLU 39	-0.56	-0.38	77.21	0.0465	-0.0121	0.0442
616	SLU 40	-0.56	-0.42	77.23	0.0442	-0.012	0.0445
616	SLU 41	-0.56	-0.39	78.07	0.0453	-0.0121	0.0447
616	SLU 42	-0.57	-0.43	78.1	0.0431	-0.0121	0.045
616	SLU 43	-0.65	-0.64	74.29	-0.0456	-0.0091	0.0446
616	SLU 44	-0.65	-0.72	74.33	-0.0494	-0.009	0.045
616	SLU 45	-0.66	-0.64	75.7	-0.0454	-0.0093	0.0455
616	SLU 46	-0.67	-0.68	75.72	-0.0477	-0.0093	0.0458



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
616	SLU 47	-0.66	-0.73	75.2	-0.0505	-0.0091	0.0455
616	SLU 48	-0.67	-0.65	76.57	-0.0466	-0.0094	0.046
616	SLU 49	-0.67	-0.69	76.59	-0.0488	-0.0094	0.0463
616	SLU 50	-0.67	-0.66	76.03	-0.0479	-0.0093	0.0456
616	SLU 51	-0.67	-0.7	76.05	-0.0502	-0.0092	0.0458
616	SLU 52	-0.65	-0.7	81.96	-0.0271	-0.0114	0.0482
616	SLU 53	-0.67	-0.62	83.32	-0.0232	-0.0117	0.0487
616	SLU 54	-0.67	-0.66	83.35	-0.0254	-0.0116	0.0489
616	SLU 55	-0.66	-0.7	82.82	-0.0283	-0.0114	0.0487
616	SLU 56	-0.68	-0.62	84.19	-0.0243	-0.0117	0.0492
616	SLU 57	-0.68	-0.67	84.21	-0.0266	-0.0117	0.0494
616	SLU 58	-0.67	-0.64	83.65	-0.0257	-0.0116	0.0487
616	SLU 59	-0.67	-0.68	83.67	-0.0279	-0.0115	0.049
616	SLU 60	-0.65	-0.61	85.18	-0.0138	-0.0125	0.0491
616	SLU 61	-0.65	-0.66	85.21	-0.0161	-0.0124	0.0494
616	SLU 62	-0.66	-0.62	86.05	-0.015	-0.0125	0.0496
616	SLU 63	-0.66	-0.66	86.07	-0.0172	-0.0125	0.0498
616	SLU 64	-0.69	-0.58	81.55	-0.0062	-0.0105	0.0489
616	SLU 65	-0.69	-0.65	81.59	-0.01	-0.0104	0.0493
616	SLU 66	-0.71	-0.57	82.96	-0.006	-0.0107	0.0498
616	SLU 67	-0.71	-0.62	82.98	-0.0083	-0.0107	0.0501
616	SLU 68	-0.7	-0.66	82.46	-0.0111	-0.0105	0.0498
616	SLU 69	-0.71	-0.58	83.82	-0.0072	-0.0108	0.0503
616	SLU 70	-0.72	-0.62	83.85	-0.0094	-0.0107	0.0506
616	SLU 71	-0.71	-0.59	83.28	-0.0085	-0.0106	0.0499
616	SLU 72	-0.71	-0.64	83.31	-0.0108	-0.0106	0.0501
616	SLU 73	-0.7	-0.63	89.21	0.0123	-0.0127	0.0525
616	SLU 74	-0.71	-0.55	90.58	0.0162	-0.013	0.053
616	SLU 75	-0.71	-0.59	90.6	0.014	-0.013	0.0533
616	SLU 76	-0.7	-0.64	90.08	0.0111	-0.0128	0.053
616	SLU 77	-0.72	-0.56	91.44	0.0151	-0.0131	0.0535
616	SLU 78	-0.72	-0.6	91.47	0.0128	-0.0131	0.0538
616	SLU 79	-0.71	-0.57	90.9	0.0137	-0.013	0.053
616	SLU 80	-0.71	-0.61	90.93	0.0115	-0.0129	0.0533
616	SLU 81	-0.69	-0.54	92.44	0.0255	-0.0138	0.0534
616	SLU 82	-0.7	-0.59	92.46	0.0233	-0.0138	0.0537
616	SLU 83	-0.7	-0.55	93.31	0.0244	-0.0139	0.0539
616	SLU 84	-0.7	-0.6	93.33	0.0221	-0.0138	0.0542
616	SLE RA 1	-0.52	-0.46	61.14	-0.0134	-0.0078	0.0367
616	SLE RA 2	-0.52	-0.51	61.16	-0.0159	-0.0077	0.0369
616	SLE RA 3	-0.53	-0.46	62.07	-0.0133	-0.0079	0.0373
616	SLE RA 4	-0.53	-0.49	62.09	-0.0148	-0.0079	0.0375
616	SLE RA 5	-0.53	-0.51	61.74	-0.0167	-0.0078	0.0373
616	SLE RA 6	-0.54	-0.46	62.65	-0.0141	-0.008	0.0376
616	SLE RA 7	-0.54	-0.49	62.67	-0.0156	-0.0079	0.0378
616	SLE RA 8	-0.54	-0.47	62.29	-0.015	-0.0079	0.0373
616	SLE RA 9	-0.54	-0.5	62.31	-0.0165	-0.0078	0.0375
616	SLE RA 10	-0.53	-0.49	66.24	-0.0011	-0.0093	0.0391
616	SLE RA 11	-0.53	-0.44	67.16	0.0015	-0.0095	0.0394
616	SLE RA 12	-0.53	-0.47	67.17	0	-0.0094	0.0396
616	SLE RA 13	-0.53	-0.5	66.82	-0.0019	-0.0093	0.0394
616	SLE RA 14	-0.54	-0.45	67.73	0.0007	-0.0095	0.0397
616	SLE RA 15	-0.54	-0.48	67.75	-0.0008	-0.0095	0.0399
616	SLE RA 16	-0.54	-0.45	67.37	-0.0002	-0.0094	0.0394
616	SLE RA 17	-0.54	-0.48	67.39	-0.0017	-0.0094	0.0396
616	SLE RA 18	-0.53	-0.44	68.4	0.0077	-0.01	0.0397
616	SLE RA 19	-0.53	-0.47	68.41	0.0062	-0.01	0.0398
616	SLE RA 20	-0.53	-0.44	68.97	0.007	-0.01	0.04
616	SLE RA 21	-0.53	-0.47	68.99	0.0055	-0.01	0.0402
616	SLE FR 1	-0.52	-0.46	61.14	-0.0134	-0.0078	0.0367
616	SLE FR 2	-0.52	-0.47	61.14	-0.0139	-0.0078	0.0367
616	SLE FR 3	-0.53	-0.46	61.37	-0.0138	-0.0078	0.0368
616	SLE FR 4	-0.52	-0.46	63.32	-0.0076	-0.0084	0.0376
616	SLE FR 5	-0.53	-0.45	63.55	-0.0074	-0.0085	0.0377
616	SLE FR 6	-0.52	-0.45	64.77	-0.0029	-0.0089	0.0382
616	SLE QP 1	-0.52	-0.46	61.14	-0.0134	-0.0078	0.0367
616	SLE QP 2	-0.52	-0.45	63.31	-0.0071	-0.0084	0.0376
616	SLD 1	4.54	0.06	66.31	0.1077	0.0172	0.0516
616	SLD 2	4.54	-0.26	66.44	0.1055	0.0175	0.0555
616	SLD 3	4.26	-1.64	66.92	0.0528	0.0192	0.0528
616	SLD 4	4.26	-1.95	67.05	0.0505	0.0194	0.0568
616	SLD 5	1.43	2.32	63.26	0.111	-0.0038	0.0391
616	SLD 6	1.43	2.12	63.34	0.1096	-0.0036	0.0417
616	SLD 7	0.47	-3.32	65.31	-0.072	0.0028	0.0433
616	SLD 8	0.47	-3.52	65.39	-0.0735	0.003	0.0459
616	SLD 9	-1.52	2.62	61.24	0.0593	-0.0199	0.0292
616	SLD 10	-1.52	2.41	61.32	0.0578	-0.0197	0.0318
616	SLD 11	-2.48	-3.02	63.29	-0.1237	-0.0133	0.0334
616	SLD 12	-2.48	-3.22	63.37	-0.1252	-0.0131	0.036
616	SLD 13	-5.3	1.04	59.58	-0.0647	-0.0363	0.0183
616	SLD 14	-5.3	0.73	59.71	-0.067	-0.0361	0.0223
616	SLD 15	-5.59	-0.65	60.19	-0.1197	-0.0343	0.0196
616	SLD 16	-5.59	-0.96	60.32	-0.1219	-0.0341	0.0235
616	SLV 1	11.33	0.67	70.34	0.2614	0.0516	0.0704
616	SLV 2	11.33	-0.05	70.64	0.2561	0.0522	0.0796
616	SLV 3	10.66	-3.16	71.75	0.1369	0.0562	0.0734
616	SLV 4	10.66	-3.88	72.05	0.1316	0.0568	0.0826
616	SLV 5	4.05	5.81	63.24	0.2631	0.0025	0.0414
616	SLV 6	4.05	5.35	63.43	0.2597	0.0029	0.0473
616	SLV 7	1.82	-6.94	67.93	-0.1518	0.0178	0.0512



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
616	SLV 8	1.81	-7.41	68.12	-0.1552	0.0182	0.0571
616	SLV 9	-2.86	6.51	58.51	0.141	-0.0351	0.018
616	SLV 10	-2.86	6.04	58.7	0.1376	-0.0347	0.0239
616	SLV 11	-5.1	-6.25	63.2	-0.2739	-0.0198	0.0278
616	SLV 12	-5.1	-6.72	63.39	-0.2773	-0.0194	0.0338
616	SLV 13	-11.71	2.98	54.58	-0.1458	-0.0737	-0.0075
616	SLV 14	-11.71	2.25	54.88	-0.1511	-0.0731	0.0017
616	SLV 15	-12.38	-0.85	55.99	-0.2703	-0.0691	-0.0045
616	SLV 16	-12.38	-1.57	56.29	-0.2756	-0.0685	0.0047
616	CRTFP Ux+	0	0	0	0	0	0
616	CRTFP Ux-	0	0	0	0	0	0
616	CRTFP Uy+	0	0	0	0	0	0
616	CRTFP Uy-	0	0	0	0	0	0
617	SLU 1	-0.47	-0.27	59.2	-0.0445	-0.001	0.0418
617	SLU 2	-0.47	-0.34	59.24	-0.0489	-0.0008	0.0422
617	SLU 3	-0.48	-0.26	60.61	-0.045	-0.001	0.043
617	SLU 4	-0.48	-0.3	60.63	-0.0477	-0.0009	0.0432
617	SLU 5	-0.48	-0.34	60.1	-0.0503	-0.0008	0.0428
617	SLU 6	-0.49	-0.26	61.48	-0.0464	-0.001	0.0436
617	SLU 7	-0.49	-0.3	61.5	-0.0491	-0.0009	0.0438
617	SLU 8	-0.49	-0.28	60.93	-0.0473	-0.0009	0.0431
617	SLU 9	-0.49	-0.32	60.95	-0.0499	-0.0008	0.0433
617	SLU 10	-0.47	-0.3	66.92	-0.0312	-0.0023	0.0459
617	SLU 11	-0.48	-0.22	68.29	-0.0273	-0.0024	0.0466
617	SLU 12	-0.48	-0.26	68.31	-0.03	-0.0024	0.0469
617	SLU 13	-0.48	-0.3	67.78	-0.0326	-0.0022	0.0465
617	SLU 14	-0.49	-0.22	69.16	-0.0287	-0.0024	0.0472
617	SLU 15	-0.49	-0.26	69.18	-0.0314	-0.0023	0.0475
617	SLU 16	-0.49	-0.23	68.61	-0.0296	-0.0023	0.0467
617	SLU 17	-0.49	-0.28	68.64	-0.0323	-0.0023	0.0469
617	SLU 18	-0.47	-0.21	70.17	-0.0192	-0.003	0.0471
617	SLU 19	-0.47	-0.25	70.2	-0.0219	-0.0029	0.0473
617	SLU 20	-0.48	-0.21	71.04	-0.0206	-0.003	0.0477
617	SLU 21	-0.48	-0.26	71.06	-0.0233	-0.0029	0.0479
617	SLU 22	-0.51	-0.18	66.49	-0.0075	-0.0015	0.0469
617	SLU 23	-0.51	-0.25	66.52	-0.0119	-0.0014	0.0473
617	SLU 24	-0.52	-0.17	67.9	-0.008	-0.0015	0.048
617	SLU 25	-0.52	-0.21	67.92	-0.0107	-0.0014	0.0482
617	SLU 26	-0.52	-0.25	67.39	-0.0133	-0.0013	0.0479
617	SLU 27	-0.53	-0.17	68.76	-0.0094	-0.0015	0.0486
617	SLU 28	-0.53	-0.21	68.78	-0.0121	-0.0014	0.0489
617	SLU 29	-0.53	-0.18	68.22	-0.0103	-0.0014	0.0481
617	SLU 30	-0.53	-0.23	68.24	-0.0129	-0.0014	0.0483
617	SLU 31	-0.51	-0.21	74.21	0.0058	-0.0028	0.0509
617	SLU 32	-0.52	-0.12	75.58	0.0097	-0.0029	0.0517
617	SLU 33	-0.52	-0.17	75.6	0.007	-0.0029	0.0519
617	SLU 34	-0.52	-0.21	75.07	0.0044	-0.0028	0.0515
617	SLU 35	-0.53	-0.13	76.45	0.0083	-0.0029	0.0523
617	SLU 36	-0.53	-0.17	76.47	0.0056	-0.0028	0.0525
617	SLU 37	-0.52	-0.14	75.9	0.0074	-0.0029	0.0518
617	SLU 38	-0.53	-0.19	75.92	0.0047	-0.0028	0.052
617	SLU 39	-0.51	-0.12	77.46	0.0178	-0.0035	0.0521
617	SLU 40	-0.51	-0.16	77.48	0.0151	-0.0035	0.0523
617	SLU 41	-0.52	-0.12	78.33	0.0164	-0.0035	0.0527
617	SLU 42	-0.52	-0.16	78.35	0.0137	-0.0034	0.0529
617	SLU 43	-0.6	-0.38	74.46	-0.0705	-0.0011	0.0527
617	SLU 44	-0.6	-0.45	74.5	-0.0749	-0.001	0.053
617	SLU 45	-0.61	-0.37	75.87	-0.071	-0.0011	0.0538
617	SLU 46	-0.61	-0.41	75.89	-0.0737	-0.001	0.054
617	SLU 47	-0.61	-0.45	75.36	-0.0763	-0.0009	0.0537
617	SLU 48	-0.62	-0.37	76.74	-0.0724	-0.0011	0.0544
617	SLU 49	-0.62	-0.42	76.76	-0.0751	-0.001	0.0546
617	SLU 50	-0.62	-0.39	76.19	-0.0733	-0.001	0.0539
617	SLU 51	-0.62	-0.43	76.21	-0.076	-0.001	0.0541
617	SLU 52	-0.6	-0.41	82.18	-0.0573	-0.0024	0.0567
617	SLU 53	-0.61	-0.33	83.55	-0.0534	-0.0025	0.0575
617	SLU 54	-0.61	-0.37	83.57	-0.056	-0.0025	0.0577
617	SLU 55	-0.61	-0.41	83.04	-0.0587	-0.0024	0.0573
617	SLU 56	-0.62	-0.33	84.42	-0.0548	-0.0025	0.0581
617	SLU 57	-0.62	-0.37	84.44	-0.0574	-0.0024	0.0583
617	SLU 58	-0.62	-0.35	83.88	-0.0556	-0.0025	0.0575
617	SLU 59	-0.62	-0.39	83.9	-0.0583	-0.0024	0.0578
617	SLU 60	-0.6	-0.32	85.43	-0.0453	-0.0031	0.0579
617	SLU 61	-0.6	-0.36	85.46	-0.0479	-0.003	0.0581
617	SLU 62	-0.61	-0.32	86.3	-0.0467	-0.0031	0.0585
617	SLU 63	-0.61	-0.37	86.32	-0.0493	-0.003	0.0587
617	SLU 64	-0.64	-0.29	81.75	-0.0335	-0.0016	0.0577
617	SLU 65	-0.64	-0.36	81.78	-0.0379	-0.0015	0.0581
617	SLU 66	-0.65	-0.28	83.16	-0.0341	-0.0016	0.0588
617	SLU 67	-0.65	-0.32	83.18	-0.0367	-0.0016	0.0591
617	SLU 68	-0.65	-0.36	82.65	-0.0393	-0.0014	0.0587
617	SLU 69	-0.66	-0.28	84.02	-0.0355	-0.0016	0.0594
617	SLU 70	-0.66	-0.32	84.05	-0.0381	-0.0015	0.0597
617	SLU 71	-0.65	-0.3	83.48	-0.0363	-0.0015	0.0589
617	SLU 72	-0.65	-0.34	83.5	-0.039	-0.0015	0.0591
617	SLU 73	-0.64	-0.32	89.47	-0.0203	-0.0029	0.0618
617	SLU 74	-0.65	-0.24	90.84	-0.0164	-0.0031	0.0625
617	SLU 75	-0.65	-0.28	90.86	-0.019	-0.003	0.0627
617	SLU 76	-0.65	-0.32	90.33	-0.0217	-0.0029	0.0624
617	SLU 77	-0.66	-0.24	91.71	-0.0178	-0.003	0.0631





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
617	SLU 78	-0.66	-0.28	91.73	-0.0204	-0.003	0.0633
617	SLU 79	-0.65	-0.25	91.16	-0.0186	-0.003	0.0626
617	SLU 80	-0.65	-0.3	91.18	-0.0213	-0.0029	0.0628
617	SLU 81	-0.64	-0.23	92.72	-0.0083	-0.0036	0.0629
617	SLU 82	-0.64	-0.27	92.74	-0.0109	-0.0036	0.0632
617	SLU 83	-0.64	-0.23	93.59	-0.0097	-0.0036	0.0635
617	SLU 84	-0.64	-0.28	93.61	-0.0123	-0.0035	0.0638
617	SLE RA 1	-0.48	-0.24	61.28	-0.0339	-0.0011	0.0433
617	SLE RA 2	-0.48	-0.29	61.31	-0.0369	-0.001	0.0435
617	SLE RA 3	-0.49	-0.23	62.22	-0.0343	-0.0011	0.044
617	SLE RA 4	-0.49	-0.26	62.24	-0.036	-0.0011	0.0442
617	SLE RA 5	-0.49	-0.29	61.88	-0.0378	-0.001	0.0439
617	SLE RA 6	-0.49	-0.24	62.8	-0.0352	-0.0011	0.0444
617	SLE RA 7	-0.5	-0.27	62.81	-0.037	-0.0011	0.0446
617	SLE RA 8	-0.49	-0.25	62.44	-0.0358	-0.0011	0.0441
617	SLE RA 9	-0.49	-0.28	62.45	-0.0375	-0.001	0.0442
617	SLE RA 10	-0.48	-0.26	66.43	-0.0251	-0.002	0.046
617	SLE RA 11	-0.49	-0.21	67.34	-0.0225	-0.0021	0.0465
617	SLE RA 12	-0.49	-0.24	67.36	-0.0243	-0.002	0.0466
617	SLE RA 13	-0.49	-0.26	67	-0.026	-0.002	0.0464
617	SLE RA 14	-0.49	-0.21	67.92	-0.0234	-0.0021	0.0469
617	SLE RA 15	-0.49	-0.24	67.93	-0.0252	-0.002	0.047
617	SLE RA 16	-0.49	-0.22	67.56	-0.024	-0.002	0.0465
617	SLE RA 17	-0.49	-0.25	67.57	-0.0258	-0.002	0.0467
617	SLE RA 18	-0.48	-0.2	68.6	-0.0171	-0.0025	0.0468
617	SLE RA 19	-0.48	-0.23	68.61	-0.0188	-0.0024	0.0469
617	SLE RA 20	-0.49	-0.2	69.18	-0.018	-0.0025	0.0472
617	SLE RA 21	-0.49	-0.23	69.19	-0.0198	-0.0024	0.0473
617	SLE FR 1	-0.48	-0.24	61.28	-0.0339	-0.0011	0.0433
617	SLE FR 2	-0.48	-0.25	61.29	-0.0345	-0.0011	0.0433
617	SLE FR 3	-0.48	-0.24	61.51	-0.0343	-0.0011	0.0434
617	SLE FR 4	-0.48	-0.24	63.48	-0.0295	-0.0015	0.0444
617	SLE FR 5	-0.48	-0.23	63.71	-0.0292	-0.0015	0.0445
617	SLE FR 6	-0.48	-0.22	64.94	-0.0255	-0.0018	0.045
617	SLE QP 1	-0.48	-0.24	61.28	-0.0339	-0.0011	0.0433
617	SLE QP 2	-0.48	-0.23	63.48	-0.0289	-0.0015	0.0443
617	SLD 1	4.59	0.34	65.6	0.1097	0.0273	0.0616
617	SLD 2	4.59	0.05	65.72	0.1051	0.0277	0.065
617	SLD 3	4.3	-1.35	66.17	0.0487	0.0298	0.0603
617	SLD 4	4.3	-1.64	66.29	0.0441	0.0302	0.0638
617	SLD 5	1.47	2.56	63.24	0.1061	0.0033	0.0508
617	SLD 6	1.47	2.37	63.31	0.103	0.0035	0.0531
617	SLD 7	0.52	-3.07	65.12	-0.0973	0.0116	0.0466
617	SLD 8	0.52	-3.27	65.2	-0.1003	0.0118	0.0488
617	SLD 9	-1.48	2.81	61.76	0.0426	-0.0149	0.0398
617	SLD 10	-1.48	2.62	61.83	0.0396	-0.0146	0.0421
617	SLD 11	-2.44	-2.82	63.64	-0.1608	-0.0066	0.0356
617	SLD 12	-2.44	-3.01	63.72	-0.1638	-0.0063	0.0378
617	SLD 13	-5.26	1.18	60.67	-0.1018	-0.0332	0.0249
617	SLD 14	-5.26	0.89	60.79	-0.1065	-0.0329	0.0284
617	SLD 15	-5.55	-0.51	61.23	-0.1628	-0.0307	0.0236
617	SLD 16	-5.55	-0.8	61.35	-0.1675	-0.0304	0.0271
617	SLV 1	11.37	1.05	68.47	0.295	0.0661	0.0847
617	SLV 2	11.37	0.37	68.74	0.2842	0.0669	0.0928
617	SLV 3	10.7	-2.78	69.76	0.1568	0.0718	0.0817
617	SLV 4	10.7	-3.46	70.04	0.146	0.0726	0.0898
617	SLV 5	4.09	6.07	62.96	0.2799	0.01	0.0596
617	SLV 6	4.09	5.63	63.14	0.2729	0.0105	0.0648
617	SLV 7	1.86	-6.67	67.28	-0.181	0.029	0.0496
617	SLV 8	1.86	-7.11	67.46	-0.188	0.0295	0.0548
617	SLV 9	-2.82	6.65	59.49	0.1303	-0.0325	0.0338
617	SLV 10	-2.82	6.22	59.67	0.1233	-0.032	0.039
617	SLV 11	-5.05	-6.09	63.81	-0.3307	-0.0135	0.0238
617	SLV 12	-5.05	-6.53	63.99	-0.3376	-0.013	0.0291
617	SLV 13	-11.66	3	56.91	-0.2037	-0.0756	-0.0012
617	SLV 14	-11.66	2.32	57.19	-0.2145	-0.0748	0.0069
617	SLV 15	-12.33	-0.82	58.21	-0.342	-0.0699	-0.0042
617	SLV 16	-12.33	-1.5	58.49	-0.3528	-0.0691	0.0039
617	CRTFP Ux+	0	0	0	0	0	0
617	CRTFP Ux-	0	0	0	0	0	0
618	SLU 1	-0.43	-0.04	59.11	-0.0647	0.0064	0.0428
618	SLU 2	-0.43	-0.11	59.15	-0.0698	0.0066	0.0431
618	SLU 3	-0.44	-0.02	60.52	-0.066	0.0066	0.0439
618	SLU 4	-0.44	-0.06	60.54	-0.0691	0.0067	0.0441
618	SLU 5	-0.44	-0.11	60.01	-0.0715	0.0067	0.0437
618	SLU 6	-0.45	-0.02	61.39	-0.0677	0.0067	0.0446
618	SLU 7	-0.45	-0.06	61.4	-0.0707	0.0068	0.0448
618	SLU 8	-0.45	-0.04	60.84	-0.068	0.0067	0.044
618	SLU 9	-0.45	-0.08	60.86	-0.0711	0.0068	0.0442
618	SLU 10	-0.43	-0.05	66.85	-0.0567	0.0063	0.0468
618	SLU 11	-0.44	0.04	68.23	-0.0529	0.0063	0.0477
618	SLU 12	-0.44	0	68.25	-0.056	0.0064	0.0478
618	SLU 13	-0.44	-0.05	67.72	-0.0584	0.0064	0.0474
618	SLU 14	-0.45	0.04	69.09	-0.0546	0.0065	0.0483
618	SLU 15	-0.45	0	69.11	-0.0576	0.0065	0.0485
618	SLU 16	-0.44	0.02	68.55	-0.055	0.0064	0.0477
618	SLU 17	-0.44	-0.02	68.57	-0.058	0.0065	0.0479
618	SLU 18	-0.43	0.05	70.13	-0.0461	0.006	0.0481
618	SLU 19	-0.43	0.01	70.15	-0.0491	0.0061	0.0483
618	SLU 20	-0.44	0.05	70.99	-0.0477	0.0062	0.0487



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
618	SLU 21	-0.44	0.01	71.01	-0.0508	0.0063	0.0489
618	SLU 22	-0.47	0.08	66.4	-0.0301	0.007	0.048
618	SLU 23	-0.47	0.01	66.43	-0.0352	0.0072	0.0483
618	SLU 24	-0.48	0.1	67.81	-0.0314	0.0072	0.0492
618	SLU 25	-0.48	0.06	67.83	-0.0345	0.0073	0.0494
618	SLU 26	-0.47	0.01	67.3	-0.0369	0.0073	0.049
618	SLU 27	-0.48	0.1	68.67	-0.0331	0.0073	0.0498
618	SLU 28	-0.48	0.06	68.69	-0.0361	0.0074	0.05
618	SLU 29	-0.48	0.08	68.13	-0.0334	0.0073	0.0493
618	SLU 30	-0.48	0.04	68.15	-0.0365	0.0074	0.0495
618	SLU 31	-0.46	0.07	74.14	-0.0221	0.0069	0.052
618	SLU 32	-0.47	0.16	75.52	-0.0183	0.0069	0.0529
618	SLU 33	-0.47	0.12	75.54	-0.0214	0.007	0.0531
618	SLU 34	-0.47	0.07	75.01	-0.0238	0.007	0.0527
618	SLU 35	-0.48	0.16	76.38	-0.02	0.007	0.0535
618	SLU 36	-0.48	0.12	76.4	-0.023	0.0071	0.0537
618	SLU 37	-0.48	0.14	75.84	-0.0204	0.007	0.053
618	SLU 38	-0.48	0.1	75.86	-0.0234	0.0071	0.0532
618	SLU 39	-0.46	0.17	77.41	-0.0114	0.0066	0.0533
618	SLU 40	-0.46	0.13	77.43	-0.0145	0.0067	0.0535
618	SLU 41	-0.47	0.17	78.28	-0.0131	0.0068	0.0539
618	SLU 42	-0.47	0.13	78.3	-0.0162	0.0068	0.0541
618	SLU 43	-0.55	-0.09	74.35	-0.096	0.0082	0.0538
618	SLU 44	-0.55	-0.16	74.38	-0.1011	0.0083	0.0541
618	SLU 45	-0.56	-0.07	75.76	-0.0973	0.0083	0.055
618	SLU 46	-0.56	-0.11	75.78	-0.1003	0.0084	0.0552
618	SLU 47	-0.56	-0.16	75.25	-0.1027	0.0084	0.0548
618	SLU 48	-0.57	-0.07	76.62	-0.0989	0.0085	0.0556
618	SLU 49	-0.57	-0.12	76.64	-0.102	0.0085	0.0558
618	SLU 50	-0.56	-0.09	76.08	-0.0993	0.0084	0.0551
618	SLU 51	-0.56	-0.13	76.1	-0.1024	0.0085	0.0553
618	SLU 52	-0.55	-0.1	82.09	-0.088	0.008	0.0578
618	SLU 53	-0.56	-0.01	83.47	-0.0842	0.0081	0.0587
618	SLU 54	-0.56	-0.05	83.49	-0.0873	0.0081	0.0589
618	SLU 55	-0.55	-0.1	82.95	-0.0897	0.0082	0.0585
618	SLU 56	-0.56	-0.01	84.33	-0.0859	0.0082	0.0593
618	SLU 57	-0.56	-0.05	84.35	-0.0889	0.0083	0.0595
618	SLU 58	-0.56	-0.03	83.79	-0.0862	0.0081	0.0588
618	SLU 59	-0.56	-0.07	83.81	-0.0893	0.0082	0.059
618	SLU 60	-0.54	0	85.36	-0.0773	0.0078	0.0591
618	SLU 61	-0.55	-0.04	85.38	-0.0804	0.0079	0.0593
618	SLU 62	-0.55	0	86.23	-0.079	0.0079	0.0597
618	SLU 63	-0.55	-0.04	86.25	-0.082	0.008	0.0599
618	SLU 64	-0.58	0.03	81.64	-0.0614	0.0088	0.059
618	SLU 65	-0.58	-0.04	81.67	-0.0665	0.0089	0.0594
618	SLU 66	-0.59	0.05	83.04	-0.0627	0.0089	0.0602
618	SLU 67	-0.59	0	83.06	-0.0657	0.009	0.0604
618	SLU 68	-0.59	-0.04	82.53	-0.0681	0.009	0.06
618	SLU 69	-0.6	0.05	83.91	-0.0643	0.0091	0.0608
618	SLU 70	-0.6	0	83.93	-0.0674	0.0091	0.061
618	SLU 71	-0.6	0.03	83.36	-0.0647	0.009	0.0603
618	SLU 72	-0.6	-0.01	83.38	-0.0678	0.0091	0.0605
618	SLU 73	-0.58	0.02	89.38	-0.0534	0.0086	0.0631
618	SLU 74	-0.59	0.11	90.75	-0.0496	0.0087	0.0639
618	SLU 75	-0.59	0.07	90.77	-0.0527	0.0087	0.0641
618	SLU 76	-0.59	0.02	90.24	-0.0551	0.0087	0.0637
618	SLU 77	-0.6	0.11	91.62	-0.0513	0.0088	0.0646
618	SLU 78	-0.6	0.06	91.64	-0.0543	0.0089	0.0647
618	SLU 79	-0.6	0.09	91.07	-0.0516	0.0087	0.064
618	SLU 80	-0.6	0.05	91.09	-0.0547	0.0088	0.0642
618	SLU 81	-0.58	0.12	92.65	-0.0427	0.0084	0.0643
618	SLU 82	-0.58	0.08	92.67	-0.0458	0.0084	0.0645
618	SLU 83	-0.59	0.12	93.51	-0.0444	0.0085	0.065
618	SLU 84	-0.59	0.07	93.53	-0.0474	0.0086	0.0652
618	SLE RA 1	-0.44	0	61.2	-0.0548	0.0066	0.0443
618	SLE RA 2	-0.44	-0.05	61.22	-0.0582	0.0067	0.0445
618	SLE RA 3	-0.45	0.01	62.13	-0.0557	0.0067	0.045
618	SLE RA 4	-0.45	-0.02	62.15	-0.0577	0.0068	0.0452
618	SLE RA 5	-0.45	-0.05	61.79	-0.0593	0.0068	0.0449
618	SLE RA 6	-0.45	0.01	62.71	-0.0568	0.0068	0.0455
618	SLE RA 7	-0.45	-0.02	62.72	-0.0588	0.0069	0.0456
618	SLE RA 8	-0.45	0	62.35	-0.057	0.0068	0.0451
618	SLE RA 9	-0.45	-0.03	62.36	-0.0591	0.0068	0.0452
618	SLE RA 10	-0.44	-0.01	66.36	-0.0495	0.0065	0.0469
618	SLE RA 11	-0.45	0.05	67.27	-0.047	0.0065	0.0475
618	SLE RA 12	-0.45	0.02	67.29	-0.049	0.0066	0.0476
618	SLE RA 13	-0.45	-0.01	66.93	-0.0506	0.0066	0.0474
618	SLE RA 14	-0.45	0.05	67.85	-0.0481	0.0066	0.0479
618	SLE RA 15	-0.45	0.02	67.86	-0.0501	0.0067	0.0481
618	SLE RA 16	-0.45	0.04	67.49	-0.0483	0.0066	0.0476
618	SLE RA 17	-0.45	0.01	67.5	-0.0504	0.0066	0.0477
618	SLE RA 18	-0.44	0.06	68.54	-0.0424	0.0063	0.0478
618	SLE RA 19	-0.44	0.03	68.55	-0.0444	0.0064	0.0479
618	SLE RA 20	-0.44	0.05	69.11	-0.0435	0.0064	0.0482
618	SLE RA 21	-0.44	0.03	69.13	-0.0455	0.0065	0.0483
618	SLE FR 1	-0.44	0	61.2	-0.0548	0.0066	0.0443
618	SLE FR 2	-0.44	-0.01	61.2	-0.0555	0.0066	0.0443
618	SLE FR 3	-0.44	0	61.43	-0.0553	0.0066	0.0444
618	SLE FR 4	-0.44	0.01	63.4	-0.0518	0.0065	0.0454
618	SLE FR 5	-0.44	0.01	63.63	-0.0515	0.0066	0.0455



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
618	SLE FR 6	-0.44	0.03	64.87	-0.0486	0.0065	0.046
618	SLE QP 1	-0.44	0	61.2	-0.0548	0.0066	0.0443
618	SLE QP 2	-0.44	0.01	63.4	-0.0511	0.0065	0.0453
618	SLD 1	4.62	0.65	64.6	0.112	0.0363	0.0633
618	SLD 2	4.62	0.37	64.71	0.105	0.0367	0.0665
618	SLD 3	4.34	-1.04	65.11	0.0447	0.039	0.0616
618	SLD 4	4.34	-1.32	65.21	0.0377	0.0394	0.0648
618	SLD 5	1.51	2.82	62.98	0.1011	0.0113	0.0527
618	SLD 6	1.51	2.64	63.05	0.0965	0.0115	0.0548
618	SLD 7	0.56	-2.82	64.65	-0.1232	0.0203	0.0471
618	SLD 8	0.56	-3	64.72	-0.1278	0.0206	0.0492
618	SLD 9	-1.44	3.03	62.07	0.0256	-0.0075	0.0414
618	SLD 10	-1.44	2.85	62.14	0.021	-0.0073	0.0435
618	SLD 11	-2.39	-2.61	63.75	-0.1987	0.0015	0.0359
618	SLD 12	-2.39	-2.79	63.82	-0.2033	0.0018	0.038
618	SLD 13	-5.22	1.35	61.58	-0.1399	-0.0263	0.0258
618	SLD 14	-5.22	1.07	61.69	-0.1469	-0.0259	0.029
618	SLD 15	-5.5	-0.35	62.09	-0.2072	-0.0236	0.0242
618	SLD 16	-5.5	-0.62	62.19	-0.2142	-0.0232	0.0274
618	SLV 1	11.4	1.43	66.23	0.3299	0.0762	0.0873
618	SLV 2	11.4	0.8	66.48	0.3135	0.0771	0.0948
618	SLV 3	10.73	-2.39	67.39	0.1774	0.0824	0.0835
618	SLV 4	10.73	-3.03	67.63	0.161	0.0834	0.0909
618	SLV 5	4.13	6.36	62.46	0.2973	0.0178	0.0625
618	SLV 6	4.13	5.94	62.62	0.2867	0.0184	0.0673
618	SLV 7	1.9	-6.4	66.3	-0.211	0.0386	0.0496
618	SLV 8	1.9	-6.82	66.46	-0.2216	0.0392	0.0544
618	SLV 9	-2.78	6.85	60.33	0.1194	-0.0261	0.0362
618	SLV 10	-2.78	6.43	60.5	0.1088	-0.0255	0.041
618	SLV 11	-5.01	-5.91	64.18	-0.3889	-0.0054	0.0233
618	SLV 12	-5.01	-6.33	64.34	-0.3995	-0.0048	0.0281
618	SLV 13	-11.61	3.06	59.16	-0.2632	-0.0703	-0.0003
618	SLV 14	-11.61	2.42	59.41	-0.2796	-0.0694	0.0072
618	SLV 15	-12.28	-0.77	60.32	-0.4157	-0.0641	-0.0041
618	SLV 16	-12.28	-1.41	60.57	-0.4321	-0.0632	0.0033
618	CRTFP Ux+	0	0	0	0	0	0
618	CRTFP Ux-	0	0	0	0	0	0
619	SLU 1	-0.39	0.18	58.79	-0.0855	0.014	0.0382
619	SLU 2	-0.39	0.11	58.82	-0.0913	0.0141	0.0384
619	SLU 3	-0.4	0.21	60.19	-0.0876	0.0144	0.0393
619	SLU 4	-0.4	0.16	60.2	-0.091	0.0145	0.0394
619	SLU 5	-0.4	0.12	59.68	-0.0932	0.0144	0.039
619	SLU 6	-0.41	0.21	61.05	-0.0895	0.0146	0.0398
619	SLU 7	-0.41	0.17	61.06	-0.093	0.0147	0.04
619	SLU 8	-0.41	0.19	60.51	-0.0894	0.0144	0.0393
619	SLU 9	-0.41	0.15	60.52	-0.0928	0.0145	0.0395
619	SLU 10	-0.39	0.2	66.52	-0.0829	0.0151	0.0417
619	SLU 11	-0.4	0.29	67.89	-0.0792	0.0153	0.0425
619	SLU 12	-0.4	0.25	67.9	-0.0826	0.0154	0.0427
619	SLU 13	-0.4	0.2	67.37	-0.0848	0.0153	0.0423
619	SLU 14	-0.4	0.29	68.75	-0.0811	0.0155	0.0431
619	SLU 15	-0.4	0.25	68.76	-0.0846	0.0156	0.0433
619	SLU 16	-0.4	0.27	68.21	-0.081	0.0154	0.0426
619	SLU 17	-0.4	0.23	68.22	-0.0844	0.0155	0.0427
619	SLU 18	-0.39	0.3	69.79	-0.0735	0.0153	0.0429
619	SLU 19	-0.39	0.26	69.8	-0.077	0.0154	0.043
619	SLU 20	-0.39	0.3	70.65	-0.0754	0.0156	0.0434
619	SLU 21	-0.39	0.26	70.66	-0.0789	0.0156	0.0436
619	SLU 22	-0.42	0.33	66.04	-0.0533	0.0158	0.043
619	SLU 23	-0.42	0.26	66.07	-0.0591	0.0159	0.0433
619	SLU 24	-0.43	0.35	67.44	-0.0554	0.0162	0.0441
619	SLU 25	-0.43	0.31	67.45	-0.0589	0.0163	0.0443
619	SLU 26	-0.43	0.26	66.92	-0.061	0.0162	0.0439
619	SLU 27	-0.44	0.35	68.3	-0.0573	0.0164	0.0447
619	SLU 28	-0.44	0.31	68.31	-0.0608	0.0165	0.0448
619	SLU 29	-0.44	0.33	67.76	-0.0572	0.0162	0.0442
619	SLU 30	-0.44	0.29	67.77	-0.0607	0.0163	0.0443
619	SLU 31	-0.42	0.34	73.76	-0.0507	0.0169	0.0466
619	SLU 32	-0.43	0.43	75.14	-0.047	0.0171	0.0474
619	SLU 33	-0.43	0.39	75.15	-0.0504	0.0172	0.0476
619	SLU 34	-0.43	0.34	74.62	-0.0526	0.0171	0.0471
619	SLU 35	-0.44	0.44	75.99	-0.0489	0.0174	0.048
619	SLU 36	-0.44	0.39	76.01	-0.0524	0.0174	0.0481
619	SLU 37	-0.43	0.41	75.45	-0.0488	0.0172	0.0475
619	SLU 38	-0.43	0.37	75.47	-0.0523	0.0173	0.0476
619	SLU 39	-0.42	0.44	77.04	-0.0413	0.0171	0.0477
619	SLU 40	-0.42	0.4	77.05	-0.0448	0.0172	0.0479
619	SLU 41	-0.42	0.45	77.9	-0.0433	0.0174	0.0483
619	SLU 42	-0.43	0.41	77.91	-0.0467	0.0175	0.0484
619	SLU 43	-0.5	0.19	73.94	-0.1222	0.0176	0.0479
619	SLU 44	-0.5	0.12	73.97	-0.128	0.0177	0.0482
619	SLU 45	-0.51	0.21	75.34	-0.1243	0.0179	0.049
619	SLU 46	-0.51	0.17	75.36	-0.1277	0.018	0.0492
619	SLU 47	-0.51	0.12	74.83	-0.1299	0.0179	0.0488
619	SLU 48	-0.52	0.21	76.2	-0.1262	0.0182	0.0496
619	SLU 49	-0.52	0.17	76.21	-0.1297	0.0183	0.0498
619	SLU 50	-0.51	0.19	75.66	-0.1261	0.018	0.0491
619	SLU 51	-0.51	0.15	75.67	-0.1295	0.0181	0.0492
619	SLU 52	-0.5	0.2	81.67	-0.1196	0.0186	0.0515
619	SLU 53	-0.5	0.29	83.04	-0.1159	0.0189	0.0523



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
619	SLU 54	-0.5	0.25	83.05	-0.1193	0.019	0.0525
619	SLU 55	-0.5	0.2	82.53	-0.1215	0.0189	0.0521
619	SLU 56	-0.51	0.29	83.9	-0.1178	0.0191	0.0529
619	SLU 57	-0.51	0.25	83.91	-0.1213	0.0192	0.053
619	SLU 58	-0.51	0.27	83.36	-0.1177	0.019	0.0524
619	SLU 59	-0.51	0.23	83.37	-0.1211	0.019	0.0525
619	SLU 60	-0.49	0.3	84.94	-0.1102	0.0189	0.0526
619	SLU 61	-0.49	0.26	84.96	-0.1137	0.019	0.0528
619	SLU 62	-0.5	0.31	85.8	-0.1121	0.0191	0.0532
619	SLU 63	-0.5	0.26	85.81	-0.1156	0.0192	0.0534
619	SLU 64	-0.53	0.33	81.19	-0.09	0.0194	0.0528
619	SLU 65	-0.53	0.27	81.22	-0.0958	0.0195	0.0531
619	SLU 66	-0.54	0.36	82.59	-0.0921	0.0198	0.0539
619	SLU 67	-0.54	0.32	82.61	-0.0955	0.0198	0.0541
619	SLU 68	-0.54	0.27	82.08	-0.0977	0.0197	0.0536
619	SLU 69	-0.55	0.36	83.45	-0.094	0.02	0.0545
619	SLU 70	-0.55	0.32	83.46	-0.0975	0.0201	0.0546
619	SLU 71	-0.54	0.34	82.91	-0.0939	0.0198	0.0539
619	SLU 72	-0.54	0.3	82.92	-0.0973	0.0199	0.0541
619	SLU 73	-0.53	0.35	88.92	-0.0874	0.0205	0.0563
619	SLU 74	-0.54	0.44	90.29	-0.0837	0.0207	0.0572
619	SLU 75	-0.54	0.4	90.3	-0.0871	0.0208	0.0573
619	SLU 76	-0.53	0.35	89.77	-0.0893	0.0207	0.0569
619	SLU 77	-0.54	0.44	91.15	-0.0856	0.0209	0.0578
619	SLU 78	-0.54	0.4	91.16	-0.0891	0.021	0.0579
619	SLU 79	-0.54	0.42	90.61	-0.0855	0.0208	0.0572
619	SLU 80	-0.54	0.38	90.62	-0.0889	0.0209	0.0574
619	SLU 81	-0.52	0.45	92.19	-0.078	0.0207	0.0575
619	SLU 82	-0.52	0.41	92.2	-0.0815	0.0208	0.0577
619	SLU 83	-0.53	0.45	93.05	-0.0799	0.0209	0.0581
619	SLU 84	-0.53	0.41	93.06	-0.0834	0.021	0.0582
619	SLE RA 1	-0.4	0.23	60.86	-0.0763	0.0145	0.0396
619	SLE RA 2	-0.4	0.18	60.88	-0.0802	0.0146	0.0397
619	SLE RA 3	-0.41	0.24	61.79	-0.0777	0.0148	0.0403
619	SLE RA 4	-0.41	0.21	61.8	-0.08	0.0148	0.0404
619	SLE RA 5	-0.41	0.18	61.45	-0.0815	0.0147	0.0401
619	SLE RA 6	-0.41	0.24	62.37	-0.079	0.0149	0.0407
619	SLE RA 7	-0.41	0.21	62.38	-0.0813	0.015	0.0408
619	SLE RA 8	-0.41	0.23	62.01	-0.0789	0.0148	0.0403
619	SLE RA 9	-0.41	0.2	62.02	-0.0812	0.0149	0.0404
619	SLE RA 10	-0.4	0.23	66.01	-0.0746	0.0152	0.0419
619	SLE RA 11	-0.4	0.29	66.93	-0.0721	0.0154	0.0425
619	SLE RA 12	-0.41	0.27	66.94	-0.0744	0.0154	0.0426
619	SLE RA 13	-0.4	0.23	66.58	-0.0759	0.0154	0.0423
619	SLE RA 14	-0.41	0.3	67.5	-0.0734	0.0155	0.0429
619	SLE RA 15	-0.41	0.27	67.51	-0.0757	0.0156	0.043
619	SLE RA 16	-0.41	0.28	67.14	-0.0733	0.0154	0.0425
619	SLE RA 17	-0.41	0.25	67.15	-0.0756	0.0155	0.0426
619	SLE RA 18	-0.4	0.3	68.19	-0.0683	0.0154	0.0427
619	SLE RA 19	-0.4	0.27	68.2	-0.0706	0.0155	0.0428
619	SLE RA 20	-0.4	0.3	68.77	-0.0696	0.0156	0.0431
619	SLE RA 21	-0.4	0.28	68.78	-0.0719	0.0156	0.0432
619	SLE FR 1	-0.4	0.23	60.86	-0.0763	0.0145	0.0396
619	SLE FR 2	-0.4	0.22	60.86	-0.0771	0.0145	0.0396
619	SLE FR 3	-0.4	0.23	61.09	-0.0768	0.0146	0.0397
619	SLE FR 4	-0.4	0.24	63.06	-0.0747	0.0148	0.0405
619	SLE FR 5	-0.4	0.25	63.29	-0.0744	0.0148	0.0406
619	SLE FR 6	-0.4	0.26	64.53	-0.0723	0.0149	0.0411
619	SLE QP 1	-0.4	0.23	60.86	-0.0763	0.0145	0.0396
619	SLE QP 2	-0.4	0.25	63.06	-0.0739	0.0148	0.0405
619	SLD 1	4.65	0.93	63.42	0.1141	0.0432	0.058
619	SLD 2	4.65	0.67	63.51	0.1047	0.0437	0.0611
619	SLD 3	4.37	-0.77	63.86	0.0404	0.0459	0.0554
619	SLD 4	4.37	-1.03	63.95	0.031	0.0463	0.0586
619	SLD 5	1.55	3.08	62.49	0.096	0.0192	0.0491
619	SLD 6	1.55	2.91	62.55	0.0898	0.0195	0.0511
619	SLD 7	0.6	-2.59	63.95	-0.1498	0.028	0.0406
619	SLD 8	0.6	-2.76	64.01	-0.156	0.0283	0.0426
619	SLD 9	-1.4	3.25	62.11	0.0082	0.0012	0.0384
619	SLD 10	-1.4	3.08	62.18	0.002	0.0015	0.0404
619	SLD 11	-2.35	-2.41	63.57	-0.2377	0.01	0.0299
619	SLD 12	-2.35	-2.58	63.63	-0.2439	0.0103	0.0319
619	SLD 13	-5.17	1.52	62.17	-0.1788	-0.0168	0.0224
619	SLD 14	-5.17	1.27	62.26	-0.1882	-0.0164	0.0255
619	SLD 15	-5.45	-0.18	62.61	-0.2526	-0.0142	0.0199
619	SLD 16	-5.45	-0.43	62.7	-0.262	-0.0137	0.023
619	SLV 1	11.42	1.78	63.91	0.3653	0.0815	0.0814
619	SLV 2	11.42	1.18	64.13	0.3434	0.0825	0.0887
619	SLV 3	10.76	-2.07	64.92	0.1982	0.0876	0.0756
619	SLV 4	10.76	-2.67	65.14	0.1762	0.0886	0.0828
619	SLV 5	4.16	6.65	61.75	0.3151	0.0254	0.0604
619	SLV 6	4.16	6.26	61.89	0.301	0.0261	0.0651
619	SLV 7	1.94	-6.18	65.11	-0.242	0.0456	0.0409
619	SLV 8	1.94	-6.56	65.25	-0.2562	0.0463	0.0456
619	SLV 9	-2.74	7.06	60.87	0.1083	-0.0168	0.0354
619	SLV 10	-2.74	6.67	61.01	0.0941	-0.0161	0.0401
619	SLV 11	-4.96	-5.76	64.23	-0.4488	0.0035	0.0159
619	SLV 12	-4.96	-6.15	64.37	-0.463	0.0041	0.0206
619	SLV 13	-11.56	3.17	60.99	-0.3241	-0.059	-0.0018
619	SLV 14	-11.56	2.56	61.2	-0.346	-0.058	0.0054



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
619	SLV 15	-12.22	-0.68	61.99	-0.4912	-0.053	-0.0077
619	SLV 16	-12.22	-1.28	62.21	-0.5132	-0.0519	-0.0004
619	CRTFP Ux+	0	0	0	0	0	0
619	CRTFP Ux-	0	0	0	0	0	0
620	SLU 1	-0.35	0.37	58.24	-0.107	0.0204	0.028
620	SLU 2	-0.35	0.3	58.26	-0.1135	0.0206	0.0281
620	SLU 3	-0.36	0.39	59.62	-0.1098	0.021	0.0288
620	SLU 4	-0.36	0.35	59.64	-0.1137	0.0211	0.0289
620	SLU 5	-0.36	0.3	59.11	-0.1157	0.0209	0.0286
620	SLU 6	-0.37	0.4	60.47	-0.112	0.0213	0.0292
620	SLU 7	-0.37	0.36	60.49	-0.1159	0.0214	0.0294
620	SLU 8	-0.36	0.38	59.94	-0.1114	0.021	0.0288
620	SLU 9	-0.36	0.34	59.95	-0.1153	0.0211	0.0289
620	SLU 10	-0.35	0.39	65.91	-0.1098	0.0226	0.0305
620	SLU 11	-0.35	0.49	67.27	-0.1061	0.023	0.0312
620	SLU 12	-0.36	0.45	67.29	-0.11	0.0231	0.0313
620	SLU 13	-0.35	0.4	66.76	-0.112	0.0229	0.0309
620	SLU 14	-0.36	0.49	68.12	-0.1083	0.0233	0.0316
620	SLU 15	-0.36	0.45	68.14	-0.1122	0.0234	0.0317
620	SLU 16	-0.36	0.47	67.59	-0.1077	0.023	0.0312
620	SLU 17	-0.36	0.43	67.6	-0.1116	0.0231	0.0313
620	SLU 18	-0.34	0.5	69.17	-0.1017	0.0233	0.0314
620	SLU 19	-0.34	0.46	69.18	-0.1056	0.0234	0.0315
620	SLU 20	-0.35	0.51	70.02	-0.1039	0.0236	0.0318
620	SLU 21	-0.35	0.47	70.03	-0.1078	0.0237	0.0319
620	SLU 22	-0.38	0.54	65.41	-0.0773	0.0234	0.0319
620	SLU 23	-0.38	0.47	65.44	-0.0837	0.0236	0.0321
620	SLU 24	-0.39	0.56	66.8	-0.0801	0.024	0.0327
620	SLU 25	-0.39	0.52	66.81	-0.084	0.0241	0.0329
620	SLU 26	-0.39	0.47	66.29	-0.0859	0.0239	0.0325
620	SLU 27	-0.4	0.57	67.65	-0.0823	0.0243	0.0332
620	SLU 28	-0.4	0.53	67.66	-0.0862	0.0244	0.0333
620	SLU 29	-0.39	0.55	67.11	-0.0817	0.024	0.0327
620	SLU 30	-0.39	0.51	67.13	-0.0856	0.0241	0.0328
620	SLU 31	-0.38	0.56	73.09	-0.0801	0.0256	0.0344
620	SLU 32	-0.38	0.66	74.45	-0.0764	0.026	0.0351
620	SLU 33	-0.38	0.62	74.46	-0.0803	0.0261	0.0352
620	SLU 34	-0.38	0.57	73.94	-0.0823	0.0259	0.0349
620	SLU 35	-0.39	0.67	75.3	-0.0786	0.0263	0.0355
620	SLU 36	-0.39	0.62	75.31	-0.0825	0.0264	0.0357
620	SLU 37	-0.39	0.64	74.76	-0.078	0.026	0.0351
620	SLU 38	-0.39	0.6	74.78	-0.0819	0.0261	0.0352
620	SLU 39	-0.37	0.67	76.34	-0.072	0.0263	0.0353
620	SLU 40	-0.37	0.63	76.36	-0.0759	0.0264	0.0354
620	SLU 41	-0.38	0.68	77.19	-0.0742	0.0266	0.0357
620	SLU 42	-0.38	0.64	77.21	-0.0781	0.0267	0.0358
620	SLU 43	-0.45	0.42	73.25	-0.1493	0.0255	0.035
620	SLU 44	-0.45	0.35	73.28	-0.1558	0.0257	0.0352
620	SLU 45	-0.46	0.44	74.64	-0.1521	0.0261	0.0359
620	SLU 46	-0.46	0.4	74.65	-0.156	0.0262	0.036
620	SLU 47	-0.45	0.35	74.13	-0.158	0.026	0.0356
620	SLU 48	-0.46	0.45	75.49	-0.1543	0.0264	0.0363
620	SLU 49	-0.46	0.41	75.5	-0.1582	0.0265	0.0364
620	SLU 50	-0.46	0.43	74.95	-0.1537	0.0261	0.0358
620	SLU 51	-0.46	0.39	74.97	-0.1576	0.0262	0.036
620	SLU 52	-0.44	0.45	80.93	-0.1521	0.0277	0.0376
620	SLU 53	-0.45	0.54	82.29	-0.1484	0.0281	0.0383
620	SLU 54	-0.45	0.5	82.3	-0.1523	0.0282	0.0384
620	SLU 55	-0.45	0.45	81.78	-0.1543	0.028	0.038
620	SLU 56	-0.46	0.55	83.14	-0.1506	0.0284	0.0387
620	SLU 57	-0.46	0.51	83.15	-0.1545	0.0285	0.0388
620	SLU 58	-0.45	0.52	82.6	-0.15	0.0281	0.0382
620	SLU 59	-0.45	0.48	82.62	-0.1539	0.0282	0.0383
620	SLU 60	-0.44	0.55	84.18	-0.144	0.0284	0.0384
620	SLU 61	-0.44	0.51	84.2	-0.1479	0.0285	0.0385
620	SLU 62	-0.45	0.56	85.03	-0.1462	0.0287	0.0388
620	SLU 63	-0.45	0.52	85.05	-0.1501	0.0288	0.0389
620	SLU 64	-0.48	0.59	80.43	-0.1195	0.0285	0.0389
620	SLU 65	-0.48	0.52	80.45	-0.126	0.0287	0.0391
620	SLU 66	-0.49	0.62	81.81	-0.1224	0.0291	0.0398
620	SLU 67	-0.49	0.57	81.82	-0.1263	0.0292	0.0399
620	SLU 68	-0.48	0.52	81.3	-0.1282	0.029	0.0395
620	SLU 69	-0.49	0.62	82.66	-0.1246	0.0294	0.0402
620	SLU 70	-0.49	0.58	82.67	-0.1285	0.0295	0.0403
620	SLU 71	-0.49	0.6	82.13	-0.124	0.0291	0.0398
620	SLU 72	-0.49	0.56	82.14	-0.1278	0.0292	0.0399
620	SLU 73	-0.47	0.62	88.1	-0.1224	0.0307	0.0415
620	SLU 74	-0.48	0.71	89.46	-0.1187	0.0311	0.0422
620	SLU 75	-0.48	0.67	89.47	-0.1226	0.0312	0.0423
620	SLU 76	-0.48	0.62	88.95	-0.1246	0.031	0.0419
620	SLU 77	-0.49	0.72	90.31	-0.1209	0.0314	0.0426
620	SLU 78	-0.49	0.68	90.32	-0.1248	0.0315	0.0427
620	SLU 79	-0.48	0.69	89.78	-0.1203	0.0311	0.0421
620	SLU 80	-0.48	0.65	89.79	-0.1242	0.0312	0.0423
620	SLU 81	-0.47	0.72	91.36	-0.1143	0.0314	0.0423
620	SLU 82	-0.47	0.68	91.37	-0.1182	0.0315	0.0424
620	SLU 83	-0.47	0.73	92.21	-0.1165	0.0317	0.0428
620	SLU 84	-0.47	0.69	92.22	-0.1204	0.0318	0.0429
620	SLE RA 1	-0.36	0.41	60.29	-0.0985	0.0213	0.0291
620	SLE RA 2	-0.36	0.37	60.3	-0.1028	0.0214	0.0292



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
620	SLE RA 3	-0.37	0.43	61.21	-0.1004	0.0217	0.0297
620	SLE RA 4	-0.37	0.41	61.22	-0.103	0.0217	0.0297
620	SLE RA 5	-0.36	0.37	60.87	-0.1043	0.0216	0.0295
620	SLE RA 6	-0.37	0.44	61.78	-0.1018	0.0219	0.0299
620	SLE RA 7	-0.37	0.41	61.79	-0.1044	0.0219	0.03
620	SLE RA 8	-0.37	0.42	61.42	-0.1014	0.0217	0.0296
620	SLE RA 9	-0.37	0.39	61.43	-0.104	0.0217	0.0297
620	SLE RA 10	-0.36	0.43	65.41	-0.1004	0.0227	0.0308
620	SLE RA 11	-0.36	0.5	66.31	-0.0979	0.023	0.0313
620	SLE RA 12	-0.36	0.47	66.32	-0.1005	0.0231	0.0313
620	SLE RA 13	-0.36	0.44	65.97	-0.1018	0.0229	0.0311
620	SLE RA 14	-0.37	0.5	66.88	-0.0994	0.0232	0.0315
620	SLE RA 15	-0.37	0.47	66.89	-0.102	0.0233	0.0316
620	SLE RA 16	-0.36	0.49	66.52	-0.099	0.023	0.0312
620	SLE RA 17	-0.37	0.46	66.53	-0.1016	0.0231	0.0313
620	SLE RA 18	-0.35	0.51	67.58	-0.095	0.0232	0.0314
620	SLE RA 19	-0.35	0.48	67.59	-0.0976	0.0233	0.0314
620	SLE RA 20	-0.36	0.51	68.14	-0.0965	0.0234	0.0316
620	SLE RA 21	-0.36	0.48	68.15	-0.0991	0.0235	0.0317
620	SLE FR 1	-0.36	0.41	60.29	-0.0985	0.0213	0.0291
620	SLE FR 2	-0.36	0.41	60.29	-0.0994	0.0213	0.0291
620	SLE FR 3	-0.36	0.42	60.52	-0.0991	0.0214	0.0292
620	SLE FR 4	-0.36	0.43	62.48	-0.0983	0.0219	0.0298
620	SLE FR 5	-0.36	0.44	62.7	-0.098	0.0219	0.0299
620	SLE FR 6	-0.36	0.46	63.93	-0.0967	0.0222	0.0302
620	SLE QP 1	-0.36	0.41	60.29	-0.0985	0.0213	0.0291
620	SLE QP 2	-0.36	0.44	62.48	-0.0974	0.0219	0.0298
620	SLD 1	4.68	1.15	61.67	0.116	0.0469	0.0455
620	SLD 2	4.68	0.9	61.75	0.1042	0.0474	0.0488
620	SLD 3	4.4	-0.57	62.05	0.0356	0.0491	0.0419
620	SLD 4	4.4	-0.81	62.13	0.0238	0.0496	0.0452
620	SLD 5	1.59	3.3	61.64	0.0907	0.0259	0.0394
620	SLD 6	1.59	3.14	61.7	0.0829	0.0262	0.0415
620	SLD 7	0.64	-2.42	62.91	-0.1774	0.0333	0.0273
620	SLD 8	0.64	-2.58	62.96	-0.1852	0.0336	0.0295
620	SLD 9	-1.35	3.46	61.99	-0.0097	0.0101	0.03
620	SLD 10	-1.35	3.3	62.04	-0.0175	0.0104	0.0322
620	SLD 11	-2.3	-2.25	63.26	-0.2778	0.0175	0.018
620	SLD 12	-2.3	-2.41	63.31	-0.2856	0.0178	0.0202
620	SLD 13	-5.12	1.69	62.82	-0.2187	-0.0059	0.0143
620	SLD 14	-5.12	1.45	62.9	-0.2305	-0.0054	0.0176
620	SLD 15	-5.4	-0.02	63.2	-0.2991	-0.0036	0.0107
620	SLD 16	-5.4	-0.26	63.28	-0.3109	-0.0032	0.014
620	SLV 1	11.44	2.03	60.6	0.4011	0.0805	0.0665
620	SLV 2	11.44	1.46	60.79	0.3736	0.0816	0.0742
620	SLV 3	10.77	-1.85	61.48	0.2189	0.0856	0.0583
620	SLV 4	10.78	-2.42	61.66	0.1913	0.0867	0.066
620	SLV 5	4.19	6.9	60.55	0.3333	0.0315	0.0519
620	SLV 6	4.19	6.53	60.67	0.3155	0.0322	0.0569
620	SLV 7	1.97	-6.03	63.47	-0.2742	0.0486	0.0245
620	SLV 8	1.98	-6.4	63.59	-0.292	0.0493	0.0295
620	SLV 9	-2.69	7.28	61.36	0.0971	-0.0056	0.03
620	SLV 10	-2.69	6.92	61.48	0.0793	-0.0049	0.035
620	SLV 11	-4.91	-5.65	64.28	-0.5104	0.0115	0.0027
620	SLV 12	-4.9	-6.02	64.4	-0.5282	0.0123	0.0076
620	SLV 13	-11.49	3.3	63.29	-0.3862	-0.043	-0.0064
620	SLV 14	-11.49	2.74	63.47	-0.4137	-0.0419	0.0012
620	SLV 15	-12.16	-0.58	64.17	-0.5684	-0.0379	-0.0146
620	SLV 16	-12.15	-1.14	64.35	-0.596	-0.0368	-0.007
620	CRTFP Ux+	0	0	0	0	0	0
620	CRTFP Ux-	0	0	0	0	0	0
621	SLU 1	-0.32	0.49	59.11	0.3245	-0.2943	0.0169
621	SLU 2	-0.32	0.43	59.13	0.3173	-0.2943	0.0167
621	SLU 3	-0.33	0.53	60.51	0.3317	-0.3012	0.0177
621	SLU 4	-0.33	0.49	60.52	0.3274	-0.3012	0.0175
621	SLU 5	-0.33	0.43	59.99	0.3214	-0.2986	0.0169
621	SLU 6	-0.33	0.53	61.37	0.3359	-0.3055	0.0179
621	SLU 7	-0.33	0.49	61.38	0.3316	-0.3055	0.0178
621	SLU 8	-0.33	0.51	60.83	0.3328	-0.303	0.0174
621	SLU 9	-0.33	0.47	60.84	0.3285	-0.3029	0.0173
621	SLU 10	-0.31	0.53	66.91	0.3767	-0.3338	0.0182
621	SLU 11	-0.32	0.64	68.29	0.3911	-0.3407	0.0192
621	SLU 12	-0.32	0.59	68.31	0.3868	-0.3407	0.019
621	SLU 13	-0.32	0.54	67.78	0.3808	-0.3381	0.0184
621	SLU 14	-0.32	0.64	69.16	0.3953	-0.345	0.0194
621	SLU 15	-0.33	0.6	69.17	0.3909	-0.345	0.0193
621	SLU 16	-0.32	0.62	68.62	0.3922	-0.3424	0.0189
621	SLU 17	-0.32	0.58	68.63	0.3879	-0.3424	0.0188
621	SLU 18	-0.31	0.65	70.23	0.4093	-0.3507	0.0191
621	SLU 19	-0.31	0.61	70.24	0.405	-0.3507	0.0189
621	SLU 20	-0.31	0.66	71.09	0.4135	-0.3551	0.0193
621	SLU 21	-0.31	0.62	71.1	0.4092	-0.355	0.0192
621	SLU 22	-0.35	0.69	66.36	0.4094	-0.3297	0.0206
621	SLU 23	-0.35	0.62	66.38	0.4022	-0.3297	0.0203
621	SLU 24	-0.35	0.72	67.77	0.4167	-0.3366	0.0213
621	SLU 25	-0.35	0.68	67.78	0.4123	-0.3366	0.0211
621	SLU 26	-0.35	0.63	67.25	0.4064	-0.334	0.0206
621	SLU 27	-0.36	0.73	68.63	0.4208	-0.3409	0.0215
621	SLU 28	-0.36	0.69	68.64	0.4165	-0.3409	0.0214
621	SLU 29	-0.36	0.7	68.09	0.4177	-0.3384	0.0211



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
621	SLU 30	-0.36	0.66	68.1	0.4134	-0.3383	0.0209
621	SLU 31	-0.34	0.73	74.17	0.4616	-0.3692	0.0218
621	SLU 32	-0.35	0.83	75.55	0.476	-0.3761	0.0228
621	SLU 33	-0.35	0.79	75.56	0.4717	-0.3761	0.0227
621	SLU 34	-0.34	0.73	75.03	0.4658	-0.3735	0.0221
621	SLU 35	-0.35	0.84	76.41	0.4802	-0.3804	0.0231
621	SLU 36	-0.35	0.79	76.43	0.4759	-0.3804	0.0229
621	SLU 37	-0.35	0.81	75.88	0.4771	-0.3779	0.0226
621	SLU 38	-0.35	0.77	75.89	0.4728	-0.3778	0.0224
621	SLU 39	-0.33	0.84	77.49	0.4943	-0.3862	0.0227
621	SLU 40	-0.33	0.8	77.5	0.4899	-0.3861	0.0226
621	SLU 41	-0.34	0.85	78.35	0.4984	-0.3905	0.023
621	SLU 42	-0.34	0.81	78.36	0.4941	-0.3905	0.0228
621	SLU 43	-0.41	0.58	74.35	0.3927	-0.3705	0.0208
621	SLU 44	-0.41	0.51	74.37	0.3855	-0.3704	0.0205
621	SLU 45	-0.41	0.61	75.75	0.3999	-0.3773	0.0215
621	SLU 46	-0.41	0.57	75.76	0.3956	-0.3773	0.0213
621	SLU 47	-0.41	0.52	75.23	0.3897	-0.3748	0.0208
621	SLU 48	-0.42	0.62	76.62	0.4041	-0.3817	0.0217
621	SLU 49	-0.42	0.58	76.63	0.3998	-0.3816	0.0216
621	SLU 50	-0.42	0.59	76.08	0.401	-0.3791	0.0213
621	SLU 51	-0.42	0.55	76.09	0.3967	-0.3791	0.0211
621	SLU 52	-0.4	0.62	82.16	0.4449	-0.4099	0.022
621	SLU 53	-0.41	0.72	83.54	0.4593	-0.4168	0.023
621	SLU 54	-0.41	0.68	83.55	0.455	-0.4168	0.0229
621	SLU 55	-0.4	0.62	83.02	0.449	-0.4143	0.0223
621	SLU 56	-0.41	0.73	84.4	0.4635	-0.4211	0.0233
621	SLU 57	-0.41	0.68	84.41	0.4592	-0.4211	0.0231
621	SLU 58	-0.41	0.7	83.86	0.4604	-0.4186	0.0228
621	SLU 59	-0.41	0.66	83.87	0.4561	-0.4186	0.0226
621	SLU 60	-0.39	0.73	85.47	0.4775	-0.4269	0.0229
621	SLU 61	-0.39	0.69	85.49	0.4732	-0.4269	0.0228
621	SLU 62	-0.4	0.74	86.34	0.4817	-0.4312	0.0232
621	SLU 63	-0.4	0.7	86.35	0.4774	-0.4312	0.023
621	SLU 64	-0.43	0.77	81.61	0.4776	-0.4059	0.0244
621	SLU 65	-0.43	0.7	81.63	0.4705	-0.4059	0.0241
621	SLU 66	-0.44	0.8	83.01	0.4849	-0.4128	0.0251
621	SLU 67	-0.44	0.76	83.02	0.4806	-0.4127	0.025
621	SLU 68	-0.44	0.71	82.49	0.4746	-0.4102	0.0244
621	SLU 69	-0.45	0.81	83.87	0.489	-0.4171	0.0254
621	SLU 70	-0.45	0.77	83.88	0.4847	-0.4171	0.0252
621	SLU 71	-0.44	0.78	83.33	0.486	-0.4145	0.0249
621	SLU 72	-0.44	0.74	83.35	0.4816	-0.4145	0.0247
621	SLU 73	-0.43	0.81	89.41	0.5298	-0.4454	0.0257
621	SLU 74	-0.43	0.91	90.8	0.5443	-0.4523	0.0266
621	SLU 75	-0.43	0.87	90.81	0.54	-0.4522	0.0265
621	SLU 76	-0.43	0.82	90.28	0.534	-0.4497	0.0259
621	SLU 77	-0.44	0.92	91.66	0.5484	-0.4566	0.0269
621	SLU 78	-0.44	0.88	91.67	0.5441	-0.4565	0.0267
621	SLU 79	-0.44	0.89	91.12	0.5453	-0.454	0.0264
621	SLU 80	-0.44	0.85	91.13	0.541	-0.454	0.0263
621	SLU 81	-0.42	0.93	92.73	0.5625	-0.4623	0.0266
621	SLU 82	-0.42	0.88	92.74	0.5582	-0.4623	0.0264
621	SLU 83	-0.43	0.93	93.59	0.5666	-0.4666	0.0268
621	SLU 84	-0.43	0.89	93.61	0.5623	-0.4666	0.0267
621	SLE RA 1	-0.33	0.55	61.18	0.3488	-0.3044	0.018
621	SLE RA 2	-0.33	0.5	61.19	0.344	-0.3044	0.0178
621	SLE RA 3	-0.33	0.57	62.11	0.3536	-0.309	0.0185
621	SLE RA 4	-0.33	0.54	62.12	0.3507	-0.309	0.0183
621	SLE RA 5	-0.33	0.51	61.77	0.3467	-0.3073	0.018
621	SLE RA 6	-0.34	0.58	62.69	0.3563	-0.3119	0.0186
621	SLE RA 7	-0.34	0.55	62.7	0.3535	-0.3119	0.0185
621	SLE RA 8	-0.33	0.56	62.33	0.3543	-0.3102	0.0183
621	SLE RA 9	-0.33	0.53	62.34	0.3514	-0.3102	0.0182
621	SLE RA 10	-0.32	0.58	66.38	0.3835	-0.3308	0.0188
621	SLE RA 11	-0.33	0.64	67.31	0.3932	-0.3353	0.0195
621	SLE RA 12	-0.33	0.62	67.31	0.3903	-0.3353	0.0194
621	SLE RA 13	-0.33	0.58	66.96	0.3863	-0.3336	0.019
621	SLE RA 14	-0.33	0.65	67.88	0.3959	-0.3382	0.0196
621	SLE RA 15	-0.33	0.62	67.89	0.3931	-0.3382	0.0195
621	SLE RA 16	-0.33	0.63	67.52	0.3939	-0.3365	0.0193
621	SLE RA 17	-0.33	0.6	67.53	0.391	-0.3365	0.0192
621	SLE RA 18	-0.32	0.65	68.6	0.4053	-0.3421	0.0194
621	SLE RA 19	-0.32	0.63	68.6	0.4024	-0.342	0.0193
621	SLE RA 20	-0.32	0.66	69.17	0.4081	-0.3449	0.0196
621	SLE RA 21	-0.32	0.63	69.18	0.4052	-0.3449	0.0195
621	SLE FR 1	-0.33	0.55	61.18	0.3488	-0.3044	0.018
621	SLE FR 2	-0.33	0.54	61.18	0.3478	-0.3044	0.0179
621	SLE FR 3	-0.33	0.55	61.41	0.3499	-0.3056	0.018
621	SLE FR 4	-0.32	0.57	63.41	0.3648	-0.3157	0.0184
621	SLE FR 5	-0.33	0.58	63.64	0.3668	-0.3169	0.0185
621	SLE FR 6	-0.32	0.6	64.89	0.377	-0.3233	0.0187
621	SLE QP 1	-0.33	0.55	61.18	0.3488	-0.3044	0.018
621	SLE QP 2	-0.32	0.58	63.41	0.3657	-0.3157	0.0184
621	SLD 1	4.84	1.87	61.94	0.5895	-0.288	0.0032
621	SLD 2	4.84	1.64	62	0.5754	-0.2878	0.0058
621	SLD 3	4.55	0.09	62.29	0.5029	-0.2896	-0.0113
621	SLD 4	4.55	-0.14	62.35	0.4888	-0.2894	-0.0086
621	SLD 5	1.67	3.71	62.42	0.5667	-0.305	0.0353
621	SLD 6	1.67	3.56	62.47	0.5574	-0.3049	0.037



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
621	SLD 7	0.7	-2.23	63.59	0.2781	-0.3104	-0.0129
621	SLD 8	0.7	-2.38	63.63	0.2688	-0.3102	-0.0112
621	SLD 9	-1.35	3.54	63.18	0.4626	-0.3212	0.048
621	SLD 10	-1.34	3.39	63.22	0.4534	-0.3211	0.0497
621	SLD 11	-2.32	-2.4	64.35	0.174	-0.3266	-0.0002
621	SLD 12	-2.32	-2.55	64.39	0.1647	-0.3264	0.0015
621	SLD 13	-5.2	1.31	64.46	0.2426	-0.3421	0.0454
621	SLD 14	-5.2	1.07	64.52	0.2285	-0.3418	0.0481
621	SLD 15	-5.49	-0.48	64.81	0.1561	-0.3437	0.031
621	SLD 16	-5.49	-0.71	64.87	0.1419	-0.3434	0.0336
621	SLV 1	11.76	3.53	59.98	0.8884	-0.2509	-0.0177
621	SLV 2	11.76	2.99	60.13	0.8555	-0.2504	-0.0116
621	SLV 3	11.08	-0.51	60.79	0.6923	-0.2547	-0.0505
621	SLV 4	11.08	-1.05	60.94	0.6594	-0.2541	-0.0444
621	SLV 5	4.33	7.68	61.12	0.8257	-0.2907	0.0562
621	SLV 6	4.33	7.33	61.22	0.8045	-0.2903	0.0602
621	SLV 7	2.06	-5.77	63.82	0.1719	-0.3032	-0.0531
621	SLV 8	2.07	-6.12	63.92	0.1506	-0.3029	-0.0491
621	SLV 9	-2.72	7.28	62.89	0.5808	-0.3286	0.0859
621	SLV 10	-2.71	6.94	62.99	0.5596	-0.3282	0.0899
621	SLV 11	-4.98	-6.17	65.59	-0.073	-0.3411	-0.0234
621	SLV 12	-4.98	-6.52	65.69	-0.0943	-0.3408	-0.0194
621	SLV 13	-11.73	2.21	65.87	0.0721	-0.3773	0.0812
621	SLV 14	-11.73	1.67	66.02	0.0392	-0.3768	0.0873
621	SLV 15	-12.41	-1.83	66.68	-0.1241	-0.3811	0.0484
621	SLV 16	-12.41	-2.36	66.83	-0.157	-0.3805	0.0545
621	CRTFP Ux+	0	0	0	0	0	0
621	CRTFP Ux-	0	0	0	0	0	0
622	SLU 1	-0.15	0.25	28.57	-6.7873	0.0077	-0.0383
622	SLU 2	-0.15	0.21	28.59	-6.7929	0.0076	-0.0383
622	SLU 3	-0.15	0.26	29.25	-6.9471	0.0079	-0.0391
622	SLU 4	-0.15	0.24	29.26	-6.9505	0.0078	-0.0392
622	SLU 5	-0.15	0.22	29.01	-6.8922	0.0077	-0.039
622	SLU 6	-0.16	0.27	29.67	-7.0463	0.008	-0.0398
622	SLU 7	-0.16	0.25	29.68	-7.0497	0.0079	-0.0398
622	SLU 8	-0.16	0.25	29.41	-6.9858	0.0079	-0.0397
622	SLU 9	-0.16	0.23	29.42	-6.9892	0.0078	-0.0397
622	SLU 10	-0.15	0.27	32.35	-7.6788	0.0082	-0.0376
622	SLU 11	-0.15	0.32	33.01	-7.833	0.0085	-0.0384
622	SLU 12	-0.15	0.3	33.02	-7.8364	0.0084	-0.0385
622	SLU 13	-0.15	0.27	32.77	-7.7781	0.0083	-0.0383
622	SLU 14	-0.15	0.32	33.43	-7.9322	0.0086	-0.0391
622	SLU 15	-0.15	0.3	33.44	-7.9356	0.0085	-0.0391
622	SLU 16	-0.15	0.31	33.17	-7.8717	0.0084	-0.0389
622	SLU 17	-0.15	0.29	33.18	-7.8751	0.0084	-0.039
622	SLU 18	-0.15	0.32	33.95	-8.0528	0.0085	-0.0373
622	SLU 19	-0.15	0.3	33.96	-8.0562	0.0085	-0.0373
622	SLU 20	-0.15	0.33	34.37	-8.1521	0.0086	-0.038
622	SLU 21	-0.15	0.31	34.38	-8.1555	0.0085	-0.038
622	SLU 22	-0.16	0.34	32.03	-7.5869	0.0093	-0.041
622	SLU 23	-0.16	0.31	32.04	-7.5926	0.0093	-0.041
622	SLU 24	-0.17	0.36	32.7	-7.7467	0.0095	-0.0418
622	SLU 25	-0.17	0.34	32.71	-7.7501	0.0095	-0.0419
622	SLU 26	-0.17	0.31	32.46	-7.6919	0.0094	-0.0417
622	SLU 27	-0.17	0.36	33.12	-7.846	0.0096	-0.0425
622	SLU 28	-0.17	0.34	33.13	-7.8494	0.0096	-0.0425
622	SLU 29	-0.17	0.35	32.86	-7.7855	0.0095	-0.0424
622	SLU 30	-0.17	0.33	32.87	-7.7889	0.0095	-0.0424
622	SLU 31	-0.16	0.36	35.81	-8.4785	0.0098	-0.0403
622	SLU 32	-0.16	0.41	36.47	-8.6326	0.0101	-0.0411
622	SLU 33	-0.16	0.39	36.48	-8.636	0.0101	-0.0411
622	SLU 34	-0.16	0.37	36.22	-8.5778	0.0099	-0.041
622	SLU 35	-0.17	0.42	36.89	-8.7319	0.0102	-0.0418
622	SLU 36	-0.17	0.4	36.9	-8.7353	0.0102	-0.0418
622	SLU 37	-0.16	0.4	36.63	-8.6714	0.0101	-0.0416
622	SLU 38	-0.16	0.38	36.64	-8.6748	0.0101	-0.0417
622	SLU 39	-0.16	0.42	37.4	-8.8525	0.0101	-0.04
622	SLU 40	-0.16	0.4	37.41	-8.8559	0.0101	-0.04
622	SLU 41	-0.16	0.42	37.82	-8.9518	0.0102	-0.0407
622	SLU 42	-0.16	0.4	37.83	-8.9552	0.0102	-0.0407
622	SLU 43	-0.19	0.29	35.96	-8.5493	0.0094	-0.0489
622	SLU 44	-0.19	0.25	35.98	-8.5549	0.0094	-0.0489
622	SLU 45	-0.2	0.3	36.64	-8.7091	0.0096	-0.0497
622	SLU 46	-0.2	0.28	36.65	-8.7125	0.0096	-0.0497
622	SLU 47	-0.2	0.26	36.39	-8.6542	0.0095	-0.0496
622	SLU 48	-0.2	0.31	37.06	-8.8083	0.0097	-0.0504
622	SLU 49	-0.2	0.29	37.06	-8.8117	0.0097	-0.0504
622	SLU 50	-0.2	0.29	36.8	-8.7478	0.0096	-0.0502
622	SLU 51	-0.2	0.27	36.81	-8.7512	0.0096	-0.0502
622	SLU 52	-0.19	0.31	39.74	-9.4408	0.0099	-0.0482
622	SLU 53	-0.19	0.36	40.4	-9.595	0.0102	-0.049
622	SLU 54	-0.19	0.34	40.41	-9.5984	0.0102	-0.049
622	SLU 55	-0.19	0.31	40.16	-9.5401	0.01	-0.0489
622	SLU 56	-0.2	0.36	40.82	-9.6942	0.0103	-0.0497
622	SLU 57	-0.2	0.34	40.83	-9.6976	0.0102	-0.0497
622	SLU 58	-0.2	0.35	40.56	-9.6337	0.0102	-0.0495
622	SLU 59	-0.2	0.33	40.57	-9.6371	0.0101	-0.0495
622	SLU 60	-0.19	0.36	41.34	-9.8148	0.0102	-0.0479
622	SLU 61	-0.19	0.34	41.35	-9.8182	0.0102	-0.0479
622	SLU 62	-0.19	0.37	41.75	-9.9141	0.0103	-0.0485





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
622	SLU 63	-0.19	0.35	41.76	-9.9175	0.0103	-0.0485
622	SLU 64	-0.2	0.38	39.41	-9.3489	0.0111	-0.0516
622	SLU 65	-0.2	0.35	39.43	-9.3546	0.011	-0.0516
622	SLU 66	-0.21	0.4	40.09	-9.5087	0.0113	-0.0524
622	SLU 67	-0.21	0.38	40.1	-9.5121	0.0112	-0.0524
622	SLU 68	-0.21	0.36	39.85	-9.4539	0.0111	-0.0523
622	SLU 69	-0.21	0.4	40.51	-9.608	0.0114	-0.0531
622	SLU 70	-0.21	0.39	40.52	-9.6114	0.0113	-0.0531
622	SLU 71	-0.21	0.39	40.25	-9.5475	0.0113	-0.0529
622	SLU 72	-0.21	0.37	40.26	-9.5509	0.0112	-0.0529
622	SLU 73	-0.2	0.4	43.19	-10.2405	0.0116	-0.0509
622	SLU 74	-0.2	0.45	43.85	-10.3946	0.0118	-0.0517
622	SLU 75	-0.2	0.43	43.86	-10.398	0.0118	-0.0517
622	SLU 76	-0.2	0.41	43.61	-10.3398	0.0117	-0.0516
622	SLU 77	-0.21	0.46	44.27	-10.4939	0.0119	-0.0524
622	SLU 78	-0.21	0.44	44.28	-10.4973	0.0119	-0.0524
622	SLU 79	-0.21	0.44	44.01	-10.4334	0.0118	-0.0522
622	SLU 80	-0.21	0.42	44.02	-10.4368	0.0118	-0.0522
622	SLU 81	-0.2	0.46	44.79	-10.6145	0.0119	-0.0506
622	SLU 82	-0.2	0.44	44.8	-10.6179	0.0118	-0.0506
622	SLU 83	-0.2	0.46	45.21	-10.7138	0.012	-0.0512
622	SLU 84	-0.2	0.44	45.22	-10.7172	0.0119	-0.0512
622	SLE RA 1	-0.15	0.27	29.56	-7.0157	0.0082	-0.0391
622	SLE RA 2	-0.15	0.25	29.57	-7.0195	0.0081	-0.0391
622	SLE RA 3	-0.16	0.29	30.01	-7.1223	0.0083	-0.0396
622	SLE RA 4	-0.16	0.27	30.02	-7.1245	0.0083	-0.0397
622	SLE RA 5	-0.16	0.25	29.85	-7.0857	0.0082	-0.0396
622	SLE RA 6	-0.16	0.29	30.29	-7.1884	0.0084	-0.0401
622	SLE RA 7	-0.16	0.27	30.3	-7.1907	0.0083	-0.0401
622	SLE RA 8	-0.16	0.28	30.12	-7.1481	0.0083	-0.04
622	SLE RA 9	-0.16	0.27	30.12	-7.1504	0.0083	-0.04
622	SLE RA 10	-0.15	0.29	32.08	-7.6101	0.0085	-0.0386
622	SLE RA 11	-0.15	0.32	32.52	-7.7129	0.0087	-0.0392
622	SLE RA 12	-0.15	0.31	32.53	-7.7151	0.0086	-0.0392
622	SLE RA 13	-0.15	0.29	32.36	-7.6763	0.0086	-0.0391
622	SLE RA 14	-0.16	0.32	32.8	-7.779	0.0087	-0.0396
622	SLE RA 15	-0.16	0.31	32.81	-7.7813	0.0087	-0.0396
622	SLE RA 16	-0.16	0.31	32.63	-7.7387	0.0087	-0.0395
622	SLE RA 17	-0.16	0.3	32.63	-7.741	0.0086	-0.0395
622	SLE RA 18	-0.15	0.33	33.14	-7.8594	0.0087	-0.0384
622	SLE RA 19	-0.15	0.31	33.15	-7.8617	0.0087	-0.0384
622	SLE RA 20	-0.15	0.33	33.42	-7.9256	0.0088	-0.0388
622	SLE RA 21	-0.15	0.31	33.43	-7.9279	0.0087	-0.0389
622	SLE FR 1	-0.15	0.27	29.56	-7.0157	0.0082	-0.0391
622	SLE FR 2	-0.15	0.27	29.56	-7.0165	0.0082	-0.0391
622	SLE FR 3	-0.16	0.28	29.67	-7.0422	0.0082	-0.0393
622	SLE FR 4	-0.15	0.29	30.64	-7.2696	0.0083	-0.0389
622	SLE FR 5	-0.15	0.29	30.75	-7.2953	0.0083	-0.0391
622	SLE FR 6	-0.15	0.3	31.35	-7.4376	0.0084	-0.0387
622	SLE QP 1	-0.15	0.27	29.56	-7.0157	0.0082	-0.0391
622	SLE QP 2	-0.15	0.29	30.64	-7.2688	0.0083	-0.0389
622	SLD 1	2.36	0.92	29.41	-6.9938	0.019	0.5902
622	SLD 2	2.37	0.82	29.45	-7.0066	0.0189	0.5928
622	SLD 3	2.22	0.04	29.66	-7.0738	0.0175	0.5548
622	SLD 4	2.23	-0.06	29.7	-7.0866	0.0174	0.5574
622	SLD 5	0.81	1.83	29.88	-7.0627	0.0138	0.2032
622	SLD 6	0.82	1.77	29.91	-7.0711	0.0137	0.2049
622	SLD 7	0.34	-1.1	30.71	-7.3294	0.0089	0.085
622	SLD 8	0.35	-1.17	30.74	-7.3378	0.0088	0.0867
622	SLD 9	-0.66	1.75	30.53	-7.1998	0.0078	-0.1644
622	SLD 10	-0.65	1.68	30.56	-7.2083	0.0078	-0.1627
622	SLD 11	-1.13	-1.19	31.36	-7.4666	0.0029	-0.2826
622	SLD 12	-1.12	-1.25	31.39	-7.475	0.0029	-0.2809
622	SLD 13	-2.54	0.64	31.57	-7.4511	-0.0008	-0.6351
622	SLD 14	-2.53	0.54	31.61	-7.4639	-0.0009	-0.6325
622	SLD 15	-2.68	-0.24	31.82	-7.5311	-0.0023	-0.6706
622	SLD 16	-2.67	-0.34	31.86	-7.5439	-0.0023	-0.668
622	SLV 1	5.73	1.74	27.78	-6.6273	0.0332	1.4328
622	SLV 2	5.75	1.5	27.88	-6.6572	0.0331	1.4389
622	SLV 3	5.4	-0.26	28.34	-6.8095	0.0299	1.3502
622	SLV 4	5.42	-0.49	28.44	-6.8394	0.0297	1.3562
622	SLV 5	2.11	3.79	28.9	-6.7949	0.0209	0.527
622	SLV 6	2.12	3.63	28.97	-6.8142	0.0208	0.5309
622	SLV 7	1.01	-2.86	30.79	-7.4022	0.0097	0.2514
622	SLV 8	1.02	-3.01	30.85	-7.4215	0.0096	0.2553
622	SLV 9	-1.33	3.59	30.42	-7.1162	0.007	-0.3331
622	SLV 10	-1.32	3.43	30.48	-7.1355	0.0069	-0.3292
622	SLV 11	-2.43	-3.06	32.3	-7.7235	-0.0042	-0.6086
622	SLV 12	-2.42	-3.21	32.37	-7.7428	-0.0042	-0.6047
622	SLV 13	-5.73	1.07	32.83	-7.6983	-0.0131	-1.434
622	SLV 14	-5.71	0.83	32.93	-7.7282	-0.0132	-1.4279
622	SLV 15	-6.06	-0.92	33.39	-7.8805	-0.0164	-1.5166
622	SLV 16	-6.04	-1.16	33.49	-7.9103	-0.0166	-1.5106
622	CRTFP Ux+	0	0	0	0	0	0
622	CRTFP Ux-	0	0	0	0	0	0
622	CRTFP Uy+	0	0	0	0	0	0
622	CRTFP Uy-	0	0	0	0	0	0
624	SLU 1	-0.83	1.48	191.03	28.017	-0.5528	-0.0116
624	SLU 2	-0.83	1.26	191.07	27.9972	-0.5616	-0.0116
624	SLU 3	-0.85	1.59	195.54	28.674	-0.5638	-0.0099



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
624	SLU 4	-0.85	1.46	195.56	28.6621	-0.5691	-0.0099
624	SLU 5	-0.84	1.28	193.87	28.4062	-0.5725	-0.0116
624	SLU 6	-0.86	1.61	198.33	29.083	-0.5746	-0.0099
624	SLU 7	-0.86	1.48	198.36	29.0711	-0.5799	-0.0099
624	SLU 8	-0.86	1.52	196.63	28.8351	-0.5744	-0.0116
624	SLU 9	-0.86	1.39	196.65	28.8232	-0.5797	-0.0116
624	SLU 10	-0.79	1.59	216.38	31.7225	-0.6464	-0.0302
624	SLU 11	-0.81	1.93	220.84	32.3993	-0.6486	-0.0286
624	SLU 12	-0.81	1.79	220.86	32.3874	-0.6538	-0.0286
624	SLU 13	-0.81	1.61	219.17	32.1315	-0.6572	-0.0302
624	SLU 14	-0.83	1.95	223.64	32.8083	-0.6594	-0.0286
624	SLU 15	-0.83	1.81	223.66	32.7964	-0.6647	-0.0286
624	SLU 16	-0.82	1.86	221.93	32.5604	-0.6592	-0.0303
624	SLU 17	-0.82	1.72	221.96	32.5485	-0.6645	-0.0302
624	SLU 18	-0.78	1.96	227.18	33.3389	-0.6739	-0.0383
624	SLU 19	-0.78	1.83	227.2	33.327	-0.6792	-0.0383
624	SLU 20	-0.79	1.98	229.98	33.7479	-0.6847	-0.0383
624	SLU 21	-0.79	1.85	230	33.736	-0.69	-0.0382
624	SLU 22	-0.9	2.14	214.3	31.5581	-0.5355	-0.0045
624	SLU 23	-0.9	1.92	214.34	31.5383	-0.5443	-0.0045
624	SLU 24	-0.92	2.25	218.81	32.2151	-0.5465	-0.0028
624	SLU 25	-0.92	2.12	218.83	32.2032	-0.5518	-0.0028
624	SLU 26	-0.92	1.94	217.14	31.9473	-0.5552	-0.0045
624	SLU 27	-0.94	2.27	221.61	32.6241	-0.5573	-0.0028
624	SLU 28	-0.94	2.14	221.63	32.6122	-0.5626	-0.0028
624	SLU 29	-0.93	2.18	219.9	32.3762	-0.5572	-0.0045
624	SLU 30	-0.93	2.05	219.93	32.3643	-0.5625	-0.0045
624	SLU 31	-0.87	2.25	239.65	35.2636	-0.6291	-0.0231
624	SLU 32	-0.89	2.59	244.11	35.9404	-0.6313	-0.0215
624	SLU 33	-0.89	2.45	244.13	35.9285	-0.6366	-0.0215
624	SLU 34	-0.88	2.27	242.45	35.6726	-0.6399	-0.0231
624	SLU 35	-0.9	2.61	246.91	36.3495	-0.6421	-0.0215
624	SLU 36	-0.9	2.47	246.93	36.3376	-0.6474	-0.0215
624	SLU 37	-0.89	2.52	245.2	36.1015	-0.6419	-0.0231
624	SLU 38	-0.9	2.38	245.23	36.0896	-0.6472	-0.0231
624	SLU 39	-0.85	2.62	250.45	36.88	-0.6566	-0.0311
624	SLU 40	-0.85	2.49	250.48	36.8681	-0.6619	-0.0311
624	SLU 41	-0.86	2.64	253.25	37.289	-0.6674	-0.0311
624	SLU 42	-0.87	2.51	253.27	37.2771	-0.6727	-0.0311
624	SLU 43	-1.05	1.7	240.36	35.208	-0.7246	-0.0175
624	SLU 44	-1.05	1.47	240.4	35.1882	-0.7334	-0.0175
624	SLU 45	-1.07	1.81	244.87	35.865	-0.7356	-0.0159
624	SLU 46	-1.07	1.68	244.89	35.8531	-0.7409	-0.0158
624	SLU 47	-1.07	1.5	243.2	35.5972	-0.7442	-0.0175
624	SLU 48	-1.09	1.83	247.67	36.274	-0.7464	-0.0159
624	SLU 49	-1.09	1.7	247.69	36.2621	-0.7517	-0.0158
624	SLU 50	-1.08	1.74	245.96	36.0261	-0.7462	-0.0175
624	SLU 51	-1.08	1.61	245.99	36.0142	-0.7515	-0.0175
624	SLU 52	-1.02	1.81	265.71	38.9135	-0.8182	-0.0362
624	SLU 53	-1.03	2.15	270.17	39.5903	-0.8203	-0.0345
624	SLU 54	-1.04	2.01	270.19	39.5784	-0.8256	-0.0345
624	SLU 55	-1.03	1.83	268.5	39.3225	-0.829	-0.0362
624	SLU 56	-1.05	2.17	272.97	39.9994	-0.8311	-0.0345
624	SLU 57	-1.05	2.03	272.99	39.9875	-0.8364	-0.0345
624	SLU 58	-1.04	2.08	271.26	39.7514	-0.831	-0.0362
624	SLU 59	-1.04	1.94	271.29	39.7395	-0.8363	-0.0362
624	SLU 60	-1	2.18	276.51	40.5299	-0.8457	-0.0442
624	SLU 61	-1	2.05	276.53	40.518	-0.851	-0.0442
624	SLU 62	-1.01	2.2	279.31	40.9389	-0.8565	-0.0442
624	SLU 63	-1.01	2.07	279.33	40.927	-0.8618	-0.0442
624	SLU 64	-1.12	2.36	263.64	38.7491	-0.7073	-0.0104
624	SLU 65	-1.13	2.13	263.68	38.7293	-0.7161	-0.0104
624	SLU 66	-1.15	2.47	268.14	39.4061	-0.7183	-0.0087
624	SLU 67	-1.15	2.34	268.16	39.3942	-0.7236	-0.0087
624	SLU 68	-1.14	2.16	266.47	39.1383	-0.7269	-0.0104
624	SLU 69	-1.16	2.49	270.94	39.8152	-0.7291	-0.0087
624	SLU 70	-1.16	2.36	270.96	39.8033	-0.7344	-0.0087
624	SLU 71	-1.15	2.4	269.23	39.5672	-0.7289	-0.0104
624	SLU 72	-1.15	2.27	269.26	39.5553	-0.7342	-0.0104
624	SLU 73	-1.09	2.47	288.98	42.4546	-0.8009	-0.0291
624	SLU 74	-1.11	2.81	293.44	43.1314	-0.803	-0.0274
624	SLU 75	-1.11	2.67	293.46	43.1195	-0.8083	-0.0274
624	SLU 76	-1.11	2.49	291.78	42.8636	-0.8117	-0.029
624	SLU 77	-1.12	2.83	296.24	43.5405	-0.8139	-0.0274
624	SLU 78	-1.13	2.69	296.26	43.5286	-0.8192	-0.0274
624	SLU 79	-1.12	2.74	294.54	43.2926	-0.8137	-0.0291
624	SLU 80	-1.12	2.6	294.56	43.2807	-0.819	-0.029
624	SLU 81	-1.07	2.84	299.78	44.071	-0.8284	-0.0371
624	SLU 82	-1.07	2.71	299.81	44.0591	-0.8337	-0.0371
624	SLU 83	-1.09	2.86	302.58	44.48	-0.8392	-0.0371
624	SLU 84	-1.09	2.73	302.6	44.4681	-0.8445	-0.037
624	SLE RA 1	-0.85	1.67	197.68	29.0287	-0.5479	-0.0096
624	SLE RA 2	-0.85	1.52	197.71	29.0155	-0.5537	-0.0096
624	SLE RA 3	-0.86	1.74	200.68	29.4667	-0.5552	-0.0085
624	SLE RA 4	-0.86	1.65	200.7	29.4588	-0.5587	-0.0085
624	SLE RA 5	-0.86	1.53	199.57	29.2882	-0.561	-0.0096
624	SLE RA 6	-0.87	1.76	202.55	29.7394	-0.5624	-0.0085
624	SLE RA 7	-0.87	1.67	202.57	29.7315	-0.5659	-0.0084
624	SLE RA 8	-0.87	1.7	201.41	29.5742	-0.5623	-0.0096
624	SLE RA 9	-0.87	1.61	201.43	29.5662	-0.5658	-0.0096



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
624	SLE RA 10	-0.83	1.74	214.58	31.4991	-0.6103	-0.022
624	SLE RA 11	-0.84	1.97	217.55	31.9503	-0.6117	-0.0209
624	SLE RA 12	-0.84	1.88	217.57	31.9423	-0.6152	-0.0209
624	SLE RA 13	-0.84	1.76	216.44	31.7718	-0.6175	-0.022
624	SLE RA 14	-0.85	1.98	219.42	32.223	-0.6189	-0.0209
624	SLE RA 15	-0.85	1.89	219.43	32.215	-0.6224	-0.0209
624	SLE RA 16	-0.84	1.92	218.28	32.0577	-0.6188	-0.022
624	SLE RA 17	-0.84	1.83	218.3	32.0498	-0.6223	-0.022
624	SLE RA 18	-0.81	1.99	221.78	32.5767	-0.6286	-0.0273
624	SLE RA 19	-0.82	1.9	221.8	32.5687	-0.6321	-0.0273
624	SLE RA 20	-0.82	2	223.65	32.8494	-0.6358	-0.0273
624	SLE RA 21	-0.82	1.91	223.66	32.8414	-0.6393	-0.0273
624	SLE FR 1	-0.85	1.67	197.68	29.0287	-0.5479	-0.0096
624	SLE FR 2	-0.85	1.64	197.69	29.0261	-0.549	-0.0096
624	SLE FR 3	-0.85	1.67	198.43	29.1378	-0.5507	-0.0096
624	SLE FR 4	-0.84	1.74	204.92	30.0905	-0.5733	-0.0149
624	SLE FR 5	-0.84	1.77	205.66	30.2022	-0.575	-0.0149
624	SLE FR 6	-0.83	1.83	209.73	30.8027	-0.5882	-0.0185
624	SLE QP 1	-0.85	1.67	197.68	29.0287	-0.5479	-0.0096
624	SLE QP 2	-0.84	1.77	204.91	30.0931	-0.5721	-0.0149
624	SLD 1	15.04	6.08	198.56	30.4483	0.0096	-2.3489
624	SLD 2	15.02	5.48	198.62	30.3946	0.0086	-2.3069
624	SLD 3	15.99	0.04	199.64	30.2847	-0.1617	-2.5066
624	SLD 4	15.97	-0.57	199.71	30.2311	-0.1627	-2.4646
624	SLD 5	2.49	12.34	201.36	30.4574	-0.1375	-0.4833
624	SLD 6	2.47	11.95	201.4	30.4221	-0.1382	-0.4557
624	SLD 7	5.65	-7.82	204.96	29.912	-0.7086	-1.0092
624	SLD 8	5.64	-8.22	205	29.8768	-0.7093	-0.9816
624	SLD 9	-7.32	11.75	204.82	30.3094	-0.4349	0.9518
624	SLD 10	-7.33	11.35	204.86	30.2742	-0.4355	0.9794
624	SLD 11	-4.15	-8.42	208.43	29.7641	-1.006	0.4259
624	SLD 12	-4.16	-8.81	208.47	29.7289	-1.0066	0.4535
624	SLD 13	-17.64	4.1	210.12	29.9552	-0.9815	2.4348
624	SLD 14	-17.66	3.5	210.18	29.9015	-0.9825	2.4768
624	SLD 15	-16.69	-1.95	211.2	29.7916	-1.1528	2.2771
624	SLD 16	-16.71	-2.55	211.26	29.7379	-1.1538	2.3191
624	SLV 1	36.31	11.63	190.09	30.9368	0.783	-5.4766
624	SLV 2	36.26	10.23	190.23	30.8119	0.7807	-5.3788
624	SLV 3	38.52	-2.06	192.56	30.5656	0.3958	-5.8427
624	SLV 4	38.48	-3.47	192.71	30.4406	0.3935	-5.7449
624	SLV 5	6.95	25.73	196.68	30.9309	0.422	-1.115
624	SLV 6	6.92	24.83	196.77	30.8503	0.4205	-1.0519
624	SLV 7	14.34	-19.9	204.94	29.6933	-0.8685	-2.3354
624	SLV 8	14.31	-20.81	205.03	29.6126	-0.87	-2.2723
624	SLV 9	-15.98	24.34	204.79	30.5736	-0.2742	2.2425
624	SLV 10	-16.01	23.44	204.88	30.4929	-0.2757	2.3056
624	SLV 11	-8.6	-21.29	213.05	29.336	-1.5647	1.0221
624	SLV 12	-8.63	-22.2	213.14	29.2553	-1.5662	1.0852
624	SLV 13	-40.15	7	217.12	29.7456	-1.5377	5.7151
624	SLV 14	-40.2	5.59	217.26	29.6207	-1.54	5.8129
624	SLV 15	-37.94	-6.69	219.59	29.3743	-1.9248	5.349
624	SLV 16	-37.98	-8.1	219.74	29.2494	-1.9272	5.4467
624	CRTFP Ux+	0	0	0	0	0	0
624	CRTFP Ux-	0	0	0	0	0	0
624	CRTFP Uy+	0	0	0	0	0	0
624	CRTFP Uy-	0	0	0	0	0	0
627	SLU 1	-0.61	0.05	152.06	-26.1568	2.5163	-0.1795
627	SLU 2	-0.61	-0.13	152.16	-26.1817	2.5127	-0.1753
627	SLU 3	-0.63	0.11	155.63	-26.7688	2.5759	-0.1842
627	SLU 4	-0.63	0.01	155.69	-26.7838	2.5738	-0.1817
627	SLU 5	-0.62	-0.13	154.41	-26.5718	2.5489	-0.1777
627	SLU 6	-0.64	0.11	157.88	-27.1589	2.6121	-0.1867
627	SLU 7	-0.64	0.01	157.94	-27.1738	2.61	-0.1842
627	SLU 8	-0.63	0.05	156.56	-26.9369	2.5886	-0.1844
627	SLU 9	-0.63	-0.06	156.62	-26.9519	2.5865	-0.1818
627	SLU 10	-0.59	0.02	172.38	-29.653	2.8334	-0.1817
627	SLU 11	-0.6	0.26	175.86	-30.24	2.8966	-0.1907
627	SLU 12	-0.6	0.16	175.92	-30.255	2.8944	-0.1882
627	SLU 13	-0.6	0.02	174.63	-30.043	2.8695	-0.1841
627	SLU 14	-0.61	0.26	178.11	-30.6301	2.9327	-0.1931
627	SLU 15	-0.61	0.16	178.17	-30.6451	2.9306	-0.1906
627	SLU 16	-0.61	0.19	176.79	-30.4081	2.9092	-0.1908
627	SLU 17	-0.61	0.09	176.85	-30.4231	2.9071	-0.1883
627	SLU 18	-0.58	0.26	180.96	-31.1157	2.9743	-0.1887
627	SLU 19	-0.58	0.15	181.01	-31.1307	2.9722	-0.1861
627	SLU 20	-0.59	0.26	183.21	-31.5057	3.0105	-0.1911
627	SLU 21	-0.59	0.15	183.26	-31.5207	3.0083	-0.1886
627	SLU 22	-0.66	0.49	170	-29.1395	2.8496	-0.2017
627	SLU 23	-0.66	0.31	170.1	-29.1644	2.8461	-0.1975
627	SLU 24	-0.68	0.55	173.58	-29.7515	2.9093	-0.2065
627	SLU 25	-0.68	0.45	173.63	-29.7665	2.9071	-0.204
627	SLU 26	-0.67	0.31	172.35	-29.5545	2.8822	-0.2
627	SLU 27	-0.69	0.55	175.83	-30.1416	2.9454	-0.209
627	SLU 28	-0.68	0.45	175.88	-30.1565	2.9433	-0.2064
627	SLU 29	-0.68	0.49	174.5	-29.9196	2.9219	-0.2066
627	SLU 30	-0.68	0.38	174.56	-29.9346	2.9198	-0.2041
627	SLU 31	-0.64	0.46	190.32	-32.6357	3.1667	-0.204
627	SLU 32	-0.65	0.7	193.8	-33.2227	3.2299	-0.2129
627	SLU 33	-0.65	0.59	193.86	-33.2377	3.2278	-0.2104
627	SLU 34	-0.65	0.46	192.57	-33.0257	3.2028	-0.2064



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
627	SLU 35	-0.66	0.7	196.05	-33.6128	3.266	-0.2154
627	SLU 36	-0.66	0.59	196.11	-33.6278	3.2639	-0.2129
627	SLU 37	-0.66	0.63	194.73	-33.3908	3.2425	-0.2131
627	SLU 38	-0.66	0.53	194.79	-33.4058	3.2404	-0.2105
627	SLU 39	-0.63	0.7	198.9	-34.0984	3.3076	-0.2109
627	SLU 40	-0.63	0.59	198.96	-34.1134	3.3055	-0.2084
627	SLU 41	-0.64	0.7	201.15	-34.4884	3.3438	-0.2134
627	SLU 42	-0.64	0.59	201.21	-34.5034	3.3417	-0.2109
627	SLU 43	-0.78	-0.09	191.53	-32.9812	3.1569	-0.2257
627	SLU 44	-0.78	-0.27	191.62	-33.0061	3.1533	-0.2215
627	SLU 45	-0.79	-0.02	195.1	-33.5932	3.2165	-0.2304
627	SLU 46	-0.79	-0.13	195.16	-33.6082	3.2144	-0.2279
627	SLU 47	-0.79	-0.27	193.87	-33.3962	3.1895	-0.2239
627	SLU 48	-0.8	-0.02	197.35	-33.9833	3.2527	-0.2329
627	SLU 49	-0.8	-0.13	197.41	-33.9982	3.2506	-0.2304
627	SLU 50	-0.8	-0.09	196.03	-33.7613	3.2292	-0.2306
627	SLU 51	-0.8	-0.2	196.09	-33.7763	3.2271	-0.228
627	SLU 52	-0.76	-0.12	211.85	-36.4774	3.474	-0.2279
627	SLU 53	-0.77	0.12	215.33	-37.0644	3.5372	-0.2369
627	SLU 54	-0.77	0.02	215.39	-37.0794	3.535	-0.2344
627	SLU 55	-0.76	-0.12	214.1	-36.8674	3.5101	-0.2304
627	SLU 56	-0.78	0.12	217.58	-37.4545	3.5733	-0.2393
627	SLU 57	-0.78	0.02	217.64	-37.4695	3.5712	-0.2368
627	SLU 58	-0.78	0.06	216.26	-37.2325	3.5498	-0.237
627	SLU 59	-0.77	-0.05	216.31	-37.2475	3.5477	-0.2345
627	SLU 60	-0.75	0.12	220.43	-37.9401	3.6149	-0.2349
627	SLU 61	-0.75	0.01	220.48	-37.955	3.6128	-0.2323
627	SLU 62	-0.76	0.12	222.68	-38.3301	3.6511	-0.2373
627	SLU 63	-0.75	0.01	222.73	-38.3451	3.6489	-0.2348
627	SLU 64	-0.83	0.35	209.47	-35.9639	3.4902	-0.2479
627	SLU 65	-0.83	0.17	209.56	-35.9888	3.4867	-0.2437
627	SLU 66	-0.84	0.42	213.04	-36.5759	3.5499	-0.2527
627	SLU 67	-0.84	0.31	213.1	-36.5909	3.5477	-0.2502
627	SLU 68	-0.84	0.17	211.81	-36.3789	3.5228	-0.2462
627	SLU 69	-0.85	0.42	215.29	-36.966	3.586	-0.2552
627	SLU 70	-0.85	0.31	215.35	-36.9809	3.5839	-0.2526
627	SLU 71	-0.85	0.35	213.97	-36.744	3.5625	-0.2528
627	SLU 72	-0.85	0.24	214.03	-36.759	3.5604	-0.2503
627	SLU 73	-0.8	0.32	229.79	-39.4601	3.8073	-0.2502
627	SLU 74	-0.82	0.56	233.27	-40.0471	3.8705	-0.2591
627	SLU 75	-0.82	0.46	233.33	-40.0621	3.8684	-0.2566
627	SLU 76	-0.81	0.32	232.04	-39.8501	3.8434	-0.2526
627	SLU 77	-0.83	0.56	235.52	-40.4372	3.9066	-0.2616
627	SLU 78	-0.83	0.46	235.58	-40.4522	3.9045	-0.2591
627	SLU 79	-0.82	0.5	234.2	-40.2152	3.8831	-0.2593
627	SLU 80	-0.82	0.39	234.25	-40.2302	3.881	-0.2567
627	SLU 81	-0.8	0.56	238.37	-40.9228	3.9482	-0.2571
627	SLU 82	-0.79	0.45	238.42	-40.9377	3.9461	-0.2546
627	SLU 83	-0.81	0.56	240.62	-41.3128	3.9844	-0.2596
627	SLU 84	-0.8	0.45	240.67	-41.3278	3.9823	-0.2571
627	SLE RA 1	-0.63	0.17	157.19	-27.009	2.6115	-0.1858
627	SLE RA 2	-0.63	0.05	157.25	-27.0256	2.6092	-0.183
627	SLE RA 3	-0.64	0.22	159.57	-27.417	2.6513	-0.189
627	SLE RA 4	-0.64	0.15	159.61	-27.427	2.6499	-0.1873
627	SLE RA 5	-0.63	0.05	158.75	-27.2857	2.6333	-0.1847
627	SLE RA 6	-0.64	0.22	161.07	-27.677	2.6754	-0.1906
627	SLE RA 7	-0.64	0.15	161.11	-27.687	2.674	-0.189
627	SLE RA 8	-0.64	0.17	160.19	-27.5291	2.6597	-0.1891
627	SLE RA 9	-0.64	0.1	160.23	-27.539	2.6583	-0.1874
627	SLE RA 10	-0.61	0.15	170.74	-29.3398	2.8229	-0.1873
627	SLE RA 11	-0.62	0.32	173.05	-29.7312	2.865	-0.1933
627	SLE RA 12	-0.62	0.24	173.09	-29.7411	2.8636	-0.1916
627	SLE RA 13	-0.62	0.15	172.24	-29.5998	2.847	-0.1889
627	SLE RA 14	-0.63	0.32	174.55	-29.9912	2.8891	-0.1949
627	SLE RA 15	-0.63	0.24	174.59	-30.0012	2.8877	-0.1933
627	SLE RA 16	-0.62	0.27	173.67	-29.8432	2.8735	-0.1934
627	SLE RA 17	-0.62	0.2	173.71	-29.8532	2.872	-0.1917
627	SLE RA 18	-0.6	0.31	176.45	-30.3149	2.9169	-0.192
627	SLE RA 19	-0.6	0.24	176.49	-30.3249	2.9155	-0.1903
627	SLE RA 20	-0.61	0.31	177.95	-30.575	2.941	-0.1936
627	SLE RA 21	-0.61	0.24	177.99	-30.5849	2.9396	-0.1919
627	SLE FR 1	-0.63	0.17	157.19	-27.009	2.6115	-0.1858
627	SLE FR 2	-0.63	0.15	157.2	-27.0123	2.611	-0.1853
627	SLE FR 3	-0.63	0.17	157.79	-27.113	2.6212	-0.1865
627	SLE FR 4	-0.62	0.19	162.98	-28.0041	2.7027	-0.1871
627	SLE FR 5	-0.62	0.21	163.57	-28.1048	2.7128	-0.1883
627	SLE FR 6	-0.62	0.24	166.82	-28.6619	2.7642	-0.1889
627	SLE QP 1	-0.63	0.17	157.19	-27.009	2.6115	-0.1858
627	SLE QP 2	-0.62	0.21	162.97	-28.0008	2.7031	-0.1877
627	SLD 1	12.51	3.6	156	-26.5264	2.6623	1.8642
627	SLD 2	12.57	3.28	156.08	-26.5684	2.6607	1.9032
627	SLD 3	11.77	-1.35	157.88	-26.9196	2.5963	2.0165
627	SLD 4	11.83	-1.66	157.97	-26.9615	2.5947	2.0555
627	SLD 5	4.43	8.79	158	-26.9547	2.7913	0.19
627	SLD 6	4.47	8.58	158.06	-26.9823	2.7902	0.2157
627	SLD 7	1.96	-7.7	164.29	-28.2652	2.5713	0.6975
627	SLD 8	2	-7.91	164.34	-28.2927	2.5702	0.7231
627	SLD 9	-3.24	8.33	161.59	-27.7088	2.836	-1.0985
627	SLD 10	-3.2	8.13	161.65	-27.7364	2.835	-1.0728
627	SLD 11	-5.71	-8.15	167.88	-29.0192	2.616	-0.591



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
627	SLD 12	-5.67	-8.36	167.93	-29.0468	2.615	-0.5654
627	SLD 13	-13.07	2.09	167.97	-29.04	2.8115	-2.4308
627	SLD 14	-13.01	1.77	168.05	-29.082	2.8099	-2.3918
627	SLD 15	-13.81	-2.85	169.85	-29.4331	2.7455	-2.2786
627	SLD 16	-13.75	-3.17	169.94	-29.4751	2.7439	-2.2396
627	SLV 1	30.09	7.94	146.73	-24.5644	2.6051	4.6153
627	SLV 2	30.23	7.2	146.93	-24.6621	2.6014	4.7061
627	SLV 3	28.37	-3.26	151	-25.4543	2.456	4.9674
627	SLV 4	28.5	-4	151.2	-25.552	2.4523	5.0582
627	SLV 5	11.19	19.64	151.59	-25.6033	2.9004	0.7035
627	SLV 6	11.27	19.16	151.72	-25.6664	2.898	0.7621
627	SLV 7	5.44	-17.68	165.82	-28.5696	2.4035	1.8772
627	SLV 8	5.52	-18.16	165.95	-28.6327	2.4012	1.9358
627	SLV 9	-6.76	18.58	159.99	-27.3688	3.0051	-2.3112
627	SLV 10	-6.68	18.1	160.12	-27.4319	3.0027	-2.2525
627	SLV 11	-12.51	-18.73	174.22	-30.3351	2.5082	-1.1374
627	SLV 12	-12.43	-19.21	174.35	-30.3982	2.5058	-1.0788
627	SLV 13	-29.74	4.43	174.73	-30.4495	2.9539	-5.4335
627	SLV 14	-29.61	3.68	174.94	-30.5472	2.9503	-5.3428
627	SLV 15	-31.47	-6.77	179	-31.3394	2.8049	-5.0814
627	SLV 16	-31.33	-7.51	179.21	-31.4371	2.8012	-4.9906
627	CRTFP Ux+	0	0	0	0	0	0
627	CRTFP Ux-	0	0	0	0	0	0
627	CRTFP Uy+	0	0	0	0	0	0
627	CRTFP Uy-	0	0	0	0	0	0
628	SLU 1	-0.02	-0.02	16.81	3.6334	-0.5225	0.0047
628	SLU 2	-0.02	-0.04	16.82	3.6345	-0.5229	0.0041
628	SLU 3	-0.02	-0.02	17.21	3.717	-0.5349	0.005
628	SLU 4	-0.02	-0.02	17.22	3.7177	-0.5351	0.0047
628	SLU 5	-0.02	-0.04	17.07	3.6874	-0.5306	0.0042
628	SLU 6	-0.02	-0.02	17.46	3.7699	-0.5426	0.0051
628	SLU 7	-0.02	-0.03	17.46	3.7706	-0.5428	0.0048
628	SLU 8	-0.02	-0.02	17.31	3.7391	-0.538	0.0049
628	SLU 9	-0.02	-0.04	17.32	3.7398	-0.5382	0.0045
628	SLU 10	-0.02	-0.03	19.07	4.1128	-0.5927	0.0029
628	SLU 11	-0.02	0	19.45	4.1954	-0.6047	0.0039
628	SLU 12	-0.02	-0.02	19.46	4.1961	-0.6049	0.0035
628	SLU 13	-0.02	-0.03	19.32	4.1657	-0.6005	0.003
628	SLU 14	-0.02	0	19.7	4.2483	-0.6124	0.004
628	SLU 15	-0.02	-0.02	19.71	4.249	-0.6126	0.0036
628	SLU 16	-0.02	-0.01	19.56	4.2175	-0.6078	0.0037
628	SLU 17	-0.02	-0.02	19.56	4.2181	-0.608	0.0033
628	SLU 18	-0.01	0	20.02	4.3167	-0.6223	0.003
628	SLU 19	-0.01	-0.02	20.03	4.3174	-0.6225	0.0026
628	SLU 20	-0.01	-0.01	20.27	4.3696	-0.63	0.0031
628	SLU 21	-0.01	-0.02	20.28	4.3703	-0.6302	0.0027
628	SLU 22	-0.03	0.02	18.82	4.0641	-0.5847	0.0066
628	SLU 23	-0.03	0	18.83	4.0652	-0.585	0.006
628	SLU 24	-0.03	0.03	19.21	4.1478	-0.597	0.007
628	SLU 25	-0.03	0.02	19.22	4.1485	-0.5972	0.0066
628	SLU 26	-0.03	0	19.08	4.1181	-0.5927	0.0061
628	SLU 27	-0.03	0.03	19.46	4.2007	-0.6047	0.0071
628	SLU 28	-0.03	0.02	19.47	4.2013	-0.6049	0.0067
628	SLU 29	-0.03	0.02	19.31	4.1698	-0.6001	0.0068
628	SLU 30	-0.03	0.01	19.32	4.1705	-0.6003	0.0065
628	SLU 31	-0.02	0.02	21.07	4.5436	-0.6548	0.0048
628	SLU 32	-0.02	0.04	21.46	4.6261	-0.6668	0.0058
628	SLU 33	-0.02	0.03	21.47	4.6268	-0.667	0.0055
628	SLU 34	-0.02	0.02	21.32	4.5965	-0.6626	0.005
628	SLU 35	-0.02	0.04	21.71	4.679	-0.6745	0.0059
628	SLU 36	-0.02	0.03	21.71	4.6797	-0.6747	0.0056
628	SLU 37	-0.02	0.04	21.56	4.6482	-0.6699	0.0056
628	SLU 38	-0.02	0.02	21.57	4.6489	-0.6701	0.0053
628	SLU 39	-0.02	0.04	22.03	4.7474	-0.6844	0.0049
628	SLU 40	-0.02	0.03	22.03	4.7481	-0.6846	0.0046
628	SLU 41	-0.02	0.04	22.27	4.8003	-0.6921	0.005
628	SLU 42	-0.02	0.03	22.28	4.801	-0.6923	0.0047
628	SLU 43	-0.03	-0.05	21.17	4.5757	-0.658	0.0054
628	SLU 44	-0.03	-0.07	21.18	4.5768	-0.6584	0.0048
628	SLU 45	-0.03	-0.04	21.57	4.6594	-0.6703	0.0058
628	SLU 46	-0.03	-0.05	21.57	4.6601	-0.6705	0.0054
628	SLU 47	-0.03	-0.07	21.43	4.6297	-0.6661	0.0049
628	SLU 48	-0.03	-0.04	21.81	4.7122	-0.678	0.0059
628	SLU 49	-0.03	-0.05	21.82	4.7129	-0.6783	0.0055
628	SLU 50	-0.03	-0.05	21.67	4.6814	-0.6735	0.0056
628	SLU 51	-0.03	-0.06	21.67	4.6821	-0.6737	0.0052
628	SLU 52	-0.02	-0.05	23.43	5.0552	-0.7282	0.0036
628	SLU 53	-0.02	-0.03	23.81	5.1377	-0.7402	0.0046
628	SLU 54	-0.02	-0.04	23.82	5.1384	-0.7404	0.0043
628	SLU 55	-0.02	-0.05	23.67	5.108	-0.7359	0.0038
628	SLU 56	-0.02	-0.03	24.06	5.1906	-0.7479	0.0047
628	SLU 57	-0.02	-0.04	24.07	5.1913	-0.7481	0.0044
628	SLU 58	-0.02	-0.03	23.91	5.1598	-0.7433	0.0044
628	SLU 59	-0.02	-0.05	23.92	5.1605	-0.7435	0.0041
628	SLU 60	-0.02	-0.03	24.38	5.259	-0.7578	0.0037
628	SLU 61	-0.02	-0.04	24.38	5.2597	-0.758	0.0034
628	SLU 62	-0.02	-0.03	24.63	5.3119	-0.7655	0.0038
628	SLU 63	-0.02	-0.04	24.63	5.3126	-0.7657	0.0035
628	SLU 64	-0.03	0	23.18	5.0064	-0.7201	0.0073
628	SLU 65	-0.03	-0.02	23.19	5.0076	-0.7205	0.0068



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
628	SLU 66	-0.03	0.01	23.57	5.0901	-0.7324	0.0077
628	SLU 67	-0.03	-0.01	23.58	5.0908	-0.7326	0.0074
628	SLU 68	-0.03	-0.02	23.43	5.0604	-0.7282	0.0069
628	SLU 69	-0.03	0.01	23.82	5.143	-0.7401	0.0078
628	SLU 70	-0.03	-0.01	23.83	5.1437	-0.7404	0.0075
628	SLU 71	-0.03	0	23.67	5.1122	-0.7356	0.0075
628	SLU 72	-0.03	-0.01	23.68	5.1129	-0.7358	0.0072
628	SLU 73	-0.03	-0.01	25.43	5.4859	-0.7903	0.0056
628	SLU 74	-0.03	0.02	25.82	5.5685	-0.8023	0.0065
628	SLU 75	-0.03	0.01	25.82	5.5691	-0.8025	0.0062
628	SLU 76	-0.03	-0.01	25.68	5.5388	-0.798	0.0057
628	SLU 77	-0.03	0.02	26.06	5.6213	-0.81	0.0066
628	SLU 78	-0.03	0.01	26.07	5.622	-0.8102	0.0063
628	SLU 79	-0.03	0.01	25.92	5.5905	-0.8054	0.0064
628	SLU 80	-0.03	0	25.92	5.5912	-0.8056	0.006
628	SLU 81	-0.02	0.02	26.38	5.6898	-0.8199	0.0057
628	SLU 82	-0.02	0.01	26.39	5.6905	-0.8201	0.0053
628	SLU 83	-0.02	0.02	26.63	5.7426	-0.8276	0.0058
628	SLU 84	-0.02	0.01	26.64	5.7433	-0.8278	0.0054
628	SLE RA 1	-0.02	-0.01	17.39	3.7564	-0.5403	0.0052
628	SLE RA 2	-0.02	-0.02	17.39	3.7572	-0.5405	0.0048
628	SLE RA 3	-0.02	-0.01	17.65	3.8122	-0.5485	0.0055
628	SLE RA 4	-0.02	-0.01	17.65	3.8127	-0.5486	0.0052
628	SLE RA 5	-0.02	-0.02	17.56	3.7924	-0.5457	0.0049
628	SLE RA 6	-0.02	-0.01	17.82	3.8475	-0.5536	0.0055
628	SLE RA 7	-0.02	-0.01	17.82	3.8479	-0.5538	0.0053
628	SLE RA 8	-0.02	-0.01	17.72	3.8269	-0.5506	0.0053
628	SLE RA 9	-0.02	-0.02	17.72	3.8274	-0.5507	0.0051
628	SLE RA 10	-0.02	-0.01	18.89	4.0761	-0.5871	0.004
628	SLE RA 11	-0.02	0	19.15	4.1311	-0.595	0.0047
628	SLE RA 12	-0.02	0	19.15	4.1316	-0.5952	0.0045
628	SLE RA 13	-0.02	-0.01	19.06	4.1113	-0.5922	0.0041
628	SLE RA 14	-0.02	0	19.31	4.1664	-0.6002	0.0047
628	SLE RA 15	-0.02	-0.01	19.32	4.1668	-0.6003	0.0045
628	SLE RA 16	-0.02	0	19.21	4.1458	-0.5971	0.0046
628	SLE RA 17	-0.02	-0.01	19.22	4.1463	-0.5973	0.0043
628	SLE RA 18	-0.02	0	19.52	4.212	-0.6068	0.0041
628	SLE RA 19	-0.02	-0.01	19.53	4.2124	-0.6069	0.0039
628	SLE RA 20	-0.02	0	19.69	4.2472	-0.6119	0.0042
628	SLE RA 21	-0.02	-0.01	19.69	4.2477	-0.6121	0.0039
628	SLE FR 1	-0.02	-0.01	17.39	3.7564	-0.5403	0.0052
628	SLE FR 2	-0.02	-0.01	17.39	3.7566	-0.5403	0.0051
628	SLE FR 3	-0.02	-0.01	17.45	3.7705	-0.5423	0.0052
628	SLE FR 4	-0.02	-0.01	18.03	3.8932	-0.5603	0.0048
628	SLE FR 5	-0.02	-0.01	18.09	3.9072	-0.5623	0.0049
628	SLE FR 6	-0.02	0	18.46	3.9842	-0.5735	0.0047
628	SLE QP 1	-0.02	-0.01	17.39	3.7564	-0.5403	0.0052
628	SLE QP 2	-0.02	-0.01	18.03	3.8931	-0.5602	0.0049
628	SLD 1	1.36	0.37	17.3	3.8456	-0.5374	-0.3349
628	SLD 2	1.35	0.34	17.31	3.8406	-0.5374	-0.3348
628	SLD 3	1.44	-0.18	17.55	3.8944	-0.5457	-0.3633
628	SLD 4	1.43	-0.21	17.55	3.8894	-0.5458	-0.3632
628	SLD 5	0.27	0.95	17.44	3.8057	-0.5407	-0.054
628	SLD 6	0.26	0.93	17.44	3.8024	-0.5407	-0.054
628	SLD 7	0.54	-0.89	18.26	3.9684	-0.5686	-0.1486
628	SLD 8	0.54	-0.91	18.26	3.9651	-0.5686	-0.1486
628	SLD 9	-0.58	0.9	17.8	3.8211	-0.5519	0.1584
628	SLD 10	-0.59	0.88	17.8	3.8178	-0.5519	0.1584
628	SLD 11	-0.31	-0.94	18.62	3.9837	-0.5798	0.0637
628	SLD 12	-0.31	-0.96	18.62	3.9805	-0.5798	0.0637
628	SLD 13	-1.48	0.2	18.51	3.8968	-0.5747	0.373
628	SLD 14	-1.48	0.17	18.51	3.8918	-0.5747	0.373
628	SLD 15	-1.4	-0.35	18.75	3.9456	-0.5831	0.3446
628	SLD 16	-1.4	-0.38	18.75	3.9406	-0.5831	0.3446
628	SLV 1	3.2	0.85	16.34	3.7833	-0.507	-0.7905
628	SLV 2	3.19	0.78	16.35	3.7716	-0.5072	-0.7904
628	SLV 3	3.39	-0.4	16.9	3.8939	-0.526	-0.8559
628	SLV 4	3.38	-0.47	16.9	3.8822	-0.5261	-0.8558
628	SLV 5	0.65	2.15	16.68	3.6945	-0.5155	-0.1346
628	SLV 6	0.65	2.11	16.68	3.6869	-0.5156	-0.1345
628	SLV 7	1.3	-2.01	18.53	4.063	-0.5787	-0.3526
628	SLV 8	1.29	-2.05	18.53	4.0555	-0.5787	-0.3525
628	SLV 9	-1.33	2.04	17.52	3.7307	-0.5417	0.3622
628	SLV 10	-1.34	1.99	17.52	3.7231	-0.5418	0.3624
628	SLV 11	-0.69	-2.12	19.37	4.0992	-0.6049	0.1442
628	SLV 12	-0.7	-2.17	19.38	4.0917	-0.6049	0.1443
628	SLV 13	-3.43	0.46	19.15	3.904	-0.5944	0.8655
628	SLV 14	-3.44	0.39	19.16	3.8923	-0.5945	0.8657
628	SLV 15	-3.24	-0.79	19.71	4.0145	-0.6133	0.8001
628	SLV 16	-3.24	-0.86	19.71	4.0029	-0.6134	0.8003
628	CRTFP Ux+	0	0	0	0	0	0
628	CRTFP Ux-	0	0	0	0	0	0
628	CRTFP Uy+	0	0	0	0	0	0
628	CRTFP Uy-	0	0	0	0	0	0
630	SLU 1	-0.03	-0.15	49.42	10.5457	-9.2546	-0.0265
630	SLU 2	-0.03	-0.21	49.46	10.5524	-9.263	-0.037
630	SLU 3	-0.03	-0.13	50.58	10.7887	-9.4723	-0.0227
630	SLU 4	-0.03	-0.17	50.6	10.7927	-9.4772	-0.029
630	SLU 5	-0.03	-0.21	50.19	10.7066	-9.3995	-0.0372
630	SLU 6	-0.03	-0.13	51.31	10.943	-9.6088	-0.0229



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
630	SLU 7	-0.03	-0.17	51.33	10.947	-9.6138	-0.0292
630	SLU 8	-0.03	-0.16	50.87	10.8542	-9.5277	-0.0268
630	SLU 9	-0.03	-0.19	50.9	10.8582	-9.5327	-0.0331
630	SLU 10	-0.01	-0.18	56.07	11.9408	-10.5025	-0.0366
630	SLU 11	-0.01	-0.1	57.19	12.1772	-10.7118	-0.0223
630	SLU 12	-0.01	-0.14	57.22	12.1812	-10.7168	-0.0286
630	SLU 13	-0.01	-0.18	56.8	12.0951	-10.6391	-0.0368
630	SLU 14	-0.01	-0.11	57.92	12.3314	-10.8484	-0.0224
630	SLU 15	-0.01	-0.14	57.94	12.3354	-10.8534	-0.0288
630	SLU 16	-0.01	-0.13	57.49	12.2427	-10.7673	-0.0264
630	SLU 17	-0.01	-0.16	57.51	12.2467	-10.7723	-0.0327
630	SLU 18	0	-0.11	58.86	12.5292	-11.0255	-0.0259
630	SLU 19	0	-0.14	58.89	12.5332	-11.0305	-0.0322
630	SLU 20	0	-0.11	59.59	12.6835	-11.162	-0.026
630	SLU 21	0	-0.15	59.62	12.6875	-11.167	-0.0323
630	SLU 22	-0.03	-0.02	55.25	11.7759	-10.3443	-0.0018
630	SLU 23	-0.03	-0.08	55.29	11.7825	-10.3527	-0.0123
630	SLU 24	-0.03	0	56.42	12.0189	-10.5619	0.002
630	SLU 25	-0.03	-0.04	56.44	12.0229	-10.5669	-0.0043
630	SLU 26	-0.03	-0.08	56.02	11.9368	-10.4892	-0.0125
630	SLU 27	-0.03	0	57.15	12.1732	-10.6985	0.0019
630	SLU 28	-0.03	-0.04	57.17	12.1772	-10.7035	-0.0045
630	SLU 29	-0.03	-0.02	56.71	12.0844	-10.6174	-0.0021
630	SLU 30	-0.03	-0.06	56.74	12.0884	-10.6224	-0.0084
630	SLU 31	-0.01	-0.05	61.91	13.171	-11.5922	-0.0119
630	SLU 32	-0.01	0.03	63.03	13.4073	-11.8015	0.0025
630	SLU 33	-0.01	-0.01	63.05	13.4113	-11.8065	-0.0039
630	SLU 34	-0.01	-0.05	62.64	13.3252	-11.7288	-0.012
630	SLU 35	-0.01	0.03	63.76	13.5616	-11.9381	0.0023
630	SLU 36	-0.01	-0.01	63.78	13.5656	-11.9431	-0.004
630	SLU 37	-0.01	0	63.33	13.4728	-11.857	-0.0016
630	SLU 38	-0.01	-0.03	63.35	13.4768	-11.862	-0.008
630	SLU 39	0	0.02	64.7	13.7594	-12.1152	-0.0011
630	SLU 40	0	-0.01	64.73	13.7634	-12.1202	-0.0075
630	SLU 41	0	0.02	65.43	13.9136	-12.2517	-0.0013
630	SLU 42	0	-0.02	65.45	13.9176	-12.2567	-0.0076
630	SLU 43	-0.03	-0.24	62.24	13.2876	-11.6574	-0.0429
630	SLU 44	-0.03	-0.3	62.28	13.2943	-11.6657	-0.0534
630	SLU 45	-0.03	-0.22	63.4	13.5307	-11.875	-0.0391
630	SLU 46	-0.03	-0.26	63.43	13.5347	-11.88	-0.0454
630	SLU 47	-0.03	-0.3	63.01	13.4486	-11.8023	-0.0536
630	SLU 48	-0.03	-0.22	64.13	13.6849	-12.0116	-0.0393
630	SLU 49	-0.03	-0.26	64.15	13.6889	-12.0166	-0.0456
630	SLU 50	-0.03	-0.25	63.7	13.5962	-11.9305	-0.0432
630	SLU 51	-0.03	-0.28	63.72	13.6002	-11.9355	-0.0495
630	SLU 52	-0.02	-0.27	68.89	14.6828	-12.9053	-0.053
630	SLU 53	-0.02	-0.19	70.01	14.9191	-13.1146	-0.0387
630	SLU 54	-0.02	-0.23	70.04	14.9231	-13.1196	-0.045
630	SLU 55	-0.02	-0.27	69.62	14.837	-13.0419	-0.0532
630	SLU 56	-0.02	-0.2	70.74	15.0734	-13.2511	-0.0388
630	SLU 57	-0.02	-0.23	70.77	15.0774	-13.2561	-0.0452
630	SLU 58	-0.02	-0.22	70.31	14.9846	-13.1701	-0.0428
630	SLU 59	-0.02	-0.25	70.33	14.9886	-13.1751	-0.0491
630	SLU 60	-0.01	-0.2	71.69	15.2711	-13.4283	-0.0423
630	SLU 61	-0.01	-0.24	71.71	15.2751	-13.4332	-0.0486
630	SLU 62	-0.01	-0.2	72.41	15.4254	-13.5648	-0.0424
630	SLU 63	-0.01	-0.24	72.44	15.4294	-13.5698	-0.0488
630	SLU 64	-0.03	-0.11	68.08	14.5178	-12.7471	-0.0182
630	SLU 65	-0.04	-0.17	68.12	14.5245	-12.7554	-0.0287
630	SLU 66	-0.04	-0.09	69.24	14.7608	-12.9647	-0.0144
630	SLU 67	-0.04	-0.13	69.26	14.7648	-12.9697	-0.0207
630	SLU 68	-0.04	-0.17	68.85	14.6787	-12.892	-0.0289
630	SLU 69	-0.04	-0.09	69.97	14.9151	-13.1013	-0.0146
630	SLU 70	-0.04	-0.13	69.99	14.9191	-13.1063	-0.0209
630	SLU 71	-0.04	-0.11	69.54	14.8263	-13.0202	-0.0185
630	SLU 72	-0.04	-0.15	69.56	14.8303	-13.0252	-0.0248
630	SLU 73	-0.02	-0.14	74.73	15.9129	-13.995	-0.0283
630	SLU 74	-0.02	-0.06	75.85	16.1493	-14.2043	-0.014
630	SLU 75	-0.02	-0.1	75.88	16.1533	-14.2093	-0.0203
630	SLU 76	-0.02	-0.14	75.46	16.0672	-14.1316	-0.0285
630	SLU 77	-0.02	-0.06	76.58	16.3035	-14.3408	-0.0141
630	SLU 78	-0.02	-0.1	76.61	16.3075	-14.3458	-0.0205
630	SLU 79	-0.02	-0.09	76.15	16.2148	-14.2598	-0.0181
630	SLU 80	-0.02	-0.12	76.17	16.2188	-14.2648	-0.0244
630	SLU 81	-0.01	-0.07	77.52	16.5013	-14.5179	-0.0176
630	SLU 82	-0.01	-0.1	77.55	16.5053	-14.5229	-0.0239
630	SLU 83	-0.01	-0.07	78.25	16.6556	-14.6545	-0.0177
630	SLU 84	-0.01	-0.11	78.28	16.6596	-14.6595	-0.024
630	SLE RA 1	-0.03	-0.11	51.08	10.8972	-9.566	-0.0194
630	SLE RA 2	-0.03	-0.15	51.11	10.9016	-9.5715	-0.0264
630	SLE RA 3	-0.03	-0.1	51.86	11.0592	-9.7111	-0.0169
630	SLE RA 4	-0.03	-0.12	51.87	11.0619	-9.7144	-0.0211
630	SLE RA 5	-0.03	-0.15	51.6	11.0045	-9.6626	-0.0265
630	SLE RA 6	-0.03	-0.1	52.34	11.162	-9.8021	-0.017
630	SLE RA 7	-0.03	-0.13	52.36	11.1647	-9.8054	-0.0212
630	SLE RA 8	-0.03	-0.12	52.06	11.1029	-9.748	-0.0196
630	SLE RA 9	-0.03	-0.14	52.07	11.1055	-9.7514	-0.0238
630	SLE RA 10	-0.02	-0.13	55.52	11.8272	-10.3979	-0.0262
630	SLE RA 11	-0.02	-0.08	56.27	11.9848	-10.5374	-0.0166
630	SLE RA 12	-0.02	-0.11	56.28	11.9875	-10.5408	-0.0208



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
630	SLE RA 13	-0.02	-0.13	56.01	11.9301	-10.4889	-0.0263
630	SLE RA 14	-0.02	-0.08	56.75	12.0877	-10.6285	-0.0167
630	SLE RA 15	-0.02	-0.11	56.77	12.0903	-10.6318	-0.0209
630	SLE RA 16	-0.02	-0.1	56.46	12.0285	-10.5744	-0.0193
630	SLE RA 17	-0.02	-0.12	56.48	12.0312	-10.5777	-0.0236
630	SLE RA 18	-0.01	-0.09	57.38	12.2195	-10.7465	-0.019
630	SLE RA 19	-0.01	-0.11	57.4	12.2222	-10.7499	-0.0232
630	SLE RA 20	-0.01	-0.09	57.87	12.3223	-10.8376	-0.0191
630	SLE RA 21	-0.01	-0.11	57.88	12.325	-10.8409	-0.0233
630	SLE FR 1	-0.03	-0.11	51.08	10.8972	-9.566	-0.0194
630	SLE FR 2	-0.03	-0.12	51.09	10.8981	-9.5671	-0.0208
630	SLE FR 3	-0.03	-0.11	51.28	10.9383	-9.6024	-0.0195
630	SLE FR 4	-0.02	-0.11	52.98	11.2948	-9.9213	-0.0207
630	SLE FR 5	-0.02	-0.11	53.17	11.335	-9.9566	-0.0193
630	SLE FR 6	-0.02	-0.1	54.23	11.5583	-10.1563	-0.0192
630	SLE QP 1	-0.03	-0.11	51.08	10.8972	-9.566	-0.0194
630	SLE QP 2	-0.02	-0.11	52.97	11.2939	-9.9201	-0.0193
630	SLD 1	4	0.99	50.86	11.3179	-9.532	-0.8844
630	SLD 2	3.99	0.93	50.86	11.3045	-9.5328	-0.891
630	SLD 3	4.24	-0.65	51.79	11.523	-9.7209	-1.2053
630	SLD 4	4.23	-0.71	51.79	11.5096	-9.7218	-1.2119
630	SLD 5	0.82	2.72	50.93	10.9924	-9.517	0.209
630	SLD 6	0.82	2.68	50.93	10.9837	-9.5176	0.2047
630	SLD 7	1.62	-2.75	54.02	11.676	-10.1468	-0.8606
630	SLD 8	1.62	-2.78	54.03	11.6672	-10.1473	-0.8649
630	SLD 9	-1.66	2.57	51.92	10.9205	-9.6929	0.8263
630	SLD 10	-1.67	2.53	51.92	10.9117	-9.6935	0.8221
630	SLD 11	-0.86	-2.89	55.01	11.6041	-10.3227	-0.2433
630	SLD 12	-0.87	-2.93	55.02	11.5953	-10.3233	-0.2476
630	SLD 13	-4.28	0.49	54.16	11.0782	-10.1185	1.1733
630	SLD 14	-4.29	0.44	54.16	11.0648	-10.1194	1.1668
630	SLD 15	-4.04	-1.14	55.08	11.2832	-10.3075	0.8524
630	SLD 16	-4.05	-1.2	55.09	11.2699	-10.3083	0.8459
630	SLV 1	9.4	2.39	48.06	11.359	-9.0193	-2.055
630	SLV 2	9.37	2.26	48.07	11.3279	-9.0213	-2.0702
630	SLV 3	9.96	-1.32	50.16	11.823	-9.4466	-2.7827
630	SLV 4	9.93	-1.45	50.17	11.7919	-9.4486	-2.7978
630	SLV 5	1.96	6.3	48.31	10.615	-9.0015	0.4762
630	SLV 6	1.94	6.21	48.32	10.5949	-9.0027	0.4664
630	SLV 7	3.83	-6.08	55.31	12.1618	-10.4258	-1.9493
630	SLV 8	3.81	-6.16	55.32	12.1417	-10.4271	-1.9591
630	SLV 9	-3.85	5.95	50.63	10.446	-9.4132	1.9205
630	SLV 10	-3.87	5.86	50.64	10.4259	-9.4145	1.9107
630	SLV 11	-1.99	-6.42	57.62	11.9929	-10.8375	-0.505
630	SLV 12	-2	-6.51	57.63	11.9728	-10.8388	-0.5148
630	SLV 13	-9.98	1.24	55.78	10.7958	-10.3917	2.7593
630	SLV 14	-10	1.1	55.79	10.7647	-10.3937	2.7441
630	SLV 15	-9.42	-2.47	57.87	11.2599	-10.819	2.0316
630	SLV 16	-9.44	-2.61	57.89	11.2288	-10.821	2.0164
630	CRTFP Ux+	0	0	0	0	0	0
630	CRTFP Ux-	0	0	0	0	0	0
630	CRTFP Uy+	0	0	0	0	0	0
630	CRTFP Uy-	0	0	0	0	0	0
632	SLU 1	0.05	-0.18	55.43	11.7203	12.3068	0.0313
632	SLU 2	0.05	-0.24	55.49	11.7299	12.319	0.0456
632	SLU 3	0.05	-0.16	56.73	11.9968	12.5958	0.026
632	SLU 4	0.05	-0.19	56.77	12.0026	12.6031	0.0346
632	SLU 5	0.05	-0.24	56.3	11.9054	12.5003	0.0457
632	SLU 6	0.05	-0.16	57.55	12.1723	12.7771	0.0261
632	SLU 7	0.05	-0.19	57.58	12.1781	12.7844	0.0347
632	SLU 8	0.05	-0.18	57.06	12.0713	12.6694	0.0316
632	SLU 9	0.05	-0.22	57.1	12.077	12.6767	0.0401
632	SLU 10	0.07	-0.21	62.92	13.2649	13.969	0.0344
632	SLU 11	0.07	-0.12	64.17	13.5319	14.2458	0.0148
632	SLU 12	0.07	-0.16	64.2	13.5376	14.2531	0.0234
632	SLU 13	0.07	-0.21	63.74	13.4404	14.1503	0.0345
632	SLU 14	0.07	-0.12	64.98	13.7073	14.4271	0.0149
632	SLU 15	0.07	-0.16	65.02	13.7131	14.4344	0.0235
632	SLU 16	0.07	-0.15	64.5	13.6063	14.3194	0.0203
632	SLU 17	0.07	-0.18	64.53	13.6121	14.3267	0.0289
632	SLU 18	0.08	-0.13	66.05	13.9132	14.6639	0.0153
632	SLU 19	0.08	-0.17	66.08	13.9189	14.6712	0.0239
632	SLU 20	0.08	-0.13	66.87	14.0886	14.8452	0.0154
632	SLU 21	0.08	-0.17	66.9	14.0944	14.8525	0.024
632	SLU 22	0.06	-0.03	61.93	13.1037	13.7503	-0.0025
632	SLU 23	0.06	-0.09	61.98	13.1134	13.7625	0.0118
632	SLU 24	0.06	-0.01	63.23	13.3803	14.0393	-0.0078
632	SLU 25	0.06	-0.05	63.26	13.3861	14.0466	0.0007
632	SLU 26	0.06	-0.09	62.8	13.2889	13.9438	0.0119
632	SLU 27	0.06	-0.01	64.04	13.5558	14.2206	-0.0077
632	SLU 28	0.06	-0.05	64.08	13.5616	14.2279	0.0009
632	SLU 29	0.06	-0.03	63.56	13.4547	14.1129	-0.0023
632	SLU 30	0.06	-0.07	63.59	13.4605	14.1202	0.0063
632	SLU 31	0.07	-0.06	69.42	14.6484	15.4125	0.0005
632	SLU 32	0.08	0.02	70.66	14.9153	15.6893	-0.0191
632	SLU 33	0.08	-0.01	70.69	14.9211	15.6966	-0.0105
632	SLU 34	0.08	-0.06	70.23	14.8239	15.5938	0.0007
632	SLU 35	0.08	0.02	71.48	15.0908	15.8706	-0.019
632	SLU 36	0.08	-0.01	71.51	15.0966	15.8779	-0.0104
632	SLU 37	0.08	0	70.99	14.9897	15.7629	-0.0135





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
632	SLU 38	0.08	-0.04	71.03	14.9955	15.7702	-0.005
632	SLU 39	0.08	0.02	72.55	15.2966	16.1074	-0.0186
632	SLU 40	0.08	-0.02	72.58	15.3024	16.1147	-0.01
632	SLU 41	0.08	0.02	73.36	15.4721	16.2887	-0.0185
632	SLU 42	0.08	-0.02	73.4	15.4779	16.296	-0.0099
632	SLU 43	0.06	-0.28	69.83	14.7621	15.504	0.0523
632	SLU 44	0.06	-0.34	69.89	14.7717	15.5162	0.0666
632	SLU 45	0.06	-0.26	71.13	15.0386	15.793	0.047
632	SLU 46	0.06	-0.3	71.17	15.0444	15.8003	0.0556
632	SLU 47	0.06	-0.35	70.71	14.9472	15.6975	0.0668
632	SLU 48	0.07	-0.26	71.95	15.2141	15.9743	0.0471
632	SLU 49	0.06	-0.3	71.98	15.2199	15.9816	0.0557
632	SLU 50	0.06	-0.28	71.47	15.113	15.8666	0.0526
632	SLU 51	0.06	-0.32	71.5	15.1188	15.8739	0.0611
632	SLU 52	0.08	-0.31	77.32	16.3067	17.1661	0.0554
632	SLU 53	0.08	-0.23	78.57	16.5736	17.4429	0.0358
632	SLU 54	0.08	-0.26	78.6	16.5794	17.4502	0.0444
632	SLU 55	0.08	-0.31	78.14	16.4822	17.3474	0.0555
632	SLU 56	0.08	-0.23	79.38	16.7491	17.6242	0.0359
632	SLU 57	0.08	-0.27	79.42	16.7549	17.6315	0.0445
632	SLU 58	0.08	-0.25	78.9	16.648	17.5165	0.0413
632	SLU 59	0.08	-0.29	78.93	16.6538	17.5238	0.0499
632	SLU 60	0.09	-0.24	80.45	16.9549	17.861	0.0363
632	SLU 61	0.09	-0.27	80.49	16.9607	17.8684	0.0449
632	SLU 62	0.09	-0.24	81.27	17.1304	18.0423	0.0364
632	SLU 63	0.09	-0.27	81.3	17.1362	18.0497	0.045
632	SLU 64	0.07	-0.13	76.33	16.1455	16.9475	0.0185
632	SLU 65	0.07	-0.2	76.39	16.1551	16.9597	0.0328
632	SLU 66	0.07	-0.11	77.63	16.422	17.2365	0.0132
632	SLU 67	0.07	-0.15	77.66	16.4278	17.2438	0.0218
632	SLU 68	0.07	-0.2	77.2	16.3306	17.141	0.0329
632	SLU 69	0.07	-0.11	78.45	16.5975	17.4177	0.0133
632	SLU 70	0.07	-0.15	78.48	16.6033	17.4251	0.0219
632	SLU 71	0.07	-0.14	77.96	16.4965	17.31	0.0187
632	SLU 72	0.07	-0.17	78	16.5022	17.3174	0.0273
632	SLU 73	0.09	-0.17	83.82	17.6901	18.6096	0.0216
632	SLU 74	0.09	-0.08	85.06	17.9571	18.8864	0.0019
632	SLU 75	0.09	-0.12	85.1	17.9628	18.8937	0.0105
632	SLU 76	0.09	-0.17	84.64	17.8656	18.7909	0.0217
632	SLU 77	0.09	-0.08	85.88	18.1325	19.0677	0.0021
632	SLU 78	0.09	-0.12	85.91	18.1383	19.075	0.0106
632	SLU 79	0.09	-0.1	85.39	18.0315	18.96	0.0075
632	SLU 80	0.09	-0.14	85.43	18.0373	18.9673	0.0161
632	SLU 81	0.1	-0.09	86.95	18.3384	19.3045	0.0024
632	SLU 82	0.1	-0.13	86.98	18.3441	19.3119	0.011
632	SLU 83	0.1	-0.09	87.76	18.5138	19.4858	0.0026
632	SLU 84	0.1	-0.13	87.8	18.5196	19.4931	0.0111
632	SLE RA 1	0.05	-0.14	57.29	12.1156	12.7193	0.0217
632	SLE RA 2	0.05	-0.18	57.33	12.122	12.7274	0.0312
632	SLE RA 3	0.05	-0.12	58.15	12.2999	12.9119	0.0181
632	SLE RA 4	0.05	-0.15	58.18	12.3038	12.9168	0.0238
632	SLE RA 5	0.05	-0.18	57.87	12.239	12.8483	0.0313
632	SLE RA 6	0.05	-0.12	58.7	12.4169	13.0328	0.0182
632	SLE RA 7	0.05	-0.15	58.72	12.4208	13.0377	0.0239
632	SLE RA 8	0.05	-0.14	58.38	12.3495	12.961	0.0218
632	SLE RA 9	0.05	-0.16	58.4	12.3534	12.9659	0.0275
632	SLE RA 10	0.06	-0.16	62.28	13.1453	13.8274	0.0237
632	SLE RA 11	0.07	-0.1	63.11	13.3233	14.0119	0.0106
632	SLE RA 12	0.07	-0.12	63.13	13.3271	14.0168	0.0164
632	SLE RA 13	0.06	-0.16	62.82	13.2623	13.9482	0.0238
632	SLE RA 14	0.07	-0.1	63.65	13.4403	14.1327	0.0107
632	SLE RA 15	0.07	-0.12	63.68	13.4441	14.1376	0.0164
632	SLE RA 16	0.07	-0.11	63.33	13.3729	14.0609	0.0143
632	SLE RA 17	0.07	-0.14	63.35	13.3767	14.0658	0.02
632	SLE RA 18	0.07	-0.1	64.37	13.5775	14.2906	0.011
632	SLE RA 19	0.07	-0.13	64.39	13.5813	14.2955	0.0167
632	SLE RA 20	0.07	-0.11	64.91	13.6945	14.4115	0.011
632	SLE RA 21	0.07	-0.13	64.93	13.6983	14.4164	0.0168
632	SLE FR 1	0.05	-0.14	57.29	12.1156	12.7193	0.0217
632	SLE FR 2	0.05	-0.14	57.29	12.1168	12.7209	0.0236
632	SLE FR 3	0.05	-0.14	57.5	12.1624	12.7676	0.0217
632	SLE FR 4	0.06	-0.13	59.42	12.5554	13.1923	0.0204
632	SLE FR 5	0.06	-0.13	59.63	12.6009	13.239	0.0185
632	SLE FR 6	0.06	-0.12	60.83	12.8465	13.5049	0.0163
632	SLE QP 1	0.05	-0.14	57.29	12.1156	12.7193	0.0217
632	SLE QP 2	0.06	-0.13	59.41	12.5541	13.1907	0.0185
632	SLD 1	4.54	1.11	57.41	12.51	12.7145	-1.3612
632	SLD 2	4.53	1.08	57.41	12.5026	12.7152	-1.3508
632	SLD 3	4.81	-0.76	58.69	12.7702	12.9901	-0.9478
632	SLD 4	4.8	-0.79	58.69	12.7629	12.9908	-0.9373
632	SLD 5	1	3.08	56.87	12.1475	12.6297	-1.0244
632	SLD 6	0.99	3.06	56.87	12.1427	12.6302	-1.0175
632	SLD 7	1.89	-3.14	61.13	13.015	13.5484	0.3538
632	SLD 8	1.88	-3.16	61.14	13.0101	13.5488	0.3606
632	SLD 9	-1.77	2.91	57.69	12.0981	12.8325	-0.3237
632	SLD 10	-1.77	2.89	57.69	12.0933	12.833	-0.3169
632	SLD 11	-0.88	-3.32	61.95	12.9656	13.7512	1.0544
632	SLD 12	-0.88	-3.33	61.95	12.9608	13.7516	1.0613
632	SLD 13	-4.68	0.53	60.14	12.3454	13.3906	0.9742
632	SLD 14	-4.69	0.51	60.14	12.3381	13.3912	0.9847



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
632	SLD 15	-4.42	-1.33	61.42	12.6056	13.6662	1.3877
632	SLD 16	-4.43	-1.36	61.42	12.5983	13.6668	1.3981
632	SLV 1	10.55	2.68	54.77	12.4619	12.0874	-3.1937
632	SLV 2	10.52	2.62	54.77	12.4448	12.0889	-3.1693
632	SLV 3	11.17	-1.54	57.66	13.0497	12.7106	-2.2576
632	SLV 4	11.15	-1.6	57.67	13.0326	12.7121	-2.2333
632	SLV 5	2.26	7.14	53.63	11.6378	11.9142	-2.3691
632	SLV 6	2.25	7.1	53.63	11.6268	11.9152	-2.3534
632	SLV 7	4.34	-6.95	63.28	13.5973	13.9916	0.7511
632	SLV 8	4.32	-6.99	63.28	13.5863	13.9926	0.7669
632	SLV 9	-4.21	6.74	55.54	11.522	12.3887	-0.7299
632	SLV 10	-4.22	6.7	55.55	11.5109	12.3897	-0.7142
632	SLV 11	-2.14	-7.35	65.19	13.4815	14.4662	2.3903
632	SLV 12	-2.15	-7.39	65.19	13.4704	14.4672	2.406
632	SLV 13	-11.03	1.35	61.16	12.0757	13.6692	2.2702
632	SLV 14	-11.06	1.29	61.16	12.0585	13.6707	2.2945
632	SLV 15	-10.41	-2.88	64.05	12.6635	14.2924	3.2062
632	SLV 16	-10.43	-2.93	64.05	12.6464	14.2939	3.2306
632	CRTFP Ux+	0	0	0	0	0	0
632	CRTFP Ux-	0	0	0	0	0	0
632	CRTFP Uy+	0	0	0	0	0	0
632	CRTFP Uy-	0	0	0	0	0	0
633	SLU 1	0.08	-0.06	40.18	8.7036	-7.7432	-0.0287
633	SLU 2	0.08	-0.11	40.22	8.7114	-7.7512	-0.0371
633	SLU 3	0.08	-0.04	41.12	8.9088	-7.9246	-0.026
633	SLU 4	0.08	-0.07	41.15	8.9136	-7.9294	-0.0311
633	SLU 5	0.08	-0.11	40.81	8.8414	-7.8649	-0.0372
633	SLU 6	0.08	-0.04	41.71	9.0389	-8.0383	-0.0261
633	SLU 7	0.08	-0.07	41.74	9.0436	-8.0431	-0.0311
633	SLU 8	0.08	-0.06	41.36	8.9636	-7.9707	-0.0288
633	SLU 9	0.08	-0.09	41.39	8.9683	-7.9755	-0.0339
633	SLU 10	0.09	-0.07	45.61	9.8557	-8.7891	-0.0328
633	SLU 11	0.1	-0.01	46.51	10.0532	-8.9625	-0.0217
633	SLU 12	0.1	-0.03	46.53	10.0579	-8.9673	-0.0267
633	SLU 13	0.1	-0.07	46.2	9.9858	-8.9029	-0.0329
633	SLU 14	0.1	-0.01	47.1	10.1832	-9.0762	-0.0217
633	SLU 15	0.1	-0.03	47.12	10.1879	-9.081	-0.0268
633	SLU 16	0.1	-0.02	46.75	10.108	-9.0086	-0.0245
633	SLU 17	0.1	-0.05	46.77	10.1127	-9.0134	-0.0295
633	SLU 18	0.1	-0.01	47.88	10.3383	-9.226	-0.0225
633	SLU 19	0.1	-0.04	47.9	10.343	-9.2308	-0.0276
633	SLU 20	0.1	-0.01	48.47	10.4684	-9.3397	-0.0226
633	SLU 21	0.1	-0.03	48.49	10.4731	-9.3445	-0.0276
633	SLU 22	0.09	0.05	44.89	9.7337	-8.6512	-0.0098
633	SLU 23	0.09	0	44.93	9.7415	-8.6592	-0.0182
633	SLU 24	0.09	0.06	45.83	9.939	-8.8326	-0.0071
633	SLU 25	0.09	0.04	45.86	9.9437	-8.8374	-0.0122
633	SLU 26	0.09	0	45.52	9.8716	-8.7729	-0.0183
633	SLU 27	0.09	0.07	46.42	10.069	-8.9463	-0.0072
633	SLU 28	0.09	0.04	46.45	10.0737	-8.9511	-0.0122
633	SLU 29	0.09	0.05	46.07	9.9938	-8.8787	-0.0099
633	SLU 30	0.09	0.02	46.09	9.9985	-8.8835	-0.015
633	SLU 31	0.1	0.04	50.32	10.8859	-9.6971	-0.0139
633	SLU 32	0.11	0.1	51.22	11.0833	-9.8705	-0.0028
633	SLU 33	0.11	0.07	51.24	11.088	-9.8753	-0.0078
633	SLU 34	0.1	0.04	50.91	11.0159	-9.8108	-0.014
633	SLU 35	0.11	0.1	51.81	11.2133	-9.9842	-0.0028
633	SLU 36	0.11	0.08	51.83	11.218	-9.989	-0.0079
633	SLU 37	0.11	0.09	51.46	11.1381	-9.9166	-0.0056
633	SLU 38	0.11	0.06	51.48	11.1428	-9.9214	-0.0106
633	SLU 39	0.11	0.1	52.59	11.3685	-10.134	-0.0036
633	SLU 40	0.11	0.07	52.61	11.3732	-10.1387	-0.0087
633	SLU 41	0.11	0.1	53.18	11.4985	-10.2477	-0.0037
633	SLU 42	0.11	0.07	53.2	11.5032	-10.2525	-0.0087
633	SLU 43	0.1	-0.12	50.62	10.9615	-9.7549	-0.0438
633	SLU 44	0.1	-0.16	50.66	10.9693	-9.7629	-0.0522
633	SLU 45	0.1	-0.1	51.56	11.1667	-9.9362	-0.0411
633	SLU 46	0.1	-0.13	51.59	11.1714	-9.941	-0.0462
633	SLU 47	0.1	-0.16	51.25	11.0993	-9.8766	-0.0523
633	SLU 48	0.11	-0.1	52.15	11.2968	-10.05	-0.0411
633	SLU 49	0.1	-0.13	52.18	11.3015	-10.0548	-0.0462
633	SLU 50	0.1	-0.12	51.8	11.2215	-9.9823	-0.0439
633	SLU 51	0.1	-0.14	51.83	11.2262	-9.9871	-0.049
633	SLU 52	0.12	-0.13	56.05	12.1136	-10.8008	-0.0479
633	SLU 53	0.12	-0.06	56.95	12.3111	-10.9742	-0.0368
633	SLU 54	0.12	-0.09	56.97	12.3158	-10.9789	-0.0418
633	SLU 55	0.12	-0.12	56.64	12.2437	-10.9145	-0.048
633	SLU 56	0.12	-0.06	57.54	12.4411	-11.0879	-0.0368
633	SLU 57	0.12	-0.09	57.56	12.4458	-11.0927	-0.0419
633	SLU 58	0.12	-0.08	57.19	12.3659	-11.0203	-0.0396
633	SLU 59	0.12	-0.11	57.21	12.3706	-11.025	-0.0446
633	SLU 60	0.12	-0.06	58.32	12.5962	-11.2376	-0.0376
633	SLU 61	0.12	-0.09	58.34	12.6009	-11.2424	-0.0427
633	SLU 62	0.12	-0.06	58.91	12.7263	-11.3514	-0.0377
633	SLU 63	0.12	-0.09	58.93	12.731	-11.3561	-0.0427
633	SLU 64	0.11	-0.01	55.33	11.9916	-10.6629	-0.0249
633	SLU 65	0.11	-0.05	55.37	11.9994	-10.6709	-0.0333
633	SLU 66	0.11	0.01	56.27	12.1969	-10.8442	-0.0222
633	SLU 67	0.11	-0.02	56.3	12.2016	-10.849	-0.0273
633	SLU 68	0.11	-0.05	55.96	12.1294	-10.7846	-0.0334



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
633	SLU 69	0.11	0.01	56.86	12.3269	-10.958	-0.0222
633	SLU 70	0.11	-0.02	56.89	12.3316	-10.9627	-0.0273
633	SLU 71	0.11	-0.01	56.51	12.2517	-10.8903	-0.025
633	SLU 72	0.11	-0.03	56.53	12.2564	-10.8951	-0.0301
633	SLU 73	0.12	-0.02	60.76	13.1437	-11.7088	-0.029
633	SLU 74	0.13	0.05	61.66	13.3412	-11.8821	-0.0179
633	SLU 75	0.13	0.02	61.68	13.3459	-11.8869	-0.0229
633	SLU 76	0.13	-0.02	61.35	13.2738	-11.8225	-0.029
633	SLU 77	0.13	0.05	62.25	13.4712	-11.9959	-0.0179
633	SLU 78	0.13	0.02	62.27	13.4759	-12.0007	-0.023
633	SLU 79	0.13	0.03	61.9	13.396	-11.9282	-0.0207
633	SLU 80	0.13	0	61.92	13.4007	-11.933	-0.0257
633	SLU 81	0.13	0.04	63.03	13.6263	-12.1456	-0.0187
633	SLU 82	0.13	0.02	63.05	13.631	-12.1504	-0.0238
633	SLU 83	0.13	0.05	63.62	13.7564	-12.2593	-0.0187
633	SLU 84	0.13	0.02	63.64	13.7611	-12.2641	-0.0238
633	SLE RA 1	0.08	-0.03	41.53	8.9979	-8.0027	-0.0233
633	SLE RA 2	0.08	-0.06	41.55	9.0031	-8.008	-0.0289
633	SLE RA 3	0.08	-0.02	42.15	9.1347	-8.1236	-0.0215
633	SLE RA 4	0.08	-0.04	42.17	9.1379	-8.1267	-0.0249
633	SLE RA 5	0.08	-0.06	41.95	9.0898	-8.0838	-0.029
633	SLE RA 6	0.09	-0.02	42.55	9.2214	-8.1994	-0.0215
633	SLE RA 7	0.09	-0.04	42.56	9.2246	-8.2026	-0.0249
633	SLE RA 8	0.08	-0.03	42.31	9.1713	-8.1543	-0.0234
633	SLE RA 9	0.08	-0.05	42.33	9.1744	-8.1575	-0.0267
633	SLE RA 10	0.09	-0.04	45.15	9.766	-8.6999	-0.026
633	SLE RA 11	0.09	0.01	45.75	9.8976	-8.8155	-0.0186
633	SLE RA 12	0.09	-0.01	45.76	9.9008	-8.8187	-0.022
633	SLE RA 13	0.09	-0.03	45.54	9.8527	-8.7757	-0.0261
633	SLE RA 14	0.09	0.01	46.14	9.9843	-8.8913	-0.0186
633	SLE RA 15	0.09	-0.01	46.16	9.9875	-8.8945	-0.022
633	SLE RA 16	0.09	0	45.9	9.9342	-8.8462	-0.0205
633	SLE RA 17	0.09	-0.02	45.92	9.9373	-8.8494	-0.0239
633	SLE RA 18	0.1	0	46.66	10.0877	-8.9911	-0.0192
633	SLE RA 19	0.1	-0.01	46.67	10.0909	-8.9943	-0.0225
633	SLE RA 20	0.1	0.01	47.05	10.1744	-9.067	-0.0192
633	SLE RA 21	0.1	-0.01	47.07	10.1776	-9.0702	-0.0226
633	SLE FR 1	0.08	-0.03	41.53	8.9979	-8.0027	-0.0233
633	SLE FR 2	0.08	-0.04	41.53	8.9989	-8.0037	-0.0244
633	SLE FR 3	0.08	-0.03	41.68	9.0326	-8.033	-0.0233
633	SLE FR 4	0.09	-0.03	43.07	9.3259	-8.3003	-0.0232
633	SLE FR 5	0.09	-0.02	43.22	9.3595	-8.3295	-0.0221
633	SLE FR 6	0.09	-0.01	44.09	9.5428	-8.4969	-0.0212
633	SLE QP 1	0.08	-0.03	41.53	8.9979	-8.0027	-0.0233
633	SLE QP 2	0.09	-0.02	43.07	9.3248	-8.2992	-0.0221
633	SLD 1	3.49	0.86	41.99	9.4226	-8.1093	-0.7084
633	SLD 2	3.48	0.86	41.99	9.4171	-8.1086	-0.7049
633	SLD 3	3.3	-0.49	42.95	9.6321	-8.2938	-0.9752
633	SLD 4	3.29	-0.49	42.95	9.6266	-8.2931	-0.9716
633	SLD 5	1.4	2.29	41.28	9.0374	-7.9625	0.176
633	SLD 6	1.39	2.29	41.28	9.0338	-7.9621	0.1784
633	SLD 7	0.76	-2.21	44.49	9.7357	-8.5775	-0.7133
633	SLD 8	0.76	-2.2	44.49	9.7321	-8.5771	-0.7109
633	SLD 9	-0.58	2.16	41.64	8.9176	-8.0213	0.6668
633	SLD 10	-0.59	2.17	41.64	8.914	-8.0209	0.6691
633	SLD 11	-1.22	-2.33	44.85	9.6159	-8.6363	-0.2225
633	SLD 12	-1.22	-2.33	44.85	9.6123	-8.6359	-0.2201
633	SLD 13	-3.12	0.45	43.18	9.0231	-8.3053	0.9275
633	SLD 14	-3.12	0.45	43.18	9.0176	-8.3046	0.9311
633	SLD 15	-3.31	-0.9	44.14	9.2326	-8.4898	0.6607
633	SLD 16	-3.31	-0.9	44.14	9.2271	-8.4891	0.6643
633	SLV 1	8.04	1.98	40.58	9.5623	-7.8622	-1.6375
633	SLV 2	8.02	1.99	40.58	9.5496	-7.8607	-1.6292
633	SLV 3	7.6	-1.07	42.76	10.0357	-8.2794	-2.2424
633	SLV 4	7.58	-1.06	42.76	10.0229	-8.278	-2.234
633	SLV 5	3.15	5.21	39.02	8.6804	-7.5355	0.4092
633	SLV 6	3.14	5.21	39.02	8.6721	-7.5346	0.4146
633	SLV 7	1.67	-4.97	46.28	10.2582	-8.9263	-1.607
633	SLV 8	1.66	-4.96	46.27	10.25	-8.9254	-1.6016
633	SLV 9	-1.48	4.92	39.86	8.3997	-7.673	1.5574
633	SLV 10	-1.49	4.93	39.85	8.3915	-7.6721	1.5628
633	SLV 11	-2.97	-5.25	47.11	9.9775	-9.0638	-0.4587
633	SLV 12	-2.98	-5.25	47.11	9.9693	-9.0629	-0.4533
633	SLV 13	-7.41	1.02	43.37	8.6268	-8.3204	2.1899
633	SLV 14	-7.42	1.03	43.37	8.614	-8.319	2.1983
633	SLV 15	-7.85	-2.03	45.55	9.1001	-8.7377	1.5851
633	SLV 16	-7.87	-2.02	45.55	9.0874	-8.7362	1.5934
633	CRTFP Ux+	0	0	0	0	0	0
633	CRTFP Ux-	0	0	0	0	0	0
633	CRTFP Uy+	0	0	0	0	0	0
633	CRTFP Uy-	0	0	0	0	0	0
635	SLU 1	0.28	0.05	80.71	11.8485	11.0086	-0.0383
635	SLU 2	0.28	-0.03	80.78	11.8609	11.0199	-0.0261
635	SLU 3	0.29	0.09	82.6	12.1259	11.2664	-0.0443
635	SLU 4	0.29	0.03	82.64	12.1333	11.2732	-0.037
635	SLU 5	0.29	-0.03	81.96	12.0346	11.1817	-0.0273
635	SLU 6	0.3	0.09	83.78	12.2996	11.4283	-0.0455
635	SLU 7	0.3	0.04	83.82	12.307	11.4351	-0.0382
635	SLU 8	0.29	0.06	83.08	12.1959	11.3323	-0.0407
635	SLU 9	0.29	0.01	83.12	12.2034	11.3391	-0.0333



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
635	SLU 10	0.31	0.07	91.57	13.443	12.496	-0.0439
635	SLU 11	0.32	0.19	93.39	13.708	12.7426	-0.0622
635	SLU 12	0.32	0.14	93.43	13.7154	12.7493	-0.0548
635	SLU 13	0.32	0.08	92.75	13.6167	12.6579	-0.0451
635	SLU 14	0.33	0.2	94.57	13.8817	12.9044	-0.0633
635	SLU 15	0.33	0.15	94.61	13.8891	12.9112	-0.056
635	SLU 16	0.32	0.17	93.87	13.7781	12.8085	-0.0585
635	SLU 17	0.32	0.12	93.91	13.7855	12.8152	-0.0512
635	SLU 18	0.33	0.2	96.13	14.1087	13.1173	-0.0638
635	SLU 19	0.33	0.15	96.17	14.1161	13.1241	-0.0565
635	SLU 20	0.33	0.21	97.31	14.2824	13.2792	-0.065
635	SLU 21	0.33	0.16	97.35	14.2898	13.286	-0.0576
635	SLU 22	0.31	0.27	90.22	13.266	12.2949	-0.0728
635	SLU 23	0.31	0.18	90.29	13.2783	12.3062	-0.0605
635	SLU 24	0.32	0.3	92.1	13.5434	12.5527	-0.0788
635	SLU 25	0.32	0.25	92.14	13.5508	12.5595	-0.0714
635	SLU 26	0.32	0.19	91.47	13.4521	12.468	-0.0617
635	SLU 27	0.32	0.31	93.28	13.7171	12.7146	-0.0799
635	SLU 28	0.32	0.26	93.32	13.7245	12.7214	-0.0726
635	SLU 29	0.32	0.28	92.58	13.6134	12.6186	-0.0751
635	SLU 30	0.32	0.23	92.62	13.6208	12.6254	-0.0678
635	SLU 31	0.34	0.29	101.08	14.8604	13.7823	-0.0784
635	SLU 32	0.35	0.41	102.89	15.1255	14.0289	-0.0966
635	SLU 33	0.35	0.36	102.93	15.1329	14.0356	-0.0893
635	SLU 34	0.35	0.3	102.26	15.0342	13.9442	-0.0795
635	SLU 35	0.36	0.42	104.07	15.2992	14.1907	-0.0978
635	SLU 36	0.36	0.37	104.11	15.3066	14.1975	-0.0904
635	SLU 37	0.35	0.39	103.37	15.1955	14.0947	-0.0929
635	SLU 38	0.35	0.34	103.41	15.2029	14.1015	-0.0856
635	SLU 39	0.35	0.42	105.63	15.5261	14.4036	-0.0982
635	SLU 40	0.35	0.37	105.67	15.5335	14.4104	-0.0909
635	SLU 41	0.36	0.43	106.81	15.6999	14.5655	-0.0994
635	SLU 42	0.36	0.38	106.85	15.7073	14.5723	-0.0921
635	SLU 43	0.36	-0.01	101.67	14.9171	13.8701	-0.038
635	SLU 44	0.36	-0.1	101.74	14.9294	13.8814	-0.0258
635	SLU 45	0.37	0.02	103.55	15.1945	14.128	-0.044
635	SLU 46	0.37	-0.03	103.6	15.2019	14.1348	-0.0367
635	SLU 47	0.36	-0.09	102.92	15.1031	14.0433	-0.027
635	SLU 48	0.37	0.03	104.74	15.3682	14.2899	-0.0452
635	SLU 49	0.37	-0.02	104.78	15.3756	14.2966	-0.0379
635	SLU 50	0.37	0	104.03	15.2645	14.1939	-0.0404
635	SLU 51	0.37	-0.05	104.07	15.2719	14.2007	-0.033
635	SLU 52	0.39	0.01	112.53	16.5115	15.3576	-0.0436
635	SLU 53	0.4	0.13	114.34	16.7766	15.6041	-0.0618
635	SLU 54	0.4	0.08	114.39	16.784	15.6109	-0.0545
635	SLU 55	0.39	0.02	113.71	16.6852	15.5194	-0.0448
635	SLU 56	0.4	0.14	115.53	16.9503	15.766	-0.063
635	SLU 57	0.4	0.09	115.57	16.9577	15.7728	-0.0557
635	SLU 58	0.4	0.11	114.82	16.8466	15.67	-0.0582
635	SLU 59	0.4	0.06	114.86	16.854	15.6768	-0.0509
635	SLU 60	0.4	0.14	117.08	17.1772	15.9789	-0.0635
635	SLU 61	0.4	0.09	117.13	17.1846	15.9857	-0.0562
635	SLU 62	0.41	0.15	118.27	17.3509	16.1408	-0.0647
635	SLU 63	0.41	0.1	118.31	17.3583	16.1475	-0.0573
635	SLU 64	0.39	0.21	111.17	16.3346	15.1564	-0.0724
635	SLU 65	0.39	0.12	111.24	16.3469	15.1677	-0.0602
635	SLU 66	0.4	0.24	113.06	16.6119	15.4143	-0.0785
635	SLU 67	0.4	0.19	113.1	16.6193	15.4211	-0.0711
635	SLU 68	0.39	0.13	112.42	16.5206	15.3296	-0.0614
635	SLU 69	0.4	0.25	114.24	16.7857	15.5762	-0.0796
635	SLU 70	0.4	0.2	114.28	16.7931	15.5829	-0.0723
635	SLU 71	0.4	0.22	113.54	16.682	15.4802	-0.0748
635	SLU 72	0.4	0.17	113.58	16.6894	15.487	-0.0675
635	SLU 73	0.42	0.23	122.03	17.929	16.6438	-0.0781
635	SLU 74	0.43	0.35	123.85	18.194	16.8904	-0.0963
635	SLU 75	0.43	0.3	123.89	18.2014	16.8972	-0.089
635	SLU 76	0.42	0.24	123.21	18.1027	16.8057	-0.0792
635	SLU 77	0.43	0.36	125.03	18.3678	17.0523	-0.0975
635	SLU 78	0.43	0.31	125.07	18.3752	17.0591	-0.0901
635	SLU 79	0.43	0.33	124.33	18.2641	16.9563	-0.0926
635	SLU 80	0.43	0.28	124.37	18.2715	16.9631	-0.0853
635	SLU 81	0.43	0.36	126.59	18.5947	17.2652	-0.0979
635	SLU 82	0.43	0.31	126.63	18.6021	17.272	-0.0906
635	SLU 83	0.43	0.37	127.77	18.7684	17.4271	-0.0991
635	SLU 84	0.43	0.32	127.81	18.7758	17.4338	-0.0918
635	SLE RA 1	0.29	0.11	83.43	12.2535	11.3761	-0.0482
635	SLE RA 2	0.29	0.06	83.48	12.2617	11.3836	-0.04
635	SLE RA 3	0.3	0.14	84.69	12.4384	11.548	-0.0522
635	SLE RA 4	0.3	0.1	84.71	12.4434	11.5525	-0.0473
635	SLE RA 5	0.29	0.06	84.26	12.3775	11.4915	-0.0408
635	SLE RA 6	0.3	0.14	85.47	12.5542	11.6559	-0.053
635	SLE RA 7	0.3	0.11	85.5	12.5592	11.6604	-0.0481
635	SLE RA 8	0.3	0.12	85	12.4851	11.5919	-0.0497
635	SLE RA 9	0.3	0.09	85.03	12.4901	11.5964	-0.0448
635	SLE RA 10	0.31	0.13	90.67	13.3165	12.3677	-0.0519
635	SLE RA 11	0.32	0.21	91.88	13.4932	12.5321	-0.0641
635	SLE RA 12	0.32	0.17	91.91	13.4981	12.5366	-0.0592
635	SLE RA 13	0.31	0.13	91.46	13.4323	12.4756	-0.0527
635	SLE RA 14	0.32	0.21	92.67	13.609	12.64	-0.0648
635	SLE RA 15	0.32	0.18	92.69	13.6139	12.6445	-0.0599



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
635	SLE RA 16	0.32	0.19	92.2	13.5399	12.576	-0.0616
635	SLE RA 17	0.32	0.16	92.23	13.5448	12.5805	-0.0567
635	SLE RA 18	0.32	0.21	93.71	13.7603	12.7819	-0.0651
635	SLE RA 19	0.32	0.18	93.73	13.7652	12.7864	-0.0603
635	SLE RA 20	0.32	0.22	94.49	13.8761	12.8898	-0.0659
635	SLE RA 21	0.32	0.18	94.52	13.881	12.8944	-0.061
635	SLE FR 1	0.29	0.11	83.43	12.2535	11.3761	-0.0482
635	SLE FR 2	0.29	0.1	83.44	12.2552	11.3776	-0.0465
635	SLE FR 3	0.29	0.11	83.75	12.2998	11.4193	-0.0485
635	SLE FR 4	0.3	0.13	86.52	12.7072	11.7993	-0.0516
635	SLE FR 5	0.3	0.14	86.83	12.7519	11.841	-0.0536
635	SLE FR 6	0.31	0.16	88.57	13.0069	12.079	-0.0567
635	SLE QP 1	0.29	0.11	83.43	12.2535	11.3761	-0.0482
635	SLE QP 2	0.3	0.14	86.51	12.7055	11.7978	-0.0533
635	SLD 1	6.93	1.82	85.23	12.6343	11.5573	-1.261
635	SLD 2	6.93	1.89	85.23	12.6301	11.5561	-1.2635
635	SLD 3	6.56	-0.81	86.88	12.9494	11.8162	-0.8931
635	SLD 4	6.56	-0.75	86.87	12.9452	11.815	-0.8956
635	SLD 5	2.85	4.62	83.64	12.207	11.3332	-0.9731
635	SLD 6	2.85	4.67	83.63	12.2042	11.3325	-0.9748
635	SLD 7	1.61	-4.15	89.12	13.2574	12.1962	0.2532
635	SLD 8	1.61	-4.1	89.11	13.2547	12.1954	0.2516
635	SLD 9	-1.01	4.39	83.91	12.1564	11.4003	-0.3581
635	SLD 10	-1.02	4.43	83.91	12.1537	11.3995	-0.3597
635	SLD 11	-2.25	-4.38	89.39	13.2069	12.2632	0.8683
635	SLD 12	-2.26	-4.34	89.39	13.2041	12.2624	0.8666
635	SLD 13	-5.96	1.03	86.15	12.4658	11.7807	0.7891
635	SLD 14	-5.96	1.1	86.15	12.4617	11.7795	0.7866
635	SLD 15	-6.33	-1.6	87.8	12.781	12.0395	1.157
635	SLD 16	-6.34	-1.53	87.79	12.7768	12.0384	1.1545
635	SLV 1	15.82	3.96	83.59	12.5511	11.2455	-2.865
635	SLV 2	15.82	4.12	83.58	12.5414	11.2428	-2.8708
635	SLV 3	14.95	-2	87.31	13.2638	11.8309	-2.032
635	SLV 4	14.95	-1.84	87.29	13.2541	11.8282	-2.0378
635	SLV 5	6.27	10.29	80	11.58	10.7448	-2.1591
635	SLV 6	6.27	10.4	79.99	11.5737	10.743	-2.1629
635	SLV 7	3.38	-9.56	92.39	13.9556	12.696	0.6175
635	SLV 8	3.38	-9.46	92.38	13.9493	12.6943	0.6137
635	SLV 9	-2.78	9.74	80.64	11.4617	10.9014	-0.7203
635	SLV 10	-2.78	9.85	80.64	11.4555	10.8996	-0.724
635	SLV 11	-5.67	-10.11	93.03	13.8374	12.8526	2.0564
635	SLV 12	-5.67	-10.01	93.02	13.8311	12.8509	2.0526
635	SLV 13	-14.35	2.12	85.73	12.157	11.7675	1.9313
635	SLV 14	-14.35	2.29	85.72	12.1473	11.7648	1.9255
635	SLV 15	-15.22	-3.83	89.45	12.8697	12.3529	2.7643
635	SLV 16	-15.22	-3.67	89.44	12.86	12.3502	2.7585
635	CRTFP Ux+	0	0	0	0	0	0
635	CRTFP Ux-	0	0	0	0	0	0
635	CRTFP Uy+	0	0	0	0	0	0
635	CRTFP Uy-	0	0	0	0	0	0
637	SLU 1	0.13	0.16	29.77	7.1148	0.8612	-0.0317
637	SLU 2	0.13	0.13	29.78	7.119	0.862	-0.0307
637	SLU 3	0.14	0.18	30.45	7.2783	0.8814	-0.033
637	SLU 4	0.14	0.16	30.47	7.2808	0.8818	-0.0324
637	SLU 5	0.14	0.14	30.22	7.2199	0.8746	-0.0312
637	SLU 6	0.14	0.18	30.89	7.3791	0.894	-0.0336
637	SLU 7	0.14	0.16	30.9	7.3817	0.8944	-0.033
637	SLU 8	0.14	0.17	30.63	7.3166	0.8865	-0.0328
637	SLU 9	0.14	0.15	30.64	7.3191	0.8869	-0.0322
637	SLU 10	0.15	0.18	33.75	8.0718	0.9771	-0.0345
637	SLU 11	0.15	0.23	34.42	8.2311	0.9965	-0.0368
637	SLU 12	0.15	0.21	34.43	8.2336	0.997	-0.0362
637	SLU 13	0.15	0.19	34.18	8.1727	0.9898	-0.0351
637	SLU 14	0.15	0.23	34.85	8.3319	1.0091	-0.0374
637	SLU 15	0.15	0.21	34.86	8.3345	1.0096	-0.0368
637	SLU 16	0.15	0.22	34.59	8.2694	1.0016	-0.0366
637	SLU 17	0.15	0.2	34.6	8.2719	1.0021	-0.036
637	SLU 18	0.15	0.23	35.43	8.476	1.0257	-0.0371
637	SLU 19	0.15	0.22	35.44	8.4785	1.0262	-0.0365
637	SLU 20	0.15	0.24	35.86	8.5769	1.0384	-0.0377
637	SLU 21	0.15	0.22	35.87	8.5794	1.0388	-0.0371
637	SLU 22	0.15	0.25	33.31	7.9749	0.9631	-0.0372
637	SLU 23	0.15	0.22	33.33	7.9791	0.9638	-0.0362
637	SLU 24	0.15	0.27	33.99	8.1383	0.9832	-0.0385
637	SLU 25	0.15	0.25	34.01	8.1408	0.9837	-0.0379
637	SLU 26	0.15	0.23	33.76	8.08	0.9765	-0.0367
637	SLU 27	0.15	0.27	34.43	8.2392	0.9959	-0.0391
637	SLU 28	0.15	0.25	34.44	8.2417	0.9963	-0.0385
637	SLU 29	0.15	0.26	34.17	8.1767	0.9884	-0.0383
637	SLU 30	0.15	0.24	34.18	8.1792	0.9888	-0.0377
637	SLU 31	0.16	0.27	37.29	8.9319	1.079	-0.04
637	SLU 32	0.16	0.32	37.96	9.0911	1.0984	-0.0423
637	SLU 33	0.16	0.3	37.97	9.0936	1.0988	-0.0417
637	SLU 34	0.16	0.28	37.72	9.0328	1.0916	-0.0405
637	SLU 35	0.17	0.32	38.39	9.192	1.111	-0.0429
637	SLU 36	0.16	0.3	38.4	9.1945	1.1115	-0.0423
637	SLU 37	0.16	0.31	38.13	9.1295	1.1035	-0.0421
637	SLU 38	0.16	0.29	38.14	9.132	1.104	-0.0415
637	SLU 39	0.16	0.32	38.97	9.336	1.1276	-0.0426
637	SLU 40	0.16	0.31	38.98	9.3386	1.128	-0.042



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
637	SLU 41	0.17	0.33	39.4	9.4369	1.1402	-0.0432
637	SLU 42	0.17	0.31	39.41	9.4395	1.1407	-0.0426
637	SLU 43	0.17	0.18	37.48	8.9544	1.0847	-0.0393
637	SLU 44	0.17	0.15	37.5	8.9586	1.0854	-0.0383
637	SLU 45	0.17	0.19	38.17	9.1178	1.1048	-0.0406
637	SLU 46	0.17	0.18	38.18	9.1203	1.1052	-0.04
637	SLU 47	0.17	0.15	37.93	9.0595	1.098	-0.0389
637	SLU 48	0.18	0.2	38.6	9.2187	1.1174	-0.0412
637	SLU 49	0.18	0.18	38.61	9.2212	1.1179	-0.0406
637	SLU 50	0.17	0.19	38.34	9.1562	1.1099	-0.0404
637	SLU 51	0.17	0.17	38.35	9.1587	1.1104	-0.0398
637	SLU 52	0.18	0.2	41.46	9.9114	1.2006	-0.0421
637	SLU 53	0.19	0.25	42.13	10.0706	1.22	-0.0444
637	SLU 54	0.19	0.23	42.15	10.0731	1.2204	-0.0438
637	SLU 55	0.18	0.2	41.89	10.0123	1.2132	-0.0427
637	SLU 56	0.19	0.25	42.56	10.1715	1.2326	-0.045
637	SLU 57	0.19	0.23	42.58	10.174	1.233	-0.0444
637	SLU 58	0.19	0.24	42.31	10.109	1.2251	-0.0443
637	SLU 59	0.19	0.22	42.32	10.1115	1.2255	-0.0437
637	SLU 60	0.19	0.25	43.14	10.3156	1.2492	-0.0447
637	SLU 61	0.19	0.23	43.15	10.3181	1.2496	-0.0441
637	SLU 62	0.19	0.25	43.57	10.4164	1.2618	-0.0453
637	SLU 63	0.19	0.24	43.59	10.419	1.2622	-0.0447
637	SLU 64	0.18	0.27	41.02	9.8145	1.1865	-0.0448
637	SLU 65	0.18	0.24	41.04	9.8187	1.1873	-0.0438
637	SLU 66	0.19	0.28	41.71	9.9779	1.2067	-0.0461
637	SLU 67	0.19	0.27	41.72	9.9804	1.2071	-0.0455
637	SLU 68	0.19	0.24	41.47	9.9196	1.1999	-0.0444
637	SLU 69	0.19	0.29	42.14	10.0788	1.2193	-0.0467
637	SLU 70	0.19	0.27	42.15	10.0813	1.2198	-0.0461
637	SLU 71	0.19	0.28	41.88	10.0162	1.2118	-0.0459
637	SLU 72	0.19	0.26	41.9	10.0188	1.2123	-0.0453
637	SLU 73	0.19	0.29	45	10.7715	1.3024	-0.0476
637	SLU 74	0.2	0.34	45.67	10.9307	1.3218	-0.0499
637	SLU 75	0.2	0.32	45.69	10.9332	1.3223	-0.0493
637	SLU 76	0.2	0.29	45.43	10.8724	1.3151	-0.0482
637	SLU 77	0.2	0.34	46.1	11.0316	1.3345	-0.0505
637	SLU 78	0.2	0.32	46.12	11.0341	1.3349	-0.0499
637	SLU 79	0.2	0.33	45.85	10.9691	1.327	-0.0497
637	SLU 80	0.2	0.31	45.86	10.9716	1.3274	-0.0491
637	SLU 81	0.2	0.34	46.68	11.1756	1.351	-0.0502
637	SLU 82	0.2	0.32	46.69	11.1781	1.3515	-0.0496
637	SLU 83	0.2	0.34	47.11	11.2765	1.3637	-0.0508
637	SLU 84	0.2	0.33	47.13	11.279	1.3641	-0.0502
637	SLE RA 1	0.14	0.19	30.78	7.3606	0.8903	-0.0332
637	SLE RA 2	0.14	0.17	30.79	7.3634	0.8908	-0.0326
637	SLE RA 3	0.14	0.2	31.24	7.4695	0.9038	-0.0341
637	SLE RA 4	0.14	0.19	31.24	7.4712	0.9041	-0.0337
637	SLE RA 5	0.14	0.17	31.08	7.4306	0.8993	-0.033
637	SLE RA 6	0.14	0.2	31.52	7.5368	0.9122	-0.0345
637	SLE RA 7	0.14	0.19	31.53	7.5384	0.9125	-0.0341
637	SLE RA 8	0.14	0.19	31.35	7.4951	0.9072	-0.034
637	SLE RA 9	0.14	0.18	31.36	7.4968	0.9075	-0.0336
637	SLE RA 10	0.15	0.2	33.43	7.9986	0.9676	-0.0351
637	SLE RA 11	0.15	0.23	33.88	8.1047	0.9805	-0.0367
637	SLE RA 12	0.15	0.22	33.89	8.1064	0.9808	-0.0363
637	SLE RA 13	0.15	0.2	33.72	8.0658	0.976	-0.0355
637	SLE RA 14	0.15	0.23	34.17	8.172	0.9889	-0.037
637	SLE RA 15	0.15	0.22	34.17	8.1737	0.9892	-0.0366
637	SLE RA 16	0.15	0.23	33.99	8.1303	0.9839	-0.0365
637	SLE RA 17	0.15	0.21	34	8.132	0.9842	-0.0361
637	SLE RA 18	0.15	0.23	34.55	8.268	1	-0.0369
637	SLE RA 19	0.15	0.22	34.56	8.2697	1.0003	-0.0365
637	SLE RA 20	0.15	0.24	34.84	8.3353	1.0084	-0.0372
637	SLE RA 21	0.15	0.23	34.85	8.3369	1.0087	-0.0368
637	SLE FR 1	0.14	0.19	30.78	7.3606	0.8903	-0.0332
637	SLE FR 2	0.14	0.18	30.78	7.3611	0.8904	-0.0331
637	SLE FR 3	0.14	0.19	30.89	7.3875	0.8937	-0.0334
637	SLE FR 4	0.14	0.2	31.91	7.6334	0.9233	-0.0342
637	SLE FR 5	0.14	0.2	32.02	7.6597	0.9266	-0.0345
637	SLE FR 6	0.14	0.21	32.66	7.8143	0.9452	-0.0351
637	SLE QP 1	0.14	0.19	30.78	7.3606	0.8903	-0.0332
637	SLE QP 2	0.14	0.2	31.91	7.6328	0.9232	-0.0343
637	SLD 1	2.6	0.51	31.5	7.6177	0.9192	-0.6531
637	SLD 2	2.59	0.56	31.5	7.6185	0.9191	-0.653
637	SLD 3	2.46	-0.44	32.01	7.7358	0.9375	-0.6096
637	SLD 4	2.46	-0.4	32.01	7.7366	0.9374	-0.6095
637	SLD 5	1.09	1.74	31.01	7.4489	0.8943	-0.286
637	SLD 6	1.08	1.77	31.01	7.4495	0.8942	-0.2859
637	SLD 7	0.63	-1.45	32.72	7.8427	0.9553	-0.141
637	SLD 8	0.63	-1.42	32.71	7.8433	0.9552	-0.1409
637	SLD 9	-0.34	1.82	31.1	7.4223	0.8913	0.0722
637	SLD 10	-0.35	1.85	31.1	7.4228	0.8912	0.0723
637	SLD 11	-0.8	-1.36	32.81	7.8161	0.9522	0.2172
637	SLD 12	-0.8	-1.33	32.81	7.8167	0.9522	0.2173
637	SLD 13	-2.17	0.8	31.81	7.5289	0.9091	0.5408
637	SLD 14	-2.18	0.85	31.81	7.5298	0.9089	0.541
637	SLD 15	-2.31	-0.16	32.32	7.6471	0.9274	0.5843
637	SLD 16	-2.32	-0.11	32.32	7.6479	0.9272	0.5845
637	SLV 1	5.89	0.89	30.97	7.6031	0.9146	-1.4813



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
637	SLV 2	5.88	1	30.97	7.6051	0.9143	-1.4809
637	SLV 3	5.57	-1.27	32.13	7.8705	0.9559	-1.3811
637	SLV 4	5.56	-1.16	32.13	7.8725	0.9557	-1.3808
637	SLV 5	2.35	3.67	29.87	7.2181	0.8579	-0.6204
637	SLV 6	2.35	3.74	29.87	7.2193	0.8578	-0.6202
637	SLV 7	1.29	-3.54	33.73	8.1093	0.9958	-0.2865
637	SLV 8	1.28	-3.47	33.73	8.1105	0.9957	-0.2863
637	SLV 9	-1	3.87	30.09	7.1551	0.8508	0.2176
637	SLV 10	-1	3.94	30.09	7.1563	0.8506	0.2178
637	SLV 11	-2.06	-3.34	33.94	8.0463	0.9887	0.5515
637	SLV 12	-2.07	-3.27	33.94	8.0475	0.9885	0.5518
637	SLV 13	-5.28	1.56	31.69	7.3931	0.8908	1.3121
637	SLV 14	-5.29	1.67	31.69	7.3951	0.8905	1.3124
637	SLV 15	-5.6	-0.6	32.85	7.6605	0.9322	1.4123
637	SLV 16	-5.61	-0.49	32.84	7.6625	0.9319	1.4126
637	CRTFP Ux+	0	0	0	0	0	0
637	CRTFP Ux-	0	0	0	0	0	0
637	CRTFP Uy+	0	0	0	0	0	0
637	CRTFP Uy-	0	0	0	0	0	0
638	SLU 1	0.16	0.35	27.57	6.6124	-1.8059	-0.0112
638	SLU 2	0.16	0.32	27.58	6.6141	-1.8066	-0.0127
638	SLU 3	0.16	0.36	28.2	6.763	-1.8472	-0.0109
638	SLU 4	0.16	0.35	28.21	6.764	-1.8476	-0.0118
638	SLU 5	0.16	0.33	27.98	6.7073	-1.8323	-0.0128
638	SLU 6	0.17	0.37	28.6	6.8561	-1.8729	-0.0111
638	SLU 7	0.16	0.36	28.61	6.8572	-1.8733	-0.012
638	SLU 8	0.16	0.36	28.36	6.7987	-1.8572	-0.0115
638	SLU 9	0.16	0.34	28.37	6.7997	-1.8577	-0.0124
638	SLU 10	0.17	0.38	31.24	7.4999	-2.0457	-0.0113
638	SLU 11	0.17	0.42	31.86	7.6488	-2.0862	-0.0096
638	SLU 12	0.17	0.41	31.87	7.6498	-2.0866	-0.0105
638	SLU 13	0.17	0.39	31.63	7.5931	-2.0713	-0.0115
638	SLU 14	0.18	0.43	32.25	7.7419	-2.1119	-0.0097
638	SLU 15	0.18	0.42	32.26	7.743	-2.1123	-0.0106
638	SLU 16	0.17	0.42	32.01	7.6845	-2.0963	-0.0101
638	SLU 17	0.17	0.4	32.02	7.6855	-2.0967	-0.011
638	SLU 18	0.17	0.43	32.79	7.8778	-2.1474	-0.0092
638	SLU 19	0.17	0.41	32.8	7.8789	-2.1478	-0.0101
638	SLU 20	0.18	0.44	33.19	7.971	-2.173	-0.0094
638	SLU 21	0.18	0.42	33.2	7.972	-2.1735	-0.0103
638	SLU 22	0.17	0.44	30.86	7.4193	-2.0222	-0.0083
638	SLU 23	0.17	0.42	30.88	7.421	-2.0229	-0.0098
638	SLU 24	0.18	0.46	31.5	7.5699	-2.0634	-0.008
638	SLU 25	0.18	0.45	31.51	7.5709	-2.0639	-0.0089
638	SLU 26	0.18	0.42	31.27	7.5142	-2.0485	-0.0099
638	SLU 27	0.18	0.47	31.89	7.663	-2.0891	-0.0081
638	SLU 28	0.18	0.45	31.9	7.6641	-2.0895	-0.009
638	SLU 29	0.18	0.46	31.65	7.6056	-2.0735	-0.0085
638	SLU 30	0.18	0.44	31.66	7.6066	-2.0739	-0.0094
638	SLU 31	0.18	0.48	34.53	8.3068	-2.2619	-0.0084
638	SLU 32	0.19	0.52	35.15	8.4557	-2.3025	-0.0066
638	SLU 33	0.19	0.51	35.16	8.4567	-2.3029	-0.0075
638	SLU 34	0.19	0.48	34.93	8.4	-2.2875	-0.0085
638	SLU 35	0.19	0.53	35.55	8.5488	-2.3281	-0.0068
638	SLU 36	0.19	0.51	35.56	8.5499	-2.3285	-0.0077
638	SLU 37	0.19	0.51	35.31	8.4914	-2.3125	-0.0072
638	SLU 38	0.19	0.5	35.32	8.4924	-2.3129	-0.0081
638	SLU 39	0.19	0.53	36.09	8.6847	-2.3636	-0.0063
638	SLU 40	0.19	0.51	36.1	8.6858	-2.3641	-0.0072
638	SLU 41	0.19	0.53	36.48	8.7779	-2.3893	-0.0065
638	SLU 42	0.19	0.52	36.49	8.7789	-2.3897	-0.0074
638	SLU 43	0.2	0.42	34.71	8.3195	-2.2736	-0.0156
638	SLU 44	0.2	0.39	34.72	8.3212	-2.2743	-0.017
638	SLU 45	0.2	0.44	35.34	8.4701	-2.3148	-0.0153
638	SLU 46	0.2	0.42	35.35	8.4711	-2.3153	-0.0162
638	SLU 47	0.2	0.4	35.12	8.4143	-2.2999	-0.0172
638	SLU 48	0.21	0.44	35.74	8.5632	-2.3405	-0.0154
638	SLU 49	0.21	0.43	35.75	8.5642	-2.3409	-0.0163
638	SLU 50	0.21	0.43	35.5	8.5057	-2.3249	-0.0158
638	SLU 51	0.21	0.41	35.51	8.5068	-2.3253	-0.0167
638	SLU 52	0.21	0.45	38.38	9.207	-2.5133	-0.0157
638	SLU 53	0.22	0.49	39	9.3559	-2.5539	-0.0139
638	SLU 54	0.22	0.48	39.01	9.3569	-2.5543	-0.0148
638	SLU 55	0.21	0.46	38.77	9.3001	-2.5389	-0.0158
638	SLU 56	0.22	0.5	39.39	9.449	-2.5795	-0.0141
638	SLU 57	0.22	0.49	39.4	9.45	-2.5799	-0.015
638	SLU 58	0.22	0.49	39.16	9.3915	-2.5639	-0.0145
638	SLU 59	0.22	0.47	39.16	9.3926	-2.5643	-0.0154
638	SLU 60	0.22	0.5	39.93	9.5849	-2.615	-0.0136
638	SLU 61	0.22	0.49	39.94	9.5859	-2.6154	-0.0145
638	SLU 62	0.22	0.51	40.33	9.678	-2.6407	-0.0137
638	SLU 63	0.22	0.49	40.34	9.6791	-2.6411	-0.0146
638	SLU 64	0.22	0.51	38.01	9.1264	-2.4898	-0.0126
638	SLU 65	0.21	0.49	38.02	9.1281	-2.4905	-0.0141
638	SLU 66	0.22	0.53	38.64	9.277	-2.5311	-0.0124
638	SLU 67	0.22	0.52	38.65	9.278	-2.5315	-0.0133
638	SLU 68	0.22	0.49	38.41	9.2212	-2.5162	-0.0143
638	SLU 69	0.22	0.54	39.03	9.3701	-2.5567	-0.0125
638	SLU 70	0.22	0.52	39.04	9.3711	-2.5572	-0.0134
638	SLU 71	0.22	0.53	38.79	9.3126	-2.5411	-0.0129



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
638	SLU 72	0.22	0.51	38.8	9.3137	-2.5415	-0.0138
638	SLU 73	0.23	0.55	41.68	10.0139	-2.7295	-0.0128
638	SLU 74	0.23	0.59	42.3	10.1628	-2.7701	-0.011
638	SLU 75	0.23	0.58	42.3	10.1638	-2.7705	-0.0119
638	SLU 76	0.23	0.55	42.07	10.107	-2.7552	-0.0129
638	SLU 77	0.23	0.6	42.69	10.2559	-2.7958	-0.0111
638	SLU 78	0.23	0.58	42.7	10.2569	-2.7962	-0.012
638	SLU 79	0.23	0.58	42.45	10.1984	-2.7801	-0.0115
638	SLU 80	0.23	0.57	42.46	10.1995	-2.7806	-0.0124
638	SLU 81	0.23	0.6	43.23	10.3918	-2.8313	-0.0107
638	SLU 82	0.23	0.58	43.24	10.3928	-2.8317	-0.0116
638	SLU 83	0.23	0.6	43.62	10.4849	-2.8569	-0.0108
638	SLU 84	0.23	0.59	43.63	10.486	-2.8573	-0.0117
638	SLE RA 1	0.16	0.37	28.51	6.8429	-1.8677	-0.0104
638	SLE RA 2	0.16	0.36	28.52	6.8441	-1.8682	-0.0113
638	SLE RA 3	0.17	0.39	28.93	6.9433	-1.8952	-0.0102
638	SLE RA 4	0.17	0.38	28.94	6.944	-1.8955	-0.0108
638	SLE RA 5	0.16	0.36	28.78	6.9062	-1.8853	-0.0114
638	SLE RA 6	0.17	0.39	29.2	7.0054	-1.9123	-0.0103
638	SLE RA 7	0.17	0.38	29.2	7.0061	-1.9126	-0.0109
638	SLE RA 8	0.17	0.38	29.04	6.9671	-1.9019	-0.0105
638	SLE RA 9	0.17	0.37	29.04	6.9678	-1.9022	-0.0111
638	SLE RA 10	0.17	0.4	30.96	7.4346	-2.0275	-0.0104
638	SLE RA 11	0.17	0.43	31.37	7.5339	-2.0546	-0.0093
638	SLE RA 12	0.17	0.42	31.38	7.5346	-2.0549	-0.0099
638	SLE RA 13	0.17	0.4	31.22	7.4967	-2.0446	-0.0105
638	SLE RA 14	0.17	0.43	31.63	7.596	-2.0717	-0.0094
638	SLE RA 15	0.17	0.42	31.64	7.5967	-2.072	-0.01
638	SLE RA 16	0.17	0.42	31.47	7.5576	-2.0613	-0.0096
638	SLE RA 17	0.17	0.41	31.48	7.5583	-2.0615	-0.0102
638	SLE RA 18	0.17	0.43	31.99	7.6865	-2.0953	-0.0091
638	SLE RA 19	0.17	0.42	32	7.6872	-2.0956	-0.0097
638	SLE RA 20	0.17	0.43	32.26	7.7486	-2.1125	-0.0092
638	SLE RA 21	0.17	0.42	32.26	7.7493	-2.1127	-0.0097
638	SLE FR 1	0.16	0.37	28.51	6.8429	-1.8677	-0.0104
638	SLE FR 2	0.16	0.37	28.51	6.8432	-1.8678	-0.0106
638	SLE FR 3	0.16	0.37	28.62	6.8678	-1.8746	-0.0104
638	SLE FR 4	0.17	0.39	29.56	7.0963	-1.9361	-0.0102
638	SLE FR 5	0.17	0.39	29.66	7.1209	-1.9428	-0.01
638	SLE FR 6	0.17	0.4	30.25	7.2647	-1.9815	-0.0097
638	SLE QP 1	0.16	0.37	28.51	6.8429	-1.8677	-0.0104
638	SLE QP 2	0.17	0.39	29.56	7.096	-1.936	-0.01
638	SLD 1	2.46	0.66	29.2	7.0228	-1.9112	-0.5385
638	SLD 2	2.46	0.72	29.2	7.0255	-1.9113	-0.5335
638	SLD 3	2.33	-0.21	29.57	7.0908	-1.9324	-0.6049
638	SLD 4	2.33	-0.15	29.57	7.0935	-1.9326	-0.5999
638	SLD 5	1.05	1.78	28.89	6.9704	-1.8963	-0.0688
638	SLD 6	1.05	1.82	28.89	6.9723	-1.8964	-0.0655
638	SLD 7	0.62	-1.12	30.12	7.1971	-1.9671	-0.29
638	SLD 8	0.62	-1.09	30.12	7.1989	-1.9672	-0.2867
638	SLD 9	-0.29	1.87	28.99	6.9932	-1.9048	0.2668
638	SLD 10	-0.29	1.9	28.99	6.995	-1.9049	0.27
638	SLD 11	-0.71	-1.04	30.23	7.2198	-1.9756	0.0456
638	SLD 12	-0.72	-1	30.23	7.2216	-1.9757	0.0489
638	SLD 13	-2	0.93	29.54	7.0985	-1.9394	0.58
638	SLD 14	-2	0.99	29.54	7.1013	-1.9396	0.585
638	SLD 15	-2.12	0.06	29.91	7.1665	-1.9607	0.5136
638	SLD 16	-2.13	0.12	29.91	7.1693	-1.9608	0.5186
638	SLV 1	5.53	1	28.73	6.9249	-1.8786	-1.2485
638	SLV 2	5.52	1.12	28.73	6.9314	-1.879	-1.2369
638	SLV 3	5.23	-0.98	29.57	7.079	-1.9267	-1.4
638	SLV 4	5.22	-0.85	29.57	7.0854	-1.927	-1.3884
638	SLV 5	2.23	3.54	28.03	6.8099	-1.8458	-0.1538
638	SLV 6	2.22	3.63	28.04	6.8141	-1.846	-0.1463
638	SLV 7	1.23	-3.04	30.83	7.3235	-2.0061	-0.6587
638	SLV 8	1.23	-2.95	30.84	7.3276	-2.0063	-0.6513
638	SLV 9	-0.9	3.73	28.28	6.8644	-1.8657	0.6313
638	SLV 10	-0.9	3.81	28.28	6.8686	-1.8659	0.6388
638	SLV 11	-1.89	-2.85	31.08	7.378	-2.026	0.1263
638	SLV 12	-1.9	-2.76	31.08	7.3821	-2.0262	0.1338
638	SLV 13	-4.89	1.63	29.54	7.1066	-1.945	1.3685
638	SLV 14	-4.9	1.76	29.54	7.1131	-1.9453	1.38
638	SLV 15	-5.19	-0.34	30.38	7.2607	-1.9931	1.217
638	SLV 16	-5.2	-0.22	30.38	7.2671	-1.9934	1.2286
638	CRTFP Ux+	0	0	0	0	0	0
638	CRTFP Ux-	0	0	0	0	0	0
638	CRTFP Uy+	0	0	0	0	0	0
638	CRTFP Uy-	0	0	0	0	0	0
640	SLU 1	0.81	2.16	108.95	39.2454	38.5283	-1.0107
640	SLU 2	0.81	2.07	108.96	39.2426	38.5348	-0.9765
640	SLU 3	0.84	2.25	111.42	40.133	39.4058	-1.0515
640	SLU 4	0.83	2.2	111.42	40.1313	39.4097	-1.031
640	SLU 5	0.82	2.11	110.49	39.7951	39.0818	-0.9941
640	SLU 6	0.85	2.29	112.94	40.6855	39.9527	-1.0691
640	SLU 7	0.85	2.23	112.95	40.6838	39.9567	-1.0486
640	SLU 8	0.84	2.23	112.01	40.3503	39.6221	-1.0458
640	SLU 9	0.84	2.18	112.01	40.3486	39.6261	-1.0253
640	SLU 10	0.86	2.34	123.4	44.483	43.6665	-1.0929
640	SLU 11	0.89	2.52	125.85	45.3734	44.5374	-1.1678
640	SLU 12	0.89	2.47	125.86	45.3717	44.5414	-1.1474





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
640	SLU 13	0.88	2.38	124.92	45.0354	44.2134	-1.1104
640	SLU 14	0.91	2.56	127.38	45.9258	45.0843	-1.1854
640	SLU 15	0.9	2.51	127.38	45.9241	45.0883	-1.1649
640	SLU 16	0.9	2.5	126.44	45.5907	44.7537	-1.1621
640	SLU 17	0.89	2.45	126.45	45.589	44.7577	-1.1416
640	SLU 18	0.89	2.55	129.58	46.7317	45.8592	-1.1768
640	SLU 19	0.89	2.5	129.58	46.73	45.8631	-1.1564
640	SLU 20	0.91	2.58	131.1	47.2841	46.4061	-1.1944
640	SLU 21	0.9	2.53	131.11	47.2824	46.41	-1.1739
640	SLU 22	0.89	2.59	122.18	44.0637	43.2012	-1.1897
640	SLU 23	0.89	2.5	122.19	44.0609	43.2077	-1.1555
640	SLU 24	0.91	2.68	124.65	44.9513	44.0787	-1.2305
640	SLU 25	0.91	2.63	124.65	44.9496	44.0826	-1.21
640	SLU 26	0.9	2.53	123.72	44.6133	43.7546	-1.1731
640	SLU 27	0.93	2.71	126.17	45.5037	44.6256	-1.2481
640	SLU 28	0.93	2.66	126.18	45.5021	44.6295	-1.2276
640	SLU 29	0.92	2.66	125.24	45.1686	44.295	-1.2248
640	SLU 30	0.92	2.6	125.24	45.1669	44.2989	-1.2043
640	SLU 31	0.94	2.77	136.63	49.3013	48.3393	-1.2719
640	SLU 32	0.97	2.95	139.08	50.1917	49.2103	-1.3468
640	SLU 33	0.97	2.9	139.09	50.19	49.2142	-1.3264
640	SLU 34	0.96	2.81	138.15	49.8537	48.8862	-1.2894
640	SLU 35	0.98	2.99	140.61	50.7441	49.7572	-1.3644
640	SLU 36	0.98	2.93	140.62	50.7424	49.7611	-1.3439
640	SLU 37	0.97	2.93	139.67	50.4089	49.4266	-1.3411
640	SLU 38	0.97	2.88	139.68	50.4073	49.4305	-1.3206
640	SLU 39	0.97	2.98	142.81	51.5499	50.532	-1.3558
640	SLU 40	0.97	2.92	142.81	51.5483	50.536	-1.3354
640	SLU 41	0.98	3.01	144.33	52.1024	51.079	-1.3734
640	SLU 42	0.98	2.96	144.34	52.1007	51.0829	-1.3529
640	SLU 43	1.03	2.66	137.1	49.3671	48.4847	-1.2525
640	SLU 44	1.03	2.57	137.11	49.3643	48.4912	-1.2184
640	SLU 45	1.05	2.75	139.56	50.2547	49.3622	-1.2934
640	SLU 46	1.05	2.7	139.57	50.253	49.3661	-1.2729
640	SLU 47	1.04	2.61	138.64	49.9167	49.0381	-1.2359
640	SLU 48	1.07	2.79	141.09	50.8071	49.9091	-1.3109
640	SLU 49	1.07	2.73	141.1	50.8054	49.913	-1.2904
640	SLU 50	1.06	2.73	140.15	50.472	49.5785	-1.2876
640	SLU 51	1.06	2.68	140.16	50.4703	49.5824	-1.2671
640	SLU 52	1.08	2.84	151.55	54.6046	53.6228	-1.3347
640	SLU 53	1.11	3.03	154	55.495	54.4938	-1.4097
640	SLU 54	1.11	2.97	154.01	55.4933	54.4977	-1.3892
640	SLU 55	1.1	2.88	153.07	55.1571	54.1697	-1.3522
640	SLU 56	1.12	3.06	155.53	56.0475	55.0407	-1.4272
640	SLU 57	1.12	3.01	155.53	56.0458	55.0446	-1.4067
640	SLU 58	1.11	3	154.59	55.7123	54.7101	-1.4039
640	SLU 59	1.11	2.95	154.6	55.7106	54.714	-1.3835
640	SLU 60	1.11	3.05	157.72	56.8533	55.8156	-1.4187
640	SLU 61	1.11	3	157.73	56.8516	55.8195	-1.3982
640	SLU 62	1.12	3.09	159.25	57.4057	56.3625	-1.4362
640	SLU 63	1.12	3.03	159.26	57.4041	56.3664	-1.4158
640	SLU 64	1.11	3.09	150.33	54.1854	53.1575	-1.4315
640	SLU 65	1.1	3	150.34	54.1826	53.1641	-1.3974
640	SLU 66	1.13	3.18	152.79	55.073	54.0351	-1.4724
640	SLU 67	1.13	3.13	152.8	55.0713	54.039	-1.4519
640	SLU 68	1.12	3.03	151.87	54.735	53.711	-1.4149
640	SLU 69	1.15	3.21	154.32	55.6254	54.582	-1.4899
640	SLU 70	1.14	3.16	154.33	55.6237	54.5859	-1.4694
640	SLU 71	1.14	3.16	153.39	55.2902	54.2514	-1.4666
640	SLU 72	1.13	3.1	153.39	55.2886	54.2553	-1.4461
640	SLU 73	1.16	3.27	164.78	59.4229	58.2957	-1.5137
640	SLU 74	1.19	3.45	167.23	60.3133	59.1667	-1.5887
640	SLU 75	1.18	3.4	167.24	60.3116	59.1706	-1.5682
640	SLU 76	1.17	3.31	166.3	59.9754	58.8426	-1.5312
640	SLU 77	1.2	3.49	168.76	60.8657	59.7136	-1.6062
640	SLU 78	1.2	3.43	168.76	60.8641	59.7175	-1.5857
640	SLU 79	1.19	3.43	167.82	60.5306	59.383	-1.5829
640	SLU 80	1.19	3.38	167.83	60.5289	59.3869	-1.5625
640	SLU 81	1.19	3.48	170.96	61.6716	60.4884	-1.5977
640	SLU 82	1.18	3.43	170.96	61.6699	60.4923	-1.5772
640	SLU 83	1.2	3.51	172.48	62.224	61.0353	-1.6152
640	SLU 84	1.2	3.46	172.49	62.2223	61.0393	-1.5948
640	SLE RA 1	0.83	2.28	112.73	40.6221	39.8634	-1.0618
640	SLE RA 2	0.83	2.22	112.74	40.6202	39.8678	-1.0391
640	SLE RA 3	0.85	2.34	114.37	41.2138	40.4484	-1.089
640	SLE RA 4	0.85	2.31	114.38	41.2127	40.451	-1.0754
640	SLE RA 5	0.84	2.25	113.76	40.9885	40.2324	-1.0508
640	SLE RA 6	0.86	2.37	115.39	41.5821	40.813	-1.1008
640	SLE RA 7	0.86	2.33	115.4	41.581	40.8156	-1.0871
640	SLE RA 8	0.85	2.33	114.77	41.3587	40.5926	-1.0852
640	SLE RA 9	0.85	2.29	114.77	41.3576	40.5952	-1.0716
640	SLE RA 10	0.87	2.4	122.36	44.1138	43.2888	-1.1166
640	SLE RA 11	0.89	2.53	124	44.7074	43.8695	-1.1666
640	SLE RA 12	0.89	2.49	124	44.7063	43.8721	-1.1529
640	SLE RA 13	0.88	2.43	123.38	44.4821	43.6535	-1.1283
640	SLE RA 14	0.9	2.55	125.02	45.0757	44.2341	-1.1783
640	SLE RA 15	0.9	2.51	125.02	45.0746	44.2367	-1.1646
640	SLE RA 16	0.89	2.51	124.39	44.8522	44.0137	-1.1628
640	SLE RA 17	0.89	2.47	124.4	44.8511	44.0163	-1.1491
640	SLE RA 18	0.89	2.54	126.48	45.6129	44.7507	-1.1726



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
640	SLE RA 19	0.89	2.51	126.48	45.6118	44.7533	-1.1589
640	SLE RA 20	0.9	2.56	127.5	45.9812	45.1153	-1.1843
640	SLE RA 21	0.9	2.53	127.5	45.9801	45.1179	-1.1706
640	SLE FR 1	0.83	2.28	112.73	40.6221	39.8634	-1.0618
640	SLE FR 2	0.83	2.27	112.73	40.6217	39.8643	-1.0573
640	SLE FR 3	0.84	2.29	113.14	40.7694	40.0093	-1.0665
640	SLE FR 4	0.85	2.35	116.86	42.119	41.3305	-1.0905
640	SLE FR 5	0.85	2.37	117.26	42.2667	41.4754	-1.0997
640	SLE FR 6	0.86	2.41	119.61	43.1175	42.307	-1.1172
640	SLE QP 1	0.83	2.28	112.73	40.6221	39.8634	-1.0618
640	SLE QP 2	0.85	2.36	116.86	42.1193	41.3296	-1.0951
640	SLD 1	10.09	3.36	114.37	41.2287	40.7588	-4.8869
640	SLD 2	10.06	3.67	114.41	41.2532	40.7739	-4.9658
640	SLD 3	9.58	-0.04	115.07	41.3995	41.0651	-3.6615
640	SLD 4	9.54	0.26	115.11	41.424	41.0803	-3.7404
640	SLD 5	4.41	7.77	115.04	41.5887	40.691	-4.0771
640	SLD 6	4.39	7.97	115.07	41.6048	40.701	-4.129
640	SLD 7	2.69	-3.58	117.38	42.1581	41.7122	0.0077
640	SLD 8	2.67	-3.38	117.4	42.1742	41.7221	-0.0442
640	SLD 9	-0.97	8.1	116.31	42.0645	40.9371	-2.1459
640	SLD 10	-0.99	8.3	116.34	42.0806	40.947	-2.1978
640	SLD 11	-2.69	-3.25	118.65	42.6339	41.9582	1.9388
640	SLD 12	-2.71	-3.05	118.67	42.65	41.9681	1.887
640	SLD 13	-7.84	4.46	118.6	42.8147	41.5789	1.5503
640	SLD 14	-7.88	4.76	118.64	42.8391	41.594	1.4714
640	SLD 15	-8.36	1.05	119.31	42.9855	41.8852	2.7757
640	SLD 16	-8.39	1.35	119.34	43.01	41.9004	2.6968
640	SLV 1	22.48	4.58	111.05	40.0357	40.0007	-9.9192
640	SLV 2	22.39	5.29	111.14	40.0927	40.036	-10.103
640	SLV 3	21.27	-3.13	112.65	40.4299	40.6961	-7.1447
640	SLV 4	21.19	-2.42	112.74	40.4868	40.7314	-7.3285
640	SLV 5	9.18	14.6	112.67	40.8867	39.8701	-7.9185
640	SLV 6	9.12	15.05	112.73	40.9234	39.8929	-8.0372
640	SLV 7	5.17	-11.1	118.01	42.2004	42.1881	1.3298
640	SLV 8	5.11	-10.64	118.07	42.2372	42.2109	1.2112
640	SLV 9	-3.41	15.36	115.64	42.0015	40.4483	-3.4013
640	SLV 10	-3.47	15.82	115.7	42.0383	40.471	-3.52
640	SLV 11	-7.42	-10.33	120.99	43.3153	42.7663	5.8471
640	SLV 12	-7.48	-9.88	121.04	43.352	42.789	5.7284
640	SLV 13	-19.49	7.14	120.97	43.7519	41.9278	5.1384
640	SLV 14	-19.57	7.85	121.06	43.8088	41.963	4.9546
640	SLV 15	-20.69	-0.57	122.57	44.146	42.6232	7.9129
640	SLV 16	-20.78	0.14	122.66	44.2029	42.6584	7.7291
640	CRTFP Ux+	0	0	0	0	0	0
640	CRTFP Ux-	0	0	0	0	0	0
640	CRTFP Uy+	0	0	0	0	0	0
640	CRTFP Uy-	0	0	0	0	0	0
641	SLU 1	0.34	0.82	41.46	2.1712	-2.3435	0.0117
641	SLU 2	0.34	0.79	41.47	2.1655	-2.3445	0.0102
641	SLU 3	0.34	0.85	42.39	2.2205	-2.3961	0.0124
641	SLU 4	0.34	0.83	42.39	2.2171	-2.3966	0.0115
641	SLU 5	0.34	0.8	42.03	2.1986	-2.3763	0.0101
641	SLU 6	0.35	0.86	42.95	2.2536	-2.428	0.0123
641	SLU 7	0.35	0.84	42.96	2.2502	-2.4285	0.0114
641	SLU 8	0.35	0.84	42.59	2.2374	-2.4073	0.0116
641	SLU 9	0.35	0.82	42.6	2.234	-2.4079	0.0106
641	SLU 10	0.35	0.88	46.85	2.4935	-2.6462	0.0128
641	SLU 11	0.36	0.95	47.77	2.5485	-2.6978	0.015
641	SLU 12	0.36	0.93	47.78	2.5451	-2.6983	0.0141
641	SLU 13	0.36	0.89	47.42	2.5266	-2.6781	0.0127
641	SLU 14	0.37	0.96	48.34	2.5816	-2.7297	0.0149
641	SLU 15	0.37	0.94	48.35	2.5782	-2.7302	0.014
641	SLU 16	0.36	0.94	47.98	2.5653	-2.709	0.0142
641	SLU 17	0.36	0.92	47.98	2.5619	-2.7096	0.0133
641	SLU 18	0.36	0.95	49.15	2.6397	-2.7746	0.0154
641	SLU 19	0.36	0.94	49.15	2.6363	-2.7751	0.0145
641	SLU 20	0.37	0.97	49.72	2.6728	-2.8065	0.0154
641	SLU 21	0.37	0.95	49.72	2.6694	-2.807	0.0145
641	SLU 22	0.36	0.97	46.41	2.4871	-2.6208	0.0166
641	SLU 23	0.36	0.94	46.42	2.4815	-2.6217	0.0151
641	SLU 24	0.37	1	47.34	2.5365	-2.6733	0.0173
641	SLU 25	0.37	0.98	47.34	2.533	-2.6739	0.0164
641	SLU 26	0.37	0.95	46.99	2.5146	-2.6536	0.015
641	SLU 27	0.38	1.01	47.91	2.5696	-2.7052	0.0172
641	SLU 28	0.38	1	47.91	2.5662	-2.7058	0.0163
641	SLU 29	0.37	0.99	47.54	2.5533	-2.6846	0.0164
641	SLU 30	0.37	0.97	47.55	2.5499	-2.6851	0.0155
641	SLU 31	0.38	1.04	51.8	2.8094	-2.9234	0.0177
641	SLU 32	0.39	1.1	52.72	2.8644	-2.975	0.0199
641	SLU 33	0.39	1.08	52.73	2.861	-2.9756	0.019
641	SLU 34	0.39	1.05	52.37	2.8425	-2.9553	0.0176
641	SLU 35	0.4	1.11	53.29	2.8975	-3.0069	0.0198
641	SLU 36	0.4	1.09	53.3	2.8941	-3.0075	0.0189
641	SLU 37	0.39	1.09	52.93	2.8813	-2.9863	0.0191
641	SLU 38	0.39	1.07	52.93	2.8779	-2.9868	0.0182
641	SLU 39	0.39	1.11	54.1	2.9557	-3.0518	0.0203
641	SLU 40	0.39	1.09	54.11	2.9522	-3.0524	0.0194
641	SLU 41	0.4	1.12	54.67	2.9888	-3.0837	0.0203
641	SLU 42	0.4	1.1	54.67	2.9854	-3.0843	0.0193
641	SLU 43	0.43	1.01	52.19	2.7142	-2.9515	0.0135



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
641	SLU 44	0.43	0.98	52.21	2.7085	-2.9525	0.012
641	SLU 45	0.43	1.04	53.13	2.7635	-3.0041	0.0142
641	SLU 46	0.44	1.02	53.13	2.7601	-3.0046	0.0133
641	SLU 47	0.43	0.99	52.77	2.7416	-2.9843	0.0119
641	SLU 48	0.44	1.05	53.69	2.7966	-3.036	0.0141
641	SLU 49	0.44	1.04	53.7	2.7932	-3.0365	0.0132
641	SLU 50	0.44	1.03	53.33	2.7804	-3.0153	0.0134
641	SLU 51	0.44	1.01	53.34	2.777	-3.0159	0.0125
641	SLU 52	0.45	1.08	57.59	3.0365	-3.2542	0.0146
641	SLU 53	0.45	1.14	58.51	3.0915	-3.3058	0.0168
641	SLU 54	0.45	1.12	58.52	3.0881	-3.3063	0.0159
641	SLU 55	0.45	1.09	58.16	3.0696	-3.2861	0.0146
641	SLU 56	0.46	1.15	59.08	3.1246	-3.3377	0.0168
641	SLU 57	0.46	1.13	59.08	3.1212	-3.3382	0.0159
641	SLU 58	0.46	1.13	58.72	3.1084	-3.317	0.016
641	SLU 59	0.46	1.11	58.72	3.105	-3.3176	0.0151
641	SLU 60	0.45	1.15	59.89	3.1827	-3.3826	0.0173
641	SLU 61	0.45	1.13	59.89	3.1793	-3.3831	0.0164
641	SLU 62	0.46	1.16	60.46	3.2158	-3.4145	0.0172
641	SLU 63	0.46	1.14	60.46	3.2124	-3.415	0.0163
641	SLU 64	0.45	1.16	57.15	3.0302	-3.2288	0.0184
641	SLU 65	0.45	1.13	57.16	3.0245	-3.2297	0.0169
641	SLU 66	0.46	1.2	58.08	3.0795	-3.2813	0.0191
641	SLU 67	0.46	1.18	58.08	3.0761	-3.2819	0.0182
641	SLU 68	0.46	1.14	57.73	3.0576	-3.2616	0.0168
641	SLU 69	0.47	1.21	58.64	3.1126	-3.3132	0.019
641	SLU 70	0.47	1.19	58.65	3.1092	-3.3138	0.0181
641	SLU 71	0.46	1.19	58.28	3.0964	-3.2926	0.0183
641	SLU 72	0.46	1.17	58.29	3.093	-3.2931	0.0174
641	SLU 73	0.47	1.23	62.54	3.3524	-3.5314	0.0195
641	SLU 74	0.48	1.29	63.46	3.4074	-3.583	0.0217
641	SLU 75	0.48	1.27	63.47	3.404	-3.5836	0.0208
641	SLU 76	0.48	1.24	63.11	3.3855	-3.5633	0.0194
641	SLU 77	0.49	1.3	64.03	3.4405	-3.6149	0.0216
641	SLU 78	0.49	1.28	64.04	3.4371	-3.6155	0.0207
641	SLU 79	0.48	1.28	63.67	3.4243	-3.5943	0.0209
641	SLU 80	0.48	1.26	63.67	3.4209	-3.5948	0.02
641	SLU 81	0.48	1.3	64.84	3.4987	-3.6598	0.0221
641	SLU 82	0.48	1.28	64.85	3.4953	-3.6604	0.0212
641	SLU 83	0.49	1.31	65.41	3.5318	-3.6917	0.0221
641	SLU 84	0.49	1.29	65.41	3.5284	-3.6923	0.0212
641	SLE RA 1	0.34	0.86	42.87	2.2614	-2.4227	0.0131
641	SLE RA 2	0.34	0.84	42.88	2.2577	-2.4234	0.0121
641	SLE RA 3	0.35	0.88	43.49	2.2943	-2.4578	0.0135
641	SLE RA 4	0.35	0.87	43.49	2.2921	-2.4581	0.0129
641	SLE RA 5	0.35	0.85	43.26	2.2797	-2.4446	0.012
641	SLE RA 6	0.35	0.89	43.87	2.3164	-2.479	0.0135
641	SLE RA 7	0.35	0.88	43.87	2.3141	-2.4794	0.0129
641	SLE RA 8	0.35	0.88	43.63	2.3056	-2.4653	0.013
641	SLE RA 9	0.35	0.86	43.63	2.3033	-2.4656	0.0124
641	SLE RA 10	0.36	0.9	46.47	2.4763	-2.6245	0.0138
641	SLE RA 11	0.36	0.95	47.08	2.513	-2.6589	0.0153
641	SLE RA 12	0.36	0.93	47.08	2.5107	-2.6593	0.0147
641	SLE RA 13	0.36	0.91	46.85	2.4984	-2.6458	0.0138
641	SLE RA 14	0.36	0.95	47.46	2.535	-2.6802	0.0152
641	SLE RA 15	0.37	0.94	47.46	2.5328	-2.6805	0.0146
641	SLE RA 16	0.36	0.94	47.22	2.5242	-2.6664	0.0147
641	SLE RA 17	0.36	0.93	47.22	2.522	-2.6668	0.0141
641	SLE RA 18	0.36	0.95	48	2.5738	-2.7101	0.0156
641	SLE RA 19	0.36	0.94	48	2.5715	-2.7105	0.015
641	SLE RA 20	0.36	0.96	48.38	2.5959	-2.7314	0.0155
641	SLE RA 21	0.36	0.95	48.38	2.5936	-2.7317	0.0149
641	SLE FR 1	0.34	0.86	42.87	2.2614	-2.4227	0.0131
641	SLE FR 2	0.34	0.86	42.87	2.2607	-2.4229	0.0129
641	SLE FR 3	0.34	0.86	43.02	2.2703	-2.4313	0.0131
641	SLE FR 4	0.35	0.88	44.41	2.3544	-2.5091	0.0136
641	SLE FR 5	0.35	0.89	44.56	2.364	-2.5175	0.0138
641	SLE FR 6	0.35	0.91	45.43	2.4176	-2.5664	0.0143
641	SLE QP 1	0.34	0.86	42.87	2.2614	-2.4227	0.0131
641	SLE QP 2	0.35	0.89	44.41	2.3551	-2.509	0.0138
641	SLD 1	3.64	1.24	42.94	2.2441	-2.4168	-0.1733
641	SLD 2	3.64	1.38	42.93	2.2557	-2.4156	-0.1629
641	SLD 3	3.83	0	43.32	2.1557	-2.4428	-0.2424
641	SLD 4	3.83	0.14	43.31	2.1674	-2.4416	-0.2319
641	SLD 5	1.04	2.86	43.4	2.4538	-2.4421	0.0605
641	SLD 6	1.04	2.95	43.39	2.4614	-2.4414	0.0674
641	SLD 7	1.69	-1.29	44.66	2.1592	-2.5287	-0.1696
641	SLD 8	1.69	-1.2	44.65	2.1669	-2.5279	-0.1628
641	SLD 9	-0.99	2.98	44.17	2.5434	-2.49	0.1904
641	SLD 10	-0.99	3.07	44.16	2.5511	-2.4892	0.1973
641	SLD 11	-0.34	-1.17	45.43	2.2489	-2.5766	-0.0397
641	SLD 12	-0.34	-1.08	45.42	2.2565	-2.5758	-0.0329
641	SLD 13	-3.14	1.64	45.51	2.5429	-2.5763	0.2596
641	SLD 14	-3.14	1.78	45.5	2.5546	-2.5751	0.27
641	SLD 15	-2.94	0.39	45.89	2.4546	-2.6023	0.1905
641	SLD 16	-2.94	0.53	45.88	2.4662	-2.6011	0.201
641	SLV 1	8.05	1.67	40.98	2.0911	-2.2941	-0.4265
641	SLV 2	8.05	2	40.96	2.1183	-2.2913	-0.4022
641	SLV 3	8.5	-1.15	41.85	1.891	-2.3535	-0.5831
641	SLV 4	8.5	-0.82	41.83	1.9182	-2.3508	-0.5588



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
641	SLV 5	1.97	5.34	42.07	2.5747	-2.3548	0.115
641	SLV 6	1.97	5.55	42.05	2.5922	-2.353	0.1307
641	SLV 7	3.48	-4.05	44.96	1.9077	-2.553	-0.4069
641	SLV 8	3.49	-3.84	44.95	1.9253	-2.5512	-0.3912
641	SLV 9	-2.79	5.62	43.87	2.785	-2.4667	0.4189
641	SLV 10	-2.79	5.83	43.86	2.8025	-2.4649	0.4346
641	SLV 11	-1.27	-3.78	46.76	2.1181	-2.6649	-0.103
641	SLV 12	-1.27	-3.57	46.75	2.1356	-2.6631	-0.0873
641	SLV 13	-7.81	2.6	46.99	2.7921	-2.6671	0.5864
641	SLV 14	-7.8	2.92	46.97	2.8193	-2.6644	0.6107
641	SLV 15	-7.35	-0.22	47.86	2.592	-2.7266	0.4299
641	SLV 16	-7.35	0.11	47.84	2.6192	-2.7238	0.4542
641	CRTFP Ux+	0	0	0	0	0	0
641	CRTFP Ux-	0	0	0	0	0	0
641	CRTFP Uy+	0	0	0	0	0	0
641	CRTFP Uy-	0	0	0	0	0	0
642	SLU 1	0.42	0.89	50.04	-0.7025	-0.6175	-0.0147
642	SLU 2	0.42	0.85	50.06	-0.7103	-0.6177	-0.0149
642	SLU 3	0.43	0.92	51.16	-0.7176	-0.6314	-0.0152
642	SLU 4	0.43	0.9	51.17	-0.7222	-0.6315	-0.0153
642	SLU 5	0.43	0.86	50.74	-0.7159	-0.6262	-0.0154
642	SLU 6	0.44	0.93	51.85	-0.7232	-0.6399	-0.0157
642	SLU 7	0.44	0.91	51.86	-0.7278	-0.64	-0.0158
642	SLU 8	0.43	0.91	51.41	-0.7137	-0.6345	-0.0156
642	SLU 9	0.43	0.89	51.42	-0.7184	-0.6346	-0.0157
642	SLU 10	0.44	0.96	56.53	-0.7455	-0.6974	-0.016
642	SLU 11	0.45	1.03	57.63	-0.7527	-0.7111	-0.0163
642	SLU 12	0.45	1.01	57.64	-0.7574	-0.7112	-0.0164
642	SLU 13	0.45	0.97	57.21	-0.7511	-0.7059	-0.0165
642	SLU 14	0.46	1.04	58.32	-0.7583	-0.7196	-0.0168
642	SLU 15	0.46	1.02	58.33	-0.763	-0.7197	-0.0169
642	SLU 16	0.45	1.02	57.88	-0.7489	-0.7142	-0.0167
642	SLU 17	0.45	1	57.89	-0.7536	-0.7143	-0.0169
642	SLU 18	0.45	1.04	59.28	-0.7528	-0.7313	-0.0163
642	SLU 19	0.45	1.02	59.29	-0.7574	-0.7315	-0.0164
642	SLU 20	0.46	1.05	59.97	-0.7584	-0.7398	-0.0167
642	SLU 21	0.46	1.03	59.98	-0.763	-0.74	-0.0169
642	SLU 22	0.45	1.06	56.01	-0.717	-0.6916	-0.0156
642	SLU 23	0.45	1.02	56.02	-0.7248	-0.6918	-0.0158
642	SLU 24	0.46	1.1	57.13	-0.732	-0.7055	-0.0161
642	SLU 25	0.47	1.07	57.14	-0.7367	-0.7056	-0.0163
642	SLU 26	0.46	1.04	56.71	-0.7304	-0.7003	-0.0163
642	SLU 27	0.47	1.11	57.81	-0.7376	-0.714	-0.0166
642	SLU 28	0.47	1.09	57.82	-0.7423	-0.7141	-0.0167
642	SLU 29	0.47	1.08	57.37	-0.7282	-0.7086	-0.0165
642	SLU 30	0.47	1.06	57.38	-0.7328	-0.7087	-0.0167
642	SLU 31	0.48	1.13	62.49	-0.7599	-0.7715	-0.017
642	SLU 32	0.49	1.2	63.6	-0.7672	-0.7852	-0.0172
642	SLU 33	0.49	1.18	63.61	-0.7719	-0.7853	-0.0174
642	SLU 34	0.48	1.14	63.18	-0.7655	-0.78	-0.0174
642	SLU 35	0.49	1.21	64.28	-0.7728	-0.7937	-0.0177
642	SLU 36	0.49	1.19	64.29	-0.7775	-0.7938	-0.0178
642	SLU 37	0.49	1.19	63.84	-0.7633	-0.7883	-0.0176
642	SLU 38	0.49	1.17	63.85	-0.768	-0.7884	-0.0178
642	SLU 39	0.49	1.21	65.25	-0.7672	-0.8055	-0.0172
642	SLU 40	0.49	1.19	65.26	-0.7719	-0.8056	-0.0173
642	SLU 41	0.49	1.22	65.93	-0.7728	-0.814	-0.0177
642	SLU 42	0.49	1.2	65.94	-0.7775	-0.8141	-0.0178
642	SLU 43	0.53	1.1	63.01	-0.9083	-0.7773	-0.0188
642	SLU 44	0.53	1.06	63.02	-0.9161	-0.7775	-0.019
642	SLU 45	0.54	1.13	64.13	-0.9233	-0.7912	-0.0193
642	SLU 46	0.55	1.11	64.14	-0.928	-0.7913	-0.0194
642	SLU 47	0.54	1.07	63.71	-0.9217	-0.786	-0.0195
642	SLU 48	0.55	1.14	64.81	-0.9289	-0.7997	-0.0197
642	SLU 49	0.55	1.12	64.82	-0.9336	-0.7998	-0.0199
642	SLU 50	0.55	1.12	64.37	-0.9195	-0.7943	-0.0197
642	SLU 51	0.55	1.1	64.38	-0.9242	-0.7944	-0.0198
642	SLU 52	0.56	1.17	69.49	-0.9513	-0.8572	-0.0201
642	SLU 53	0.57	1.24	70.6	-0.9585	-0.8709	-0.0204
642	SLU 54	0.57	1.22	70.61	-0.9632	-0.871	-0.0205
642	SLU 55	0.56	1.18	70.18	-0.9569	-0.8657	-0.0206
642	SLU 56	0.57	1.25	71.28	-0.9641	-0.8794	-0.0209
642	SLU 57	0.57	1.23	71.29	-0.9688	-0.8795	-0.021
642	SLU 58	0.57	1.22	70.85	-0.9547	-0.874	-0.0208
642	SLU 59	0.57	1.2	70.85	-0.9594	-0.8741	-0.0209
642	SLU 60	0.56	1.25	72.25	-0.9586	-0.8912	-0.0204
642	SLU 61	0.57	1.23	72.26	-0.9632	-0.8913	-0.0205
642	SLU 62	0.57	1.26	72.93	-0.9642	-0.8997	-0.0208
642	SLU 63	0.57	1.24	72.94	-0.9688	-0.8998	-0.021
642	SLU 64	0.57	1.27	68.97	-0.9227	-0.8514	-0.0197
642	SLU 65	0.57	1.23	68.99	-0.9306	-0.8516	-0.0199
642	SLU 66	0.58	1.3	70.1	-0.9378	-0.8653	-0.0202
642	SLU 67	0.58	1.28	70.1	-0.9425	-0.8655	-0.0203
642	SLU 68	0.58	1.24	69.67	-0.9361	-0.8601	-0.0204
642	SLU 69	0.59	1.31	70.78	-0.9434	-0.8738	-0.0207
642	SLU 70	0.59	1.29	70.79	-0.9481	-0.874	-0.0208
642	SLU 71	0.58	1.29	70.34	-0.9339	-0.8684	-0.0206
642	SLU 72	0.58	1.27	70.35	-0.9386	-0.8685	-0.0207
642	SLU 73	0.59	1.34	75.46	-0.9657	-0.9313	-0.021
642	SLU 74	0.6	1.41	76.57	-0.973	-0.945	-0.0213



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
642	SLU 75	0.6	1.39	76.58	-0.9777	-0.9452	-0.0215
642	SLU 76	0.6	1.35	76.14	-0.9713	-0.9398	-0.0215
642	SLU 77	0.61	1.42	77.25	-0.9786	-0.9535	-0.0218
642	SLU 78	0.61	1.4	77.26	-0.9833	-0.9537	-0.0219
642	SLU 79	0.6	1.4	76.81	-0.9691	-0.9481	-0.0217
642	SLU 80	0.6	1.37	76.82	-0.9738	-0.9482	-0.0219
642	SLU 81	0.6	1.42	78.22	-0.973	-0.9653	-0.0213
642	SLU 82	0.6	1.4	78.23	-0.9777	-0.9654	-0.0214
642	SLU 83	0.61	1.43	78.9	-0.9786	-0.9738	-0.0218
642	SLU 84	0.61	1.41	78.91	-0.9833	-0.9739	-0.0219
642	SLE RA 1	0.43	0.94	51.74	-0.7066	-0.6387	-0.015
642	SLE RA 2	0.43	0.91	51.75	-0.7118	-0.6388	-0.0151
642	SLE RA 3	0.44	0.96	52.49	-0.7167	-0.6479	-0.0153
642	SLE RA 4	0.44	0.95	52.5	-0.7198	-0.648	-0.0154
642	SLE RA 5	0.43	0.92	52.21	-0.7156	-0.6445	-0.0154
642	SLE RA 6	0.44	0.97	52.95	-0.7204	-0.6536	-0.0156
642	SLE RA 7	0.44	0.95	52.96	-0.7235	-0.6537	-0.0157
642	SLE RA 8	0.44	0.95	52.66	-0.7141	-0.65	-0.0156
642	SLE RA 9	0.44	0.94	52.66	-0.7172	-0.6501	-0.0157
642	SLE RA 10	0.44	0.98	56.07	-0.7353	-0.6919	-0.0158
642	SLE RA 11	0.45	1.03	56.81	-0.7401	-0.7011	-0.016
642	SLE RA 12	0.45	1.02	56.81	-0.7432	-0.7011	-0.0161
642	SLE RA 13	0.45	0.99	56.52	-0.739	-0.6976	-0.0162
642	SLE RA 14	0.46	1.04	57.26	-0.7439	-0.7067	-0.0163
642	SLE RA 15	0.46	1.02	57.27	-0.747	-0.7068	-0.0164
642	SLE RA 16	0.45	1.02	56.97	-0.7375	-0.7031	-0.0163
642	SLE RA 17	0.45	1.01	56.98	-0.7407	-0.7032	-0.0164
642	SLE RA 18	0.45	1.04	57.91	-0.7401	-0.7146	-0.016
642	SLE RA 19	0.45	1.02	57.91	-0.7433	-0.7147	-0.0161
642	SLE RA 20	0.45	1.05	58.36	-0.7439	-0.7202	-0.0163
642	SLE RA 21	0.45	1.03	58.37	-0.747	-0.7203	-0.0164
642	SLE FR 1	0.43	0.94	51.74	-0.7066	-0.6387	-0.015
642	SLE FR 2	0.43	0.93	51.75	-0.7077	-0.6387	-0.015
642	SLE FR 3	0.43	0.94	51.93	-0.7081	-0.6409	-0.0151
642	SLE FR 4	0.44	0.96	53.6	-0.7177	-0.6615	-0.0153
642	SLE FR 5	0.44	0.97	53.78	-0.7182	-0.6637	-0.0154
642	SLE FR 6	0.44	0.99	54.83	-0.7234	-0.6766	-0.0155
642	SLE QP 1	0.43	0.94	51.74	-0.7066	-0.6387	-0.015
642	SLE QP 2	0.44	0.97	53.59	-0.7167	-0.6614	-0.0153
642	SLD 1	4.4	1.86	51.29	-0.7558	-0.6157	0.0012
642	SLD 2	4.4	2.04	51.28	-0.7407	-0.6154	0.0068
642	SLD 3	4.64	0.38	51.8	-0.8896	-0.6224	-0.0142
642	SLD 4	4.64	0.56	51.78	-0.8745	-0.6221	-0.0085
642	SLD 5	1.27	3.45	52.14	-0.5281	-0.6376	0.012
642	SLD 6	1.27	3.57	52.13	-0.5183	-0.6374	0.0157
642	SLD 7	2.05	-1.49	53.82	-0.9742	-0.6599	-0.0393
642	SLD 8	2.06	-1.37	53.81	-0.9643	-0.6597	-0.0356
642	SLD 9	-1.18	3.31	53.38	-0.4691	-0.6631	0.005
642	SLD 10	-1.18	3.43	53.37	-0.4592	-0.663	0.0087
642	SLD 11	-0.4	-1.64	55.05	-0.9151	-0.6855	-0.0462
642	SLD 12	-0.4	-1.52	55.04	-0.9052	-0.6853	-0.0425
642	SLD 13	-3.77	1.38	55.41	-0.5588	-0.7008	-0.022
642	SLD 14	-3.76	1.56	55.39	-0.5438	-0.7005	-0.0164
642	SLD 15	-3.53	-0.11	55.91	-0.6926	-0.7075	-0.0374
642	SLD 16	-3.53	0.08	55.89	-0.6776	-0.7072	-0.0318
642	SLV 1	9.71	3	48.23	-0.8148	-0.5544	0.0228
642	SLV 2	9.72	3.42	48.18	-0.7798	-0.5538	0.0358
642	SLV 3	10.26	-0.36	49.38	-1.1179	-0.5699	-0.012
642	SLV 4	10.27	0.06	49.34	-1.0829	-0.5692	0.001
642	SLV 5	2.38	6.59	50.24	-0.2924	-0.606	0.0467
642	SLV 6	2.39	6.87	50.21	-0.2698	-0.6056	0.0551
642	SLV 7	4.22	-4.6	54.09	-1.3029	-0.6575	-0.0693
642	SLV 8	4.22	-4.32	54.06	-1.2803	-0.6571	-0.0609
642	SLV 9	-3.35	6.26	53.12	-0.1531	-0.6658	0.0303
642	SLV 10	-3.34	6.53	53.1	-0.1305	-0.6654	0.0388
642	SLV 11	-1.52	-4.93	56.98	-1.1636	-0.7173	-0.0856
642	SLV 12	-1.51	-4.66	56.95	-1.141	-0.7168	-0.0772
642	SLV 13	-9.4	1.87	57.85	-0.3504	-0.7536	-0.0316
642	SLV 14	-9.39	2.3	57.81	-0.3155	-0.753	-0.0185
642	SLV 15	-8.85	-1.49	59	-0.6536	-0.7691	-0.0664
642	SLV 16	-8.84	-1.06	58.96	-0.6186	-0.7684	-0.0533
642	CRTFP Ux+	0	0	0	0	0	0
642	CRTFP Ux-	0	0	0	0	0	0
642	CRTFP Uy+	0	0	0	0	0	0
642	CRTFP Uy-	0	0	0	0	0	0
643	SLU 1	0.49	0.79	53.61	-0.7579	0.0053	-0.0376
643	SLU 2	0.49	0.75	53.63	-0.7662	0.0052	-0.0374
643	SLU 3	0.5	0.82	54.82	-0.7742	0.0053	-0.0388
643	SLU 4	0.5	0.8	54.83	-0.7792	0.0053	-0.0387
643	SLU 5	0.5	0.76	54.37	-0.7724	0.0052	-0.0382
643	SLU 6	0.51	0.83	55.56	-0.7804	0.0052	-0.0396
643	SLU 7	0.51	0.81	55.57	-0.7854	0.0052	-0.0395
643	SLU 8	0.5	0.81	55.09	-0.7703	0.0052	-0.0391
643	SLU 9	0.5	0.78	55.1	-0.7753	0.0051	-0.039
643	SLU 10	0.51	0.85	60.56	-0.8047	0.0062	-0.0404
643	SLU 11	0.53	0.92	61.74	-0.8127	0.0063	-0.0418
643	SLU 12	0.53	0.9	61.76	-0.8177	0.0063	-0.0417
643	SLU 13	0.52	0.86	61.29	-0.8109	0.0062	-0.0412
643	SLU 14	0.53	0.93	62.48	-0.8189	0.0062	-0.0426
643	SLU 15	0.53	0.91	62.49	-0.8239	0.0062	-0.0425



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
643	SLU 16	0.53	0.91	62.01	-0.8088	0.0062	-0.0421
643	SLU 17	0.53	0.88	62.02	-0.8138	0.0061	-0.042
643	SLU 18	0.52	0.93	63.51	-0.8129	0.0067	-0.0419
643	SLU 19	0.52	0.91	63.52	-0.8179	0.0067	-0.0418
643	SLU 20	0.53	0.94	64.24	-0.8191	0.0067	-0.0426
643	SLU 21	0.53	0.92	64.25	-0.8241	0.0066	-0.0425
643	SLU 22	0.53	0.96	60.02	-0.7746	0.0055	-0.0415
643	SLU 23	0.53	0.92	60.04	-0.7829	0.0054	-0.0413
643	SLU 24	0.54	0.99	61.23	-0.7909	0.0055	-0.0427
643	SLU 25	0.54	0.97	61.24	-0.7959	0.0055	-0.0426
643	SLU 26	0.54	0.93	60.78	-0.7891	0.0054	-0.0421
643	SLU 27	0.55	1	61.97	-0.7971	0.0054	-0.0435
643	SLU 28	0.55	0.97	61.98	-0.802	0.0054	-0.0434
643	SLU 29	0.54	0.97	61.5	-0.787	0.0054	-0.043
643	SLU 30	0.54	0.95	61.51	-0.7919	0.0053	-0.0429
643	SLU 31	0.55	1.02	66.97	-0.8213	0.0064	-0.0443
643	SLU 32	0.57	1.09	68.15	-0.8293	0.0065	-0.0458
643	SLU 33	0.57	1.06	68.17	-0.8343	0.0065	-0.0457
643	SLU 34	0.56	1.03	67.7	-0.8275	0.0064	-0.0451
643	SLU 35	0.57	1.1	68.89	-0.8355	0.0064	-0.0465
643	SLU 36	0.57	1.07	68.9	-0.8405	0.0064	-0.0464
643	SLU 37	0.57	1.07	68.42	-0.8254	0.0064	-0.046
643	SLU 38	0.57	1.05	68.43	-0.8304	0.0063	-0.0459
643	SLU 39	0.56	1.1	69.92	-0.8295	0.0069	-0.0458
643	SLU 40	0.56	1.08	69.93	-0.8345	0.0069	-0.0457
643	SLU 41	0.57	1.11	70.65	-0.8357	0.0069	-0.0466
643	SLU 42	0.57	1.08	70.66	-0.8407	0.0068	-0.0465
643	SLU 43	0.62	0.97	67.5	-0.9796	0.0068	-0.0475
643	SLU 44	0.62	0.93	67.52	-0.9879	0.0067	-0.0473
643	SLU 45	0.63	1	68.71	-0.9959	0.0068	-0.0487
643	SLU 46	0.63	0.98	68.72	-1.0009	0.0068	-0.0486
643	SLU 47	0.63	0.94	68.25	-0.9941	0.0067	-0.0481
643	SLU 48	0.64	1.01	69.44	-1.0021	0.0067	-0.0495
643	SLU 49	0.64	0.99	69.45	-1.0071	0.0067	-0.0494
643	SLU 50	0.64	0.99	68.97	-0.992	0.0067	-0.049
643	SLU 51	0.64	0.96	68.98	-0.997	0.0066	-0.0489
643	SLU 52	0.65	1.03	74.44	-1.0264	0.0078	-0.0503
643	SLU 53	0.66	1.1	75.63	-1.0344	0.0078	-0.0517
643	SLU 54	0.66	1.08	75.64	-1.0394	0.0078	-0.0516
643	SLU 55	0.65	1.04	75.18	-1.0326	0.0077	-0.0511
643	SLU 56	0.67	1.11	76.37	-1.0406	0.0077	-0.0525
643	SLU 57	0.67	1.09	76.38	-1.0456	0.0077	-0.0524
643	SLU 58	0.66	1.09	75.9	-1.0305	0.0077	-0.052
643	SLU 59	0.66	1.06	75.91	-1.0354	0.0077	-0.0519
643	SLU 60	0.66	1.11	77.39	-1.0346	0.0082	-0.0518
643	SLU 61	0.66	1.09	77.4	-1.0396	0.0082	-0.0517
643	SLU 62	0.66	1.12	78.13	-1.0408	0.0082	-0.0525
643	SLU 63	0.66	1.1	78.14	-1.0457	0.0081	-0.0524
643	SLU 64	0.66	1.14	73.91	-0.9963	0.007	-0.0514
643	SLU 65	0.66	1.1	73.93	-1.0046	0.0069	-0.0512
643	SLU 66	0.67	1.17	75.12	-1.0126	0.007	-0.0527
643	SLU 67	0.67	1.14	75.13	-1.0175	0.007	-0.0526
643	SLU 68	0.67	1.11	74.66	-1.0108	0.0069	-0.052
643	SLU 69	0.68	1.18	75.85	-1.0187	0.0069	-0.0534
643	SLU 70	0.68	1.15	75.86	-1.0237	0.0069	-0.0533
643	SLU 71	0.68	1.15	75.38	-1.0086	0.0069	-0.053
643	SLU 72	0.68	1.13	75.39	-1.0136	0.0068	-0.0529
643	SLU 73	0.69	1.2	80.85	-1.043	0.008	-0.0543
643	SLU 74	0.7	1.27	82.04	-1.051	0.008	-0.0557
643	SLU 75	0.7	1.24	82.05	-1.056	0.008	-0.0556
643	SLU 76	0.69	1.21	81.59	-1.0492	0.0079	-0.055
643	SLU 77	0.71	1.28	82.78	-1.0572	0.0079	-0.0564
643	SLU 78	0.71	1.25	82.79	-1.0622	0.0079	-0.0563
643	SLU 79	0.7	1.25	82.31	-1.0471	0.0079	-0.056
643	SLU 80	0.7	1.23	82.32	-1.0521	0.0079	-0.0559
643	SLU 81	0.7	1.28	83.8	-1.0512	0.0084	-0.0557
643	SLU 82	0.7	1.26	83.81	-1.0562	0.0084	-0.0556
643	SLU 83	0.7	1.29	84.54	-1.0574	0.0084	-0.0565
643	SLU 84	0.7	1.26	84.55	-1.0624	0.0083	-0.0564
643	SLE RA 1	0.5	0.84	55.45	-0.7627	0.0053	-0.0387
643	SLE RA 2	0.5	0.81	55.46	-0.7682	0.0053	-0.0386
643	SLE RA 3	0.51	0.86	56.25	-0.7736	0.0053	-0.0395
643	SLE RA 4	0.51	0.84	56.26	-0.7769	0.0053	-0.0394
643	SLE RA 5	0.5	0.82	55.95	-0.7724	0.0053	-0.0391
643	SLE RA 6	0.51	0.86	56.74	-0.7777	0.0053	-0.04
643	SLE RA 7	0.51	0.85	56.75	-0.781	0.0053	-0.04
643	SLE RA 8	0.51	0.85	56.43	-0.7709	0.0053	-0.0397
643	SLE RA 9	0.51	0.83	56.43	-0.7743	0.0052	-0.0396
643	SLE RA 10	0.52	0.88	60.07	-0.7939	0.006	-0.0406
643	SLE RA 11	0.52	0.92	60.87	-0.7992	0.006	-0.0415
643	SLE RA 12	0.52	0.91	60.87	-0.8025	0.006	-0.0415
643	SLE RA 13	0.52	0.88	60.56	-0.798	0.0059	-0.0411
643	SLE RA 14	0.53	0.93	61.36	-0.8033	0.006	-0.042
643	SLE RA 15	0.53	0.92	61.36	-0.8066	0.006	-0.042
643	SLE RA 16	0.53	0.91	61.04	-0.7966	0.0059	-0.0417
643	SLE RA 17	0.53	0.9	61.05	-0.7999	0.0059	-0.0416
643	SLE RA 18	0.52	0.93	62.04	-0.7993	0.0063	-0.0416
643	SLE RA 19	0.52	0.92	62.05	-0.8026	0.0063	-0.0415
643	SLE RA 20	0.53	0.94	62.53	-0.8035	0.0063	-0.0421
643	SLE RA 21	0.53	0.92	62.54	-0.8068	0.0062	-0.042



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
643	SLE FR 1	0.5	0.84	55.45	-0.7627	0.0053	-0.0387
643	SLE FR 2	0.5	0.83	55.45	-0.7638	0.0053	-0.0387
643	SLE FR 3	0.5	0.84	55.64	-0.7643	0.0053	-0.0389
643	SLE FR 4	0.51	0.86	57.43	-0.7748	0.0056	-0.0395
643	SLE FR 5	0.51	0.87	57.62	-0.7753	0.0056	-0.0398
643	SLE FR 6	0.51	0.88	58.74	-0.781	0.0058	-0.0401
643	SLE QP 1	0.5	0.84	55.45	-0.7627	0.0053	-0.0387
643	SLE QP 2	0.51	0.87	57.42	-0.7737	0.0056	-0.0395
643	SLD 1	4.76	1.82	54.23	-0.8149	0.0281	-0.0301
643	SLD 2	4.77	2.04	54.21	-0.7987	0.0282	-0.0265
643	SLD 3	5.02	0.24	54.8	-0.9581	0.0267	-0.0276
643	SLD 4	5.02	0.46	54.77	-0.9419	0.0269	-0.024
643	SLD 5	1.4	3.51	55.62	-0.5717	0.0143	-0.0412
643	SLD 6	1.4	3.65	55.6	-0.5611	0.0144	-0.0388
643	SLD 7	2.24	-1.76	57.49	-1.0491	0.0099	-0.0328
643	SLD 8	2.25	-1.62	57.48	-1.0385	0.01	-0.0304
643	SLD 9	-1.23	3.35	57.37	-0.5089	0.0012	-0.0487
643	SLD 10	-1.23	3.49	57.35	-0.4983	0.0013	-0.0463
643	SLD 11	-0.39	-1.92	59.25	-0.9863	-0.0032	-0.0403
643	SLD 12	-0.39	-1.78	59.23	-0.9756	-0.0031	-0.0379
643	SLD 13	-4.01	1.27	60.07	-0.6054	-0.0156	-0.0551
643	SLD 14	-4	1.49	60.05	-0.5893	-0.0155	-0.0515
643	SLD 15	-3.76	-0.31	60.64	-0.7486	-0.0169	-0.0526
643	SLD 16	-3.75	-0.09	60.61	-0.7325	-0.0168	-0.0489
643	SLV 1	10.47	3.04	49.97	-0.8772	0.0582	-0.0174
643	SLV 2	10.48	3.54	49.92	-0.8396	0.0584	-0.0089
643	SLV 3	11.06	-0.53	51.27	-1.2016	0.0551	-0.0116
643	SLV 4	11.07	-0.03	51.21	-1.164	0.0553	-0.0032
643	SLV 5	2.6	6.86	53.23	-0.3192	0.026	-0.0431
643	SLV 6	2.6	7.18	53.2	-0.2949	0.0262	-0.0376
643	SLV 7	4.57	-5.06	57.55	-1.4006	0.0157	-0.0239
643	SLV 8	4.57	-4.74	57.52	-1.3763	0.0159	-0.0184
643	SLV 9	-3.56	6.47	57.33	-0.171	-0.0046	-0.0606
643	SLV 10	-3.55	6.79	57.3	-0.1467	-0.0045	-0.0552
643	SLV 11	-1.59	-5.45	61.65	-1.2525	-0.015	-0.0415
643	SLV 12	-1.59	-5.13	61.61	-1.2282	-0.0148	-0.036
643	SLV 13	-10.05	1.76	63.63	-0.3834	-0.0441	-0.0759
643	SLV 14	-10.05	2.26	63.58	-0.3457	-0.0438	-0.0675
643	SLV 15	-9.46	-1.81	64.93	-0.7078	-0.0472	-0.0702
643	SLV 16	-9.46	-1.31	64.87	-0.6702	-0.0469	-0.0617
643	CRTFP Ux+	0	0	0	0	0	0
643	CRTFP Ux-	0	0	0	0	0	0
643	CRTFP Uy+	0	0	0	0	0	0
643	CRTFP Uy-	0	0	0	0	0	0
644	SLU 1	0.53	0.58	53.39	-0.7644	0.0082	-0.0427
644	SLU 2	0.53	0.55	53.41	-0.7726	0.0081	-0.0426
644	SLU 3	0.54	0.61	54.59	-0.7809	0.0082	-0.044
644	SLU 4	0.54	0.59	54.6	-0.7858	0.0082	-0.0439
644	SLU 5	0.54	0.55	54.15	-0.779	0.0081	-0.0434
644	SLU 6	0.55	0.61	55.33	-0.7873	0.0082	-0.0448
644	SLU 7	0.55	0.59	55.34	-0.7922	0.0082	-0.0448
644	SLU 8	0.54	0.59	54.86	-0.7772	0.0081	-0.0443
644	SLU 9	0.55	0.57	54.88	-0.7821	0.008	-0.0442
644	SLU 10	0.56	0.63	60.29	-0.812	0.0099	-0.0456
644	SLU 11	0.57	0.69	61.47	-0.8202	0.01	-0.0471
644	SLU 12	0.57	0.67	61.48	-0.8252	0.0099	-0.047
644	SLU 13	0.56	0.63	61.02	-0.8184	0.0098	-0.0465
644	SLU 14	0.58	0.7	62.21	-0.8266	0.0099	-0.0479
644	SLU 15	0.58	0.67	62.22	-0.8316	0.0099	-0.0478
644	SLU 16	0.57	0.68	61.74	-0.8165	0.0098	-0.0474
644	SLU 17	0.57	0.65	61.75	-0.8215	0.0098	-0.0473
644	SLU 18	0.57	0.7	63.21	-0.8206	0.0107	-0.0471
644	SLU 19	0.57	0.68	63.23	-0.8255	0.0106	-0.047
644	SLU 20	0.57	0.71	63.95	-0.827	0.0106	-0.0479
644	SLU 21	0.58	0.68	63.96	-0.8319	0.0106	-0.0478
644	SLU 22	0.57	0.73	59.78	-0.7823	0.009	-0.0468
644	SLU 23	0.57	0.69	59.8	-0.7905	0.0089	-0.0467
644	SLU 24	0.59	0.75	60.99	-0.7988	0.009	-0.0482
644	SLU 25	0.59	0.73	61	-0.8037	0.009	-0.0481
644	SLU 26	0.58	0.7	60.54	-0.7969	0.0088	-0.0475
644	SLU 27	0.59	0.76	61.72	-0.8052	0.009	-0.049
644	SLU 28	0.59	0.74	61.74	-0.8101	0.0089	-0.0489
644	SLU 29	0.59	0.74	61.26	-0.7951	0.0088	-0.0485
644	SLU 30	0.59	0.72	61.27	-0.8	0.0088	-0.0484
644	SLU 31	0.6	0.78	66.68	-0.8299	0.0106	-0.0498
644	SLU 32	0.61	0.84	67.86	-0.8381	0.0107	-0.0513
644	SLU 33	0.61	0.82	67.88	-0.8431	0.0107	-0.0512
644	SLU 34	0.61	0.78	67.42	-0.8363	0.0106	-0.0506
644	SLU 35	0.62	0.84	68.6	-0.8445	0.0107	-0.0521
644	SLU 36	0.62	0.82	68.61	-0.8495	0.0106	-0.052
644	SLU 37	0.62	0.82	68.14	-0.8344	0.0106	-0.0515
644	SLU 38	0.62	0.8	68.15	-0.8394	0.0105	-0.0515
644	SLU 39	0.61	0.85	69.61	-0.8385	0.0114	-0.0512
644	SLU 40	0.61	0.83	69.62	-0.8434	0.0114	-0.0512
644	SLU 41	0.62	0.85	70.35	-0.8449	0.0114	-0.052
644	SLU 42	0.62	0.83	70.36	-0.8498	0.0113	-0.052
644	SLU 43	0.67	0.71	67.21	-0.9876	0.0104	-0.054
644	SLU 44	0.67	0.67	67.23	-0.9958	0.0103	-0.0539
644	SLU 45	0.69	0.73	68.42	-1.0041	0.0104	-0.0554
644	SLU 46	0.69	0.71	68.43	-1.009	0.0104	-0.0553



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
644	SLU 47	0.68	0.68	67.97	-1.0022	0.0103	-0.0547
644	SLU 48	0.69	0.74	69.15	-1.0105	0.0104	-0.0562
644	SLU 49	0.69	0.72	69.17	-1.0154	0.0104	-0.0561
644	SLU 50	0.69	0.72	68.69	-1.0004	0.0103	-0.0557
644	SLU 51	0.69	0.69	68.7	-1.0053	0.0102	-0.0556
644	SLU 52	0.7	0.75	74.11	-1.0352	0.0121	-0.057
644	SLU 53	0.71	0.82	75.29	-1.0434	0.0122	-0.0585
644	SLU 54	0.71	0.79	75.31	-1.0483	0.0121	-0.0584
644	SLU 55	0.71	0.76	74.85	-1.0416	0.012	-0.0578
644	SLU 56	0.72	0.82	76.03	-1.0498	0.0121	-0.0593
644	SLU 57	0.72	0.8	76.05	-1.0547	0.0121	-0.0592
644	SLU 58	0.72	0.8	75.57	-1.0397	0.012	-0.0588
644	SLU 59	0.72	0.78	75.58	-1.0447	0.012	-0.0587
644	SLU 60	0.71	0.83	77.04	-1.0438	0.0129	-0.0584
644	SLU 61	0.71	0.81	77.05	-1.0487	0.0128	-0.0584
644	SLU 62	0.72	0.83	77.78	-1.0502	0.0128	-0.0593
644	SLU 63	0.72	0.81	77.79	-1.0551	0.0128	-0.0592
644	SLU 64	0.71	0.85	73.6	-1.0055	0.0112	-0.0582
644	SLU 65	0.72	0.82	73.62	-1.0137	0.0111	-0.0581
644	SLU 66	0.73	0.88	74.81	-1.0219	0.0112	-0.0595
644	SLU 67	0.73	0.86	74.82	-1.0269	0.0112	-0.0595
644	SLU 68	0.72	0.82	74.36	-1.0201	0.011	-0.0589
644	SLU 69	0.74	0.88	75.55	-1.0283	0.0112	-0.0604
644	SLU 70	0.74	0.86	75.56	-1.0333	0.0111	-0.0603
644	SLU 71	0.73	0.86	75.08	-1.0183	0.011	-0.0598
644	SLU 72	0.73	0.84	75.09	-1.0232	0.011	-0.0598
644	SLU 73	0.74	0.9	80.5	-1.0531	0.0128	-0.0612
644	SLU 74	0.76	0.96	81.69	-1.0613	0.0129	-0.0626
644	SLU 75	0.76	0.94	81.7	-1.0662	0.0129	-0.0626
644	SLU 76	0.75	0.9	81.24	-1.0595	0.0128	-0.062
644	SLU 77	0.76	0.97	82.43	-1.0677	0.0129	-0.0634
644	SLU 78	0.76	0.94	82.44	-1.0726	0.0128	-0.0634
644	SLU 79	0.76	0.95	81.96	-1.0576	0.0128	-0.0629
644	SLU 80	0.76	0.92	81.97	-1.0626	0.0127	-0.0628
644	SLU 81	0.75	0.97	83.43	-1.0617	0.0136	-0.0626
644	SLU 82	0.75	0.95	83.44	-1.0666	0.0136	-0.0625
644	SLU 83	0.76	0.98	84.17	-1.0681	0.0136	-0.0634
644	SLU 84	0.76	0.96	84.18	-1.073	0.0135	-0.0634
644	SLE RA 1	0.54	0.62	55.21	-0.7695	0.0084	-0.0439
644	SLE RA 2	0.54	0.6	55.23	-0.775	0.0084	-0.0438
644	SLE RA 3	0.55	0.64	56.02	-0.7805	0.0084	-0.0448
644	SLE RA 4	0.55	0.63	56.03	-0.7838	0.0084	-0.0447
644	SLE RA 5	0.55	0.6	55.72	-0.7793	0.0083	-0.0443
644	SLE RA 6	0.56	0.64	56.51	-0.7848	0.0084	-0.0453
644	SLE RA 7	0.56	0.63	56.52	-0.7881	0.0084	-0.0453
644	SLE RA 8	0.55	0.63	56.2	-0.778	0.0083	-0.0449
644	SLE RA 9	0.55	0.62	56.21	-0.7813	0.0083	-0.0449
644	SLE RA 10	0.56	0.66	59.81	-0.8012	0.0095	-0.0458
644	SLE RA 11	0.57	0.7	60.6	-0.8067	0.0096	-0.0468
644	SLE RA 12	0.57	0.68	60.61	-0.81	0.0096	-0.0468
644	SLE RA 13	0.56	0.66	60.31	-0.8055	0.0095	-0.0464
644	SLE RA 14	0.57	0.7	61.1	-0.811	0.0096	-0.0473
644	SLE RA 15	0.57	0.69	61.1	-0.8143	0.0095	-0.0473
644	SLE RA 16	0.57	0.69	60.78	-0.8043	0.0095	-0.047
644	SLE RA 17	0.57	0.67	60.79	-0.8076	0.0095	-0.047
644	SLE RA 18	0.57	0.7	61.76	-0.807	0.0101	-0.0468
644	SLE RA 19	0.57	0.69	61.77	-0.8103	0.01	-0.0467
644	SLE RA 20	0.57	0.71	62.26	-0.8112	0.01	-0.0473
644	SLE RA 21	0.57	0.69	62.27	-0.8145	0.01	-0.0473
644	SLE FR 1	0.54	0.62	55.21	-0.7695	0.0084	-0.0439
644	SLE FR 2	0.54	0.62	55.22	-0.7706	0.0084	-0.0438
644	SLE FR 3	0.54	0.63	55.41	-0.7712	0.0084	-0.0441
644	SLE FR 4	0.55	0.64	57.18	-0.7818	0.0089	-0.0447
644	SLE FR 5	0.55	0.65	57.38	-0.7824	0.0089	-0.045
644	SLE FR 6	0.55	0.66	58.49	-0.7882	0.0092	-0.0453
644	SLE QP 1	0.54	0.62	55.21	-0.7695	0.0084	-0.0439
644	SLE QP 2	0.55	0.65	57.18	-0.7807	0.0089	-0.0447
644	SLD 1	4.8	1.62	53.29	-0.8212	0.0281	-0.0351
644	SLD 2	4.81	1.85	53.26	-0.805	0.0282	-0.0313
644	SLD 3	5.05	0.05	53.88	-0.9645	0.0266	-0.0335
644	SLD 4	5.06	0.28	53.85	-0.9482	0.0268	-0.0297
644	SLD 5	1.44	3.28	55.12	-0.5785	0.0168	-0.0449
644	SLD 6	1.44	3.43	55.1	-0.5679	0.0169	-0.0425
644	SLD 7	2.28	-1.95	57.09	-1.056	0.012	-0.0396
644	SLD 8	2.29	-1.8	57.07	-1.0453	0.0122	-0.0371
644	SLD 9	-1.19	3.1	57.28	-0.5161	0.0057	-0.0523
644	SLD 10	-1.19	3.25	57.27	-0.5055	0.0058	-0.0499
644	SLD 11	-0.35	-2.14	59.26	-0.9936	0.0009	-0.047
644	SLD 12	-0.34	-1.98	59.24	-0.983	0.001	-0.0445
644	SLD 13	-3.96	1.01	60.51	-0.6133	-0.009	-0.0597
644	SLD 14	-3.96	1.25	60.48	-0.597	-0.0088	-0.056
644	SLD 15	-3.71	-0.56	61.1	-0.7565	-0.0104	-0.0581
644	SLD 16	-3.71	-0.32	61.07	-0.7403	-0.0102	-0.0544
644	SLV 1	10.5	2.86	48.08	-0.8825	0.0537	-0.022
644	SLV 2	10.51	3.4	48.02	-0.8447	0.0541	-0.0133
644	SLV 3	11.09	-0.69	49.45	-1.207	0.0505	-0.0183
644	SLV 4	11.1	-0.15	49.38	-1.1692	0.0509	-0.0096
644	SLV 5	2.64	6.61	52.4	-0.3257	0.0272	-0.045
644	SLV 6	2.64	6.96	52.35	-0.3012	0.0275	-0.0394
644	SLV 7	4.6	-5.24	56.94	-1.4073	0.0164	-0.0327





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
644	SLV 8	4.61	-4.89	56.89	-1.3829	0.0166	-0.0271
644	SLV 9	-3.51	6.19	57.46	-0.1786	0.0012	-0.0624
644	SLV 10	-3.51	6.54	57.42	-0.1541	0.0015	-0.0567
644	SLV 11	-1.55	-5.66	62	-1.2603	-0.0097	-0.0501
644	SLV 12	-1.54	-5.32	61.96	-1.2358	-0.0094	-0.0445
644	SLV 13	-10	1.45	64.98	-0.3923	-0.033	-0.0799
644	SLV 14	-9.99	1.99	64.91	-0.3544	-0.0326	-0.0712
644	SLV 15	-9.41	-2.11	66.34	-0.7168	-0.0363	-0.0762
644	SLV 16	-9.4	-1.57	66.28	-0.6789	-0.0359	-0.0675
644	CRTFP Ux+	0	0	0	0	0	0
644	CRTFP Ux-	0	0	0	0	0	0
644	CRTFP Uy+	0	0	0	0	0	0
644	CRTFP Uy-	0	0	0	0	0	0
645	SLU 1	0.57	0.36	53.06	-0.7719	0.0111	-0.0431
645	SLU 2	0.57	0.33	53.08	-0.7801	0.0111	-0.0431
645	SLU 3	0.59	0.38	54.26	-0.7886	0.0112	-0.0445
645	SLU 4	0.59	0.36	54.27	-0.7935	0.0112	-0.0444
645	SLU 5	0.58	0.33	53.82	-0.7867	0.011	-0.0439
645	SLU 6	0.6	0.38	55	-0.7952	0.0112	-0.0453
645	SLU 7	0.6	0.36	55.01	-0.8001	0.0112	-0.0452
645	SLU 8	0.59	0.36	54.54	-0.7851	0.0111	-0.0447
645	SLU 9	0.59	0.34	54.55	-0.7901	0.011	-0.0447
645	SLU 10	0.6	0.39	59.88	-0.8204	0.0136	-0.0459
645	SLU 11	0.62	0.45	61.06	-0.8289	0.0137	-0.0473
645	SLU 12	0.62	0.43	61.08	-0.8338	0.0137	-0.0473
645	SLU 13	0.61	0.4	60.62	-0.827	0.0135	-0.0467
645	SLU 14	0.63	0.45	61.8	-0.8355	0.0137	-0.0481
645	SLU 15	0.63	0.43	61.82	-0.8404	0.0137	-0.0481
645	SLU 16	0.62	0.43	61.34	-0.8254	0.0136	-0.0476
645	SLU 17	0.62	0.41	61.36	-0.8304	0.0135	-0.0476
645	SLU 18	0.61	0.46	62.78	-0.8295	0.0147	-0.0472
645	SLU 19	0.61	0.44	62.79	-0.8344	0.0147	-0.0472
645	SLU 20	0.62	0.46	63.52	-0.8361	0.0147	-0.048
645	SLU 21	0.62	0.44	63.53	-0.841	0.0146	-0.048
645	SLU 22	0.62	0.49	59.42	-0.7911	0.0124	-0.0472
645	SLU 23	0.62	0.45	59.44	-0.7993	0.0123	-0.0471
645	SLU 24	0.63	0.51	60.62	-0.8078	0.0125	-0.0485
645	SLU 25	0.63	0.48	60.63	-0.8127	0.0124	-0.0484
645	SLU 26	0.63	0.45	60.18	-0.8059	0.0123	-0.0479
645	SLU 27	0.64	0.51	61.36	-0.8144	0.0124	-0.0493
645	SLU 28	0.64	0.48	61.37	-0.8193	0.0124	-0.0492
645	SLU 29	0.64	0.49	60.89	-0.8043	0.0123	-0.0487
645	SLU 30	0.64	0.47	60.91	-0.8093	0.0123	-0.0487
645	SLU 31	0.65	0.52	66.24	-0.8396	0.0148	-0.0499
645	SLU 32	0.66	0.57	67.42	-0.8481	0.015	-0.0513
645	SLU 33	0.66	0.55	67.44	-0.853	0.0149	-0.0513
645	SLU 34	0.66	0.52	66.98	-0.8462	0.0148	-0.0507
645	SLU 35	0.67	0.57	68.16	-0.8547	0.0149	-0.0521
645	SLU 36	0.67	0.55	68.18	-0.8596	0.0149	-0.0521
645	SLU 37	0.67	0.56	67.7	-0.8446	0.0148	-0.0516
645	SLU 38	0.67	0.53	67.71	-0.8496	0.0148	-0.0516
645	SLU 39	0.66	0.59	69.14	-0.8487	0.0159	-0.0512
645	SLU 40	0.66	0.56	69.15	-0.8536	0.0159	-0.0512
645	SLU 41	0.67	0.59	69.88	-0.8553	0.0159	-0.052
645	SLU 42	0.67	0.56	69.89	-0.8602	0.0159	-0.052
645	SLU 43	0.73	0.43	66.79	-0.9969	0.014	-0.0547
645	SLU 44	0.73	0.39	66.81	-1.0051	0.014	-0.0546
645	SLU 45	0.74	0.45	67.99	-1.0136	0.0141	-0.056
645	SLU 46	0.74	0.42	68.01	-1.0185	0.0141	-0.056
645	SLU 47	0.74	0.39	67.55	-1.0117	0.0139	-0.0554
645	SLU 48	0.75	0.45	68.73	-1.0202	0.0141	-0.0568
645	SLU 49	0.75	0.43	68.75	-1.0251	0.0141	-0.0568
645	SLU 50	0.75	0.43	68.27	-1.0101	0.014	-0.0563
645	SLU 51	0.75	0.41	68.29	-1.015	0.0139	-0.0563
645	SLU 52	0.76	0.46	73.62	-1.0454	0.0165	-0.0575
645	SLU 53	0.77	0.52	74.8	-1.0539	0.0167	-0.0589
645	SLU 54	0.77	0.49	74.81	-1.0588	0.0166	-0.0589
645	SLU 55	0.77	0.46	74.36	-1.052	0.0164	-0.0583
645	SLU 56	0.78	0.52	75.54	-1.0605	0.0166	-0.0597
645	SLU 57	0.78	0.49	75.55	-1.0654	0.0166	-0.0597
645	SLU 58	0.78	0.5	75.08	-1.0504	0.0165	-0.0592
645	SLU 59	0.78	0.48	75.09	-1.0553	0.0164	-0.0591
645	SLU 60	0.77	0.53	76.52	-1.0544	0.0176	-0.0588
645	SLU 61	0.77	0.5	76.53	-1.0594	0.0176	-0.0588
645	SLU 62	0.78	0.53	77.26	-1.0611	0.0176	-0.0596
645	SLU 63	0.78	0.5	77.27	-1.066	0.0175	-0.0596
645	SLU 64	0.77	0.55	73.15	-1.0161	0.0153	-0.0587
645	SLU 65	0.78	0.52	73.17	-1.0243	0.0152	-0.0586
645	SLU 66	0.79	0.57	74.35	-1.0328	0.0154	-0.06
645	SLU 67	0.79	0.55	74.37	-1.0377	0.0153	-0.06
645	SLU 68	0.78	0.52	73.91	-1.0309	0.0152	-0.0594
645	SLU 69	0.8	0.57	75.09	-1.0394	0.0154	-0.0608
645	SLU 70	0.8	0.55	75.11	-1.0443	0.0153	-0.0608
645	SLU 71	0.79	0.55	74.63	-1.0293	0.0152	-0.0603
645	SLU 72	0.79	0.53	74.64	-1.0342	0.0152	-0.0603
645	SLU 73	0.8	0.59	79.98	-1.0646	0.0177	-0.0615
645	SLU 74	0.82	0.64	81.16	-1.0731	0.0179	-0.0629
645	SLU 75	0.82	0.62	81.17	-1.078	0.0178	-0.0629
645	SLU 76	0.81	0.59	80.72	-1.0712	0.0177	-0.0623
645	SLU 77	0.83	0.64	81.9	-1.0797	0.0179	-0.0637



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
645	SLU 78	0.83	0.62	81.91	-1.0846	0.0178	-0.0637
645	SLU 79	0.82	0.62	81.44	-1.0696	0.0177	-0.0632
645	SLU 80	0.82	0.6	81.45	-1.0745	0.0177	-0.0631
645	SLU 81	0.82	0.65	82.88	-1.0736	0.0188	-0.0628
645	SLU 82	0.82	0.63	82.89	-1.0786	0.0188	-0.0628
645	SLU 83	0.83	0.65	83.61	-1.0803	0.0188	-0.0636
645	SLU 84	0.83	0.63	83.63	-1.0852	0.0188	-0.0636
645	SLE RA 1	0.59	0.4	54.87	-0.7774	0.0115	-0.0443
645	SLE RA 2	0.59	0.37	54.89	-0.7828	0.0114	-0.0442
645	SLE RA 3	0.6	0.41	55.67	-0.7885	0.0115	-0.0452
645	SLE RA 4	0.6	0.4	55.68	-0.7918	0.0115	-0.0451
645	SLE RA 5	0.59	0.37	55.38	-0.7873	0.0114	-0.0448
645	SLE RA 6	0.6	0.41	56.17	-0.7929	0.0115	-0.0457
645	SLE RA 7	0.6	0.4	56.18	-0.7962	0.0115	-0.0457
645	SLE RA 8	0.6	0.4	55.86	-0.7862	0.0114	-0.0453
645	SLE RA 9	0.6	0.38	55.87	-0.7895	0.0114	-0.0453
645	SLE RA 10	0.61	0.42	59.43	-0.8097	0.0131	-0.0462
645	SLE RA 11	0.61	0.46	60.21	-0.8154	0.0132	-0.0471
645	SLE RA 12	0.62	0.44	60.22	-0.8187	0.0132	-0.0471
645	SLE RA 13	0.61	0.42	59.92	-0.8141	0.0131	-0.0467
645	SLE RA 14	0.62	0.46	60.71	-0.8198	0.0132	-0.0476
645	SLE RA 15	0.62	0.44	60.71	-0.8231	0.0132	-0.0476
645	SLE RA 16	0.62	0.44	60.4	-0.8131	0.0131	-0.0473
645	SLE RA 17	0.62	0.43	60.41	-0.8164	0.0131	-0.0472
645	SLE RA 18	0.61	0.46	61.36	-0.8158	0.0139	-0.047
645	SLE RA 19	0.61	0.45	61.36	-0.819	0.0138	-0.047
645	SLE RA 20	0.62	0.46	61.85	-0.8202	0.0138	-0.0476
645	SLE RA 21	0.62	0.45	61.86	-0.8235	0.0138	-0.0475
645	SLE FR 1	0.59	0.4	54.87	-0.7774	0.0115	-0.0443
645	SLE FR 2	0.59	0.39	54.88	-0.7785	0.0115	-0.0443
645	SLE FR 3	0.59	0.4	55.07	-0.7791	0.0115	-0.0445
645	SLE FR 4	0.59	0.41	56.82	-0.79	0.0122	-0.0451
645	SLE FR 5	0.6	0.42	57.01	-0.7906	0.0122	-0.0453
645	SLE FR 6	0.6	0.43	58.11	-0.7966	0.0127	-0.0457
645	SLE QP 1	0.59	0.4	54.87	-0.7774	0.0115	-0.0443
645	SLE QP 2	0.59	0.42	56.82	-0.7889	0.0122	-0.0451
645	SLD 1	4.84	1.41	52.4	-0.8286	0.0243	-0.0363
645	SLD 2	4.84	1.66	52.37	-0.8122	0.0245	-0.0323
645	SLD 3	5.09	-0.15	53.02	-0.9721	0.0228	-0.0354
645	SLD 4	5.1	0.1	52.99	-0.9558	0.023	-0.0314
645	SLD 5	1.48	3.05	54.56	-0.5861	0.0181	-0.0445
645	SLD 6	1.49	3.21	54.54	-0.5753	0.0182	-0.0419
645	SLD 7	2.33	-2.17	56.62	-1.0644	0.013	-0.0415
645	SLD 8	2.33	-2.01	56.6	-1.0537	0.0132	-0.0389
645	SLD 9	-1.14	2.84	57.04	-0.5241	0.0112	-0.0513
645	SLD 10	-1.14	3.01	57.02	-0.5133	0.0114	-0.0487
645	SLD 11	-0.3	-2.38	59.09	-1.0024	0.0061	-0.0483
645	SLD 12	-0.3	-2.21	59.07	-0.9917	0.0063	-0.0457
645	SLD 13	-3.91	0.74	60.65	-0.622	0.0014	-0.0588
645	SLD 14	-3.91	0.99	60.61	-0.6057	0.0016	-0.0549
645	SLD 15	-3.66	-0.83	61.27	-0.7655	-0.0002	-0.0579
645	SLD 16	-3.65	-0.58	61.23	-0.7492	0.0001	-0.054
645	SLV 1	10.53	2.69	46.5	-0.8889	0.0405	-0.0242
645	SLV 2	10.54	3.27	46.42	-0.8508	0.0411	-0.015
645	SLV 3	11.12	-0.86	47.92	-1.214	0.037	-0.0221
645	SLV 4	11.13	-0.27	47.84	-1.1759	0.0376	-0.0129
645	SLV 5	2.68	6.38	51.59	-0.3324	0.0259	-0.0436
645	SLV 6	2.69	6.75	51.54	-0.3078	0.0262	-0.0377
645	SLV 7	4.64	-5.44	56.31	-1.416	0.0142	-0.0366
645	SLV 8	4.65	-5.07	56.26	-1.3915	0.0146	-0.0306
645	SLV 9	-3.46	5.9	57.38	-0.1863	0.0098	-0.0596
645	SLV 10	-3.46	6.28	57.33	-0.1617	0.0101	-0.0536
645	SLV 11	-1.5	-5.92	62.1	-1.2699	-0.0019	-0.0526
645	SLV 12	-1.49	-5.54	62.05	-1.2453	-0.0015	-0.0466
645	SLV 13	-9.94	1.11	65.8	-0.4019	-0.0132	-0.0773
645	SLV 14	-9.93	1.69	65.72	-0.3638	-0.0126	-0.0681
645	SLV 15	-9.35	-2.44	67.21	-0.727	-0.0167	-0.0752
645	SLV 16	-9.34	-1.86	67.13	-0.6889	-0.0161	-0.066
645	CRTFP Ux+	0	0	0	0	0	0
645	CRTFP Ux-	0	0	0	0	0	0
645	CRTFP Uy+	0	0	0	0	0	0
645	CRTFP Uy-	0	0	0	0	0	0
646	SLU 1	1.09	0.14	89.35	-0.8476	-11.1812	-0.0686
646	SLU 2	1.09	0.08	89.4	-0.8596	-11.1866	-0.0762
646	SLU 3	1.12	0.16	91.39	-0.8664	-11.4366	-0.069
646	SLU 4	1.12	0.13	91.42	-0.8736	-11.4398	-0.0735
646	SLU 5	1.11	0.08	90.66	-0.8661	-11.3453	-0.0787
646	SLU 6	1.14	0.15	92.65	-0.8729	-11.5953	-0.0715
646	SLU 7	1.14	0.12	92.68	-0.8801	-11.5985	-0.076
646	SLU 8	1.13	0.13	91.88	-0.8606	-11.4987	-0.0737
646	SLU 9	1.13	0.09	91.9	-0.8678	-11.5019	-0.0782
646	SLU 10	1.15	0.17	100.76	-0.8801	-12.6034	-0.0702
646	SLU 11	1.18	0.25	102.76	-0.8869	-12.8533	-0.063
646	SLU 12	1.18	0.21	102.78	-0.8941	-12.8566	-0.0675
646	SLU 13	1.17	0.16	102.03	-0.8867	-12.7621	-0.0727
646	SLU 14	1.2	0.24	104.02	-0.8935	-13.0121	-0.0655
646	SLU 15	1.2	0.21	104.04	-0.9007	-13.0153	-0.07
646	SLU 16	1.19	0.22	103.24	-0.8812	-12.9155	-0.0676
646	SLU 17	1.19	0.18	103.27	-0.8884	-12.9187	-0.0722
646	SLU 18	1.18	0.27	105.59	-0.877	-13.2052	-0.0601



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
646	SLU 19	1.18	0.23	105.62	-0.8841	-13.2084	-0.0646
646	SLU 20	1.19	0.26	106.85	-0.8835	-13.3639	-0.0626
646	SLU 21	1.19	0.23	106.88	-0.8907	-13.3671	-0.0671
646	SLU 22	1.18	0.31	100.08	-0.8423	-12.5249	-0.0548
646	SLU 23	1.18	0.25	100.12	-0.8543	-12.5303	-0.0624
646	SLU 24	1.21	0.33	102.11	-0.8611	-12.7803	-0.0552
646	SLU 25	1.21	0.3	102.14	-0.8683	-12.7835	-0.0597
646	SLU 26	1.2	0.25	101.38	-0.8608	-12.6891	-0.0649
646	SLU 27	1.23	0.32	103.37	-0.8676	-12.939	-0.0577
646	SLU 28	1.23	0.29	103.4	-0.8748	-12.9423	-0.0622
646	SLU 29	1.22	0.3	102.6	-0.8553	-12.8424	-0.0598
646	SLU 30	1.22	0.26	102.62	-0.8625	-12.8457	-0.0643
646	SLU 31	1.24	0.34	111.49	-0.8749	-13.9471	-0.0563
646	SLU 32	1.27	0.42	113.48	-0.8817	-14.1971	-0.0491
646	SLU 33	1.27	0.38	113.5	-0.8889	-14.2003	-0.0537
646	SLU 34	1.26	0.33	112.75	-0.8814	-14.1058	-0.0588
646	SLU 35	1.29	0.41	114.74	-0.8882	-14.3558	-0.0517
646	SLU 36	1.29	0.38	114.77	-0.8954	-14.359	-0.0562
646	SLU 37	1.28	0.39	113.97	-0.8759	-14.2592	-0.0538
646	SLU 38	1.28	0.35	113.99	-0.8831	-14.2624	-0.0583
646	SLU 39	1.27	0.44	116.32	-0.8717	-14.5489	-0.0462
646	SLU 40	1.27	0.4	116.34	-0.8789	-14.5521	-0.0507
646	SLU 41	1.28	0.43	117.58	-0.8782	-14.7076	-0.0487
646	SLU 42	1.29	0.4	117.6	-0.8854	-14.7109	-0.0532
646	SLU 43	1.39	0.13	112.49	-1.1037	-14.0749	-0.094
646	SLU 44	1.39	0.07	112.53	-1.1157	-14.0802	-0.1015
646	SLU 45	1.42	0.15	114.52	-1.1225	-14.3302	-0.0943
646	SLU 46	1.42	0.11	114.55	-1.1297	-14.3334	-0.0989
646	SLU 47	1.41	0.06	113.79	-1.1222	-14.239	-0.104
646	SLU 48	1.44	0.14	115.78	-1.129	-14.489	-0.0969
646	SLU 49	1.44	0.1	115.81	-1.1362	-14.4922	-0.1014
646	SLU 50	1.42	0.11	115.01	-1.1167	-14.3924	-0.099
646	SLU 51	1.43	0.08	115.03	-1.1239	-14.3956	-0.1035
646	SLU 52	1.45	0.16	123.89	-1.1362	-15.497	-0.0955
646	SLU 53	1.48	0.23	125.89	-1.143	-15.747	-0.0883
646	SLU 54	1.48	0.2	125.91	-1.1502	-15.7502	-0.0929
646	SLU 55	1.47	0.15	125.16	-1.1427	-15.6558	-0.098
646	SLU 56	1.49	0.23	127.15	-1.1495	-15.9057	-0.0908
646	SLU 57	1.49	0.19	127.17	-1.1567	-15.909	-0.0954
646	SLU 58	1.48	0.2	126.37	-1.1373	-15.8091	-0.093
646	SLU 59	1.48	0.16	126.4	-1.1445	-15.8124	-0.0975
646	SLU 60	1.47	0.25	128.72	-1.133	-16.0988	-0.0854
646	SLU 61	1.47	0.22	128.75	-1.1402	-16.102	-0.0899
646	SLU 62	1.49	0.25	129.99	-1.1396	-16.2576	-0.0879
646	SLU 63	1.49	0.21	130.01	-1.1468	-16.2608	-0.0924
646	SLU 64	1.48	0.3	123.21	-1.0984	-15.4186	-0.0801
646	SLU 65	1.48	0.24	123.25	-1.1104	-15.424	-0.0877
646	SLU 66	1.51	0.32	125.24	-1.1172	-15.6739	-0.0805
646	SLU 67	1.51	0.28	125.27	-1.1244	-15.6772	-0.085
646	SLU 68	1.5	0.23	124.51	-1.1169	-15.5827	-0.0902
646	SLU 69	1.53	0.31	126.5	-1.1237	-15.8327	-0.083
646	SLU 70	1.53	0.27	126.53	-1.1309	-15.8359	-0.0875
646	SLU 71	1.52	0.28	125.73	-1.1114	-15.7361	-0.0851
646	SLU 72	1.52	0.25	125.75	-1.1186	-15.7393	-0.0897
646	SLU 73	1.54	0.33	134.62	-1.1309	-16.8407	-0.0817
646	SLU 74	1.57	0.41	136.61	-1.1378	-17.0907	-0.0745
646	SLU 75	1.57	0.37	136.63	-1.1449	-17.0939	-0.079
646	SLU 76	1.56	0.32	135.88	-1.1375	-16.9995	-0.0842
646	SLU 77	1.58	0.4	137.87	-1.1443	-17.2495	-0.077
646	SLU 78	1.59	0.36	137.9	-1.1515	-17.2527	-0.0815
646	SLU 79	1.57	0.37	137.1	-1.132	-17.1529	-0.0791
646	SLU 80	1.57	0.34	137.12	-1.1392	-17.1561	-0.0837
646	SLU 81	1.56	0.43	139.45	-1.1278	-17.4425	-0.0715
646	SLU 82	1.56	0.39	139.47	-1.135	-17.4458	-0.0761
646	SLU 83	1.58	0.42	140.71	-1.1343	-17.6013	-0.0741
646	SLU 84	1.58	0.38	140.73	-1.1415	-17.6045	-0.0786
646	SLE RA 1	1.12	0.19	92.42	-0.8461	-11.5651	-0.0647
646	SLE RA 2	1.12	0.15	92.45	-0.8541	-11.5687	-0.0697
646	SLE RA 3	1.14	0.2	93.77	-0.8586	-11.7354	-0.0649
646	SLE RA 4	1.14	0.18	93.79	-0.8634	-11.7375	-0.068
646	SLE RA 5	1.13	0.15	93.29	-0.8584	-11.6746	-0.0714
646	SLE RA 6	1.15	0.2	94.62	-0.863	-11.8412	-0.0666
646	SLE RA 7	1.15	0.17	94.63	-0.8678	-11.8434	-0.0696
646	SLE RA 8	1.14	0.18	94.1	-0.8548	-11.7768	-0.068
646	SLE RA 9	1.14	0.16	94.12	-0.8596	-11.779	-0.071
646	SLE RA 10	1.16	0.21	100.02	-0.8678	-12.5132	-0.0657
646	SLE RA 11	1.18	0.26	101.35	-0.8723	-12.6799	-0.0609
646	SLE RA 12	1.18	0.24	101.37	-0.8771	-12.682	-0.0639
646	SLE RA 13	1.17	0.21	100.86	-0.8721	-12.6191	-0.0674
646	SLE RA 14	1.19	0.26	102.19	-0.8767	-12.7857	-0.0626
646	SLE RA 15	1.19	0.23	102.21	-0.8815	-12.7879	-0.0656
646	SLE RA 16	1.18	0.24	101.68	-0.8685	-12.7213	-0.064
646	SLE RA 17	1.18	0.22	101.69	-0.8733	-12.7235	-0.067
646	SLE RA 18	1.17	0.28	103.24	-0.8657	-12.9144	-0.059
646	SLE RA 19	1.17	0.25	103.26	-0.8705	-12.9166	-0.062
646	SLE RA 20	1.19	0.27	104.08	-0.87	-13.0203	-0.0606
646	SLE RA 21	1.19	0.25	104.1	-0.8748	-13.0224	-0.0637
646	SLE FR 1	1.12	0.19	92.42	-0.8461	-11.5651	-0.0647
646	SLE FR 2	1.12	0.18	92.42	-0.8477	-11.5658	-0.0657
646	SLE FR 3	1.12	0.19	92.75	-0.8478	-11.6075	-0.0654



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
646	SLE FR 4	1.13	0.21	95.67	-0.8536	-11.9706	-0.064
646	SLE FR 5	1.14	0.22	96	-0.8537	-12.0123	-0.0636
646	SLE FR 6	1.15	0.23	97.83	-0.8559	-12.2398	-0.0618
646	SLE QP 1	1.12	0.19	92.42	-0.8461	-11.5651	-0.0647
646	SLE QP 2	1.13	0.22	95.67	-0.852	-11.9699	-0.063
646	SLD 1	8.34	1.98	87.76	-1.0128	-10.9733	0.1353
646	SLD 2	8.34	2.45	87.68	-0.9882	-10.9623	0.2045
646	SLD 3	8.77	-0.69	88.81	-1.228	-11.103	-0.2019
646	SLD 4	8.77	-0.22	88.73	-1.2035	-11.0921	-0.1327
646	SLD 5	2.64	4.71	91.71	-0.5781	-11.4761	0.4955
646	SLD 6	2.65	5.02	91.65	-0.562	-11.4689	0.5409
646	SLD 7	4.07	-4.19	95.22	-1.2956	-11.9086	-0.6283
646	SLD 8	4.08	-3.88	95.17	-1.2795	-11.9014	-0.5828
646	SLD 9	-1.81	4.31	96.16	-0.4244	-12.0384	0.4569
646	SLD 10	-1.8	4.62	96.11	-0.4083	-12.0312	0.5024
646	SLD 11	-0.38	-4.58	99.68	-1.1419	-12.471	-0.6669
646	SLD 12	-0.38	-4.27	99.63	-1.1258	-12.4638	-0.6214
646	SLD 13	-6.5	0.65	102.6	-0.5004	-12.8478	0.0067
646	SLD 14	-6.5	1.13	102.52	-0.4759	-12.8368	0.0759
646	SLD 15	-6.08	-2.01	103.65	-0.7157	-12.9775	-0.3304
646	SLD 16	-6.07	-1.54	103.57	-0.6911	-12.9666	-0.2612
646	SLV 1	17.99	4.23	77.18	-1.2377	-9.6408	0.388
646	SLV 2	18	5.33	77	-1.1805	-9.6153	0.5491
646	SLV 3	18.99	-1.81	79.6	-1.7252	-9.9374	-0.3752
646	SLV 4	19	-0.7	79.41	-1.668	-9.9119	-0.214
646	SLV 5	4.67	10.39	86.49	-0.2382	-10.8256	1.2019
646	SLV 6	4.68	11.1	86.37	-0.2012	-10.8092	1.3059
646	SLV 7	8	-9.74	94.54	-1.8633	-11.8145	-1.3419
646	SLV 8	8.01	-9.03	94.42	-1.8263	-11.7981	-1.2378
646	SLV 9	-5.74	9.46	96.91	0.1224	-12.1418	1.1119
646	SLV 10	-5.73	10.18	96.79	0.1593	-12.1253	1.216
646	SLV 11	-2.41	-10.67	104.96	-1.5027	-13.1307	-1.4319
646	SLV 12	-2.4	-9.96	104.84	-1.4658	-13.1142	-1.3278
646	SLV 13	-16.73	1.14	111.92	-0.0359	-14.0279	0.0881
646	SLV 14	-16.72	2.24	111.73	0.0213	-14.0024	0.2492
646	SLV 15	-15.73	-4.9	114.33	-0.5234	-14.3246	-0.675
646	SLV 16	-15.72	-3.8	114.15	-0.4662	-14.2991	-0.5139
646	CRTFP Ux+	0	0	0	0	0	0
646	CRTFP Ux-	0	0	0	0	0	0
646	CRTFP Uy+	0	0	0	0	0	0
646	CRTFP Uy-	0	0	0	0	0	0
647	SLU 1	1.09	-0.09	69.02	14.8423	-2.5865	-0.2786
647	SLU 2	1.09	-0.13	69.05	14.8431	-2.5879	-0.2803
647	SLU 3	1.12	-0.08	70.61	15.1779	-2.6468	-0.286
647	SLU 4	1.12	-0.11	70.62	15.1784	-2.6476	-0.287
647	SLU 5	1.11	-0.14	70.04	15.0546	-2.6256	-0.2852
647	SLU 6	1.14	-0.09	71.6	15.3895	-2.6845	-0.2909
647	SLU 7	1.14	-0.12	71.61	15.3899	-2.6853	-0.2919
647	SLU 8	1.13	-0.11	71.01	15.2654	-2.6619	-0.2885
647	SLU 9	1.13	-0.13	71.02	15.2659	-2.6627	-0.2895
647	SLU 10	1.15	-0.06	77.79	16.737	-2.9029	-0.2917
647	SLU 11	1.18	-0.01	79.35	17.0718	-2.9619	-0.2973
647	SLU 12	1.18	-0.04	79.37	17.0723	-2.9627	-0.2983
647	SLU 13	1.17	-0.07	78.79	16.9485	-2.9406	-0.2966
647	SLU 14	1.2	-0.02	80.35	17.2834	-2.9996	-0.3022
647	SLU 15	1.2	-0.05	80.36	17.2839	-3.0004	-0.3032
647	SLU 16	1.19	-0.04	79.75	17.1593	-2.977	-0.2998
647	SLU 17	1.19	-0.06	79.77	17.1598	-2.9778	-0.3008
647	SLU 18	1.18	0.01	81.52	17.5478	-3.0366	-0.2948
647	SLU 19	1.18	-0.02	81.53	17.5483	-3.0374	-0.2958
647	SLU 20	1.2	0	82.51	17.7594	-3.0743	-0.2998
647	SLU 21	1.2	-0.03	82.52	17.7599	-3.0751	-0.3008
647	SLU 22	1.18	0.03	77.44	16.6534	-2.9013	-0.297
647	SLU 23	1.18	-0.01	77.47	16.6542	-2.9027	-0.2987
647	SLU 24	1.21	0.04	79.03	16.989	-2.9616	-0.3043
647	SLU 25	1.21	0.01	79.04	16.9895	-2.9624	-0.3053
647	SLU 26	1.2	-0.02	78.46	16.8657	-2.9404	-0.3036
647	SLU 27	1.23	0.03	80.02	17.2006	-2.9993	-0.3093
647	SLU 28	1.23	0.01	80.03	17.2011	-3.0001	-0.3103
647	SLU 29	1.22	0.02	79.43	17.0765	-2.9767	-0.3068
647	SLU 30	1.22	-0.01	79.44	17.077	-2.9775	-0.3079
647	SLU 31	1.24	0.06	86.21	18.5481	-3.2177	-0.31
647	SLU 32	1.27	0.11	87.77	18.8829	-3.2766	-0.3157
647	SLU 33	1.27	0.08	87.79	18.8834	-3.2774	-0.3167
647	SLU 34	1.26	0.05	87.21	18.7596	-3.2554	-0.3149
647	SLU 35	1.29	0.1	88.77	19.0945	-3.3143	-0.3206
647	SLU 36	1.29	0.07	88.78	19.095	-3.3151	-0.3216
647	SLU 37	1.28	0.09	88.17	18.9704	-3.2917	-0.3182
647	SLU 38	1.28	0.06	88.19	18.9709	-3.2925	-0.3192
647	SLU 39	1.27	0.13	89.94	19.3589	-3.3513	-0.3132
647	SLU 40	1.27	0.11	89.95	19.3594	-3.3522	-0.3142
647	SLU 41	1.29	0.12	90.93	19.5705	-3.389	-0.3181
647	SLU 42	1.29	0.1	90.94	19.5711	-3.3898	-0.3191
647	SLU 43	1.39	-0.16	86.84	18.674	-3.2546	-0.3559
647	SLU 44	1.39	-0.2	86.87	18.6748	-3.2559	-0.3576
647	SLU 45	1.42	-0.15	88.43	19.0096	-3.3149	-0.3633
647	SLU 46	1.42	-0.18	88.44	19.0101	-3.3157	-0.3643
647	SLU 47	1.4	-0.21	87.86	18.8863	-3.2936	-0.3625
647	SLU 48	1.43	-0.16	89.42	19.2212	-3.3526	-0.3682
647	SLU 49	1.43	-0.18	89.44	19.2217	-3.3534	-0.3692



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
647	SLU 50	1.42	-0.17	88.83	19.0971	-3.33	-0.3658
647	SLU 51	1.42	-0.2	88.84	19.0976	-3.3308	-0.3668
647	SLU 52	1.45	-0.13	95.61	20.5687	-3.5709	-0.369
647	SLU 53	1.48	-0.08	97.18	20.9035	-3.6299	-0.3746
647	SLU 54	1.48	-0.11	97.19	20.904	-3.6307	-0.3756
647	SLU 55	1.47	-0.14	96.61	20.7803	-3.6086	-0.3739
647	SLU 56	1.49	-0.09	98.17	21.1151	-3.6676	-0.3795
647	SLU 57	1.5	-0.12	98.18	21.1156	-3.6684	-0.3805
647	SLU 58	1.48	-0.1	97.57	20.991	-3.645	-0.3771
647	SLU 59	1.48	-0.13	97.59	20.9915	-3.6458	-0.3781
647	SLU 60	1.47	-0.06	99.34	21.3796	-3.7046	-0.3721
647	SLU 61	1.47	-0.09	99.35	21.3801	-3.7054	-0.3731
647	SLU 62	1.49	-0.07	100.33	21.5911	-3.7423	-0.3771
647	SLU 63	1.49	-0.09	100.35	21.5916	-3.7431	-0.3781
647	SLU 64	1.48	-0.03	95.26	20.4851	-3.5693	-0.3743
647	SLU 65	1.48	-0.08	95.29	20.4859	-3.5707	-0.376
647	SLU 66	1.51	-0.03	96.85	20.8207	-3.6296	-0.3816
647	SLU 67	1.51	-0.05	96.86	20.8212	-3.6304	-0.3826
647	SLU 68	1.5	-0.09	96.28	20.6974	-3.6084	-0.3809
647	SLU 69	1.53	-0.04	97.84	21.0323	-3.6673	-0.3865
647	SLU 70	1.53	-0.06	97.85	21.0328	-3.6681	-0.3876
647	SLU 71	1.52	-0.05	97.25	20.9082	-3.6447	-0.3841
647	SLU 72	1.52	-0.08	97.26	20.9087	-3.6455	-0.3851
647	SLU 73	1.54	-0.01	104.03	22.3798	-3.8857	-0.3873
647	SLU 74	1.57	0.04	105.59	22.7146	-3.9447	-0.393
647	SLU 75	1.57	0.01	105.61	22.7151	-3.9455	-0.394
647	SLU 76	1.56	-0.02	105.03	22.5914	-3.9234	-0.3922
647	SLU 77	1.59	0.03	106.59	22.9262	-3.9824	-0.3979
647	SLU 78	1.59	0.01	106.6	22.9267	-3.9832	-0.3989
647	SLU 79	1.58	0.02	105.99	22.8021	-3.9598	-0.3955
647	SLU 80	1.58	-0.01	106.01	22.8026	-3.9606	-0.3965
647	SLU 81	1.57	0.06	107.76	23.1907	-4.0194	-0.3905
647	SLU 82	1.57	0.04	107.77	23.1912	-4.0202	-0.3915
647	SLU 83	1.58	0.06	108.75	23.4022	-4.0571	-0.3954
647	SLU 84	1.58	0.03	108.76	23.4027	-4.0579	-0.3964
647	SLE RA 1	1.12	-0.05	71.43	15.3597	-2.6765	-0.2839
647	SLE RA 2	1.12	-0.08	71.44	15.3602	-2.6774	-0.285
647	SLE RA 3	1.14	-0.05	72.49	15.5835	-2.7167	-0.2888
647	SLE RA 4	1.14	-0.07	72.5	15.5838	-2.7172	-0.2894
647	SLE RA 5	1.13	-0.09	72.11	15.5013	-2.7025	-0.2883
647	SLE RA 6	1.15	-0.05	73.15	15.7245	-2.7418	-0.2921
647	SLE RA 7	1.15	-0.07	73.16	15.7248	-2.7423	-0.2927
647	SLE RA 8	1.14	-0.06	72.75	15.6418	-2.7267	-0.2905
647	SLE RA 9	1.14	-0.08	72.76	15.6421	-2.7273	-0.2911
647	SLE RA 10	1.16	-0.04	77.28	16.6229	-2.8874	-0.2926
647	SLE RA 11	1.18	0	78.32	16.8461	-2.9267	-0.2963
647	SLE RA 12	1.18	-0.02	78.33	16.8464	-2.9272	-0.297
647	SLE RA 13	1.17	-0.04	77.94	16.7639	-2.9125	-0.2958
647	SLE RA 14	1.19	-0.01	78.98	16.9871	-2.9518	-0.2996
647	SLE RA 15	1.19	-0.03	78.99	16.9875	-2.9524	-0.3003
647	SLE RA 16	1.18	-0.02	78.58	16.9044	-2.9367	-0.298
647	SLE RA 17	1.18	-0.04	78.59	16.9047	-2.9373	-0.2987
647	SLE RA 18	1.17	0.01	79.76	17.1634	-2.9765	-0.2947
647	SLE RA 19	1.18	-0.01	79.77	17.1638	-2.977	-0.2954
647	SLE RA 20	1.19	0.01	80.42	17.3045	-3.0016	-0.298
647	SLE RA 21	1.19	-0.01	80.43	17.3048	-3.0022	-0.2986
647	SLE FR 1	1.12	-0.05	71.43	15.3597	-2.6765	-0.2839
647	SLE FR 2	1.12	-0.06	71.43	15.3598	-2.6766	-0.2841
647	SLE FR 3	1.12	-0.06	71.69	15.4161	-2.6865	-0.2852
647	SLE FR 4	1.13	-0.04	73.93	15.9009	-2.7667	-0.2874
647	SLE FR 5	1.14	-0.04	74.19	15.9572	-2.7765	-0.2884
647	SLE FR 6	1.15	-0.02	75.59	16.2616	-2.8265	-0.2893
647	SLE QP 1	1.12	-0.05	71.43	15.3597	-2.6765	-0.2839
647	SLE QP 2	1.13	-0.03	73.93	15.9008	-2.7665	-0.2871
647	SLD 1	6.82	1.37	68.16	14.0552	-2.6224	-1.6849
647	SLD 2	6.8	1.82	68.1	14.0634	-2.6182	-1.6568
647	SLD 3	7.16	-0.74	68.69	13.9268	-2.635	-1.8043
647	SLD 4	7.14	-0.29	68.63	13.935	-2.6308	-1.7762
647	SLD 5	2.33	3.5	71.4	15.5405	-2.7049	-0.5304
647	SLD 6	2.32	3.8	71.36	15.5459	-2.7022	-0.5119
647	SLD 7	3.46	-3.52	73.17	15.1123	-2.7469	-0.9284
647	SLD 8	3.45	-3.23	73.13	15.1177	-2.7441	-0.91
647	SLD 9	-1.18	3.16	74.72	16.6839	-2.7889	0.3357
647	SLD 10	-1.19	3.46	74.68	16.6893	-2.7861	0.3542
647	SLD 11	-0.05	-3.86	76.49	16.2558	-2.8308	-0.0623
647	SLD 12	-0.06	-3.57	76.45	16.2612	-2.828	-0.0439
647	SLD 13	-4.87	0.23	79.22	17.8667	-2.9022	1.202
647	SLD 14	-4.89	0.67	79.16	17.8749	-2.898	1.2301
647	SLD 15	-4.53	-1.88	79.75	17.7382	-2.9148	1.0826
647	SLD 16	-4.55	-1.43	79.7	17.7464	-2.9105	1.1107
647	SLV 1	14.43	3.17	60.44	11.5803	-2.4294	-3.5593
647	SLV 2	14.39	4.21	60.3	11.5994	-2.4196	-3.4939
647	SLV 3	15.22	-1.6	61.66	11.2807	-2.4585	-3.834
647	SLV 4	15.18	-0.56	61.52	11.2999	-2.4487	-3.7686
647	SLV 5	3.93	7.98	68.05	15.0557	-2.6229	-0.8635
647	SLV 6	3.91	8.66	67.97	15.068	-2.6166	-0.8213
647	SLV 7	6.56	-7.92	72.12	14.0572	-2.7199	-1.7791
647	SLV 8	6.54	-7.25	72.03	14.0695	-2.7136	-1.7369
647	SLV 9	-4.27	7.18	75.82	17.7321	-2.8194	1.1626
647	SLV 10	-4.29	7.85	75.73	17.7445	-2.813	1.2048



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
647	SLV 11	-1.64	-8.72	79.89	16.7336	-2.9164	0.247
647	SLV 12	-1.67	-8.05	79.8	16.746	-2.91	0.2892
647	SLV 13	-12.91	0.5	86.33	20.5018	-3.0842	3.1943
647	SLV 14	-12.95	1.54	86.2	20.5209	-3.0744	3.2597
647	SLV 15	-12.12	-4.27	87.55	20.2022	-3.1133	2.9197
647	SLV 16	-12.16	-3.23	87.42	20.2214	-3.1035	2.9851
647	CRTFP Ux+	0	0	0	0	0	0
647	CRTFP Ux-	0	0	0	0	0	0
647	CRTFP Uy+	0	0	0	0	0	0
647	CRTFP Uy-	0	0	0	0	0	0
651	SLU 1	1.36	-0.48	106.06	-21.8761	29.7705	0.4141
651	SLU 2	1.36	-0.55	106.13	-21.8891	29.7929	0.4351
651	SLU 3	1.39	-0.48	108.5	-22.378	30.4503	0.4207
651	SLU 4	1.4	-0.52	108.54	-22.3858	30.4638	0.4333
651	SLU 5	1.38	-0.57	107.64	-22.2033	30.2129	0.4454
651	SLU 6	1.42	-0.5	110.01	-22.6922	30.8703	0.431
651	SLU 7	1.42	-0.54	110.05	-22.7	30.8838	0.4436
651	SLU 8	1.4	-0.52	109.09	-22.5044	30.6105	0.4348
651	SLU 9	1.4	-0.56	109.13	-22.5122	30.624	0.4474
651	SLU 10	1.44	-0.47	119.35	-24.589	33.5068	0.4331
651	SLU 11	1.47	-0.4	121.72	-25.0778	34.1642	0.4188
651	SLU 12	1.47	-0.44	121.76	-25.0857	34.1776	0.4313
651	SLU 13	1.46	-0.49	120.87	-24.9031	33.9268	0.4435
651	SLU 14	1.49	-0.42	123.23	-25.392	34.5842	0.4291
651	SLU 15	1.49	-0.46	123.27	-25.3999	34.5976	0.4417
651	SLU 16	1.48	-0.44	122.31	-25.2043	34.3244	0.4329
651	SLU 17	1.48	-0.48	122.35	-25.2121	34.3378	0.4454
651	SLU 18	1.47	-0.37	124.95	-25.733	35.076	0.4113
651	SLU 19	1.47	-0.41	124.99	-25.7408	35.0895	0.4239
651	SLU 20	1.49	-0.38	126.47	-26.0472	35.496	0.4217
651	SLU 21	1.49	-0.43	126.51	-26.055	35.5095	0.4343
651	SLU 22	1.47	-0.32	118.75	-24.465	33.2811	0.3969
651	SLU 23	1.47	-0.39	118.82	-24.478	33.3036	0.4178
651	SLU 24	1.51	-0.32	121.18	-24.9669	33.961	0.4034
651	SLU 25	1.51	-0.36	121.22	-24.9747	33.9744	0.416
651	SLU 26	1.5	-0.41	120.33	-24.7922	33.7236	0.4281
651	SLU 27	1.53	-0.34	122.7	-25.2811	34.381	0.4138
651	SLU 28	1.53	-0.38	122.74	-25.2889	34.3944	0.4264
651	SLU 29	1.52	-0.36	121.78	-25.0933	34.1211	0.4175
651	SLU 30	1.52	-0.4	121.82	-25.1012	34.1346	0.4301
651	SLU 31	1.55	-0.31	132.04	-27.1779	37.0174	0.4159
651	SLU 32	1.58	-0.24	134.41	-27.6668	37.6748	0.4015
651	SLU 33	1.59	-0.28	134.44	-27.6746	37.6883	0.4141
651	SLU 34	1.57	-0.33	133.55	-27.492	37.4374	0.4262
651	SLU 35	1.61	-0.26	135.92	-27.9809	38.0948	0.4118
651	SLU 36	1.61	-0.3	135.96	-27.9888	38.1083	0.4244
651	SLU 37	1.59	-0.28	135	-27.7932	37.835	0.4156
651	SLU 38	1.6	-0.33	135.04	-27.801	37.8484	0.4282
651	SLU 39	1.58	-0.21	137.64	-28.3219	38.5866	0.3941
651	SLU 40	1.58	-0.25	137.68	-28.3297	38.6001	0.4067
651	SLU 41	1.6	-0.23	139.15	-28.6361	39.0066	0.4044
651	SLU 42	1.61	-0.27	139.19	-28.6439	39.0201	0.417
651	SLU 43	1.73	-0.67	133.53	-27.5513	37.498	0.5442
651	SLU 44	1.73	-0.74	133.6	-27.5643	37.5204	0.5652
651	SLU 45	1.76	-0.67	135.97	-28.0532	38.1778	0.5508
651	SLU 46	1.76	-0.71	136.01	-28.061	38.1913	0.5634
651	SLU 47	1.75	-0.76	135.11	-27.8785	37.9404	0.5755
651	SLU 48	1.78	-0.69	137.48	-28.3674	38.5978	0.5612
651	SLU 49	1.79	-0.73	137.52	-28.3752	38.6113	0.5737
651	SLU 50	1.77	-0.71	136.56	-28.1796	38.338	0.5649
651	SLU 51	1.77	-0.75	136.6	-28.1874	38.3515	0.5775
651	SLU 52	1.81	-0.66	146.82	-30.2642	41.2343	0.5633
651	SLU 53	1.84	-0.59	149.19	-30.753	41.8917	0.5489
651	SLU 54	1.84	-0.63	149.23	-30.7609	41.9051	0.5615
651	SLU 55	1.83	-0.68	148.34	-30.5783	41.6543	0.5736
651	SLU 56	1.86	-0.61	150.7	-31.0672	42.3117	0.5592
651	SLU 57	1.86	-0.65	150.74	-31.0751	42.3251	0.5718
651	SLU 58	1.85	-0.63	149.78	-30.8794	42.0519	0.563
651	SLU 59	1.85	-0.68	149.82	-30.8873	42.0653	0.5756
651	SLU 60	1.84	-0.56	152.42	-31.4082	42.8035	0.5415
651	SLU 61	1.84	-0.6	152.46	-31.416	42.817	0.5541
651	SLU 62	1.86	-0.58	153.94	-31.7223	43.2235	0.5518
651	SLU 63	1.86	-0.62	153.98	-31.7302	43.237	0.5644
651	SLU 64	1.84	-0.52	146.22	-30.1402	41.0086	0.527
651	SLU 65	1.84	-0.59	146.29	-30.1532	41.0311	0.548
651	SLU 66	1.88	-0.52	148.65	-30.6421	41.6885	0.5336
651	SLU 67	1.88	-0.56	148.69	-30.6499	41.7019	0.5462
651	SLU 68	1.87	-0.61	147.8	-30.4674	41.4511	0.5583
651	SLU 69	1.9	-0.54	150.17	-30.9563	42.1085	0.5439
651	SLU 70	1.9	-0.58	150.21	-30.9641	42.1219	0.5565
651	SLU 71	1.89	-0.56	149.25	-30.7685	41.8486	0.5477
651	SLU 72	1.89	-0.6	149.29	-30.7763	41.8621	0.5603
651	SLU 73	1.92	-0.51	159.51	-32.8531	44.7449	0.546
651	SLU 74	1.95	-0.44	161.87	-33.3419	45.4023	0.5316
651	SLU 75	1.95	-0.48	161.91	-33.3498	45.4158	0.5442
651	SLU 76	1.94	-0.53	161.02	-33.1672	45.1649	0.5564
651	SLU 77	1.98	-0.46	163.39	-33.6561	45.8223	0.542
651	SLU 78	1.98	-0.5	163.43	-33.664	45.8358	0.5546
651	SLU 79	1.96	-0.48	162.47	-33.4684	45.5625	0.5457
651	SLU 80	1.96	-0.52	162.51	-33.4762	45.5759	0.5583



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
651	SLU 81	1.95	-0.41	165.11	-33.9971	46.3141	0.5242
651	SLU 82	1.95	-0.45	165.15	-34.0049	46.3276	0.5368
651	SLU 83	1.97	-0.43	166.62	-34.3113	46.7341	0.5346
651	SLU 84	1.97	-0.47	166.66	-34.3191	46.7476	0.5471
651	SLE RA 1	1.39	-0.43	109.69	-22.6158	30.7735	0.4092
651	SLE RA 2	1.39	-0.48	109.73	-22.6245	30.7885	0.4231
651	SLE RA 3	1.41	-0.43	111.31	-22.9504	31.2268	0.4136
651	SLE RA 4	1.42	-0.46	111.34	-22.9556	31.2357	0.4219
651	SLE RA 5	1.41	-0.49	110.74	-22.8339	31.0685	0.43
651	SLE RA 6	1.43	-0.45	112.32	-23.1598	31.5068	0.4205
651	SLE RA 7	1.43	-0.47	112.35	-23.1651	31.5157	0.4288
651	SLE RA 8	1.42	-0.46	111.71	-23.0347	31.3335	0.423
651	SLE RA 9	1.42	-0.49	111.73	-23.0399	31.3425	0.4313
651	SLE RA 10	1.44	-0.43	118.55	-24.4244	33.2644	0.4219
651	SLE RA 11	1.47	-0.38	120.13	-24.7503	33.7027	0.4123
651	SLE RA 12	1.47	-0.41	120.15	-24.7555	33.7116	0.4207
651	SLE RA 13	1.46	-0.44	119.56	-24.6338	33.5444	0.4287
651	SLE RA 14	1.48	-0.39	121.14	-24.9597	33.9827	0.4192
651	SLE RA 15	1.48	-0.42	121.16	-24.9649	33.9916	0.4276
651	SLE RA 16	1.47	-0.41	120.52	-24.8345	33.8094	0.4217
651	SLE RA 17	1.47	-0.44	120.55	-24.8398	33.8184	0.4301
651	SLE RA 18	1.46	-0.36	122.28	-25.187	34.3105	0.4073
651	SLE RA 19	1.46	-0.39	122.31	-25.1923	34.3195	0.4157
651	SLE RA 20	1.48	-0.37	123.29	-25.3965	34.5905	0.4142
651	SLE RA 21	1.48	-0.4	123.32	-25.4017	34.5995	0.4226
651	SLE FR 1	1.39	-0.43	109.69	-22.6158	30.7735	0.4092
651	SLE FR 2	1.39	-0.44	109.7	-22.6175	30.7765	0.412
651	SLE FR 3	1.4	-0.44	110.09	-22.6995	30.8855	0.4119
651	SLE FR 4	1.41	-0.42	113.47	-23.3889	31.8376	0.4114
651	SLE FR 5	1.42	-0.42	113.87	-23.4709	31.9466	0.4114
651	SLE FR 6	1.43	-0.4	115.98	-23.9014	32.542	0.4083
651	SLE QP 1	1.39	-0.43	109.69	-22.6158	30.7735	0.4092
651	SLE QP 2	1.41	-0.41	113.47	-23.3871	31.8346	0.4086
651	SLD 1	9.74	1.75	104.68	-21.6119	29.2801	1.6103
651	SLD 2	9.78	2.45	104.56	-21.6002	29.2278	1.4514
651	SLD 3	10.24	-1.4	106	-21.8513	29.772	2.5103
651	SLD 4	10.27	-0.7	105.87	-21.8396	29.7197	2.3514
651	SLD 5	3.15	4.89	108.86	-22.4936	30.3316	-0.5675
651	SLD 6	3.18	5.36	108.78	-22.486	30.2972	-0.6719
651	SLD 7	4.81	-5.62	113.24	-23.2915	31.9712	2.4325
651	SLD 8	4.83	-5.16	113.16	-23.2838	31.9368	2.328
651	SLD 9	-2	4.33	113.77	-23.4905	31.7325	-1.5108
651	SLD 10	-1.98	4.79	113.69	-23.4828	31.6981	-1.6153
651	SLD 11	-0.35	-6.18	118.16	-24.2883	33.372	1.4892
651	SLD 12	-0.33	-5.72	118.07	-24.2806	33.3377	1.3847
651	SLD 13	-7.45	-0.12	121.06	-24.9347	33.9496	-1.5341
651	SLD 14	-7.41	0.58	120.94	-24.923	33.8973	-1.6931
651	SLD 15	-6.95	-3.28	122.38	-25.174	34.4415	-0.6341
651	SLD 16	-6.91	-2.57	122.25	-25.1624	34.3892	-0.7931
651	SLV 1	20.9	4.53	92.95	-19.2397	25.8715	3.2522
651	SLV 2	20.98	6.17	92.65	-19.2125	25.7497	2.882
651	SLV 3	22.05	-2.61	95.94	-19.7853	26.99	5.2907
651	SLV 4	22.14	-0.97	95.65	-19.7581	26.8681	4.9205
651	SLV 5	5.49	11.61	102.82	-21.3201	28.3704	-1.766
651	SLV 6	5.54	12.67	102.63	-21.3026	28.2917	-2.0051
651	SLV 7	9.34	-12.18	112.8	-23.1387	32.0987	5.029
651	SLV 8	9.4	-11.12	112.61	-23.1212	32.02	4.7899
651	SLV 9	-6.57	10.3	114.32	-23.6531	31.6493	-3.9726
651	SLV 10	-6.52	11.36	114.13	-23.6355	31.5706	-4.2117
651	SLV 11	-2.72	-13.5	124.3	-25.4717	35.3775	2.8223
651	SLV 12	-2.66	-12.44	124.11	-25.4541	35.2988	2.5832
651	SLV 13	-19.31	0.15	131.28	-27.0162	36.8011	-4.1033
651	SLV 14	-19.23	1.79	130.99	-26.989	36.6793	-4.4735
651	SLV 15	-18.16	-6.99	134.28	-27.5618	37.9196	-2.0648
651	SLV 16	-18.07	-5.35	133.98	-27.5346	37.7978	-2.435
651	CRTFP Ux+	0	0	0	0	0	0
651	CRTFP Ux-	0	0	0	0	0	0
651	CRTFP Uy+	0	0	0	0	0	0
651	CRTFP Uy-	0	0	0	0	0	0
652	SLU 1	2.19	-0.06	136.35	-1.7462	27.8838	0.0492
652	SLU 2	2.19	-0.14	136.4	-1.7508	27.8959	0.0671
652	SLU 3	2.25	-0.05	139.5	-1.7861	28.5265	0.0467
652	SLU 4	2.25	-0.09	139.52	-1.7888	28.5338	0.0574
652	SLU 5	2.23	-0.15	138.37	-1.7773	28.2981	0.0706
652	SLU 6	2.29	-0.06	141.46	-1.8126	28.9287	0.0502
652	SLU 7	2.29	-0.11	141.49	-1.8153	28.936	0.061
652	SLU 8	2.26	-0.09	140.29	-1.7992	28.6882	0.0563
652	SLU 9	2.27	-0.14	140.31	-1.8019	28.6954	0.067
652	SLU 10	2.32	0.04	153.46	-1.9435	31.3883	0.0364
652	SLU 11	2.38	0.13	156.56	-1.9788	32.019	0.0161
652	SLU 12	2.38	0.08	156.59	-1.9815	32.0262	0.0268
652	SLU 13	2.36	0.02	155.43	-1.9699	31.7905	0.04
652	SLU 14	2.42	0.11	158.53	-2.0052	32.4212	0.0196
652	SLU 15	2.42	0.07	158.55	-2.008	32.4284	0.0303
652	SLU 16	2.4	0.09	157.35	-1.9918	32.1806	0.0256
652	SLU 17	2.4	0.04	157.38	-1.9946	32.1879	0.0364
652	SLU 18	2.38	0.19	160.73	-2.0214	32.873	0.0054
652	SLU 19	2.38	0.14	160.76	-2.0242	32.8802	0.0161
652	SLU 20	2.41	0.18	162.7	-2.0479	33.2752	0.009
652	SLU 21	2.42	0.13	162.73	-2.0507	33.2824	0.0197



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
652	SLU 22	2.38	0.19	152.98	-1.9315	31.2755	-0.0006
652	SLU 23	2.38	0.11	153.03	-1.9361	31.2875	0.0173
652	SLU 24	2.44	0.2	156.13	-1.9714	31.9182	-0.0031
652	SLU 25	2.44	0.16	156.15	-1.9742	31.9255	0.0077
652	SLU 26	2.42	0.1	154.99	-1.9626	31.6897	0.0209
652	SLU 27	2.47	0.19	158.09	-1.9979	32.3204	0.0005
652	SLU 28	2.47	0.14	158.12	-2.0006	32.3277	0.0112
652	SLU 29	2.45	0.16	156.92	-1.9845	32.0798	0.0065
652	SLU 30	2.45	0.11	156.94	-1.9872	32.0871	0.0173
652	SLU 31	2.51	0.28	170.09	-2.1288	34.78	-0.0133
652	SLU 32	2.57	0.38	173.19	-2.1641	35.4107	-0.0337
652	SLU 33	2.57	0.33	173.22	-2.1668	35.4179	-0.023
652	SLU 34	2.55	0.27	172.06	-2.1553	35.1822	-0.0098
652	SLU 35	2.6	0.36	175.16	-2.1906	35.8129	-0.0302
652	SLU 36	2.61	0.32	175.18	-2.1933	35.8201	-0.0194
652	SLU 37	2.58	0.34	173.98	-2.1771	35.5723	-0.0241
652	SLU 38	2.58	0.29	174.01	-2.1799	35.5795	-0.0134
652	SLU 39	2.56	0.44	177.36	-2.2068	36.2647	-0.0443
652	SLU 40	2.57	0.39	177.39	-2.2095	36.2719	-0.0336
652	SLU 41	2.6	0.43	179.33	-2.2332	36.6669	-0.0408
652	SLU 42	2.6	0.38	179.36	-2.236	36.6741	-0.0301
652	SLU 43	2.78	-0.16	171.56	-2.2065	35.0861	0.081
652	SLU 44	2.79	-0.24	171.6	-2.2111	35.0981	0.0989
652	SLU 45	2.84	-0.15	174.7	-2.2464	35.7288	0.0785
652	SLU 46	2.84	-0.2	174.73	-2.2492	35.7361	0.0892
652	SLU 47	2.82	-0.26	173.57	-2.2376	35.5003	0.1024
652	SLU 48	2.88	-0.16	176.67	-2.2729	36.131	0.082
652	SLU 49	2.88	-0.21	176.69	-2.2756	36.1382	0.0928
652	SLU 50	2.86	-0.19	175.49	-2.2595	35.8904	0.0881
652	SLU 51	2.86	-0.24	175.52	-2.2622	35.8977	0.0988
652	SLU 52	2.92	-0.07	188.67	-2.4038	38.5906	0.0682
652	SLU 53	2.97	0.03	191.77	-2.4391	39.2213	0.0479
652	SLU 54	2.97	-0.02	191.79	-2.4418	39.2285	0.0586
652	SLU 55	2.95	-0.08	190.64	-2.4303	38.9928	0.0718
652	SLU 56	3.01	0.01	193.73	-2.4656	39.6234	0.0514
652	SLU 57	3.01	-0.04	193.76	-2.4683	39.6307	0.0622
652	SLU 58	2.99	-0.02	192.56	-2.4522	39.3829	0.0574
652	SLU 59	2.99	-0.06	192.58	-2.4549	39.3901	0.0682
652	SLU 60	2.97	0.09	195.94	-2.4818	40.0753	0.0372
652	SLU 61	2.97	0.04	195.96	-2.4845	40.0825	0.048
652	SLU 62	3.01	0.07	197.9	-2.5082	40.4775	0.0408
652	SLU 63	3.01	0.02	197.93	-2.511	40.4847	0.0515
652	SLU 64	2.97	0.09	188.19	-2.3918	38.4777	0.0312
652	SLU 65	2.97	0.01	188.23	-2.3964	38.4898	0.0491
652	SLU 66	3.03	0.1	191.33	-2.4317	39.1205	0.0287
652	SLU 67	3.03	0.05	191.36	-2.4345	39.1277	0.0395
652	SLU 68	3.01	-0.01	190.2	-2.4229	38.892	0.0527
652	SLU 69	3.07	0.09	193.3	-2.4582	39.5227	0.0323
652	SLU 70	3.07	0.04	193.32	-2.461	39.5299	0.043
652	SLU 71	3.04	0.06	192.12	-2.4448	39.2821	0.0383
652	SLU 72	3.05	0.01	192.15	-2.4476	39.2894	0.0491
652	SLU 73	3.1	0.18	205.3	-2.5891	41.9823	0.0185
652	SLU 74	3.16	0.28	208.4	-2.6244	42.6129	-0.0019
652	SLU 75	3.16	0.23	208.42	-2.6272	42.6202	0.0088
652	SLU 76	3.14	0.17	207.26	-2.6156	42.3845	0.022
652	SLU 77	3.2	0.26	210.36	-2.6509	43.0151	0.0017
652	SLU 78	3.2	0.21	210.39	-2.6536	43.0224	0.0124
652	SLU 79	3.18	0.23	209.19	-2.6375	42.7746	0.0077
652	SLU 80	3.18	0.19	209.21	-2.6402	42.7818	0.0184
652	SLU 81	3.16	0.34	212.57	-2.6671	43.467	-0.0125
652	SLU 82	3.16	0.29	212.59	-2.6698	43.4742	-0.0018
652	SLU 83	3.19	0.32	214.53	-2.6936	43.8691	-0.009
652	SLU 84	3.2	0.27	214.56	-2.6963	43.8764	0.0018
652	SLE RA 1	2.24	0.01	141.11	-1.7992	28.8528	0.035
652	SLE RA 2	2.25	-0.04	141.14	-1.8022	28.8609	0.0469
652	SLE RA 3	2.28	0.02	143.2	-1.8257	29.2813	0.0333
652	SLE RA 4	2.28	-0.01	143.22	-1.8276	29.2862	0.0405
652	SLE RA 5	2.27	-0.05	142.45	-1.8199	29.129	0.0493
652	SLE RA 6	2.31	0.01	144.51	-1.8434	29.5495	0.0357
652	SLE RA 7	2.31	-0.02	144.53	-1.8452	29.5543	0.0428
652	SLE RA 8	2.29	-0.01	143.73	-1.8345	29.3891	0.0397
652	SLE RA 9	2.29	-0.04	143.75	-1.8363	29.3939	0.0469
652	SLE RA 10	2.33	0.08	152.51	-1.9307	31.1892	0.0265
652	SLE RA 11	2.37	0.14	154.58	-1.9542	31.6096	0.0129
652	SLE RA 12	2.37	0.11	154.59	-1.956	31.6145	0.02
652	SLE RA 13	2.36	0.07	153.82	-1.9483	31.4573	0.0288
652	SLE RA 14	2.39	0.13	155.89	-1.9718	31.8778	0.0152
652	SLE RA 15	2.4	0.1	155.91	-1.9737	31.8826	0.0224
652	SLE RA 16	2.38	0.11	155.1	-1.9629	31.7174	0.0193
652	SLE RA 17	2.38	0.08	155.12	-1.9647	31.7222	0.0264
652	SLE RA 18	2.37	0.18	157.36	-1.9826	32.179	0.0058
652	SLE RA 19	2.37	0.15	157.38	-1.9845	32.1838	0.0129
652	SLE RA 20	2.39	0.17	158.67	-2.0003	32.4471	0.0081
652	SLE RA 21	2.39	0.14	158.69	-2.0021	32.4519	0.0153
652	SLE FR 1	2.24	0.01	141.11	-1.7992	28.8528	0.035
652	SLE FR 2	2.24	0	141.11	-1.7998	28.8544	0.0373
652	SLE FR 3	2.25	0.01	141.63	-1.8062	28.9601	0.0359
652	SLE FR 4	2.28	0.05	145.99	-1.8548	29.8523	0.0286
652	SLE FR 5	2.29	0.06	146.51	-1.8613	29.9579	0.0272
652	SLE FR 6	2.31	0.1	149.23	-1.8909	30.5159	0.0204





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
652	SLE QP 1	2.24	0.01	141.11	-1.7992	28.8528	0.035
652	SLE QP 2	2.28	0.06	145.98	-1.8542	29.8507	0.0262
652	SLD 1	12.88	2.52	135.08	-1.692	27.7581	-0.4699
652	SLD 2	12.89	3.58	135.01	-1.708	27.7328	-0.6641
652	SLD 3	13.52	-1.45	135.89	-1.7892	27.9549	0.3694
652	SLD 4	13.53	-0.4	135.82	-1.8052	27.9296	0.1752
652	SLD 5	4.5	6.63	141.5	-1.6552	28.929	-1.3608
652	SLD 6	4.51	7.33	141.45	-1.6657	28.9124	-1.4885
652	SLD 7	6.61	-6.6	144.19	-1.9793	29.5849	1.4367
652	SLD 8	6.61	-5.91	144.15	-1.9898	29.5683	1.3091
652	SLD 9	-2.05	6.03	147.82	-1.7186	30.1331	-1.2567
652	SLD 10	-2.05	6.73	147.77	-1.7291	30.1165	-1.3843
652	SLD 11	0.05	-7.2	150.51	-2.0427	30.789	1.5409
652	SLD 12	0.06	-6.51	150.47	-2.0532	30.7724	1.4132
652	SLD 13	-8.97	0.52	156.14	-1.9032	31.7717	-0.1227
652	SLD 14	-8.96	1.58	156.07	-1.9192	31.7465	-0.3169
652	SLD 15	-8.33	-3.45	156.95	-2.0004	31.9685	0.7165
652	SLD 16	-8.32	-2.39	156.88	-2.0164	31.9433	0.5223
652	SLV 1	27.09	5.66	120.48	-1.4769	24.9575	-1.1029
652	SLV 2	27.11	8.12	120.32	-1.5142	24.8987	-1.5551
652	SLV 3	28.56	-3.33	122.36	-1.6986	25.4087	0.797
652	SLV 4	28.59	-0.87	122.2	-1.7359	25.3499	0.3447
652	SLV 5	7.48	14.95	135.52	-1.3983	27.7086	-3.1157
652	SLV 6	7.5	16.54	135.41	-1.4224	27.6706	-3.4078
652	SLV 7	12.4	-15.02	141.77	-2.1373	29.2126	3.2171
652	SLV 8	12.41	-13.43	141.66	-2.1614	29.1746	2.925
652	SLV 9	-7.85	13.55	150.3	-1.547	30.5268	-2.8726
652	SLV 10	-7.84	15.14	150.2	-1.5711	30.4888	-3.1647
652	SLV 11	-2.94	-16.42	156.55	-2.286	32.0307	3.4602
652	SLV 12	-2.92	-14.83	156.45	-2.3101	31.9928	3.1681
652	SLV 13	-24.03	0.99	169.77	-1.9725	34.3515	-0.2923
652	SLV 14	-24	3.45	169.6	-2.0098	34.2927	-0.7446
652	SLV 15	-22.55	-8	171.64	-2.1942	34.8027	1.6075
652	SLV 16	-22.53	-5.54	171.48	-2.2315	34.7439	1.1553
652	CRTFP Ux+	0	0	0	0	0	0
652	CRTFP Ux-	0	0	0	0	0	0
652	CRTFP Uy+	0	0	0	0	0	0
652	CRTFP Uy-	0	0	0	0	0	0
655	SLU 1	0.81	0.02	49.2	-2.4849	-1.3096	0.0458
655	SLU 2	0.81	-0.01	49.21	-2.4876	-1.3097	0.0453
655	SLU 3	0.83	0.02	50.34	-2.5417	-1.3398	0.047
655	SLU 4	0.83	0.01	50.34	-2.5433	-1.3398	0.0467
655	SLU 5	0.83	-0.01	49.92	-2.5239	-1.3285	0.0459
655	SLU 6	0.85	0.02	51.05	-2.5779	-1.3586	0.0476
655	SLU 7	0.85	0	51.05	-2.5796	-1.3587	0.0473
655	SLU 8	0.84	0.01	50.62	-2.5574	-1.3473	0.047
655	SLU 9	0.84	-0.01	50.63	-2.5591	-1.3473	0.0467
655	SLU 10	0.86	0.06	55.38	-2.7882	-1.4743	0.0505
655	SLU 11	0.88	0.09	56.5	-2.8423	-1.5044	0.0522
655	SLU 12	0.88	0.08	56.51	-2.8439	-1.5045	0.0519
655	SLU 13	0.87	0.06	56.09	-2.8245	-1.4932	0.0511
655	SLU 14	0.9	0.09	57.21	-2.8785	-1.5233	0.0528
655	SLU 15	0.9	0.07	57.22	-2.8802	-1.5233	0.0525
655	SLU 16	0.89	0.08	56.79	-2.858	-1.5119	0.0523
655	SLU 17	0.89	0.06	56.79	-2.8597	-1.512	0.052
655	SLU 18	0.88	0.12	58.01	-2.9143	-1.5448	0.0532
655	SLU 19	0.88	0.1	58.02	-2.916	-1.5449	0.0529
655	SLU 20	0.89	0.11	58.72	-2.9506	-1.5637	0.0539
655	SLU 21	0.9	0.1	58.72	-2.9522	-1.5637	0.0536
655	SLU 22	0.88	0.11	55.23	-2.7752	-1.4711	0.0519
655	SLU 23	0.88	0.08	55.24	-2.778	-1.4711	0.0514
655	SLU 24	0.9	0.11	56.37	-2.832	-1.5013	0.0531
655	SLU 25	0.9	0.1	56.37	-2.8336	-1.5013	0.0528
655	SLU 26	0.89	0.08	55.95	-2.8142	-1.49	0.052
655	SLU 27	0.92	0.11	57.08	-2.8683	-1.5201	0.0538
655	SLU 28	0.92	0.09	57.08	-2.8699	-1.5201	0.0534
655	SLU 29	0.91	0.1	56.65	-2.8478	-1.5088	0.0532
655	SLU 30	0.91	0.08	56.66	-2.8494	-1.5088	0.0529
655	SLU 31	0.93	0.15	61.41	-3.0785	-1.6358	0.0566
655	SLU 32	0.95	0.18	62.53	-3.1326	-1.6659	0.0584
655	SLU 33	0.95	0.17	62.54	-3.1342	-1.666	0.058
655	SLU 34	0.94	0.15	62.12	-3.1148	-1.6546	0.0573
655	SLU 35	0.96	0.18	63.24	-3.1688	-1.6848	0.059
655	SLU 36	0.97	0.16	63.24	-3.1705	-1.6848	0.0587
655	SLU 37	0.96	0.17	62.82	-3.1484	-1.6734	0.0584
655	SLU 38	0.96	0.15	62.82	-3.15	-1.6734	0.0581
655	SLU 39	0.95	0.21	64.04	-3.2047	-1.7063	0.0594
655	SLU 40	0.95	0.19	64.04	-3.2063	-1.7063	0.0591
655	SLU 41	0.96	0.2	64.75	-3.2409	-1.7251	0.06
655	SLU 42	0.96	0.19	64.75	-3.2425	-1.7252	0.0597
655	SLU 43	1.03	-0.01	61.9	-3.1309	-1.6471	0.0574
655	SLU 44	1.03	-0.03	61.91	-3.1336	-1.6472	0.0569
655	SLU 45	1.05	0	63.03	-3.1876	-1.6773	0.0586
655	SLU 46	1.05	-0.02	63.04	-3.1892	-1.6773	0.0583
655	SLU 47	1.04	-0.04	62.62	-3.1698	-1.666	0.0575
655	SLU 48	1.06	-0.01	63.74	-3.2239	-1.6962	0.0592
655	SLU 49	1.07	-0.02	63.75	-3.2255	-1.6962	0.0589
655	SLU 50	1.06	-0.01	63.32	-3.2034	-1.6848	0.0587
655	SLU 51	1.06	-0.03	63.32	-3.205	-1.6848	0.0584
655	SLU 52	1.08	0.04	68.07	-3.4342	-1.8118	0.0621





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
655	SLV 14	-8.28	1.38	62.86	-3.1466	-1.6963	-0.3244
655	SLV 15	-7.78	-2.71	62.21	-3.2429	-1.6759	-0.445
655	SLV 16	-7.76	-1.75	62.19	-3.2619	-1.675	-0.4085
655	CRTFP Ux+	0	0	0	0	0	0
655	CRTFP Ux-	0	0	0	0	0	0
655	CRTFP Uy+	0	0	0	0	0	0
655	CRTFP Uy-	0	0	0	0	0	0
656	SLU 1	1.02	0.06	60.42	-0.0887	-0.0379	0.0089
656	SLU 2	1.02	0.03	60.43	-0.0913	-0.0379	0.009
656	SLU 3	1.05	0.07	61.81	-0.0902	-0.0388	0.0089
656	SLU 4	1.05	0.05	61.82	-0.0917	-0.0388	0.009
656	SLU 5	1.04	0.03	61.3	-0.0931	-0.0384	0.0091
656	SLU 6	1.07	0.06	62.68	-0.092	-0.0393	0.009
656	SLU 7	1.07	0.05	62.69	-0.0936	-0.0393	0.0091
656	SLU 8	1.06	0.05	62.16	-0.0924	-0.039	0.0091
656	SLU 9	1.06	0.03	62.17	-0.0939	-0.039	0.0091
656	SLU 10	1.08	0.12	68	-0.0899	-0.0424	0.0105
656	SLU 11	1.11	0.16	69.39	-0.0889	-0.0433	0.0105
656	SLU 12	1.11	0.14	69.39	-0.0904	-0.0433	0.0105
656	SLU 13	1.1	0.12	68.87	-0.0918	-0.043	0.0106
656	SLU 14	1.13	0.15	70.26	-0.0907	-0.0439	0.0106
656	SLU 15	1.13	0.14	70.26	-0.0922	-0.0439	0.0106
656	SLU 16	1.12	0.14	69.73	-0.091	-0.0435	0.0106
656	SLU 17	1.12	0.12	69.74	-0.0926	-0.0435	0.0107
656	SLU 18	1.11	0.19	71.24	-0.0868	-0.0444	0.011
656	SLU 19	1.11	0.17	71.24	-0.0883	-0.0444	0.0111
656	SLU 20	1.13	0.19	72.11	-0.0886	-0.045	0.0111
656	SLU 21	1.13	0.17	72.11	-0.0902	-0.0449	0.0112
656	SLU 22	1.11	0.17	67.84	-0.0833	-0.0426	0.0095
656	SLU 23	1.11	0.14	67.85	-0.0858	-0.0426	0.0096
656	SLU 24	1.14	0.18	69.23	-0.0848	-0.0435	0.0096
656	SLU 25	1.14	0.16	69.24	-0.0863	-0.0435	0.0096
656	SLU 26	1.13	0.14	68.72	-0.0877	-0.0432	0.0097
656	SLU 27	1.15	0.17	70.1	-0.0866	-0.0441	0.0097
656	SLU 28	1.15	0.16	70.11	-0.0881	-0.0441	0.0097
656	SLU 29	1.14	0.16	69.58	-0.0869	-0.0437	0.0097
656	SLU 30	1.14	0.15	69.58	-0.0885	-0.0437	0.0098
656	SLU 31	1.17	0.23	75.42	-0.0845	-0.0472	0.0111
656	SLU 32	1.2	0.27	76.8	-0.0834	-0.0481	0.0111
656	SLU 33	1.2	0.25	76.81	-0.0849	-0.0481	0.0112
656	SLU 34	1.19	0.23	76.29	-0.0863	-0.0477	0.0112
656	SLU 35	1.22	0.27	77.67	-0.0852	-0.0486	0.0112
656	SLU 36	1.22	0.25	77.68	-0.0868	-0.0486	0.0113
656	SLU 37	1.21	0.25	77.15	-0.0856	-0.0483	0.0112
656	SLU 38	1.21	0.24	77.16	-0.0871	-0.0483	0.0113
656	SLU 39	1.2	0.3	78.66	-0.0813	-0.0492	0.0117
656	SLU 40	1.2	0.28	78.66	-0.0829	-0.0491	0.0117
656	SLU 41	1.21	0.3	79.53	-0.0832	-0.0497	0.0118
656	SLU 42	1.21	0.28	79.53	-0.0847	-0.0497	0.0118
656	SLU 43	1.3	0.04	76.01	-0.1172	-0.0476	0.0113
656	SLU 44	1.3	0.01	76.01	-0.1198	-0.0476	0.0114
656	SLU 45	1.32	0.05	77.4	-0.1187	-0.0485	0.0114
656	SLU 46	1.33	0.03	77.4	-0.1202	-0.0485	0.0114
656	SLU 47	1.32	0.01	76.88	-0.1216	-0.0481	0.0115
656	SLU 48	1.34	0.04	78.27	-0.1205	-0.0491	0.0115
656	SLU 49	1.34	0.03	78.27	-0.1221	-0.049	0.0116
656	SLU 50	1.33	0.03	77.75	-0.1209	-0.0487	0.0115
656	SLU 51	1.33	0.02	77.75	-0.1224	-0.0487	0.0116
656	SLU 52	1.36	0.1	83.59	-0.1184	-0.0522	0.0129
656	SLU 53	1.39	0.14	84.97	-0.1174	-0.0531	0.0129
656	SLU 54	1.39	0.12	84.97	-0.1189	-0.0531	0.013
656	SLU 55	1.38	0.1	84.46	-0.1203	-0.0527	0.013
656	SLU 56	1.4	0.13	85.84	-0.1192	-0.0536	0.013
656	SLU 57	1.4	0.12	85.85	-0.1207	-0.0536	0.0131
656	SLU 58	1.39	0.12	85.32	-0.1195	-0.0533	0.013
656	SLU 59	1.4	0.11	85.32	-0.1211	-0.0533	0.0131
656	SLU 60	1.39	0.17	86.82	-0.1153	-0.0541	0.0135
656	SLU 61	1.39	0.15	86.83	-0.1168	-0.0541	0.0135
656	SLU 62	1.4	0.17	87.69	-0.1171	-0.0547	0.0136
656	SLU 63	1.4	0.15	87.7	-0.1187	-0.0547	0.0136
656	SLU 64	1.38	0.15	83.42	-0.1118	-0.0524	0.0119
656	SLU 65	1.39	0.12	83.43	-0.1143	-0.0523	0.0121
656	SLU 66	1.41	0.16	84.81	-0.1133	-0.0533	0.012
656	SLU 67	1.41	0.14	84.82	-0.1148	-0.0533	0.0121
656	SLU 68	1.4	0.12	84.3	-0.1162	-0.0529	0.0122
656	SLU 69	1.43	0.16	85.69	-0.1151	-0.0538	0.0121
656	SLU 70	1.43	0.14	85.69	-0.1166	-0.0538	0.0122
656	SLU 71	1.42	0.14	85.16	-0.1154	-0.0535	0.0121
656	SLU 72	1.42	0.13	85.17	-0.117	-0.0535	0.0122
656	SLU 73	1.45	0.21	91	-0.113	-0.0569	0.0136
656	SLU 74	1.47	0.25	92.39	-0.1119	-0.0578	0.0135
656	SLU 75	1.47	0.23	92.39	-0.1134	-0.0578	0.0136
656	SLU 76	1.47	0.21	91.87	-0.1148	-0.0575	0.0137
656	SLU 77	1.49	0.25	93.26	-0.1137	-0.0584	0.0136
656	SLU 78	1.49	0.23	93.26	-0.1153	-0.0584	0.0137
656	SLU 79	1.48	0.24	92.74	-0.1141	-0.058	0.0137
656	SLU 80	1.48	0.22	92.74	-0.1156	-0.058	0.0137
656	SLU 81	1.47	0.28	94.24	-0.1098	-0.0589	0.0141
656	SLU 82	1.47	0.26	94.25	-0.1114	-0.0589	0.0142
656	SLU 83	1.49	0.28	95.11	-0.1117	-0.0594	0.0142



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
656	SLU 84	1.49	0.26	95.12	-0.1132	-0.0594	0.0143
656	SLE RA 1	1.05	0.09	62.54	-0.0872	-0.0392	0.009
656	SLE RA 2	1.05	0.07	62.55	-0.0889	-0.0392	0.0091
656	SLE RA 3	1.06	0.1	63.47	-0.0882	-0.0398	0.0091
656	SLE RA 4	1.06	0.09	63.47	-0.0892	-0.0398	0.0091
656	SLE RA 5	1.06	0.07	63.13	-0.0901	-0.0396	0.0092
656	SLE RA 6	1.08	0.1	64.05	-0.0894	-0.0402	0.0092
656	SLE RA 7	1.08	0.08	64.05	-0.0904	-0.0402	0.0092
656	SLE RA 8	1.07	0.09	63.7	-0.0896	-0.04	0.0092
656	SLE RA 9	1.07	0.08	63.71	-0.0906	-0.04	0.0092
656	SLE RA 10	1.09	0.13	67.59	-0.088	-0.0423	0.0101
656	SLE RA 11	1.11	0.16	68.52	-0.0873	-0.0429	0.0101
656	SLE RA 12	1.11	0.15	68.52	-0.0883	-0.0429	0.0102
656	SLE RA 13	1.1	0.13	68.18	-0.0892	-0.0426	0.0102
656	SLE RA 14	1.12	0.16	69.1	-0.0885	-0.0432	0.0102
656	SLE RA 15	1.12	0.14	69.1	-0.0895	-0.0432	0.0102
656	SLE RA 16	1.11	0.15	68.75	-0.0887	-0.043	0.0102
656	SLE RA 17	1.11	0.14	68.75	-0.0897	-0.043	0.0102
656	SLE RA 18	1.1	0.18	69.75	-0.0859	-0.0436	0.0105
656	SLE RA 19	1.11	0.17	69.76	-0.0869	-0.0436	0.0105
656	SLE RA 20	1.12	0.18	70.33	-0.0871	-0.044	0.0106
656	SLE RA 21	1.12	0.16	70.34	-0.0881	-0.0439	0.0106
656	SLE FR 1	1.05	0.09	62.54	-0.0872	-0.0392	0.009
656	SLE FR 2	1.05	0.09	62.54	-0.0875	-0.0392	0.0091
656	SLE FR 3	1.05	0.09	62.77	-0.0877	-0.0394	0.0091
656	SLE FR 4	1.06	0.12	64.71	-0.0871	-0.0405	0.0095
656	SLE FR 5	1.07	0.12	64.94	-0.0873	-0.0407	0.0095
656	SLE FR 6	1.08	0.14	66.15	-0.0865	-0.0414	0.0098
656	SLE QP 1	1.05	0.09	62.54	-0.0872	-0.0392	0.009
656	SLE QP 2	1.06	0.12	64.7	-0.0868	-0.0405	0.0095
656	SLD 1	5.5	1.05	59.14	-0.0115	-0.013	-0.0027
656	SLD 2	5.51	1.57	59.13	-0.0228	-0.0133	0.0034
656	SLD 3	5.77	-0.62	58.74	-0.0623	-0.0107	-0.005
656	SLD 4	5.77	-0.1	58.74	-0.0736	-0.011	0.001
656	SLD 5	1.99	2.84	63.64	0.0149	-0.0357	0.0083
656	SLD 6	1.99	3.18	63.63	0.0074	-0.0359	0.0123
656	SLD 7	2.88	-2.73	62.31	-0.1545	-0.0281	0.0005
656	SLD 8	2.88	-2.39	62.31	-0.1619	-0.0282	0.0045
656	SLD 9	-0.75	2.63	67.1	-0.0117	-0.0529	0.0145
656	SLD 10	-0.75	2.97	67.09	-0.0191	-0.053	0.0185
656	SLD 11	0.13	-2.94	65.78	-0.181	-0.0452	0.0067
656	SLD 12	0.13	-2.6	65.77	-0.1884	-0.0454	0.0106
656	SLD 13	-3.64	0.34	70.67	-0.1	-0.0701	0.0179
656	SLD 14	-3.64	0.86	70.67	-0.1113	-0.0704	0.024
656	SLD 15	-3.38	-1.33	70.28	-0.1508	-0.0678	0.0156
656	SLD 16	-3.38	-0.81	70.27	-0.1621	-0.0681	0.0216
656	SLV 1	11.45	2.23	51.68	0.0884	0.024	-0.019
656	SLV 2	11.46	3.45	51.67	0.0622	0.0233	-0.0049
656	SLV 3	12.07	-1.56	50.75	-0.0275	0.0293	-0.0244
656	SLV 4	12.07	-0.33	50.74	-0.0537	0.0286	-0.0103
656	SLV 5	3.24	6.28	62.2	0.1461	-0.0291	0.0066
656	SLV 6	3.25	7.07	62.2	0.1292	-0.0295	0.0158
656	SLV 7	5.3	-6.33	59.12	-0.2403	-0.0115	-0.0113
656	SLV 8	5.3	-5.54	59.11	-0.2572	-0.0119	-0.0021
656	SLV 9	-3.18	5.78	70.3	0.0836	-0.0692	0.0211
656	SLV 10	-3.17	6.57	70.29	0.0667	-0.0696	0.0302
656	SLV 11	-1.12	-6.83	67.21	-0.3028	-0.0516	0.0032
656	SLV 12	-1.11	-6.04	67.21	-0.3197	-0.052	0.0123
656	SLV 13	-9.95	0.57	78.67	-0.1199	-0.1097	0.0292
656	SLV 14	-9.94	1.8	78.66	-0.1461	-0.1104	0.0433
656	SLV 15	-9.33	-3.21	77.74	-0.2358	-0.1044	0.0238
656	SLV 16	-9.32	-1.99	77.73	-0.262	-0.1051	0.038
656	CRTFP Ux+	0	0	0	0	0	0
656	CRTFP Ux-	0	0	0	0	0	0
656	CRTFP Uy+	0	0	0	0	0	0
656	CRTFP Uy-	0	0	0	0	0	0
657	SLU 1	1.07	0.11	61.58	-0.079	-0.0343	0.0099
657	SLU 2	1.07	0.08	61.59	-0.0813	-0.0343	0.01
657	SLU 3	1.1	0.12	63	-0.0802	-0.0351	0.01
657	SLU 4	1.1	0.1	63.01	-0.0817	-0.0351	0.0101
657	SLU 5	1.09	0.08	62.48	-0.083	-0.0348	0.0101
657	SLU 6	1.12	0.11	63.89	-0.0819	-0.0356	0.0101
657	SLU 7	1.12	0.09	63.9	-0.0834	-0.0357	0.0102
657	SLU 8	1.11	0.1	63.36	-0.0823	-0.0353	0.0101
657	SLU 9	1.11	0.08	63.36	-0.0838	-0.0353	0.0102
657	SLU 10	1.14	0.18	69.3	-0.0793	-0.0381	0.0117
657	SLU 11	1.16	0.22	70.71	-0.0782	-0.0389	0.0118
657	SLU 12	1.16	0.2	70.72	-0.0796	-0.0389	0.0118
657	SLU 13	1.15	0.17	70.19	-0.081	-0.0386	0.0118
657	SLU 14	1.18	0.21	71.6	-0.0799	-0.0394	0.0119
657	SLU 15	1.18	0.19	71.6	-0.0813	-0.0394	0.0119
657	SLU 16	1.17	0.2	71.07	-0.0803	-0.0391	0.0119
657	SLU 17	1.17	0.18	71.07	-0.0817	-0.0391	0.0119
657	SLU 18	1.16	0.25	72.59	-0.076	-0.0396	0.0124
657	SLU 19	1.16	0.23	72.6	-0.0774	-0.0396	0.0125
657	SLU 20	1.18	0.25	73.48	-0.0777	-0.0401	0.0125
657	SLU 21	1.18	0.23	73.49	-0.0791	-0.0402	0.0126
657	SLU 22	1.16	0.23	69.14	-0.0729	-0.0382	0.0107
657	SLU 23	1.16	0.19	69.15	-0.0753	-0.0382	0.0108
657	SLU 24	1.19	0.23	70.56	-0.0742	-0.039	0.0108



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
657	SLU 25	1.19	0.21	70.57	-0.0757	-0.0391	0.0108
657	SLU 26	1.18	0.19	70.04	-0.077	-0.0388	0.0109
657	SLU 27	1.21	0.23	71.45	-0.0759	-0.0396	0.0109
657	SLU 28	1.21	0.21	71.45	-0.0773	-0.0396	0.0109
657	SLU 29	1.2	0.22	70.92	-0.0763	-0.0392	0.0109
657	SLU 30	1.2	0.2	70.92	-0.0778	-0.0393	0.0109
657	SLU 31	1.23	0.29	76.86	-0.0732	-0.042	0.0125
657	SLU 32	1.25	0.33	78.27	-0.0722	-0.0428	0.0125
657	SLU 33	1.25	0.31	78.27	-0.0736	-0.0428	0.0126
657	SLU 34	1.25	0.29	77.74	-0.0749	-0.0425	0.0126
657	SLU 35	1.27	0.33	79.15	-0.0739	-0.0433	0.0126
657	SLU 36	1.27	0.31	79.16	-0.0753	-0.0433	0.0127
657	SLU 37	1.26	0.32	78.62	-0.0743	-0.043	0.0126
657	SLU 38	1.26	0.3	78.63	-0.0757	-0.043	0.0127
657	SLU 39	1.25	0.37	80.15	-0.07	-0.0435	0.0132
657	SLU 40	1.25	0.35	80.15	-0.0714	-0.0435	0.0132
657	SLU 41	1.27	0.36	81.04	-0.0717	-0.0441	0.0133
657	SLU 42	1.27	0.34	81.04	-0.0731	-0.0441	0.0133
657	SLU 43	1.36	0.11	77.47	-0.1047	-0.0433	0.0127
657	SLU 44	1.36	0.07	77.48	-0.1071	-0.0433	0.0127
657	SLU 45	1.39	0.11	78.89	-0.106	-0.0441	0.0127
657	SLU 46	1.39	0.09	78.89	-0.1074	-0.0441	0.0128
657	SLU 47	1.38	0.07	78.37	-0.1088	-0.0438	0.0128
657	SLU 48	1.41	0.11	79.78	-0.1077	-0.0446	0.0128
657	SLU 49	1.41	0.09	79.78	-0.1091	-0.0446	0.0129
657	SLU 50	1.4	0.1	79.24	-0.1081	-0.0443	0.0128
657	SLU 51	1.4	0.08	79.25	-0.1095	-0.0443	0.0129
657	SLU 52	1.43	0.17	85.18	-0.105	-0.047	0.0145
657	SLU 53	1.45	0.21	86.6	-0.1039	-0.0478	0.0145
657	SLU 54	1.45	0.19	86.6	-0.1053	-0.0478	0.0145
657	SLU 55	1.44	0.17	86.07	-0.1067	-0.0475	0.0146
657	SLU 56	1.47	0.21	87.48	-0.1056	-0.0483	0.0146
657	SLU 57	1.47	0.19	87.49	-0.107	-0.0483	0.0146
657	SLU 58	1.46	0.2	86.95	-0.106	-0.048	0.0146
657	SLU 59	1.46	0.18	86.96	-0.1075	-0.048	0.0146
657	SLU 60	1.45	0.25	88.48	-0.1018	-0.0486	0.0151
657	SLU 61	1.45	0.23	88.48	-0.1032	-0.0486	0.0152
657	SLU 62	1.47	0.24	89.37	-0.1034	-0.0491	0.0152
657	SLU 63	1.47	0.22	89.37	-0.1049	-0.0491	0.0153
657	SLU 64	1.45	0.22	85.03	-0.0987	-0.0472	0.0134
657	SLU 65	1.45	0.19	85.03	-0.1011	-0.0472	0.0135
657	SLU 66	1.48	0.23	86.45	-0.1	-0.048	0.0135
657	SLU 67	1.48	0.21	86.45	-0.1014	-0.048	0.0135
657	SLU 68	1.47	0.18	85.92	-0.1028	-0.0477	0.0136
657	SLU 69	1.5	0.22	87.33	-0.1017	-0.0485	0.0136
657	SLU 70	1.5	0.2	87.34	-0.1031	-0.0485	0.0136
657	SLU 71	1.49	0.21	86.8	-0.1021	-0.0482	0.0136
657	SLU 72	1.49	0.19	86.81	-0.1035	-0.0482	0.0137
657	SLU 73	1.52	0.29	92.74	-0.0999	-0.0509	0.0152
657	SLU 74	1.54	0.32	94.15	-0.0979	-0.0517	0.0152
657	SLU 75	1.54	0.31	94.16	-0.0993	-0.0517	0.0153
657	SLU 76	1.53	0.28	93.63	-0.1007	-0.0514	0.0153
657	SLU 77	1.56	0.32	95.04	-0.0996	-0.0522	0.0153
657	SLU 78	1.56	0.3	95.04	-0.101	-0.0522	0.0154
657	SLU 79	1.55	0.31	94.51	-0.1	-0.0519	0.0153
657	SLU 80	1.55	0.29	94.51	-0.1014	-0.0519	0.0154
657	SLU 81	1.54	0.36	96.03	-0.0957	-0.0525	0.0159
657	SLU 82	1.54	0.34	96.04	-0.0972	-0.0525	0.0159
657	SLU 83	1.56	0.36	96.92	-0.0974	-0.053	0.016
657	SLU 84	1.56	0.34	96.93	-0.0989	-0.053	0.016
657	SLE RA 1	1.1	0.14	63.74	-0.0772	-0.0354	0.0102
657	SLE RA 2	1.1	0.12	63.75	-0.0788	-0.0354	0.0102
657	SLE RA 3	1.11	0.15	64.69	-0.0781	-0.036	0.0102
657	SLE RA 4	1.12	0.14	64.69	-0.079	-0.036	0.0102
657	SLE RA 5	1.11	0.12	64.34	-0.08	-0.0358	0.0103
657	SLE RA 6	1.13	0.15	65.28	-0.0792	-0.0363	0.0103
657	SLE RA 7	1.13	0.13	65.29	-0.0802	-0.0363	0.0103
657	SLE RA 8	1.12	0.14	64.93	-0.0795	-0.0361	0.0103
657	SLE RA 9	1.12	0.13	64.93	-0.0804	-0.0361	0.0103
657	SLE RA 10	1.14	0.19	68.89	-0.0774	-0.0379	0.0114
657	SLE RA 11	1.16	0.21	69.83	-0.0767	-0.0385	0.0114
657	SLE RA 12	1.16	0.2	69.83	-0.0777	-0.0385	0.0114
657	SLE RA 13	1.15	0.19	69.48	-0.0786	-0.0383	0.0114
657	SLE RA 14	1.17	0.21	70.42	-0.0778	-0.0388	0.0114
657	SLE RA 15	1.17	0.2	70.42	-0.0788	-0.0388	0.0115
657	SLE RA 16	1.16	0.2	70.06	-0.0781	-0.0386	0.0114
657	SLE RA 17	1.16	0.19	70.07	-0.0791	-0.0386	0.0115
657	SLE RA 18	1.16	0.24	71.08	-0.0753	-0.039	0.0118
657	SLE RA 19	1.16	0.23	71.09	-0.0762	-0.039	0.0118
657	SLE RA 20	1.17	0.23	71.67	-0.0764	-0.0393	0.0119
657	SLE RA 21	1.17	0.22	71.68	-0.0773	-0.0393	0.0119
657	SLE FR 1	1.1	0.14	63.74	-0.0772	-0.0354	0.0102
657	SLE FR 2	1.1	0.14	63.75	-0.0776	-0.0354	0.0102
657	SLE FR 3	1.1	0.14	63.98	-0.0777	-0.0356	0.0102
657	SLE FR 4	1.11	0.17	65.95	-0.077	-0.0365	0.0107
657	SLE FR 5	1.12	0.17	66.18	-0.0771	-0.0366	0.0107
657	SLE FR 6	1.13	0.19	67.41	-0.0763	-0.0372	0.011
657	SLE QP 1	1.1	0.14	63.74	-0.0772	-0.0354	0.0102
657	SLE QP 2	1.11	0.17	65.95	-0.0767	-0.0365	0.0107
657	SLD 1	5.55	1.07	59.37	-0.0063	-0.0017	-0.0016



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
657	SLD 2	5.55	1.63	59.37	-0.0182	-0.002	0.005
657	SLD 3	5.81	-0.61	58.91	-0.0513	0.0004	-0.0059
657	SLD 4	5.82	-0.06	58.91	-0.0633	0.0001	0.0006
657	SLD 5	2.04	2.9	64.67	0.0149	-0.0292	0.0125
657	SLD 6	2.04	3.27	64.67	0.0071	-0.0294	0.0167
657	SLD 7	2.93	-2.72	63.13	-0.1353	-0.0222	-0.0021
657	SLD 8	2.93	-2.35	63.14	-0.1431	-0.0224	0.0022
657	SLD 9	-0.7	2.7	68.75	-0.0102	-0.0506	0.0191
657	SLD 10	-0.7	3.06	68.76	-0.018	-0.0508	0.0234
657	SLD 11	0.18	-2.92	67.22	-0.1604	-0.0436	0.0046
657	SLD 12	0.19	-2.56	67.22	-0.1682	-0.0438	0.0089
657	SLD 13	-3.59	0.4	72.98	-0.09	-0.0731	0.0207
657	SLD 14	-3.59	0.96	72.98	-0.102	-0.0733	0.0272
657	SLD 15	-3.32	-1.29	72.52	-0.1351	-0.071	0.0163
657	SLD 16	-3.32	-0.73	72.52	-0.147	-0.0712	0.0229
657	SLV 1	11.49	2.22	50.56	0.0872	0.0449	-0.018
657	SLV 2	11.5	3.52	50.56	0.0593	0.0443	-0.0029
657	SLV 3	12.11	-1.6	49.48	-0.0157	0.0497	-0.028
657	SLV 4	12.12	-0.3	49.49	-0.0436	0.0492	-0.0128
657	SLV 5	3.29	6.35	62.96	0.1334	-0.0194	0.0145
657	SLV 6	3.29	7.19	62.96	0.1154	-0.0198	0.0243
657	SLV 7	5.35	-6.37	59.37	-0.2096	-0.0031	-0.0186
657	SLV 8	5.35	-5.54	59.38	-0.2276	-0.0035	-0.0088
657	SLV 9	-3.12	5.88	72.51	0.0743	-0.0695	0.0301
657	SLV 10	-3.12	6.72	72.52	0.0563	-0.0699	0.0399
657	SLV 11	-1.06	-6.85	68.93	-0.2687	-0.0532	-0.003
657	SLV 12	-1.06	-6.01	68.93	-0.2867	-0.0536	0.0068
657	SLV 13	-9.89	0.64	82.4	-0.1097	-0.1221	0.0341
657	SLV 14	-9.88	1.94	82.41	-0.1376	-0.1227	0.0493
657	SLV 15	-9.27	-3.17	81.33	-0.2126	-0.1173	0.0242
657	SLV 16	-9.26	-1.88	81.34	-0.2405	-0.1178	0.0393
657	CRTFP Ux+	0	0	0	0	0	0
657	CRTFP Ux-	0	0	0	0	0	0
657	CRTFP Uy+	0	0	0	0	0	0
657	CRTFP Uy-	0	0	0	0	0	0
658	SLU 1	1.11	0.16	62.62	-0.0696	-0.0304	0.011
658	SLU 2	1.12	0.13	62.63	-0.0718	-0.0305	0.011
658	SLU 3	1.14	0.17	64.07	-0.0707	-0.0312	0.0111
658	SLU 4	1.14	0.15	64.08	-0.072	-0.0312	0.0111
658	SLU 5	1.13	0.13	63.54	-0.0734	-0.031	0.0111
658	SLU 6	1.16	0.17	64.97	-0.0723	-0.0317	0.0112
658	SLU 7	1.16	0.15	64.98	-0.0736	-0.0317	0.0112
658	SLU 8	1.15	0.16	64.43	-0.0727	-0.0314	0.0112
658	SLU 9	1.15	0.14	64.44	-0.074	-0.0314	0.0112
658	SLU 10	1.18	0.24	70.45	-0.069	-0.0333	0.013
658	SLU 11	1.21	0.28	71.88	-0.0679	-0.034	0.013
658	SLU 12	1.21	0.26	71.89	-0.0693	-0.0341	0.0131
658	SLU 13	1.2	0.24	71.35	-0.0706	-0.0338	0.013
658	SLU 14	1.23	0.28	72.78	-0.0695	-0.0345	0.0131
658	SLU 15	1.23	0.26	72.79	-0.0708	-0.0346	0.0131
658	SLU 16	1.22	0.27	72.24	-0.07	-0.0343	0.0131
658	SLU 17	1.22	0.25	72.25	-0.0713	-0.0343	0.0131
658	SLU 18	1.21	0.32	73.78	-0.0657	-0.0345	0.0138
658	SLU 19	1.21	0.3	73.79	-0.067	-0.0345	0.0138
658	SLU 20	1.23	0.32	74.69	-0.0672	-0.035	0.0139
658	SLU 21	1.23	0.3	74.69	-0.0685	-0.035	0.0139
658	SLU 22	1.21	0.28	70.29	-0.0631	-0.0335	0.0119
658	SLU 23	1.21	0.25	70.3	-0.0653	-0.0336	0.0119
658	SLU 24	1.24	0.29	71.74	-0.0642	-0.0343	0.012
658	SLU 25	1.24	0.27	71.74	-0.0655	-0.0343	0.012
658	SLU 26	1.23	0.25	71.21	-0.0668	-0.034	0.012
658	SLU 27	1.26	0.29	72.64	-0.0657	-0.0348	0.0121
658	SLU 28	1.26	0.27	72.65	-0.067	-0.0348	0.0121
658	SLU 29	1.25	0.28	72.1	-0.0662	-0.0345	0.0121
658	SLU 30	1.25	0.26	72.11	-0.0675	-0.0345	0.0121
658	SLU 31	1.28	0.36	78.11	-0.0625	-0.0364	0.0139
658	SLU 32	1.31	0.4	79.55	-0.0614	-0.0371	0.014
658	SLU 33	1.31	0.38	79.56	-0.0627	-0.0372	0.014
658	SLU 34	1.3	0.36	79.02	-0.0641	-0.0369	0.014
658	SLU 35	1.32	0.39	80.45	-0.063	-0.0376	0.0141
658	SLU 36	1.33	0.38	80.46	-0.0643	-0.0377	0.0141
658	SLU 37	1.31	0.38	79.91	-0.0634	-0.0373	0.0141
658	SLU 38	1.31	0.37	79.92	-0.0648	-0.0374	0.0141
658	SLU 39	1.3	0.44	81.45	-0.0591	-0.0376	0.0147
658	SLU 40	1.3	0.42	81.46	-0.0604	-0.0376	0.0147
658	SLU 41	1.32	0.43	82.36	-0.0607	-0.0381	0.0148
658	SLU 42	1.32	0.42	82.36	-0.062	-0.0381	0.0148
658	SLU 43	1.42	0.17	78.78	-0.0927	-0.0385	0.0139
658	SLU 44	1.42	0.14	78.79	-0.0949	-0.0385	0.014
658	SLU 45	1.45	0.18	80.23	-0.0938	-0.0393	0.0141
658	SLU 46	1.45	0.16	80.23	-0.0951	-0.0393	0.0141
658	SLU 47	1.44	0.14	79.7	-0.0965	-0.039	0.0141
658	SLU 48	1.47	0.18	81.13	-0.0954	-0.0397	0.0141
658	SLU 49	1.47	0.16	81.14	-0.0967	-0.0398	0.0142
658	SLU 50	1.45	0.17	80.59	-0.0958	-0.0395	0.0141
658	SLU 51	1.46	0.15	80.6	-0.0972	-0.0395	0.0141
658	SLU 52	1.48	0.25	86.6	-0.0922	-0.0414	0.0159
658	SLU 53	1.51	0.29	88.04	-0.0911	-0.0421	0.016
658	SLU 54	1.51	0.27	88.04	-0.0924	-0.0421	0.016
658	SLU 55	1.5	0.25	87.51	-0.0937	-0.0419	0.016









Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
659	SLE RA 3	1.2	0.26	66.75	-0.0593	-0.0285	0.0123
659	SLE RA 4	1.2	0.25	66.75	-0.0601	-0.0285	0.0123
659	SLE RA 5	1.2	0.24	66.39	-0.061	-0.0283	0.0123
659	SLE RA 6	1.22	0.26	67.36	-0.0603	-0.0288	0.0124
659	SLE RA 7	1.22	0.25	67.36	-0.0611	-0.0288	0.0124
659	SLE RA 8	1.21	0.25	66.99	-0.0606	-0.0286	0.0124
659	SLE RA 9	1.21	0.24	67	-0.0614	-0.0286	0.0124
659	SLE RA 10	1.23	0.32	71.03	-0.0578	-0.0294	0.0137
659	SLE RA 11	1.25	0.34	72.01	-0.0571	-0.0299	0.0138
659	SLE RA 12	1.25	0.33	72.01	-0.0579	-0.0299	0.0138
659	SLE RA 13	1.24	0.32	71.65	-0.0587	-0.0297	0.0138
659	SLE RA 14	1.26	0.34	72.62	-0.058	-0.0302	0.0139
659	SLE RA 15	1.26	0.33	72.62	-0.0588	-0.0302	0.0138
659	SLE RA 16	1.26	0.33	72.25	-0.0584	-0.03	0.0138
659	SLE RA 17	1.26	0.32	72.26	-0.0592	-0.03	0.0138
659	SLE RA 18	1.25	0.37	73.28	-0.0555	-0.03	0.0143
659	SLE RA 19	1.25	0.36	73.29	-0.0563	-0.03	0.0143
659	SLE RA 20	1.26	0.37	73.89	-0.0564	-0.0303	0.0144
659	SLE RA 21	1.26	0.36	73.9	-0.0572	-0.0303	0.0144
659	SLE FR 1	1.18	0.26	65.77	-0.0587	-0.028	0.0123
659	SLE FR 2	1.18	0.26	65.77	-0.059	-0.028	0.0123
659	SLE FR 3	1.19	0.26	66.01	-0.0591	-0.0281	0.0123
659	SLE FR 4	1.2	0.29	68.02	-0.058	-0.0286	0.0129
659	SLE FR 5	1.21	0.29	68.27	-0.0581	-0.0287	0.0129
659	SLE FR 6	1.22	0.32	69.52	-0.0571	-0.029	0.0133
659	SLE QP 1	1.18	0.26	65.77	-0.0587	-0.028	0.0123
659	SLE QP 2	1.2	0.29	68.02	-0.0577	-0.0286	0.0129
659	SLD 1	5.62	1.2	59	0.0035	0.0138	0.0026
659	SLD 2	5.63	1.83	59.02	-0.0099	0.0136	0.0106
659	SLD 3	5.89	-0.56	58.41	-0.0307	0.0116	-0.0068
659	SLD 4	5.89	0.07	58.43	-0.0441	0.0114	0.0012
659	SLD 5	2.13	3.11	66.2	0.0148	-0.0124	0.0226
659	SLD 6	2.13	3.53	66.21	0.006	-0.0125	0.0278
659	SLD 7	3.01	-2.74	64.24	-0.099	-0.02	-0.0087
659	SLD 8	3.01	-2.32	64.26	-0.1078	-0.0201	-0.0034
659	SLD 9	-0.61	2.91	71.79	-0.0077	-0.0371	0.0292
659	SLD 10	-0.61	3.32	71.8	-0.0165	-0.0372	0.0344
659	SLD 11	0.28	-2.94	69.83	-0.1215	-0.0447	-0.0021
659	SLD 12	0.28	-2.53	69.84	-0.1303	-0.0448	0.0032
659	SLD 13	-3.49	0.52	77.61	-0.0714	-0.0685	0.0246
659	SLD 14	-3.48	1.15	77.63	-0.0848	-0.0687	0.0325
659	SLD 15	-3.22	-1.24	77.03	-0.1055	-0.0708	0.0152
659	SLD 16	-3.22	-0.61	77.04	-0.1189	-0.071	0.0232
659	SLV 1	11.55	2.34	46.9	0.085	0.0707	-0.0115
659	SLV 2	11.55	3.81	46.95	0.0538	0.0703	0.0071
659	SLV 3	12.17	-1.63	45.53	0.0068	0.0654	-0.0328
659	SLV 4	12.17	-0.17	45.57	-0.0244	0.0649	-0.0142
659	SLV 5	3.37	6.68	63.76	0.1091	0.0093	0.0346
659	SLV 6	3.37	7.63	63.78	0.0889	0.0091	0.0466
659	SLV 7	5.43	-6.57	59.19	-0.1515	-0.0084	-0.0363
659	SLV 8	5.43	-5.62	59.22	-0.1717	-0.0087	-0.0243
659	SLV 9	-3.03	6.2	76.83	0.0562	-0.0485	0.0501
659	SLV 10	-3.02	7.15	76.85	0.0361	-0.0488	0.0621
659	SLV 11	-0.97	-7.04	72.26	-0.2044	-0.0662	-0.0209
659	SLV 12	-0.97	-6.09	72.28	-0.2245	-0.0665	-0.0089
659	SLV 13	-9.77	0.75	90.47	-0.0911	-0.1221	0.04
659	SLV 14	-9.76	2.22	90.51	-0.1223	-0.1226	0.0585
659	SLV 15	-9.15	-3.22	89.1	-0.1692	-0.1274	0.0187
659	SLV 16	-9.14	-1.75	89.14	-0.2005	-0.1279	0.0372
659	CRTFP Ux+	0	0	0	0	0	0
659	CRTFP Ux-	0	0	0	0	0	0
659	CRTFP Uy+	0	0	0	0	0	0
659	CRTFP Uy-	0	0	0	0	0	0
660	SLU 1	1.19	0.29	64.39	-0.0523	-0.0251	0.0127
660	SLU 2	1.19	0.26	64.4	-0.0542	-0.0251	0.0126
660	SLU 3	1.22	0.3	65.88	-0.0531	-0.0258	0.0129
660	SLU 4	1.23	0.28	65.89	-0.0542	-0.0258	0.0128
660	SLU 5	1.21	0.25	65.34	-0.0555	-0.0256	0.0127
660	SLU 6	1.25	0.29	66.81	-0.0544	-0.0262	0.013
660	SLU 7	1.25	0.27	66.82	-0.0555	-0.0262	0.0129
660	SLU 8	1.23	0.28	66.26	-0.055	-0.026	0.0129
660	SLU 9	1.23	0.26	66.26	-0.0561	-0.026	0.0128
660	SLU 10	1.26	0.39	72.35	-0.0502	-0.0267	0.015
660	SLU 11	1.3	0.43	73.83	-0.0491	-0.0273	0.0153
660	SLU 12	1.3	0.41	73.84	-0.0502	-0.0274	0.0152
660	SLU 13	1.29	0.38	73.29	-0.0515	-0.0272	0.0151
660	SLU 14	1.32	0.42	74.76	-0.0504	-0.0278	0.0153
660	SLU 15	1.32	0.4	74.77	-0.0515	-0.0278	0.0153
660	SLU 16	1.3	0.41	74.21	-0.051	-0.0275	0.0153
660	SLU 17	1.31	0.39	74.21	-0.0521	-0.0276	0.0152
660	SLU 18	1.29	0.47	75.75	-0.0466	-0.0273	0.0161
660	SLU 19	1.29	0.46	75.76	-0.0477	-0.0274	0.0161
660	SLU 20	1.31	0.47	76.68	-0.048	-0.0278	0.0162
660	SLU 21	1.32	0.45	76.69	-0.0491	-0.0278	0.0162
660	SLU 22	1.29	0.42	72.22	-0.0449	-0.027	0.0141
660	SLU 23	1.29	0.39	72.23	-0.0467	-0.0271	0.014
660	SLU 24	1.32	0.43	73.71	-0.0456	-0.0277	0.0142
660	SLU 25	1.32	0.41	73.72	-0.0467	-0.0277	0.0142
660	SLU 26	1.31	0.38	73.16	-0.0481	-0.0275	0.0141
660	SLU 27	1.34	0.42	74.64	-0.047	-0.0281	0.0143



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
660	SLU 28	1.35	0.4	74.65	-0.0481	-0.0282	0.0143
660	SLU 29	1.33	0.41	74.08	-0.0475	-0.0279	0.0143
660	SLU 30	1.33	0.39	74.09	-0.0487	-0.0279	0.0142
660	SLU 31	1.36	0.52	80.18	-0.0427	-0.0286	0.0164
660	SLU 32	1.4	0.56	81.66	-0.0417	-0.0293	0.0166
660	SLU 33	1.4	0.54	81.67	-0.0428	-0.0293	0.0166
660	SLU 34	1.38	0.51	81.11	-0.0441	-0.0291	0.0165
660	SLU 35	1.42	0.55	82.59	-0.043	-0.0297	0.0167
660	SLU 36	1.42	0.54	82.6	-0.0441	-0.0297	0.0167
660	SLU 37	1.4	0.54	82.03	-0.0436	-0.0295	0.0166
660	SLU 38	1.41	0.52	82.04	-0.0447	-0.0295	0.0166
660	SLU 39	1.39	0.6	83.58	-0.0392	-0.0293	0.0175
660	SLU 40	1.39	0.59	83.58	-0.0403	-0.0293	0.0174
660	SLU 41	1.41	0.6	84.51	-0.0405	-0.0297	0.0176
660	SLU 42	1.41	0.58	84.52	-0.0416	-0.0297	0.0175
660	SLU 43	1.52	0.33	81.02	-0.0706	-0.0319	0.0161
660	SLU 44	1.52	0.3	81.04	-0.0724	-0.032	0.016
660	SLU 45	1.55	0.34	82.51	-0.0713	-0.0326	0.0162
660	SLU 46	1.55	0.32	82.52	-0.0725	-0.0327	0.0162
660	SLU 47	1.54	0.3	81.97	-0.0738	-0.0324	0.0161
660	SLU 48	1.57	0.33	83.45	-0.0727	-0.0331	0.0163
660	SLU 49	1.57	0.32	83.46	-0.0738	-0.0331	0.0163
660	SLU 50	1.56	0.32	82.89	-0.0732	-0.0328	0.0162
660	SLU 51	1.56	0.3	82.9	-0.0744	-0.0329	0.0162
660	SLU 52	1.59	0.43	88.99	-0.0684	-0.0336	0.0184
660	SLU 53	1.62	0.47	90.47	-0.0674	-0.0342	0.0186
660	SLU 54	1.62	0.45	90.47	-0.0685	-0.0342	0.0186
660	SLU 55	1.61	0.43	89.92	-0.0698	-0.034	0.0185
660	SLU 56	1.64	0.46	91.4	-0.0687	-0.0346	0.0187
660	SLU 57	1.64	0.45	91.41	-0.0698	-0.0347	0.0186
660	SLU 58	1.63	0.45	90.84	-0.0693	-0.0344	0.0186
660	SLU 59	1.63	0.44	90.85	-0.0704	-0.0344	0.0186
660	SLU 60	1.62	0.52	92.38	-0.0649	-0.0342	0.0195
660	SLU 61	1.62	0.5	92.39	-0.066	-0.0342	0.0194
660	SLU 62	1.64	0.51	93.31	-0.0662	-0.0346	0.0196
660	SLU 63	1.64	0.49	93.32	-0.0673	-0.0347	0.0195
660	SLU 64	1.61	0.46	88.85	-0.0631	-0.0339	0.0174
660	SLU 65	1.62	0.43	88.86	-0.065	-0.0339	0.0173
660	SLU 66	1.65	0.47	90.34	-0.0639	-0.0346	0.0176
660	SLU 67	1.65	0.45	90.35	-0.065	-0.0346	0.0175
660	SLU 68	1.64	0.43	89.8	-0.0663	-0.0344	0.0174
660	SLU 69	1.67	0.46	91.27	-0.0652	-0.035	0.0177
660	SLU 70	1.67	0.45	91.28	-0.0663	-0.035	0.0176
660	SLU 71	1.66	0.45	90.72	-0.0658	-0.0348	0.0176
660	SLU 72	1.66	0.44	90.72	-0.0669	-0.0348	0.0176
660	SLU 73	1.69	0.56	96.81	-0.061	-0.0355	0.0197
660	SLU 74	1.72	0.6	98.29	-0.0599	-0.0361	0.02
660	SLU 75	1.72	0.58	98.3	-0.061	-0.0362	0.0199
660	SLU 76	1.71	0.56	97.75	-0.0623	-0.0359	0.0198
660	SLU 77	1.74	0.6	99.23	-0.0612	-0.0366	0.0201
660	SLU 78	1.74	0.58	99.23	-0.0623	-0.0366	0.02
660	SLU 79	1.73	0.58	98.67	-0.0618	-0.0363	0.02
660	SLU 80	1.73	0.57	98.68	-0.0629	-0.0364	0.0199
660	SLU 81	1.72	0.65	100.21	-0.0574	-0.0361	0.0208
660	SLU 82	1.72	0.63	100.22	-0.0585	-0.0362	0.0208
660	SLU 83	1.74	0.64	101.14	-0.0588	-0.0366	0.0209
660	SLU 84	1.74	0.62	101.15	-0.0599	-0.0366	0.0209
660	SLE RA 1	1.22	0.32	66.63	-0.0502	-0.0256	0.0131
660	SLE RA 2	1.22	0.3	66.63	-0.0514	-0.0257	0.0131
660	SLE RA 3	1.24	0.33	67.62	-0.0507	-0.0261	0.0132
660	SLE RA 4	1.24	0.32	67.63	-0.0514	-0.0261	0.0132
660	SLE RA 5	1.24	0.3	67.26	-0.0523	-0.026	0.0131
660	SLE RA 6	1.26	0.33	68.24	-0.0516	-0.0264	0.0133
660	SLE RA 7	1.26	0.32	68.25	-0.0523	-0.0264	0.0132
660	SLE RA 8	1.25	0.32	67.87	-0.052	-0.0262	0.0132
660	SLE RA 9	1.25	0.31	67.88	-0.0527	-0.0262	0.0132
660	SLE RA 10	1.27	0.39	71.94	-0.0488	-0.0267	0.0146
660	SLE RA 11	1.29	0.42	72.92	-0.048	-0.0271	0.0148
660	SLE RA 12	1.29	0.4	72.93	-0.0488	-0.0272	0.0148
660	SLE RA 13	1.28	0.39	72.56	-0.0497	-0.027	0.0147
660	SLE RA 14	1.3	0.42	73.54	-0.0489	-0.0274	0.0149
660	SLE RA 15	1.3	0.4	73.55	-0.0497	-0.0275	0.0148
660	SLE RA 16	1.3	0.41	73.17	-0.0493	-0.0273	0.0148
660	SLE RA 17	1.3	0.4	73.18	-0.0501	-0.0273	0.0148
660	SLE RA 18	1.29	0.45	74.2	-0.0464	-0.0271	0.0154
660	SLE RA 19	1.29	0.44	74.2	-0.0471	-0.0272	0.0153
660	SLE RA 20	1.3	0.45	74.82	-0.0473	-0.0274	0.0154
660	SLE RA 21	1.3	0.43	74.83	-0.048	-0.0274	0.0154
660	SLE FR 1	1.22	0.32	66.63	-0.0502	-0.0256	0.0131
660	SLE FR 2	1.22	0.32	66.63	-0.0504	-0.0256	0.0131
660	SLE FR 3	1.23	0.32	66.87	-0.0505	-0.0257	0.0131
660	SLE FR 4	1.24	0.36	68.9	-0.0493	-0.0261	0.0138
660	SLE FR 5	1.25	0.36	69.15	-0.0494	-0.0262	0.0138
660	SLE FR 6	1.25	0.39	70.41	-0.0483	-0.0264	0.0142
660	SLE QP 1	1.22	0.32	66.63	-0.0502	-0.0256	0.0131
660	SLE QP 2	1.24	0.36	68.9	-0.0491	-0.0261	0.0138
660	SLD 1	5.65	1.29	58.57	0.008	0.0171	0.0053
660	SLD 2	5.66	1.96	58.59	-0.0062	0.0169	0.0142
660	SLD 3	5.92	-0.52	57.92	-0.021	0.0147	-0.0067
660	SLD 4	5.92	0.15	57.94	-0.0351	0.0145	0.0022



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
660	SLD 5	2.16	3.27	66.78	0.0145	-0.0094	0.0278
660	SLD 6	2.16	3.71	66.8	0.0052	-0.0096	0.0337
660	SLD 7	3.04	-2.77	64.62	-0.082	-0.0174	-0.0121
660	SLD 8	3.05	-2.33	64.63	-0.0913	-0.0176	-0.0063
660	SLD 9	-0.56	3.05	73.16	-0.0068	-0.0346	0.0339
660	SLD 10	-0.56	3.49	73.18	-0.0161	-0.0347	0.0397
660	SLD 11	0.32	-2.98	71	-0.1033	-0.0426	-0.0061
660	SLD 12	0.32	-2.54	71.02	-0.1126	-0.0427	-0.0003
660	SLD 13	-3.44	0.57	79.85	-0.063	-0.0667	0.0254
660	SLD 14	-3.44	1.24	79.88	-0.0771	-0.0669	0.0343
660	SLD 15	-3.17	-1.24	79.2	-0.0919	-0.0691	0.0134
660	SLD 16	-3.17	-0.57	79.23	-0.1061	-0.0693	0.0223
660	SLV 1	11.57	2.47	44.73	0.084	0.075	-0.0065
660	SLV 2	11.57	4.04	44.78	0.0511	0.0746	0.0142
660	SLV 3	12.18	-1.63	43.21	0.0175	0.0694	-0.0337
660	SLV 4	12.19	-0.06	43.26	-0.0154	0.069	-0.013
660	SLV 5	3.4	6.94	63.94	0.0974	0.0128	0.0454
660	SLV 6	3.4	7.95	63.97	0.0761	0.0126	0.0587
660	SLV 7	5.46	-6.72	58.88	-0.1242	-0.0059	-0.0453
660	SLV 8	5.46	-5.71	58.92	-0.1455	-0.0061	-0.0319
660	SLV 9	-2.98	6.43	78.88	0.0474	-0.046	0.0595
660	SLV 10	-2.98	7.45	78.92	0.0261	-0.0463	0.0728
660	SLV 11	-0.92	-7.23	73.82	-0.1742	-0.0647	-0.0311
660	SLV 12	-0.92	-6.21	73.86	-0.1955	-0.065	-0.0178
660	SLV 13	-9.7	0.79	94.53	-0.0827	-0.1212	0.0406
660	SLV 14	-9.7	2.36	94.59	-0.1156	-0.1216	0.0612
660	SLV 15	-9.09	-3.31	93.01	-0.1492	-0.1268	0.0134
660	SLV 16	-9.08	-1.74	93.07	-0.1821	-0.1272	0.034
660	CRTFP Ux+	0	0	0	0	0	0
660	CRTFP Ux-	0	0	0	0	0	0
660	CRTFP Uy+	0	0	0	0	0	0
660	CRTFP Uy-	0	0	0	0	0	0
661	SLU 1	1.23	0.35	65.17	-0.0445	-0.0237	0.0133
661	SLU 2	1.23	0.32	65.19	-0.0461	-0.0238	0.0131
661	SLU 3	1.26	0.36	66.69	-0.0451	-0.0244	0.0134
661	SLU 4	1.26	0.34	66.69	-0.0461	-0.0245	0.0134
661	SLU 5	1.25	0.32	66.14	-0.0474	-0.0242	0.0132
661	SLU 6	1.28	0.36	67.63	-0.0463	-0.0249	0.0135
661	SLU 7	1.28	0.34	67.64	-0.0473	-0.0249	0.0134
661	SLU 8	1.27	0.35	67.07	-0.0469	-0.0246	0.0134
661	SLU 9	1.27	0.33	67.08	-0.0479	-0.0247	0.0134
661	SLU 10	1.3	0.47	73.18	-0.0416	-0.025	0.0157
661	SLU 11	1.33	0.51	74.68	-0.0405	-0.0256	0.016
661	SLU 12	1.33	0.49	74.69	-0.0416	-0.0256	0.0159
661	SLU 13	1.32	0.46	74.13	-0.0428	-0.0254	0.0158
661	SLU 14	1.35	0.5	75.63	-0.0418	-0.026	0.0161
661	SLU 15	1.35	0.49	75.64	-0.0428	-0.0261	0.016
661	SLU 16	1.34	0.49	75.06	-0.0424	-0.0258	0.016
661	SLU 17	1.34	0.47	75.07	-0.0434	-0.0258	0.0159
661	SLU 18	1.33	0.56	76.59	-0.038	-0.0254	0.0169
661	SLU 19	1.33	0.54	76.6	-0.039	-0.0254	0.0168
661	SLU 20	1.35	0.56	77.54	-0.0392	-0.0259	0.017
661	SLU 21	1.35	0.54	77.55	-0.0402	-0.0259	0.0169
661	SLU 22	1.33	0.49	73.06	-0.0366	-0.0253	0.0148
661	SLU 23	1.33	0.46	73.07	-0.0383	-0.0254	0.0147
661	SLU 24	1.36	0.5	74.57	-0.0372	-0.026	0.015
661	SLU 25	1.36	0.48	74.58	-0.0383	-0.026	0.0149
661	SLU 26	1.35	0.46	74.02	-0.0395	-0.0258	0.0148
661	SLU 27	1.38	0.5	75.52	-0.0385	-0.0265	0.0151
661	SLU 28	1.38	0.48	75.53	-0.0395	-0.0265	0.015
661	SLU 29	1.37	0.49	74.95	-0.0391	-0.0262	0.015
661	SLU 30	1.37	0.47	74.96	-0.0401	-0.0263	0.0149
661	SLU 31	1.4	0.6	81.07	-0.0338	-0.0265	0.0172
661	SLU 32	1.43	0.65	82.56	-0.0327	-0.0272	0.0175
661	SLU 33	1.44	0.63	82.57	-0.0337	-0.0272	0.0175
661	SLU 34	1.42	0.6	82.01	-0.0335	-0.027	0.0173
661	SLU 35	1.46	0.64	83.51	-0.0339	-0.0276	0.0176
661	SLU 36	1.46	0.62	83.52	-0.0335	-0.0276	0.0175
661	SLU 37	1.44	0.63	82.95	-0.0346	-0.0274	0.0175
661	SLU 38	1.44	0.61	82.95	-0.0356	-0.0274	0.0175
661	SLU 39	1.43	0.7	84.48	-0.0301	-0.027	0.0184
661	SLU 40	1.43	0.68	84.49	-0.0312	-0.027	0.0184
661	SLU 41	1.45	0.7	85.42	-0.0314	-0.0274	0.0185
661	SLU 42	1.45	0.68	85.43	-0.0324	-0.0275	0.0185
661	SLU 43	1.56	0.41	82.02	-0.0605	-0.0303	0.0167
661	SLU 44	1.56	0.38	82.04	-0.0622	-0.0304	0.0166
661	SLU 45	1.59	0.42	83.53	-0.0611	-0.031	0.0169
661	SLU 46	1.59	0.4	83.54	-0.0621	-0.031	0.0168
661	SLU 47	1.58	0.38	82.98	-0.0634	-0.0308	0.0167
661	SLU 48	1.61	0.42	84.48	-0.0623	-0.0315	0.017
661	SLU 49	1.61	0.4	84.49	-0.0633	-0.0315	0.0169
661	SLU 50	1.6	0.41	83.92	-0.0629	-0.0312	0.0169
661	SLU 51	1.6	0.39	83.93	-0.064	-0.0313	0.0168
661	SLU 52	1.63	0.53	90.03	-0.0576	-0.0315	0.0191
661	SLU 53	1.66	0.57	91.53	-0.0566	-0.0322	0.0194
661	SLU 54	1.67	0.55	91.54	-0.0576	-0.0322	0.0194
661	SLU 55	1.65	0.52	90.98	-0.0589	-0.032	0.0192
661	SLU 56	1.69	0.56	92.48	-0.0578	-0.0326	0.0195
661	SLU 57	1.69	0.54	92.49	-0.0588	-0.0326	0.0194
661	SLU 58	1.67	0.55	91.91	-0.0584	-0.0324	0.0194



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
661	SLU 59	1.68	0.53	91.92	-0.0594	-0.0324	0.0193
661	SLU 60	1.66	0.62	93.44	-0.054	-0.032	0.0203
661	SLU 61	1.66	0.6	93.45	-0.055	-0.032	0.0203
661	SLU 62	1.68	0.62	94.39	-0.0552	-0.0324	0.0204
661	SLU 63	1.69	0.6	94.4	-0.0562	-0.0325	0.0204
661	SLU 64	1.66	0.55	89.91	-0.0526	-0.0319	0.0183
661	SLU 65	1.66	0.52	89.92	-0.0543	-0.032	0.0181
661	SLU 66	1.69	0.56	91.42	-0.0533	-0.0326	0.0184
661	SLU 67	1.69	0.54	91.43	-0.0543	-0.0326	0.0184
661	SLU 68	1.68	0.52	90.87	-0.0556	-0.0324	0.0182
661	SLU 69	1.72	0.56	92.37	-0.0545	-0.033	0.0185
661	SLU 70	1.72	0.54	92.37	-0.0555	-0.0331	0.0184
661	SLU 71	1.7	0.55	91.8	-0.0551	-0.0328	0.0184
661	SLU 72	1.7	0.53	91.81	-0.0561	-0.0328	0.0184
661	SLU 73	1.73	0.66	97.91	-0.0498	-0.0331	0.0207
661	SLU 74	1.77	0.7	99.41	-0.0487	-0.0337	0.021
661	SLU 75	1.77	0.69	99.42	-0.0497	-0.0338	0.0209
661	SLU 76	1.76	0.66	98.86	-0.051	-0.0336	0.0208
661	SLU 77	1.79	0.7	100.36	-0.05	-0.0342	0.0211
661	SLU 78	1.79	0.68	100.37	-0.051	-0.0342	0.021
661	SLU 79	1.78	0.69	99.79	-0.0506	-0.034	0.021
661	SLU 80	1.78	0.67	99.8	-0.0516	-0.034	0.0209
661	SLU 81	1.76	0.76	101.33	-0.0462	-0.0336	0.0219
661	SLU 82	1.77	0.74	101.34	-0.0472	-0.0336	0.0218
661	SLU 83	1.79	0.75	102.27	-0.0474	-0.034	0.022
661	SLU 84	1.79	0.74	102.28	-0.0484	-0.0341	0.0219
661	SLE RA 1	1.25	0.39	67.43	-0.0422	-0.0242	0.0137
661	SLE RA 2	1.26	0.37	67.44	-0.0433	-0.0242	0.0136
661	SLE RA 3	1.28	0.4	68.43	-0.0426	-0.0247	0.0138
661	SLE RA 4	1.28	0.39	68.44	-0.0433	-0.0247	0.0138
661	SLE RA 5	1.27	0.37	68.07	-0.0442	-0.0245	0.0137
661	SLE RA 6	1.29	0.4	69.07	-0.0435	-0.0249	0.0139
661	SLE RA 7	1.29	0.39	69.07	-0.0441	-0.025	0.0138
661	SLE RA 8	1.28	0.39	68.69	-0.0439	-0.0248	0.0138
661	SLE RA 9	1.28	0.38	68.69	-0.0445	-0.0248	0.0138
661	SLE RA 10	1.3	0.47	72.76	-0.0403	-0.025	0.0153
661	SLE RA 11	1.33	0.5	73.76	-0.0396	-0.0254	0.0155
661	SLE RA 12	1.33	0.48	73.77	-0.0403	-0.0254	0.0155
661	SLE RA 13	1.32	0.47	73.4	-0.0411	-0.0253	0.0154
661	SLE RA 14	1.34	0.49	74.4	-0.0404	-0.0257	0.0156
661	SLE RA 15	1.34	0.48	74.4	-0.0411	-0.0257	0.0155
661	SLE RA 16	1.33	0.49	74.02	-0.0408	-0.0256	0.0155
661	SLE RA 17	1.33	0.47	74.02	-0.0415	-0.0256	0.0155
661	SLE RA 18	1.32	0.53	75.04	-0.0379	-0.0253	0.0161
661	SLE RA 19	1.32	0.52	75.05	-0.0386	-0.0253	0.0161
661	SLE RA 20	1.34	0.53	75.67	-0.0387	-0.0256	0.0162
661	SLE RA 21	1.34	0.52	75.68	-0.0394	-0.0256	0.0161
661	SLE FR 1	1.25	0.39	67.43	-0.0422	-0.0242	0.0137
661	SLE FR 2	1.26	0.39	67.43	-0.0424	-0.0242	0.0137
661	SLE FR 3	1.26	0.39	67.68	-0.0425	-0.0243	0.0137
661	SLE FR 4	1.28	0.43	69.71	-0.0411	-0.0245	0.0144
661	SLE FR 5	1.28	0.43	69.96	-0.0412	-0.0246	0.0145
661	SLE FR 6	1.29	0.46	71.23	-0.0401	-0.0248	0.0149
661	SLE QP 1	1.25	0.39	67.43	-0.0422	-0.0242	0.0137
661	SLE QP 2	1.28	0.44	69.71	-0.0409	-0.0245	0.0144
661	SLD 1	5.68	0.63	58.06	0.0122	0.0191	0.0081
661	SLD 2	5.68	1.35	58.09	-0.0027	0.0189	0.0179
661	SLD 3	5.94	-1.25	57.35	-0.0118	0.0165	-0.0063
661	SLD 4	5.94	-0.53	57.38	-0.0267	0.0164	0.0035
661	SLD 5	2.2	3.21	67.29	0.0141	-0.0075	0.0326
661	SLD 6	2.2	3.69	67.31	0.0043	-0.0077	0.039
661	SLD 7	3.08	-3.05	64.91	-0.0659	-0.0161	-0.0154
661	SLD 8	3.08	-2.57	64.93	-0.0757	-0.0162	-0.009
661	SLD 9	-0.53	3.45	74.49	-0.0061	-0.0329	0.0378
661	SLD 10	-0.52	3.92	74.5	-0.0159	-0.033	0.0442
661	SLD 11	0.36	-2.82	72.11	-0.0862	-0.0414	-0.0102
661	SLD 12	0.36	-2.34	72.13	-0.0959	-0.0415	-0.0038
661	SLD 13	-3.39	1.4	82.04	-0.0551	-0.0654	0.0254
661	SLD 14	-3.39	2.12	82.07	-0.07	-0.0656	0.0351
661	SLD 15	-3.13	-0.48	81.33	-0.0792	-0.068	0.011
661	SLD 16	-3.13	0.25	81.36	-0.0941	-0.0681	0.0207
661	SLV 1	11.58	0.82	42.45	0.0832	0.0776	-0.0008
661	SLV 2	11.58	2.5	42.51	0.0485	0.0772	0.0219
661	SLV 3	12.19	-3.44	40.78	0.0279	0.0716	-0.0335
661	SLV 4	12.2	-1.76	40.85	-0.0068	0.0712	-0.0108
661	SLV 5	3.43	6.71	64.05	0.0861	0.0152	0.0555
661	SLV 6	3.43	7.79	64.09	0.0637	0.015	0.0701
661	SLV 7	5.48	-7.47	58.49	-0.0981	-0.0047	-0.0534
661	SLV 8	5.49	-6.38	58.54	-0.1205	-0.0049	-0.0387
661	SLV 9	-2.93	7.25	80.88	0.0386	-0.0441	0.0676
661	SLV 10	-2.93	8.34	80.93	0.0162	-0.0444	0.0822
661	SLV 11	-0.88	-6.92	75.33	-0.1456	-0.064	-0.0412
661	SLV 12	-0.88	-5.84	75.37	-0.168	-0.0643	-0.0266
661	SLV 13	-9.64	2.63	98.57	-0.0751	-0.1203	0.0396
661	SLV 14	-9.64	4.31	98.64	-0.1098	-0.1207	0.0623
661	SLV 15	-9.03	-1.63	96.91	-0.1303	-0.1262	0.007
661	SLV 16	-9.03	0.05	96.97	-0.165	-0.1266	0.0297
661	CRTFP Ux+	0	0	0	0	0	0
661	CRTFP Ux-	0	0	0	0	0	0
661	CRTFP Uy+	0	0	0	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
661	CRTP Uy-	0	0	0	0	0	0
662	SLU 1	1.26	0.42	65.93	-0.0371	-0.0234	0.0135
662	SLU 2	1.26	0.39	65.95	-0.0386	-0.0235	0.0133
662	SLU 3	1.29	0.43	67.46	-0.0376	-0.0241	0.0137
662	SLU 4	1.29	0.41	67.47	-0.0385	-0.0241	0.0136
662	SLU 5	1.28	0.39	66.91	-0.0397	-0.0239	0.0134
662	SLU 6	1.31	0.43	68.43	-0.0387	-0.0246	0.0137
662	SLU 7	1.31	0.41	68.44	-0.0396	-0.0246	0.0136
662	SLU 8	1.3	0.42	67.85	-0.0394	-0.0243	0.0136
662	SLU 9	1.3	0.4	67.86	-0.0403	-0.0244	0.0135
662	SLU 10	1.33	0.55	73.97	-0.0336	-0.0244	0.016
662	SLU 11	1.37	0.59	75.49	-0.0325	-0.025	0.0163
662	SLU 12	1.37	0.57	75.5	-0.0335	-0.025	0.0162
662	SLU 13	1.35	0.55	74.93	-0.0347	-0.0248	0.016
662	SLU 14	1.39	0.59	76.45	-0.0337	-0.0255	0.0164
662	SLU 15	1.39	0.57	76.46	-0.0346	-0.0255	0.0163
662	SLU 16	1.38	0.58	75.88	-0.0343	-0.0252	0.0163
662	SLU 17	1.38	0.56	75.89	-0.0353	-0.0253	0.0162
662	SLU 18	1.36	0.65	77.4	-0.0299	-0.0247	0.0172
662	SLU 19	1.36	0.63	77.41	-0.0308	-0.0247	0.0171
662	SLU 20	1.39	0.65	78.36	-0.031	-0.0252	0.0173
662	SLU 21	1.39	0.63	78.37	-0.0319	-0.0252	0.0172
662	SLU 22	1.36	0.57	73.86	-0.0289	-0.0248	0.0152
662	SLU 23	1.36	0.54	73.88	-0.0304	-0.0249	0.015
662	SLU 24	1.4	0.58	75.39	-0.0294	-0.0255	0.0154
662	SLU 25	1.4	0.56	75.4	-0.0303	-0.0255	0.0153
662	SLU 26	1.38	0.54	74.84	-0.0316	-0.0253	0.0151
662	SLU 27	1.42	0.58	76.36	-0.0306	-0.026	0.0154
662	SLU 28	1.42	0.56	76.37	-0.0315	-0.026	0.0154
662	SLU 29	1.41	0.57	75.78	-0.0312	-0.0257	0.0153
662	SLU 30	1.41	0.55	75.79	-0.0321	-0.0258	0.0153
662	SLU 31	1.44	0.7	81.9	-0.0254	-0.0258	0.0177
662	SLU 32	1.47	0.74	83.42	-0.0244	-0.0264	0.018
662	SLU 33	1.47	0.72	83.43	-0.0253	-0.0264	0.0179
662	SLU 34	1.46	0.69	82.87	-0.0265	-0.0262	0.0177
662	SLU 35	1.49	0.74	84.38	-0.0255	-0.0269	0.0181
662	SLU 36	1.49	0.72	84.39	-0.0264	-0.0269	0.018
662	SLU 37	1.48	0.72	83.81	-0.0262	-0.0266	0.018
662	SLU 38	1.48	0.7	83.82	-0.0271	-0.0267	0.0179
662	SLU 39	1.47	0.79	85.33	-0.0217	-0.0261	0.0189
662	SLU 40	1.47	0.78	85.34	-0.0226	-0.0261	0.0189
662	SLU 41	1.49	0.79	86.29	-0.0229	-0.0266	0.019
662	SLU 42	1.49	0.77	86.3	-0.0238	-0.0266	0.0189
662	SLU 43	1.6	0.5	82.99	-0.051	-0.03	0.0169
662	SLU 44	1.6	0.47	83	-0.0525	-0.03	0.0168
662	SLU 45	1.63	0.51	84.52	-0.0515	-0.0307	0.0171
662	SLU 46	1.63	0.49	84.53	-0.0524	-0.0307	0.017
662	SLU 47	1.62	0.47	83.97	-0.0537	-0.0305	0.0169
662	SLU 48	1.65	0.51	85.48	-0.0526	-0.0311	0.0172
662	SLU 49	1.66	0.49	85.49	-0.0536	-0.0312	0.0171
662	SLU 50	1.64	0.5	84.91	-0.0533	-0.0309	0.0171
662	SLU 51	1.64	0.48	84.92	-0.0542	-0.0309	0.017
662	SLU 52	1.67	0.63	91.03	-0.0475	-0.0309	0.0194
662	SLU 53	1.71	0.67	92.55	-0.0465	-0.0316	0.0197
662	SLU 54	1.71	0.65	92.56	-0.0474	-0.0316	0.0197
662	SLU 55	1.7	0.62	91.99	-0.0486	-0.0314	0.0195
662	SLU 56	1.73	0.67	93.51	-0.0476	-0.032	0.0198
662	SLU 57	1.73	0.65	93.52	-0.0485	-0.0321	0.0197
662	SLU 58	1.72	0.65	92.94	-0.0483	-0.0318	0.0197
662	SLU 59	1.72	0.63	92.95	-0.0492	-0.0318	0.0196
662	SLU 60	1.7	0.72	94.46	-0.0438	-0.0313	0.0207
662	SLU 61	1.71	0.71	94.47	-0.0447	-0.0313	0.0206
662	SLU 62	1.73	0.72	95.42	-0.045	-0.0317	0.0208
662	SLU 63	1.73	0.7	95.43	-0.0459	-0.0317	0.0207
662	SLU 64	1.7	0.65	90.92	-0.0428	-0.0314	0.0186
662	SLU 65	1.7	0.62	90.94	-0.0444	-0.0314	0.0185
662	SLU 66	1.74	0.66	92.45	-0.0433	-0.032	0.0188
662	SLU 67	1.74	0.64	92.46	-0.0442	-0.0321	0.0187
662	SLU 68	1.73	0.61	91.9	-0.0455	-0.0319	0.0186
662	SLU 69	1.76	0.66	93.42	-0.0445	-0.0325	0.0189
662	SLU 70	1.76	0.64	93.43	-0.0454	-0.0325	0.0188
662	SLU 71	1.75	0.64	92.84	-0.0451	-0.0323	0.0188
662	SLU 72	1.75	0.62	92.85	-0.046	-0.0323	0.0187
662	SLU 73	1.78	0.77	98.96	-0.0393	-0.0323	0.0211
662	SLU 74	1.81	0.81	100.48	-0.0383	-0.0329	0.0214
662	SLU 75	1.81	0.79	100.49	-0.0392	-0.033	0.0214
662	SLU 76	1.8	0.77	99.92	-0.0405	-0.0328	0.0212
662	SLU 77	1.83	0.81	101.44	-0.0395	-0.0334	0.0215
662	SLU 78	1.83	0.79	101.45	-0.0404	-0.0334	0.0214
662	SLU 79	1.82	0.8	100.87	-0.0401	-0.0332	0.0214
662	SLU 80	1.82	0.78	100.88	-0.041	-0.0332	0.0213
662	SLU 81	1.81	0.87	102.39	-0.0356	-0.0326	0.0224
662	SLU 82	1.81	0.85	102.4	-0.0366	-0.0327	0.0223
662	SLU 83	1.83	0.87	103.35	-0.0368	-0.0331	0.0225
662	SLU 84	1.83	0.85	103.36	-0.0377	-0.0331	0.0224
662	SLE RA 1	1.29	0.47	68.19	-0.0347	-0.0238	0.014
662	SLE RA 2	1.29	0.44	68.21	-0.0358	-0.0238	0.0139
662	SLE RA 3	1.31	0.47	69.22	-0.0351	-0.0243	0.0141
662	SLE RA 4	1.31	0.46	69.22	-0.0357	-0.0243	0.014
662	SLE RA 5	1.3	0.44	68.85	-0.0365	-0.0242	0.0139



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
662	SLE RA 6	1.32	0.47	69.86	-0.0358	-0.0246	0.0141
662	SLE RA 7	1.32	0.46	69.87	-0.0364	-0.0246	0.0141
662	SLE RA 8	1.32	0.46	69.48	-0.0363	-0.0244	0.0141
662	SLE RA 9	1.32	0.45	69.48	-0.0369	-0.0244	0.014
662	SLE RA 10	1.34	0.55	73.56	-0.0324	-0.0244	0.0156
662	SLE RA 11	1.36	0.58	74.57	-0.0317	-0.0249	0.0158
662	SLE RA 12	1.36	0.56	74.58	-0.0323	-0.0249	0.0158
662	SLE RA 13	1.35	0.55	74.2	-0.0332	-0.0248	0.0157
662	SLE RA 14	1.37	0.58	75.21	-0.0325	-0.0252	0.0159
662	SLE RA 15	1.37	0.56	75.22	-0.0331	-0.0252	0.0158
662	SLE RA 16	1.37	0.57	74.83	-0.0329	-0.025	0.0158
662	SLE RA 17	1.37	0.55	74.84	-0.0335	-0.0251	0.0158
662	SLE RA 18	1.36	0.62	75.84	-0.03	-0.0247	0.0165
662	SLE RA 19	1.36	0.6	75.85	-0.0306	-0.0247	0.0164
662	SLE RA 20	1.37	0.61	76.48	-0.0307	-0.025	0.0165
662	SLE RA 21	1.37	0.6	76.49	-0.0313	-0.025	0.0165
662	SLE FR 1	1.29	0.47	68.19	-0.0347	-0.0238	0.014
662	SLE FR 2	1.29	0.46	68.2	-0.0349	-0.0238	0.0139
662	SLE FR 3	1.29	0.47	68.45	-0.0351	-0.0239	0.014
662	SLE FR 4	1.31	0.51	70.49	-0.0335	-0.0241	0.0147
662	SLE FR 5	1.31	0.51	70.74	-0.0336	-0.0242	0.0147
662	SLE FR 6	1.32	0.54	72.02	-0.0323	-0.0242	0.0152
662	SLE QP 1	1.29	0.47	68.19	-0.0347	-0.0238	0.014
662	SLE QP 2	1.31	0.51	70.49	-0.0333	-0.0241	0.0147
662	SLD 1	5.7	0.68	57.51	-0.003	0.0201	0.0107
662	SLD 2	5.7	1.46	57.54	-0.0187	0.0199	0.0213
662	SLD 3	5.96	-1.27	56.73	0.0163	0.0173	-0.0057
662	SLD 4	5.96	-0.5	56.76	0.0006	0.0172	0.0048
662	SLD 5	2.22	3.39	67.77	-0.0508	-0.0066	0.0365
662	SLD 6	2.23	3.9	67.79	-0.061	-0.0067	0.0435
662	SLD 7	3.1	-3.13	65.17	0.0137	-0.0158	-0.0182
662	SLD 8	3.11	-2.62	65.19	0.0034	-0.0159	-0.0113
662	SLD 9	-0.49	3.65	75.78	-0.07	-0.0323	0.0407
662	SLD 10	-0.49	4.15	75.8	-0.0803	-0.0324	0.0476
662	SLD 11	0.39	-2.88	73.18	-0.0056	-0.0414	-0.014
662	SLD 12	0.39	-2.37	73.21	-0.0159	-0.0415	-0.0071
662	SLD 13	-3.35	1.52	84.21	-0.0672	-0.0653	0.0246
662	SLD 14	-3.35	2.3	84.25	-0.0829	-0.0655	0.0351
662	SLD 15	-3.08	-0.44	83.43	-0.0479	-0.0681	0.0082
662	SLD 16	-3.08	0.34	83.47	-0.0636	-0.0682	0.0187
662	SLV 1	11.58	0.85	40.11	0.038	0.0793	0.0048
662	SLV 2	11.58	2.65	40.19	0.0015	0.0789	0.0294
662	SLV 3	12.2	-3.59	38.29	0.0826	0.0729	-0.0324
662	SLV 4	12.2	-1.78	38.37	0.0461	0.0725	-0.0078
662	SLV 5	3.46	7.03	64.12	-0.0733	0.0167	0.0639
662	SLV 6	3.46	8.19	64.17	-0.0969	0.0165	0.0798
662	SLV 7	5.51	-7.76	58.05	0.0755	-0.0046	-0.0601
662	SLV 8	5.51	-6.59	58.1	0.0519	-0.0049	-0.0443
662	SLV 9	-2.89	7.61	82.87	-0.1186	-0.0433	0.0737
662	SLV 10	-2.89	8.78	82.92	-0.1421	-0.0435	0.0895
662	SLV 11	-0.84	-7.17	76.8	0.0303	-0.0646	-0.0504
662	SLV 12	-0.84	-6	76.85	0.0067	-0.0648	-0.0345
662	SLV 13	-9.58	2.81	102.61	-0.1128	-0.1206	0.0373
662	SLV 14	-9.58	4.61	102.69	-0.1492	-0.121	0.0618
662	SLV 15	-8.97	-1.63	100.79	-0.0681	-0.127	0
662	SLV 16	-8.97	0.17	100.87	-0.1046	-0.1274	0.0246
662	CRTFP Ux+	0	0	0	0	0	0
662	CRTFP Ux-	0	0	0	0	0	0
662	CRTFP Uy+	0	0	0	0	0	0
662	CRTFP Uy-	0	0	0	0	0	0
663	SLU 1	1.28	0.49	66.7	-0.0301	-0.0248	0.0132
663	SLU 2	1.29	0.46	66.72	-0.0315	-0.0249	0.0131
663	SLU 3	1.32	0.5	68.26	-0.0305	-0.0256	0.0134
663	SLU 4	1.32	0.48	68.27	-0.0313	-0.0256	0.0133
663	SLU 5	1.31	0.46	67.69	-0.0326	-0.0254	0.0132
663	SLU 6	1.34	0.5	69.23	-0.0316	-0.0261	0.0135
663	SLU 7	1.34	0.48	69.25	-0.0324	-0.0261	0.0134
663	SLU 8	1.33	0.49	68.65	-0.0323	-0.0258	0.0134
663	SLU 9	1.33	0.47	68.66	-0.0331	-0.0259	0.0133
663	SLU 10	1.36	0.63	74.77	-0.026	-0.0258	0.0157
663	SLU 11	1.4	0.67	76.31	-0.025	-0.0265	0.0161
663	SLU 12	1.4	0.66	76.32	-0.0259	-0.0265	0.016
663	SLU 13	1.38	0.63	75.75	-0.0271	-0.0263	0.0158
663	SLU 14	1.42	0.67	77.29	-0.0261	-0.027	0.0161
663	SLU 15	1.42	0.65	77.3	-0.0269	-0.027	0.016
663	SLU 16	1.41	0.66	76.71	-0.0268	-0.0267	0.016
663	SLU 17	1.41	0.64	76.72	-0.0276	-0.0268	0.0159
663	SLU 18	1.39	0.74	78.21	-0.0223	-0.0261	0.017
663	SLU 19	1.39	0.72	78.22	-0.0231	-0.0261	0.0169
663	SLU 20	1.42	0.74	79.18	-0.0234	-0.0266	0.0171
663	SLU 21	1.42	0.72	79.2	-0.0242	-0.0266	0.017
663	SLU 22	1.39	0.65	74.67	-0.0217	-0.0263	0.015
663	SLU 23	1.39	0.62	74.69	-0.023	-0.0263	0.0149
663	SLU 24	1.43	0.66	76.23	-0.0221	-0.027	0.0152
663	SLU 25	1.43	0.64	76.24	-0.0229	-0.027	0.0152
663	SLU 26	1.41	0.61	75.67	-0.0241	-0.0268	0.015
663	SLU 27	1.45	0.66	77.21	-0.0231	-0.0275	0.0153
663	SLU 28	1.45	0.64	77.22	-0.024	-0.0275	0.0152
663	SLU 29	1.44	0.65	76.63	-0.0238	-0.0273	0.0152
663	SLU 30	1.44	0.63	76.64	-0.0246	-0.0273	0.0151



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
663	SLU 31	1.47	0.79	82.75	-0.0176	-0.0272	0.0175
663	SLU 32	1.5	0.83	84.29	-0.0166	-0.0279	0.0179
663	SLU 33	1.5	0.81	84.3	-0.0174	-0.0279	0.0178
663	SLU 34	1.49	0.79	83.73	-0.0186	-0.0277	0.0176
663	SLU 35	1.52	0.83	85.27	-0.0177	-0.0284	0.0179
663	SLU 36	1.53	0.81	85.28	-0.0185	-0.0284	0.0178
663	SLU 37	1.51	0.82	84.68	-0.0183	-0.0281	0.0178
663	SLU 38	1.51	0.8	84.7	-0.0191	-0.0282	0.0177
663	SLU 39	1.5	0.89	86.18	-0.0138	-0.0275	0.0188
663	SLU 40	1.5	0.87	86.19	-0.0147	-0.0276	0.0187
663	SLU 41	1.52	0.89	87.16	-0.0149	-0.028	0.0189
663	SLU 42	1.52	0.87	87.17	-0.0157	-0.0281	0.0188
663	SLU 43	1.63	0.59	83.97	-0.0421	-0.0318	0.0166
663	SLU 44	1.63	0.56	83.99	-0.0434	-0.0318	0.0164
663	SLU 45	1.67	0.6	85.53	-0.0425	-0.0325	0.0168
663	SLU 46	1.67	0.58	85.54	-0.0433	-0.0326	0.0167
663	SLU 47	1.66	0.55	84.97	-0.0445	-0.0323	0.0165
663	SLU 48	1.69	0.6	86.51	-0.0435	-0.033	0.0169
663	SLU 49	1.69	0.58	86.52	-0.0444	-0.0331	0.0168
663	SLU 50	1.68	0.59	85.93	-0.0442	-0.0328	0.0167
663	SLU 51	1.68	0.57	85.94	-0.045	-0.0328	0.0166
663	SLU 52	1.71	0.73	92.05	-0.038	-0.0327	0.0191
663	SLU 53	1.74	0.77	93.59	-0.037	-0.0334	0.0194
663	SLU 54	1.74	0.75	93.6	-0.0378	-0.0335	0.0193
663	SLU 55	1.73	0.72	93.03	-0.039	-0.0332	0.0191
663	SLU 56	1.77	0.77	94.57	-0.0381	-0.0339	0.0195
663	SLU 57	1.77	0.75	94.58	-0.0389	-0.034	0.0194
663	SLU 58	1.75	0.76	93.98	-0.0387	-0.0337	0.0194
663	SLU 59	1.76	0.74	94	-0.0396	-0.0337	0.0193
663	SLU 60	1.74	0.83	95.48	-0.0343	-0.0331	0.0203
663	SLU 61	1.74	0.81	95.49	-0.0351	-0.0331	0.0203
663	SLU 62	1.76	0.83	96.46	-0.0353	-0.0336	0.0204
663	SLU 63	1.77	0.81	96.47	-0.0361	-0.0336	0.0203
663	SLU 64	1.74	0.74	91.95	-0.0336	-0.0332	0.0184
663	SLU 65	1.74	0.71	91.97	-0.035	-0.0333	0.0183
663	SLU 66	1.77	0.75	93.51	-0.034	-0.034	0.0186
663	SLU 67	1.78	0.74	93.52	-0.0348	-0.034	0.0185
663	SLU 68	1.76	0.71	92.95	-0.0361	-0.0338	0.0183
663	SLU 69	1.8	0.75	94.48	-0.0351	-0.0345	0.0187
663	SLU 70	1.8	0.73	94.5	-0.0359	-0.0345	0.0186
663	SLU 71	1.78	0.74	93.9	-0.0358	-0.0342	0.0185
663	SLU 72	1.79	0.72	93.92	-0.0366	-0.0342	0.0185
663	SLU 73	1.82	0.88	100.02	-0.0295	-0.0342	0.0209
663	SLU 74	1.85	0.93	101.56	-0.0285	-0.0349	0.0212
663	SLU 75	1.85	0.91	101.57	-0.0293	-0.0349	0.0211
663	SLU 76	1.84	0.88	101	-0.0306	-0.0347	0.0209
663	SLU 77	1.87	0.92	102.54	-0.0296	-0.0354	0.0213
663	SLU 78	1.87	0.9	102.55	-0.0304	-0.0354	0.0212
663	SLU 79	1.86	0.91	101.96	-0.0303	-0.0351	0.0212
663	SLU 80	1.86	0.89	101.97	-0.0311	-0.0351	0.0211
663	SLU 81	1.85	0.99	103.46	-0.0258	-0.0345	0.0221
663	SLU 82	1.85	0.97	103.47	-0.0266	-0.0345	0.0221
663	SLU 83	1.87	0.99	104.43	-0.0269	-0.035	0.0222
663	SLU 84	1.87	0.97	104.45	-0.0277	-0.035	0.0221
663	SLE RA 1	1.31	0.54	68.98	-0.0277	-0.0252	0.0138
663	SLE RA 2	1.32	0.52	68.99	-0.0286	-0.0253	0.0137
663	SLE RA 3	1.34	0.55	70.02	-0.028	-0.0257	0.0139
663	SLE RA 4	1.34	0.53	70.02	-0.0285	-0.0258	0.0138
663	SLE RA 5	1.33	0.52	69.64	-0.0293	-0.0256	0.0137
663	SLE RA 6	1.35	0.54	70.67	-0.0287	-0.0261	0.0139
663	SLE RA 7	1.35	0.53	70.68	-0.0292	-0.0261	0.0139
663	SLE RA 8	1.34	0.54	70.28	-0.0292	-0.0259	0.0138
663	SLE RA 9	1.35	0.52	70.29	-0.0297	-0.0259	0.0138
663	SLE RA 10	1.37	0.63	74.36	-0.025	-0.0259	0.0154
663	SLE RA 11	1.39	0.66	75.39	-0.0243	-0.0263	0.0156
663	SLE RA 12	1.39	0.65	75.39	-0.0249	-0.0263	0.0156
663	SLE RA 13	1.38	0.63	75.01	-0.0257	-0.0262	0.0155
663	SLE RA 14	1.4	0.66	76.04	-0.025	-0.0267	0.0157
663	SLE RA 15	1.4	0.64	76.05	-0.0256	-0.0267	0.0156
663	SLE RA 16	1.4	0.65	75.65	-0.0255	-0.0265	0.0156
663	SLE RA 17	1.4	0.64	75.66	-0.026	-0.0265	0.0155
663	SLE RA 18	1.39	0.7	76.65	-0.0225	-0.0261	0.0163
663	SLE RA 19	1.39	0.69	76.66	-0.023	-0.0261	0.0162
663	SLE RA 20	1.4	0.7	77.3	-0.0232	-0.0264	0.0163
663	SLE RA 21	1.4	0.69	77.31	-0.0238	-0.0264	0.0162
663	SLE FR 1	1.31	0.54	68.98	-0.0277	-0.0252	0.0138
663	SLE FR 2	1.31	0.53	68.98	-0.0279	-0.0252	0.0137
663	SLE FR 3	1.32	0.54	69.24	-0.028	-0.0254	0.0138
663	SLE FR 4	1.34	0.58	71.28	-0.0263	-0.0255	0.0145
663	SLE FR 5	1.34	0.59	71.54	-0.0264	-0.0256	0.0145
663	SLE FR 6	1.35	0.62	72.81	-0.0251	-0.0257	0.015
663	SLE QP 1	1.31	0.54	68.98	-0.0277	-0.0252	0.0138
663	SLE QP 2	1.34	0.59	71.28	-0.0262	-0.0255	0.0145
663	SLD 1	5.72	0.75	56.95	0.0053	0.0197	0.0122
663	SLD 2	5.72	1.58	56.99	-0.0112	0.0195	0.0234
663	SLD 3	5.98	-1.3	56.1	0.0203	0.0167	-0.0056
663	SLD 4	5.98	-0.47	56.14	0.0038	0.0166	0.0056
663	SLD 5	2.25	3.59	68.26	-0.0366	-0.0074	0.0389
663	SLD 6	2.25	4.14	68.29	-0.0474	-0.0075	0.0462
663	SLD 7	3.13	-3.23	65.43	0.0135	-0.0173	-0.0206



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
663	SLD 8	3.13	-2.69	65.46	0.0027	-0.0174	-0.0132
663	SLD 9	-0.46	3.86	77.1	-0.0551	-0.0336	0.0422
663	SLD 10	-0.46	4.41	77.13	-0.0659	-0.0337	0.0496
663	SLD 11	0.42	-2.96	74.27	-0.0049	-0.0434	-0.0172
663	SLD 12	0.42	-2.42	74.3	-0.0157	-0.0435	-0.0099
663	SLD 13	-3.31	1.65	86.42	-0.0562	-0.0676	0.0234
663	SLD 14	-3.31	2.47	86.46	-0.0726	-0.0677	0.0346
663	SLD 15	-3.04	-0.4	85.57	-0.0411	-0.0705	0.0056
663	SLD 16	-3.04	0.43	85.61	-0.0576	-0.0707	0.0168
663	SLV 1	11.58	0.89	37.73	0.0476	0.0803	0.0086
663	SLV 2	11.58	2.82	37.83	0.0093	0.0799	0.0346
663	SLV 3	12.2	-3.75	35.75	0.0826	0.0734	-0.0318
663	SLV 4	12.2	-1.81	35.84	0.0443	0.073	-0.0058
663	SLV 5	3.48	7.38	64.21	-0.0504	0.0167	0.0695
663	SLV 6	3.48	8.62	64.27	-0.0752	0.0165	0.0863
663	SLV 7	5.52	-8.08	57.59	0.0661	-0.0062	-0.0652
663	SLV 8	5.53	-6.83	57.65	0.0414	-0.0064	-0.0484
663	SLV 9	-2.85	8	84.91	-0.0937	-0.0445	0.0774
663	SLV 10	-2.85	9.25	84.97	-0.1185	-0.0448	0.0942
663	SLV 11	-0.81	-7.45	78.29	0.0229	-0.0675	-0.0573
663	SLV 12	-0.81	-6.2	78.35	-0.0019	-0.0677	-0.0405
663	SLV 13	-9.53	2.99	106.72	-0.0966	-0.124	0.0348
663	SLV 14	-9.52	4.92	106.81	-0.1349	-0.1244	0.0608
663	SLV 15	-8.91	-1.65	104.73	-0.0616	-0.1309	-0.0056
663	SLV 16	-8.91	0.28	104.82	-0.1	-0.1312	0.0204
663	CRTFP Ux+	0	0	0	0	0	0
663	CRTFP Ux-	0	0	0	0	0	0
663	CRTFP Uy+	0	0	0	0	0	0
663	CRTFP Uy-	0	0	0	0	0	0
664	SLU 1	1.31	0.56	67.57	-0.0236	-0.0298	0.0125
664	SLU 2	1.31	0.53	67.59	-0.0248	-0.0299	0.0123
664	SLU 3	1.34	0.57	69.15	-0.0239	-0.0307	0.0127
664	SLU 4	1.34	0.55	69.16	-0.0246	-0.0307	0.0126
664	SLU 5	1.33	0.53	68.58	-0.0258	-0.0304	0.0124
664	SLU 6	1.37	0.57	70.15	-0.0249	-0.0313	0.0127
664	SLU 7	1.37	0.55	70.16	-0.0256	-0.0313	0.0127
664	SLU 8	1.35	0.56	69.56	-0.0256	-0.031	0.0126
664	SLU 9	1.36	0.54	69.57	-0.0263	-0.031	0.0125
664	SLU 10	1.39	0.71	75.68	-0.0189	-0.0312	0.0149
664	SLU 11	1.42	0.76	77.24	-0.018	-0.0321	0.0152
664	SLU 12	1.42	0.74	77.25	-0.0187	-0.0321	0.0151
664	SLU 13	1.41	0.71	76.67	-0.0199	-0.0318	0.0149
664	SLU 14	1.44	0.76	78.24	-0.019	-0.0327	0.0152
664	SLU 15	1.45	0.73	78.25	-0.0197	-0.0327	0.0152
664	SLU 16	1.43	0.74	77.65	-0.0197	-0.0324	0.0151
664	SLU 17	1.43	0.72	77.66	-0.0204	-0.0324	0.015
664	SLU 18	1.42	0.82	79.13	-0.0151	-0.0318	0.0161
664	SLU 19	1.42	0.8	79.14	-0.0159	-0.0318	0.016
664	SLU 20	1.44	0.82	80.12	-0.0161	-0.0324	0.0161
664	SLU 21	1.44	0.8	80.13	-0.0169	-0.0324	0.016
664	SLU 22	1.42	0.73	75.59	-0.0149	-0.0318	0.0143
664	SLU 23	1.42	0.69	75.61	-0.0161	-0.0318	0.0142
664	SLU 24	1.45	0.74	77.18	-0.0152	-0.0327	0.0145
664	SLU 25	1.45	0.72	77.19	-0.0159	-0.0327	0.0144
664	SLU 26	1.44	0.69	76.61	-0.0171	-0.0324	0.0142
664	SLU 27	1.48	0.74	78.17	-0.0161	-0.0332	0.0145
664	SLU 28	1.48	0.72	78.19	-0.0169	-0.0333	0.0145
664	SLU 29	1.46	0.72	77.58	-0.0169	-0.0329	0.0144
664	SLU 30	1.46	0.7	77.6	-0.0176	-0.033	0.0143
664	SLU 31	1.49	0.88	83.71	-0.0102	-0.0332	0.0167
664	SLU 32	1.53	0.92	85.27	-0.0092	-0.034	0.017
664	SLU 33	1.53	0.9	85.28	-0.01	-0.0341	0.0169
664	SLU 34	1.52	0.87	84.7	-0.0111	-0.0338	0.0167
664	SLU 35	1.55	0.92	86.26	-0.0102	-0.0346	0.0171
664	SLU 36	1.55	0.9	86.28	-0.011	-0.0347	0.017
664	SLU 37	1.54	0.91	85.68	-0.0109	-0.0343	0.0169
664	SLU 38	1.54	0.89	85.69	-0.0117	-0.0344	0.0168
664	SLU 39	1.53	0.99	87.15	-0.0064	-0.0337	0.0179
664	SLU 40	1.53	0.97	87.17	-0.0071	-0.0338	0.0178
664	SLU 41	1.55	0.99	88.15	-0.0074	-0.0343	0.0179
664	SLU 42	1.55	0.97	88.16	-0.0081	-0.0344	0.0179
664	SLU 43	1.66	0.67	85.08	-0.0337	-0.0381	0.0156
664	SLU 44	1.66	0.64	85.1	-0.0349	-0.0381	0.0155
664	SLU 45	1.7	0.68	86.67	-0.0339	-0.039	0.0158
664	SLU 46	1.7	0.66	86.68	-0.0347	-0.039	0.0157
664	SLU 47	1.69	0.64	86.1	-0.0358	-0.0387	0.0155
664	SLU 48	1.72	0.68	87.66	-0.0349	-0.0396	0.0158
664	SLU 49	1.72	0.66	87.67	-0.0357	-0.0396	0.0158
664	SLU 50	1.71	0.67	87.07	-0.0356	-0.0393	0.0157
664	SLU 51	1.71	0.65	87.09	-0.0364	-0.0393	0.0156
664	SLU 52	1.74	0.82	93.19	-0.0289	-0.0395	0.018
664	SLU 53	1.78	0.87	94.76	-0.028	-0.0404	0.0183
664	SLU 54	1.78	0.85	94.77	-0.0287	-0.0404	0.0182
664	SLU 55	1.77	0.82	94.19	-0.0299	-0.0401	0.018
664	SLU 56	1.8	0.87	95.75	-0.029	-0.041	0.0184
664	SLU 57	1.8	0.85	95.77	-0.0297	-0.041	0.0183
664	SLU 58	1.79	0.85	95.16	-0.0297	-0.0406	0.0182
664	SLU 59	1.79	0.83	95.18	-0.0305	-0.0407	0.0181
664	SLU 60	1.77	0.93	96.64	-0.0252	-0.0401	0.0192
664	SLU 61	1.77	0.91	96.65	-0.0259	-0.0401	0.0191





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
664	SLU 62	1.8	0.93	97.64	-0.0262	-0.0406	0.0192
664	SLU 63	1.8	0.91	97.65	-0.0269	-0.0407	0.0192
664	SLU 64	1.77	0.84	93.11	-0.0249	-0.04	0.0174
664	SLU 65	1.77	0.8	93.13	-0.0261	-0.0401	0.0173
664	SLU 66	1.81	0.85	94.7	-0.0252	-0.0409	0.0176
664	SLU 67	1.81	0.83	94.71	-0.0259	-0.041	0.0175
664	SLU 68	1.8	0.8	94.13	-0.0271	-0.0407	0.0173
664	SLU 69	1.83	0.85	95.69	-0.0262	-0.0415	0.0177
664	SLU 70	1.83	0.83	95.7	-0.0269	-0.0415	0.0176
664	SLU 71	1.82	0.84	95.1	-0.0269	-0.0412	0.0175
664	SLU 72	1.82	0.81	95.11	-0.0276	-0.0412	0.0175
664	SLU 73	1.85	0.99	101.22	-0.0202	-0.0415	0.0198
664	SLU 74	1.88	1.03	102.79	-0.0193	-0.0423	0.0201
664	SLU 75	1.89	1.01	102.8	-0.02	-0.0423	0.02
664	SLU 76	1.87	0.99	102.22	-0.0212	-0.0421	0.0198
664	SLU 77	1.91	1.03	103.78	-0.0203	-0.0429	0.0202
664	SLU 78	1.91	1.01	103.79	-0.021	-0.0429	0.0201
664	SLU 79	1.9	1.02	103.19	-0.021	-0.0426	0.02
664	SLU 80	1.9	1	103.2	-0.0217	-0.0426	0.02
664	SLU 81	1.88	1.1	104.67	-0.0165	-0.042	0.021
664	SLU 82	1.88	1.08	104.68	-0.0172	-0.042	0.0209
664	SLU 83	1.91	1.1	105.67	-0.0175	-0.0426	0.0211
664	SLU 84	1.91	1.08	105.68	-0.0182	-0.0426	0.021
664	SLE RA 1	1.34	0.61	69.86	-0.0211	-0.0304	0.013
664	SLE RA 2	1.34	0.59	69.87	-0.0219	-0.0304	0.0129
664	SLE RA 3	1.36	0.62	70.92	-0.0213	-0.031	0.0131
664	SLE RA 4	1.36	0.6	70.92	-0.0218	-0.031	0.0131
664	SLE RA 5	1.36	0.58	70.54	-0.0226	-0.0308	0.0129
664	SLE RA 6	1.38	0.62	71.58	-0.022	-0.0314	0.0132
664	SLE RA 7	1.38	0.6	71.59	-0.0224	-0.0314	0.0131
664	SLE RA 8	1.37	0.61	71.19	-0.0224	-0.0312	0.0131
664	SLE RA 9	1.37	0.59	71.19	-0.0229	-0.0312	0.013
664	SLE RA 10	1.39	0.71	75.27	-0.018	-0.0313	0.0146
664	SLE RA 11	1.41	0.74	76.31	-0.0173	-0.0319	0.0148
664	SLE RA 12	1.41	0.72	76.32	-0.0178	-0.0319	0.0147
664	SLE RA 13	1.41	0.71	75.93	-0.0186	-0.0317	0.0146
664	SLE RA 14	1.43	0.74	76.97	-0.018	-0.0323	0.0148
664	SLE RA 15	1.43	0.72	76.98	-0.0185	-0.0323	0.0148
664	SLE RA 16	1.42	0.73	76.58	-0.0185	-0.0321	0.0147
664	SLE RA 17	1.42	0.72	76.59	-0.019	-0.0321	0.0147
664	SLE RA 18	1.41	0.78	77.57	-0.0155	-0.0317	0.0154
664	SLE RA 19	1.41	0.77	77.57	-0.0159	-0.0317	0.0153
664	SLE RA 20	1.43	0.78	78.23	-0.0161	-0.0321	0.0154
664	SLE RA 21	1.43	0.77	78.24	-0.0166	-0.0321	0.0154
664	SLE FR 1	1.34	0.61	69.86	-0.0211	-0.0304	0.013
664	SLE FR 2	1.34	0.6	69.86	-0.0213	-0.0304	0.013
664	SLE FR 3	1.34	0.61	70.13	-0.0214	-0.0305	0.013
664	SLE FR 4	1.36	0.66	72.17	-0.0196	-0.0308	0.0137
664	SLE FR 5	1.37	0.66	72.44	-0.0197	-0.0309	0.0137
664	SLE FR 6	1.38	0.7	73.71	-0.0183	-0.031	0.0142
664	SLE QP 1	1.34	0.61	69.86	-0.0211	-0.0304	0.013
664	SLE QP 2	1.36	0.66	72.17	-0.0194	-0.0308	0.0137
664	SLD 1	5.73	0.81	56.45	0.013	0.0165	0.0233
664	SLD 2	5.73	1.7	56.49	-0.0042	0.0164	0.0348
664	SLD 3	5.99	-1.33	55.52	0.0245	0.0134	0.0049
664	SLD 4	5.99	-0.44	55.57	0.0073	0.0132	0.0164
664	SLD 5	2.27	3.8	68.85	-0.0241	-0.0117	0.0424
664	SLD 6	2.27	4.38	68.88	-0.0354	-0.0118	0.05
664	SLD 7	3.15	-3.34	65.76	0.0143	-0.0223	-0.0189
664	SLD 8	3.15	-2.76	65.79	0.003	-0.0224	-0.0113
664	SLD 9	-0.43	4.08	78.55	-0.0418	-0.0391	0.0387
664	SLD 10	-0.43	4.67	78.58	-0.0531	-0.0392	0.0463
664	SLD 11	0.45	-3.06	75.46	-0.0034	-0.0497	-0.0226
664	SLD 12	0.45	-2.48	75.49	-0.0148	-0.0498	-0.015
664	SLD 13	-3.27	1.76	88.78	-0.0461	-0.0747	0.011
664	SLD 14	-3.27	2.65	88.82	-0.0634	-0.0749	0.0226
664	SLD 15	-3.01	-0.38	87.85	-0.0346	-0.0779	-0.0074
664	SLD 16	-3.01	0.51	87.9	-0.0518	-0.078	0.0041
664	SLV 1	11.58	0.94	35.37	0.0566	0.0799	0.0355
664	SLV 2	11.58	3.01	35.47	0.0164	0.0795	0.0624
664	SLV 3	12.19	-3.91	33.2	0.0836	0.0725	-0.0062
664	SLV 4	12.19	-1.84	33.3	0.0434	0.0721	0.0207
664	SLV 5	3.5	7.74	64.4	-0.0305	0.0138	0.0788
664	SLV 6	3.5	9.08	64.47	-0.0565	0.0135	0.0962
664	SLV 7	5.54	-8.43	57.17	0.0593	-0.011	-0.0602
664	SLV 8	5.54	-7.09	57.24	0.0333	-0.0112	-0.0428
664	SLV 9	-2.82	8.41	87.1	-0.0722	-0.0503	0.0702
664	SLV 10	-2.82	9.75	87.17	-0.0981	-0.0506	0.0876
664	SLV 11	-0.77	-7.76	79.88	0.0177	-0.075	-0.0688
664	SLV 12	-0.77	-6.42	79.94	-0.0083	-0.0753	-0.0514
664	SLV 13	-9.47	3.16	111.04	-0.0822	-0.1336	0.0068
664	SLV 14	-9.47	5.23	111.15	-0.1224	-0.134	0.0337
664	SLV 15	-8.86	-1.69	108.87	-0.0552	-0.1411	-0.0349
664	SLV 16	-8.85	0.38	108.98	-0.0954	-0.1415	-0.008
664	CRTFP Ux+	0	0	0	0	0	0
664	CRTFP Ux-	0	0	0	0	0	0
664	CRTFP Uy+	0	0	0	0	0	0
664	CRTFP Uy-	0	0	0	0	0	0
665	SLU 1	1.33	0.62	68.7	-0.0173	-0.0419	0.0111
665	SLU 2	1.33	0.59	68.72	-0.0183	-0.042	0.011



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
665	SLU 3	1.36	0.64	70.32	-0.0175	-0.0431	0.0113
665	SLU 4	1.36	0.61	70.33	-0.0181	-0.0432	0.0112
665	SLU 5	1.35	0.59	69.74	-0.0193	-0.0428	0.011
665	SLU 6	1.39	0.63	71.33	-0.0184	-0.0439	0.0113
665	SLU 7	1.39	0.61	71.35	-0.019	-0.044	0.0113
665	SLU 8	1.37	0.62	70.73	-0.0192	-0.0435	0.0112
665	SLU 9	1.37	0.6	70.75	-0.0198	-0.0435	0.0111
665	SLU 10	1.41	0.78	76.88	-0.012	-0.0448	0.0132
665	SLU 11	1.44	0.83	78.47	-0.0112	-0.046	0.0135
665	SLU 12	1.44	0.81	78.49	-0.0118	-0.046	0.0135
665	SLU 13	1.43	0.78	77.89	-0.013	-0.0456	0.0133
665	SLU 14	1.47	0.83	79.49	-0.0121	-0.0468	0.0136
665	SLU 15	1.47	0.81	79.5	-0.0127	-0.0468	0.0135
665	SLU 16	1.45	0.82	78.89	-0.0129	-0.0463	0.0134
665	SLU 17	1.45	0.8	78.9	-0.0135	-0.0464	0.0134
665	SLU 18	1.44	0.9	80.35	-0.0083	-0.046	0.0143
665	SLU 19	1.44	0.88	80.36	-0.0089	-0.046	0.0142
665	SLU 20	1.46	0.9	81.37	-0.0092	-0.0467	0.0143
665	SLU 21	1.46	0.88	81.38	-0.0098	-0.0468	0.0143
665	SLU 22	1.44	0.8	76.81	-0.0083	-0.0453	0.0128
665	SLU 23	1.44	0.76	76.83	-0.0094	-0.0454	0.0127
665	SLU 24	1.47	0.81	78.43	-0.0085	-0.0465	0.013
665	SLU 25	1.47	0.79	78.44	-0.0092	-0.0466	0.0129
665	SLU 26	1.46	0.76	77.85	-0.0103	-0.0462	0.0128
665	SLU 27	1.5	0.81	79.45	-0.0095	-0.0473	0.013
665	SLU 28	1.5	0.79	79.46	-0.0101	-0.0474	0.013
665	SLU 29	1.48	0.8	78.84	-0.0102	-0.0469	0.0129
665	SLU 30	1.48	0.77	78.86	-0.0108	-0.047	0.0128
665	SLU 31	1.52	0.96	84.99	-0.0031	-0.0482	0.015
665	SLU 32	1.55	1.01	86.58	-0.0022	-0.0494	0.0152
665	SLU 33	1.55	0.99	86.6	-0.0029	-0.0494	0.0152
665	SLU 34	1.54	0.96	86.01	-0.004	-0.049	0.015
665	SLU 35	1.58	1.01	87.6	-0.0032	-0.0502	0.0153
665	SLU 36	1.58	0.98	87.61	-0.0038	-0.0502	0.0152
665	SLU 37	1.56	0.99	87	-0.0039	-0.0497	0.0151
665	SLU 38	1.56	0.97	87.01	-0.0045	-0.0498	0.0151
665	SLU 39	1.55	1.08	88.46	0.0007	-0.0494	0.016
665	SLU 40	1.55	1.06	88.48	0	-0.0494	0.016
665	SLU 41	1.57	1.08	89.48	-0.0003	-0.0502	0.0161
665	SLU 42	1.57	1.06	89.49	-0.0009	-0.0502	0.016
665	SLU 43	1.69	0.75	86.53	-0.0256	-0.0533	0.0138
665	SLU 44	1.69	0.72	86.55	-0.0266	-0.0534	0.0137
665	SLU 45	1.72	0.76	88.15	-0.0258	-0.0545	0.014
665	SLU 46	1.72	0.74	88.16	-0.0264	-0.0546	0.0139
665	SLU 47	1.71	0.71	87.57	-0.0275	-0.0542	0.0138
665	SLU 48	1.75	0.76	89.16	-0.0267	-0.0553	0.014
665	SLU 49	1.75	0.74	89.18	-0.0273	-0.0554	0.014
665	SLU 50	1.73	0.75	88.56	-0.0274	-0.0549	0.0139
665	SLU 51	1.74	0.73	88.57	-0.028	-0.055	0.0139
665	SLU 52	1.77	0.91	94.71	-0.0203	-0.0562	0.016
665	SLU 53	1.8	0.96	96.3	-0.0195	-0.0574	0.0162
665	SLU 54	1.8	0.94	96.31	-0.0201	-0.0574	0.0162
665	SLU 55	1.79	0.91	95.72	-0.0212	-0.057	0.016
665	SLU 56	1.83	0.96	97.32	-0.0204	-0.0582	0.0163
665	SLU 57	1.83	0.94	97.33	-0.021	-0.0582	0.0162
665	SLU 58	1.81	0.94	96.72	-0.0211	-0.0577	0.0162
665	SLU 59	1.81	0.92	96.73	-0.0217	-0.0578	0.0161
665	SLU 60	1.8	1.03	98.18	-0.0166	-0.0574	0.017
665	SLU 61	1.8	1.01	98.19	-0.0172	-0.0574	0.017
665	SLU 62	1.82	1.03	99.2	-0.0175	-0.0582	0.0171
665	SLU 63	1.82	1.01	99.21	-0.0181	-0.0582	0.017
665	SLU 64	1.8	0.92	94.64	-0.0166	-0.0567	0.0155
665	SLU 65	1.8	0.89	94.66	-0.0176	-0.0568	0.0155
665	SLU 66	1.83	0.94	96.26	-0.0168	-0.058	0.0157
665	SLU 67	1.83	0.92	96.27	-0.0174	-0.058	0.0157
665	SLU 68	1.82	0.89	95.68	-0.0186	-0.0576	0.0155
665	SLU 69	1.86	0.94	97.27	-0.0177	-0.0587	0.0158
665	SLU 70	1.86	0.92	97.29	-0.0184	-0.0588	0.0157
665	SLU 71	1.84	0.92	96.67	-0.0185	-0.0583	0.0156
665	SLU 72	1.85	0.9	96.69	-0.0191	-0.0584	0.0156
665	SLU 73	1.88	1.09	102.82	-0.0113	-0.0596	0.0177
665	SLU 74	1.91	1.13	104.41	-0.0105	-0.0608	0.018
665	SLU 75	1.91	1.11	104.43	-0.0111	-0.0608	0.0179
665	SLU 76	1.9	1.09	103.83	-0.0123	-0.0604	0.0177
665	SLU 77	1.94	1.13	105.43	-0.0114	-0.0616	0.018
665	SLU 78	1.94	1.11	105.44	-0.012	-0.0616	0.018
665	SLU 79	1.92	1.12	104.83	-0.0122	-0.0612	0.0179
665	SLU 80	1.92	1.1	104.84	-0.0128	-0.0612	0.0178
665	SLU 81	1.91	1.2	106.29	-0.0076	-0.0608	0.0188
665	SLU 82	1.91	1.18	106.3	-0.0082	-0.0608	0.0187
665	SLU 83	1.93	1.2	107.31	-0.0085	-0.0616	0.0188
665	SLU 84	1.93	1.18	107.32	-0.0091	-0.0616	0.0187
665	SLE RA 1	1.36	0.67	71.02	-0.0147	-0.0429	0.0116
665	SLE RA 2	1.36	0.65	71.03	-0.0154	-0.0429	0.0115
665	SLE RA 3	1.38	0.68	72.1	-0.0149	-0.0437	0.0117
665	SLE RA 4	1.38	0.67	72.1	-0.0153	-0.0437	0.0117
665	SLE RA 5	1.37	0.65	71.71	-0.0161	-0.0435	0.0116
665	SLE RA 6	1.4	0.68	72.77	-0.0155	-0.0442	0.0117
665	SLE RA 7	1.4	0.67	72.78	-0.0159	-0.0443	0.0117
665	SLE RA 8	1.39	0.67	72.37	-0.016	-0.044	0.0116



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
665	SLE RA 9	1.39	0.66	72.38	-0.0164	-0.044	0.0116
665	SLE RA 10	1.41	0.78	76.47	-0.0112	-0.0448	0.013
665	SLE RA 11	1.43	0.81	77.53	-0.0107	-0.0456	0.0132
665	SLE RA 12	1.44	0.8	77.54	-0.0111	-0.0456	0.0132
665	SLE RA 13	1.43	0.78	77.15	-0.0118	-0.0453	0.013
665	SLE RA 14	1.45	0.81	78.21	-0.0113	-0.0461	0.0132
665	SLE RA 15	1.45	0.8	78.22	-0.0117	-0.0461	0.0132
665	SLE RA 16	1.44	0.8	77.81	-0.0118	-0.0458	0.0131
665	SLE RA 17	1.44	0.79	77.82	-0.0122	-0.0459	0.0131
665	SLE RA 18	1.43	0.86	78.78	-0.0087	-0.0456	0.0137
665	SLE RA 19	1.43	0.85	78.79	-0.0092	-0.0456	0.0137
665	SLE RA 20	1.45	0.86	79.46	-0.0094	-0.0461	0.0137
665	SLE RA 21	1.45	0.84	79.47	-0.0098	-0.0461	0.0137
665	SLE FR 1	1.36	0.67	71.02	-0.0147	-0.0429	0.0116
665	SLE FR 2	1.36	0.67	71.02	-0.0149	-0.0429	0.0116
665	SLE FR 3	1.36	0.67	71.29	-0.015	-0.0431	0.0116
665	SLE FR 4	1.38	0.72	73.35	-0.0131	-0.0437	0.0122
665	SLE FR 5	1.39	0.73	73.62	-0.0132	-0.0439	0.0122
665	SLE FR 6	1.4	0.77	74.9	-0.0117	-0.0442	0.0126
665	SLE QP 1	1.36	0.67	71.02	-0.0147	-0.0429	0.0116
665	SLE QP 2	1.38	0.73	73.35	-0.0129	-0.0437	0.0122
665	SLD 1	5.73	0.88	56.14	0.02	0.0077	0.0246
665	SLD 2	5.73	1.83	56.19	0.0019	0.0076	0.0362
665	SLD 3	6	-1.36	55.13	0.0295	0.0043	0.0067
665	SLD 4	6	-0.41	55.18	0.0114	0.0041	0.0182
665	SLD 5	2.29	4	69.71	-0.0142	-0.023	0.041
665	SLD 6	2.29	4.62	69.75	-0.0261	-0.0231	0.0486
665	SLD 7	3.16	-3.46	66.33	0.0174	-0.0345	-0.0187
665	SLD 8	3.16	-2.84	66.37	0.0055	-0.0346	-0.0111
665	SLD 9	-0.4	4.29	80.33	-0.0314	-0.0528	0.0355
665	SLD 10	-0.4	4.92	80.36	-0.0433	-0.0529	0.0431
665	SLD 11	0.47	-3.16	76.95	0.0002	-0.0643	-0.0242
665	SLD 12	0.47	-2.54	76.98	-0.0117	-0.0644	-0.0166
665	SLD 13	-3.24	1.87	91.52	-0.0373	-0.0915	0.0062
665	SLD 14	-3.23	2.82	91.57	-0.0554	-0.0917	0.0178
665	SLD 15	-2.97	-0.37	90.5	-0.0278	-0.095	-0.0117
665	SLD 16	-2.97	0.58	90.55	-0.0459	-0.0951	-0.0002
665	SLV 1	11.56	1	33.07	0.0642	0.0767	0.0406
665	SLV 2	11.57	3.21	33.19	0.0221	0.0763	0.0675
665	SLV 3	12.18	-4.07	30.7	0.0865	0.0686	0
665	SLV 4	12.18	-1.86	30.82	0.0444	0.0682	0.0269
665	SLV 5	3.51	8.11	64.84	-0.0162	0.0048	0.0776
665	SLV 6	3.51	9.54	64.92	-0.0435	0.0045	0.095
665	SLV 7	5.55	-8.78	56.94	0.0579	-0.0222	-0.0577
665	SLV 8	5.55	-7.35	57.01	0.0307	-0.0225	-0.0403
665	SLV 9	-2.79	8.81	89.68	-0.0566	-0.0649	0.0647
665	SLV 10	-2.79	10.24	89.76	-0.0838	-0.0652	0.0821
665	SLV 11	-0.75	-8.08	81.78	0.0176	-0.0919	-0.0706
665	SLV 12	-0.75	-6.66	81.85	-0.0096	-0.0922	-0.0532
665	SLV 13	-9.42	3.32	115.88	-0.0702	-0.1556	-0.0025
665	SLV 14	-9.41	5.53	116	-0.1124	-0.156	0.0245
665	SLV 15	-8.8	-1.75	113.51	-0.048	-0.1637	-0.0431
665	SLV 16	-8.8	0.46	113.62	-0.0901	-0.1641	-0.0161
665	CRTFP Ux+	0	0	0	0	0	0
665	CRTFP Ux-	0	0	0	0	0	0
665	CRTFP Uy+	0	0	0	0	0	0
665	CRTFP Uy-	0	0	0	0	0	0
666	SLU 1	1.14	0.57	59.9	-0.0101	1.6321	-0.0085
666	SLU 2	1.14	0.54	59.92	-0.0109	1.6326	-0.0077
666	SLU 3	1.17	0.58	61.32	-0.0102	1.6705	-0.0087
666	SLU 4	1.17	0.57	61.33	-0.0106	1.6709	-0.0082
666	SLU 5	1.16	0.54	60.81	-0.0116	1.6568	-0.0077
666	SLU 6	1.19	0.58	62.21	-0.0109	1.6947	-0.0087
666	SLU 7	1.19	0.57	62.22	-0.0114	1.695	-0.0082
666	SLU 8	1.18	0.57	61.68	-0.0116	1.6804	-0.0084
666	SLU 9	1.18	0.55	61.7	-0.012	1.6807	-0.008
666	SLU 10	1.21	0.72	66.98	-0.0051	1.8261	-0.0111
666	SLU 11	1.24	0.76	68.38	-0.0045	1.8641	-0.0121
666	SLU 12	1.24	0.74	68.39	-0.0049	1.8644	-0.0116
666	SLU 13	1.23	0.72	67.87	-0.0059	1.8503	-0.0111
666	SLU 14	1.26	0.76	69.27	-0.0052	1.8882	-0.0121
666	SLU 15	1.26	0.74	69.28	-0.0057	1.8885	-0.0116
666	SLU 16	1.25	0.75	68.74	-0.0059	1.8739	-0.0118
666	SLU 17	1.25	0.73	68.75	-0.0063	1.8743	-0.0113
666	SLU 18	1.24	0.82	69.98	-0.0019	1.9086	-0.0134
666	SLU 19	1.24	0.81	70	-0.0024	1.9089	-0.0129
666	SLU 20	1.26	0.82	70.88	-0.0027	1.9327	-0.0133
666	SLU 21	1.26	0.81	70.89	-0.0031	1.933	-0.0128
666	SLU 22	1.24	0.73	66.94	-0.0022	1.8246	-0.0116
666	SLU 23	1.24	0.7	66.96	-0.003	1.8251	-0.0108
666	SLU 24	1.27	0.74	68.35	-0.0023	1.8631	-0.0118
666	SLU 25	1.27	0.72	68.37	-0.0028	1.8634	-0.0113
666	SLU 26	1.26	0.7	67.85	-0.0037	1.8493	-0.0108
666	SLU 27	1.29	0.74	69.25	-0.0031	1.8872	-0.0118
666	SLU 28	1.29	0.72	69.26	-0.0035	1.8875	-0.0113
666	SLU 29	1.28	0.73	68.72	-0.0037	1.873	-0.0115
666	SLU 30	1.28	0.71	68.73	-0.0042	1.8733	-0.0111
666	SLU 31	1.31	0.88	74.01	0.0027	2.0187	-0.0142
666	SLU 32	1.34	0.92	75.41	0.0034	2.0566	-0.0152
666	SLU 33	1.34	0.9	75.42	0.0029	2.0569	-0.0147



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
666	SLU 34	1.33	0.87	74.91	0.002	2.0428	-0.0142
666	SLU 35	1.36	0.92	76.3	0.0026	2.0807	-0.0152
666	SLU 36	1.36	0.9	76.32	0.0022	2.0811	-0.0147
666	SLU 37	1.34	0.9	75.78	0.002	2.0665	-0.0149
666	SLU 38	1.35	0.89	75.79	0.0015	2.0668	-0.0145
666	SLU 39	1.33	0.98	77.02	0.0059	2.1011	-0.0165
666	SLU 40	1.33	0.96	77.03	0.0055	2.1014	-0.016
666	SLU 41	1.35	0.98	77.91	0.0052	2.1252	-0.0164
666	SLU 42	1.35	0.96	77.92	0.0047	2.1255	-0.016
666	SLU 43	1.45	0.69	75.46	-0.0158	2.0557	-0.01
666	SLU 44	1.45	0.66	75.48	-0.0166	2.0562	-0.0092
666	SLU 45	1.48	0.7	76.88	-0.0159	2.0942	-0.0102
666	SLU 46	1.48	0.69	76.89	-0.0164	2.0945	-0.0097
666	SLU 47	1.47	0.66	76.37	-0.0173	2.0804	-0.0092
666	SLU 48	1.5	0.7	77.77	-0.0167	2.1183	-0.0102
666	SLU 49	1.5	0.68	77.78	-0.0171	2.1186	-0.0097
666	SLU 50	1.49	0.69	77.24	-0.0173	2.1041	-0.0099
666	SLU 51	1.49	0.67	77.25	-0.0178	2.1044	-0.0094
666	SLU 52	1.52	0.84	82.54	-0.0109	2.2498	-0.0126
666	SLU 53	1.55	0.88	83.93	-0.0102	2.2877	-0.0136
666	SLU 54	1.55	0.86	83.95	-0.0107	2.288	-0.0131
666	SLU 55	1.54	0.84	83.43	-0.0116	2.2739	-0.0126
666	SLU 56	1.57	0.88	84.83	-0.0109	2.3118	-0.0136
666	SLU 57	1.57	0.86	84.84	-0.0114	2.3122	-0.0131
666	SLU 58	1.56	0.87	84.3	-0.0116	2.2976	-0.0133
666	SLU 59	1.56	0.85	84.31	-0.0121	2.2979	-0.0128
666	SLU 60	1.55	0.94	85.54	-0.0077	2.3322	-0.0149
666	SLU 61	1.55	0.93	85.55	-0.0081	2.3325	-0.0144
666	SLU 62	1.57	0.94	86.43	-0.0084	2.3563	-0.0148
666	SLU 63	1.57	0.92	86.45	-0.0089	2.3567	-0.0143
666	SLU 64	1.55	0.85	82.5	-0.008	2.2483	-0.0131
666	SLU 65	1.55	0.82	82.51	-0.0087	2.2488	-0.0123
666	SLU 66	1.58	0.86	83.91	-0.008	2.2867	-0.0133
666	SLU 67	1.58	0.84	83.92	-0.0085	2.287	-0.0128
666	SLU 68	1.57	0.82	83.41	-0.0095	2.2729	-0.0123
666	SLU 69	1.6	0.86	84.8	-0.0088	2.3109	-0.0133
666	SLU 70	1.6	0.84	84.82	-0.0093	2.3112	-0.0128
666	SLU 71	1.59	0.85	84.28	-0.0094	2.2966	-0.013
666	SLU 72	1.59	0.83	84.29	-0.0099	2.2969	-0.0125
666	SLU 73	1.62	0.99	89.57	-0.003	2.4423	-0.0157
666	SLU 74	1.65	1.03	90.97	-0.0023	2.4802	-0.0167
666	SLU 75	1.65	1.02	90.98	-0.0028	2.4805	-0.0162
666	SLU 76	1.64	0.99	90.46	-0.0038	2.4664	-0.0157
666	SLU 77	1.67	1.03	91.86	-0.0031	2.5044	-0.0167
666	SLU 78	1.67	1.02	91.87	-0.0035	2.5047	-0.0162
666	SLU 79	1.65	1.02	91.34	-0.0037	2.4901	-0.0164
666	SLU 80	1.66	1	91.35	-0.0042	2.4904	-0.0159
666	SLU 81	1.64	1.1	92.58	0.0002	2.5247	-0.018
666	SLU 82	1.64	1.08	92.59	-0.0003	2.525	-0.0175
666	SLU 83	1.66	1.1	93.47	-0.0005	2.5489	-0.0179
666	SLU 84	1.66	1.08	93.48	-0.001	2.5492	-0.0174
666	SLE RA 1	1.17	0.62	61.91	-0.0078	1.6871	-0.0094
666	SLE RA 2	1.17	0.6	61.92	-0.0084	1.6875	-0.0089
666	SLE RA 3	1.19	0.63	62.86	-0.0079	1.7127	-0.0095
666	SLE RA 4	1.19	0.61	62.86	-0.0082	1.7129	-0.0092
666	SLE RA 5	1.18	0.6	62.52	-0.0089	1.7036	-0.0088
666	SLE RA 6	1.2	0.62	63.45	-0.0084	1.7288	-0.0095
666	SLE RA 7	1.2	0.61	63.46	-0.0087	1.7291	-0.0092
666	SLE RA 8	1.2	0.62	63.1	-0.0088	1.7193	-0.0093
666	SLE RA 9	1.2	0.6	63.11	-0.0091	1.7195	-0.009
666	SLE RA 10	1.21	0.72	66.63	-0.0045	1.8165	-0.0111
666	SLE RA 11	1.23	0.74	67.56	-0.0041	1.8418	-0.0118
666	SLE RA 12	1.24	0.73	67.57	-0.0044	1.842	-0.0115
666	SLE RA 13	1.23	0.71	67.22	-0.005	1.8326	-0.0111
666	SLE RA 14	1.25	0.74	68.16	-0.0046	1.8579	-0.0118
666	SLE RA 15	1.25	0.73	68.16	-0.0049	1.8581	-0.0115
666	SLE RA 16	1.24	0.73	67.81	-0.005	1.8483	-0.0116
666	SLE RA 17	1.24	0.72	67.81	-0.0053	1.8485	-0.0113
666	SLE RA 18	1.23	0.79	68.63	-0.0024	1.8714	-0.0126
666	SLE RA 19	1.23	0.77	68.64	-0.0027	1.8716	-0.0123
666	SLE RA 20	1.25	0.78	69.23	-0.0029	1.8875	-0.0126
666	SLE RA 21	1.25	0.77	69.24	-0.0032	1.8877	-0.0123
666	SLE FR 1	1.17	0.62	61.91	-0.0078	1.6871	-0.0094
666	SLE FR 2	1.17	0.61	61.91	-0.0079	1.6872	-0.0093
666	SLE FR 3	1.17	0.62	62.15	-0.008	1.6936	-0.0094
666	SLE FR 4	1.19	0.66	63.93	-0.0063	1.7425	-0.0103
666	SLE FR 5	1.19	0.67	64.17	-0.0064	1.7488	-0.0104
666	SLE FR 6	1.2	0.7	65.27	-0.0051	1.7793	-0.011
666	SLE QP 1	1.17	0.62	61.91	-0.0078	1.6871	-0.0094
666	SLE QP 2	1.19	0.67	63.93	-0.0062	1.7424	-0.0104
666	SLD 1	4.89	1.67	47.96	0.0217	1.3305	-0.0098
666	SLD 2	4.89	2.52	48	0.0055	1.3317	-0.0246
666	SLD 3	5.11	-0.31	47.01	0.03	1.3062	0.0322
666	SLD 4	5.11	0.54	47.06	0.0139	1.3074	0.0174
666	SLD 5	1.96	3.82	60.56	-0.0076	1.6554	-0.0712
666	SLD 6	1.96	4.38	60.59	-0.0182	1.6562	-0.081
666	SLD 7	2.7	-2.78	57.41	0.0202	1.5745	0.0687
666	SLD 8	2.7	-2.22	57.44	0.0096	1.5753	0.059
666	SLD 9	-0.33	3.55	70.41	-0.022	1.9095	-0.0798
666	SLD 10	-0.33	4.12	70.44	-0.0326	1.9103	-0.0895



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
666	SLD 11	0.42	-3.04	67.26	0.0058	1.8286	0.0602
666	SLD 12	0.42	-2.48	67.3	-0.0048	1.8294	0.0505
666	SLD 13	-2.74	0.79	80.8	-0.0263	2.1774	-0.0382
666	SLD 14	-2.74	1.65	80.85	-0.0425	2.1786	-0.053
666	SLD 15	-2.51	-1.19	79.85	-0.018	2.1531	0.0038
666	SLD 16	-2.51	-0.33	79.9	-0.0341	2.1543	-0.011
666	SLV 1	9.85	2.94	26.54	0.0593	0.7783	-0.0075
666	SLV 2	9.85	4.93	26.65	0.0217	0.7811	-0.042
666	SLV 3	10.37	-1.55	24.33	0.0787	0.7215	0.0876
666	SLV 4	10.37	0.45	24.44	0.041	0.7243	0.0531
666	SLV 5	3	7.8	56.04	-0.0094	1.5388	-0.1478
666	SLV 6	3	9.09	56.11	-0.0338	1.5406	-0.17
666	SLV 7	4.73	-7.14	48.68	0.0552	1.3495	0.1692
666	SLV 8	4.73	-5.85	48.75	0.0308	1.3514	0.1469
666	SLV 9	-2.36	7.19	79.1	-0.0433	2.1334	-0.1677
666	SLV 10	-2.36	8.48	79.18	-0.0676	2.1353	-0.1899
666	SLV 11	-0.62	-7.75	71.74	0.0213	1.9442	0.1493
666	SLV 12	-0.62	-6.47	71.81	-0.003	1.946	0.127
666	SLV 13	-7.99	0.89	103.41	-0.0535	2.7605	-0.0739
666	SLV 14	-7.99	2.88	103.52	-0.0911	2.7633	-0.1083
666	SLV 15	-7.47	-3.59	101.2	-0.0341	2.7037	0.0212
666	SLV 16	-7.47	-1.6	101.32	-0.0717	2.7065	-0.0132
666	CRTFP Ux+	0	0	0	0	0	0
666	CRTFP Ux-	0	0	0	0	0	0
666	CRTFP Uy+	0	0	0	0	0	0
666	CRTFP Uy-	0	0	0	0	0	0
668	SLU 1	1.93	1	102.42	0.1818	24.1367	-0.2437
668	SLU 2	1.93	0.95	102.46	0.1812	24.1445	-0.2313
668	SLU 3	1.99	1.02	104.85	0.1862	24.7049	-0.2487
668	SLU 4	1.99	0.99	104.87	0.1858	24.7095	-0.2413
668	SLU 5	1.97	0.95	103.99	0.1834	24.5016	-0.2311
668	SLU 6	2.02	1.02	106.38	0.1883	25.062	-0.2485
668	SLU 7	2.02	0.99	106.4	0.188	25.0667	-0.241
668	SLU 8	2	1	105.48	0.1861	24.8511	-0.2433
668	SLU 9	2	0.97	105.5	0.1857	24.8557	-0.2359
668	SLU 10	2.05	1.25	114.49	0.2086	26.9959	-0.3053
668	SLU 11	2.1	1.32	116.88	0.2136	27.5563	-0.3227
668	SLU 12	2.1	1.29	116.9	0.2133	27.5609	-0.3152
668	SLU 13	2.08	1.25	116.02	0.2108	27.3531	-0.3051
668	SLU 14	2.14	1.32	118.41	0.2158	27.9135	-0.3225
668	SLU 15	2.14	1.29	118.43	0.2154	27.9181	-0.315
668	SLU 16	2.12	1.3	117.51	0.2135	27.7025	-0.3173
668	SLU 17	2.12	1.27	117.53	0.2132	27.7071	-0.3098
668	SLU 18	2.1	1.43	119.61	0.221	28.2102	-0.3494
668	SLU 19	2.1	1.4	119.63	0.2206	28.2148	-0.342
668	SLU 20	2.13	1.43	121.14	0.2231	28.5673	-0.3492
668	SLU 21	2.13	1.4	121.16	0.2228	28.572	-0.3418
668	SLU 22	2.09	1.27	114.43	0.211	26.9751	-0.3092
668	SLU 23	2.09	1.22	114.46	0.2105	26.9829	-0.2968
668	SLU 24	2.15	1.29	116.85	0.2154	27.5433	-0.3142
668	SLU 25	2.15	1.26	116.87	0.2151	27.5479	-0.3067
668	SLU 26	2.13	1.22	115.99	0.2126	27.3401	-0.2965
668	SLU 27	2.18	1.29	118.38	0.2176	27.9005	-0.314
668	SLU 28	2.18	1.26	118.4	0.2172	27.9051	-0.3065
668	SLU 29	2.16	1.26	117.48	0.2153	27.6895	-0.3088
668	SLU 30	2.16	1.23	117.5	0.215	27.6942	-0.3013
668	SLU 31	2.21	1.52	126.49	0.2379	29.8343	-0.3707
668	SLU 32	2.26	1.59	128.88	0.2429	30.3947	-0.3882
668	SLU 33	2.26	1.56	128.9	0.2425	30.3993	-0.3807
668	SLU 34	2.24	1.52	128.02	0.2401	30.1915	-0.3705
668	SLU 35	2.3	1.59	130.41	0.245	30.7519	-0.3879
668	SLU 36	2.3	1.56	130.43	0.2447	30.7565	-0.3805
668	SLU 37	2.28	1.57	129.51	0.2428	30.5409	-0.3828
668	SLU 38	2.28	1.54	129.53	0.2425	30.5456	-0.3753
668	SLU 39	2.26	1.7	131.61	0.2502	31.0486	-0.4149
668	SLU 40	2.26	1.67	131.63	0.2499	31.0532	-0.4074
668	SLU 41	2.29	1.7	133.14	0.2524	31.4058	-0.4147
668	SLU 42	2.29	1.67	133.16	0.2521	31.4104	-0.4072
668	SLU 43	2.46	1.21	129.03	0.2263	30.4045	-0.2944
668	SLU 44	2.46	1.16	129.07	0.2257	30.4123	-0.282
668	SLU 45	2.51	1.23	131.46	0.2307	30.9727	-0.2994
668	SLU 46	2.51	1.2	131.48	0.2303	30.9773	-0.2919
668	SLU 47	2.49	1.16	130.6	0.2279	30.7695	-0.2818
668	SLU 48	2.54	1.23	132.99	0.2328	31.3299	-0.2992
668	SLU 49	2.55	1.2	133.01	0.2325	31.3345	-0.2917
668	SLU 50	2.53	1.2	132.09	0.2306	31.1189	-0.294
668	SLU 51	2.53	1.17	132.11	0.2302	31.1236	-0.2865
668	SLU 52	2.57	1.46	141.1	0.2531	33.2637	-0.356
668	SLU 53	2.63	1.53	143.49	0.2581	33.8241	-0.3734
668	SLU 54	2.63	1.5	143.51	0.2578	33.8287	-0.3659
668	SLU 55	2.61	1.46	142.63	0.2553	33.6209	-0.3558
668	SLU 56	2.66	1.53	145.02	0.2603	34.1813	-0.3732
668	SLU 57	2.66	1.5	145.04	0.2599	34.1859	-0.3657
668	SLU 58	2.64	1.51	144.12	0.258	33.9703	-0.368
668	SLU 59	2.64	1.48	144.14	0.2577	33.975	-0.3605
668	SLU 60	2.62	1.64	146.22	0.2655	34.478	-0.4001
668	SLU 61	2.62	1.61	146.24	0.2651	34.4826	-0.3927
668	SLU 62	2.66	1.64	147.75	0.2676	34.8352	-0.3999
668	SLU 63	2.66	1.61	147.77	0.2673	34.8398	-0.3924
668	SLU 64	2.62	1.47	141.04	0.2555	33.243	-0.3599



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
	N.br.	x	y	z	x	y	z
668	SLU 65	2.62	1.42	141.07	0.255	33.2507	-0.3474
668	SLU 66	2.67	1.49	143.47	0.2599	33.8111	-0.3649
668	SLU 67	2.67	1.46	143.49	0.2596	33.8158	-0.3574
668	SLU 68	2.65	1.42	142.6	0.2571	33.6079	-0.3472
668	SLU 69	2.7	1.49	144.99	0.2621	34.1683	-0.3646
668	SLU 70	2.71	1.46	145.01	0.2617	34.173	-0.3572
668	SLU 71	2.69	1.47	144.09	0.2598	33.9573	-0.3595
668	SLU 72	2.69	1.44	144.11	0.2595	33.962	-0.352
668	SLU 73	2.73	1.73	153.1	0.2824	36.1021	-0.4214
668	SLU 74	2.79	1.8	155.5	0.2874	36.6625	-0.4388
668	SLU 75	2.79	1.77	155.52	0.287	36.6672	-0.4314
668	SLU 76	2.77	1.73	154.63	0.2846	36.4593	-0.4212
668	SLU 77	2.82	1.8	157.02	0.2895	37.0197	-0.4386
668	SLU 78	2.82	1.77	157.04	0.2892	37.0244	-0.4312
668	SLU 79	2.8	1.78	156.12	0.2873	36.8088	-0.4334
668	SLU 80	2.8	1.75	156.14	0.2869	36.8134	-0.426
668	SLU 81	2.78	1.91	158.22	0.2947	37.3164	-0.4656
668	SLU 82	2.78	1.88	158.24	0.2944	37.3211	-0.4581
668	SLU 83	2.82	1.91	159.75	0.2969	37.6736	-0.4654
668	SLU 84	2.82	1.88	159.77	0.2966	37.6783	-0.4579
668	SLE RA 1	1.98	1.07	105.85	0.1901	24.9477	-0.2624
668	SLE RA 2	1.98	1.04	105.88	0.1897	24.9529	-0.2541
668	SLE RA 3	2.01	1.09	107.47	0.1931	25.3265	-0.2658
668	SLE RA 4	2.01	1.07	107.48	0.1928	25.3296	-0.2608
668	SLE RA 5	2	1.04	106.89	0.1912	25.191	-0.254
668	SLE RA 6	2.04	1.09	108.49	0.1945	25.5646	-0.2656
668	SLE RA 7	2.04	1.07	108.5	0.1943	25.5677	-0.2606
668	SLE RA 8	2.02	1.07	107.89	0.193	25.4239	-0.2622
668	SLE RA 9	2.02	1.05	107.9	0.1928	25.427	-0.2572
668	SLE RA 10	2.06	1.24	113.9	0.208	26.8538	-0.3035
668	SLE RA 11	2.09	1.29	115.49	0.2114	27.2274	-0.3151
668	SLE RA 12	2.09	1.27	115.5	0.2111	27.2305	-0.3101
668	SLE RA 13	2.08	1.24	114.91	0.2095	27.0919	-0.3033
668	SLE RA 14	2.11	1.29	116.51	0.2128	27.4655	-0.3149
668	SLE RA 15	2.11	1.27	116.52	0.2126	27.4686	-0.31
668	SLE RA 16	2.1	1.28	115.91	0.2113	27.3249	-0.3115
668	SLE RA 17	2.1	1.26	115.92	0.2111	27.328	-0.3065
668	SLE RA 18	2.09	1.36	117.31	0.2163	27.6633	-0.3329
668	SLE RA 19	2.09	1.34	117.32	0.216	27.6664	-0.3279
668	SLE RA 20	2.11	1.36	118.33	0.2177	27.9014	-0.3328
668	SLE RA 21	2.11	1.34	118.34	0.2175	27.9045	-0.3278
668	SLE FR 1	1.98	1.07	105.85	0.1901	24.9477	-0.2624
668	SLE FR 2	1.98	1.07	105.86	0.19	24.9487	-0.2608
668	SLE FR 3	1.99	1.07	106.26	0.1907	25.0429	-0.2624
668	SLE FR 4	2.01	1.15	109.29	0.1979	25.7634	-0.2819
668	SLE FR 5	2.02	1.16	109.7	0.1985	25.8576	-0.2835
668	SLE FR 6	2.03	1.22	111.58	0.2032	26.3055	-0.2977
668	SLE QP 1	1.98	1.07	105.85	0.1901	24.9477	-0.2624
668	SLE QP 2	2.01	1.16	109.29	0.198	25.7624	-0.2836
668	SLD 1	8.25	2.87	81.24	0.1632	19.5645	-0.7023
668	SLD 2	8.25	4.35	81.33	0.1486	19.5827	-1.059
668	SLD 3	8.63	-0.53	79.58	0.1716	19.1991	0.1259
668	SLD 4	8.63	0.96	79.67	0.157	19.2173	-0.2308
668	SLD 5	3.31	6.56	103.38	0.1774	24.4539	-1.6016
668	SLD 6	3.31	7.54	103.44	0.1678	24.4658	-1.836
668	SLD 7	4.57	-4.76	97.84	0.2054	23.236	1.1591
668	SLD 8	4.57	-3.79	97.9	0.1958	23.248	0.9247
668	SLD 9	-0.55	6.11	120.68	0.2001	28.2767	-1.4918
668	SLD 10	-0.55	7.09	120.74	0.1905	28.2887	-1.7262
668	SLD 11	0.71	-5.21	115.14	0.2281	27.0589	1.2689
668	SLD 12	0.71	-4.24	115.2	0.2185	27.0709	1.0345
668	SLD 13	-4.61	1.37	138.91	0.2389	32.3074	-0.3364
668	SLD 14	-4.61	2.85	139	0.2243	32.3256	-0.693
668	SLD 15	-4.23	-2.03	137.25	0.2473	31.9421	0.4918
668	SLD 16	-4.23	-0.55	137.34	0.2327	31.9603	0.1352
668	SLV 1	16.61	5.04	43.64	0.1167	11.255	-1.2333
668	SLV 2	16.61	8.49	43.83	0.0826	11.2974	-2.0639
668	SLV 3	17.49	-2.65	39.75	0.136	10.4006	0.6423
668	SLV 4	17.49	0.8	39.95	0.102	10.4431	-0.1883
668	SLV 5	5.06	13.4	95.45	0.1501	22.6986	-3.2696
668	SLV 6	5.06	15.63	95.58	0.1281	22.726	-3.806
668	SLV 7	7.99	-12.25	82.5	0.2147	19.8507	2.9826
668	SLV 8	7.99	-10.02	82.63	0.1927	19.8781	2.4461
668	SLV 9	-3.97	12.35	135.95	0.2032	31.6466	-3.0132
668	SLV 10	-3.97	14.58	136.08	0.1812	31.674	-3.5497
668	SLV 11	-1.04	-13.31	123	0.2679	28.7987	3.2389
668	SLV 12	-1.04	-11.08	123.13	0.2459	28.8261	2.7024
668	SLV 13	-13.47	1.53	178.63	0.2939	41.0817	-0.3789
668	SLV 14	-13.47	4.98	178.83	0.2599	41.1241	-1.2095
668	SLV 15	-12.59	-6.17	174.74	0.3133	40.2273	1.4968
668	SLV 16	-12.59	-2.72	174.94	0.2793	40.2697	0.6661
668	CRTFP Ux+	0	0	0	0	0.0001	0
668	CRTFP Ux-	0	0	0	0	-0.0001	0
668	CRTFP Uy+	0	0	0	0	0	0
668	CRTFP Uy-	0	0	0	0	0	0
670	SLU 1	0.6	0.01	37.23	-0.7167	0.9949	0.0111
670	SLU 2	0.6	-0.01	37.24	-0.7169	0.9969	0.012
670	SLU 3	0.62	0.02	38.09	-0.7332	1.0181	0.0112
670	SLU 4	0.62	0	38.09	-0.7333	1.0192	0.0118
670	SLU 5	0.61	-0.01	37.77	-0.7273	1.0114	0.0123



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
670	SLU 6	0.63	0.01	38.62	-0.7435	1.0326	0.0115
670	SLU 7	0.63	0	38.63	-0.7437	1.0337	0.0121
670	SLU 8	0.62	0	38.3	-0.7373	1.024	0.0117
670	SLU 9	0.62	-0.01	38.3	-0.7375	1.0251	0.0123
670	SLU 10	0.63	0.04	41.91	-0.8065	1.1199	0.0112
670	SLU 11	0.65	0.07	42.76	-0.8228	1.1411	0.0104
670	SLU 12	0.65	0.05	42.76	-0.8229	1.1423	0.011
670	SLU 13	0.65	0.04	42.44	-0.8169	1.1344	0.0115
670	SLU 14	0.66	0.06	43.29	-0.8331	1.1557	0.0107
670	SLU 15	0.66	0.05	43.3	-0.8333	1.1568	0.0113
670	SLU 16	0.66	0.06	42.97	-0.8269	1.147	0.0109
670	SLU 17	0.66	0.04	42.97	-0.8271	1.1482	0.0115
670	SLU 18	0.65	0.08	43.9	-0.8446	1.1708	0.01
670	SLU 19	0.65	0.07	43.9	-0.8448	1.1719	0.0105
670	SLU 20	0.66	0.08	44.43	-0.855	1.1853	0.0103
670	SLU 21	0.66	0.07	44.44	-0.8551	1.1864	0.0108
670	SLU 22	0.65	0.08	41.79	-0.8039	1.1112	0.0097
670	SLU 23	0.65	0.06	41.8	-0.8042	1.1132	0.0106
670	SLU 24	0.67	0.09	42.65	-0.8204	1.1344	0.0098
670	SLU 25	0.67	0.07	42.65	-0.8206	1.1355	0.0103
670	SLU 26	0.66	0.06	42.33	-0.8145	1.1277	0.0109
670	SLU 27	0.68	0.08	43.18	-0.8308	1.1489	0.0101
670	SLU 28	0.68	0.07	43.19	-0.8309	1.15	0.0106
670	SLU 29	0.67	0.07	42.86	-0.8246	1.1403	0.0103
670	SLU 30	0.67	0.06	42.87	-0.8248	1.1414	0.0108
670	SLU 31	0.69	0.11	46.47	-0.8938	1.2362	0.0098
670	SLU 32	0.7	0.14	47.32	-0.91	1.2574	0.009
670	SLU 33	0.7	0.12	47.32	-0.9102	1.2586	0.0095
670	SLU 34	0.7	0.11	47	-0.9041	1.2507	0.0101
670	SLU 35	0.71	0.13	47.85	-0.9204	1.272	0.0093
670	SLU 36	0.71	0.12	47.86	-0.9205	1.2731	0.0098
670	SLU 37	0.71	0.13	47.53	-0.9142	1.2634	0.0095
670	SLU 38	0.71	0.11	47.54	-0.9144	1.2645	0.01
670	SLU 39	0.7	0.15	48.46	-0.9319	1.2871	0.0086
670	SLU 40	0.7	0.14	48.46	-0.9321	1.2882	0.0091
670	SLU 41	0.71	0.15	49	-0.9423	1.3016	0.0089
670	SLU 42	0.71	0.14	49	-0.9424	1.3027	0.0094
670	SLU 43	0.76	-0.01	46.83	-0.9017	1.2536	0.015
670	SLU 44	0.76	-0.03	46.84	-0.902	1.2555	0.0159
670	SLU 45	0.78	0	47.69	-0.9182	1.2767	0.0151
670	SLU 46	0.78	-0.02	47.69	-0.9184	1.2778	0.0156
670	SLU 47	0.77	-0.03	47.38	-0.9123	1.27	0.0162
670	SLU 48	0.79	-0.01	48.23	-0.9286	1.2912	0.0154
670	SLU 49	0.79	-0.02	48.23	-0.9287	1.2923	0.0159
670	SLU 50	0.78	-0.02	47.9	-0.9224	1.2826	0.0156
670	SLU 51	0.78	-0.03	47.91	-0.9226	1.2837	0.0161
670	SLU 52	0.8	0.02	51.51	-0.9916	1.3785	0.0151
670	SLU 53	0.81	0.05	52.36	-1.0078	1.3997	0.0143
670	SLU 54	0.81	0.03	52.36	-1.008	1.4009	0.0148
670	SLU 55	0.81	0.02	52.05	-1.0019	1.393	0.0154
670	SLU 56	0.82	0.04	52.9	-1.0182	1.4143	0.0146
670	SLU 57	0.82	0.03	52.9	-1.0183	1.4154	0.0151
670	SLU 58	0.82	0.04	52.57	-1.012	1.4057	0.0148
670	SLU 59	0.82	0.02	52.58	-1.0122	1.4068	0.0153
670	SLU 60	0.81	0.06	53.5	-1.0297	1.4294	0.0138
670	SLU 61	0.81	0.05	53.51	-1.0299	1.4305	0.0144
670	SLU 62	0.82	0.06	54.04	-1.0401	1.4439	0.0141
670	SLU 63	0.82	0.05	54.04	-1.0402	1.445	0.0147
670	SLU 64	0.81	0.06	51.39	-0.989	1.3699	0.0135
670	SLU 65	0.81	0.04	51.4	-0.9893	1.3718	0.0144
670	SLU 66	0.83	0.07	52.25	-1.0055	1.393	0.0136
670	SLU 67	0.83	0.05	52.26	-1.0057	1.3941	0.0142
670	SLU 68	0.82	0.04	51.94	-0.9996	1.3863	0.0147
670	SLU 69	0.84	0.06	52.79	-1.0159	1.4075	0.0139
670	SLU 70	0.84	0.05	52.79	-1.016	1.4086	0.0145
670	SLU 71	0.83	0.05	52.46	-1.0097	1.3989	0.0141
670	SLU 72	0.83	0.04	52.47	-1.0098	1.4	0.0147
670	SLU 73	0.85	0.09	56.07	-1.0789	1.4948	0.0136
670	SLU 74	0.86	0.12	56.92	-1.0951	1.516	0.0128
670	SLU 75	0.86	0.1	56.93	-1.0953	1.5172	0.0134
670	SLU 76	0.86	0.09	56.61	-1.0892	1.5094	0.0139
670	SLU 77	0.87	0.11	57.46	-1.1054	1.5306	0.0131
670	SLU 78	0.88	0.1	57.46	-1.1056	1.5317	0.0137
670	SLU 79	0.87	0.11	57.13	-1.0993	1.522	0.0133
670	SLU 80	0.87	0.09	57.14	-1.0994	1.5231	0.0139
670	SLU 81	0.86	0.13	58.06	-1.117	1.5457	0.0124
670	SLU 82	0.86	0.12	58.07	-1.1172	1.5468	0.0129
670	SLU 83	0.87	0.13	58.6	-1.1273	1.5602	0.0127
670	SLU 84	0.87	0.12	58.6	-1.1275	1.5613	0.0132
670	SLE RA 1	0.61	0.03	38.53	-0.7416	1.0282	0.0107
670	SLE RA 2	0.61	0.02	38.54	-0.7418	1.0294	0.0113
670	SLE RA 3	0.63	0.03	39.1	-0.7526	1.0436	0.0108
670	SLE RA 4	0.63	0.03	39.11	-0.7527	1.0444	0.0111
670	SLE RA 5	0.62	0.02	38.89	-0.7487	1.0391	0.0115
670	SLE RA 6	0.63	0.03	39.46	-0.7595	1.0533	0.011
670	SLE RA 7	0.63	0.02	39.46	-0.7596	1.054	0.0113
670	SLE RA 8	0.63	0.03	39.24	-0.7554	1.0475	0.0111
670	SLE RA 9	0.63	0.02	39.25	-0.7555	1.0483	0.0115
670	SLE RA 10	0.64	0.05	41.65	-0.8015	1.1115	0.0108
670	SLE RA 11	0.65	0.07	42.22	-0.8123	1.1256	0.0103



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
670	SLE RA 12	0.65	0.06	42.22	-0.8124	1.1264	0.0106
670	SLE RA 13	0.64	0.05	42.01	-0.8084	1.1212	0.011
670	SLE RA 14	0.66	0.07	42.57	-0.8192	1.1353	0.0105
670	SLE RA 15	0.66	0.06	42.58	-0.8193	1.1361	0.0108
670	SLE RA 16	0.65	0.06	42.36	-0.8151	1.1296	0.0106
670	SLE RA 17	0.65	0.05	42.36	-0.8152	1.1303	0.0109
670	SLE RA 18	0.65	0.08	42.98	-0.8269	1.1454	0.01
670	SLE RA 19	0.65	0.07	42.98	-0.827	1.1461	0.0103
670	SLE RA 20	0.65	0.08	43.34	-0.8338	1.1551	0.0102
670	SLE RA 21	0.65	0.07	43.34	-0.8339	1.1558	0.0105
670	SLE FR 1	0.61	0.03	38.53	-0.7416	1.0282	0.0107
670	SLE FR 2	0.61	0.03	38.53	-0.7416	1.0284	0.0108
670	SLE FR 3	0.62	0.03	38.67	-0.7443	1.032	0.0108
670	SLE FR 4	0.62	0.04	39.87	-0.7672	1.0636	0.0106
670	SLE FR 5	0.63	0.05	40.01	-0.7699	1.0672	0.0106
670	SLE FR 6	0.63	0.06	40.75	-0.7843	1.0868	0.0103
670	SLE QP 1	0.61	0.03	38.53	-0.7416	1.0282	0.0107
670	SLE QP 2	0.62	0.05	39.86	-0.7672	1.0633	0.0105
670	SLD 1	3.51	0.69	36.86	-0.7104	1.0249	0.0442
670	SLD 2	3.5	0.99	36.84	-0.7101	1.022	0.0377
670	SLD 3	3.68	-0.38	37.06	-0.7149	1.0566	0.082
670	SLD 4	3.67	-0.09	37.03	-0.7146	1.0538	0.0754
670	SLD 5	1.23	1.82	38.68	-0.7433	1.0041	-0.0354
670	SLD 6	1.23	2.01	38.66	-0.7431	1.0023	-0.0397
670	SLD 7	1.8	-1.77	39.32	-0.7584	1.11	0.0903
670	SLD 8	1.8	-1.57	39.3	-0.7582	1.1081	0.086
670	SLD 9	-0.55	1.66	40.43	-0.7761	1.0185	-0.065
670	SLD 10	-0.55	1.86	40.41	-0.7759	1.0167	-0.0693
670	SLD 11	0.02	-1.92	41.07	-0.7913	1.1244	0.0607
670	SLD 12	0.02	-1.73	41.05	-0.7911	1.1225	0.0564
670	SLD 13	-2.42	0.18	42.7	-0.8198	1.0729	-0.0544
670	SLD 14	-2.43	0.47	42.67	-0.8195	1.07	-0.061
670	SLD 15	-2.25	-0.89	42.89	-0.8243	1.1046	-0.0167
670	SLD 16	-2.26	-0.6	42.86	-0.824	1.1018	-0.0233
670	SLV 1	7.37	1.52	32.84	-0.6343	0.9744	0.0908
670	SLV 2	7.35	2.2	32.79	-0.6336	0.9677	0.0756
670	SLV 3	7.78	-0.91	33.29	-0.6448	1.0462	0.1762
670	SLV 4	7.75	-0.23	33.24	-0.6441	1.0395	0.161
670	SLV 5	2.05	4.06	37.09	-0.7115	0.929	-0.0923
670	SLV 6	2.03	4.5	37.05	-0.7111	0.9247	-0.1022
670	SLV 7	3.38	-4.05	38.59	-0.7465	1.1682	0.1924
670	SLV 8	3.37	-3.61	38.55	-0.746	1.1639	0.1825
670	SLV 9	-2.12	3.7	41.18	-0.7883	0.9628	-0.1616
670	SLV 10	-2.13	4.14	41.14	-0.7879	0.9585	-0.1714
670	SLV 11	-0.78	-4.41	42.68	-0.8233	1.202	0.1232
670	SLV 12	-0.8	-3.97	42.64	-0.8229	1.1977	0.1133
670	SLV 13	-6.51	0.32	46.49	-0.8903	1.0872	-0.14
670	SLV 14	-6.53	1.01	46.43	-0.8896	1.0805	-0.1552
670	SLV 15	-6.11	-2.11	46.94	-0.9008	1.1589	-0.0546
670	SLV 16	-6.13	-1.43	46.88	-0.9001	1.1523	-0.0698
670	CRITFP Ux+	0	0	0	0	0	0
670	CRITFP Ux-	0	0	0	0	0	0
672	SLU 1	-1.68	0.1	114.12	-6.1687	-21.5434	-0.0567
672	SLU 2	-1.69	-0.17	114.17	-6.1692	-21.5522	-0.1091
672	SLU 3	-1.72	0.12	116.86	-6.3154	-22.057	-0.0554
672	SLU 4	-1.73	-0.05	116.89	-6.3157	-22.0622	-0.0868
672	SLU 5	-1.72	-0.16	115.89	-6.2622	-21.8751	-0.1082
672	SLU 6	-1.75	0.13	118.59	-6.4084	-22.3799	-0.0545
672	SLU 7	-1.76	-0.04	118.62	-6.4087	-22.3852	-0.086
672	SLU 8	-1.74	0.12	117.58	-6.3547	-22.1893	-0.055
672	SLU 9	-1.75	-0.04	117.6	-6.355	-22.1945	-0.0864
672	SLU 10	-1.73	0.04	127.78	-6.8996	-24.1397	-0.069
672	SLU 11	-1.77	0.33	130.48	-7.0459	-24.6445	-0.0153
672	SLU 12	-1.77	0.17	130.5	-7.0462	-24.6497	-0.0467
672	SLU 13	-1.76	0.05	129.51	-6.9926	-24.4626	-0.0682
672	SLU 14	-1.8	0.34	132.2	-7.1388	-24.9674	-0.0145
672	SLU 15	-1.8	0.18	132.23	-7.1391	-24.9727	-0.0459
672	SLU 16	-1.79	0.33	131.19	-7.0851	-24.7768	-0.0149
672	SLU 17	-1.79	0.17	131.22	-7.0854	-24.782	-0.0464
672	SLU 18	-1.74	0.4	133.57	-7.2122	-25.2398	0.0006
672	SLU 19	-1.75	0.24	133.6	-7.2125	-25.2451	-0.0309
672	SLU 20	-1.77	0.41	135.3	-7.3052	-25.5628	0.0014
672	SLU 21	-1.78	0.25	135.33	-7.3055	-25.568	-0.03
672	SLU 22	-1.8	0.27	127.8	-6.8978	-24.1344	-0.0275
672	SLU 23	-1.81	0	127.85	-6.8983	-24.1432	-0.0799
672	SLU 24	-1.85	0.29	130.54	-7.0445	-24.648	-0.0262
672	SLU 25	-1.85	0.13	130.57	-7.0448	-24.6532	-0.0576
672	SLU 26	-1.84	0.02	129.57	-6.9913	-24.4661	-0.079
672	SLU 27	-1.88	0.3	132.27	-7.1375	-24.9709	-0.0254
672	SLU 28	-1.88	0.14	132.29	-7.1378	-24.9762	-0.0568
672	SLU 29	-1.86	0.3	131.26	-7.0838	-24.7803	-0.0258
672	SLU 30	-1.87	0.14	131.28	-7.0841	-24.7856	-0.0573
672	SLU 31	-1.85	0.22	141.46	-7.6287	-26.7307	-0.0398
672	SLU 32	-1.89	0.5	144.16	-7.775	-27.2355	0.0139
672	SLU 33	-1.9	0.34	144.18	-7.7753	-27.2408	-0.0175
672	SLU 34	-1.89	0.23	143.19	-7.7217	-27.0536	-0.039
672	SLU 35	-1.92	0.52	145.88	-7.8679	-27.5584	0.0147
672	SLU 36	-1.93	0.35	145.91	-7.8683	-27.5637	-0.0167
672	SLU 37	-1.91	0.51	144.87	-7.8142	-27.3678	0.0142
672	SLU 38	-1.91	0.35	144.9	-7.8145	-27.3731	-0.0172





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
672	SLU 39	-1.87	0.58	147.25	-7.9413	-27.8309	0.0298
672	SLU 40	-1.87	0.42	147.28	-7.9416	-27.8361	-0.0017
672	SLU 41	-1.9	0.59	148.98	-8.0343	-28.1538	0.0306
672	SLU 42	-1.9	0.43	149	-8.0346	-28.1591	-0.0008
672	SLU 43	-2.14	0.07	143.67	-7.7693	-27.1181	-0.0837
672	SLU 44	-2.15	-0.2	143.71	-7.7698	-27.1269	-0.1361
672	SLU 45	-2.18	0.08	146.41	-7.9161	-27.6316	-0.0824
672	SLU 46	-2.19	-0.08	146.44	-7.9164	-27.6369	-0.1138
672	SLU 47	-2.18	-0.19	145.44	-7.8628	-27.4498	-0.1352
672	SLU 48	-2.22	0.1	148.14	-8.009	-27.9546	-0.0816
672	SLU 49	-2.22	-0.07	148.16	-8.0093	-27.9598	-0.113
672	SLU 50	-2.2	0.09	147.12	-7.9553	-27.7639	-0.082
672	SLU 51	-2.21	-0.07	147.15	-7.9556	-27.7692	-0.1134
672	SLU 52	-2.19	0.01	157.33	-8.5003	-29.7144	-0.096
672	SLU 53	-2.23	0.3	160.02	-8.6465	-30.2191	-0.0423
672	SLU 54	-2.23	0.13	160.05	-8.6468	-30.2244	-0.0737
672	SLU 55	-2.22	0.02	159.06	-8.5933	-30.0373	-0.0952
672	SLU 56	-2.26	0.31	161.75	-8.7395	-30.5421	-0.0415
672	SLU 57	-2.27	0.15	161.78	-8.7398	-30.5473	-0.0729
672	SLU 58	-2.25	0.3	160.74	-8.6857	-30.3514	-0.0419
672	SLU 59	-2.25	0.14	160.76	-8.686	-30.3567	-0.0734
672	SLU 60	-2.2	0.37	163.12	-8.8128	-30.8145	-0.0264
672	SLU 61	-2.21	0.21	163.15	-8.8131	-30.8198	-0.0579
672	SLU 62	-2.24	0.38	164.85	-8.9058	-31.1374	-0.0256
672	SLU 63	-2.24	0.22	164.87	-8.9061	-31.1427	-0.057
672	SLU 64	-2.26	0.24	157.35	-8.4984	-29.7091	-0.0545
672	SLU 65	-2.27	-0.03	157.39	-8.4989	-29.7179	-0.1069
672	SLU 66	-2.31	0.26	160.09	-8.6452	-30.2226	-0.0532
672	SLU 67	-2.31	0.1	160.11	-8.6455	-30.2279	-0.0846
672	SLU 68	-2.3	-0.02	159.12	-8.5919	-30.0408	-0.106
672	SLU 69	-2.34	0.27	161.82	-8.7382	-30.5456	-0.0524
672	SLU 70	-2.34	0.11	161.84	-8.7385	-30.5509	-0.0838
672	SLU 71	-2.33	0.27	160.8	-8.6844	-30.3549	-0.0528
672	SLU 72	-2.33	0.1	160.83	-8.6847	-30.3602	-0.0843
672	SLU 73	-2.32	0.19	171.01	-9.2294	-32.3054	-0.0668
672	SLU 74	-2.35	0.47	173.7	-9.3756	-32.8102	-0.0131
672	SLU 75	-2.36	0.31	173.73	-9.3759	-32.8154	-0.0446
672	SLU 76	-2.35	0.2	172.73	-9.3224	-32.6283	-0.066
672	SLU 77	-2.38	0.48	175.43	-9.4686	-33.1331	-0.0123
672	SLU 78	-2.39	0.32	175.46	-9.4689	-33.1384	-0.0437
672	SLU 79	-2.37	0.48	174.42	-9.4148	-32.9425	-0.0128
672	SLU 80	-2.38	0.32	174.44	-9.4151	-32.9477	-0.0442
672	SLU 81	-2.33	0.55	176.8	-9.5419	-33.4055	0.0027
672	SLU 82	-2.33	0.38	176.82	-9.5422	-33.4108	-0.0287
672	SLU 83	-2.36	0.56	178.53	-9.6349	-33.7285	0.0036
672	SLU 84	-2.36	0.4	178.55	-9.6352	-33.7337	-0.0279
672	SLE RA 1	-1.71	0.15	118.03	-6.377	-22.2837	-0.0483
672	SLE RA 2	-1.72	-0.03	118.06	-6.3774	-22.2895	-0.0833
672	SLE RA 3	-1.74	0.16	119.86	-6.4748	-22.6261	-0.0475
672	SLE RA 4	-1.75	0.05	119.88	-6.475	-22.6296	-0.0684
672	SLE RA 5	-1.74	-0.02	119.21	-6.4393	-22.5048	-0.0827
672	SLE RA 6	-1.76	0.17	121.01	-6.5368	-22.8413	-0.0469
672	SLE RA 7	-1.77	0.06	121.03	-6.537	-22.8449	-0.0679
672	SLE RA 8	-1.76	0.16	120.33	-6.501	-22.7143	-0.0472
672	SLE RA 9	-1.76	0.06	120.35	-6.5012	-22.7178	-0.0682
672	SLE RA 10	-1.75	0.11	127.14	-6.8643	-24.0146	-0.0565
672	SLE RA 11	-1.77	0.3	128.93	-6.9618	-24.3511	-0.0208
672	SLE RA 12	-1.78	0.19	128.95	-6.962	-24.3546	-0.0417
672	SLE RA 13	-1.77	0.12	128.29	-6.9263	-24.2298	-0.056
672	SLE RA 14	-1.79	0.31	130.09	-7.0238	-24.5664	-0.0202
672	SLE RA 15	-1.8	0.2	130.1	-7.024	-24.5699	-0.0412
672	SLE RA 16	-1.79	0.31	129.41	-6.988	-24.4393	-0.0205
672	SLE RA 17	-1.79	0.2	129.43	-6.9882	-24.4428	-0.0415
672	SLE RA 18	-1.76	0.35	131	-7.0727	-24.748	-0.0102
672	SLE RA 19	-1.76	0.24	131.02	-7.0729	-24.7515	-0.0311
672	SLE RA 20	-1.78	0.36	132.15	-7.1347	-24.9633	-0.0096
672	SLE RA 21	-1.78	0.25	132.17	-7.1349	-24.9668	-0.0306
672	SLE FR 1	-1.71	0.15	118.03	-6.377	-22.2837	-0.0483
672	SLE FR 2	-1.71	0.11	118.04	-6.3771	-22.2849	-0.0553
672	SLE FR 3	-1.72	0.15	118.49	-6.4018	-22.3698	-0.0481
672	SLE FR 4	-1.73	0.17	121.93	-6.5858	-23.0241	-0.0439
672	SLE FR 5	-1.74	0.21	122.38	-6.6105	-23.1091	-0.0367
672	SLE FR 6	-1.74	0.25	124.51	-6.7248	-23.5158	-0.0293
672	SLE QP 1	-1.71	0.15	118.03	-6.377	-22.2837	-0.0483
672	SLE QP 2	-1.73	0.21	121.92	-6.5857	-23.023	-0.0369
672	SLD 1	6.41	1.92	154.17	-8.5324	-28.8817	0.8199
672	SLD 2	6.35	0.28	154.36	-8.5254	-28.9239	0.5083
672	SLD 3	5.94	-2.14	156.05	-8.4208	-29.2331	0.0323
672	SLD 4	5.88	-3.77	156.25	-8.4139	-29.2754	-0.2793
672	SLD 5	1.44	7.16	128.7	-7.3402	-24.24	1.4703
672	SLD 6	1.4	6.09	128.83	-7.3356	-24.2677	1.2655
672	SLD 7	-0.13	-6.35	134.99	-6.9682	-25.4115	-1.155
672	SLD 8	-0.16	-7.42	135.11	-6.9637	-25.4393	-1.3598
672	SLD 9	-3.29	7.84	108.73	-6.2077	-20.6066	1.286
672	SLD 10	-3.33	6.77	108.86	-6.2032	-20.6344	1.0812
672	SLD 11	-4.85	-5.67	115.01	-5.8358	-21.7782	-1.3393
672	SLD 12	-4.89	-6.74	115.14	-5.8312	-21.806	-1.5441
672	SLD 13	-9.34	4.19	87.6	-4.7576	-16.7705	0.2056
672	SLD 14	-9.39	2.56	87.79	-4.7506	-16.8128	-0.106
672	SLD 15	-9.81	0.14	89.48	-4.646	-17.122	-0.582



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
672	SLD 16	-9.86	-1.5	89.67	-4.639	-17.1643	-0.8936
672	SLV 1	17.3	4.04	197.41	-11.1423	-36.7375	1.9363
672	SLV 2	17.18	0.23	197.86	-11.1262	-36.836	1.2106
672	SLV 3	16.21	-5.14	201.82	-10.8815	-37.559	0.1541
672	SLV 4	16.08	-8.94	202.27	-10.8653	-37.6574	-0.5716
672	SLV 5	5.66	15.92	137.81	-8.3512	-25.8745	3.3836
672	SLV 6	5.58	13.47	138.1	-8.3407	-25.9381	2.9149
672	SLV 7	2.02	-14.65	152.5	-7.4815	-28.6126	-2.5571
672	SLV 8	1.94	-17.1	152.79	-7.4711	-28.6761	-3.0258
672	SLV 9	-5.39	17.52	91.06	-5.7003	-17.3698	2.952
672	SLV 10	-5.47	15.06	91.35	-5.6899	-17.4334	2.4833
672	SLV 11	-9.03	-13.05	105.75	-4.8307	-20.1079	-2.9886
672	SLV 12	-9.12	-15.51	106.04	-4.8202	-20.1714	-3.4573
672	SLV 13	-19.54	9.36	41.58	-2.3061	-8.3886	0.4978
672	SLV 14	-19.66	5.55	42.03	-2.29	-8.487	-0.2279
672	SLV 15	-20.63	0.19	45.98	-2.0453	-9.21	-1.2844
672	SLV 16	-20.76	-3.62	46.43	-2.0291	-9.3084	-2.0101
672	CRTFP Ux+	0	0	0	0	0.0001	0
672	CRTFP Ux-	0	0	0	0	-0.0001	0
672	CRTFP Uy+	0	0	0	0	0	0
672	CRTFP Uy-	0	0	0	0	0	0
686	SLU 1	-2.44	-2.2	204.21	-15.1577	-11.7407	-0.3623
686	SLU 2	-2.45	-2.49	204.31	-15.1636	-11.7523	-0.3768
686	SLU 3	-2.5	-2.21	209.05	-15.5089	-12.0206	-0.3677
686	SLU 4	-2.5	-2.38	209.11	-15.5124	-12.0276	-0.3765
686	SLU 5	-2.49	-2.52	207.31	-15.3831	-11.9251	-0.383
686	SLU 6	-2.54	-2.23	212.05	-15.7285	-12.1934	-0.3739
686	SLU 7	-2.55	-2.41	212.11	-15.732	-12.2004	-0.3826
686	SLU 8	-2.52	-2.25	210.2	-15.5968	-12.0862	-0.3746
686	SLU 9	-2.53	-2.43	210.26	-15.6003	-12.0932	-0.3833
686	SLU 10	-2.5	-2.5	230.45	-17.0586	-13.247	-0.3828
686	SLU 11	-2.55	-2.21	235.2	-17.4039	-13.5153	-0.3737
686	SLU 12	-2.56	-2.39	235.26	-17.4074	-13.5223	-0.3824
686	SLU 13	-2.54	-2.52	233.45	-17.2781	-13.4198	-0.3889
686	SLU 14	-2.6	-2.24	238.19	-17.6235	-13.6881	-0.3798
686	SLU 15	-2.6	-2.41	238.25	-17.627	-13.6951	-0.3885
686	SLU 16	-2.58	-2.26	236.35	-17.4918	-13.5809	-0.3806
686	SLU 17	-2.58	-2.43	236.41	-17.4953	-13.5879	-0.3893
686	SLU 18	-2.51	-2.21	241.56	-17.8648	-13.876	-0.3708
686	SLU 19	-2.52	-2.38	241.62	-17.8683	-13.8829	-0.3795
686	SLU 20	-2.56	-2.23	244.56	-18.0844	-14.0487	-0.377
686	SLU 21	-2.56	-2.41	244.62	-18.0879	-14.0557	-0.3857
686	SLU 22	-2.64	-2.11	229.54	-16.9638	-13.1738	-0.3715
686	SLU 23	-2.64	-2.4	229.64	-16.9697	-13.1854	-0.386
686	SLU 24	-2.7	-2.11	234.38	-17.315	-13.4537	-0.3769
686	SLU 25	-2.7	-2.29	234.44	-17.3186	-13.4607	-0.3856
686	SLU 26	-2.69	-2.42	232.64	-17.1893	-13.3582	-0.3922
686	SLU 27	-2.74	-2.14	237.38	-17.5346	-13.6265	-0.3831
686	SLU 28	-2.75	-2.31	237.44	-17.5381	-13.6335	-0.3918
686	SLU 29	-2.72	-2.16	235.53	-17.4029	-13.5193	-0.3838
686	SLU 30	-2.73	-2.33	235.59	-17.4064	-13.5263	-0.3925
686	SLU 31	-2.7	-2.4	255.78	-18.8647	-14.6801	-0.3919
686	SLU 32	-2.75	-2.12	260.53	-19.21	-14.9484	-0.3829
686	SLU 33	-2.76	-2.29	260.59	-19.2136	-14.9554	-0.3916
686	SLU 34	-2.74	-2.43	258.78	-19.0843	-14.8529	-0.3981
686	SLU 35	-2.8	-2.14	263.53	-19.4296	-15.1212	-0.389
686	SLU 36	-2.8	-2.32	263.59	-19.4331	-15.1282	-0.3977
686	SLU 37	-2.78	-2.16	261.68	-19.2979	-15.014	-0.3897
686	SLU 38	-2.78	-2.34	261.74	-19.3014	-15.021	-0.3984
686	SLU 39	-2.71	-2.11	266.89	-19.6709	-15.3091	-0.38
686	SLU 40	-2.72	-2.29	266.95	-19.6745	-15.3161	-0.3887
686	SLU 41	-2.76	-2.14	269.89	-19.8905	-15.4819	-0.3861
686	SLU 42	-2.76	-2.31	269.95	-19.894	-15.4888	-0.3948
686	SLU 43	-3.1	-2.9	256.79	-19.0857	-14.7715	-0.4679
686	SLU 44	-3.11	-3.19	256.89	-19.0916	-14.7832	-0.4824
686	SLU 45	-3.16	-2.9	261.63	-19.437	-15.0514	-0.4733
686	SLU 46	-3.17	-3.08	261.69	-19.4405	-15.0584	-0.482
686	SLU 47	-3.15	-3.21	259.88	-19.3112	-14.9559	-0.4885
686	SLU 48	-3.21	-2.93	264.63	-19.6565	-15.2242	-0.4795
686	SLU 49	-3.21	-3.1	264.69	-19.6601	-15.2312	-0.4882
686	SLU 50	-3.19	-2.95	262.78	-19.5248	-15.1171	-0.4802
686	SLU 51	-3.19	-3.12	262.84	-19.5284	-15.124	-0.4889
686	SLU 52	-3.16	-3.19	283.03	-20.9866	-16.2779	-0.4883
686	SLU 53	-3.22	-2.91	287.78	-21.332	-16.5462	-0.4792
686	SLU 54	-3.22	-3.08	287.83	-21.3355	-16.5531	-0.4879
686	SLU 55	-3.21	-3.22	286.03	-21.2062	-16.4506	-0.4945
686	SLU 56	-3.26	-2.93	290.77	-21.5515	-16.7189	-0.4854
686	SLU 57	-3.27	-3.11	290.83	-21.5551	-16.7259	-0.4941
686	SLU 58	-3.24	-2.95	288.93	-21.4198	-16.6118	-0.4861
686	SLU 59	-3.25	-3.13	288.99	-21.4234	-16.6188	-0.4948
686	SLU 60	-3.18	-2.9	294.14	-21.7929	-16.9068	-0.4763
686	SLU 61	-3.18	-3.08	294.2	-21.7964	-16.9138	-0.4851
686	SLU 62	-3.22	-2.93	297.13	-22.0124	-17.0796	-0.4825
686	SLU 63	-3.23	-3.1	297.19	-22.016	-17.0866	-0.4912
686	SLU 64	-3.3	-2.8	282.12	-20.8919	-16.2046	-0.477
686	SLU 65	-3.31	-3.09	282.22	-20.8978	-16.2163	-0.4916
686	SLU 66	-3.36	-2.81	286.96	-21.2431	-16.4846	-0.4825
686	SLU 67	-3.37	-2.98	287.02	-21.2466	-16.4916	-0.4912
686	SLU 68	-3.35	-3.12	285.21	-21.1173	-16.3891	-0.4977
686	SLU 69	-3.4	-2.83	289.96	-21.4626	-16.6573	-0.4886



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
686	SLU 70	-3.41	-3.01	290.02	-21.4662	-16.6643	-0.4973
686	SLU 71	-3.39	-2.85	288.11	-21.331	-16.5502	-0.4893
686	SLU 72	-3.39	-3.03	288.17	-21.3345	-16.5572	-0.4981
686	SLU 73	-3.36	-3.1	308.36	-22.7928	-17.711	-0.4975
686	SLU 74	-3.42	-2.81	313.11	-23.1381	-17.9793	-0.4884
686	SLU 75	-3.42	-2.99	313.17	-23.1416	-17.9863	-0.4971
686	SLU 76	-3.41	-3.12	311.36	-23.0123	-17.8838	-0.5036
686	SLU 77	-3.46	-2.84	316.1	-23.3576	-18.152	-0.4946
686	SLU 78	-3.46	-3.01	316.16	-23.3612	-18.159	-0.5033
686	SLU 79	-3.44	-2.86	314.26	-23.226	-18.0449	-0.4953
686	SLU 80	-3.45	-3.03	314.32	-23.2295	-18.0519	-0.504
686	SLU 81	-3.38	-2.81	319.47	-23.599	-18.3399	-0.4855
686	SLU 82	-3.38	-2.98	319.53	-23.6025	-18.3469	-0.4942
686	SLU 83	-3.42	-2.83	322.46	-23.8185	-18.5127	-0.4917
686	SLU 84	-3.42	-3.01	322.52	-23.8221	-18.5197	-0.5004
686	SLE RA 1	-2.49	-2.18	211.45	-15.6737	-12.1501	-0.3649
686	SLE RA 2	-2.5	-2.37	211.51	-15.6776	-12.1579	-0.3746
686	SLE RA 3	-2.53	-2.18	214.67	-15.9079	-12.3368	-0.3686
686	SLE RA 4	-2.54	-2.3	214.71	-15.9102	-12.3414	-0.3744
686	SLE RA 5	-2.53	-2.39	213.51	-15.824	-12.2731	-0.3787
686	SLE RA 6	-2.56	-2.2	216.67	-16.0542	-12.4519	-0.3727
686	SLE RA 7	-2.57	-2.31	216.71	-16.0566	-12.4566	-0.3785
686	SLE RA 8	-2.55	-2.21	215.44	-15.9664	-12.3805	-0.3731
686	SLE RA 9	-2.55	-2.33	215.48	-15.9688	-12.3852	-0.3789
686	SLE RA 10	-2.54	-2.37	228.94	-16.941	-13.1544	-0.3786
686	SLE RA 11	-2.57	-2.18	232.1	-17.1712	-13.3332	-0.3725
686	SLE RA 12	-2.57	-2.3	232.14	-17.1736	-13.3379	-0.3783
686	SLE RA 13	-2.56	-2.39	230.94	-17.0873	-13.2695	-0.3827
686	SLE RA 14	-2.6	-2.2	234.1	-17.3176	-13.4484	-0.3766
686	SLE RA 15	-2.6	-2.32	234.14	-17.3199	-13.4531	-0.3824
686	SLE RA 16	-2.59	-2.21	232.87	-17.2298	-13.377	-0.3771
686	SLE RA 17	-2.59	-2.33	232.91	-17.2321	-13.3816	-0.3829
686	SLE RA 18	-2.54	-2.18	236.35	-17.4785	-13.5737	-0.3706
686	SLE RA 19	-2.55	-2.3	236.39	-17.4808	-13.5783	-0.3764
686	SLE RA 20	-2.57	-2.2	238.34	-17.6248	-13.6888	-0.3747
686	SLE RA 21	-2.58	-2.31	238.38	-17.6272	-13.6935	-0.3805
686	SLE FR 1	-2.49	-2.18	211.45	-15.6737	-12.1501	-0.3649
686	SLE FR 2	-2.49	-2.21	211.46	-15.6745	-12.1517	-0.3669
686	SLE FR 3	-2.5	-2.18	212.24	-15.7323	-12.1962	-0.3666
686	SLE FR 4	-2.51	-2.22	218.93	-16.2159	-12.5787	-0.3686
686	SLE FR 5	-2.52	-2.18	219.71	-16.2737	-12.6233	-0.3683
686	SLE FR 6	-2.52	-2.18	223.9	-16.5761	-12.8619	-0.3678
686	SLE QP 1	-2.49	-2.18	211.45	-15.6737	-12.1501	-0.3649
686	SLE QP 2	-2.51	-2.18	218.92	-16.2151	-12.5772	-0.3666
686	SLD 1	14.99	-0.94	237.77	-17.6908	-13.3756	0.998
686	SLD 2	14.93	-2.41	238.18	-17.6719	-13.4042	0.9461
686	SLD 3	13.99	-6.7	239.18	-17.8874	-13.5396	0.6422
686	SLD 4	13.93	-8.17	239.6	-17.8685	-13.5681	0.5904
686	SLD 5	4.26	7.18	222.35	-16.363	-12.563	0.5915
686	SLD 6	4.22	6.22	222.62	-16.3505	-12.5818	0.5575
686	SLD 7	0.95	-12	227.07	-17.0184	-13.1094	-0.5943
686	SLD 8	0.91	-12.97	227.34	-17.006	-13.1282	-0.6283
686	SLD 9	-5.92	8.61	210.49	-15.4242	-12.0262	-0.105
686	SLD 10	-5.96	7.65	210.76	-15.4118	-12.045	-0.139
686	SLD 11	-9.23	-10.57	215.21	-16.0797	-12.5726	-1.2907
686	SLD 12	-9.27	-11.54	215.48	-16.0673	-12.5914	-1.3248
686	SLD 13	-18.95	3.82	198.23	-14.5617	-11.5863	-1.3237
686	SLD 14	-19.01	2.35	198.65	-14.5429	-11.6148	-1.3755
686	SLD 15	-19.94	-1.94	199.65	-14.7584	-11.7502	-1.6794
686	SLD 16	-20	-3.41	200.07	-14.7395	-11.7787	-1.7312
686	SLV 1	38.41	0.48	263.04	-19.67	-14.4518	2.812
686	SLV 2	38.28	-2.94	264.02	-19.626	-14.5182	2.6914
686	SLV 3	36.1	-12.55	266.34	-20.1244	-14.8255	2.0066
686	SLV 4	35.96	-15.97	267.32	-20.0805	-14.8919	1.886
686	SLV 5	13.3	18.97	226.98	-16.5699	-12.5613	1.8293
686	SLV 6	13.22	16.76	227.61	-16.5415	-12.6042	1.7514
686	SLV 7	5.59	-24.45	237.98	-18.0848	-13.807	-0.8553
686	SLV 8	5.5	-26.66	238.61	-18.0564	-13.8499	-0.9332
686	SLV 9	-10.51	22.31	199.22	-14.3739	-11.3045	0.2
686	SLV 10	-10.6	20.1	199.85	-14.3455	-11.3474	0.122
686	SLV 11	-18.23	-21.12	210.22	-15.8887	-12.5502	-2.4847
686	SLV 12	-18.32	-23.32	210.85	-15.8603	-12.5931	-2.5626
686	SLV 13	-40.98	11.61	170.51	-12.3498	-10.2625	-2.6193
686	SLV 14	-41.12	8.19	171.49	-12.3058	-10.3289	-2.7399
686	SLV 15	-43.3	-1.42	173.82	-12.8043	-10.6362	-3.4246
686	SLV 16	-43.43	-4.83	174.79	-12.7603	-10.7026	-3.5453
686	CRTFP Ux+	0	0	0	0	0	0
686	CRTFP Ux-	0	0	0	0	0	0
686	CRTFP Uy+	0	0	0	0	0	0
686	CRTFP Uy-	0	0	0	0	0	0
732	SLU 1	0.69	0.39	37.73	1.031	11.5257	-0.1528
732	SLU 2	0.69	0.37	37.74	1.0313	11.5289	-0.1461
732	SLU 3	0.71	0.39	38.63	1.0553	11.7942	-0.156
732	SLU 4	0.71	0.38	38.63	1.0555	11.7961	-0.152
732	SLU 5	0.7	0.37	38.3	1.0465	11.6974	-0.1464
732	SLU 6	0.72	0.39	39.19	1.0706	11.9627	-0.1563
732	SLU 7	0.72	0.38	39.19	1.0707	11.9646	-0.1523
732	SLU 8	0.72	0.38	38.85	1.0615	11.8628	-0.1533
732	SLU 9	0.72	0.37	38.86	1.0617	11.8647	-0.1493
732	SLU 10	0.73	0.48	42.19	1.1526	12.8902	-0.1872



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
732	SLU 11	0.75	0.51	43.07	1.1767	13.1555	-0.1971
732	SLU 12	0.75	0.5	43.08	1.1768	13.1574	-0.1931
732	SLU 13	0.74	0.48	42.75	1.1679	13.0587	-0.1875
732	SLU 14	0.76	0.51	43.63	1.1919	13.324	-0.1974
732	SLU 15	0.76	0.5	43.64	1.1921	13.326	-0.1934
732	SLU 16	0.75	0.5	43.3	1.1828	13.2241	-0.1944
732	SLU 17	0.76	0.49	43.3	1.183	13.226	-0.1904
732	SLU 18	0.75	0.55	44.08	1.2043	13.4704	-0.2115
732	SLU 19	0.75	0.54	44.09	1.2045	13.4723	-0.2075
732	SLU 20	0.76	0.55	44.64	1.2196	13.639	-0.2118
732	SLU 21	0.76	0.54	44.65	1.2198	13.6409	-0.2078
732	SLU 22	0.75	0.49	42.17	1.1522	12.8795	-0.1897
732	SLU 23	0.75	0.47	42.18	1.1525	12.8827	-0.183
732	SLU 24	0.77	0.49	43.06	1.1765	13.148	-0.193
732	SLU 25	0.77	0.48	43.07	1.1767	13.1499	-0.189
732	SLU 26	0.76	0.47	42.74	1.1677	13.0512	-0.1833
732	SLU 27	0.78	0.49	43.62	1.1918	13.3165	-0.1932
732	SLU 28	0.78	0.48	43.63	1.192	13.3184	-0.1892
732	SLU 29	0.77	0.49	43.29	1.1827	13.2166	-0.1903
732	SLU 30	0.77	0.47	43.3	1.1829	13.2185	-0.1863
732	SLU 31	0.79	0.58	46.62	1.2738	14.244	-0.2242
732	SLU 32	0.8	0.61	47.51	1.2979	14.5093	-0.2341
732	SLU 33	0.8	0.6	47.51	1.2981	14.5112	-0.2301
732	SLU 34	0.8	0.58	47.18	1.2891	14.4125	-0.2244
732	SLU 35	0.82	0.61	48.07	1.3131	14.6778	-0.2343
732	SLU 36	0.82	0.6	48.07	1.3133	14.6797	-0.2303
732	SLU 37	0.81	0.6	47.73	1.3041	14.5779	-0.2314
732	SLU 38	0.81	0.59	47.74	1.3042	14.5798	-0.2274
732	SLU 39	0.8	0.65	48.52	1.3255	14.8242	-0.2484
732	SLU 40	0.8	0.64	48.52	1.3257	14.8261	-0.2444
732	SLU 41	0.81	0.65	49.08	1.3408	14.9928	-0.2487
732	SLU 42	0.81	0.64	49.08	1.341	14.9947	-0.2447
732	SLU 43	0.88	0.47	47.53	1.2987	14.5193	-0.1859
732	SLU 44	0.88	0.45	47.54	1.299	14.5224	-0.1793
732	SLU 45	0.9	0.47	48.42	1.323	14.7877	-0.1892
732	SLU 46	0.9	0.46	48.43	1.3232	14.7896	-0.1852
732	SLU 47	0.89	0.45	48.1	1.3142	14.691	-0.1796
732	SLU 48	0.91	0.47	48.98	1.3383	14.9563	-0.1895
732	SLU 49	0.91	0.46	48.99	1.3385	14.9582	-0.1855
732	SLU 50	0.91	0.47	48.65	1.3292	14.8563	-0.1865
732	SLU 51	0.91	0.45	48.66	1.3294	14.8583	-0.1825
732	SLU 52	0.92	0.56	51.99	1.4203	15.8837	-0.2204
732	SLU 53	0.94	0.59	52.87	1.4444	16.1491	-0.2303
732	SLU 54	0.94	0.58	52.88	1.4446	16.151	-0.2263
732	SLU 55	0.93	0.56	52.55	1.4356	16.0523	-0.2207
732	SLU 56	0.95	0.59	53.43	1.4597	16.3176	-0.2306
732	SLU 57	0.95	0.58	53.44	1.4598	16.3195	-0.2266
732	SLU 58	0.94	0.58	53.1	1.4506	16.2177	-0.2276
732	SLU 59	0.94	0.57	53.1	1.4507	16.2196	-0.2236
732	SLU 60	0.93	0.63	53.88	1.4721	16.464	-0.2447
732	SLU 61	0.93	0.62	53.89	1.4722	16.4659	-0.2407
732	SLU 62	0.95	0.63	54.44	1.4873	16.6325	-0.245
732	SLU 63	0.95	0.62	54.45	1.4875	16.6344	-0.241
732	SLU 64	0.94	0.57	51.97	1.4199	15.8731	-0.2229
732	SLU 65	0.94	0.55	51.98	1.4202	15.8762	-0.2162
732	SLU 66	0.95	0.58	52.86	1.4442	16.1415	-0.2261
732	SLU 67	0.95	0.56	52.87	1.4444	16.1434	-0.2221
732	SLU 68	0.95	0.55	52.54	1.4355	16.0448	-0.2165
732	SLU 69	0.97	0.57	53.42	1.4595	16.3101	-0.2264
732	SLU 70	0.97	0.56	53.43	1.4597	16.312	-0.2224
732	SLU 71	0.96	0.57	53.09	1.4504	16.2101	-0.2234
732	SLU 72	0.96	0.56	53.1	1.4506	16.212	-0.2194
732	SLU 73	0.97	0.66	56.42	1.5416	17.2375	-0.2573
732	SLU 74	0.99	0.69	57.3	1.5656	17.5029	-0.2672
732	SLU 75	0.99	0.68	57.31	1.5658	17.5048	-0.2632
732	SLU 76	0.99	0.66	56.98	1.5568	17.4061	-0.2576
732	SLU 77	1.01	0.69	57.86	1.5809	17.6714	-0.2675
732	SLU 78	1.01	0.68	57.87	1.581	17.6733	-0.2635
732	SLU 79	1	0.68	57.53	1.5718	17.5715	-0.2645
732	SLU 80	1	0.67	57.54	1.572	17.5734	-0.2605
732	SLU 81	0.99	0.73	58.32	1.5933	17.8178	-0.2816
732	SLU 82	0.99	0.72	58.32	1.5934	17.8197	-0.2776
732	SLU 83	1	0.73	58.88	1.6085	17.9863	-0.2819
732	SLU 84	1	0.72	58.88	1.6087	17.9882	-0.2779
732	SLE RA 1	0.71	0.41	39	1.0656	11.9125	-0.1633
732	SLE RA 2	0.71	0.4	39.01	1.0658	11.9146	-0.1589
732	SLE RA 3	0.72	0.42	39.6	1.0818	12.0915	-0.1655
732	SLE RA 4	0.72	0.41	39.6	1.0819	12.0928	-0.1628
732	SLE RA 5	0.72	0.4	39.38	1.076	12.027	-0.1591
732	SLE RA 6	0.73	0.42	39.97	1.092	12.2039	-0.1657
732	SLE RA 7	0.73	0.41	39.97	1.0921	12.2051	-0.163
732	SLE RA 8	0.72	0.41	39.75	1.0859	12.1372	-0.1637
732	SLE RA 9	0.72	0.41	39.75	1.0861	12.1385	-0.161
732	SLE RA 10	0.73	0.48	41.97	1.1467	12.8222	-0.1863
732	SLE RA 11	0.75	0.5	42.56	1.1627	12.999	-0.1929
732	SLE RA 12	0.75	0.49	42.56	1.1628	13.0003	-0.1902
732	SLE RA 13	0.74	0.48	42.34	1.1569	12.9345	-0.1865
732	SLE RA 14	0.75	0.5	42.93	1.1729	13.1114	-0.1931
732	SLE RA 15	0.75	0.49	42.94	1.173	13.1127	-0.1904
732	SLE RA 16	0.75	0.49	42.71	1.1668	13.0448	-0.1911



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
732	SLE RA 17	0.75	0.48	42.71	1.167	13.046	-0.1884
732	SLE RA 18	0.74	0.52	43.23	1.1812	13.209	-0.2025
732	SLE RA 19	0.74	0.52	43.24	1.1813	13.2103	-0.1998
732	SLE RA 20	0.75	0.52	43.61	1.1913	13.3214	-0.2027
732	SLE RA 21	0.75	0.52	43.61	1.1915	13.3226	-0.2
732	SLE FR 1	0.71	0.41	39	1.0656	11.9125	-0.1633
732	SLE FR 2	0.71	0.41	39	1.0656	11.9129	-0.1624
732	SLE FR 3	0.71	0.41	39.15	1.0697	11.9574	-0.1634
732	SLE FR 4	0.72	0.44	40.27	1.1003	12.3019	-0.1742
732	SLE FR 5	0.72	0.45	40.42	1.1043	12.3464	-0.1751
732	SLE FR 6	0.73	0.47	41.12	1.1234	12.5607	-0.1829
732	SLE QP 1	0.71	0.41	39	1.0656	11.9125	-0.1633
732	SLE QP 2	0.72	0.45	40.27	1.1003	12.3015	-0.1751
732	SLD 1	3.01	1.09	29.56	0.8091	9.4221	-0.4121
732	SLD 2	2.98	1.64	29.56	0.8083	9.4327	-0.6036
732	SLD 3	3.16	-0.18	30.16	0.8254	9.2494	0.0304
732	SLD 4	3.13	0.37	30.16	0.8246	9.26	-0.1611
732	SLD 5	1.18	2.47	36.15	0.9883	11.6977	-0.8831
732	SLD 6	1.16	2.83	36.15	0.9878	11.7047	-1.0089
732	SLD 7	1.69	-1.77	38.14	1.0427	11.122	0.5918
732	SLD 8	1.67	-1.41	38.15	1.0422	11.1289	0.466
732	SLD 9	-0.23	2.3	42.39	1.1584	13.474	-0.8161
732	SLD 10	-0.25	2.66	42.4	1.1579	13.4809	-0.942
732	SLD 11	0.28	-1.94	44.39	1.2127	12.8982	0.6588
732	SLD 12	0.25	-1.58	44.39	1.2122	12.9052	0.5329
732	SLD 13	-1.69	0.52	50.38	1.3759	15.3429	-0.189
732	SLD 14	-1.73	1.08	50.38	1.3752	15.3535	-0.3805
732	SLD 15	-1.54	-0.75	50.98	1.3922	15.1702	0.2535
732	SLD 16	-1.57	-0.2	50.98	1.3915	15.1808	0.0619
732	SLV 1	6.08	1.91	15.2	0.4187	5.5617	-0.7137
732	SLV 2	6.01	3.19	15.2	0.417	5.5863	-1.1597
732	SLV 3	6.43	-0.98	16.6	0.4568	5.158	0.2884
732	SLV 4	6.36	0.31	16.6	0.4551	5.1826	-0.1576
732	SLV 5	1.81	5.03	30.62	0.8383	10.8875	-1.7793
732	SLV 6	1.76	5.86	30.63	0.8372	10.9034	-2.0673
732	SLV 7	2.98	-4.57	35.29	0.9653	9.5419	1.5608
732	SLV 8	2.93	-3.74	35.29	0.9642	9.5578	1.2728
732	SLV 9	-1.49	4.64	45.25	1.2363	15.0451	-1.6229
732	SLV 10	-1.54	5.47	45.25	1.2352	15.061	-1.911
732	SLV 11	-0.32	-4.97	49.91	1.3634	13.6995	1.7172
732	SLV 12	-0.37	-4.14	49.92	1.3622	13.7154	1.4291
732	SLV 13	-4.92	0.58	63.94	1.7454	19.4203	-0.1925
732	SLV 14	-5	1.87	63.94	1.7437	19.4449	-0.6385
732	SLV 15	-4.57	-2.3	65.34	1.7835	19.0166	0.8095
732	SLV 16	-4.65	-1.01	65.34	1.7818	19.0412	0.3635
732	CRTFP Ux+	0	0	0	0	0	0
732	CRTFP Ux-	0	0	0	0	0	0
732	CRTFP Uy+	0	0	0	0	0	0
732	CRTFP Uy-	0	0	0	0	0	0
735	SLU 1	1.25	0.07	76.43	11.1454	-0.4619	-0.1888
735	SLU 2	1.25	0.02	76.44	11.1463	-0.4578	-0.1882
735	SLU 3	1.28	0.08	78.19	11.4033	-0.4717	-0.1941
735	SLU 4	1.28	0.05	78.2	11.4038	-0.4693	-0.1938
735	SLU 5	1.27	0.02	77.54	11.3067	-0.464	-0.1915
735	SLU 6	1.31	0.07	79.29	11.5637	-0.4778	-0.1974
735	SLU 7	1.3	0.04	79.3	11.5642	-0.4754	-0.197
735	SLU 8	1.29	0.05	78.63	11.4663	-0.4741	-0.1954
735	SLU 9	1.29	0.03	78.63	11.4668	-0.4717	-0.1951
735	SLU 10	1.32	0.13	86.06	12.5512	-0.5167	-0.1986
735	SLU 11	1.35	0.18	87.82	12.8082	-0.5306	-0.2044
735	SLU 12	1.35	0.16	87.82	12.8087	-0.5281	-0.2041
735	SLU 13	1.34	0.13	87.16	12.7116	-0.5228	-0.2018
735	SLU 14	1.38	0.18	88.92	12.9686	-0.5367	-0.2077
735	SLU 15	1.38	0.15	88.92	12.9691	-0.5343	-0.2074
735	SLU 16	1.36	0.16	88.25	12.8712	-0.533	-0.2057
735	SLU 17	1.36	0.14	88.25	12.8717	-0.5306	-0.2054
735	SLU 18	1.35	0.22	90.17	13.1524	-0.5459	-0.2035
735	SLU 19	1.35	0.2	90.18	13.153	-0.5435	-0.2032
735	SLU 20	1.37	0.22	91.27	13.3129	-0.5521	-0.2068
735	SLU 21	1.37	0.19	91.28	13.3134	-0.5497	-0.2065
735	SLU 22	1.36	0.21	85.84	12.5215	-0.5255	-0.2048
735	SLU 23	1.36	0.17	85.85	12.5224	-0.5215	-0.2042
735	SLU 24	1.39	0.22	87.61	12.7794	-0.5354	-0.2101
735	SLU 25	1.39	0.2	87.62	12.7799	-0.5329	-0.2097
735	SLU 26	1.38	0.16	86.95	12.6828	-0.5276	-0.2075
735	SLU 27	1.41	0.22	88.71	12.9398	-0.5415	-0.2134
735	SLU 28	1.41	0.19	88.72	12.9403	-0.5391	-0.213
735	SLU 29	1.4	0.2	88.04	12.8424	-0.5378	-0.2114
735	SLU 30	1.4	0.18	88.05	12.8429	-0.5354	-0.2111
735	SLU 31	1.43	0.28	95.47	13.9273	-0.5803	-0.2145
735	SLU 32	1.46	0.33	97.23	14.1843	-0.5942	-0.2204
735	SLU 33	1.46	0.31	97.24	14.1848	-0.5918	-0.2201
735	SLU 34	1.45	0.27	96.58	14.0877	-0.5865	-0.2178
735	SLU 35	1.48	0.33	98.33	14.3447	-0.6004	-0.2237
735	SLU 36	1.48	0.3	98.34	14.3452	-0.5979	-0.2233
735	SLU 37	1.47	0.31	97.67	14.2473	-0.5967	-0.2217
735	SLU 38	1.47	0.28	97.67	14.2478	-0.5942	-0.2214
735	SLU 39	1.46	0.37	99.59	14.5285	-0.6096	-0.2195
735	SLU 40	1.46	0.34	99.6	14.5291	-0.6072	-0.2192
735	SLU 41	1.48	0.36	100.69	14.689	-0.6157	-0.2228



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
735	SLU 42	1.48	0.34	100.7	14.6895	-0.6133	-0.2225
735	SLU 43	1.59	0.04	96.13	14.0172	-0.5786	-0.24
735	SLU 44	1.59	-0.01	96.13	14.0181	-0.5745	-0.2394
735	SLU 45	1.62	0.05	97.89	14.2751	-0.5884	-0.2453
735	SLU 46	1.62	0.02	97.9	14.2756	-0.586	-0.2449
735	SLU 47	1.61	-0.01	97.23	14.1785	-0.5807	-0.2427
735	SLU 48	1.64	0.04	98.99	14.4355	-0.5946	-0.2485
735	SLU 49	1.64	0.01	99	14.436	-0.5921	-0.2482
735	SLU 50	1.63	0.02	98.33	14.3381	-0.5909	-0.2466
735	SLU 51	1.63	0	98.33	14.3386	-0.5884	-0.2462
735	SLU 52	1.66	0.1	105.76	15.423	-0.6334	-0.2497
735	SLU 53	1.69	0.15	107.51	15.68	-0.6473	-0.2556
735	SLU 54	1.69	0.13	107.52	15.6805	-0.6449	-0.2552
735	SLU 55	1.68	0.09	106.86	15.5834	-0.6395	-0.253
735	SLU 56	1.71	0.15	108.61	15.8404	-0.6534	-0.2589
735	SLU 57	1.71	0.12	108.62	15.8409	-0.651	-0.2585
735	SLU 58	1.7	0.13	107.95	15.743	-0.6497	-0.2569
735	SLU 59	1.7	0.11	107.95	15.7435	-0.6473	-0.2565
735	SLU 60	1.69	0.19	109.87	16.0243	-0.6627	-0.2547
735	SLU 61	1.69	0.16	109.88	16.0248	-0.6602	-0.2544
735	SLU 62	1.71	0.19	110.97	16.1847	-0.6688	-0.258
735	SLU 63	1.71	0.16	110.98	16.1852	-0.6664	-0.2577
735	SLU 64	1.69	0.18	105.54	15.3933	-0.6423	-0.256
735	SLU 65	1.69	0.14	105.55	15.3942	-0.6382	-0.2554
735	SLU 66	1.73	0.19	107.31	15.6512	-0.6521	-0.2612
735	SLU 67	1.73	0.17	107.31	15.6517	-0.6497	-0.2609
735	SLU 68	1.71	0.13	106.65	15.5546	-0.6444	-0.2587
735	SLU 69	1.75	0.19	108.41	15.8116	-0.6582	-0.2645
735	SLU 70	1.75	0.16	108.41	15.8121	-0.6558	-0.2642
735	SLU 71	1.74	0.17	107.74	15.7142	-0.6545	-0.2626
735	SLU 72	1.74	0.14	107.75	15.7147	-0.6521	-0.2622
735	SLU 73	1.76	0.25	115.17	16.7991	-0.6971	-0.2657
735	SLU 74	1.8	0.3	116.93	17.0561	-0.711	-0.2716
735	SLU 75	1.8	0.27	116.94	17.0566	-0.7085	-0.2712
735	SLU 76	1.79	0.24	116.27	16.9595	-0.7032	-0.269
735	SLU 77	1.82	0.3	118.03	17.2165	-0.7171	-0.2748
735	SLU 78	1.82	0.27	118.04	17.217	-0.7147	-0.2745
735	SLU 79	1.81	0.28	117.37	17.1191	-0.7134	-0.2729
735	SLU 80	1.81	0.25	117.37	17.1196	-0.711	-0.2725
735	SLU 81	1.79	0.34	119.29	17.4004	-0.7263	-0.2707
735	SLU 82	1.79	0.31	119.29	17.4009	-0.7239	-0.2704
735	SLU 83	1.82	0.33	120.39	17.5608	-0.7325	-0.274
735	SLU 84	1.82	0.31	120.39	17.5613	-0.7301	-0.2736
735	SLE RA 1	1.28	0.11	79.12	11.5386	-0.48	-0.1934
735	SLE RA 2	1.28	0.08	79.12	11.5391	-0.4774	-0.193
735	SLE RA 3	1.3	0.12	80.29	11.7105	-0.4866	-0.1969
735	SLE RA 4	1.3	0.1	80.3	11.7108	-0.485	-0.1967
735	SLE RA 5	1.29	0.08	79.86	11.6461	-0.4814	-0.1952
735	SLE RA 6	1.32	0.11	81.03	11.8174	-0.4907	-0.1991
735	SLE RA 7	1.32	0.09	81.03	11.8178	-0.4891	-0.1989
735	SLE RA 8	1.31	0.1	80.58	11.7525	-0.4882	-0.1978
735	SLE RA 9	1.31	0.08	80.59	11.7528	-0.4866	-0.1975
735	SLE RA 10	1.33	0.15	85.54	12.4758	-0.5166	-0.1999
735	SLE RA 11	1.35	0.19	86.71	12.6471	-0.5258	-0.2038
735	SLE RA 12	1.35	0.17	86.71	12.6474	-0.5242	-0.2035
735	SLE RA 13	1.34	0.15	86.27	12.5827	-0.5207	-0.2021
735	SLE RA 14	1.36	0.18	87.44	12.7541	-0.5299	-0.206
735	SLE RA 15	1.36	0.17	87.45	12.7544	-0.5283	-0.2057
735	SLE RA 16	1.36	0.17	87	12.6891	-0.5275	-0.2046
735	SLE RA 17	1.36	0.16	87	12.6895	-0.5259	-0.2044
735	SLE RA 18	1.35	0.21	88.28	12.8766	-0.5361	-0.2032
735	SLE RA 19	1.35	0.19	88.28	12.8769	-0.5345	-0.203
735	SLE RA 20	1.36	0.21	89.01	12.9836	-0.5402	-0.2054
735	SLE RA 21	1.36	0.19	89.02	12.9839	-0.5386	-0.2052
735	SLE FR 1	1.28	0.11	79.12	11.5386	-0.48	-0.1934
735	SLE FR 2	1.28	0.1	79.12	11.5387	-0.4795	-0.1933
735	SLE FR 3	1.29	0.11	79.41	11.5814	-0.4817	-0.1943
735	SLE FR 4	1.3	0.13	81.87	11.9401	-0.4963	-0.1963
735	SLE FR 5	1.31	0.14	82.16	11.9828	-0.4985	-0.1972
735	SLE FR 6	1.31	0.16	83.7	12.2076	-0.5081	-0.1983
735	SLE QP 1	1.28	0.11	79.12	11.5386	-0.48	-0.1934
735	SLE QP 2	1.3	0.14	81.87	11.94	-0.4969	-0.1963
735	SLD 1	7.25	1.45	76.12	11.1064	-0.3794	-1.0734
735	SLD 2	7.19	2.06	76.04	11.0924	-0.3821	-1.0524
735	SLD 3	7.61	-0.75	75.71	11.0416	-0.3215	-1.1251
735	SLD 4	7.54	-0.15	75.63	11.0276	-0.3242	-1.1041
735	SLD 5	2.56	3.77	80.78	11.7907	-0.5489	-0.3848
735	SLD 6	2.52	4.17	80.73	11.7815	-0.5507	-0.371
735	SLD 7	3.74	-3.58	79.41	11.5747	-0.356	-0.5571
735	SLD 8	3.7	-3.18	79.35	11.5655	-0.3578	-0.5433
735	SLD 9	-1.1	3.46	84.38	12.3144	-0.636	0.1506
735	SLD 10	-1.14	3.86	84.33	12.3052	-0.6377	0.1644
735	SLD 11	0.08	-3.89	83	12.0985	-0.443	-0.0217
735	SLD 12	0.04	-3.49	82.95	12.0893	-0.4448	-0.0078
735	SLD 13	-4.94	0.43	88.11	12.8524	-0.6695	0.7114
735	SLD 14	-5.01	1.03	88.02	12.8383	-0.6722	0.7325
735	SLD 15	-4.59	-1.78	87.69	12.7876	-0.6116	0.6597
735	SLD 16	-4.65	-1.17	87.61	12.7736	-0.6143	0.6808
735	SLV 1	15.23	3.13	68.42	9.988	-0.2203	-2.2485
735	SLV 2	15.08	4.54	68.22	9.9554	-0.2266	-2.1994



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
735	SLV 3	16.05	-1.87	67.45	9.8374	-0.0893	-2.3689
735	SLV 4	15.9	-0.46	67.26	9.8047	-0.0956	-2.3199
735	SLV 5	4.26	8.36	79.33	11.5885	-0.6115	-0.6378
735	SLV 6	4.16	9.28	79.2	11.5674	-0.6156	-0.6061
735	SLV 7	7	-8.28	76.11	11.0864	-0.1748	-1.0393
735	SLV 8	6.9	-7.37	75.99	11.0653	-0.1789	-1.0076
735	SLV 9	-4.3	7.65	87.74	12.8147	-0.8148	0.6149
735	SLV 10	-4.4	8.56	87.62	12.7936	-0.8189	0.6466
735	SLV 11	-1.56	-9	84.53	12.3125	-0.3782	0.2134
735	SLV 12	-1.66	-8.08	84.41	12.2915	-0.3822	0.2451
735	SLV 13	-13.3	0.74	96.47	14.0752	-0.8981	1.9272
735	SLV 14	-13.45	2.15	96.28	14.0426	-0.9044	1.9763
735	SLV 15	-12.48	-4.26	95.51	13.9246	-0.7671	1.8068
735	SLV 16	-12.63	-2.85	95.32	13.8919	-0.7734	1.8558
735	CRTFP Ux+	0	0	0	0	0	0
735	CRTFP Ux-	0	0	0	0	0	0
735	CRTFP Uy+	0	0	0	0	0	0
735	CRTFP Uy-	0	0	0	0	0	0
738	SLU 1	0.74	0.46	42.43	-0.0582	11.9351	-0.1576
738	SLU 2	0.74	0.43	42.44	-0.0582	11.9381	-0.1498
738	SLU 3	0.76	0.47	43.43	-0.0596	12.2099	-0.1608
738	SLU 4	0.76	0.45	43.44	-0.0596	12.2117	-0.1561
738	SLU 5	0.75	0.43	43.07	-0.0591	12.1105	-0.1497
738	SLU 6	0.77	0.47	44.06	-0.0606	12.3823	-0.1608
738	SLU 7	0.78	0.45	44.07	-0.0606	12.3841	-0.1561
738	SLU 8	0.77	0.46	43.69	-0.0601	12.2798	-0.1575
738	SLU 9	0.77	0.44	43.7	-0.0601	12.2817	-0.1528
738	SLU 10	0.78	0.57	47.43	-0.0655	13.3384	-0.1966
738	SLU 11	0.8	0.6	48.42	-0.067	13.6101	-0.2077
738	SLU 12	0.8	0.59	48.43	-0.067	13.612	-0.203
738	SLU 13	0.79	0.57	48.06	-0.0665	13.5108	-0.1966
738	SLU 14	0.81	0.6	49.05	-0.0679	13.7825	-0.2076
738	SLU 15	0.81	0.59	49.06	-0.068	13.7844	-0.2029
738	SLU 16	0.81	0.59	48.68	-0.0674	13.6801	-0.2044
738	SLU 17	0.81	0.58	48.68	-0.0674	13.6819	-0.1997
738	SLU 18	0.79	0.65	49.56	-0.0686	13.9354	-0.2246
738	SLU 19	0.79	0.64	49.57	-0.0687	13.9373	-0.2199
738	SLU 20	0.81	0.65	50.19	-0.0696	14.1078	-0.2245
738	SLU 21	0.81	0.64	50.19	-0.0696	14.1097	-0.2198
738	SLU 22	0.8	0.58	47.42	-0.0653	13.3272	-0.199
738	SLU 23	0.8	0.55	47.43	-0.0654	13.3302	-0.1912
738	SLU 24	0.82	0.59	48.42	-0.0668	13.602	-0.2022
738	SLU 25	0.82	0.57	48.42	-0.0668	13.6038	-0.1975
738	SLU 26	0.81	0.55	48.06	-0.0663	13.5026	-0.1911
738	SLU 27	0.83	0.59	49.04	-0.0678	13.7744	-0.2021
738	SLU 28	0.83	0.57	49.05	-0.0678	13.7762	-0.1974
738	SLU 29	0.83	0.58	48.67	-0.0673	13.6719	-0.1989
738	SLU 30	0.83	0.56	48.68	-0.0673	13.6738	-0.1942
738	SLU 31	0.84	0.69	52.42	-0.0727	14.7305	-0.238
738	SLU 32	0.86	0.72	53.41	-0.0741	15.0022	-0.249
738	SLU 33	0.86	0.71	53.41	-0.0742	15.0041	-0.2443
738	SLU 34	0.85	0.69	53.04	-0.0737	14.9029	-0.238
738	SLU 35	0.87	0.72	54.03	-0.0751	15.1746	-0.249
738	SLU 36	0.87	0.71	54.04	-0.0751	15.1764	-0.2443
738	SLU 37	0.86	0.71	53.66	-0.0746	15.0722	-0.2457
738	SLU 38	0.86	0.7	53.67	-0.0746	15.074	-0.241
738	SLU 39	0.85	0.77	54.54	-0.0758	15.3275	-0.2659
738	SLU 40	0.85	0.75	54.55	-0.0758	15.3294	-0.2612
738	SLU 41	0.86	0.77	55.17	-0.0768	15.4999	-0.2659
738	SLU 42	0.87	0.75	55.18	-0.0768	15.5017	-0.2612
738	SLU 43	0.94	0.55	53.45	-0.0731	15.0383	-0.1908
738	SLU 44	0.94	0.53	53.47	-0.0732	15.0414	-0.1829
738	SLU 45	0.96	0.56	54.45	-0.0746	15.3131	-0.1939
738	SLU 46	0.96	0.55	54.46	-0.0746	15.315	-0.1892
738	SLU 47	0.96	0.53	54.09	-0.0741	15.2138	-0.1829
738	SLU 48	0.98	0.56	55.08	-0.0756	15.4855	-0.1939
738	SLU 49	0.98	0.55	55.09	-0.0756	15.4873	-0.1892
738	SLU 50	0.97	0.55	54.71	-0.0751	15.3831	-0.1906
738	SLU 51	0.97	0.54	54.72	-0.0751	15.3849	-0.1859
738	SLU 52	0.98	0.67	58.45	-0.0805	16.4416	-0.2298
738	SLU 53	1	0.7	59.44	-0.082	16.7134	-0.2408
738	SLU 54	1	0.68	59.45	-0.082	16.7152	-0.2361
738	SLU 55	0.99	0.67	59.08	-0.0815	16.614	-0.2297
738	SLU 56	1.01	0.7	60.07	-0.0829	16.8858	-0.2407
738	SLU 57	1.02	0.68	60.08	-0.0829	16.8876	-0.236
738	SLU 58	1.01	0.69	59.7	-0.0824	16.7833	-0.2375
738	SLU 59	1.01	0.67	59.7	-0.0824	16.7852	-0.2328
738	SLU 60	1	0.75	60.58	-0.0836	17.0387	-0.2577
738	SLU 61	1	0.73	60.59	-0.0837	17.0405	-0.253
738	SLU 62	1.01	0.75	61.21	-0.0846	17.2111	-0.2576
738	SLU 63	1.01	0.73	61.22	-0.0846	17.2129	-0.2529
738	SLU 64	1	0.67	58.44	-0.0803	16.4304	-0.2321
738	SLU 65	1	0.65	58.45	-0.0803	16.4335	-0.2243
738	SLU 66	1.02	0.68	59.44	-0.0818	16.7052	-0.2353
738	SLU 67	1.02	0.67	59.45	-0.0818	16.7071	-0.2306
738	SLU 68	1.01	0.65	59.08	-0.0813	16.6058	-0.2242
738	SLU 69	1.03	0.68	60.07	-0.0828	16.8776	-0.2353
738	SLU 70	1.03	0.67	60.07	-0.0828	16.8794	-0.2306
738	SLU 71	1.03	0.67	59.69	-0.0822	16.7752	-0.232
738	SLU 72	1.03	0.66	59.7	-0.0823	16.777	-0.2273



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
738	SLU 73	1.04	0.78	63.44	-0.0877	17.8337	-0.2711
738	SLU 74	1.06	0.82	64.43	-0.0891	18.1055	-0.2822
738	SLU 75	1.06	0.8	64.43	-0.0892	18.1073	-0.2775
738	SLU 76	1.05	0.78	64.07	-0.0887	18.0061	-0.2711
738	SLU 77	1.07	0.82	65.05	-0.0901	18.2778	-0.2821
738	SLU 78	1.07	0.8	65.06	-0.0901	18.2797	-0.2774
738	SLU 79	1.06	0.81	64.68	-0.0896	18.1754	-0.2789
738	SLU 80	1.07	0.79	64.69	-0.0896	18.1772	-0.2742
738	SLU 81	1.05	0.86	65.56	-0.0908	18.4308	-0.299
738	SLU 82	1.05	0.85	65.57	-0.0908	18.4326	-0.2943
738	SLU 83	1.07	0.86	66.19	-0.0918	18.6031	-0.299
738	SLU 84	1.07	0.85	66.2	-0.0918	18.605	-0.2943
738	SLE RA 1	0.76	0.49	43.86	-0.0602	12.3328	-0.1695
738	SLE RA 2	0.76	0.48	43.86	-0.0602	12.3349	-0.1642
738	SLE RA 3	0.77	0.5	44.52	-0.0612	12.516	-0.1716
738	SLE RA 4	0.77	0.49	44.53	-0.0612	12.5173	-0.1685
738	SLE RA 5	0.77	0.48	44.28	-0.0609	12.4498	-0.1642
738	SLE RA 6	0.78	0.5	44.94	-0.0618	12.6309	-0.1716
738	SLE RA 7	0.78	0.49	44.95	-0.0618	12.6322	-0.1684
738	SLE RA 8	0.77	0.49	44.69	-0.0615	12.5627	-0.1694
738	SLE RA 9	0.78	0.48	44.7	-0.0615	12.5639	-0.1663
738	SLE RA 10	0.78	0.57	47.19	-0.0651	13.2684	-0.1955
738	SLE RA 11	0.8	0.59	47.85	-0.0661	13.4495	-0.2028
738	SLE RA 12	0.8	0.58	47.85	-0.0661	13.4508	-0.1997
738	SLE RA 13	0.79	0.57	47.61	-0.0658	13.3833	-0.1954
738	SLE RA 14	0.8	0.59	48.27	-0.0667	13.5644	-0.2028
738	SLE RA 15	0.8	0.58	48.27	-0.0667	13.5657	-0.1996
738	SLE RA 16	0.8	0.58	48.02	-0.0664	13.4962	-0.2006
738	SLE RA 17	0.8	0.57	48.02	-0.0664	13.4974	-0.1975
738	SLE RA 18	0.79	0.62	48.61	-0.0672	13.6664	-0.2141
738	SLE RA 19	0.79	0.61	48.61	-0.0672	13.6676	-0.2109
738	SLE RA 20	0.8	0.62	49.03	-0.0678	13.7813	-0.214
738	SLE RA 21	0.8	0.61	49.03	-0.0679	13.7825	-0.2109
738	SLE FR 1	0.76	0.49	43.86	-0.0602	12.3328	-0.1695
738	SLE FR 2	0.76	0.49	43.86	-0.0602	12.3332	-0.1684
738	SLE FR 3	0.76	0.49	44.02	-0.0605	12.3788	-0.1694
738	SLE FR 4	0.77	0.53	45.28	-0.0623	12.7333	-0.1818
738	SLE FR 5	0.77	0.53	45.45	-0.0626	12.7789	-0.1828
738	SLE FR 6	0.77	0.56	46.23	-0.0637	12.9996	-0.1918
738	SLE QP 1	0.76	0.49	43.86	-0.0602	12.3328	-0.1695
738	SLE QP 2	0.77	0.53	45.28	-0.0623	12.7329	-0.1828
738	SLD 1	3.32	0.62	33.31	-0.0444	9.7657	-0.2136
738	SLD 2	3.25	1.26	33.28	-0.0457	9.7778	-0.437
738	SLD 3	3.51	-0.86	33.98	-0.0424	9.5848	0.3023
738	SLD 4	3.44	-0.22	33.95	-0.0437	9.5969	0.0789
738	SLD 5	1.25	2.68	40.68	-0.0598	12.115	-0.9346
738	SLD 6	1.21	3.11	40.66	-0.0607	12.123	-1.0814
738	SLD 7	1.89	-2.24	42.91	-0.053	11.5119	0.785
738	SLD 8	1.85	-1.82	42.89	-0.0538	11.5199	0.6382
738	SLD 9	-0.32	2.88	47.67	-0.0707	13.9459	-1.0039
738	SLD 10	-0.36	3.3	47.65	-0.0716	13.9539	-1.1507
738	SLD 11	0.32	-2.05	49.91	-0.0639	13.3428	0.7157
738	SLD 12	0.28	-1.62	49.88	-0.0648	13.3508	0.5689
738	SLD 13	-1.91	1.28	56.62	-0.0809	15.8689	-0.4446
738	SLD 14	-1.98	1.92	56.58	-0.0822	15.881	-0.668
738	SLD 15	-1.72	-0.2	57.29	-0.0789	15.688	0.0713
738	SLD 16	-1.79	0.44	57.25	-0.0802	15.7001	-0.1521
738	SLV 1	6.74	0.69	17.26	-0.0204	5.7871	-0.2372
738	SLV 2	6.58	2.18	17.18	-0.0234	5.8154	-0.7575
738	SLV 3	7.18	-2.66	18.83	-0.0157	5.3646	0.9311
738	SLV 4	7.03	-1.17	18.75	-0.0188	5.3929	0.4109
738	SLV 5	1.91	5.4	34.51	-0.0563	11.2851	-1.8812
738	SLV 6	1.81	6.36	34.46	-0.0583	11.3034	-2.2172
738	SLV 7	3.39	-5.76	39.73	-0.0407	9.8767	2.0133
738	SLV 8	3.29	-4.8	39.68	-0.0427	9.895	1.6773
738	SLV 9	-1.76	5.86	50.88	-0.0819	15.5708	-2.043
738	SLV 10	-1.86	6.82	50.83	-0.0839	15.5891	-2.379
738	SLV 11	-0.28	-5.3	56.1	-0.0663	14.1624	1.8515
738	SLV 12	-0.38	-4.34	56.05	-0.0683	14.1807	1.5155
738	SLV 13	-5.49	2.23	71.82	-0.1058	20.0729	-0.7766
738	SLV 14	-5.65	3.72	71.74	-0.1089	20.1012	-1.2968
738	SLV 15	-5.05	-1.12	73.38	-0.1012	19.6504	0.3918
738	SLV 16	-5.21	0.37	73.3	-0.1042	19.6787	-0.1285
738	CRTFP Ux+	0	0	0	0	0	0
738	CRTFP Ux-	0	0	0	0	0	0
738	CRTFP Uy+	0	0	0	0	0	0
738	CRTFP Uy-	0	0	0	0	0	0
740	SLU 1	0.55	2.07	92.83	-12.3417	-2.1459	0.143
740	SLU 2	0.54	2	92.77	-12.3366	-2.1413	0.1411
740	SLU 3	0.57	2.16	94.93	-12.6199	-2.1904	0.1479
740	SLU 4	0.56	2.11	94.89	-12.6169	-2.1876	0.1467
740	SLU 5	0.55	2.03	94.09	-12.5109	-2.1676	0.1436
740	SLU 6	0.58	2.19	96.25	-12.7942	-2.2167	0.1504
740	SLU 7	0.58	2.15	96.21	-12.7912	-2.2139	0.1492
740	SLU 8	0.58	2.14	95.47	-12.6903	-2.1985	0.1481
740	SLU 9	0.57	2.09	95.43	-12.6872	-2.1957	0.1469
740	SLU 10	0.59	2.25	105.45	-14.0032	-2.419	0.1536
740	SLU 11	0.62	2.41	107.61	-14.2865	-2.4681	0.1604
740	SLU 12	0.61	2.37	107.57	-14.2835	-2.4654	0.1592
740	SLU 13	0.6	2.28	106.77	-14.1775	-2.4453	0.1561





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
740	SLU 14	0.63	2.45	108.93	-14.4608	-2.4944	0.1629
740	SLU 15	0.63	2.4	108.89	-14.4577	-2.4917	0.1617
740	SLU 16	0.63	2.39	108.16	-14.3568	-2.4763	0.1605
740	SLU 17	0.62	2.35	108.12	-14.3538	-2.4735	0.1594
740	SLU 18	0.62	2.44	110.95	-14.7225	-2.5427	0.1609
740	SLU 19	0.61	2.39	110.91	-14.7195	-2.5399	0.1597
740	SLU 20	0.64	2.47	112.27	-14.8968	-2.569	0.1634
740	SLU 21	0.63	2.42	112.23	-14.8938	-2.5662	0.1622
740	SLU 22	0.62	2.47	104.68	-13.887	-2.4234	0.1617
740	SLU 23	0.61	2.39	104.61	-13.8819	-2.4188	0.1597
740	SLU 24	0.64	2.55	106.77	-14.1652	-2.4679	0.1665
740	SLU 25	0.63	2.51	106.73	-14.1622	-2.4651	0.1654
740	SLU 26	0.62	2.42	105.93	-14.0562	-2.4451	0.1622
740	SLU 27	0.65	2.59	108.09	-14.3395	-2.4942	0.1691
740	SLU 28	0.65	2.54	108.05	-14.3365	-2.4915	0.1679
740	SLU 29	0.65	2.53	107.32	-14.2356	-2.4761	0.1667
740	SLU 30	0.64	2.49	107.28	-14.2325	-2.4733	0.1655
740	SLU 31	0.66	2.64	117.3	-15.5485	-2.6966	0.1722
740	SLU 32	0.69	2.8	119.45	-15.8318	-2.7457	0.179
740	SLU 33	0.68	2.76	119.41	-15.8287	-2.7429	0.1778
740	SLU 34	0.67	2.67	118.62	-15.7228	-2.7229	0.1747
740	SLU 35	0.7	2.84	120.77	-16.0061	-2.772	0.1815
740	SLU 36	0.7	2.79	120.73	-16.003	-2.7692	0.1804
740	SLU 37	0.7	2.79	120	-15.9021	-2.7538	0.1792
740	SLU 38	0.69	2.74	119.96	-15.8991	-2.7511	0.178
740	SLU 39	0.69	2.83	122.79	-16.2678	-2.8202	0.1795
740	SLU 40	0.68	2.78	122.76	-16.2648	-2.8174	0.1783
740	SLU 41	0.71	2.86	124.11	-16.4421	-2.8465	0.182
740	SLU 42	0.7	2.81	124.08	-16.439	-2.8438	0.1808
740	SLU 43	0.69	2.56	116.62	-15.5144	-2.6945	0.1796
740	SLU 44	0.68	2.48	116.56	-15.5093	-2.6899	0.1776
740	SLU 45	0.71	2.65	118.72	-15.7926	-2.739	0.1844
740	SLU 46	0.7	2.6	118.68	-15.7896	-2.7362	0.1833
740	SLU 47	0.69	2.52	117.88	-15.6836	-2.7162	0.1801
740	SLU 48	0.73	2.68	120.04	-15.9669	-2.7653	0.1869
740	SLU 49	0.72	2.63	120	-15.9639	-2.7625	0.1858
740	SLU 50	0.72	2.63	119.26	-15.863	-2.7471	0.1846
740	SLU 51	0.71	2.58	119.22	-15.8599	-2.7443	0.1834
740	SLU 52	0.73	2.74	129.24	-17.1759	-2.9676	0.1901
740	SLU 53	0.76	2.9	131.4	-17.4592	-3.0167	0.1969
740	SLU 54	0.75	2.85	131.36	-17.4562	-3.0139	0.1957
740	SLU 55	0.74	2.77	130.56	-17.3502	-2.9939	0.1926
740	SLU 56	0.78	2.93	132.72	-17.6335	-3.043	0.1994
740	SLU 57	0.77	2.89	132.68	-17.6304	-3.0403	0.1982
740	SLU 58	0.77	2.88	131.94	-17.5295	-3.0249	0.1971
740	SLU 59	0.76	2.84	131.91	-17.5265	-3.0221	0.1959
740	SLU 60	0.76	2.92	134.74	-17.8952	-3.0912	0.1974
740	SLU 61	0.76	2.88	134.7	-17.8922	-3.0885	0.1962
740	SLU 62	0.78	2.96	136.06	-18.0695	-3.1176	0.1999
740	SLU 63	0.77	2.91	136.02	-18.0664	-3.1148	0.1987
740	SLU 64	0.76	2.95	128.47	-17.0597	-2.972	0.1982
740	SLU 65	0.75	2.88	128.4	-17.0546	-2.9674	0.1963
740	SLU 66	0.78	3.04	130.56	-17.3379	-3.0165	0.2031
740	SLU 67	0.77	2.99	130.52	-17.3349	-3.0137	0.2019
740	SLU 68	0.76	2.91	129.72	-17.2289	-2.9937	0.1988
740	SLU 69	0.79	3.07	131.88	-17.5122	-3.0428	0.2056
740	SLU 70	0.79	3.03	131.84	-17.5091	-3.0401	0.2044
740	SLU 71	0.79	3.02	131.11	-17.4083	-3.0247	0.2032
740	SLU 72	0.78	2.97	131.07	-17.4052	-3.0219	0.2021
740	SLU 73	0.8	3.13	141.09	-18.7212	-3.2452	0.2087
740	SLU 74	0.83	3.29	143.24	-19.0045	-3.2943	0.2155
740	SLU 75	0.82	3.25	143.2	-19.0014	-3.2915	0.2144
740	SLU 76	0.81	3.16	142.4	-18.8954	-3.2715	0.2112
740	SLU 77	0.85	3.33	144.56	-19.1788	-3.3206	0.2181
740	SLU 78	0.84	3.28	144.52	-19.1757	-3.3178	0.2169
740	SLU 79	0.84	3.27	143.79	-19.0748	-3.3024	0.2157
740	SLU 80	0.83	3.23	143.75	-19.0718	-3.2996	0.2145
740	SLU 81	0.83	3.32	146.58	-19.4405	-3.3688	0.216
740	SLU 82	0.83	3.27	146.55	-19.4375	-3.366	0.2149
740	SLU 83	0.85	3.35	147.9	-19.6148	-3.3951	0.2185
740	SLU 84	0.84	3.3	147.87	-19.6117	-3.3924	0.2174
740	SLE RA 1	0.57	2.19	96.22	-12.7832	-2.2252	0.1484
740	SLE RA 2	0.56	2.13	96.17	-12.7798	-2.2221	0.1471
740	SLE RA 3	0.58	2.24	97.61	-12.9687	-2.2548	0.1516
740	SLE RA 4	0.58	2.21	97.59	-12.9667	-2.253	0.1508
740	SLE RA 5	0.57	2.16	97.05	-12.896	-2.2396	0.1487
740	SLE RA 6	0.59	2.27	98.49	-13.0849	-2.2724	0.1533
740	SLE RA 7	0.59	2.23	98.47	-13.0829	-2.2705	0.1525
740	SLE RA 8	0.59	2.23	97.98	-13.0156	-2.2603	0.1517
740	SLE RA 9	0.58	2.2	97.95	-13.0135	-2.2584	0.1509
740	SLE RA 10	0.6	2.3	104.63	-13.8909	-2.4073	0.1554
740	SLE RA 11	0.62	2.41	106.07	-14.0798	-2.44	0.1599
740	SLE RA 12	0.61	2.38	106.04	-14.0777	-2.4382	0.1591
740	SLE RA 13	0.6	2.33	105.51	-14.0071	-2.4248	0.1571
740	SLE RA 14	0.63	2.43	106.95	-14.1959	-2.4575	0.1616
740	SLE RA 15	0.62	2.4	106.92	-14.1939	-2.4557	0.1608
740	SLE RA 16	0.62	2.4	106.43	-14.1266	-2.4454	0.16
740	SLE RA 17	0.62	2.37	106.41	-14.1246	-2.4436	0.1592
740	SLE RA 18	0.62	2.43	108.3	-14.3704	-2.4897	0.1603
740	SLE RA 19	0.61	2.4	108.27	-14.3684	-2.4878	0.1595



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
740	SLE RA 20	0.63	2.45	109.18	-14.4866	-2.5072	0.1619
740	SLE RA 21	0.62	2.42	109.15	-14.4846	-2.5054	0.1611
740	SLE FR 1	0.57	2.19	96.22	-12.7832	-2.2252	0.1484
740	SLE FR 2	0.57	2.18	96.21	-12.7825	-2.2245	0.1481
740	SLE FR 3	0.57	2.2	96.57	-12.8297	-2.2322	0.149
740	SLE FR 4	0.58	2.25	99.83	-13.2587	-2.3039	0.1517
740	SLE FR 5	0.59	2.27	100.19	-13.3059	-2.3115	0.1526
740	SLE FR 6	0.59	2.31	102.26	-13.5768	-2.3574	0.1543
740	SLE QP 1	0.57	2.19	96.22	-12.7832	-2.2252	0.1484
740	SLE QP 2	0.58	2.26	99.84	-13.2594	-2.3045	0.1519
740	SLD 1	8.69	3.13	97.41	-12.947	-1.9569	1.2257
740	SLD 2	8.57	3.41	97.55	-12.9607	-1.9601	1.2315
740	SLD 3	8.24	0.13	96.73	-12.8952	-1.8769	1.133
740	SLD 4	8.11	0.4	96.87	-12.909	-1.8801	1.1389
740	SLD 5	3.73	7.03	100.11	-13.2417	-2.3209	0.6135
740	SLD 6	3.64	7.21	100.21	-13.2507	-2.323	0.6174
740	SLD 7	2.22	-2.99	97.85	-13.0692	-2.0544	0.3047
740	SLD 8	2.13	-2.81	97.94	-13.0782	-2.0565	0.3086
740	SLD 9	-0.97	7.32	101.74	-13.4405	-2.5525	-0.0047
740	SLD 10	-1.05	7.5	101.83	-13.4495	-2.5546	-0.0009
740	SLD 11	-2.48	-2.69	99.48	-13.2681	-2.286	-0.3135
740	SLD 12	-2.56	-2.51	99.57	-13.2771	-2.2881	-0.3096
740	SLD 13	-6.95	4.11	102.81	-13.6098	-2.7289	-0.835
740	SLD 14	-7.07	4.39	102.95	-13.6235	-2.7321	-0.8292
740	SLD 15	-7.4	1.11	102.14	-13.5581	-2.649	-0.9277
740	SLD 16	-7.52	1.38	102.27	-13.5718	-2.6522	-0.9218
740	SLV 1	19.55	4.19	94.11	-12.5263	-1.4884	2.6615
740	SLV 2	19.26	4.83	94.43	-12.5583	-1.4958	2.6752
740	SLV 3	18.5	-2.61	92.57	-12.4071	-1.3067	2.4496
740	SLV 4	18.21	-1.97	92.89	-12.439	-1.3141	2.4632
740	SLV 5	7.93	13.04	100.4	-13.2148	-2.3339	1.2239
740	SLV 6	7.74	13.46	100.61	-13.2354	-2.3387	1.2327
740	SLV 7	4.41	-9.63	95.26	-12.8173	-1.7284	0.5174
740	SLV 8	4.22	-9.21	95.47	-12.8379	-1.7332	0.5262
740	SLV 9	-3.05	13.73	104.21	-13.6808	-2.8759	-0.2223
740	SLV 10	-3.24	14.14	104.42	-13.7014	-2.8807	-0.2135
740	SLV 11	-6.57	-8.94	99.07	-13.2833	-2.2703	-0.9289
740	SLV 12	-6.76	-8.53	99.28	-13.3039	-2.2751	-0.9201
740	SLV 13	-17.04	6.49	106.79	-14.0797	-3.2949	-2.1593
740	SLV 14	-17.33	7.13	107.11	-14.1117	-3.3023	-2.1457
740	SLV 15	-18.09	-0.31	105.25	-13.9605	-3.1132	-2.3713
740	SLV 16	-18.38	0.33	105.57	-13.9924	-3.1207	-2.3577
740	CRTFP Ux+	0	0	0	0	0	0
740	CRTFP Ux-	0	0	0	0	0	0
740	CRTFP Uy+	0	0	0	0	0	0
740	CRTFP Uy-	0	0	0	0	0	0
743	SLU 1	0.67	0.46	40.51	-0.0678	10.2281	-0.1599
743	SLU 2	0.67	0.44	40.52	-0.0678	10.2306	-0.152
743	SLU 3	0.69	0.47	41.46	-0.0695	10.4593	-0.1631
743	SLU 4	0.69	0.46	41.47	-0.0695	10.4609	-0.1584
743	SLU 5	0.69	0.44	41.11	-0.0689	10.3756	-0.1519
743	SLU 6	0.7	0.47	42.05	-0.0706	10.6042	-0.1631
743	SLU 7	0.71	0.46	42.06	-0.0706	10.6058	-0.1584
743	SLU 8	0.7	0.46	41.7	-0.07	10.5179	-0.1599
743	SLU 9	0.7	0.45	41.71	-0.07	10.5194	-0.1551
743	SLU 10	0.71	0.58	45.26	-0.0765	11.4144	-0.1991
743	SLU 11	0.72	0.61	46.2	-0.0782	11.6431	-0.2103
743	SLU 12	0.72	0.59	46.21	-0.0782	11.6446	-0.2055
743	SLU 13	0.72	0.58	45.86	-0.0776	11.5593	-0.1991
743	SLU 14	0.74	0.61	46.8	-0.0793	11.788	-0.2103
743	SLU 15	0.74	0.59	46.81	-0.0793	11.7895	-0.2055
743	SLU 16	0.73	0.6	46.44	-0.0787	11.7017	-0.207
743	SLU 17	0.73	0.58	46.45	-0.0787	11.7032	-0.2023
743	SLU 18	0.72	0.66	47.28	-0.0801	11.9192	-0.2273
743	SLU 19	0.72	0.64	47.29	-0.0802	11.9207	-0.2225
743	SLU 20	0.73	0.66	47.88	-0.0813	12.0641	-0.2273
743	SLU 21	0.73	0.64	47.89	-0.0813	12.0656	-0.2225
743	SLU 22	0.72	0.58	45.25	-0.0763	11.4047	-0.2015
743	SLU 23	0.72	0.56	45.26	-0.0763	11.4072	-0.1936
743	SLU 24	0.74	0.59	46.2	-0.078	11.6359	-0.2048
743	SLU 25	0.74	0.58	46.21	-0.078	11.6375	-0.2
743	SLU 26	0.74	0.56	45.86	-0.0774	11.5522	-0.1936
743	SLU 27	0.76	0.59	46.8	-0.0791	11.7808	-0.2047
743	SLU 28	0.76	0.58	46.81	-0.0791	11.7824	-0.2
743	SLU 29	0.75	0.58	46.44	-0.0785	11.6945	-0.2015
743	SLU 30	0.75	0.57	46.45	-0.0785	11.696	-0.1967
743	SLU 31	0.76	0.69	50.01	-0.0849	12.591	-0.2408
743	SLU 32	0.77	0.73	50.95	-0.0866	12.8197	-0.2519
743	SLU 33	0.78	0.71	50.95	-0.0867	12.8212	-0.2472
743	SLU 34	0.77	0.69	50.6	-0.0861	12.7359	-0.2407
743	SLU 35	0.79	0.73	51.54	-0.0878	12.9646	-0.2519
743	SLU 36	0.79	0.71	51.55	-0.0878	12.9661	-0.2471
743	SLU 37	0.78	0.72	51.19	-0.0872	12.8783	-0.2486
743	SLU 38	0.78	0.7	51.19	-0.0872	12.8798	-0.2439
743	SLU 39	0.77	0.78	52.03	-0.0886	13.0958	-0.2689
743	SLU 40	0.77	0.76	52.03	-0.0886	13.0973	-0.2641
743	SLU 41	0.78	0.78	52.62	-0.0897	13.2407	-0.2689
743	SLU 42	0.78	0.76	52.63	-0.0898	13.2422	-0.2641
743	SLU 43	0.86	0.56	51.03	-0.0852	12.8931	-0.1936
743	SLU 44	0.86	0.54	51.04	-0.0852	12.8957	-0.1857



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
743	SLU 45	0.88	0.57	51.98	-0.0869	13.1243	-0.1968
743	SLU 46	0.88	0.56	51.99	-0.0869	13.1259	-0.1921
743	SLU 47	0.87	0.54	51.64	-0.0863	13.0406	-0.1857
743	SLU 48	0.89	0.57	52.58	-0.088	13.2692	-0.1968
743	SLU 49	0.89	0.56	52.59	-0.0881	13.2708	-0.1921
743	SLU 50	0.88	0.56	52.22	-0.0874	13.1829	-0.1936
743	SLU 51	0.88	0.55	52.23	-0.0875	13.1845	-0.1888
743	SLU 52	0.89	0.67	55.79	-0.0939	14.0794	-0.2328
743	SLU 53	0.91	0.71	56.73	-0.0956	14.3081	-0.244
743	SLU 54	0.91	0.69	56.74	-0.0956	14.3096	-0.2393
743	SLU 55	0.9	0.67	56.38	-0.095	14.2243	-0.2328
743	SLU 56	0.92	0.71	57.32	-0.0967	14.453	-0.244
743	SLU 57	0.92	0.69	57.33	-0.0967	14.4546	-0.2392
743	SLU 58	0.92	0.7	56.97	-0.0961	14.3667	-0.2407
743	SLU 59	0.92	0.68	56.97	-0.0961	14.3682	-0.236
743	SLU 60	0.9	0.75	57.81	-0.0976	14.5842	-0.261
743	SLU 61	0.9	0.74	57.82	-0.0976	14.5857	-0.2562
743	SLU 62	0.92	0.75	58.4	-0.0987	14.7291	-0.261
743	SLU 63	0.92	0.74	58.41	-0.0987	14.7306	-0.2562
743	SLU 64	0.91	0.68	55.78	-0.0937	14.0697	-0.2352
743	SLU 65	0.91	0.66	55.79	-0.0937	14.0723	-0.2273
743	SLU 66	0.93	0.69	56.73	-0.0954	14.3009	-0.2385
743	SLU 67	0.93	0.68	56.74	-0.0954	14.3025	-0.2337
743	SLU 68	0.92	0.66	56.38	-0.0948	14.2172	-0.2273
743	SLU 69	0.94	0.69	57.32	-0.0965	14.4458	-0.2384
743	SLU 70	0.94	0.68	57.33	-0.0965	14.4474	-0.2337
743	SLU 71	0.93	0.68	56.97	-0.0959	14.3595	-0.2352
743	SLU 72	0.93	0.67	56.97	-0.0959	14.3611	-0.2304
743	SLU 73	0.94	0.79	60.53	-0.1024	15.256	-0.2745
743	SLU 74	0.96	0.82	61.47	-0.1041	15.4847	-0.2856
743	SLU 75	0.96	0.81	61.48	-0.1041	15.4862	-0.2809
743	SLU 76	0.95	0.79	61.13	-0.1035	15.4009	-0.2744
743	SLU 77	0.97	0.82	62.07	-0.1052	15.6296	-0.2856
743	SLU 78	0.97	0.81	62.07	-0.1052	15.6312	-0.2808
743	SLU 79	0.97	0.82	61.71	-0.1046	15.5433	-0.2824
743	SLU 80	0.97	0.8	61.72	-0.1046	15.5448	-0.2776
743	SLU 81	0.95	0.87	62.55	-0.1061	15.7608	-0.3026
743	SLU 82	0.95	0.86	62.56	-0.1061	15.7623	-0.2979
743	SLU 83	0.97	0.87	63.15	-0.1072	15.9057	-0.3026
743	SLU 84	0.97	0.86	63.16	-0.1072	15.9072	-0.2978
743	SLE RA 1	0.69	0.5	41.86	-0.0702	10.5642	-0.1718
743	SLE RA 2	0.69	0.48	41.87	-0.0702	10.566	-0.1665
743	SLE RA 3	0.7	0.5	42.5	-0.0713	10.7184	-0.174
743	SLE RA 4	0.7	0.49	42.5	-0.0714	10.7194	-0.1708
743	SLE RA 5	0.7	0.48	42.27	-0.071	10.6626	-0.1665
743	SLE RA 6	0.71	0.5	42.89	-0.0721	10.815	-0.1739
743	SLE RA 7	0.71	0.49	42.9	-0.0721	10.816	-0.1708
743	SLE RA 8	0.7	0.5	42.66	-0.0717	10.7574	-0.1718
743	SLE RA 9	0.71	0.49	42.66	-0.0717	10.7585	-0.1686
743	SLE RA 10	0.71	0.57	45.03	-0.076	11.3551	-0.198
743	SLE RA 11	0.72	0.59	45.66	-0.0771	11.5076	-0.2054
743	SLE RA 12	0.72	0.58	45.66	-0.0771	11.5086	-0.2022
743	SLE RA 13	0.72	0.57	45.43	-0.0767	11.4517	-0.1979
743	SLE RA 14	0.73	0.59	46.06	-0.0779	11.6042	-0.2054
743	SLE RA 15	0.73	0.58	46.06	-0.0779	11.6052	-0.2022
743	SLE RA 16	0.73	0.59	45.82	-0.0775	11.5466	-0.2032
743	SLE RA 17	0.73	0.58	45.82	-0.0775	11.5477	-0.2
743	SLE RA 18	0.72	0.63	46.38	-0.0784	11.6916	-0.2167
743	SLE RA 19	0.72	0.62	46.38	-0.0785	11.6927	-0.2135
743	SLE RA 20	0.73	0.63	46.78	-0.0792	11.7882	-0.2167
743	SLE RA 21	0.73	0.62	46.78	-0.0792	11.7893	-0.2135
743	SLE FR 1	0.69	0.5	41.86	-0.0702	10.5642	-0.1718
743	SLE FR 2	0.69	0.49	41.86	-0.0702	10.5646	-0.1707
743	SLE FR 3	0.69	0.5	42.02	-0.0705	10.6029	-0.1718
743	SLE FR 4	0.7	0.53	43.22	-0.0727	10.9028	-0.1842
743	SLE FR 5	0.7	0.54	43.38	-0.073	10.9411	-0.1853
743	SLE FR 6	0.7	0.56	44.12	-0.0743	11.1279	-0.1943
743	SLE QP 1	0.69	0.5	41.86	-0.0702	10.5642	-0.1718
743	SLE QP 2	0.7	0.54	43.22	-0.0727	10.9024	-0.1853
743	SLD 1	3.1	0.62	31.88	-0.052	8.3932	-0.2155
743	SLD 2	3	1.27	31.81	-0.0534	8.4025	-0.4393
743	SLD 3	3.31	-0.86	32.52	-0.0494	8.239	0.3011
743	SLD 4	3.22	-0.21	32.45	-0.0509	8.2484	0.0773
743	SLD 5	1.11	2.69	38.86	-0.0701	10.3818	-0.9379
743	SLD 6	1.04	3.11	38.81	-0.071	10.3879	-1.0849
743	SLD 7	1.83	-2.24	40.99	-0.0616	9.868	0.784
743	SLD 8	1.76	-1.82	40.94	-0.0625	9.8741	0.637
743	SLD 9	-0.37	2.89	45.49	-0.0828	11.9308	-1.0076
743	SLD 10	-0.43	3.31	45.44	-0.0838	11.9369	-1.1546
743	SLD 11	0.35	-2.04	47.62	-0.0743	11.417	0.7143
743	SLD 12	0.28	-1.62	47.57	-0.0753	11.4231	0.5673
743	SLD 13	-1.82	1.28	53.99	-0.0945	13.5565	-0.4478
743	SLD 14	-1.92	1.93	53.91	-0.0959	13.5658	-0.6716
743	SLD 15	-1.61	-0.2	54.63	-0.0919	13.4023	0.0687
743	SLD 16	-1.71	0.45	54.55	-0.0934	13.4117	-0.155
743	SLV 1	6.32	0.69	16.69	-0.0241	5.0285	-0.2384
743	SLV 2	6.09	2.19	16.52	-0.0275	5.0503	-0.7596
743	SLV 3	6.81	-2.66	18.18	-0.0183	4.6687	0.9314
743	SLV 4	6.58	-1.16	18.01	-0.0217	4.6905	0.4103
743	SLV 5	1.67	5.41	33.03	-0.0664	9.6823	-1.8854



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
743	SLV 6	1.52	6.37	32.91	-0.0685	9.6963	-2.222
743	SLV 7	3.32	-5.76	38	-0.047	8.4828	2.0141
743	SLV 8	3.17	-4.8	37.89	-0.0491	8.4969	1.6776
743	SLV 9	-1.78	5.87	48.55	-0.0962	13.308	-2.0481
743	SLV 10	-1.93	6.84	48.44	-0.0984	13.3221	-2.3847
743	SLV 11	-0.13	-5.3	53.52	-0.0768	12.1086	1.8514
743	SLV 12	-0.28	-4.34	53.41	-0.079	12.1226	1.5148
743	SLV 13	-5.19	2.24	68.43	-0.1237	17.1144	-0.7809
743	SLV 14	-5.42	3.73	68.25	-0.127	17.1362	-1.302
743	SLV 15	-4.7	-1.12	69.92	-0.1179	16.7546	0.389
743	SLV 16	-4.93	0.38	69.74	-0.1212	16.7764	-0.1321
743	CRTFP Ux+	0	0	0	0	0	0
743	CRTFP Ux-	0	0	0	0	0	0
743	CRTFP Uy+	0	0	0	0	0	0
743	CRTFP Uy-	0	0	0	0	0	0
744	SLU 1	-1.08	0.13	64.7	-11.6985	-9.9059	-0.1542
744	SLU 2	-1.09	-0.03	64.73	-11.7038	-9.9168	-0.197
744	SLU 3	-1.1	0.14	66.26	-11.9797	-10.1282	-0.1562
744	SLU 4	-1.11	0.05	66.28	-11.9828	-10.1348	-0.1818
744	SLU 5	-1.11	-0.02	65.71	-11.8809	-10.0543	-0.1983
744	SLU 6	-1.12	0.15	67.24	-12.1567	-10.2657	-0.1575
744	SLU 7	-1.13	0.05	67.25	-12.1599	-10.2723	-0.1831
744	SLU 8	-1.11	0.15	66.66	-12.0527	-10.1809	-0.1568
744	SLU 9	-1.12	0.05	66.68	-12.0559	-10.1875	-0.1825
744	SLU 10	-1.13	0.1	72.4	-13.0962	-11.1097	-0.169
744	SLU 11	-1.14	0.28	73.93	-13.3721	-11.3211	-0.1281
744	SLU 12	-1.15	0.18	73.95	-13.3752	-11.3277	-0.1538
744	SLU 13	-1.15	0.11	73.38	-13.2733	-11.2472	-0.1703
744	SLU 14	-1.16	0.29	74.91	-13.5492	-11.4586	-0.1295
744	SLU 15	-1.17	0.19	74.93	-13.5523	-11.4652	-0.1551
744	SLU 16	-1.15	0.28	74.33	-13.4451	-11.3738	-0.1288
744	SLU 17	-1.16	0.19	74.35	-13.4483	-11.3803	-0.1545
744	SLU 18	-1.13	0.33	75.66	-13.6877	-11.61	-0.1142
744	SLU 19	-1.14	0.23	75.68	-13.6909	-11.6165	-0.1399
744	SLU 20	-1.15	0.33	76.64	-13.8648	-11.7475	-0.1155
744	SLU 21	-1.16	0.24	76.66	-13.868	-11.7541	-0.1412
744	SLU 22	-1.16	0.25	72.44	-13.1006	-11.0916	-0.1399
744	SLU 23	-1.17	0.08	72.47	-13.1058	-11.1025	-0.1827
744	SLU 24	-1.19	0.26	73.99	-13.3817	-11.3139	-0.1418
744	SLU 25	-1.19	0.16	74.01	-13.3848	-11.3205	-0.1675
744	SLU 26	-1.19	0.09	73.45	-13.2829	-11.24	-0.184
744	SLU 27	-1.2	0.27	74.97	-13.5588	-11.4514	-0.1431
744	SLU 28	-1.21	0.17	74.99	-13.5619	-11.458	-0.1688
744	SLU 29	-1.2	0.26	74.39	-13.4547	-11.3666	-0.1425
744	SLU 30	-1.2	0.16	74.41	-13.4579	-11.3732	-0.1682
744	SLU 31	-1.21	0.22	80.14	-14.4982	-12.2954	-0.1546
744	SLU 32	-1.22	0.39	81.66	-14.7741	-12.5068	-0.1138
744	SLU 33	-1.23	0.29	81.68	-14.7772	-12.5134	-0.1395
744	SLU 34	-1.23	0.23	81.12	-14.6753	-12.4329	-0.156
744	SLU 35	-1.24	0.4	82.64	-14.9512	-12.6443	-0.1151
744	SLU 36	-1.25	0.3	82.66	-14.9543	-12.6509	-0.1408
744	SLU 37	-1.24	0.4	82.07	-14.8471	-12.5595	-0.1145
744	SLU 38	-1.24	0.3	82.08	-14.8503	-12.566	-0.1402
744	SLU 39	-1.21	0.44	83.39	-15.0897	-12.7957	-0.0999
744	SLU 40	-1.22	0.34	83.41	-15.0929	-12.8023	-0.1255
744	SLU 41	-1.23	0.45	84.37	-15.2668	-12.9332	-0.1012
744	SLU 42	-1.24	0.35	84.39	-15.27	-12.9398	-0.1268
744	SLU 43	-1.37	0.13	81.46	-14.7274	-12.4711	-0.2054
744	SLU 44	-1.38	-0.03	81.49	-14.7327	-12.482	-0.2482
744	SLU 45	-1.4	0.15	83.02	-15.0085	-12.6935	-0.2073
744	SLU 46	-1.41	0.05	83.03	-15.0117	-12.7	-0.233
744	SLU 47	-1.4	-0.02	82.47	-14.9098	-12.6196	-0.2495
744	SLU 48	-1.42	0.15	83.99	-15.1856	-12.831	-0.2087
744	SLU 49	-1.42	0.06	84.01	-15.1888	-12.8375	-0.2343
744	SLU 50	-1.41	0.15	83.42	-15.0816	-12.7461	-0.208
744	SLU 51	-1.42	0.05	83.44	-15.0847	-12.7527	-0.2337
744	SLU 52	-1.42	0.11	89.16	-16.1251	-13.6749	-0.2202
744	SLU 53	-1.44	0.28	90.69	-16.401	-13.8863	-0.1793
744	SLU 54	-1.44	0.18	90.71	-16.4041	-13.8929	-0.205
744	SLU 55	-1.44	0.11	90.14	-16.3022	-13.8124	-0.2215
744	SLU 56	-1.46	0.29	91.67	-16.578	-14.0238	-0.1806
744	SLU 57	-1.46	0.19	91.68	-16.5812	-14.0304	-0.2063
744	SLU 58	-1.45	0.29	91.09	-16.474	-13.939	-0.18
744	SLU 59	-1.45	0.19	91.11	-16.4772	-13.9456	-0.2057
744	SLU 60	-1.43	0.33	92.42	-16.7166	-14.1752	-0.1654
744	SLU 61	-1.43	0.23	92.44	-16.7197	-14.1818	-0.191
744	SLU 62	-1.45	0.33	93.4	-16.8937	-14.3127	-0.1667
744	SLU 63	-1.45	0.24	93.42	-16.8968	-14.3193	-0.1923
744	SLU 64	-1.45	0.25	89.2	-16.1294	-13.6568	-0.1911
744	SLU 65	-1.46	0.08	89.23	-16.1347	-13.6678	-0.2338
744	SLU 66	-1.48	0.26	90.75	-16.4105	-13.8792	-0.193
744	SLU 67	-1.49	0.16	90.77	-16.4137	-13.8857	-0.2187
744	SLU 68	-1.48	0.09	90.21	-16.3118	-13.8053	-0.2352
744	SLU 69	-1.5	0.27	91.73	-16.5876	-14.0167	-0.1943
744	SLU 70	-1.51	0.17	91.75	-16.5908	-14.0232	-0.22
744	SLU 71	-1.49	0.26	91.15	-16.4836	-13.9318	-0.1937
744	SLU 72	-1.5	0.17	91.17	-16.4867	-13.9384	-0.2194
744	SLU 73	-1.5	0.22	96.9	-17.5271	-14.8606	-0.2058
744	SLU 74	-1.52	0.39	98.42	-17.803	-15.072	-0.165
744	SLU 75	-1.53	0.3	98.44	-17.8061	-15.0786	-0.1907



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
744	SLU 76	-1.52	0.23	97.88	-17.7042	-14.9981	-0.2071
744	SLU 77	-1.54	0.4	99.4	-17.98	-15.2096	-0.1663
744	SLU 78	-1.55	0.3	99.42	-17.9832	-15.2161	-0.192
744	SLU 79	-1.53	0.4	98.82	-17.876	-15.1247	-0.1657
744	SLU 80	-1.54	0.3	98.84	-17.8792	-15.1313	-0.1913
744	SLU 81	-1.51	0.44	100.15	-18.1186	-15.3609	-0.151
744	SLU 82	-1.52	0.34	100.17	-18.1218	-15.3675	-0.1767
744	SLU 83	-1.53	0.45	101.13	-18.2957	-15.4984	-0.1524
744	SLU 84	-1.53	0.35	101.15	-18.2988	-15.505	-0.178
744	SLE RA 1	-1.1	0.16	66.91	-12.0991	-10.2447	-0.1501
744	SLE RA 2	-1.11	0.06	66.93	-12.1026	-10.2519	-0.1786
744	SLE RA 3	-1.12	0.17	67.95	-12.2865	-10.3929	-0.1514
744	SLE RA 4	-1.12	0.11	67.96	-12.2886	-10.3973	-0.1685
744	SLE RA 5	-1.12	0.06	67.59	-12.2207	-10.3436	-0.1795
744	SLE RA 6	-1.13	0.18	68.6	-12.4046	-10.4846	-0.1523
744	SLE RA 7	-1.14	0.11	68.61	-12.4067	-10.4889	-0.1694
744	SLE RA 8	-1.12	0.18	68.22	-12.3352	-10.428	-0.1519
744	SLE RA 9	-1.13	0.11	68.23	-12.3373	-10.4324	-0.169
744	SLE RA 10	-1.13	0.15	72.05	-13.0309	-11.0472	-0.16
744	SLE RA 11	-1.14	0.26	73.06	-13.2148	-11.1881	-0.1327
744	SLE RA 12	-1.15	0.2	73.07	-13.2169	-11.1925	-0.1499
744	SLE RA 13	-1.15	0.15	72.7	-13.149	-11.1389	-0.1608
744	SLE RA 14	-1.16	0.27	73.71	-13.3329	-11.2798	-0.1336
744	SLE RA 15	-1.16	0.2	73.73	-13.335	-11.2842	-0.1507
744	SLE RA 16	-1.15	0.27	73.33	-13.2635	-11.2233	-0.1332
744	SLE RA 17	-1.16	0.2	73.34	-13.2656	-11.2276	-0.1503
744	SLE RA 18	-1.14	0.29	74.22	-13.4252	-11.3807	-0.1234
744	SLE RA 19	-1.14	0.23	74.23	-13.4273	-11.3851	-0.1406
744	SLE RA 20	-1.15	0.3	74.87	-13.5433	-11.4724	-0.1243
744	SLE RA 21	-1.15	0.23	74.88	-13.5454	-11.4768	-0.1414
744	SLE FR 1	-1.1	0.16	66.91	-12.0991	-10.2447	-0.1501
744	SLE FR 2	-1.1	0.14	66.92	-12.0998	-10.2461	-0.1558
744	SLE FR 3	-1.1	0.17	67.17	-12.1463	-10.2813	-0.1505
744	SLE FR 4	-1.11	0.18	69.11	-12.4977	-10.5869	-0.1478
744	SLE FR 5	-1.12	0.21	69.36	-12.5442	-10.6221	-0.1425
744	SLE FR 6	-1.12	0.23	70.56	-12.7622	-10.8127	-0.1368
744	SLE QP 1	-1.1	0.16	66.91	-12.0991	-10.2447	-0.1501
744	SLE QP 2	-1.11	0.2	69.1	-12.497	-10.5855	-0.1421
744	SLD 1	3.64	1.24	86.9	-15.7383	-13.2847	1.0146
744	SLD 2	3.51	0.26	87.07	-15.7654	-13.3625	0.7521
744	SLD 3	3.35	-1.18	87.91	-15.9244	-13.5624	0.3875
744	SLD 4	3.22	-2.16	88.08	-15.9515	-13.6402	0.125
744	SLD 5	0.78	4.36	72.87	-13.1824	-10.9601	1.2029
744	SLD 6	0.69	3.72	72.98	-13.2002	-11.0113	1.0304
744	SLD 7	-0.19	-3.71	76.25	-13.8025	-11.8859	-0.8875
744	SLD 8	-0.27	-4.35	76.37	-13.8203	-11.937	-1.06
744	SLD 9	-1.95	4.76	61.84	-11.1736	-9.234	0.7758
744	SLD 10	-2.03	4.12	61.95	-11.1914	-9.2851	0.6032
744	SLD 11	-2.91	-3.32	65.22	-11.7937	-10.1597	-1.3146
744	SLD 12	-3	-3.96	65.33	-11.8116	-10.2108	-1.4871
744	SLD 13	-5.44	2.57	50.13	-9.0424	-7.5307	-0.4092
744	SLD 14	-5.58	1.59	50.29	-9.0695	-7.6085	-0.6717
744	SLD 15	-5.73	0.14	51.14	-9.2285	-7.8085	-1.0363
744	SLD 16	-5.86	-0.83	51.31	-9.2556	-7.8862	-1.2988
744	SLV 1	10.01	2.53	110.76	-20.0844	-16.9107	2.5387
744	SLV 2	9.7	0.26	111.15	-20.1475	-17.0918	1.9274
744	SLV 3	9.34	-2.96	113.13	-20.5195	-17.5494	1.1198
744	SLV 4	9.03	-5.23	113.52	-20.5826	-17.7305	0.5085
744	SLV 5	3.29	9.61	77.93	-14.1024	-11.4831	2.9198
744	SLV 6	3.1	8.14	78.19	-14.1431	-11.6001	2.525
744	SLV 7	1.06	-8.67	85.84	-15.5527	-13.612	-1.8098
744	SLV 8	0.86	-10.13	86.09	-15.5935	-13.7289	-2.2046
744	SLV 9	-3.08	10.54	52.11	-9.4004	-7.442	1.9204
744	SLV 10	-3.28	9.08	52.37	-9.4412	-7.559	1.5255
744	SLV 11	-5.32	-7.74	60.02	-10.8508	-9.5709	-2.8092
744	SLV 12	-5.52	-9.2	60.27	-10.8915	-9.6878	-3.2041
744	SLV 13	-11.25	5.63	24.68	-4.4113	-3.4405	-0.7927
744	SLV 14	-11.56	3.36	25.08	-4.4744	-3.6216	-1.4041
744	SLV 15	-11.92	0.15	27.06	-4.8464	-4.0791	-2.2116
744	SLV 16	-12.23	-2.12	27.45	-4.9095	-4.2602	-2.823
744	CRTFP Ux+	0	0	0	0	0	0
744	CRTFP Ux-	0	0	0	0	0	0
744	CRTFP Uy+	0	0	0	0	0	0
744	CRTFP Uy-	0	0	0	0	0	0
747	SLU 1	-1.24	-1.08	107.03	-15.095	1.9901	-0.1472
747	SLU 2	-1.26	-1.23	107.1	-15.1022	1.984	-0.1446
747	SLU 3	-1.28	-1.08	109.6	-15.4555	2.0349	-0.1517
747	SLU 4	-1.29	-1.17	109.64	-15.4598	2.0312	-0.1502
747	SLU 5	-1.28	-1.24	108.68	-15.325	2.0132	-0.1474
747	SLU 6	-1.3	-1.09	111.19	-15.6783	2.0641	-0.1545
747	SLU 7	-1.31	-1.18	111.22	-15.6826	2.0605	-0.153
747	SLU 8	-1.29	-1.1	110.2	-15.5406	2.0486	-0.1527
747	SLU 9	-1.3	-1.19	110.24	-15.5449	2.0449	-0.1512
747	SLU 10	-1.3	-1.23	120.91	-17.0458	2.2289	-0.1479
747	SLU 11	-1.31	-1.07	123.41	-17.399	2.2798	-0.155
747	SLU 12	-1.32	-1.17	123.45	-17.4034	2.2761	-0.1534
747	SLU 13	-1.32	-1.24	122.49	-17.2686	2.2581	-0.1507
747	SLU 14	-1.33	-1.09	125	-17.6218	2.309	-0.1577
747	SLU 15	-1.34	-1.18	125.04	-17.6262	2.3053	-0.1562
747	SLU 16	-1.32	-1.1	124.02	-17.4841	2.2935	-0.156



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
747	SLU 17	-1.33	-1.19	124.05	-17.4884	2.2898	-0.1545
747	SLU 18	-1.29	-1.07	126.77	-17.8714	2.34	-0.1518
747	SLU 19	-1.3	-1.16	126.8	-17.8758	2.3363	-0.1503
747	SLU 20	-1.31	-1.08	128.35	-18.0942	2.3692	-0.1546
747	SLU 21	-1.32	-1.18	128.39	-18.0986	2.3655	-0.1531
747	SLU 22	-1.35	-1.02	120.5	-16.9865	2.2303	-0.1629
747	SLU 23	-1.37	-1.17	120.56	-16.9938	2.2242	-0.1604
747	SLU 24	-1.39	-1.02	123.07	-17.347	2.2751	-0.1674
747	SLU 25	-1.4	-1.11	123.11	-17.3514	2.2714	-0.1659
747	SLU 26	-1.39	-1.19	122.15	-17.2166	2.2534	-0.1632
747	SLU 27	-1.41	-1.03	124.65	-17.5698	2.3043	-0.1702
747	SLU 28	-1.42	-1.13	124.69	-17.5742	2.3006	-0.1687
747	SLU 29	-1.39	-1.04	123.67	-17.4321	2.2888	-0.1684
747	SLU 30	-1.4	-1.14	123.71	-17.4365	2.2851	-0.1669
747	SLU 31	-1.4	-1.17	134.37	-18.9373	2.469	-0.1636
747	SLU 32	-1.42	-1.02	136.88	-19.2906	2.52	-0.1707
747	SLU 33	-1.43	-1.11	136.92	-19.2949	2.5163	-0.1692
747	SLU 34	-1.42	-1.18	135.96	-19.1601	2.4983	-0.1664
747	SLU 35	-1.44	-1.03	138.47	-19.5134	2.5492	-0.1735
747	SLU 36	-1.45	-1.12	138.5	-19.5177	2.5455	-0.1719
747	SLU 37	-1.43	-1.04	137.48	-19.3756	2.5337	-0.1717
747	SLU 38	-1.44	-1.13	137.52	-19.38	2.53	-0.1702
747	SLU 39	-1.4	-1.02	140.23	-19.763	2.5801	-0.1676
747	SLU 40	-1.41	-1.11	140.27	-19.7673	2.5765	-0.166
747	SLU 41	-1.42	-1.03	141.82	-19.9858	2.6094	-0.1703
747	SLU 42	-1.43	-1.12	141.85	-19.9901	2.6057	-0.1688
747	SLU 43	-1.58	-1.42	134.53	-18.9749	2.5048	-0.1859
747	SLU 44	-1.6	-1.57	134.59	-18.9822	2.4987	-0.1834
747	SLU 45	-1.61	-1.42	137.09	-19.3354	2.5496	-0.1904
747	SLU 46	-1.63	-1.51	137.13	-19.3398	2.5459	-0.1889
747	SLU 47	-1.62	-1.58	136.17	-19.205	2.5279	-0.1862
747	SLU 48	-1.64	-1.43	138.68	-19.5582	2.5788	-0.1932
747	SLU 49	-1.65	-1.52	138.72	-19.5626	2.5751	-0.1917
747	SLU 50	-1.62	-1.44	137.7	-19.4205	2.5633	-0.1915
747	SLU 51	-1.63	-1.53	137.73	-19.4249	2.5596	-0.19
747	SLU 52	-1.63	-1.57	148.4	-20.9257	2.7436	-0.1867
747	SLU 53	-1.65	-1.42	150.91	-21.279	2.7945	-0.1937
747	SLU 54	-1.66	-1.51	150.94	-21.2833	2.7908	-0.1922
747	SLU 55	-1.65	-1.58	149.99	-21.1485	2.7728	-0.1895
747	SLU 56	-1.67	-1.43	152.49	-21.5018	2.8237	-0.1965
747	SLU 57	-1.68	-1.52	152.53	-21.5061	2.82	-0.195
747	SLU 58	-1.66	-1.44	151.51	-21.364	2.8082	-0.1948
747	SLU 59	-1.67	-1.53	151.55	-21.3684	2.8045	-0.1933
747	SLU 60	-1.63	-1.41	154.26	-21.7514	2.8546	-0.1906
747	SLU 61	-1.64	-1.51	154.3	-21.7557	2.851	-0.1891
747	SLU 62	-1.65	-1.43	155.84	-21.9742	2.8839	-0.1934
747	SLU 63	-1.66	-1.52	155.88	-21.9785	2.8802	-0.1919
747	SLU 64	-1.69	-1.36	147.99	-20.8665	2.745	-0.2016
747	SLU 65	-1.71	-1.52	148.06	-20.8737	2.7388	-0.1991
747	SLU 66	-1.72	-1.36	150.56	-21.227	2.7898	-0.2061
747	SLU 67	-1.73	-1.46	150.6	-21.2313	2.7861	-0.2046
747	SLU 68	-1.73	-1.53	149.64	-21.0965	2.7681	-0.2019
747	SLU 69	-1.74	-1.38	152.15	-21.4498	2.819	-0.2089
747	SLU 70	-1.75	-1.47	152.18	-21.4541	2.8153	-0.2074
747	SLU 71	-1.73	-1.39	151.16	-21.3121	2.8035	-0.2072
747	SLU 72	-1.74	-1.48	151.2	-21.3164	2.7998	-0.2057
747	SLU 73	-1.74	-1.51	161.87	-22.8173	2.9837	-0.2024
747	SLU 74	-1.76	-1.36	164.37	-23.1705	3.0346	-0.2094
747	SLU 75	-1.77	-1.45	164.41	-23.1749	3.031	-0.2079
747	SLU 76	-1.76	-1.53	163.45	-23.0401	3.013	-0.2052
747	SLU 77	-1.78	-1.37	165.96	-23.3933	3.0639	-0.2122
747	SLU 78	-1.79	-1.47	166	-23.3977	3.0602	-0.2107
747	SLU 79	-1.76	-1.38	164.98	-23.2556	3.0484	-0.2105
747	SLU 80	-1.77	-1.48	165.01	-23.26	3.0447	-0.209
747	SLU 81	-1.74	-1.36	167.72	-23.6429	3.0948	-0.2063
747	SLU 82	-1.75	-1.45	167.76	-23.6473	3.0911	-0.2048
747	SLU 83	-1.76	-1.37	169.31	-23.8657	3.1241	-0.2091
747	SLU 84	-1.77	-1.46	169.35	-23.8701	3.1204	-0.2076
747	SLE RA 1	-1.27	-1.06	110.88	-15.6354	2.0587	-0.1516
747	SLE RA 2	-1.29	-1.16	110.92	-15.6402	2.0546	-0.15
747	SLE RA 3	-1.3	-1.06	112.59	-15.8757	2.0886	-0.1547
747	SLE RA 4	-1.3	-1.12	112.62	-15.8787	2.0861	-0.1537
747	SLE RA 5	-1.3	-1.17	111.98	-15.7888	2.0741	-0.1518
747	SLE RA 6	-1.31	-1.07	113.65	-16.0243	2.1081	-0.1565
747	SLE RA 7	-1.32	-1.13	113.67	-16.0272	2.1056	-0.1555
747	SLE RA 8	-1.3	-1.08	112.99	-15.9325	2.0977	-0.1554
747	SLE RA 9	-1.31	-1.14	113.02	-15.9354	2.0953	-0.1544
747	SLE RA 10	-1.31	-1.16	120.13	-16.9359	2.2179	-0.1522
747	SLE RA 11	-1.32	-1.06	121.8	-17.1714	2.2518	-0.1568
747	SLE RA 12	-1.33	-1.12	121.83	-17.1743	2.2494	-0.1558
747	SLE RA 13	-1.32	-1.17	121.19	-17.0845	2.2374	-0.154
747	SLE RA 14	-1.33	-1.07	122.86	-17.32	2.2713	-0.1587
747	SLE RA 15	-1.34	-1.13	122.88	-17.3229	2.2689	-0.1577
747	SLE RA 16	-1.33	-1.07	122.2	-17.2282	2.261	-0.1575
747	SLE RA 17	-1.33	-1.14	122.23	-17.2311	2.2585	-0.1565
747	SLE RA 18	-1.31	-1.06	124.04	-17.4864	2.292	-0.1548
747	SLE RA 19	-1.31	-1.12	124.06	-17.4893	2.2895	-0.1538
747	SLE RA 20	-1.32	-1.07	125.09	-17.6349	2.3115	-0.1566
747	SLE RA 21	-1.33	-1.13	125.12	-17.6378	2.309	-0.1556
747	SLE FR 1	-1.27	-1.06	110.88	-15.6354	2.0587	-0.1516



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
747	SLE FR 2	-1.28	-1.08	110.89	-15.6364	2.0579	-0.1513
747	SLE FR 3	-1.28	-1.06	111.3	-15.6948	2.0665	-0.1524
747	SLE FR 4	-1.29	-1.08	114.84	-16.1917	2.1279	-0.1522
747	SLE FR 5	-1.29	-1.06	115.25	-16.2501	2.1365	-0.1533
747	SLE FR 6	-1.29	-1.06	117.46	-16.5609	2.1753	-0.1532
747	SLE QP 1	-1.27	-1.06	110.88	-15.6354	2.0587	-0.1516
747	SLE QP 2	-1.28	-1.06	114.83	-16.1907	2.1287	-0.1526
747	SLD 1	7.81	-0.4	123.84	-17.5285	2.3792	1.0606
747	SLD 2	7.63	-1.18	124.29	-17.5776	2.3955	1.0726
747	SLD 3	7.3	-3.43	124.4	-17.6157	2.2786	1.1639
747	SLD 4	7.12	-4.21	124.85	-17.6648	2.2948	1.1759
747	SLD 5	2.25	3.87	116.59	-16.4511	2.3536	0.0526
747	SLD 6	2.13	3.36	116.89	-16.4834	2.3643	0.0604
747	SLD 7	0.55	-6.22	118.48	-16.7415	2.0181	0.3969
747	SLD 8	0.43	-6.74	118.77	-16.7738	2.0288	0.4048
747	SLD 9	-3	4.62	110.88	-15.6076	2.2286	-0.7099
747	SLD 10	-3.12	4.11	111.18	-15.6398	2.2393	-0.7021
747	SLD 11	-4.7	-5.48	112.77	-15.898	1.8931	-0.3656
747	SLD 12	-4.82	-5.99	113.06	-15.9302	1.9038	-0.3577
747	SLD 13	-9.69	2.09	104.8	-14.7166	1.9626	-1.481
747	SLD 14	-9.87	1.31	105.25	-14.7657	1.9788	-1.4691
747	SLD 15	-10.2	-0.94	105.37	-14.8038	1.8619	-1.3778
747	SLD 16	-10.38	-1.72	105.82	-14.8528	1.8782	-1.3658
747	SLV 1	19.99	0.36	135.93	-19.3233	2.7109	2.6877
747	SLV 2	19.57	-1.46	136.97	-19.4376	2.7487	2.7155
747	SLV 3	18.8	-6.49	137.25	-19.527	2.4827	2.9256
747	SLV 4	18.38	-8.31	138.3	-19.6413	2.5205	2.9535
747	SLV 5	6.98	10.08	118.97	-16.8017	2.643	0.3338
747	SLV 6	6.71	8.9	119.64	-16.8755	2.6674	0.3517
747	SLV 7	3	-12.77	123.39	-17.4808	1.8822	1.127
747	SLV 8	2.73	-13.95	124.06	-17.5547	1.9066	1.145
747	SLV 9	-5.3	11.83	105.59	-14.8267	2.3508	-1.4501
747	SLV 10	-5.57	10.65	106.27	-14.9006	2.3752	-1.4321
747	SLV 11	-9.28	-11.02	110.01	-15.5058	1.59	-0.6569
747	SLV 12	-9.55	-12.2	110.69	-15.5797	1.6144	-0.6389
747	SLV 13	-20.95	6.19	91.36	-12.74	1.7369	-3.2586
747	SLV 14	-21.37	4.37	92.4	-12.8544	1.7747	-3.2308
747	SLV 15	-22.14	-0.66	92.68	-12.9438	1.5087	-3.0207
747	SLV 16	-22.56	-2.48	93.73	-13.0581	1.5465	-2.9928
747	CRTFP Ux+	0	0	0	0	0	0
747	CRTFP Ux-	0	0	0	0	0	0
747	CRTFP Uy+	0	0	0	0	0	0
747	CRTFP Uy-	0	0	0	0	0	0
750	SLU 1	-0.18	1.18	109.04	-19.4787	0.1815	-0.0604
750	SLU 2	-0.18	1.05	108.92	-19.4656	0.1789	-0.0607
750	SLU 3	-0.19	1.25	111.58	-19.9341	0.1868	-0.0623
750	SLU 4	-0.19	1.17	111.51	-19.9263	0.1853	-0.0624
750	SLU 5	-0.19	1.07	110.52	-19.7508	0.1807	-0.0618
750	SLU 6	-0.19	1.27	113.17	-20.2193	0.1886	-0.0634
750	SLU 7	-0.19	1.19	113.11	-20.2114	0.1871	-0.0635
750	SLU 8	-0.18	1.21	112.23	-20.049	0.185	-0.0626
750	SLU 9	-0.19	1.14	112.16	-20.0412	0.1835	-0.0628
750	SLU 10	-0.14	1.28	123.37	-22.0483	0.1954	-0.0544
750	SLU 11	-0.14	1.48	126.03	-22.5168	0.2032	-0.056
750	SLU 12	-0.14	1.4	125.96	-22.509	0.2017	-0.0562
750	SLU 13	-0.14	1.3	124.97	-22.3335	0.1972	-0.0555
750	SLU 14	-0.14	1.49	127.62	-22.802	0.205	-0.0571
750	SLU 15	-0.15	1.42	127.55	-22.7941	0.2035	-0.0573
750	SLU 16	-0.14	1.44	126.68	-22.6317	0.2015	-0.0564
750	SLU 17	-0.14	1.36	126.61	-22.6239	0.2	-0.0565
750	SLU 18	-0.11	1.5	129.68	-23.1683	0.205	-0.0515
750	SLU 19	-0.12	1.43	129.61	-23.1604	0.2034	-0.0516
750	SLU 20	-0.12	1.52	131.28	-23.4534	0.2068	-0.0526
750	SLU 21	-0.12	1.44	131.21	-23.4456	0.2052	-0.0527
750	SLU 22	-0.21	1.59	122.81	-21.9165	0.2206	-0.0671
750	SLU 23	-0.21	1.46	122.7	-21.9034	0.2181	-0.0673
750	SLU 24	-0.21	1.66	125.35	-22.3719	0.2259	-0.069
750	SLU 25	-0.22	1.58	125.28	-22.3641	0.2244	-0.0691
750	SLU 26	-0.22	1.48	124.3	-22.1886	0.2199	-0.0684
750	SLU 27	-0.22	1.67	126.95	-22.6571	0.2277	-0.0701
750	SLU 28	-0.22	1.6	126.88	-22.6492	0.2262	-0.0702
750	SLU 29	-0.21	1.62	126	-22.4868	0.2242	-0.0693
750	SLU 30	-0.22	1.54	125.94	-22.4789	0.2227	-0.0694
750	SLU 31	-0.17	1.69	137.15	-24.4861	0.2345	-0.0611
750	SLU 32	-0.17	1.89	139.8	-24.9546	0.2424	-0.0627
750	SLU 33	-0.17	1.81	139.73	-24.9468	0.2409	-0.0628
750	SLU 34	-0.17	1.7	138.75	-24.7713	0.2363	-0.0622
750	SLU 35	-0.17	1.9	141.4	-25.2398	0.2442	-0.0638
750	SLU 36	-0.18	1.83	141.33	-25.2319	0.2427	-0.0639
750	SLU 37	-0.17	1.85	140.45	-25.0695	0.2406	-0.063
750	SLU 38	-0.17	1.77	140.39	-25.0616	0.2391	-0.0632
750	SLU 39	-0.14	1.91	143.45	-25.6061	0.2441	-0.0581
750	SLU 40	-0.15	1.84	143.39	-25.5982	0.2426	-0.0583
750	SLU 41	-0.15	1.93	145.05	-25.8912	0.2459	-0.0592
750	SLU 42	-0.15	1.85	144.98	-25.8834	0.2444	-0.0594
750	SLU 43	-0.22	1.39	137.03	-24.4865	0.2225	-0.0763
750	SLU 44	-0.23	1.26	136.91	-24.4734	0.22	-0.0765
750	SLU 45	-0.23	1.46	139.56	-24.9419	0.2278	-0.0782
750	SLU 46	-0.23	1.39	139.5	-24.9341	0.2263	-0.0783
750	SLU 47	-0.23	1.28	138.51	-24.7586	0.2218	-0.0776



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
750	SLU 48	-0.23	1.48	141.16	-25.2271	0.2296	-0.0793
750	SLU 49	-0.23	1.4	141.09	-25.2192	0.2281	-0.0794
750	SLU 50	-0.23	1.43	140.22	-25.0568	0.2261	-0.0785
750	SLU 51	-0.23	1.35	140.15	-25.049	0.2246	-0.0786
750	SLU 52	-0.18	1.49	151.36	-27.0561	0.2364	-0.0703
750	SLU 53	-0.18	1.69	154.01	-27.5246	0.2443	-0.0719
750	SLU 54	-0.19	1.61	153.95	-27.5168	0.2427	-0.072
750	SLU 55	-0.19	1.51	152.96	-27.3413	0.2382	-0.0714
750	SLU 56	-0.19	1.71	155.61	-27.8098	0.246	-0.073
750	SLU 57	-0.19	1.63	155.54	-27.8019	0.2445	-0.0731
750	SLU 58	-0.18	1.65	154.67	-27.6395	0.2425	-0.0722
750	SLU 59	-0.19	1.58	154.6	-27.6317	0.241	-0.0724
750	SLU 60	-0.16	1.72	157.67	-28.1761	0.246	-0.0673
750	SLU 61	-0.16	1.64	157.6	-28.1682	0.2445	-0.0675
750	SLU 62	-0.16	1.73	159.26	-28.4612	0.2478	-0.0684
750	SLU 63	-0.16	1.66	159.2	-28.4534	0.2463	-0.0686
750	SLU 64	-0.25	1.8	150.8	-26.9243	0.2616	-0.083
750	SLU 65	-0.26	1.67	150.69	-26.9112	0.2591	-0.0832
750	SLU 66	-0.26	1.87	153.34	-27.3797	0.267	-0.0848
750	SLU 67	-0.26	1.79	153.27	-27.3719	0.2654	-0.085
750	SLU 68	-0.26	1.69	152.28	-27.1964	0.2609	-0.0843
750	SLU 69	-0.26	1.89	154.93	-27.6649	0.2687	-0.0859
750	SLU 70	-0.26	1.81	154.87	-27.657	0.2672	-0.086
750	SLU 71	-0.26	1.83	153.99	-27.4946	0.2652	-0.0851
750	SLU 72	-0.26	1.76	153.93	-27.4867	0.2637	-0.0853
750	SLU 73	-0.21	1.9	165.14	-29.4939	0.2756	-0.0769
750	SLU 74	-0.21	2.1	167.79	-29.9624	0.2834	-0.0786
750	SLU 75	-0.22	2.02	167.72	-29.9546	0.2819	-0.0787
750	SLU 76	-0.21	1.92	166.73	-29.7791	0.2773	-0.078
750	SLU 77	-0.22	2.12	169.38	-30.2476	0.2852	-0.0796
750	SLU 78	-0.22	2.04	169.32	-30.2397	0.2837	-0.0798
750	SLU 79	-0.21	2.06	168.44	-30.0773	0.2817	-0.0789
750	SLU 80	-0.21	1.99	168.38	-30.0694	0.2801	-0.079
750	SLU 81	-0.19	2.13	171.44	-30.6139	0.2851	-0.074
750	SLU 82	-0.19	2.05	171.37	-30.606	0.2836	-0.0741
750	SLU 83	-0.19	2.14	173.04	-30.899	0.2869	-0.0751
750	SLU 84	-0.19	2.07	172.97	-30.8912	0.2854	-0.0752
750	SLE RA 1	-0.19	1.3	112.97	-20.1752	0.1926	-0.0623
750	SLE RA 2	-0.19	1.21	112.9	-20.1665	0.191	-0.0625
750	SLE RA 3	-0.19	1.34	114.66	-20.4788	0.1962	-0.0636
750	SLE RA 4	-0.19	1.29	114.62	-20.4736	0.1952	-0.0637
750	SLE RA 5	-0.19	1.22	113.96	-20.3566	0.1922	-0.0632
750	SLE RA 6	-0.19	1.35	115.73	-20.6689	0.1974	-0.0643
750	SLE RA 7	-0.2	1.3	115.68	-20.6637	0.1964	-0.0644
750	SLE RA 8	-0.19	1.32	115.1	-20.5554	0.195	-0.0638
750	SLE RA 9	-0.19	1.27	115.06	-20.5502	0.194	-0.0639
750	SLE RA 10	-0.16	1.36	122.53	-21.8883	0.2019	-0.0583
750	SLE RA 11	-0.16	1.49	124.3	-22.2006	0.2072	-0.0594
750	SLE RA 12	-0.16	1.44	124.25	-22.1954	0.2062	-0.0595
750	SLE RA 13	-0.16	1.37	123.6	-22.0784	0.2031	-0.0591
750	SLE RA 14	-0.16	1.51	125.36	-22.3907	0.2084	-0.0601
750	SLE RA 15	-0.17	1.45	125.32	-22.3855	0.2073	-0.0602
750	SLE RA 16	-0.16	1.47	124.73	-22.2772	0.206	-0.0596
750	SLE RA 17	-0.16	1.42	124.69	-22.272	0.205	-0.0597
750	SLE RA 18	-0.14	1.51	126.73	-22.6349	0.2083	-0.0564
750	SLE RA 19	-0.15	1.46	126.69	-22.6297	0.2073	-0.0565
750	SLE RA 20	-0.15	1.52	127.8	-22.825	0.2095	-0.0571
750	SLE RA 21	-0.15	1.47	127.75	-22.8198	0.2085	-0.0572
750	SLE FR 1	-0.19	1.3	112.97	-20.1752	0.1926	-0.0623
750	SLE FR 2	-0.19	1.28	112.96	-20.1735	0.1923	-0.0624
750	SLE FR 3	-0.19	1.3	113.4	-20.2513	0.1931	-0.0626
750	SLE FR 4	-0.17	1.34	117.09	-20.9114	0.197	-0.0606
750	SLE FR 5	-0.17	1.36	117.53	-20.9892	0.1978	-0.0608
750	SLE FR 6	-0.17	1.4	119.85	-21.4051	0.2005	-0.0594
750	SLE QP 1	-0.19	1.3	112.97	-20.1752	0.1926	-0.0623
750	SLE QP 2	-0.17	1.36	117.1	-20.9131	0.1973	-0.0606
750	SLD 1	8.83	3.87	119.72	-21.142	0.4548	1.546
750	SLD 2	8.67	3.51	119.39	-21.1033	0.4601	1.5379
750	SLD 3	9.38	0.41	118.8	-21.0413	0.4175	1.643
750	SLD 4	9.22	0.05	118.47	-21.0026	0.4228	1.635
750	SLD 5	1.73	7.42	119.33	-21.1414	0.3302	0.2756
750	SLD 6	1.62	7.18	119.12	-21.116	0.3337	0.2704
750	SLD 7	3.55	-4.1	116.28	-20.8058	0.2059	0.5992
750	SLD 8	3.44	-4.34	116.06	-20.7803	0.2094	0.5939
750	SLD 9	-3.79	7.06	118.14	-21.0459	0.1853	-0.715
750	SLD 10	-3.9	6.82	117.92	-21.0205	0.1888	-0.7203
750	SLD 11	-1.97	-4.46	115.08	-20.7103	0.061	-0.3915
750	SLD 12	-2.07	-4.7	114.87	-20.6848	0.0645	-0.3968
750	SLD 13	-9.57	2.67	115.73	-20.8237	-0.0281	-1.7561
750	SLD 14	-9.72	2.31	115.4	-20.785	-0.0228	-1.7641
750	SLD 15	-9.02	-0.79	114.82	-20.723	-0.0654	-1.659
750	SLD 16	-9.18	-1.15	114.48	-20.6843	-0.0601	-1.6671
750	SLV 1	20.89	7.1	123.25	-21.4574	0.7985	3.6984
750	SLV 2	20.52	6.25	122.48	-21.3673	0.8107	3.6796
750	SLV 3	22.17	-0.73	121.18	-21.2287	0.7136	3.9247
750	SLV 4	21.8	-1.57	120.41	-21.1385	0.7259	3.9059
750	SLV 5	4.28	15.1	122.23	-21.4389	0.5043	0.7272
750	SLV 6	4.04	14.55	121.73	-21.3807	0.5122	0.7151
750	SLV 7	8.53	-10.99	115.31	-20.6765	0.2214	1.4814
750	SLV 8	8.29	-11.53	114.81	-20.6183	0.2293	1.4693





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
750	SLV 9	-8.63	14.25	119.39	-21.208	0.1654	-1.5904
750	SLV 10	-8.87	13.71	118.89	-21.1498	0.1733	-1.6025
750	SLV 11	-4.39	-11.83	112.47	-20.4456	-0.1175	-0.8362
750	SLV 12	-4.62	-12.37	111.97	-20.3874	-0.1096	-0.8483
750	SLV 13	-22.14	4.29	113.79	-20.6877	-0.3312	-4.027
750	SLV 14	-22.51	3.45	113.02	-20.5975	-0.319	-4.0458
750	SLV 15	-20.87	-3.53	111.72	-20.459	-0.4161	-3.8008
750	SLV 16	-21.24	-4.38	110.95	-20.3688	-0.4038	-3.8195
750	CRTFP Ux+	0	0	0	0	0	0
750	CRTFP Ux-	0	0	0	0	0	0
753	SLU 1	1.58	0.16	91.83	-8.8913	0.0332	0.1356
753	SLU 2	1.58	0.1	91.83	-8.8917	0.043	0.1359
753	SLU 3	1.63	0.17	93.96	-9.0972	0.0371	0.1393
753	SLU 4	1.62	0.14	93.96	-9.0974	0.0429	0.1395
753	SLU 5	1.6	0.1	93.15	-9.0197	0.045	0.1382
753	SLU 6	1.65	0.16	95.28	-9.2252	0.039	0.1417
753	SLU 7	1.65	0.13	95.28	-9.2254	0.0449	0.1418
753	SLU 8	1.64	0.14	94.47	-9.1473	0.0372	0.1402
753	SLU 9	1.63	0.11	94.47	-9.1475	0.043	0.1404
753	SLU 10	1.67	0.24	103.43	-10.0135	0.0562	0.1432
753	SLU 11	1.72	0.31	105.57	-10.2191	0.0502	0.1467
753	SLU 12	1.71	0.27	105.57	-10.2193	0.0561	0.1468
753	SLU 13	1.69	0.23	104.76	-10.1415	0.0582	0.1455
753	SLU 14	1.74	0.3	106.89	-10.347	0.0522	0.149
753	SLU 15	1.74	0.27	106.89	-10.3473	0.0581	0.1492
753	SLU 16	1.73	0.28	106.08	-10.2692	0.0503	0.1476
753	SLU 17	1.72	0.25	106.08	-10.2694	0.0562	0.1477
753	SLU 18	1.71	0.35	108.41	-10.494	0.0521	0.1461
753	SLU 19	1.71	0.32	108.41	-10.4942	0.0579	0.1462
753	SLU 20	1.74	0.35	109.73	-10.622	0.054	0.1484
753	SLU 21	1.73	0.31	109.73	-10.6222	0.0599	0.1486
753	SLU 22	1.72	0.34	103.23	-9.9909	0.0441	0.1473
753	SLU 23	1.71	0.29	103.23	-9.9912	0.0538	0.1476
753	SLU 24	1.76	0.35	105.36	-10.1968	0.0479	0.1511
753	SLU 25	1.76	0.32	105.36	-10.197	0.0538	0.1512
753	SLU 26	1.74	0.28	104.55	-10.1192	0.0558	0.1499
753	SLU 27	1.79	0.35	106.68	-10.3247	0.0499	0.1534
753	SLU 28	1.78	0.31	106.68	-10.3249	0.0557	0.1536
753	SLU 29	1.77	0.33	105.87	-10.2468	0.048	0.152
753	SLU 30	1.77	0.3	105.87	-10.2471	0.0539	0.1521
753	SLU 31	1.8	0.42	114.83	-11.1131	0.067	0.1549
753	SLU 32	1.85	0.49	116.97	-11.3186	0.0611	0.1584
753	SLU 33	1.85	0.46	116.97	-11.3188	0.0669	0.1586
753	SLU 34	1.83	0.42	116.16	-11.2411	0.069	0.1573
753	SLU 35	1.88	0.48	118.29	-11.4466	0.063	0.1607
753	SLU 36	1.87	0.45	118.29	-11.4468	0.0689	0.1609
753	SLU 37	1.86	0.46	117.48	-11.3687	0.0612	0.1593
753	SLU 38	1.86	0.43	117.48	-11.3689	0.0671	0.1595
753	SLU 39	1.84	0.53	119.81	-11.5935	0.0629	0.1578
753	SLU 40	1.84	0.5	119.81	-11.5937	0.0688	0.158
753	SLU 41	1.87	0.53	121.13	-11.7215	0.0649	0.1601
753	SLU 42	1.87	0.5	121.13	-11.7217	0.0707	0.1603
753	SLU 43	2.01	0.14	115.47	-11.1818	0.0395	0.1722
753	SLU 44	2.01	0.09	115.47	-11.1821	0.0493	0.1725
753	SLU 45	2.05	0.15	117.6	-11.3876	0.0433	0.176
753	SLU 46	2.05	0.12	117.6	-11.3878	0.0492	0.1762
753	SLU 47	2.03	0.08	116.79	-11.3101	0.0512	0.1749
753	SLU 48	2.08	0.15	118.92	-11.5156	0.0453	0.1783
753	SLU 49	2.08	0.12	118.92	-11.5158	0.0511	0.1785
753	SLU 50	2.07	0.13	118.11	-11.4377	0.0434	0.1769
753	SLU 51	2.06	0.1	118.11	-11.4379	0.0493	0.1771
753	SLU 52	2.1	0.22	127.07	-12.304	0.0625	0.1799
753	SLU 53	2.14	0.29	129.21	-12.5095	0.0565	0.1833
753	SLU 54	2.14	0.26	129.21	-12.5097	0.0624	0.1835
753	SLU 55	2.12	0.22	128.4	-12.4319	0.0644	0.1822
753	SLU 56	2.17	0.28	130.53	-12.6375	0.0585	0.1856
753	SLU 57	2.17	0.25	130.53	-12.6377	0.0643	0.1858
753	SLU 58	2.16	0.27	129.72	-12.5596	0.0566	0.1842
753	SLU 59	2.15	0.23	129.72	-12.5598	0.0625	0.1844
753	SLU 60	2.14	0.34	132.05	-12.7844	0.0583	0.1827
753	SLU 61	2.14	0.3	132.05	-12.7846	0.0642	0.1829
753	SLU 62	2.17	0.33	133.37	-12.9124	0.0603	0.185
753	SLU 63	2.16	0.3	133.37	-12.9126	0.0662	0.1852
753	SLU 64	2.14	0.32	126.87	-12.2813	0.0503	0.184
753	SLU 65	2.14	0.27	126.87	-12.2817	0.0601	0.1843
753	SLU 66	2.19	0.34	129	-12.4872	0.0541	0.1877
753	SLU 67	2.18	0.3	129	-12.4874	0.06	0.1879
753	SLU 68	2.17	0.26	128.19	-12.4096	0.0621	0.1866
753	SLU 69	2.22	0.33	130.32	-12.6152	0.0561	0.19
753	SLU 70	2.21	0.3	130.32	-12.6154	0.062	0.1902
753	SLU 71	2.2	0.31	129.51	-12.5373	0.0542	0.1886
753	SLU 72	2.2	0.28	129.51	-12.5375	0.0601	0.1888
753	SLU 73	2.23	0.41	138.47	-13.4035	0.0733	0.1916
753	SLU 74	2.28	0.47	140.61	-13.609	0.0673	0.1951
753	SLU 75	2.27	0.44	140.61	-13.6092	0.0732	0.1952
753	SLU 76	2.26	0.4	139.8	-13.5315	0.0753	0.1939
753	SLU 77	2.3	0.47	141.93	-13.737	0.0693	0.1974
753	SLU 78	2.3	0.44	141.93	-13.7372	0.0752	0.1976
753	SLU 79	2.29	0.45	141.12	-13.6591	0.0674	0.1959
753	SLU 80	2.29	0.42	141.12	-13.6593	0.0733	0.1961



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
753	SLU 81	2.27	0.52	143.45	-13.8839	0.0691	0.1944
753	SLU 82	2.27	0.49	143.45	-13.8842	0.075	0.1946
753	SLU 83	2.3	0.51	144.77	-14.0119	0.0711	0.1968
753	SLU 84	2.3	0.48	144.77	-14.0121	0.077	0.1969
753	SLE RA 1	1.62	0.21	95.08	-9.2055	0.0363	0.1389
753	SLE RA 2	1.62	0.17	95.08	-9.2057	0.0428	0.1391
753	SLE RA 3	1.65	0.22	96.51	-9.3427	0.0389	0.1414
753	SLE RA 4	1.65	0.2	96.51	-9.3429	0.0428	0.1416
753	SLE RA 5	1.64	0.17	95.96	-9.2911	0.0442	0.1407
753	SLE RA 6	1.67	0.21	97.39	-9.4281	0.0402	0.143
753	SLE RA 7	1.67	0.19	97.39	-9.4282	0.0441	0.1431
753	SLE RA 8	1.66	0.2	96.85	-9.3761	0.0389	0.142
753	SLE RA 9	1.65	0.18	96.85	-9.3763	0.0429	0.1422
753	SLE RA 10	1.68	0.26	102.82	-9.9536	0.0516	0.144
753	SLE RA 11	1.71	0.31	104.24	-10.0906	0.0477	0.1463
753	SLE RA 12	1.71	0.29	104.24	-10.0908	0.0516	0.1464
753	SLE RA 13	1.69	0.26	103.7	-10.039	0.0529	0.1456
753	SLE RA 14	1.73	0.3	105.13	-10.176	0.049	0.1479
753	SLE RA 15	1.73	0.28	105.13	-10.1761	0.0529	0.148
753	SLE RA 16	1.72	0.29	104.59	-10.124	0.0477	0.1469
753	SLE RA 17	1.71	0.27	104.59	-10.1242	0.0516	0.147
753	SLE RA 18	1.71	0.34	106.14	-10.2739	0.0489	0.1459
753	SLE RA 19	1.7	0.32	106.14	-10.2741	0.0528	0.146
753	SLE RA 20	1.72	0.33	107.02	-10.3593	0.0502	0.1475
753	SLE RA 21	1.72	0.31	107.02	-10.3594	0.0541	0.1476
753	SLE FR 1	1.62	0.21	95.08	-9.2055	0.0363	0.1389
753	SLE FR 2	1.62	0.2	95.08	-9.2055	0.0376	0.139
753	SLE FR 3	1.63	0.21	95.44	-9.2396	0.0368	0.1396
753	SLE FR 4	1.65	0.24	98.4	-9.5261	0.0414	0.1411
753	SLE FR 5	1.65	0.25	98.75	-9.5602	0.0406	0.1417
753	SLE FR 6	1.66	0.27	100.61	-9.7397	0.0426	0.1424
753	SLE QP 1	1.62	0.21	95.08	-9.2055	0.0363	0.1389
753	SLE QP 2	1.65	0.25	98.4	-9.526	0.0401	0.141
753	SLD 1	8.8	1.79	91.65	-8.8642	0.0862	0.8224
753	SLD 2	8.62	2.51	91.46	-8.8521	0.0901	0.8223
753	SLD 3	9.22	-0.84	91.01	-8.8075	0.1511	0.863
753	SLD 4	9.04	-0.12	90.83	-8.7954	0.155	0.8629
753	SLD 5	3.18	4.57	97.37	-9.4156	-0.0453	0.2839
753	SLD 6	3.07	5.05	97.25	-9.4077	-0.0427	0.2839
753	SLD 7	4.59	-4.2	95.25	-9.2267	0.1712	0.4192
753	SLD 8	4.47	-3.72	95.13	-9.2187	0.1738	0.4191
753	SLD 9	-1.18	4.22	101.67	-9.8334	-0.0936	-0.1371
753	SLD 10	-1.3	4.69	101.55	-9.8254	-0.091	-0.1371
753	SLD 11	0.23	-4.55	99.55	-9.6444	0.1229	-0.0018
753	SLD 12	0.11	-4.08	99.43	-9.6364	0.1255	-0.0018
753	SLD 13	-5.75	0.61	105.98	-10.2566	-0.0748	-0.5808
753	SLD 14	-5.93	1.34	105.79	-10.2445	-0.0709	-0.5809
753	SLD 15	-5.33	-2.02	105.34	-10.1999	-0.0099	-0.5403
753	SLD 16	-5.5	-1.3	105.16	-10.1878	-0.006	-0.5403
753	SLV 1	18.38	3.76	82.57	-7.9759	0.1504	1.7352
753	SLV 2	17.96	5.44	82.15	-7.9477	0.1595	1.7351
753	SLV 3	19.36	-2.2	81.1	-7.8444	0.2973	1.8298
753	SLV 4	18.94	-0.51	80.67	-7.8163	0.3064	1.8297
753	SLV 5	5.25	10.05	95.96	-9.2652	-0.151	0.4758
753	SLV 6	4.98	11.13	95.69	-9.247	-0.1452	0.4757
753	SLV 7	8.52	-9.81	91.05	-8.8271	0.3383	0.7912
753	SLV 8	8.25	-8.73	90.77	-8.8089	0.3442	0.7911
753	SLV 9	-4.96	9.22	106.03	-10.2431	-0.264	-0.509
753	SLV 10	-5.23	10.31	105.76	-10.2249	-0.2582	-0.5091
753	SLV 11	-1.69	-10.64	101.11	-9.8051	0.2254	-0.1937
753	SLV 12	-1.96	-9.55	100.84	-9.7869	0.2312	-0.1937
753	SLV 13	-15.65	1.01	116.13	-11.2358	-0.2262	-1.5476
753	SLV 14	-16.07	2.69	115.71	-11.2076	-0.2171	-1.5477
753	SLV 15	-14.67	-4.95	114.65	-11.1044	-0.0794	-1.453
753	SLV 16	-15.08	-3.27	114.23	-11.0762	-0.0703	-1.4531
753	CRTFP Ux+	0	0	0	0	0	0
753	CRTFP Ux-	0	0	0	0	0	0
753	CRTFP Uy+	0	0	0	0	0	0
753	CRTFP Uy-	0	0	0	0	0	0
756	SLU 1	0.28	1.32	55.77	0.0035	0.0341	0.0053
756	SLU 2	0.26	1.27	55.71	0.0032	0.0365	0.0061
756	SLU 3	0.29	1.37	57.03	0.0036	0.0371	0.0054
756	SLU 4	0.28	1.35	56.99	0.0034	0.0385	0.0058
756	SLU 5	0.27	1.3	56.51	0.0033	0.0392	0.006
756	SLU 6	0.3	1.4	57.83	0.0038	0.0398	0.0053
756	SLU 7	0.29	1.37	57.79	0.0036	0.0413	0.0058
756	SLU 8	0.29	1.36	57.37	0.0039	0.0396	0.0052
756	SLU 9	0.29	1.34	57.34	0.0036	0.041	0.0057
756	SLU 10	0.3	1.43	63.46	0.0057	0.0476	0.0059
756	SLU 11	0.32	1.53	64.78	0.0062	0.0483	0.0052
756	SLU 12	0.31	1.5	64.74	0.006	0.0497	0.0056
756	SLU 13	0.3	1.45	64.26	0.0059	0.0503	0.0059
756	SLU 14	0.33	1.55	65.58	0.0063	0.051	0.0052
756	SLU 15	0.32	1.53	65.54	0.0061	0.0524	0.0056
756	SLU 16	0.33	1.52	65.12	0.0064	0.0507	0.0051
756	SLU 17	0.32	1.49	65.09	0.0062	0.0521	0.0055
756	SLU 18	0.32	1.55	66.84	0.0072	0.05	0.0051
756	SLU 19	0.31	1.52	66.81	0.0069	0.0514	0.0055
756	SLU 20	0.33	1.57	67.64	0.0073	0.0528	0.0051
756	SLU 21	0.32	1.54	67.61	0.0071	0.0542	0.0055



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
756	SLU 22	0.32	1.56	63.11	0.0083	0.0332	0.0055
756	SLU 23	0.31	1.52	63.05	0.008	0.0356	0.0062
756	SLU 24	0.33	1.62	64.37	0.0085	0.0362	0.0055
756	SLU 25	0.32	1.59	64.33	0.0082	0.0376	0.0059
756	SLU 26	0.31	1.54	63.85	0.0082	0.0383	0.0061
756	SLU 27	0.34	1.64	65.17	0.0086	0.0389	0.0055
756	SLU 28	0.33	1.61	65.13	0.0084	0.0403	0.0059
756	SLU 29	0.33	1.61	64.71	0.0087	0.0387	0.0054
756	SLU 30	0.33	1.58	64.67	0.0085	0.0401	0.0058
756	SLU 31	0.34	1.67	70.8	0.0105	0.0467	0.006
756	SLU 32	0.36	1.78	72.12	0.011	0.0473	0.0054
756	SLU 33	0.35	1.75	72.08	0.0108	0.0487	0.0058
756	SLU 34	0.35	1.7	71.6	0.0107	0.0494	0.006
756	SLU 35	0.37	1.8	72.92	0.0112	0.0501	0.0053
756	SLU 36	0.36	1.77	72.88	0.011	0.0515	0.0057
756	SLU 37	0.37	1.76	72.46	0.0112	0.0498	0.0052
756	SLU 38	0.36	1.74	72.42	0.011	0.0512	0.0057
756	SLU 39	0.36	1.79	74.18	0.012	0.0491	0.0053
756	SLU 40	0.36	1.76	74.14	0.0118	0.0505	0.0057
756	SLU 41	0.37	1.81	74.98	0.0122	0.0519	0.0052
756	SLU 42	0.36	1.78	74.94	0.0119	0.0533	0.0056
756	SLU 43	0.35	1.63	69.99	0.0029	0.0447	0.0069
756	SLU 44	0.33	1.59	69.93	0.0025	0.047	0.0076
756	SLU 45	0.36	1.69	71.25	0.003	0.0477	0.0069
756	SLU 46	0.35	1.66	71.21	0.0028	0.0491	0.0074
756	SLU 47	0.34	1.61	70.73	0.0027	0.0498	0.0076
756	SLU 48	0.37	1.71	72.05	0.0032	0.0504	0.0069
756	SLU 49	0.36	1.68	72.01	0.003	0.0518	0.0073
756	SLU 50	0.36	1.68	71.59	0.0032	0.0501	0.0068
756	SLU 51	0.36	1.65	71.55	0.003	0.0515	0.0072
756	SLU 52	0.37	1.74	77.68	0.0051	0.0582	0.0075
756	SLU 53	0.39	1.84	78.99	0.0056	0.0588	0.0068
756	SLU 54	0.38	1.82	78.96	0.0054	0.0602	0.0072
756	SLU 55	0.37	1.77	78.48	0.0053	0.0609	0.0074
756	SLU 56	0.4	1.87	79.79	0.0057	0.0615	0.0067
756	SLU 57	0.39	1.84	79.76	0.0055	0.0629	0.0072
756	SLU 58	0.39	1.83	79.34	0.0058	0.0613	0.0066
756	SLU 59	0.39	1.81	79.3	0.0056	0.0627	0.0071
756	SLU 60	0.39	1.86	81.06	0.0065	0.0606	0.0067
756	SLU 61	0.38	1.83	81.02	0.0063	0.062	0.0071
756	SLU 62	0.4	1.88	81.86	0.0067	0.0633	0.0066
756	SLU 63	0.39	1.85	81.82	0.0065	0.0647	0.0071
756	SLU 64	0.39	1.88	77.33	0.0077	0.0438	0.007
756	SLU 65	0.37	1.83	77.27	0.0074	0.0461	0.0077
756	SLU 66	0.4	1.93	78.58	0.0079	0.0468	0.0071
756	SLU 67	0.39	1.9	78.55	0.0076	0.0482	0.0075
756	SLU 68	0.38	1.85	78.07	0.0076	0.0488	0.0077
756	SLU 69	0.41	1.95	79.38	0.008	0.0495	0.007
756	SLU 70	0.4	1.92	79.35	0.0078	0.0509	0.0074
756	SLU 71	0.4	1.92	78.93	0.0081	0.0492	0.0069
756	SLU 72	0.4	1.89	78.89	0.0079	0.0506	0.0074
756	SLU 73	0.41	1.99	85.02	0.0099	0.0573	0.0076
756	SLU 74	0.43	2.09	86.33	0.0104	0.0579	0.0069
756	SLU 75	0.42	2.06	86.3	0.0102	0.0593	0.0073
756	SLU 76	0.41	2.01	85.81	0.0101	0.06	0.0075
756	SLU 77	0.44	2.11	87.13	0.0106	0.0606	0.0069
756	SLU 78	0.43	2.08	87.1	0.0104	0.062	0.0073
756	SLU 79	0.44	2.08	86.68	0.0106	0.0604	0.0068
756	SLU 80	0.43	2.05	86.64	0.0104	0.0618	0.0072
756	SLU 81	0.43	2.1	88.4	0.0114	0.0597	0.0068
756	SLU 82	0.42	2.07	88.36	0.0112	0.0611	0.0072
756	SLU 83	0.44	2.12	89.2	0.0116	0.0624	0.0068
756	SLU 84	0.43	2.1	89.16	0.0113	0.0638	0.0072
756	SLE RA 1	0.29	1.39	57.87	0.0049	0.0339	0.0054
756	SLE RA 2	0.28	1.36	57.83	0.0047	0.0354	0.0059
756	SLE RA 3	0.3	1.43	58.71	0.005	0.0359	0.0054
756	SLE RA 4	0.29	1.41	58.68	0.0048	0.0368	0.0057
756	SLE RA 5	0.29	1.37	58.36	0.0048	0.0372	0.0058
756	SLE RA 6	0.3	1.44	59.24	0.0051	0.0377	0.0054
756	SLE RA 7	0.3	1.42	59.22	0.0049	0.0386	0.0057
756	SLE RA 8	0.3	1.42	58.94	0.0051	0.0375	0.0053
756	SLE RA 9	0.3	1.4	58.91	0.005	0.0384	0.0056
756	SLE RA 10	0.3	1.46	62.99	0.0064	0.0429	0.0058
756	SLE RA 11	0.32	1.53	63.87	0.0067	0.0433	0.0053
756	SLE RA 12	0.31	1.51	63.85	0.0065	0.0442	0.0056
756	SLE RA 13	0.31	1.48	63.53	0.0065	0.0447	0.0057
756	SLE RA 14	0.32	1.55	64.41	0.0068	0.0451	0.0053
756	SLE RA 15	0.32	1.53	64.38	0.0066	0.046	0.0056
756	SLE RA 16	0.32	1.52	64.1	0.0068	0.0449	0.0052
756	SLE RA 17	0.32	1.51	64.08	0.0067	0.0459	0.0055
756	SLE RA 18	0.32	1.54	65.25	0.0073	0.0445	0.0052
756	SLE RA 19	0.31	1.52	65.23	0.0072	0.0454	0.0055
756	SLE RA 20	0.32	1.55	65.78	0.0074	0.0463	0.0052
756	SLE RA 21	0.32	1.54	65.76	0.0073	0.0472	0.0055
756	SLE FR 1	0.29	1.39	57.87	0.0049	0.0339	0.0054
756	SLE FR 2	0.29	1.38	57.86	0.0048	0.0342	0.0055
756	SLE FR 3	0.29	1.4	58.08	0.0049	0.0346	0.0054
756	SLE FR 4	0.3	1.43	60.08	0.0056	0.0374	0.0054
756	SLE FR 5	0.3	1.44	60.3	0.0057	0.0378	0.0053
756	SLE FR 6	0.3	1.47	61.56	0.0061	0.0392	0.0053



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
756	SLE QP 1	0.29	1.39	57.87	0.0049	0.0339	0.0054
756	SLE QP 2	0.3	1.44	60.08	0.0056	0.037	0.0053
756	SLD 1	5.24	1.96	58.44	0	0.2295	-0.0073
756	SLD 2	5.11	2.13	58.55	0.0002	0.2289	0.0013
756	SLD 3	4.97	0.14	57.73	-0.0039	0.2719	-0.0051
756	SLD 4	4.84	0.31	57.84	-0.0037	0.2712	0.0034
756	SLD 5	2.23	4.32	60.65	0.01	0.0307	-0.0033
756	SLD 6	2.14	4.43	60.72	0.0101	0.0303	0.0023
756	SLD 7	1.3	-1.74	58.28	-0.0033	0.1718	0.004
756	SLD 8	1.21	-1.63	58.35	-0.0032	0.1714	0.0096
756	SLD 9	-0.62	4.5	61.82	0.0144	-0.0973	0.0011
756	SLD 10	-0.71	4.61	61.89	0.0146	-0.0977	0.0067
756	SLD 11	-1.54	-1.56	59.44	0.0011	0.0438	0.0083
756	SLD 12	-1.63	-1.45	59.52	0.0013	0.0434	0.0139
756	SLD 13	-4.24	2.56	62.33	0.015	-0.1971	0.0072
756	SLD 14	-4.37	2.73	62.44	0.0152	-0.1978	0.0157
756	SLD 15	-4.52	0.74	61.62	0.011	-0.1548	0.0094
756	SLD 16	-4.65	0.91	61.73	0.0112	-0.1554	0.0179
756	SLV 1	11.87	2.6	56.2	-0.0076	0.489	-0.0241
756	SLV 2	11.56	2.98	56.45	-0.0072	0.4874	-0.0042
756	SLV 3	11.22	-1.52	54.58	-0.0167	0.5851	-0.0191
756	SLV 4	10.92	-1.14	54.84	-0.0162	0.5835	0.0007
756	SLV 5	4.8	7.97	61.32	0.0153	0.0272	-0.0144
756	SLV 6	4.61	8.21	61.49	0.0156	0.0262	-0.0016
756	SLV 7	2.65	-5.77	55.94	-0.0149	0.3474	0.0021
756	SLV 8	2.45	-5.52	56.1	-0.0146	0.3464	0.0149
756	SLV 9	-1.86	8.39	64.06	0.0258	-0.2723	-0.0042
756	SLV 10	-2.05	8.64	64.23	0.0261	-0.2733	0.0086
756	SLV 11	-4.01	-5.34	58.68	-0.0044	0.0479	0.0123
756	SLV 12	-4.21	-5.1	58.84	-0.0041	0.0469	0.0251
756	SLV 13	-10.32	4.01	65.33	0.0274	-0.5094	0.0099
756	SLV 14	-10.63	4.39	65.59	0.0279	-0.511	0.0298
756	SLV 15	-10.97	-0.11	63.72	0.0184	-0.4133	0.0149
756	SLV 16	-11.27	0.27	63.97	0.0189	-0.4149	0.0347
756	CRTFP Ux+	0	0	0	0	0	0
756	CRTFP Ux-	0	0	0	0	0	0
759	SLU 1	-0.03	0.7	57.19	0.0148	0.1033	-0.0065
759	SLU 2	-0.03	0.64	57.1	0.0143	0.1017	-0.0061
759	SLU 3	-0.03	0.74	58.51	0.015	0.1062	-0.0067
759	SLU 4	-0.03	0.7	58.46	0.0147	0.1052	-0.0064
759	SLU 5	-0.03	0.65	57.93	0.0145	0.1028	-0.0063
759	SLU 6	-0.03	0.75	59.35	0.0152	0.1073	-0.0069
759	SLU 7	-0.03	0.71	59.29	0.0149	0.1063	-0.0066
759	SLU 8	-0.03	0.72	58.87	0.0153	0.1055	-0.0069
759	SLU 9	-0.03	0.68	58.81	0.015	0.1045	-0.0066
759	SLU 10	-0.01	0.76	64.66	0.016	0.1112	-0.0061
759	SLU 11	0	0.87	66.08	0.0167	0.1157	-0.0067
759	SLU 12	-0.01	0.83	66.02	0.0164	0.1147	-0.0065
759	SLU 13	-0.01	0.77	65.5	0.0162	0.1123	-0.0063
759	SLU 14	0	0.88	66.92	0.0169	0.1168	-0.0069
759	SLU 15	-0.01	0.84	66.86	0.0166	0.1158	-0.0067
759	SLU 16	0	0.85	66.44	0.0169	0.115	-0.0069
759	SLU 17	0	0.81	66.38	0.0166	0.114	-0.0067
759	SLU 18	0.01	0.88	68	0.0172	0.1169	-0.0066
759	SLU 19	0.01	0.84	67.95	0.0169	0.1159	-0.0063
759	SLU 20	0.01	0.89	68.84	0.0174	0.118	-0.0068
759	SLU 21	0.01	0.85	68.78	0.0171	0.117	-0.0065
759	SLU 22	-0.04	0.92	64.55	0.0193	0.1233	-0.0069
759	SLU 23	-0.04	0.86	64.46	0.0188	0.1217	-0.0065
759	SLU 24	-0.04	0.96	65.87	0.0195	0.1262	-0.0071
759	SLU 25	-0.04	0.92	65.82	0.0192	0.1253	-0.0068
759	SLU 26	-0.04	0.87	65.3	0.019	0.1228	-0.0067
759	SLU 27	-0.04	0.97	66.71	0.0197	0.1273	-0.0073
759	SLU 28	-0.04	0.93	66.65	0.0194	0.1263	-0.007
759	SLU 29	-0.04	0.94	66.23	0.0198	0.1255	-0.0073
759	SLU 30	-0.04	0.9	66.17	0.0194	0.1245	-0.007
759	SLU 31	-0.02	0.98	72.03	0.0205	0.1312	-0.0065
759	SLU 32	-0.01	1.09	73.44	0.0212	0.1357	-0.0071
759	SLU 33	-0.02	1.05	73.38	0.0209	0.1348	-0.0069
759	SLU 34	-0.02	0.99	72.86	0.0207	0.1323	-0.0067
759	SLU 35	-0.01	1.1	74.28	0.0214	0.1368	-0.0073
759	SLU 36	-0.02	1.06	74.22	0.0211	0.1359	-0.0071
759	SLU 37	-0.01	1.07	73.8	0.0214	0.135	-0.0073
759	SLU 38	-0.02	1.03	73.74	0.0211	0.134	-0.0071
759	SLU 39	0	1.11	75.36	0.0217	0.1369	-0.007
759	SLU 40	-0.01	1.07	75.31	0.0214	0.1359	-0.0067
759	SLU 41	0	1.12	76.2	0.0219	0.138	-0.0072
759	SLU 42	0	1.08	76.14	0.0216	0.137	-0.0069
759	SLU 43	-0.03	0.84	71.82	0.0178	0.1274	-0.0083
759	SLU 44	-0.04	0.77	71.73	0.0172	0.1258	-0.0079
759	SLU 45	-0.03	0.88	73.15	0.0179	0.1303	-0.0085
759	SLU 46	-0.04	0.84	73.09	0.0176	0.1294	-0.0082
759	SLU 47	-0.04	0.78	72.57	0.0174	0.1269	-0.0081
759	SLU 48	-0.03	0.89	73.98	0.0182	0.1314	-0.0087
759	SLU 49	-0.04	0.85	73.93	0.0178	0.1305	-0.0084
759	SLU 50	-0.03	0.86	73.5	0.0182	0.1296	-0.0087
759	SLU 51	-0.03	0.82	73.44	0.0179	0.1286	-0.0085
759	SLU 52	-0.01	0.9	79.3	0.0189	0.1353	-0.0079
759	SLU 53	-0.01	1	80.71	0.0196	0.1398	-0.0085
759	SLU 54	-0.01	0.96	80.66	0.0193	0.1389	-0.0083



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
759	SLU 55	-0.01	0.91	80.14	0.0191	0.1364	-0.0081
759	SLU 56	-0.01	1.01	81.55	0.0198	0.1409	-0.0087
759	SLU 57	-0.01	0.97	81.5	0.0195	0.14	-0.0085
759	SLU 58	-0.01	0.98	81.07	0.0199	0.1391	-0.0088
759	SLU 59	-0.01	0.95	81.01	0.0195	0.1381	-0.0085
759	SLU 60	0.01	1.02	82.64	0.0201	0.141	-0.0084
759	SLU 61	0	0.98	82.58	0.0198	0.14	-0.0081
759	SLU 62	0.01	1.03	83.47	0.0204	0.1421	-0.0086
759	SLU 63	0	0.99	83.42	0.02	0.1411	-0.0083
759	SLU 64	-0.04	1.06	79.19	0.0222	0.1474	-0.0087
759	SLU 65	-0.05	0.99	79.09	0.0217	0.1458	-0.0083
759	SLU 66	-0.04	1.1	80.51	0.0224	0.1503	-0.0089
759	SLU 67	-0.05	1.06	80.45	0.0221	0.1494	-0.0086
759	SLU 68	-0.05	1	79.93	0.0219	0.1469	-0.0085
759	SLU 69	-0.04	1.11	81.35	0.0226	0.1514	-0.0091
759	SLU 70	-0.05	1.07	81.29	0.0223	0.1505	-0.0088
759	SLU 71	-0.04	1.08	80.86	0.0227	0.1496	-0.0091
759	SLU 72	-0.05	1.04	80.81	0.0224	0.1486	-0.0088
759	SLU 73	-0.02	1.12	86.66	0.0234	0.1553	-0.0083
759	SLU 74	-0.02	1.22	88.08	0.0241	0.1598	-0.0089
759	SLU 75	-0.02	1.18	88.02	0.0238	0.1589	-0.0087
759	SLU 76	-0.02	1.13	87.5	0.0236	0.1564	-0.0085
759	SLU 77	-0.02	1.23	88.91	0.0243	0.1609	-0.0091
759	SLU 78	-0.02	1.19	88.86	0.024	0.16	-0.0089
759	SLU 79	-0.02	1.21	88.43	0.0243	0.1591	-0.0091
759	SLU 80	-0.02	1.17	88.37	0.024	0.1582	-0.0089
759	SLU 81	-0.01	1.24	90	0.0246	0.161	-0.0088
759	SLU 82	-0.01	1.2	89.94	0.0243	0.16	-0.0085
759	SLU 83	-0.01	1.25	90.84	0.0248	0.1621	-0.009
759	SLU 84	-0.01	1.21	90.78	0.0245	0.1611	-0.0087
759	SLE RA 1	-0.03	0.77	59.29	0.0161	0.109	-0.0066
759	SLE RA 2	-0.03	0.72	59.23	0.0158	0.1079	-0.0063
759	SLE RA 3	-0.03	0.79	60.18	0.0162	0.1109	-0.0067
759	SLE RA 4	-0.03	0.76	60.14	0.016	0.1103	-0.0066
759	SLE RA 5	-0.03	0.73	59.79	0.0159	0.1087	-0.0065
759	SLE RA 6	-0.03	0.8	60.73	0.0164	0.1117	-0.0069
759	SLE RA 7	-0.03	0.77	60.7	0.0162	0.111	-0.0067
759	SLE RA 8	-0.03	0.78	60.41	0.0164	0.1105	-0.0069
759	SLE RA 9	-0.03	0.75	60.37	0.0162	0.1098	-0.0067
759	SLE RA 10	-0.02	0.81	64.28	0.0169	0.1143	-0.0064
759	SLE RA 11	-0.01	0.88	65.22	0.0174	0.1173	-0.0068
759	SLE RA 12	-0.02	0.85	65.18	0.0171	0.1166	-0.0066
759	SLE RA 13	-0.02	0.81	64.84	0.017	0.115	-0.0065
759	SLE RA 14	-0.01	0.88	65.78	0.0175	0.118	-0.0069
759	SLE RA 15	-0.02	0.86	65.74	0.0173	0.1174	-0.0067
759	SLE RA 16	-0.01	0.86	65.46	0.0175	0.1168	-0.0069
759	SLE RA 17	-0.02	0.84	65.42	0.0173	0.1162	-0.0067
759	SLE RA 18	-0.01	0.89	66.5	0.0177	0.118	-0.0067
759	SLE RA 19	-0.01	0.86	66.46	0.0175	0.1174	-0.0065
759	SLE RA 20	-0.01	0.89	67.06	0.0179	0.1188	-0.0068
759	SLE RA 21	-0.01	0.87	67.02	0.0176	0.1181	-0.0066
759	SLE FR 1	-0.03	0.77	59.29	0.0161	0.109	-0.0066
759	SLE FR 2	-0.03	0.76	59.28	0.0161	0.1088	-0.0066
759	SLE FR 3	-0.03	0.77	59.52	0.0162	0.1093	-0.0067
759	SLE FR 4	-0.02	0.79	61.44	0.0165	0.1115	-0.0066
759	SLE FR 5	-0.02	0.8	61.68	0.0167	0.112	-0.0067
759	SLE FR 6	-0.02	0.83	62.9	0.0169	0.1135	-0.0066
759	SLE QP 1	-0.03	0.77	59.29	0.0161	0.109	-0.0066
759	SLE QP 2	-0.02	0.8	61.46	0.0166	0.1117	-0.0066
759	SLD 1	4.69	2.12	64.62	0.0508	0.2674	-0.0166
759	SLD 2	4.55	1.93	64.33	0.0488	0.2698	-0.0081
759	SLD 3	4.98	0.32	63.83	0.0472	0.249	-0.0178
759	SLD 4	4.84	0.13	63.54	0.0452	0.2515	-0.0093
759	SLD 5	0.98	3.96	63.66	0.0326	0.1858	-0.0093
759	SLD 6	0.89	3.84	63.47	0.0313	0.1874	-0.0037
759	SLD 7	1.94	-2.04	61.02	0.0207	0.1247	-0.0133
759	SLD 8	1.85	-2.16	60.83	0.0194	0.1263	-0.0077
759	SLD 9	-1.89	3.76	62.08	0.0138	0.0971	-0.0055
759	SLD 10	-1.99	3.64	61.9	0.0125	0.0987	0.0001
759	SLD 11	-0.93	-2.23	59.44	0.0019	0.0361	-0.0095
759	SLD 12	-1.03	-2.36	59.25	0.0006	0.0377	-0.0039
759	SLD 13	-4.88	1.47	59.37	-0.012	-0.028	-0.0039
759	SLD 14	-5.03	1.28	59.08	-0.014	-0.0256	0.0046
759	SLD 15	-4.6	-0.33	58.58	-0.0156	-0.0464	-0.0051
759	SLD 16	-4.74	-0.52	58.29	-0.0176	-0.0439	0.0034
759	SLV 1	11.01	3.82	68.87	0.0965	0.4753	-0.03
759	SLV 2	10.68	3.37	68.2	0.092	0.481	-0.0102
759	SLV 3	11.68	-0.25	67.07	0.0884	0.4335	-0.0328
759	SLV 4	11.35	-0.7	66.4	0.0838	0.4391	-0.0129
759	SLV 5	2.33	7.96	66.52	0.0537	0.2833	-0.0129
759	SLV 6	2.12	7.67	66.08	0.0508	0.287	-0.0001
759	SLV 7	4.56	-5.61	60.54	0.0266	0.1438	-0.0221
759	SLV 8	4.35	-5.9	60.1	0.0236	0.1474	-0.0093
759	SLV 9	-4.39	7.5	62.81	0.0096	0.076	-0.004
759	SLV 10	-4.61	7.22	62.38	0.0066	0.0797	0.0089
759	SLV 11	-2.16	-6.07	56.83	-0.0176	-0.0635	-0.0132
759	SLV 12	-2.38	-6.36	56.4	-0.0205	-0.0599	-0.0004
759	SLV 13	-11.4	2.3	56.51	-0.0506	-0.2157	-0.0003
759	SLV 14	-11.73	1.86	55.84	-0.0552	-0.21	0.0196
759	SLV 15	-10.73	-1.77	54.72	-0.0588	-0.2576	-0.0031



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
759	SLV 16	-11.06	-2.21	54.05	-0.0633	-0.2519	0.0168
759	CRTFP Ux+	0	0	0	0	0	0
759	CRTFP Ux-	0	0	0	0	0	0
761	SLU 1	-0.58	0.09	32.51	-0.0368	-3.2224	0.0235
761	SLU 2	-0.59	0.01	32.53	-0.0367	-3.227	0.0017
761	SLU 3	-0.6	0.1	33.29	-0.0377	-3.2879	0.0251
761	SLU 4	-0.6	0.05	33.3	-0.0376	-3.2907	0.012
761	SLU 5	-0.6	0.01	33.02	-0.0373	-3.2669	0.0029
761	SLU 6	-0.61	0.1	33.78	-0.0383	-3.3278	0.0263
761	SLU 7	-0.61	0.05	33.8	-0.0382	-3.3306	0.0132
761	SLU 8	-0.6	0.1	33.5	-0.0379	-3.3021	0.0258
761	SLU 9	-0.61	0.05	33.51	-0.0379	-3.305	0.0128
761	SLU 10	-0.62	0.08	36.35	-0.0418	-3.6029	0.0204
761	SLU 11	-0.63	0.17	37.11	-0.0428	-3.6638	0.0438
761	SLU 12	-0.63	0.12	37.12	-0.0427	-3.6666	0.0308
761	SLU 13	-0.63	0.08	36.84	-0.0423	-3.6428	0.0216
761	SLU 14	-0.64	0.18	37.6	-0.0433	-3.7037	0.045
761	SLU 15	-0.64	0.13	37.61	-0.0433	-3.7065	0.0319
761	SLU 16	-0.63	0.18	37.31	-0.043	-3.6781	0.0445
761	SLU 17	-0.63	0.12	37.33	-0.0429	-3.6809	0.0315
761	SLU 18	-0.62	0.2	37.97	-0.044	-3.7594	0.0502
761	SLU 19	-0.63	0.15	37.98	-0.044	-3.7622	0.0371
761	SLU 20	-0.63	0.2	38.46	-0.0446	-3.7993	0.0514
761	SLU 21	-0.64	0.15	38.47	-0.0446	-3.8021	0.0383
761	SLU 22	-0.63	0.16	36.37	-0.0416	-3.5929	0.0392
761	SLU 23	-0.64	0.07	36.39	-0.0416	-3.5975	0.0174
761	SLU 24	-0.64	0.16	37.15	-0.0425	-3.6584	0.0408
761	SLU 25	-0.65	0.11	37.17	-0.0425	-3.6612	0.0277
761	SLU 26	-0.65	0.07	36.88	-0.0421	-3.6374	0.0185
761	SLU 27	-0.65	0.17	37.65	-0.0431	-3.6983	0.042
761	SLU 28	-0.66	0.11	37.66	-0.0431	-3.7011	0.0289
761	SLU 29	-0.65	0.17	37.36	-0.0428	-3.6727	0.0415
761	SLU 30	-0.65	0.11	37.37	-0.0427	-3.6755	0.0284
761	SLU 31	-0.66	0.14	40.21	-0.0466	-3.9735	0.0361
761	SLU 32	-0.67	0.24	40.97	-0.0476	-4.0343	0.0595
761	SLU 33	-0.68	0.18	40.98	-0.0476	-4.0371	0.0465
761	SLU 34	-0.67	0.15	40.7	-0.0472	-4.0134	0.0373
761	SLU 35	-0.68	0.24	41.47	-0.0482	-4.0742	0.0607
761	SLU 36	-0.69	0.19	41.48	-0.0482	-4.077	0.0476
761	SLU 37	-0.68	0.24	41.18	-0.0479	-4.0486	0.0602
761	SLU 38	-0.68	0.19	41.19	-0.0478	-4.0514	0.0472
761	SLU 39	-0.67	0.26	41.83	-0.0489	-4.1299	0.0659
761	SLU 40	-0.67	0.21	41.84	-0.0488	-4.1327	0.0528
761	SLU 41	-0.68	0.27	42.32	-0.0495	-4.1698	0.0671
761	SLU 42	-0.68	0.21	42.33	-0.0494	-4.1726	0.054
761	SLU 43	-0.74	0.1	40.94	-0.0461	-4.062	0.0251
761	SLU 44	-0.75	0.01	40.96	-0.0461	-4.0667	0.0033
761	SLU 45	-0.76	0.11	41.72	-0.047	-4.1276	0.0268
761	SLU 46	-0.76	0.05	41.73	-0.047	-4.1304	0.0137
761	SLU 47	-0.76	0.02	41.45	-0.0466	-4.1066	0.0045
761	SLU 48	-0.76	0.11	42.21	-0.0476	-4.1675	0.0279
761	SLU 49	-0.77	0.06	42.22	-0.0476	-4.1703	0.0149
761	SLU 50	-0.76	0.11	41.92	-0.0473	-4.1418	0.0275
761	SLU 51	-0.76	0.06	41.94	-0.0472	-4.1446	0.0144
761	SLU 52	-0.78	0.09	44.78	-0.0511	-4.4426	0.0221
761	SLU 53	-0.78	0.18	45.54	-0.0521	-4.5035	0.0455
761	SLU 54	-0.79	0.13	45.55	-0.0521	-4.5063	0.0324
761	SLU 55	-0.79	0.09	45.27	-0.0517	-4.4825	0.0232
761	SLU 56	-0.79	0.19	46.03	-0.0527	-4.5434	0.0467
761	SLU 57	-0.8	0.13	46.04	-0.0526	-4.5462	0.0336
761	SLU 58	-0.79	0.18	45.74	-0.0524	-4.5177	0.0462
761	SLU 59	-0.79	0.13	45.76	-0.0523	-4.5205	0.0331
761	SLU 60	-0.78	0.21	46.4	-0.0534	-4.5991	0.0519
761	SLU 61	-0.79	0.15	46.41	-0.0533	-4.6019	0.0388
761	SLU 62	-0.79	0.21	46.89	-0.054	-4.6389	0.053
761	SLU 63	-0.8	0.16	46.9	-0.0539	-4.6418	0.04
761	SLU 64	-0.79	0.16	44.8	-0.051	-4.4325	0.0408
761	SLU 65	-0.79	0.08	44.82	-0.0509	-4.4372	0.019
761	SLU 66	-0.8	0.17	45.58	-0.0519	-4.4981	0.0425
761	SLU 67	-0.81	0.12	45.6	-0.0519	-4.5009	0.0294
761	SLU 68	-0.8	0.08	45.31	-0.0515	-4.4771	0.0202
761	SLU 69	-0.81	0.17	46.08	-0.0525	-4.538	0.0436
761	SLU 70	-0.82	0.12	46.09	-0.0524	-4.5408	0.0306
761	SLU 71	-0.81	0.17	45.79	-0.0521	-4.5123	0.0432
761	SLU 72	-0.81	0.12	45.8	-0.0521	-4.5151	0.0301
761	SLU 73	-0.82	0.15	48.64	-0.056	-4.8131	0.0378
761	SLU 74	-0.83	0.24	49.4	-0.057	-4.874	0.0612
761	SLU 75	-0.83	0.19	49.41	-0.0569	-4.8768	0.0481
761	SLU 76	-0.83	0.15	49.13	-0.0566	-4.853	0.0389
761	SLU 77	-0.84	0.25	49.89	-0.0576	-4.9139	0.0624
761	SLU 78	-0.84	0.2	49.91	-0.0575	-4.9167	0.0493
761	SLU 79	-0.84	0.25	49.61	-0.0572	-4.8882	0.0619
761	SLU 80	-0.84	0.19	49.62	-0.0572	-4.8911	0.0488
761	SLU 81	-0.83	0.27	50.26	-0.0583	-4.9696	0.0676
761	SLU 82	-0.83	0.22	50.27	-0.0582	-4.9724	0.0545
761	SLU 83	-0.84	0.27	50.75	-0.0588	-5.0095	0.0687
761	SLU 84	-0.84	0.22	50.76	-0.0588	-5.0123	0.0557
761	SLE RA 1	-0.6	0.11	33.62	-0.0382	-3.3282	0.0279
761	SLE RA 2	-0.6	0.05	33.63	-0.0381	-3.3313	0.0134
761	SLE RA 3	-0.61	0.12	34.14	-0.0388	-3.3719	0.029



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
761	SLE RA 4	-0.61	0.08	34.14	-0.0387	-3.3738	0.0203
761	SLE RA 5	-0.61	0.06	33.96	-0.0385	-3.3579	0.0142
761	SLE RA 6	-0.61	0.12	34.46	-0.0391	-3.3985	0.0298
761	SLE RA 7	-0.61	0.08	34.47	-0.0391	-3.4004	0.0211
761	SLE RA 8	-0.61	0.12	34.27	-0.0389	-3.3814	0.0295
761	SLE RA 9	-0.61	0.08	34.28	-0.0389	-3.3833	0.0208
761	SLE RA 10	-0.62	0.1	36.17	-0.0415	-3.5819	0.0259
761	SLE RA 11	-0.62	0.16	36.68	-0.0422	-3.6225	0.0415
761	SLE RA 12	-0.63	0.13	36.69	-0.0421	-3.6244	0.0328
761	SLE RA 13	-0.63	0.11	36.5	-0.0419	-3.6085	0.0267
761	SLE RA 14	-0.63	0.17	37.01	-0.0425	-3.6491	0.0423
761	SLE RA 15	-0.63	0.13	37.02	-0.0425	-3.651	0.0336
761	SLE RA 16	-0.63	0.17	36.82	-0.0423	-3.632	0.042
761	SLE RA 17	-0.63	0.13	36.82	-0.0423	-3.6339	0.0333
761	SLE RA 18	-0.62	0.18	37.25	-0.043	-3.6862	0.0458
761	SLE RA 19	-0.63	0.15	37.26	-0.043	-3.6881	0.0371
761	SLE RA 20	-0.63	0.18	37.58	-0.0434	-3.7128	0.0466
761	SLE RA 21	-0.63	0.15	37.59	-0.0433	-3.7147	0.0379
761	SLE FR 1	-0.6	0.11	33.62	-0.0382	-3.3282	0.0279
761	SLE FR 2	-0.6	0.1	33.62	-0.0382	-3.3288	0.025
761	SLE FR 3	-0.6	0.11	33.75	-0.0383	-3.3389	0.0283
761	SLE FR 4	-0.6	0.12	34.71	-0.0396	-3.4362	0.0304
761	SLE FR 5	-0.61	0.13	34.84	-0.0398	-3.4463	0.0336
761	SLE FR 6	-0.61	0.15	35.43	-0.0406	-3.5072	0.0369
761	SLE QP 1	-0.6	0.11	33.62	-0.0382	-3.3282	0.0279
761	SLE QP 2	-0.6	0.13	34.71	-0.0396	-3.4356	0.0333
761	SLD 1	1.87	0.69	43.49	-0.0544	-4.2913	0.172
761	SLD 2	1.77	0.17	43.61	-0.0536	-4.3271	0.0434
761	SLD 3	1.72	-0.6	43.99	-0.0533	-4.4131	-0.1498
761	SLD 4	1.63	-1.12	44.1	-0.0525	-4.4489	-0.2783
761	SLD 5	0.37	2.34	36.57	-0.0459	-3.5012	0.5859
761	SLD 6	0.31	2	36.64	-0.0454	-3.5248	0.5014
761	SLD 7	-0.11	-1.94	38.22	-0.0421	-3.9071	-0.4867
761	SLD 8	-0.17	-2.28	38.3	-0.0416	-3.9307	-0.5712
761	SLD 9	-1.04	2.55	31.11	-0.0376	-2.9406	0.6378
761	SLD 10	-1.1	2.21	31.19	-0.0371	-2.9641	0.5533
761	SLD 11	-1.52	-1.74	32.77	-0.0338	-3.3465	-0.4348
761	SLD 12	-1.58	-2.08	32.84	-0.0333	-3.37	-0.5193
761	SLD 13	-2.83	1.38	25.31	-0.0267	-2.4223	0.3449
761	SLD 14	-2.93	0.86	25.42	-0.0259	-2.4582	0.2163
761	SLD 15	-2.98	0.1	25.81	-0.0256	-2.5441	0.0231
761	SLD 16	-3.08	-0.42	25.92	-0.0248	-2.58	-0.1054
761	SLV 1	5.18	1.37	55.27	-0.0743	-5.4424	0.3447
761	SLV 2	4.95	0.17	55.54	-0.0725	-5.5259	0.0452
761	SLV 3	4.84	-1.53	56.43	-0.0716	-5.7212	-0.3835
761	SLV 4	4.62	-2.74	56.7	-0.0698	-5.8046	-0.683
761	SLV 5	1.68	5.12	39.07	-0.0544	-3.6005	1.283
761	SLV 6	1.53	4.35	39.24	-0.0532	-3.6544	1.0896
761	SLV 7	0.56	-4.57	42.94	-0.0455	-4.5296	-1.1444
761	SLV 8	0.41	-5.35	43.11	-0.0443	-4.5835	-1.3379
761	SLV 9	-1.62	5.61	26.3	-0.0349	-2.2877	1.4044
761	SLV 10	-1.77	4.84	26.47	-0.0337	-2.3416	1.211
761	SLV 11	-2.74	-4.08	30.17	-0.026	-3.2168	-1.023
761	SLV 12	-2.89	-4.86	30.34	-0.0248	-3.2708	-1.2164
761	SLV 13	-5.82	3	12.71	-0.0094	-1.0666	0.7496
761	SLV 14	-6.05	1.8	12.98	-0.0076	-1.1501	0.4501
761	SLV 15	-6.16	0.09	13.88	-0.0068	-1.3453	0.0214
761	SLV 16	-6.39	-1.11	14.14	-0.0049	-1.4288	-0.2781
761	CRTFP Ux+	0	0	0	0	0	0
761	CRTFP Ux-	0	0	0	0	0	0
761	CRTFP Uy+	0	0	0	0	0	0
761	CRTFP Uy-	0	0	0	0	0	0
764	SLU 1	0.62	0.47	38.45	-0.0673	8.5183	-0.1614
764	SLU 2	0.62	0.44	38.47	-0.0673	8.5206	-0.1533
764	SLU 3	0.64	0.47	39.35	-0.069	8.706	-0.1646
764	SLU 4	0.64	0.46	39.36	-0.069	8.7074	-0.1598
764	SLU 5	0.63	0.44	39.03	-0.0684	8.638	-0.1533
764	SLU 6	0.65	0.47	39.92	-0.0701	8.8235	-0.1646
764	SLU 7	0.65	0.46	39.92	-0.0701	8.8248	-0.1598
764	SLU 8	0.64	0.47	39.58	-0.0695	8.7533	-0.1613
764	SLU 9	0.65	0.45	39.58	-0.0695	8.7546	-0.1565
764	SLU 10	0.65	0.58	42.95	-0.0759	9.4853	-0.2007
764	SLU 11	0.67	0.61	43.84	-0.0776	9.6707	-0.212
764	SLU 12	0.67	0.6	43.84	-0.0776	9.6721	-0.2072
764	SLU 13	0.66	0.58	43.51	-0.077	9.6028	-0.2007
764	SLU 14	0.68	0.61	44.4	-0.0787	9.7882	-0.212
764	SLU 15	0.68	0.6	44.4	-0.0787	9.7895	-0.2072
764	SLU 16	0.67	0.6	44.06	-0.0781	9.718	-0.2088
764	SLU 17	0.67	0.59	44.07	-0.0781	9.7193	-0.2039
764	SLU 18	0.66	0.66	44.86	-0.0796	9.8965	-0.2291
764	SLU 19	0.66	0.64	44.86	-0.0796	9.8979	-0.2243
764	SLU 20	0.67	0.66	45.42	-0.0807	10.014	-0.2291
764	SLU 21	0.67	0.65	45.42	-0.0807	10.0153	-0.2243
764	SLU 22	0.67	0.58	42.94	-0.0757	9.4772	-0.2032
764	SLU 23	0.67	0.56	42.95	-0.0757	9.4794	-0.1951
764	SLU 24	0.68	0.59	43.84	-0.0774	9.6648	-0.2064
764	SLU 25	0.69	0.58	43.85	-0.0774	9.6662	-0.2016
764	SLU 26	0.68	0.56	43.51	-0.0769	9.5969	-0.1951
764	SLU 27	0.7	0.59	44.4	-0.0785	9.7823	-0.2064
764	SLU 28	0.7	0.58	44.41	-0.0786	9.7836	-0.2016



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
764	SLU 29	0.69	0.58	44.06	-0.0779	9.7121	-0.2031
764	SLU 30	0.69	0.57	44.07	-0.078	9.7134	-0.1983
764	SLU 31	0.7	0.7	47.43	-0.0844	10.4442	-0.2425
764	SLU 32	0.71	0.73	48.32	-0.086	10.6296	-0.2538
764	SLU 33	0.72	0.72	48.33	-0.0861	10.6309	-0.249
764	SLU 34	0.71	0.7	47.99	-0.0855	10.5616	-0.2425
764	SLU 35	0.73	0.73	48.88	-0.0872	10.747	-0.2538
764	SLU 36	0.73	0.72	48.89	-0.0872	10.7484	-0.249
764	SLU 37	0.72	0.72	48.55	-0.0865	10.6768	-0.2505
764	SLU 38	0.72	0.71	48.55	-0.0866	10.6782	-0.2457
764	SLU 39	0.71	0.78	49.34	-0.088	10.8554	-0.2709
764	SLU 40	0.71	0.76	49.35	-0.088	10.8567	-0.2661
764	SLU 41	0.72	0.78	49.9	-0.0891	10.9728	-0.2709
764	SLU 42	0.72	0.76	49.91	-0.0892	10.9742	-0.266
764	SLU 43	0.79	0.56	48.45	-0.0845	10.7451	-0.1955
764	SLU 44	0.79	0.54	48.46	-0.0846	10.7474	-0.1874
764	SLU 45	0.81	0.57	49.35	-0.0863	10.9328	-0.1987
764	SLU 46	0.81	0.56	49.36	-0.0863	10.9341	-0.1939
764	SLU 47	0.8	0.54	49.03	-0.0857	10.8648	-0.1874
764	SLU 48	0.82	0.57	49.91	-0.0874	11.0502	-0.1987
764	SLU 49	0.82	0.56	49.92	-0.0874	11.0516	-0.1939
764	SLU 50	0.81	0.56	49.58	-0.0868	10.98	-0.1954
764	SLU 51	0.82	0.55	49.58	-0.0868	10.9814	-0.1906
764	SLU 52	0.82	0.68	52.94	-0.0932	11.7121	-0.2348
764	SLU 53	0.84	0.71	53.83	-0.0949	11.8975	-0.2461
764	SLU 54	0.84	0.69	53.84	-0.0949	11.8989	-0.2413
764	SLU 55	0.83	0.68	53.51	-0.0943	11.8296	-0.2348
764	SLU 56	0.85	0.71	54.4	-0.096	12.015	-0.2461
764	SLU 57	0.85	0.69	54.4	-0.096	12.0163	-0.2413
764	SLU 58	0.84	0.7	54.06	-0.0954	11.9448	-0.2428
764	SLU 59	0.84	0.69	54.06	-0.0954	11.9461	-0.238
764	SLU 60	0.83	0.76	54.85	-0.0968	12.1233	-0.2632
764	SLU 61	0.83	0.74	54.86	-0.0969	12.1247	-0.2584
764	SLU 62	0.84	0.76	55.42	-0.098	12.2408	-0.2632
764	SLU 63	0.84	0.74	55.42	-0.098	12.2421	-0.2583
764	SLU 64	0.84	0.68	52.94	-0.093	11.7039	-0.2372
764	SLU 65	0.84	0.66	52.95	-0.093	11.7062	-0.2292
764	SLU 66	0.85	0.69	53.84	-0.0947	11.8916	-0.2405
764	SLU 67	0.86	0.68	53.85	-0.0947	11.8929	-0.2357
764	SLU 68	0.85	0.66	53.51	-0.0941	11.8236	-0.2292
764	SLU 69	0.87	0.69	54.4	-0.0958	12.009	-0.2405
764	SLU 70	0.87	0.68	54.41	-0.0958	12.0104	-0.2356
764	SLU 71	0.86	0.68	54.06	-0.0952	11.9388	-0.2372
764	SLU 72	0.86	0.67	54.07	-0.0952	11.9402	-0.2324
764	SLU 73	0.87	0.8	57.43	-0.1016	12.6709	-0.2766
764	SLU 74	0.88	0.83	58.32	-0.1033	12.8563	-0.2879
764	SLU 75	0.88	0.81	58.33	-0.1033	12.8577	-0.2831
764	SLU 76	0.88	0.8	57.99	-0.1028	12.7884	-0.2766
764	SLU 77	0.9	0.83	58.88	-0.1044	12.9738	-0.2879
764	SLU 78	0.9	0.81	58.89	-0.1045	12.9751	-0.2831
764	SLU 79	0.89	0.82	58.54	-0.1038	12.9036	-0.2846
764	SLU 80	0.89	0.81	58.55	-0.1039	12.9049	-0.2798
764	SLU 81	0.88	0.88	59.34	-0.1053	13.0821	-0.305
764	SLU 82	0.88	0.86	59.35	-0.1053	13.0835	-0.3001
764	SLU 83	0.89	0.88	59.9	-0.1064	13.1996	-0.305
764	SLU 84	0.89	0.86	59.91	-0.1064	13.2009	-0.3001
764	SLE RA 1	0.63	0.5	39.74	-0.0697	8.7923	-0.1733
764	SLE RA 2	0.63	0.48	39.74	-0.0697	8.7938	-0.1679
764	SLE RA 3	0.65	0.51	40.34	-0.0708	8.9174	-0.1755
764	SLE RA 4	0.65	0.5	40.34	-0.0708	8.9183	-0.1723
764	SLE RA 5	0.64	0.48	40.12	-0.0704	8.8721	-0.1679
764	SLE RA 6	0.65	0.51	40.71	-0.0716	8.9957	-0.1755
764	SLE RA 7	0.65	0.5	40.72	-0.0716	8.9966	-0.1722
764	SLE RA 8	0.65	0.5	40.49	-0.0712	8.9489	-0.1733
764	SLE RA 9	0.65	0.49	40.49	-0.0712	8.9498	-0.1701
764	SLE RA 10	0.65	0.57	42.73	-0.0754	9.437	-0.1996
764	SLE RA 11	0.66	0.6	43.32	-0.0766	9.5606	-0.2071
764	SLE RA 12	0.67	0.59	43.33	-0.0766	9.5615	-0.2039
764	SLE RA 13	0.66	0.57	43.11	-0.0762	9.5153	-0.1995
764	SLE RA 14	0.67	0.6	43.7	-0.0773	9.6389	-0.2071
764	SLE RA 15	0.67	0.59	43.7	-0.0773	9.6398	-0.2038
764	SLE RA 16	0.67	0.59	43.47	-0.0769	9.5921	-0.2049
764	SLE RA 17	0.67	0.58	43.48	-0.0769	9.593	-0.2017
764	SLE RA 18	0.66	0.63	44	-0.0779	9.7111	-0.2185
764	SLE RA 19	0.66	0.62	44.01	-0.0779	9.712	-0.2152
764	SLE RA 20	0.67	0.63	44.38	-0.0786	9.7894	-0.2185
764	SLE RA 21	0.67	0.62	44.38	-0.0786	9.7903	-0.2152
764	SLE FR 1	0.63	0.5	39.74	-0.0697	8.7923	-0.1733
764	SLE FR 2	0.63	0.5	39.74	-0.0697	8.7926	-0.1722
764	SLE FR 3	0.64	0.5	39.89	-0.07	8.8236	-0.1733
764	SLE FR 4	0.64	0.53	41.02	-0.0721	9.0682	-0.1858
764	SLE FR 5	0.65	0.54	41.17	-0.0724	9.0993	-0.1869
764	SLE FR 6	0.65	0.56	41.87	-0.0738	9.2517	-0.1959
764	SLE QP 1	0.63	0.5	39.74	-0.0697	8.7923	-0.1733
764	SLE QP 2	0.64	0.54	41.02	-0.0721	9.0679	-0.1869
764	SLD 1	2.87	0.63	30.36	-0.0515	7.0264	-0.2167
764	SLD 2	2.74	1.27	30.24	-0.053	7.0311	-0.4408
764	SLD 3	3.11	-0.86	30.98	-0.0487	6.9018	0.3003
764	SLD 4	2.98	-0.21	30.86	-0.0502	6.9065	0.0763
764	SLD 5	0.96	2.7	36.91	-0.07	8.6436	-0.94





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
764	SLD 6	0.88	3.12	36.83	-0.071	8.6467	-1.0872
764	SLD 7	1.77	-2.24	38.96	-0.0605	8.2283	0.7835
764	SLD 8	1.69	-1.82	38.88	-0.0615	8.2314	0.6363
764	SLD 9	-0.41	2.89	43.16	-0.0828	9.9045	-1.01
764	SLD 10	-0.49	3.32	43.08	-0.0838	9.9076	-1.1572
764	SLD 11	0.4	-2.04	45.2	-0.0733	9.4892	0.7135
764	SLD 12	0.32	-1.62	45.12	-0.0743	9.4923	0.5663
764	SLD 13	-1.7	1.29	51.18	-0.0941	11.2294	-0.45
764	SLD 14	-1.83	1.93	51.06	-0.0956	11.2341	-0.6741
764	SLD 15	-1.46	-0.19	51.79	-0.0912	11.1048	0.067
764	SLD 16	-1.59	0.45	51.67	-0.0928	11.1095	-0.157
764	SLV 1	5.86	0.69	16.08	-0.0238	4.2889	-0.2391
764	SLV 2	5.56	2.19	15.8	-0.0273	4.2997	-0.7609
764	SLV 3	6.41	-2.66	17.51	-0.0173	3.998	0.9319
764	SLV 4	6.11	-1.16	17.23	-0.0208	4.0088	0.4101
764	SLV 5	1.42	5.41	31.42	-0.0668	8.0736	-1.8882
764	SLV 6	1.22	6.38	31.24	-0.0691	8.0805	-2.2252
764	SLV 7	3.27	-5.77	36.18	-0.0452	7.1039	2.0149
764	SLV 8	3.07	-4.8	36	-0.0475	7.1109	1.6779
764	SLV 9	-1.79	5.88	46.03	-0.0968	11.025	-2.0516
764	SLV 10	-1.98	6.84	45.85	-0.099	11.032	-2.3886
764	SLV 11	0.06	-5.3	50.8	-0.0751	10.0553	1.8515
764	SLV 12	-0.13	-4.34	50.61	-0.0774	10.0623	1.5145
764	SLV 13	-4.83	2.24	64.8	-0.1235	14.127	-0.7838
764	SLV 14	-5.13	3.74	64.52	-0.127	14.1378	-1.3056
764	SLV 15	-4.27	-1.11	66.23	-0.117	13.8361	0.3872
764	SLV 16	-4.57	0.38	65.95	-0.1205	13.8469	-0.1346
764	CRTFP Ux+	0	0	0	0	0	0
764	CRTFP Ux-	0	0	0	0	0	0
764	CRTFP Uy+	0	0	0	0	0	0
764	CRTFP Uy-	0	0	0	0	0	0
766	SLU 1	1.15	0.15	62.8	0.0258	0.1684	-0.0141
766	SLU 2	1.14	0.11	62.79	0.0257	0.1766	-0.0135
766	SLU 3	1.18	0.16	64.26	0.0265	0.175	-0.0144
766	SLU 4	1.18	0.13	64.26	0.0265	0.1799	-0.0141
766	SLU 5	1.16	0.11	63.7	0.026	0.1803	-0.0138
766	SLU 6	1.2	0.15	65.17	0.0268	0.1787	-0.0147
766	SLU 7	1.2	0.13	65.16	0.0268	0.1836	-0.0143
766	SLU 8	1.19	0.14	64.61	0.0265	0.1758	-0.0146
766	SLU 9	1.19	0.12	64.6	0.0264	0.1807	-0.0143
766	SLU 10	1.21	0.21	70.75	0.0294	0.2066	-0.0148
766	SLU 11	1.25	0.25	72.22	0.0302	0.205	-0.0157
766	SLU 12	1.24	0.23	72.22	0.0302	0.2099	-0.0154
766	SLU 13	1.23	0.2	71.66	0.0298	0.2103	-0.0151
766	SLU 14	1.27	0.25	73.13	0.0306	0.2087	-0.016
766	SLU 15	1.27	0.23	73.12	0.0305	0.2136	-0.0156
766	SLU 16	1.26	0.24	72.57	0.0302	0.2058	-0.0159
766	SLU 17	1.25	0.21	72.56	0.0301	0.2107	-0.0156
766	SLU 18	1.25	0.28	74.17	0.031	0.2113	-0.0159
766	SLU 19	1.24	0.26	74.17	0.031	0.2162	-0.0156
766	SLU 20	1.27	0.28	75.07	0.0314	0.215	-0.0162
766	SLU 21	1.26	0.26	75.07	0.0314	0.2199	-0.0158
766	SLU 22	1.25	0.27	70.64	0.0301	0.1976	-0.015
766	SLU 23	1.24	0.24	70.64	0.0301	0.2058	-0.0145
766	SLU 24	1.28	0.28	72.11	0.0309	0.2042	-0.0154
766	SLU 25	1.27	0.26	72.1	0.0308	0.2091	-0.015
766	SLU 26	1.26	0.23	71.54	0.0304	0.2095	-0.0147
766	SLU 27	1.3	0.28	73.01	0.0312	0.2079	-0.0157
766	SLU 28	1.29	0.26	73.01	0.0312	0.2128	-0.0153
766	SLU 29	1.29	0.27	72.45	0.0308	0.205	-0.0156
766	SLU 30	1.28	0.25	72.45	0.0308	0.2099	-0.0152
766	SLU 31	1.31	0.33	78.6	0.0338	0.2358	-0.0158
766	SLU 32	1.34	0.38	80.07	0.0346	0.2342	-0.0167
766	SLU 33	1.34	0.36	80.06	0.0345	0.2391	-0.0163
766	SLU 34	1.33	0.33	79.5	0.0341	0.2395	-0.016
766	SLU 35	1.36	0.38	80.97	0.0349	0.2379	-0.017
766	SLU 36	1.36	0.35	80.97	0.0349	0.2428	-0.0166
766	SLU 37	1.35	0.36	80.41	0.0346	0.235	-0.0169
766	SLU 38	1.35	0.34	80.41	0.0345	0.2399	-0.0165
766	SLU 39	1.34	0.41	82.01	0.0354	0.2405	-0.0169
766	SLU 40	1.34	0.39	82.01	0.0354	0.2454	-0.0166
766	SLU 41	1.36	0.41	82.92	0.0358	0.2442	-0.0172
766	SLU 42	1.36	0.39	82.91	0.0357	0.2491	-0.0168
766	SLU 43	1.46	0.15	78.95	0.032	0.209	-0.0179
766	SLU 44	1.46	0.11	78.94	0.0319	0.2171	-0.0174
766	SLU 45	1.49	0.16	80.41	0.0327	0.2155	-0.0183
766	SLU 46	1.49	0.14	80.41	0.0327	0.2204	-0.0179
766	SLU 47	1.48	0.11	79.85	0.0323	0.2208	-0.0176
766	SLU 48	1.51	0.15	81.32	0.0331	0.2192	-0.0185
766	SLU 49	1.51	0.13	81.31	0.033	0.2241	-0.0182
766	SLU 50	1.5	0.14	80.76	0.0327	0.2163	-0.0185
766	SLU 51	1.5	0.12	80.75	0.0327	0.2212	-0.0181
766	SLU 52	1.52	0.21	86.9	0.0356	0.2471	-0.0187
766	SLU 53	1.56	0.25	88.37	0.0364	0.2455	-0.0196
766	SLU 54	1.56	0.23	88.37	0.0364	0.2504	-0.0192
766	SLU 55	1.54	0.2	87.81	0.036	0.2508	-0.0189
766	SLU 56	1.58	0.25	89.28	0.0368	0.2492	-0.0198
766	SLU 57	1.58	0.23	89.27	0.0367	0.2541	-0.0195
766	SLU 58	1.57	0.24	88.72	0.0364	0.2464	-0.0198
766	SLU 59	1.57	0.22	88.71	0.0364	0.2512	-0.0194



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
766	SLU 60	1.56	0.28	90.32	0.0373	0.2518	-0.0198
766	SLU 61	1.55	0.26	90.32	0.0372	0.2567	-0.0195
766	SLU 62	1.58	0.28	91.22	0.0376	0.2555	-0.0201
766	SLU 63	1.57	0.26	91.22	0.0376	0.2604	-0.0197
766	SLU 64	1.56	0.27	86.79	0.0364	0.2381	-0.0189
766	SLU 65	1.55	0.24	86.79	0.0363	0.2463	-0.0184
766	SLU 66	1.59	0.28	88.26	0.0371	0.2447	-0.0193
766	SLU 67	1.59	0.26	88.25	0.0371	0.2496	-0.0189
766	SLU 68	1.57	0.23	87.69	0.0366	0.25	-0.0186
766	SLU 69	1.61	0.28	89.16	0.0375	0.2484	-0.0195
766	SLU 70	1.61	0.26	89.16	0.0374	0.2533	-0.0192
766	SLU 71	1.6	0.27	88.6	0.0371	0.2455	-0.0195
766	SLU 72	1.59	0.25	88.6	0.037	0.2504	-0.0191
766	SLU 73	1.62	0.33	94.75	0.04	0.2763	-0.0197
766	SLU 74	1.66	0.38	96.22	0.0408	0.2747	-0.0206
766	SLU 75	1.65	0.36	96.21	0.0408	0.2796	-0.0202
766	SLU 76	1.64	0.33	95.65	0.0404	0.28	-0.0199
766	SLU 77	1.68	0.38	97.12	0.0412	0.2784	-0.0208
766	SLU 78	1.67	0.35	97.12	0.0411	0.2833	-0.0205
766	SLU 79	1.67	0.36	96.56	0.0408	0.2755	-0.0208
766	SLU 80	1.66	0.34	96.56	0.0407	0.2804	-0.0204
766	SLU 81	1.65	0.41	98.16	0.0417	0.281	-0.0208
766	SLU 82	1.65	0.39	98.16	0.0416	0.2859	-0.0204
766	SLU 83	1.67	0.41	99.07	0.042	0.2847	-0.021
766	SLU 84	1.67	0.39	99.06	0.042	0.2896	-0.0207
766	SLE RA 1	1.18	0.18	65.04	0.027	0.1768	-0.0143
766	SLE RA 2	1.17	0.16	65.04	0.027	0.1822	-0.014
766	SLE RA 3	1.2	0.19	66.02	0.0275	0.1811	-0.0146
766	SLE RA 4	1.2	0.17	66.01	0.0275	0.1844	-0.0143
766	SLE RA 5	1.19	0.16	65.64	0.0272	0.1847	-0.0141
766	SLE RA 6	1.21	0.19	66.62	0.0277	0.1836	-0.0147
766	SLE RA 7	1.21	0.17	66.62	0.0277	0.1869	-0.0145
766	SLE RA 8	1.2	0.18	66.24	0.0275	0.1817	-0.0147
766	SLE RA 9	1.2	0.16	66.24	0.0275	0.185	-0.0145
766	SLE RA 10	1.22	0.22	70.34	0.0294	0.2022	-0.0148
766	SLE RA 11	1.24	0.25	71.32	0.03	0.2012	-0.0154
766	SLE RA 12	1.24	0.24	71.32	0.0299	0.2044	-0.0152
766	SLE RA 13	1.23	0.22	70.94	0.0297	0.2047	-0.015
766	SLE RA 14	1.26	0.25	71.92	0.0302	0.2036	-0.0156
766	SLE RA 15	1.25	0.24	71.92	0.0302	0.2069	-0.0154
766	SLE RA 16	1.25	0.24	71.55	0.03	0.2017	-0.0156
766	SLE RA 17	1.25	0.23	71.55	0.0299	0.205	-0.0153
766	SLE RA 18	1.24	0.27	72.62	0.0305	0.2054	-0.0156
766	SLE RA 19	1.24	0.26	72.62	0.0305	0.2086	-0.0153
766	SLE RA 20	1.25	0.27	73.22	0.0308	0.2078	-0.0158
766	SLE RA 21	1.25	0.26	73.22	0.0307	0.2111	-0.0155
766	SLE FR 1	1.18	0.18	65.04	0.027	0.1768	-0.0143
766	SLE FR 2	1.18	0.18	65.04	0.027	0.1779	-0.0143
766	SLE FR 3	1.18	0.18	65.28	0.0271	0.1778	-0.0144
766	SLE FR 4	1.2	0.21	67.31	0.0281	0.1864	-0.0146
766	SLE FR 5	1.2	0.21	67.56	0.0282	0.1863	-0.0148
766	SLE FR 6	1.21	0.23	68.83	0.0288	0.1911	-0.015
766	SLE QP 1	1.18	0.18	65.04	0.027	0.1768	-0.0143
766	SLE QP 2	1.2	0.21	67.31	0.0281	0.1853	-0.0147
766	SLD 1	6.09	1.24	62.77	0.0258	0.1987	-0.0292
766	SLD 2	5.9	1.73	62.57	0.0232	0.2032	-0.0185
766	SLD 3	6.38	-0.53	62.33	0.0291	0.2436	-0.0308
766	SLD 4	6.19	-0.05	62.13	0.0265	0.2482	-0.02
766	SLD 5	2.26	3.13	66.66	0.0228	0.1203	-0.0186
766	SLD 6	2.14	3.45	66.53	0.0211	0.1233	-0.0116
766	SLD 7	3.22	-2.79	65.19	0.0339	0.2703	-0.0238
766	SLD 8	3.1	-2.47	65.05	0.0322	0.2732	-0.0167
766	SLD 9	-0.7	2.89	69.58	0.0239	0.0974	-0.0127
766	SLD 10	-0.83	3.21	69.44	0.0222	0.1004	-0.0057
766	SLD 11	0.26	-3.03	68.1	0.0351	0.2474	-0.0178
766	SLD 12	0.13	-2.71	67.97	0.0334	0.2504	-0.0108
766	SLD 13	-3.79	0.47	72.5	0.0296	0.1225	-0.0094
766	SLD 14	-3.98	0.96	72.3	0.027	0.127	0.0013
766	SLD 15	-3.51	-1.31	72.06	0.033	0.1675	-0.0109
766	SLD 16	-3.7	-0.82	71.85	0.0304	0.172	-0.0002
766	SLV 1	12.64	2.56	56.67	0.0226	0.219	-0.0487
766	SLV 2	12.2	3.69	56.2	0.0166	0.2295	-0.0238
766	SLV 3	13.31	-1.46	55.65	0.0302	0.3207	-0.0522
766	SLV 4	12.87	-0.33	55.18	0.0241	0.3312	-0.0273
766	SLV 5	3.69	6.82	65.76	0.016	0.0394	-0.0239
766	SLV 6	3.41	7.55	65.46	0.0121	0.0462	-0.0078
766	SLV 7	5.92	-6.59	62.34	0.0412	0.3784	-0.0356
766	SLV 8	5.64	-5.85	62.04	0.0373	0.3852	-0.0195
766	SLV 9	-3.25	6.27	72.59	0.0188	-0.0145	-0.0099
766	SLV 10	-3.53	7.01	72.29	0.0149	-0.0077	0.0062
766	SLV 11	-1.01	-7.13	69.17	0.044	0.3245	-0.0217
766	SLV 12	-1.3	-6.39	68.87	0.0401	0.3313	-0.0056
766	SLV 13	-10.48	0.75	79.45	0.032	0.0395	-0.0021
766	SLV 14	-10.92	1.88	78.98	0.026	0.05	0.0228
766	SLV 15	-9.81	-3.27	78.42	0.0396	0.1412	-0.0056
766	SLV 16	-10.25	-2.14	77.95	0.0335	0.1517	0.0193
766	CRTFP Ux+	0	0	0	0	0	0
766	CRTFP Ux-	0	0	0	0	0	0
769	SLU 1	-0.79	-0.63	65.01	0.0009	-0.3797	0.008
769	SLU 2	-0.81	-0.72	65.07	0.0014	-0.3851	0.0089



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
769	SLU 3	-0.82	-0.63	66.58	0.0012	-0.3908	0.0083
769	SLU 4	-0.83	-0.68	66.62	0.0015	-0.394	0.0088
769	SLU 5	-0.82	-0.73	66.03	0.0015	-0.3907	0.009
769	SLU 6	-0.83	-0.64	67.55	0.0013	-0.3965	0.0083
769	SLU 7	-0.84	-0.69	67.58	0.0016	-0.3997	0.0088
769	SLU 8	-0.82	-0.64	66.95	0.0012	-0.3911	0.0082
769	SLU 9	-0.83	-0.7	66.98	0.0015	-0.3943	0.0087
769	SLU 10	-0.84	-0.72	73.49	0.0021	-0.4437	0.0102
769	SLU 11	-0.84	-0.63	75	0.0019	-0.4495	0.0095
769	SLU 12	-0.85	-0.68	75.03	0.0022	-0.4527	0.01
769	SLU 13	-0.85	-0.73	74.45	0.0022	-0.4494	0.0102
769	SLU 14	-0.86	-0.63	75.97	0.002	-0.4551	0.0096
769	SLU 15	-0.87	-0.69	76	0.0023	-0.4583	0.0101
769	SLU 16	-0.85	-0.64	75.37	0.0019	-0.4497	0.0095
769	SLU 17	-0.86	-0.69	75.4	0.0022	-0.4529	0.01
769	SLU 18	-0.83	-0.63	77.04	0.0019	-0.4635	0.0099
769	SLU 19	-0.84	-0.68	77.07	0.0022	-0.4667	0.0104
769	SLU 20	-0.85	-0.63	78.01	0.002	-0.4692	0.0099
769	SLU 21	-0.86	-0.69	78.04	0.0023	-0.4724	0.0104
769	SLU 22	-0.86	-0.59	73.25	0.0024	-0.4368	0.0086
769	SLU 23	-0.88	-0.69	73.3	0.0029	-0.4421	0.0095
769	SLU 24	-0.88	-0.59	74.82	0.0027	-0.4479	0.0088
769	SLU 25	-0.89	-0.65	74.85	0.003	-0.4511	0.0093
769	SLU 26	-0.89	-0.69	74.27	0.003	-0.4478	0.0095
769	SLU 27	-0.9	-0.6	75.79	0.0028	-0.4536	0.0089
769	SLU 28	-0.91	-0.66	75.82	0.0031	-0.4567	0.0094
769	SLU 29	-0.89	-0.61	75.19	0.0026	-0.4481	0.0088
769	SLU 30	-0.9	-0.66	75.22	0.0029	-0.4513	0.0093
769	SLU 31	-0.91	-0.68	81.72	0.0036	-0.5008	0.0107
769	SLU 32	-0.91	-0.59	83.24	0.0034	-0.5065	0.0101
769	SLU 33	-0.92	-0.65	83.27	0.0037	-0.5097	0.0106
769	SLU 34	-0.92	-0.69	82.69	0.0037	-0.5064	0.0108
769	SLU 35	-0.93	-0.6	84.21	0.0035	-0.5122	0.0102
769	SLU 36	-0.94	-0.65	84.24	0.0038	-0.5154	0.0107
769	SLU 37	-0.92	-0.61	83.61	0.0033	-0.5068	0.0101
769	SLU 38	-0.93	-0.66	83.64	0.0036	-0.51	0.0106
769	SLU 39	-0.9	-0.59	85.28	0.0034	-0.5206	0.0105
769	SLU 40	-0.91	-0.65	85.31	0.0037	-0.5238	0.011
769	SLU 41	-0.92	-0.6	86.25	0.0035	-0.5263	0.0105
769	SLU 42	-0.93	-0.65	86.28	0.0038	-0.5294	0.011
769	SLU 43	-1.01	-0.83	81.69	0.0007	-0.4741	0.0103
769	SLU 44	-1.03	-0.92	81.75	0.0012	-0.4794	0.0111
769	SLU 45	-1.03	-0.83	83.26	0.001	-0.4852	0.0105
769	SLU 46	-1.04	-0.88	83.3	0.0013	-0.4884	0.011
769	SLU 47	-1.04	-0.93	82.71	0.0013	-0.4851	0.0112
769	SLU 48	-1.04	-0.84	84.23	0.0011	-0.4908	0.0106
769	SLU 49	-1.05	-0.89	84.26	0.0014	-0.494	0.0111
769	SLU 50	-1.04	-0.84	83.63	0.0009	-0.4854	0.0104
769	SLU 51	-1.05	-0.9	83.66	0.0012	-0.4886	0.0109
769	SLU 52	-1.05	-0.92	90.16	0.0019	-0.5381	0.0124
769	SLU 53	-1.06	-0.83	91.68	0.0017	-0.5438	0.0118
769	SLU 54	-1.07	-0.88	91.71	0.002	-0.547	0.0123
769	SLU 55	-1.07	-0.93	91.13	0.002	-0.5437	0.0125
769	SLU 56	-1.07	-0.83	92.65	0.0018	-0.5495	0.0118
769	SLU 57	-1.08	-0.89	92.68	0.0021	-0.5527	0.0123
769	SLU 58	-1.06	-0.84	92.05	0.0016	-0.5441	0.0117
769	SLU 59	-1.07	-0.9	92.08	0.0019	-0.5473	0.0122
769	SLU 60	-1.05	-0.83	93.72	0.0017	-0.5579	0.0121
769	SLU 61	-1.06	-0.88	93.75	0.002	-0.5611	0.0126
769	SLU 62	-1.06	-0.83	94.69	0.0018	-0.5635	0.0122
769	SLU 63	-1.07	-0.89	94.72	0.0021	-0.5667	0.0127
769	SLU 64	-1.08	-0.79	89.93	0.0022	-0.5312	0.0108
769	SLU 65	-1.09	-0.89	89.98	0.0027	-0.5365	0.0117
769	SLU 66	-1.1	-0.79	91.5	0.0024	-0.5422	0.0111
769	SLU 67	-1.11	-0.85	91.53	0.0027	-0.5454	0.0116
769	SLU 68	-1.11	-0.89	90.95	0.0028	-0.5421	0.0118
769	SLU 69	-1.11	-0.8	92.47	0.0026	-0.5479	0.0111
769	SLU 70	-1.12	-0.86	92.5	0.0029	-0.5511	0.0116
769	SLU 71	-1.1	-0.81	91.87	0.0024	-0.5425	0.011
769	SLU 72	-1.11	-0.86	91.9	0.0027	-0.5457	0.0115
769	SLU 73	-1.12	-0.89	98.4	0.0034	-0.5951	0.013
769	SLU 74	-1.13	-0.79	99.92	0.0031	-0.6009	0.0123
769	SLU 75	-1.14	-0.85	99.95	0.0034	-0.6041	0.0128
769	SLU 76	-1.14	-0.89	99.37	0.0035	-0.6008	0.013
769	SLU 77	-1.14	-0.8	100.89	0.0032	-0.6066	0.0124
769	SLU 78	-1.15	-0.85	100.92	0.0035	-0.6098	0.0129
769	SLU 79	-1.13	-0.81	100.29	0.0031	-0.6011	0.0123
769	SLU 80	-1.14	-0.86	100.32	0.0034	-0.6043	0.0128
769	SLU 81	-1.12	-0.79	101.96	0.0032	-0.6149	0.0127
769	SLU 82	-1.13	-0.85	101.99	0.0035	-0.6181	0.0132
769	SLU 83	-1.13	-0.8	102.93	0.0033	-0.6206	0.0127
769	SLU 84	-1.14	-0.85	102.96	0.0036	-0.6238	0.0132
769	SLE RA 1	-0.81	-0.62	67.37	0.0013	-0.396	0.0082
769	SLE RA 2	-0.83	-0.68	67.4	0.0017	-0.3996	0.0088
769	SLE RA 3	-0.83	-0.62	68.41	0.0015	-0.4034	0.0084
769	SLE RA 4	-0.84	-0.66	68.44	0.0017	-0.4056	0.0087
769	SLE RA 5	-0.83	-0.68	68.05	0.0018	-0.4034	0.0088
769	SLE RA 6	-0.84	-0.62	69.06	0.0016	-0.4072	0.0084
769	SLE RA 7	-0.84	-0.66	69.08	0.0018	-0.4093	0.0087
769	SLE RA 8	-0.83	-0.63	68.66	0.0015	-0.4036	0.0083



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
769	SLE RA 9	-0.84	-0.66	68.68	0.0017	-0.4057	0.0086
769	SLE RA 10	-0.84	-0.68	73.01	0.0021	-0.4387	0.0096
769	SLE RA 11	-0.85	-0.62	74.03	0.002	-0.4425	0.0092
769	SLE RA 12	-0.85	-0.65	74.05	0.0022	-0.4447	0.0095
769	SLE RA 13	-0.85	-0.68	73.66	0.0022	-0.4425	0.0097
769	SLE RA 14	-0.86	-0.62	74.67	0.0021	-0.4463	0.0093
769	SLE RA 15	-0.86	-0.66	74.69	0.0023	-0.4484	0.0096
769	SLE RA 16	-0.85	-0.63	74.27	0.002	-0.4427	0.0092
769	SLE RA 17	-0.86	-0.66	74.29	0.0022	-0.4448	0.0095
769	SLE RA 18	-0.84	-0.62	75.39	0.002	-0.4519	0.0094
769	SLE RA 19	-0.85	-0.65	75.41	0.0022	-0.454	0.0098
769	SLE RA 20	-0.85	-0.62	76.03	0.0021	-0.4557	0.0095
769	SLE RA 21	-0.86	-0.66	76.05	0.0023	-0.4578	0.0098
769	SLE FR 1	-0.81	-0.62	67.37	0.0013	-0.396	0.0082
769	SLE FR 2	-0.82	-0.63	67.37	0.0014	-0.3968	0.0083
769	SLE FR 3	-0.82	-0.62	67.63	0.0014	-0.3976	0.0082
769	SLE FR 4	-0.82	-0.63	69.78	0.0016	-0.4135	0.0087
769	SLE FR 5	-0.83	-0.62	70.03	0.0016	-0.4143	0.0086
769	SLE FR 6	-0.83	-0.62	71.38	0.0017	-0.424	0.0088
769	SLE QP 1	-0.81	-0.62	67.37	0.0013	-0.396	0.0082
769	SLE QP 2	-0.82	-0.62	69.77	0.0015	-0.4128	0.0086
769	SLD 1	4.71	-0.21	74.7	-0.0165	-0.451	-0.0013
769	SLD 2	4.53	-0.68	75.1	-0.0124	-0.4432	0.0094
769	SLD 3	4.4	-2.05	75.01	-0.0103	-0.5161	0.0009
769	SLD 4	4.22	-2.52	75.42	-0.0062	-0.5083	0.0116
769	SLD 5	1.34	2.37	70.69	-0.014	-0.3269	0.0004
769	SLD 6	1.22	2.06	70.96	-0.0113	-0.3218	0.0075
769	SLD 7	0.31	-3.75	71.76	0.0066	-0.5439	0.0076
769	SLD 8	0.19	-4.06	72.02	0.0093	-0.5388	0.0147
769	SLD 9	-1.83	2.82	67.52	-0.0062	-0.2868	0.0025
769	SLD 10	-1.95	2.51	67.79	-0.0035	-0.2817	0.0095
769	SLD 11	-2.86	-3.3	68.58	0.0144	-0.5038	0.0097
769	SLD 12	-2.98	-3.61	68.85	0.0171	-0.4987	0.0167
769	SLD 13	-5.86	1.28	64.13	0.0093	-0.3173	0.0056
769	SLD 14	-6.04	0.81	64.53	0.0134	-0.3095	0.0163
769	SLD 15	-6.17	-0.55	64.44	0.0155	-0.3824	0.0077
769	SLD 16	-6.35	-1.02	64.85	0.0196	-0.3746	0.0184
769	SLV 1	12.11	0.25	81.31	-0.0405	-0.5049	-0.0144
769	SLV 2	11.69	-0.84	82.26	-0.0309	-0.4866	0.0105
769	SLV 3	11.39	-3.9	82.05	-0.0265	-0.6524	-0.0095
769	SLV 4	10.97	-5	83	-0.0169	-0.6341	0.0155
769	SLV 5	4.23	6.14	71.94	-0.0339	-0.2199	-0.0101
769	SLV 6	3.95	5.43	72.55	-0.0277	-0.2081	0.006
769	SLV 7	1.82	-7.72	74.42	0.0126	-0.7115	0.0063
769	SLV 8	1.55	-8.42	75.03	0.0188	-0.6997	0.0224
769	SLV 9	-3.19	7.19	64.51	-0.0157	-0.1259	-0.0052
769	SLV 10	-3.47	6.48	65.12	-0.0096	-0.1141	0.0109
769	SLV 11	-5.59	-6.67	66.99	0.0308	-0.6175	0.0111
769	SLV 12	-5.87	-7.37	67.61	0.037	-0.6057	0.0272
769	SLV 13	-12.61	3.76	56.55	0.02	-0.1915	0.0017
769	SLV 14	-13.04	2.67	57.49	0.0296	-0.1732	0.0267
769	SLV 15	-13.33	-0.4	57.29	0.034	-0.339	0.0066
769	SLV 16	-13.76	-1.49	58.24	0.0436	-0.3207	0.0316
769	CRTFP Ux+	0	0	0	0	0	0
769	CRTFP Ux-	0	0	0	0	0	0
769	CRTFP Uy+	0	0	0	0	0	0
769	CRTFP Uy-	0	0	0	0	0	0
772	SLU 1	0.26	1.37	56.08	0.0155	0.0278	0.0017
772	SLU 2	0.24	1.32	56.01	0.0155	0.0301	0.0025
772	SLU 3	0.27	1.42	57.34	0.016	0.0305	0.0017
772	SLU 4	0.26	1.4	57.3	0.016	0.0319	0.0022
772	SLU 5	0.25	1.35	56.82	0.0158	0.0326	0.0024
772	SLU 6	0.28	1.45	58.15	0.0163	0.033	0.0017
772	SLU 7	0.27	1.42	58.11	0.0163	0.0343	0.0021
772	SLU 8	0.28	1.41	57.69	0.0162	0.0328	0.0016
772	SLU 9	0.27	1.39	57.65	0.0161	0.0341	0.0021
772	SLU 10	0.28	1.48	63.84	0.0182	0.04	0.0022
772	SLU 11	0.3	1.59	65.18	0.0187	0.0404	0.0015
772	SLU 12	0.29	1.56	65.13	0.0187	0.0417	0.0019
772	SLU 13	0.28	1.51	64.65	0.0185	0.0424	0.0022
772	SLU 14	0.31	1.61	65.98	0.0191	0.0429	0.0014
772	SLU 15	0.3	1.58	65.94	0.019	0.0442	0.0019
772	SLU 16	0.31	1.58	65.52	0.0189	0.0427	0.0014
772	SLU 17	0.3	1.55	65.48	0.0188	0.044	0.0018
772	SLU 18	0.31	1.6	67.27	0.0194	0.0419	0.0014
772	SLU 19	0.3	1.57	67.22	0.0194	0.0433	0.0018
772	SLU 20	0.31	1.62	68.07	0.0197	0.0444	0.0013
772	SLU 21	0.3	1.59	68.03	0.0197	0.0458	0.0018
772	SLU 22	0.3	1.62	63.57	0.0204	0.0266	0.0018
772	SLU 23	0.28	1.57	63.5	0.0203	0.0289	0.0026
772	SLU 24	0.31	1.67	64.83	0.0209	0.0293	0.0018
772	SLU 25	0.3	1.64	64.79	0.0208	0.0307	0.0023
772	SLU 26	0.29	1.59	64.31	0.0206	0.0314	0.0025
772	SLU 27	0.32	1.69	65.64	0.0212	0.0318	0.0018
772	SLU 28	0.31	1.67	65.6	0.0211	0.0332	0.0022
772	SLU 29	0.32	1.66	65.18	0.021	0.0316	0.0017
772	SLU 30	0.31	1.63	65.14	0.021	0.033	0.0021
772	SLU 31	0.32	1.73	71.33	0.023	0.0388	0.0023
772	SLU 32	0.34	1.83	72.66	0.0236	0.0392	0.0016
772	SLU 33	0.33	1.8	72.62	0.0235	0.0406	0.002



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
772	SLU 34	0.32	1.75	72.14	0.0233	0.0413	0.0023
772	SLU 35	0.35	1.85	73.47	0.0239	0.0417	0.0015
772	SLU 36	0.34	1.83	73.43	0.0239	0.043	0.002
772	SLU 37	0.35	1.82	73.01	0.0237	0.0415	0.0015
772	SLU 38	0.34	1.79	72.97	0.0237	0.0428	0.0019
772	SLU 39	0.35	1.85	74.75	0.0243	0.0407	0.0015
772	SLU 40	0.34	1.82	74.71	0.0242	0.0421	0.0019
772	SLU 41	0.35	1.87	75.56	0.0246	0.0432	0.0014
772	SLU 42	0.34	1.84	75.52	0.0245	0.0446	0.0019
772	SLU 43	0.32	1.7	70.33	0.0185	0.0366	0.0022
772	SLU 44	0.31	1.65	70.27	0.0185	0.0388	0.003
772	SLU 45	0.33	1.75	71.6	0.019	0.0392	0.0022
772	SLU 46	0.33	1.72	71.56	0.019	0.0406	0.0027
772	SLU 47	0.32	1.67	71.07	0.0188	0.0413	0.0029
772	SLU 48	0.34	1.77	72.41	0.0193	0.0417	0.0022
772	SLU 49	0.33	1.74	72.37	0.0193	0.0431	0.0026
772	SLU 50	0.34	1.74	71.95	0.0191	0.0415	0.0021
772	SLU 51	0.33	1.71	71.91	0.0191	0.0429	0.0026
772	SLU 52	0.34	1.81	78.1	0.0212	0.0487	0.0027
772	SLU 53	0.37	1.91	79.43	0.0217	0.0491	0.002
772	SLU 54	0.36	1.88	79.39	0.0217	0.0505	0.0024
772	SLU 55	0.35	1.83	78.9	0.0215	0.0512	0.0027
772	SLU 56	0.38	1.93	80.24	0.022	0.0516	0.0019
772	SLU 57	0.37	1.91	80.2	0.022	0.053	0.0024
772	SLU 58	0.37	1.9	79.78	0.0219	0.0514	0.0019
772	SLU 59	0.36	1.87	79.74	0.0218	0.0528	0.0023
772	SLU 60	0.37	1.93	81.52	0.0224	0.0507	0.0019
772	SLU 61	0.36	1.9	81.48	0.0224	0.052	0.0023
772	SLU 62	0.38	1.95	82.33	0.0227	0.0532	0.0018
772	SLU 63	0.37	1.92	82.29	0.0227	0.0545	0.0023
772	SLU 64	0.36	1.94	77.82	0.0234	0.0354	0.0023
772	SLU 65	0.35	1.9	77.75	0.0233	0.0376	0.0031
772	SLU 66	0.38	2	79.09	0.0239	0.0381	0.0023
772	SLU 67	0.37	1.97	79.05	0.0238	0.0394	0.0028
772	SLU 68	0.36	1.92	78.56	0.0236	0.0401	0.003
772	SLU 69	0.38	2.02	79.9	0.0242	0.0405	0.0023
772	SLU 70	0.37	1.99	79.85	0.0241	0.0419	0.0027
772	SLU 71	0.38	1.99	79.44	0.024	0.0404	0.0022
772	SLU 72	0.37	1.96	79.4	0.024	0.0417	0.0026
772	SLU 73	0.38	2.06	85.59	0.026	0.0475	0.0028
772	SLU 74	0.41	2.16	86.92	0.0266	0.0479	0.0021
772	SLU 75	0.4	2.13	86.88	0.0265	0.0493	0.0025
772	SLU 76	0.39	2.08	86.39	0.0263	0.05	0.0027
772	SLU 77	0.42	2.18	87.73	0.0269	0.0504	0.002
772	SLU 78	0.41	2.15	87.69	0.0269	0.0518	0.0025
772	SLU 79	0.41	2.15	87.27	0.0267	0.0502	0.0019
772	SLU 80	0.4	2.12	87.23	0.0267	0.0516	0.0024
772	SLU 81	0.41	2.17	89.01	0.0273	0.0495	0.002
772	SLU 82	0.4	2.14	88.97	0.0272	0.0509	0.0024
772	SLU 83	0.42	2.19	89.82	0.0276	0.052	0.0019
772	SLU 84	0.41	2.17	89.78	0.0275	0.0533	0.0023
772	SLE RA 1	0.27	1.44	58.22	0.0169	0.0275	0.0018
772	SLE RA 2	0.26	1.41	58.17	0.0169	0.029	0.0023
772	SLE RA 3	0.28	1.48	59.06	0.0172	0.0293	0.0018
772	SLE RA 4	0.27	1.46	59.03	0.0172	0.0302	0.0021
772	SLE RA 5	0.27	1.42	58.71	0.0171	0.0306	0.0022
772	SLE RA 6	0.28	1.49	59.6	0.0174	0.0309	0.0017
772	SLE RA 7	0.28	1.47	59.57	0.0174	0.0318	0.002
772	SLE RA 8	0.28	1.47	59.29	0.0173	0.0308	0.0017
772	SLE RA 9	0.28	1.45	59.27	0.0173	0.0317	0.002
772	SLE RA 10	0.28	1.52	63.39	0.0187	0.0356	0.0021
772	SLE RA 11	0.3	1.58	64.28	0.0191	0.0359	0.0016
772	SLE RA 12	0.29	1.57	64.26	0.019	0.0368	0.0019
772	SLE RA 13	0.29	1.53	63.93	0.0189	0.0372	0.0021
772	SLE RA 14	0.31	1.6	64.82	0.0193	0.0375	0.0016
772	SLE RA 15	0.3	1.58	64.79	0.0192	0.0384	0.0019
772	SLE RA 16	0.3	1.58	64.51	0.0191	0.0374	0.0015
772	SLE RA 17	0.3	1.56	64.49	0.0191	0.0383	0.0018
772	SLE RA 18	0.3	1.59	65.68	0.0195	0.0369	0.0015
772	SLE RA 19	0.3	1.57	65.65	0.0195	0.0378	0.0018
772	SLE RA 20	0.31	1.61	66.21	0.0197	0.0385	0.0015
772	SLE RA 21	0.3	1.59	66.19	0.0197	0.0394	0.0018
772	SLE FR 1	0.27	1.44	58.22	0.0169	0.0275	0.0018
772	SLE FR 2	0.27	1.43	58.21	0.0169	0.0278	0.0019
772	SLE FR 3	0.27	1.45	58.43	0.017	0.0281	0.0018
772	SLE FR 4	0.28	1.48	60.45	0.0177	0.0306	0.0018
772	SLE FR 5	0.28	1.49	60.67	0.0178	0.031	0.0017
772	SLE FR 6	0.29	1.52	61.95	0.0182	0.0322	0.0016
772	SLE QP 1	0.27	1.44	58.22	0.0169	0.0275	0.0018
772	SLE QP 2	0.28	1.49	60.45	0.0177	0.0303	0.0017
772	SLD 1	5.31	2.01	58.63	0.0111	0.2231	-0.0179
772	SLD 2	5.13	2.17	58.74	0.0108	0.2224	-0.0085
772	SLD 3	5.02	0.19	57.88	0.0128	0.2626	-0.0162
772	SLD 4	4.85	0.35	57.99	0.0125	0.2619	-0.0069
772	SLD 5	2.25	4.37	61.02	0.0132	0.0283	-0.0084
772	SLD 6	2.13	4.48	61.09	0.013	0.0278	-0.0022
772	SLD 7	1.31	-1.69	58.53	0.0188	0.1601	-0.0028
772	SLD 8	1.19	-1.58	58.6	0.0186	0.1597	0.0033
772	SLD 9	-0.63	4.56	62.31	0.0168	-0.0991	0
772	SLD 10	-0.75	4.66	62.38	0.0165	-0.0995	0.0062



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
772	SLD 11	-1.57	-1.51	59.82	0.0224	0.0328	0.0056
772	SLD 12	-1.69	-1.4	59.89	0.0221	0.0323	0.0118
772	SLD 13	-4.29	2.62	62.92	0.0229	-0.2014	0.0103
772	SLD 14	-4.46	2.78	63.03	0.0226	-0.202	0.0196
772	SLD 15	-4.57	0.8	62.17	0.0246	-0.1618	0.0119
772	SLD 16	-4.75	0.96	62.28	0.0242	-0.1625	0.0213
772	SLV 1	12.03	2.64	56.14	0.0024	0.4828	-0.0442
772	SLV 2	11.62	3.03	56.39	0.0016	0.4812	-0.0223
772	SLV 3	11.38	-1.48	54.45	0.0062	0.5726	-0.0403
772	SLV 4	10.96	-1.09	54.7	0.0054	0.571	-0.0185
772	SLV 5	4.87	8.01	61.68	0.0075	0.0301	-0.0217
772	SLV 6	4.61	8.26	61.84	0.007	0.0291	-0.0076
772	SLV 7	2.68	-5.72	56.05	0.0202	0.3295	-0.0088
772	SLV 8	2.42	-5.47	56.21	0.0197	0.3285	0.0053
772	SLV 9	-1.86	8.44	64.7	0.0157	-0.2679	-0.0019
772	SLV 10	-2.13	8.69	64.86	0.0152	-0.2689	0.0122
772	SLV 11	-4.05	-5.29	59.07	0.0284	0.0315	0.011
772	SLV 12	-4.31	-5.04	59.23	0.0279	0.0305	0.0251
772	SLV 13	-10.4	4.07	66.21	0.0299	-0.5104	0.0219
772	SLV 14	-10.82	4.45	66.46	0.0292	-0.512	0.0437
772	SLV 15	-11.06	-0.05	64.52	0.0337	-0.4206	0.0257
772	SLV 16	-11.48	0.33	64.77	0.033	-0.4222	0.0475
772	CRTFP Ux+	0	0	0	0	0	0
772	CRTFP Ux-	0	0	0	0	0	0
775	SLU 1	0	0.76	57.71	0.0177	0.1026	-0.0039
775	SLU 2	-0.01	0.69	57.6	0.0175	0.1009	-0.0034
775	SLU 3	0	0.8	59.04	0.018	0.1054	-0.0041
775	SLU 4	-0.01	0.76	58.97	0.0179	0.1045	-0.0038
775	SLU 5	-0.01	0.7	58.44	0.0177	0.102	-0.0036
775	SLU 6	0	0.81	59.88	0.0182	0.1065	-0.0042
775	SLU 7	0	0.77	59.82	0.0181	0.1056	-0.0039
775	SLU 8	0	0.78	59.4	0.0181	0.1048	-0.0042
775	SLU 9	0	0.74	59.33	0.018	0.1038	-0.004
775	SLU 10	0.02	0.82	65.23	0.0195	0.1104	-0.0031
775	SLU 11	0.02	0.93	66.66	0.02	0.1149	-0.0038
775	SLU 12	0.02	0.89	66.6	0.0199	0.1139	-0.0035
775	SLU 13	0.02	0.83	66.07	0.0197	0.1115	-0.0033
775	SLU 14	0.02	0.94	67.51	0.0202	0.116	-0.0039
775	SLU 15	0.02	0.9	67.44	0.0201	0.115	-0.0036
775	SLU 16	0.03	0.91	67.02	0.0201	0.1142	-0.004
775	SLU 17	0.02	0.87	66.96	0.02	0.1133	-0.0037
775	SLU 18	0.04	0.95	68.6	0.0205	0.1161	-0.0035
775	SLU 19	0.03	0.91	68.54	0.0204	0.1151	-0.0032
775	SLU 20	0.04	0.96	69.44	0.0207	0.1172	-0.0037
775	SLU 21	0.03	0.92	69.38	0.0206	0.1162	-0.0034
775	SLU 22	-0.01	0.98	65.2	0.0219	0.1219	-0.0042
775	SLU 23	-0.02	0.92	65.1	0.0218	0.1203	-0.0037
775	SLU 24	-0.01	1.02	66.53	0.0223	0.1248	-0.0043
775	SLU 25	-0.02	0.98	66.47	0.0222	0.1238	-0.004
775	SLU 26	-0.02	0.93	65.94	0.022	0.1214	-0.0038
775	SLU 27	-0.01	1.03	67.38	0.0225	0.1259	-0.0045
775	SLU 28	-0.01	0.99	67.32	0.0224	0.1249	-0.0042
775	SLU 29	-0.01	1	66.89	0.0224	0.1241	-0.0045
775	SLU 30	-0.01	0.96	66.83	0.0223	0.1231	-0.0042
775	SLU 31	0.01	1.05	72.72	0.0238	0.1298	-0.0034
775	SLU 32	0.01	1.16	74.16	0.0243	0.1342	-0.004
775	SLU 33	0.01	1.12	74.1	0.0242	0.1333	-0.0037
775	SLU 34	0.01	1.06	73.57	0.024	0.1309	-0.0036
775	SLU 35	0.02	1.17	75	0.0245	0.1353	-0.0042
775	SLU 36	0.01	1.13	74.94	0.0244	0.1344	-0.0039
775	SLU 37	0.02	1.14	74.52	0.0244	0.1336	-0.0042
775	SLU 38	0.01	1.1	74.46	0.0243	0.1326	-0.0039
775	SLU 39	0.03	1.17	76.1	0.0248	0.1354	-0.0037
775	SLU 40	0.02	1.13	76.03	0.0247	0.1345	-0.0034
775	SLU 41	0.03	1.18	76.94	0.025	0.1365	-0.0039
775	SLU 42	0.02	1.14	76.88	0.0249	0.1356	-0.0036
775	SLU 43	0	0.91	72.45	0.0215	0.1267	-0.005
775	SLU 44	-0.01	0.84	72.34	0.0213	0.1251	-0.0045
775	SLU 45	0	0.95	73.78	0.0218	0.1296	-0.0051
775	SLU 46	0	0.91	73.71	0.0217	0.1286	-0.0048
775	SLU 47	0	0.85	73.19	0.0216	0.1262	-0.0047
775	SLU 48	0	0.96	74.62	0.0221	0.1307	-0.0053
775	SLU 49	0	0.92	74.56	0.022	0.1297	-0.005
775	SLU 50	0.01	0.93	74.14	0.0219	0.1289	-0.0053
775	SLU 51	0	0.89	74.07	0.0219	0.1279	-0.005
775	SLU 52	0.02	0.97	79.97	0.0233	0.1345	-0.0042
775	SLU 53	0.03	1.08	81.4	0.0238	0.139	-0.0048
775	SLU 54	0.02	1.04	81.34	0.0237	0.1381	-0.0046
775	SLU 55	0.02	0.98	80.81	0.0235	0.1356	-0.0044
775	SLU 56	0.03	1.09	82.25	0.024	0.1401	-0.005
775	SLU 57	0.02	1.05	82.18	0.0239	0.1392	-0.0047
775	SLU 58	0.03	1.06	81.76	0.0239	0.1384	-0.005
775	SLU 59	0.03	1.02	81.7	0.0238	0.1374	-0.0047
775	SLU 60	0.04	1.1	83.34	0.0243	0.1402	-0.0046
775	SLU 61	0.03	1.06	83.28	0.0242	0.1393	-0.0043
775	SLU 62	0.04	1.11	84.18	0.0245	0.1413	-0.0047
775	SLU 63	0.04	1.07	84.12	0.0244	0.1404	-0.0044
775	SLU 64	-0.01	1.13	79.94	0.0258	0.146	-0.0052
775	SLU 65	-0.01	1.07	79.84	0.0256	0.1444	-0.0048
775	SLU 66	-0.01	1.17	81.27	0.0261	0.1489	-0.0054



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
775	SLU 67	-0.01	1.13	81.21	0.026	0.1479	-0.0051
775	SLU 68	-0.01	1.08	80.68	0.0258	0.1455	-0.0049
775	SLU 69	-0.01	1.18	82.12	0.0264	0.15	-0.0056
775	SLU 70	-0.01	1.14	82.06	0.0263	0.149	-0.0053
775	SLU 71	0	1.15	81.64	0.0262	0.1482	-0.0056
775	SLU 72	-0.01	1.11	81.57	0.0261	0.1473	-0.0053
775	SLU 73	0.01	1.2	87.46	0.0276	0.1539	-0.0045
775	SLU 74	0.02	1.31	88.9	0.0281	0.1584	-0.0051
775	SLU 75	0.01	1.27	88.84	0.028	0.1574	-0.0048
775	SLU 76	0.01	1.21	88.31	0.0278	0.155	-0.0046
775	SLU 77	0.02	1.32	89.75	0.0283	0.1595	-0.0053
775	SLU 78	0.01	1.28	89.68	0.0282	0.1585	-0.005
775	SLU 79	0.02	1.29	89.26	0.0282	0.1577	-0.0053
775	SLU 80	0.02	1.25	89.2	0.0281	0.1567	-0.005
775	SLU 81	0.03	1.32	90.84	0.0286	0.1596	-0.0048
775	SLU 82	0.02	1.28	90.78	0.0285	0.1586	-0.0045
775	SLU 83	0.03	1.33	91.68	0.0288	0.1607	-0.005
775	SLU 84	0.03	1.29	91.62	0.0287	0.1597	-0.0047
775	SLE RA 1	0	0.82	59.85	0.0189	0.1081	-0.004
775	SLE RA 2	-0.01	0.78	59.78	0.0188	0.107	-0.0036
775	SLE RA 3	0	0.85	60.73	0.0191	0.11	-0.0041
775	SLE RA 4	-0.01	0.82	60.69	0.0191	0.1094	-0.0039
775	SLE RA 5	-0.01	0.78	60.34	0.0189	0.1077	-0.0038
775	SLE RA 6	0	0.85	61.3	0.0193	0.1107	-0.0042
775	SLE RA 7	-0.01	0.83	61.26	0.0192	0.1101	-0.004
775	SLE RA 8	0	0.84	60.97	0.0192	0.1096	-0.0042
775	SLE RA 9	0	0.81	60.93	0.0191	0.1089	-0.004
775	SLE RA 10	0.01	0.87	64.86	0.0201	0.1133	-0.0035
775	SLE RA 11	0.01	0.94	65.82	0.0204	0.1163	-0.0039
775	SLE RA 12	0.01	0.91	65.78	0.0204	0.1157	-0.0037
775	SLE RA 13	0.01	0.87	65.42	0.0202	0.1141	-0.0036
775	SLE RA 14	0.01	0.94	66.38	0.0206	0.117	-0.004
775	SLE RA 15	0.01	0.92	66.34	0.0205	0.1164	-0.0038
775	SLE RA 16	0.02	0.92	66.06	0.0205	0.1159	-0.004
775	SLE RA 17	0.01	0.9	66.02	0.0204	0.1152	-0.0038
775	SLE RA 18	0.02	0.95	67.11	0.0208	0.1171	-0.0037
775	SLE RA 19	0.02	0.92	67.07	0.0207	0.1165	-0.0035
775	SLE RA 20	0.02	0.96	67.67	0.0209	0.1178	-0.0038
775	SLE RA 21	0.02	0.93	67.63	0.0209	0.1172	-0.0036
775	SLE FR 1	0	0.82	59.85	0.0189	0.1081	-0.004
775	SLE FR 2	0	0.81	59.83	0.0189	0.1079	-0.0039
775	SLE FR 3	0	0.82	60.07	0.0189	0.1084	-0.004
775	SLE FR 4	0	0.85	62.01	0.0194	0.1106	-0.0038
775	SLE FR 5	0	0.86	62.25	0.0195	0.1111	-0.0039
775	SLE FR 6	0.01	0.88	63.48	0.0198	0.1126	-0.0038
775	SLE QP 1	0	0.82	59.85	0.0189	0.1081	-0.004
775	SLE QP 2	0	0.86	62.03	0.0194	0.1108	-0.0039
775	SLD 1	4.79	2.19	66.09	0.0432	0.2685	-0.0218
775	SLD 2	4.6	1.99	65.75	0.0421	0.2708	-0.0225
775	SLD 3	5.08	0.39	65.27	0.0454	0.2509	-0.0204
775	SLD 4	4.89	0.2	64.93	0.0442	0.2532	-0.0211
775	SLD 5	1.03	4.02	64.55	0.0235	0.1844	-0.013
775	SLD 6	0.91	3.89	64.33	0.0227	0.186	-0.0069
775	SLD 7	2	-1.98	61.81	0.0307	0.1257	-0.0084
775	SLD 8	1.88	-2.1	61.59	0.03	0.1272	-0.0023
775	SLD 9	-1.87	3.82	62.46	0.0089	0.0944	-0.0055
775	SLD 10	-1.99	3.69	62.24	0.0082	0.0959	0.0006
775	SLD 11	-0.9	-2.17	59.73	0.0162	0.0356	-0.0008
775	SLD 12	-1.03	-2.3	59.5	0.0154	0.0372	0.0052
775	SLD 13	-4.88	1.52	59.12	-0.0053	-0.0316	0.0033
775	SLD 14	-5.07	1.33	58.79	-0.0065	-0.0293	0.0126
775	SLD 15	-4.59	-0.28	58.3	-0.0032	-0.0492	0.0047
775	SLD 16	-4.78	-0.47	57.97	-0.0043	-0.0469	0.014
775	SLV 1	11.2	3.89	71.53	0.075	0.4793	-0.0457
775	SLV 2	10.76	3.45	70.75	0.0724	0.4846	-0.0241
775	SLV 3	11.88	-0.18	69.67	0.08	0.439	-0.0424
775	SLV 4	11.43	-0.62	68.89	0.0774	0.4443	-0.0209
775	SLV 5	2.41	8.02	67.83	0.029	0.2816	-0.0251
775	SLV 6	2.13	7.73	67.33	0.0273	0.285	-0.0112
775	SLV 7	4.67	-5.55	61.64	0.0457	0.1472	-0.0142
775	SLV 8	4.38	-5.83	61.13	0.044	0.1506	-0.0003
775	SLV 9	-4.37	7.55	62.92	-0.0051	0.071	-0.0075
775	SLV 10	-4.66	7.26	62.42	-0.0068	0.0744	0.0065
775	SLV 11	-2.12	-6.01	56.73	0.0116	-0.0634	0.0034
775	SLV 12	-2.41	-6.3	56.22	0.0099	-0.06	0.0173
775	SLV 13	-11.43	2.34	55.16	-0.0385	-0.2227	0.0131
775	SLV 14	-11.87	1.9	54.38	-0.0412	-0.2174	0.0346
775	SLV 15	-10.75	-1.73	53.3	-0.0335	-0.2631	0.0163
775	SLV 16	-11.19	-2.17	52.52	-0.0362	-0.2577	0.0379
775	CRTFP Ux+	0	0	0	0	0	0
775	CRTFP Ux-	0	0	0	0	0	0
777	SLU 1	-0.59	0.11	31.52	-0.0276	-2.6734	0.0265
777	SLU 2	-0.59	0.02	31.54	-0.0276	-2.6762	0.0046
777	SLU 3	-0.6	0.11	32.27	-0.0283	-2.7253	0.0282
777	SLU 4	-0.6	0.06	32.28	-0.0283	-2.727	0.0151
777	SLU 5	-0.6	0.02	32.01	-0.028	-2.7079	0.0059
777	SLU 6	-0.61	0.12	32.75	-0.0288	-2.7571	0.0295
777	SLU 7	-0.61	0.07	32.76	-0.0287	-2.7588	0.0163
777	SLU 8	-0.61	0.12	32.47	-0.0285	-2.7369	0.029
777	SLU 9	-0.61	0.06	32.48	-0.0285	-2.7386	0.0158



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
777	SLU 10	-0.63	0.09	35.22	-0.0313	-2.9713	0.0237
777	SLU 11	-0.63	0.19	35.95	-0.0321	-3.0205	0.0473
777	SLU 12	-0.64	0.14	35.97	-0.0321	-3.0221	0.0342
777	SLU 13	-0.64	0.1	35.69	-0.0318	-3.0031	0.0249
777	SLU 14	-0.64	0.19	36.43	-0.0326	-3.0522	0.0485
777	SLU 15	-0.65	0.14	36.44	-0.0325	-3.0539	0.0354
777	SLU 16	-0.64	0.19	36.15	-0.0323	-3.0321	0.0481
777	SLU 17	-0.64	0.14	36.16	-0.0323	-3.0337	0.0349
777	SLU 18	-0.64	0.21	36.78	-0.0331	-3.095	0.0538
777	SLU 19	-0.64	0.16	36.79	-0.033	-3.0967	0.0406
777	SLU 20	-0.64	0.22	37.25	-0.0335	-3.1268	0.055
777	SLU 21	-0.65	0.17	37.26	-0.0334	-3.1285	0.0419
777	SLU 22	-0.64	0.17	35.25	-0.0312	-2.9649	0.0426
777	SLU 23	-0.64	0.08	35.27	-0.0312	-2.9677	0.0207
777	SLU 24	-0.65	0.18	36	-0.0319	-3.0168	0.0443
777	SLU 25	-0.65	0.12	36.01	-0.0319	-3.0185	0.0311
777	SLU 26	-0.65	0.09	35.74	-0.0316	-2.9995	0.0219
777	SLU 27	-0.66	0.18	36.48	-0.0324	-3.0486	0.0455
777	SLU 28	-0.66	0.13	36.49	-0.0323	-3.0503	0.0324
777	SLU 29	-0.65	0.18	36.2	-0.0321	-3.0285	0.045
777	SLU 30	-0.66	0.13	36.21	-0.0321	-3.0301	0.0319
777	SLU 31	-0.68	0.16	38.95	-0.0349	-3.2628	0.0398
777	SLU 32	-0.68	0.25	39.68	-0.0357	-3.312	0.0634
777	SLU 33	-0.69	0.2	39.7	-0.0357	-3.3137	0.0502
777	SLU 34	-0.69	0.16	39.43	-0.0354	-3.2946	0.041
777	SLU 35	-0.69	0.26	40.16	-0.0361	-3.3438	0.0646
777	SLU 36	-0.7	0.2	40.17	-0.0361	-3.3454	0.0514
777	SLU 37	-0.69	0.26	39.88	-0.0359	-3.3236	0.0641
777	SLU 38	-0.69	0.2	39.89	-0.0359	-3.3253	0.051
777	SLU 39	-0.68	0.28	40.51	-0.0366	-3.3865	0.0698
777	SLU 40	-0.69	0.23	40.52	-0.0366	-3.3882	0.0567
777	SLU 41	-0.69	0.28	40.98	-0.0371	-3.4183	0.0711
777	SLU 42	-0.7	0.23	41	-0.037	-3.42	0.0579
777	SLU 43	-0.74	0.12	39.69	-0.0347	-3.3754	0.029
777	SLU 44	-0.75	0.03	39.71	-0.0346	-3.3782	0.0071
777	SLU 45	-0.76	0.12	40.45	-0.0354	-3.4274	0.0307
777	SLU 46	-0.76	0.07	40.46	-0.0353	-3.429	0.0175
777	SLU 47	-0.76	0.03	40.19	-0.0351	-3.41	0.0083
777	SLU 48	-0.77	0.13	40.92	-0.0358	-3.4592	0.0319
777	SLU 49	-0.77	0.07	40.93	-0.0358	-3.4608	0.0188
777	SLU 50	-0.76	0.13	40.64	-0.0356	-3.439	0.0314
777	SLU 51	-0.77	0.07	40.66	-0.0355	-3.4407	0.0183
777	SLU 52	-0.78	0.1	43.39	-0.0384	-3.6734	0.0262
777	SLU 53	-0.79	0.2	44.13	-0.0392	-3.7225	0.0498
777	SLU 54	-0.8	0.15	44.14	-0.0391	-3.7242	0.0366
777	SLU 55	-0.79	0.11	43.87	-0.0389	-3.7051	0.0274
777	SLU 56	-0.8	0.2	44.6	-0.0396	-3.7543	0.051
777	SLU 57	-0.81	0.15	44.62	-0.0396	-3.756	0.0379
777	SLU 58	-0.8	0.2	44.32	-0.0394	-3.7341	0.0505
777	SLU 59	-0.8	0.15	44.34	-0.0393	-3.7358	0.0374
777	SLU 60	-0.79	0.22	44.95	-0.0401	-3.7971	0.0562
777	SLU 61	-0.8	0.17	44.96	-0.0401	-3.7987	0.0431
777	SLU 62	-0.8	0.23	45.43	-0.0406	-3.8289	0.0575
777	SLU 63	-0.81	0.18	45.44	-0.0405	-3.8305	0.0443
777	SLU 64	-0.79	0.18	43.42	-0.0383	-3.667	0.045
777	SLU 65	-0.8	0.09	43.44	-0.0382	-3.6697	0.0231
777	SLU 66	-0.81	0.19	44.18	-0.039	-3.7189	0.0467
777	SLU 67	-0.81	0.13	44.19	-0.0389	-3.7206	0.0336
777	SLU 68	-0.81	0.1	43.92	-0.0387	-3.7015	0.0244
777	SLU 69	-0.82	0.19	44.65	-0.0394	-3.7507	0.0479
777	SLU 70	-0.82	0.14	44.67	-0.0394	-3.7523	0.0348
777	SLU 71	-0.81	0.19	44.37	-0.0392	-3.7305	0.0475
777	SLU 72	-0.82	0.14	44.39	-0.0391	-3.7322	0.0343
777	SLU 73	-0.83	0.17	47.13	-0.042	-3.9649	0.0422
777	SLU 74	-0.84	0.26	47.86	-0.0428	-4.0141	0.0658
777	SLU 75	-0.85	0.21	47.87	-0.0427	-4.0157	0.0527
777	SLU 76	-0.84	0.17	47.6	-0.0424	-3.9967	0.0434
777	SLU 77	-0.85	0.27	48.34	-0.0432	-4.0458	0.067
777	SLU 78	-0.86	0.21	48.35	-0.0432	-4.0475	0.0539
777	SLU 79	-0.85	0.27	48.06	-0.043	-4.0257	0.0666
777	SLU 80	-0.85	0.21	48.07	-0.0429	-4.0273	0.0534
777	SLU 81	-0.84	0.29	48.68	-0.0437	-4.0886	0.0723
777	SLU 82	-0.85	0.24	48.69	-0.0437	-4.0903	0.0591
777	SLU 83	-0.85	0.29	49.16	-0.0441	-4.1204	0.0735
777	SLU 84	-0.86	0.24	49.17	-0.0441	-4.1221	0.0604
777	SLE RA 1	-0.6	0.12	32.58	-0.0287	-2.7567	0.0311
777	SLE RA 2	-0.6	0.07	32.6	-0.0286	-2.7585	0.0165
777	SLE RA 3	-0.61	0.13	33.08	-0.0291	-2.7913	0.0322
777	SLE RA 4	-0.61	0.09	33.09	-0.0291	-2.7924	0.0235
777	SLE RA 5	-0.61	0.07	32.91	-0.0289	-2.7797	0.0173
777	SLE RA 6	-0.62	0.13	33.4	-0.0294	-2.8125	0.0331
777	SLE RA 7	-0.62	0.1	33.41	-0.0294	-2.8136	0.0243
777	SLE RA 8	-0.61	0.13	33.22	-0.0293	-2.799	0.0327
777	SLE RA 9	-0.62	0.1	33.22	-0.0292	-2.8001	0.024
777	SLE RA 10	-0.63	0.12	35.05	-0.0311	-2.9553	0.0292
777	SLE RA 11	-0.63	0.18	35.54	-0.0317	-2.9881	0.045
777	SLE RA 12	-0.63	0.14	35.55	-0.0316	-2.9892	0.0362
777	SLE RA 13	-0.63	0.12	35.37	-0.0314	-2.9765	0.0301
777	SLE RA 14	-0.64	0.18	35.86	-0.0319	-3.0092	0.0458
777	SLE RA 15	-0.64	0.15	35.87	-0.0319	-3.0104	0.037





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
777	SLE RA 16	-0.64	0.18	35.67	-0.0318	-2.9958	0.0455
777	SLE RA 17	-0.64	0.15	35.68	-0.0317	-2.9969	0.0367
777	SLE RA 18	-0.63	0.2	36.09	-0.0323	-3.0378	0.0493
777	SLE RA 19	-0.64	0.16	36.1	-0.0322	-3.0389	0.0405
777	SLE RA 20	-0.64	0.2	36.41	-0.0326	-3.0589	0.0501
777	SLE RA 21	-0.64	0.16	36.41	-0.0325	-3.0601	0.0413
777	SLE FR 1	-0.6	0.12	32.58	-0.0287	-2.7567	0.0311
777	SLE FR 2	-0.6	0.11	32.58	-0.0287	-2.757	0.0282
777	SLE FR 3	-0.6	0.13	32.71	-0.0288	-2.7651	0.0314
777	SLE FR 4	-0.61	0.13	33.64	-0.0297	-2.8414	0.0336
777	SLE FR 5	-0.61	0.15	33.76	-0.0299	-2.8495	0.0369
777	SLE FR 6	-0.62	0.16	34.33	-0.0305	-2.8972	0.0402
777	SLE QP 1	-0.6	0.12	32.58	-0.0287	-2.7567	0.0311
777	SLE QP 2	-0.61	0.15	33.63	-0.0298	-2.841	0.0366
777	SLD 1	1.87	0.7	42.04	-0.0417	-3.5274	0.1752
777	SLD 2	1.75	0.18	42.19	-0.0406	-3.5504	0.0465
777	SLD 3	1.73	-0.58	42.52	-0.0401	-3.604	-0.1469
777	SLD 4	1.61	-1.1	42.67	-0.039	-3.6269	-0.2756
777	SLD 5	0.37	2.36	35.4	-0.036	-2.9268	0.5897
777	SLD 6	0.29	2.02	35.5	-0.0353	-2.9419	0.5051
777	SLD 7	-0.1	-1.93	37	-0.0306	-3.1818	-0.484
777	SLD 8	-0.18	-2.27	37.1	-0.0299	-3.1969	-0.5686
777	SLD 9	-1.04	2.56	30.17	-0.0296	-2.4851	0.6417
777	SLD 10	-1.12	2.22	30.27	-0.0289	-2.5002	0.5571
777	SLD 11	-1.51	-1.72	31.77	-0.0242	-2.7401	-0.432
777	SLD 12	-1.59	-2.06	31.86	-0.0235	-2.7552	-0.5166
777	SLD 13	-2.83	1.39	24.6	-0.0205	-2.0551	0.3487
777	SLD 14	-2.95	0.88	24.74	-0.0194	-2.078	0.22
777	SLD 15	-2.97	0.11	25.08	-0.0189	-2.1316	0.0266
777	SLD 16	-3.09	-0.41	25.22	-0.0178	-2.1545	-0.1021
777	SLV 1	5.18	1.39	53.32	-0.0578	-4.45	0.3477
777	SLV 2	4.91	0.19	53.66	-0.0552	-4.5035	0.0481
777	SLV 3	4.86	-1.52	54.44	-0.054	-4.6258	-0.3812
777	SLV 4	4.58	-2.72	54.78	-0.0515	-4.6793	-0.6809
777	SLV 5	1.67	5.14	37.78	-0.0442	-3.0479	1.2873
777	SLV 6	1.5	4.37	38	-0.0426	-3.0824	1.0938
777	SLV 7	0.58	-4.56	41.52	-0.0319	-3.6338	-1.1426
777	SLV 8	0.4	-5.34	41.73	-0.0302	-3.6683	-1.3361
777	SLV 9	-1.63	5.63	25.53	-0.0293	-2.0137	1.4092
777	SLV 10	-1.8	4.85	25.75	-0.0276	-2.0482	1.2157
777	SLV 11	-2.72	-4.07	29.27	-0.0169	-2.5996	-1.0207
777	SLV 12	-2.89	-4.85	29.48	-0.0153	-2.6341	-1.2142
777	SLV 13	-5.8	3.01	12.49	-0.008	-1.0027	0.754
777	SLV 14	-6.08	1.81	12.83	-0.0055	-1.0562	0.4543
777	SLV 15	-6.13	0.1	13.61	-0.0043	-1.1785	0.025
777	SLV 16	-6.4	-1.1	13.94	-0.0018	-1.232	-0.2746
777	CRTFP Ux+	0	0	0	0	0	0
777	CRTFP Ux-	0	0	0	0	0	0
777	CRTFP Uy+	0	0	0	0	0	0
777	CRTFP Uy-	0	0	0	0	0	0
780	SLU 1	0.59	0.47	36.51	-0.0613	6.9403	-0.1623
780	SLU 2	0.59	0.44	36.52	-0.0614	6.9422	-0.1542
780	SLU 3	0.61	0.47	37.36	-0.0629	7.0877	-0.1656
780	SLU 4	0.61	0.46	37.36	-0.0629	7.0889	-0.1607
780	SLU 5	0.6	0.44	37.05	-0.0624	7.0343	-0.1542
780	SLU 6	0.62	0.47	37.89	-0.0639	7.1798	-0.1656
780	SLU 7	0.62	0.46	37.89	-0.0639	7.181	-0.1607
780	SLU 8	0.61	0.47	37.57	-0.0633	7.1245	-0.1623
780	SLU 9	0.62	0.45	37.57	-0.0634	7.1257	-0.1574
780	SLU 10	0.62	0.58	40.75	-0.0692	7.7035	-0.2018
780	SLU 11	0.64	0.61	41.59	-0.0707	7.8489	-0.2132
780	SLU 12	0.64	0.6	41.6	-0.0707	7.8501	-0.2083
780	SLU 13	0.63	0.58	41.28	-0.0702	7.7956	-0.2018
780	SLU 14	0.65	0.61	42.12	-0.0717	7.9411	-0.2132
780	SLU 15	0.65	0.6	42.12	-0.0718	7.9422	-0.2083
780	SLU 16	0.64	0.6	41.8	-0.0712	7.8858	-0.2099
780	SLU 17	0.64	0.59	41.8	-0.0712	7.8869	-0.205
780	SLU 18	0.63	0.66	42.55	-0.0725	8.0278	-0.2303
780	SLU 19	0.63	0.65	42.56	-0.0725	8.0289	-0.2254
780	SLU 20	0.64	0.66	43.08	-0.0735	8.1199	-0.2303
780	SLU 21	0.64	0.65	43.09	-0.0736	8.121	-0.2254
780	SLU 22	0.64	0.59	40.75	-0.069	7.697	-0.2042
780	SLU 23	0.64	0.56	40.76	-0.069	7.6989	-0.1961
780	SLU 24	0.65	0.59	41.6	-0.0706	7.8444	-0.2075
780	SLU 25	0.66	0.58	41.61	-0.0706	7.8456	-0.2026
780	SLU 26	0.65	0.56	41.29	-0.0701	7.791	-0.1961
780	SLU 27	0.66	0.59	42.13	-0.0716	7.9365	-0.2075
780	SLU 28	0.67	0.58	42.14	-0.0716	7.9377	-0.2026
780	SLU 29	0.66	0.59	41.81	-0.071	7.8812	-0.2042
780	SLU 30	0.66	0.57	41.81	-0.0711	7.8824	-0.1993
780	SLU 31	0.67	0.7	44.99	-0.0769	8.4602	-0.2437
780	SLU 32	0.68	0.73	45.83	-0.0784	8.6057	-0.2551
780	SLU 33	0.68	0.72	45.84	-0.0784	8.6068	-0.2502
780	SLU 34	0.68	0.7	45.52	-0.0779	8.5523	-0.2437
780	SLU 35	0.69	0.73	46.36	-0.0794	8.6978	-0.2551
780	SLU 36	0.7	0.72	46.37	-0.0794	8.6989	-0.2502
780	SLU 37	0.69	0.72	46.04	-0.0789	8.6425	-0.2518
780	SLU 38	0.69	0.71	46.05	-0.0789	8.6436	-0.2469
780	SLU 39	0.68	0.78	46.8	-0.0802	8.7845	-0.2722
780	SLU 40	0.68	0.77	46.8	-0.0802	8.7856	-0.2673



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
780	SLU 41	0.69	0.78	47.33	-0.0812	8.8766	-0.2722
780	SLU 42	0.69	0.77	47.33	-0.0812	8.8778	-0.2673
780	SLU 43	0.75	0.56	46.01	-0.0771	8.7629	-0.1967
780	SLU 44	0.75	0.54	46.02	-0.0771	8.7648	-0.1885
780	SLU 45	0.77	0.57	46.86	-0.0786	8.9103	-0.1999
780	SLU 46	0.77	0.56	46.86	-0.0787	8.9115	-0.195
780	SLU 47	0.77	0.54	46.54	-0.0781	8.857	-0.1885
780	SLU 48	0.78	0.57	47.39	-0.0797	9.0025	-0.1999
780	SLU 49	0.78	0.56	47.39	-0.0797	9.0036	-0.195
780	SLU 50	0.77	0.56	47.07	-0.0791	8.9471	-0.1966
780	SLU 51	0.78	0.55	47.07	-0.0791	8.9483	-0.1918
780	SLU 52	0.78	0.68	50.25	-0.085	9.5261	-0.2361
780	SLU 53	0.8	0.71	51.09	-0.0865	9.6716	-0.2475
780	SLU 54	0.8	0.7	51.09	-0.0865	9.6727	-0.2426
780	SLU 55	0.79	0.68	50.78	-0.086	9.6182	-0.2361
780	SLU 56	0.81	0.71	51.62	-0.0875	9.7637	-0.2475
780	SLU 57	0.81	0.7	51.62	-0.0875	9.7649	-0.2426
780	SLU 58	0.8	0.7	51.3	-0.0869	9.7084	-0.2442
780	SLU 59	0.8	0.69	51.3	-0.087	9.7096	-0.2394
780	SLU 60	0.79	0.76	52.05	-0.0883	9.8504	-0.2647
780	SLU 61	0.79	0.74	52.06	-0.0883	9.8516	-0.2598
780	SLU 62	0.8	0.76	52.58	-0.0893	9.9425	-0.2646
780	SLU 63	0.81	0.74	52.59	-0.0893	9.9437	-0.2598
780	SLU 64	0.8	0.68	50.25	-0.0847	9.5196	-0.2386
780	SLU 65	0.8	0.66	50.26	-0.0848	9.5216	-0.2304
780	SLU 66	0.81	0.69	51.1	-0.0863	9.667	-0.2418
780	SLU 67	0.82	0.68	51.1	-0.0863	9.6682	-0.2369
780	SLU 68	0.81	0.66	50.79	-0.0858	9.6137	-0.2304
780	SLU 69	0.83	0.69	51.63	-0.0873	9.7592	-0.2418
780	SLU 70	0.83	0.68	51.63	-0.0874	9.7603	-0.2369
780	SLU 71	0.82	0.68	51.31	-0.0868	9.7039	-0.2386
780	SLU 72	0.82	0.67	51.31	-0.0868	9.705	-0.2337
780	SLU 73	0.83	0.8	54.49	-0.0926	10.2828	-0.278
780	SLU 74	0.84	0.83	55.33	-0.0941	10.4283	-0.2894
780	SLU 75	0.84	0.81	55.34	-0.0942	10.4295	-0.2845
780	SLU 76	0.84	0.8	55.02	-0.0937	10.3749	-0.278
780	SLU 77	0.85	0.83	55.86	-0.0952	10.5204	-0.2894
780	SLU 78	0.86	0.81	55.86	-0.0952	10.5216	-0.2845
780	SLU 79	0.85	0.82	55.54	-0.0946	10.4651	-0.2861
780	SLU 80	0.85	0.81	55.54	-0.0947	10.4663	-0.2813
780	SLU 81	0.84	0.88	56.29	-0.0959	10.6071	-0.3066
780	SLU 82	0.84	0.86	56.3	-0.096	10.6083	-0.3017
780	SLU 83	0.85	0.88	56.82	-0.097	10.6992	-0.3066
780	SLU 84	0.85	0.86	56.83	-0.097	10.7004	-0.3017
780	SLE RA 1	0.6	0.5	37.72	-0.0635	7.1565	-0.1743
780	SLE RA 2	0.61	0.48	37.73	-0.0635	7.1578	-0.1689
780	SLE RA 3	0.61	0.51	38.29	-0.0645	7.2548	-0.1765
780	SLE RA 4	0.62	0.5	38.29	-0.0646	7.2555	-0.1732
780	SLE RA 5	0.61	0.48	38.08	-0.0642	7.2192	-0.1689
780	SLE RA 6	0.62	0.51	38.64	-0.0652	7.3162	-0.1765
780	SLE RA 7	0.62	0.5	38.64	-0.0653	7.317	-0.1732
780	SLE RA 8	0.62	0.5	38.43	-0.0649	7.2793	-0.1743
780	SLE RA 9	0.62	0.49	38.43	-0.0649	7.2801	-0.171
780	SLE RA 10	0.62	0.57	40.55	-0.0688	7.6653	-0.2006
780	SLE RA 11	0.63	0.6	41.11	-0.0698	7.7623	-0.2082
780	SLE RA 12	0.63	0.59	41.11	-0.0698	7.763	-0.2049
780	SLE RA 13	0.63	0.57	40.9	-0.0694	7.7267	-0.2006
780	SLE RA 14	0.64	0.6	41.46	-0.0705	7.8237	-0.2082
780	SLE RA 15	0.64	0.59	41.46	-0.0705	7.8244	-0.2049
780	SLE RA 16	0.64	0.59	41.25	-0.0701	7.7868	-0.206
780	SLE RA 17	0.64	0.58	41.25	-0.0701	7.7876	-0.2028
780	SLE RA 18	0.63	0.63	41.75	-0.071	7.8815	-0.2196
780	SLE RA 19	0.63	0.62	41.75	-0.071	7.8822	-0.2164
780	SLE RA 20	0.64	0.63	42.1	-0.0716	7.9429	-0.2196
780	SLE RA 21	0.64	0.62	42.11	-0.0717	7.9437	-0.2164
780	SLE FR 1	0.6	0.5	37.72	-0.0635	7.1565	-0.1743
780	SLE FR 2	0.6	0.5	37.72	-0.0635	7.1567	-0.1732
780	SLE FR 3	0.61	0.5	37.86	-0.0638	7.181	-0.1743
780	SLE FR 4	0.61	0.54	38.93	-0.0657	7.3742	-0.1868
780	SLE FR 5	0.61	0.54	39.07	-0.066	7.3985	-0.1879
780	SLE FR 6	0.62	0.56	39.74	-0.0672	7.519	-0.197
780	SLE QP 1	0.6	0.5	37.72	-0.0635	7.1565	-0.1743
780	SLE QP 2	0.61	0.54	38.93	-0.0657	7.374	-0.1879
780	SLD 1	2.65	0.63	28.92	-0.0467	5.7723	-0.2175
780	SLD 2	2.49	1.27	28.76	-0.0483	5.7707	-0.4417
780	SLD 3	2.92	-0.86	29.53	-0.0437	5.6768	0.2999
780	SLD 4	2.77	-0.21	29.36	-0.0453	5.6752	0.0756
780	SLD 5	0.84	2.7	35.05	-0.0643	7.0386	-0.9413
780	SLD 6	0.73	3.12	34.94	-0.0654	7.0376	-1.0887
780	SLD 7	1.75	-2.24	37.05	-0.0543	6.7202	0.7831
780	SLD 8	1.64	-1.82	36.94	-0.0553	6.7191	0.6357
780	SLD 9	-0.42	2.9	40.92	-0.0762	8.0288	-1.0115
780	SLD 10	-0.52	3.32	40.81	-0.0772	8.0277	-1.1589
780	SLD 11	0.49	-2.04	42.92	-0.0661	7.7103	0.7129
780	SLD 12	0.38	-1.62	42.81	-0.0671	7.7093	0.5655
780	SLD 13	-1.54	1.29	48.5	-0.0862	9.0728	-0.4514
780	SLD 14	-1.7	1.93	48.33	-0.0877	9.0712	-0.6757
780	SLD 15	-1.27	-0.19	49.1	-0.0831	8.9772	0.0659
780	SLD 16	-1.43	0.45	48.93	-0.0847	8.9756	-0.1583
780	SLV 1	5.39	0.69	15.52	-0.0212	3.6247	-0.2395



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
780	SLV 2	5.02	2.19	15.13	-0.0249	3.621	-0.7617
780	SLV 3	6.01	-2.66	16.91	-0.0143	3.4015	0.9321
780	SLV 4	5.64	-1.16	16.52	-0.018	3.3977	0.4099
780	SLV 5	1.17	5.42	29.85	-0.0622	6.5884	-1.89
780	SLV 6	0.93	6.38	29.6	-0.0645	6.586	-2.2273
780	SLV 7	3.24	-5.77	34.51	-0.0392	5.8442	2.0154
780	SLV 8	3	-4.8	34.26	-0.0416	5.8418	1.6781
780	SLV 9	-1.78	5.88	43.6	-0.0899	8.9061	-2.0539
780	SLV 10	-2.02	6.85	43.35	-0.0922	8.9037	-2.3912
780	SLV 11	0.29	-5.31	48.26	-0.0669	8.1619	1.8515
780	SLV 12	0.06	-4.34	48	-0.0693	8.1595	1.5142
780	SLV 13	-4.42	2.24	61.33	-0.1135	11.3502	-0.7857
780	SLV 14	-4.79	3.74	60.95	-0.1172	11.3465	-1.308
780	SLV 15	-3.8	-1.11	62.73	-0.1066	11.127	0.3859
780	SLV 16	-4.17	0.38	62.34	-0.1103	11.1232	-0.1363
780	CRTFP Ux+	0	0	0	0	0	0
780	CRTFP Ux-	0	0	0	0	0	0
780	CRTFP Uy+	0	0	0	0	0	0
780	CRTFP Uy-	0	0	0	0	0	0
782	SLU 1	1.23	0.17	63.55	0.024	0.2445	-0.0159
782	SLU 2	1.22	0.14	63.55	0.024	0.2534	-0.0152
782	SLU 3	1.27	0.18	65.04	0.0247	0.2531	-0.0163
782	SLU 4	1.26	0.16	65.03	0.0247	0.2584	-0.0159
782	SLU 5	1.24	0.13	64.46	0.0243	0.2583	-0.0155
782	SLU 6	1.29	0.18	65.95	0.025	0.258	-0.0166
782	SLU 7	1.28	0.16	65.95	0.025	0.2633	-0.0162
782	SLU 8	1.28	0.17	65.38	0.0247	0.2544	-0.0165
782	SLU 9	1.27	0.15	65.38	0.0247	0.2596	-0.0161
782	SLU 10	1.3	0.24	71.61	0.0273	0.2942	-0.0169
782	SLU 11	1.34	0.28	73.1	0.028	0.294	-0.0179
782	SLU 12	1.34	0.26	73.1	0.028	0.2993	-0.0175
782	SLU 13	1.32	0.23	72.53	0.0276	0.2992	-0.0172
782	SLU 14	1.36	0.28	74.02	0.0283	0.2989	-0.0182
782	SLU 15	1.36	0.26	74.01	0.0283	0.3042	-0.0178
782	SLU 16	1.35	0.27	73.45	0.028	0.2952	-0.0181
782	SLU 17	1.35	0.24	73.44	0.028	0.3005	-0.0177
782	SLU 18	1.34	0.31	75.08	0.0287	0.303	-0.0182
782	SLU 19	1.33	0.29	75.07	0.0287	0.3082	-0.0178
782	SLU 20	1.36	0.31	75.99	0.0291	0.3079	-0.0185
782	SLU 21	1.36	0.29	75.99	0.029	0.3132	-0.0181
782	SLU 22	1.33	0.3	71.53	0.028	0.285	-0.0171
782	SLU 23	1.32	0.27	71.52	0.028	0.2939	-0.0164
782	SLU 24	1.37	0.31	73.01	0.0287	0.2936	-0.0174
782	SLU 25	1.36	0.29	73.01	0.0287	0.2989	-0.017
782	SLU 26	1.35	0.26	72.43	0.0283	0.2988	-0.0167
782	SLU 27	1.39	0.31	73.92	0.029	0.2986	-0.0177
782	SLU 28	1.38	0.29	73.92	0.029	0.3038	-0.0173
782	SLU 29	1.38	0.3	73.35	0.0286	0.2949	-0.0177
782	SLU 30	1.37	0.27	73.35	0.0286	0.3002	-0.0173
782	SLU 31	1.4	0.36	79.58	0.0313	0.3348	-0.018
782	SLU 32	1.44	0.41	81.08	0.032	0.3345	-0.0191
782	SLU 33	1.44	0.39	81.07	0.032	0.3398	-0.0187
782	SLU 34	1.42	0.36	80.5	0.0316	0.3397	-0.0183
782	SLU 35	1.46	0.41	81.99	0.0323	0.3394	-0.0194
782	SLU 36	1.46	0.39	81.98	0.0323	0.3447	-0.019
782	SLU 37	1.45	0.39	81.42	0.0319	0.3358	-0.0193
782	SLU 38	1.45	0.37	81.41	0.0319	0.341	-0.0189
782	SLU 39	1.44	0.44	83.05	0.0327	0.3435	-0.0194
782	SLU 40	1.44	0.42	83.04	0.0327	0.3488	-0.019
782	SLU 41	1.46	0.44	83.96	0.033	0.3484	-0.0197
782	SLU 42	1.46	0.42	83.96	0.033	0.3537	-0.0193
782	SLU 43	1.57	0.18	79.89	0.0299	0.304	-0.0203
782	SLU 44	1.56	0.15	79.88	0.0299	0.3128	-0.0196
782	SLU 45	1.6	0.19	81.37	0.0305	0.3126	-0.0206
782	SLU 46	1.59	0.17	81.37	0.0305	0.3179	-0.0202
782	SLU 47	1.58	0.14	80.79	0.0302	0.3177	-0.0199
782	SLU 48	1.62	0.19	82.29	0.0309	0.3175	-0.0209
782	SLU 49	1.62	0.17	82.28	0.0309	0.3228	-0.0205
782	SLU 50	1.61	0.18	81.72	0.0305	0.3138	-0.0209
782	SLU 51	1.6	0.15	81.71	0.0305	0.3191	-0.0205
782	SLU 52	1.63	0.24	87.95	0.0332	0.3537	-0.0212
782	SLU 53	1.68	0.29	89.44	0.0338	0.3535	-0.0223
782	SLU 54	1.67	0.27	89.43	0.0338	0.3588	-0.0219
782	SLU 55	1.65	0.24	88.86	0.0335	0.3586	-0.0215
782	SLU 56	1.7	0.29	90.35	0.0341	0.3584	-0.0226
782	SLU 57	1.69	0.27	90.35	0.0341	0.3637	-0.0222
782	SLU 58	1.69	0.27	89.78	0.0338	0.3547	-0.0225
782	SLU 59	1.68	0.25	89.78	0.0338	0.36	-0.0221
782	SLU 60	1.67	0.32	91.41	0.0346	0.3624	-0.0226
782	SLU 61	1.67	0.3	91.41	0.0346	0.3677	-0.0222
782	SLU 62	1.7	0.32	92.32	0.0349	0.3673	-0.0229
782	SLU 63	1.69	0.3	92.32	0.0349	0.3726	-0.0225
782	SLU 64	1.67	0.31	87.86	0.0339	0.3445	-0.0214
782	SLU 65	1.66	0.27	87.85	0.0339	0.3533	-0.0208
782	SLU 66	1.7	0.32	89.34	0.0345	0.3531	-0.0218
782	SLU 67	1.7	0.3	89.34	0.0345	0.3584	-0.0214
782	SLU 68	1.68	0.27	88.77	0.0342	0.3582	-0.0211
782	SLU 69	1.72	0.32	90.26	0.0348	0.358	-0.0221
782	SLU 70	1.72	0.3	90.25	0.0348	0.3633	-0.0217
782	SLU 71	1.71	0.3	89.69	0.0345	0.3543	-0.022



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
782	SLU 72	1.71	0.28	89.68	0.0345	0.3596	-0.0216
782	SLU 73	1.73	0.37	95.92	0.0371	0.3942	-0.0224
782	SLU 74	1.78	0.42	97.41	0.0378	0.394	-0.0234
782	SLU 75	1.77	0.4	97.4	0.0378	0.3993	-0.023
782	SLU 76	1.76	0.37	96.83	0.0375	0.3991	-0.0227
782	SLU 77	1.8	0.42	98.32	0.0381	0.3989	-0.0237
782	SLU 78	1.79	0.39	98.32	0.0381	0.4042	-0.0233
782	SLU 79	1.79	0.4	97.75	0.0378	0.3952	-0.0237
782	SLU 80	1.78	0.38	97.75	0.0378	0.4005	-0.0233
782	SLU 81	1.78	0.45	99.38	0.0386	0.4029	-0.0237
782	SLU 82	1.77	0.43	99.38	0.0386	0.4082	-0.0234
782	SLU 83	1.8	0.45	100.3	0.0389	0.4078	-0.024
782	SLU 84	1.79	0.43	100.29	0.0389	0.4131	-0.0237
782	SLE RA 1	1.26	0.21	65.83	0.0252	0.2561	-0.0162
782	SLE RA 2	1.25	0.19	65.83	0.0252	0.262	-0.0158
782	SLE RA 3	1.28	0.22	66.82	0.0256	0.2618	-0.0165
782	SLE RA 4	1.28	0.2	66.82	0.0256	0.2654	-0.0162
782	SLE RA 5	1.27	0.18	66.44	0.0254	0.2653	-0.016
782	SLE RA 6	1.3	0.22	67.43	0.0258	0.2651	-0.0167
782	SLE RA 7	1.29	0.2	67.43	0.0258	0.2686	-0.0164
782	SLE RA 8	1.29	0.21	67.05	0.0256	0.2627	-0.0166
782	SLE RA 9	1.29	0.19	67.05	0.0256	0.2662	-0.0164
782	SLE RA 10	1.3	0.25	71.2	0.0274	0.2893	-0.0169
782	SLE RA 11	1.33	0.28	72.2	0.0278	0.2891	-0.0176
782	SLE RA 12	1.33	0.27	72.2	0.0278	0.2926	-0.0173
782	SLE RA 13	1.32	0.25	71.81	0.0276	0.2925	-0.0171
782	SLE RA 14	1.35	0.28	72.81	0.028	0.2924	-0.0178
782	SLE RA 15	1.34	0.27	72.8	0.028	0.2959	-0.0175
782	SLE RA 16	1.34	0.27	72.43	0.0278	0.2899	-0.0177
782	SLE RA 17	1.34	0.26	72.42	0.0278	0.2934	-0.0174
782	SLE RA 18	1.33	0.3	73.51	0.0283	0.2951	-0.0178
782	SLE RA 19	1.33	0.29	73.51	0.0283	0.2986	-0.0175
782	SLE RA 20	1.35	0.3	74.12	0.0285	0.2983	-0.018
782	SLE RA 21	1.34	0.29	74.12	0.0285	0.3019	-0.0177
782	SLE FR 1	1.26	0.21	65.83	0.0252	0.2561	-0.0162
782	SLE FR 2	1.26	0.21	65.83	0.0252	0.2573	-0.0161
782	SLE FR 3	1.27	0.21	66.08	0.0253	0.2574	-0.0163
782	SLE FR 4	1.28	0.23	68.14	0.0261	0.269	-0.0166
782	SLE FR 5	1.29	0.24	68.38	0.0262	0.2691	-0.0168
782	SLE FR 6	1.3	0.26	69.67	0.0267	0.2756	-0.017
782	SLE QP 1	1.26	0.21	65.83	0.0252	0.2561	-0.0162
782	SLE QP 2	1.28	0.24	68.14	0.0261	0.2678	-0.0167
782	SLD 1	6.27	1.26	63.22	0.023	0.2743	-0.0372
782	SLD 2	6.02	1.75	62.93	0.0198	0.2798	-0.0259
782	SLD 3	6.56	-0.52	63.6	0.0297	0.319	-0.0388
782	SLD 4	6.31	-0.03	63.31	0.0265	0.3245	-0.0275
782	SLD 5	2.38	3.15	66.13	0.0155	0.201	-0.0224
782	SLD 6	2.22	3.47	65.94	0.0135	0.2046	-0.015
782	SLD 7	3.35	-2.77	67.41	0.0379	0.3499	-0.0278
782	SLD 8	3.19	-2.45	67.22	0.0359	0.3535	-0.0204
782	SLD 9	-0.62	2.93	69.06	0.0164	0.1821	-0.013
782	SLD 10	-0.79	3.24	68.87	0.0143	0.1857	-0.0056
782	SLD 11	0.35	-3	70.33	0.0388	0.331	-0.0184
782	SLD 12	0.19	-2.68	70.14	0.0367	0.3345	-0.011
782	SLD 13	-3.75	0.51	72.96	0.0257	0.2111	-0.0058
782	SLD 14	-3.99	0.99	72.67	0.0225	0.2166	0.0055
782	SLD 15	-3.45	-1.27	73.34	0.0324	0.2558	-0.0075
782	SLD 16	-3.7	-0.79	73.05	0.0293	0.2612	0.0038
782	SLV 1	12.95	2.57	56.61	0.019	0.2862	-0.0648
782	SLV 2	12.37	3.7	55.94	0.0116	0.299	-0.0384
782	SLV 3	13.63	-1.46	57.5	0.0342	0.3872	-0.0685
782	SLV 4	13.05	-0.32	56.83	0.0268	0.3999	-0.0422
782	SLV 5	3.85	6.84	63.44	0.0022	0.118	-0.03
782	SLV 6	3.48	7.57	63.01	-0.0025	0.1263	-0.013
782	SLV 7	6.12	-6.56	66.42	0.0528	0.4545	-0.0425
782	SLV 8	5.74	-5.83	65.98	0.0481	0.4627	-0.0255
782	SLV 9	-3.18	6.31	70.29	0.0041	0.0729	-0.0079
782	SLV 10	-3.55	7.04	69.86	-0.0006	0.0811	0.0091
782	SLV 11	-0.91	-7.09	73.26	0.0548	0.4093	-0.0204
782	SLV 12	-1.28	-6.36	72.83	0.05	0.4175	-0.0034
782	SLV 13	-10.48	0.8	79.44	0.0254	0.1357	0.0088
782	SLV 14	-11.06	1.93	78.77	0.0181	0.1484	0.0351
782	SLV 15	-9.8	-3.22	80.33	0.0406	0.2366	0.0051
782	SLV 16	-10.38	-2.09	79.66	0.0332	0.2493	0.0314
782	CRTFP Ux+	0	0	0	0	0	0
782	CRTFP Ux-	0	0	0	0	0	0
785	SLU 1	-0.85	-0.62	64.93	-0.0067	-0.4329	0.0111
785	SLU 2	-0.87	-0.71	65	-0.0061	-0.4384	0.012
785	SLU 3	-0.87	-0.62	66.51	-0.0067	-0.4454	0.0114
785	SLU 4	-0.89	-0.67	66.55	-0.0064	-0.4487	0.0119
785	SLU 5	-0.89	-0.72	65.97	-0.0062	-0.4449	0.0121
785	SLU 6	-0.89	-0.62	67.48	-0.0068	-0.4518	0.0115
785	SLU 7	-0.9	-0.68	67.52	-0.0065	-0.4551	0.012
785	SLU 8	-0.88	-0.63	66.87	-0.0069	-0.4458	0.0114
785	SLU 9	-0.89	-0.69	66.91	-0.0065	-0.4491	0.0119
785	SLU 10	-0.91	-0.71	73.42	-0.0068	-0.5048	0.0136
785	SLU 11	-0.91	-0.62	74.93	-0.0074	-0.5117	0.013
785	SLU 12	-0.92	-0.67	74.97	-0.0071	-0.515	0.0135
785	SLU 13	-0.92	-0.71	74.39	-0.0069	-0.5112	0.0137
785	SLU 14	-0.92	-0.62	75.9	-0.0075	-0.5182	0.0131



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
785	SLU 15	-0.94	-0.68	75.94	-0.0072	-0.5215	0.0136
785	SLU 16	-0.91	-0.63	75.29	-0.0076	-0.5122	0.013
785	SLU 17	-0.93	-0.68	75.33	-0.0072	-0.5155	0.0135
785	SLU 18	-0.9	-0.61	76.96	-0.0077	-0.5277	0.0134
785	SLU 19	-0.92	-0.67	77	-0.0074	-0.531	0.0139
785	SLU 20	-0.92	-0.62	77.93	-0.0078	-0.5341	0.0136
785	SLU 21	-0.93	-0.68	77.97	-0.0074	-0.5375	0.0141
785	SLU 22	-0.92	-0.58	73.19	-0.0066	-0.4979	0.0119
785	SLU 23	-0.94	-0.68	73.26	-0.006	-0.5035	0.0127
785	SLU 24	-0.95	-0.58	74.77	-0.0066	-0.5104	0.0122
785	SLU 25	-0.96	-0.64	74.81	-0.0062	-0.5137	0.0127
785	SLU 26	-0.96	-0.68	74.23	-0.0061	-0.5099	0.0129
785	SLU 27	-0.96	-0.59	75.74	-0.0066	-0.5169	0.0123
785	SLU 28	-0.97	-0.65	75.78	-0.0063	-0.5202	0.0128
785	SLU 29	-0.95	-0.6	75.13	-0.0067	-0.5109	0.0122
785	SLU 30	-0.96	-0.65	75.17	-0.0064	-0.5142	0.0127
785	SLU 31	-0.98	-0.67	81.68	-0.0067	-0.5698	0.0144
785	SLU 32	-0.98	-0.58	83.19	-0.0073	-0.5768	0.0138
785	SLU 33	-1	-0.64	83.23	-0.0069	-0.5801	0.0143
785	SLU 34	-0.99	-0.68	82.65	-0.0067	-0.5763	0.0145
785	SLU 35	-1	-0.59	84.16	-0.0073	-0.5832	0.0139
785	SLU 36	-1.01	-0.64	84.2	-0.007	-0.5866	0.0144
785	SLU 37	-0.99	-0.59	83.55	-0.0074	-0.5772	0.0138
785	SLU 38	-1	-0.65	83.59	-0.0071	-0.5805	0.0143
785	SLU 39	-0.97	-0.58	85.22	-0.0076	-0.5927	0.0142
785	SLU 40	-0.99	-0.64	85.26	-0.0072	-0.5961	0.0147
785	SLU 41	-0.99	-0.59	86.19	-0.0076	-0.5992	0.0143
785	SLU 42	-1	-0.64	86.23	-0.0073	-0.6025	0.0148
785	SLU 43	-1.08	-0.81	81.58	-0.0088	-0.5404	0.0142
785	SLU 44	-1.1	-0.91	81.65	-0.0082	-0.546	0.015
785	SLU 45	-1.1	-0.81	83.16	-0.0088	-0.5529	0.0145
785	SLU 46	-1.12	-0.87	83.2	-0.0085	-0.5562	0.015
785	SLU 47	-1.12	-0.91	82.62	-0.0083	-0.5524	0.0152
785	SLU 48	-1.12	-0.82	84.12	-0.0089	-0.5594	0.0146
785	SLU 49	-1.13	-0.88	84.17	-0.0085	-0.5627	0.0151
785	SLU 50	-1.11	-0.83	83.52	-0.0089	-0.5534	0.0145
785	SLU 51	-1.12	-0.88	83.56	-0.0086	-0.5567	0.015
785	SLU 52	-1.14	-0.91	90.07	-0.0089	-0.6123	0.0167
785	SLU 53	-1.14	-0.81	91.58	-0.0095	-0.6193	0.0161
785	SLU 54	-1.15	-0.87	91.62	-0.0091	-0.6226	0.0166
785	SLU 55	-1.15	-0.91	91.04	-0.009	-0.6188	0.0168
785	SLU 56	-1.15	-0.82	92.54	-0.0096	-0.6257	0.0162
785	SLU 57	-1.17	-0.87	92.59	-0.0092	-0.6291	0.0167
785	SLU 58	-1.14	-0.83	91.94	-0.0096	-0.6197	0.0161
785	SLU 59	-1.16	-0.88	91.98	-0.0093	-0.623	0.0166
785	SLU 60	-1.13	-0.81	93.61	-0.0098	-0.6352	0.0165
785	SLU 61	-1.15	-0.87	93.65	-0.0094	-0.6386	0.017
785	SLU 62	-1.15	-0.82	94.58	-0.0098	-0.6417	0.0166
785	SLU 63	-1.16	-0.87	94.62	-0.0095	-0.645	0.0171
785	SLU 64	-1.15	-0.78	89.84	-0.0086	-0.6055	0.015
785	SLU 65	-1.17	-0.87	89.91	-0.008	-0.611	0.0158
785	SLU 66	-1.18	-0.78	91.42	-0.0086	-0.618	0.0152
785	SLU 67	-1.19	-0.84	91.46	-0.0083	-0.6213	0.0157
785	SLU 68	-1.19	-0.88	90.88	-0.0081	-0.6175	0.0159
785	SLU 69	-1.19	-0.79	92.39	-0.0087	-0.6244	0.0154
785	SLU 70	-1.2	-0.84	92.43	-0.0084	-0.6278	0.0159
785	SLU 71	-1.18	-0.79	91.78	-0.0088	-0.6184	0.0152
785	SLU 72	-1.19	-0.85	91.82	-0.0084	-0.6218	0.0157
785	SLU 73	-1.21	-0.87	98.33	-0.0087	-0.6774	0.0174
785	SLU 74	-1.21	-0.78	99.84	-0.0093	-0.6843	0.0169
785	SLU 75	-1.23	-0.83	99.88	-0.009	-0.6877	0.0174
785	SLU 76	-1.22	-0.88	99.3	-0.0088	-0.6839	0.0176
785	SLU 77	-1.23	-0.79	100.81	-0.0094	-0.6908	0.017
785	SLU 78	-1.24	-0.84	100.85	-0.0091	-0.6941	0.0175
785	SLU 79	-1.22	-0.79	100.2	-0.0095	-0.6848	0.0168
785	SLU 80	-1.23	-0.85	100.24	-0.0091	-0.6881	0.0173
785	SLU 81	-1.2	-0.78	101.87	-0.0096	-0.7003	0.0173
785	SLU 82	-1.22	-0.83	101.91	-0.0093	-0.7036	0.0178
785	SLU 83	-1.22	-0.78	102.84	-0.0097	-0.7068	0.0174
785	SLU 84	-1.23	-0.84	102.88	-0.0093	-0.7101	0.0179
785	SLE RA 1	-0.87	-0.61	67.29	-0.0067	-0.4515	0.0114
785	SLE RA 2	-0.89	-0.67	67.34	-0.0063	-0.4552	0.0119
785	SLE RA 3	-0.89	-0.61	68.34	-0.0067	-0.4598	0.0115
785	SLE RA 4	-0.9	-0.65	68.37	-0.0064	-0.462	0.0119
785	SLE RA 5	-0.89	-0.67	67.99	-0.0063	-0.4595	0.012
785	SLE RA 6	-0.9	-0.61	68.99	-0.0067	-0.4641	0.0116
785	SLE RA 7	-0.9	-0.65	69.02	-0.0065	-0.4663	0.0119
785	SLE RA 8	-0.89	-0.62	68.59	-0.0068	-0.4601	0.0115
785	SLE RA 9	-0.9	-0.65	68.61	-0.0065	-0.4623	0.0119
785	SLE RA 10	-0.91	-0.67	72.95	-0.0067	-0.4994	0.013
785	SLE RA 11	-0.91	-0.61	73.96	-0.0071	-0.504	0.0126
785	SLE RA 12	-0.92	-0.64	73.98	-0.0069	-0.5062	0.0129
785	SLE RA 13	-0.92	-0.67	73.6	-0.0068	-0.5037	0.0131
785	SLE RA 14	-0.92	-0.61	74.6	-0.0072	-0.5083	0.0127
785	SLE RA 15	-0.93	-0.65	74.63	-0.007	-0.5105	0.013
785	SLE RA 16	-0.91	-0.62	74.2	-0.0072	-0.5043	0.0126
785	SLE RA 17	-0.92	-0.65	74.23	-0.007	-0.5065	0.0129
785	SLE RA 18	-0.91	-0.61	75.31	-0.0073	-0.5147	0.0129
785	SLE RA 19	-0.91	-0.64	75.34	-0.0071	-0.5169	0.0132
785	SLE RA 20	-0.91	-0.61	75.96	-0.0074	-0.519	0.013



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
785	SLE RA 21	-0.92	-0.65	75.99	-0.0071	-0.5212	0.0133
785	SLE FR 1	-0.87	-0.61	67.29	-0.0067	-0.4515	0.0114
785	SLE FR 2	-0.87	-0.62	67.3	-0.0066	-0.4522	0.0115
785	SLE FR 3	-0.87	-0.61	67.55	-0.0067	-0.4532	0.0114
785	SLE FR 4	-0.88	-0.62	69.71	-0.0068	-0.4712	0.0119
785	SLE FR 5	-0.89	-0.61	69.96	-0.0069	-0.4722	0.0118
785	SLE FR 6	-0.89	-0.61	71.3	-0.007	-0.4831	0.0121
785	SLE QP 1	-0.87	-0.61	67.29	-0.0067	-0.4515	0.0114
785	SLE QP 2	-0.88	-0.61	69.7	-0.0069	-0.4704	0.0118
785	SLD 1	4.71	-0.2	74.16	-0.0258	-0.5215	-0.0053
785	SLD 2	4.47	-0.67	74.69	-0.0213	-0.5129	0.0064
785	SLD 3	4.4	-2.04	74.59	-0.0159	-0.5864	-0.0027
785	SLD 4	4.15	-2.5	75.12	-0.0114	-0.5778	0.009
785	SLD 5	1.31	2.38	70.29	-0.0283	-0.3888	0.0008
785	SLD 6	1.15	2.07	70.64	-0.0254	-0.3831	0.0084
785	SLD 7	0.27	-3.73	71.72	0.0046	-0.6053	0.0092
785	SLD 8	0.11	-4.04	72.07	0.0076	-0.5996	0.0169
785	SLD 9	-1.88	2.83	67.33	-0.0213	-0.3412	0.0067
785	SLD 10	-2.04	2.52	67.68	-0.0184	-0.3356	0.0144
785	SLD 11	-2.91	-3.29	68.76	0.0117	-0.5577	0.0152
785	SLD 12	-3.08	-3.6	69.11	0.0146	-0.5521	0.0229
785	SLD 13	-5.92	1.29	64.28	-0.0023	-0.363	0.0147
785	SLD 14	-6.16	0.82	64.81	0.0022	-0.3545	0.0264
785	SLD 15	-6.23	-0.55	64.71	0.0076	-0.428	0.0172
785	SLD 16	-6.47	-1.01	65.24	0.012	-0.4194	0.0289
785	SLV 1	12.2	0.27	80.16	-0.0507	-0.5926	-0.028
785	SLV 2	11.63	-0.82	81.4	-0.0403	-0.5726	-0.0008
785	SLV 3	11.47	-3.88	81.15	-0.0284	-0.7397	-0.0223
785	SLV 4	10.9	-4.97	82.38	-0.0179	-0.7198	0.0049
785	SLV 5	4.24	6.14	71.13	-0.0557	-0.2874	-0.0136
785	SLV 6	3.87	5.44	71.92	-0.049	-0.2745	0.004
785	SLV 7	1.82	-7.7	74.42	0.0188	-0.7778	0.0056
785	SLV 8	1.45	-8.4	75.22	0.0255	-0.7649	0.0232
785	SLV 9	-3.22	7.19	64.18	-0.0392	-0.176	0.0004
785	SLV 10	-3.58	6.48	64.98	-0.0325	-0.163	0.018
785	SLV 11	-5.64	-6.65	67.48	0.0353	-0.6664	0.0197
785	SLV 12	-6.01	-7.36	68.27	0.042	-0.6535	0.0372
785	SLV 13	-12.66	3.76	57.02	0.0042	-0.2211	0.0187
785	SLV 14	-13.24	2.67	58.25	0.0146	-0.2011	0.0459
785	SLV 15	-13.39	-0.4	58	0.0266	-0.3683	0.0245
785	SLV 16	-13.96	-1.49	59.24	0.037	-0.3483	0.0517
785	CRTFP Ux+	0	0	0	0	0	0
785	CRTFP Ux-	0	0	0	0	0	0
785	CRTFP Uy+	0	0	0	0	0	0
785	CRTFP Uy-	0	0	0	0	0	0
788	SLU 1	0.26	1.41	56.68	0.0231	0.0214	-0.0015
788	SLU 2	0.24	1.37	56.62	0.0233	0.0236	-0.0007
788	SLU 3	0.27	1.47	57.97	0.0239	0.0237	-0.0015
788	SLU 4	0.26	1.44	57.93	0.024	0.0251	-0.001
788	SLU 5	0.25	1.39	57.43	0.0237	0.0258	-0.0008
788	SLU 6	0.28	1.49	58.79	0.0243	0.026	-0.0016
788	SLU 7	0.27	1.47	58.75	0.0244	0.0273	-0.0011
788	SLU 8	0.28	1.46	58.32	0.024	0.0259	-0.0016
788	SLU 9	0.27	1.43	58.28	0.0241	0.0272	-0.0012
788	SLU 10	0.27	1.53	64.53	0.0259	0.0322	-0.001
788	SLU 11	0.31	1.63	65.88	0.0265	0.0324	-0.0018
788	SLU 12	0.29	1.61	65.84	0.0265	0.0337	-0.0014
788	SLU 13	0.28	1.55	65.35	0.0263	0.0344	-0.0011
788	SLU 14	0.31	1.66	66.7	0.0269	0.0346	-0.0019
788	SLU 15	0.3	1.63	66.66	0.027	0.0359	-0.0015
788	SLU 16	0.31	1.62	66.23	0.0265	0.0345	-0.002
788	SLU 17	0.3	1.6	66.19	0.0266	0.0358	-0.0015
788	SLU 18	0.31	1.65	67.99	0.0268	0.0337	-0.0019
788	SLU 19	0.3	1.62	67.95	0.0269	0.035	-0.0015
788	SLU 20	0.32	1.67	68.81	0.0272	0.0359	-0.002
788	SLU 21	0.3	1.64	68.77	0.0273	0.0372	-0.0016
788	SLU 22	0.3	1.66	64.32	0.0277	0.0199	-0.0014
788	SLU 23	0.28	1.62	64.25	0.0279	0.0221	-0.0007
788	SLU 24	0.31	1.72	65.6	0.0285	0.0223	-0.0015
788	SLU 25	0.3	1.69	65.56	0.0286	0.0236	-0.001
788	SLU 26	0.29	1.64	65.07	0.0283	0.0243	-0.0008
788	SLU 27	0.32	1.74	66.42	0.0289	0.0245	-0.0016
788	SLU 28	0.31	1.72	66.38	0.029	0.0258	-0.0011
788	SLU 29	0.32	1.71	65.95	0.0285	0.0244	-0.0016
788	SLU 30	0.31	1.68	65.91	0.0286	0.0257	-0.0012
788	SLU 31	0.31	1.78	72.16	0.0304	0.0307	-0.001
788	SLU 32	0.35	1.88	73.52	0.031	0.0309	-0.0018
788	SLU 33	0.33	1.86	73.48	0.0311	0.0322	-0.0014
788	SLU 34	0.32	1.8	72.98	0.0308	0.0329	-0.0011
788	SLU 35	0.35	1.91	74.33	0.0314	0.0331	-0.0019
788	SLU 36	0.34	1.88	74.29	0.0315	0.0344	-0.0014
788	SLU 37	0.35	1.87	73.87	0.0311	0.033	-0.0019
788	SLU 38	0.34	1.85	73.83	0.0312	0.0343	-0.0015
788	SLU 39	0.35	1.9	75.62	0.0314	0.0322	-0.0019
788	SLU 40	0.34	1.87	75.58	0.0315	0.0335	-0.0015
788	SLU 41	0.36	1.92	76.44	0.0318	0.0345	-0.002
788	SLU 42	0.34	1.89	76.4	0.0319	0.0358	-0.0015
788	SLU 43	0.32	1.75	71.07	0.0285	0.0283	-0.0019
788	SLU 44	0.3	1.71	71	0.0287	0.0305	-0.0012
788	SLU 45	0.34	1.81	72.36	0.0293	0.0307	-0.0019



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
788	SLU 46	0.32	1.78	72.32	0.0294	0.032	-0.0015
788	SLU 47	0.31	1.73	71.82	0.0291	0.0327	-0.0012
788	SLU 48	0.34	1.83	73.17	0.0297	0.0329	-0.002
788	SLU 49	0.33	1.8	73.13	0.0298	0.0342	-0.0016
788	SLU 50	0.34	1.8	72.71	0.0294	0.0328	-0.0021
788	SLU 51	0.33	1.77	72.67	0.0295	0.0341	-0.0016
788	SLU 52	0.34	1.87	78.92	0.0312	0.0391	-0.0015
788	SLU 53	0.37	1.97	80.27	0.0318	0.0393	-0.0023
788	SLU 54	0.36	1.94	80.23	0.0319	0.0406	-0.0018
788	SLU 55	0.35	1.89	79.74	0.0317	0.0413	-0.0016
788	SLU 56	0.38	1.99	81.09	0.0322	0.0415	-0.0024
788	SLU 57	0.37	1.97	81.05	0.0323	0.0428	-0.0019
788	SLU 58	0.38	1.96	80.62	0.0319	0.0414	-0.0024
788	SLU 59	0.36	1.93	80.58	0.032	0.0427	-0.002
788	SLU 60	0.37	1.99	82.37	0.0322	0.0406	-0.0024
788	SLU 61	0.36	1.96	82.33	0.0323	0.0419	-0.0019
788	SLU 62	0.38	2.01	83.19	0.0326	0.0428	-0.0025
788	SLU 63	0.37	1.98	83.15	0.0327	0.0442	-0.002
788	SLU 64	0.36	2	78.7	0.0331	0.0268	-0.0019
788	SLU 65	0.34	1.96	78.64	0.0333	0.029	-0.0011
788	SLU 66	0.38	2.06	79.99	0.0338	0.0292	-0.0019
788	SLU 67	0.36	2.03	79.95	0.0339	0.0305	-0.0015
788	SLU 68	0.35	1.98	79.46	0.0337	0.0312	-0.0012
788	SLU 69	0.38	2.08	80.81	0.0343	0.0314	-0.002
788	SLU 70	0.37	2.05	80.77	0.0344	0.0327	-0.0015
788	SLU 71	0.38	2.05	80.34	0.0339	0.0313	-0.0021
788	SLU 72	0.37	2.02	80.3	0.034	0.0326	-0.0016
788	SLU 73	0.38	2.12	86.55	0.0358	0.0376	-0.0015
788	SLU 74	0.41	2.22	87.9	0.0364	0.0378	-0.0023
788	SLU 75	0.4	2.19	87.86	0.0365	0.0391	-0.0018
788	SLU 76	0.39	2.14	87.37	0.0362	0.0399	-0.0016
788	SLU 77	0.42	2.25	88.72	0.0368	0.0401	-0.0023
788	SLU 78	0.41	2.22	88.68	0.0369	0.0414	-0.0019
788	SLU 79	0.42	2.21	88.25	0.0365	0.0399	-0.0024
788	SLU 80	0.4	2.18	88.21	0.0366	0.0412	-0.0019
788	SLU 81	0.41	2.24	90.01	0.0367	0.0391	-0.0024
788	SLU 82	0.4	2.21	89.97	0.0368	0.0404	-0.0019
788	SLU 83	0.42	2.26	90.83	0.0372	0.0414	-0.0024
788	SLU 84	0.41	2.23	90.79	0.0372	0.0427	-0.002
788	SLE RA 1	0.27	1.49	58.86	0.0245	0.021	-0.0015
788	SLE RA 2	0.26	1.45	58.82	0.0246	0.0224	-0.001
788	SLE RA 3	0.28	1.52	59.72	0.025	0.0225	-0.0015
788	SLE RA 4	0.27	1.5	59.69	0.025	0.0234	-0.0012
788	SLE RA 5	0.26	1.47	59.37	0.0248	0.0239	-0.001
788	SLE RA 6	0.28	1.54	60.27	0.0252	0.024	-0.0015
788	SLE RA 7	0.28	1.52	60.24	0.0253	0.0249	-0.0012
788	SLE RA 8	0.28	1.52	59.96	0.025	0.0239	-0.0016
788	SLE RA 9	0.27	1.5	59.93	0.0251	0.0248	-0.0013
788	SLE RA 10	0.28	1.56	64.09	0.0263	0.0282	-0.0012
788	SLE RA 11	0.3	1.63	65	0.0267	0.0283	-0.0017
788	SLE RA 12	0.29	1.61	64.97	0.0267	0.0292	-0.0014
788	SLE RA 13	0.29	1.58	64.64	0.0265	0.0296	-0.0012
788	SLE RA 14	0.31	1.65	65.54	0.0269	0.0298	-0.0018
788	SLE RA 15	0.3	1.63	65.52	0.027	0.0307	-0.0015
788	SLE RA 16	0.31	1.63	65.23	0.0267	0.0297	-0.0018
788	SLE RA 17	0.3	1.61	65.2	0.0268	0.0306	-0.0015
788	SLE RA 18	0.3	1.64	66.4	0.0269	0.0292	-0.0018
788	SLE RA 19	0.29	1.62	66.37	0.0269	0.03	-0.0015
788	SLE RA 20	0.31	1.66	66.95	0.0272	0.0307	-0.0018
788	SLE RA 21	0.3	1.64	66.92	0.0272	0.0315	-0.0015
788	SLE FR 1	0.27	1.49	58.86	0.0245	0.021	-0.0015
788	SLE FR 2	0.27	1.48	58.85	0.0245	0.0212	-0.0014
788	SLE FR 3	0.27	1.49	59.08	0.0246	0.0216	-0.0015
788	SLE FR 4	0.28	1.53	61.12	0.0252	0.0237	-0.0015
788	SLE FR 5	0.28	1.54	61.34	0.0253	0.024	-0.0016
788	SLE FR 6	0.29	1.56	62.63	0.0257	0.0251	-0.0016
788	SLE QP 1	0.27	1.49	58.86	0.0245	0.021	-0.0015
788	SLE QP 2	0.28	1.53	61.12	0.0252	0.0234	-0.0016
788	SLD 1	5.43	2.05	59.1	0.0178	0.2167	-0.0273
788	SLD 2	5.2	2.22	59.19	0.0171	0.216	-0.0172
788	SLD 3	5.14	0.23	58.46	0.0234	0.2536	-0.0291
788	SLD 4	4.91	0.4	58.55	0.0227	0.2529	-0.019
788	SLD 5	2.3	4.42	61.46	0.0146	0.0256	-0.0084
788	SLD 6	2.15	4.52	61.52	0.0142	0.0252	-0.0018
788	SLD 7	1.34	-1.64	59.35	0.0332	0.1485	-0.0143
788	SLD 8	1.19	-1.54	59.4	0.0328	0.148	-0.0076
788	SLD 9	-0.63	4.6	62.84	0.0176	-0.1012	0.0045
788	SLD 10	-0.78	4.71	62.9	0.0171	-0.1017	0.0112
788	SLD 11	-1.59	-1.46	60.73	0.0362	0.0217	-0.0013
788	SLD 12	-1.74	-1.35	60.78	0.0357	0.0212	0.0053
788	SLD 13	-4.35	2.66	63.7	0.0277	-0.206	0.0158
788	SLD 14	-4.58	2.83	63.79	0.027	-0.2067	0.026
788	SLD 15	-4.64	0.85	63.06	0.0333	-0.1692	0.0141
788	SLD 16	-4.87	1.01	63.15	0.0325	-0.1699	0.0242
788	SLV 1	12.32	2.68	56.35	0.0081	0.477	-0.0618
788	SLV 2	11.79	3.06	56.56	0.0064	0.4753	-0.0383
788	SLV 3	11.65	-1.44	54.91	0.0207	0.5607	-0.0659
788	SLV 4	11.11	-1.05	55.12	0.019	0.5591	-0.0424
788	SLV 5	5	8.05	61.84	0.0012	0.0328	-0.0175
788	SLV 6	4.66	8.3	61.98	0.0001	0.0317	-0.0023



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
788	SLV 7	2.77	-5.67	57.04	0.0433	0.3119	-0.0311
788	SLV 8	2.42	-5.42	57.17	0.0422	0.3108	-0.0159
788	SLV 9	-1.86	8.48	65.08	0.0082	-0.264	0.0128
788	SLV 10	-2.21	8.73	65.21	0.0071	-0.265	0.028
788	SLV 11	-4.1	-5.24	60.27	0.0503	0.0151	-0.0008
788	SLV 12	-4.44	-4.99	60.41	0.0492	0.0141	0.0144
788	SLV 13	-10.55	4.12	67.13	0.0313	-0.5122	0.0392
788	SLV 14	-11.09	4.5	67.34	0.0296	-0.5139	0.0628
788	SLV 15	-11.23	0	65.69	0.044	-0.4285	0.0352
788	SLV 16	-11.76	0.38	65.9	0.0423	-0.4301	0.0587
788	CRTFP Ux+	0	0	0	0	0	0
788	CRTFP Ux-	0	0	0	0	0	0
791	SLU 1	0.01	0.81	58.28	0.0192	0.1016	-0.0014
791	SLU 2	0	0.74	58.18	0.0194	0.0999	-0.0008
791	SLU 3	0.01	0.85	59.63	0.0197	0.1044	-0.0015
791	SLU 4	0.01	0.81	59.56	0.0198	0.1034	-0.0012
791	SLU 5	0	0.75	59.03	0.0196	0.101	-0.001
791	SLU 6	0.02	0.86	60.48	0.0199	0.1055	-0.0016
791	SLU 7	0.01	0.82	60.42	0.02	0.1045	-0.0013
791	SLU 8	0.02	0.83	59.99	0.0197	0.1038	-0.0017
791	SLU 9	0.01	0.79	59.93	0.0198	0.1028	-0.0013
791	SLU 10	0.03	0.88	65.87	0.0214	0.1093	-0.0002
791	SLU 11	0.04	0.99	67.32	0.0218	0.1138	-0.0009
791	SLU 12	0.03	0.95	67.25	0.0219	0.1128	-0.0006
791	SLU 13	0.03	0.89	66.72	0.0217	0.1104	-0.0004
791	SLU 14	0.04	1	68.17	0.022	0.1149	-0.001
791	SLU 15	0.03	0.96	68.11	0.0221	0.1139	-0.0007
791	SLU 16	0.04	0.97	67.68	0.0218	0.1132	-0.0011
791	SLU 17	0.03	0.93	67.62	0.0218	0.1122	-0.0007
791	SLU 18	0.05	1	69.27	0.0222	0.115	-0.0005
791	SLU 19	0.04	0.96	69.21	0.0223	0.114	-0.0002
791	SLU 20	0.05	1.01	70.12	0.0224	0.1161	-0.0007
791	SLU 21	0.04	0.98	70.06	0.0225	0.1151	-0.0003
791	SLU 22	0.01	1.04	65.91	0.0232	0.1202	-0.0015
791	SLU 23	-0.01	0.97	65.81	0.0233	0.1186	-0.0009
791	SLU 24	0	1.08	67.26	0.0237	0.123	-0.0016
791	SLU 25	0	1.04	67.19	0.0238	0.122	-0.0013
791	SLU 26	0	0.98	66.66	0.0236	0.1197	-0.0011
791	SLU 27	0.01	1.09	68.11	0.0239	0.1241	-0.0018
791	SLU 28	0	1.05	68.05	0.024	0.1231	-0.0014
791	SLU 29	0.01	1.06	67.62	0.0237	0.1224	-0.0018
791	SLU 30	0	1.02	67.56	0.0237	0.1214	-0.0014
791	SLU 31	0.02	1.11	73.5	0.0254	0.128	-0.0003
791	SLU 32	0.03	1.22	74.95	0.0257	0.1324	-0.001
791	SLU 33	0.02	1.18	74.88	0.0258	0.1315	-0.0007
791	SLU 34	0.02	1.12	74.35	0.0257	0.1291	-0.0005
791	SLU 35	0.03	1.23	75.8	0.026	0.1335	-0.0012
791	SLU 36	0.02	1.19	75.74	0.0261	0.1325	-0.0008
791	SLU 37	0.03	1.2	75.31	0.0257	0.1318	-0.0012
791	SLU 38	0.03	1.16	75.25	0.0258	0.1308	-0.0009
791	SLU 39	0.04	1.23	76.9	0.0262	0.1337	-0.0006
791	SLU 40	0.03	1.19	76.84	0.0263	0.1327	-0.0003
791	SLU 41	0.04	1.25	77.75	0.0264	0.1348	-0.0008
791	SLU 42	0.03	1.21	77.69	0.0265	0.1338	-0.0005
791	SLU 43	0.02	0.97	73.15	0.0236	0.1257	-0.0017
791	SLU 44	0.01	0.9	73.05	0.0237	0.124	-0.0012
791	SLU 45	0.02	1.01	74.5	0.0241	0.1285	-0.0019
791	SLU 46	0.01	0.97	74.43	0.0242	0.1275	-0.0015
791	SLU 47	0.01	0.91	73.9	0.024	0.1251	-0.0013
791	SLU 48	0.02	1.02	75.35	0.0243	0.1296	-0.002
791	SLU 49	0.02	0.98	75.29	0.0244	0.1286	-0.0017
791	SLU 50	0.02	0.99	74.86	0.0241	0.1279	-0.002
791	SLU 51	0.02	0.95	74.8	0.0241	0.1269	-0.0017
791	SLU 52	0.03	1.04	80.74	0.0258	0.1334	-0.0006
791	SLU 53	0.04	1.15	82.19	0.0262	0.1379	-0.0013
791	SLU 54	0.04	1.11	82.12	0.0262	0.1369	-0.0009
791	SLU 55	0.03	1.05	81.59	0.0261	0.1345	-0.0007
791	SLU 56	0.04	1.16	83.04	0.0264	0.139	-0.0014
791	SLU 57	0.04	1.12	82.98	0.0265	0.138	-0.0011
791	SLU 58	0.05	1.13	82.55	0.0261	0.1373	-0.0014
791	SLU 59	0.04	1.09	82.49	0.0262	0.1363	-0.0011
791	SLU 60	0.05	1.17	84.14	0.0266	0.1391	-0.0009
791	SLU 61	0.05	1.13	84.08	0.0267	0.1381	-0.0006
791	SLU 62	0.05	1.18	84.99	0.0268	0.1402	-0.001
791	SLU 63	0.05	1.14	84.93	0.0269	0.1392	-0.0007
791	SLU 64	0.01	1.2	80.78	0.0276	0.1443	-0.0019
791	SLU 65	0	1.13	80.68	0.0277	0.1427	-0.0013
791	SLU 66	0.01	1.24	82.13	0.0281	0.1471	-0.002
791	SLU 67	0.01	1.2	82.06	0.0281	0.1461	-0.0017
791	SLU 68	0	1.14	81.53	0.028	0.1438	-0.0015
791	SLU 69	0.01	1.25	82.98	0.0283	0.1482	-0.0021
791	SLU 70	0.01	1.21	82.92	0.0284	0.1472	-0.0018
791	SLU 71	0.02	1.22	82.49	0.028	0.1465	-0.0021
791	SLU 72	0.01	1.18	82.43	0.0281	0.1455	-0.0018
791	SLU 73	0.02	1.27	88.37	0.0298	0.1521	-0.0007
791	SLU 74	0.03	1.38	89.82	0.0301	0.1565	-0.0014
791	SLU 75	0.03	1.34	89.75	0.0302	0.1555	-0.0011
791	SLU 76	0.03	1.28	89.22	0.0301	0.1532	-0.0009
791	SLU 77	0.04	1.39	90.67	0.0304	0.1576	-0.0015
791	SLU 78	0.03	1.35	90.61	0.0305	0.1566	-0.0012





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
791	SLU 79	0.04	1.36	90.18	0.0301	0.1559	-0.0016
791	SLU 80	0.03	1.32	90.11	0.0302	0.1549	-0.0012
791	SLU 81	0.04	1.4	91.77	0.0306	0.1578	-0.001
791	SLU 82	0.04	1.36	91.71	0.0307	0.1568	-0.0007
791	SLU 83	0.05	1.41	92.62	0.0308	0.1589	-0.0012
791	SLU 84	0.04	1.37	92.56	0.0309	0.1579	-0.0008
791	SLE RA 1	0.01	0.87	60.46	0.0203	0.1069	-0.0014
791	SLE RA 2	0	0.83	60.39	0.0204	0.1058	-0.001
791	SLE RA 3	0.01	0.9	61.36	0.0207	0.1088	-0.0015
791	SLE RA 4	0.01	0.87	61.32	0.0207	0.1081	-0.0013
791	SLE RA 5	0.01	0.84	60.96	0.0206	0.1065	-0.0011
791	SLE RA 6	0.01	0.91	61.93	0.0208	0.1095	-0.0016
791	SLE RA 7	0.01	0.88	61.89	0.0209	0.1089	-0.0014
791	SLE RA 8	0.01	0.89	61.6	0.0207	0.1084	-0.0016
791	SLE RA 9	0.01	0.86	61.56	0.0207	0.1077	-0.0014
791	SLE RA 10	0.02	0.92	65.52	0.0218	0.1121	-0.0006
791	SLE RA 11	0.03	0.99	66.49	0.022	0.1151	-0.0011
791	SLE RA 12	0.02	0.96	66.44	0.0221	0.1144	-0.0009
791	SLE RA 13	0.02	0.93	66.09	0.022	0.1128	-0.0007
791	SLE RA 14	0.03	1	67.05	0.0222	0.1158	-0.0012
791	SLE RA 15	0.02	0.97	67.01	0.0223	0.1151	-0.001
791	SLE RA 16	0.03	0.98	66.73	0.022	0.1146	-0.0012
791	SLE RA 17	0.02	0.95	66.69	0.0221	0.114	-0.001
791	SLE RA 18	0.03	1	67.79	0.0223	0.1159	-0.0008
791	SLE RA 19	0.03	0.98	67.75	0.0224	0.1152	-0.0006
791	SLE RA 20	0.03	1.01	68.36	0.0225	0.1166	-0.0009
791	SLE RA 21	0.03	0.98	68.31	0.0225	0.1159	-0.0007
791	SLE FR 1	0.01	0.87	60.46	0.0203	0.1069	-0.0014
791	SLE FR 2	0.01	0.86	60.45	0.0204	0.1067	-0.0013
791	SLE FR 3	0.01	0.87	60.69	0.0204	0.1072	-0.0014
791	SLE FR 4	0.02	0.9	62.65	0.021	0.1094	-0.0012
791	SLE FR 5	0.02	0.91	62.89	0.021	0.1099	-0.0013
791	SLE FR 6	0.02	0.94	64.13	0.0213	0.1114	-0.0011
791	SLE QP 1	0.01	0.87	60.46	0.0203	0.1069	-0.0014
791	SLE QP 2	0.02	0.91	62.66	0.0209	0.1096	-0.0012
791	SLD 1	4.91	2.24	67.34	0.0368	0.2695	-0.0265
791	SLD 2	4.67	2.05	66.98	0.0364	0.2717	-0.0166
791	SLD 3	5.2	0.45	66.62	0.0424	0.2525	-0.0246
791	SLD 4	4.96	0.26	66.26	0.0419	0.2547	-0.0147
791	SLD 5	1.08	4.07	65.22	0.0173	0.1829	-0.0136
791	SLD 6	0.92	3.94	64.98	0.017	0.1844	-0.0071
791	SLD 7	2.06	-1.92	62.82	0.0359	0.1263	-0.007
791	SLD 8	1.9	-2.04	62.59	0.0356	0.1278	-0.0005
791	SLD 9	-1.87	3.87	62.74	0.0063	0.0914	-0.002
791	SLD 10	-2.03	3.74	62.5	0.006	0.0929	0.0045
791	SLD 11	-0.89	-2.12	60.34	0.0248	0.0348	0.0046
791	SLD 12	-1.05	-2.25	60.11	0.0245	0.0363	0.0111
791	SLD 13	-4.93	1.57	59.06	-0.0001	-0.0355	0.0122
791	SLD 14	-5.17	1.37	58.7	-0.0005	-0.0333	0.0221
791	SLD 15	-4.63	-0.23	58.35	0.0055	-0.0525	0.0142
791	SLD 16	-4.87	-0.42	57.99	0.005	-0.0503	0.0241
791	SLV 1	11.46	3.96	73.61	0.0583	0.4833	-0.0604
791	SLV 2	10.9	3.51	72.77	0.0573	0.4883	-0.0373
791	SLV 3	12.14	-0.11	71.98	0.0709	0.4444	-0.0558
791	SLV 4	11.59	-0.55	71.14	0.0699	0.4494	-0.0328
791	SLV 5	2.51	8.07	68.56	0.0132	0.2798	-0.0299
791	SLV 6	2.15	7.78	68.02	0.0125	0.2831	-0.015
791	SLV 7	4.79	-5.48	63.13	0.0553	0.1502	-0.0147
791	SLV 8	4.43	-5.77	62.59	0.0546	0.1534	0.0002
791	SLV 9	-4.39	7.59	62.73	-0.0127	0.0658	-0.0027
791	SLV 10	-4.76	7.31	62.19	-0.0134	0.069	0.0122
791	SLV 11	-2.11	-5.96	57.3	0.0294	-0.0639	0.0125
791	SLV 12	-2.47	-6.25	56.76	0.0287	-0.0606	0.0274
791	SLV 13	-11.55	2.37	54.18	-0.028	-0.2302	0.0303
791	SLV 14	-12.11	1.93	53.35	-0.0291	-0.2252	0.0534
791	SLV 15	-10.87	-1.69	52.55	-0.0154	-0.2691	0.0349
791	SLV 16	-11.42	-2.14	51.72	-0.0164	-0.264	0.0579
791	CRTFP Ux+	0	0	0	0	0	0
791	CRTFP Ux-	0	0	0	0	0	0
793	SLU 1	-0.59	0.12	30.86	-0.0146	-2.3314	0.0289
793	SLU 2	-0.59	0.03	30.88	-0.0145	-2.3329	0.007
793	SLU 3	-0.6	0.12	31.6	-0.015	-2.375	0.0307
793	SLU 4	-0.6	0.07	31.61	-0.0149	-2.3758	0.0175
793	SLU 5	-0.6	0.03	31.35	-0.0148	-2.3597	0.0082
793	SLU 6	-0.61	0.13	32.06	-0.0152	-2.4017	0.0319
793	SLU 7	-0.61	0.08	32.08	-0.0152	-2.4026	0.0188
793	SLU 8	-0.6	0.13	31.79	-0.0151	-2.385	0.0315
793	SLU 9	-0.61	0.07	31.81	-0.015	-2.3858	0.0183
793	SLU 10	-0.63	0.1	34.48	-0.0165	-2.5756	0.0263
793	SLU 11	-0.64	0.2	35.19	-0.0169	-2.6177	0.05
793	SLU 12	-0.64	0.15	35.21	-0.0169	-2.6186	0.0368
793	SLU 13	-0.64	0.11	34.94	-0.0167	-2.6024	0.0276
793	SLU 14	-0.65	0.2	35.66	-0.0172	-2.6445	0.0513
793	SLU 15	-0.65	0.15	35.67	-0.0171	-2.6454	0.0381
793	SLU 16	-0.64	0.2	35.38	-0.0171	-2.6277	0.0508
793	SLU 17	-0.65	0.15	35.4	-0.017	-2.6286	0.0376
793	SLU 18	-0.64	0.23	35.99	-0.0174	-2.6782	0.0566
793	SLU 19	-0.65	0.17	36.01	-0.0174	-2.6791	0.0434
793	SLU 20	-0.65	0.23	36.46	-0.0177	-2.705	0.0578
793	SLU 21	-0.66	0.18	36.47	-0.0176	-2.7059	0.0447



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
793	SLU 22	-0.64	0.18	34.51	-0.0164	-2.5724	0.0452
793	SLU 23	-0.64	0.09	34.53	-0.0163	-2.5738	0.0233
793	SLU 24	-0.65	0.19	35.25	-0.0168	-2.6159	0.047
793	SLU 25	-0.66	0.14	35.26	-0.0167	-2.6167	0.0338
793	SLU 26	-0.65	0.1	35	-0.0166	-2.6006	0.0245
793	SLU 27	-0.66	0.19	35.71	-0.017	-2.6426	0.0483
793	SLU 28	-0.66	0.14	35.73	-0.0169	-2.6435	0.0351
793	SLU 29	-0.66	0.19	35.44	-0.0169	-2.6259	0.0478
793	SLU 30	-0.66	0.14	35.45	-0.0168	-2.6268	0.0346
793	SLU 31	-0.68	0.17	38.12	-0.0183	-2.8166	0.0426
793	SLU 32	-0.69	0.26	38.84	-0.0187	-2.8586	0.0664
793	SLU 33	-0.69	0.21	38.85	-0.0187	-2.8595	0.0532
793	SLU 34	-0.69	0.18	38.59	-0.0185	-2.8433	0.0439
793	SLU 35	-0.7	0.27	39.31	-0.019	-2.8854	0.0676
793	SLU 36	-0.7	0.22	39.32	-0.0189	-2.8863	0.0544
793	SLU 37	-0.7	0.27	39.03	-0.0189	-2.8687	0.0671
793	SLU 38	-0.7	0.22	39.05	-0.0188	-2.8695	0.054
793	SLU 39	-0.69	0.29	39.64	-0.0192	-2.9192	0.0729
793	SLU 40	-0.7	0.24	39.65	-0.0192	-2.92	0.0597
793	SLU 41	-0.7	0.3	40.11	-0.0195	-2.9459	0.0742
793	SLU 42	-0.71	0.24	40.12	-0.0194	-2.9468	0.061
793	SLU 43	-0.74	0.13	38.87	-0.0184	-2.9483	0.032
793	SLU 44	-0.75	0.04	38.89	-0.0183	-2.9497	0.01
793	SLU 45	-0.76	0.14	39.61	-0.0187	-2.9918	0.0338
793	SLU 46	-0.76	0.08	39.62	-0.0187	-2.9927	0.0206
793	SLU 47	-0.76	0.05	39.36	-0.0185	-2.9765	0.0113
793	SLU 48	-0.77	0.14	40.07	-0.019	-3.0186	0.035
793	SLU 49	-0.77	0.09	40.09	-0.0189	-3.0194	0.0218
793	SLU 50	-0.76	0.14	39.8	-0.0189	-3.0018	0.0345
793	SLU 51	-0.77	0.09	39.81	-0.0188	-3.0027	0.0214
793	SLU 52	-0.79	0.12	42.48	-0.0203	-3.1925	0.0294
793	SLU 53	-0.8	0.21	43.2	-0.0207	-3.2346	0.0531
793	SLU 54	-0.8	0.16	43.21	-0.0207	-3.2354	0.0399
793	SLU 55	-0.8	0.12	42.95	-0.0205	-3.2192	0.0307
793	SLU 56	-0.81	0.22	43.66	-0.021	-3.2613	0.0544
793	SLU 57	-0.81	0.16	43.68	-0.0209	-3.2622	0.0412
793	SLU 58	-0.8	0.22	43.39	-0.0208	-3.2446	0.0539
793	SLU 59	-0.81	0.16	43.41	-0.0208	-3.2454	0.0407
793	SLU 60	-0.8	0.24	44	-0.0212	-3.2951	0.0597
793	SLU 61	-0.8	0.19	44.01	-0.0211	-3.2959	0.0465
793	SLU 62	-0.81	0.24	44.47	-0.0214	-3.3218	0.0609
793	SLU 63	-0.81	0.19	44.48	-0.0214	-3.3227	0.0477
793	SLU 64	-0.8	0.19	42.52	-0.0202	-3.1892	0.0483
793	SLU 65	-0.8	0.11	42.54	-0.0201	-3.1906	0.0264
793	SLU 66	-0.81	0.2	43.25	-0.0205	-3.2327	0.0501
793	SLU 67	-0.81	0.15	43.27	-0.0205	-3.2336	0.0369
793	SLU 68	-0.81	0.11	43	-0.0203	-3.2174	0.0276
793	SLU 69	-0.82	0.21	43.72	-0.0208	-3.2595	0.0513
793	SLU 70	-0.82	0.15	43.73	-0.0207	-3.2603	0.0382
793	SLU 71	-0.81	0.2	43.45	-0.0206	-3.2427	0.0509
793	SLU 72	-0.82	0.15	43.46	-0.0206	-3.2436	0.0377
793	SLU 73	-0.84	0.18	46.13	-0.0221	-3.4334	0.0457
793	SLU 74	-0.85	0.28	46.85	-0.0225	-3.4755	0.0694
793	SLU 75	-0.85	0.22	46.86	-0.0225	-3.4763	0.0563
793	SLU 76	-0.85	0.19	46.6	-0.0223	-3.4602	0.047
793	SLU 77	-0.86	0.28	47.31	-0.0227	-3.5022	0.0707
793	SLU 78	-0.86	0.23	47.33	-0.0227	-3.5031	0.0575
793	SLU 79	-0.85	0.28	47.04	-0.0226	-3.4855	0.0702
793	SLU 80	-0.86	0.23	47.05	-0.0226	-3.4864	0.057
793	SLU 81	-0.85	0.3	47.65	-0.023	-3.536	0.076
793	SLU 82	-0.86	0.25	47.66	-0.0229	-3.5369	0.0628
793	SLU 83	-0.86	0.31	48.11	-0.0232	-3.5628	0.0773
793	SLU 84	-0.86	0.26	48.13	-0.0232	-3.5636	0.0641
793	SLE RA 1	-0.6	0.13	31.9	-0.0151	-2.4003	0.0336
793	SLE RA 2	-0.61	0.08	31.92	-0.0151	-2.4012	0.0189
793	SLE RA 3	-0.61	0.14	32.39	-0.0154	-2.4293	0.0348
793	SLE RA 4	-0.61	0.1	32.4	-0.0153	-2.4299	0.026
793	SLE RA 5	-0.61	0.08	32.23	-0.0152	-2.4191	0.0198
793	SLE RA 6	-0.62	0.14	32.71	-0.0155	-2.4471	0.0356
793	SLE RA 7	-0.62	0.11	32.71	-0.0155	-2.4477	0.0268
793	SLE RA 8	-0.61	0.14	32.52	-0.0154	-2.436	0.0353
793	SLE RA 9	-0.62	0.11	32.53	-0.0154	-2.4365	0.0265
793	SLE RA 10	-0.63	0.13	34.31	-0.0164	-2.5631	0.0318
793	SLE RA 11	-0.64	0.19	34.79	-0.0167	-2.5911	0.0477
793	SLE RA 12	-0.64	0.16	34.8	-0.0166	-2.5917	0.0389
793	SLE RA 13	-0.64	0.13	34.62	-0.0165	-2.5809	0.0327
793	SLE RA 14	-0.64	0.19	35.1	-0.0168	-2.609	0.0485
793	SLE RA 15	-0.65	0.16	35.11	-0.0168	-2.6096	0.0397
793	SLE RA 16	-0.64	0.19	34.92	-0.0168	-2.5978	0.0482
793	SLE RA 17	-0.64	0.16	34.93	-0.0167	-2.5984	0.0394
793	SLE RA 18	-0.64	0.21	35.32	-0.017	-2.6315	0.052
793	SLE RA 19	-0.64	0.17	35.33	-0.017	-2.6321	0.0432
793	SLE RA 20	-0.64	0.21	35.63	-0.0172	-2.6493	0.0529
793	SLE RA 21	-0.65	0.18	35.64	-0.0171	-2.6499	0.0441
793	SLE FR 1	-0.6	0.13	31.9	-0.0151	-2.4003	0.0336
793	SLE FR 2	-0.6	0.12	31.91	-0.0151	-2.4005	0.0307
793	SLE FR 3	-0.6	0.14	32.03	-0.0152	-2.4074	0.0339
793	SLE FR 4	-0.61	0.14	32.93	-0.0157	-2.4698	0.0362
793	SLE FR 5	-0.61	0.16	33.05	-0.0157	-2.4768	0.0395
793	SLE FR 6	-0.62	0.17	33.61	-0.0161	-2.5159	0.0428



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
793	SLE QP 1	-0.6	0.13	31.9	-0.0151	-2.4003	0.0336
793	SLE QP 2	-0.61	0.16	32.93	-0.0157	-2.4696	0.0391
793	SLD 1	1.91	0.71	41.07	-0.0238	-3.0405	0.1774
793	SLD 2	1.77	0.2	41.25	-0.0224	-3.0578	0.0487
793	SLD 3	1.77	-0.57	41.54	-0.0215	-3.0918	-0.1447
793	SLD 4	1.63	-1.09	41.72	-0.0201	-3.1091	-0.2734
793	SLD 5	0.38	2.37	34.61	-0.0218	-2.56	0.5922
793	SLD 6	0.29	2.03	34.73	-0.0209	-2.5714	0.5076
793	SLD 7	-0.09	-1.92	36.2	-0.0142	-2.731	-0.4817
793	SLD 8	-0.18	-2.26	36.32	-0.0133	-2.7424	-0.5662
793	SLD 9	-1.05	2.58	29.53	-0.018	-2.1969	0.6445
793	SLD 10	-1.14	2.23	29.65	-0.0171	-2.2083	0.5599
793	SLD 11	-1.51	-1.71	31.12	-0.0104	-2.3679	-0.4294
793	SLD 12	-1.61	-2.06	31.24	-0.0095	-2.3793	-0.5139
793	SLD 13	-2.85	1.4	24.13	-0.0112	-1.8302	0.3517
793	SLD 14	-2.99	0.89	24.31	-0.0098	-1.8475	0.223
793	SLD 15	-2.99	0.12	24.61	-0.0089	-1.8815	0.0295
793	SLD 16	-3.13	-0.4	24.79	-0.0075	-1.8988	-0.0992
793	SLV 1	5.28	1.41	51.98	-0.0347	-3.807	0.3494
793	SLV 2	4.95	0.2	52.4	-0.0314	-3.8473	0.0498
793	SLV 3	4.95	-1.5	53.09	-0.0295	-3.9254	-0.3796
793	SLV 4	4.63	-2.71	53.51	-0.0262	-3.9657	-0.6793
793	SLV 5	1.71	5.16	36.88	-0.0298	-2.6843	1.2898
793	SLV 6	1.5	4.38	37.15	-0.0277	-2.7104	1.0962
793	SLV 7	0.62	-4.55	40.59	-0.0126	-3.0789	-1.1404
793	SLV 8	0.41	-5.33	40.87	-0.0105	-3.105	-1.334
793	SLV 9	-1.63	5.64	24.99	-0.0209	-1.8343	1.4122
793	SLV 10	-1.84	4.86	25.26	-0.0188	-1.8603	1.2187
793	SLV 11	-2.72	-4.07	28.71	-0.0037	-2.2289	-1.018
793	SLV 12	-2.93	-4.85	28.98	-0.0016	-2.255	-1.2115
793	SLV 13	-5.85	3.02	12.34	-0.0051	-0.9735	0.7575
793	SLV 14	-6.18	1.82	12.77	-0.0018	-1.0139	0.4579
793	SLV 15	-6.18	0.11	13.46	0.0001	-1.0919	0.0285
793	SLV 16	-6.5	-1.1	13.88	0.0033	-1.1323	-0.2712
793	CRTFP Ux+	0	0	0	0	0	0
793	CRTFP Ux-	0	0	0	0	0	0
793	CRTFP Uy+	0	0	0	0	0	0
793	CRTFP Uy-	0	0	0	0	0	0
796	SLU 1	0.59	0.46	34.78	-0.0532	5.5609	-0.1629
796	SLU 2	0.59	0.44	34.79	-0.0533	5.5626	-0.1546
796	SLU 3	0.6	0.47	35.58	-0.0546	5.6732	-0.1661
796	SLU 4	0.61	0.46	35.59	-0.0546	5.6742	-0.1612
796	SLU 5	0.6	0.44	35.29	-0.0542	5.6325	-0.1546
796	SLU 6	0.61	0.47	36.09	-0.0555	5.7432	-0.1661
796	SLU 7	0.62	0.46	36.09	-0.0555	5.7442	-0.1612
796	SLU 8	0.61	0.46	35.78	-0.055	5.7009	-0.1629
796	SLU 9	0.61	0.45	35.78	-0.0551	5.7019	-0.1579
796	SLU 10	0.62	0.58	38.8	-0.06	6.1451	-0.2024
796	SLU 11	0.63	0.61	39.6	-0.0613	6.2557	-0.2139
796	SLU 12	0.64	0.6	39.6	-0.0614	6.2567	-0.2089
796	SLU 13	0.63	0.58	39.3	-0.0609	6.2151	-0.2024
796	SLU 14	0.65	0.61	40.1	-0.0622	6.3257	-0.2139
796	SLU 15	0.65	0.6	40.1	-0.0623	6.3267	-0.2089
796	SLU 16	0.64	0.6	39.79	-0.0618	6.2834	-0.2106
796	SLU 17	0.64	0.59	39.8	-0.0618	6.2844	-0.2057
796	SLU 18	0.63	0.66	40.51	-0.0629	6.393	-0.2311
796	SLU 19	0.63	0.64	40.51	-0.0629	6.394	-0.2261
796	SLU 20	0.64	0.66	41.01	-0.0638	6.463	-0.2311
796	SLU 21	0.64	0.64	41.01	-0.0638	6.464	-0.2261
796	SLU 22	0.63	0.58	38.81	-0.0598	6.1403	-0.2049
796	SLU 23	0.64	0.56	38.81	-0.0599	6.142	-0.1966
796	SLU 24	0.65	0.59	39.61	-0.0612	6.2526	-0.2081
796	SLU 25	0.65	0.58	39.61	-0.0612	6.2536	-0.2032
796	SLU 26	0.65	0.56	39.31	-0.0608	6.212	-0.1966
796	SLU 27	0.66	0.59	40.11	-0.0621	6.3226	-0.2081
796	SLU 28	0.67	0.58	40.12	-0.0621	6.3236	-0.2032
796	SLU 29	0.66	0.58	39.81	-0.0616	6.2803	-0.2049
796	SLU 30	0.66	0.57	39.81	-0.0617	6.2813	-0.1999
796	SLU 31	0.67	0.7	42.82	-0.0667	6.7245	-0.2444
796	SLU 32	0.68	0.73	43.62	-0.068	6.8351	-0.2559
796	SLU 33	0.69	0.72	43.63	-0.068	6.8361	-0.2509
796	SLU 34	0.68	0.7	43.32	-0.0676	6.7945	-0.2444
796	SLU 35	0.69	0.73	44.12	-0.0689	6.9051	-0.2558
796	SLU 36	0.7	0.72	44.13	-0.0689	6.9061	-0.2509
796	SLU 37	0.69	0.72	43.82	-0.0684	6.8628	-0.2526
796	SLU 38	0.69	0.71	43.82	-0.0684	6.8638	-0.2477
796	SLU 39	0.68	0.78	44.54	-0.0695	6.9724	-0.2731
796	SLU 40	0.68	0.76	44.54	-0.0695	6.9734	-0.2681
796	SLU 41	0.69	0.78	45.04	-0.0704	7.0424	-0.2731
796	SLU 42	0.69	0.76	45.04	-0.0704	7.0434	-0.2681
796	SLU 43	0.74	0.56	43.83	-0.0669	7.0305	-0.1974
796	SLU 44	0.75	0.54	43.84	-0.067	7.0322	-0.1891
796	SLU 45	0.76	0.57	44.64	-0.0683	7.1428	-0.2006
796	SLU 46	0.77	0.56	44.64	-0.0683	7.1438	-0.1956
796	SLU 47	0.76	0.54	44.34	-0.0679	7.1022	-0.1891
796	SLU 48	0.77	0.57	45.14	-0.0692	7.2128	-0.2006
796	SLU 49	0.78	0.56	45.14	-0.0692	7.2138	-0.1956
796	SLU 50	0.77	0.56	44.83	-0.0687	7.1705	-0.1973
796	SLU 51	0.77	0.55	44.84	-0.0687	7.1715	-0.1924
796	SLU 52	0.78	0.68	47.85	-0.0737	7.6147	-0.2369



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
796	SLU 53	0.79	0.71	48.65	-0.075	7.7253	-0.2483
796	SLU 54	0.8	0.69	48.65	-0.0751	7.7263	-0.2434
796	SLU 55	0.79	0.68	48.35	-0.0746	7.6847	-0.2368
796	SLU 56	0.8	0.71	49.15	-0.0759	7.7953	-0.2483
796	SLU 57	0.81	0.69	49.15	-0.076	7.7963	-0.2434
796	SLU 58	0.8	0.7	48.85	-0.0755	7.753	-0.2451
796	SLU 59	0.8	0.68	48.85	-0.0755	7.754	-0.2401
796	SLU 60	0.79	0.76	49.56	-0.0766	7.8626	-0.2656
796	SLU 61	0.79	0.74	49.57	-0.0766	7.8637	-0.2606
796	SLU 62	0.8	0.76	50.06	-0.0775	7.9326	-0.2656
796	SLU 63	0.8	0.74	50.07	-0.0775	7.9336	-0.2606
796	SLU 64	0.79	0.68	47.86	-0.0735	7.6099	-0.2394
796	SLU 65	0.8	0.66	47.87	-0.0736	7.6116	-0.2311
796	SLU 66	0.81	0.69	48.66	-0.0749	7.7222	-0.2426
796	SLU 67	0.81	0.68	48.67	-0.0749	7.7232	-0.2376
796	SLU 68	0.81	0.66	48.37	-0.0745	7.6816	-0.2311
796	SLU 69	0.82	0.69	49.17	-0.0758	7.7922	-0.2426
796	SLU 70	0.83	0.68	49.17	-0.0758	7.7932	-0.2376
796	SLU 71	0.82	0.68	48.86	-0.0753	7.7499	-0.2393
796	SLU 72	0.82	0.67	48.86	-0.0754	7.7509	-0.2344
796	SLU 73	0.83	0.79	51.88	-0.0804	8.1941	-0.2788
796	SLU 74	0.84	0.83	52.68	-0.0817	8.3047	-0.2903
796	SLU 75	0.84	0.81	52.68	-0.0817	8.3057	-0.2854
796	SLU 76	0.84	0.79	52.38	-0.0813	8.2641	-0.2788
796	SLU 77	0.85	0.83	53.18	-0.0825	8.3747	-0.2903
796	SLU 78	0.86	0.81	53.18	-0.0826	8.3757	-0.2854
796	SLU 79	0.85	0.82	52.87	-0.0821	8.3324	-0.2871
796	SLU 80	0.85	0.8	52.88	-0.0821	8.3334	-0.2821
796	SLU 81	0.84	0.88	53.59	-0.0832	8.4421	-0.3076
796	SLU 82	0.84	0.86	53.59	-0.0832	8.4431	-0.3026
796	SLU 83	0.85	0.88	54.09	-0.0841	8.512	-0.3075
796	SLU 84	0.85	0.86	54.09	-0.0841	8.513	-0.3026
796	SLE RA 1	0.6	0.5	35.93	-0.0551	5.7264	-0.1749
796	SLE RA 2	0.6	0.48	35.93	-0.0552	5.7276	-0.1694
796	SLE RA 3	0.61	0.5	36.47	-0.056	5.8013	-0.177
796	SLE RA 4	0.61	0.5	36.47	-0.056	5.802	-0.1737
796	SLE RA 5	0.61	0.48	36.27	-0.0558	5.7742	-0.1694
796	SLE RA 6	0.62	0.5	36.8	-0.0566	5.848	-0.177
796	SLE RA 7	0.62	0.5	36.8	-0.0566	5.8486	-0.1737
796	SLE RA 8	0.62	0.5	36.6	-0.0563	5.8197	-0.1749
796	SLE RA 9	0.62	0.49	36.6	-0.0563	5.8204	-0.1716
796	SLE RA 10	0.62	0.57	38.61	-0.0597	6.1159	-0.2012
796	SLE RA 11	0.63	0.6	39.14	-0.0605	6.1896	-0.2089
796	SLE RA 12	0.63	0.59	39.14	-0.0606	6.1903	-0.2056
796	SLE RA 13	0.63	0.57	38.94	-0.0603	6.1625	-0.2012
796	SLE RA 14	0.64	0.6	39.47	-0.0611	6.2363	-0.2089
796	SLE RA 15	0.64	0.59	39.48	-0.0612	6.237	-0.2056
796	SLE RA 16	0.64	0.59	39.27	-0.0608	6.2081	-0.2067
796	SLE RA 17	0.64	0.58	39.27	-0.0608	6.2087	-0.2034
796	SLE RA 18	0.63	0.63	39.75	-0.0615	6.2812	-0.2204
796	SLE RA 19	0.63	0.62	39.75	-0.0616	6.2819	-0.2171
796	SLE RA 20	0.64	0.63	40.08	-0.0621	6.3279	-0.2204
796	SLE RA 21	0.64	0.62	40.09	-0.0622	6.3285	-0.2171
796	SLE FR 1	0.6	0.5	35.93	-0.0551	5.7264	-0.1749
796	SLE FR 2	0.6	0.5	35.93	-0.0551	5.7267	-0.1738
796	SLE FR 3	0.6	0.5	36.06	-0.0553	5.7451	-0.1749
796	SLE FR 4	0.61	0.53	37.08	-0.057	5.8931	-0.1874
796	SLE FR 5	0.61	0.54	37.21	-0.0573	5.9115	-0.1885
796	SLE FR 6	0.61	0.56	37.84	-0.0583	6.0038	-0.1976
796	SLE QP 1	0.6	0.5	35.93	-0.0551	5.7264	-0.1749
796	SLE QP 2	0.61	0.54	37.08	-0.057	5.8929	-0.1885
796	SLD 1	2.46	0.62	27.65	-0.0403	4.6143	-0.2179
796	SLD 2	2.27	1.27	27.44	-0.0419	4.6052	-0.4423
796	SLD 3	2.76	-0.86	28.26	-0.0372	4.6844	0.2996
796	SLD 4	2.57	-0.21	28.04	-0.0388	4.6752	0.0752
796	SLD 5	0.74	2.7	33.37	-0.0565	5.4047	-0.9421
796	SLD 6	0.61	3.12	33.22	-0.0576	5.3987	-1.0896
796	SLD 7	1.75	-2.24	35.39	-0.046	5.6382	0.7828
796	SLD 8	1.63	-1.82	35.25	-0.0471	5.6322	0.6354
796	SLD 9	-0.41	2.9	38.9	-0.067	6.1536	-1.0124
796	SLD 10	-0.53	3.32	38.76	-0.068	6.1475	-1.1599
796	SLD 11	0.6	-2.04	40.93	-0.0565	6.3871	0.7125
796	SLD 12	0.48	-1.62	40.79	-0.0576	6.381	0.565
796	SLD 13	-1.36	1.29	46.11	-0.0753	7.1105	-0.4523
796	SLD 14	-1.55	1.93	45.89	-0.0769	7.1013	-0.6766
796	SLD 15	-1.05	-0.19	46.71	-0.0721	7.1806	0.0652
796	SLD 16	-1.24	0.45	46.5	-0.0738	7.1714	-0.1592
796	SLV 1	4.95	0.69	15.03	-0.0178	2.9002	-0.2397
796	SLV 2	4.51	2.19	14.53	-0.0216	2.8788	-0.7622
796	SLV 3	5.64	-2.67	16.43	-0.0106	3.0641	0.9323
796	SLV 4	5.2	-1.17	15.93	-0.0145	3.0427	0.4097
796	SLV 5	0.94	5.42	28.42	-0.0554	4.7502	-1.8909
796	SLV 6	0.65	6.38	28.09	-0.0579	4.7364	-2.2284
796	SLV 7	3.24	-5.77	33.1	-0.0316	5.2965	2.0155
796	SLV 8	2.96	-4.81	32.78	-0.0341	5.2827	1.678
796	SLV 9	-1.74	5.88	41.37	-0.08	6.5031	-2.055
796	SLV 10	-2.03	6.85	41.05	-0.0824	6.4893	-2.3925
796	SLV 11	0.56	-5.31	46.06	-0.0562	7.0493	1.8514
796	SLV 12	0.28	-4.34	45.74	-0.0586	7.0355	1.5138
796	SLV 13	-3.98	2.24	58.22	-0.0996	8.743	-0.7868



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
796	SLV 14	-4.42	3.74	57.72	-0.1034	8.7216	-1.3093
796	SLV 15	-3.29	-1.12	59.63	-0.0925	8.9069	0.3852
796	SLV 16	-3.73	0.38	59.13	-0.0963	8.8855	-0.1374
796	CRTFP Ux+	0	0	0	0	0	0
796	CRTFP Ux-	0	0	0	0	0	0
796	CRTFP Uy+	0	0	0	0	0	0
796	CRTFP Uy-	0	0	0	0	0	0
798	SLU 1	1.32	0.2	64.25	0.0219	0.3211	-0.0165
798	SLU 2	1.31	0.16	64.24	0.0219	0.3306	-0.0158
798	SLU 3	1.36	0.21	65.75	0.0225	0.3318	-0.0169
798	SLU 4	1.35	0.18	65.74	0.0225	0.3375	-0.0165
798	SLU 5	1.33	0.16	65.16	0.0222	0.3368	-0.0161
798	SLU 6	1.38	0.2	66.67	0.0228	0.3379	-0.0172
798	SLU 7	1.37	0.18	66.67	0.0228	0.3436	-0.0168
798	SLU 8	1.37	0.19	66.09	0.0225	0.3334	-0.0172
798	SLU 9	1.36	0.17	66.09	0.0225	0.3391	-0.0167
798	SLU 10	1.39	0.26	72.4	0.0248	0.3825	-0.0176
798	SLU 11	1.44	0.31	73.91	0.0254	0.3836	-0.0188
798	SLU 12	1.43	0.28	73.9	0.0254	0.3893	-0.0183
798	SLU 13	1.42	0.26	73.32	0.0251	0.3886	-0.0179
798	SLU 14	1.47	0.3	74.83	0.0257	0.3898	-0.0191
798	SLU 15	1.46	0.28	74.83	0.0257	0.3955	-0.0186
798	SLU 16	1.45	0.29	74.25	0.0253	0.3852	-0.019
798	SLU 17	1.45	0.27	74.24	0.0253	0.3909	-0.0186
798	SLU 18	1.44	0.34	75.9	0.026	0.3952	-0.0192
798	SLU 19	1.43	0.32	75.9	0.026	0.4009	-0.0187
798	SLU 20	1.47	0.34	76.82	0.0263	0.4013	-0.0195
798	SLU 21	1.46	0.31	76.82	0.0263	0.407	-0.019
798	SLU 22	1.43	0.33	72.33	0.0255	0.373	-0.0178
798	SLU 23	1.42	0.29	72.32	0.0255	0.3825	-0.0171
798	SLU 24	1.47	0.34	73.83	0.0261	0.3837	-0.0182
798	SLU 25	1.46	0.31	73.83	0.0261	0.3894	-0.0177
798	SLU 26	1.44	0.29	73.25	0.0258	0.3887	-0.0174
798	SLU 27	1.49	0.33	74.76	0.0264	0.3898	-0.0185
798	SLU 28	1.48	0.31	74.75	0.0264	0.3955	-0.0181
798	SLU 29	1.48	0.32	74.18	0.026	0.3853	-0.0185
798	SLU 30	1.47	0.3	74.17	0.026	0.391	-0.018
798	SLU 31	1.5	0.39	80.48	0.0284	0.4344	-0.0189
798	SLU 32	1.55	0.44	81.99	0.0289	0.4355	-0.0201
798	SLU 33	1.54	0.41	81.99	0.0289	0.4412	-0.0196
798	SLU 34	1.52	0.39	81.4	0.0286	0.4405	-0.0192
798	SLU 35	1.57	0.43	82.91	0.0292	0.4417	-0.0204
798	SLU 36	1.57	0.41	82.91	0.0292	0.4474	-0.0199
798	SLU 37	1.56	0.42	82.33	0.0289	0.4371	-0.0203
798	SLU 38	1.55	0.4	82.33	0.0289	0.4428	-0.0198
798	SLU 39	1.55	0.47	83.98	0.0296	0.4471	-0.0205
798	SLU 40	1.54	0.45	83.98	0.0296	0.4528	-0.02
798	SLU 41	1.57	0.47	84.91	0.0298	0.4532	-0.0208
798	SLU 42	1.57	0.44	84.9	0.0298	0.4589	-0.0203
798	SLU 43	1.68	0.21	80.75	0.0273	0.3997	-0.0211
798	SLU 44	1.67	0.17	80.74	0.0273	0.4092	-0.0203
798	SLU 45	1.72	0.22	82.25	0.0279	0.4103	-0.0215
798	SLU 46	1.71	0.2	82.25	0.0279	0.416	-0.021
798	SLU 47	1.69	0.17	81.66	0.0276	0.4153	-0.0206
798	SLU 48	1.74	0.22	83.17	0.0282	0.4165	-0.0218
798	SLU 49	1.73	0.2	83.17	0.0282	0.4222	-0.0213
798	SLU 50	1.73	0.21	82.59	0.0278	0.4119	-0.0217
798	SLU 51	1.72	0.18	82.59	0.0278	0.4176	-0.0212
798	SLU 52	1.75	0.27	88.9	0.0302	0.461	-0.0221
798	SLU 53	1.8	0.32	90.41	0.0307	0.4622	-0.0233
798	SLU 54	1.79	0.3	90.4	0.0307	0.4679	-0.0228
798	SLU 55	1.78	0.27	89.82	0.0304	0.4672	-0.0225
798	SLU 56	1.83	0.32	91.33	0.031	0.4683	-0.0236
798	SLU 57	1.82	0.3	91.33	0.031	0.474	-0.0231
798	SLU 58	1.81	0.3	90.75	0.0307	0.4638	-0.0235
798	SLU 59	1.8	0.28	90.75	0.0307	0.4695	-0.0231
798	SLU 60	1.8	0.35	92.4	0.0314	0.4737	-0.0237
798	SLU 61	1.79	0.33	92.4	0.0314	0.4794	-0.0232
798	SLU 62	1.83	0.35	93.32	0.0317	0.4799	-0.024
798	SLU 63	1.82	0.33	93.32	0.0317	0.4856	-0.0236
798	SLU 64	1.79	0.34	88.83	0.0309	0.4516	-0.0224
798	SLU 65	1.78	0.3	88.82	0.0309	0.4611	-0.0216
798	SLU 66	1.82	0.35	90.33	0.0314	0.4622	-0.0227
798	SLU 67	1.82	0.33	90.33	0.0314	0.4679	-0.0223
798	SLU 68	1.8	0.3	89.75	0.0311	0.4672	-0.0219
798	SLU 69	1.85	0.35	91.26	0.0317	0.4684	-0.023
798	SLU 70	1.84	0.33	91.25	0.0317	0.4741	-0.0226
798	SLU 71	1.84	0.34	90.68	0.0314	0.4638	-0.023
798	SLU 72	1.83	0.31	90.67	0.0314	0.4695	-0.0225
798	SLU 73	1.86	0.4	96.98	0.0337	0.5129	-0.0234
798	SLU 74	1.91	0.45	98.49	0.0343	0.5141	-0.0246
798	SLU 75	1.9	0.43	98.49	0.0343	0.5198	-0.0241
798	SLU 76	1.88	0.4	97.91	0.034	0.5191	-0.0237
798	SLU 77	1.93	0.45	99.42	0.0346	0.5202	-0.0249
798	SLU 78	1.92	0.43	99.41	0.0346	0.5259	-0.0244
798	SLU 79	1.92	0.43	98.84	0.0343	0.5157	-0.0248
798	SLU 80	1.91	0.41	98.83	0.0343	0.5214	-0.0244
798	SLU 81	1.91	0.48	100.49	0.0349	0.5256	-0.025
798	SLU 82	1.9	0.46	100.48	0.0349	0.5313	-0.0245
798	SLU 83	1.93	0.48	101.41	0.0352	0.5318	-0.0253



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
798	SLU 84	1.93	0.46	101.4	0.0352	0.5375	-0.0248
798	SLE RA 1	1.35	0.23	66.56	0.023	0.336	-0.0169
798	SLE RA 2	1.34	0.21	66.55	0.023	0.3423	-0.0164
798	SLE RA 3	1.38	0.24	67.56	0.0233	0.3431	-0.0172
798	SLE RA 4	1.37	0.23	67.55	0.0233	0.3469	-0.0169
798	SLE RA 5	1.36	0.21	67.17	0.0231	0.3464	-0.0166
798	SLE RA 6	1.39	0.24	68.17	0.0235	0.3471	-0.0174
798	SLE RA 7	1.39	0.22	68.17	0.0235	0.3509	-0.0171
798	SLE RA 8	1.38	0.23	67.79	0.0233	0.3441	-0.0173
798	SLE RA 9	1.38	0.22	67.78	0.0233	0.3479	-0.017
798	SLE RA 10	1.4	0.28	71.99	0.0249	0.3769	-0.0176
798	SLE RA 11	1.43	0.31	73	0.0253	0.3776	-0.0184
798	SLE RA 12	1.43	0.29	72.99	0.0253	0.3814	-0.0181
798	SLE RA 13	1.42	0.27	72.6	0.025	0.3809	-0.0178
798	SLE RA 14	1.45	0.3	73.61	0.0254	0.3817	-0.0186
798	SLE RA 15	1.44	0.29	73.61	0.0254	0.3855	-0.0183
798	SLE RA 16	1.44	0.3	73.22	0.0252	0.3787	-0.0186
798	SLE RA 17	1.43	0.28	73.22	0.0252	0.3825	-0.0183
798	SLE RA 18	1.43	0.33	74.33	0.0257	0.3853	-0.0187
798	SLE RA 19	1.43	0.31	74.32	0.0257	0.3891	-0.0184
798	SLE RA 20	1.45	0.33	74.94	0.0259	0.3894	-0.0189
798	SLE RA 21	1.44	0.31	74.94	0.0259	0.3932	-0.0186
798	SLE FR 1	1.35	0.23	66.56	0.023	0.336	-0.0169
798	SLE FR 2	1.35	0.23	66.55	0.023	0.3372	-0.0168
798	SLE FR 3	1.36	0.23	66.8	0.023	0.3376	-0.017
798	SLE FR 4	1.37	0.26	68.89	0.0238	0.352	-0.0173
798	SLE FR 5	1.38	0.26	69.13	0.0238	0.3524	-0.0175
798	SLE FR 6	1.39	0.28	70.44	0.0243	0.3606	-0.0178
798	SLE QP 1	1.35	0.23	66.56	0.023	0.336	-0.0169
798	SLE QP 2	1.38	0.26	68.89	0.0238	0.3508	-0.0174
798	SLD 1	6.49	1.28	64.01	0.0194	0.2956	-0.0446
798	SLD 2	6.18	1.76	63.62	0.016	0.302	-0.0329
798	SLD 3	6.79	-0.5	64.39	0.0285	0.3401	-0.0463
798	SLD 4	6.48	-0.01	64	0.025	0.3465	-0.0346
798	SLD 5	2.51	3.17	66.91	0.0093	0.2657	-0.025
798	SLD 6	2.31	3.49	66.66	0.0071	0.2699	-0.0173
798	SLD 7	3.51	-2.75	68.19	0.0395	0.4138	-0.0309
798	SLD 8	3.3	-2.43	67.93	0.0373	0.418	-0.0232
798	SLD 9	-0.55	2.95	69.84	0.0103	0.2836	-0.0117
798	SLD 10	-0.75	3.27	69.59	0.008	0.2878	-0.004
798	SLD 11	0.44	-2.97	71.12	0.0405	0.4316	-0.0175
798	SLD 12	0.24	-2.65	70.86	0.0382	0.4358	-0.0099
798	SLD 13	-3.72	0.54	73.77	0.0225	0.3551	-0.0002
798	SLD 14	-4.03	1.02	73.38	0.0191	0.3615	0.0115
798	SLD 15	-3.43	-1.24	74.15	0.0316	0.3995	-0.002
798	SLD 16	-3.74	-0.75	73.76	0.0281	0.4059	0.0097
798	SLV 1	13.34	2.57	57.46	0.0139	0.2217	-0.081
798	SLV 2	12.61	3.7	56.55	0.0059	0.2366	-0.0538
798	SLV 3	14.03	-1.45	58.35	0.0344	0.322	-0.085
798	SLV 4	13.31	-0.32	57.44	0.0264	0.3369	-0.0578
798	SLV 5	4.04	6.86	64.27	-0.0089	0.1573	-0.035
798	SLV 6	3.57	7.59	63.68	-0.0141	0.1669	-0.0174
798	SLV 7	6.35	-6.54	67.23	0.0594	0.4918	-0.0486
798	SLV 8	5.89	-5.81	66.64	0.0542	0.5014	-0.0311
798	SLV 9	-3.13	6.34	71.13	-0.0067	0.2001	-0.0038
798	SLV 10	-3.6	7.07	70.54	-0.0119	0.2098	0.0137
798	SLV 11	-0.82	-7.06	74.09	0.0616	0.5346	-0.0174
798	SLV 12	-1.28	-6.33	73.51	0.0564	0.5443	0.0001
798	SLV 13	-10.56	0.84	80.33	0.0212	0.3646	0.023
798	SLV 14	-11.28	1.97	79.43	0.0132	0.3795	0.0502
798	SLV 15	-9.86	-3.18	81.22	0.0417	0.465	0.0189
798	SLV 16	-10.58	-2.05	80.31	0.0337	0.4799	0.0461
798	CRTFP Ux+	0	0	0	0	0	0
798	CRTFP Ux-	0	0	0	0	0	0
801	SLU 1	-0.92	-0.61	64.65	-0.0122	-0.4871	0.0125
801	SLU 2	-0.95	-0.7	64.74	-0.0117	-0.4928	0.0133
801	SLU 3	-0.94	-0.61	66.22	-0.0124	-0.5009	0.0128
801	SLU 4	-0.96	-0.67	66.27	-0.0121	-0.5044	0.0133
801	SLU 5	-0.96	-0.71	65.7	-0.0119	-0.5001	0.0135
801	SLU 6	-0.96	-0.62	67.19	-0.0126	-0.5082	0.0129
801	SLU 7	-0.97	-0.67	67.24	-0.0123	-0.5117	0.0134
801	SLU 8	-0.95	-0.62	66.58	-0.0126	-0.5016	0.0128
801	SLU 9	-0.96	-0.68	66.63	-0.0123	-0.5051	0.0133
801	SLU 10	-0.99	-0.7	73.12	-0.0136	-0.567	0.0152
801	SLU 11	-0.99	-0.61	74.61	-0.0143	-0.5751	0.0146
801	SLU 12	-1.01	-0.67	74.66	-0.014	-0.5786	0.0151
801	SLU 13	-1.01	-0.71	74.08	-0.0138	-0.5743	0.0153
801	SLU 14	-1	-0.62	75.57	-0.0146	-0.5824	0.0148
801	SLU 15	-1.02	-0.67	75.62	-0.0143	-0.5859	0.0153
801	SLU 16	-0.99	-0.62	74.96	-0.0145	-0.5758	0.0146
801	SLU 17	-1.01	-0.68	75.01	-0.0142	-0.5793	0.0151
801	SLU 18	-0.99	-0.61	76.63	-0.0149	-0.5931	0.0152
801	SLU 19	-1	-0.67	76.68	-0.0146	-0.5965	0.0156
801	SLU 20	-1	-0.62	77.59	-0.0151	-0.6003	0.0153
801	SLU 21	-1.02	-0.67	77.64	-0.0148	-0.6038	0.0158
801	SLU 22	-1	-0.58	72.9	-0.0131	-0.5603	0.0135
801	SLU 23	-1.02	-0.67	72.99	-0.0126	-0.566	0.0142
801	SLU 24	-1.02	-0.58	74.47	-0.0134	-0.5741	0.0137
801	SLU 25	-1.04	-0.63	74.52	-0.0131	-0.5776	0.0142
801	SLU 26	-1.04	-0.68	73.95	-0.0128	-0.5733	0.0144



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
801	SLU 27	-1.04	-0.59	75.44	-0.0136	-0.5814	0.0139
801	SLU 28	-1.05	-0.64	75.49	-0.0133	-0.5849	0.0143
801	SLU 29	-1.03	-0.59	74.83	-0.0135	-0.5748	0.0137
801	SLU 30	-1.04	-0.65	74.88	-0.0132	-0.5783	0.0142
801	SLU 31	-1.07	-0.67	81.37	-0.0145	-0.6402	0.0161
801	SLU 32	-1.07	-0.58	82.85	-0.0153	-0.6483	0.0156
801	SLU 33	-1.08	-0.63	82.9	-0.015	-0.6518	0.016
801	SLU 34	-1.08	-0.68	82.33	-0.0148	-0.6475	0.0162
801	SLU 35	-1.08	-0.58	83.82	-0.0155	-0.6556	0.0157
801	SLU 36	-1.1	-0.64	83.87	-0.0152	-0.6591	0.0162
801	SLU 37	-1.07	-0.59	83.21	-0.0155	-0.649	0.0156
801	SLU 38	-1.09	-0.65	83.26	-0.0152	-0.6525	0.016
801	SLU 39	-1.06	-0.58	84.88	-0.0159	-0.6663	0.0161
801	SLU 40	-1.08	-0.63	84.93	-0.0156	-0.6697	0.0165
801	SLU 41	-1.08	-0.58	85.84	-0.0161	-0.6735	0.0162
801	SLU 42	-1.09	-0.64	85.89	-0.0158	-0.677	0.0167
801	SLU 43	-1.17	-0.81	81.22	-0.0155	-0.6081	0.016
801	SLU 44	-1.2	-0.9	81.31	-0.015	-0.6138	0.0168
801	SLU 45	-1.19	-0.81	82.79	-0.0157	-0.6219	0.0163
801	SLU 46	-1.21	-0.86	82.84	-0.0154	-0.6254	0.0167
801	SLU 47	-1.21	-0.91	82.27	-0.0152	-0.6211	0.0169
801	SLU 48	-1.21	-0.81	83.76	-0.016	-0.6292	0.0164
801	SLU 49	-1.22	-0.87	83.81	-0.0157	-0.6327	0.0169
801	SLU 50	-1.2	-0.82	83.15	-0.0159	-0.6226	0.0163
801	SLU 51	-1.21	-0.87	83.2	-0.0156	-0.6261	0.0167
801	SLU 52	-1.24	-0.9	89.69	-0.0169	-0.6881	0.0186
801	SLU 53	-1.24	-0.81	91.17	-0.0177	-0.6962	0.0181
801	SLU 54	-1.26	-0.86	91.22	-0.0174	-0.6996	0.0186
801	SLU 55	-1.26	-0.9	90.65	-0.0171	-0.6953	0.0188
801	SLU 56	-1.25	-0.81	92.14	-0.0179	-0.7034	0.0182
801	SLU 57	-1.27	-0.87	92.19	-0.0176	-0.7069	0.0187
801	SLU 58	-1.24	-0.82	91.53	-0.0179	-0.6968	0.0181
801	SLU 59	-1.26	-0.87	91.58	-0.0176	-0.7003	0.0186
801	SLU 60	-1.23	-0.81	93.19	-0.0182	-0.7141	0.0186
801	SLU 61	-1.25	-0.86	93.25	-0.0179	-0.7175	0.0191
801	SLU 62	-1.25	-0.81	94.16	-0.0185	-0.7214	0.0187
801	SLU 63	-1.27	-0.87	94.21	-0.0182	-0.7248	0.0192
801	SLU 64	-1.25	-0.77	89.47	-0.0164	-0.6813	0.0169
801	SLU 65	-1.27	-0.87	89.55	-0.0159	-0.687	0.0177
801	SLU 66	-1.27	-0.77	91.04	-0.0167	-0.6951	0.0172
801	SLU 67	-1.29	-0.83	91.09	-0.0164	-0.6986	0.0177
801	SLU 68	-1.29	-0.87	90.52	-0.0162	-0.6943	0.0178
801	SLU 69	-1.29	-0.78	92.01	-0.0169	-0.7024	0.0173
801	SLU 70	-1.3	-0.84	92.06	-0.0166	-0.7059	0.0178
801	SLU 71	-1.27	-0.79	91.4	-0.0169	-0.6958	0.0172
801	SLU 72	-1.29	-0.84	91.45	-0.0166	-0.6993	0.0177
801	SLU 73	-1.32	-0.87	97.94	-0.0179	-0.7613	0.0195
801	SLU 74	-1.32	-0.77	99.42	-0.0186	-0.7694	0.019
801	SLU 75	-1.33	-0.83	99.47	-0.0183	-0.7728	0.0195
801	SLU 76	-1.33	-0.87	98.9	-0.0181	-0.7685	0.0197
801	SLU 77	-1.33	-0.78	100.39	-0.0188	-0.7766	0.0191
801	SLU 78	-1.35	-0.83	100.44	-0.0185	-0.7801	0.0196
801	SLU 79	-1.32	-0.79	99.78	-0.0188	-0.77	0.019
801	SLU 80	-1.34	-0.84	99.83	-0.0185	-0.7735	0.0195
801	SLU 81	-1.31	-0.77	101.44	-0.0192	-0.7873	0.0195
801	SLU 82	-1.33	-0.83	101.49	-0.0189	-0.7908	0.02
801	SLU 83	-1.33	-0.78	102.41	-0.0194	-0.7946	0.0197
801	SLU 84	-1.34	-0.83	102.46	-0.0191	-0.798	0.0201
801	SLE RA 1	-0.94	-0.6	67.01	-0.0124	-0.508	0.0128
801	SLE RA 2	-0.96	-0.66	67.07	-0.0121	-0.5118	0.0133
801	SLE RA 3	-0.96	-0.6	68.06	-0.0126	-0.5172	0.013
801	SLE RA 4	-0.97	-0.64	68.09	-0.0124	-0.5195	0.0133
801	SLE RA 5	-0.97	-0.67	67.71	-0.0122	-0.5167	0.0134
801	SLE RA 6	-0.97	-0.61	68.7	-0.0127	-0.5221	0.0131
801	SLE RA 7	-0.98	-0.64	68.73	-0.0125	-0.5244	0.0134
801	SLE RA 8	-0.96	-0.61	68.3	-0.0127	-0.5177	0.013
801	SLE RA 9	-0.97	-0.65	68.33	-0.0125	-0.52	0.0133
801	SLE RA 10	-0.99	-0.66	72.65	-0.0134	-0.5613	0.0146
801	SLE RA 11	-0.99	-0.6	73.64	-0.0139	-0.5667	0.0142
801	SLE RA 12	-1	-0.64	73.68	-0.0137	-0.569	0.0145
801	SLE RA 13	-1	-0.67	73.3	-0.0135	-0.5661	0.0146
801	SLE RA 14	-1	-0.61	74.29	-0.014	-0.5715	0.0143
801	SLE RA 15	-1.01	-0.64	74.32	-0.0138	-0.5739	0.0146
801	SLE RA 16	-0.99	-0.61	73.88	-0.014	-0.5671	0.0142
801	SLE RA 17	-1	-0.65	73.92	-0.0138	-0.5694	0.0145
801	SLE RA 18	-0.99	-0.6	74.99	-0.0143	-0.5786	0.0145
801	SLE RA 19	-1	-0.64	75.03	-0.0141	-0.581	0.0149
801	SLE RA 20	-0.99	-0.61	75.64	-0.0144	-0.5835	0.0146
801	SLE RA 21	-1.01	-0.64	75.67	-0.0142	-0.5858	0.015
801	SLE FR 1	-0.94	-0.6	67.01	-0.0124	-0.508	0.0128
801	SLE FR 2	-0.95	-0.62	67.02	-0.0124	-0.5087	0.0129
801	SLE FR 3	-0.95	-0.6	67.27	-0.0125	-0.5099	0.0128
801	SLE FR 4	-0.96	-0.61	69.42	-0.0129	-0.5299	0.0134
801	SLE FR 5	-0.96	-0.6	69.66	-0.013	-0.5311	0.0134
801	SLE FR 6	-0.96	-0.6	71	-0.0133	-0.5433	0.0137
801	SLE QP 1	-0.94	-0.6	67.01	-0.0124	-0.508	0.0128
801	SLE QP 2	-0.95	-0.6	69.41	-0.013	-0.5292	0.0133
801	SLD 1	4.75	-0.19	73.39	-0.0291	-0.594	-0.0125
801	SLD 2	4.44	-0.66	74.04	-0.0249	-0.5847	-0.0001
801	SLD 3	4.43	-2.02	74.07	-0.0177	-0.659	-0.0097



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
801	SLD 4	4.12	-2.49	74.73	-0.0136	-0.6497	0.0026
801	SLD 5	1.29	2.38	69.44	-0.0358	-0.4518	-0.0008
801	SLD 6	1.09	2.07	69.88	-0.0331	-0.4456	0.0073
801	SLD 7	0.24	-3.72	71.73	0.0021	-0.6683	0.0084
801	SLD 8	0.03	-4.03	72.16	0.0048	-0.6622	0.0165
801	SLD 9	-1.94	2.83	66.65	-0.0308	-0.3962	0.0102
801	SLD 10	-2.15	2.52	67.08	-0.0281	-0.39	0.0183
801	SLD 11	-3	-3.28	68.94	0.0071	-0.6127	0.0193
801	SLD 12	-3.2	-3.59	69.37	0.0099	-0.6066	0.0275
801	SLD 13	-6.03	1.29	64.08	-0.0124	-0.4087	0.024
801	SLD 14	-6.34	0.82	64.74	-0.0082	-0.3993	0.0364
801	SLD 15	-6.35	-0.54	64.77	-0.001	-0.4736	0.0268
801	SLD 16	-6.66	-1.01	65.42	0.0032	-0.4643	0.0391
801	SLV 1	12.39	0.28	78.77	-0.0503	-0.6838	-0.0469
801	SLV 2	11.66	-0.81	80.29	-0.0405	-0.662	-0.0181
801	SLV 3	11.65	-3.86	80.32	-0.0246	-0.8309	-0.0406
801	SLV 4	10.92	-4.95	81.85	-0.0148	-0.8092	-0.0119
801	SLV 5	4.3	6.14	69.59	-0.0649	-0.3561	-0.0192
801	SLV 6	3.83	5.44	70.58	-0.0586	-0.3421	-0.0007
801	SLV 7	1.83	-7.68	74.78	0.0209	-0.8466	0.0017
801	SLV 8	1.36	-8.38	75.76	0.0272	-0.8326	0.0203
801	SLV 9	-3.27	7.18	63.05	-0.0531	-0.2257	0.0064
801	SLV 10	-3.74	6.47	64.03	-0.0468	-0.2117	0.025
801	SLV 11	-5.73	-6.64	68.23	0.0326	-0.7163	0.0273
801	SLV 12	-6.2	-7.34	69.22	0.0389	-0.7022	0.0459
801	SLV 13	-12.83	3.75	56.96	-0.0111	-0.2492	0.0385
801	SLV 14	-13.56	2.66	58.49	-0.0014	-0.2274	0.0673
801	SLV 15	-13.57	-0.4	58.52	0.0146	-0.3963	0.0448
801	SLV 16	-14.3	-1.49	60.04	0.0243	-0.3746	0.0736
801	CRTFP Ux+	0	0	0	0	0	0
801	CRTFP Ux-	0	0	0	0	0	0
801	CRTFP Uy+	0	0	0	0	0	0
801	CRTFP Uy-	0	0	0	0	0	0
804	SLU 1	0.27	1.45	57.47	0.0277	0.0148	-0.0043
804	SLU 2	0.25	1.41	57.41	0.0281	0.0169	-0.0035
804	SLU 3	0.29	1.51	58.78	0.0287	0.0168	-0.0043
804	SLU 4	0.27	1.48	58.75	0.0289	0.0181	-0.0039
804	SLU 5	0.26	1.43	58.25	0.0285	0.0189	-0.0036
804	SLU 6	0.3	1.53	59.62	0.0291	0.0188	-0.0044
804	SLU 7	0.28	1.51	59.58	0.0293	0.0201	-0.004
804	SLU 8	0.29	1.5	59.14	0.0287	0.0188	-0.0045
804	SLU 9	0.28	1.47	59.1	0.0289	0.02	-0.004
804	SLU 10	0.29	1.57	65.4	0.0303	0.0242	-0.0039
804	SLU 11	0.32	1.68	66.77	0.0309	0.0242	-0.0047
804	SLU 12	0.31	1.65	66.74	0.0311	0.0254	-0.0043
804	SLU 13	0.3	1.6	66.23	0.0308	0.0262	-0.004
804	SLU 14	0.33	1.7	67.6	0.0314	0.0262	-0.0048
804	SLU 15	0.32	1.67	67.57	0.0316	0.0274	-0.0044
804	SLU 16	0.33	1.67	67.12	0.0309	0.0261	-0.0049
804	SLU 17	0.32	1.64	67.09	0.0311	0.0274	-0.0044
804	SLU 18	0.33	1.69	68.88	0.0309	0.0253	-0.0049
804	SLU 19	0.31	1.66	68.85	0.0311	0.0265	-0.0044
804	SLU 20	0.34	1.71	69.72	0.0314	0.0273	-0.005
804	SLU 21	0.32	1.69	69.68	0.0316	0.0285	-0.0045
804	SLU 22	0.31	1.71	65.24	0.0319	0.013	-0.0043
804	SLU 23	0.29	1.66	65.18	0.0323	0.0151	-0.0036
804	SLU 24	0.33	1.76	66.55	0.0329	0.015	-0.0044
804	SLU 25	0.31	1.74	66.52	0.0331	0.0163	-0.0039
804	SLU 26	0.3	1.68	66.02	0.0328	0.0171	-0.0037
804	SLU 27	0.34	1.79	67.39	0.0333	0.017	-0.0045
804	SLU 28	0.32	1.76	67.35	0.0335	0.0183	-0.004
804	SLU 29	0.33	1.75	66.91	0.0329	0.017	-0.0045
804	SLU 30	0.32	1.73	66.87	0.0331	0.0182	-0.0041
804	SLU 31	0.33	1.83	73.17	0.0345	0.0224	-0.004
804	SLU 32	0.36	1.93	74.54	0.0351	0.0224	-0.0048
804	SLU 33	0.35	1.9	74.51	0.0353	0.0237	-0.0043
804	SLU 34	0.34	1.85	74	0.035	0.0244	-0.0041
804	SLU 35	0.37	1.95	75.37	0.0356	0.0244	-0.0049
804	SLU 36	0.36	1.93	75.34	0.0358	0.0257	-0.0044
804	SLU 37	0.37	1.92	74.89	0.0351	0.0243	-0.0049
804	SLU 38	0.36	1.89	74.86	0.0353	0.0256	-0.0045
804	SLU 39	0.37	1.94	76.65	0.0351	0.0235	-0.0049
804	SLU 40	0.35	1.92	76.62	0.0353	0.0247	-0.0045
804	SLU 41	0.38	1.97	77.48	0.0356	0.0255	-0.005
804	SLU 42	0.36	1.94	77.45	0.0358	0.0267	-0.0046
804	SLU 43	0.34	1.8	72.05	0.0346	0.0198	-0.0055
804	SLU 44	0.32	1.76	71.99	0.0349	0.0219	-0.0048
804	SLU 45	0.36	1.86	73.36	0.0355	0.0219	-0.0056
804	SLU 46	0.34	1.83	73.33	0.0357	0.0231	-0.0051
804	SLU 47	0.33	1.78	72.82	0.0354	0.0239	-0.0049
804	SLU 48	0.37	1.88	74.19	0.036	0.0239	-0.0057
804	SLU 49	0.35	1.86	74.16	0.0362	0.0251	-0.0052
804	SLU 50	0.36	1.85	73.72	0.0356	0.0238	-0.0057
804	SLU 51	0.35	1.82	73.68	0.0358	0.0251	-0.0053
804	SLU 52	0.36	1.92	79.98	0.0372	0.0293	-0.0052
804	SLU 53	0.39	2.03	81.35	0.0378	0.0292	-0.006
804	SLU 54	0.38	2	81.31	0.038	0.0305	-0.0055
804	SLU 55	0.37	1.95	80.81	0.0377	0.0313	-0.0053
804	SLU 56	0.4	2.05	82.18	0.0383	0.0312	-0.0061
804	SLU 57	0.39	2.02	82.15	0.0385	0.0325	-0.0056





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
804	SLU 58	0.4	2.02	81.7	0.0378	0.0312	-0.0061
804	SLU 59	0.38	1.99	81.67	0.038	0.0324	-0.0057
804	SLU 60	0.4	2.04	83.46	0.0378	0.0303	-0.0061
804	SLU 61	0.38	2.01	83.43	0.038	0.0316	-0.0057
804	SLU 62	0.4	2.06	84.29	0.0383	0.0323	-0.0062
804	SLU 63	0.39	2.04	84.26	0.0385	0.0336	-0.0058
804	SLU 64	0.38	2.06	79.82	0.0388	0.018	-0.0056
804	SLU 65	0.36	2.01	79.76	0.0392	0.0201	-0.0048
804	SLU 66	0.4	2.11	81.13	0.0397	0.0201	-0.0056
804	SLU 67	0.38	2.09	81.1	0.0399	0.0213	-0.0052
804	SLU 68	0.37	2.03	80.59	0.0396	0.0221	-0.0049
804	SLU 69	0.41	2.14	81.96	0.0402	0.0221	-0.0057
804	SLU 70	0.39	2.11	81.93	0.0404	0.0233	-0.0053
804	SLU 71	0.4	2.1	81.48	0.0398	0.022	-0.0058
804	SLU 72	0.39	2.08	81.45	0.04	0.0233	-0.0053
804	SLU 73	0.4	2.18	87.75	0.0414	0.0275	-0.0052
804	SLU 74	0.43	2.28	89.12	0.042	0.0274	-0.0061
804	SLU 75	0.42	2.25	89.08	0.0422	0.0287	-0.0056
804	SLU 76	0.41	2.2	88.58	0.0419	0.0295	-0.0053
804	SLU 77	0.44	2.3	89.95	0.0425	0.0294	-0.0062
804	SLU 78	0.43	2.28	89.92	0.0427	0.0307	-0.0057
804	SLU 79	0.44	2.27	89.47	0.042	0.0294	-0.0062
804	SLU 80	0.42	2.24	89.44	0.0422	0.0306	-0.0057
804	SLU 81	0.44	2.29	91.23	0.042	0.0285	-0.0062
804	SLU 82	0.42	2.26	91.2	0.0422	0.0298	-0.0057
804	SLU 83	0.44	2.32	92.06	0.0425	0.0305	-0.0063
804	SLU 84	0.43	2.29	92.03	0.0427	0.0318	-0.0058
804	SLE RA 1	0.29	1.53	59.69	0.0289	0.0143	-0.0043
804	SLE RA 2	0.27	1.5	59.65	0.0292	0.0157	-0.0038
804	SLE RA 3	0.29	1.56	60.57	0.0295	0.0156	-0.0043
804	SLE RA 4	0.28	1.55	60.54	0.0297	0.0165	-0.004
804	SLE RA 5	0.28	1.51	60.21	0.0295	0.017	-0.0038
804	SLE RA 6	0.3	1.58	61.12	0.0299	0.017	-0.0044
804	SLE RA 7	0.29	1.56	61.1	0.03	0.0178	-0.0041
804	SLE RA 8	0.3	1.56	60.8	0.0296	0.0169	-0.0044
804	SLE RA 9	0.29	1.54	60.78	0.0297	0.0178	-0.0041
804	SLE RA 10	0.29	1.61	64.98	0.0307	0.0206	-0.0041
804	SLE RA 11	0.32	1.67	65.89	0.031	0.0205	-0.0046
804	SLE RA 12	0.31	1.66	65.87	0.0312	0.0214	-0.0043
804	SLE RA 13	0.3	1.62	65.53	0.031	0.0219	-0.0041
804	SLE RA 14	0.33	1.69	66.45	0.0314	0.0219	-0.0047
804	SLE RA 15	0.32	1.67	66.42	0.0315	0.0227	-0.0044
804	SLE RA 16	0.32	1.67	66.13	0.0311	0.0218	-0.0047
804	SLE RA 17	0.31	1.65	66.1	0.0312	0.0227	-0.0044
804	SLE RA 18	0.32	1.68	67.3	0.0311	0.0213	-0.0047
804	SLE RA 19	0.31	1.67	67.28	0.0312	0.0221	-0.0044
804	SLE RA 20	0.33	1.7	67.85	0.0314	0.0226	-0.0047
804	SLE RA 21	0.32	1.68	67.83	0.0315	0.0234	-0.0044
804	SLE FR 1	0.29	1.53	59.69	0.0289	0.0143	-0.0043
804	SLE FR 2	0.28	1.52	59.68	0.029	0.0145	-0.0042
804	SLE FR 3	0.29	1.53	59.91	0.0291	0.0148	-0.0043
804	SLE FR 4	0.29	1.57	61.97	0.0296	0.0166	-0.0043
804	SLE FR 5	0.3	1.58	62.2	0.0297	0.0169	-0.0044
804	SLE FR 6	0.3	1.6	63.5	0.03	0.0178	-0.0045
804	SLE QP 1	0.29	1.53	59.69	0.0289	0.0143	-0.0043
804	SLE QP 2	0.3	1.57	61.97	0.0296	0.0164	-0.0044
804	SLD 1	5.61	2.09	59.74	0.0213	0.2104	-0.0377
804	SLD 2	5.32	2.26	59.8	0.0204	0.2096	-0.027
804	SLD 3	5.31	0.27	59.31	0.0295	0.2446	-0.0399
804	SLD 4	5.03	0.44	59.37	0.0285	0.2439	-0.0291
804	SLD 5	2.39	4.45	61.95	0.0149	0.0228	-0.013
804	SLD 6	2.2	4.56	61.99	0.0143	0.0223	-0.006
804	SLD 7	1.4	-1.6	60.51	0.0421	0.1369	-0.0202
804	SLD 8	1.22	-1.49	60.55	0.0415	0.1364	-0.0132
804	SLD 9	-0.62	4.64	63.4	0.0177	-0.1037	0.0044
804	SLD 10	-0.81	4.75	63.44	0.017	-0.1042	0.0114
804	SLD 11	-1.61	-1.42	61.96	0.0449	0.0104	-0.0028
804	SLD 12	-1.8	-1.31	62	0.0442	0.0099	0.0042
804	SLD 13	-4.44	2.71	64.58	0.0306	-0.2112	0.0203
804	SLD 14	-4.72	2.87	64.64	0.0296	-0.2119	0.0311
804	SLD 15	-4.73	0.89	64.15	0.0388	-0.1769	0.0182
804	SLD 16	-5.02	1.05	64.21	0.0378	-0.1776	0.0289
804	SLV 1	12.72	2.72	56.71	0.0104	0.4715	-0.0823
804	SLV 2	12.06	3.1	56.86	0.0082	0.4698	-0.0573
804	SLV 3	12.03	-1.4	55.73	0.0289	0.5493	-0.0874
804	SLV 4	11.37	-1.02	55.88	0.0266	0.5476	-0.0624
804	SLV 5	5.18	8.09	61.86	-0.0038	0.0352	-0.0244
804	SLV 6	4.76	8.33	61.95	-0.0052	0.0341	-0.0083
804	SLV 7	2.89	-5.62	58.59	0.0578	0.2945	-0.0413
804	SLV 8	2.46	-5.38	58.69	0.0563	0.2934	-0.0251
804	SLV 9	-1.87	8.52	65.26	0.0028	-0.2607	0.0163
804	SLV 10	-2.3	8.77	65.36	0.0014	-0.2618	0.0325
804	SLV 11	-4.16	-5.19	62	0.0644	-0.0014	-0.0005
804	SLV 12	-4.59	-4.94	62.09	0.0629	-0.0025	0.0156
804	SLV 13	-10.78	4.16	68.07	0.0325	-0.5149	0.0536
804	SLV 14	-11.44	4.54	68.21	0.0303	-0.5166	0.0786
804	SLV 15	-11.47	0.05	67.09	0.051	-0.4371	0.0485
804	SLV 16	-12.13	0.43	67.23	0.0487	-0.4388	0.0735
804	CRTFP Ux+	0	0	0	0	0	0
804	CRTFP Ux-	0	0	0	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
807	SLU 1	0.01	0.85	58.91	0.0204	0.1004	0.0011
807	SLU 2	0	0.79	58.81	0.0208	0.0987	0.0017
807	SLU 3	0.01	0.89	60.27	0.0209	0.1032	0.001
807	SLU 4	0.01	0.85	60.21	0.0212	0.1021	0.0013
807	SLU 5	0	0.8	59.67	0.021	0.0998	0.0015
807	SLU 6	0.02	0.91	61.12	0.0212	0.1042	0.0009
807	SLU 7	0.01	0.87	61.07	0.0214	0.1032	0.0012
807	SLU 8	0.02	0.88	60.63	0.0208	0.1026	0.0008
807	SLU 9	0.01	0.84	60.57	0.0211	0.1016	0.0012
807	SLU 10	0.02	0.93	66.56	0.0229	0.108	0.0025
807	SLU 11	0.03	1.04	68.02	0.0231	0.1125	0.0018
807	SLU 12	0.02	1	67.96	0.0233	0.1115	0.0022
807	SLU 13	0.02	0.94	67.42	0.0231	0.1091	0.0024
807	SLU 14	0.04	1.05	68.88	0.0233	0.1136	0.0017
807	SLU 15	0.03	1.01	68.82	0.0235	0.1125	0.0021
807	SLU 16	0.04	1.02	68.38	0.023	0.1119	0.0017
807	SLU 17	0.03	0.98	68.32	0.0232	0.1109	0.002
807	SLU 18	0.04	1.05	69.99	0.0234	0.1137	0.0023
807	SLU 19	0.03	1.02	69.93	0.0236	0.1127	0.0026
807	SLU 20	0.04	1.07	70.85	0.0236	0.1148	0.0022
807	SLU 21	0.04	1.03	70.79	0.0239	0.1138	0.0025
807	SLU 22	0.01	1.09	66.66	0.0241	0.1183	0.0011
807	SLU 23	-0.01	1.02	66.56	0.0245	0.1166	0.0017
807	SLU 24	0.01	1.13	68.01	0.0247	0.1211	0.001
807	SLU 25	0	1.09	67.96	0.0249	0.1201	0.0014
807	SLU 26	-0.01	1.03	67.42	0.0247	0.1177	0.0016
807	SLU 27	0.01	1.14	68.87	0.0249	0.1222	0.0009
807	SLU 28	0	1.1	68.82	0.0251	0.1211	0.0013
807	SLU 29	0.01	1.11	68.37	0.0246	0.1205	0.0009
807	SLU 30	0	1.07	68.32	0.0248	0.1195	0.0012
807	SLU 31	0.01	1.16	74.31	0.0266	0.126	0.0026
807	SLU 32	0.02	1.27	75.77	0.0268	0.1304	0.0019
807	SLU 33	0.02	1.23	75.71	0.027	0.1294	0.0022
807	SLU 34	0.01	1.17	75.17	0.0268	0.127	0.0024
807	SLU 35	0.03	1.28	76.63	0.027	0.1315	0.0018
807	SLU 36	0.02	1.24	76.57	0.0272	0.1305	0.0021
807	SLU 37	0.03	1.25	76.13	0.0267	0.1298	0.0017
807	SLU 38	0.02	1.21	76.07	0.0269	0.1288	0.0021
807	SLU 39	0.03	1.29	77.74	0.0271	0.1317	0.0023
807	SLU 40	0.02	1.25	77.68	0.0274	0.1306	0.0027
807	SLU 41	0.04	1.3	78.59	0.0274	0.1327	0.0022
807	SLU 42	0.03	1.26	78.54	0.0276	0.1317	0.0026
807	SLU 43	0.02	1.03	73.92	0.0252	0.1244	0.0014
807	SLU 44	0.01	0.96	73.82	0.0256	0.1227	0.002
807	SLU 45	0.02	1.07	75.28	0.0258	0.1271	0.0013
807	SLU 46	0.01	1.03	75.22	0.026	0.1261	0.0016
807	SLU 47	0.01	0.97	74.68	0.0258	0.1238	0.0018
807	SLU 48	0.02	1.08	76.14	0.026	0.1282	0.0012
807	SLU 49	0.02	1.04	76.08	0.0263	0.1272	0.0015
807	SLU 50	0.03	1.05	75.64	0.0257	0.1266	0.0011
807	SLU 51	0.02	1.01	75.58	0.0259	0.1255	0.0015
807	SLU 52	0.03	1.1	81.58	0.0277	0.132	0.0028
807	SLU 53	0.04	1.21	83.04	0.0279	0.1365	0.0021
807	SLU 54	0.03	1.17	82.98	0.0281	0.1354	0.0025
807	SLU 55	0.03	1.12	82.44	0.028	0.1331	0.0027
807	SLU 56	0.04	1.22	83.9	0.0281	0.1375	0.002
807	SLU 57	0.03	1.18	83.84	0.0284	0.1365	0.0024
807	SLU 58	0.05	1.19	83.4	0.0278	0.1359	0.002
807	SLU 59	0.04	1.15	83.34	0.028	0.1349	0.0023
807	SLU 60	0.05	1.23	85	0.0282	0.1377	0.0026
807	SLU 61	0.04	1.19	84.94	0.0285	0.1367	0.0029
807	SLU 62	0.05	1.24	85.86	0.0285	0.1388	0.0025
807	SLU 63	0.04	1.2	85.8	0.0287	0.1378	0.0028
807	SLU 64	0.01	1.26	81.67	0.0289	0.1423	0.0014
807	SLU 65	0	1.19	81.57	0.0293	0.1406	0.002
807	SLU 66	0.01	1.3	83.03	0.0295	0.1451	0.0013
807	SLU 67	0	1.26	82.97	0.0297	0.144	0.0017
807	SLU 68	0	1.21	82.43	0.0296	0.1417	0.0019
807	SLU 69	0.02	1.31	83.89	0.0297	0.1461	0.0012
807	SLU 70	0.01	1.28	83.83	0.03	0.1451	0.0016
807	SLU 71	0.02	1.28	83.39	0.0294	0.1445	0.0012
807	SLU 72	0.01	1.25	83.33	0.0296	0.1435	0.0015
807	SLU 73	0.02	1.34	89.33	0.0315	0.1499	0.0029
807	SLU 74	0.03	1.44	90.79	0.0316	0.1544	0.0022
807	SLU 75	0.02	1.41	90.73	0.0319	0.1534	0.0025
807	SLU 76	0.02	1.35	90.19	0.0317	0.151	0.0027
807	SLU 77	0.03	1.46	91.64	0.0319	0.1555	0.0021
807	SLU 78	0.03	1.42	91.59	0.0321	0.1544	0.0024
807	SLU 79	0.04	1.43	91.15	0.0315	0.1538	0.002
807	SLU 80	0.03	1.39	91.09	0.0318	0.1528	0.0024
807	SLU 81	0.04	1.46	92.75	0.032	0.1556	0.0026
807	SLU 82	0.03	1.42	92.69	0.0322	0.1546	0.003
807	SLU 83	0.04	1.48	93.61	0.0322	0.1567	0.0025
807	SLU 84	0.03	1.44	93.55	0.0324	0.1557	0.0029
807	SLE RA 1	0.01	0.92	61.12	0.0214	0.1055	0.0011
807	SLE RA 2	0	0.87	61.06	0.0217	0.1044	0.0015
807	SLE RA 3	0.01	0.95	62.03	0.0218	0.1074	0.001
807	SLE RA 4	0.01	0.92	61.99	0.022	0.1067	0.0013
807	SLE RA 5	0	0.88	61.63	0.0219	0.1051	0.0014
807	SLE RA 6	0.01	0.95	62.6	0.022	0.1081	0.0009



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
807	SLE RA 7	0.01	0.93	62.56	0.0221	0.1074	0.0012
807	SLE RA 8	0.02	0.93	62.27	0.0218	0.107	0.0009
807	SLE RA 9	0.01	0.91	62.23	0.0219	0.1063	0.0012
807	SLE RA 10	0.01	0.97	66.23	0.0231	0.1106	0.002
807	SLE RA 11	0.02	1.04	67.2	0.0232	0.1136	0.0016
807	SLE RA 12	0.02	1.01	67.16	0.0234	0.1129	0.0018
807	SLE RA 13	0.02	0.98	66.8	0.0233	0.1113	0.002
807	SLE RA 14	0.03	1.05	67.77	0.0234	0.1143	0.0015
807	SLE RA 15	0.02	1.02	67.73	0.0235	0.1136	0.0017
807	SLE RA 16	0.03	1.03	67.44	0.0232	0.1132	0.0015
807	SLE RA 17	0.02	1	67.4	0.0233	0.1125	0.0017
807	SLE RA 18	0.03	1.05	68.51	0.0235	0.1144	0.0019
807	SLE RA 19	0.02	1.03	68.47	0.0236	0.1137	0.0021
807	SLE RA 20	0.03	1.06	69.08	0.0236	0.1151	0.0018
807	SLE RA 21	0.03	1.04	69.04	0.0238	0.1145	0.002
807	SLE FR 1	0.01	0.92	61.12	0.0214	0.1055	0.0011
807	SLE FR 2	0.01	0.91	61.11	0.0215	0.1053	0.0012
807	SLE FR 3	0.01	0.92	61.35	0.0215	0.1058	0.001
807	SLE FR 4	0.02	0.95	63.32	0.0221	0.108	0.0014
807	SLE FR 5	0.02	0.96	63.57	0.0221	0.1085	0.0013
807	SLE FR 6	0.02	0.99	64.81	0.0225	0.11	0.0015
807	SLE QP 1	0.01	0.92	61.12	0.0214	0.1055	0.0011
807	SLE QP 2	0.02	0.96	63.34	0.022	0.1082	0.0013
807	SLD 1	5.05	2.3	68.42	0.0325	0.2704	-0.0313
807	SLD 2	4.76	2.1	68.05	0.0325	0.2725	-0.0209
807	SLD 3	5.35	0.5	67.89	0.0405	0.254	-0.0287
807	SLD 4	5.06	0.31	67.52	0.0406	0.2561	-0.0183
807	SLD 5	1.13	4.11	65.73	0.013	0.1813	-0.0142
807	SLD 6	0.93	3.99	65.49	0.013	0.1827	-0.0074
807	SLD 7	2.12	-1.87	63.96	0.0398	0.1268	-0.0057
807	SLD 8	1.93	-1.99	63.72	0.0398	0.1281	0.0012
807	SLD 9	-1.9	3.91	62.95	0.0043	0.0883	0.0015
807	SLD 10	-2.09	3.78	62.71	0.0043	0.0897	0.0083
807	SLD 11	-0.9	-2.07	61.18	0.0311	0.0337	0.01
807	SLD 12	-1.09	-2.2	60.94	0.0311	0.0351	0.0168
807	SLD 13	-5.02	1.61	59.15	0.0035	-0.0397	0.021
807	SLD 14	-5.32	1.42	58.79	0.0036	-0.0376	0.0314
807	SLD 15	-4.72	-0.19	58.62	0.0116	-0.0561	0.0235
807	SLD 16	-5.02	-0.38	58.25	0.0116	-0.054	0.0339
807	SLV 1	11.79	4.02	75.24	0.0468	0.4873	-0.0749
807	SLV 2	11.11	3.57	74.38	0.0468	0.4921	-0.0507
807	SLV 3	12.49	-0.04	74.03	0.065	0.4498	-0.069
807	SLV 4	11.81	-0.49	73.17	0.0651	0.4545	-0.0448
807	SLV 5	2.61	8.11	68.89	0.0018	0.2781	-0.0347
807	SLV 6	2.17	7.82	68.34	0.0018	0.2811	-0.019
807	SLV 7	4.94	-5.42	64.85	0.0626	0.1529	-0.015
807	SLV 8	4.49	-5.71	64.3	0.0626	0.156	0.0006
807	SLV 9	-4.46	7.63	62.37	-0.0185	0.0604	0.002
807	SLV 10	-4.9	7.34	61.82	-0.0185	0.0635	0.0177
807	SLV 11	-2.13	-5.91	58.33	0.0423	-0.0647	0.0216
807	SLV 12	-2.58	-6.19	57.78	0.0423	-0.0617	0.0373
807	SLV 13	-11.77	2.41	53.5	-0.021	-0.2381	0.0474
807	SLV 14	-12.46	1.96	52.65	-0.0209	-0.2334	0.0717
807	SLV 15	-11.08	-1.65	52.29	-0.0027	-0.2757	0.0533
807	SLV 16	-11.76	-2.1	51.43	-0.0027	-0.2709	0.0775
807	CRTFP Ux+	0	0	0	0	0	0
807	CRTFP Ux-	0	0	0	0	0	0
809	SLU 1	-0.58	0.12	30.66	0.002	-2.2672	0.0306
809	SLU 2	-0.59	0.03	30.69	0.002	-2.2678	0.0086
809	SLU 3	-0.6	0.13	31.39	0.002	-2.3094	0.0324
809	SLU 4	-0.6	0.08	31.41	0.0021	-2.3097	0.0192
809	SLU 5	-0.6	0.04	31.15	0.0021	-2.2939	0.0099
809	SLU 6	-0.61	0.14	31.86	0.002	-2.3354	0.0337
809	SLU 7	-0.61	0.08	31.87	0.0021	-2.3357	0.0205
809	SLU 8	-0.6	0.13	31.58	0.002	-2.3193	0.0332
809	SLU 9	-0.61	0.08	31.6	0.0021	-2.3197	0.02
809	SLU 10	-0.63	0.11	34.25	0.0023	-2.4958	0.0281
809	SLU 11	-0.64	0.21	34.96	0.0023	-2.5374	0.0519
809	SLU 12	-0.64	0.16	34.98	0.0023	-2.5377	0.0387
809	SLU 13	-0.64	0.12	34.71	0.0023	-2.5219	0.0294
809	SLU 14	-0.65	0.21	35.42	0.0023	-2.5634	0.0532
809	SLU 15	-0.65	0.16	35.44	0.0024	-2.5638	0.04
809	SLU 16	-0.64	0.21	35.15	0.0023	-2.5474	0.0527
809	SLU 17	-0.65	0.16	35.16	0.0023	-2.5477	0.0395
809	SLU 18	-0.64	0.23	35.75	0.0024	-2.593	0.0585
809	SLU 19	-0.65	0.18	35.77	0.0024	-2.5933	0.0453
809	SLU 20	-0.65	0.24	36.22	0.0024	-2.619	0.0598
809	SLU 21	-0.66	0.19	36.23	0.0024	-2.6194	0.0466
809	SLU 22	-0.63	0.19	34.29	0.0024	-2.4954	0.0471
809	SLU 23	-0.64	0.1	34.31	0.0025	-2.4959	0.0251
809	SLU 24	-0.65	0.2	35.02	0.0025	-2.5375	0.0489
809	SLU 25	-0.65	0.14	35.04	0.0025	-2.5378	0.0357
809	SLU 26	-0.65	0.11	34.77	0.0025	-2.522	0.0264
809	SLU 27	-0.66	0.2	35.48	0.0025	-2.5635	0.0502
809	SLU 28	-0.66	0.15	35.5	0.0026	-2.5638	0.037
809	SLU 29	-0.65	0.2	35.21	0.0025	-2.5474	0.0497
809	SLU 30	-0.66	0.15	35.23	0.0025	-2.5478	0.0365
809	SLU 31	-0.68	0.18	37.88	0.0028	-2.7239	0.0446
809	SLU 32	-0.69	0.27	38.59	0.0028	-2.7655	0.0685
809	SLU 33	-0.7	0.22	38.6	0.0028	-2.7658	0.0552



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
809	SLU 34	-0.69	0.18	38.34	0.0028	-2.75	0.0459
809	SLU 35	-0.7	0.28	39.05	0.0028	-2.7915	0.0697
809	SLU 36	-0.7	0.23	39.06	0.0028	-2.7919	0.0565
809	SLU 37	-0.69	0.28	38.78	0.0028	-2.7755	0.0693
809	SLU 38	-0.7	0.22	38.79	0.0028	-2.7758	0.056
809	SLU 39	-0.69	0.3	39.38	0.0028	-2.8211	0.075
809	SLU 40	-0.7	0.25	39.4	0.0029	-2.8214	0.0618
809	SLU 41	-0.7	0.31	39.84	0.0029	-2.8471	0.0763
809	SLU 42	-0.71	0.25	39.86	0.0029	-2.8475	0.0631
809	SLU 43	-0.74	0.14	38.61	0.0024	-2.8692	0.0342
809	SLU 44	-0.75	0.05	38.64	0.0025	-2.8698	0.0121
809	SLU 45	-0.75	0.14	39.35	0.0025	-2.9113	0.0359
809	SLU 46	-0.76	0.09	39.36	0.0025	-2.9117	0.0227
809	SLU 47	-0.76	0.05	39.1	0.0025	-2.8958	0.0134
809	SLU 48	-0.76	0.15	39.81	0.0025	-2.9374	0.0372
809	SLU 49	-0.77	0.1	39.83	0.0025	-2.9377	0.024
809	SLU 50	-0.76	0.15	39.54	0.0024	-2.9213	0.0367
809	SLU 51	-0.76	0.09	39.55	0.0025	-2.9216	0.0235
809	SLU 52	-0.79	0.13	42.21	0.0028	-3.0978	0.0317
809	SLU 53	-0.8	0.22	42.91	0.0027	-3.1393	0.0555
809	SLU 54	-0.8	0.17	42.93	0.0028	-3.1397	0.0422
809	SLU 55	-0.8	0.13	42.67	0.0028	-3.1238	0.0329
809	SLU 56	-0.81	0.23	43.38	0.0028	-3.1654	0.0568
809	SLU 57	-0.81	0.17	43.39	0.0028	-3.1657	0.0435
809	SLU 58	-0.8	0.23	43.1	0.0027	-3.1493	0.0563
809	SLU 59	-0.8	0.17	43.12	0.0028	-3.1497	0.043
809	SLU 60	-0.8	0.25	43.71	0.0028	-3.195	0.0621
809	SLU 61	-0.81	0.2	43.72	0.0028	-3.1953	0.0488
809	SLU 62	-0.81	0.25	44.17	0.0028	-3.221	0.0634
809	SLU 63	-0.81	0.2	44.19	0.0029	-3.2213	0.0501
809	SLU 64	-0.79	0.2	42.24	0.0029	-3.0973	0.0507
809	SLU 65	-0.8	0.12	42.27	0.003	-3.0979	0.0286
809	SLU 66	-0.81	0.21	42.97	0.0029	-3.1394	0.0525
809	SLU 67	-0.81	0.16	42.99	0.003	-3.1398	0.0392
809	SLU 68	-0.81	0.12	42.73	0.003	-3.1239	0.0299
809	SLU 69	-0.81	0.22	43.44	0.0029	-3.1655	0.0537
809	SLU 70	-0.82	0.16	43.45	0.003	-3.1658	0.0405
809	SLU 71	-0.81	0.21	43.16	0.0029	-3.1494	0.0533
809	SLU 72	-0.81	0.16	43.18	0.003	-3.1497	0.04
809	SLU 73	-0.84	0.19	45.83	0.0032	-3.3259	0.0482
809	SLU 74	-0.85	0.29	46.54	0.0032	-3.3674	0.072
809	SLU 75	-0.85	0.24	46.56	0.0033	-3.3678	0.0588
809	SLU 76	-0.85	0.2	46.29	0.0032	-3.3519	0.0495
809	SLU 77	-0.86	0.29	47	0.0032	-3.3935	0.0733
809	SLU 78	-0.86	0.24	47.02	0.0033	-3.3938	0.0601
809	SLU 79	-0.85	0.29	46.73	0.0032	-3.3774	0.0728
809	SLU 80	-0.86	0.24	46.75	0.0032	-3.3778	0.0596
809	SLU 81	-0.85	0.31	47.33	0.0033	-3.4231	0.0786
809	SLU 82	-0.86	0.26	47.35	0.0033	-3.4234	0.0654
809	SLU 83	-0.86	0.32	47.8	0.0033	-3.4491	0.0799
809	SLU 84	-0.87	0.27	47.81	0.0033	-3.4494	0.0666
809	SLE RA 1	-0.6	0.14	31.7	0.0021	-2.3324	0.0353
809	SLE RA 2	-0.6	0.08	31.71	0.0022	-2.3328	0.0207
809	SLE RA 3	-0.61	0.15	32.18	0.0021	-2.3605	0.0365
809	SLE RA 4	-0.61	0.11	32.2	0.0022	-2.3607	0.0277
809	SLE RA 5	-0.61	0.09	32.02	0.0022	-2.3502	0.0215
809	SLE RA 6	-0.61	0.15	32.49	0.0022	-2.3779	0.0374
809	SLE RA 7	-0.62	0.12	32.5	0.0022	-2.3781	0.0286
809	SLE RA 8	-0.61	0.15	32.31	0.0021	-2.3671	0.0371
809	SLE RA 9	-0.61	0.11	32.32	0.0022	-2.3674	0.0283
809	SLE RA 10	-0.63	0.14	34.09	0.0023	-2.4848	0.0337
809	SLE RA 11	-0.64	0.2	34.56	0.0023	-2.5125	0.0496
809	SLE RA 12	-0.64	0.16	34.57	0.0024	-2.5127	0.0407
809	SLE RA 13	-0.64	0.14	34.4	0.0024	-2.5022	0.0345
809	SLE RA 14	-0.64	0.2	34.87	0.0023	-2.5299	0.0504
809	SLE RA 15	-0.64	0.17	34.88	0.0024	-2.5301	0.0416
809	SLE RA 16	-0.64	0.2	34.69	0.0023	-2.5192	0.0501
809	SLE RA 17	-0.64	0.17	34.7	0.0023	-2.5194	0.0413
809	SLE RA 18	-0.64	0.22	35.09	0.0024	-2.5496	0.054
809	SLE RA 19	-0.64	0.18	35.1	0.0024	-2.5498	0.0451
809	SLE RA 20	-0.64	0.22	35.4	0.0024	-2.5669	0.0548
809	SLE RA 21	-0.65	0.18	35.41	0.0024	-2.5672	0.046
809	SLE FR 1	-0.6	0.14	31.7	0.0021	-2.3324	0.0353
809	SLE FR 2	-0.6	0.13	31.7	0.0021	-2.3325	0.0324
809	SLE FR 3	-0.6	0.14	31.82	0.0021	-2.3394	0.0357
809	SLE FR 4	-0.61	0.15	32.72	0.0022	-2.3976	0.038
809	SLE FR 5	-0.61	0.17	32.84	0.0022	-2.4045	0.0413
809	SLE FR 6	-0.62	0.18	33.39	0.0022	-2.441	0.0447
809	SLE QP 1	-0.6	0.14	31.7	0.0021	-2.3324	0.0353
809	SLE QP 2	-0.61	0.16	32.71	0.0022	-2.3976	0.0409
809	SLD 1	1.99	0.72	40.7	-0.0014	-2.9258	0.1788
809	SLD 2	1.82	0.21	40.93	0.0003	-2.9448	0.0501
809	SLD 3	1.84	-0.56	41.2	0.0015	-2.9694	-0.1431
809	SLD 4	1.68	-1.08	41.43	0.0032	-2.9884	-0.2718
809	SLD 5	0.42	2.38	34.31	-0.0037	-2.4866	0.5935
809	SLD 6	0.31	2.04	34.46	-0.0025	-2.499	0.5089
809	SLD 7	-0.06	-1.91	35.98	0.0062	-2.6318	-0.4795
809	SLD 8	-0.17	-2.25	36.13	0.0073	-2.6443	-0.5641
809	SLD 9	-1.05	2.58	29.3	-0.0029	-2.1508	0.6459
809	SLD 10	-1.16	2.24	29.45	-0.0018	-2.1633	0.5614



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
809	SLD 11	-1.53	-1.71	30.97	0.0069	-2.2961	-0.4271
809	SLD 12	-1.64	-2.05	31.12	0.008	-2.3086	-0.5116
809	SLD 13	-2.9	1.41	24	0.0011	-1.8068	0.3536
809	SLD 14	-3.06	0.89	24.23	0.0028	-1.8257	0.225
809	SLD 15	-3.04	0.12	24.5	0.0041	-1.8503	0.0317
809	SLD 16	-3.21	-0.39	24.73	0.0058	-1.8693	-0.0969
809	SLV 1	5.46	1.42	51.42	-0.0061	-3.6349	0.3502
809	SLV 2	5.08	0.21	51.95	-0.0022	-3.6791	0.0506
809	SLV 3	5.13	-1.49	52.58	0.0005	-3.7357	-0.3783
809	SLV 4	4.74	-2.7	53.11	0.0045	-3.7798	-0.6778
809	SLV 5	1.78	5.17	36.47	-0.0111	-2.6084	1.2904
809	SLV 6	1.54	4.39	36.81	-0.0085	-2.6369	1.0969
809	SLV 7	0.67	-4.54	40.35	0.0111	-2.9441	-1.1379
809	SLV 8	0.42	-5.32	40.69	0.0137	-2.9726	-1.3313
809	SLV 9	-1.64	5.65	24.74	-0.0093	-1.8225	1.4132
809	SLV 10	-1.89	4.87	25.08	-0.0067	-1.851	1.2197
809	SLV 11	-2.76	-4.06	28.62	0.0129	-2.1583	-1.015
809	SLV 12	-3	-4.84	28.96	0.0155	-2.1868	-1.2085
809	SLV 13	-5.96	3.03	12.31	-0.0001	-1.0153	0.7597
809	SLV 14	-6.35	1.82	12.85	0.0039	-1.0595	0.4602
809	SLV 15	-6.3	0.12	13.48	0.0065	-1.1161	0.0312
809	SLV 16	-6.68	-1.09	14.01	0.0105	-1.1602	-0.2683
809	CRTFP Ux+	0	0	0	0	0	0
809	CRTFP Ux-	0	0	0	0	0	0
809	CRTFP Uy+	0	0	0	0	0	0
809	CRTFP Uy-	0	0	0	0	0	0
812	SLU 1	0.61	0.46	33.29	-0.0454	4.3893	-0.1632
812	SLU 2	0.62	0.44	33.3	-0.0455	4.3907	-0.1549
812	SLU 3	0.63	0.47	34.06	-0.0466	4.4718	-0.1664
812	SLU 4	0.63	0.46	34.06	-0.0466	4.4726	-0.1614
812	SLU 5	0.63	0.44	33.77	-0.0463	4.4419	-0.1549
812	SLU 6	0.64	0.47	34.54	-0.0474	4.5229	-0.1664
812	SLU 7	0.64	0.46	34.54	-0.0474	4.5238	-0.1614
812	SLU 8	0.63	0.46	34.25	-0.047	4.4916	-0.1632
812	SLU 9	0.64	0.45	34.25	-0.047	4.4925	-0.1582
812	SLU 10	0.65	0.57	37.12	-0.0512	4.8208	-0.2027
812	SLU 11	0.66	0.61	37.89	-0.0523	4.9018	-0.2143
812	SLU 12	0.67	0.59	37.89	-0.0523	4.9027	-0.2093
812	SLU 13	0.67	0.57	37.6	-0.052	4.8719	-0.2027
812	SLU 14	0.68	0.61	38.36	-0.0531	4.953	-0.2143
812	SLU 15	0.68	0.59	38.36	-0.0531	4.9538	-0.2093
812	SLU 16	0.67	0.6	38.07	-0.0527	4.9216	-0.211
812	SLU 17	0.67	0.58	38.07	-0.0527	4.9225	-0.206
812	SLU 18	0.66	0.66	38.76	-0.0535	5.0036	-0.2316
812	SLU 19	0.66	0.64	38.76	-0.0536	5.0045	-0.2266
812	SLU 20	0.67	0.66	39.23	-0.0543	5.0548	-0.2316
812	SLU 21	0.68	0.64	39.23	-0.0544	5.0556	-0.2266
812	SLU 22	0.66	0.58	37.14	-0.051	4.8177	-0.2053
812	SLU 23	0.67	0.56	37.14	-0.0511	4.8191	-0.1969
812	SLU 24	0.68	0.59	37.9	-0.0522	4.9002	-0.2085
812	SLU 25	0.69	0.58	37.91	-0.0522	4.901	-0.2035
812	SLU 26	0.68	0.56	37.62	-0.0519	4.8703	-0.1969
812	SLU 27	0.69	0.59	38.38	-0.0529	4.9513	-0.2085
812	SLU 28	0.7	0.58	38.38	-0.053	4.9522	-0.2035
812	SLU 29	0.69	0.58	38.09	-0.0525	4.92	-0.2052
812	SLU 30	0.69	0.57	38.09	-0.0526	4.9209	-0.2002
812	SLU 31	0.71	0.69	40.96	-0.0568	5.2492	-0.2448
812	SLU 32	0.72	0.73	41.73	-0.0579	5.3302	-0.2563
812	SLU 33	0.72	0.71	41.73	-0.0579	5.3311	-0.2513
812	SLU 34	0.72	0.69	41.44	-0.0576	5.3003	-0.2448
812	SLU 35	0.73	0.73	42.2	-0.0586	5.3813	-0.2563
812	SLU 36	0.73	0.71	42.21	-0.0587	5.3822	-0.2513
812	SLU 37	0.72	0.72	41.91	-0.0582	5.35	-0.2531
812	SLU 38	0.73	0.7	41.91	-0.0583	5.3509	-0.2481
812	SLU 39	0.71	0.78	42.6	-0.0591	5.432	-0.2736
812	SLU 40	0.72	0.76	42.6	-0.0592	5.4329	-0.2686
812	SLU 41	0.72	0.78	43.07	-0.0599	5.4832	-0.2736
812	SLU 42	0.73	0.76	43.08	-0.06	5.484	-0.2686
812	SLU 43	0.77	0.56	41.97	-0.0571	5.5592	-0.1978
812	SLU 44	0.78	0.54	41.97	-0.0572	5.5606	-0.1894
812	SLU 45	0.79	0.57	42.73	-0.0583	5.6417	-0.201
812	SLU 46	0.8	0.56	42.73	-0.0584	5.6425	-0.196
812	SLU 47	0.79	0.54	42.44	-0.058	5.6118	-0.1894
812	SLU 48	0.8	0.57	43.21	-0.0591	5.6928	-0.201
812	SLU 49	0.81	0.56	43.21	-0.0591	5.6937	-0.196
812	SLU 50	0.8	0.56	42.92	-0.0587	5.6615	-0.1977
812	SLU 51	0.8	0.55	42.92	-0.0587	5.6624	-0.1927
812	SLU 52	0.82	0.67	45.79	-0.0629	5.9907	-0.2373
812	SLU 53	0.83	0.71	46.56	-0.064	6.0717	-0.2488
812	SLU 54	0.83	0.69	46.56	-0.0641	6.0726	-0.2438
812	SLU 55	0.83	0.67	46.27	-0.0637	6.0418	-0.2373
812	SLU 56	0.84	0.71	47.03	-0.0648	6.1229	-0.2488
812	SLU 57	0.84	0.69	47.03	-0.0648	6.1237	-0.2438
812	SLU 58	0.83	0.7	46.74	-0.0644	6.0915	-0.2456
812	SLU 59	0.84	0.68	46.74	-0.0644	6.0924	-0.2406
812	SLU 60	0.82	0.76	47.43	-0.0653	6.1735	-0.2661
812	SLU 61	0.83	0.74	47.43	-0.0653	6.1744	-0.2611
812	SLU 62	0.84	0.76	47.9	-0.066	6.2247	-0.2661
812	SLU 63	0.84	0.74	47.91	-0.0661	6.2255	-0.2611
812	SLU 64	0.83	0.68	45.81	-0.0627	5.9876	-0.2398



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
812	SLU 65	0.83	0.66	45.81	-0.0628	5.989	-0.2315
812	SLU 66	0.84	0.69	46.57	-0.0639	6.0701	-0.243
812	SLU 67	0.85	0.67	46.58	-0.0639	6.0709	-0.238
812	SLU 68	0.85	0.66	46.29	-0.0636	6.0402	-0.2315
812	SLU 69	0.86	0.69	47.05	-0.0646	6.1212	-0.243
812	SLU 70	0.86	0.67	47.05	-0.0647	6.1221	-0.238
812	SLU 71	0.85	0.68	46.76	-0.0642	6.0899	-0.2398
812	SLU 72	0.86	0.67	46.76	-0.0643	6.0908	-0.2348
812	SLU 73	0.87	0.79	49.64	-0.0685	6.4191	-0.2793
812	SLU 74	0.88	0.83	50.4	-0.0696	6.5001	-0.2909
812	SLU 75	0.89	0.81	50.4	-0.0696	6.501	-0.2859
812	SLU 76	0.88	0.79	50.11	-0.0693	6.4702	-0.2793
812	SLU 77	0.89	0.83	50.87	-0.0703	6.5513	-0.2909
812	SLU 78	0.9	0.81	50.88	-0.0704	6.5521	-0.2859
812	SLU 79	0.89	0.82	50.58	-0.0699	6.5199	-0.2876
812	SLU 80	0.89	0.8	50.58	-0.07	6.5208	-0.2826
812	SLU 81	0.88	0.87	51.27	-0.0708	6.6019	-0.3082
812	SLU 82	0.88	0.86	51.27	-0.0709	6.6028	-0.3032
812	SLU 83	0.89	0.87	51.75	-0.0716	6.6531	-0.3082
812	SLU 84	0.89	0.86	51.75	-0.0717	6.6539	-0.3032
812	SLE RA 1	0.62	0.5	34.39	-0.047	4.5117	-0.1752
812	SLE RA 2	0.63	0.48	34.39	-0.0471	4.5126	-0.1697
812	SLE RA 3	0.64	0.5	34.9	-0.0478	4.5667	-0.1774
812	SLE RA 4	0.64	0.49	34.9	-0.0478	4.5672	-0.174
812	SLE RA 5	0.64	0.48	34.71	-0.0476	4.5468	-0.1697
812	SLE RA 6	0.64	0.5	35.22	-0.0483	4.6008	-0.1774
812	SLE RA 7	0.65	0.49	35.22	-0.0483	4.6014	-0.174
812	SLE RA 8	0.64	0.5	35.03	-0.048	4.5799	-0.1752
812	SLE RA 9	0.64	0.49	35.03	-0.0481	4.5805	-0.1719
812	SLE RA 10	0.65	0.57	36.94	-0.0509	4.7993	-0.2016
812	SLE RA 11	0.66	0.59	37.45	-0.0516	4.8533	-0.2093
812	SLE RA 12	0.66	0.58	37.45	-0.0516	4.8539	-0.2059
812	SLE RA 13	0.66	0.57	37.26	-0.0514	4.8334	-0.2016
812	SLE RA 14	0.67	0.59	37.77	-0.0521	4.8875	-0.2093
812	SLE RA 15	0.67	0.58	37.77	-0.0521	4.888	-0.2059
812	SLE RA 16	0.66	0.59	37.58	-0.0518	4.8666	-0.2071
812	SLE RA 17	0.67	0.58	37.58	-0.0519	4.8672	-0.2038
812	SLE RA 18	0.66	0.63	38.03	-0.0524	4.9212	-0.2208
812	SLE RA 19	0.66	0.62	38.04	-0.0525	4.9218	-0.2175
812	SLE RA 20	0.67	0.63	38.35	-0.0529	4.9553	-0.2208
812	SLE RA 21	0.67	0.62	38.35	-0.053	4.9559	-0.2175
812	SLE FR 1	0.62	0.5	34.39	-0.047	4.5117	-0.1752
812	SLE FR 2	0.62	0.49	34.39	-0.047	4.5119	-0.1741
812	SLE FR 3	0.63	0.5	34.52	-0.0472	4.5253	-0.1752
812	SLE FR 4	0.63	0.53	35.49	-0.0486	4.6347	-0.1878
812	SLE FR 5	0.64	0.54	35.61	-0.0488	4.6482	-0.1889
812	SLE FR 6	0.64	0.56	36.21	-0.0497	4.7164	-0.198
812	SLE QP 1	0.62	0.5	34.39	-0.047	4.5117	-0.1752
812	SLE QP 2	0.63	0.54	35.48	-0.0486	4.6345	-0.1889
812	SLD 1	2.3	0.62	26.57	-0.0341	3.7185	-0.2182
812	SLD 2	2.08	1.27	26.3	-0.0358	3.7005	-0.4426
812	SLD 3	2.64	-0.86	27.2	-0.0309	3.7708	0.2993
812	SLD 4	2.42	-0.22	26.93	-0.0326	3.7528	0.0749
812	SLD 5	0.66	2.69	31.9	-0.0489	4.2836	-0.9424
812	SLD 6	0.52	3.12	31.72	-0.05	4.2718	-1.0899
812	SLD 7	1.78	-2.25	34.01	-0.0381	4.458	0.7825
812	SLD 8	1.64	-1.82	33.83	-0.0392	4.4462	0.635
812	SLD 9	-0.37	2.89	37.14	-0.058	4.8229	-1.0128
812	SLD 10	-0.52	3.32	36.96	-0.0592	4.8111	-1.1603
812	SLD 11	0.75	-2.05	39.25	-0.0473	4.9973	0.7121
812	SLD 12	0.61	-1.62	39.07	-0.0484	4.9855	0.5646
812	SLD 13	-1.15	1.29	44.04	-0.0647	5.5162	-0.4527
812	SLD 14	-1.37	1.93	43.77	-0.0664	5.4983	-0.6771
812	SLD 15	-0.81	-0.2	44.67	-0.0614	5.5686	0.0648
812	SLD 16	-1.03	0.45	44.4	-0.0632	5.5506	-0.1596
812	SLV 1	4.54	0.69	14.62	-0.0145	2.4906	-0.2398
812	SLV 2	4.03	2.19	14	-0.0185	2.4487	-0.7625
812	SLV 3	5.3	-2.67	16.08	-0.0072	2.6125	0.9321
812	SLV 4	4.79	-1.17	15.46	-0.0111	2.5706	0.4095
812	SLV 5	0.73	5.41	27.12	-0.0488	3.8137	-1.8912
812	SLV 6	0.4	6.38	26.72	-0.0514	3.7867	-2.2288
812	SLV 7	3.28	-5.78	31.98	-0.0244	4.22	2.0152
812	SLV 8	2.95	-4.81	31.58	-0.0269	4.193	1.6776
812	SLV 9	-1.69	5.88	39.39	-0.0703	5.0761	-2.0554
812	SLV 10	-2.02	6.85	38.99	-0.0729	5.0491	-2.393
812	SLV 11	0.86	-5.31	44.25	-0.0459	5.4824	1.851
812	SLV 12	0.54	-4.34	43.85	-0.0484	5.4554	1.5134
812	SLV 13	-3.53	2.24	55.51	-0.0861	6.6984	-0.7873
812	SLV 14	-4.04	3.74	54.89	-0.0901	6.6566	-1.3099
812	SLV 15	-2.76	-1.12	56.97	-0.0788	6.8203	0.3847
812	SLV 16	-3.27	0.38	56.35	-0.0827	6.7785	-0.138
812	CRTFP Ux+	0	0	0	0	0	0
812	CRTFP Ux-	0	0	0	0	0	0
812	CRTFP Uy+	0	0	0	0	0	0
812	CRTFP Uy-	0	0	0	0	0	0
814	SLU 1	1.41	0.21	64.91	0.0223	0.3983	-0.0158
814	SLU 2	1.39	0.18	64.9	0.0223	0.4085	-0.0149
814	SLU 3	1.45	0.23	66.43	0.0229	0.411	-0.0162
814	SLU 4	1.44	0.2	66.42	0.0229	0.4172	-0.0156
814	SLU 5	1.42	0.18	65.83	0.0226	0.4159	-0.0152



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
814	SLU 6	1.47	0.22	67.36	0.0232	0.4184	-0.0165
814	SLU 7	1.46	0.2	67.35	0.0231	0.4245	-0.0159
814	SLU 8	1.46	0.21	66.77	0.0229	0.4131	-0.0164
814	SLU 9	1.45	0.19	66.76	0.0228	0.4192	-0.0159
814	SLU 10	1.49	0.28	73.14	0.0251	0.4714	-0.0169
814	SLU 11	1.54	0.33	74.67	0.0257	0.474	-0.0181
814	SLU 12	1.53	0.31	74.66	0.0256	0.4801	-0.0176
814	SLU 13	1.51	0.28	74.07	0.0253	0.4788	-0.0172
814	SLU 14	1.57	0.32	75.6	0.0259	0.4813	-0.0184
814	SLU 15	1.56	0.3	75.59	0.0259	0.4874	-0.0179
814	SLU 16	1.56	0.31	75.01	0.0256	0.476	-0.0184
814	SLU 17	1.55	0.29	75	0.0256	0.4821	-0.0178
814	SLU 18	1.55	0.36	76.68	0.0263	0.4882	-0.0186
814	SLU 19	1.54	0.34	76.68	0.0263	0.4943	-0.0181
814	SLU 20	1.57	0.36	77.61	0.0265	0.4956	-0.0189
814	SLU 21	1.56	0.34	77.61	0.0265	0.5017	-0.0184
814	SLU 22	1.53	0.35	73.1	0.0258	0.4617	-0.0171
814	SLU 23	1.51	0.31	73.09	0.0258	0.4719	-0.0163
814	SLU 24	1.56	0.36	74.62	0.0264	0.4744	-0.0175
814	SLU 25	1.55	0.34	74.61	0.0264	0.4806	-0.017
814	SLU 26	1.53	0.31	74.02	0.026	0.4793	-0.0166
814	SLU 27	1.59	0.36	75.55	0.0266	0.4818	-0.0178
814	SLU 28	1.58	0.33	75.54	0.0266	0.4879	-0.0173
814	SLU 29	1.58	0.34	74.96	0.0263	0.4765	-0.0177
814	SLU 30	1.57	0.32	74.95	0.0263	0.4826	-0.0172
814	SLU 31	1.6	0.41	81.33	0.0285	0.5348	-0.0182
814	SLU 32	1.66	0.46	82.86	0.0291	0.5373	-0.0194
814	SLU 33	1.65	0.44	82.85	0.0291	0.5435	-0.0189
814	SLU 34	1.63	0.41	82.26	0.0288	0.5422	-0.0185
814	SLU 35	1.68	0.46	83.79	0.0294	0.5447	-0.0197
814	SLU 36	1.67	0.43	83.78	0.0294	0.5508	-0.0192
814	SLU 37	1.67	0.44	83.2	0.0291	0.5394	-0.0197
814	SLU 38	1.66	0.42	83.19	0.0291	0.5455	-0.0192
814	SLU 39	1.66	0.49	84.87	0.0298	0.5516	-0.0199
814	SLU 40	1.65	0.47	84.87	0.0297	0.5577	-0.0194
814	SLU 41	1.69	0.49	85.8	0.03	0.5589	-0.0202
814	SLU 42	1.68	0.47	85.8	0.03	0.5651	-0.0197
814	SLU 43	1.8	0.23	81.57	0.0278	0.4961	-0.0201
814	SLU 44	1.78	0.2	81.56	0.0278	0.5063	-0.0192
814	SLU 45	1.83	0.25	83.09	0.0284	0.5088	-0.0205
814	SLU 46	1.82	0.22	83.09	0.0284	0.5149	-0.0199
814	SLU 47	1.8	0.2	82.49	0.0281	0.5137	-0.0195
814	SLU 48	1.86	0.24	84.02	0.0287	0.5162	-0.0208
814	SLU 49	1.85	0.22	84.02	0.0287	0.5223	-0.0202
814	SLU 50	1.85	0.23	83.43	0.0284	0.5108	-0.0207
814	SLU 51	1.83	0.21	83.43	0.0283	0.517	-0.0202
814	SLU 52	1.87	0.3	89.8	0.0306	0.5692	-0.0212
814	SLU 53	1.93	0.35	91.33	0.0312	0.5717	-0.0224
814	SLU 54	1.92	0.32	91.33	0.0312	0.5778	-0.0219
814	SLU 55	1.9	0.3	90.74	0.0308	0.5766	-0.0215
814	SLU 56	1.95	0.34	92.26	0.0314	0.5791	-0.0227
814	SLU 57	1.94	0.32	92.26	0.0314	0.5852	-0.0222
814	SLU 58	1.94	0.33	91.67	0.0311	0.5737	-0.0227
814	SLU 59	1.93	0.31	91.67	0.0311	0.5799	-0.0221
814	SLU 60	1.93	0.38	93.34	0.0318	0.586	-0.0229
814	SLU 61	1.92	0.36	93.34	0.0318	0.5921	-0.0224
814	SLU 62	1.96	0.38	94.28	0.032	0.5933	-0.0232
814	SLU 63	1.95	0.35	94.27	0.032	0.5994	-0.0227
814	SLU 64	1.91	0.37	89.76	0.0313	0.5595	-0.0214
814	SLU 65	1.89	0.33	89.75	0.0313	0.5697	-0.0206
814	SLU 66	1.95	0.38	91.28	0.0319	0.5722	-0.0218
814	SLU 67	1.94	0.35	91.28	0.0319	0.5783	-0.0213
814	SLU 68	1.92	0.33	90.68	0.0315	0.5771	-0.0209
814	SLU 69	1.97	0.37	92.21	0.0321	0.5796	-0.0221
814	SLU 70	1.96	0.35	92.21	0.0321	0.5857	-0.0216
814	SLU 71	1.96	0.36	91.62	0.0318	0.5742	-0.022
814	SLU 72	1.95	0.34	91.62	0.0318	0.5803	-0.0215
814	SLU 73	1.99	0.43	97.99	0.034	0.6326	-0.0225
814	SLU 74	2.04	0.48	99.52	0.0346	0.6351	-0.0237
814	SLU 75	2.03	0.46	99.52	0.0346	0.6412	-0.0232
814	SLU 76	2.01	0.43	98.92	0.0343	0.64	-0.0228
814	SLU 77	2.07	0.48	100.45	0.0349	0.6425	-0.024
814	SLU 78	2.06	0.45	100.45	0.0349	0.6486	-0.0235
814	SLU 79	2.06	0.46	99.86	0.0346	0.6371	-0.024
814	SLU 80	2.04	0.44	99.86	0.0346	0.6432	-0.0234
814	SLU 81	2.05	0.51	101.53	0.0353	0.6493	-0.0242
814	SLU 82	2.04	0.49	101.53	0.0352	0.6555	-0.0237
814	SLU 83	2.07	0.51	102.46	0.0355	0.6567	-0.0245
814	SLU 84	2.06	0.49	102.46	0.0355	0.6628	-0.024
814	SLE RA 1	1.44	0.25	67.25	0.0233	0.4164	-0.0162
814	SLE RA 2	1.43	0.23	67.24	0.0233	0.4232	-0.0156
814	SLE RA 3	1.47	0.26	68.26	0.0237	0.4249	-0.0164
814	SLE RA 4	1.46	0.25	68.26	0.0237	0.429	-0.0161
814	SLE RA 5	1.45	0.23	67.86	0.0235	0.4282	-0.0158
814	SLE RA 6	1.49	0.26	68.88	0.0239	0.4298	-0.0166
814	SLE RA 7	1.48	0.24	68.88	0.0239	0.4339	-0.0163
814	SLE RA 8	1.48	0.25	68.49	0.0237	0.4263	-0.0166
814	SLE RA 9	1.47	0.23	68.48	0.0237	0.4303	-0.0162
814	SLE RA 10	1.5	0.3	72.74	0.0251	0.4652	-0.0169
814	SLE RA 11	1.53	0.33	73.75	0.0255	0.4669	-0.0177



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
814	SLE RA 12	1.53	0.31	73.75	0.0255	0.4709	-0.0174
814	SLE RA 13	1.51	0.29	73.36	0.0253	0.4701	-0.0171
814	SLE RA 14	1.55	0.33	74.37	0.0257	0.4718	-0.0179
814	SLE RA 15	1.54	0.31	74.37	0.0257	0.4759	-0.0176
814	SLE RA 16	1.54	0.32	73.98	0.0255	0.4682	-0.0179
814	SLE RA 17	1.53	0.3	73.98	0.0255	0.4723	-0.0175
814	SLE RA 18	1.53	0.35	75.1	0.026	0.4763	-0.018
814	SLE RA 19	1.53	0.33	75.09	0.0259	0.4804	-0.0177
814	SLE RA 20	1.55	0.35	75.72	0.0261	0.4813	-0.0182
814	SLE RA 21	1.54	0.33	75.71	0.0261	0.4853	-0.0179
814	SLE FR 1	1.44	0.25	67.25	0.0233	0.4164	-0.0162
814	SLE FR 2	1.44	0.25	67.25	0.0233	0.4178	-0.0161
814	SLE FR 3	1.45	0.25	67.49	0.0234	0.4184	-0.0163
814	SLE FR 4	1.47	0.28	69.6	0.0241	0.4358	-0.0166
814	SLE FR 5	1.48	0.28	69.85	0.0242	0.4364	-0.0168
814	SLE FR 6	1.49	0.3	71.17	0.0246	0.4464	-0.0171
814	SLE QP 1	1.44	0.25	67.25	0.0233	0.4164	-0.0162
814	SLE QP 2	1.47	0.28	69.6	0.0241	0.4344	-0.0167
814	SLD 1	6.75	1.29	64.65	0.0175	0.3753	-0.0503
814	SLD 2	6.37	1.77	64.16	0.0141	0.3827	-0.0385
814	SLD 3	7.05	-0.49	65.2	0.0278	0.4196	-0.0523
814	SLD 4	6.68	0	64.7	0.0244	0.4269	-0.0405
814	SLD 5	2.66	3.19	67.38	0.0072	0.3483	-0.0259
814	SLD 6	2.41	3.51	67.05	0.0049	0.3531	-0.0181
814	SLD 7	3.68	-2.73	69.2	0.0414	0.4957	-0.0326
814	SLD 8	3.43	-2.41	68.87	0.0391	0.5006	-0.0248
814	SLD 9	-0.49	2.97	70.33	0.0091	0.3683	-0.0087
814	SLD 10	-0.73	3.29	70.01	0.0068	0.3731	-0.0009
814	SLD 11	0.53	-2.95	72.15	0.0433	0.5157	-0.0154
814	SLD 12	0.29	-2.63	71.83	0.041	0.5205	-0.0076
814	SLD 13	-3.74	0.56	74.5	0.0238	0.4419	0.007
814	SLD 14	-4.11	1.05	74.01	0.0204	0.4493	0.0188
814	SLD 15	-3.43	-1.21	75.04	0.0341	0.4861	0.005
814	SLD 16	-3.8	-0.73	74.55	0.0307	0.4935	0.0168
814	SLV 1	13.82	2.57	58.02	0.0091	0.2957	-0.0953
814	SLV 2	12.94	3.7	56.87	0.0011	0.3129	-0.0678
814	SLV 3	14.53	-1.44	59.26	0.0324	0.3957	-0.1
814	SLV 4	13.66	-0.32	58.11	0.0244	0.4128	-0.0725
814	SLV 5	4.24	6.87	64.44	-0.0142	0.2383	-0.0379
814	SLV 6	3.68	7.6	63.69	-0.0194	0.2493	-0.0202
814	SLV 7	6.62	-6.53	68.59	0.0632	0.5714	-0.0536
814	SLV 8	6.06	-5.8	67.84	0.058	0.5825	-0.0358
814	SLV 9	-3.12	6.36	71.36	-0.0098	0.2864	0.0023
814	SLV 10	-3.68	7.09	70.62	-0.015	0.2974	0.0201
814	SLV 11	-0.74	-7.03	75.51	0.0676	0.6195	-0.0133
814	SLV 12	-1.3	-6.31	74.77	0.0625	0.6305	0.0044
814	SLV 13	-10.72	0.88	81.09	0.0239	0.456	0.039
814	SLV 14	-11.59	2.01	79.94	0.0159	0.4731	0.0665
814	SLV 15	-10	-3.14	82.34	0.0471	0.5559	0.0343
814	SLV 16	-10.87	-2.01	81.19	0.0391	0.5731	0.0618
814	CRITFP Ux+	0	0	0	0	0	0
814	CRITFP Ux-	0	0	0	0	0	0
817	SLU 1	-0.99	-0.61	64.33	-0.0086	-0.5423	0.0121
817	SLU 2	-1.02	-0.7	64.43	-0.0084	-0.5484	0.0128
817	SLU 3	-1.02	-0.61	65.9	-0.0089	-0.5577	0.0123
817	SLU 4	-1.04	-0.67	65.95	-0.0088	-0.5613	0.0128
817	SLU 5	-1.04	-0.71	65.39	-0.0086	-0.5565	0.0129
817	SLU 6	-1.03	-0.62	66.85	-0.0091	-0.5658	0.0125
817	SLU 7	-1.05	-0.67	66.91	-0.009	-0.5694	0.0129
817	SLU 8	-1.02	-0.62	66.25	-0.0091	-0.5586	0.0123
817	SLU 9	-1.04	-0.68	66.31	-0.009	-0.5622	0.0127
817	SLU 10	-1.08	-0.7	72.75	-0.0105	-0.6306	0.0147
817	SLU 11	-1.07	-0.61	74.22	-0.011	-0.6399	0.0143
817	SLU 12	-1.09	-0.66	74.27	-0.0109	-0.6435	0.0147
817	SLU 13	-1.09	-0.71	73.71	-0.0108	-0.6387	0.0148
817	SLU 14	-1.09	-0.62	75.17	-0.0113	-0.648	0.0144
817	SLU 15	-1.11	-0.67	75.23	-0.0111	-0.6516	0.0148
817	SLU 16	-1.08	-0.62	74.57	-0.0112	-0.6408	0.0142
817	SLU 17	-1.1	-0.68	74.63	-0.0111	-0.6444	0.0147
817	SLU 18	-1.07	-0.61	76.22	-0.0117	-0.6598	0.0148
817	SLU 19	-1.09	-0.66	76.28	-0.0115	-0.6634	0.0153
817	SLU 20	-1.09	-0.62	77.18	-0.0119	-0.6679	0.015
817	SLU 21	-1.11	-0.67	77.23	-0.0118	-0.6715	0.0154
817	SLU 22	-1.07	-0.58	72.55	-0.0095	-0.6239	0.0131
817	SLU 23	-1.1	-0.67	72.65	-0.0093	-0.6299	0.0138
817	SLU 24	-1.1	-0.58	74.11	-0.0098	-0.6392	0.0133
817	SLU 25	-1.12	-0.63	74.17	-0.0097	-0.6428	0.0137
817	SLU 26	-1.12	-0.68	73.6	-0.0095	-0.638	0.0139
817	SLU 27	-1.12	-0.58	75.07	-0.0101	-0.6473	0.0134
817	SLU 28	-1.13	-0.64	75.13	-0.0099	-0.6509	0.0138
817	SLU 29	-1.1	-0.59	74.47	-0.01	-0.6401	0.0133
817	SLU 30	-1.12	-0.65	74.53	-0.0099	-0.6437	0.0137
817	SLU 31	-1.16	-0.67	80.97	-0.0114	-0.7121	0.0157
817	SLU 32	-1.16	-0.58	82.44	-0.012	-0.7214	0.0152
817	SLU 33	-1.18	-0.63	82.49	-0.0118	-0.725	0.0156
817	SLU 34	-1.18	-0.68	81.93	-0.0117	-0.7202	0.0158
817	SLU 35	-1.17	-0.58	83.39	-0.0122	-0.7295	0.0153
817	SLU 36	-1.19	-0.64	83.45	-0.012	-0.7331	0.0158
817	SLU 37	-1.16	-0.59	82.79	-0.0121	-0.7223	0.0152
817	SLU 38	-1.18	-0.65	82.85	-0.012	-0.7259	0.0156





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
817	SLU 39	-1.15	-0.58	84.44	-0.0126	-0.7413	0.0158
817	SLU 40	-1.17	-0.63	84.5	-0.0125	-0.7449	0.0162
817	SLU 41	-1.17	-0.58	85.4	-0.0128	-0.7494	0.0159
817	SLU 42	-1.19	-0.64	85.45	-0.0127	-0.7531	0.0163
817	SLU 43	-1.26	-0.8	80.82	-0.0109	-0.6771	0.0154
817	SLU 44	-1.29	-0.9	80.91	-0.0107	-0.6831	0.0161
817	SLU 45	-1.29	-0.8	82.38	-0.0112	-0.6924	0.0156
817	SLU 46	-1.31	-0.86	82.43	-0.011	-0.696	0.0161
817	SLU 47	-1.31	-0.9	81.87	-0.0109	-0.6912	0.0162
817	SLU 48	-1.3	-0.81	83.34	-0.0114	-0.7005	0.0158
817	SLU 49	-1.32	-0.87	83.39	-0.0113	-0.7041	0.0162
817	SLU 50	-1.29	-0.82	82.73	-0.0114	-0.6933	0.0156
817	SLU 51	-1.31	-0.87	82.79	-0.0112	-0.6969	0.0161
817	SLU 52	-1.35	-0.9	89.23	-0.0128	-0.7653	0.018
817	SLU 53	-1.34	-0.8	90.7	-0.0133	-0.7747	0.0176
817	SLU 54	-1.36	-0.86	90.75	-0.0132	-0.7783	0.018
817	SLU 55	-1.36	-0.9	90.19	-0.013	-0.7735	0.0181
817	SLU 56	-1.36	-0.81	91.66	-0.0136	-0.7828	0.0177
817	SLU 57	-1.38	-0.87	91.71	-0.0134	-0.7864	0.0181
817	SLU 58	-1.35	-0.82	91.05	-0.0135	-0.7756	0.0175
817	SLU 59	-1.37	-0.87	91.11	-0.0134	-0.7792	0.018
817	SLU 60	-1.34	-0.8	92.7	-0.014	-0.7946	0.0182
817	SLU 61	-1.36	-0.86	92.76	-0.0138	-0.7982	0.0186
817	SLU 62	-1.36	-0.81	93.66	-0.0142	-0.8027	0.0183
817	SLU 63	-1.38	-0.86	93.72	-0.014	-0.8063	0.0187
817	SLU 64	-1.34	-0.77	89.03	-0.0118	-0.7586	0.0164
817	SLU 65	-1.37	-0.86	89.13	-0.0116	-0.7646	0.0171
817	SLU 66	-1.37	-0.77	90.6	-0.0121	-0.7739	0.0166
817	SLU 67	-1.39	-0.83	90.65	-0.012	-0.7775	0.017
817	SLU 68	-1.39	-0.87	90.09	-0.0118	-0.7727	0.0172
817	SLU 69	-1.38	-0.78	91.55	-0.0123	-0.782	0.0167
817	SLU 70	-1.4	-0.83	91.61	-0.0122	-0.7856	0.0171
817	SLU 71	-1.37	-0.78	90.95	-0.0123	-0.7748	0.0166
817	SLU 72	-1.39	-0.84	91.01	-0.0122	-0.7784	0.017
817	SLU 73	-1.43	-0.86	97.45	-0.0137	-0.8469	0.019
817	SLU 74	-1.43	-0.77	98.92	-0.0142	-0.8562	0.0185
817	SLU 75	-1.44	-0.83	98.97	-0.0141	-0.8598	0.0189
817	SLU 76	-1.45	-0.87	98.41	-0.014	-0.855	0.0191
817	SLU 77	-1.44	-0.78	99.87	-0.0145	-0.8643	0.0186
817	SLU 78	-1.46	-0.83	99.93	-0.0143	-0.8679	0.0191
817	SLU 79	-1.43	-0.78	99.27	-0.0144	-0.8571	0.0185
817	SLU 80	-1.45	-0.84	99.33	-0.0143	-0.8607	0.0189
817	SLU 81	-1.42	-0.77	100.92	-0.0149	-0.8761	0.0191
817	SLU 82	-1.44	-0.83	100.98	-0.0147	-0.8797	0.0195
817	SLU 83	-1.44	-0.78	101.88	-0.0151	-0.8842	0.0192
817	SLU 84	-1.46	-0.83	101.94	-0.015	-0.8878	0.0196
817	SLE RA 1	-1.02	-0.6	66.68	-0.0089	-0.5656	0.0124
817	SLE RA 2	-1.04	-0.66	66.74	-0.0087	-0.5696	0.0129
817	SLE RA 3	-1.03	-0.6	67.72	-0.0091	-0.5758	0.0125
817	SLE RA 4	-1.05	-0.64	67.76	-0.009	-0.5783	0.0128
817	SLE RA 5	-1.05	-0.67	67.38	-0.0089	-0.575	0.0129
817	SLE RA 6	-1.04	-0.6	68.36	-0.0092	-0.5813	0.0126
817	SLE RA 7	-1.06	-0.64	68.4	-0.0091	-0.5837	0.0129
817	SLE RA 8	-1.04	-0.61	67.96	-0.0092	-0.5764	0.0125
817	SLE RA 9	-1.05	-0.65	68	-0.0091	-0.5788	0.0128
817	SLE RA 10	-1.07	-0.66	72.29	-0.0102	-0.6245	0.0141
817	SLE RA 11	-1.07	-0.6	73.27	-0.0105	-0.6307	0.0138
817	SLE RA 12	-1.08	-0.64	73.31	-0.0104	-0.6331	0.0141
817	SLE RA 13	-1.08	-0.67	72.93	-0.0103	-0.6299	0.0142
817	SLE RA 14	-1.08	-0.6	73.91	-0.0107	-0.6361	0.0139
817	SLE RA 15	-1.09	-0.64	73.95	-0.0106	-0.6385	0.0142
817	SLE RA 16	-1.07	-0.61	73.51	-0.0106	-0.6313	0.0138
817	SLE RA 17	-1.09	-0.65	73.54	-0.0105	-0.6337	0.0141
817	SLE RA 18	-1.07	-0.6	74.61	-0.0109	-0.644	0.0142
817	SLE RA 19	-1.08	-0.64	74.64	-0.0108	-0.6464	0.0145
817	SLE RA 20	-1.08	-0.6	75.24	-0.0111	-0.6494	0.0143
817	SLE RA 21	-1.09	-0.64	75.28	-0.011	-0.6518	0.0146
817	SLE FR 1	-1.02	-0.6	66.68	-0.0089	-0.5656	0.0124
817	SLE FR 2	-1.02	-0.61	66.69	-0.0089	-0.5664	0.0125
817	SLE FR 3	-1.02	-0.6	66.94	-0.009	-0.5678	0.0124
817	SLE FR 4	-1.04	-0.61	69.07	-0.0095	-0.5899	0.013
817	SLE FR 5	-1.04	-0.6	69.31	-0.0096	-0.5913	0.013
817	SLE FR 6	-1.04	-0.6	70.64	-0.0099	-0.6048	0.0133
817	SLE QP 1	-1.02	-0.6	66.68	-0.0089	-0.5656	0.0124
817	SLE QP 2	-1.03	-0.6	69.06	-0.0095	-0.5891	0.0129
817	SLD 1	4.84	-0.19	72.71	-0.0139	-0.6686	-0.0215
817	SLD 2	4.45	-0.66	73.47	-0.0109	-0.6585	-0.0088
817	SLD 3	4.51	-2.02	73.69	-0.0035	-0.7338	-0.0187
817	SLD 4	4.13	-2.48	74.45	-0.0004	-0.7236	-0.006
817	SLD 5	1.29	2.38	68.53	-0.0272	-0.516	-0.004
817	SLD 6	1.04	2.07	69.03	-0.0252	-0.5093	0.0044
817	SLD 7	0.2	-3.71	71.8	0.0076	-0.7331	0.0055
817	SLD 8	-0.05	-4.02	72.3	0.0096	-0.7265	0.0138
817	SLD 9	-2.02	2.82	65.82	-0.0286	-0.4518	0.0121
817	SLD 10	-2.27	2.51	66.32	-0.0266	-0.4451	0.0204
817	SLD 11	-3.1	-3.27	69.08	0.0062	-0.6689	0.0215
817	SLD 12	-3.36	-3.58	69.58	0.0082	-0.6623	0.0298
817	SLD 13	-6.19	1.28	63.66	-0.0186	-0.4546	0.0319
817	SLD 14	-6.57	0.82	64.43	-0.0155	-0.4445	0.0446
817	SLD 15	-6.52	-0.55	64.64	-0.0082	-0.5198	0.0347



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
817	SLD 16	-6.9	-1.01	65.41	-0.0051	-0.5097	0.0474
817	SLV 1	12.69	0.29	77.66	-0.0193	-0.778	-0.0676
817	SLV 2	11.8	-0.79	79.44	-0.0121	-0.7544	-0.038
817	SLV 3	11.93	-3.85	79.88	0.0043	-0.9255	-0.0611
817	SLV 4	11.04	-4.93	81.66	0.0115	-0.902	-0.0315
817	SLV 5	4.39	6.13	67.97	-0.0495	-0.426	-0.0262
817	SLV 6	3.82	5.43	69.11	-0.0449	-0.4108	-0.0071
817	SLV 7	1.86	-7.66	75.37	0.0292	-0.9179	-0.0046
817	SLV 8	1.28	-8.36	76.51	0.0339	-0.9027	0.0146
817	SLV 9	-3.35	7.16	61.61	-0.0529	-0.2755	0.0113
817	SLV 10	-3.92	6.46	62.75	-0.0482	-0.2603	0.0304
817	SLV 11	-5.88	-6.63	69.01	0.0259	-0.7674	0.0329
817	SLV 12	-6.46	-7.33	70.15	0.0305	-0.7522	0.052
817	SLV 13	-13.11	3.73	56.46	-0.0305	-0.2763	0.0574
817	SLV 14	-14	2.65	58.23	-0.0233	-0.2527	0.087
817	SLV 15	-13.87	-0.41	58.68	-0.0069	-0.4239	0.0639
817	SLV 16	-14.76	-1.49	60.45	0.0003	-0.4003	0.0935
817	CRTFP Ux+	0	0	0	0	0	0
817	CRTFP Ux-	0	0	0	0	0	0
817	CRTFP Uy+	0	0	0	0	0	0
817	CRTFP Uy-	0	0	0	0	0	0
820	SLU 1	0.3	1.49	58.38	0.0307	0.008	-0.0067
820	SLU 2	0.28	1.44	58.33	0.0312	0.01	-0.0059
820	SLU 3	0.32	1.55	59.72	0.0318	0.0097	-0.0068
820	SLU 4	0.3	1.52	59.69	0.0321	0.0109	-0.0063
820	SLU 5	0.29	1.47	59.18	0.0317	0.0117	-0.006
820	SLU 6	0.33	1.57	60.57	0.0323	0.0115	-0.0069
820	SLU 7	0.31	1.54	60.54	0.0326	0.0127	-0.0064
820	SLU 8	0.33	1.54	60.07	0.0318	0.0115	-0.0069
820	SLU 9	0.31	1.51	60.05	0.032	0.0127	-0.0064
820	SLU 10	0.31	1.61	66.38	0.0332	0.0161	-0.0064
820	SLU 11	0.36	1.71	67.77	0.0337	0.0158	-0.0072
820	SLU 12	0.34	1.69	67.74	0.034	0.017	-0.0068
820	SLU 13	0.33	1.64	67.23	0.0337	0.0178	-0.0065
820	SLU 14	0.37	1.74	68.62	0.0343	0.0175	-0.0074
820	SLU 15	0.35	1.71	68.59	0.0346	0.0188	-0.0069
820	SLU 16	0.36	1.71	68.12	0.0337	0.0175	-0.0074
820	SLU 17	0.35	1.68	68.1	0.034	0.0188	-0.0069
820	SLU 18	0.36	1.73	69.88	0.0335	0.0166	-0.0074
820	SLU 19	0.34	1.7	69.85	0.0338	0.0179	-0.0069
820	SLU 20	0.37	1.75	70.73	0.0341	0.0184	-0.0075
820	SLU 21	0.35	1.73	70.7	0.0343	0.0196	-0.007
820	SLU 22	0.35	1.74	66.27	0.0346	0.0058	-0.0068
820	SLU 23	0.32	1.7	66.23	0.0351	0.0079	-0.006
820	SLU 24	0.36	1.8	67.61	0.0357	0.0076	-0.0069
820	SLU 25	0.34	1.78	67.59	0.036	0.0088	-0.0064
820	SLU 26	0.33	1.72	67.07	0.0356	0.0096	-0.0061
820	SLU 27	0.37	1.83	68.46	0.0362	0.0093	-0.007
820	SLU 28	0.35	1.8	68.43	0.0365	0.0105	-0.0065
820	SLU 29	0.37	1.79	67.97	0.0357	0.0093	-0.007
820	SLU 30	0.35	1.77	67.94	0.036	0.0105	-0.0066
820	SLU 31	0.36	1.87	74.28	0.0371	0.0139	-0.0065
820	SLU 32	0.4	1.97	75.67	0.0377	0.0137	-0.0074
820	SLU 33	0.38	1.94	75.64	0.038	0.0149	-0.0069
820	SLU 34	0.37	1.89	75.13	0.0376	0.0157	-0.0066
820	SLU 35	0.41	2	76.51	0.0382	0.0154	-0.0075
820	SLU 36	0.39	1.97	76.49	0.0385	0.0166	-0.007
820	SLU 37	0.4	1.96	76.02	0.0376	0.0154	-0.0075
820	SLU 38	0.39	1.93	75.99	0.0379	0.0166	-0.0071
820	SLU 39	0.4	1.98	77.77	0.0375	0.0145	-0.0075
820	SLU 40	0.38	1.96	77.75	0.0378	0.0157	-0.007
820	SLU 41	0.41	2.01	78.62	0.038	0.0163	-0.0076
820	SLU 42	0.39	1.98	78.6	0.0383	0.0175	-0.0071
820	SLU 43	0.38	1.85	73.18	0.0386	0.0111	-0.0086
820	SLU 44	0.35	1.8	73.14	0.0391	0.0131	-0.0078
820	SLU 45	0.39	1.91	74.53	0.0396	0.0128	-0.0087
820	SLU 46	0.38	1.88	74.5	0.0399	0.014	-0.0082
820	SLU 47	0.36	1.83	73.99	0.0396	0.0149	-0.008
820	SLU 48	0.41	1.93	75.37	0.0402	0.0146	-0.0088
820	SLU 49	0.39	1.9	75.35	0.0404	0.0158	-0.0084
820	SLU 50	0.4	1.9	74.88	0.0396	0.0146	-0.0088
820	SLU 51	0.39	1.87	74.85	0.0399	0.0158	-0.0084
820	SLU 52	0.39	1.97	81.19	0.0411	0.0192	-0.0083
820	SLU 53	0.43	2.07	82.58	0.0416	0.0189	-0.0092
820	SLU 54	0.42	2.05	82.55	0.0419	0.0201	-0.0087
820	SLU 55	0.4	1.99	82.04	0.0416	0.0209	-0.0084
820	SLU 56	0.44	2.1	83.43	0.0421	0.0207	-0.0093
820	SLU 57	0.43	2.07	83.4	0.0424	0.0219	-0.0088
820	SLU 58	0.44	2.06	82.93	0.0416	0.0207	-0.0093
820	SLU 59	0.42	2.04	82.9	0.0419	0.0219	-0.0089
820	SLU 60	0.44	2.09	84.69	0.0414	0.0198	-0.0093
820	SLU 61	0.42	2.06	84.66	0.0417	0.021	-0.0088
820	SLU 62	0.45	2.11	85.53	0.0419	0.0215	-0.0094
820	SLU 63	0.43	2.08	85.51	0.0422	0.0227	-0.009
820	SLU 64	0.42	2.1	81.08	0.0425	0.0089	-0.0087
820	SLU 65	0.39	2.06	81.03	0.043	0.011	-0.008
820	SLU 66	0.44	2.16	82.42	0.0436	0.0107	-0.0088
820	SLU 67	0.42	2.13	82.39	0.0438	0.0119	-0.0084
820	SLU 68	0.4	2.08	81.88	0.0435	0.0127	-0.0081
820	SLU 69	0.45	2.19	83.27	0.0441	0.0125	-0.009



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
820	SLU 70	0.43	2.16	83.24	0.0444	0.0137	-0.0085
820	SLU 71	0.44	2.15	82.77	0.0435	0.0125	-0.009
820	SLU 72	0.43	2.13	82.75	0.0438	0.0137	-0.0085
820	SLU 73	0.43	2.23	89.08	0.045	0.0171	-0.0085
820	SLU 74	0.47	2.33	90.47	0.0455	0.0168	-0.0093
820	SLU 75	0.46	2.3	90.44	0.0458	0.018	-0.0089
820	SLU 76	0.44	2.25	89.93	0.0455	0.0188	-0.0086
820	SLU 77	0.48	2.35	91.32	0.046	0.0185	-0.0094
820	SLU 78	0.47	2.33	91.29	0.0463	0.0197	-0.009
820	SLU 79	0.48	2.32	90.83	0.0455	0.0185	-0.0095
820	SLU 80	0.46	2.29	90.8	0.0458	0.0197	-0.009
820	SLU 81	0.48	2.34	92.58	0.0453	0.0176	-0.0094
820	SLU 82	0.46	2.32	92.55	0.0456	0.0188	-0.009
820	SLU 83	0.49	2.37	93.43	0.0458	0.0194	-0.0096
820	SLU 84	0.47	2.34	93.4	0.0461	0.0206	-0.0091
820	SLE RA 1	0.32	1.56	60.63	0.0318	0.0074	-0.0067
820	SLE RA 2	0.3	1.53	60.6	0.0322	0.0087	-0.0062
820	SLE RA 3	0.32	1.6	61.53	0.0325	0.0085	-0.0068
820	SLE RA 4	0.31	1.58	61.51	0.0327	0.0093	-0.0065
820	SLE RA 5	0.3	1.55	61.17	0.0325	0.0099	-0.0063
820	SLE RA 6	0.33	1.62	62.09	0.0329	0.0097	-0.0068
820	SLE RA 7	0.32	1.6	62.07	0.0331	0.0105	-0.0065
820	SLE RA 8	0.33	1.59	61.76	0.0325	0.0097	-0.0069
820	SLE RA 9	0.32	1.58	61.74	0.0327	0.0105	-0.0065
820	SLE RA 10	0.32	1.64	65.97	0.0335	0.0128	-0.0065
820	SLE RA 11	0.35	1.71	66.9	0.0339	0.0126	-0.0071
820	SLE RA 12	0.34	1.69	66.88	0.034	0.0134	-0.0068
820	SLE RA 13	0.33	1.66	66.54	0.0338	0.0139	-0.0066
820	SLE RA 14	0.36	1.73	67.46	0.0342	0.0137	-0.0072
820	SLE RA 15	0.35	1.71	67.44	0.0344	0.0145	-0.0069
820	SLE RA 16	0.36	1.71	67.13	0.0338	0.0137	-0.0072
820	SLE RA 17	0.34	1.69	67.11	0.034	0.0145	-0.0069
820	SLE RA 18	0.35	1.72	68.3	0.0337	0.0131	-0.0072
820	SLE RA 19	0.34	1.7	68.28	0.0339	0.0139	-0.0069
820	SLE RA 20	0.36	1.74	68.87	0.0341	0.0143	-0.0072
820	SLE RA 21	0.35	1.72	68.85	0.0343	0.0151	-0.0069
820	SLE FR 1	0.32	1.56	60.63	0.0318	0.0074	-0.0067
820	SLE FR 2	0.31	1.56	60.63	0.0319	0.0076	-0.0066
820	SLE FR 3	0.32	1.57	60.86	0.032	0.0078	-0.0067
820	SLE FR 4	0.32	1.6	62.93	0.0325	0.0094	-0.0067
820	SLE FR 5	0.33	1.62	63.16	0.0325	0.0096	-0.0069
820	SLE FR 6	0.33	1.64	64.47	0.0328	0.0102	-0.0069
820	SLE QP 1	0.32	1.56	60.63	0.0318	0.0074	-0.0067
820	SLE QP 2	0.33	1.61	62.93	0.0324	0.0091	-0.0068
820	SLD 1	5.85	2.12	60.29	0.0234	0.2041	-0.0469
820	SLD 2	5.5	2.29	60.32	0.0223	0.2033	-0.0357
820	SLD 3	5.54	0.31	60.49	0.033	0.2357	-0.0495
820	SLD 4	5.2	0.47	60.52	0.0319	0.235	-0.0383
820	SLD 5	2.51	4.49	61.83	0.0152	0.0197	-0.0169
820	SLD 6	2.28	4.59	61.85	0.0145	0.0192	-0.0095
820	SLD 7	1.49	-1.56	62.5	0.0475	0.1252	-0.0256
820	SLD 8	1.26	-1.45	62.52	0.0467	0.1247	-0.0183
820	SLD 9	-0.61	4.67	63.35	0.0181	-0.1066	0.0046
820	SLD 10	-0.84	4.78	63.37	0.0173	-0.107	0.0119
820	SLD 11	-1.63	-1.38	64.01	0.0503	-0.001	-0.0042
820	SLD 12	-1.85	-1.27	64.03	0.0496	-0.0015	0.0032
820	SLD 13	-4.54	2.75	65.34	0.0329	-0.2168	0.0246
820	SLD 14	-4.89	2.91	65.38	0.0318	-0.2175	0.0358
820	SLD 15	-4.85	0.93	65.54	0.0425	-0.1852	0.022
820	SLD 16	-5.19	1.09	65.57	0.0414	-0.1859	0.0332
820	SLV 1	13.24	2.74	56.75	0.0113	0.4664	-0.1005
820	SLV 2	12.44	3.13	56.82	0.0087	0.4647	-0.0744
820	SLV 3	12.53	-1.36	57.21	0.0332	0.5384	-0.1066
820	SLV 4	11.73	-0.98	57.28	0.0306	0.5367	-0.0805
820	SLV 5	5.42	8.11	60.37	-0.0067	0.0374	-0.0301
820	SLV 6	4.9	8.36	60.42	-0.0084	0.0363	-0.0133
820	SLV 7	3.05	-5.58	61.9	0.0663	0.2774	-0.0506
820	SLV 8	2.53	-5.33	61.94	0.0647	0.2763	-0.0337
820	SLV 9	-1.88	8.55	63.92	0.0001	-0.2581	0.0201
820	SLV 10	-2.39	8.8	63.97	-0.0015	-0.2592	0.0369
820	SLV 11	-4.25	-5.14	65.45	0.0732	-0.0181	-0.0004
820	SLV 12	-4.76	-4.9	65.5	0.0715	-0.0192	0.0165
820	SLV 13	-11.07	4.2	68.59	0.0342	-0.5185	0.0669
820	SLV 14	-11.87	4.58	68.66	0.0316	-0.5202	0.0929
820	SLV 15	-11.78	0.09	69.04	0.0561	-0.4465	0.0607
820	SLV 16	-12.58	0.47	69.12	0.0535	-0.4482	0.0868
820	CRTFP Ux+	0	0	0	0	0	0
820	CRTFP Ux-	0	0	0	0	0	0
823	SLU 1	0	0.89	59.57	0.0219	0.0991	0.0034
823	SLU 2	-0.01	0.83	59.49	0.0225	0.0973	0.004
823	SLU 3	0	0.93	60.95	0.0226	0.1017	0.0033
823	SLU 4	-0.01	0.9	60.9	0.0229	0.1007	0.0037
823	SLU 5	-0.01	0.84	60.35	0.0228	0.0984	0.0039
823	SLU 6	0.01	0.95	61.81	0.0228	0.1028	0.0032
823	SLU 7	0	0.91	61.77	0.0232	0.1018	0.0036
823	SLU 8	0.01	0.92	61.3	0.0224	0.1012	0.0032
823	SLU 9	0	0.88	61.25	0.0228	0.1002	0.0036
823	SLU 10	0	0.97	67.31	0.0247	0.1066	0.0051
823	SLU 11	0.02	1.08	68.77	0.0248	0.111	0.0044
823	SLU 12	0.01	1.04	68.72	0.0251	0.1099	0.0048



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
823	SLU 13	0	0.99	68.18	0.0249	0.1076	0.005
823	SLU 14	0.02	1.09	69.64	0.025	0.112	0.0043
823	SLU 15	0.01	1.06	69.59	0.0254	0.111	0.0047
823	SLU 16	0.02	1.06	69.13	0.0246	0.1104	0.0043
823	SLU 17	0.01	1.02	69.08	0.0249	0.1094	0.0046
823	SLU 18	0.02	1.1	70.74	0.025	0.1123	0.0049
823	SLU 19	0.01	1.06	70.69	0.0254	0.1112	0.0053
823	SLU 20	0.03	1.11	71.61	0.0253	0.1133	0.0048
823	SLU 21	0.01	1.07	71.56	0.0256	0.1123	0.0052
823	SLU 22	-0.01	1.13	67.43	0.0255	0.1163	0.0036
823	SLU 23	-0.02	1.06	67.35	0.0261	0.1145	0.0042
823	SLU 24	-0.01	1.17	68.81	0.0262	0.1189	0.0035
823	SLU 25	-0.02	1.13	68.76	0.0265	0.1179	0.0039
823	SLU 26	-0.02	1.08	68.22	0.0263	0.1156	0.0041
823	SLU 27	0	1.19	69.68	0.0264	0.12	0.0035
823	SLU 28	-0.01	1.15	69.63	0.0268	0.1189	0.0038
823	SLU 29	0	1.15	69.17	0.026	0.1184	0.0034
823	SLU 30	-0.01	1.12	69.12	0.0264	0.1173	0.0038
823	SLU 31	-0.01	1.21	75.17	0.0283	0.1237	0.0053
823	SLU 32	0.01	1.32	76.63	0.0283	0.1281	0.0046
823	SLU 33	0	1.28	76.58	0.0287	0.1271	0.005
823	SLU 34	-0.01	1.22	76.04	0.0285	0.1248	0.0052
823	SLU 35	0.01	1.33	77.5	0.0286	0.1292	0.0045
823	SLU 36	0	1.29	77.45	0.0289	0.1282	0.0049
823	SLU 37	0.01	1.3	76.99	0.0282	0.1276	0.0045
823	SLU 38	0	1.26	76.94	0.0285	0.1266	0.0048
823	SLU 39	0.01	1.34	78.61	0.0286	0.1294	0.0051
823	SLU 40	0	1.3	78.56	0.029	0.1284	0.0055
823	SLU 41	0.02	1.35	79.47	0.0289	0.1305	0.005
823	SLU 42	0.01	1.31	79.43	0.0292	0.1295	0.0054
823	SLU 43	0.01	1.08	74.74	0.0273	0.1229	0.0043
823	SLU 44	-0.01	1.01	74.66	0.0279	0.1212	0.0049
823	SLU 45	0.01	1.12	76.12	0.028	0.1256	0.0043
823	SLU 46	0	1.08	76.07	0.0283	0.1245	0.0046
823	SLU 47	-0.01	1.03	75.53	0.0281	0.1222	0.0049
823	SLU 48	0.01	1.13	76.99	0.0282	0.1266	0.0042
823	SLU 49	0	1.09	76.94	0.0285	0.1256	0.0046
823	SLU 50	0.01	1.1	76.48	0.0278	0.125	0.0041
823	SLU 51	0	1.06	76.43	0.0281	0.124	0.0045
823	SLU 52	0	1.16	82.48	0.03	0.1304	0.006
823	SLU 53	0.02	1.27	83.94	0.0301	0.1348	0.0053
823	SLU 54	0.01	1.23	83.9	0.0305	0.1337	0.0057
823	SLU 55	0.01	1.17	83.35	0.0303	0.1315	0.0059
823	SLU 56	0.02	1.28	84.81	0.0304	0.1358	0.0052
823	SLU 57	0.01	1.24	84.76	0.0307	0.1348	0.0056
823	SLU 58	0.03	1.25	84.3	0.03	0.1342	0.0052
823	SLU 59	0.02	1.21	84.25	0.0303	0.1332	0.0056
823	SLU 60	0.03	1.29	85.92	0.0304	0.1361	0.0058
823	SLU 61	0.02	1.25	85.87	0.0307	0.135	0.0062
823	SLU 62	0.03	1.3	86.79	0.0306	0.1371	0.0057
823	SLU 63	0.02	1.26	86.74	0.031	0.1361	0.0061
823	SLU 64	0	1.31	82.61	0.0309	0.1401	0.0045
823	SLU 65	-0.02	1.25	82.53	0.0315	0.1384	0.0052
823	SLU 66	0	1.36	83.99	0.0315	0.1427	0.0045
823	SLU 67	-0.01	1.32	83.94	0.0319	0.1417	0.0049
823	SLU 68	-0.02	1.26	83.39	0.0317	0.1394	0.0051
823	SLU 69	0	1.37	84.85	0.0318	0.1438	0.0044
823	SLU 70	-0.01	1.33	84.8	0.0321	0.1428	0.0048
823	SLU 71	0	1.34	84.34	0.0314	0.1422	0.0043
823	SLU 72	-0.01	1.3	84.29	0.0317	0.1412	0.0047
823	SLU 73	-0.01	1.4	90.35	0.0336	0.1476	0.0062
823	SLU 74	0.01	1.5	91.81	0.0337	0.152	0.0055
823	SLU 75	0	1.47	91.76	0.034	0.1509	0.0059
823	SLU 76	0	1.41	91.22	0.0339	0.1486	0.0061
823	SLU 77	0.01	1.52	92.67	0.0339	0.153	0.0054
823	SLU 78	0	1.48	92.63	0.0343	0.152	0.0058
823	SLU 79	0.02	1.49	92.16	0.0335	0.1514	0.0054
823	SLU 80	0.01	1.45	92.11	0.0339	0.1504	0.0058
823	SLU 81	0.02	1.52	93.78	0.034	0.1533	0.006
823	SLU 82	0.01	1.48	93.73	0.0343	0.1522	0.0064
823	SLU 83	0.02	1.54	94.65	0.0342	0.1543	0.0059
823	SLU 84	0.01	1.5	94.6	0.0346	0.1533	0.0063
823	SLE RA 1	0	0.96	61.82	0.023	0.104	0.0034
823	SLE RA 2	-0.01	0.92	61.76	0.0234	0.1028	0.0039
823	SLE RA 3	0	0.99	62.73	0.0234	0.1058	0.0034
823	SLE RA 4	-0.01	0.96	62.7	0.0236	0.1051	0.0037
823	SLE RA 5	-0.01	0.92	62.34	0.0235	0.1035	0.0038
823	SLE RA 6	0	1	63.31	0.0236	0.1065	0.0033
823	SLE RA 7	0	0.97	63.28	0.0238	0.1058	0.0036
823	SLE RA 8	0	0.98	62.97	0.0233	0.1054	0.0033
823	SLE RA 9	0	0.95	62.94	0.0235	0.1047	0.0036
823	SLE RA 10	0	1.01	66.98	0.0248	0.109	0.0046
823	SLE RA 11	0.01	1.09	67.95	0.0248	0.1119	0.0041
823	SLE RA 12	0	1.06	67.92	0.0251	0.1112	0.0044
823	SLE RA 13	0	1.02	67.55	0.025	0.1097	0.0045
823	SLE RA 14	0.01	1.09	68.53	0.025	0.1126	0.004
823	SLE RA 15	0	1.07	68.49	0.0252	0.1119	0.0043
823	SLE RA 16	0.01	1.07	68.19	0.0247	0.1115	0.004
823	SLE RA 17	0.01	1.05	68.15	0.025	0.1109	0.0043
823	SLE RA 18	0.01	1.1	69.27	0.025	0.1128	0.0044



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
823	SLE RA 19	0.01	1.07	69.23	0.0253	0.1121	0.0047
823	SLE RA 20	0.01	1.11	69.84	0.0252	0.1135	0.0044
823	SLE RA 21	0.01	1.08	69.81	0.0254	0.1128	0.0046
823	SLE FR 1	0	0.96	61.82	0.023	0.104	0.0034
823	SLE FR 2	0	0.95	61.8	0.023	0.1038	0.0035
823	SLE FR 3	0	0.96	62.05	0.023	0.1043	0.0034
823	SLE FR 4	0	0.99	64.04	0.0237	0.1064	0.0038
823	SLE FR 5	0	1	64.28	0.0237	0.1069	0.0037
823	SLE FR 6	0.01	1.03	65.54	0.024	0.1084	0.0039
823	SLE QP 1	0	0.96	61.82	0.023	0.104	0.0034
823	SLE QP 2	0	1	64.05	0.0236	0.1066	0.0037
823	SLD 1	5.21	2.34	69.42	0.0308	0.2713	-0.0353
823	SLD 2	4.87	2.15	69.06	0.0311	0.2732	-0.0246
823	SLD 3	5.52	0.55	69.09	0.0404	0.2555	-0.0323
823	SLD 4	5.17	0.36	68.73	0.0407	0.2574	-0.0215
823	SLD 5	1.16	4.15	66.23	0.0112	0.1797	-0.0145
823	SLD 6	0.93	4.03	66	0.0114	0.1809	-0.0075
823	SLD 7	2.19	-1.82	65.12	0.0431	0.1269	-0.0044
823	SLD 8	1.96	-1.94	64.88	0.0433	0.1282	0.0027
823	SLD 9	-1.95	3.94	63.22	0.0038	0.085	0.0048
823	SLD 10	-2.18	3.82	62.98	0.004	0.0863	0.0118
823	SLD 11	-0.93	-2.03	62.1	0.0358	0.0323	0.0149
823	SLD 12	-1.16	-2.15	61.87	0.036	0.0336	0.022
823	SLD 13	-5.17	1.64	59.37	0.0064	-0.0442	0.029
823	SLD 14	-5.51	1.45	59.01	0.0068	-0.0422	0.0398
823	SLD 15	-4.86	-0.15	59.04	0.016	-0.06	0.032
823	SLD 16	-5.21	-0.34	58.68	0.0164	-0.0581	0.0428
823	SLV 1	12.19	4.07	76.64	0.0409	0.4915	-0.0876
823	SLV 2	11.38	3.62	75.8	0.0417	0.496	-0.0626
823	SLV 3	12.91	0.01	75.87	0.0627	0.4552	-0.0806
823	SLV 4	12.1	-0.43	75.03	0.0634	0.4597	-0.0556
823	SLV 5	2.72	8.15	69.14	-0.0043	0.2764	-0.0386
823	SLV 6	2.19	7.86	68.6	-0.0038	0.2793	-0.0224
823	SLV 7	5.1	-5.37	66.57	0.0681	0.1553	-0.0153
823	SLV 8	4.58	-5.65	66.03	0.0686	0.1582	0.0009
823	SLV 9	-4.57	7.66	62.08	-0.0214	0.055	0.0066
823	SLV 10	-5.09	7.37	61.53	-0.021	0.0579	0.0228
823	SLV 11	-2.18	-5.86	59.5	0.051	-0.0661	0.0299
823	SLV 12	-2.71	-6.15	58.96	0.0515	-0.0632	0.0461
823	SLV 13	-12.09	2.43	53.08	-0.0162	-0.2465	0.063
823	SLV 14	-12.9	1.99	52.24	-0.0155	-0.242	0.0881
823	SLV 15	-11.38	-1.62	52.3	0.0055	-0.2828	0.07
823	SLV 16	-12.19	-2.07	51.46	0.0062	-0.2783	0.0951
823	CRTFP Ux+	0	0	0	0	0	0
823	CRTFP Ux-	0	0	0	0	0	0
825	SLU 1	-0.58	0.13	31.02	0.0223	-2.5573	0.0316
825	SLU 2	-0.59	0.04	31.05	0.0223	-2.5575	0.0095
825	SLU 3	-0.59	0.13	31.77	0.0228	-2.6071	0.0334
825	SLU 4	-0.59	0.08	31.78	0.0229	-2.6071	0.0201
825	SLU 5	-0.59	0.04	31.52	0.0227	-2.5884	0.0108
825	SLU 6	-0.6	0.14	32.23	0.0232	-2.638	0.0347
825	SLU 7	-0.6	0.09	32.25	0.0232	-2.638	0.0214
825	SLU 8	-0.59	0.14	31.96	0.0229	-2.6191	0.0342
825	SLU 9	-0.6	0.09	31.97	0.023	-2.6192	0.0209
825	SLU 10	-0.63	0.12	34.67	0.0253	-2.8179	0.0291
825	SLU 11	-0.63	0.21	35.38	0.0258	-2.8675	0.053
825	SLU 12	-0.64	0.16	35.4	0.0259	-2.8676	0.0397
825	SLU 13	-0.64	0.12	35.13	0.0257	-2.8488	0.0304
825	SLU 14	-0.64	0.22	35.85	0.0262	-2.8984	0.0543
825	SLU 15	-0.65	0.17	35.87	0.0262	-2.8985	0.041
825	SLU 16	-0.63	0.22	35.57	0.0259	-2.8796	0.0538
825	SLU 17	-0.64	0.16	35.59	0.026	-2.8796	0.0405
825	SLU 18	-0.64	0.24	36.19	0.0265	-2.9294	0.0596
825	SLU 19	-0.64	0.19	36.2	0.0266	-2.9294	0.0463
825	SLU 20	-0.64	0.25	36.65	0.0269	-2.9603	0.0609
825	SLU 21	-0.65	0.19	36.67	0.0269	-2.9603	0.0476
825	SLU 22	-0.63	0.19	34.71	0.0255	-2.8202	0.0482
825	SLU 23	-0.64	0.11	34.73	0.0255	-2.8203	0.0261
825	SLU 24	-0.64	0.2	35.45	0.026	-2.8699	0.05
825	SLU 25	-0.65	0.15	35.47	0.0261	-2.87	0.0367
825	SLU 26	-0.64	0.11	35.2	0.0259	-2.8512	0.0274
825	SLU 27	-0.65	0.21	35.92	0.0264	-2.9008	0.0513
825	SLU 28	-0.65	0.15	35.93	0.0264	-2.9009	0.038
825	SLU 29	-0.64	0.21	35.64	0.0261	-2.882	0.0508
825	SLU 30	-0.65	0.15	35.66	0.0262	-2.8821	0.0376
825	SLU 31	-0.68	0.18	38.35	0.0285	-3.0807	0.0457
825	SLU 32	-0.68	0.28	39.06	0.029	-3.1303	0.0696
825	SLU 33	-0.69	0.23	39.08	0.0291	-3.1304	0.0563
825	SLU 34	-0.69	0.19	38.82	0.0289	-3.1116	0.047
825	SLU 35	-0.69	0.29	39.53	0.0294	-3.1612	0.0709
825	SLU 36	-0.7	0.23	39.55	0.0294	-3.1613	0.0576
825	SLU 37	-0.69	0.28	39.25	0.0291	-3.1424	0.0704
825	SLU 38	-0.69	0.23	39.27	0.0292	-3.1425	0.0572
825	SLU 39	-0.69	0.31	39.87	0.0298	-3.1922	0.0762
825	SLU 40	-0.69	0.25	39.89	0.0298	-3.1923	0.063
825	SLU 41	-0.69	0.31	40.34	0.0301	-3.2231	0.0775
825	SLU 42	-0.7	0.26	40.35	0.0301	-3.2232	0.0643
825	SLU 43	-0.73	0.14	39.07	0.0278	-3.2344	0.0354
825	SLU 44	-0.74	0.05	39.1	0.0279	-3.2345	0.0133
825	SLU 45	-0.74	0.15	39.81	0.0284	-3.2842	0.0371



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
825	SLU 46	-0.75	0.1	39.83	0.0284	-3.2842	0.0239
825	SLU 47	-0.75	0.06	39.56	0.0282	-3.2654	0.0146
825	SLU 48	-0.75	0.16	40.28	0.0287	-3.3151	0.0384
825	SLU 49	-0.76	0.1	40.3	0.0288	-3.3151	0.0252
825	SLU 50	-0.75	0.15	40	0.0285	-3.2962	0.038
825	SLU 51	-0.75	0.1	40.02	0.0285	-3.2963	0.0247
825	SLU 52	-0.78	0.13	42.71	0.0309	-3.4949	0.0329
825	SLU 53	-0.79	0.23	43.43	0.0314	-3.5446	0.0567
825	SLU 54	-0.79	0.18	43.44	0.0314	-3.5446	0.0435
825	SLU 55	-0.79	0.14	43.18	0.0312	-3.5258	0.0342
825	SLU 56	-0.8	0.23	43.89	0.0317	-3.5755	0.058
825	SLU 57	-0.8	0.18	43.91	0.0318	-3.5755	0.0448
825	SLU 58	-0.79	0.23	43.62	0.0315	-3.5566	0.0576
825	SLU 59	-0.8	0.18	43.63	0.0315	-3.5567	0.0443
825	SLU 60	-0.79	0.26	44.23	0.0321	-3.6064	0.0634
825	SLU 61	-0.8	0.2	44.25	0.0322	-3.6065	0.0501
825	SLU 62	-0.8	0.26	44.7	0.0325	-3.6373	0.0647
825	SLU 63	-0.81	0.21	44.72	0.0325	-3.6374	0.0514
825	SLU 64	-0.78	0.21	42.75	0.031	-3.4973	0.052
825	SLU 65	-0.79	0.12	42.78	0.0311	-3.4974	0.0299
825	SLU 66	-0.79	0.22	43.49	0.0316	-3.547	0.0538
825	SLU 67	-0.8	0.16	43.51	0.0317	-3.5471	0.0405
825	SLU 68	-0.8	0.13	43.25	0.0314	-3.5283	0.0312
825	SLU 69	-0.8	0.22	43.96	0.032	-3.5779	0.0551
825	SLU 70	-0.81	0.17	43.98	0.032	-3.578	0.0418
825	SLU 71	-0.8	0.22	43.68	0.0317	-3.5591	0.0546
825	SLU 72	-0.8	0.17	43.7	0.0318	-3.5591	0.0413
825	SLU 73	-0.83	0.2	46.39	0.0341	-3.7578	0.0495
825	SLU 74	-0.84	0.3	47.11	0.0346	-3.8074	0.0734
825	SLU 75	-0.84	0.24	47.13	0.0347	-3.8075	0.0601
825	SLU 76	-0.84	0.21	46.86	0.0344	-3.7887	0.0508
825	SLU 77	-0.85	0.3	47.58	0.035	-3.8383	0.0747
825	SLU 78	-0.85	0.25	47.59	0.035	-3.8384	0.0614
825	SLU 79	-0.84	0.3	47.3	0.0347	-3.8195	0.0742
825	SLU 80	-0.85	0.25	47.32	0.0348	-3.8195	0.0609
825	SLU 81	-0.84	0.32	47.91	0.0353	-3.8693	0.08
825	SLU 82	-0.85	0.27	47.93	0.0354	-3.8693	0.0667
825	SLU 83	-0.85	0.33	48.38	0.0357	-3.9002	0.0813
825	SLU 84	-0.86	0.27	48.4	0.0357	-3.9002	0.068
825	SLE RA 1	-0.59	0.15	32.08	0.0232	-2.6324	0.0363
825	SLE RA 2	-0.6	0.09	32.09	0.0232	-2.6325	0.0216
825	SLE RA 3	-0.6	0.15	32.57	0.0236	-2.6656	0.0375
825	SLE RA 4	-0.6	0.12	32.58	0.0236	-2.6656	0.0287
825	SLE RA 5	-0.6	0.09	32.41	0.0234	-2.6531	0.0225
825	SLE RA 6	-0.6	0.16	32.88	0.0238	-2.6862	0.0384
825	SLE RA 7	-0.61	0.12	32.89	0.0238	-2.6862	0.0296
825	SLE RA 8	-0.6	0.15	32.7	0.0236	-2.6736	0.0381
825	SLE RA 9	-0.6	0.12	32.71	0.0236	-2.6737	0.0292
825	SLE RA 10	-0.62	0.14	34.5	0.0252	-2.8061	0.0347
825	SLE RA 11	-0.63	0.2	34.98	0.0256	-2.8392	0.0506
825	SLE RA 12	-0.63	0.17	34.99	0.0256	-2.8392	0.0418
825	SLE RA 13	-0.63	0.14	34.82	0.0254	-2.8267	0.0355
825	SLE RA 14	-0.63	0.21	35.29	0.0258	-2.8598	0.0515
825	SLE RA 15	-0.64	0.17	35.3	0.0258	-2.8598	0.0426
825	SLE RA 16	-0.63	0.21	35.11	0.0256	-2.8472	0.0511
825	SLE RA 17	-0.63	0.17	35.12	0.0256	-2.8473	0.0423
825	SLE RA 18	-0.63	0.22	35.52	0.026	-2.8804	0.055
825	SLE RA 19	-0.63	0.19	35.53	0.0261	-2.8805	0.0462
825	SLE RA 20	-0.64	0.23	35.83	0.0263	-2.901	0.0559
825	SLE RA 21	-0.64	0.19	35.84	0.0263	-2.9011	0.047
825	SLE FR 1	-0.59	0.15	32.08	0.0232	-2.6324	0.0363
825	SLE FR 2	-0.59	0.14	32.08	0.0232	-2.6325	0.0334
825	SLE FR 3	-0.59	0.15	32.2	0.0233	-2.6407	0.0367
825	SLE FR 4	-0.6	0.16	33.11	0.024	-2.7069	0.039
825	SLE FR 5	-0.6	0.17	33.23	0.0241	-2.7151	0.0423
825	SLE FR 6	-0.61	0.18	33.8	0.0246	-2.7564	0.0457
825	SLE QP 1	-0.59	0.15	32.08	0.0232	-2.6324	0.0363
825	SLE QP 2	-0.6	0.17	33.11	0.024	-2.7068	0.0419
825	SLD 1	2.1	0.73	41.1	0.0261	-3.2832	0.1794
825	SLD 2	1.91	0.21	41.38	0.0282	-3.311	0.0509
825	SLD 3	1.95	-0.56	41.65	0.0298	-3.3339	-0.142
825	SLD 4	1.76	-1.07	41.94	0.0318	-3.3617	-0.2705
825	SLD 5	0.47	2.38	34.61	0.0188	-2.7979	0.5935
825	SLD 6	0.34	2.04	34.8	0.0202	-2.8162	0.509
825	SLD 7	-0.03	-1.91	36.46	0.0309	-2.9669	-0.4776
825	SLD 8	-0.15	-2.25	36.65	0.0322	-2.9851	-0.5621
825	SLD 9	-1.05	2.59	29.57	0.0159	-2.4286	0.6459
825	SLD 10	-1.18	2.24	29.76	0.0172	-2.4468	0.5615
825	SLD 11	-1.55	-1.7	31.42	0.0279	-2.5975	-0.4252
825	SLD 12	-1.67	-2.04	31.6	0.0293	-2.6157	-0.5096
825	SLD 13	-2.96	1.41	24.28	0.0163	-2.052	0.3543
825	SLD 14	-3.16	0.89	24.57	0.0183	-2.0798	0.2258
825	SLD 15	-3.11	0.13	24.83	0.0199	-2.1027	0.033
825	SLD 16	-3.31	-0.39	25.12	0.0219	-2.1305	-0.0955
825	SLV 1	5.72	1.43	51.81	0.0291	-4.057	0.3503
825	SLV 2	5.27	0.22	52.48	0.0339	-4.1216	0.051
825	SLV 3	5.38	-1.48	53.1	0.0373	-4.1738	-0.3769
825	SLV 4	4.92	-2.69	53.76	0.0421	-4.2385	-0.6762
825	SLV 5	1.9	5.17	36.66	0.0123	-2.9235	1.2891
825	SLV 6	1.61	4.39	37.09	0.0154	-2.9653	1.0958



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
825	SLV 7	0.74	-4.53	40.94	0.0396	-3.3129	-1.1349
825	SLV 8	0.45	-5.31	41.37	0.0427	-3.3547	-1.3282
825	SLV 9	-1.65	5.65	24.85	0.0054	-2.059	1.412
825	SLV 10	-1.95	4.87	25.28	0.0084	-2.1008	1.2187
825	SLV 11	-2.81	-4.05	29.13	0.0327	-2.4484	-1.012
825	SLV 12	-3.1	-4.83	29.56	0.0358	-2.4902	-1.2053
825	SLV 13	-6.12	3.03	12.45	0.006	-1.1752	0.76
825	SLV 14	-6.58	1.82	13.12	0.0108	-1.2399	0.4607
825	SLV 15	-6.47	0.12	13.74	0.0142	-1.292	0.0328
825	SLV 16	-6.93	-1.09	14.41	0.019	-1.3567	-0.2665
825	CRTFP Ux+	0	0	0	0	0	0
825	CRTFP Ux-	0	0	0	0	0	0
825	CRTFP Uy+	0	0	0	0	0	0
825	CRTFP Uy-	0	0	0	0	0	0
828	SLU 1	0.66	0.46	32.02	-0.0394	3.402	-0.1633
828	SLU 2	0.67	0.44	32.02	-0.0395	3.4034	-0.1549
828	SLU 3	0.68	0.47	32.75	-0.0404	3.4594	-0.1665
828	SLU 4	0.68	0.46	32.75	-0.0405	3.4602	-0.1615
828	SLU 5	0.68	0.44	32.47	-0.0402	3.4387	-0.1549
828	SLU 6	0.69	0.47	33.21	-0.0411	3.4947	-0.1665
828	SLU 7	0.7	0.46	33.21	-0.0411	3.4955	-0.1615
828	SLU 8	0.68	0.46	32.93	-0.0407	3.4726	-0.1633
828	SLU 9	0.69	0.45	32.93	-0.0408	3.4734	-0.1582
828	SLU 10	0.71	0.57	35.69	-0.0444	3.7043	-0.2028
828	SLU 11	0.72	0.61	36.42	-0.0453	3.7604	-0.2145
828	SLU 12	0.73	0.59	36.42	-0.0453	3.7612	-0.2094
828	SLU 13	0.73	0.57	36.14	-0.045	3.7397	-0.2028
828	SLU 14	0.73	0.61	36.87	-0.0459	3.7957	-0.2144
828	SLU 15	0.74	0.59	36.87	-0.046	3.7965	-0.2094
828	SLU 16	0.73	0.6	36.59	-0.0456	3.7736	-0.2112
828	SLU 17	0.73	0.58	36.59	-0.0457	3.7744	-0.2062
828	SLU 18	0.72	0.66	37.26	-0.0463	3.832	-0.2318
828	SLU 19	0.73	0.64	37.26	-0.0464	3.8328	-0.2268
828	SLU 20	0.73	0.66	37.71	-0.047	3.8673	-0.2318
828	SLU 21	0.74	0.64	37.71	-0.0471	3.8681	-0.2267
828	SLU 22	0.72	0.58	35.71	-0.0441	3.7028	-0.2054
828	SLU 23	0.73	0.56	35.71	-0.0442	3.7042	-0.197
828	SLU 24	0.74	0.59	36.44	-0.0451	3.7602	-0.2086
828	SLU 25	0.74	0.57	36.44	-0.0452	3.7611	-0.2036
828	SLU 26	0.74	0.56	36.16	-0.0449	3.7395	-0.197
828	SLU 27	0.75	0.59	36.89	-0.0458	3.7955	-0.2086
828	SLU 28	0.76	0.57	36.89	-0.0459	3.7964	-0.2036
828	SLU 29	0.74	0.58	36.61	-0.0455	3.7735	-0.2054
828	SLU 30	0.75	0.57	36.61	-0.0456	3.7743	-0.2003
828	SLU 31	0.77	0.69	39.37	-0.0491	4.0052	-0.2449
828	SLU 32	0.78	0.73	40.11	-0.05	4.0612	-0.2566
828	SLU 33	0.79	0.71	40.11	-0.0501	4.0621	-0.2515
828	SLU 34	0.79	0.69	39.83	-0.0498	4.0405	-0.2449
828	SLU 35	0.79	0.73	40.56	-0.0507	4.0965	-0.2565
828	SLU 36	0.8	0.71	40.56	-0.0508	4.0974	-0.2515
828	SLU 37	0.79	0.72	40.28	-0.0503	4.0744	-0.2533
828	SLU 38	0.79	0.7	40.28	-0.0504	4.0753	-0.2483
828	SLU 39	0.78	0.78	40.94	-0.0511	4.1328	-0.2739
828	SLU 40	0.79	0.76	40.94	-0.0511	4.1337	-0.2689
828	SLU 41	0.79	0.77	41.4	-0.0517	4.1681	-0.2739
828	SLU 42	0.8	0.76	41.4	-0.0518	4.169	-0.2688
828	SLU 43	0.83	0.56	40.36	-0.0495	4.3194	-0.1979
828	SLU 44	0.85	0.53	40.36	-0.0497	4.3208	-0.1895
828	SLU 45	0.85	0.57	41.1	-0.0506	4.3768	-0.2011
828	SLU 46	0.86	0.55	41.1	-0.0506	4.3776	-0.196
828	SLU 47	0.86	0.53	40.82	-0.0503	4.3561	-0.1895
828	SLU 48	0.87	0.57	41.55	-0.0512	4.4121	-0.2011
828	SLU 49	0.87	0.55	41.55	-0.0513	4.4129	-0.196
828	SLU 50	0.86	0.56	41.27	-0.0509	4.39	-0.1979
828	SLU 51	0.87	0.54	41.27	-0.051	4.3908	-0.1928
828	SLU 52	0.89	0.67	44.03	-0.0545	4.6218	-0.2374
828	SLU 53	0.9	0.7	44.76	-0.0554	4.6778	-0.249
828	SLU 54	0.9	0.69	44.76	-0.0555	4.6786	-0.244
828	SLU 55	0.9	0.67	44.48	-0.0552	4.6571	-0.2374
828	SLU 56	0.91	0.7	45.21	-0.0561	4.7131	-0.249
828	SLU 57	0.92	0.69	45.22	-0.0562	4.7139	-0.244
828	SLU 58	0.9	0.69	44.93	-0.0558	4.691	-0.2458
828	SLU 59	0.91	0.68	44.93	-0.0558	4.6918	-0.2407
828	SLU 60	0.89	0.75	45.6	-0.0565	4.7494	-0.2664
828	SLU 61	0.9	0.74	45.6	-0.0566	4.7502	-0.2613
828	SLU 62	0.91	0.75	46.05	-0.0572	4.7847	-0.2664
828	SLU 63	0.92	0.74	46.05	-0.0572	4.7855	-0.2613
828	SLU 64	0.89	0.68	44.05	-0.0543	4.6203	-0.24
828	SLU 65	0.91	0.65	44.05	-0.0544	4.6217	-0.2316
828	SLU 66	0.91	0.69	44.78	-0.0553	4.6777	-0.2432
828	SLU 67	0.92	0.67	44.78	-0.0554	4.6785	-0.2381
828	SLU 68	0.92	0.65	44.5	-0.0551	4.657	-0.2315
828	SLU 69	0.93	0.69	45.24	-0.056	4.713	-0.2432
828	SLU 70	0.93	0.67	45.24	-0.0561	4.7138	-0.2381
828	SLU 71	0.92	0.68	44.96	-0.0557	4.6909	-0.24
828	SLU 72	0.93	0.66	44.96	-0.0557	4.6917	-0.2349
828	SLU 73	0.95	0.79	47.72	-0.0593	4.9226	-0.2795
828	SLU 74	0.96	0.82	48.45	-0.0602	4.9787	-0.2911
828	SLU 75	0.96	0.81	48.45	-0.0603	4.9795	-0.2861
828	SLU 76	0.96	0.79	48.17	-0.06	4.958	-0.2795



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
828	SLU 77	0.97	0.82	48.9	-0.0609	5.014	-0.2911
828	SLU 78	0.98	0.81	48.9	-0.0609	5.0148	-0.2861
828	SLU 79	0.96	0.81	48.62	-0.0605	4.9919	-0.2879
828	SLU 80	0.97	0.8	48.62	-0.0606	4.9927	-0.2828
828	SLU 81	0.95	0.87	49.29	-0.0612	5.0503	-0.3085
828	SLU 82	0.96	0.86	49.29	-0.0613	5.0511	-0.3034
828	SLU 83	0.97	0.87	49.74	-0.0619	5.0856	-0.3085
828	SLU 84	0.98	0.86	49.74	-0.062	5.0864	-0.3034
828	SLE RA 1	0.67	0.5	33.07	-0.0407	3.4879	-0.1754
828	SLE RA 2	0.68	0.48	33.07	-0.0408	3.4889	-0.1697
828	SLE RA 3	0.69	0.5	33.56	-0.0414	3.5262	-0.1775
828	SLE RA 4	0.69	0.49	33.56	-0.0415	3.5267	-0.1741
828	SLE RA 5	0.69	0.48	33.38	-0.0413	3.5124	-0.1697
828	SLE RA 6	0.7	0.5	33.87	-0.0419	3.5497	-0.1775
828	SLE RA 7	0.7	0.49	33.87	-0.0419	3.5503	-0.1741
828	SLE RA 8	0.69	0.49	33.68	-0.0416	3.535	-0.1753
828	SLE RA 9	0.7	0.49	33.68	-0.0417	3.5356	-0.172
828	SLE RA 10	0.71	0.57	35.52	-0.044	3.6895	-0.2017
828	SLE RA 11	0.72	0.59	36.01	-0.0446	3.7269	-0.2094
828	SLE RA 12	0.72	0.58	36.01	-0.0447	3.7274	-0.2061
828	SLE RA 13	0.72	0.57	35.82	-0.0445	3.7131	-0.2017
828	SLE RA 14	0.73	0.59	36.31	-0.0451	3.7504	-0.2094
828	SLE RA 15	0.73	0.58	36.31	-0.0452	3.7509	-0.2061
828	SLE RA 16	0.72	0.59	36.12	-0.0449	3.7357	-0.2073
828	SLE RA 17	0.73	0.58	36.12	-0.0449	3.7362	-0.2039
828	SLE RA 18	0.71	0.62	36.56	-0.0453	3.7746	-0.221
828	SLE RA 19	0.72	0.62	36.56	-0.0454	3.7751	-0.2176
828	SLE RA 20	0.72	0.62	36.87	-0.0458	3.7981	-0.221
828	SLE RA 21	0.73	0.61	36.87	-0.0459	3.7987	-0.2176
828	SLE FR 1	0.67	0.5	33.07	-0.0407	3.4879	-0.1754
828	SLE FR 2	0.68	0.49	33.07	-0.0407	3.4881	-0.1742
828	SLE FR 3	0.68	0.5	33.19	-0.0409	3.4973	-0.1754
828	SLE FR 4	0.69	0.53	34.12	-0.0421	3.5741	-0.1879
828	SLE FR 5	0.69	0.53	34.24	-0.0423	3.5833	-0.189
828	SLE FR 6	0.69	0.56	34.82	-0.043	3.6313	-0.1982
828	SLE QP 1	0.67	0.5	33.07	-0.0407	3.4879	-0.1754
828	SLE QP 2	0.69	0.53	34.12	-0.0421	3.5739	-0.1891
828	SLD 1	2.17	0.62	25.64	-0.0293	2.9662	-0.2183
828	SLD 2	1.92	1.26	25.32	-0.0311	2.9384	-0.4427
828	SLD 3	2.54	-0.86	26.32	-0.026	3.0145	0.2991
828	SLD 4	2.29	-0.22	26	-0.0277	2.9866	0.0747
828	SLD 5	0.62	2.69	30.61	-0.043	3.3234	-0.9424
828	SLD 6	0.45	3.12	30.4	-0.0441	3.3051	-1.0899
828	SLD 7	1.85	-2.25	32.86	-0.0319	3.4842	0.7822
828	SLD 8	1.69	-1.82	32.66	-0.0331	3.4659	0.6347
828	SLD 9	-0.31	2.89	35.59	-0.0511	3.6819	-1.0128
828	SLD 10	-0.48	3.31	35.38	-0.0523	3.6636	-1.1603
828	SLD 11	0.92	-2.05	37.84	-0.0401	3.8427	0.7118
828	SLD 12	0.76	-1.62	37.64	-0.0412	3.8244	0.5643
828	SLD 13	-0.92	1.28	42.24	-0.0565	4.1612	-0.4528
828	SLD 14	-1.17	1.93	41.92	-0.0582	4.1334	-0.6772
828	SLD 15	-0.55	-0.2	42.92	-0.0532	4.2095	0.0646
828	SLD 16	-0.8	0.45	42.6	-0.0549	4.1816	-0.1598
828	SLV 1	4.18	0.69	14.29	-0.012	2.1526	-0.2398
828	SLV 2	3.6	2.19	13.55	-0.0161	2.0878	-0.7625
828	SLV 3	5.02	-2.67	15.84	-0.0045	2.2633	0.9319
828	SLV 4	4.43	-1.17	15.1	-0.0086	2.1984	0.4092
828	SLV 5	0.56	5.41	25.94	-0.0438	2.9909	-1.8909
828	SLV 6	0.18	6.38	25.47	-0.0464	2.9491	-2.2285
828	SLV 7	3.36	-5.78	31.12	-0.0187	3.3597	2.0147
828	SLV 8	2.98	-4.81	30.64	-0.0214	3.3179	1.6771
828	SLV 9	-1.61	5.87	37.6	-0.0628	3.83	-2.0552
828	SLV 10	-1.99	6.84	37.12	-0.0655	3.7881	-2.3928
828	SLV 11	1.19	-5.31	42.78	-0.0378	4.1988	1.8504
828	SLV 12	0.81	-4.34	42.3	-0.0404	4.1569	1.5128
828	SLV 13	-3.06	2.24	53.14	-0.0756	4.9494	-0.7873
828	SLV 14	-3.64	3.74	52.4	-0.0797	4.8846	-1.31
828	SLV 15	-2.22	-1.12	54.7	-0.0681	5.0601	0.3844
828	SLV 16	-2.8	0.38	53.96	-0.0722	4.9952	-0.1383
828	CRTFP Ux+	0	0	0	0	0	0
828	CRTFP Ux-	0	0	0	0	0	0
828	CRTFP Uy+	0	0	0	0	0	0
828	CRTFP Uy-	0	0	0	0	0	0
830	SLU 1	1.49	0.23	65.65	0.0276	0.4763	-0.0135
830	SLU 2	1.47	0.19	65.64	0.0275	0.4872	-0.0125
830	SLU 3	1.53	0.24	67.19	0.0283	0.4911	-0.0138
830	SLU 4	1.52	0.22	67.18	0.0282	0.4976	-0.0132
830	SLU 5	1.5	0.19	66.58	0.0278	0.4958	-0.0128
830	SLU 6	1.56	0.24	68.13	0.0286	0.4997	-0.0141
830	SLU 7	1.55	0.22	68.12	0.0286	0.5062	-0.0135
830	SLU 8	1.55	0.23	67.53	0.0283	0.4935	-0.014
830	SLU 9	1.53	0.21	67.52	0.0282	0.5	-0.0134
830	SLU 10	1.58	0.3	73.97	0.0308	0.5612	-0.0144
830	SLU 11	1.64	0.34	75.52	0.0316	0.5651	-0.0157
830	SLU 12	1.62	0.32	75.51	0.0316	0.5717	-0.0151
830	SLU 13	1.6	0.29	74.91	0.0312	0.5699	-0.0147
830	SLU 14	1.67	0.34	76.46	0.032	0.5738	-0.016
830	SLU 15	1.65	0.32	76.45	0.0319	0.5803	-0.0154
830	SLU 16	1.65	0.33	75.86	0.0316	0.5676	-0.0159
830	SLU 17	1.64	0.31	75.85	0.0316	0.5741	-0.0153





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
830	SLU 18	1.64	0.38	77.55	0.0324	0.5821	-0.0162
830	SLU 19	1.63	0.35	77.55	0.0323	0.5886	-0.0156
830	SLU 20	1.67	0.37	78.49	0.0327	0.5907	-0.0165
830	SLU 21	1.66	0.35	78.48	0.0326	0.5972	-0.0159
830	SLU 22	1.62	0.36	73.95	0.0317	0.5512	-0.0148
830	SLU 23	1.59	0.33	73.94	0.0316	0.5622	-0.0138
830	SLU 24	1.65	0.37	75.49	0.0323	0.5661	-0.015
830	SLU 25	1.64	0.35	75.48	0.0323	0.5726	-0.0145
830	SLU 26	1.62	0.33	74.88	0.0319	0.5708	-0.014
830	SLU 27	1.68	0.37	76.43	0.0327	0.5747	-0.0153
830	SLU 28	1.67	0.35	76.42	0.0326	0.5812	-0.0147
830	SLU 29	1.67	0.36	75.83	0.0323	0.5685	-0.0153
830	SLU 30	1.65	0.34	75.82	0.0323	0.575	-0.0147
830	SLU 31	1.7	0.43	82.27	0.0349	0.6362	-0.0157
830	SLU 32	1.76	0.48	83.82	0.0357	0.6401	-0.017
830	SLU 33	1.75	0.46	83.81	0.0356	0.6467	-0.0164
830	SLU 34	1.72	0.43	83.21	0.0352	0.6449	-0.0159
830	SLU 35	1.79	0.47	84.76	0.036	0.6488	-0.0172
830	SLU 36	1.77	0.45	84.75	0.036	0.6553	-0.0166
830	SLU 37	1.77	0.46	84.16	0.0357	0.6426	-0.0172
830	SLU 38	1.76	0.44	84.15	0.0356	0.6491	-0.0166
830	SLU 39	1.77	0.51	85.85	0.0364	0.6571	-0.0175
830	SLU 40	1.75	0.49	85.85	0.0364	0.6636	-0.0169
830	SLU 41	1.79	0.51	86.79	0.0368	0.6657	-0.0178
830	SLU 42	1.78	0.49	86.79	0.0367	0.6722	-0.0172
830	SLU 43	1.9	0.25	82.5	0.0345	0.5934	-0.0171
830	SLU 44	1.88	0.22	82.49	0.0344	0.6043	-0.0161
830	SLU 45	1.94	0.27	84.03	0.0351	0.6082	-0.0174
830	SLU 46	1.92	0.24	84.03	0.0351	0.6148	-0.0168
830	SLU 47	1.9	0.22	83.43	0.0347	0.613	-0.0164
830	SLU 48	1.97	0.26	84.97	0.0355	0.6169	-0.0177
830	SLU 49	1.95	0.24	84.97	0.0354	0.6234	-0.0171
830	SLU 50	1.95	0.25	84.37	0.0351	0.6107	-0.0176
830	SLU 51	1.94	0.23	84.37	0.0351	0.6172	-0.017
830	SLU 52	1.98	0.32	90.82	0.0377	0.6784	-0.018
830	SLU 53	2.04	0.37	92.37	0.0385	0.6823	-0.0193
830	SLU 54	2.03	0.35	92.36	0.0384	0.6889	-0.0187
830	SLU 55	2.01	0.32	91.76	0.038	0.687	-0.0183
830	SLU 56	2.07	0.37	93.31	0.0388	0.6909	-0.0196
830	SLU 57	2.06	0.34	93.3	0.0388	0.6975	-0.019
830	SLU 58	2.06	0.35	92.71	0.0385	0.6847	-0.0196
830	SLU 59	2.04	0.33	92.7	0.0384	0.6913	-0.019
830	SLU 60	2.05	0.4	94.4	0.0392	0.6992	-0.0199
830	SLU 61	2.04	0.38	94.39	0.0392	0.7058	-0.0193
830	SLU 62	2.08	0.4	95.34	0.0396	0.7078	-0.0201
830	SLU 63	2.06	0.38	95.33	0.0395	0.7144	-0.0195
830	SLU 64	2.02	0.39	90.8	0.0385	0.6684	-0.0184
830	SLU 65	2	0.35	90.79	0.0384	0.6793	-0.0174
830	SLU 66	2.06	0.4	92.34	0.0392	0.6832	-0.0187
830	SLU 67	2.05	0.38	92.33	0.0392	0.6898	-0.0181
830	SLU 68	2.02	0.35	91.73	0.0388	0.688	-0.0176
830	SLU 69	2.09	0.4	93.28	0.0396	0.6918	-0.0189
830	SLU 70	2.07	0.38	93.27	0.0395	0.6984	-0.0183
830	SLU 71	2.07	0.38	92.68	0.0392	0.6856	-0.0189
830	SLU 72	2.06	0.36	92.67	0.0392	0.6922	-0.0183
830	SLU 73	2.1	0.45	99.12	0.0418	0.7534	-0.0193
830	SLU 74	2.17	0.5	100.67	0.0426	0.7573	-0.0206
830	SLU 75	2.15	0.48	100.66	0.0425	0.7639	-0.02
830	SLU 76	2.13	0.45	100.06	0.0421	0.762	-0.0196
830	SLU 77	2.19	0.5	101.61	0.0429	0.7659	-0.0208
830	SLU 78	2.18	0.48	101.6	0.0429	0.7725	-0.0203
830	SLU 79	2.18	0.49	101.01	0.0426	0.7597	-0.0208
830	SLU 80	2.17	0.46	101	0.0425	0.7663	-0.0202
830	SLU 81	2.17	0.53	102.7	0.0433	0.7742	-0.0211
830	SLU 82	2.16	0.51	102.69	0.0432	0.7808	-0.0205
830	SLU 83	2.2	0.53	103.64	0.0436	0.7828	-0.0214
830	SLU 84	2.19	0.51	103.63	0.0436	0.7894	-0.0208
830	SLE RA 1	1.53	0.27	68.02	0.0287	0.4977	-0.0139
830	SLE RA 2	1.51	0.24	68.01	0.0287	0.505	-0.0132
830	SLE RA 3	1.55	0.28	69.05	0.0292	0.5076	-0.0141
830	SLE RA 4	1.55	0.26	69.04	0.0292	0.5119	-0.0137
830	SLE RA 5	1.53	0.24	68.64	0.0289	0.5107	-0.0134
830	SLE RA 6	1.57	0.27	69.67	0.0294	0.5133	-0.0142
830	SLE RA 7	1.56	0.26	69.67	0.0294	0.5177	-0.0138
830	SLE RA 8	1.56	0.27	69.27	0.0292	0.5092	-0.0142
830	SLE RA 9	1.55	0.25	69.27	0.0292	0.5135	-0.0138
830	SLE RA 10	1.58	0.31	73.57	0.0309	0.5543	-0.0145
830	SLE RA 11	1.62	0.34	74.6	0.0314	0.5569	-0.0153
830	SLE RA 12	1.62	0.33	74.6	0.0314	0.5613	-0.0149
830	SLE RA 13	1.6	0.31	74.19	0.0311	0.5601	-0.0146
830	SLE RA 14	1.64	0.34	75.23	0.0317	0.5627	-0.0155
830	SLE RA 15	1.63	0.33	75.22	0.0316	0.5671	-0.0151
830	SLE RA 16	1.63	0.33	74.83	0.0314	0.5585	-0.0155
830	SLE RA 17	1.62	0.32	74.82	0.0314	0.5629	-0.0151
830	SLE RA 18	1.63	0.37	75.95	0.0319	0.5682	-0.0157
830	SLE RA 19	1.62	0.35	75.95	0.0319	0.5726	-0.0153
830	SLE RA 20	1.65	0.36	76.58	0.0322	0.574	-0.0159
830	SLE RA 21	1.64	0.35	76.58	0.0321	0.5783	-0.0155
830	SLE FR 1	1.53	0.27	68.02	0.0287	0.4977	-0.0139
830	SLE FR 2	1.52	0.26	68.02	0.0287	0.4991	-0.0137



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
830	SLE FR 3	1.54	0.27	68.27	0.0288	0.5	-0.0139
830	SLE FR 4	1.56	0.29	70.4	0.0297	0.5203	-0.0143
830	SLE FR 5	1.57	0.3	70.65	0.0298	0.5211	-0.0145
830	SLE FR 6	1.58	0.32	71.99	0.0303	0.533	-0.0148
830	SLE QP 1	1.53	0.27	68.02	0.0287	0.4977	-0.0139
830	SLE QP 2	1.56	0.3	70.4	0.0297	0.5188	-0.0144
830	SLD 1	7.03	1.3	65.23	0.0184	0.4516	-0.0534
830	SLD 2	6.59	1.78	64.63	0.0153	0.4599	-0.0418
830	SLD 3	7.35	-0.47	66.03	0.0289	0.4957	-0.0558
830	SLD 4	6.91	0.01	65.44	0.0259	0.504	-0.0442
830	SLD 5	2.8	3.2	67.73	0.0108	0.4303	-0.0245
830	SLD 6	2.51	3.52	67.34	0.0088	0.4357	-0.0168
830	SLD 7	3.85	-2.71	70.42	0.0461	0.5773	-0.0326
830	SLD 8	3.56	-2.39	70.03	0.044	0.5828	-0.025
830	SLD 9	-0.45	2.99	70.77	0.0154	0.4549	-0.0038
830	SLD 10	-0.74	3.3	70.38	0.0133	0.4603	0.0038
830	SLD 11	0.6	-2.92	73.46	0.0506	0.602	-0.012
830	SLD 12	0.32	-2.61	73.07	0.0486	0.6074	-0.0043
830	SLD 13	-3.79	0.58	75.36	0.0335	0.5337	0.0154
830	SLD 14	-4.23	1.07	74.77	0.0304	0.542	0.027
830	SLD 15	-3.48	-1.19	76.17	0.0441	0.5778	0.013
830	SLD 16	-3.92	-0.7	75.57	0.041	0.5861	0.0246
830	SLV 1	14.36	2.57	58.31	0.0036	0.361	-0.1056
830	SLV 2	13.35	3.7	56.93	-0.0036	0.3804	-0.0786
830	SLV 3	15.1	-1.44	60.14	0.0275	0.4607	-0.1113
830	SLV 4	14.08	-0.31	58.75	0.0203	0.4801	-0.0843
830	SLV 5	4.46	6.87	64.24	-0.0132	0.317	-0.0378
830	SLV 6	3.8	7.6	63.35	-0.0178	0.3295	-0.0204
830	SLV 7	6.91	-6.51	70.33	0.0666	0.6492	-0.0568
830	SLV 8	6.26	-5.78	69.44	0.0619	0.6617	-0.0393
830	SLV 9	-3.14	6.37	71.36	-0.0026	0.3759	0.0105
830	SLV 10	-3.8	7.1	70.47	-0.0072	0.3884	0.028
830	SLV 11	-0.69	-7.01	77.45	0.0772	0.7082	-0.0084
830	SLV 12	-1.34	-6.28	76.56	0.0726	0.7207	0.009
830	SLV 13	-10.97	0.91	82.05	0.0391	0.5576	0.0555
830	SLV 14	-11.98	2.03	80.66	0.0319	0.577	0.0825
830	SLV 15	-10.23	-3.11	83.87	0.063	0.6573	0.0498
830	SLV 16	-11.25	-1.98	82.49	0.0558	0.6766	0.0768
830	CRTFP Ux+	0	0	0	0	0	0
830	CRTFP Ux-	0	0	0	0	0	0
830	CRTFP Uy+	0	0	0	0	0	0
830	CRTFP Uy-	0	0	0	0	0	0
833	SLU 1	-1.06	-0.61	64.34	0.0115	-0.5989	0.0097
833	SLU 2	-1.09	-0.7	64.43	0.0113	-0.6052	0.0102
833	SLU 3	-1.08	-0.61	65.89	0.0116	-0.6157	0.0098
833	SLU 4	-1.1	-0.66	65.95	0.0115	-0.6194	0.0101
833	SLU 5	-1.11	-0.71	65.38	0.0113	-0.6141	0.0102
833	SLU 6	-1.1	-0.62	66.85	0.0116	-0.6246	0.0098
833	SLU 7	-1.12	-0.67	66.91	0.0115	-0.6284	0.0102
833	SLU 8	-1.09	-0.62	66.24	0.0115	-0.6168	0.0097
833	SLU 9	-1.11	-0.68	66.3	0.0114	-0.6206	0.0101
833	SLU 10	-1.16	-0.7	72.71	0.011	-0.6956	0.0121
833	SLU 11	-1.15	-0.61	74.18	0.0113	-0.7061	0.0117
833	SLU 12	-1.17	-0.67	74.23	0.0112	-0.7099	0.012
833	SLU 13	-1.17	-0.71	73.67	0.0111	-0.7046	0.0121
833	SLU 14	-1.17	-0.62	75.13	0.0113	-0.7151	0.0117
833	SLU 15	-1.19	-0.67	75.19	0.0112	-0.7188	0.012
833	SLU 16	-1.16	-0.62	74.52	0.0112	-0.7073	0.0116
833	SLU 17	-1.18	-0.68	74.58	0.0111	-0.711	0.0119
833	SLU 18	-1.15	-0.61	76.17	0.0111	-0.7281	0.0123
833	SLU 19	-1.17	-0.67	76.22	0.011	-0.7319	0.0126
833	SLU 20	-1.17	-0.62	77.12	0.0111	-0.7371	0.0123
833	SLU 21	-1.19	-0.67	77.18	0.011	-0.7408	0.0127
833	SLU 22	-1.14	-0.58	72.56	0.0128	-0.6889	0.0106
833	SLU 23	-1.18	-0.67	72.65	0.0126	-0.6952	0.0111
833	SLU 24	-1.17	-0.58	74.11	0.0129	-0.7057	0.0107
833	SLU 25	-1.19	-0.63	74.17	0.0128	-0.7094	0.0111
833	SLU 26	-1.19	-0.68	73.6	0.0126	-0.7041	0.0112
833	SLU 27	-1.19	-0.58	75.07	0.0129	-0.7146	0.0108
833	SLU 28	-1.21	-0.64	75.13	0.0128	-0.7184	0.0111
833	SLU 29	-1.18	-0.59	74.46	0.0128	-0.7068	0.0107
833	SLU 30	-1.2	-0.65	74.52	0.0127	-0.7106	0.011
833	SLU 31	-1.25	-0.67	80.93	0.0123	-0.7856	0.013
833	SLU 32	-1.24	-0.58	82.39	0.0126	-0.7961	0.0126
833	SLU 33	-1.26	-0.63	82.45	0.0125	-0.7999	0.0129
833	SLU 34	-1.26	-0.68	81.89	0.0123	-0.7946	0.013
833	SLU 35	-1.25	-0.58	83.35	0.0126	-0.8051	0.0126
833	SLU 36	-1.28	-0.64	83.41	0.0125	-0.8089	0.013
833	SLU 37	-1.24	-0.59	82.74	0.0125	-0.7973	0.0125
833	SLU 38	-1.26	-0.65	82.8	0.0124	-0.801	0.0129
833	SLU 39	-1.24	-0.58	84.39	0.0124	-0.8181	0.0133
833	SLU 40	-1.26	-0.63	84.44	0.0123	-0.8219	0.0136
833	SLU 41	-1.26	-0.58	85.34	0.0124	-0.8271	0.0133
833	SLU 42	-1.28	-0.64	85.4	0.0123	-0.8308	0.0136
833	SLU 43	-1.34	-0.8	80.82	0.0145	-0.7477	0.0122
833	SLU 44	-1.38	-0.89	80.91	0.0143	-0.754	0.0128
833	SLU 45	-1.37	-0.8	82.38	0.0146	-0.7645	0.0124
833	SLU 46	-1.39	-0.86	82.43	0.0145	-0.7683	0.0127
833	SLU 47	-1.39	-0.9	81.87	0.0143	-0.7629	0.0128
833	SLU 48	-1.39	-0.81	83.33	0.0146	-0.7735	0.0124



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
833	SLU 49	-1.41	-0.86	83.39	0.0145	-0.7772	0.0127
833	SLU 50	-1.37	-0.81	82.73	0.0145	-0.7656	0.0123
833	SLU 51	-1.4	-0.87	82.78	0.0144	-0.7694	0.0126
833	SLU 52	-1.44	-0.89	89.19	0.0141	-0.8444	0.0146
833	SLU 53	-1.44	-0.8	90.66	0.0144	-0.8549	0.0142
833	SLU 54	-1.46	-0.86	90.71	0.0142	-0.8587	0.0146
833	SLU 55	-1.46	-0.9	90.15	0.0141	-0.8534	0.0147
833	SLU 56	-1.45	-0.81	91.61	0.0144	-0.8639	0.0143
833	SLU 57	-1.47	-0.86	91.67	0.0142	-0.8677	0.0146
833	SLU 58	-1.44	-0.82	91.01	0.0142	-0.8561	0.0142
833	SLU 59	-1.46	-0.87	91.06	0.0141	-0.8598	0.0145
833	SLU 60	-1.44	-0.8	92.65	0.0141	-0.8769	0.0149
833	SLU 61	-1.46	-0.86	92.71	0.014	-0.8807	0.0152
833	SLU 62	-1.46	-0.81	93.6	0.0141	-0.8859	0.0149
833	SLU 63	-1.48	-0.86	93.66	0.014	-0.8896	0.0152
833	SLU 64	-1.43	-0.77	89.04	0.0158	-0.8377	0.0132
833	SLU 65	-1.47	-0.86	89.13	0.0156	-0.844	0.0137
833	SLU 66	-1.46	-0.77	90.6	0.0159	-0.8545	0.0133
833	SLU 67	-1.48	-0.83	90.65	0.0158	-0.8583	0.0136
833	SLU 68	-1.48	-0.87	90.09	0.0156	-0.8529	0.0138
833	SLU 69	-1.47	-0.78	91.55	0.0159	-0.8635	0.0134
833	SLU 70	-1.49	-0.83	91.61	0.0158	-0.8672	0.0137
833	SLU 71	-1.46	-0.78	90.95	0.0158	-0.8556	0.0133
833	SLU 72	-1.48	-0.84	91	0.0157	-0.8594	0.0136
833	SLU 73	-1.53	-0.86	97.41	0.0154	-0.9344	0.0156
833	SLU 74	-1.53	-0.77	98.88	0.0156	-0.9449	0.0152
833	SLU 75	-1.55	-0.83	98.93	0.0155	-0.9487	0.0155
833	SLU 76	-1.55	-0.87	98.37	0.0154	-0.9434	0.0156
833	SLU 77	-1.54	-0.78	99.83	0.0156	-0.9539	0.0152
833	SLU 78	-1.56	-0.83	99.89	0.0155	-0.9577	0.0155
833	SLU 79	-1.53	-0.78	99.23	0.0155	-0.9461	0.0151
833	SLU 80	-1.55	-0.84	99.28	0.0154	-0.9498	0.0154
833	SLU 81	-1.53	-0.77	100.87	0.0154	-0.9669	0.0158
833	SLU 82	-1.55	-0.83	100.92	0.0153	-0.9707	0.0161
833	SLU 83	-1.54	-0.78	101.82	0.0154	-0.9759	0.0159
833	SLU 84	-1.56	-0.83	101.88	0.0153	-0.9796	0.0162
833	SLE RA 1	-1.08	-0.6	66.68	0.0119	-0.6246	0.0099
833	SLE RA 2	-1.1	-0.66	66.75	0.0118	-0.6288	0.0103
833	SLE RA 3	-1.1	-0.6	67.72	0.012	-0.6358	0.01
833	SLE RA 4	-1.11	-0.64	67.76	0.0119	-0.6383	0.0102
833	SLE RA 5	-1.11	-0.67	67.38	0.0118	-0.6348	0.0103
833	SLE RA 6	-1.11	-0.6	68.36	0.012	-0.6418	0.0101
833	SLE RA 7	-1.12	-0.64	68.4	0.0119	-0.6443	0.0103
833	SLE RA 8	-1.1	-0.61	67.96	0.0119	-0.6366	0.01
833	SLE RA 9	-1.12	-0.64	67.99	0.0118	-0.6391	0.0102
833	SLE RA 10	-1.15	-0.66	72.27	0.0116	-0.6891	0.0115
833	SLE RA 11	-1.14	-0.6	73.24	0.0118	-0.6961	0.0113
833	SLE RA 12	-1.16	-0.64	73.28	0.0117	-0.6986	0.0115
833	SLE RA 13	-1.16	-0.67	72.9	0.0116	-0.6951	0.0116
833	SLE RA 14	-1.16	-0.6	73.88	0.0118	-0.7021	0.0113
833	SLE RA 15	-1.17	-0.64	73.92	0.0117	-0.7046	0.0115
833	SLE RA 16	-1.15	-0.61	73.48	0.0117	-0.6968	0.0112
833	SLE RA 17	-1.16	-0.65	73.51	0.0116	-0.6994	0.0114
833	SLE RA 18	-1.15	-0.6	74.57	0.0116	-0.7107	0.0117
833	SLE RA 19	-1.16	-0.64	74.61	0.0115	-0.7133	0.0119
833	SLE RA 20	-1.16	-0.6	75.21	0.0116	-0.7167	0.0117
833	SLE RA 21	-1.17	-0.64	75.24	0.0115	-0.7192	0.0119
833	SLE FR 1	-1.08	-0.6	66.68	0.0119	-0.6246	0.0099
833	SLE FR 2	-1.09	-0.61	66.7	0.0119	-0.6254	0.01
833	SLE FR 3	-1.09	-0.6	66.94	0.0119	-0.627	0.0099
833	SLE FR 4	-1.11	-0.61	69.06	0.0118	-0.6513	0.0105
833	SLE FR 5	-1.1	-0.6	69.3	0.0118	-0.6528	0.0105
833	SLE FR 6	-1.11	-0.6	70.63	0.0117	-0.6677	0.0108
833	SLE QP 1	-1.08	-0.6	66.68	0.0119	-0.6246	0.0099
833	SLE QP 2	-1.1	-0.6	69.05	0.0118	-0.6504	0.0105
833	SLD 1	4.98	-0.19	72.75	0.0231	-0.7451	-0.0316
833	SLD 2	4.53	-0.65	73.57	0.0241	-0.7342	-0.0189
833	SLD 3	4.64	-2.01	73.97	0.0305	-0.8107	-0.0288
833	SLD 4	4.19	-2.47	74.8	0.0315	-0.7998	-0.0161
833	SLD 5	1.32	2.37	68.15	0.0037	-0.5815	-0.0087
833	SLD 6	1.02	2.07	68.69	0.0044	-0.5743	-0.0004
833	SLD 7	0.19	-3.7	72.25	0.0285	-0.7998	0.0007
833	SLD 8	-0.11	-4.01	72.79	0.0292	-0.7926	0.009
833	SLD 9	-2.09	2.81	65.31	-0.0056	-0.5083	0.0119
833	SLD 10	-2.39	2.5	65.85	-0.0049	-0.5011	0.0202
833	SLD 11	-3.22	-3.27	69.41	0.0192	-0.7266	0.0213
833	SLD 12	-3.52	-3.57	69.95	0.0199	-0.7194	0.0296
833	SLD 13	-6.39	1.27	63.3	-0.0079	-0.5011	0.0371
833	SLD 14	-6.84	0.81	64.13	-0.0069	-0.4902	0.0497
833	SLD 15	-6.73	-0.55	64.53	-0.0005	-0.5666	0.0399
833	SLD 16	-7.18	-1.01	65.35	0.0005	-0.5557	0.0525
833	SLV 1	13.12	0.29	77.76	0.0384	-0.8749	-0.0879
833	SLV 2	12.06	-0.79	79.67	0.0408	-0.8495	-0.0584
833	SLV 3	12.34	-3.83	80.54	0.0553	-1.0233	-0.0814
833	SLV 4	11.28	-4.91	82.46	0.0577	-0.9979	-0.0519
833	SLV 5	4.54	6.11	67.11	-0.0064	-0.4972	-0.034
833	SLV 6	3.86	5.41	68.34	-0.0048	-0.4808	-0.0149
833	SLV 7	1.92	-7.64	76.39	0.0501	-0.9917	-0.0124
833	SLV 8	1.24	-8.34	77.63	0.0517	-0.9753	0.0067
833	SLV 9	-3.44	7.14	60.47	-0.0281	-0.3256	0.0142



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
833	SLV 10	-4.12	6.44	61.71	-0.0265	-0.3092	0.0333
833	SLV 11	-6.06	-6.61	69.76	0.0284	-0.8201	0.0359
833	SLV 12	-6.74	-7.31	70.99	0.03	-0.8037	0.0549
833	SLV 13	-13.48	3.71	55.64	-0.0341	-0.303	0.0728
833	SLV 14	-14.54	2.63	57.56	-0.0317	-0.2776	0.1023
833	SLV 15	-14.27	-0.41	58.43	-0.0172	-0.4513	0.0793
833	SLV 16	-15.32	-1.49	60.34	-0.0148	-0.426	0.1088
833	CRTFP Ux+	0	0	0	0	0	0
833	CRTFP Ux-	0	0	0	0	0	0
833	CRTFP Uy+	0	0	0	0	0	0
833	CRTFP Uy-	0	0	0	0	0	0
836	SLU 1	0.35	1.52	59.37	0.0335	0.0009	-0.0086
836	SLU 2	0.31	1.47	59.34	0.0341	0.0029	-0.0079
836	SLU 3	0.36	1.58	60.74	0.0347	0.0024	-0.0088
836	SLU 4	0.34	1.55	60.73	0.035	0.0035	-0.0083
836	SLU 5	0.32	1.5	60.2	0.0347	0.0044	-0.008
836	SLU 6	0.37	1.6	61.61	0.0352	0.0039	-0.0089
836	SLU 7	0.35	1.58	61.59	0.0356	0.005	-0.0084
836	SLU 8	0.37	1.57	61.1	0.0346	0.0039	-0.0089
836	SLU 9	0.35	1.54	61.08	0.035	0.0051	-0.0084
836	SLU 10	0.35	1.64	67.45	0.036	0.0077	-0.0084
836	SLU 11	0.4	1.75	68.85	0.0366	0.0072	-0.0093
836	SLU 12	0.38	1.72	68.84	0.0369	0.0083	-0.0088
836	SLU 13	0.37	1.67	68.31	0.0366	0.0092	-0.0085
836	SLU 14	0.41	1.77	69.72	0.0371	0.0087	-0.0094
836	SLU 15	0.39	1.75	69.7	0.0375	0.0098	-0.009
836	SLU 16	0.41	1.74	69.21	0.0365	0.0087	-0.0094
836	SLU 17	0.39	1.71	69.19	0.0369	0.0099	-0.009
836	SLU 18	0.4	1.76	70.95	0.0362	0.0078	-0.0094
836	SLU 19	0.39	1.73	70.94	0.0366	0.009	-0.0089
836	SLU 20	0.42	1.79	71.82	0.0368	0.0093	-0.0095
836	SLU 21	0.4	1.76	71.8	0.0372	0.0105	-0.0091
836	SLU 22	0.39	1.78	67.38	0.0374	-0.0016	-0.0089
836	SLU 23	0.36	1.73	67.35	0.038	0.0004	-0.0081
836	SLU 24	0.4	1.84	68.76	0.0385	-0.0001	-0.009
836	SLU 25	0.38	1.81	68.74	0.0389	0.001	-0.0085
836	SLU 26	0.37	1.76	68.22	0.0385	0.0019	-0.0082
836	SLU 27	0.41	1.86	69.62	0.0391	0.0014	-0.0091
836	SLU 28	0.39	1.83	69.6	0.0394	0.0025	-0.0087
836	SLU 29	0.41	1.83	69.11	0.0385	0.0014	-0.0091
836	SLU 30	0.39	1.8	69.09	0.0388	0.0026	-0.0087
836	SLU 31	0.4	1.9	75.46	0.0399	0.0052	-0.0086
836	SLU 32	0.44	2.01	76.87	0.0404	0.0047	-0.0095
836	SLU 33	0.42	1.98	76.85	0.0408	0.0058	-0.0091
836	SLU 34	0.41	1.93	76.33	0.0404	0.0067	-0.0088
836	SLU 35	0.45	2.03	77.73	0.041	0.0062	-0.0097
836	SLU 36	0.43	2	77.72	0.0413	0.0073	-0.0092
836	SLU 37	0.45	2	77.22	0.0404	0.0062	-0.0097
836	SLU 38	0.43	1.97	77.2	0.0407	0.0074	-0.0092
836	SLU 39	0.45	2.02	78.97	0.0401	0.0053	-0.0096
836	SLU 40	0.43	1.99	78.95	0.0404	0.0064	-0.0092
836	SLU 41	0.46	2.04	79.83	0.0406	0.0068	-0.0098
836	SLU 42	0.44	2.02	79.82	0.041	0.0079	-0.0093
836	SLU 43	0.44	1.89	74.43	0.0423	0.0021	-0.0111
836	SLU 44	0.4	1.84	74.4	0.0429	0.004	-0.0104
836	SLU 45	0.45	1.95	75.81	0.0434	0.0035	-0.0113
836	SLU 46	0.43	1.92	75.79	0.0438	0.0047	-0.0108
836	SLU 47	0.41	1.87	75.27	0.0434	0.0055	-0.0105
836	SLU 48	0.46	1.97	76.67	0.044	0.005	-0.0114
836	SLU 49	0.44	1.94	76.65	0.0443	0.0062	-0.0109
836	SLU 50	0.46	1.94	76.16	0.0434	0.0051	-0.0114
836	SLU 51	0.44	1.91	76.14	0.0438	0.0063	-0.0109
836	SLU 52	0.44	2.01	82.51	0.0448	0.0088	-0.0109
836	SLU 53	0.49	2.12	83.92	0.0453	0.0083	-0.0118
836	SLU 54	0.47	2.09	83.9	0.0457	0.0095	-0.0113
836	SLU 55	0.46	2.04	83.38	0.0453	0.0103	-0.011
836	SLU 56	0.5	2.14	84.78	0.0459	0.0098	-0.0119
836	SLU 57	0.48	2.11	84.76	0.0462	0.011	-0.0115
836	SLU 58	0.5	2.11	84.27	0.0453	0.0099	-0.0119
836	SLU 59	0.48	2.08	84.25	0.0456	0.011	-0.0115
836	SLU 60	0.49	2.13	86.02	0.045	0.0089	-0.0119
836	SLU 61	0.47	2.1	86	0.0454	0.0101	-0.0115
836	SLU 62	0.5	2.15	86.88	0.0455	0.0104	-0.012
836	SLU 63	0.49	2.13	86.86	0.0459	0.0116	-0.0116
836	SLU 64	0.48	2.14	82.44	0.0461	-0.0004	-0.0114
836	SLU 65	0.44	2.1	82.41	0.0467	0.0015	-0.0106
836	SLU 66	0.49	2.2	83.82	0.0473	0.001	-0.0115
836	SLU 67	0.47	2.18	83.8	0.0476	0.0022	-0.011
836	SLU 68	0.46	2.12	83.28	0.0473	0.003	-0.0107
836	SLU 69	0.5	2.23	84.68	0.0478	0.0025	-0.0116
836	SLU 70	0.48	2.2	84.67	0.0482	0.0037	-0.0112
836	SLU 71	0.5	2.19	84.17	0.0472	0.0026	-0.0116
836	SLU 72	0.48	2.17	84.16	0.0476	0.0038	-0.0112
836	SLU 73	0.49	2.27	90.53	0.0486	0.0063	-0.0112
836	SLU 74	0.53	2.37	91.93	0.0491	0.0058	-0.012
836	SLU 75	0.51	2.35	91.91	0.0495	0.007	-0.0116
836	SLU 76	0.5	2.29	91.39	0.0492	0.0078	-0.0113
836	SLU 77	0.54	2.4	92.79	0.0497	0.0073	-0.0122
836	SLU 78	0.52	2.37	92.78	0.0501	0.0085	-0.0117
836	SLU 79	0.54	2.36	92.28	0.0491	0.0074	-0.0122



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
836	SLU 80	0.52	2.34	92.27	0.0495	0.0085	-0.0117
836	SLU 81	0.54	2.39	94.03	0.0488	0.0064	-0.0121
836	SLU 82	0.52	2.36	94.01	0.0492	0.0076	-0.0117
836	SLU 83	0.55	2.41	94.9	0.0494	0.0079	-0.0123
836	SLU 84	0.53	2.38	94.88	0.0497	0.0091	-0.0118
836	SLE RA 1	0.36	1.59	61.66	0.0346	0.0002	-0.0087
836	SLE RA 2	0.34	1.56	61.64	0.035	0.0015	-0.0082
836	SLE RA 3	0.37	1.63	62.57	0.0354	0.0012	-0.0088
836	SLE RA 4	0.35	1.61	62.56	0.0356	0.002	-0.0085
836	SLE RA 5	0.34	1.58	62.21	0.0354	0.0025	-0.0083
836	SLE RA 6	0.37	1.65	63.15	0.0358	0.0022	-0.0089
836	SLE RA 7	0.36	1.63	63.14	0.036	0.003	-0.0086
836	SLE RA 8	0.37	1.63	62.81	0.0354	0.0022	-0.0089
836	SLE RA 9	0.36	1.61	62.8	0.0356	0.003	-0.0086
836	SLE RA 10	0.36	1.68	67.05	0.0363	0.0047	-0.0085
836	SLE RA 11	0.39	1.75	67.98	0.0367	0.0044	-0.0091
836	SLE RA 12	0.38	1.73	67.97	0.0369	0.0052	-0.0088
836	SLE RA 13	0.37	1.69	67.62	0.0367	0.0057	-0.0086
836	SLE RA 14	0.4	1.76	68.56	0.037	0.0054	-0.0092
836	SLE RA 15	0.39	1.74	68.55	0.0373	0.0062	-0.0089
836	SLE RA 16	0.4	1.74	68.22	0.0366	0.0054	-0.0092
836	SLE RA 17	0.39	1.72	68.21	0.0369	0.0062	-0.0089
836	SLE RA 18	0.4	1.75	69.38	0.0364	0.0048	-0.0092
836	SLE RA 19	0.38	1.74	69.37	0.0367	0.0056	-0.0089
836	SLE RA 20	0.4	1.77	69.96	0.0368	0.0058	-0.0093
836	SLE RA 21	0.39	1.75	69.95	0.037	0.0066	-0.009
836	SLE FR 1	0.36	1.59	61.66	0.0346	0.0002	-0.0087
836	SLE FR 2	0.35	1.59	61.65	0.0347	0.0005	-0.0086
836	SLE FR 3	0.36	1.6	61.89	0.0348	0.0006	-0.0087
836	SLE FR 4	0.37	1.64	63.97	0.0352	0.0019	-0.0087
836	SLE FR 5	0.37	1.65	64.2	0.0353	0.002	-0.0089
836	SLE FR 6	0.38	1.67	65.52	0.0355	0.0025	-0.009
836	SLE QP 1	0.36	1.59	61.66	0.0346	0.0002	-0.0087
836	SLE QP 2	0.37	1.64	63.97	0.0352	0.0016	-0.0088
836	SLD 1	6.13	2.15	61.23	0.0254	0.1978	-0.0541
836	SLD 2	5.73	2.32	61.22	0.0242	0.197	-0.0427
836	SLD 3	5.81	0.34	61.47	0.036	0.2269	-0.0571
836	SLD 4	5.41	0.51	61.47	0.0348	0.2262	-0.0457
836	SLD 5	2.65	4.51	62.78	0.0165	0.0164	-0.0199
836	SLD 6	2.38	4.62	62.78	0.0157	0.0159	-0.0124
836	SLD 7	1.59	-1.53	63.59	0.0516	0.1135	-0.0299
836	SLD 8	1.33	-1.42	63.59	0.0508	0.1131	-0.0224
836	SLD 9	-0.59	4.7	64.36	0.0195	-0.1099	0.0047
836	SLD 10	-0.86	4.81	64.36	0.0187	-0.1104	0.0122
836	SLD 11	-1.65	-1.34	65.17	0.0546	-0.0127	-0.0053
836	SLD 12	-1.91	-1.23	65.16	0.0539	-0.0132	0.0022
836	SLD 13	-4.67	2.78	66.48	0.0355	-0.223	0.028
836	SLD 14	-5.07	2.94	66.48	0.0343	-0.2237	0.0394
836	SLD 15	-4.99	0.97	66.72	0.0461	-0.1938	0.025
836	SLD 16	-5.39	1.13	66.72	0.0449	-0.1946	0.0364
836	SLV 1	13.84	2.77	57.55	0.0123	0.4616	-0.1148
836	SLV 2	12.9	3.15	57.54	0.0096	0.4599	-0.0882
836	SLV 3	13.11	-1.33	58.1	0.0362	0.528	-0.1218
836	SLV 4	12.17	-0.95	58.1	0.0334	0.5262	-0.0952
836	SLV 5	5.69	8.13	61.21	-0.0074	0.0392	-0.0346
836	SLV 6	5.09	8.38	61.2	-0.0092	0.0381	-0.0174
836	SLV 7	3.23	-5.54	63.06	0.0722	0.2605	-0.058
836	SLV 8	2.63	-5.29	63.05	0.0704	0.2594	-0.0408
836	SLV 9	-1.89	8.57	64.9	0	-0.2562	0.0231
836	SLV 10	-2.5	8.82	64.89	-0.0018	-0.2573	0.0403
836	SLV 11	-4.35	-5.1	66.75	0.0795	-0.0349	-0.0003
836	SLV 12	-4.95	-4.85	66.74	0.0777	-0.036	0.0169
836	SLV 13	-11.43	4.23	69.85	0.0369	-0.5231	0.0775
836	SLV 14	-12.37	4.62	69.84	0.0341	-0.5248	0.1041
836	SLV 15	-12.17	0.13	70.41	0.0608	-0.4567	0.0705
836	SLV 16	-13.1	0.51	70.4	0.058	-0.4584	0.0971
836	CRTFP Ux+	0	0	0	0	0	0
836	CRTFP Ux-	0	0	0	0	0	0
839	SLU 1	-0.02	0.93	60.3	0.0246	0.0976	0.0055
839	SLU 2	-0.04	0.86	60.23	0.0253	0.0958	0.0062
839	SLU 3	-0.02	0.97	61.7	0.0254	0.1002	0.0055
839	SLU 4	-0.03	0.93	61.66	0.0258	0.0991	0.0059
839	SLU 5	-0.04	0.88	61.11	0.0256	0.0969	0.0061
839	SLU 6	-0.02	0.99	62.57	0.0256	0.1012	0.0055
839	SLU 7	-0.03	0.95	62.53	0.0261	0.1002	0.0059
839	SLU 8	-0.01	0.95	62.05	0.0252	0.0997	0.0054
839	SLU 9	-0.03	0.92	62.01	0.0256	0.0986	0.0058
839	SLU 10	-0.03	1.01	68.13	0.0277	0.1049	0.0074
839	SLU 11	-0.01	1.12	69.59	0.0277	0.1093	0.0067
839	SLU 12	-0.03	1.08	69.55	0.0281	0.1082	0.0071
839	SLU 13	-0.03	1.03	69	0.0279	0.106	0.0073
839	SLU 14	-0.01	1.13	70.46	0.028	0.1103	0.0067
839	SLU 15	-0.02	1.1	70.43	0.0284	0.1093	0.0071
839	SLU 16	-0.01	1.1	69.94	0.0275	0.1088	0.0066
839	SLU 17	-0.02	1.07	69.9	0.0279	0.1077	0.007
839	SLU 18	-0.01	1.14	71.57	0.0279	0.1106	0.0073
839	SLU 19	-0.02	1.1	71.53	0.0284	0.1096	0.0077
839	SLU 20	-0.01	1.15	72.45	0.0282	0.1116	0.0072
839	SLU 21	-0.02	1.12	72.41	0.0286	0.1106	0.0076
839	SLU 22	-0.03	1.17	68.27	0.0283	0.114	0.0059



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
839	SLU 23	-0.05	1.1	68.21	0.029	0.1123	0.0066
839	SLU 24	-0.03	1.21	69.67	0.029	0.1166	0.0059
839	SLU 25	-0.04	1.17	69.64	0.0294	0.1156	0.0063
839	SLU 26	-0.05	1.12	69.09	0.0292	0.1133	0.0065
839	SLU 27	-0.03	1.23	70.55	0.0293	0.1176	0.0059
839	SLU 28	-0.04	1.19	70.51	0.0297	0.1166	0.0063
839	SLU 29	-0.02	1.2	70.02	0.0288	0.1161	0.0058
839	SLU 30	-0.04	1.16	69.99	0.0292	0.115	0.0062
839	SLU 31	-0.04	1.25	76.1	0.0313	0.1214	0.0078
839	SLU 32	-0.02	1.36	77.57	0.0313	0.1257	0.0071
839	SLU 33	-0.04	1.32	77.53	0.0318	0.1247	0.0075
839	SLU 34	-0.04	1.27	76.98	0.0316	0.1224	0.0077
839	SLU 35	-0.02	1.38	78.44	0.0316	0.1268	0.0071
839	SLU 36	-0.03	1.34	78.4	0.0321	0.1257	0.0075
839	SLU 37	-0.02	1.34	77.91	0.0311	0.1252	0.007
839	SLU 38	-0.03	1.31	77.88	0.0316	0.1242	0.0074
839	SLU 39	-0.02	1.38	79.55	0.0316	0.127	0.0077
839	SLU 40	-0.03	1.34	79.51	0.032	0.126	0.008
839	SLU 41	-0.02	1.4	80.42	0.0319	0.1281	0.0076
839	SLU 42	-0.03	1.36	80.39	0.0323	0.127	0.008
839	SLU 43	-0.02	1.12	75.65	0.0307	0.1213	0.007
839	SLU 44	-0.04	1.06	75.59	0.0315	0.1195	0.0077
839	SLU 45	-0.02	1.17	77.05	0.0315	0.1238	0.007
839	SLU 46	-0.04	1.13	77.01	0.0319	0.1228	0.0074
839	SLU 47	-0.04	1.07	76.46	0.0317	0.1205	0.0076
839	SLU 48	-0.02	1.18	77.92	0.0318	0.1249	0.007
839	SLU 49	-0.03	1.14	77.89	0.0322	0.1238	0.0074
839	SLU 50	-0.02	1.15	77.4	0.0313	0.1233	0.0069
839	SLU 51	-0.03	1.11	77.36	0.0317	0.1223	0.0073
839	SLU 52	-0.04	1.21	83.48	0.0338	0.1286	0.0089
839	SLU 53	-0.02	1.32	84.94	0.0338	0.1329	0.0083
839	SLU 54	-0.03	1.28	84.91	0.0343	0.1319	0.0087
839	SLU 55	-0.03	1.22	84.36	0.0341	0.1296	0.0089
839	SLU 56	-0.01	1.33	85.82	0.0341	0.134	0.0082
839	SLU 57	-0.02	1.29	85.78	0.0345	0.1329	0.0086
839	SLU 58	-0.01	1.3	85.29	0.0336	0.1324	0.0082
839	SLU 59	-0.02	1.26	85.26	0.034	0.1314	0.0085
839	SLU 60	-0.01	1.34	86.92	0.0341	0.1343	0.0088
839	SLU 61	-0.03	1.3	86.89	0.0345	0.1332	0.0092
839	SLU 62	-0.01	1.35	87.8	0.0343	0.1353	0.0087
839	SLU 63	-0.02	1.31	87.76	0.0348	0.1342	0.0091
839	SLU 64	-0.03	1.36	83.63	0.0344	0.1377	0.0074
839	SLU 65	-0.06	1.3	83.56	0.0351	0.1359	0.0081
839	SLU 66	-0.03	1.41	85.03	0.0351	0.1403	0.0074
839	SLU 67	-0.05	1.37	84.99	0.0356	0.1392	0.0078
839	SLU 68	-0.05	1.31	84.44	0.0354	0.137	0.008
839	SLU 69	-0.03	1.42	85.9	0.0354	0.1413	0.0074
839	SLU 70	-0.04	1.38	85.86	0.0359	0.1402	0.0078
839	SLU 71	-0.03	1.39	85.38	0.0349	0.1398	0.0073
839	SLU 72	-0.04	1.35	85.34	0.0354	0.1387	0.0077
839	SLU 73	-0.05	1.45	91.46	0.0374	0.145	0.0093
839	SLU 74	-0.03	1.56	92.92	0.0375	0.1494	0.0087
839	SLU 75	-0.04	1.52	92.88	0.0379	0.1483	0.0091
839	SLU 76	-0.04	1.46	92.33	0.0377	0.1461	0.0093
839	SLU 77	-0.02	1.57	93.79	0.0377	0.1504	0.0086
839	SLU 78	-0.04	1.53	93.76	0.0382	0.1493	0.009
839	SLU 79	-0.02	1.54	93.27	0.0373	0.1489	0.0085
839	SLU 80	-0.03	1.5	93.23	0.0377	0.1478	0.0089
839	SLU 81	-0.02	1.58	94.9	0.0377	0.1507	0.0092
839	SLU 82	-0.04	1.54	94.86	0.0381	0.1496	0.0096
839	SLU 83	-0.02	1.59	95.78	0.038	0.1517	0.0091
839	SLU 84	-0.03	1.55	95.74	0.0384	0.1507	0.0095
839	SLE RA 1	-0.02	1	62.57	0.0256	0.1023	0.0056
839	SLE RA 2	-0.04	0.95	62.53	0.0261	0.1011	0.0061
839	SLE RA 3	-0.02	1.03	63.51	0.0262	0.104	0.0056
839	SLE RA 4	-0.03	1	63.48	0.0264	0.1033	0.0059
839	SLE RA 5	-0.04	0.96	63.12	0.0263	0.1018	0.006
839	SLE RA 6	-0.02	1.03	64.09	0.0263	0.1047	0.0056
839	SLE RA 7	-0.03	1.01	64.07	0.0266	0.104	0.0059
839	SLE RA 8	-0.02	1.01	63.74	0.026	0.1037	0.0056
839	SLE RA 9	-0.03	0.99	63.72	0.0263	0.103	0.0058
839	SLE RA 10	-0.03	1.05	67.8	0.0277	0.1072	0.0069
839	SLE RA 11	-0.02	1.13	68.77	0.0277	0.1101	0.0064
839	SLE RA 12	-0.03	1.1	68.75	0.028	0.1094	0.0067
839	SLE RA 13	-0.03	1.06	68.38	0.0279	0.1079	0.0068
839	SLE RA 14	-0.02	1.13	69.35	0.0279	0.1108	0.0064
839	SLE RA 15	-0.02	1.11	69.33	0.0282	0.1101	0.0067
839	SLE RA 16	-0.01	1.11	69	0.0276	0.1098	0.0064
839	SLE RA 17	-0.02	1.09	68.98	0.0279	0.109	0.0066
839	SLE RA 18	-0.02	1.14	70.09	0.0279	0.111	0.0068
839	SLE RA 19	-0.03	1.11	70.07	0.0282	0.1103	0.0071
839	SLE RA 20	-0.01	1.15	70.67	0.028	0.1117	0.0068
839	SLE RA 21	-0.02	1.12	70.65	0.0283	0.111	0.007
839	SLE FR 1	-0.02	1	62.57	0.0256	0.1023	0.0056
839	SLE FR 2	-0.03	0.99	62.57	0.0257	0.1021	0.0057
839	SLE FR 3	-0.02	1	62.81	0.0257	0.1026	0.0056
839	SLE FR 4	-0.02	1.03	64.82	0.0264	0.1047	0.0061
839	SLE FR 5	-0.02	1.04	65.06	0.0264	0.1052	0.006
839	SLE FR 6	-0.02	1.07	66.33	0.0268	0.1066	0.0062
839	SLE QP 1	-0.02	1	62.57	0.0256	0.1023	0.0056



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
839	SLE QP 2	-0.02	1.04	64.83	0.0263	0.1049	0.006
839	SLD 1	5.4	2.38	70.2	0.032	0.2722	-0.0381
839	SLD 2	4.99	2.19	69.85	0.0325	0.274	-0.0271
839	SLD 3	5.71	0.59	70.52	0.0425	0.2569	-0.0347
839	SLD 4	5.31	0.4	70.18	0.043	0.2587	-0.0237
839	SLD 5	1.2	4.19	66.02	0.012	0.178	-0.0143
839	SLD 6	0.93	4.06	65.79	0.0123	0.1792	-0.0071
839	SLD 7	2.25	-1.77	67.09	0.047	0.127	-0.003
839	SLD 8	1.98	-1.9	66.86	0.0473	0.1282	0.0042
839	SLD 9	-2.03	3.98	62.8	0.0053	0.0816	0.0078
839	SLD 10	-2.29	3.85	62.57	0.0056	0.0828	0.015
839	SLD 11	-0.97	-1.99	63.87	0.0403	0.0306	0.0191
839	SLD 12	-1.24	-2.11	63.64	0.0406	0.0318	0.0263
839	SLD 13	-5.35	1.67	59.48	0.0096	-0.0489	0.0357
839	SLD 14	-5.76	1.48	59.14	0.0101	-0.0471	0.0466
839	SLD 15	-5.03	-0.11	59.8	0.0201	-0.0642	0.0391
839	SLD 16	-5.44	-0.31	59.46	0.0206	-0.0624	0.05
839	SLV 1	12.65	4.11	77.42	0.0403	0.496	-0.097
839	SLV 2	11.71	3.67	76.61	0.0414	0.5002	-0.0716
839	SLV 3	13.39	0.07	78.17	0.064	0.4608	-0.0892
839	SLV 4	12.45	-0.38	77.36	0.0651	0.465	-0.0638
839	SLV 5	2.82	8.18	67.61	-0.0057	0.2749	-0.0411
839	SLV 6	2.21	7.89	67.09	-0.005	0.2776	-0.0247
839	SLV 7	5.28	-5.31	70.11	0.0735	0.1575	-0.0152
839	SLV 8	4.67	-5.6	69.58	0.0742	0.1603	0.0013
839	SLV 9	-4.72	7.68	60.08	-0.0216	0.0495	0.0107
839	SLV 10	-5.33	7.39	59.55	-0.0209	0.0523	0.0271
839	SLV 11	-2.26	-5.81	62.57	0.0577	-0.0678	0.0367
839	SLV 12	-2.87	-6.1	62.05	0.0584	-0.0651	0.0531
839	SLV 13	-12.49	2.46	52.3	-0.0125	-0.2552	0.0757
839	SLV 14	-13.43	2.01	51.49	-0.0114	-0.251	0.1012
839	SLV 15	-11.75	-1.59	53.05	0.0113	-0.2904	0.0835
839	SLV 16	-12.7	-2.04	52.24	0.0124	-0.2862	0.1089
839	CRTFP Ux+	0	0	0	0	0	0
839	CRTFP Ux-	0	0	0	0	0	0
841	SLU 1	-0.56	0.13	32.07	0.0467	-3.2857	0.0317
841	SLU 2	-0.57	0.04	32.1	0.0467	-3.2859	0.0097
841	SLU 3	-0.57	0.14	32.84	0.0479	-3.3544	0.0335
841	SLU 4	-0.58	0.08	32.86	0.0479	-3.3545	0.0203
841	SLU 5	-0.58	0.05	32.59	0.0475	-3.3287	0.011
841	SLU 6	-0.58	0.14	33.33	0.0486	-3.3972	0.0348
841	SLU 7	-0.59	0.09	33.34	0.0486	-3.3973	0.0216
841	SLU 8	-0.58	0.14	33.04	0.0481	-3.3713	0.0343
841	SLU 9	-0.58	0.09	33.06	0.0482	-3.3714	0.0211
841	SLU 10	-0.61	0.12	35.86	0.053	-3.6362	0.0292
841	SLU 11	-0.61	0.22	36.6	0.0541	-3.7047	0.0531
841	SLU 12	-0.62	0.16	36.62	0.0541	-3.7048	0.0398
841	SLU 13	-0.62	0.12	36.34	0.0537	-3.679	0.0305
841	SLU 14	-0.62	0.22	37.08	0.0548	-3.7474	0.0544
841	SLU 15	-0.63	0.17	37.1	0.0549	-3.7475	0.0411
841	SLU 16	-0.62	0.22	36.79	0.0544	-3.7216	0.0539
841	SLU 17	-0.63	0.17	36.81	0.0544	-3.7217	0.0407
841	SLU 18	-0.62	0.24	37.44	0.0556	-3.7862	0.0597
841	SLU 19	-0.63	0.19	37.46	0.0556	-3.7863	0.0464
841	SLU 20	-0.63	0.25	37.92	0.0563	-3.8289	0.061
841	SLU 21	-0.63	0.19	37.94	0.0564	-3.829	0.0477
841	SLU 22	-0.61	0.2	35.9	0.0532	-3.6415	0.0484
841	SLU 23	-0.62	0.11	35.93	0.0532	-3.6417	0.0263
841	SLU 24	-0.62	0.2	36.67	0.0544	-3.7102	0.0501
841	SLU 25	-0.63	0.15	36.69	0.0544	-3.7103	0.0369
841	SLU 26	-0.63	0.11	36.42	0.0539	-3.6845	0.0276
841	SLU 27	-0.63	0.21	37.16	0.0551	-3.7529	0.0514
841	SLU 28	-0.64	0.16	37.17	0.0551	-3.753	0.0382
841	SLU 29	-0.62	0.21	36.87	0.0546	-3.7271	0.051
841	SLU 30	-0.63	0.15	36.89	0.0547	-3.7272	0.0377
841	SLU 31	-0.66	0.19	39.69	0.0595	-3.992	0.0458
841	SLU 32	-0.66	0.28	40.43	0.0606	-4.0605	0.0697
841	SLU 33	-0.67	0.23	40.45	0.0606	-4.0606	0.0565
841	SLU 34	-0.67	0.19	40.17	0.0602	-4.0347	0.0471
841	SLU 35	-0.67	0.29	40.91	0.0613	-4.1032	0.071
841	SLU 36	-0.68	0.23	40.93	0.0614	-4.1033	0.0578
841	SLU 37	-0.66	0.29	40.62	0.0609	-4.0773	0.0705
841	SLU 38	-0.67	0.23	40.64	0.0609	-4.0774	0.0573
841	SLU 39	-0.66	0.31	41.27	0.0621	-4.1419	0.0763
841	SLU 40	-0.67	0.26	41.29	0.0621	-4.142	0.0631
841	SLU 41	-0.67	0.31	41.75	0.0628	-4.1847	0.0776
841	SLU 42	-0.68	0.26	41.77	0.0628	-4.1848	0.0644
841	SLU 43	-0.71	0.15	40.38	0.0585	-4.1495	0.0356
841	SLU 44	-0.73	0.06	40.41	0.0585	-4.1497	0.0135
841	SLU 45	-0.73	0.15	41.15	0.0597	-4.2181	0.0373
841	SLU 46	-0.73	0.1	41.17	0.0597	-4.2182	0.0241
841	SLU 47	-0.73	0.06	40.89	0.0592	-4.1924	0.0148
841	SLU 48	-0.73	0.16	41.63	0.0604	-4.2609	0.0386
841	SLU 49	-0.74	0.1	41.65	0.0604	-4.261	0.0254
841	SLU 50	-0.73	0.16	41.35	0.0599	-4.235	0.0382
841	SLU 51	-0.74	0.1	41.37	0.0599	-4.2351	0.0249
841	SLU 52	-0.77	0.14	44.17	0.0648	-4.4999	0.033
841	SLU 53	-0.77	0.23	44.91	0.0659	-4.5684	0.0569
841	SLU 54	-0.77	0.18	44.92	0.0659	-4.5685	0.0437
841	SLU 55	-0.77	0.14	44.65	0.0655	-4.5427	0.0343



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
841	SLU 56	-0.77	0.24	45.39	0.0666	-4.6112	0.0582
841	SLU 57	-0.78	0.18	45.41	0.0667	-4.6113	0.045
841	SLU 58	-0.77	0.23	45.1	0.0662	-4.5853	0.0577
841	SLU 59	-0.78	0.18	45.12	0.0662	-4.5854	0.0445
841	SLU 60	-0.77	0.26	45.75	0.0674	-4.6499	0.0635
841	SLU 61	-0.78	0.2	45.76	0.0674	-4.65	0.0503
841	SLU 62	-0.78	0.26	46.23	0.0681	-4.6927	0.0648
841	SLU 63	-0.79	0.21	46.25	0.0681	-4.6928	0.0516
841	SLU 64	-0.76	0.21	44.21	0.065	-4.5053	0.0522
841	SLU 65	-0.77	0.12	44.24	0.065	-4.5054	0.0301
841	SLU 66	-0.77	0.22	44.98	0.0662	-4.5739	0.054
841	SLU 67	-0.78	0.17	45	0.0662	-4.574	0.0407
841	SLU 68	-0.78	0.13	44.72	0.0657	-4.5482	0.0314
841	SLU 69	-0.78	0.22	45.46	0.0669	-4.6167	0.0553
841	SLU 70	-0.79	0.17	45.48	0.0669	-4.6168	0.042
841	SLU 71	-0.77	0.22	45.18	0.0664	-4.5908	0.0548
841	SLU 72	-0.78	0.17	45.2	0.0664	-4.5909	0.0415
841	SLU 73	-0.81	0.2	48	0.0712	-4.8557	0.0497
841	SLU 74	-0.81	0.3	48.74	0.0724	-4.9242	0.0735
841	SLU 75	-0.82	0.25	48.75	0.0724	-4.9243	0.0603
841	SLU 76	-0.82	0.21	48.48	0.072	-4.8985	0.051
841	SLU 77	-0.82	0.3	49.22	0.0731	-4.967	0.0748
841	SLU 78	-0.83	0.25	49.24	0.0731	-4.9671	0.0616
841	SLU 79	-0.82	0.3	48.93	0.0726	-4.9411	0.0743
841	SLU 80	-0.82	0.25	48.95	0.0727	-4.9412	0.0611
841	SLU 81	-0.82	0.33	49.58	0.0739	-5.0057	0.0801
841	SLU 82	-0.83	0.27	49.59	0.0739	-5.0058	0.0669
841	SLU 83	-0.82	0.33	50.06	0.0746	-5.0484	0.0814
841	SLU 84	-0.83	0.28	50.08	0.0746	-5.0485	0.0682
841	SLE RA 1	-0.57	0.15	33.17	0.0485	-3.3874	0.0365
841	SLE RA 2	-0.58	0.09	33.19	0.0486	-3.3875	0.0218
841	SLE RA 3	-0.58	0.15	33.68	0.0493	-3.4332	0.0377
841	SLE RA 4	-0.59	0.12	33.69	0.0494	-3.4332	0.0288
841	SLE RA 5	-0.59	0.09	33.51	0.0491	-3.416	0.0226
841	SLE RA 6	-0.59	0.16	34	0.0498	-3.4617	0.0385
841	SLE RA 7	-0.59	0.12	34.01	0.0498	-3.4617	0.0297
841	SLE RA 8	-0.58	0.16	33.81	0.0495	-3.4444	0.0382
841	SLE RA 9	-0.59	0.12	33.82	0.0495	-3.4445	0.0294
841	SLE RA 10	-0.61	0.14	35.69	0.0527	-3.621	0.0348
841	SLE RA 11	-0.61	0.21	36.18	0.0535	-3.6667	0.0507
841	SLE RA 12	-0.62	0.17	36.2	0.0535	-3.6668	0.0419
841	SLE RA 13	-0.62	0.15	36.01	0.0532	-3.6495	0.0357
841	SLE RA 14	-0.61	0.21	36.51	0.054	-3.6952	0.0516
841	SLE RA 15	-0.62	0.17	36.52	0.054	-3.6953	0.0428
841	SLE RA 16	-0.61	0.21	36.31	0.0537	-3.6779	0.0513
841	SLE RA 17	-0.62	0.17	36.33	0.0537	-3.678	0.0424
841	SLE RA 18	-0.61	0.22	36.74	0.0545	-3.721	0.0551
841	SLE RA 19	-0.62	0.19	36.76	0.0545	-3.7211	0.0463
841	SLE RA 20	-0.62	0.23	37.07	0.055	-3.7495	0.056
841	SLE RA 21	-0.62	0.19	37.08	0.055	-3.7496	0.0472
841	SLE FR 1	-0.57	0.15	33.17	0.0485	-3.3874	0.0365
841	SLE FR 2	-0.57	0.14	33.17	0.0485	-3.3874	0.0335
841	SLE FR 3	-0.58	0.15	33.3	0.0487	-3.3988	0.0368
841	SLE FR 4	-0.59	0.16	34.24	0.0503	-3.4875	0.0391
841	SLE FR 5	-0.59	0.17	34.37	0.0505	-3.4989	0.0424
841	SLE FR 6	-0.59	0.19	34.95	0.0515	-3.5542	0.0458
841	SLE QP 1	-0.57	0.15	33.17	0.0485	-3.3874	0.0365
841	SLE QP 2	-0.58	0.17	34.24	0.0503	-3.4875	0.0421
841	SLD 1	2.25	0.73	42.4	0.0588	-4.2219	0.1795
841	SLD 2	2.02	0.21	42.76	0.0612	-4.266	0.0511
841	SLD 3	2.09	-0.55	43.04	0.0631	-4.2948	-0.141
841	SLD 4	1.86	-1.07	43.4	0.0655	-4.3389	-0.2694
841	SLD 5	0.54	2.38	35.65	0.0459	-3.5894	0.5923
841	SLD 6	0.39	2.04	35.88	0.0475	-3.6184	0.5079
841	SLD 7	0.02	-1.9	37.79	0.0603	-3.8323	-0.476
841	SLD 8	-0.13	-2.24	38.02	0.0619	-3.8613	-0.5603
841	SLD 9	-1.04	2.58	30.46	0.0388	-3.1137	0.6445
841	SLD 10	-1.19	2.24	30.69	0.0404	-3.1427	0.5601
841	SLD 11	-1.56	-1.7	32.59	0.0532	-3.3566	-0.4238
841	SLD 12	-1.71	-2.04	32.83	0.0548	-3.3856	-0.5081
841	SLD 13	-3.03	1.41	25.08	0.0351	-2.6361	0.3535
841	SLD 14	-3.26	0.89	25.44	0.0376	-2.6802	0.2252
841	SLD 15	-3.19	0.13	25.72	0.0395	-2.709	0.0331
841	SLD 16	-3.41	-0.39	26.08	0.0419	-2.7531	-0.0953
841	SLV 1	6.03	1.43	53.35	0.0702	-5.2081	0.3504
841	SLV 2	5.5	0.23	54.18	0.0759	-5.3108	0.0514
841	SLV 3	5.67	-1.47	54.83	0.08	-5.3755	-0.3749
841	SLV 4	5.14	-2.68	55.66	0.0857	-5.4783	-0.6739
841	SLV 5	2.04	5.17	37.58	0.0404	-3.7319	1.2862
841	SLV 6	1.7	4.39	38.12	0.0441	-3.7983	1.0931
841	SLV 7	0.83	-4.52	42.52	0.0731	-4.2901	-1.1313
841	SLV 8	0.49	-5.3	43.06	0.0768	-4.3564	-1.3244
841	SLV 9	-1.66	5.64	25.42	0.0239	-2.6185	1.4085
841	SLV 10	-2	4.86	25.96	0.0275	-2.6849	1.2154
841	SLV 11	-2.87	-4.04	30.36	0.0566	-3.1767	-1.009
841	SLV 12	-3.21	-4.82	30.9	0.0602	-3.243	-1.2021
841	SLV 13	-6.31	3.02	12.82	0.015	-1.4967	0.758
841	SLV 14	-6.84	1.82	13.65	0.0206	-1.5994	0.459
841	SLV 15	-6.67	0.12	14.3	0.0248	-1.6641	0.0328
841	SLV 16	-7.2	-1.09	15.13	0.0304	-1.7669	-0.2662





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
841	CRTFP Ux+	0	0	0	0	0	0
841	CRTFP Ux-	0	0	0	0	0	0
841	CRTFP Uy+	0	0	0	0	0	0
841	CRTFP Uy-	0	0	0	0	0	0
844	SLU 1	0.73	0.46	30.89	-0.0362	2.5428	-0.1635
844	SLU 2	0.74	0.44	30.88	-0.0363	2.5444	-0.155
844	SLU 3	0.75	0.47	31.59	-0.0371	2.5784	-0.1667
844	SLU 4	0.76	0.45	31.59	-0.0372	2.5793	-0.1616
844	SLU 5	0.76	0.43	31.32	-0.037	2.5659	-0.155
844	SLU 6	0.76	0.47	32.02	-0.0378	2.5999	-0.1666
844	SLU 7	0.77	0.45	32.02	-0.0379	2.6009	-0.1615
844	SLU 8	0.76	0.46	31.75	-0.0375	2.5858	-0.1634
844	SLU 9	0.77	0.44	31.75	-0.0376	2.5868	-0.1583
844	SLU 10	0.79	0.57	34.41	-0.0408	2.7325	-0.203
844	SLU 11	0.8	0.61	35.12	-0.0415	2.7666	-0.2147
844	SLU 12	0.81	0.59	35.11	-0.0416	2.7675	-0.2096
844	SLU 13	0.81	0.57	34.84	-0.0414	2.7541	-0.203
844	SLU 14	0.82	0.6	35.55	-0.0422	2.7881	-0.2147
844	SLU 15	0.83	0.59	35.55	-0.0423	2.789	-0.2096
844	SLU 16	0.81	0.6	35.28	-0.0419	2.774	-0.2115
844	SLU 17	0.82	0.58	35.28	-0.042	2.7749	-0.2064
844	SLU 18	0.8	0.65	35.92	-0.0425	2.8116	-0.2321
844	SLU 19	0.81	0.64	35.92	-0.0426	2.8126	-0.227
844	SLU 20	0.81	0.65	36.36	-0.0431	2.8331	-0.2321
844	SLU 21	0.82	0.64	36.36	-0.0432	2.8341	-0.227
844	SLU 22	0.8	0.58	34.44	-0.0405	2.7324	-0.2056
844	SLU 23	0.81	0.55	34.43	-0.0407	2.734	-0.1971
844	SLU 24	0.82	0.59	35.14	-0.0415	2.768	-0.2088
844	SLU 25	0.83	0.57	35.14	-0.0416	2.769	-0.2037
844	SLU 26	0.83	0.55	34.87	-0.0413	2.7555	-0.1971
844	SLU 27	0.83	0.59	35.58	-0.0421	2.7895	-0.2088
844	SLU 28	0.84	0.57	35.57	-0.0422	2.7905	-0.2037
844	SLU 29	0.83	0.58	35.31	-0.0418	2.7754	-0.2056
844	SLU 30	0.84	0.56	35.3	-0.0419	2.7764	-0.2005
844	SLU 31	0.86	0.69	37.96	-0.0451	2.9222	-0.2451
844	SLU 32	0.87	0.72	38.67	-0.0459	2.9562	-0.2568
844	SLU 33	0.88	0.71	38.67	-0.046	2.9571	-0.2517
844	SLU 34	0.88	0.69	38.39	-0.0457	2.9437	-0.2451
844	SLU 35	0.88	0.72	39.1	-0.0465	2.9777	-0.2568
844	SLU 36	0.9	0.71	39.1	-0.0466	2.9787	-0.2517
844	SLU 37	0.88	0.72	38.83	-0.0462	2.9636	-0.2536
844	SLU 38	0.89	0.7	38.83	-0.0463	2.9646	-0.2485
844	SLU 39	0.87	0.77	39.48	-0.0468	3.0012	-0.2742
844	SLU 40	0.88	0.76	39.47	-0.0469	3.0022	-0.2691
844	SLU 41	0.88	0.77	39.91	-0.0474	3.0228	-0.2742
844	SLU 42	0.89	0.76	39.91	-0.0475	3.0237	-0.2691
844	SLU 43	0.92	0.56	38.94	-0.0456	3.2406	-0.1981
844	SLU 44	0.94	0.53	38.93	-0.0457	3.2422	-0.1896
844	SLU 45	0.94	0.57	39.64	-0.0465	3.2762	-0.2013
844	SLU 46	0.95	0.55	39.64	-0.0466	3.2772	-0.1962
844	SLU 47	0.95	0.53	39.37	-0.0464	3.2637	-0.1896
844	SLU 48	0.96	0.57	40.07	-0.0472	3.2977	-0.2012
844	SLU 49	0.97	0.55	40.07	-0.0472	3.2987	-0.1961
844	SLU 50	0.95	0.56	39.8	-0.0468	3.2836	-0.198
844	SLU 51	0.96	0.54	39.8	-0.0469	3.2846	-0.1929
844	SLU 52	0.99	0.67	42.46	-0.0501	3.4304	-0.2376
844	SLU 53	0.99	0.7	43.17	-0.0509	3.4644	-0.2493
844	SLU 54	1	0.69	43.16	-0.051	3.4653	-0.2442
844	SLU 55	1	0.67	42.89	-0.0508	3.4519	-0.2376
844	SLU 56	1.01	0.7	43.6	-0.0516	3.4859	-0.2493
844	SLU 57	1.02	0.69	43.6	-0.0517	3.4869	-0.2442
844	SLU 58	1	0.69	43.33	-0.0512	3.4718	-0.2461
844	SLU 59	1.01	0.68	43.33	-0.0513	3.4728	-0.241
844	SLU 60	0.99	0.75	43.97	-0.0519	3.5094	-0.2667
844	SLU 61	1	0.74	43.97	-0.052	3.5104	-0.2616
844	SLU 62	1.01	0.75	44.41	-0.0525	3.531	-0.2667
844	SLU 63	1.02	0.74	44.4	-0.0526	3.5319	-0.2616
844	SLU 64	0.99	0.68	42.49	-0.0499	3.4302	-0.2402
844	SLU 65	1.01	0.65	42.48	-0.05	3.4318	-0.2317
844	SLU 66	1.01	0.69	43.19	-0.0508	3.4658	-0.2434
844	SLU 67	1.02	0.67	43.19	-0.0509	3.4668	-0.2383
844	SLU 68	1.02	0.65	42.92	-0.0507	3.4533	-0.2317
844	SLU 69	1.03	0.68	43.62	-0.0515	3.4874	-0.2434
844	SLU 70	1.04	0.67	43.62	-0.0516	3.4883	-0.2383
844	SLU 71	1.02	0.68	43.35	-0.0512	3.4733	-0.2402
844	SLU 72	1.03	0.66	43.35	-0.0512	3.4742	-0.2351
844	SLU 73	1.06	0.79	46.01	-0.0544	3.62	-0.2797
844	SLU 74	1.06	0.82	46.72	-0.0552	3.654	-0.2914
844	SLU 75	1.07	0.81	46.71	-0.0553	3.655	-0.2863
844	SLU 76	1.07	0.79	46.44	-0.0551	3.6415	-0.2797
844	SLU 77	1.08	0.82	47.15	-0.0559	3.6755	-0.2914
844	SLU 78	1.09	0.81	47.15	-0.056	3.6765	-0.2863
844	SLU 79	1.07	0.81	46.88	-0.0556	3.6614	-0.2882
844	SLU 80	1.08	0.8	46.88	-0.0557	3.6624	-0.2831
844	SLU 81	1.06	0.87	47.52	-0.0562	3.6991	-0.3088
844	SLU 82	1.07	0.86	47.52	-0.0563	3.7	-0.3037
844	SLU 83	1.08	0.87	47.96	-0.0568	3.7206	-0.3088
844	SLU 84	1.09	0.86	47.96	-0.0569	3.7215	-0.3037
844	SLE RA 1	0.75	0.49	31.9	-0.0374	2.597	-0.1755
844	SLE RA 2	0.76	0.48	31.9	-0.0375	2.598	-0.1699



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
844	SLE RA 3	0.76	0.5	32.37	-0.0381	2.6207	-0.1777
844	SLE RA 4	0.77	0.49	32.37	-0.0381	2.6213	-0.1743
844	SLE RA 5	0.77	0.48	32.19	-0.0379	2.6124	-0.1698
844	SLE RA 6	0.77	0.5	32.66	-0.0385	2.635	-0.1776
844	SLE RA 7	0.78	0.49	32.66	-0.0385	2.6357	-0.1742
844	SLE RA 8	0.77	0.49	32.48	-0.0383	2.6257	-0.1755
844	SLE RA 9	0.77	0.48	32.48	-0.0383	2.6263	-0.1721
844	SLE RA 10	0.79	0.57	34.25	-0.0405	2.7235	-0.2019
844	SLE RA 11	0.8	0.59	34.72	-0.041	2.7462	-0.2097
844	SLE RA 12	0.8	0.58	34.72	-0.0411	2.7468	-0.2063
844	SLE RA 13	0.8	0.57	34.54	-0.0409	2.7378	-0.2019
844	SLE RA 14	0.81	0.59	35.01	-0.0414	2.7605	-0.2096
844	SLE RA 15	0.81	0.58	35.01	-0.0415	2.7611	-0.2062
844	SLE RA 16	0.8	0.58	34.83	-0.0412	2.7511	-0.2075
844	SLE RA 17	0.81	0.57	34.83	-0.0413	2.7517	-0.2041
844	SLE RA 18	0.79	0.62	35.26	-0.0416	2.7762	-0.2213
844	SLE RA 19	0.8	0.61	35.26	-0.0417	2.7768	-0.2179
844	SLE RA 20	0.8	0.62	35.55	-0.042	2.7905	-0.2212
844	SLE RA 21	0.81	0.61	35.55	-0.0421	2.7912	-0.2178
844	SLE FR 1	0.75	0.49	31.9	-0.0374	2.597	-0.1755
844	SLE FR 2	0.75	0.49	31.9	-0.0374	2.5972	-0.1744
844	SLE FR 3	0.75	0.49	32.02	-0.0376	2.6027	-0.1755
844	SLE FR 4	0.76	0.53	32.91	-0.0387	2.6509	-0.1881
844	SLE FR 5	0.76	0.53	33.03	-0.0388	2.6565	-0.1892
844	SLE FR 6	0.77	0.56	33.58	-0.0395	2.6866	-0.1984
844	SLE QP 1	0.75	0.49	31.9	-0.0374	2.597	-0.1755
844	SLE QP 2	0.76	0.53	32.91	-0.0387	2.6507	-0.1892
844	SLD 1	2.08	0.62	24.82	-0.0268	2.3079	-0.2184
844	SLD 2	1.8	1.26	24.45	-0.0286	2.2694	-0.4428
844	SLD 3	2.49	-0.86	25.55	-0.0234	2.3658	0.2988
844	SLD 4	2.2	-0.22	25.18	-0.0252	2.3272	0.0744
844	SLD 5	0.6	2.69	29.43	-0.0399	2.467	-0.9423
844	SLD 6	0.41	3.11	29.19	-0.0411	2.4417	-1.0898
844	SLD 7	1.94	-2.25	31.88	-0.0287	2.6599	0.7817
844	SLD 8	1.75	-1.82	31.64	-0.0299	2.6345	0.6342
844	SLD 9	-0.23	2.89	34.18	-0.0475	2.6669	-1.0127
844	SLD 10	-0.42	3.31	33.94	-0.0487	2.6416	-1.1601
844	SLD 11	1.11	-2.05	36.63	-0.0363	2.8598	0.7113
844	SLD 12	0.92	-1.62	36.38	-0.0375	2.8344	0.5638
844	SLD 13	-0.68	1.28	40.64	-0.0521	2.9743	-0.4529
844	SLD 14	-0.96	1.93	40.26	-0.0539	2.9357	-0.6773
844	SLD 15	-0.28	-0.2	41.37	-0.0488	3.0321	0.0643
844	SLD 16	-0.56	0.45	41	-0.0506	2.9935	-0.1601
844	SLV 1	3.87	0.68	13.99	-0.0108	1.8505	-0.2399
844	SLV 2	3.21	2.18	13.13	-0.0149	1.7607	-0.7625
844	SLV 3	4.78	-2.67	15.67	-0.0031	1.9817	0.9314
844	SLV 4	4.12	-1.17	14.81	-0.0073	1.8919	0.4088
844	SLV 5	0.42	5.41	24.84	-0.0412	2.2273	-1.8905
844	SLV 6	0	6.37	24.28	-0.0439	2.1692	-2.228
844	SLV 7	3.47	-5.77	30.43	-0.0157	2.6645	2.0138
844	SLV 8	3.04	-4.8	29.87	-0.0184	2.6065	1.6762
844	SLV 9	-1.52	5.87	35.94	-0.059	2.695	-2.0547
844	SLV 10	-1.94	6.84	35.39	-0.0617	2.637	-2.3922
844	SLV 11	1.52	-5.31	41.54	-0.0335	3.1322	1.8495
844	SLV 12	1.1	-4.34	40.98	-0.0362	3.0742	1.512
844	SLV 13	-2.6	2.23	51.01	-0.0701	3.4096	-0.7873
844	SLV 14	-3.26	3.74	50.15	-0.0742	3.3198	-1.3099
844	SLV 15	-1.69	-1.12	52.69	-0.0624	3.5408	0.384
844	SLV 16	-2.35	0.38	51.82	-0.0666	3.451	-0.1386
844	CRTFP Ux+	0	0	0	0	0	0
844	CRTFP Ux-	0	0	0	0	0	0
844	CRTFP Uy+	0	0	0	0	0	0
844	CRTFP Uy-	0	0	0	0	0	0
846	SLU 1	1.56	0.24	66.65	0.04	0.555	-0.0094
846	SLU 2	1.53	0.21	66.64	0.0398	0.5667	-0.0083
846	SLU 3	1.6	0.26	68.21	0.041	0.572	-0.0096
846	SLU 4	1.58	0.23	68.21	0.0409	0.579	-0.0089
846	SLU 5	1.56	0.21	67.59	0.0404	0.5766	-0.0085
846	SLU 6	1.63	0.25	69.17	0.0416	0.5818	-0.0098
846	SLU 7	1.61	0.23	69.16	0.0415	0.5888	-0.0091
846	SLU 8	1.61	0.24	68.56	0.0411	0.5748	-0.0097
846	SLU 9	1.6	0.22	68.55	0.041	0.5818	-0.0091
846	SLU 10	1.65	0.31	75.09	0.0447	0.652	-0.01
846	SLU 11	1.71	0.36	76.67	0.0459	0.6573	-0.0113
846	SLU 12	1.7	0.34	76.66	0.0458	0.6643	-0.0106
846	SLU 13	1.67	0.31	76.04	0.0453	0.6619	-0.0102
846	SLU 14	1.74	0.36	77.62	0.0464	0.6672	-0.0115
846	SLU 15	1.73	0.34	77.61	0.0463	0.6742	-0.0108
846	SLU 16	1.73	0.34	77.01	0.046	0.6601	-0.0115
846	SLU 17	1.71	0.32	77	0.0459	0.6671	-0.0108
846	SLU 18	1.72	0.39	78.73	0.047	0.677	-0.0119
846	SLU 19	1.71	0.37	78.72	0.0469	0.684	-0.0112
846	SLU 20	1.75	0.39	79.68	0.0475	0.6869	-0.012
846	SLU 21	1.73	0.37	79.67	0.0474	0.6938	-0.0114
846	SLU 22	1.69	0.38	75.1	0.0457	0.6418	-0.0105
846	SLU 23	1.66	0.34	75.08	0.0455	0.6534	-0.0094
846	SLU 24	1.73	0.39	76.66	0.0467	0.6587	-0.0106
846	SLU 25	1.71	0.37	76.65	0.0466	0.6657	-0.01
846	SLU 26	1.69	0.34	76.04	0.046	0.6633	-0.0095
846	SLU 27	1.76	0.39	77.61	0.0472	0.6686	-0.0108



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
846	SLU 28	1.74	0.37	77.61	0.0471	0.6756	-0.0102
846	SLU 29	1.74	0.37	77	0.0467	0.6615	-0.0108
846	SLU 30	1.73	0.35	76.99	0.0466	0.6685	-0.0102
846	SLU 31	1.77	0.44	83.54	0.0504	0.7388	-0.0111
846	SLU 32	1.84	0.49	85.11	0.0516	0.7441	-0.0124
846	SLU 33	1.83	0.47	85.11	0.0515	0.7511	-0.0117
846	SLU 34	1.8	0.44	84.49	0.0509	0.7487	-0.0113
846	SLU 35	1.87	0.49	86.07	0.0521	0.7539	-0.0126
846	SLU 36	1.85	0.47	86.06	0.052	0.7609	-0.0119
846	SLU 37	1.86	0.48	85.46	0.0516	0.7469	-0.0126
846	SLU 38	1.84	0.46	85.45	0.0515	0.7539	-0.0119
846	SLU 39	1.85	0.52	87.17	0.0526	0.7637	-0.0129
846	SLU 40	1.83	0.5	87.17	0.0525	0.7707	-0.0123
846	SLU 41	1.88	0.52	88.13	0.0532	0.7736	-0.0131
846	SLU 42	1.86	0.5	88.12	0.0531	0.7806	-0.0125
846	SLU 43	1.98	0.27	83.75	0.0501	0.6918	-0.0118
846	SLU 44	1.95	0.24	83.74	0.0499	0.7035	-0.0107
846	SLU 45	2.02	0.28	85.31	0.0511	0.7087	-0.012
846	SLU 46	2	0.26	85.31	0.051	0.7157	-0.0114
846	SLU 47	1.98	0.23	84.69	0.0504	0.7133	-0.0109
846	SLU 48	2.05	0.28	86.27	0.0516	0.7186	-0.0122
846	SLU 49	2.03	0.26	86.26	0.0515	0.7256	-0.0115
846	SLU 50	2.04	0.27	85.65	0.0511	0.7116	-0.0122
846	SLU 51	2.02	0.25	85.65	0.051	0.7186	-0.0115
846	SLU 52	2.07	0.34	92.19	0.0548	0.7888	-0.0125
846	SLU 53	2.14	0.39	93.77	0.056	0.7941	-0.0138
846	SLU 54	2.12	0.36	93.76	0.0559	0.8011	-0.0131
846	SLU 55	2.1	0.34	93.14	0.0553	0.7987	-0.0126
846	SLU 56	2.17	0.38	94.72	0.0565	0.804	-0.0139
846	SLU 57	2.15	0.36	94.71	0.0564	0.811	-0.0133
846	SLU 58	2.15	0.37	94.11	0.056	0.7969	-0.0139
846	SLU 59	2.14	0.35	94.1	0.0559	0.8039	-0.0133
846	SLU 60	2.15	0.42	95.83	0.057	0.8137	-0.0143
846	SLU 61	2.13	0.4	95.82	0.0569	0.8207	-0.0136
846	SLU 62	2.17	0.42	96.78	0.0576	0.8236	-0.0145
846	SLU 63	2.16	0.4	96.77	0.0575	0.8306	-0.0138
846	SLU 64	2.11	0.4	92.2	0.0557	0.7785	-0.0129
846	SLU 65	2.08	0.37	92.18	0.0556	0.7902	-0.0118
846	SLU 66	2.15	0.42	93.76	0.0567	0.7955	-0.0131
846	SLU 67	2.13	0.4	93.75	0.0566	0.8025	-0.0124
846	SLU 68	2.11	0.37	93.14	0.0561	0.8001	-0.012
846	SLU 69	2.18	0.42	94.71	0.0573	0.8053	-0.0133
846	SLU 70	2.16	0.39	94.7	0.0572	0.8123	-0.0126
846	SLU 71	2.17	0.4	94.1	0.0568	0.7983	-0.0133
846	SLU 72	2.15	0.38	94.09	0.0567	0.8053	-0.0126
846	SLU 73	2.2	0.47	100.64	0.0604	0.8755	-0.0135
846	SLU 74	2.27	0.52	102.21	0.0616	0.8808	-0.0148
846	SLU 75	2.25	0.5	102.21	0.0615	0.8878	-0.0142
846	SLU 76	2.23	0.47	101.59	0.061	0.8854	-0.0137
846	SLU 77	2.29	0.52	103.17	0.0622	0.8907	-0.015
846	SLU 78	2.28	0.5	103.16	0.0621	0.8977	-0.0144
846	SLU 79	2.28	0.5	102.56	0.0617	0.8836	-0.015
846	SLU 80	2.26	0.48	102.55	0.0616	0.8906	-0.0143
846	SLU 81	2.28	0.55	104.27	0.0627	0.9005	-0.0154
846	SLU 82	2.26	0.53	104.27	0.0626	0.9075	-0.0147
846	SLU 83	2.3	0.55	105.23	0.0632	0.9104	-0.0156
846	SLU 84	2.29	0.53	105.22	0.0631	0.9173	-0.0149
846	SLE RA 1	1.59	0.28	69.06	0.0416	0.5798	-0.0097
846	SLE RA 2	1.58	0.26	69.05	0.0415	0.5876	-0.0089
846	SLE RA 3	1.62	0.29	70.11	0.0423	0.5911	-0.0098
846	SLE RA 4	1.61	0.28	70.1	0.0422	0.5958	-0.0094
846	SLE RA 5	1.59	0.26	69.69	0.0419	0.5942	-0.0091
846	SLE RA 6	1.64	0.29	70.74	0.0427	0.5977	-0.0099
846	SLE RA 7	1.63	0.27	70.74	0.0426	0.6023	-0.0095
846	SLE RA 8	1.63	0.28	70.33	0.0423	0.593	-0.0099
846	SLE RA 9	1.62	0.27	70.33	0.0423	0.5976	-0.0095
846	SLE RA 10	1.65	0.33	74.69	0.0448	0.6445	-0.0101
846	SLE RA 11	1.7	0.36	75.74	0.0455	0.648	-0.011
846	SLE RA 12	1.69	0.34	75.74	0.0455	0.6527	-0.0105
846	SLE RA 13	1.67	0.33	75.33	0.0451	0.6511	-0.0102
846	SLE RA 14	1.72	0.36	76.38	0.0459	0.6546	-0.0111
846	SLE RA 15	1.71	0.34	76.37	0.0458	0.6593	-0.0107
846	SLE RA 16	1.71	0.35	75.97	0.0456	0.6499	-0.0111
846	SLE RA 17	1.7	0.33	75.96	0.0455	0.6546	-0.0107
846	SLE RA 18	1.71	0.38	77.12	0.0463	0.6611	-0.0113
846	SLE RA 19	1.69	0.37	77.11	0.0462	0.6658	-0.0109
846	SLE RA 20	1.72	0.38	77.75	0.0466	0.6677	-0.0115
846	SLE RA 21	1.71	0.36	77.74	0.0466	0.6724	-0.011
846	SLE FR 1	1.59	0.28	69.06	0.0416	0.5798	-0.0097
846	SLE FR 2	1.59	0.28	69.06	0.0416	0.5814	-0.0095
846	SLE FR 3	1.6	0.28	69.32	0.0418	0.5824	-0.0097
846	SLE FR 4	1.62	0.31	71.48	0.043	0.6057	-0.01
846	SLE FR 5	1.64	0.31	71.73	0.0432	0.6068	-0.0102
846	SLE FR 6	1.65	0.33	73.09	0.0439	0.6205	-0.0105
846	SLE QP 1	1.59	0.28	69.06	0.0416	0.5798	-0.0097
846	SLE QP 2	1.63	0.31	71.48	0.043	0.6042	-0.0102
846	SLD 1	7.33	1.31	65.86	0.023	0.5263	-0.0559
846	SLD 2	6.83	1.79	65.19	0.0207	0.5356	-0.0449
846	SLD 3	7.65	-0.46	66.96	0.0331	0.5704	-0.0528
846	SLD 4	7.15	0.02	66.28	0.0308	0.5797	-0.0418



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
846	SLD 5	2.93	3.21	68.26	0.022	0.5123	-0.0306
846	SLD 6	2.6	3.53	67.81	0.0205	0.5184	-0.0233
846	SLD 7	4.02	-2.69	71.9	0.0559	0.6593	-0.0203
846	SLD 8	3.69	-2.37	71.46	0.0543	0.6654	-0.013
846	SLD 9	-0.44	3	71.5	0.0317	0.543	-0.0074
846	SLD 10	-0.76	3.32	71.06	0.0302	0.5491	-0.0001
846	SLD 11	0.65	-2.9	75.15	0.0655	0.69	0.0029
846	SLD 12	0.32	-2.59	74.7	0.064	0.6961	0.0102
846	SLD 13	-3.9	0.6	76.68	0.0552	0.6287	0.0214
846	SLD 14	-4.4	1.09	76	0.0529	0.638	0.0325
846	SLD 15	-3.57	-1.17	77.77	0.0654	0.6728	0.0245
846	SLD 16	-4.07	-0.68	77.1	0.063	0.6821	0.0356
846	SLV 1	14.96	2.57	58.36	-0.0035	0.4216	-0.1171
846	SLV 2	13.8	3.7	56.79	-0.0089	0.4432	-0.0914
846	SLV 3	15.72	-1.43	60.84	0.0195	0.5212	-0.11
846	SLV 4	14.56	-0.31	59.26	0.0141	0.5428	-0.0843
846	SLV 5	4.67	6.87	64.06	-0.0049	0.3946	-0.0575
846	SLV 6	3.92	7.6	63.05	-0.0084	0.4086	-0.0409
846	SLV 7	7.21	-6.49	72.31	0.0718	0.7266	-0.0338
846	SLV 8	6.46	-5.76	71.29	0.0683	0.7406	-0.0172
846	SLV 9	-3.2	6.38	71.66	0.0177	0.4678	-0.0032
846	SLV 10	-3.95	7.11	70.65	0.0142	0.4818	0.0134
846	SLV 11	-0.67	-6.98	79.91	0.0944	0.7998	0.0205
846	SLV 12	-1.42	-6.25	78.89	0.0909	0.8138	0.0372
846	SLV 13	-11.3	0.93	83.69	0.0719	0.6656	0.0639
846	SLV 14	-12.46	2.06	82.12	0.0665	0.6872	0.0897
846	SLV 15	-10.54	-3.08	86.17	0.0949	0.7652	0.071
846	SLV 16	-11.7	-1.95	84.6	0.0895	0.7868	0.0968
846	CRTFP Ux+	0	0	0	0	0	0
846	CRTFP Ux-	0	0	0	0	0	0
846	CRTFP Uy+	0	0	0	0	0	0
846	CRTFP Uy-	0	0	0	0	0	0
849	SLU 1	-1.73	-0.95	102.78	12.5763	-1.0662	0.2145
849	SLU 2	-1.79	-1.09	102.9	12.588	-1.0762	0.222
849	SLU 3	-1.78	-0.95	105.26	12.8785	-1.0957	0.2196
849	SLU 4	-1.81	-1.03	105.33	12.8856	-1.1018	0.2241
849	SLU 5	-1.82	-1.1	104.42	12.7722	-1.0922	0.2247
849	SLU 6	-1.8	-0.96	106.77	13.0627	-1.1117	0.2223
849	SLU 7	-1.84	-1.04	106.84	13.0697	-1.1177	0.2268
849	SLU 8	-1.78	-0.97	105.81	12.9446	-1.0981	0.2199
849	SLU 9	-1.82	-1.05	105.88	12.9517	-1.1041	0.2244
849	SLU 10	-1.92	-1.09	116.01	14.1824	-1.2362	0.24
849	SLU 11	-1.9	-0.95	118.36	14.4729	-1.2557	0.2377
849	SLU 12	-1.94	-1.04	118.44	14.48	-1.2617	0.2422
849	SLU 13	-1.94	-1.1	117.52	14.3666	-1.2521	0.2427
849	SLU 14	-1.93	-0.96	119.88	14.6571	-1.2716	0.2404
849	SLU 15	-1.96	-1.05	119.95	14.6641	-1.2777	0.2449
849	SLU 16	-1.91	-0.97	118.91	14.539	-1.258	0.238
849	SLU 17	-1.94	-1.05	118.98	14.5461	-1.2641	0.2424
849	SLU 18	-1.91	-0.95	121.5	14.854	-1.2946	0.2403
849	SLU 19	-1.95	-1.04	121.58	14.8611	-1.3007	0.2448
849	SLU 20	-1.94	-0.96	123.02	15.0382	-1.3106	0.243
849	SLU 21	-1.97	-1.05	123.09	15.0452	-1.3167	0.2475
849	SLU 22	-1.88	-0.9	115.9	14.1806	-1.2264	0.2336
849	SLU 23	-1.94	-1.04	116.02	14.1923	-1.2364	0.2411
849	SLU 24	-1.92	-0.9	118.38	14.4828	-1.2559	0.2387
849	SLU 25	-1.96	-0.99	118.45	14.4899	-1.262	0.2432
849	SLU 26	-1.96	-1.05	117.53	14.3765	-1.2524	0.2438
849	SLU 27	-1.95	-0.91	119.89	14.667	-1.2719	0.2414
849	SLU 28	-1.98	-1	119.96	14.674	-1.2779	0.2459
849	SLU 29	-1.93	-0.92	118.92	14.5489	-1.2583	0.239
849	SLU 30	-1.96	-1	119	14.5559	-1.2643	0.2435
849	SLU 31	-2.06	-1.05	129.13	15.7867	-1.3964	0.2591
849	SLU 32	-2.05	-0.9	131.48	16.0772	-1.4159	0.2568
849	SLU 33	-2.08	-0.99	131.55	16.0843	-1.4219	0.2613
849	SLU 34	-2.09	-1.05	130.64	15.9709	-1.4123	0.2618
849	SLU 35	-2.07	-0.91	132.99	16.2614	-1.4318	0.2595
849	SLU 36	-2.11	-1	133.07	16.2684	-1.4379	0.264
849	SLU 37	-2.05	-0.92	132.03	16.1433	-1.4182	0.2571
849	SLU 38	-2.09	-1.01	132.1	16.1504	-1.4243	0.2615
849	SLU 39	-2.06	-0.9	134.62	16.4583	-1.4549	0.2594
849	SLU 40	-2.09	-0.99	134.69	16.4653	-1.4609	0.2639
849	SLU 41	-2.08	-0.91	136.13	16.6425	-1.4708	0.2621
849	SLU 42	-2.12	-1	136.21	16.6495	-1.4769	0.2666
849	SLU 43	-2.2	-1.25	129.12	15.7991	-1.3311	0.2723
849	SLU 44	-2.26	-1.39	129.24	15.8109	-1.3411	0.2798
849	SLU 45	-2.25	-1.25	131.6	16.1014	-1.3606	0.2774
849	SLU 46	-2.28	-1.33	131.67	16.1084	-1.3667	0.2819
849	SLU 47	-2.29	-1.4	130.75	15.995	-1.3571	0.2825
849	SLU 48	-2.27	-1.26	133.11	16.2855	-1.3766	0.2801
849	SLU 49	-2.31	-1.34	133.18	16.2926	-1.3826	0.2846
849	SLU 50	-2.25	-1.27	132.14	16.1675	-1.363	0.2777
849	SLU 51	-2.29	-1.35	132.22	16.1745	-1.3691	0.2822
849	SLU 52	-2.39	-1.39	142.35	17.4053	-1.5011	0.2978
849	SLU 53	-2.37	-1.25	144.7	17.6958	-1.5206	0.2955
849	SLU 54	-2.41	-1.34	144.77	17.7028	-1.5266	0.2999
849	SLU 55	-2.41	-1.4	143.86	17.5894	-1.5171	0.3005
849	SLU 56	-2.4	-1.26	146.21	17.88	-1.5365	0.2982
849	SLU 57	-2.43	-1.35	146.29	17.887	-1.5426	0.3027
849	SLU 58	-2.38	-1.27	145.25	17.7619	-1.523	0.2958



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
849	SLU 59	-2.41	-1.36	145.32	17.7689	-1.529	0.3002
849	SLU 60	-2.38	-1.25	147.84	18.0769	-1.5596	0.2981
849	SLU 61	-2.42	-1.34	147.91	18.0839	-1.5656	0.3026
849	SLU 62	-2.4	-1.26	149.35	18.261	-1.5755	0.3008
849	SLU 63	-2.44	-1.35	149.43	18.2681	-1.5816	0.3053
849	SLU 64	-2.35	-1.2	142.24	17.4034	-1.4913	0.2914
849	SLU 65	-2.41	-1.34	142.36	17.4151	-1.5013	0.2989
849	SLU 66	-2.39	-1.2	144.71	17.7057	-1.5208	0.2965
849	SLU 67	-2.43	-1.29	144.79	17.7127	-1.5269	0.301
849	SLU 68	-2.43	-1.35	143.87	17.5993	-1.5173	0.3016
849	SLU 69	-2.42	-1.21	146.23	17.8898	-1.5368	0.2992
849	SLU 70	-2.45	-1.3	146.3	17.8969	-1.5428	0.3037
849	SLU 71	-2.4	-1.22	145.26	17.7718	-1.5232	0.2968
849	SLU 72	-2.43	-1.31	145.33	17.7788	-1.5293	0.3013
849	SLU 73	-2.53	-1.35	155.46	19.0096	-1.6613	0.3169
849	SLU 74	-2.52	-1.2	157.82	19.3001	-1.6808	0.3146
849	SLU 75	-2.55	-1.29	157.89	19.3071	-1.6868	0.3191
849	SLU 76	-2.56	-1.36	156.98	19.1937	-1.6773	0.3196
849	SLU 77	-2.54	-1.21	159.33	19.4842	-1.6968	0.3173
849	SLU 78	-2.58	-1.3	159.4	19.4913	-1.7028	0.3218
849	SLU 79	-2.52	-1.22	158.37	19.3662	-1.6832	0.3149
849	SLU 80	-2.56	-1.31	158.44	19.3732	-1.6892	0.3193
849	SLU 81	-2.53	-1.2	160.96	19.6812	-1.7198	0.3172
849	SLU 82	-2.56	-1.29	161.03	19.6882	-1.7258	0.3217
849	SLU 83	-2.55	-1.21	162.47	19.8653	-1.7357	0.3199
849	SLU 84	-2.59	-1.3	162.54	19.8724	-1.7418	0.3244
849	SLE RA 1	-1.77	-0.93	106.53	13.0347	-1.1119	0.2199
849	SLE RA 2	-1.81	-1.03	106.61	13.0425	-1.1186	0.2249
849	SLE RA 3	-1.8	-0.93	108.18	13.2361	-1.1316	0.2234
849	SLE RA 4	-1.83	-0.99	108.23	13.2408	-1.1357	0.2264
849	SLE RA 5	-1.83	-1.04	107.62	13.1653	-1.1293	0.2267
849	SLE RA 6	-1.82	-0.94	109.19	13.3589	-1.1423	0.2252
849	SLE RA 7	-1.84	-1	109.24	13.3636	-1.1463	0.2282
849	SLE RA 8	-1.81	-0.95	108.55	13.2802	-1.1332	0.2236
849	SLE RA 9	-1.83	-1	108.6	13.2849	-1.1372	0.2265
849	SLE RA 10	-1.9	-1.03	115.35	14.1054	-1.2253	0.237
849	SLE RA 11	-1.89	-0.94	116.92	14.2991	-1.2383	0.2354
849	SLE RA 12	-1.91	-0.99	116.97	14.3038	-1.2423	0.2384
849	SLE RA 13	-1.91	-1.04	116.36	14.2282	-1.2359	0.2388
849	SLE RA 14	-1.9	-0.94	117.93	14.4219	-1.2489	0.2372
849	SLE RA 15	-1.93	-1	117.98	14.4266	-1.2529	0.2402
849	SLE RA 16	-1.89	-0.95	117.28	14.3432	-1.2398	0.2356
849	SLE RA 17	-1.91	-1.01	117.33	14.3478	-1.2439	0.2386
849	SLE RA 18	-1.89	-0.94	119.01	14.5531	-1.2643	0.2371
849	SLE RA 19	-1.92	-0.99	119.06	14.5578	-1.2683	0.2401
849	SLE RA 20	-1.91	-0.94	120.02	14.6759	-1.2749	0.2389
849	SLE RA 21	-1.93	-1	120.07	14.6806	-1.2789	0.2419
849	SLE FR 1	-1.77	-0.93	106.53	13.0347	-1.1119	0.2199
849	SLE FR 2	-1.78	-0.95	106.55	13.0362	-1.1133	0.2209
849	SLE FR 3	-1.78	-0.94	106.93	13.0838	-1.1162	0.2207
849	SLE FR 4	-1.82	-0.95	110.29	13.4918	-1.159	0.2261
849	SLE FR 5	-1.82	-0.94	110.68	13.5393	-1.1619	0.2258
849	SLE FR 6	-1.83	-0.94	112.77	13.7939	-1.1881	0.2285
849	SLE QP 1	-1.77	-0.93	106.53	13.0347	-1.1119	0.2199
849	SLE QP 2	-1.81	-0.93	110.27	13.4902	-1.1576	0.2251
849	SLD 1	8.2	-0.29	117.75	14.5665	-1.3476	-1.0712
849	SLD 2	7.35	-1.01	118.98	14.704	-1.329	-0.9457
849	SLD 3	7.65	-3.12	119.94	14.8405	-1.4457	-0.9997
849	SLD 4	6.8	-3.85	121.17	14.9779	-1.4271	-0.8743
849	SLD 5	2.19	3.68	108.97	13.3731	-1.0691	-0.2945
849	SLD 6	1.63	3.21	109.78	13.4634	-1.0568	-0.2121
849	SLD 7	0.34	-5.76	116.28	14.2862	-1.3962	-0.0564
849	SLD 8	-0.22	-6.23	117.09	14.3765	-1.384	0.026
849	SLD 9	-3.4	4.36	103.46	12.6039	-0.9313	0.4242
849	SLD 10	-3.96	3.89	104.27	12.6942	-0.919	0.5066
849	SLD 11	-5.25	-5.08	110.77	13.517	-1.2584	0.6623
849	SLD 12	-5.81	-5.55	111.58	13.6073	-1.2462	0.7447
849	SLD 13	-10.42	1.98	99.38	12.0025	-0.8881	1.3245
849	SLD 14	-11.27	1.25	100.61	12.1399	-0.8695	1.45
849	SLD 15	-10.98	-0.86	101.57	12.2764	-0.9863	1.3959
849	SLD 16	-11.82	-1.58	102.8	12.4139	-0.9677	1.5214
849	SLV 1	21.61	0.46	127.85	16.0196	-1.6065	-2.8069
849	SLV 2	19.64	-1.22	130.72	16.3396	-1.5631	-2.5147
849	SLV 3	20.32	-5.95	132.83	16.6418	-1.8287	-2.6406
849	SLV 4	18.34	-7.63	135.7	16.9618	-1.7854	-2.3484
849	SLV 5	7.52	9.5	107.51	13.25	-0.9627	-0.9874
849	SLV 6	6.24	8.41	109.36	13.4567	-0.9347	-0.7987
849	SLV 7	3.21	-11.87	124.09	15.324	-1.7035	-0.4328
849	SLV 8	1.93	-12.96	125.94	15.5307	-1.6755	-0.2441
849	SLV 9	-5.56	11.09	94.61	11.4497	-0.6397	0.6943
849	SLV 10	-6.83	10.01	96.46	11.6564	-0.6117	0.883
849	SLV 11	-9.86	-10.28	111.19	13.5237	-1.3806	1.2489
849	SLV 12	-11.14	-11.37	113.04	13.7304	-1.3525	1.4376
849	SLV 13	-21.96	5.76	84.85	10.0186	-0.5299	2.7986
849	SLV 14	-23.94	4.08	87.72	10.3386	-0.4865	3.0908
849	SLV 15	-23.26	-0.65	89.83	10.6408	-0.7521	2.9649
849	SLV 16	-25.23	-2.33	92.69	10.9608	-0.7088	3.2571
849	CRTFP Ux+	0	0	0	0	0	0
849	CRTFP Ux-	0	0	0	0	0	0
849	CRTFP Uy+	0	0	0	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
849	CRTP Uy-	0	0	0	0	0	0
852	SLU 1	0.4	1.55	60.47	0.0381	-0.0063	-0.0101
852	SLU 2	0.36	1.5	60.46	0.0389	-0.0044	-0.0094
852	SLU 3	0.41	1.61	61.88	0.0394	-0.0052	-0.0103
852	SLU 4	0.39	1.58	61.88	0.0399	-0.004	-0.0099
852	SLU 5	0.37	1.53	61.34	0.0395	-0.0031	-0.0096
852	SLU 6	0.42	1.63	62.76	0.04	-0.0039	-0.0105
852	SLU 7	0.4	1.6	62.76	0.0405	-0.0028	-0.01
852	SLU 8	0.42	1.6	62.23	0.0394	-0.0038	-0.0104
852	SLU 9	0.4	1.57	62.23	0.0398	-0.0027	-0.01
852	SLU 10	0.4	1.67	68.63	0.0411	-0.0009	-0.01
852	SLU 11	0.45	1.78	70.05	0.0416	-0.0017	-0.0109
852	SLU 12	0.43	1.75	70.05	0.0421	-0.0006	-0.0105
852	SLU 13	0.42	1.7	69.52	0.0417	0.0003	-0.0102
852	SLU 14	0.47	1.8	70.94	0.0423	-0.0005	-0.011
852	SLU 15	0.44	1.77	70.93	0.0427	0.0007	-0.0106
852	SLU 16	0.46	1.77	70.41	0.0416	-0.0003	-0.011
852	SLU 17	0.44	1.74	70.4	0.042	0.0008	-0.0106
852	SLU 18	0.46	1.79	72.14	0.0413	-0.0013	-0.011
852	SLU 19	0.44	1.76	72.14	0.0418	-0.0002	-0.0106
852	SLU 20	0.47	1.82	73.03	0.0419	-0.0001	-0.0111
852	SLU 21	0.45	1.79	73.02	0.0424	0.0011	-0.0107
852	SLU 22	0.44	1.8	68.6	0.0423	-0.0092	-0.0105
852	SLU 23	0.4	1.76	68.6	0.043	-0.0073	-0.0097
852	SLU 24	0.45	1.86	70.02	0.0436	-0.0081	-0.0106
852	SLU 25	0.43	1.84	70.01	0.044	-0.007	-0.0102
852	SLU 26	0.41	1.79	69.48	0.0436	-0.0061	-0.0099
852	SLU 27	0.46	1.89	70.9	0.0442	-0.0069	-0.0108
852	SLU 28	0.44	1.86	70.89	0.0446	-0.0057	-0.0103
852	SLU 29	0.46	1.86	70.37	0.0435	-0.0067	-0.0108
852	SLU 30	0.44	1.83	70.36	0.044	-0.0056	-0.0103
852	SLU 31	0.45	1.93	76.77	0.0453	-0.0038	-0.0103
852	SLU 32	0.5	2.04	78.19	0.0458	-0.0046	-0.0112
852	SLU 33	0.48	2.01	78.19	0.0462	-0.0035	-0.0108
852	SLU 34	0.46	1.96	77.65	0.0459	-0.0026	-0.0105
852	SLU 35	0.51	2.06	79.07	0.0464	-0.0034	-0.0114
852	SLU 36	0.49	2.03	79.07	0.0468	-0.0022	-0.0109
852	SLU 37	0.51	2.03	78.54	0.0457	-0.0032	-0.0114
852	SLU 38	0.48	2	78.54	0.0462	-0.0021	-0.0109
852	SLU 39	0.5	2.05	80.28	0.0455	-0.0042	-0.0113
852	SLU 40	0.48	2.02	80.28	0.0459	-0.0031	-0.0109
852	SLU 41	0.51	2.07	81.16	0.0461	-0.003	-0.0115
852	SLU 42	0.49	2.05	81.16	0.0465	-0.0019	-0.011
852	SLU 43	0.5	1.92	75.82	0.0482	-0.0072	-0.0131
852	SLU 44	0.46	1.87	75.81	0.0489	-0.0053	-0.0123
852	SLU 45	0.51	1.98	77.23	0.0494	-0.0061	-0.0132
852	SLU 46	0.49	1.95	77.23	0.0499	-0.0049	-0.0128
852	SLU 47	0.48	1.9	76.69	0.0495	-0.004	-0.0125
852	SLU 48	0.53	2.01	78.11	0.0501	-0.0048	-0.0134
852	SLU 49	0.5	1.98	78.11	0.0505	-0.0037	-0.0129
852	SLU 50	0.52	1.97	77.58	0.0494	-0.0047	-0.0134
852	SLU 51	0.5	1.94	77.58	0.0498	-0.0035	-0.0129
852	SLU 52	0.51	2.05	83.98	0.0511	-0.0018	-0.0129
852	SLU 53	0.56	2.15	85.41	0.0517	-0.0026	-0.0138
852	SLU 54	0.54	2.12	85.4	0.0521	-0.0014	-0.0134
852	SLU 55	0.52	2.07	84.87	0.0517	-0.0005	-0.0131
852	SLU 56	0.57	2.18	86.29	0.0523	-0.0013	-0.014
852	SLU 57	0.55	2.15	86.28	0.0527	-0.0002	-0.0135
852	SLU 58	0.57	2.14	85.76	0.0516	-0.0012	-0.014
852	SLU 59	0.55	2.12	85.75	0.0521	-0.0001	-0.0135
852	SLU 60	0.56	2.16	87.5	0.0513	-0.0022	-0.0139
852	SLU 61	0.54	2.14	87.49	0.0518	-0.0011	-0.0135
852	SLU 62	0.58	2.19	88.38	0.0519	-0.0009	-0.0141
852	SLU 63	0.55	2.16	88.37	0.0524	0.0002	-0.0136
852	SLU 64	0.54	2.18	83.95	0.0523	-0.0101	-0.0134
852	SLU 65	0.51	2.13	83.95	0.0531	-0.0082	-0.0127
852	SLU 66	0.56	2.24	85.37	0.0536	-0.009	-0.0136
852	SLU 67	0.54	2.21	85.36	0.054	-0.0079	-0.0131
852	SLU 68	0.52	2.16	84.83	0.0537	-0.007	-0.0128
852	SLU 69	0.57	2.26	86.25	0.0542	-0.0077	-0.0137
852	SLU 70	0.55	2.24	86.25	0.0547	-0.0066	-0.0133
852	SLU 71	0.57	2.23	85.72	0.0535	-0.0076	-0.0137
852	SLU 72	0.54	2.2	85.71	0.054	-0.0065	-0.0133
852	SLU 73	0.55	2.31	92.12	0.0553	-0.0047	-0.0133
852	SLU 74	0.6	2.41	93.54	0.0558	-0.0055	-0.0142
852	SLU 75	0.58	2.38	93.54	0.0563	-0.0044	-0.0137
852	SLU 76	0.56	2.33	93	0.0559	-0.0035	-0.0134
852	SLU 77	0.61	2.44	94.42	0.0564	-0.0043	-0.0143
852	SLU 78	0.59	2.41	94.42	0.0569	-0.0031	-0.0139
852	SLU 79	0.61	2.4	93.89	0.0558	-0.0041	-0.0143
852	SLU 80	0.59	2.37	93.89	0.0562	-0.003	-0.0139
852	SLU 81	0.61	2.42	95.63	0.0555	-0.0051	-0.0143
852	SLU 82	0.58	2.4	95.63	0.0559	-0.004	-0.0138
852	SLU 83	0.62	2.45	96.51	0.0561	-0.0039	-0.0144
852	SLU 84	0.6	2.42	96.51	0.0565	-0.0027	-0.014
852	SLE RA 1	0.41	1.62	62.79	0.0393	-0.0071	-0.0102
852	SLE RA 2	0.38	1.59	62.79	0.0398	-0.0059	-0.0098
852	SLE RA 3	0.42	1.66	63.73	0.0402	-0.0064	-0.0104
852	SLE RA 4	0.4	1.64	63.73	0.0405	-0.0056	-0.0101
852	SLE RA 5	0.39	1.61	63.38	0.0402	-0.005	-0.0098



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
852	SLE RA 6	0.43	1.68	64.32	0.0406	-0.0056	-0.0104
852	SLE RA 7	0.41	1.66	64.32	0.0409	-0.0048	-0.0102
852	SLE RA 8	0.42	1.65	63.97	0.0402	-0.0055	-0.0104
852	SLE RA 9	0.41	1.64	63.97	0.0404	-0.0047	-0.0101
852	SLE RA 10	0.41	1.7	68.24	0.0413	-0.0035	-0.0101
852	SLE RA 11	0.45	1.77	69.18	0.0417	-0.0041	-0.0107
852	SLE RA 12	0.43	1.76	69.18	0.042	-0.0033	-0.0105
852	SLE RA 13	0.42	1.72	68.82	0.0417	-0.0027	-0.0102
852	SLE RA 14	0.46	1.79	69.77	0.0421	-0.0032	-0.0108
852	SLE RA 15	0.44	1.77	69.77	0.0424	-0.0025	-0.0105
852	SLE RA 16	0.45	1.77	69.42	0.0416	-0.0031	-0.0108
852	SLE RA 17	0.44	1.75	69.41	0.0419	-0.0024	-0.0105
852	SLE RA 18	0.45	1.78	70.58	0.0414	-0.0038	-0.0108
852	SLE RA 19	0.44	1.76	70.57	0.0417	-0.003	-0.0105
852	SLE RA 20	0.46	1.8	71.16	0.0419	-0.003	-0.0109
852	SLE RA 21	0.44	1.78	71.16	0.0421	-0.0022	-0.0106
852	SLE FR 1	0.41	1.62	62.79	0.0393	-0.0071	-0.0102
852	SLE FR 2	0.4	1.61	62.79	0.0394	-0.0069	-0.0101
852	SLE FR 3	0.41	1.63	63.03	0.0395	-0.0068	-0.0103
852	SLE FR 4	0.42	1.66	65.13	0.0401	-0.0059	-0.0103
852	SLE FR 5	0.42	1.68	65.36	0.0401	-0.0058	-0.0105
852	SLE FR 6	0.43	1.7	66.68	0.0404	-0.0055	-0.0105
852	SLE QP 1	0.41	1.62	62.79	0.0393	-0.0071	-0.0102
852	SLE QP 2	0.42	1.67	65.13	0.04	-0.0061	-0.0104
852	SLD 1	6.45	2.18	62.15	0.0296	0.1915	-0.0588
852	SLD 2	5.98	2.34	62.1	0.0283	0.1907	-0.0474
852	SLD 3	6.12	0.37	62.69	0.0407	0.2182	-0.0621
852	SLD 4	5.65	0.53	62.65	0.0394	0.2175	-0.0506
852	SLD 5	2.81	4.54	63.42	0.0203	0.0128	-0.0221
852	SLD 6	2.51	4.64	63.39	0.0195	0.0123	-0.0146
852	SLD 7	1.71	-1.49	65.23	0.0572	0.1019	-0.0329
852	SLD 8	1.41	-1.39	65.2	0.0564	0.1014	-0.0254
852	SLD 9	-0.57	4.72	65.06	0.0236	-0.1136	0.0045
852	SLD 10	-0.87	4.83	65.03	0.0227	-0.1141	0.012
852	SLD 11	-1.66	-1.31	66.87	0.0605	-0.0245	-0.0063
852	SLD 12	-1.97	-1.2	66.84	0.0597	-0.025	0.0012
852	SLD 13	-4.81	2.8	67.61	0.0405	-0.2297	0.0298
852	SLD 14	-5.28	2.97	67.57	0.0393	-0.2305	0.0412
852	SLD 15	-5.14	1	68.15	0.0516	-0.203	0.0266
852	SLD 16	-5.61	1.16	68.11	0.0503	-0.2037	0.038
852	SLV 1	14.52	2.79	58.16	0.0156	0.4572	-0.1237
852	SLV 2	13.44	3.17	58.07	0.0126	0.4554	-0.097
852	SLV 3	13.75	-1.3	59.4	0.0406	0.5181	-0.1312
852	SLV 4	12.67	-0.92	59.3	0.0377	0.5163	-0.1046
852	SLV 5	6	8.15	61.19	-0.0049	0.0408	-0.0376
852	SLV 6	5.3	8.39	61.12	-0.0068	0.0397	-0.0204
852	SLV 7	3.44	-5.5	65.29	0.0787	0.2438	-0.0627
852	SLV 8	2.75	-5.25	65.23	0.0768	0.2427	-0.0455
852	SLV 9	-1.9	8.59	65.02	0.0031	-0.2549	0.0246
852	SLV 10	-2.6	8.84	64.96	0.0012	-0.2561	0.0418
852	SLV 11	-4.46	-5.06	69.13	0.0867	-0.0519	-0.0004
852	SLV 12	-5.16	-4.81	69.07	0.0848	-0.053	0.0168
852	SLV 13	-11.83	4.26	70.96	0.0422	-0.5286	0.0838
852	SLV 14	-12.91	4.64	70.86	0.0393	-0.5303	0.1104
852	SLV 15	-12.6	0.17	72.19	0.0673	-0.4677	0.0762
852	SLV 16	-13.68	0.55	72.09	0.0644	-0.4694	0.1028
852	CRTFP Ux+	0	0	0	0	0	0
852	CRTFP Ux-	0	0	0	0	0	0
855	SLU 1	-0.06	0.96	61.14	0.0297	0.096	0.0075
855	SLU 2	-0.08	0.89	61.1	0.0306	0.0942	0.0082
855	SLU 3	-0.06	1	62.57	0.0306	0.0985	0.0075
855	SLU 4	-0.07	0.97	62.55	0.0311	0.0974	0.0079
855	SLU 5	-0.08	0.91	61.99	0.0309	0.0952	0.0081
855	SLU 6	-0.05	1.02	63.45	0.031	0.0995	0.0075
855	SLU 7	-0.07	0.98	63.43	0.0315	0.0985	0.0079
855	SLU 8	-0.05	0.99	62.91	0.0304	0.0981	0.0075
855	SLU 9	-0.06	0.95	62.89	0.0309	0.097	0.0078
855	SLU 10	-0.08	1.05	69.08	0.0334	0.1032	0.0095
855	SLU 11	-0.05	1.16	70.54	0.0335	0.1075	0.0089
855	SLU 12	-0.07	1.12	70.52	0.034	0.1064	0.0093
855	SLU 13	-0.07	1.06	69.96	0.0337	0.1042	0.0095
855	SLU 14	-0.05	1.17	71.43	0.0338	0.1085	0.0089
855	SLU 15	-0.06	1.13	71.4	0.0343	0.1074	0.0093
855	SLU 16	-0.05	1.14	70.88	0.0333	0.107	0.0088
855	SLU 17	-0.06	1.1	70.86	0.0338	0.1059	0.0092
855	SLU 18	-0.05	1.18	72.53	0.0338	0.1089	0.0094
855	SLU 19	-0.07	1.14	72.51	0.0343	0.1078	0.0098
855	SLU 20	-0.05	1.19	73.42	0.0341	0.1099	0.0094
855	SLU 21	-0.06	1.15	73.39	0.0346	0.1088	0.0098
855	SLU 22	-0.07	1.2	69.24	0.0338	0.1117	0.0081
855	SLU 23	-0.09	1.14	69.2	0.0347	0.1099	0.0087
855	SLU 24	-0.07	1.25	70.66	0.0348	0.1142	0.0081
855	SLU 25	-0.08	1.21	70.64	0.0353	0.1131	0.0085
855	SLU 26	-0.09	1.15	70.09	0.035	0.1109	0.0087
855	SLU 27	-0.06	1.26	71.55	0.0351	0.1152	0.0081
855	SLU 28	-0.08	1.22	71.53	0.0356	0.1141	0.0085
855	SLU 29	-0.06	1.23	71.01	0.0345	0.1137	0.008
855	SLU 30	-0.08	1.19	70.99	0.035	0.1126	0.0084
855	SLU 31	-0.09	1.29	77.17	0.0375	0.1189	0.0101
855	SLU 32	-0.07	1.4	78.64	0.0376	0.1232	0.0094



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
855	SLU 33	-0.08	1.36	78.62	0.0381	0.1221	0.0098
855	SLU 34	-0.09	1.3	78.06	0.0379	0.1199	0.01
855	SLU 35	-0.06	1.41	79.52	0.0379	0.1242	0.0094
855	SLU 36	-0.08	1.37	79.5	0.0384	0.1231	0.0098
855	SLU 37	-0.06	1.38	78.98	0.0374	0.1227	0.0094
855	SLU 38	-0.07	1.34	78.96	0.0379	0.1216	0.0097
855	SLU 39	-0.07	1.42	80.63	0.0379	0.1245	0.01
855	SLU 40	-0.08	1.38	80.61	0.0384	0.1235	0.0104
855	SLU 41	-0.06	1.43	81.51	0.0382	0.1256	0.0099
855	SLU 42	-0.08	1.4	81.49	0.0387	0.1245	0.0103
855	SLU 43	-0.07	1.16	76.71	0.0372	0.1195	0.0095
855	SLU 44	-0.09	1.1	76.67	0.0381	0.1177	0.0102
855	SLU 45	-0.07	1.21	78.13	0.0381	0.122	0.0096
855	SLU 46	-0.08	1.17	78.11	0.0386	0.1209	0.01
855	SLU 47	-0.09	1.11	77.56	0.0384	0.1187	0.0102
855	SLU 48	-0.06	1.22	79.02	0.0385	0.123	0.0096
855	SLU 49	-0.08	1.18	79	0.039	0.1219	0.01
855	SLU 50	-0.06	1.19	78.48	0.0379	0.1215	0.0095
855	SLU 51	-0.07	1.15	78.45	0.0384	0.1204	0.0099
855	SLU 52	-0.09	1.25	84.64	0.0409	0.1266	0.0115
855	SLU 53	-0.07	1.36	86.11	0.041	0.1309	0.0109
855	SLU 54	-0.08	1.32	86.08	0.0415	0.1299	0.0113
855	SLU 55	-0.09	1.27	85.53	0.0412	0.1277	0.0115
855	SLU 56	-0.06	1.37	86.99	0.0413	0.132	0.0109
855	SLU 57	-0.08	1.34	86.97	0.0418	0.1309	0.0113
855	SLU 58	-0.06	1.34	86.45	0.0408	0.1305	0.0108
855	SLU 59	-0.07	1.31	86.43	0.0413	0.1294	0.0112
855	SLU 60	-0.07	1.38	88.1	0.0413	0.1323	0.0115
855	SLU 61	-0.08	1.34	88.07	0.0418	0.1312	0.0119
855	SLU 62	-0.06	1.39	88.98	0.0416	0.1333	0.0114
855	SLU 63	-0.08	1.36	88.96	0.0421	0.1322	0.0118
855	SLU 64	-0.08	1.41	84.8	0.0413	0.1352	0.0101
855	SLU 65	-0.1	1.34	84.77	0.0422	0.1333	0.0108
855	SLU 66	-0.08	1.45	86.23	0.0423	0.1376	0.0102
855	SLU 67	-0.09	1.41	86.21	0.0428	0.1366	0.0106
855	SLU 68	-0.1	1.36	85.65	0.0425	0.1344	0.0107
855	SLU 69	-0.08	1.47	87.12	0.0426	0.1387	0.0101
855	SLU 70	-0.09	1.43	87.09	0.0431	0.1376	0.0105
855	SLU 71	-0.07	1.43	86.57	0.042	0.1372	0.0101
855	SLU 72	-0.09	1.4	86.55	0.0425	0.1361	0.0105
855	SLU 73	-0.1	1.49	92.74	0.045	0.1423	0.0121
855	SLU 74	-0.08	1.6	94.2	0.0451	0.1466	0.0115
855	SLU 75	-0.09	1.57	94.18	0.0456	0.1455	0.0119
855	SLU 76	-0.1	1.51	93.63	0.0454	0.1433	0.0121
855	SLU 77	-0.08	1.62	95.09	0.0454	0.1476	0.0115
855	SLU 78	-0.09	1.58	95.07	0.0459	0.1465	0.0119
855	SLU 79	-0.07	1.59	94.55	0.0449	0.1461	0.0114
855	SLU 80	-0.09	1.55	94.53	0.0454	0.1451	0.0118
855	SLU 81	-0.08	1.62	96.19	0.0454	0.148	0.012
855	SLU 82	-0.09	1.59	96.17	0.0459	0.1469	0.0124
855	SLU 83	-0.08	1.64	97.08	0.0457	0.149	0.012
855	SLU 84	-0.09	1.6	97.06	0.0462	0.1479	0.0124
855	SLE RA 1	-0.06	1.03	63.45	0.0309	0.1005	0.0077
855	SLE RA 2	-0.08	0.99	63.43	0.0315	0.0993	0.0081
855	SLE RA 3	-0.06	1.06	64.41	0.0315	0.1022	0.0077
855	SLE RA 4	-0.07	1.03	64.39	0.0318	0.1015	0.008
855	SLE RA 5	-0.07	0.99	64.02	0.0317	0.1	0.0081
855	SLE RA 6	-0.06	1.07	65	0.0317	0.1028	0.0077
855	SLE RA 7	-0.07	1.04	64.98	0.0321	0.1021	0.0079
855	SLE RA 8	-0.05	1.05	64.63	0.0314	0.1019	0.0076
855	SLE RA 9	-0.06	1.02	64.62	0.0317	0.1011	0.0079
855	SLE RA 10	-0.07	1.09	68.75	0.0333	0.1053	0.009
855	SLE RA 11	-0.06	1.16	69.72	0.0334	0.1082	0.0086
855	SLE RA 12	-0.07	1.13	69.71	0.0337	0.1074	0.0088
855	SLE RA 13	-0.07	1.1	69.34	0.0336	0.106	0.009
855	SLE RA 14	-0.06	1.17	70.31	0.0336	0.1088	0.0086
855	SLE RA 15	-0.07	1.14	70.3	0.034	0.1081	0.0088
855	SLE RA 16	-0.05	1.15	69.95	0.0333	0.1078	0.0085
855	SLE RA 17	-0.06	1.12	69.93	0.0336	0.1071	0.0088
855	SLE RA 18	-0.06	1.17	71.05	0.0336	0.1091	0.0089
855	SLE RA 19	-0.07	1.15	71.03	0.0339	0.1083	0.0092
855	SLE RA 20	-0.06	1.18	71.64	0.0338	0.1097	0.0089
855	SLE RA 21	-0.07	1.16	71.62	0.0342	0.109	0.0092
855	SLE FR 1	-0.06	1.03	63.45	0.0309	0.1005	0.0077
855	SLE FR 2	-0.06	1.02	63.45	0.031	0.1003	0.0077
855	SLE FR 3	-0.06	1.03	63.69	0.031	0.1008	0.0076
855	SLE FR 4	-0.06	1.06	65.73	0.0318	0.1028	0.0081
855	SLE FR 5	-0.06	1.08	65.97	0.0318	0.1034	0.008
855	SLE FR 6	-0.06	1.1	67.25	0.0322	0.1048	0.0083
855	SLE QP 1	-0.06	1.03	63.45	0.0309	0.1005	0.0077
855	SLE QP 2	-0.06	1.07	65.73	0.0317	0.1031	0.008
855	SLD 1	5.59	2.42	71.29	0.0372	0.2732	-0.0388
855	SLD 2	5.12	2.23	70.96	0.0377	0.2749	-0.0279
855	SLD 3	5.91	0.63	71.85	0.0482	0.2583	-0.0352
855	SLD 4	5.45	0.44	71.52	0.0487	0.26	-0.0244
855	SLD 5	1.22	4.22	66.61	0.0165	0.1763	-0.0133
855	SLD 6	0.92	4.09	66.39	0.0169	0.1774	-0.0062
855	SLD 7	2.31	-1.73	68.48	0.0533	0.1268	-0.0015
855	SLD 8	2.01	-1.86	68.26	0.0537	0.128	0.0057
855	SLD 9	-2.13	4	63.21	0.0098	0.0782	0.0104





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
855	SLD 10	-2.43	3.88	62.99	0.0101	0.0793	0.0175
855	SLD 11	-1.03	-1.95	65.07	0.0466	0.0287	0.0223
855	SLD 12	-1.34	-2.07	64.85	0.0469	0.0299	0.0294
855	SLD 13	-5.57	1.7	59.94	0.0147	-0.0539	0.0404
855	SLD 14	-6.03	1.51	59.61	0.0152	-0.0522	0.0513
855	SLD 15	-5.24	-0.08	60.5	0.0257	-0.0687	0.044
855	SLD 16	-5.7	-0.27	60.17	0.0263	-0.067	0.0548
855	SLV 1	13.15	4.15	78.77	0.0451	0.5008	-0.1014
855	SLV 2	12.07	3.71	77.99	0.0463	0.5047	-0.0761
855	SLV 3	13.91	0.11	80.05	0.0701	0.4665	-0.0932
855	SLV 4	12.83	-0.33	79.28	0.0713	0.4705	-0.068
855	SLV 5	2.93	8.2	67.83	-0.0024	0.2736	-0.0416
855	SLV 6	2.23	7.91	67.33	-0.0016	0.2762	-0.0253
855	SLV 7	5.48	-5.27	72.11	0.0809	0.1596	-0.0143
855	SLV 8	4.78	-5.55	71.61	0.0818	0.1621	0.002
855	SLV 9	-4.9	7.7	59.86	-0.0183	0.044	0.014
855	SLV 10	-5.6	7.41	59.36	-0.0175	0.0466	0.0303
855	SLV 11	-2.35	-5.77	64.14	0.065	-0.07	0.0414
855	SLV 12	-3.05	-6.06	63.64	0.0659	-0.0674	0.0576
855	SLV 13	-12.95	2.48	52.19	-0.0079	-0.2644	0.084
855	SLV 14	-14.03	2.03	51.42	-0.0067	-0.2604	0.1092
855	SLV 15	-12.19	-1.56	53.47	0.0171	-0.2986	0.0922
855	SLV 16	-13.26	-2.01	52.7	0.0183	-0.2946	0.1174
855	CRTFP Ux+	0	0	0	0	0	0
855	CRTFP Ux-	0	0	0	0	0	0
857	SLU 1	-0.53	0.13	33.94	0.0757	-4.5517	0.0311
857	SLU 2	-0.55	0.04	33.97	0.0758	-4.5526	0.009
857	SLU 3	-0.55	0.14	34.76	0.0777	-4.6532	0.0328
857	SLU 4	-0.56	0.08	34.78	0.0777	-4.6537	0.0196
857	SLU 5	-0.56	0.04	34.48	0.077	-4.6159	0.0103
857	SLU 6	-0.55	0.14	35.27	0.0788	-4.7165	0.0341
857	SLU 7	-0.57	0.09	35.29	0.0789	-4.717	0.0209
857	SLU 8	-0.55	0.14	34.97	0.0781	-4.6783	0.0337
857	SLU 9	-0.56	0.09	34.98	0.0781	-4.6789	0.0204
857	SLU 10	-0.59	0.12	37.98	0.0858	-5.0626	0.0285
857	SLU 11	-0.58	0.21	38.76	0.0877	-5.1631	0.0523
857	SLU 12	-0.59	0.16	38.78	0.0877	-5.1637	0.039
857	SLU 13	-0.6	0.12	38.49	0.087	-5.1259	0.0298
857	SLU 14	-0.59	0.22	39.28	0.0889	-5.2264	0.0536
857	SLU 15	-0.6	0.17	39.29	0.0889	-5.227	0.0403
857	SLU 16	-0.58	0.22	38.97	0.0881	-5.1883	0.0531
857	SLU 17	-0.6	0.16	38.99	0.0882	-5.1888	0.0399
857	SLU 18	-0.58	0.24	39.66	0.0901	-5.2802	0.0589
857	SLU 19	-0.6	0.19	39.68	0.0901	-5.2808	0.0456
857	SLU 20	-0.59	0.25	40.17	0.0913	-5.3435	0.0601
857	SLU 21	-0.6	0.19	40.19	0.0913	-5.3441	0.0469
857	SLU 22	-0.57	0.2	38.03	0.0861	-5.0713	0.0476
857	SLU 23	-0.59	0.11	38.06	0.0861	-5.0722	0.0256
857	SLU 24	-0.59	0.2	38.85	0.088	-5.1728	0.0494
857	SLU 25	-0.6	0.15	38.86	0.088	-5.1733	0.0361
857	SLU 26	-0.6	0.11	38.57	0.0873	-5.1355	0.0268
857	SLU 27	-0.6	0.21	39.36	0.0892	-5.2361	0.0507
857	SLU 28	-0.61	0.15	39.38	0.0892	-5.2366	0.0374
857	SLU 29	-0.59	0.21	39.05	0.0884	-5.1979	0.0502
857	SLU 30	-0.6	0.15	39.07	0.0885	-5.1985	0.037
857	SLU 31	-0.63	0.19	42.06	0.0962	-5.5822	0.045
857	SLU 32	-0.62	0.28	42.85	0.0981	-5.6827	0.0688
857	SLU 33	-0.63	0.23	42.87	0.0981	-5.6833	0.0556
857	SLU 34	-0.64	0.19	42.58	0.0974	-5.6455	0.0463
857	SLU 35	-0.63	0.29	43.36	0.0992	-5.746	0.0701
857	SLU 36	-0.64	0.23	43.38	0.0993	-5.7466	0.0569
857	SLU 37	-0.62	0.29	43.06	0.0985	-5.7079	0.0696
857	SLU 38	-0.64	0.23	43.08	0.0985	-5.7084	0.0564
857	SLU 39	-0.62	0.31	43.75	0.1004	-5.7998	0.0754
857	SLU 40	-0.64	0.25	43.77	0.1004	-5.8004	0.0622
857	SLU 41	-0.63	0.31	44.26	0.1016	-5.8631	0.0767
857	SLU 42	-0.64	0.26	44.28	0.1016	-5.8637	0.0634
857	SLU 43	-0.68	0.14	42.72	0.0949	-5.739	0.0347
857	SLU 44	-0.7	0.06	42.75	0.0949	-5.74	0.0127
857	SLU 45	-0.69	0.15	43.54	0.0968	-5.8405	0.0365
857	SLU 46	-0.7	0.1	43.56	0.0969	-5.8411	0.0233
857	SLU 47	-0.71	0.06	43.27	0.0961	-5.8033	0.014
857	SLU 48	-0.7	0.16	44.05	0.098	-5.9038	0.0378
857	SLU 49	-0.71	0.1	44.07	0.098	-5.9044	0.0246
857	SLU 50	-0.69	0.15	43.75	0.0973	-5.8656	0.0373
857	SLU 51	-0.71	0.1	43.77	0.0973	-5.8662	0.0241
857	SLU 52	-0.73	0.13	46.76	0.105	-6.2499	0.0321
857	SLU 53	-0.73	0.23	47.54	0.1069	-6.3505	0.0559
857	SLU 54	-0.74	0.18	47.56	0.1069	-6.3511	0.0427
857	SLU 55	-0.74	0.14	47.27	0.1062	-6.3132	0.0334
857	SLU 56	-0.74	0.24	48.06	0.1081	-6.4138	0.0572
857	SLU 57	-0.75	0.18	48.08	0.1081	-6.4144	0.044
857	SLU 58	-0.73	0.23	47.75	0.1073	-6.3756	0.0568
857	SLU 59	-0.74	0.18	47.77	0.1073	-6.3762	0.0435
857	SLU 60	-0.73	0.26	48.44	0.1092	-6.4676	0.0625
857	SLU 61	-0.74	0.2	48.46	0.1093	-6.4681	0.0493
857	SLU 62	-0.74	0.26	48.95	0.1104	-6.5309	0.0638
857	SLU 63	-0.75	0.21	48.97	0.1105	-6.5314	0.0506
857	SLU 64	-0.72	0.21	46.81	0.1052	-6.2587	0.0513
857	SLU 65	-0.74	0.12	46.84	0.1053	-6.2596	0.0292



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
857	SLU 66	-0.73	0.22	47.63	0.1072	-6.3601	0.053
857	SLU 67	-0.75	0.17	47.65	0.1072	-6.3607	0.0398
857	SLU 68	-0.75	0.13	47.35	0.1065	-6.3229	0.0305
857	SLU 69	-0.74	0.22	48.14	0.1084	-6.4234	0.0543
857	SLU 70	-0.75	0.17	48.16	0.1084	-6.424	0.0411
857	SLU 71	-0.74	0.22	47.83	0.1076	-6.3853	0.0539
857	SLU 72	-0.75	0.17	47.85	0.1076	-6.3858	0.0406
857	SLU 73	-0.78	0.2	50.84	0.1153	-6.7696	0.0487
857	SLU 74	-0.77	0.3	51.63	0.1172	-6.8701	0.0725
857	SLU 75	-0.78	0.24	51.65	0.1172	-6.8707	0.0592
857	SLU 76	-0.78	0.21	51.36	0.1165	-6.8329	0.0499
857	SLU 77	-0.78	0.3	52.14	0.1184	-6.9334	0.0738
857	SLU 78	-0.79	0.25	52.16	0.1184	-6.934	0.0605
857	SLU 79	-0.77	0.3	51.84	0.1177	-6.8952	0.0733
857	SLU 80	-0.78	0.25	51.86	0.1177	-6.8958	0.0601
857	SLU 81	-0.77	0.32	52.53	0.1196	-6.9872	0.079
857	SLU 82	-0.78	0.27	52.55	0.1196	-6.9877	0.0658
857	SLU 83	-0.78	0.33	53.04	0.1208	-7.0505	0.0803
857	SLU 84	-0.79	0.28	53.06	0.1208	-7.051	0.0671
857	SLE RA 1	-0.54	0.15	35.11	0.0787	-4.7001	0.0358
857	SLE RA 2	-0.56	0.09	35.13	0.0787	-4.7008	0.0211
857	SLE RA 3	-0.55	0.15	35.65	0.08	-4.7678	0.037
857	SLE RA 4	-0.56	0.12	35.67	0.08	-4.7682	0.0282
857	SLE RA 5	-0.56	0.09	35.47	0.0795	-4.743	0.022
857	SLE RA 6	-0.56	0.16	36	0.0808	-4.81	0.0378
857	SLE RA 7	-0.57	0.12	36.01	0.0808	-4.8104	0.029
857	SLE RA 8	-0.56	0.15	35.79	0.0803	-4.7845	0.0375
857	SLE RA 9	-0.56	0.12	35.8	0.0803	-4.7849	0.0287
857	SLE RA 10	-0.58	0.14	37.8	0.0854	-5.0408	0.0341
857	SLE RA 11	-0.58	0.21	38.32	0.0867	-5.1078	0.0499
857	SLE RA 12	-0.59	0.17	38.34	0.0867	-5.1082	0.0411
857	SLE RA 13	-0.59	0.14	38.14	0.0862	-5.083	0.0349
857	SLE RA 14	-0.58	0.21	38.66	0.0875	-5.15	0.0508
857	SLE RA 15	-0.59	0.17	38.68	0.0875	-5.1504	0.042
857	SLE RA 16	-0.58	0.21	38.46	0.087	-5.1245	0.0505
857	SLE RA 17	-0.59	0.17	38.47	0.087	-5.1249	0.0417
857	SLE RA 18	-0.58	0.22	38.92	0.0882	-5.1858	0.0543
857	SLE RA 19	-0.59	0.19	38.93	0.0883	-5.1862	0.0455
857	SLE RA 20	-0.58	0.23	39.26	0.089	-5.228	0.0552
857	SLE RA 21	-0.59	0.19	39.28	0.0891	-5.2284	0.0464
857	SLE FR 1	-0.54	0.15	35.11	0.0787	-4.7001	0.0358
857	SLE FR 2	-0.55	0.14	35.11	0.0787	-4.7003	0.0329
857	SLE FR 3	-0.55	0.15	35.25	0.079	-4.717	0.0362
857	SLE FR 4	-0.56	0.16	36.26	0.0815	-4.846	0.0384
857	SLE FR 5	-0.56	0.17	36.39	0.0819	-4.8627	0.0417
857	SLE FR 6	-0.56	0.19	37.02	0.0835	-4.943	0.0451
857	SLE QP 1	-0.54	0.15	35.11	0.0787	-4.7001	0.0358
857	SLE QP 2	-0.55	0.17	36.25	0.0815	-4.8459	0.0414
857	SLD 1	2.4	0.73	44.79	0.0972	-5.8721	0.1792
857	SLD 2	2.14	0.22	45.23	0.1001	-5.9408	0.0509
857	SLD 3	2.24	-0.55	45.55	0.1023	-5.983	-0.1402
857	SLD 4	1.97	-1.07	45.99	0.1052	-6.0517	-0.2684
857	SLD 5	0.63	2.38	37.58	0.078	-4.9734	0.5899
857	SLD 6	0.46	2.04	37.87	0.0799	-5.0185	0.5056
857	SLD 7	0.08	-1.9	40.12	0.095	-5.3428	-0.4745
857	SLD 8	-0.1	-2.24	40.41	0.0969	-5.388	-0.5588
857	SLD 9	-1.01	2.58	32.1	0.0662	-4.3037	0.6415
857	SLD 10	-1.19	2.24	32.38	0.0681	-4.3489	0.5572
857	SLD 11	-1.57	-1.69	34.64	0.0832	-4.6732	-0.4229
857	SLD 12	-1.74	-2.03	34.93	0.0851	-4.7183	-0.5072
857	SLD 13	-3.08	1.41	26.52	0.0579	-3.64	0.3511
857	SLD 14	-3.35	0.89	26.95	0.0608	-3.7087	0.2229
857	SLD 15	-3.25	0.13	27.28	0.063	-3.7509	0.0318
857	SLD 16	-3.51	-0.39	27.71	0.0659	-3.8196	-0.0964
857	SLV 1	6.36	1.43	56.25	0.1184	-7.2507	0.3507
857	SLV 2	5.75	0.23	57.27	0.1251	-7.4106	0.052
857	SLV 3	5.97	-1.47	58.01	0.13	-7.5048	-0.372
857	SLV 4	5.36	-2.67	59.02	0.1367	-7.6648	-0.6706
857	SLV 5	2.21	5.16	39.41	0.0739	-5.1542	1.2818
857	SLV 6	1.82	4.38	40.07	0.0783	-5.2575	1.0889
857	SLV 7	0.92	-4.51	45.26	0.1124	-6.0014	-1.127
857	SLV 8	0.53	-5.29	45.92	0.1167	-6.1047	-1.3199
857	SLV 9	-1.64	5.63	26.58	0.0463	-3.587	1.4026
857	SLV 10	-2.03	4.85	27.24	0.0507	-3.6903	1.2097
857	SLV 11	-2.93	-4.04	32.43	0.0848	-4.4342	-1.0062
857	SLV 12	-3.32	-4.82	33.09	0.0891	-4.5375	-1.1991
857	SLV 13	-6.47	3.01	13.48	0.0264	-2.0269	0.7534
857	SLV 14	-7.08	1.81	14.5	0.0331	-2.1869	0.4547
857	SLV 15	-6.86	0.11	15.24	0.0379	-2.2811	0.0307
857	SLV 16	-7.47	-1.09	16.25	0.0446	-2.441	-0.2679
857	CRTFP Ux+	0	0	0	0	0	0
857	CRTFP Ux-	0	0	0	0	0	0
857	CRTFP Uy+	0	0	0	0	0	0
857	CRTFP Uy-	0	0	0	0	0	0
860	SLU 1	0.81	0.46	29.8	-0.0362	1.7647	-0.1639
860	SLU 2	0.83	0.44	29.79	-0.0364	1.7669	-0.1553
860	SLU 3	0.83	0.47	30.48	-0.0372	1.7806	-0.1671
860	SLU 4	0.85	0.45	30.47	-0.0373	1.782	-0.1619
860	SLU 5	0.85	0.44	30.21	-0.037	1.7759	-0.1553
860	SLU 6	0.85	0.47	30.89	-0.0378	1.7897	-0.1671



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
860	SLU 7	0.86	0.45	30.89	-0.0379	1.791	-0.1619
860	SLU 8	0.84	0.46	30.63	-0.0375	1.7828	-0.1638
860	SLU 9	0.85	0.44	30.63	-0.0376	1.7841	-0.1587
860	SLU 10	0.89	0.57	33.19	-0.0408	1.8524	-0.2034
860	SLU 11	0.89	0.61	33.87	-0.0415	1.8662	-0.2152
860	SLU 12	0.91	0.59	33.87	-0.0417	1.8675	-0.2101
860	SLU 13	0.91	0.57	33.6	-0.0414	1.8615	-0.2034
860	SLU 14	0.91	0.61	34.29	-0.0422	1.8752	-0.2152
860	SLU 15	0.92	0.59	34.28	-0.0423	1.8765	-0.21
860	SLU 16	0.9	0.6	34.03	-0.0419	1.8683	-0.212
860	SLU 17	0.91	0.58	34.02	-0.042	1.8696	-0.2068
860	SLU 18	0.89	0.66	34.65	-0.0425	1.8869	-0.2326
860	SLU 19	0.91	0.64	34.65	-0.0426	1.8882	-0.2275
860	SLU 20	0.91	0.66	35.07	-0.0431	1.8959	-0.2326
860	SLU 21	0.92	0.64	35.06	-0.0432	1.8972	-0.2275
860	SLU 22	0.89	0.58	33.22	-0.0405	1.8533	-0.2061
860	SLU 23	0.91	0.56	33.22	-0.0407	1.8555	-0.1976
860	SLU 24	0.91	0.59	33.9	-0.0415	1.8693	-0.2093
860	SLU 25	0.93	0.57	33.89	-0.0416	1.8706	-0.2042
860	SLU 26	0.93	0.55	33.63	-0.0413	1.8646	-0.1975
860	SLU 27	0.93	0.59	34.31	-0.0421	1.8783	-0.2093
860	SLU 28	0.94	0.57	34.31	-0.0422	1.8796	-0.2041
860	SLU 29	0.92	0.58	34.05	-0.0418	1.8714	-0.2061
860	SLU 30	0.93	0.56	34.05	-0.0419	1.8727	-0.2009
860	SLU 31	0.97	0.69	36.61	-0.0451	1.9411	-0.2457
860	SLU 32	0.97	0.73	37.29	-0.0458	1.9548	-0.2574
860	SLU 33	0.99	0.71	37.29	-0.046	1.9561	-0.2523
860	SLU 34	0.99	0.69	37.02	-0.0457	1.9501	-0.2457
860	SLU 35	0.99	0.73	37.71	-0.0465	1.9638	-0.2574
860	SLU 36	1	0.71	37.7	-0.0466	1.9651	-0.2523
860	SLU 37	0.98	0.72	37.45	-0.0462	1.9569	-0.2542
860	SLU 38	0.99	0.7	37.44	-0.0463	1.9582	-0.2491
860	SLU 39	0.97	0.78	38.07	-0.0468	1.9755	-0.2749
860	SLU 40	0.99	0.76	38.07	-0.0469	1.9768	-0.2697
860	SLU 41	0.99	0.78	38.49	-0.0474	1.9845	-0.2748
860	SLU 42	1	0.76	38.48	-0.0475	1.9859	-0.2697
860	SLU 43	1.02	0.56	37.57	-0.0456	2.2637	-0.1986
860	SLU 44	1.04	0.53	37.56	-0.0458	2.2659	-0.19
860	SLU 45	1.05	0.57	38.24	-0.0466	2.2797	-0.2018
860	SLU 46	1.06	0.55	38.24	-0.0467	2.281	-0.1966
860	SLU 47	1.06	0.53	37.98	-0.0464	2.275	-0.19
860	SLU 48	1.06	0.57	38.66	-0.0472	2.2887	-0.2017
860	SLU 49	1.08	0.55	38.65	-0.0473	2.29	-0.1966
860	SLU 50	1.05	0.56	38.4	-0.0469	2.2818	-0.1985
860	SLU 51	1.07	0.54	38.39	-0.047	2.2831	-0.1934
860	SLU 52	1.1	0.67	40.96	-0.0502	2.3515	-0.2381
860	SLU 53	1.11	0.7	41.64	-0.0509	2.3652	-0.2499
860	SLU 54	1.12	0.69	41.63	-0.051	2.3665	-0.2448
860	SLU 55	1.12	0.67	41.37	-0.0508	2.3605	-0.2381
860	SLU 56	1.12	0.7	42.05	-0.0516	2.3742	-0.2499
860	SLU 57	1.14	0.69	42.05	-0.0517	2.3755	-0.2447
860	SLU 58	1.12	0.69	41.79	-0.0513	2.3673	-0.2467
860	SLU 59	1.13	0.68	41.79	-0.0514	2.3686	-0.2415
860	SLU 60	1.11	0.75	42.42	-0.0519	2.3859	-0.2673
860	SLU 61	1.12	0.74	42.41	-0.052	2.3872	-0.2622
860	SLU 62	1.12	0.75	42.83	-0.0525	2.3949	-0.2673
860	SLU 63	1.14	0.74	42.83	-0.0526	2.3963	-0.2622
860	SLU 64	1.1	0.68	40.99	-0.0499	2.3524	-0.2408
860	SLU 65	1.12	0.65	40.98	-0.0501	2.3546	-0.2322
860	SLU 66	1.13	0.69	41.67	-0.0509	2.3683	-0.244
860	SLU 67	1.14	0.67	41.66	-0.051	2.3696	-0.2389
860	SLU 68	1.14	0.65	41.4	-0.0507	2.3636	-0.2322
860	SLU 69	1.14	0.69	42.08	-0.0515	2.3773	-0.244
860	SLU 70	1.16	0.67	42.08	-0.0516	2.3786	-0.2388
860	SLU 71	1.13	0.68	41.82	-0.0512	2.3704	-0.2408
860	SLU 72	1.15	0.66	41.82	-0.0513	2.3717	-0.2356
860	SLU 73	1.18	0.79	44.38	-0.0545	2.4401	-0.2804
860	SLU 74	1.19	0.82	45.06	-0.0552	2.4538	-0.2921
860	SLU 75	1.2	0.81	45.06	-0.0553	2.4551	-0.287
860	SLU 76	1.2	0.79	44.79	-0.0551	2.4491	-0.2803
860	SLU 77	1.2	0.82	45.48	-0.0559	2.4629	-0.2921
860	SLU 78	1.22	0.81	45.47	-0.056	2.4642	-0.287
860	SLU 79	1.2	0.81	45.22	-0.0556	2.456	-0.2889
860	SLU 80	1.21	0.8	45.21	-0.0557	2.4573	-0.2837
860	SLU 81	1.19	0.87	45.84	-0.0561	2.4745	-0.3095
860	SLU 82	1.2	0.86	45.84	-0.0563	2.4759	-0.3044
860	SLU 83	1.2	0.87	46.26	-0.0568	2.4836	-0.3095
860	SLU 84	1.22	0.86	46.25	-0.0569	2.4849	-0.3044
860	SLE RA 1	0.83	0.49	30.78	-0.0374	1.79	-0.176
860	SLE RA 2	0.84	0.48	30.77	-0.0376	1.7915	-0.1702
860	SLE RA 3	0.85	0.5	31.23	-0.0381	1.8007	-0.1781
860	SLE RA 4	0.86	0.49	31.23	-0.0381	1.8015	-0.1747
860	SLE RA 5	0.86	0.48	31.05	-0.038	1.7975	-0.1702
860	SLE RA 6	0.86	0.5	31.51	-0.0385	1.8067	-0.1781
860	SLE RA 7	0.87	0.49	31.5	-0.0386	1.8076	-0.1746
860	SLE RA 8	0.85	0.49	31.33	-0.0383	1.8021	-0.1759
860	SLE RA 9	0.86	0.48	31.33	-0.0384	1.803	-0.1725
860	SLE RA 10	0.88	0.57	33.04	-0.0405	1.8485	-0.2023
860	SLE RA 11	0.89	0.59	33.49	-0.041	1.8577	-0.2102
860	SLE RA 12	0.9	0.58	33.49	-0.0411	1.8585	-0.2067



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
860	SLE RA 13	0.9	0.57	33.31	-0.0409	1.8545	-0.2023
860	SLE RA 14	0.9	0.59	33.77	-0.0414	1.8637	-0.2101
860	SLE RA 15	0.91	0.58	33.77	-0.0415	1.8646	-0.2067
860	SLE RA 16	0.89	0.59	33.6	-0.0412	1.8591	-0.208
860	SLE RA 17	0.9	0.58	33.59	-0.0413	1.86	-0.2046
860	SLE RA 18	0.89	0.62	34.01	-0.0416	1.8715	-0.2218
860	SLE RA 19	0.9	0.61	34.01	-0.0417	1.8724	-0.2184
860	SLE RA 20	0.9	0.62	34.29	-0.042	1.8775	-0.2218
860	SLE RA 21	0.91	0.61	34.29	-0.0421	1.8784	-0.2183
860	SLE FR 1	0.83	0.49	30.78	-0.0374	1.79	-0.176
860	SLE FR 2	0.83	0.49	30.78	-0.0375	1.7903	-0.1748
860	SLE FR 3	0.83	0.49	30.89	-0.0376	1.7924	-0.1759
860	SLE FR 4	0.85	0.53	31.75	-0.0387	1.8148	-0.1886
860	SLE FR 5	0.85	0.53	31.86	-0.0389	1.8169	-0.1897
860	SLE FR 6	0.86	0.56	32.4	-0.0395	1.8308	-0.1989
860	SLE QP 1	0.83	0.49	30.78	-0.0374	1.79	-0.176
860	SLE QP 2	0.85	0.53	31.75	-0.0387	1.8145	-0.1897
860	SLD 1	2.02	0.62	24.03	-0.0269	1.667	-0.2188
860	SLD 2	1.7	1.26	23.61	-0.0287	1.6169	-0.4431
860	SLD 3	2.45	-0.86	24.83	-0.0235	1.7417	0.2982
860	SLD 4	2.14	-0.22	24.41	-0.0253	1.6916	0.0738
860	SLD 5	0.6	2.69	28.29	-0.04	1.6658	-0.9424
860	SLD 6	0.39	3.11	28.01	-0.0411	1.6329	-1.0899
860	SLD 7	2.04	-2.24	30.97	-0.0287	1.9149	0.7808
860	SLD 8	1.84	-1.82	30.69	-0.0298	1.882	0.6334
860	SLD 9	-0.14	2.89	32.81	-0.0475	1.747	-1.0128
860	SLD 10	-0.35	3.31	32.53	-0.0487	1.714	-1.1602
860	SLD 11	1.31	-2.05	35.49	-0.0362	1.996	0.7105
860	SLD 12	1.1	-1.62	35.21	-0.0374	1.9631	0.563
860	SLD 13	-0.44	1.28	39.09	-0.0521	1.9373	-0.4532
860	SLD 14	-0.76	1.93	38.67	-0.0539	1.8873	-0.6776
860	SLD 15	-0.01	-0.2	39.89	-0.0487	2.0121	0.0637
860	SLD 16	-0.32	0.45	39.47	-0.0505	1.962	-0.1606
860	SLV 1	3.6	0.68	13.71	-0.0109	1.4723	-0.2402
860	SLV 2	2.87	2.18	12.72	-0.0151	1.3556	-0.7627
860	SLV 3	4.59	-2.67	15.54	-0.0032	1.6413	0.9306
860	SLV 4	3.85	-1.17	14.55	-0.0074	1.5246	0.4081
860	SLV 5	0.31	5.4	23.74	-0.0413	1.4756	-1.8901
860	SLV 6	-0.17	6.37	23.1	-0.044	1.4003	-2.2276
860	SLV 7	3.59	-5.77	29.83	-0.0156	2.039	2.0124
860	SLV 8	3.12	-4.8	29.19	-0.0183	1.9637	1.6749
860	SLV 9	-1.42	5.87	34.31	-0.059	1.6652	-2.0543
860	SLV 10	-1.9	6.84	33.67	-0.0617	1.5899	-2.3918
860	SLV 11	1.86	-5.3	40.4	-0.0334	2.2287	1.8482
860	SLV 12	1.39	-4.34	39.76	-0.0361	2.1533	1.5107
860	SLV 13	-2.16	2.24	48.95	-0.07	2.1043	-0.7875
860	SLV 14	-2.89	3.74	47.96	-0.0742	1.9876	-1.31
860	SLV 15	-1.17	-1.12	50.78	-0.0623	2.2733	0.3832
860	SLV 16	-1.91	0.38	49.79	-0.0665	2.1567	-0.1392
860	CRTFP Ux+	0	0	0	0	0	0
860	CRTFP Ux-	0	0	0	0	0	0
860	CRTFP Uy+	0	0	0	0	0	0
860	CRTFP Uy-	0	0	0	0	0	0
862	SLU 1	1.37	0.22	58.63	-1.598	0.5438	0.0353
862	SLU 2	1.34	0.19	58.61	-1.5977	0.5545	0.0355
862	SLU 3	1.41	0.23	60.01	-1.6355	0.5602	0.0363
862	SLU 4	1.39	0.21	60	-1.6353	0.5666	0.0363
862	SLU 5	1.37	0.19	59.45	-1.6205	0.5641	0.0361
862	SLU 6	1.43	0.23	60.84	-1.6583	0.5697	0.0369
862	SLU 7	1.42	0.21	60.83	-1.6582	0.5762	0.037
862	SLU 8	1.42	0.22	60.3	-1.6437	0.5629	0.0365
862	SLU 9	1.41	0.2	60.29	-1.6435	0.5694	0.0366
862	SLU 10	1.45	0.28	66.04	-1.8004	0.6375	0.0373
862	SLU 11	1.52	0.32	67.44	-1.8382	0.6432	0.0381
862	SLU 12	1.5	0.3	67.43	-1.838	0.6496	0.0382
862	SLU 13	1.48	0.28	66.88	-1.8232	0.6471	0.0379
862	SLU 14	1.54	0.32	68.28	-1.861	0.6527	0.0387
862	SLU 15	1.52	0.3	68.27	-1.8608	0.6592	0.0388
862	SLU 16	1.53	0.31	67.73	-1.8464	0.6459	0.0383
862	SLU 17	1.51	0.29	67.73	-1.8462	0.6524	0.0384
862	SLU 18	1.53	0.35	69.24	-1.8876	0.6624	0.0379
862	SLU 19	1.51	0.33	69.24	-1.8874	0.6688	0.038
862	SLU 20	1.55	0.35	70.08	-1.9104	0.6719	0.0385
862	SLU 21	1.53	0.33	70.07	-1.9102	0.6784	0.0386
862	SLU 22	1.49	0.33	66.07	-1.8005	0.6283	0.0379
862	SLU 23	1.46	0.3	66.06	-1.8002	0.639	0.038
862	SLU 24	1.53	0.34	67.45	-1.838	0.6447	0.0388
862	SLU 25	1.51	0.33	67.44	-1.8378	0.6511	0.0389
862	SLU 26	1.48	0.3	66.89	-1.823	0.6486	0.0386
862	SLU 27	1.55	0.34	68.29	-1.8608	0.6543	0.0394
862	SLU 28	1.53	0.32	68.28	-1.8606	0.6607	0.0395
862	SLU 29	1.54	0.33	67.75	-1.8462	0.6475	0.0391
862	SLU 30	1.52	0.31	67.74	-1.846	0.6539	0.0392
862	SLU 31	1.57	0.39	73.49	-2.0029	0.722	0.0398
862	SLU 32	1.63	0.43	74.88	-2.0407	0.7277	0.0406
862	SLU 33	1.61	0.42	74.87	-2.0405	0.7341	0.0407
862	SLU 34	1.59	0.39	74.33	-2.0257	0.7316	0.0404
862	SLU 35	1.66	0.43	75.72	-2.0635	0.7373	0.0412
862	SLU 36	1.64	0.41	75.71	-2.0633	0.7437	0.0413
862	SLU 37	1.65	0.42	75.18	-2.0488	0.7305	0.0409



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
862	SLU 38	1.63	0.4	75.17	-2.0487	0.7369	0.041
862	SLU 39	1.64	0.46	76.69	-2.0901	0.7469	0.0404
862	SLU 40	1.62	0.44	76.68	-2.0899	0.7533	0.0405
862	SLU 41	1.67	0.46	77.53	-2.1129	0.7565	0.0411
862	SLU 42	1.65	0.44	77.52	-2.1127	0.7629	0.0412
862	SLU 43	1.75	0.24	73.66	-2.008	0.678	0.045
862	SLU 44	1.72	0.21	73.65	-2.0077	0.6887	0.0452
862	SLU 45	1.78	0.26	75.04	-2.0455	0.6943	0.046
862	SLU 46	1.77	0.24	75.03	-2.0453	0.7008	0.0461
862	SLU 47	1.74	0.21	74.48	-2.0305	0.6982	0.0458
862	SLU 48	1.81	0.25	75.88	-2.0683	0.7039	0.0466
862	SLU 49	1.79	0.24	75.87	-2.0681	0.7103	0.0467
862	SLU 50	1.8	0.24	75.34	-2.0537	0.6971	0.0463
862	SLU 51	1.78	0.22	75.33	-2.0535	0.7035	0.0463
862	SLU 52	1.82	0.3	81.08	-2.2104	0.7717	0.047
862	SLU 53	1.89	0.34	82.47	-2.2482	0.7773	0.0478
862	SLU 54	1.87	0.33	82.46	-2.248	0.7837	0.0479
862	SLU 55	1.85	0.3	81.92	-2.2332	0.7812	0.0476
862	SLU 56	1.91	0.34	83.31	-2.271	0.7869	0.0484
862	SLU 57	1.9	0.32	83.3	-2.2708	0.7933	0.0485
862	SLU 58	1.9	0.33	82.77	-2.2563	0.7801	0.0481
862	SLU 59	1.89	0.31	82.76	-2.2562	0.7865	0.0482
862	SLU 60	1.9	0.37	84.28	-2.2976	0.7965	0.0476
862	SLU 61	1.88	0.35	84.27	-2.2974	0.8029	0.0477
862	SLU 62	1.92	0.37	85.12	-2.3204	0.8061	0.0482
862	SLU 63	1.91	0.35	85.11	-2.3202	0.8125	0.0483
862	SLU 64	1.86	0.36	81.11	-2.2105	0.7625	0.0476
862	SLU 65	1.83	0.33	81.09	-2.2102	0.7732	0.0477
862	SLU 66	1.9	0.37	82.49	-2.248	0.7789	0.0485
862	SLU 67	1.88	0.35	82.48	-2.2478	0.7853	0.0486
862	SLU 68	1.86	0.33	81.93	-2.233	0.7828	0.0483
862	SLU 69	1.92	0.37	83.32	-2.2708	0.7884	0.0491
862	SLU 70	1.91	0.35	83.31	-2.2706	0.7949	0.0492
862	SLU 71	1.91	0.36	82.78	-2.2561	0.7816	0.0488
862	SLU 72	1.89	0.34	82.77	-2.256	0.7881	0.0489
862	SLU 73	1.94	0.42	88.52	-2.4129	0.8562	0.0495
862	SLU 74	2.01	0.46	89.92	-2.4507	0.8618	0.0503
862	SLU 75	1.99	0.44	89.91	-2.4505	0.8683	0.0504
862	SLU 76	1.96	0.42	89.36	-2.4357	0.8657	0.0502
862	SLU 77	2.03	0.46	90.76	-2.4735	0.8714	0.051
862	SLU 78	2.01	0.44	90.75	-2.4733	0.8778	0.051
862	SLU 79	2.02	0.45	90.22	-2.4588	0.8646	0.0506
862	SLU 80	2	0.43	90.21	-2.4586	0.871	0.0507
862	SLU 81	2.01	0.49	91.73	-2.5	0.881	0.0502
862	SLU 82	2	0.47	91.72	-2.4998	0.8875	0.0503
862	SLU 83	2.04	0.49	92.56	-2.5229	0.8906	0.0508
862	SLU 84	2.02	0.47	92.55	-2.5227	0.897	0.0509
862	SLE RA 1	1.41	0.25	60.75	-1.6559	0.568	0.036
862	SLE RA 2	1.39	0.23	60.74	-1.6557	0.5751	0.0361
862	SLE RA 3	1.43	0.26	61.67	-1.6809	0.5789	0.0367
862	SLE RA 4	1.42	0.25	61.67	-1.6807	0.5831	0.0367
862	SLE RA 5	1.4	0.23	61.3	-1.6709	0.5815	0.0365
862	SLE RA 6	1.45	0.26	62.23	-1.6961	0.5852	0.0371
862	SLE RA 7	1.44	0.25	62.23	-1.696	0.5895	0.0371
862	SLE RA 8	1.44	0.25	61.87	-1.6863	0.5807	0.0369
862	SLE RA 9	1.43	0.24	61.86	-1.6862	0.585	0.0369
862	SLE RA 10	1.46	0.29	65.7	-1.7908	0.6304	0.0373
862	SLE RA 11	1.5	0.32	66.63	-1.816	0.6342	0.0379
862	SLE RA 12	1.49	0.31	66.62	-1.8159	0.6385	0.0379
862	SLE RA 13	1.48	0.29	66.26	-1.806	0.6368	0.0378
862	SLE RA 14	1.52	0.32	67.19	-1.8312	0.6406	0.0383
862	SLE RA 15	1.51	0.31	67.18	-1.8311	0.6449	0.0383
862	SLE RA 16	1.51	0.31	66.83	-1.8214	0.636	0.0381
862	SLE RA 17	1.5	0.3	66.82	-1.8213	0.6403	0.0381
862	SLE RA 18	1.51	0.34	67.83	-1.8489	0.647	0.0378
862	SLE RA 19	1.5	0.32	67.83	-1.8488	0.6513	0.0378
862	SLE RA 20	1.53	0.34	68.39	-1.8641	0.6534	0.0382
862	SLE RA 21	1.51	0.32	68.38	-1.864	0.6576	0.0382
862	SLE FR 1	1.41	0.25	60.75	-1.6559	0.568	0.036
862	SLE FR 2	1.4	0.25	60.75	-1.6558	0.5694	0.0361
862	SLE FR 3	1.41	0.25	60.98	-1.662	0.5705	0.0362
862	SLE FR 4	1.43	0.27	62.88	-1.7137	0.5931	0.0366
862	SLE FR 5	1.44	0.28	63.1	-1.7199	0.5942	0.0367
862	SLE FR 6	1.46	0.29	64.29	-1.7524	0.6075	0.0369
862	SLE QP 1	1.41	0.25	60.75	-1.6559	0.568	0.036
862	SLE QP 2	1.44	0.28	62.88	-1.7138	0.5917	0.0365
862	SLD 1	6.54	1.13	57.42	-1.5822	0.5147	0.142
862	SLD 2	6.06	1.55	56.79	-1.5655	0.5235	0.1371
862	SLD 3	6.83	-0.39	58.58	-1.6092	0.553	0.149
862	SLD 4	6.35	0.02	57.96	-1.5924	0.5618	0.144
862	SLD 5	2.61	2.77	59.58	-1.6365	0.509	0.0586
862	SLD 6	2.3	3.04	59.17	-1.6255	0.5148	0.0553
862	SLD 7	3.58	-2.31	63.47	-1.7262	0.6365	0.0817
862	SLD 8	3.27	-2.03	63.06	-1.7152	0.6423	0.0784
862	SLD 9	-0.39	2.59	62.7	-1.7123	0.5411	-0.0053
862	SLD 10	-0.71	2.86	62.29	-1.7013	0.5469	-0.0086
862	SLD 11	0.58	-2.49	66.58	-1.8021	0.6685	0.0178
862	SLD 12	0.26	-2.21	66.17	-1.7911	0.6743	0.0145
862	SLD 13	-3.48	0.53	67.8	-1.8351	0.6215	-0.0709
862	SLD 14	-3.96	0.95	67.17	-1.8184	0.6304	-0.0759



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
862	SLD 15	-3.19	-0.99	68.96	-1.8621	0.6598	-0.064
862	SLD 16	-3.67	-0.58	68.34	-1.8453	0.6686	-0.0689
862	SLV 1	13.38	2.21	50.13	-1.4066	0.4114	0.2834
862	SLV 2	12.27	3.18	48.68	-1.3677	0.432	0.2719
862	SLV 3	14.05	-1.23	52.77	-1.4675	0.4978	0.2994
862	SLV 4	12.94	-0.26	51.32	-1.4286	0.5183	0.2879
862	SLV 5	4.18	5.92	55.3	-1.5359	0.403	0.0883
862	SLV 6	3.47	6.55	54.36	-1.5108	0.4163	0.0808
862	SLV 7	6.44	-5.57	64.1	-1.7391	0.691	0.1417
862	SLV 8	5.72	-4.95	63.16	-1.7139	0.7042	0.1343
862	SLV 9	-2.85	5.5	62.6	-1.7137	0.4791	-0.0612
862	SLV 10	-3.57	6.13	61.66	-1.6885	0.4924	-0.0686
862	SLV 11	-0.59	-5.99	71.39	-1.9168	0.767	-0.0077
862	SLV 12	-1.31	-5.37	70.45	-1.8916	0.7803	-0.0152
862	SLV 13	-10.07	0.82	74.44	-1.999	0.665	-0.2148
862	SLV 14	-11.18	1.79	72.99	-1.96	0.6855	-0.2263
862	SLV 15	-9.39	-2.63	77.08	-2.0599	0.7514	-0.1988
862	SLV 16	-10.5	-1.66	75.62	-2.021	0.7719	-0.2103
862	CRTFP Ux+	0	0	0	0	0	0
862	CRTFP Ux-	0	0	0	0	0	0
862	CRTFP Uy+	0	0	0	0	0	0
862	CRTFP Uy-	0	0	0	0	0	0
879	SLU 1	0.45	1.57	61.77	0.0471	-0.0137	-0.0112
879	SLU 2	0.41	1.52	61.79	0.0479	-0.0119	-0.0105
879	SLU 3	0.47	1.63	63.23	0.0486	-0.0129	-0.0114
879	SLU 4	0.44	1.6	63.24	0.0491	-0.0118	-0.011
879	SLU 5	0.43	1.55	62.69	0.0486	-0.0109	-0.0107
879	SLU 6	0.48	1.65	64.13	0.0493	-0.0119	-0.0116
879	SLU 7	0.46	1.63	64.14	0.0498	-0.0108	-0.0111
879	SLU 8	0.48	1.62	63.58	0.0485	-0.0117	-0.0115
879	SLU 9	0.45	1.59	63.59	0.049	-0.0106	-0.0111
879	SLU 10	0.46	1.69	70.04	0.0512	-0.0097	-0.0111
879	SLU 11	0.52	1.8	71.48	0.0518	-0.0108	-0.012
879	SLU 12	0.49	1.77	71.49	0.0523	-0.0097	-0.0116
879	SLU 13	0.47	1.72	70.95	0.0519	-0.0087	-0.0113
879	SLU 14	0.53	1.83	72.39	0.0526	-0.0098	-0.0122
879	SLU 15	0.5	1.8	72.4	0.0531	-0.0087	-0.0118
879	SLU 16	0.53	1.79	71.83	0.0518	-0.0096	-0.0121
879	SLU 17	0.5	1.76	71.84	0.0523	-0.0085	-0.0117
879	SLU 18	0.52	1.81	73.57	0.0517	-0.0106	-0.0121
879	SLU 19	0.5	1.79	73.58	0.0522	-0.0095	-0.0117
879	SLU 20	0.53	1.84	74.47	0.0525	-0.0096	-0.0123
879	SLU 21	0.51	1.81	74.48	0.053	-0.0085	-0.0118
879	SLU 22	0.5	1.83	70.05	0.0523	-0.0171	-0.0116
879	SLU 23	0.46	1.78	70.07	0.0531	-0.0152	-0.011
879	SLU 24	0.51	1.89	71.5	0.0538	-0.0163	-0.0118
879	SLU 25	0.49	1.86	71.52	0.0543	-0.0152	-0.0114
879	SLU 26	0.47	1.81	70.97	0.0539	-0.0142	-0.0111
879	SLU 27	0.53	1.91	72.41	0.0545	-0.0153	-0.012
879	SLU 28	0.5	1.89	72.42	0.055	-0.0142	-0.0116
879	SLU 29	0.52	1.88	71.86	0.0537	-0.0151	-0.012
879	SLU 30	0.5	1.85	71.87	0.0543	-0.014	-0.0115
879	SLU 31	0.51	1.96	78.32	0.0564	-0.0131	-0.0116
879	SLU 32	0.56	2.06	79.76	0.057	-0.0141	-0.0125
879	SLU 33	0.54	2.03	79.77	0.0575	-0.013	-0.0121
879	SLU 34	0.52	1.98	79.23	0.0571	-0.0121	-0.0117
879	SLU 35	0.57	2.09	80.66	0.0578	-0.0131	-0.0126
879	SLU 36	0.55	2.06	80.67	0.0583	-0.012	-0.0122
879	SLU 37	0.57	2.05	80.11	0.057	-0.0129	-0.0126
879	SLU 38	0.55	2.02	80.12	0.0575	-0.0118	-0.0122
879	SLU 39	0.57	2.07	81.84	0.0569	-0.014	-0.0125
879	SLU 40	0.54	2.05	81.85	0.0574	-0.0129	-0.0121
879	SLU 41	0.58	2.1	82.75	0.0577	-0.013	-0.0127
879	SLU 42	0.55	2.07	82.76	0.0582	-0.0119	-0.0123
879	SLU 43	0.57	1.95	77.46	0.0594	-0.0167	-0.0144
879	SLU 44	0.53	1.9	77.48	0.0602	-0.0148	-0.0137
879	SLU 45	0.59	2.01	78.92	0.0609	-0.0159	-0.0146
879	SLU 46	0.57	1.98	78.93	0.0614	-0.0148	-0.0142
879	SLU 47	0.55	1.93	78.38	0.061	-0.0138	-0.0139
879	SLU 48	0.6	2.03	79.82	0.0616	-0.0149	-0.0148
879	SLU 49	0.58	2.01	79.83	0.0621	-0.0138	-0.0144
879	SLU 50	0.6	2	79.27	0.0609	-0.0147	-0.0147
879	SLU 51	0.57	1.97	79.28	0.0614	-0.0136	-0.0143
879	SLU 52	0.58	2.07	85.74	0.0635	-0.0127	-0.0144
879	SLU 53	0.64	2.18	87.18	0.0642	-0.0137	-0.0152
879	SLU 54	0.61	2.15	87.19	0.0647	-0.0126	-0.0148
879	SLU 55	0.59	2.1	86.64	0.0642	-0.0117	-0.0145
879	SLU 56	0.65	2.21	88.08	0.0649	-0.0127	-0.0154
879	SLU 57	0.62	2.18	88.09	0.0654	-0.0116	-0.015
879	SLU 58	0.65	2.17	87.53	0.0641	-0.0125	-0.0154
879	SLU 59	0.62	2.14	87.54	0.0646	-0.0114	-0.0149
879	SLU 60	0.64	2.19	89.26	0.064	-0.0136	-0.0153
879	SLU 61	0.62	2.17	89.27	0.0646	-0.0125	-0.0149
879	SLU 62	0.65	2.22	90.16	0.0648	-0.0126	-0.0155
879	SLU 63	0.63	2.19	90.17	0.0653	-0.0115	-0.0151
879	SLU 64	0.62	2.21	85.74	0.0646	-0.02	-0.0149
879	SLU 65	0.58	2.16	85.76	0.0654	-0.0182	-0.0142
879	SLU 66	0.63	2.27	87.2	0.0661	-0.0193	-0.0151
879	SLU 67	0.61	2.24	87.21	0.0666	-0.0182	-0.0146
879	SLU 68	0.59	2.19	86.66	0.0662	-0.0172	-0.0143



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
879	SLU 69	0.65	2.29	88.1	0.0668	-0.0183	-0.0152
879	SLU 70	0.62	2.27	88.11	0.0674	-0.0172	-0.0148
879	SLU 71	0.64	2.26	87.55	0.0661	-0.0181	-0.0152
879	SLU 72	0.62	2.23	87.56	0.0666	-0.017	-0.0148
879	SLU 73	0.63	2.34	94.02	0.0687	-0.016	-0.0148
879	SLU 74	0.68	2.44	95.45	0.0694	-0.0171	-0.0157
879	SLU 75	0.66	2.41	95.46	0.0699	-0.016	-0.0153
879	SLU 76	0.64	2.36	94.92	0.0694	-0.015	-0.015
879	SLU 77	0.69	2.47	96.36	0.0701	-0.0161	-0.0158
879	SLU 78	0.67	2.44	96.37	0.0706	-0.015	-0.0154
879	SLU 79	0.69	2.43	95.8	0.0693	-0.0159	-0.0158
879	SLU 80	0.67	2.41	95.81	0.0699	-0.0148	-0.0154
879	SLU 81	0.69	2.45	97.54	0.0693	-0.0169	-0.0158
879	SLU 82	0.66	2.43	97.55	0.0698	-0.0158	-0.0153
879	SLU 83	0.7	2.48	98.44	0.07	-0.0159	-0.0159
879	SLU 84	0.68	2.45	98.45	0.0705	-0.0148	-0.0155
879	SLE RA 1	0.47	1.64	64.14	0.0485	-0.0147	-0.0113
879	SLE RA 2	0.44	1.61	64.15	0.0491	-0.0134	-0.0109
879	SLE RA 3	0.48	1.68	65.11	0.0495	-0.0142	-0.0115
879	SLE RA 4	0.46	1.66	65.11	0.0499	-0.0134	-0.0112
879	SLE RA 5	0.45	1.63	64.75	0.0496	-0.0128	-0.011
879	SLE RA 6	0.48	1.7	65.71	0.05	-0.0135	-0.0116
879	SLE RA 7	0.47	1.68	65.72	0.0504	-0.0128	-0.0113
879	SLE RA 8	0.48	1.68	65.34	0.0495	-0.0133	-0.0115
879	SLE RA 9	0.47	1.66	65.35	0.0499	-0.0126	-0.0113
879	SLE RA 10	0.47	1.73	69.65	0.0513	-0.012	-0.0113
879	SLE RA 11	0.51	1.8	70.61	0.0517	-0.0127	-0.0119
879	SLE RA 12	0.49	1.78	70.62	0.0521	-0.012	-0.0116
879	SLE RA 13	0.48	1.74	70.25	0.0518	-0.0113	-0.0114
879	SLE RA 14	0.52	1.81	71.21	0.0522	-0.012	-0.012
879	SLE RA 15	0.5	1.8	71.22	0.0526	-0.0113	-0.0117
879	SLE RA 16	0.51	1.79	70.84	0.0517	-0.0119	-0.012
879	SLE RA 17	0.5	1.77	70.85	0.052	-0.0112	-0.0117
879	SLE RA 18	0.51	1.81	72	0.0517	-0.0126	-0.0119
879	SLE RA 19	0.5	1.79	72.01	0.052	-0.0119	-0.0117
879	SLE RA 20	0.52	1.82	72.6	0.0521	-0.0119	-0.012
879	SLE RA 21	0.5	1.8	72.61	0.0525	-0.0112	-0.0118
879	SLE FR 1	0.47	1.64	64.14	0.0485	-0.0147	-0.0113
879	SLE FR 2	0.46	1.64	64.14	0.0487	-0.0144	-0.0112
879	SLE FR 3	0.47	1.65	64.38	0.0487	-0.0144	-0.0114
879	SLE FR 4	0.47	1.68	66.5	0.0496	-0.0138	-0.0114
879	SLE FR 5	0.48	1.7	66.74	0.0497	-0.0138	-0.0116
879	SLE FR 6	0.49	1.72	68.07	0.0501	-0.0136	-0.0116
879	SLE QP 1	0.47	1.64	64.14	0.0485	-0.0147	-0.0113
879	SLE QP 2	0.48	1.69	66.49	0.0495	-0.014	-0.0115
879	SLD 1	6.78	2.2	63.24	0.0383	0.1853	-0.0602
879	SLD 2	6.26	2.36	63.16	0.037	0.1845	-0.049
879	SLD 3	6.44	0.39	64.12	0.0499	0.2097	-0.0634
879	SLD 4	5.92	0.56	64.04	0.0486	0.2089	-0.0523
879	SLD 5	2.98	4.55	64.19	0.0289	0.0089	-0.0231
879	SLD 6	2.64	4.66	64.14	0.028	0.0084	-0.0158
879	SLD 7	1.84	-1.47	67.14	0.0673	0.0902	-0.034
879	SLD 8	1.5	-1.36	67.08	0.0665	0.0897	-0.0267
879	SLD 9	-0.54	4.74	65.91	0.0325	-0.1178	0.0037
879	SLD 10	-0.88	4.85	65.85	0.0316	-0.1183	0.011
879	SLD 11	-1.68	-1.28	68.85	0.0709	-0.0365	-0.0072
879	SLD 12	-2.03	-1.17	68.8	0.0701	-0.037	0.0001
879	SLD 13	-4.96	2.83	68.95	0.0504	-0.237	0.0293
879	SLD 14	-5.48	2.99	68.86	0.0491	-0.2378	0.0404
879	SLD 15	-5.3	1.02	69.83	0.0619	-0.2126	0.026
879	SLD 16	-5.82	1.18	69.75	0.0606	-0.2134	0.0371
879	SLV 1	15.23	2.81	58.91	0.0233	0.4532	-0.1253
879	SLV 2	14.01	3.19	58.72	0.0202	0.4514	-0.0994
879	SLV 3	14.43	-1.28	60.91	0.0494	0.5088	-0.1329
879	SLV 4	13.21	-0.9	60.72	0.0464	0.507	-0.107
879	SLV 5	6.33	8.16	61.22	0.0025	0.042	-0.0386
879	SLV 6	5.54	8.4	61.09	0.0005	0.0409	-0.0219
879	SLV 7	3.66	-5.46	67.89	0.0896	0.2275	-0.0639
879	SLV 8	2.87	-5.22	67.77	0.0877	0.2264	-0.0472
879	SLV 9	-1.92	8.6	65.22	0.0113	-0.2545	0.0242
879	SLV 10	-2.7	8.84	65.1	0.0093	-0.2556	0.0409
879	SLV 11	-4.58	-5.02	71.89	0.0984	-0.0689	-0.0011
879	SLV 12	-5.37	-4.78	71.77	0.0965	-0.0701	0.0156
879	SLV 13	-12.25	4.28	72.27	0.0526	-0.5351	0.084
879	SLV 14	-13.47	4.66	72.08	0.0495	-0.5369	0.1099
879	SLV 15	-13.05	0.2	74.27	0.0787	-0.4795	0.0764
879	SLV 16	-14.27	0.57	74.08	0.0757	-0.4812	0.1023
879	CRTFP Ux+	0	0	0	0	0	0
879	CRTFP Ux-	0	0	0	0	0	0
882	SLU 1	-0.1	0.99	62.21	0.0392	0.0944	0.0093
882	SLU 2	-0.13	0.92	62.2	0.0402	0.0926	0.0099
882	SLU 3	-0.1	1.03	63.67	0.0404	0.0968	0.0094
882	SLU 4	-0.12	0.99	63.66	0.041	0.0957	0.0098
882	SLU 5	-0.12	0.94	63.1	0.0407	0.0936	0.0099
882	SLU 6	-0.1	1.05	64.57	0.0409	0.0978	0.0094
882	SLU 7	-0.11	1.01	64.56	0.0415	0.0967	0.0098
882	SLU 8	-0.09	1.01	64.01	0.0402	0.0964	0.0093
882	SLU 9	-0.11	0.98	64	0.0408	0.0953	0.0097
882	SLU 10	-0.13	1.08	70.28	0.0442	0.1014	0.0113
882	SLU 11	-0.11	1.19	71.75	0.0444	0.1057	0.0108



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
882	SLU 12	-0.12	1.15	71.74	0.045	0.1046	0.0112
882	SLU 13	-0.13	1.09	71.18	0.0447	0.1024	0.0113
882	SLU 14	-0.1	1.2	72.65	0.0449	0.1066	0.0108
882	SLU 15	-0.12	1.16	72.64	0.0455	0.1055	0.0112
882	SLU 16	-0.1	1.17	72.08	0.0442	0.1052	0.0107
882	SLU 17	-0.11	1.13	72.08	0.0448	0.1041	0.0111
882	SLU 18	-0.11	1.21	73.75	0.0449	0.1071	0.0113
882	SLU 19	-0.13	1.17	73.75	0.0455	0.106	0.0117
882	SLU 20	-0.11	1.22	74.65	0.0454	0.108	0.0113
882	SLU 21	-0.12	1.18	74.64	0.046	0.1069	0.0117
882	SLU 22	-0.12	1.23	70.45	0.0445	0.1093	0.01
882	SLU 23	-0.14	1.17	70.45	0.0455	0.1075	0.0106
882	SLU 24	-0.12	1.28	71.91	0.0457	0.1117	0.0101
882	SLU 25	-0.13	1.24	71.91	0.0463	0.1106	0.0105
882	SLU 26	-0.14	1.18	71.34	0.046	0.1085	0.0106
882	SLU 27	-0.11	1.29	72.81	0.0462	0.1127	0.0101
882	SLU 28	-0.13	1.25	72.81	0.0468	0.1116	0.0105
882	SLU 29	-0.11	1.26	72.25	0.0455	0.1113	0.01
882	SLU 30	-0.12	1.22	72.24	0.0461	0.1102	0.0104
882	SLU 31	-0.15	1.32	78.52	0.0495	0.1163	0.012
882	SLU 32	-0.12	1.43	79.99	0.0497	0.1206	0.0115
882	SLU 33	-0.14	1.39	79.99	0.0503	0.1195	0.0119
882	SLU 34	-0.15	1.34	79.42	0.05	0.1173	0.0121
882	SLU 35	-0.12	1.45	80.89	0.0502	0.1216	0.0115
882	SLU 36	-0.14	1.41	80.88	0.0508	0.1205	0.0119
882	SLU 37	-0.11	1.41	80.33	0.0495	0.1201	0.0114
882	SLU 38	-0.13	1.38	80.32	0.0501	0.119	0.0118
882	SLU 39	-0.13	1.45	81.99	0.0502	0.122	0.012
882	SLU 40	-0.14	1.41	81.99	0.0508	0.1209	0.0124
882	SLU 41	-0.12	1.47	82.89	0.0507	0.123	0.012
882	SLU 42	-0.14	1.43	82.89	0.0513	0.1219	0.0124
882	SLU 43	-0.12	1.2	78.05	0.0492	0.1176	0.0118
882	SLU 44	-0.15	1.13	78.04	0.0502	0.1158	0.0124
882	SLU 45	-0.12	1.24	79.51	0.0504	0.12	0.0119
882	SLU 46	-0.14	1.2	79.5	0.051	0.1189	0.0123
882	SLU 47	-0.15	1.15	78.94	0.0506	0.1168	0.0124
882	SLU 48	-0.12	1.26	80.4	0.0509	0.121	0.0119
882	SLU 49	-0.14	1.22	80.4	0.0514	0.1199	0.0123
882	SLU 50	-0.12	1.23	79.84	0.0502	0.1196	0.0118
882	SLU 51	-0.13	1.19	79.84	0.0508	0.1185	0.0122
882	SLU 52	-0.16	1.29	86.12	0.0541	0.1246	0.0138
882	SLU 53	-0.13	1.4	87.58	0.0544	0.1289	0.0133
882	SLU 54	-0.15	1.36	87.58	0.0549	0.1278	0.0137
882	SLU 55	-0.15	1.3	87.02	0.0546	0.1256	0.0139
882	SLU 56	-0.13	1.41	88.48	0.0549	0.1299	0.0133
882	SLU 57	-0.14	1.37	88.48	0.0554	0.1288	0.0137
882	SLU 58	-0.12	1.38	87.92	0.0542	0.1284	0.0132
882	SLU 59	-0.14	1.34	87.92	0.0547	0.1273	0.0136
882	SLU 60	-0.13	1.42	89.59	0.0549	0.1303	0.0138
882	SLU 61	-0.15	1.38	89.58	0.0555	0.1292	0.0142
882	SLU 62	-0.13	1.43	90.49	0.0554	0.1313	0.0138
882	SLU 63	-0.15	1.39	90.48	0.056	0.1301	0.0142
882	SLU 64	-0.14	1.44	86.29	0.0545	0.1326	0.0125
882	SLU 65	-0.17	1.38	86.28	0.0554	0.1307	0.0132
882	SLU 66	-0.14	1.49	87.75	0.0557	0.135	0.0126
882	SLU 67	-0.16	1.45	87.74	0.0562	0.1338	0.013
882	SLU 68	-0.16	1.39	87.18	0.0559	0.1317	0.0132
882	SLU 69	-0.14	1.5	88.65	0.0562	0.1359	0.0126
882	SLU 70	-0.15	1.46	88.64	0.0567	0.1348	0.013
882	SLU 71	-0.13	1.47	88.09	0.0555	0.1345	0.0125
882	SLU 72	-0.15	1.43	88.08	0.0561	0.1334	0.0129
882	SLU 73	-0.17	1.53	94.36	0.0594	0.1396	0.0146
882	SLU 74	-0.15	1.64	95.83	0.0597	0.1438	0.014
882	SLU 75	-0.16	1.6	95.82	0.0602	0.1427	0.0144
882	SLU 76	-0.17	1.55	95.26	0.0599	0.1405	0.0146
882	SLU 77	-0.14	1.66	96.73	0.0601	0.1448	0.014
882	SLU 78	-0.16	1.62	96.72	0.0607	0.1437	0.0144
882	SLU 79	-0.14	1.63	96.16	0.0595	0.1434	0.014
882	SLU 80	-0.16	1.59	96.16	0.06	0.1422	0.0143
882	SLU 81	-0.15	1.66	97.83	0.0602	0.1452	0.0145
882	SLU 82	-0.17	1.62	97.83	0.0607	0.1441	0.0149
882	SLU 83	-0.15	1.68	98.73	0.0607	0.1462	0.0145
882	SLU 84	-0.16	1.64	98.72	0.0612	0.1451	0.0149
882	SLE RA 1	-0.1	1.06	64.57	0.0408	0.0987	0.0095
882	SLE RA 2	-0.12	1.01	64.56	0.0414	0.0975	0.0099
882	SLE RA 3	-0.1	1.09	65.54	0.0415	0.1003	0.0095
882	SLE RA 4	-0.12	1.06	65.54	0.0419	0.0995	0.0098
882	SLE RA 5	-0.12	1.02	65.16	0.0417	0.0981	0.0099
882	SLE RA 6	-0.1	1.1	66.14	0.0419	0.1009	0.0095
882	SLE RA 7	-0.11	1.07	66.13	0.0423	0.1002	0.0098
882	SLE RA 8	-0.1	1.07	65.76	0.0414	0.1	0.0095
882	SLE RA 9	-0.11	1.05	65.76	0.0418	0.0993	0.0097
882	SLE RA 10	-0.13	1.12	69.95	0.044	0.1034	0.0108
882	SLE RA 11	-0.11	1.19	70.92	0.0442	0.1062	0.0105
882	SLE RA 12	-0.12	1.16	70.92	0.0446	0.1054	0.0107
882	SLE RA 13	-0.12	1.13	70.54	0.0444	0.104	0.0108
882	SLE RA 14	-0.11	1.2	71.52	0.0445	0.1068	0.0105
882	SLE RA 15	-0.12	1.17	71.52	0.0449	0.1061	0.0107
882	SLE RA 16	-0.1	1.18	71.15	0.0441	0.1059	0.0104
882	SLE RA 17	-0.11	1.15	71.15	0.0444	0.1051	0.0107





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
882	SLE RA 18	-0.11	1.2	72.26	0.0445	0.1071	0.0108
882	SLE RA 19	-0.12	1.18	72.26	0.0449	0.1064	0.0111
882	SLE RA 20	-0.11	1.21	72.86	0.0449	0.1078	0.0108
882	SLE RA 21	-0.12	1.19	72.85	0.0453	0.107	0.0111
882	SLE FR 1	-0.1	1.06	64.57	0.0408	0.0987	0.0095
882	SLE FR 2	-0.11	1.05	64.56	0.0409	0.0984	0.0096
882	SLE FR 3	-0.1	1.06	64.81	0.0409	0.0989	0.0095
882	SLE FR 4	-0.11	1.09	66.87	0.042	0.101	0.01
882	SLE FR 5	-0.11	1.1	67.11	0.042	0.1015	0.0099
882	SLE FR 6	-0.11	1.13	68.41	0.0427	0.1029	0.0101
882	SLE QP 1	-0.1	1.06	64.57	0.0408	0.0987	0.0095
882	SLE QP 2	-0.11	1.1	66.87	0.0419	0.1012	0.0099
882	SLD 1	6.11	2.45	72.59	0.048	0.2743	-0.0367
882	SLD 2	5.59	2.26	72.28	0.0485	0.2759	-0.0263
882	SLD 3	5.77	0.67	73.47	0.0595	0.2598	-0.0332
882	SLD 4	5.25	0.47	73.16	0.06	0.2615	-0.0228
882	SLD 5	2.37	4.24	67.31	0.0262	0.1747	-0.0113
882	SLD 6	2.03	4.11	67.1	0.0266	0.1758	-0.0045
882	SLD 7	1.23	-1.7	70.25	0.0645	0.1266	0.0005
882	SLD 8	0.89	-1.82	70.04	0.0648	0.1277	0.0073
882	SLD 9	-1.11	4.02	63.71	0.0189	0.0747	0.0124
882	SLD 10	-1.45	3.9	63.5	0.0193	0.0758	0.0193
882	SLD 11	-2.24	-1.92	66.65	0.0572	0.0266	0.0242
882	SLD 12	-2.58	-2.04	66.44	0.0576	0.0277	0.0311
882	SLD 13	-5.47	1.72	60.59	0.0238	-0.059	0.0425
882	SLD 14	-5.98	1.53	60.27	0.0243	-0.0574	0.0529
882	SLD 15	-5.81	-0.06	61.47	0.0353	-0.0735	0.046
882	SLD 16	-6.32	-0.25	61.16	0.0358	-0.0718	0.0565
882	SLV 1	14.44	4.18	80.28	0.0568	0.5059	-0.0991
882	SLV 2	13.23	3.74	79.55	0.058	0.5097	-0.0748
882	SLV 3	13.65	0.15	82.29	0.0828	0.4726	-0.0909
882	SLV 4	12.44	-0.29	81.56	0.0841	0.4763	-0.0667
882	SLV 5	5.67	8.22	67.97	0.0067	0.2725	-0.0394
882	SLV 6	4.89	7.93	67.5	0.0075	0.2749	-0.0237
882	SLV 7	3.03	-5.22	74.68	0.0934	0.1614	-0.0122
882	SLV 8	2.25	-5.51	74.2	0.0943	0.1639	0.0035
882	SLV 9	-2.46	7.71	59.55	-0.0105	0.0386	0.0163
882	SLV 10	-3.24	7.42	59.07	-0.0097	0.041	0.032
882	SLV 11	-5.1	-5.73	66.25	0.0763	-0.0725	0.0434
882	SLV 12	-5.88	-6.02	65.77	0.0771	-0.0701	0.0591
882	SLV 13	-12.65	2.49	52.19	-0.0003	-0.2739	0.0864
882	SLV 14	-13.86	2.05	51.45	0.001	-0.2702	0.1107
882	SLV 15	-13.44	-1.54	54.2	0.0257	-0.3072	0.0945
882	SLV 16	-14.65	-1.98	53.46	0.027	-0.3035	0.1188
882	CRTFP Ux+	0	0	0	0	0	0
882	CRTFP Ux-	0	0	0	0	0	0
884	SLU 1	-0.42	0.11	31.4	-0.8086	-5.4481	0.0142
884	SLU 2	-0.45	0.03	31.43	-0.8094	-5.4504	-0.0055
884	SLU 3	-0.44	0.11	32.16	-0.8281	-5.5752	0.0154
884	SLU 4	-0.45	0.07	32.18	-0.8285	-5.5766	0.0036
884	SLU 5	-0.45	0.04	31.9	-0.8216	-5.5297	-0.0045
884	SLU 6	-0.44	0.12	32.63	-0.8403	-5.6546	0.0163
884	SLU 7	-0.46	0.07	32.65	-0.8407	-5.6559	0.0045
884	SLU 8	-0.44	0.12	32.35	-0.833	-5.6068	0.016
884	SLU 9	-0.45	0.07	32.37	-0.8335	-5.6081	0.0042
884	SLU 10	-0.47	0.1	35.16	-0.9047	-6.0839	0.0105
884	SLU 11	-0.46	0.18	35.89	-0.9234	-6.2087	0.0314
884	SLU 12	-0.47	0.14	35.91	-0.9239	-6.2101	0.0196
884	SLU 13	-0.48	0.1	35.64	-0.9169	-6.1632	0.0115
884	SLU 14	-0.46	0.19	36.37	-0.9356	-6.2881	0.0323
884	SLU 15	-0.48	0.14	36.39	-0.9361	-6.2894	0.0205
884	SLU 16	-0.46	0.18	36.09	-0.9284	-6.2403	0.032
884	SLU 17	-0.47	0.14	36.1	-0.9288	-6.2417	0.0202
884	SLU 18	-0.46	0.21	36.74	-0.9448	-6.3531	0.0371
884	SLU 19	-0.47	0.16	36.75	-0.9453	-6.3545	0.0253
884	SLU 20	-0.46	0.21	37.21	-0.957	-6.4324	0.038
884	SLU 21	-0.48	0.16	37.23	-0.9575	-6.4338	0.0262
884	SLU 22	-0.45	0.17	35.21	-0.9059	-6.0944	0.0276
884	SLU 23	-0.48	0.09	35.24	-0.9067	-6.0967	0.0079
884	SLU 24	-0.46	0.17	35.97	-0.9254	-6.2215	0.0287
884	SLU 25	-0.48	0.13	35.99	-0.9259	-6.2229	0.0169
884	SLU 26	-0.48	0.09	35.72	-0.9189	-6.176	0.0088
884	SLU 27	-0.47	0.18	36.45	-0.9376	-6.3009	0.0297
884	SLU 28	-0.48	0.13	36.47	-0.9381	-6.3022	0.0179
884	SLU 29	-0.46	0.17	36.16	-0.9303	-6.2531	0.0294
884	SLU 30	-0.48	0.13	36.18	-0.9308	-6.2545	0.0176
884	SLU 31	-0.5	0.16	38.98	-1.002	-6.7302	0.0239
884	SLU 32	-0.49	0.24	39.71	-1.0208	-6.855	0.0447
884	SLU 33	-0.5	0.19	39.73	-1.0212	-6.8564	0.0329
884	SLU 34	-0.5	0.16	39.45	-1.0142	-6.8095	0.0248
884	SLU 35	-0.49	0.24	40.19	-1.033	-6.9344	0.0457
884	SLU 36	-0.51	0.2	40.2	-1.0334	-6.9357	0.0339
884	SLU 37	-0.49	0.24	39.9	-1.0257	-6.8866	0.0454
884	SLU 38	-0.5	0.2	39.92	-1.0261	-6.888	0.0336
884	SLU 39	-0.48	0.26	40.55	-1.0421	-6.9994	0.0504
884	SLU 40	-0.5	0.22	40.57	-1.0426	-7.0008	0.0386
884	SLU 41	-0.49	0.27	41.03	-1.0543	-7.0788	0.0514
884	SLU 42	-0.5	0.22	41.04	-1.0548	-7.0801	0.0396
884	SLU 43	-0.54	0.12	39.51	-1.0178	-6.8609	0.0139
884	SLU 44	-0.57	0.04	39.54	-1.0186	-6.8632	-0.0058



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
884	SLU 45	-0.55	0.13	40.27	-1.0373	-6.9881	0.0151
884	SLU 46	-0.57	0.08	40.29	-1.0378	-6.9894	0.0033
884	SLU 47	-0.57	0.05	40.01	-1.0308	-6.9425	-0.0049
884	SLU 48	-0.56	0.13	40.75	-1.0495	-7.0674	0.016
884	SLU 49	-0.57	0.09	40.76	-1.05	-7.0688	0.0042
884	SLU 50	-0.55	0.13	40.46	-1.0422	-7.0196	0.0157
884	SLU 51	-0.57	0.08	40.48	-1.0427	-7.021	0.0039
884	SLU 52	-0.59	0.11	43.27	-1.1139	-7.4967	0.0102
884	SLU 53	-0.57	0.2	44.01	-1.1327	-7.6216	0.0311
884	SLU 54	-0.59	0.15	44.02	-1.1331	-7.6229	0.0193
884	SLU 55	-0.59	0.12	43.75	-1.1261	-7.576	0.0111
884	SLU 56	-0.58	0.2	44.48	-1.1449	-7.7009	0.032
884	SLU 57	-0.6	0.15	44.5	-1.1453	-7.7023	0.0202
884	SLU 58	-0.58	0.2	44.2	-1.1376	-7.6531	0.0317
884	SLU 59	-0.59	0.15	44.21	-1.138	-7.6545	0.0199
884	SLU 60	-0.57	0.22	44.85	-1.154	-7.7659	0.0368
884	SLU 61	-0.59	0.17	44.86	-1.1545	-7.7673	0.025
884	SLU 62	-0.58	0.22	45.32	-1.1662	-7.8453	0.0377
884	SLU 63	-0.59	0.18	45.34	-1.1667	-7.8466	0.0259
884	SLU 64	-0.57	0.18	43.33	-1.1152	-7.5072	0.0273
884	SLU 65	-0.59	0.1	43.35	-1.1159	-7.5095	0.0076
884	SLU 66	-0.58	0.19	44.09	-1.1346	-7.6344	0.0284
884	SLU 67	-0.6	0.14	44.1	-1.1351	-7.6357	0.0166
884	SLU 68	-0.6	0.11	43.83	-1.1281	-7.5889	0.0085
884	SLU 69	-0.59	0.19	44.56	-1.1468	-7.7137	0.0293
884	SLU 70	-0.6	0.14	44.58	-1.1473	-7.7151	0.0175
884	SLU 71	-0.58	0.19	44.28	-1.1396	-7.6659	0.0291
884	SLU 72	-0.6	0.14	44.29	-1.14	-7.6673	0.0173
884	SLU 73	-0.62	0.17	47.09	-1.2112	-8.143	0.0236
884	SLU 74	-0.6	0.25	47.82	-1.23	-8.2679	0.0444
884	SLU 75	-0.62	0.21	47.84	-1.2304	-8.2692	0.0326
884	SLU 76	-0.62	0.17	47.57	-1.2234	-8.2224	0.0245
884	SLU 77	-0.61	0.26	48.3	-1.2422	-8.3472	0.0453
884	SLU 78	-0.62	0.21	48.31	-1.2426	-8.3486	0.0335
884	SLU 79	-0.6	0.26	48.01	-1.2349	-8.2994	0.0451
884	SLU 80	-0.62	0.21	48.03	-1.2353	-8.3008	0.0333
884	SLU 81	-0.6	0.28	48.66	-1.2513	-8.4122	0.0501
884	SLU 82	-0.62	0.23	48.68	-1.2518	-8.4136	0.0383
884	SLU 83	-0.61	0.28	49.14	-1.2635	-8.4916	0.051
884	SLU 84	-0.62	0.23	49.16	-1.264	-8.493	0.0392
884	SLE RA 1	-0.43	0.13	32.49	-0.8364	-5.6328	0.018
884	SLE RA 2	-0.45	0.07	32.51	-0.8369	-5.6343	0.0049
884	SLE RA 3	-0.44	0.13	33	-0.8494	-5.7175	0.0188
884	SLE RA 4	-0.45	0.1	33.01	-0.8497	-5.7184	0.0109
884	SLE RA 5	-0.45	0.08	32.82	-0.8451	-5.6872	0.0055
884	SLE RA 6	-0.44	0.13	33.31	-0.8575	-5.7704	0.0194
884	SLE RA 7	-0.45	0.1	33.32	-0.8578	-5.7713	0.0116
884	SLE RA 8	-0.44	0.13	33.12	-0.8527	-5.7385	0.0193
884	SLE RA 9	-0.45	0.1	33.13	-0.853	-5.7395	0.0114
884	SLE RA 10	-0.46	0.12	35	-0.9005	-6.0566	0.0156
884	SLE RA 11	-0.45	0.17	35.49	-0.913	-6.1398	0.0295
884	SLE RA 12	-0.46	0.14	35.5	-0.9133	-6.1407	0.0216
884	SLE RA 13	-0.47	0.12	35.32	-0.9086	-6.1095	0.0162
884	SLE RA 14	-0.46	0.18	35.8	-0.9211	-6.1927	0.0301
884	SLE RA 15	-0.47	0.15	35.81	-0.9214	-6.1936	0.0222
884	SLE RA 16	-0.45	0.18	35.61	-0.9162	-6.1609	0.0299
884	SLE RA 17	-0.46	0.15	35.62	-0.9165	-6.1618	0.0221
884	SLE RA 18	-0.45	0.19	36.05	-0.9272	-6.2361	0.0333
884	SLE RA 19	-0.46	0.16	36.06	-0.9275	-6.237	0.0254
884	SLE RA 20	-0.46	0.19	36.36	-0.9354	-6.289	0.0339
884	SLE RA 21	-0.47	0.16	36.38	-0.9357	-6.2899	0.026
884	SLE FR 1	-0.43	0.13	32.49	-0.8364	-5.6328	0.018
884	SLE FR 2	-0.44	0.11	32.49	-0.8365	-5.6331	0.0154
884	SLE FR 3	-0.43	0.13	32.62	-0.8397	-5.6539	0.0183
884	SLE FR 4	-0.44	0.13	33.56	-0.8638	-5.8141	0.02
884	SLE FR 5	-0.44	0.15	33.68	-0.8669	-5.8349	0.0229
884	SLE FR 6	-0.44	0.16	34.27	-0.8818	-5.9344	0.0257
884	SLE QP 1	-0.43	0.13	32.49	-0.8364	-5.6328	0.018
884	SLE QP 2	-0.44	0.14	33.56	-0.8637	-5.8138	0.0226
884	SLD 1	2.19	0.63	41.37	-1.067	-7.0591	0.2806
884	SLD 2	1.93	0.18	41.82	-1.0775	-7.145	0.163
884	SLD 3	2.03	-0.47	42.15	-1.0853	-7.198	0.0051
884	SLD 4	1.78	-0.91	42.6	-1.0957	-7.2839	-0.1125
884	SLD 5	0.64	2.04	34.64	-0.8951	-5.9613	0.5388
884	SLD 6	0.47	1.74	34.94	-0.9019	-6.0178	0.4616
884	SLD 7	0.11	-1.63	37.23	-0.956	-6.4244	-0.3795
884	SLD 8	-0.06	-1.92	37.53	-0.9629	-6.4808	-0.4568
884	SLD 9	-0.82	2.21	29.58	-0.7644	-5.1467	0.502
884	SLD 10	-0.98	1.92	29.88	-0.7713	-5.2032	0.4247
884	SLD 11	-1.34	-1.46	32.17	-0.8254	-5.6097	-0.4164
884	SLD 12	-1.51	-1.75	32.47	-0.8323	-5.6662	-0.4936
884	SLD 13	-2.65	1.2	24.51	-0.6316	-4.3436	0.1577
884	SLD 14	-2.91	0.76	24.96	-0.642	-4.4295	0.0401
884	SLD 15	-2.81	0.1	25.29	-0.6499	-4.4825	-0.1178
884	SLD 16	-3.07	-0.34	25.74	-0.6603	-4.5684	-0.2354
884	SLV 1	5.71	1.23	51.87	-1.34	-8.732	0.6154
884	SLV 2	5.11	0.2	52.92	-1.3643	-8.9322	0.3417
884	SLV 3	5.34	-1.25	53.65	-1.382	-9.0503	-0.008
884	SLV 4	4.74	-2.29	54.7	-1.4064	-9.2505	-0.2818
884	SLV 5	2.06	4.42	36.16	-0.9386	-6.1719	1.1933



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
884	SLV 6	1.68	3.75	36.84	-0.9543	-6.3012	1.0165
884	SLV 7	0.84	-3.87	42.11	-1.0787	-7.2329	-0.8848
884	SLV 8	0.46	-4.54	42.79	-1.0945	-7.3622	-1.0616
884	SLV 9	-1.33	4.83	24.32	-0.6328	-4.2654	1.1068
884	SLV 10	-1.72	4.16	25	-0.6486	-4.3946	0.93
884	SLV 11	-2.56	-3.47	30.27	-0.773	-5.3263	-0.9713
884	SLV 12	-2.94	-4.13	30.95	-0.7888	-5.4556	-1.1481
884	SLV 13	-5.62	2.58	12.41	-0.3209	-2.377	0.327
884	SLV 14	-6.22	1.54	13.46	-0.3453	-2.5772	0.0533
884	SLV 15	-5.99	0.09	14.19	-0.363	-2.6953	-0.2964
884	SLV 16	-6.58	-0.94	15.24	-0.3874	-2.8955	-0.5702
884	CRTFP Ux+	0	0	0	0	0	0
884	CRTFP Ux-	0	0	0	0	0	0
884	CRTFP Uy+	0	0	0	0	0	0
884	CRTFP Uy-	0	0	0	0	0	0
887	SLU 1	1.77	0.29	77.41	-3.6758	-0.0103	0.0983
887	SLU 2	1.72	0.25	77.38	-3.6752	0.003	0.0971
887	SLU 3	1.81	0.3	79.24	-3.7616	-0.006	0.1009
887	SLU 4	1.78	0.28	79.22	-3.7613	0.0019	0.1002
887	SLU 5	1.75	0.25	78.49	-3.7275	0.0051	0.0988
887	SLU 6	1.84	0.3	80.34	-3.8139	-0.0039	0.1026
887	SLU 7	1.82	0.28	80.33	-3.8135	0.0041	0.1019
887	SLU 8	1.83	0.28	79.62	-3.7803	-0.0061	0.1016
887	SLU 9	1.8	0.26	79.61	-3.78	0.0019	0.1009
887	SLU 10	1.87	0.36	87.19	-4.1402	0.019	0.1044
887	SLU 11	1.96	0.42	89.05	-4.2265	0.01	0.1083
887	SLU 12	1.93	0.39	89.03	-4.2262	0.0179	0.1075
887	SLU 13	1.9	0.36	88.3	-4.1924	0.0211	0.1061
887	SLU 14	1.99	0.41	90.15	-4.2788	0.0121	0.1099
887	SLU 15	1.96	0.39	90.14	-4.2784	0.0201	0.1092
887	SLU 16	1.97	0.4	89.43	-4.2453	0.0099	0.109
887	SLU 17	1.95	0.38	89.42	-4.2449	0.0179	0.1083
887	SLU 18	1.97	0.45	91.42	-4.34	0.0125	0.1088
887	SLU 19	1.94	0.43	91.41	-4.3397	0.0205	0.1081
887	SLU 20	2	0.45	92.53	-4.3923	0.0147	0.1105
887	SLU 21	1.98	0.43	92.51	-4.3919	0.0226	0.1097
887	SLU 22	1.92	0.43	87.26	-4.14	0.0078	0.107
887	SLU 23	1.87	0.4	87.24	-4.1394	0.0211	0.1059
887	SLU 24	1.96	0.45	89.09	-4.2258	0.012	0.1097
887	SLU 25	1.94	0.43	89.07	-4.2254	0.02	0.109
887	SLU 26	1.9	0.39	88.35	-4.1916	0.0232	0.1075
887	SLU 27	2	0.45	90.2	-4.278	0.0142	0.1114
887	SLU 28	1.97	0.42	90.18	-4.2777	0.0221	0.1107
887	SLU 29	1.98	0.43	89.48	-4.2445	0.012	0.1104
887	SLU 30	1.95	0.41	89.46	-4.2441	0.02	0.1097
887	SLU 31	2.02	0.51	97.05	-4.6043	0.037	0.1132
887	SLU 32	2.11	0.56	98.9	-4.6907	0.028	0.117
887	SLU 33	2.08	0.54	98.88	-4.6903	0.036	0.1163
887	SLU 34	2.05	0.51	98.15	-4.6566	0.0392	0.1149
887	SLU 35	2.14	0.56	100.01	-4.7429	0.0302	0.1187
887	SLU 36	2.11	0.54	99.99	-4.7426	0.0381	0.118
887	SLU 37	2.13	0.55	99.29	-4.7094	0.028	0.1178
887	SLU 38	2.1	0.52	99.27	-4.7091	0.036	0.1171
887	SLU 39	2.12	0.6	101.28	-4.8042	0.0306	0.1175
887	SLU 40	2.1	0.58	101.26	-4.8038	0.0386	0.1168
887	SLU 41	2.15	0.6	102.38	-4.8564	0.0327	0.1192
887	SLU 42	2.13	0.57	102.37	-4.8561	0.0407	0.1185
887	SLU 43	2.24	0.32	97.25	-4.6194	-0.0196	0.1247
887	SLU 44	2.2	0.28	97.23	-4.6188	-0.0063	0.1235
887	SLU 45	2.29	0.34	99.08	-4.7052	-0.0153	0.1274
887	SLU 46	2.26	0.31	99.06	-4.7049	-0.0074	0.1267
887	SLU 47	2.23	0.28	98.34	-4.6711	-0.0042	0.1252
887	SLU 48	2.32	0.33	100.19	-4.7575	-0.0132	0.1291
887	SLU 49	2.29	0.31	100.17	-4.7571	-0.0052	0.1283
887	SLU 50	2.31	0.32	99.47	-4.7239	-0.0153	0.1281
887	SLU 51	2.28	0.3	99.45	-4.7236	-0.0074	0.1274
887	SLU 52	2.34	0.4	107.04	-5.0838	0.0097	0.1309
887	SLU 53	2.43	0.45	108.89	-5.1701	0.0007	0.1347
887	SLU 54	2.41	0.43	108.87	-5.1698	0.0086	0.134
887	SLU 55	2.38	0.4	108.14	-5.136	0.0118	0.1326
887	SLU 56	2.47	0.45	110	-5.2224	0.0028	0.1364
887	SLU 57	2.44	0.43	109.98	-5.222	0.0108	0.1357
887	SLU 58	2.45	0.43	109.28	-5.1889	0.0006	0.1355
887	SLU 59	2.42	0.41	109.26	-5.1885	0.0086	0.1347
887	SLU 60	2.45	0.49	111.27	-5.2836	0.0032	0.1352
887	SLU 61	2.42	0.46	111.25	-5.2833	0.0112	0.1345
887	SLU 62	2.48	0.48	112.37	-5.3359	0.0054	0.1369
887	SLU 63	2.45	0.46	112.36	-5.3355	0.0134	0.1362
887	SLU 64	2.4	0.47	107.11	-5.0836	-0.0015	0.1335
887	SLU 65	2.35	0.43	107.08	-5.083	0.0118	0.1323
887	SLU 66	2.44	0.48	108.93	-5.1694	0.0027	0.1362
887	SLU 67	2.41	0.46	108.92	-5.169	0.0107	0.1354
887	SLU 68	2.38	0.43	108.19	-5.1352	0.0139	0.134
887	SLU 69	2.47	0.48	110.04	-5.2216	0.0049	0.1378
887	SLU 70	2.45	0.46	110.03	-5.2213	0.0128	0.1371
887	SLU 71	2.46	0.47	109.32	-5.1881	0.0027	0.1369
887	SLU 72	2.43	0.44	109.31	-5.1877	0.0107	0.1362
887	SLU 73	2.49	0.55	116.89	-5.5479	0.0278	0.1397
887	SLU 74	2.59	0.6	118.74	-5.6343	0.0187	0.1435
887	SLU 75	2.56	0.58	118.73	-5.634	0.0267	0.1428



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
887	SLU 76	2.53	0.54	118	-5.6002	0.0299	0.1414
887	SLU 77	2.62	0.6	119.85	-5.6866	0.0209	0.1452
887	SLU 78	2.59	0.57	119.84	-5.6862	0.0288	0.1445
887	SLU 79	2.6	0.58	119.13	-5.653	0.0187	0.1442
887	SLU 80	2.58	0.56	119.12	-5.6527	0.0267	0.1435
887	SLU 81	2.6	0.63	121.12	-5.7478	0.0213	0.144
887	SLU 82	2.57	0.61	121.11	-5.7474	0.0293	0.1433
887	SLU 83	2.63	0.63	122.23	-5.8	0.0235	0.1457
887	SLU 84	2.61	0.61	122.21	-5.7997	0.0314	0.145
887	SLE RA 1	1.81	0.33	80.23	-3.8084	-0.0052	0.1008
887	SLE RA 2	1.78	0.3	80.21	-3.808	0.0037	0.1
887	SLE RA 3	1.84	0.34	81.44	-3.8656	-0.0023	0.1025
887	SLE RA 4	1.82	0.32	81.43	-3.8654	0.003	0.1021
887	SLE RA 5	1.8	0.3	80.95	-3.8429	0.0051	0.1011
887	SLE RA 6	1.86	0.34	82.18	-3.9005	-0.0009	0.1037
887	SLE RA 7	1.84	0.32	82.17	-3.9002	0.0044	0.1032
887	SLE RA 8	1.85	0.33	81.7	-3.8781	-0.0023	0.103
887	SLE RA 9	1.83	0.31	81.69	-3.8779	0.003	0.1025
887	SLE RA 10	1.88	0.38	86.75	-4.118	0.0144	0.1049
887	SLE RA 11	1.94	0.41	87.98	-4.1756	0.0084	0.1074
887	SLE RA 12	1.92	0.4	87.97	-4.1753	0.0137	0.107
887	SLE RA 13	1.9	0.38	87.49	-4.1528	0.0158	0.106
887	SLE RA 14	1.96	0.41	88.72	-4.2104	0.0098	0.1086
887	SLE RA 15	1.94	0.4	88.71	-4.2102	0.0151	0.1081
887	SLE RA 16	1.95	0.4	88.24	-4.1881	0.0084	0.1079
887	SLE RA 17	1.93	0.39	88.23	-4.1878	0.0137	0.1074
887	SLE RA 18	1.95	0.44	89.57	-4.2512	0.0101	0.1078
887	SLE RA 19	1.93	0.42	89.56	-4.251	0.0154	0.1073
887	SLE RA 20	1.97	0.44	90.31	-4.2861	0.0115	0.1089
887	SLE RA 21	1.95	0.42	90.3	-4.2858	0.0168	0.1084
887	SLE FR 1	1.81	0.33	80.23	-3.8084	-0.0052	0.1008
887	SLE FR 2	1.8	0.32	80.22	-3.8084	-0.0034	0.1006
887	SLE FR 3	1.82	0.33	80.52	-3.8224	-0.0046	0.1012
887	SLE FR 4	1.84	0.36	83.02	-3.9412	0.0012	0.1027
887	SLE FR 5	1.86	0.36	83.32	-3.9552	0	0.1033
887	SLE FR 6	1.88	0.38	84.9	-4.0298	0.0025	0.1043
887	SLE QP 1	1.81	0.33	80.23	-3.8084	-0.0052	0.1008
887	SLE QP 2	1.85	0.36	83.03	-3.9413	-0.0006	0.1029
887	SLD 1	8.64	1.45	74.76	-3.6731	-0.063	0.4245
887	SLD 2	7.98	1.98	73.94	-3.6314	-0.0418	0.4059
887	SLD 3	9.03	-0.5	76.51	-3.7365	-0.0336	0.4033
887	SLD 4	8.36	0.03	75.7	-3.6948	-0.0124	0.3847
887	SLD 5	3.42	3.55	78.03	-3.7721	-0.0676	0.2349
887	SLD 6	2.99	3.9	77.49	-3.7447	-0.0536	0.2227
887	SLD 7	4.7	-2.95	83.88	-3.9835	0.0302	0.1641
887	SLD 8	4.27	-2.6	83.35	-3.9561	0.0441	0.1519
887	SLD 9	-0.57	3.32	82.71	-3.9265	-0.0453	0.0538
887	SLD 10	-1	3.67	82.17	-3.8991	-0.0313	0.0416
887	SLD 11	0.71	-3.18	88.56	-4.1379	0.0525	-0.0169
887	SLD 12	0.28	-2.82	88.03	-4.1105	0.0664	-0.0292
887	SLD 13	-4.66	0.69	90.36	-4.1878	0.0113	-0.179
887	SLD 14	-5.33	1.22	89.54	-4.146	0.0325	-0.1976
887	SLD 15	-4.28	-1.26	92.11	-4.2512	0.0406	-0.2002
887	SLD 16	-4.94	-0.72	91.3	-4.2095	0.0618	-0.2188
887	SLV 1	17.74	2.83	63.73	-3.3154	-0.1477	0.855
887	SLV 2	16.19	4.07	61.83	-3.2183	-0.0983	0.8117
887	SLV 3	18.64	-1.58	67.7	-3.4588	-0.0814	0.8061
887	SLV 4	17.09	-0.34	65.8	-3.3616	-0.032	0.7628
887	SLV 5	5.53	7.58	71.54	-3.5529	-0.1538	0.4103
887	SLV 6	4.53	8.38	70.31	-3.4901	-0.1219	0.3823
887	SLV 7	8.51	-7.13	84.79	-4.0308	0.0672	0.2471
887	SLV 8	7.51	-6.33	83.56	-3.968	0.0991	0.2191
887	SLV 9	-3.81	7.05	82.5	-3.9145	-0.1003	-0.0134
887	SLV 10	-4.81	7.85	81.27	-3.8518	-0.0683	-0.0413
887	SLV 11	-0.83	-7.66	95.74	-4.3924	0.1207	-0.1766
887	SLV 12	-1.82	-6.85	94.52	-4.3297	0.1527	-0.2045
887	SLV 13	-13.39	1.06	100.25	-4.5209	0.0308	-0.557
887	SLV 14	-14.94	2.31	98.36	-4.4238	0.0802	-0.6003
887	SLV 15	-12.49	-3.35	104.23	-4.6643	0.0971	-0.606
887	SLV 16	-14.04	-2.11	102.33	-4.5671	0.1465	-0.6493
887	CRTFP Ux+	0	0	0	0	0	0
887	CRTFP Ux-	0	0	0	0	0	0
887	CRTFP Uy+	0	0	0	0	0	0
887	CRTFP Uy-	0	0	0	0	0	0
901	SLU 1	0.43	0.23	14.48	-1.468	0.6189	-0.0377
901	SLU 2	0.45	0.22	14.47	-1.4673	0.6204	-0.032
901	SLU 3	0.45	0.24	14.81	-1.5011	0.6202	-0.0378
901	SLU 4	0.46	0.23	14.8	-1.5007	0.6211	-0.0344
901	SLU 5	0.46	0.22	14.67	-1.4876	0.6207	-0.031
901	SLU 6	0.46	0.24	15.01	-1.5213	0.6205	-0.0369
901	SLU 7	0.46	0.23	15	-1.5209	0.6214	-0.0335
901	SLU 8	0.45	0.23	14.88	-1.5085	0.6195	-0.0358
901	SLU 9	0.46	0.22	14.88	-1.5081	0.6204	-0.0324
901	SLU 10	0.48	0.29	16.12	-1.6342	0.6282	-0.0527
901	SLU 11	0.48	0.3	16.45	-1.668	0.628	-0.0585
901	SLU 12	0.49	0.3	16.45	-1.6676	0.6289	-0.0551
901	SLU 13	0.49	0.29	16.32	-1.6545	0.6285	-0.0517
901	SLU 14	0.49	0.3	16.65	-1.6883	0.6283	-0.0576
901	SLU 15	0.5	0.3	16.65	-1.6879	0.6292	-0.0541
901	SLU 16	0.48	0.3	16.53	-1.6754	0.6273	-0.0565



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
901	SLU 17	0.49	0.29	16.52	-1.6751	0.6282	-0.0531
901	SLU 18	0.48	0.33	16.83	-1.7064	0.6301	-0.0673
901	SLU 19	0.49	0.32	16.83	-1.706	0.631	-0.0638
901	SLU 20	0.49	0.33	17.03	-1.7267	0.6304	-0.0663
901	SLU 21	0.5	0.32	17.03	-1.7263	0.6313	-0.0629
901	SLU 22	0.48	0.29	16.14	-1.6363	0.629	-0.0544
901	SLU 23	0.49	0.28	16.13	-1.6357	0.6305	-0.0486
901	SLU 24	0.49	0.3	16.47	-1.6695	0.6303	-0.0545
901	SLU 25	0.5	0.29	16.46	-1.6691	0.6312	-0.0511
901	SLU 26	0.5	0.28	16.33	-1.656	0.6307	-0.0477
901	SLU 27	0.5	0.3	16.67	-1.6897	0.6306	-0.0536
901	SLU 28	0.51	0.29	16.66	-1.6893	0.6315	-0.0501
901	SLU 29	0.49	0.29	16.54	-1.6769	0.6295	-0.0525
901	SLU 30	0.5	0.28	16.54	-1.6765	0.6304	-0.049
901	SLU 31	0.52	0.35	17.78	-1.8026	0.6383	-0.0693
901	SLU 32	0.52	0.37	18.11	-1.8364	0.6381	-0.0752
901	SLU 33	0.53	0.36	18.11	-1.836	0.639	-0.0718
901	SLU 34	0.53	0.35	17.98	-1.8229	0.6386	-0.0684
901	SLU 35	0.53	0.36	18.31	-1.8567	0.6384	-0.0742
901	SLU 36	0.54	0.36	18.31	-1.8563	0.6393	-0.0708
901	SLU 37	0.53	0.36	18.19	-1.8438	0.6373	-0.0732
901	SLU 38	0.54	0.35	18.18	-1.8434	0.6382	-0.0697
901	SLU 39	0.52	0.39	18.49	-1.8748	0.6401	-0.0839
901	SLU 40	0.53	0.38	18.49	-1.8744	0.641	-0.0805
901	SLU 41	0.53	0.39	18.69	-1.8951	0.6404	-0.083
901	SLU 42	0.54	0.38	18.69	-1.8947	0.6413	-0.0795
901	SLU 43	0.55	0.28	18.25	-1.8506	0.8011	-0.0433
901	SLU 44	0.56	0.27	18.25	-1.85	0.8026	-0.0376
901	SLU 45	0.56	0.29	18.58	-1.8837	0.8024	-0.0434
901	SLU 46	0.57	0.28	18.58	-1.8833	0.8033	-0.04
901	SLU 47	0.57	0.27	18.45	-1.8702	0.8029	-0.0366
901	SLU 48	0.57	0.29	18.78	-1.904	0.8027	-0.0425
901	SLU 49	0.58	0.28	18.78	-1.9036	0.8036	-0.039
901	SLU 50	0.57	0.28	18.65	-1.8912	0.8017	-0.0414
901	SLU 51	0.57	0.27	18.65	-1.8908	0.8026	-0.038
901	SLU 52	0.59	0.34	19.89	-2.0169	0.8104	-0.0583
901	SLU 53	0.6	0.35	20.23	-2.0506	0.8103	-0.0641
901	SLU 54	0.6	0.35	20.22	-2.0502	0.8112	-0.0607
901	SLU 55	0.6	0.34	20.09	-2.0372	0.8107	-0.0573
901	SLU 56	0.6	0.35	20.43	-2.0709	0.8105	-0.0632
901	SLU 57	0.61	0.35	20.42	-2.0705	0.8115	-0.0597
901	SLU 58	0.6	0.35	20.3	-2.0581	0.8095	-0.0621
901	SLU 59	0.61	0.34	20.3	-2.0577	0.8104	-0.0587
901	SLU 60	0.6	0.38	20.61	-2.0891	0.8123	-0.0729
901	SLU 61	0.6	0.37	20.6	-2.0887	0.8132	-0.0694
901	SLU 62	0.6	0.38	20.81	-2.1094	0.8126	-0.0719
901	SLU 63	0.61	0.37	20.8	-2.109	0.8135	-0.0685
901	SLU 64	0.59	0.34	19.92	-2.019	0.8112	-0.06
901	SLU 65	0.61	0.33	19.91	-2.0183	0.8127	-0.0542
901	SLU 66	0.61	0.35	20.24	-2.0521	0.8125	-0.0601
901	SLU 67	0.61	0.34	20.24	-2.0517	0.8134	-0.0567
901	SLU 68	0.61	0.33	20.11	-2.0386	0.813	-0.0533
901	SLU 69	0.61	0.35	20.44	-2.0724	0.8128	-0.0592
901	SLU 70	0.62	0.34	20.44	-2.072	0.8137	-0.0557
901	SLU 71	0.61	0.34	20.32	-2.0596	0.8117	-0.0581
901	SLU 72	0.62	0.33	20.31	-2.0592	0.8127	-0.0546
901	SLU 73	0.64	0.4	21.56	-2.1853	0.8205	-0.0749
901	SLU 74	0.64	0.41	21.89	-2.219	0.8203	-0.0808
901	SLU 75	0.65	0.41	21.88	-2.2186	0.8212	-0.0774
901	SLU 76	0.65	0.4	21.76	-2.2056	0.8208	-0.074
901	SLU 77	0.65	0.41	22.09	-2.2393	0.8206	-0.0798
901	SLU 78	0.66	0.41	22.08	-2.2389	0.8215	-0.0764
901	SLU 79	0.64	0.41	21.96	-2.2265	0.8196	-0.0788
901	SLU 80	0.65	0.4	21.96	-2.2261	0.8205	-0.0753
901	SLU 81	0.64	0.44	22.27	-2.2575	0.8223	-0.0895
901	SLU 82	0.65	0.43	22.26	-2.2571	0.8232	-0.0861
901	SLU 83	0.65	0.44	22.47	-2.2778	0.8226	-0.0886
901	SLU 84	0.66	0.43	22.46	-2.2774	0.8235	-0.0851
901	SLE RA 1	0.45	0.25	14.95	-1.5161	0.6218	-0.0425
901	SLE RA 2	0.45	0.24	14.95	-1.5156	0.6228	-0.0387
901	SLE RA 3	0.45	0.25	15.17	-1.5381	0.6227	-0.0426
901	SLE RA 4	0.46	0.25	15.17	-1.5379	0.6233	-0.0403
901	SLE RA 5	0.46	0.24	15.08	-1.5292	0.623	-0.038
901	SLE RA 6	0.46	0.25	15.31	-1.5517	0.6228	-0.0419
901	SLE RA 7	0.47	0.25	15.3	-1.5514	0.6234	-0.0396
901	SLE RA 8	0.46	0.25	15.22	-1.5431	0.6222	-0.0412
901	SLE RA 9	0.46	0.24	15.22	-1.5428	0.6228	-0.0389
901	SLE RA 10	0.48	0.29	16.05	-1.6269	0.628	-0.0524
901	SLE RA 11	0.48	0.3	16.27	-1.6494	0.6279	-0.0564
901	SLE RA 12	0.48	0.29	16.27	-1.6492	0.6285	-0.0541
901	SLE RA 13	0.48	0.29	16.18	-1.6404	0.6282	-0.0518
901	SLE RA 14	0.48	0.3	16.4	-1.6629	0.6281	-0.0557
901	SLE RA 15	0.49	0.29	16.4	-1.6627	0.6287	-0.0534
901	SLE RA 16	0.48	0.29	16.32	-1.6544	0.6274	-0.055
901	SLE RA 17	0.49	0.29	16.32	-1.6541	0.628	-0.0527
901	SLE RA 18	0.48	0.31	16.52	-1.675	0.6292	-0.0622
901	SLE RA 19	0.48	0.31	16.52	-1.6748	0.6298	-0.0599
901	SLE RA 20	0.48	0.31	16.66	-1.6886	0.6294	-0.0615
901	SLE RA 21	0.49	0.31	16.65	-1.6883	0.63	-0.0592
901	SLE FR 1	0.45	0.25	14.95	-1.5161	0.6218	-0.0425



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
901	SLE FR 2	0.45	0.25	14.95	-1.516	0.622	-0.0417
901	SLE FR 3	0.45	0.25	15.01	-1.5215	0.6218	-0.0422
901	SLE FR 4	0.46	0.27	15.42	-1.5637	0.6242	-0.0476
901	SLE FR 5	0.46	0.27	15.48	-1.5692	0.6241	-0.0481
901	SLE FR 6	0.46	0.28	15.74	-1.5956	0.6255	-0.0523
901	SLE QP 1	0.45	0.25	14.95	-1.5161	0.6218	-0.0425
901	SLE QP 2	0.45	0.27	15.42	-1.5638	0.624	-0.0484
901	SLD 1	0.99	0.31	11.71	-1.1866	0.7073	-0.0316
901	SLD 2	0.82	0.63	11.47	-1.1632	0.6775	-0.1614
901	SLD 3	1.22	-0.43	12.14	-1.2296	0.7525	0.2499
901	SLD 4	1.05	-0.11	11.9	-1.2063	0.7227	0.1202
901	SLD 5	0.3	1.35	13.7	-1.3895	0.5858	-0.4473
901	SLD 6	0.19	1.56	13.55	-1.3742	0.5662	-0.5325
901	SLD 7	1.06	-1.12	15.13	-1.5329	0.7364	0.4913
901	SLD 8	0.95	-0.91	14.98	-1.5176	0.7168	0.4061
901	SLD 9	-0.04	1.45	15.87	-1.6099	0.5312	-0.5029
901	SLD 10	-0.15	1.66	15.72	-1.5946	0.5116	-0.5881
901	SLD 11	0.72	-1.02	17.3	-1.7533	0.6818	0.4357
901	SLD 12	0.61	-0.81	17.15	-1.738	0.6622	0.3505
901	SLD 13	-0.14	0.64	18.95	-1.9213	0.5253	-0.217
901	SLD 14	-0.31	0.97	18.71	-1.8979	0.4955	-0.3467
901	SLD 15	0.09	-0.1	19.38	-1.9643	0.5705	0.0646
901	SLD 16	-0.08	0.23	19.14	-1.9409	0.5407	-0.0651
901	SLV 1	1.71	0.34	6.74	-0.6823	0.8206	0.0004
901	SLV 2	1.32	1.09	6.2	-0.628	0.7511	-0.3017
901	SLV 3	2.23	-1.33	7.71	-0.7801	0.9229	0.638
901	SLV 4	1.83	-0.58	7.17	-0.7258	0.8534	0.336
901	SLV 5	0.11	2.7	11.43	-1.1604	0.5399	-0.9486
901	SLV 6	-0.14	3.19	11.08	-1.1253	0.495	-1.1437
901	SLV 7	1.84	-2.88	14.68	-1.4864	0.8808	1.1769
901	SLV 8	1.59	-2.4	14.33	-1.4513	0.8359	0.9818
901	SLV 9	-0.68	2.93	16.52	-1.6762	0.4121	-1.0786
901	SLV 10	-0.93	3.42	16.17	-1.6411	0.3672	-1.2737
901	SLV 11	1.05	-2.65	19.77	-2.0022	0.753	1.0469
901	SLV 12	0.8	-2.16	19.41	-1.9671	0.7081	0.8518
901	SLV 13	-0.92	1.12	23.68	-2.4017	0.3946	-0.4327
901	SLV 14	-1.32	1.87	23.14	-2.3474	0.3251	-0.7348
901	SLV 15	-0.41	-0.56	24.65	-2.4995	0.4969	0.2049
901	SLV 16	-0.8	0.19	24.11	-2.4452	0.4274	-0.0972
901	CRTFP Ux+	0	0	0	0	0	0
901	CRTFP Ux-	0	0	0	0	0	0
901	CRTFP Uy+	0	0	0	0	0	0
901	CRTFP Uy-	0	0	0	0	0	0
905	SLU 1	0.51	1.58	63.47	0.0641	-0.0213	-0.0118
905	SLU 2	0.47	1.54	63.51	0.0651	-0.0195	-0.0111
905	SLU 3	0.53	1.64	64.97	0.0661	-0.0208	-0.012
905	SLU 4	0.51	1.62	65	0.0666	-0.0198	-0.0116
905	SLU 5	0.48	1.56	64.44	0.0661	-0.0188	-0.0113
905	SLU 6	0.54	1.67	65.9	0.0671	-0.0201	-0.0121
905	SLU 7	0.52	1.64	65.93	0.0676	-0.019	-0.0118
905	SLU 8	0.54	1.63	65.32	0.0661	-0.0198	-0.0121
905	SLU 9	0.52	1.61	65.35	0.0667	-0.0188	-0.0117
905	SLU 10	0.52	1.71	71.9	0.0706	-0.0187	-0.0118
905	SLU 11	0.58	1.82	73.36	0.0716	-0.02	-0.0126
905	SLU 12	0.56	1.79	73.39	0.0722	-0.0189	-0.0122
905	SLU 13	0.54	1.74	72.83	0.0716	-0.0179	-0.0119
905	SLU 14	0.6	1.84	74.29	0.0726	-0.0193	-0.0128
905	SLU 15	0.57	1.82	74.32	0.0732	-0.0182	-0.0124
905	SLU 16	0.59	1.81	73.71	0.0717	-0.019	-0.0127
905	SLU 17	0.57	1.78	73.74	0.0722	-0.0179	-0.0124
905	SLU 18	0.59	1.83	75.45	0.0721	-0.0201	-0.0127
905	SLU 19	0.56	1.8	75.48	0.0726	-0.019	-0.0123
905	SLU 20	0.6	1.86	76.38	0.0731	-0.0193	-0.0128
905	SLU 21	0.57	1.83	76.41	0.0736	-0.0183	-0.0125
905	SLU 22	0.56	1.84	71.94	0.0716	-0.0251	-0.0123
905	SLU 23	0.52	1.8	71.98	0.0726	-0.0233	-0.0117
905	SLU 24	0.58	1.9	73.45	0.0736	-0.0247	-0.0125
905	SLU 25	0.55	1.88	73.47	0.0742	-0.0236	-0.0122
905	SLU 26	0.53	1.83	72.91	0.0736	-0.0226	-0.0119
905	SLU 27	0.59	1.93	74.38	0.0746	-0.0239	-0.0127
905	SLU 28	0.57	1.9	74.4	0.0752	-0.0229	-0.0123
905	SLU 29	0.59	1.9	73.8	0.0736	-0.0236	-0.0126
905	SLU 30	0.56	1.87	73.82	0.0742	-0.0226	-0.0123
905	SLU 31	0.57	1.97	80.37	0.0781	-0.0225	-0.0123
905	SLU 32	0.63	2.08	81.84	0.0792	-0.0238	-0.0132
905	SLU 33	0.6	2.05	81.86	0.0797	-0.0228	-0.0128
905	SLU 34	0.58	2	81.3	0.0791	-0.0218	-0.0125
905	SLU 35	0.64	2.1	82.77	0.0802	-0.0231	-0.0133
905	SLU 36	0.62	2.08	82.79	0.0807	-0.022	-0.013
905	SLU 37	0.64	2.07	82.19	0.0792	-0.0228	-0.0133
905	SLU 38	0.61	2.04	82.21	0.0798	-0.0217	-0.0129
905	SLU 39	0.64	2.09	83.92	0.0796	-0.0239	-0.0132
905	SLU 40	0.61	2.06	83.95	0.0802	-0.0228	-0.0128
905	SLU 41	0.65	2.12	84.85	0.0806	-0.0232	-0.0134
905	SLU 42	0.62	2.09	84.88	0.0812	-0.0221	-0.013
905	SLU 43	0.65	1.97	79.6	0.0808	-0.0264	-0.0151
905	SLU 44	0.61	1.92	79.65	0.0817	-0.0246	-0.0145
905	SLU 45	0.67	2.03	81.11	0.0827	-0.0259	-0.0153
905	SLU 46	0.64	2	81.14	0.0833	-0.0248	-0.015
905	SLU 47	0.62	1.95	80.58	0.0827	-0.0238	-0.0146



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
905	SLU 48	0.68	2.05	82.04	0.0837	-0.0252	-0.0155
905	SLU 49	0.66	2.03	82.07	0.0843	-0.0241	-0.0151
905	SLU 50	0.68	2.02	81.46	0.0828	-0.0249	-0.0154
905	SLU 51	0.65	1.99	81.49	0.0833	-0.0238	-0.0151
905	SLU 52	0.66	2.1	88.03	0.0873	-0.0237	-0.0151
905	SLU 53	0.72	2.2	89.5	0.0883	-0.0251	-0.016
905	SLU 54	0.69	2.17	89.53	0.0888	-0.024	-0.0156
905	SLU 55	0.67	2.12	88.96	0.0883	-0.023	-0.0153
905	SLU 56	0.73	2.23	90.43	0.0893	-0.0243	-0.0161
905	SLU 57	0.71	2.2	90.46	0.0898	-0.0233	-0.0158
905	SLU 58	0.73	2.19	89.85	0.0883	-0.0241	-0.0161
905	SLU 59	0.7	2.17	89.88	0.0889	-0.023	-0.0157
905	SLU 60	0.73	2.21	91.59	0.0887	-0.0251	-0.016
905	SLU 61	0.7	2.19	91.61	0.0893	-0.0241	-0.0156
905	SLU 62	0.74	2.24	92.52	0.0897	-0.0244	-0.0162
905	SLU 63	0.71	2.21	92.54	0.0903	-0.0234	-0.0158
905	SLU 64	0.7	2.23	88.07	0.0883	-0.0302	-0.0156
905	SLU 65	0.66	2.18	88.12	0.0892	-0.0284	-0.015
905	SLU 66	0.72	2.29	89.58	0.0902	-0.0297	-0.0159
905	SLU 67	0.69	2.26	89.61	0.0908	-0.0287	-0.0155
905	SLU 68	0.67	2.21	89.05	0.0902	-0.0277	-0.0152
905	SLU 69	0.73	2.32	90.51	0.0912	-0.029	-0.016
905	SLU 70	0.7	2.29	90.54	0.0918	-0.0279	-0.0157
905	SLU 71	0.73	2.28	89.93	0.0903	-0.0287	-0.016
905	SLU 72	0.7	2.25	89.96	0.0909	-0.0276	-0.0156
905	SLU 73	0.71	2.36	96.51	0.0948	-0.0276	-0.0157
905	SLU 74	0.77	2.46	97.97	0.0958	-0.0289	-0.0165
905	SLU 75	0.74	2.44	98	0.0964	-0.0278	-0.0161
905	SLU 76	0.72	2.38	97.44	0.0958	-0.0268	-0.0158
905	SLU 77	0.78	2.49	98.9	0.0968	-0.0282	-0.0167
905	SLU 78	0.76	2.46	98.93	0.0974	-0.0271	-0.0163
905	SLU 79	0.78	2.45	98.32	0.0959	-0.0279	-0.0166
905	SLU 80	0.75	2.43	98.35	0.0964	-0.0268	-0.0162
905	SLU 81	0.77	2.48	100.06	0.0962	-0.029	-0.0166
905	SLU 82	0.75	2.45	100.08	0.0968	-0.0279	-0.0162
905	SLU 83	0.79	2.5	100.99	0.0972	-0.0282	-0.0167
905	SLU 84	0.76	2.48	101.01	0.0978	-0.0272	-0.0163
905	SLE RA 1	0.53	1.66	65.89	0.0663	-0.0224	-0.0119
905	SLE RA 2	0.5	1.63	65.92	0.0669	-0.0212	-0.0115
905	SLE RA 3	0.54	1.7	66.89	0.0676	-0.0221	-0.0121
905	SLE RA 4	0.52	1.68	66.91	0.0679	-0.0214	-0.0118
905	SLE RA 5	0.51	1.64	66.54	0.0676	-0.0207	-0.0116
905	SLE RA 6	0.55	1.71	67.51	0.0682	-0.0216	-0.0122
905	SLE RA 7	0.53	1.7	67.53	0.0686	-0.0209	-0.0119
905	SLE RA 8	0.55	1.69	67.13	0.0676	-0.0214	-0.0121
905	SLE RA 9	0.53	1.67	67.14	0.068	-0.0207	-0.0119
905	SLE RA 10	0.53	1.74	71.51	0.0706	-0.0206	-0.0119
905	SLE RA 11	0.57	1.81	72.48	0.0713	-0.0215	-0.0125
905	SLE RA 12	0.56	1.8	72.5	0.0716	-0.0208	-0.0122
905	SLE RA 13	0.54	1.76	72.13	0.0713	-0.0201	-0.012
905	SLE RA 14	0.58	1.83	73.1	0.0719	-0.021	-0.0126
905	SLE RA 15	0.56	1.81	73.12	0.0723	-0.0203	-0.0124
905	SLE RA 16	0.58	1.81	72.72	0.0713	-0.0208	-0.0126
905	SLE RA 17	0.56	1.79	72.74	0.0717	-0.0201	-0.0123
905	SLE RA 18	0.58	1.82	73.88	0.0716	-0.0216	-0.0125
905	SLE RA 19	0.56	1.8	73.89	0.0719	-0.0209	-0.0123
905	SLE RA 20	0.59	1.84	74.5	0.0722	-0.0211	-0.0126
905	SLE RA 21	0.57	1.82	74.51	0.0726	-0.0204	-0.0124
905	SLE FR 1	0.53	1.66	65.89	0.0663	-0.0224	-0.0119
905	SLE FR 2	0.52	1.65	65.89	0.0664	-0.0221	-0.0118
905	SLE FR 3	0.53	1.66	66.13	0.0665	-0.0222	-0.012
905	SLE FR 4	0.54	1.7	68.29	0.068	-0.0219	-0.012
905	SLE FR 5	0.55	1.71	68.53	0.0681	-0.0219	-0.0121
905	SLE FR 6	0.55	1.74	69.88	0.0689	-0.022	-0.0122
905	SLE QP 1	0.53	1.66	65.89	0.0663	-0.0224	-0.0119
905	SLE QP 2	0.54	1.71	68.28	0.0679	-0.0221	-0.0121
905	SLD 1	7.12	2.21	64.72	0.0556	0.1792	-0.0573
905	SLD 2	6.54	2.37	64.6	0.0543	0.1784	-0.0469
905	SLD 3	6.76	0.41	65.97	0.0678	0.2013	-0.0604
905	SLD 4	6.18	0.57	65.84	0.0664	0.2005	-0.05
905	SLD 5	3.16	4.56	65.35	0.046	0.0048	-0.0229
905	SLD 6	2.78	4.67	65.27	0.0451	0.0043	-0.016
905	SLD 7	1.97	-1.44	69.5	0.0865	0.0786	-0.0331
905	SLD 8	1.59	-1.34	69.42	0.0856	0.0781	-0.0263
905	SLD 9	-0.5	4.75	67.15	0.0501	-0.1224	0.0021
905	SLD 10	-0.89	4.86	67.07	0.0492	-0.1229	0.0089
905	SLD 11	-1.69	-1.25	71.3	0.0906	-0.0485	-0.0082
905	SLD 12	-2.07	-1.15	71.22	0.0897	-0.0491	-0.0013
905	SLD 13	-5.09	2.84	70.72	0.0693	-0.2448	0.0258
905	SLD 14	-5.68	3	70.6	0.0679	-0.2456	0.0362
905	SLD 15	-5.45	1.04	71.97	0.0814	-0.2226	0.0227
905	SLD 16	-6.03	1.2	71.84	0.0801	-0.2234	0.0331
905	SLV 1	15.92	2.82	59.99	0.0391	0.4495	-0.1179
905	SLV 2	14.57	3.2	59.7	0.0359	0.4477	-0.0936
905	SLV 3	15.09	-1.26	62.81	0.0666	0.5002	-0.1251
905	SLV 4	13.74	-0.88	62.52	0.0634	0.4984	-0.1008
905	SLV 5	6.65	8.16	61.57	0.0181	0.0429	-0.0372
905	SLV 6	5.78	8.4	61.38	0.016	0.0417	-0.0215
905	SLV 7	3.88	-5.43	70.96	0.1097	0.2117	-0.061
905	SLV 8	3.01	-5.19	70.78	0.1077	0.2105	-0.0453



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
905	SLV 9	-1.92	8.6	65.79	0.028	-0.2548	0.0211
905	SLV 10	-2.8	8.85	65.6	0.026	-0.256	0.0368
905	SLV 11	-4.69	-4.99	75.18	0.1197	-0.0859	-0.0027
905	SLV 12	-5.57	-4.75	75	0.1176	-0.0871	0.013
905	SLV 13	-12.65	4.29	74.04	0.0723	-0.5426	0.0766
905	SLV 14	-14.01	4.67	73.76	0.0691	-0.5444	0.1009
905	SLV 15	-13.48	0.22	76.86	0.0998	-0.492	0.0694
905	SLV 16	-14.84	0.6	76.58	0.0966	-0.4938	0.0937
905	CRTFP Ux+	0	0	0	0	0	0
905	CRTFP Ux-	0	0	0	0	0	0
908	SLU 1	-0.15	1.01	63.69	0.0566	0.0928	0.0108
908	SLU 2	-0.18	0.94	63.72	0.0576	0.0909	0.0114
908	SLU 3	-0.15	1.05	65.2	0.0582	0.0951	0.011
908	SLU 4	-0.17	1.01	65.21	0.0588	0.094	0.0113
908	SLU 5	-0.18	0.96	64.63	0.0584	0.0919	0.0114
908	SLU 6	-0.15	1.07	66.11	0.059	0.0961	0.011
908	SLU 7	-0.17	1.03	66.13	0.0596	0.0949	0.0114
908	SLU 8	-0.14	1.04	65.53	0.0581	0.0947	0.0109
908	SLU 9	-0.16	1	65.54	0.0587	0.0936	0.0113
908	SLU 10	-0.2	1.1	71.95	0.0639	0.0996	0.0128
908	SLU 11	-0.17	1.21	73.43	0.0645	0.1038	0.0124
908	SLU 12	-0.19	1.17	73.45	0.0651	0.1027	0.0127
908	SLU 13	-0.19	1.11	72.87	0.0646	0.1006	0.0129
908	SLU 14	-0.16	1.22	74.35	0.0652	0.1048	0.0124
908	SLU 15	-0.18	1.19	74.36	0.0659	0.1037	0.0128
908	SLU 16	-0.16	1.19	73.76	0.0644	0.1034	0.0123
908	SLU 17	-0.18	1.15	73.78	0.065	0.1023	0.0127
908	SLU 18	-0.17	1.23	75.46	0.0655	0.1053	0.0128
908	SLU 19	-0.19	1.19	75.47	0.0661	0.1041	0.0132
908	SLU 20	-0.17	1.24	76.38	0.0663	0.1062	0.0129
908	SLU 21	-0.19	1.21	76.39	0.0669	0.1051	0.0132
908	SLU 22	-0.17	1.25	72.14	0.0642	0.107	0.0117
908	SLU 23	-0.2	1.19	72.16	0.0652	0.1051	0.0123
908	SLU 24	-0.17	1.3	73.64	0.0659	0.1093	0.0118
908	SLU 25	-0.19	1.26	73.65	0.0665	0.1082	0.0122
908	SLU 26	-0.2	1.2	73.08	0.066	0.106	0.0123
908	SLU 27	-0.17	1.31	74.56	0.0666	0.1102	0.0119
908	SLU 28	-0.19	1.27	74.57	0.0672	0.1091	0.0123
908	SLU 29	-0.17	1.28	73.97	0.0658	0.1089	0.0118
908	SLU 30	-0.18	1.24	73.99	0.0664	0.1077	0.0121
908	SLU 31	-0.22	1.35	80.39	0.0715	0.1138	0.0137
908	SLU 32	-0.19	1.45	81.87	0.0721	0.118	0.0133
908	SLU 33	-0.21	1.42	81.89	0.0727	0.1169	0.0136
908	SLU 34	-0.21	1.36	81.31	0.0723	0.1148	0.0138
908	SLU 35	-0.18	1.47	82.79	0.0729	0.119	0.0133
908	SLU 36	-0.2	1.43	82.81	0.0735	0.1178	0.0137
908	SLU 37	-0.18	1.44	82.21	0.072	0.1176	0.0132
908	SLU 38	-0.2	1.4	82.22	0.0726	0.1165	0.0136
908	SLU 39	-0.19	1.48	83.9	0.0732	0.1194	0.0137
908	SLU 40	-0.21	1.44	83.92	0.0738	0.1183	0.0141
908	SLU 41	-0.19	1.49	84.82	0.0739	0.1204	0.0138
908	SLU 42	-0.21	1.45	84.83	0.0745	0.1192	0.0141
908	SLU 43	-0.19	1.22	79.91	0.0709	0.1158	0.0137
908	SLU 44	-0.22	1.16	79.93	0.072	0.1139	0.0143
908	SLU 45	-0.19	1.27	81.41	0.0726	0.1181	0.0139
908	SLU 46	-0.21	1.23	81.42	0.0732	0.117	0.0143
908	SLU 47	-0.22	1.17	80.85	0.0727	0.1149	0.0144
908	SLU 48	-0.19	1.28	82.33	0.0733	0.1191	0.0139
908	SLU 49	-0.21	1.25	82.34	0.0739	0.1179	0.0143
908	SLU 50	-0.18	1.25	81.74	0.0725	0.1177	0.0138
908	SLU 51	-0.2	1.21	81.76	0.0731	0.1166	0.0142
908	SLU 52	-0.24	1.32	88.17	0.0782	0.1226	0.0158
908	SLU 53	-0.21	1.43	89.65	0.0788	0.1268	0.0153
908	SLU 54	-0.22	1.39	89.66	0.0794	0.1257	0.0157
908	SLU 55	-0.23	1.33	89.08	0.079	0.1236	0.0154
908	SLU 56	-0.2	1.44	90.56	0.0796	0.1278	0.0154
908	SLU 57	-0.22	1.4	90.58	0.0802	0.1266	0.0157
908	SLU 58	-0.2	1.41	89.98	0.0787	0.1264	0.0153
908	SLU 59	-0.22	1.37	89.99	0.0793	0.1253	0.0156
908	SLU 60	-0.21	1.45	91.67	0.0799	0.1283	0.0158
908	SLU 61	-0.23	1.41	91.69	0.0805	0.1271	0.0161
908	SLU 62	-0.21	1.46	92.59	0.0806	0.1292	0.0158
908	SLU 63	-0.23	1.42	92.6	0.0813	0.1281	0.0162
908	SLU 64	-0.21	1.47	88.35	0.0786	0.13	0.0146
908	SLU 65	-0.24	1.41	88.37	0.0796	0.1281	0.0152
908	SLU 66	-0.21	1.52	89.85	0.0802	0.1323	0.0148
908	SLU 67	-0.23	1.48	89.87	0.0808	0.1311	0.0151
908	SLU 68	-0.24	1.42	89.29	0.0804	0.129	0.0153
908	SLU 69	-0.21	1.53	90.77	0.081	0.1332	0.0148
908	SLU 70	-0.23	1.49	90.78	0.0816	0.1321	0.0152
908	SLU 71	-0.2	1.5	90.18	0.0801	0.1319	0.0147
908	SLU 72	-0.22	1.46	90.2	0.0807	0.1307	0.0151
908	SLU 73	-0.26	1.56	96.61	0.0859	0.1368	0.0167
908	SLU 74	-0.23	1.67	98.09	0.0865	0.141	0.0162
908	SLU 75	-0.25	1.63	98.1	0.0871	0.1399	0.0166
908	SLU 76	-0.25	1.58	97.53	0.0866	0.1377	0.0167
908	SLU 77	-0.22	1.69	99.01	0.0872	0.1419	0.0163
908	SLU 78	-0.24	1.65	99.02	0.0878	0.1408	0.0166
908	SLU 79	-0.22	1.66	98.42	0.0864	0.1406	0.0161
908	SLU 80	-0.24	1.62	98.43	0.087	0.1394	0.0165





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
908	SLU 81	-0.23	1.69	100.12	0.0875	0.1424	0.0167
908	SLU 82	-0.25	1.66	100.13	0.0881	0.1413	0.017
908	SLU 83	-0.23	1.71	101.03	0.0883	0.1434	0.0167
908	SLU 84	-0.25	1.67	101.05	0.0889	0.1422	0.0171
908	SLE RA 1	-0.16	1.08	66.11	0.0588	0.0969	0.011
908	SLE RA 2	-0.18	1.03	66.12	0.0594	0.0956	0.0115
908	SLE RA 3	-0.16	1.11	67.11	0.0599	0.0984	0.0112
908	SLE RA 4	-0.17	1.08	67.12	0.0603	0.0976	0.0114
908	SLE RA 5	-0.18	1.04	66.73	0.06	0.0962	0.0115
908	SLE RA 6	-0.16	1.12	67.72	0.0604	0.099	0.0112
908	SLE RA 7	-0.17	1.09	67.73	0.0608	0.0983	0.0114
908	SLE RA 8	-0.15	1.1	67.33	0.0598	0.0981	0.0111
908	SLE RA 9	-0.17	1.07	67.34	0.0602	0.0974	0.0114
908	SLE RA 10	-0.19	1.14	71.61	0.0636	0.1014	0.0124
908	SLE RA 11	-0.17	1.21	72.6	0.064	0.1042	0.0121
908	SLE RA 12	-0.18	1.19	72.61	0.0644	0.1035	0.0124
908	SLE RA 13	-0.19	1.15	72.22	0.0641	0.102	0.0124
908	SLE RA 14	-0.17	1.22	73.21	0.0645	0.1048	0.0121
908	SLE RA 15	-0.18	1.2	73.22	0.0649	0.1041	0.0124
908	SLE RA 16	-0.16	1.2	72.82	0.064	0.1039	0.0121
908	SLE RA 17	-0.17	1.17	72.83	0.0644	0.1032	0.0123
908	SLE RA 18	-0.17	1.23	73.95	0.0647	0.1052	0.0124
908	SLE RA 19	-0.18	1.2	73.96	0.0651	0.1044	0.0126
908	SLE RA 20	-0.17	1.24	74.56	0.0652	0.1058	0.0124
908	SLE RA 21	-0.18	1.21	74.57	0.0656	0.105	0.0127
908	SLE FR 1	-0.16	1.08	66.11	0.0588	0.0969	0.011
908	SLE FR 2	-0.16	1.07	66.11	0.0589	0.0966	0.0111
908	SLE FR 3	-0.16	1.08	66.35	0.059	0.0971	0.0111
908	SLE FR 4	-0.17	1.11	68.46	0.0607	0.0991	0.0115
908	SLE FR 5	-0.16	1.12	68.7	0.0608	0.0996	0.0115
908	SLE FR 6	-0.17	1.15	70.03	0.0617	0.101	0.0117
908	SLE QP 1	-0.16	1.08	66.11	0.0588	0.0969	0.011
908	SLE QP 2	-0.16	1.12	68.46	0.0606	0.0994	0.0115
908	SLD 1	6.29	2.47	74.36	0.0683	0.2756	-0.0313
908	SLD 2	5.72	2.28	74.07	0.0687	0.2771	-0.0216
908	SLD 3	5.94	0.69	75.6	0.0803	0.2615	-0.028
908	SLD 4	5.37	0.5	75.3	0.0808	0.263	-0.0183
908	SLD 5	2.41	4.26	68.41	0.0445	0.1733	-0.0081
908	SLD 6	2.03	4.13	68.21	0.0448	0.1743	-0.0017
908	SLD 7	1.24	-1.67	72.53	0.0846	0.1264	0.0029
908	SLD 8	0.86	-1.8	72.33	0.085	0.1274	0.0093
908	SLD 9	-1.19	4.04	64.58	0.0362	0.0713	0.0136
908	SLD 10	-1.56	3.91	64.39	0.0365	0.0723	0.02
908	SLD 11	-2.36	-1.89	68.71	0.0763	0.0244	0.0246
908	SLD 12	-2.74	-2.01	68.51	0.0766	0.0254	0.031
908	SLD 13	-5.69	1.74	61.62	0.0403	-0.0643	0.0412
908	SLD 14	-6.27	1.55	61.32	0.0408	-0.0628	0.0509
908	SLD 15	-6.05	-0.04	62.85	0.0524	-0.0784	0.0445
908	SLD 16	-6.62	-0.23	62.55	0.0528	-0.0769	0.0542
908	SLV 1	14.94	4.21	82.32	0.0792	0.5116	-0.0884
908	SLV 2	13.61	3.76	81.62	0.0803	0.5151	-0.0659
908	SLV 3	14.12	0.18	85.13	0.1065	0.479	-0.0809
908	SLV 4	12.79	-0.26	84.43	0.1076	0.4825	-0.0583
908	SLV 5	5.85	8.23	68.47	0.0246	0.2718	-0.0339
908	SLV 6	4.98	7.94	68.02	0.0253	0.2741	-0.0194
908	SLV 7	3.11	-5.19	77.85	0.1155	0.1633	-0.0086
908	SLV 8	2.25	-5.47	77.4	0.1162	0.1655	0.0059
908	SLV 9	-2.57	7.72	59.52	0.0049	0.0332	0.017
908	SLV 10	-3.43	7.43	59.07	0.0056	0.0355	0.0315
908	SLV 11	-5.31	-5.7	68.9	0.0958	-0.0754	0.0423
908	SLV 12	-6.17	-5.98	68.45	0.0965	-0.0731	0.0568
908	SLV 13	-13.11	2.5	52.48	0.0135	-0.2838	0.0812
908	SLV 14	-14.44	2.06	51.79	0.0146	-0.2803	0.1038
908	SLV 15	-13.93	-1.52	55.3	0.0408	-0.3164	0.0888
908	SLV 16	-15.26	-1.96	54.6	0.0419	-0.3129	0.1114
908	CRTFP Ux+	0	0	0	0	0	0
908	CRTFP Ux-	0	0	0	0	0	0
911	SLU 1	0.43	0.07	20.9	0.592	5.2923	-0.0294
911	SLU 2	0.42	0.06	20.89	0.592	5.2918	-0.0261
911	SLU 3	0.44	0.08	21.39	0.6061	5.4188	-0.0305
911	SLU 4	0.44	0.07	21.39	0.6061	5.4185	-0.0286
911	SLU 5	0.43	0.06	21.19	0.6005	5.3683	-0.0263
911	SLU 6	0.45	0.07	21.69	0.6146	5.4953	-0.0307
911	SLU 7	0.44	0.07	21.69	0.6146	5.495	-0.0287
911	SLU 8	0.45	0.07	21.5	0.609	5.4453	-0.0296
911	SLU 9	0.44	0.06	21.5	0.609	5.445	-0.0277
911	SLU 10	0.46	0.09	23.55	0.6673	5.9632	-0.0348
911	SLU 11	0.48	0.11	24.05	0.6814	6.0901	-0.0391
911	SLU 12	0.47	0.1	24.05	0.6814	6.0898	-0.0372
911	SLU 13	0.46	0.09	23.85	0.6758	6.0397	-0.0349
911	SLU 14	0.49	0.11	24.35	0.6899	6.1666	-0.0393
911	SLU 15	0.48	0.1	24.35	0.6899	6.1663	-0.0373
911	SLU 16	0.49	0.1	24.15	0.6843	6.1166	-0.0382
911	SLU 17	0.48	0.09	24.15	0.6843	6.1163	-0.0363
911	SLU 18	0.49	0.12	24.69	0.6995	6.2514	-0.0417
911	SLU 19	0.48	0.11	24.69	0.6995	6.2511	-0.0397
911	SLU 20	0.49	0.11	24.99	0.708	6.3279	-0.0418
911	SLU 21	0.49	0.11	24.99	0.708	6.3276	-0.0399
911	SLU 22	0.47	0.11	23.57	0.6679	5.9696	-0.04
911	SLU 23	0.46	0.1	23.57	0.668	5.9691	-0.0368



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
911	SLU 24	0.48	0.11	24.07	0.682	6.096	-0.0412
911	SLU 25	0.47	0.11	24.07	0.6821	6.0957	-0.0392
911	SLU 26	0.47	0.1	23.87	0.6765	6.0455	-0.0369
911	SLU 27	0.49	0.11	24.37	0.6906	6.1725	-0.0413
911	SLU 28	0.48	0.11	24.37	0.6906	6.1722	-0.0394
911	SLU 29	0.49	0.11	24.17	0.685	6.1225	-0.0403
911	SLU 30	0.48	0.1	24.17	0.685	6.1222	-0.0383
911	SLU 31	0.49	0.13	26.23	0.7432	6.6404	-0.0454
911	SLU 32	0.52	0.14	26.72	0.7573	6.7674	-0.0498
911	SLU 33	0.51	0.14	26.72	0.7573	6.7671	-0.0479
911	SLU 34	0.5	0.13	26.53	0.7517	6.7169	-0.0455
911	SLU 35	0.53	0.14	27.02	0.7658	6.8438	-0.0499
911	SLU 36	0.52	0.14	27.02	0.7658	6.8435	-0.048
911	SLU 37	0.52	0.14	26.83	0.7602	6.7939	-0.0489
911	SLU 38	0.52	0.13	26.83	0.7602	6.7936	-0.047
911	SLU 39	0.52	0.15	27.37	0.7754	6.9286	-0.0523
911	SLU 40	0.52	0.15	27.37	0.7755	6.9283	-0.0504
911	SLU 41	0.53	0.15	27.67	0.784	7.0051	-0.0524
911	SLU 42	0.52	0.15	27.67	0.784	7.0048	-0.0505
911	SLU 43	0.55	0.08	26.25	0.7436	6.6478	-0.0345
911	SLU 44	0.54	0.07	26.25	0.7436	6.6473	-0.0313
911	SLU 45	0.56	0.08	26.74	0.7577	6.7743	-0.0357
911	SLU 46	0.55	0.08	26.74	0.7577	6.774	-0.0337
911	SLU 47	0.54	0.07	26.55	0.7521	6.7238	-0.0314
911	SLU 48	0.57	0.08	27.04	0.7662	6.8508	-0.0358
911	SLU 49	0.56	0.08	27.04	0.7662	6.8505	-0.0339
911	SLU 50	0.57	0.08	26.85	0.7606	6.8008	-0.0348
911	SLU 51	0.56	0.07	26.85	0.7606	6.8005	-0.0328
911	SLU 52	0.57	0.1	28.9	0.8188	7.3187	-0.0399
911	SLU 53	0.6	0.11	29.4	0.8329	7.4456	-0.0443
911	SLU 54	0.59	0.11	29.4	0.8329	7.4453	-0.0424
911	SLU 55	0.58	0.1	29.2	0.8273	7.3952	-0.04
911	SLU 56	0.61	0.11	29.7	0.8414	7.5221	-0.0444
911	SLU 57	0.6	0.11	29.7	0.8414	7.5218	-0.0425
911	SLU 58	0.6	0.11	29.5	0.8358	7.4721	-0.0434
911	SLU 59	0.6	0.1	29.5	0.8359	7.4718	-0.0415
911	SLU 60	0.6	0.12	30.04	0.8511	7.6069	-0.0468
911	SLU 61	0.6	0.12	30.04	0.8511	7.6066	-0.0449
911	SLU 62	0.61	0.12	30.34	0.8596	7.6834	-0.047
911	SLU 63	0.6	0.12	30.34	0.8596	7.6831	-0.045
911	SLU 64	0.59	0.12	28.92	0.8195	7.3251	-0.0452
911	SLU 65	0.57	0.11	28.92	0.8195	7.3246	-0.0419
911	SLU 66	0.6	0.12	29.42	0.8336	7.4515	-0.0463
911	SLU 67	0.59	0.12	29.42	0.8336	7.4512	-0.0444
911	SLU 68	0.58	0.11	29.22	0.828	7.401	-0.0421
911	SLU 69	0.61	0.12	29.72	0.8421	7.528	-0.0465
911	SLU 70	0.6	0.11	29.72	0.8421	7.5277	-0.0445
911	SLU 71	0.6	0.12	29.52	0.8365	7.478	-0.0454
911	SLU 72	0.6	0.11	29.52	0.8365	7.4777	-0.0435
911	SLU 73	0.61	0.14	31.58	0.8948	7.9959	-0.0506
911	SLU 74	0.64	0.15	32.08	0.9089	8.1229	-0.0549
911	SLU 75	0.63	0.15	32.07	0.9089	8.1226	-0.053
911	SLU 76	0.62	0.14	31.88	0.9033	8.0724	-0.0507
911	SLU 77	0.64	0.15	32.38	0.9174	8.1994	-0.0551
911	SLU 78	0.64	0.15	32.38	0.9174	8.1991	-0.0531
911	SLU 79	0.64	0.15	32.18	0.9118	8.1494	-0.054
911	SLU 80	0.63	0.14	32.18	0.9118	8.1491	-0.0521
911	SLU 81	0.64	0.16	32.72	0.927	8.2841	-0.0575
911	SLU 82	0.63	0.16	32.72	0.927	8.2838	-0.0555
911	SLU 83	0.65	0.16	33.02	0.9355	8.3606	-0.0576
911	SLU 84	0.64	0.16	33.02	0.9355	8.3603	-0.0557
911	SLE RA 1	0.44	0.08	21.66	0.6137	5.4858	-0.0324
911	SLE RA 2	0.44	0.08	21.66	0.6137	5.4855	-0.0303
911	SLE RA 3	0.45	0.09	21.99	0.6231	5.5701	-0.0332
911	SLE RA 4	0.45	0.08	21.99	0.6231	5.5699	-0.0319
911	SLE RA 5	0.44	0.07	21.86	0.6194	5.5365	-0.0303
911	SLE RA 6	0.46	0.08	22.19	0.6288	5.6211	-0.0333
911	SLE RA 7	0.45	0.08	22.19	0.6288	5.6209	-0.032
911	SLE RA 8	0.45	0.08	22.06	0.6251	5.5878	-0.0326
911	SLE RA 9	0.45	0.08	22.06	0.6251	5.5876	-0.0313
911	SLE RA 10	0.46	0.1	23.43	0.6639	5.9331	-0.036
911	SLE RA 11	0.48	0.11	23.76	0.6733	6.0177	-0.0389
911	SLE RA 12	0.47	0.1	23.76	0.6733	6.0175	-0.0376
911	SLE RA 13	0.47	0.1	23.63	0.6696	5.984	-0.0361
911	SLE RA 14	0.48	0.11	23.96	0.6789	6.0687	-0.039
911	SLE RA 15	0.48	0.1	23.96	0.679	6.0685	-0.0377
911	SLE RA 16	0.48	0.1	23.83	0.6752	6.0354	-0.0383
911	SLE RA 17	0.47	0.1	23.83	0.6752	6.0352	-0.037
911	SLE RA 18	0.48	0.11	24.19	0.6854	6.1252	-0.0406
911	SLE RA 19	0.47	0.11	24.19	0.6854	6.125	-0.0393
911	SLE RA 20	0.48	0.11	24.39	0.691	6.1762	-0.0407
911	SLE RA 21	0.48	0.11	24.39	0.691	6.176	-0.0394
911	SLE FR 1	0.44	0.08	21.66	0.6137	5.4858	-0.0324
911	SLE FR 2	0.44	0.08	21.66	0.6137	5.4858	-0.032
911	SLE FR 3	0.45	0.08	21.74	0.616	5.5062	-0.0324
911	SLE FR 4	0.45	0.09	22.42	0.6352	5.6776	-0.0344
911	SLE FR 5	0.46	0.09	22.5	0.6375	5.698	-0.0349
911	SLE FR 6	0.46	0.1	22.92	0.6495	5.8055	-0.0365
911	SLE QP 1	0.44	0.08	21.66	0.6137	5.4858	-0.0324
911	SLE QP 2	0.45	0.09	22.42	0.6352	5.6776	-0.0349



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
911	SLD 1	2.26	0.4	19.83	0.5564	4.8908	-0.1574
911	SLD 2	2.08	0.53	19.63	0.5511	4.8662	-0.1843
911	SLD 3	2.37	-0.11	20.36	0.5719	4.9927	-0.0313
911	SLD 4	2.18	0.02	20.16	0.5667	4.968	-0.0582
911	SLD 5	0.87	0.92	20.87	0.5889	5.2916	-0.2581
911	SLD 6	0.75	1.01	20.74	0.5855	5.2754	-0.2758
911	SLD 7	1.22	-0.76	22.64	0.6407	5.6309	0.1623
911	SLD 8	1.1	-0.67	22.51	0.6372	5.6148	0.1446
911	SLD 9	-0.19	0.85	22.32	0.6332	5.7405	-0.2143
911	SLD 10	-0.31	0.94	22.19	0.6297	5.7243	-0.232
911	SLD 11	0.15	-0.83	24.1	0.6849	6.0799	0.2061
911	SLD 12	0.03	-0.74	23.97	0.6814	6.0637	0.1884
911	SLD 13	-1.27	0.16	24.67	0.7037	6.3872	-0.0115
911	SLD 14	-1.46	0.29	24.48	0.6985	6.3626	-0.0384
911	SLD 15	-1.17	-0.34	25.21	0.7192	6.489	0.1146
911	SLD 16	-1.35	-0.21	25.01	0.714	6.4644	0.0877
911	SLV 1	4.69	0.79	16.37	0.4512	3.8383	-0.317
911	SLV 2	4.26	1.09	15.91	0.439	3.781	-0.3796
911	SLV 3	4.92	-0.36	17.57	0.4863	4.0698	-0.0315
911	SLV 4	4.5	-0.06	17.12	0.4742	4.0125	-0.0942
911	SLV 5	1.44	1.98	18.86	0.5288	4.7846	-0.5416
911	SLV 6	1.16	2.17	18.56	0.5209	4.7476	-0.5821
911	SLV 7	2.23	-1.83	22.87	0.646	5.5563	0.4099
911	SLV 8	1.96	-1.63	22.58	0.6381	5.5193	0.3695
911	SLV 9	-1.05	1.82	22.26	0.6323	5.836	-0.4392
911	SLV 10	-1.32	2.01	21.97	0.6244	5.7989	-0.4796
911	SLV 11	-0.25	-1.99	26.28	0.7495	6.6077	0.5124
911	SLV 12	-0.53	-1.8	25.98	0.7416	6.5707	0.4719
911	SLV 13	-3.59	0.24	27.72	0.7962	7.3428	0.0245
911	SLV 14	-4.01	0.54	27.26	0.7841	7.2855	-0.0382
911	SLV 15	-3.35	-0.9	28.93	0.8314	7.5743	0.3099
911	SLV 16	-3.78	-0.6	28.47	0.8192	7.517	0.2473
911	CRTFP Ux+	0	0	0	0	0	0
911	CRTFP Ux-	0	0	0	0	0	0
911	CRTFP Uy+	0	0	0	0	0	0
911	CRTFP Uy-	0	0	0	0	0	0
912	SLU 1	-0.68	0.19	51.59	-17.1977	-8.7494	-0.2304
912	SLU 2	-0.72	0.06	51.64	-17.2147	-8.756	-0.2659
912	SLU 3	-0.7	0.2	52.84	-17.6123	-8.9602	-0.2356
912	SLU 4	-0.72	0.12	52.87	-17.6225	-8.9641	-0.2569
912	SLU 5	-0.73	0.07	52.42	-17.4743	-8.8877	-0.2685
912	SLU 6	-0.71	0.21	53.63	-17.872	-9.0919	-0.2381
912	SLU 7	-0.73	0.13	53.65	-17.8822	-9.0958	-0.2594
912	SLU 8	-0.7	0.2	53.16	-17.717	-9.0129	-0.2356
912	SLU 9	-0.72	0.13	53.19	-17.7272	-9.0168	-0.2569
912	SLU 10	-0.75	0.18	57.79	-19.2418	-9.7965	-0.2617
912	SLU 11	-0.73	0.31	58.99	-19.6395	-10.0007	-0.2313
912	SLU 12	-0.75	0.24	59.02	-19.6497	-10.0046	-0.2526
912	SLU 13	-0.76	0.18	58.57	-19.5015	-9.9282	-0.2642
912	SLU 14	-0.74	0.32	59.78	-19.8991	-10.1324	-0.2339
912	SLU 15	-0.76	0.24	59.8	-19.9093	-10.1363	-0.2552
912	SLU 16	-0.73	0.32	59.31	-19.7441	-10.0534	-0.2313
912	SLU 17	-0.76	0.24	59.34	-19.7543	-10.0573	-0.2526
912	SLU 18	-0.73	0.35	60.38	-20.0936	-10.2359	-0.2243
912	SLU 19	-0.75	0.27	60.41	-20.1038	-10.2398	-0.2456
912	SLU 20	-0.74	0.36	61.16	-20.3533	-10.3676	-0.2269
912	SLU 21	-0.76	0.28	61.19	-20.3634	-10.3715	-0.2482
912	SLU 22	-0.72	0.28	57.87	-19.2679	-9.8117	-0.2322
912	SLU 23	-0.76	0.16	57.92	-19.2849	-9.8182	-0.2677
912	SLU 24	-0.74	0.29	59.12	-19.6826	-10.0225	-0.2373
912	SLU 25	-0.76	0.22	59.15	-19.6927	-10.0264	-0.2586
912	SLU 26	-0.77	0.17	58.7	-19.5445	-9.9499	-0.2702
912	SLU 27	-0.75	0.3	59.91	-19.9422	-10.1542	-0.2399
912	SLU 28	-0.77	0.23	59.94	-19.9524	-10.1581	-0.2612
912	SLU 29	-0.74	0.3	59.44	-19.7872	-10.0751	-0.2373
912	SLU 30	-0.77	0.22	59.47	-19.7974	-10.079	-0.2586
912	SLU 31	-0.8	0.27	64.07	-21.312	-10.8587	-0.2634
912	SLU 32	-0.78	0.41	65.27	-21.7097	-11.063	-0.233
912	SLU 33	-0.8	0.33	65.3	-21.7199	-11.0669	-0.2543
912	SLU 34	-0.81	0.28	64.85	-21.5717	-10.9904	-0.266
912	SLU 35	-0.79	0.41	66.06	-21.9693	-11.1947	-0.2356
912	SLU 36	-0.81	0.34	66.09	-21.9795	-11.1986	-0.2569
912	SLU 37	-0.78	0.41	65.59	-21.8144	-11.1156	-0.233
912	SLU 38	-0.8	0.33	65.62	-21.8245	-11.1195	-0.2543
912	SLU 39	-0.77	0.44	66.66	-22.1638	-11.2981	-0.2261
912	SLU 40	-0.8	0.37	66.69	-22.174	-11.302	-0.2474
912	SLU 41	-0.78	0.45	67.44	-22.4235	-11.4298	-0.2286
912	SLU 42	-0.81	0.38	67.47	-22.4337	-11.4338	-0.2499
912	SLU 43	-0.87	0.21	64.92	-21.6472	-11.0101	-0.299
912	SLU 44	-0.91	0.09	64.96	-21.6642	-11.0166	-0.3344
912	SLU 45	-0.88	0.22	66.17	-22.0619	-11.2208	-0.3041
912	SLU 46	-0.91	0.15	66.2	-22.072	-11.2247	-0.3254
912	SLU 47	-0.92	0.09	65.75	-21.9238	-11.1483	-0.337
912	SLU 48	-0.89	0.23	66.95	-22.3215	-11.3525	-0.3067
912	SLU 49	-0.92	0.15	66.98	-22.3317	-11.3565	-0.328
912	SLU 50	-0.89	0.23	66.48	-22.1665	-11.2735	-0.3041
912	SLU 51	-0.91	0.15	66.51	-22.1767	-11.2774	-0.3254
912	SLU 52	-0.94	0.2	71.11	-23.6913	-12.0571	-0.3302
912	SLU 53	-0.92	0.33	72.32	-24.089	-12.2613	-0.2998
912	SLU 54	-0.94	0.26	72.35	-24.0992	-12.2652	-0.3211



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
912	SLU 55	-0.95	0.21	71.9	-23.951	-12.1888	-0.3328
912	SLU 56	-0.93	0.34	73.1	-24.3487	-12.393	-0.3024
912	SLU 57	-0.95	0.27	73.13	-24.3588	-12.397	-0.3237
912	SLU 58	-0.92	0.34	72.63	-24.1937	-12.314	-0.2998
912	SLU 59	-0.94	0.26	72.66	-24.2038	-12.3179	-0.3211
912	SLU 60	-0.92	0.37	73.7	-24.5431	-12.4965	-0.2929
912	SLU 61	-0.94	0.3	73.73	-24.5533	-12.5004	-0.3142
912	SLU 62	-0.93	0.38	74.48	-24.8028	-12.6282	-0.2954
912	SLU 63	-0.95	0.3	74.51	-24.813	-12.6321	-0.3167
912	SLU 64	-0.91	0.31	71.2	-23.7174	-12.0723	-0.3007
912	SLU 65	-0.95	0.18	71.25	-23.7344	-12.0788	-0.3362
912	SLU 66	-0.93	0.32	72.45	-24.1321	-12.2831	-0.3058
912	SLU 67	-0.95	0.24	72.48	-24.1423	-12.287	-0.3271
912	SLU 68	-0.96	0.19	72.03	-23.994	-12.2106	-0.3388
912	SLU 69	-0.94	0.33	73.23	-24.3917	-12.4148	-0.3084
912	SLU 70	-0.96	0.25	73.26	-24.4019	-12.4187	-0.3297
912	SLU 71	-0.93	0.32	72.76	-24.2367	-12.3358	-0.3058
912	SLU 72	-0.95	0.25	72.79	-24.2469	-12.3397	-0.3271
912	SLU 73	-0.99	0.29	77.39	-25.7615	-13.1193	-0.3319
912	SLU 74	-0.96	0.43	78.6	-26.1592	-13.3236	-0.3016
912	SLU 75	-0.99	0.35	78.63	-26.1694	-13.3275	-0.3229
912	SLU 76	-1	0.3	78.18	-26.0212	-13.2511	-0.3345
912	SLU 77	-0.97	0.44	79.38	-26.4189	-13.4553	-0.3041
912	SLU 78	-1	0.36	79.41	-26.429	-13.4592	-0.3254
912	SLU 79	-0.97	0.43	78.91	-26.2639	-13.3763	-0.3016
912	SLU 80	-0.99	0.36	78.94	-26.2741	-13.3802	-0.3229
912	SLU 81	-0.96	0.47	79.98	-26.6134	-13.5588	-0.2946
912	SLU 82	-0.98	0.39	80.01	-26.6235	-13.5627	-0.3159
912	SLU 83	-0.97	0.47	80.76	-26.873	-13.6905	-0.2972
912	SLU 84	-0.99	0.4	80.79	-26.8832	-13.6944	-0.3185
912	SLE RA 1	-0.69	0.22	53.39	-17.7892	-9.0529	-0.2309
912	SLE RA 2	-0.72	0.13	53.42	-17.8005	-9.0573	-0.2546
912	SLE RA 3	-0.7	0.22	54.22	-18.0656	-9.1935	-0.2343
912	SLE RA 4	-0.72	0.17	54.24	-18.0724	-9.1961	-0.2485
912	SLE RA 5	-0.72	0.14	53.94	-17.9736	-9.1451	-0.2563
912	SLE RA 6	-0.71	0.23	54.74	-18.2387	-9.2813	-0.2361
912	SLE RA 7	-0.73	0.18	54.76	-18.2455	-9.2839	-0.2503
912	SLE RA 8	-0.7	0.23	54.43	-18.1354	-9.2286	-0.2343
912	SLE RA 9	-0.72	0.18	54.45	-18.1422	-9.2312	-0.2485
912	SLE RA 10	-0.74	0.21	57.52	-19.1519	-9.751	-0.2517
912	SLE RA 11	-0.73	0.3	58.32	-19.417	-9.8871	-0.2315
912	SLE RA 12	-0.74	0.25	58.34	-19.4238	-9.8897	-0.2457
912	SLE RA 13	-0.75	0.21	58.04	-19.325	-9.8388	-0.2535
912	SLE RA 14	-0.73	0.3	58.84	-19.5901	-9.9749	-0.2332
912	SLE RA 15	-0.75	0.25	58.86	-19.5969	-9.9775	-0.2474
912	SLE RA 16	-0.73	0.3	58.53	-19.4868	-9.9222	-0.2315
912	SLE RA 17	-0.74	0.25	58.55	-19.4936	-9.9248	-0.2457
912	SLE RA 18	-0.72	0.32	59.24	-19.7198	-10.0439	-0.2269
912	SLE RA 19	-0.74	0.27	59.26	-19.7266	-10.0465	-0.2411
912	SLE RA 20	-0.73	0.33	59.76	-19.8929	-10.1317	-0.2286
912	SLE RA 21	-0.75	0.28	59.78	-19.8997	-10.1343	-0.2428
912	SLE FR 1	-0.69	0.22	53.39	-17.7892	-9.0529	-0.2309
912	SLE FR 2	-0.7	0.2	53.39	-17.7915	-9.0538	-0.2357
912	SLE FR 3	-0.69	0.22	53.59	-17.8584	-9.0881	-0.2316
912	SLE FR 4	-0.71	0.23	55.15	-18.3706	-9.3511	-0.2344
912	SLE FR 5	-0.7	0.25	55.35	-18.4376	-9.3854	-0.2304
912	SLE FR 6	-0.71	0.27	56.31	-18.7545	-9.5484	-0.2289
912	SLE QP 1	-0.69	0.22	53.39	-17.7892	-9.0529	-0.2309
912	SLE QP 2	-0.7	0.25	55.14	-18.3684	-9.3502	-0.2297
912	SLD 1	3.55	1.04	68.08	-22.759	-11.4503	1.4788
912	SLD 2	3.14	0.31	68.83	-22.986	-11.582	1.2008
912	SLD 3	3.3	-0.74	69.39	-23.1603	-11.6707	1.1202
912	SLD 4	2.88	-1.46	70.14	-23.3874	-11.8024	0.8423
912	SLD 5	1.04	3.31	56.91	-19.0363	-9.6224	0.8763
912	SLD 6	0.77	2.83	57.41	-19.1855	-9.709	0.6936
912	SLD 7	0.18	-2.61	61.26	-20.3741	-10.3572	-0.3189
912	SLD 8	-0.09	-3.09	61.75	-20.5233	-10.4437	-0.5015
912	SLD 9	-1.31	3.58	48.53	-16.2134	-8.2568	0.0421
912	SLD 10	-1.58	3.11	49.03	-16.3626	-8.3433	-0.1405
912	SLD 11	-2.17	-2.34	52.88	-17.5512	-8.9915	-1.153
912	SLD 12	-2.44	-2.81	53.37	-17.7004	-9.078	-1.3357
912	SLD 13	-4.28	1.96	40.15	-13.3494	-6.8981	-1.3017
912	SLD 14	-4.7	1.24	40.9	-13.5764	-7.0297	-1.5796
912	SLD 15	-4.54	0.18	41.45	-13.7507	-7.1185	-1.6603
912	SLD 16	-4.95	-0.54	42.2	-13.9778	-7.2501	-1.9382
912	SLV 1	9.25	2.02	85.46	-28.6534	-14.271	3.7527
912	SLV 2	8.27	0.34	87.21	-29.1822	-14.5776	3.1055
912	SLV 3	8.65	-2	88.45	-29.5762	-14.7765	2.9412
912	SLV 4	7.68	-3.68	90.2	-30.105	-15.0831	2.2939
912	SLV 5	3.35	7.16	59.4	-19.9629	-10.0069	2.3079
912	SLV 6	2.73	6.08	60.53	-20.3044	-10.2049	1.8898
912	SLV 7	1.37	-6.23	69.37	-23.0388	-11.6917	-0.3974
912	SLV 8	0.74	-7.31	70.5	-23.3803	-11.8897	-0.8154
912	SLV 9	-2.14	7.81	39.79	-13.3564	-6.8108	0.356
912	SLV 10	-2.77	6.72	40.92	-13.6979	-7.0088	-0.062
912	SLV 11	-4.13	-5.58	49.76	-16.4323	-8.4956	-2.3492
912	SLV 12	-4.76	-6.67	50.89	-16.7738	-8.6936	-2.7673
912	SLV 13	-9.08	4.17	20.08	-6.6318	-3.6174	-2.7533
912	SLV 14	-10.05	2.5	21.83	-7.1605	-3.924	-3.4006
912	SLV 15	-9.67	0.16	23.08	-7.5545	-4.1229	-3.5649



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
912	SLU 16	-10.65	-1.52	24.83	-8.0833	-4.4294	-4.2122
912	CRTFP Ux+	0	0	0	0	0	0
912	CRTFP Ux-	0	0	0	0	0	0
912	CRTFP Uy+	0	0	0	0	0	0
912	CRTFP Uy-	0	0	0	0	0	0
914	SLU 1	-0.52	0.09	32.3	-16.0991	-0.8213	-0.3003
914	SLU 2	-0.55	0.01	32.32	-16.1133	-0.8217	-0.3156
914	SLU 3	-0.54	0.1	33.07	-16.4813	-0.8408	-0.308
914	SLU 4	-0.55	0.05	33.09	-16.4898	-0.8411	-0.3171
914	SLU 5	-0.55	0.01	32.81	-16.3528	-0.8339	-0.3199
914	SLU 6	-0.55	0.1	33.56	-16.7208	-0.853	-0.3123
914	SLU 7	-0.56	0.05	33.58	-16.7293	-0.8533	-0.3214
914	SLU 8	-0.54	0.1	33.27	-16.5781	-0.8457	-0.309
914	SLU 9	-0.55	0.05	33.29	-16.5866	-0.846	-0.3181
914	SLU 10	-0.58	0.08	36.14	-17.982	-0.9182	-0.3333
914	SLU 11	-0.57	0.17	36.89	-18.3501	-0.9372	-0.3257
914	SLU 12	-0.58	0.12	36.9	-18.3585	-0.9375	-0.3349
914	SLU 13	-0.59	0.08	36.62	-18.2215	-0.9304	-0.3376
914	SLU 14	-0.58	0.17	37.37	-18.5895	-0.9495	-0.33
914	SLU 15	-0.59	0.12	37.39	-18.598	-0.9497	-0.3392
914	SLU 16	-0.57	0.17	37.08	-18.4469	-0.9422	-0.3267
914	SLU 17	-0.59	0.12	37.1	-18.4554	-0.9424	-0.3358
914	SLU 18	-0.57	0.19	37.75	-18.7688	-0.9591	-0.3257
914	SLU 19	-0.59	0.14	37.76	-18.7773	-0.9593	-0.3348
914	SLU 20	-0.58	0.19	38.23	-19.0083	-0.9713	-0.33
914	SLU 21	-0.59	0.14	38.25	-19.0168	-0.9715	-0.3391
914	SLU 22	-0.56	0.15	36.19	-18.0062	-0.9196	-0.3213
914	SLU 23	-0.59	0.07	36.22	-18.0203	-0.9201	-0.3366
914	SLU 24	-0.58	0.16	36.97	-18.3884	-0.9391	-0.329
914	SLU 25	-0.59	0.11	36.98	-18.3968	-0.9394	-0.3381
914	SLU 26	-0.59	0.07	36.7	-18.2598	-0.9323	-0.3409
914	SLU 27	-0.58	0.16	37.45	-18.6278	-0.9514	-0.3333
914	SLU 28	-0.6	0.11	37.47	-18.6363	-0.9516	-0.3424
914	SLU 29	-0.58	0.16	37.16	-18.4852	-0.9441	-0.33
914	SLU 30	-0.59	0.11	37.18	-18.4937	-0.9443	-0.3391
914	SLU 31	-0.62	0.14	40.03	-19.8891	-1.0165	-0.3543
914	SLU 32	-0.61	0.23	40.78	-20.2571	-1.0356	-0.3467
914	SLU 33	-0.62	0.18	40.79	-20.2656	-1.0359	-0.3558
914	SLU 34	-0.63	0.14	40.51	-20.1286	-1.0287	-0.3586
914	SLU 35	-0.62	0.23	41.26	-20.4966	-1.0478	-0.351
914	SLU 36	-0.63	0.18	41.28	-20.5051	-1.0481	-0.3602
914	SLU 37	-0.61	0.23	40.97	-20.3539	-1.0405	-0.3477
914	SLU 38	-0.63	0.18	40.99	-20.3624	-1.0408	-0.3568
914	SLU 39	-0.61	0.25	41.64	-20.6758	-1.0574	-0.3467
914	SLU 40	-0.62	0.2	41.65	-20.6843	-1.0577	-0.3558
914	SLU 41	-0.62	0.25	42.12	-20.9153	-1.0696	-0.351
914	SLU 42	-0.63	0.2	42.14	-20.9238	-1.0699	-0.3601
914	SLU 43	-0.67	0.1	40.65	-20.275	-1.0339	-0.3832
914	SLU 44	-0.69	0.01	40.68	-20.2892	-1.0344	-0.3985
914	SLU 45	-0.68	0.1	41.43	-20.6572	-1.0534	-0.3909
914	SLU 46	-0.69	0.05	41.45	-20.6657	-1.0537	-0.4
914	SLU 47	-0.7	0.02	41.17	-20.5287	-1.0466	-0.4028
914	SLU 48	-0.69	0.11	41.92	-20.8967	-1.0657	-0.3952
914	SLU 49	-0.7	0.06	41.93	-20.9052	-1.0659	-0.4043
914	SLU 50	-0.68	0.11	41.63	-20.754	-1.0583	-0.3919
914	SLU 51	-0.7	0.06	41.64	-20.7625	-1.0586	-0.401
914	SLU 52	-0.72	0.08	44.49	-22.1579	-1.1308	-0.4162
914	SLU 53	-0.71	0.17	45.24	-22.5259	-1.1499	-0.4086
914	SLU 54	-0.73	0.12	45.26	-22.5344	-1.1502	-0.4177
914	SLU 55	-0.73	0.09	44.98	-22.3974	-1.143	-0.4205
914	SLU 56	-0.72	0.18	45.73	-22.7654	-1.1621	-0.4129
914	SLU 57	-0.74	0.13	45.74	-22.7739	-1.1624	-0.4221
914	SLU 58	-0.72	0.18	45.44	-22.6228	-1.1548	-0.4096
914	SLU 59	-0.73	0.13	45.45	-22.6312	-1.1551	-0.4187
914	SLU 60	-0.72	0.2	46.1	-22.9447	-1.1717	-0.4086
914	SLU 61	-0.73	0.15	46.12	-22.9531	-1.172	-0.4177
914	SLU 62	-0.72	0.2	46.59	-23.1842	-1.1839	-0.4129
914	SLU 63	-0.74	0.15	46.6	-23.1926	-1.1842	-0.422
914	SLU 64	-0.71	0.16	44.55	-22.1821	-1.1323	-0.4042
914	SLU 65	-0.73	0.07	44.57	-22.1962	-1.1327	-0.4195
914	SLU 66	-0.72	0.16	45.32	-22.5642	-1.1518	-0.4119
914	SLU 67	-0.73	0.11	45.34	-22.5727	-1.1521	-0.421
914	SLU 68	-0.74	0.08	45.06	-22.4357	-1.1449	-0.4238
914	SLU 69	-0.73	0.17	45.81	-22.8037	-1.164	-0.4162
914	SLU 70	-0.74	0.12	45.82	-22.8122	-1.1643	-0.4253
914	SLU 71	-0.72	0.17	45.52	-22.6611	-1.1567	-0.4129
914	SLU 72	-0.74	0.12	45.53	-22.6695	-1.157	-0.422
914	SLU 73	-0.76	0.14	48.38	-24.065	-1.2292	-0.4372
914	SLU 74	-0.75	0.23	49.13	-24.433	-1.2483	-0.4296
914	SLU 75	-0.77	0.18	49.15	-24.4415	-1.2485	-0.4387
914	SLU 76	-0.77	0.15	48.87	-24.3045	-1.2414	-0.4415
914	SLU 77	-0.76	0.24	49.62	-24.6725	-1.2605	-0.4339
914	SLU 78	-0.78	0.19	49.64	-24.681	-1.2607	-0.4431
914	SLU 79	-0.76	0.24	49.33	-24.5298	-1.2532	-0.4306
914	SLU 80	-0.77	0.19	49.34	-24.5383	-1.2534	-0.4397
914	SLU 81	-0.75	0.26	49.99	-24.8517	-1.2701	-0.4296
914	SLU 82	-0.77	0.21	50.01	-24.8602	-1.2703	-0.4387
914	SLU 83	-0.76	0.26	50.48	-25.0912	-1.2823	-0.4339
914	SLU 84	-0.78	0.21	50.49	-25.0997	-1.2826	-0.443
914	SLE RA 1	-0.53	0.11	33.41	-16.644	-0.8494	-0.3063



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
914	SLE RA 2	-0.55	0.05	33.43	-16.6534	-0.8497	-0.3165
914	SLE RA 3	-0.54	0.11	33.93	-16.8988	-0.8624	-0.3114
914	SLE RA 4	-0.55	0.08	33.94	-16.9044	-0.8626	-0.3175
914	SLE RA 5	-0.56	0.06	33.75	-16.8131	-0.8578	-0.3194
914	SLE RA 6	-0.55	0.11	34.25	-17.0584	-0.8705	-0.3143
914	SLE RA 7	-0.56	0.08	34.26	-17.0641	-0.8707	-0.3204
914	SLE RA 8	-0.55	0.11	34.06	-16.9633	-0.8657	-0.3121
914	SLE RA 9	-0.55	0.08	34.07	-16.969	-0.8658	-0.3182
914	SLE RA 10	-0.57	0.1	35.97	-17.8993	-0.914	-0.3283
914	SLE RA 11	-0.57	0.16	36.47	-18.1446	-0.9267	-0.3232
914	SLE RA 12	-0.58	0.13	36.48	-18.1503	-0.9269	-0.3293
914	SLE RA 13	-0.58	0.1	36.29	-18.0589	-0.9221	-0.3312
914	SLE RA 14	-0.57	0.16	36.79	-18.3043	-0.9348	-0.3261
914	SLE RA 15	-0.58	0.13	36.8	-18.3099	-0.935	-0.3322
914	SLE RA 16	-0.57	0.16	36.6	-18.2092	-0.93	-0.3239
914	SLE RA 17	-0.58	0.13	36.61	-18.2148	-0.9301	-0.33
914	SLE RA 18	-0.57	0.17	37.04	-18.4238	-0.9412	-0.3232
914	SLE RA 19	-0.58	0.14	37.05	-18.4294	-0.9414	-0.3293
914	SLE RA 20	-0.57	0.18	37.37	-18.5834	-0.9494	-0.3261
914	SLE RA 21	-0.58	0.14	37.38	-18.5891	-0.9495	-0.3322
914	SLE FR 1	-0.53	0.11	33.41	-16.644	-0.8494	-0.3063
914	SLE FR 2	-0.54	0.1	33.41	-16.6459	-0.8494	-0.3084
914	SLE FR 3	-0.54	0.11	33.54	-16.7079	-0.8526	-0.3075
914	SLE FR 4	-0.55	0.12	34.5	-17.1798	-0.877	-0.3134
914	SLE FR 5	-0.55	0.13	34.63	-17.2418	-0.8802	-0.3125
914	SLE FR 6	-0.55	0.14	35.23	-17.5339	-0.8953	-0.3148
914	SLE QP 1	-0.53	0.11	33.41	-16.644	-0.8494	-0.3063
914	SLE QP 2	-0.54	0.13	34.5	-17.1779	-0.8769	-0.3114
914	SLD 1	2.46	0.67	42.39	-21.1681	-1.0664	1.424
914	SLD 2	2.18	0.18	42.83	-21.3754	-1.0778	1.2513
914	SLD 3	2.29	-0.55	43.14	-21.5219	-1.0847	1.3148
914	SLD 4	2.01	-1.04	43.59	-21.7292	-1.0961	1.1421
914	SLD 5	0.66	2.22	35.64	-17.8014	-0.9039	0.4057
914	SLD 6	0.48	1.9	35.93	-17.9376	-0.9114	0.2922
914	SLD 7	0.1	-1.83	38.16	-18.9807	-0.965	0.0417
914	SLD 8	-0.08	-2.15	38.45	-19.1169	-0.9725	-0.0718
914	SLD 9	-1	2.41	30.55	-15.2389	-0.7813	-0.551
914	SLD 10	-1.19	2.09	30.84	-15.3751	-0.7888	-0.6645
914	SLD 11	-1.57	-1.64	33.07	-16.4183	-0.8424	-0.915
914	SLD 12	-1.75	-1.97	33.36	-16.5545	-0.8499	-1.0285
914	SLD 13	-3.1	1.29	25.41	-12.6266	-0.6577	-1.7649
914	SLD 14	-3.38	0.8	25.86	-12.8339	-0.6691	-1.9376
914	SLD 15	-3.27	0.08	26.17	-12.9805	-0.6761	-1.8741
914	SLD 16	-3.55	-0.41	26.61	-13.1877	-0.6874	-2.0468
914	SLV 1	6.48	1.34	52.97	-26.5244	-1.3208	3.7464
914	SLV 2	5.84	0.2	54.01	-27.0071	-1.3473	3.3442
914	SLV 3	6.09	-1.41	54.71	-27.3386	-1.3629	3.4942
914	SLV 4	5.44	-2.55	55.75	-27.8213	-1.3895	3.092
914	SLV 5	2.28	4.86	37.23	-18.6635	-0.9416	1.358
914	SLV 6	1.86	4.13	37.9	-18.9753	-0.9587	1.0982
914	SLV 7	0.96	-4.31	43.02	-21.3775	-1.0821	0.5173
914	SLV 8	0.54	-5.05	43.69	-21.6893	-1.0992	0.2576
914	SLV 9	-1.63	5.3	25.31	-12.6666	-0.6546	-0.8804
914	SLV 10	-2.05	4.57	25.98	-12.9783	-0.6718	-1.1401
914	SLV 11	-2.95	-3.87	31.1	-15.3805	-0.7951	-1.721
914	SLV 12	-3.36	-4.61	31.77	-15.6923	-0.8123	-1.9808
914	SLV 13	-6.53	2.81	13.25	-6.5345	-0.3644	-3.7148
914	SLV 14	-7.18	1.67	14.29	-7.0172	-0.3909	-4.117
914	SLV 15	-6.93	0.06	14.99	-7.3487	-0.4065	-3.967
914	SLV 16	-7.57	-1.08	16.03	-7.8314	-0.433	-4.3692
914	CRTP Ux+	0	0	0	0	0	0
914	CRTP Ux-	0	0	0	0	0	0
914	CRTP Uy+	0	0	0	0	0	0
914	CRTP Uy-	0	0	0	0	0	0
915	SLU 1	-0.62	0.03	34.25	-15.9374	0.1115	-0.3578
915	SLU 2	-0.64	-0.05	34.27	-15.9479	0.1119	-0.3727
915	SLU 3	-0.63	0.04	35.06	-16.3085	0.1144	-0.367
915	SLU 4	-0.65	-0.01	35.07	-16.3148	0.1147	-0.3759
915	SLU 5	-0.65	-0.05	34.78	-16.1805	0.1137	-0.3779
915	SLU 6	-0.64	0.05	35.57	-16.5412	0.1163	-0.3722
915	SLU 7	-0.66	-0.01	35.58	-16.5474	0.1165	-0.3812
915	SLU 8	-0.64	0.04	35.27	-16.4027	0.1152	-0.3683
915	SLU 9	-0.65	-0.01	35.28	-16.409	0.1154	-0.3772
915	SLU 10	-0.69	0.01	38.29	-17.7698	0.1256	-0.3963
915	SLU 11	-0.67	0.11	39.09	-18.1304	0.1282	-0.3906
915	SLU 12	-0.69	0.05	39.1	-18.1367	0.1284	-0.3996
915	SLU 13	-0.69	0.02	38.8	-18.0024	0.1275	-0.4016
915	SLU 14	-0.68	0.11	39.59	-18.3631	0.13	-0.3958
915	SLU 15	-0.7	0.06	39.61	-18.3693	0.1303	-0.4048
915	SLU 16	-0.68	0.11	39.29	-18.2246	0.1289	-0.3919
915	SLU 17	-0.69	0.06	39.3	-18.2309	0.1292	-0.4008
915	SLU 18	-0.68	0.13	40	-18.5401	0.1311	-0.3915
915	SLU 19	-0.69	0.08	40.01	-18.5464	0.1314	-0.4005
915	SLU 20	-0.68	0.13	40.5	-18.7728	0.133	-0.3968
915	SLU 21	-0.7	0.08	40.52	-18.779	0.1332	-0.4057
915	SLU 22	-0.66	0.09	38.35	-17.7944	0.1257	-0.3848
915	SLU 23	-0.69	0.01	38.37	-17.8048	0.1261	-0.3997
915	SLU 24	-0.68	0.1	39.16	-18.1655	0.1286	-0.394
915	SLU 25	-0.7	0.05	39.17	-18.1718	0.1289	-0.403
915	SLU 26	-0.7	0.01	38.88	-18.0375	0.1279	-0.405



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
915	SLU 27	-0.69	0.1	39.67	-18.3981	0.1305	-0.3993
915	SLU 28	-0.71	0.05	39.68	-18.4044	0.1307	-0.4082
915	SLU 29	-0.68	0.1	39.37	-18.2596	0.1294	-0.3953
915	SLU 30	-0.7	0.05	39.38	-18.2659	0.1296	-0.4042
915	SLU 31	-0.73	0.07	42.39	-19.6267	0.1398	-0.4233
915	SLU 32	-0.72	0.16	43.19	-19.9874	0.1424	-0.4176
915	SLU 33	-0.74	0.11	43.2	-19.9937	0.1426	-0.4266
915	SLU 34	-0.74	0.07	42.9	-19.8594	0.1417	-0.4286
915	SLU 35	-0.73	0.17	43.7	-20.22	0.1442	-0.4229
915	SLU 36	-0.75	0.12	43.71	-20.2263	0.1445	-0.4318
915	SLU 37	-0.72	0.17	43.39	-20.0815	0.1431	-0.4189
915	SLU 38	-0.74	0.11	43.4	-20.0878	0.1434	-0.4279
915	SLU 39	-0.72	0.18	44.1	-20.3971	0.1453	-0.4185
915	SLU 40	-0.74	0.13	44.11	-20.4034	0.1456	-0.4275
915	SLU 41	-0.73	0.19	44.61	-20.6297	0.1472	-0.4238
915	SLU 42	-0.75	0.14	44.62	-20.636	0.1474	-0.4327
915	SLU 43	-0.79	0.03	43.12	-20.082	0.1401	-0.4559
915	SLU 44	-0.81	-0.06	43.13	-20.0924	0.1405	-0.4708
915	SLU 45	-0.8	0.03	43.93	-20.4531	0.143	-0.4651
915	SLU 46	-0.82	-0.02	43.94	-20.4594	0.1433	-0.474
915	SLU 47	-0.82	-0.06	43.64	-20.3251	0.1423	-0.476
915	SLU 48	-0.81	0.04	44.44	-20.6857	0.1449	-0.4703
915	SLU 49	-0.83	-0.02	44.45	-20.692	0.1451	-0.4793
915	SLU 50	-0.81	0.03	44.14	-20.5473	0.1438	-0.4663
915	SLU 51	-0.82	-0.02	44.15	-20.5535	0.144	-0.4753
915	SLU 52	-0.85	0	47.16	-21.9143	0.1542	-0.4944
915	SLU 53	-0.84	0.1	47.95	-22.275	0.1568	-0.4887
915	SLU 54	-0.86	0.05	47.96	-22.2813	0.157	-0.4976
915	SLU 55	-0.86	0.01	47.67	-22.147	0.1561	-0.4996
915	SLU 56	-0.85	0.1	48.46	-22.5076	0.1586	-0.4939
915	SLU 57	-0.87	0.05	48.47	-22.5139	0.1588	-0.5029
915	SLU 58	-0.85	0.1	48.16	-22.3692	0.1575	-0.49
915	SLU 59	-0.86	0.05	48.17	-22.3754	0.1577	-0.4989
915	SLU 60	-0.85	0.12	48.86	-22.6847	0.1597	-0.4896
915	SLU 61	-0.86	0.07	48.87	-22.691	0.1599	-0.4985
915	SLU 62	-0.85	0.12	49.37	-22.9173	0.1615	-0.4948
915	SLU 63	-0.87	0.07	49.38	-22.9236	0.1618	-0.5038
915	SLU 64	-0.83	0.08	47.22	-21.9389	0.1543	-0.4829
915	SLU 65	-0.86	0	47.24	-21.9494	0.1547	-0.4978
915	SLU 66	-0.85	0.09	48.03	-22.31	0.1572	-0.4921
915	SLU 67	-0.87	0.04	48.04	-22.3163	0.1574	-0.501
915	SLU 68	-0.87	0	47.75	-22.182	0.1565	-0.503
915	SLU 69	-0.86	0.09	48.54	-22.5427	0.1591	-0.4973
915	SLU 70	-0.88	0.04	48.55	-22.5489	0.1593	-0.5063
915	SLU 71	-0.85	0.09	48.24	-22.4042	0.1579	-0.4934
915	SLU 72	-0.87	0.04	48.25	-22.4105	0.1582	-0.5023
915	SLU 73	-0.9	0.06	51.26	-23.7713	0.1684	-0.5214
915	SLU 74	-0.89	0.15	52.06	-24.1319	0.171	-0.5157
915	SLU 75	-0.91	0.1	52.07	-24.1382	0.1712	-0.5246
915	SLU 76	-0.91	0.07	51.77	-24.0039	0.1702	-0.5267
915	SLU 77	-0.9	0.16	52.56	-24.3646	0.1728	-0.5209
915	SLU 78	-0.92	0.11	52.58	-24.3708	0.173	-0.5299
915	SLU 79	-0.89	0.16	52.26	-24.2261	0.1717	-0.517
915	SLU 80	-0.91	0.1	52.27	-24.2324	0.1719	-0.5259
915	SLU 81	-0.89	0.18	52.97	-24.5416	0.1739	-0.5166
915	SLU 82	-0.91	0.12	52.98	-24.5479	0.1741	-0.5256
915	SLU 83	-0.9	0.18	53.47	-24.7743	0.1757	-0.5219
915	SLU 84	-0.92	0.13	53.49	-24.7806	0.176	-0.5308
915	SLE RA 1	-0.63	0.05	35.42	-16.468	0.1155	-0.3655
915	SLE RA 2	-0.65	-0.01	35.43	-16.475	0.1158	-0.3755
915	SLE RA 3	-0.64	0.06	35.96	-16.7154	0.1175	-0.3716
915	SLE RA 4	-0.65	0.02	35.97	-16.7196	0.1177	-0.3776
915	SLE RA 5	-0.66	0	35.77	-16.63	0.117	-0.3789
915	SLE RA 6	-0.65	0.06	36.3	-16.8705	0.1187	-0.3751
915	SLE RA 7	-0.66	0.02	36.31	-16.8747	0.1189	-0.3811
915	SLE RA 8	-0.64	0.06	36.1	-16.7782	0.118	-0.3725
915	SLE RA 9	-0.65	0.02	36.11	-16.7823	0.1182	-0.3785
915	SLE RA 10	-0.68	0.04	38.11	-17.6896	0.125	-0.3912
915	SLE RA 11	-0.67	0.1	38.64	-17.93	0.1267	-0.3874
915	SLE RA 12	-0.68	0.06	38.65	-17.9342	0.1268	-0.3934
915	SLE RA 13	-0.68	0.04	38.45	-17.8446	0.1262	-0.3947
915	SLE RA 14	-0.68	0.1	38.98	-18.0851	0.1279	-0.3909
915	SLE RA 15	-0.69	0.07	38.99	-18.0893	0.1281	-0.3968
915	SLE RA 16	-0.67	0.1	38.78	-17.9928	0.1272	-0.3882
915	SLE RA 17	-0.68	0.07	38.79	-17.9969	0.1273	-0.3942
915	SLE RA 18	-0.67	0.11	39.25	-18.2031	0.1286	-0.388
915	SLE RA 19	-0.68	0.08	39.26	-18.2073	0.1288	-0.394
915	SLE RA 20	-0.68	0.12	39.59	-18.3582	0.1299	-0.3915
915	SLE RA 21	-0.69	0.08	39.6	-18.3624	0.13	-0.3975
915	SLE FR 1	-0.63	0.05	35.42	-16.468	0.1155	-0.3655
915	SLE FR 2	-0.64	0.04	35.42	-16.4694	0.1156	-0.3675
915	SLE FR 3	-0.63	0.05	35.56	-16.53	0.116	-0.3669
915	SLE FR 4	-0.65	0.06	36.57	-16.9899	0.1195	-0.3742
915	SLE FR 5	-0.65	0.07	36.71	-17.0506	0.12	-0.3736
915	SLE FR 6	-0.65	0.08	37.34	-17.3356	0.1221	-0.3767
915	SLE QP 1	-0.63	0.05	35.42	-16.468	0.1155	-0.3655
915	SLE QP 2	-0.64	0.07	36.57	-16.9885	0.1195	-0.3723
915	SLD 1	2.88	0.67	44.41	-20.6888	0.1643	1.6522
915	SLD 2	2.55	0.14	44.89	-20.8974	0.1657	1.4664
915	SLD 3	2.68	-0.67	45.17	-21.0196	0.1683	1.5385



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
915	SLD 4	2.35	-1.21	45.65	-21.2282	0.1697	1.3526
915	SLD 5	0.77	2.39	37.68	-17.5595	0.1266	0.4408
915	SLD 6	0.56	2.03	38	-17.6966	0.1275	0.3187
915	SLD 7	0.11	-2.1	40.22	-18.6624	0.1399	0.0616
915	SLD 8	-0.1	-2.45	40.53	-18.7995	0.1409	-0.0605
915	SLD 9	-1.18	2.59	32.61	-15.1775	0.0981	-0.684
915	SLD 10	-1.4	2.24	32.92	-15.3146	0.099	-0.8061
915	SLD 11	-1.85	-1.89	35.14	-16.2804	0.1114	-1.0632
915	SLD 12	-2.06	-2.25	35.46	-16.4175	0.1123	-1.1853
915	SLD 13	-3.64	1.35	27.49	-12.7488	0.0692	-2.0971
915	SLD 14	-3.96	0.81	27.97	-12.9574	0.0707	-2.283
915	SLD 15	-3.84	0	28.25	-13.0797	0.0732	-2.2109
915	SLD 16	-4.16	-0.53	28.73	-13.2883	0.0747	-2.3967
915	SLV 1	7.59	1.42	54.94	-25.6558	0.2244	4.3627
915	SLV 2	6.83	0.17	56.05	-26.1417	0.2278	3.9299
915	SLV 3	7.13	-1.62	56.69	-26.4173	0.2336	4.098
915	SLV 4	6.37	-2.87	57.8	-26.9032	0.237	3.6652
915	SLV 5	2.66	5.31	39.24	-18.3498	0.1365	1.5246
915	SLV 6	2.17	4.5	39.95	-18.6636	0.1386	1.245
915	SLV 7	1.12	-4.84	45.07	-20.8881	0.167	0.6422
915	SLV 8	0.63	-5.64	45.78	-21.2019	0.1692	0.3627
915	SLV 9	-1.92	5.78	27.36	-12.7752	0.0697	-1.1072
915	SLV 10	-2.4	4.98	28.07	-13.089	0.0719	-1.3867
915	SLV 11	-3.46	-4.36	33.19	-15.3135	0.1003	-1.9895
915	SLV 12	-3.95	-5.17	33.9	-15.6273	0.1025	-2.2691
915	SLV 13	-7.66	3.01	15.34	-7.0739	0.002	-4.4097
915	SLV 14	-8.42	1.76	16.45	-7.5597	0.0053	-4.8425
915	SLV 15	-8.12	-0.04	17.09	-7.8354	0.0112	-4.6744
915	SLV 16	-8.88	-1.28	18.2	-8.3212	0.0145	-5.1072
915	CRTFP Ux+	0	0	0	0	0	0
915	CRTFP Ux-	0	0	0	0	0	0
915	CRTFP Uy+	0	0	0	0	0	0
915	CRTFP Uy-	0	0	0	0	0	0
916	SLU 1	-0.62	-0.03	31.07	-13.4002	0.0886	-0.3606
916	SLU 2	-0.65	-0.11	31.07	-13.4049	0.0889	-0.3753
916	SLU 3	-0.64	-0.02	31.8	-13.7048	0.0909	-0.3698
916	SLU 4	-0.66	-0.07	31.8	-13.7076	0.0911	-0.3787
916	SLU 5	-0.66	-0.1	31.53	-13.5959	0.0904	-0.3806
916	SLU 6	-0.65	-0.02	32.25	-13.8957	0.0924	-0.3751
916	SLU 7	-0.66	-0.07	32.26	-13.8985	0.0926	-0.384
916	SLU 8	-0.64	-0.02	31.98	-13.7822	0.0915	-0.3711
916	SLU 9	-0.66	-0.07	31.99	-13.785	0.0917	-0.38
916	SLU 10	-0.69	-0.06	34.71	-14.9097	0.0997	-0.3994
916	SLU 11	-0.68	0.03	35.43	-15.2096	0.1017	-0.3939
916	SLU 12	-0.7	-0.02	35.43	-15.2124	0.1019	-0.4028
916	SLU 13	-0.7	-0.05	35.16	-15.1007	0.1012	-0.4047
916	SLU 14	-0.69	0.03	35.89	-15.4005	0.1032	-0.3992
916	SLU 15	-0.71	-0.02	35.89	-15.4033	0.1034	-0.4081
916	SLU 16	-0.68	0.03	35.61	-15.287	0.1023	-0.3952
916	SLU 17	-0.7	-0.02	35.62	-15.2898	0.1025	-0.4041
916	SLU 18	-0.68	0.04	36.26	-15.55	0.104	-0.395
916	SLU 19	-0.7	0	36.26	-15.5528	0.1042	-0.4038
916	SLU 20	-0.69	0.04	36.71	-15.7409	0.1055	-0.4003
916	SLU 21	-0.71	0	36.72	-15.7437	0.1057	-0.4091
916	SLU 22	-0.67	0.02	34.77	-14.9309	0.0998	-0.388
916	SLU 23	-0.7	-0.06	34.77	-14.9356	0.1001	-0.4028
916	SLU 24	-0.69	0.02	35.5	-15.2354	0.1021	-0.3973
916	SLU 25	-0.7	-0.02	35.5	-15.2382	0.1023	-0.4062
916	SLU 26	-0.71	-0.06	35.23	-15.1265	0.1016	-0.4081
916	SLU 27	-0.7	0.02	35.95	-15.4264	0.1036	-0.4026
916	SLU 28	-0.71	-0.02	35.96	-15.4292	0.1038	-0.4114
916	SLU 29	-0.69	0.02	35.68	-15.3128	0.1027	-0.3986
916	SLU 30	-0.71	-0.02	35.68	-15.3156	0.1029	-0.4074
916	SLU 31	-0.74	-0.01	38.41	-16.4404	0.1109	-0.4269
916	SLU 32	-0.73	0.07	39.13	-16.7402	0.1129	-0.4214
916	SLU 33	-0.74	0.03	39.13	-16.743	0.1131	-0.4302
916	SLU 34	-0.75	-0.01	38.86	-16.6313	0.1124	-0.4322
916	SLU 35	-0.74	0.07	39.59	-16.9312	0.1144	-0.4267
916	SLU 36	-0.75	0.03	39.59	-16.934	0.1146	-0.4355
916	SLU 37	-0.73	0.07	39.31	-16.8176	0.1135	-0.4227
916	SLU 38	-0.75	0.03	39.32	-16.8204	0.1137	-0.4315
916	SLU 39	-0.73	0.09	39.96	-17.0806	0.1152	-0.4224
916	SLU 40	-0.75	0.04	39.96	-17.0834	0.1154	-0.4313
916	SLU 41	-0.74	0.09	40.41	-17.2716	0.1166	-0.4277
916	SLU 42	-0.75	0.04	40.42	-17.2744	0.1168	-0.4366
916	SLU 43	-0.79	-0.05	39.12	-16.8955	0.1114	-0.4593
916	SLU 44	-0.82	-0.13	39.13	-16.9002	0.1117	-0.4741
916	SLU 45	-0.81	-0.05	39.85	-17.2	0.1137	-0.4686
916	SLU 46	-0.83	-0.09	39.85	-17.2028	0.1139	-0.4775
916	SLU 47	-0.83	-0.13	39.58	-17.0912	0.1132	-0.4794
916	SLU 48	-0.82	-0.04	40.31	-17.391	0.1152	-0.4739
916	SLU 49	-0.84	-0.09	40.31	-17.3938	0.1154	-0.4827
916	SLU 50	-0.81	-0.05	40.03	-17.2774	0.1143	-0.4699
916	SLU 51	-0.83	-0.09	40.04	-17.2803	0.1145	-0.4788
916	SLU 52	-0.86	-0.08	42.76	-18.405	0.1225	-0.4982
916	SLU 53	-0.85	0	43.48	-18.7048	0.1245	-0.4927
916	SLU 54	-0.87	-0.04	43.49	-18.7076	0.1247	-0.5015
916	SLU 55	-0.87	-0.08	43.22	-18.596	0.1239	-0.5035
916	SLU 56	-0.86	0	43.94	-18.8958	0.1259	-0.498
916	SLU 57	-0.88	-0.04	43.94	-18.8986	0.1261	-0.5068





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
916	SLU 58	-0.85	0	43.67	-18.7822	0.1251	-0.494
916	SLU 59	-0.87	-0.04	43.67	-18.7851	0.1253	-0.5028
916	SLU 60	-0.85	0.02	44.31	-19.0452	0.1267	-0.4938
916	SLU 61	-0.87	-0.03	44.31	-19.048	0.1269	-0.5026
916	SLU 62	-0.86	0.02	44.77	-19.2362	0.1282	-0.499
916	SLU 63	-0.88	-0.03	44.77	-19.239	0.1284	-0.5079
916	SLU 64	-0.84	-0.01	42.82	-18.4262	0.1225	-0.4868
916	SLU 65	-0.87	-0.08	42.83	-18.4309	0.1229	-0.5016
916	SLU 66	-0.86	0	43.55	-18.7307	0.1249	-0.4961
916	SLU 67	-0.87	-0.05	43.55	-18.7335	0.1251	-0.5049
916	SLU 68	-0.88	-0.08	43.28	-18.6218	0.1243	-0.5068
916	SLU 69	-0.87	0	44.01	-18.9216	0.1263	-0.5013
916	SLU 70	-0.88	-0.04	44.01	-18.9245	0.1265	-0.5102
916	SLU 71	-0.86	0	43.73	-18.8081	0.1255	-0.4974
916	SLU 72	-0.88	-0.05	43.74	-18.8109	0.1257	-0.5062
916	SLU 73	-0.91	-0.04	46.46	-19.9357	0.1336	-0.5256
916	SLU 74	-0.9	0.05	47.18	-20.2355	0.1356	-0.5201
916	SLU 75	-0.92	0	47.19	-20.2383	0.1358	-0.529
916	SLU 76	-0.92	-0.03	46.91	-20.1266	0.1351	-0.5309
916	SLU 77	-0.91	0.05	47.64	-20.4264	0.1371	-0.5254
916	SLU 78	-0.92	0	47.64	-20.4293	0.1373	-0.5343
916	SLU 79	-0.9	0.05	47.37	-20.3129	0.1362	-0.5214
916	SLU 80	-0.92	0	47.37	-20.3157	0.1364	-0.5303
916	SLU 81	-0.9	0.06	48.01	-20.5759	0.1379	-0.5212
916	SLU 82	-0.92	0.02	48.01	-20.5787	0.1381	-0.5301
916	SLU 83	-0.91	0.07	48.47	-20.7668	0.1394	-0.5265
916	SLU 84	-0.93	0.02	48.47	-20.7697	0.1396	-0.5353
916	SLE RA 1	-0.64	-0.02	32.12	-13.8376	0.0918	-0.3684
916	SLE RA 2	-0.65	-0.07	32.13	-13.8407	0.092	-0.3783
916	SLE RA 3	-0.65	-0.01	32.61	-14.0406	0.0934	-0.3746
916	SLE RA 4	-0.66	-0.04	32.61	-14.0425	0.0935	-0.3805
916	SLE RA 5	-0.66	-0.06	32.43	-13.968	0.093	-0.3818
916	SLE RA 6	-0.65	-0.01	32.92	-14.1679	0.0943	-0.3781
916	SLE RA 7	-0.66	-0.04	32.92	-14.1698	0.0945	-0.384
916	SLE RA 8	-0.65	-0.01	32.73	-14.0922	0.0938	-0.3755
916	SLE RA 9	-0.66	-0.04	32.74	-14.0941	0.0939	-0.3814
916	SLE RA 10	-0.68	-0.03	34.55	-14.8439	0.0992	-0.3943
916	SLE RA 11	-0.68	0.02	35.03	-15.0438	0.1005	-0.3907
916	SLE RA 12	-0.69	-0.01	35.04	-15.0457	0.1007	-0.3966
916	SLE RA 13	-0.69	-0.03	34.86	-14.9712	0.1002	-0.3978
916	SLE RA 14	-0.68	0.02	35.34	-15.1711	0.1015	-0.3942
916	SLE RA 15	-0.69	-0.01	35.34	-15.173	0.1017	-0.4001
916	SLE RA 16	-0.68	0.02	35.16	-15.0954	0.1009	-0.3915
916	SLE RA 17	-0.69	-0.01	35.16	-15.0973	0.1011	-0.3974
916	SLE RA 18	-0.68	0.03	35.58	-15.2707	0.1021	-0.3914
916	SLE RA 19	-0.69	0	35.59	-15.2726	0.1022	-0.3973
916	SLE RA 20	-0.68	0.03	35.89	-15.398	0.103	-0.3949
916	SLE RA 21	-0.69	0	35.89	-15.3999	0.1032	-0.4008
916	SLE FR 1	-0.64	-0.02	32.12	-13.8376	0.0918	-0.3684
916	SLE FR 2	-0.64	-0.03	32.13	-13.8382	0.0918	-0.3704
916	SLE FR 3	-0.64	-0.02	32.25	-13.8885	0.0922	-0.3698
916	SLE FR 4	-0.65	-0.01	33.16	-14.2681	0.0949	-0.3773
916	SLE FR 5	-0.65	0	33.28	-14.3184	0.0953	-0.3767
916	SLE FR 6	-0.66	0.01	33.85	-14.5541	0.0969	-0.3799
916	SLE QP 1	-0.64	-0.02	32.12	-13.8376	0.0918	-0.3684
916	SLE QP 2	-0.65	0	33.16	-14.2675	0.0949	-0.3753
916	SLD 1	2.88	0.57	39.67	-17.0642	0.1341	1.6525
916	SLD 2	2.55	0.08	40.11	-17.2442	0.1352	1.4664
916	SLD 3	2.68	-0.69	40.32	-17.3191	0.1375	1.5386
916	SLD 4	2.35	-1.19	40.75	-17.4991	0.1386	1.3526
916	SLD 5	0.77	2.17	34.06	-14.6877	0.1013	0.4389
916	SLD 6	0.55	1.85	34.35	-14.806	0.102	0.3166
916	SLD 7	0.11	-2.03	36.21	-15.5375	0.1126	0.0595
916	SLD 8	-0.11	-2.36	36.5	-15.6558	0.1133	-0.0628
916	SLD 9	-1.19	2.36	29.83	-12.8793	0.0764	-0.6878
916	SLD 10	-1.4	2.03	30.12	-12.9976	0.0771	-0.8101
916	SLD 11	-1.85	-1.85	31.98	-13.729	0.0877	-1.0672
916	SLD 12	-2.07	-2.18	32.27	-13.8473	0.0884	-1.1895
916	SLD 13	-3.65	1.18	25.57	-11.0359	0.0511	-2.1032
916	SLD 14	-3.98	0.68	26.01	-11.2159	0.0523	-2.2893
916	SLD 15	-3.85	-0.08	26.22	-11.2909	0.0545	-2.217
916	SLD 16	-4.18	-0.58	26.65	-11.4709	0.0556	-2.4031
916	SLV 1	7.6	1.29	48.41	-20.8184	0.1868	4.3674
916	SLV 2	6.84	0.13	49.43	-21.2376	0.1893	3.934
916	SLV 3	7.14	-1.56	49.9	-21.4052	0.1945	4.1025
916	SLV 4	6.38	-2.72	50.91	-21.8244	0.1971	3.6692
916	SLV 5	2.66	4.92	35.31	-15.2703	0.1102	1.5241
916	SLV 6	2.17	4.17	35.97	-15.5411	0.1119	1.2442
916	SLV 7	1.12	-4.6	40.26	-17.2263	0.1361	0.6413
916	SLV 8	0.63	-5.35	40.91	-17.497	0.1378	0.3615
916	SLV 9	-1.92	5.35	25.42	-11.038	0.0519	-1.1121
916	SLV 10	-2.41	4.6	26.07	-11.3088	0.0536	-1.3919
916	SLV 11	-3.47	-4.18	30.36	-12.9939	0.0779	-1.9948
916	SLV 12	-3.96	-4.93	31.01	-13.2647	0.0795	-2.2747
916	SLV 13	-7.68	2.72	15.42	-6.7106	-0.0074	-4.4198
916	SLV 14	-8.43	1.56	16.43	-7.1299	-0.0048	-4.8531
916	SLV 15	-8.14	-0.14	16.9	-7.2974	0.0004	-4.6847
916	SLV 16	-8.9	-1.3	17.91	-7.7166	0.003	-5.118
916	CRTFP Ux+	0	0	0	0	0	0
916	CRTFP Ux-	0	0	0	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
916	CRTFP Uy+	0	0	0	0	0	0
916	CRTFP Uy-	0	0	0	0	0	0
917	SLU 1	-0.63	-0.08	28.65	-11.5162	0.0634	-0.3629
917	SLU 2	-0.65	-0.15	28.65	-11.5162	0.0637	-0.3775
917	SLU 3	-0.64	-0.08	29.32	-11.7713	0.0651	-0.3722
917	SLU 4	-0.66	-0.12	29.32	-11.7713	0.0653	-0.3809
917	SLU 5	-0.66	-0.14	29.07	-11.6762	0.0648	-0.3828
917	SLU 6	-0.65	-0.07	29.74	-11.9313	0.0662	-0.3775
917	SLU 7	-0.67	-0.11	29.73	-11.9313	0.0663	-0.3862
917	SLU 8	-0.65	-0.08	29.49	-11.8362	0.0656	-0.3735
917	SLU 9	-0.66	-0.11	29.49	-11.8362	0.0657	-0.3822
917	SLU 10	-0.7	-0.11	31.99	-12.7888	0.0712	-0.402
917	SLU 11	-0.69	-0.04	32.66	-13.0438	0.0726	-0.3967
917	SLU 12	-0.7	-0.08	32.66	-13.0438	0.0728	-0.4055
917	SLU 13	-0.71	-0.11	32.41	-12.9487	0.0723	-0.4073
917	SLU 14	-0.7	-0.04	33.08	-13.2038	0.0737	-0.402
917	SLU 15	-0.71	-0.08	33.08	-13.2038	0.0738	-0.4107
917	SLU 16	-0.69	-0.04	32.83	-13.1087	0.0731	-0.398
917	SLU 17	-0.7	-0.08	32.83	-13.1087	0.0732	-0.4068
917	SLU 18	-0.69	-0.03	33.43	-13.3341	0.0742	-0.3979
917	SLU 19	-0.7	-0.07	33.43	-13.3341	0.0743	-0.4067
917	SLU 20	-0.7	-0.03	33.85	-13.4941	0.0752	-0.4032
917	SLU 21	-0.71	-0.07	33.84	-13.4941	0.0754	-0.412
917	SLU 22	-0.68	-0.05	32.05	-12.8068	0.0713	-0.3908
917	SLU 23	-0.7	-0.11	32.05	-12.8068	0.0715	-0.4053
917	SLU 24	-0.69	-0.04	32.72	-13.0619	0.073	-0.4
917	SLU 25	-0.71	-0.08	32.71	-13.0619	0.0731	-0.4088
917	SLU 26	-0.71	-0.11	32.46	-12.9668	0.0726	-0.4106
917	SLU 27	-0.7	-0.04	33.13	-13.2219	0.074	-0.4053
917	SLU 28	-0.72	-0.08	33.13	-13.2219	0.0742	-0.4141
917	SLU 29	-0.69	-0.04	32.88	-13.1268	0.0734	-0.4013
917	SLU 30	-0.71	-0.08	32.88	-13.1268	0.0736	-0.4101
917	SLU 31	-0.74	-0.08	35.39	-14.0794	0.079	-0.4299
917	SLU 32	-0.73	0	36.06	-14.3344	0.0805	-0.4246
917	SLU 33	-0.75	-0.04	36.06	-14.3344	0.0806	-0.4333
917	SLU 34	-0.75	-0.07	35.81	-14.2394	0.0801	-0.4351
917	SLU 35	-0.74	0	36.48	-14.4944	0.0815	-0.4299
917	SLU 36	-0.76	-0.04	36.47	-14.4944	0.0817	-0.4386
917	SLU 37	-0.74	0	36.23	-14.3993	0.0809	-0.4259
917	SLU 38	-0.75	-0.04	36.22	-14.3993	0.0811	-0.4346
917	SLU 39	-0.74	0.01	36.83	-14.6247	0.082	-0.4258
917	SLU 40	-0.75	-0.03	36.82	-14.6247	0.0821	-0.4345
917	SLU 41	-0.75	0.01	37.24	-14.7847	0.083	-0.4311
917	SLU 42	-0.76	-0.03	37.24	-14.7847	0.0832	-0.4398
917	SLU 43	-0.8	-0.12	36.09	-14.5286	0.0798	-0.4622
917	SLU 44	-0.83	-0.18	36.08	-14.5286	0.0801	-0.4768
917	SLU 45	-0.82	-0.11	36.75	-14.7836	0.0815	-0.4715
917	SLU 46	-0.83	-0.15	36.75	-14.7836	0.0816	-0.4802
917	SLU 47	-0.84	-0.18	36.5	-14.6886	0.0811	-0.4821
917	SLU 48	-0.83	-0.11	37.17	-14.9436	0.0825	-0.4768
917	SLU 49	-0.84	-0.15	37.17	-14.9436	0.0827	-0.4855
917	SLU 50	-0.82	-0.11	36.92	-14.8485	0.0819	-0.4728
917	SLU 51	-0.83	-0.15	36.92	-14.8486	0.0821	-0.4815
917	SLU 52	-0.87	-0.15	39.43	-15.8011	0.0876	-0.5013
917	SLU 53	-0.86	-0.08	40.09	-16.0562	0.089	-0.496
917	SLU 54	-0.87	-0.12	40.09	-16.0562	0.0891	-0.5048
917	SLU 55	-0.88	-0.14	39.84	-15.9611	0.0886	-0.5066
917	SLU 56	-0.87	-0.07	40.51	-16.2162	0.09	-0.5013
917	SLU 57	-0.88	-0.11	40.51	-16.2162	0.0902	-0.5101
917	SLU 58	-0.86	-0.08	40.26	-16.1211	0.0894	-0.4973
917	SLU 59	-0.88	-0.12	40.26	-16.1211	0.0896	-0.5061
917	SLU 60	-0.86	-0.07	40.86	-16.3465	0.0905	-0.4973
917	SLU 61	-0.88	-0.11	40.86	-16.3465	0.0907	-0.506
917	SLU 62	-0.87	-0.06	41.28	-16.5065	0.0916	-0.5026
917	SLU 63	-0.89	-0.1	41.28	-16.5065	0.0917	-0.5113
917	SLU 64	-0.85	-0.08	39.48	-15.8192	0.0876	-0.4901
917	SLU 65	-0.87	-0.15	39.48	-15.8192	0.0879	-0.5046
917	SLU 66	-0.86	-0.08	40.15	-16.0742	0.0893	-0.4994
917	SLU 67	-0.88	-0.12	40.15	-16.0743	0.0895	-0.5081
917	SLU 68	-0.88	-0.14	39.9	-15.9792	0.089	-0.5099
917	SLU 69	-0.87	-0.07	40.56	-16.2342	0.0904	-0.5047
917	SLU 70	-0.89	-0.11	40.56	-16.2342	0.0905	-0.5134
917	SLU 71	-0.87	-0.08	40.32	-16.1391	0.0897	-0.5007
917	SLU 72	-0.88	-0.12	40.31	-16.1392	0.0899	-0.5094
917	SLU 73	-0.92	-0.11	42.82	-17.0917	0.0954	-0.5292
917	SLU 74	-0.91	-0.04	43.49	-17.3468	0.0968	-0.5239
917	SLU 75	-0.92	-0.08	43.49	-17.3468	0.097	-0.5326
917	SLU 76	-0.93	-0.11	43.24	-17.2517	0.0964	-0.5345
917	SLU 77	-0.92	-0.04	43.91	-17.5068	0.0979	-0.5292
917	SLU 78	-0.93	-0.08	43.91	-17.5068	0.098	-0.5379
917	SLU 79	-0.91	-0.04	43.66	-17.4117	0.0972	-0.5252
917	SLU 80	-0.92	-0.08	43.66	-17.4117	0.0974	-0.5339
917	SLU 81	-0.91	-0.03	44.26	-17.6371	0.0983	-0.5251
917	SLU 82	-0.92	-0.07	44.26	-17.6371	0.0985	-0.5339
917	SLU 83	-0.92	-0.03	44.67	-17.7971	0.0994	-0.5304
917	SLU 84	-0.93	-0.07	44.67	-17.7971	0.0996	-0.5391
917	SLE RA 1	-0.64	-0.07	29.62	-11.8849	0.0657	-0.3709
917	SLE RA 2	-0.66	-0.11	29.62	-11.885	0.0659	-0.3806
917	SLE RA 3	-0.65	-0.07	30.07	-12.055	0.0668	-0.377
917	SLE RA 4	-0.66	-0.09	30.07	-12.055	0.0669	-0.3829



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
917	SLE RA 5	-0.67	-0.11	29.9	-11.9916	0.0666	-0.3841
917	SLE RA 6	-0.66	-0.07	30.35	-12.1616	0.0675	-0.3806
917	SLE RA 7	-0.67	-0.09	30.34	-12.1617	0.0676	-0.3864
917	SLE RA 8	-0.65	-0.07	30.18	-12.0983	0.0671	-0.3779
917	SLE RA 9	-0.66	-0.09	30.18	-12.0983	0.0672	-0.3837
917	SLE RA 10	-0.69	-0.09	31.85	-12.7333	0.0709	-0.3969
917	SLE RA 11	-0.68	-0.04	32.3	-12.9033	0.0718	-0.3934
917	SLE RA 12	-0.69	-0.07	32.3	-12.9034	0.0719	-0.3992
917	SLE RA 13	-0.69	-0.09	32.13	-12.84	0.0716	-0.4005
917	SLE RA 14	-0.69	-0.04	32.57	-13.01	0.0725	-0.3969
917	SLE RA 15	-0.7	-0.07	32.57	-13.01	0.0726	-0.4028
917	SLE RA 16	-0.68	-0.04	32.41	-12.9466	0.0721	-0.3943
917	SLE RA 17	-0.69	-0.07	32.41	-12.9466	0.0722	-0.4001
917	SLE RA 18	-0.68	-0.04	32.81	-13.0969	0.0728	-0.3942
917	SLE RA 19	-0.69	-0.06	32.81	-13.0969	0.0729	-0.4
917	SLE RA 20	-0.69	-0.04	33.09	-13.2035	0.0735	-0.3977
917	SLE RA 21	-0.7	-0.06	33.08	-13.2035	0.0736	-0.4036
917	SLE FR 1	-0.64	-0.07	29.62	-11.8849	0.0657	-0.3709
917	SLE FR 2	-0.65	-0.08	29.62	-11.8849	0.0657	-0.3728
917	SLE FR 3	-0.64	-0.07	29.74	-11.9276	0.066	-0.3723
917	SLE FR 4	-0.66	-0.07	30.58	-12.2485	0.0679	-0.3798
917	SLE FR 5	-0.66	-0.06	30.69	-12.2912	0.0681	-0.3793
917	SLE FR 6	-0.66	-0.05	31.22	-12.4909	0.0693	-0.3825
917	SLE QP 1	-0.64	-0.07	29.62	-11.8849	0.0657	-0.3709
917	SLE QP 2	-0.65	-0.06	30.58	-12.2485	0.0678	-0.3779
917	SLD 1	2.88	0.49	35.94	-14.2915	0.1011	1.653
917	SLD 2	2.55	0.03	36.34	-14.4524	0.1018	1.4667
917	SLD 3	2.68	-0.69	36.49	-14.4867	0.1038	1.5391
917	SLD 4	2.35	-1.16	36.9	-14.6476	0.1045	1.3528
917	SLD 5	0.76	1.99	31.28	-12.5365	0.0736	0.4374
917	SLD 6	0.55	1.68	31.55	-12.6423	0.0741	0.3149
917	SLD 7	0.1	-1.97	33.12	-13.1874	0.0826	0.0578
917	SLD 8	-0.11	-2.27	33.38	-13.2931	0.083	-0.0646
917	SLD 9	-1.2	2.15	27.78	-11.2039	0.0526	-0.6911
917	SLD 10	-1.41	1.85	28.04	-11.3097	0.0531	-0.8135
917	SLD 11	-1.86	-1.81	29.61	-11.8548	0.0616	-1.0707
917	SLD 12	-2.07	-2.11	29.88	-11.9605	0.0621	-1.1931
917	SLD 13	-3.66	1.03	24.26	-9.8494	0.0311	-2.1086
917	SLD 14	-3.99	0.57	24.67	-10.0103	0.0319	-2.2948
917	SLD 15	-3.86	-0.15	24.81	-10.0447	0.0338	-2.2224
917	SLD 16	-4.19	-0.62	25.22	-10.2056	0.0346	-2.4087
917	SLV 1	7.6	1.19	43.14	-17.0342	0.1458	4.372
917	SLV 2	6.85	0.11	44.08	-17.4089	0.1475	3.9382
917	SLV 3	7.14	-1.5	44.4	-17.4836	0.152	4.1071
917	SLV 4	6.38	-2.58	45.35	-17.8583	0.1537	3.6732
917	SLV 5	2.66	4.57	32.26	-12.9379	0.0815	1.524
917	SLV 6	2.17	3.88	32.87	-13.1799	0.0826	1.2438
917	SLV 7	1.11	-4.38	36.48	-14.4357	0.1022	0.6408
917	SLV 8	0.62	-5.08	37.09	-14.6778	0.1033	0.3606
917	SLV 9	-1.93	4.95	24.07	-9.8193	0.0324	-1.1163
917	SLV 10	-2.42	4.26	24.68	-10.0613	0.0335	-1.3965
917	SLV 11	-3.47	-4	28.29	-11.3171	0.053	-1.9995
917	SLV 12	-3.96	-4.7	28.9	-11.5591	0.0542	-2.2797
917	SLV 13	-7.69	2.45	15.81	-6.6388	-0.018	-4.429
917	SLV 14	-8.45	1.38	16.76	-7.0135	-0.0163	-4.8628
917	SLV 15	-8.15	-0.23	17.08	-7.0881	-0.0118	-4.6939
917	SLV 16	-8.91	-1.31	18.02	-7.4628	-0.0101	-5.1278
917	CRTFP Ux+	0	0	0	0	0	0
917	CRTFP Ux-	0	0	0	0	0	0
917	CRTFP Uy+	0	0	0	0	0	0
917	CRTFP Uy-	0	0	0	0	0	0
918	SLU 1	-0.63	-0.12	27.05	-10.3088	0.0377	-0.3646
918	SLU 2	-0.66	-0.18	27.04	-10.3055	0.0379	-0.379
918	SLU 3	-0.65	-0.12	27.67	-10.5322	0.0387	-0.3739
918	SLU 4	-0.66	-0.15	27.67	-10.5303	0.0388	-0.3825
918	SLU 5	-0.67	-0.18	27.43	-10.4456	0.0385	-0.3843
918	SLU 6	-0.66	-0.12	28.06	-10.6723	0.0393	-0.3792
918	SLU 7	-0.67	-0.15	28.06	-10.6704	0.0394	-0.3878
918	SLU 8	-0.65	-0.12	27.83	-10.589	0.0389	-0.3752
918	SLU 9	-0.67	-0.15	27.82	-10.587	0.0391	-0.3838
918	SLU 10	-0.7	-0.16	30.2	-11.4341	0.042	-0.4039
918	SLU 11	-0.69	-0.09	30.83	-11.6608	0.0428	-0.3989
918	SLU 12	-0.71	-0.13	30.83	-11.6589	0.0429	-0.4075
918	SLU 13	-0.71	-0.15	30.59	-11.5742	0.0426	-0.4092
918	SLU 14	-0.7	-0.09	31.22	-11.8009	0.0434	-0.4042
918	SLU 15	-0.72	-0.13	31.22	-11.799	0.0435	-0.4128
918	SLU 16	-0.69	-0.09	30.99	-11.7176	0.0431	-0.4002
918	SLU 17	-0.71	-0.13	30.98	-11.7156	0.0432	-0.4088
918	SLU 18	-0.69	-0.09	31.56	-11.9211	0.0436	-0.4003
918	SLU 19	-0.71	-0.12	31.56	-11.9191	0.0437	-0.4089
918	SLU 20	-0.7	-0.09	31.95	-12.0612	0.0442	-0.4056
918	SLU 21	-0.72	-0.12	31.95	-12.0592	0.0443	-0.4142
918	SLU 22	-0.68	-0.09	30.25	-11.4491	0.0421	-0.3929
918	SLU 23	-0.71	-0.15	30.24	-11.4458	0.0423	-0.4072
918	SLU 24	-0.7	-0.09	30.88	-11.6725	0.0431	-0.4022
918	SLU 25	-0.71	-0.12	30.87	-11.6706	0.0432	-0.4108
918	SLU 26	-0.72	-0.15	30.63	-11.5859	0.0429	-0.4125
918	SLU 27	-0.71	-0.09	31.27	-11.8126	0.0437	-0.4074
918	SLU 28	-0.72	-0.12	31.26	-11.8107	0.0438	-0.4161
918	SLU 29	-0.7	-0.09	31.03	-11.7293	0.0433	-0.4034



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
918	SLU 30	-0.71	-0.12	31.03	-11.7274	0.0435	-0.4121
918	SLU 31	-0.75	-0.13	33.4	-12.5744	0.0464	-0.4321
918	SLU 32	-0.74	-0.07	34.04	-12.8011	0.0472	-0.4271
918	SLU 33	-0.75	-0.1	34.03	-12.7992	0.0473	-0.4357
918	SLU 34	-0.76	-0.13	33.79	-12.7145	0.047	-0.4374
918	SLU 35	-0.75	-0.06	34.42	-12.9412	0.0478	-0.4324
918	SLU 36	-0.76	-0.1	34.42	-12.9393	0.0479	-0.441
918	SLU 37	-0.74	-0.07	34.19	-12.8579	0.0475	-0.4284
918	SLU 38	-0.76	-0.1	34.18	-12.856	0.0476	-0.437
918	SLU 39	-0.74	-0.06	34.77	-13.0614	0.048	-0.4285
918	SLU 40	-0.76	-0.1	34.76	-13.0594	0.0481	-0.4371
918	SLU 41	-0.75	-0.06	35.15	-13.2015	0.0486	-0.4338
918	SLU 42	-0.77	-0.09	35.15	-13.1995	0.0487	-0.4424
918	SLU 43	-0.81	-0.17	34.07	-13.0105	0.0475	-0.4644
918	SLU 44	-0.83	-0.23	34.06	-13.0072	0.0476	-0.4787
918	SLU 45	-0.82	-0.16	34.69	-13.2339	0.0485	-0.4736
918	SLU 46	-0.84	-0.2	34.69	-13.2319	0.0486	-0.4822
918	SLU 47	-0.84	-0.22	34.45	-13.1473	0.0483	-0.484
918	SLU 48	-0.83	-0.16	35.08	-13.374	0.0491	-0.4789
918	SLU 49	-0.85	-0.2	35.07	-13.3721	0.0492	-0.4875
918	SLU 50	-0.82	-0.16	34.85	-13.2907	0.0487	-0.4749
918	SLU 51	-0.84	-0.2	34.84	-13.2887	0.0488	-0.4835
918	SLU 52	-0.87	-0.2	37.22	-14.1358	0.0518	-0.5036
918	SLU 53	-0.86	-0.14	37.85	-14.3625	0.0526	-0.4986
918	SLU 54	-0.88	-0.17	37.84	-14.3605	0.0527	-0.5072
918	SLU 55	-0.88	-0.2	37.61	-14.2759	0.0524	-0.5089
918	SLU 56	-0.87	-0.14	38.24	-14.5026	0.0532	-0.5039
918	SLU 57	-0.89	-0.17	38.23	-14.5006	0.0533	-0.5125
918	SLU 58	-0.87	-0.14	38.01	-14.4193	0.0529	-0.4999
918	SLU 59	-0.88	-0.18	38	-14.4173	0.053	-0.5085
918	SLU 60	-0.87	-0.13	38.58	-14.6228	0.0534	-0.5
918	SLU 61	-0.88	-0.17	38.57	-14.6208	0.0535	-0.5086
918	SLU 62	-0.88	-0.13	38.97	-14.7629	0.054	-0.5053
918	SLU 63	-0.89	-0.17	38.96	-14.7609	0.0541	-0.5139
918	SLU 64	-0.85	-0.14	37.27	-14.1508	0.0519	-0.4926
918	SLU 65	-0.88	-0.2	37.26	-14.1475	0.0521	-0.5069
918	SLU 66	-0.87	-0.14	37.89	-14.3742	0.0529	-0.5019
918	SLU 67	-0.89	-0.17	37.89	-14.3722	0.053	-0.5105
918	SLU 68	-0.89	-0.2	37.65	-14.2876	0.0527	-0.5122
918	SLU 69	-0.88	-0.13	38.28	-14.5143	0.0535	-0.5072
918	SLU 70	-0.89	-0.17	38.28	-14.5124	0.0536	-0.5158
918	SLU 71	-0.87	-0.14	38.05	-14.431	0.0531	-0.5032
918	SLU 72	-0.89	-0.17	38.04	-14.429	0.0532	-0.5118
918	SLU 73	-0.92	-0.17	40.42	-15.2761	0.0562	-0.5319
918	SLU 74	-0.91	-0.11	41.05	-15.5028	0.057	-0.5268
918	SLU 75	-0.93	-0.15	41.05	-15.5008	0.0571	-0.5354
918	SLU 76	-0.93	-0.17	40.81	-15.4162	0.0568	-0.5372
918	SLU 77	-0.92	-0.11	41.44	-15.6429	0.0576	-0.5321
918	SLU 78	-0.94	-0.14	41.44	-15.641	0.0577	-0.5407
918	SLU 79	-0.91	-0.11	41.21	-15.5596	0.0573	-0.5281
918	SLU 80	-0.93	-0.15	41.2	-15.5576	0.0574	-0.5367
918	SLU 81	-0.91	-0.11	41.78	-15.7631	0.0578	-0.5282
918	SLU 82	-0.93	-0.14	41.78	-15.7611	0.0579	-0.5368
918	SLU 83	-0.92	-0.1	42.17	-15.9032	0.0584	-0.5335
918	SLU 84	-0.94	-0.14	42.17	-15.9012	0.0585	-0.5421
918	SLE RA 1	-0.65	-0.11	27.97	-10.6346	0.0389	-0.3727
918	SLE RA 2	-0.66	-0.15	27.96	-10.6324	0.0391	-0.3823
918	SLE RA 3	-0.66	-0.11	28.38	-10.7835	0.0396	-0.3789
918	SLE RA 4	-0.67	-0.13	28.38	-10.7822	0.0397	-0.3846
918	SLE RA 5	-0.67	-0.15	28.22	-10.7258	0.0395	-0.3858
918	SLE RA 6	-0.66	-0.11	28.64	-10.877	0.04	-0.3824
918	SLE RA 7	-0.67	-0.13	28.64	-10.8756	0.0401	-0.3882
918	SLE RA 8	-0.66	-0.11	28.49	-10.8214	0.0398	-0.3798
918	SLE RA 9	-0.67	-0.13	28.48	-10.8201	0.0398	-0.3855
918	SLE RA 10	-0.69	-0.14	30.06	-11.3848	0.0418	-0.3989
918	SLE RA 11	-0.69	-0.1	30.49	-11.5359	0.0423	-0.3955
918	SLE RA 12	-0.7	-0.12	30.48	-11.5346	0.0424	-0.4013
918	SLE RA 13	-0.7	-0.14	30.32	-11.4782	0.0422	-0.4024
918	SLE RA 14	-0.69	-0.09	30.75	-11.6294	0.0428	-0.3991
918	SLE RA 15	-0.7	-0.12	30.74	-11.628	0.0428	-0.4048
918	SLE RA 16	-0.69	-0.1	30.59	-11.5738	0.0425	-0.3964
918	SLE RA 17	-0.7	-0.12	30.59	-11.5725	0.0426	-0.4021
918	SLE RA 18	-0.69	-0.09	30.97	-11.7094	0.0429	-0.3965
918	SLE RA 19	-0.7	-0.11	30.97	-11.7081	0.0429	-0.4022
918	SLE RA 20	-0.69	-0.09	31.23	-11.8029	0.0433	-0.4
918	SLE RA 21	-0.7	-0.11	31.23	-11.8015	0.0434	-0.4057
918	SLE FR 1	-0.65	-0.11	27.97	-10.6346	0.0389	-0.3727
918	SLE FR 2	-0.65	-0.12	27.96	-10.6342	0.039	-0.3746
918	SLE FR 3	-0.65	-0.11	28.07	-10.672	0.0391	-0.3741
918	SLE FR 4	-0.66	-0.12	28.87	-10.9566	0.0401	-0.3817
918	SLE FR 5	-0.66	-0.11	28.97	-10.9944	0.0403	-0.3812
918	SLE FR 6	-0.67	-0.1	29.47	-11.172	0.0409	-0.3846
918	SLE QP 1	-0.65	-0.11	27.97	-10.6346	0.0389	-0.3727
918	SLE QP 2	-0.66	-0.11	28.87	-10.957	0.0401	-0.3798
918	SLD 1	2.88	0.43	33.27	-12.3969	0.0674	1.6538
918	SLD 2	2.55	0	33.66	-12.5485	0.0678	1.4673
918	SLD 3	2.68	-0.69	33.75	-12.5504	0.0694	1.5399
918	SLD 4	2.35	-1.12	34.14	-12.702	0.0697	1.3534
918	SLD 5	0.76	1.83	29.39	-11.1292	0.0452	0.4363
918	SLD 6	0.55	1.54	29.64	-11.2288	0.0455	0.3138



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
918	SLD 7	0.1	-1.9	30.99	-11.6407	0.0518	0.0566
918	SLD 8	-0.11	-2.19	31.25	-11.7404	0.0521	-0.0659
918	SLD 9	-1.2	1.97	26.49	-10.1737	0.0282	-0.6937
918	SLD 10	-1.42	1.69	26.75	-10.2734	0.0284	-0.8163
918	SLD 11	-1.86	-1.76	28.09	-10.6853	0.0347	-1.0734
918	SLD 12	-2.08	-2.04	28.35	-10.7849	0.035	-1.196
918	SLD 13	-3.67	0.91	23.6	-9.2121	0.0105	-2.113
918	SLD 14	-4	0.48	23.99	-9.3637	0.0108	-2.2995
918	SLD 15	-3.87	-0.21	24.08	-9.3656	0.0125	-2.227
918	SLD 16	-4.19	-0.64	24.47	-9.5172	0.0128	-2.4135
918	SLV 1	7.61	1.09	39.17	-14.3305	0.104	4.3766
918	SLV 2	6.85	0.09	40.08	-14.6836	0.1049	3.9423
918	SLV 3	7.15	-1.44	40.28	-14.6834	0.1086	4.1115
918	SLV 4	6.39	-2.44	41.18	-15.0365	0.1094	3.6772
918	SLV 5	2.66	4.27	30.13	-11.3728	0.0522	1.5242
918	SLV 6	2.16	3.62	30.71	-11.6009	0.0527	1.2437
918	SLV 7	1.11	-4.18	33.81	-12.5491	0.0674	0.6407
918	SLV 8	0.62	-4.82	34.39	-12.7771	0.068	0.3602
918	SLV 9	-1.94	4.61	23.34	-9.137	0.0122	-1.1198
918	SLV 10	-2.43	3.96	23.93	-9.365	0.0128	-1.4003
918	SLV 11	-3.48	-3.84	27.02	-10.3132	0.0275	-2.0033
918	SLV 12	-3.97	-4.48	27.61	-10.5413	0.028	-2.2839
918	SLV 13	-7.71	2.23	16.55	-6.8776	-0.0292	-4.4369
918	SLV 14	-8.47	1.22	17.46	-7.2307	-0.0284	-4.8712
918	SLV 15	-8.17	-0.31	17.66	-7.2305	-0.0246	-4.7019
918	SLV 16	-8.93	-1.31	18.56	-7.5836	-0.0238	-5.1362
918	CRTFP Ux+	0	0	0	0	0	0
918	CRTFP Ux-	0	0	0	0	0	0
918	CRTFP Uy+	0	0	0	0	0	0
918	CRTFP Uy-	0	0	0	0	0	0
919	SLU 1	-0.63	-0.16	26.26	-9.7707	0.0125	-0.3658
919	SLU 2	-0.66	-0.21	26.24	-9.7657	0.0126	-0.3799
919	SLU 3	-0.65	-0.15	26.86	-9.9801	0.0128	-0.3751
919	SLU 4	-0.67	-0.18	26.85	-9.9771	0.0129	-0.3835
919	SLU 5	-0.67	-0.21	26.62	-9.8969	0.0128	-0.3852
919	SLU 6	-0.66	-0.15	27.24	-10.1113	0.0131	-0.3804
919	SLU 7	-0.67	-0.18	27.23	-10.1083	0.0131	-0.3888
919	SLU 8	-0.65	-0.15	27.01	-10.033	0.013	-0.3764
919	SLU 9	-0.67	-0.19	27	-10.03	0.013	-0.3848
919	SLU 10	-0.7	-0.2	29.32	-10.8382	0.0134	-0.4052
919	SLU 11	-0.69	-0.14	29.94	-11.0526	0.0137	-0.4004
919	SLU 12	-0.71	-0.17	29.93	-11.0496	0.0137	-0.4088
919	SLU 13	-0.71	-0.19	29.7	-10.9693	0.0136	-0.4105
919	SLU 14	-0.7	-0.14	30.32	-11.1838	0.0139	-0.4057
919	SLU 15	-0.72	-0.17	30.31	-11.1808	0.0139	-0.4141
919	SLU 16	-0.7	-0.14	30.09	-11.1055	0.0138	-0.4017
919	SLU 17	-0.71	-0.17	30.08	-11.1025	0.0138	-0.4101
919	SLU 18	-0.7	-0.14	30.66	-11.3028	0.0137	-0.402
919	SLU 19	-0.71	-0.17	30.65	-11.2998	0.0137	-0.4104
919	SLU 20	-0.71	-0.14	31.03	-11.434	0.0139	-0.4073
919	SLU 21	-0.72	-0.17	31.03	-11.431	0.014	-0.4157
919	SLU 22	-0.68	-0.14	29.37	-10.8499	0.0136	-0.3944
919	SLU 23	-0.71	-0.19	29.36	-10.8449	0.0136	-0.4084
919	SLU 24	-0.7	-0.13	29.98	-11.0593	0.0139	-0.4036
919	SLU 25	-0.71	-0.16	29.97	-11.0563	0.0139	-0.4121
919	SLU 26	-0.72	-0.19	29.73	-10.9761	0.0139	-0.4137
919	SLU 27	-0.71	-0.13	30.35	-11.1905	0.0141	-0.4089
919	SLU 28	-0.72	-0.16	30.34	-11.1875	0.0142	-0.4174
919	SLU 29	-0.7	-0.13	30.13	-11.1122	0.014	-0.4049
919	SLU 30	-0.72	-0.16	30.12	-11.1092	0.0141	-0.4134
919	SLU 31	-0.75	-0.17	32.44	-11.9174	0.0145	-0.4338
919	SLU 32	-0.74	-0.12	33.06	-12.1318	0.0147	-0.429
919	SLU 33	-0.76	-0.15	33.05	-12.1288	0.0147	-0.4374
919	SLU 34	-0.76	-0.17	32.82	-12.0486	0.0147	-0.4391
919	SLU 35	-0.75	-0.12	33.43	-12.263	0.0149	-0.4342
919	SLU 36	-0.77	-0.15	33.42	-12.26	0.015	-0.4427
919	SLU 37	-0.75	-0.12	33.21	-12.1847	0.0148	-0.4302
919	SLU 38	-0.76	-0.15	33.2	-12.1817	0.0149	-0.4387
919	SLU 39	-0.75	-0.12	33.77	-12.382	0.0147	-0.4305
919	SLU 40	-0.76	-0.15	33.77	-12.379	0.0148	-0.439
919	SLU 41	-0.76	-0.11	34.15	-12.5132	0.0149	-0.4358
919	SLU 42	-0.77	-0.14	34.14	-12.5102	0.015	-0.4443
919	SLU 43	-0.81	-0.21	33.07	-12.3318	0.0159	-0.4657
919	SLU 44	-0.83	-0.26	33.05	-12.3269	0.016	-0.4798
919	SLU 45	-0.82	-0.21	33.67	-12.5413	0.0162	-0.475
919	SLU 46	-0.84	-0.24	33.66	-12.5383	0.0163	-0.4835
919	SLU 47	-0.84	-0.26	33.43	-12.458	0.0162	-0.4851
919	SLU 48	-0.83	-0.21	34.04	-12.6725	0.0165	-0.4803
919	SLU 49	-0.85	-0.24	34.04	-12.6695	0.0165	-0.4887
919	SLU 50	-0.83	-0.21	33.82	-12.5942	0.0164	-0.4763
919	SLU 51	-0.84	-0.24	33.81	-12.5912	0.0164	-0.4848
919	SLU 52	-0.88	-0.25	36.13	-13.3994	0.0168	-0.5051
919	SLU 53	-0.87	-0.19	36.75	-13.6138	0.0171	-0.5003
919	SLU 54	-0.88	-0.22	36.74	-13.6108	0.0171	-0.5088
919	SLU 55	-0.89	-0.25	36.51	-13.5305	0.017	-0.5104
919	SLU 56	-0.88	-0.19	37.13	-13.745	0.0173	-0.5056
919	SLU 57	-0.89	-0.22	37.12	-13.742	0.0173	-0.5141
919	SLU 58	-0.87	-0.19	36.9	-13.6667	0.0172	-0.5016
919	SLU 59	-0.88	-0.23	36.89	-13.6637	0.0172	-0.5101
919	SLU 60	-0.87	-0.19	37.47	-13.864	0.0171	-0.5019



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
919	SLU 61	-0.88	-0.22	37.46	-13.861	0.0171	-0.5104
919	SLU 62	-0.88	-0.19	37.84	-13.9952	0.0173	-0.5072
919	SLU 63	-0.89	-0.22	37.83	-13.9922	0.0174	-0.5156
919	SLU 64	-0.86	-0.19	36.18	-13.4111	0.017	-0.4943
919	SLU 65	-0.88	-0.24	36.17	-13.4061	0.017	-0.5084
919	SLU 66	-0.87	-0.19	36.79	-13.6205	0.0173	-0.5036
919	SLU 67	-0.89	-0.22	36.78	-13.6175	0.0173	-0.512
919	SLU 68	-0.89	-0.24	36.54	-13.5373	0.0173	-0.5137
919	SLU 69	-0.88	-0.18	37.16	-13.7517	0.0175	-0.5089
919	SLU 70	-0.9	-0.22	37.15	-13.7487	0.0176	-0.5173
919	SLU 71	-0.88	-0.19	36.93	-13.6734	0.0174	-0.5049
919	SLU 72	-0.89	-0.22	36.93	-13.6704	0.0175	-0.5133
919	SLU 73	-0.93	-0.23	39.25	-14.4786	0.0179	-0.5337
919	SLU 74	-0.92	-0.17	39.87	-14.693	0.0181	-0.5289
919	SLU 75	-0.93	-0.2	39.86	-14.69	0.0181	-0.5374
919	SLU 76	-0.93	-0.23	39.62	-14.6097	0.0181	-0.539
919	SLU 77	-0.93	-0.17	40.24	-14.8242	0.0183	-0.5342
919	SLU 78	-0.94	-0.2	40.23	-14.8212	0.0184	-0.5426
919	SLU 79	-0.92	-0.17	40.02	-14.7459	0.0182	-0.5302
919	SLU 80	-0.93	-0.2	40.01	-14.7429	0.0183	-0.5386
919	SLU 81	-0.92	-0.17	40.58	-14.9432	0.0181	-0.5305
919	SLU 82	-0.93	-0.2	40.57	-14.9402	0.0182	-0.5389
919	SLU 83	-0.93	-0.17	40.96	-15.0744	0.0183	-0.5358
919	SLU 84	-0.94	-0.2	40.95	-15.0714	0.0184	-0.5442
919	SLE RA 1	-0.65	-0.15	27.15	-10.079	0.0128	-0.374
919	SLE RA 2	-0.66	-0.19	27.14	-10.0757	0.0129	-0.3833
919	SLE RA 3	-0.66	-0.15	27.55	-10.2187	0.013	-0.3801
919	SLE RA 4	-0.67	-0.17	27.54	-10.2167	0.0131	-0.3858
919	SLE RA 5	-0.67	-0.18	27.39	-10.1631	0.013	-0.3869
919	SLE RA 6	-0.67	-0.15	27.8	-10.3061	0.0132	-0.3837
919	SLE RA 7	-0.68	-0.17	27.79	-10.3041	0.0132	-0.3893
919	SLE RA 8	-0.66	-0.15	27.65	-10.2539	0.0131	-0.381
919	SLE RA 9	-0.67	-0.17	27.64	-10.2519	0.0131	-0.3866
919	SLE RA 10	-0.69	-0.18	29.19	-10.7907	0.0134	-0.4002
919	SLE RA 11	-0.69	-0.14	29.6	-10.9336	0.0136	-0.397
919	SLE RA 12	-0.7	-0.16	29.6	-10.9317	0.0136	-0.4027
919	SLE RA 13	-0.7	-0.18	29.44	-10.8781	0.0136	-0.4037
919	SLE RA 14	-0.69	-0.14	29.85	-11.0211	0.0137	-0.4005
919	SLE RA 15	-0.7	-0.16	29.85	-11.0191	0.0138	-0.4062
919	SLE RA 16	-0.69	-0.14	29.7	-10.9689	0.0137	-0.3979
919	SLE RA 17	-0.7	-0.16	29.7	-10.9669	0.0137	-0.4035
919	SLE RA 18	-0.69	-0.14	30.08	-11.1004	0.0136	-0.3981
919	SLE RA 19	-0.7	-0.16	30.08	-11.0984	0.0136	-0.4037
919	SLE RA 20	-0.7	-0.14	30.33	-11.1879	0.0137	-0.4016
919	SLE RA 21	-0.71	-0.16	30.33	-11.1859	0.0138	-0.4072
919	SLE FR 1	-0.65	-0.15	27.15	-10.079	0.0128	-0.374
919	SLE FR 2	-0.65	-0.16	27.15	-10.0783	0.0128	-0.3758
919	SLE FR 3	-0.65	-0.15	27.25	-10.114	0.0129	-0.3754
919	SLE FR 4	-0.66	-0.15	28.03	-10.3848	0.0131	-0.3831
919	SLE FR 5	-0.66	-0.15	28.13	-10.4204	0.0131	-0.3826
919	SLE FR 6	-0.67	-0.14	28.61	-10.5897	0.0132	-0.386
919	SLE QP 1	-0.65	-0.15	27.15	-10.079	0.0128	-0.374
919	SLE QP 2	-0.66	-0.15	28.03	-10.3854	0.013	-0.3812
919	SLD 1	2.88	0.37	31.65	-11.3689	0.0345	1.6548
919	SLD 2	2.55	-0.04	32.03	-11.5206	0.0345	1.4682
919	SLD 3	2.68	-0.7	32.09	-11.4998	0.0358	1.5409
919	SLD 4	2.36	-1.1	32.47	-11.6515	0.0359	1.3543
919	SLD 5	0.76	1.69	28.39	-10.4548	0.0175	0.4357
919	SLD 6	0.55	1.43	28.64	-10.5545	0.0175	0.3131
919	SLD 7	0.1	-1.85	29.84	-10.8913	0.0219	0.056
919	SLD 8	-0.12	-2.12	30.09	-10.9909	0.0219	-0.0667
919	SLD 9	-1.21	1.82	25.97	-9.7799	0.0042	-0.6957
919	SLD 10	-1.42	1.56	26.22	-9.8796	0.0042	-0.8184
919	SLD 11	-1.87	-1.72	27.42	-10.2164	0.0086	-1.0755
919	SLD 12	-2.08	-1.99	27.67	-10.3161	0.0086	-1.1981
919	SLD 13	-3.68	0.8	23.59	-9.1194	-0.0098	-2.1166
919	SLD 14	-4	0.4	23.97	-9.271	-0.0097	-2.3033
919	SLD 15	-3.88	-0.26	24.02	-9.2503	-0.0084	-2.2306
919	SLD 16	-4.2	-0.66	24.4	-9.402	-0.0084	-2.4172
919	SLV 1	7.62	1.01	36.52	-12.6906	0.0633	4.3808
919	SLV 2	6.86	0.08	37.41	-13.0438	0.0634	3.9462
919	SLV 3	7.16	-1.4	37.52	-12.991	0.0664	4.1157
919	SLV 4	6.4	-2.33	38.41	-13.3442	0.0664	3.6811
919	SLV 5	2.66	4.01	28.91	-10.5603	0.0234	1.5247
919	SLV 6	2.17	3.41	29.48	-10.7885	0.0235	1.2439
919	SLV 7	1.12	-4.01	32.24	-11.5616	0.0337	0.641
919	SLV 8	0.62	-4.61	32.81	-11.7898	0.0338	0.3602
919	SLV 9	-1.95	4.32	23.25	-8.9811	-0.0077	-1.1226
919	SLV 10	-2.44	3.72	23.82	-9.2093	-0.0076	-1.4033
919	SLV 11	-3.49	-3.7	26.57	-9.9824	0.0026	-2.0063
919	SLV 12	-3.98	-4.31	27.15	-10.2106	0.0027	-2.2871
919	SLV 13	-7.72	2.04	17.65	-7.4267	-0.0403	-4.4434
919	SLV 14	-8.48	1.1	18.54	-7.7799	-0.0403	-4.8781
919	SLV 15	-8.18	-0.37	18.64	-7.727	-0.0373	-4.7086
919	SLV 16	-8.94	-1.3	19.54	-8.0803	-0.0372	-5.1432
919	CRTFP Ux+	0	0	0	0	0	0
919	CRTFP Ux-	0	0	0	0	0	0
919	CRTFP Uy+	0	0	0	0	0	0
919	CRTFP Uy-	0	0	0	0	0	0
920	SLU 1	-0.64	-0.19	26.24	-9.8685	-0.011	-0.3664



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
920	SLU 2	-0.66	-0.24	26.22	-9.8635	-0.011	-0.3803
920	SLU 3	-0.65	-0.18	26.84	-10.0808	-0.0113	-0.3757
920	SLU 4	-0.67	-0.21	26.83	-10.0778	-0.0113	-0.384
920	SLU 5	-0.67	-0.24	26.6	-9.9961	-0.0112	-0.3855
920	SLU 6	-0.66	-0.18	27.22	-10.2134	-0.0115	-0.381
920	SLU 7	-0.68	-0.21	27.21	-10.2104	-0.0115	-0.3892
920	SLU 8	-0.65	-0.19	26.99	-10.1338	-0.0113	-0.377
920	SLU 9	-0.67	-0.21	26.98	-10.1307	-0.0113	-0.3853
920	SLU 10	-0.7	-0.23	29.33	-10.9638	-0.0133	-0.406
920	SLU 11	-0.7	-0.18	29.94	-11.1812	-0.0136	-0.4014
920	SLU 12	-0.71	-0.21	29.94	-11.1781	-0.0136	-0.4097
920	SLU 13	-0.71	-0.23	29.7	-11.0965	-0.0135	-0.4112
920	SLU 14	-0.71	-0.18	30.32	-11.3138	-0.0137	-0.4067
920	SLU 15	-0.72	-0.21	30.31	-11.3108	-0.0138	-0.4149
920	SLU 16	-0.7	-0.18	30.09	-11.2341	-0.0136	-0.4027
920	SLU 17	-0.71	-0.21	30.08	-11.2311	-0.0136	-0.411
920	SLU 18	-0.7	-0.18	30.67	-11.4404	-0.0143	-0.4032
920	SLU 19	-0.71	-0.21	30.66	-11.4374	-0.0143	-0.4114
920	SLU 20	-0.71	-0.18	31.05	-11.5731	-0.0144	-0.4084
920	SLU 21	-0.72	-0.21	31.04	-11.57	-0.0144	-0.4167
920	SLU 22	-0.69	-0.17	29.37	-10.972	-0.0131	-0.3953
920	SLU 23	-0.71	-0.22	29.36	-10.9669	-0.0131	-0.4092
920	SLU 24	-0.7	-0.17	29.97	-11.1842	-0.0134	-0.4046
920	SLU 25	-0.72	-0.2	29.96	-11.1812	-0.0134	-0.4129
920	SLU 26	-0.72	-0.22	29.73	-11.0995	-0.0133	-0.4144
920	SLU 27	-0.71	-0.17	30.35	-11.3169	-0.0136	-0.4099
920	SLU 28	-0.73	-0.2	30.34	-11.3138	-0.0136	-0.4181
920	SLU 29	-0.7	-0.17	30.12	-11.2372	-0.0134	-0.4059
920	SLU 30	-0.72	-0.2	30.11	-11.2342	-0.0134	-0.4142
920	SLU 31	-0.75	-0.21	32.46	-12.0673	-0.0154	-0.4348
920	SLU 32	-0.75	-0.16	33.08	-12.2846	-0.0157	-0.4303
920	SLU 33	-0.76	-0.19	33.07	-12.2816	-0.0157	-0.4386
920	SLU 34	-0.76	-0.21	32.84	-12.1999	-0.0156	-0.4401
920	SLU 35	-0.76	-0.16	33.45	-12.4172	-0.0159	-0.4355
920	SLU 36	-0.77	-0.19	33.44	-12.4142	-0.0159	-0.4438
920	SLU 37	-0.75	-0.16	33.23	-12.3375	-0.0157	-0.4316
920	SLU 38	-0.76	-0.19	33.22	-12.3345	-0.0157	-0.4398
920	SLU 39	-0.75	-0.16	33.81	-12.5439	-0.0164	-0.432
920	SLU 40	-0.76	-0.19	33.8	-12.5409	-0.0164	-0.4403
920	SLU 41	-0.76	-0.16	34.18	-12.6765	-0.0166	-0.4373
920	SLU 42	-0.77	-0.19	34.17	-12.6735	-0.0166	-0.4456
920	SLU 43	-0.81	-0.25	33.03	-12.4508	-0.0136	-0.4665
920	SLU 44	-0.83	-0.3	33.02	-12.4457	-0.0136	-0.4803
920	SLU 45	-0.83	-0.25	33.64	-12.663	-0.0139	-0.4757
920	SLU 46	-0.84	-0.28	33.63	-12.66	-0.0139	-0.484
920	SLU 47	-0.84	-0.3	33.39	-12.5783	-0.0137	-0.4855
920	SLU 48	-0.83	-0.25	34.01	-12.7957	-0.014	-0.481
920	SLU 49	-0.85	-0.27	34	-12.7926	-0.014	-0.4893
920	SLU 50	-0.83	-0.25	33.79	-12.716	-0.0139	-0.477
920	SLU 51	-0.84	-0.28	33.78	-12.713	-0.0139	-0.4853
920	SLU 52	-0.88	-0.29	36.12	-13.5461	-0.0159	-0.506
920	SLU 53	-0.87	-0.24	36.74	-13.7634	-0.0161	-0.5014
920	SLU 54	-0.88	-0.27	36.73	-13.7604	-0.0162	-0.5097
920	SLU 55	-0.89	-0.29	36.5	-13.6787	-0.016	-0.5112
920	SLU 56	-0.88	-0.24	37.12	-13.896	-0.0163	-0.5067
920	SLU 57	-0.89	-0.27	37.11	-13.893	-0.0163	-0.515
920	SLU 58	-0.87	-0.24	36.89	-13.8163	-0.0162	-0.5027
920	SLU 59	-0.89	-0.27	36.88	-13.8133	-0.0162	-0.511
920	SLU 60	-0.87	-0.24	37.47	-14.0227	-0.0168	-0.5032
920	SLU 61	-0.89	-0.27	37.46	-14.0197	-0.0168	-0.5115
920	SLU 62	-0.88	-0.24	37.85	-14.1553	-0.017	-0.5084
920	SLU 63	-0.9	-0.27	37.84	-14.1523	-0.017	-0.5167
920	SLU 64	-0.86	-0.23	36.17	-13.5542	-0.0157	-0.4954
920	SLU 65	-0.88	-0.28	36.15	-13.5492	-0.0157	-0.5092
920	SLU 66	-0.88	-0.23	36.77	-13.7665	-0.016	-0.5046
920	SLU 67	-0.89	-0.26	36.76	-13.7635	-0.016	-0.5129
920	SLU 68	-0.89	-0.28	36.53	-13.6818	-0.0159	-0.5144
920	SLU 69	-0.88	-0.23	37.15	-13.8991	-0.0161	-0.5099
920	SLU 70	-0.9	-0.26	37.14	-13.8961	-0.0162	-0.5182
920	SLU 71	-0.88	-0.23	36.92	-13.8194	-0.016	-0.5059
920	SLU 72	-0.89	-0.26	36.91	-13.8164	-0.016	-0.5142
920	SLU 73	-0.93	-0.28	39.26	-14.6495	-0.018	-0.5349
920	SLU 74	-0.92	-0.22	39.88	-14.8668	-0.0183	-0.5303
920	SLU 75	-0.93	-0.25	39.87	-14.8638	-0.0183	-0.5386
920	SLU 76	-0.94	-0.27	39.63	-14.7821	-0.0182	-0.5401
920	SLU 77	-0.93	-0.22	40.25	-14.9994	-0.0184	-0.5356
920	SLU 78	-0.94	-0.25	40.24	-14.9964	-0.0184	-0.5439
920	SLU 79	-0.92	-0.23	40.02	-14.9198	-0.0183	-0.5316
920	SLU 80	-0.94	-0.25	40.01	-14.9167	-0.0183	-0.5399
920	SLU 81	-0.92	-0.23	40.6	-15.1261	-0.019	-0.5321
920	SLU 82	-0.94	-0.25	40.59	-15.1231	-0.019	-0.5404
920	SLU 83	-0.93	-0.22	40.98	-15.2587	-0.0191	-0.5373
920	SLU 84	-0.95	-0.25	40.97	-15.2557	-0.0191	-0.5456
920	SLE RA 1	-0.65	-0.18	27.13	-10.1838	-0.0116	-0.3747
920	SLE RA 2	-0.67	-0.22	27.12	-10.1804	-0.0116	-0.3839
920	SLE RA 3	-0.66	-0.18	27.53	-10.3253	-0.0118	-0.3809
920	SLE RA 4	-0.67	-0.2	27.53	-10.3233	-0.0118	-0.3864
920	SLE RA 5	-0.67	-0.21	27.37	-10.2688	-0.0117	-0.3874
920	SLE RA 6	-0.67	-0.18	27.79	-10.4137	-0.0119	-0.3844
920	SLE RA 7	-0.68	-0.2	27.78	-10.4117	-0.0119	-0.3899



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
920	SLE RA 8	-0.66	-0.18	27.63	-10.3606	-0.0118	-0.3817
920	SLE RA 9	-0.67	-0.2	27.63	-10.3586	-0.0118	-0.3872
920	SLE RA 10	-0.7	-0.21	29.19	-10.914	-0.0131	-0.401
920	SLE RA 11	-0.69	-0.18	29.6	-11.0589	-0.0133	-0.398
920	SLE RA 12	-0.7	-0.2	29.6	-11.0569	-0.0133	-0.4035
920	SLE RA 13	-0.7	-0.21	29.44	-11.0024	-0.0132	-0.4045
920	SLE RA 14	-0.7	-0.18	29.85	-11.1473	-0.0134	-0.4015
920	SLE RA 15	-0.71	-0.2	29.85	-11.1453	-0.0134	-0.407
920	SLE RA 16	-0.69	-0.18	29.7	-11.0942	-0.0133	-0.3988
920	SLE RA 17	-0.7	-0.2	29.7	-11.0922	-0.0133	-0.4044
920	SLE RA 18	-0.69	-0.18	30.09	-11.2317	-0.0138	-0.3992
920	SLE RA 19	-0.7	-0.2	30.08	-11.2297	-0.0138	-0.4047
920	SLE RA 20	-0.7	-0.18	30.34	-11.3201	-0.0139	-0.4027
920	SLE RA 21	-0.71	-0.2	30.33	-11.3181	-0.0139	-0.4082
920	SLE FR 1	-0.65	-0.18	27.13	-10.1838	-0.0116	-0.3747
920	SLE FR 2	-0.65	-0.19	27.13	-10.1831	-0.0116	-0.3765
920	SLE FR 3	-0.65	-0.18	27.23	-10.2192	-0.0116	-0.3761
920	SLE FR 4	-0.67	-0.19	28.02	-10.4975	-0.0123	-0.3839
920	SLE FR 5	-0.67	-0.18	28.12	-10.5335	-0.0123	-0.3834
920	SLE FR 6	-0.67	-0.18	28.61	-10.7078	-0.0127	-0.3869
920	SLE QP 1	-0.65	-0.18	27.13	-10.1838	-0.0116	-0.3747
920	SLE QP 2	-0.66	-0.18	28.02	-10.4982	-0.0122	-0.382
920	SLD 1	2.88	0.31	31.05	-11.1662	0.0045	1.656
920	SLD 2	2.56	-0.06	31.44	-11.3261	0.0042	1.4692
920	SLD 3	2.68	-0.71	31.46	-11.2948	0.0035	1.542
920	SLD 4	2.36	-1.08	31.85	-11.4546	0.0033	1.3553
920	SLD 5	0.76	1.58	28.23	-10.4751	-0.0058	0.4355
920	SLD 6	0.55	1.33	28.48	-10.5801	-0.0059	0.3128
920	SLD 7	0.1	-1.82	29.61	-10.9036	-0.0089	0.0557
920	SLD 8	-0.12	-2.06	29.87	-11.0086	-0.0091	-0.067
920	SLD 9	-1.21	1.7	26.17	-9.9877	-0.0154	-0.6971
920	SLD 10	-1.42	1.45	26.43	-10.0927	-0.0156	-0.8198
920	SLD 11	-1.87	-1.7	27.56	-10.4163	-0.0186	-1.0769
920	SLD 12	-2.09	-1.94	27.81	-10.5213	-0.0187	-1.1996
920	SLD 13	-3.68	0.72	24.19	-9.5417	-0.0277	-2.1194
920	SLD 14	-4.01	0.34	24.58	-9.7015	-0.028	-2.3061
920	SLD 15	-3.88	-0.3	24.61	-9.6703	-0.0287	-2.2333
920	SLD 16	-4.21	-0.68	24.99	-9.8301	-0.029	-2.42
920	SLV 1	7.63	0.93	35.12	-12.0656	0.0268	4.3846
920	SLV 2	6.87	0.06	36.02	-12.4378	0.0262	3.9498
920	SLV 3	7.17	-1.37	36.07	-12.3596	0.0246	4.1195
920	SLV 4	6.41	-2.25	36.97	-12.7318	0.024	3.6847
920	SLV 5	2.66	3.8	28.55	-10.4582	0.0029	1.5252
920	SLV 6	2.17	3.23	29.13	-10.6986	0.0025	1.2444
920	SLV 7	1.12	-3.88	31.72	-11.4381	-0.0044	0.6415
920	SLV 8	0.63	-4.45	32.31	-11.6785	-0.0048	0.3607
920	SLV 9	-1.95	4.08	23.74	-9.3179	-0.0197	-1.1248
920	SLV 10	-2.44	3.52	24.32	-9.5583	-0.0201	-1.4056
920	SLV 11	-3.49	-3.6	26.91	-10.2978	-0.027	-2.0085
920	SLV 12	-3.98	-4.16	27.49	-10.5382	-0.0274	-2.2893
920	SLV 13	-7.73	1.88	19.07	-8.2646	-0.0485	-4.4488
920	SLV 14	-8.49	1.01	19.97	-8.6368	-0.0491	-4.8836
920	SLV 15	-8.19	-0.42	20.02	-8.5585	-0.0507	-4.7139
920	SLV 16	-8.95	-1.3	20.92	-8.9307	-0.0513	-5.1487
920	CRTFP Ux+	0	0	0	0	0	0
920	CRTFP Ux-	0	0	0	0	0	0
920	CRTFP Uy+	0	0	0	0	0	0
920	CRTFP Uy-	0	0	0	0	0	0
921	SLU 1	-0.64	-0.22	26.92	-10.5477	-0.0318	-0.3667
921	SLU 2	-0.66	-0.26	26.91	-10.5443	-0.0319	-0.3803
921	SLU 3	-0.65	-0.21	27.54	-10.7782	-0.0327	-0.376
921	SLU 4	-0.67	-0.24	27.54	-10.7761	-0.0327	-0.3841
921	SLU 5	-0.67	-0.26	27.3	-10.6878	-0.0324	-0.3855
921	SLU 6	-0.66	-0.21	27.93	-10.9217	-0.0332	-0.3812
921	SLU 7	-0.68	-0.24	27.92	-10.9196	-0.0332	-0.3893
921	SLU 8	-0.65	-0.22	27.7	-10.8347	-0.0328	-0.3772
921	SLU 9	-0.67	-0.24	27.69	-10.8326	-0.0329	-0.3853
921	SLU 10	-0.7	-0.26	30.13	-11.7498	-0.037	-0.4063
921	SLU 11	-0.7	-0.21	30.77	-11.9837	-0.0377	-0.402
921	SLU 12	-0.71	-0.24	30.76	-11.9816	-0.0378	-0.4101
921	SLU 13	-0.71	-0.26	30.52	-11.8933	-0.0375	-0.4116
921	SLU 14	-0.71	-0.21	31.15	-12.1272	-0.0382	-0.4073
921	SLU 15	-0.72	-0.24	31.14	-12.1251	-0.0383	-0.4154
921	SLU 16	-0.7	-0.22	30.92	-12.0402	-0.0379	-0.4033
921	SLU 17	-0.71	-0.24	30.91	-12.0381	-0.0379	-0.4114
921	SLU 18	-0.7	-0.22	31.53	-12.2698	-0.039	-0.404
921	SLU 19	-0.71	-0.25	31.52	-12.2678	-0.0391	-0.4121
921	SLU 20	-0.71	-0.22	31.91	-12.4133	-0.0395	-0.4092
921	SLU 21	-0.72	-0.24	31.9	-12.4113	-0.0396	-0.4173
921	SLU 22	-0.69	-0.2	30.17	-11.7539	-0.0367	-0.396
921	SLU 23	-0.71	-0.25	30.16	-11.7505	-0.0368	-0.4095
921	SLU 24	-0.7	-0.2	30.79	-11.9844	-0.0376	-0.4052
921	SLU 25	-0.72	-0.23	30.78	-11.9823	-0.0377	-0.4133
921	SLU 26	-0.72	-0.25	30.54	-11.894	-0.0373	-0.4147
921	SLU 27	-0.71	-0.2	31.18	-12.1279	-0.0381	-0.4104
921	SLU 28	-0.73	-0.23	31.17	-12.1258	-0.0382	-0.4185
921	SLU 29	-0.71	-0.2	30.94	-12.0408	-0.0377	-0.4064
921	SLU 30	-0.72	-0.23	30.93	-12.0388	-0.0378	-0.4146
921	SLU 31	-0.76	-0.25	33.38	-12.956	-0.0419	-0.4356
921	SLU 32	-0.75	-0.2	34.01	-13.1899	-0.0427	-0.4313





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
921	SLU 33	-0.76	-0.23	34.01	-13.1878	-0.0427	-0.4394
921	SLU 34	-0.76	-0.25	33.77	-13.0995	-0.0424	-0.4408
921	SLU 35	-0.76	-0.2	34.4	-13.3334	-0.0432	-0.4365
921	SLU 36	-0.77	-0.23	34.39	-13.3313	-0.0432	-0.4446
921	SLU 37	-0.75	-0.2	34.17	-13.2463	-0.0428	-0.4325
921	SLU 38	-0.76	-0.23	34.16	-13.2443	-0.0429	-0.4406
921	SLU 39	-0.75	-0.2	34.77	-13.476	-0.044	-0.4332
921	SLU 40	-0.77	-0.23	34.77	-13.474	-0.044	-0.4413
921	SLU 41	-0.76	-0.2	35.16	-13.6195	-0.0445	-0.4384
921	SLU 42	-0.77	-0.23	35.15	-13.6175	-0.0445	-0.4466
921	SLU 43	-0.81	-0.29	33.89	-13.2984	-0.0396	-0.4667
921	SLU 44	-0.83	-0.33	33.87	-13.295	-0.0397	-0.4803
921	SLU 45	-0.83	-0.28	34.51	-13.5289	-0.0405	-0.476
921	SLU 46	-0.84	-0.31	34.5	-13.5269	-0.0406	-0.4841
921	SLU 47	-0.84	-0.33	34.26	-13.4385	-0.0402	-0.4855
921	SLU 48	-0.83	-0.28	34.89	-13.6724	-0.041	-0.4812
921	SLU 49	-0.85	-0.31	34.89	-13.6704	-0.0411	-0.4893
921	SLU 50	-0.83	-0.29	34.66	-13.5854	-0.0406	-0.4772
921	SLU 51	-0.84	-0.31	34.65	-13.5834	-0.0407	-0.4853
921	SLU 52	-0.88	-0.33	37.1	-14.5005	-0.0448	-0.5063
921	SLU 53	-0.87	-0.28	37.73	-14.7344	-0.0456	-0.502
921	SLU 54	-0.89	-0.31	37.72	-14.7324	-0.0456	-0.5101
921	SLU 55	-0.89	-0.33	37.48	-14.644	-0.0453	-0.5116
921	SLU 56	-0.88	-0.28	38.12	-14.8779	-0.0461	-0.5073
921	SLU 57	-0.89	-0.31	38.11	-14.8759	-0.0461	-0.5154
921	SLU 58	-0.87	-0.29	37.88	-14.7909	-0.0457	-0.5033
921	SLU 59	-0.89	-0.31	37.87	-14.7889	-0.0458	-0.5114
921	SLU 60	-0.87	-0.29	38.49	-15.0206	-0.0469	-0.504
921	SLU 61	-0.89	-0.32	38.48	-15.0185	-0.0469	-0.5121
921	SLU 62	-0.88	-0.29	38.88	-15.1641	-0.0474	-0.5092
921	SLU 63	-0.9	-0.31	38.87	-15.162	-0.0474	-0.5173
921	SLU 64	-0.86	-0.27	37.13	-14.5046	-0.0446	-0.496
921	SLU 65	-0.88	-0.32	37.12	-14.5012	-0.0447	-0.5095
921	SLU 66	-0.88	-0.27	37.76	-14.7351	-0.0454	-0.5052
921	SLU 67	-0.89	-0.3	37.75	-14.7331	-0.0455	-0.5133
921	SLU 68	-0.89	-0.32	37.51	-14.6447	-0.0452	-0.5147
921	SLU 69	-0.89	-0.27	38.14	-14.8786	-0.0459	-0.5104
921	SLU 70	-0.9	-0.3	38.13	-14.8766	-0.046	-0.5185
921	SLU 71	-0.88	-0.27	37.91	-14.7916	-0.0456	-0.5064
921	SLU 72	-0.89	-0.3	37.9	-14.7896	-0.0457	-0.5145
921	SLU 73	-0.93	-0.32	40.34	-15.7067	-0.0497	-0.5356
921	SLU 74	-0.92	-0.27	40.98	-15.9406	-0.0505	-0.5313
921	SLU 75	-0.94	-0.3	40.97	-15.9386	-0.0506	-0.5394
921	SLU 76	-0.94	-0.32	40.73	-15.8502	-0.0503	-0.5408
921	SLU 77	-0.93	-0.27	41.36	-16.0841	-0.051	-0.5365
921	SLU 78	-0.94	-0.3	41.36	-16.0821	-0.0511	-0.5446
921	SLU 79	-0.92	-0.27	41.13	-15.9971	-0.0506	-0.5325
921	SLU 80	-0.94	-0.3	41.12	-15.9951	-0.0507	-0.5406
921	SLU 81	-0.92	-0.27	41.74	-16.2268	-0.0518	-0.5332
921	SLU 82	-0.94	-0.3	41.73	-16.2247	-0.0519	-0.5413
921	SLU 83	-0.93	-0.27	42.12	-16.3702	-0.0523	-0.5384
921	SLU 84	-0.95	-0.3	42.12	-16.3682	-0.0524	-0.5466
921	SLE RA 1	-0.65	-0.21	27.85	-10.8923	-0.0332	-0.3751
921	SLE RA 2	-0.67	-0.24	27.84	-10.89	-0.0333	-0.3841
921	SLE RA 3	-0.66	-0.21	28.27	-11.046	-0.0338	-0.3812
921	SLE RA 4	-0.67	-0.23	28.26	-11.0446	-0.0338	-0.3866
921	SLE RA 5	-0.67	-0.24	28.1	-10.9857	-0.0336	-0.3876
921	SLE RA 6	-0.67	-0.21	28.52	-11.1416	-0.0341	-0.3847
921	SLE RA 7	-0.68	-0.23	28.52	-11.1403	-0.0342	-0.3901
921	SLE RA 8	-0.66	-0.21	28.37	-11.0836	-0.0339	-0.3821
921	SLE RA 9	-0.67	-0.23	28.36	-11.0823	-0.0339	-0.3875
921	SLE RA 10	-0.7	-0.24	29.99	-11.6937	-0.0367	-0.4015
921	SLE RA 11	-0.69	-0.21	30.41	-11.8496	-0.0372	-0.3986
921	SLE RA 12	-0.7	-0.23	30.41	-11.8483	-0.0372	-0.404
921	SLE RA 13	-0.7	-0.24	30.25	-11.7894	-0.037	-0.405
921	SLE RA 14	-0.7	-0.21	30.67	-11.9453	-0.0375	-0.4021
921	SLE RA 15	-0.71	-0.23	30.67	-11.9439	-0.0375	-0.4075
921	SLE RA 16	-0.69	-0.21	30.51	-11.8873	-0.0373	-0.3994
921	SLE RA 17	-0.7	-0.23	30.51	-11.8859	-0.0373	-0.4049
921	SLE RA 18	-0.69	-0.21	30.92	-12.0404	-0.038	-0.3999
921	SLE RA 19	-0.7	-0.23	30.91	-12.039	-0.0381	-0.4053
921	SLE RA 20	-0.7	-0.21	31.18	-12.1361	-0.0384	-0.4034
921	SLE RA 21	-0.71	-0.23	31.17	-12.1347	-0.0384	-0.4088
921	SLE FR 1	-0.65	-0.21	27.85	-10.8923	-0.0332	-0.3751
921	SLE FR 2	-0.65	-0.22	27.85	-10.8918	-0.0332	-0.3769
921	SLE FR 3	-0.65	-0.21	27.95	-10.9306	-0.0333	-0.3765
921	SLE FR 4	-0.67	-0.22	28.77	-11.2363	-0.0347	-0.3843
921	SLE FR 5	-0.67	-0.21	28.88	-11.275	-0.0348	-0.3839
921	SLE FR 6	-0.67	-0.21	29.39	-11.4663	-0.0356	-0.3875
921	SLE QP 1	-0.65	-0.21	27.85	-10.8923	-0.0332	-0.3751
921	SLE QP 2	-0.66	-0.21	28.77	-11.2367	-0.0347	-0.3825
921	SLD 1	2.88	0.26	31.38	-11.7246	-0.0235	1.657
921	SLD 2	2.56	-0.09	31.77	-11.8987	-0.024	1.4703
921	SLD 3	2.69	-0.72	31.8	-11.8707	-0.0247	1.5431
921	SLD 4	2.36	-1.07	32.2	-12.0448	-0.0251	1.3564
921	SLD 5	0.76	1.49	28.84	-11.1304	-0.0295	0.4354
921	SLD 6	0.55	1.26	29.1	-11.2448	-0.0298	0.3127
921	SLD 7	0.1	-1.8	30.25	-11.6174	-0.0333	0.0558
921	SLD 8	-0.12	-2.03	30.51	-11.7318	-0.0336	-0.0669
921	SLD 9	-1.21	1.6	27.03	-10.7417	-0.0357	-0.6982



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
921	SLD 10	-1.43	1.37	27.3	-10.8561	-0.036	-0.8208
921	SLD 11	-1.87	-1.68	28.44	-11.2286	-0.0395	-1.0778
921	SLD 12	-2.09	-1.91	28.7	-11.343	-0.0398	-1.2005
921	SLD 13	-3.69	0.65	25.35	-10.4287	-0.0442	-2.1215
921	SLD 14	-4.01	0.3	25.75	-10.6028	-0.0447	-2.3082
921	SLD 15	-3.89	-0.34	25.77	-10.5748	-0.0453	-2.2354
921	SLD 16	-4.21	-0.69	26.17	-10.7488	-0.0458	-2.4221
921	SLV 1	7.63	0.86	34.88	-12.3836	-0.0086	4.3877
921	SLV 2	6.88	0.04	35.81	-12.7889	-0.0097	3.953
921	SLV 3	7.17	-1.37	35.84	-12.7164	-0.0112	4.1227
921	SLV 4	6.41	-2.19	36.77	-13.1218	-0.0123	3.6879
921	SLV 5	2.66	3.63	28.98	-11.0058	-0.0227	1.5257
921	SLV 6	2.17	3.1	29.58	-11.2676	-0.0234	1.2449
921	SLV 7	1.12	-3.8	32.2	-12.1154	-0.0314	0.6422
921	SLV 8	0.63	-4.33	32.8	-12.3773	-0.0321	0.3615
921	SLV 9	-1.96	3.9	24.75	-10.0962	-0.0372	-1.1265
921	SLV 10	-2.45	3.37	25.35	-10.358	-0.0379	-1.4073
921	SLV 11	-3.49	-3.53	27.97	-11.2058	-0.0459	-2.01
921	SLV 12	-3.98	-4.06	28.56	-11.4677	-0.0466	-2.2908
921	SLV 13	-7.74	1.76	20.77	-9.3516	-0.057	-4.453
921	SLV 14	-8.5	0.94	21.7	-9.757	-0.0581	-4.8877
921	SLV 15	-8.2	-0.47	21.74	-9.6845	-0.0596	-4.7181
921	SLV 16	-8.96	-1.29	22.67	-10.0899	-0.0607	-5.1528
921	CRTFP Ux+	0	0	0	0	0	0
921	CRTFP Ux-	0	0	0	0	0	0
921	CRTFP Uy+	0	0	0	0	0	0
921	CRTFP Uy-	0	0	0	0	0	0
922	SLU 1	-0.64	-0.24	28.21	-11.7301	-0.0486	-0.3668
922	SLU 2	-0.66	-0.29	28.2	-11.73	-0.0488	-0.38
922	SLU 3	-0.65	-0.24	28.86	-11.9922	-0.0499	-0.376
922	SLU 4	-0.67	-0.27	28.86	-11.9921	-0.05	-0.3839
922	SLU 5	-0.67	-0.29	28.61	-11.8925	-0.0496	-0.3852
922	SLU 6	-0.66	-0.24	29.27	-12.1547	-0.0507	-0.3812
922	SLU 7	-0.68	-0.27	29.27	-12.1546	-0.0508	-0.3891
922	SLU 8	-0.65	-0.24	29.02	-12.0551	-0.0502	-0.3772
922	SLU 9	-0.67	-0.27	29.02	-12.055	-0.0503	-0.3851
922	SLU 10	-0.71	-0.29	31.62	-13.1081	-0.0561	-0.4065
922	SLU 11	-0.7	-0.25	32.28	-13.3703	-0.0572	-0.4024
922	SLU 12	-0.71	-0.27	32.28	-13.3702	-0.0573	-0.4104
922	SLU 13	-0.71	-0.29	32.03	-13.2706	-0.0569	-0.4117
922	SLU 14	-0.71	-0.25	32.69	-13.5328	-0.058	-0.4076
922	SLU 15	-0.72	-0.27	32.69	-13.5327	-0.0581	-0.4156
922	SLU 16	-0.7	-0.25	32.44	-13.4332	-0.0575	-0.4037
922	SLU 17	-0.71	-0.27	32.44	-13.4331	-0.0576	-0.4116
922	SLU 18	-0.7	-0.25	33.09	-13.6988	-0.059	-0.4046
922	SLU 19	-0.72	-0.28	33.09	-13.6987	-0.0592	-0.4125
922	SLU 20	-0.71	-0.25	33.5	-13.8613	-0.0598	-0.4098
922	SLU 21	-0.72	-0.28	33.5	-13.8612	-0.0599	-0.4177
922	SLU 22	-0.69	-0.23	31.65	-13.1077	-0.0559	-0.3964
922	SLU 23	-0.71	-0.28	31.64	-13.1075	-0.0561	-0.4096
922	SLU 24	-0.7	-0.23	32.31	-13.3698	-0.0572	-0.4056
922	SLU 25	-0.72	-0.26	32.3	-13.3697	-0.0573	-0.4135
922	SLU 26	-0.72	-0.28	32.05	-13.27	-0.0568	-0.4148
922	SLU 27	-0.71	-0.23	32.71	-13.5323	-0.0579	-0.4108
922	SLU 28	-0.73	-0.26	32.71	-13.5322	-0.0581	-0.4187
922	SLU 29	-0.71	-0.23	32.46	-13.4327	-0.0574	-0.4068
922	SLU 30	-0.72	-0.26	32.46	-13.4326	-0.0575	-0.4147
922	SLU 31	-0.76	-0.28	35.06	-14.4856	-0.0634	-0.4361
922	SLU 32	-0.75	-0.23	35.73	-14.7479	-0.0645	-0.432
922	SLU 33	-0.76	-0.26	35.72	-14.7478	-0.0646	-0.44
922	SLU 34	-0.77	-0.28	35.47	-14.6481	-0.0641	-0.4413
922	SLU 35	-0.76	-0.23	36.13	-14.9104	-0.0652	-0.4372
922	SLU 36	-0.77	-0.26	36.13	-14.9103	-0.0654	-0.4452
922	SLU 37	-0.75	-0.24	35.88	-14.8108	-0.0647	-0.4332
922	SLU 38	-0.77	-0.26	35.88	-14.8107	-0.0648	-0.4412
922	SLU 39	-0.75	-0.24	36.54	-15.0764	-0.0663	-0.4342
922	SLU 40	-0.77	-0.27	36.53	-15.0763	-0.0664	-0.4421
922	SLU 41	-0.76	-0.24	36.94	-15.2389	-0.0671	-0.4394
922	SLU 42	-0.78	-0.27	36.94	-15.2388	-0.0672	-0.4473
922	SLU 43	-0.81	-0.32	35.49	-14.7769	-0.0607	-0.4667
922	SLU 44	-0.83	-0.36	35.48	-14.7767	-0.0609	-0.4799
922	SLU 45	-0.83	-0.32	36.15	-15.0399	-0.062	-0.4759
922	SLU 46	-0.84	-0.34	36.14	-15.0389	-0.0621	-0.4838
922	SLU 47	-0.84	-0.36	35.89	-14.9392	-0.0617	-0.4851
922	SLU 48	-0.83	-0.32	36.55	-15.2015	-0.0628	-0.4811
922	SLU 49	-0.85	-0.34	36.55	-15.2014	-0.0629	-0.489
922	SLU 50	-0.83	-0.32	36.3	-15.1019	-0.0623	-0.4771
922	SLU 51	-0.84	-0.35	36.3	-15.1018	-0.0624	-0.485
922	SLU 52	-0.88	-0.37	38.9	-16.1548	-0.0682	-0.5064
922	SLU 53	-0.87	-0.32	39.57	-16.4171	-0.0693	-0.5023
922	SLU 54	-0.89	-0.35	39.56	-16.417	-0.0694	-0.5103
922	SLU 55	-0.89	-0.37	39.31	-16.3173	-0.069	-0.5116
922	SLU 56	-0.88	-0.32	39.97	-16.5796	-0.0701	-0.5075
922	SLU 57	-0.89	-0.35	39.97	-16.5795	-0.0702	-0.5155
922	SLU 58	-0.87	-0.33	39.72	-16.48	-0.0696	-0.5035
922	SLU 59	-0.89	-0.35	39.72	-16.4799	-0.0697	-0.5115
922	SLU 60	-0.88	-0.33	40.38	-16.7456	-0.0711	-0.5045
922	SLU 61	-0.89	-0.35	40.37	-16.7455	-0.0713	-0.5124
922	SLU 62	-0.88	-0.33	40.78	-16.9081	-0.0719	-0.5097
922	SLU 63	-0.9	-0.35	40.78	-16.908	-0.072	-0.5176



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
922	SLU 64	-0.86	-0.31	38.93	-16.1544	-0.068	-0.4963
922	SLU 65	-0.88	-0.35	38.92	-16.1543	-0.0682	-0.5095
922	SLU 66	-0.88	-0.31	39.59	-16.4165	-0.0693	-0.5055
922	SLU 67	-0.89	-0.33	39.58	-16.4164	-0.0694	-0.5134
922	SLU 68	-0.89	-0.35	39.33	-16.3168	-0.0689	-0.5147
922	SLU 69	-0.89	-0.31	40	-16.579	-0.07	-0.5107
922	SLU 70	-0.9	-0.33	39.99	-16.5789	-0.0702	-0.5186
922	SLU 71	-0.88	-0.31	39.75	-16.4794	-0.0695	-0.5067
922	SLU 72	-0.89	-0.34	39.74	-16.4793	-0.0696	-0.5146
922	SLU 73	-0.93	-0.36	42.34	-17.5324	-0.0755	-0.536
922	SLU 74	-0.92	-0.31	43.01	-17.7946	-0.0766	-0.5319
922	SLU 75	-0.94	-0.34	43	-17.7945	-0.0767	-0.5399
922	SLU 76	-0.94	-0.36	42.75	-17.6948	-0.0762	-0.5412
922	SLU 77	-0.93	-0.31	43.42	-17.9571	-0.0773	-0.5371
922	SLU 78	-0.95	-0.34	43.41	-17.957	-0.0775	-0.5451
922	SLU 79	-0.93	-0.31	43.17	-17.8575	-0.0768	-0.5331
922	SLU 80	-0.94	-0.34	43.16	-17.8574	-0.0769	-0.5411
922	SLU 81	-0.93	-0.32	43.82	-18.1231	-0.0784	-0.5341
922	SLU 82	-0.94	-0.34	43.81	-18.123	-0.0785	-0.542
922	SLU 83	-0.94	-0.32	44.23	-18.2856	-0.0792	-0.5393
922	SLU 84	-0.95	-0.34	44.22	-18.2855	-0.0793	-0.5472
922	SLE RA 1	-0.65	-0.24	29.19	-12.1237	-0.0507	-0.3752
922	SLE RA 2	-0.67	-0.27	29.19	-12.1236	-0.0508	-0.3841
922	SLE RA 3	-0.66	-0.24	29.63	-12.2985	-0.0516	-0.3814
922	SLE RA 4	-0.67	-0.26	29.63	-12.2984	-0.0516	-0.3867
922	SLE RA 5	-0.67	-0.27	29.46	-12.2319	-0.0513	-0.3875
922	SLE RA 6	-0.67	-0.24	29.9	-12.4068	-0.0521	-0.3848
922	SLE RA 7	-0.68	-0.26	29.9	-12.4067	-0.0522	-0.3901
922	SLE RA 8	-0.66	-0.24	29.73	-12.3404	-0.0517	-0.3822
922	SLE RA 9	-0.67	-0.26	29.73	-12.3403	-0.0518	-0.3875
922	SLE RA 10	-0.7	-0.27	31.47	-13.0423	-0.0557	-0.4017
922	SLE RA 11	-0.69	-0.24	31.91	-13.2172	-0.0564	-0.399
922	SLE RA 12	-0.7	-0.26	31.91	-13.2171	-0.0565	-0.4043
922	SLE RA 13	-0.7	-0.27	31.74	-13.1507	-0.0562	-0.4052
922	SLE RA 14	-0.7	-0.24	32.18	-13.3255	-0.0569	-0.4025
922	SLE RA 15	-0.71	-0.26	32.18	-13.3254	-0.057	-0.4078
922	SLE RA 16	-0.69	-0.24	32.01	-13.2591	-0.0566	-0.3998
922	SLE RA 17	-0.7	-0.26	32.01	-13.259	-0.0567	-0.4051
922	SLE RA 18	-0.69	-0.24	32.45	-13.4362	-0.0576	-0.4004
922	SLE RA 19	-0.7	-0.26	32.45	-13.4361	-0.0577	-0.4057
922	SLE RA 20	-0.7	-0.24	32.72	-13.5445	-0.0582	-0.4039
922	SLE RA 21	-0.71	-0.26	32.72	-13.5445	-0.0582	-0.4092
922	SLE FR 1	-0.65	-0.24	29.19	-12.1237	-0.0507	-0.3752
922	SLE FR 2	-0.65	-0.25	29.19	-12.1237	-0.0507	-0.377
922	SLE FR 3	-0.65	-0.24	29.3	-12.1671	-0.0509	-0.3766
922	SLE FR 4	-0.67	-0.25	30.17	-12.5174	-0.0528	-0.3846
922	SLE FR 5	-0.67	-0.24	30.28	-12.5608	-0.053	-0.3842
922	SLE FR 6	-0.67	-0.24	30.82	-12.78	-0.0542	-0.3878
922	SLE QP 1	-0.65	-0.24	29.19	-12.1237	-0.0507	-0.3752
922	SLE QP 2	-0.66	-0.24	30.17	-12.5175	-0.0528	-0.3828
922	SLD 1	2.89	0.22	32.51	-12.9536	-0.0468	1.6578
922	SLD 2	2.56	-0.11	32.93	-13.1456	-0.0474	1.4713
922	SLD 3	2.69	-0.75	32.97	-13.1353	-0.0485	1.544
922	SLD 4	2.36	-1.08	33.38	-13.3273	-0.049	1.3575
922	SLD 5	0.76	1.42	30.11	-12.3384	-0.0484	0.4353
922	SLD 6	0.55	1.2	30.38	-12.4646	-0.0487	0.3128
922	SLD 7	0.1	-1.8	31.62	-12.9441	-0.054	0.0559
922	SLD 8	-0.11	-2.01	31.9	-13.0703	-0.0543	-0.0666
922	SLD 9	-1.21	1.53	28.44	-11.9646	-0.0512	-0.699
922	SLD 10	-1.43	1.31	28.72	-12.0908	-0.0516	-0.8215
922	SLD 11	-1.87	-1.68	29.96	-12.5704	-0.0568	-1.0784
922	SLD 12	-2.09	-1.9	30.23	-12.6965	-0.0572	-1.2009
922	SLD 13	-3.69	0.59	26.96	-11.7076	-0.0565	-2.1231
922	SLD 14	-4.02	0.26	27.37	-11.8996	-0.057	-2.3096
922	SLD 15	-3.89	-0.37	27.41	-11.8894	-0.0582	-2.2369
922	SLD 16	-4.22	-0.7	27.83	-12.0813	-0.0587	-2.4234
922	SLV 1	7.64	0.79	35.67	-13.545	-0.039	4.3901
922	SLV 2	6.88	0.02	36.63	-13.992	-0.0402	3.9557
922	SLV 3	7.18	-1.39	36.71	-13.9581	-0.0428	4.1252
922	SLV 4	6.42	-2.16	37.67	-14.4051	-0.044	3.6908
922	SLV 5	2.66	3.51	30.08	-12.1219	-0.0427	1.5259
922	SLV 6	2.17	3.02	30.7	-12.4106	-0.0434	1.2454
922	SLV 7	1.12	-3.76	33.53	-13.4989	-0.0553	0.643
922	SLV 8	0.63	-4.26	34.16	-13.7876	-0.0561	0.3624
922	SLV 9	-1.96	3.78	26.18	-11.2473	-0.0494	-1.128
922	SLV 10	-2.45	3.28	26.81	-11.5361	-0.0502	-1.4086
922	SLV 11	-3.5	-3.5	29.63	-12.6243	-0.0621	-2.011
922	SLV 12	-3.99	-4	30.26	-12.913	-0.0629	-2.2915
922	SLV 13	-7.75	1.68	22.67	-10.6298	-0.0616	-4.4564
922	SLV 14	-8.51	0.91	23.63	-11.0768	-0.0628	-4.8908
922	SLV 15	-8.21	-0.51	23.71	-11.0429	-0.0654	-4.7213
922	SLV 16	-8.97	-1.28	24.67	-11.4899	-0.0666	-5.1557
922	CRTFP Ux+	0	0	0	0	0	0
922	CRTFP Ux-	0	0	0	0	0	0
922	CRTFP Uy+	0	0	0	0	0	0
922	CRTFP Uy-	0	0	0	0	0	0
923	SLU 1	-0.64	-0.26	29.94	-13.3104	-0.0598	-0.3666
923	SLU 2	-0.66	-0.31	29.94	-13.3149	-0.06	-0.3796
923	SLU 3	-0.65	-0.26	30.64	-13.6146	-0.0614	-0.3758
923	SLU 4	-0.67	-0.29	30.64	-13.6173	-0.0615	-0.3835



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
923	SLU 5	-0.67	-0.31	30.37	-13.5027	-0.061	-0.3847
923	SLU 6	-0.66	-0.26	31.08	-13.8025	-0.0623	-0.3809
923	SLU 7	-0.67	-0.29	31.08	-13.8052	-0.0625	-0.3887
923	SLU 8	-0.65	-0.27	30.81	-13.686	-0.0617	-0.377
923	SLU 9	-0.67	-0.29	30.81	-13.6887	-0.0618	-0.3847
923	SLU 10	-0.71	-0.31	33.62	-14.9192	-0.0688	-0.4065
923	SLU 11	-0.7	-0.27	34.32	-15.2189	-0.0702	-0.4027
923	SLU 12	-0.71	-0.29	34.32	-15.2217	-0.0703	-0.4104
923	SLU 13	-0.71	-0.32	34.05	-15.1071	-0.0698	-0.4116
923	SLU 14	-0.71	-0.27	34.76	-15.4068	-0.0711	-0.4078
923	SLU 15	-0.72	-0.3	34.75	-15.4095	-0.0713	-0.4156
923	SLU 16	-0.7	-0.27	34.49	-15.2904	-0.0704	-0.4038
923	SLU 17	-0.71	-0.3	34.49	-15.2931	-0.0706	-0.4116
923	SLU 18	-0.7	-0.27	35.2	-15.6022	-0.0723	-0.405
923	SLU 19	-0.72	-0.3	35.19	-15.605	-0.0725	-0.4128
923	SLU 20	-0.71	-0.27	35.63	-15.7901	-0.0733	-0.4102
923	SLU 21	-0.73	-0.3	35.63	-15.7928	-0.0734	-0.418
923	SLU 22	-0.69	-0.25	33.64	-14.9139	-0.0685	-0.3966
923	SLU 23	-0.71	-0.3	33.64	-14.9185	-0.0688	-0.4096
923	SLU 24	-0.7	-0.25	34.34	-15.2182	-0.0701	-0.4058
923	SLU 25	-0.72	-0.28	34.34	-15.2209	-0.0703	-0.4135
923	SLU 26	-0.72	-0.3	34.07	-15.1063	-0.0698	-0.4147
923	SLU 27	-0.71	-0.25	34.78	-15.406	-0.0711	-0.4109
923	SLU 28	-0.73	-0.28	34.78	-15.4088	-0.0713	-0.4187
923	SLU 29	-0.71	-0.25	34.51	-15.2896	-0.0704	-0.407
923	SLU 30	-0.72	-0.28	34.51	-15.2923	-0.0706	-0.4147
923	SLU 31	-0.76	-0.3	37.32	-16.5228	-0.0776	-0.4365
923	SLU 32	-0.75	-0.26	38.02	-16.8225	-0.0789	-0.4326
923	SLU 33	-0.76	-0.28	38.02	-16.8253	-0.0791	-0.4404
923	SLU 34	-0.77	-0.3	37.75	-16.7106	-0.0785	-0.4416
923	SLU 35	-0.76	-0.26	38.45	-17.0104	-0.0799	-0.4378
923	SLU 36	-0.77	-0.28	38.45	-17.0131	-0.08	-0.4456
923	SLU 37	-0.75	-0.26	38.19	-16.8939	-0.0792	-0.4338
923	SLU 38	-0.77	-0.29	38.18	-16.8967	-0.0794	-0.4416
923	SLU 39	-0.76	-0.26	38.89	-17.2058	-0.0811	-0.435
923	SLU 40	-0.77	-0.29	38.89	-17.2086	-0.0813	-0.4428
923	SLU 41	-0.76	-0.26	39.33	-17.3937	-0.082	-0.4402
923	SLU 42	-0.78	-0.29	39.33	-17.3964	-0.0822	-0.448
923	SLU 43	-0.81	-0.35	37.66	-16.7537	-0.0747	-0.4663
923	SLU 44	-0.83	-0.39	37.66	-16.7582	-0.075	-0.4793
923	SLU 45	-0.83	-0.34	38.36	-17.0579	-0.0763	-0.4755
923	SLU 46	-0.84	-0.37	38.36	-17.0607	-0.0765	-0.4833
923	SLU 47	-0.84	-0.39	38.09	-16.946	-0.0759	-0.4845
923	SLU 48	-0.83	-0.35	38.79	-17.2458	-0.0772	-0.4807
923	SLU 49	-0.85	-0.37	38.79	-17.2485	-0.0774	-0.4884
923	SLU 50	-0.83	-0.35	38.53	-17.1293	-0.0766	-0.4767
923	SLU 51	-0.84	-0.37	38.52	-17.1321	-0.0767	-0.4844
923	SLU 52	-0.88	-0.4	41.33	-18.3625	-0.0837	-0.5062
923	SLU 53	-0.87	-0.35	42.04	-18.6623	-0.0851	-0.5024
923	SLU 54	-0.89	-0.38	42.04	-18.665	-0.0852	-0.5101
923	SLU 55	-0.89	-0.4	41.77	-18.5504	-0.0847	-0.5113
923	SLU 56	-0.88	-0.35	42.47	-18.8501	-0.086	-0.5075
923	SLU 57	-0.89	-0.38	42.47	-18.8528	-0.0862	-0.5153
923	SLU 58	-0.87	-0.35	42.2	-18.7337	-0.0854	-0.5036
923	SLU 59	-0.89	-0.38	42.2	-18.7364	-0.0855	-0.5113
923	SLU 60	-0.88	-0.36	42.91	-19.0456	-0.0872	-0.5047
923	SLU 61	-0.89	-0.38	42.91	-19.0483	-0.0874	-0.5125
923	SLU 62	-0.89	-0.36	43.34	-19.2334	-0.0882	-0.5099
923	SLU 63	-0.9	-0.38	43.34	-19.2361	-0.0883	-0.5177
923	SLU 64	-0.86	-0.34	41.36	-18.3572	-0.0835	-0.4963
923	SLU 65	-0.88	-0.38	41.35	-18.3618	-0.0837	-0.5093
923	SLU 66	-0.88	-0.33	42.06	-18.6615	-0.0851	-0.5055
923	SLU 67	-0.89	-0.36	42.06	-18.6642	-0.0852	-0.5132
923	SLU 68	-0.89	-0.38	41.79	-18.5496	-0.0847	-0.5144
923	SLU 69	-0.89	-0.33	42.49	-18.8494	-0.086	-0.5106
923	SLU 70	-0.9	-0.36	42.49	-18.8521	-0.0862	-0.5184
923	SLU 71	-0.88	-0.34	42.22	-18.7329	-0.0853	-0.5067
923	SLU 72	-0.89	-0.36	42.22	-18.7356	-0.0855	-0.5144
923	SLU 73	-0.93	-0.39	45.03	-19.9661	-0.0925	-0.5362
923	SLU 74	-0.92	-0.34	45.73	-20.2658	-0.0939	-0.5324
923	SLU 75	-0.94	-0.37	45.73	-20.2686	-0.094	-0.5401
923	SLU 76	-0.94	-0.39	45.46	-20.1539	-0.0935	-0.5413
923	SLU 77	-0.93	-0.34	46.17	-20.4537	-0.0948	-0.5375
923	SLU 78	-0.95	-0.37	46.17	-20.4564	-0.095	-0.5453
923	SLU 79	-0.93	-0.34	45.9	-20.3372	-0.0941	-0.5335
923	SLU 80	-0.94	-0.37	45.9	-20.34	-0.0943	-0.5413
923	SLU 81	-0.93	-0.34	46.61	-20.6491	-0.096	-0.5347
923	SLU 82	-0.94	-0.37	46.61	-20.6519	-0.0962	-0.5425
923	SLU 83	-0.94	-0.35	47.04	-20.837	-0.097	-0.5399
923	SLU 84	-0.95	-0.37	47.04	-20.8397	-0.0971	-0.5477
923	SLE RA 1	-0.65	-0.26	31	-13.7685	-0.0623	-0.3752
923	SLE RA 2	-0.67	-0.29	31	-13.7715	-0.0624	-0.3838
923	SLE RA 3	-0.66	-0.26	31.47	-13.9714	-0.0633	-0.3813
923	SLE RA 4	-0.67	-0.28	31.47	-13.9732	-0.0634	-0.3865
923	SLE RA 5	-0.67	-0.29	31.29	-13.8968	-0.0631	-0.3873
923	SLE RA 6	-0.67	-0.26	31.76	-14.0966	-0.064	-0.3847
923	SLE RA 7	-0.68	-0.28	31.76	-14.0984	-0.0641	-0.3899
923	SLE RA 8	-0.66	-0.26	31.58	-14.019	-0.0635	-0.3821
923	SLE RA 9	-0.67	-0.28	31.58	-14.0208	-0.0636	-0.3873
923	SLE RA 10	-0.7	-0.29	33.45	-14.8411	-0.0683	-0.4018



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
923	SLE RA 11	-0.69	-0.26	33.92	-15.0409	-0.0692	-0.3992
923	SLE RA 12	-0.7	-0.28	33.92	-15.0427	-0.0693	-0.4044
923	SLE RA 13	-0.7	-0.3	33.74	-14.9663	-0.0689	-0.4052
923	SLE RA 14	-0.7	-0.26	34.21	-15.1661	-0.0698	-0.4027
923	SLE RA 15	-0.71	-0.28	34.21	-15.168	-0.0699	-0.4078
923	SLE RA 16	-0.69	-0.27	34.03	-15.0885	-0.0694	-0.4
923	SLE RA 17	-0.7	-0.28	34.03	-15.0903	-0.0695	-0.4052
923	SLE RA 18	-0.7	-0.27	34.5	-15.2964	-0.0706	-0.4008
923	SLE RA 19	-0.71	-0.28	34.5	-15.2983	-0.0707	-0.406
923	SLE RA 20	-0.7	-0.27	34.79	-15.4217	-0.0713	-0.4042
923	SLE RA 21	-0.71	-0.28	34.79	-15.4235	-0.0714	-0.4094
923	SLE FR 1	-0.65	-0.26	31	-13.7685	-0.0623	-0.3752
923	SLE FR 2	-0.65	-0.27	31	-13.7691	-0.0623	-0.3769
923	SLE FR 3	-0.65	-0.26	31.12	-13.8186	-0.0625	-0.3766
923	SLE FR 4	-0.67	-0.27	32.05	-14.2275	-0.0648	-0.3846
923	SLE FR 5	-0.67	-0.26	32.17	-14.277	-0.065	-0.3843
923	SLE FR 6	-0.67	-0.26	32.75	-14.5325	-0.0665	-0.388
923	SLE QP 1	-0.65	-0.26	31	-13.7685	-0.0623	-0.3752
923	SLE QP 2	-0.66	-0.26	32.05	-14.2269	-0.0648	-0.3829
923	SLD 1	2.89	0.17	34.3	-14.7317	-0.0644	1.6585
923	SLD 2	2.56	-0.14	34.72	-14.9422	-0.0648	1.4723
923	SLD 3	2.69	-0.78	34.8	-14.9646	-0.0666	1.5448
923	SLD 4	2.37	-1.09	35.23	-15.1751	-0.067	1.3586
923	SLD 5	0.76	1.37	31.87	-13.9874	-0.0612	0.4353
923	SLD 6	0.55	1.17	32.16	-14.1257	-0.0614	0.3129
923	SLD 7	0.1	-1.81	33.57	-14.764	-0.0687	0.0562
923	SLD 8	-0.11	-2.01	33.85	-14.9023	-0.0689	-0.0662
923	SLD 9	-1.22	1.49	30.25	-13.5515	-0.0606	-0.6996
923	SLD 10	-1.43	1.28	30.53	-13.6898	-0.0609	-0.822
923	SLD 11	-1.88	-1.69	31.94	-14.3281	-0.0681	-1.0786
923	SLD 12	-2.09	-1.89	32.22	-14.4664	-0.0684	-1.201
923	SLD 13	-3.7	0.57	28.87	-13.2787	-0.0625	-2.1244
923	SLD 14	-4.02	0.26	29.3	-13.4892	-0.0629	-2.3106
923	SLD 15	-3.89	-0.39	29.38	-13.5116	-0.0648	-2.2381
923	SLD 16	-4.22	-0.7	29.8	-13.7221	-0.0652	-2.4243
923	SLV 1	7.65	0.72	37.32	-15.4175	-0.064	4.3918
923	SLV 2	6.89	0	38.32	-15.9078	-0.0649	3.9581
923	SLV 3	7.19	-1.44	38.48	-15.9463	-0.0691	4.1272
923	SLV 4	6.43	-2.16	39.48	-16.4366	-0.07	3.6935
923	SLV 5	2.66	3.43	31.7	-13.6972	-0.0567	1.5259
923	SLV 6	2.17	2.96	32.35	-14.0139	-0.0573	1.2458
923	SLV 7	1.12	-3.76	35.57	-15.46	-0.0736	0.6437
923	SLV 8	0.63	-4.23	36.21	-15.7767	-0.0742	0.3636
923	SLV 9	-1.96	3.71	27.89	-12.6771	-0.0553	-1.1294
923	SLV 10	-2.45	3.24	28.53	-12.9938	-0.0559	-1.4095
923	SLV 11	-3.5	-3.49	31.75	-14.4399	-0.0723	-2.0116
923	SLV 12	-3.99	-3.96	32.4	-14.7566	-0.0729	-2.2917
923	SLV 13	-7.76	1.64	24.62	-12.0172	-0.0595	-4.4592
923	SLV 14	-8.52	0.91	25.62	-12.5075	-0.0605	-4.8929
923	SLV 15	-8.22	-0.52	25.78	-12.546	-0.0646	-4.7239
923	SLV 16	-8.98	-1.24	26.78	-13.0363	-0.0656	-5.1576
923	CRTFP Ux+	0	0	0	0	0	0
923	CRTFP Ux-	0	0	0	0	0	0
923	CRTFP Uy+	0	0	0	0	0	0
923	CRTFP Uy-	0	0	0	0	0	0
924	SLU 1	-0.64	-0.28	31.91	-15.1538	-0.063	-0.366
924	SLU 2	-0.66	-0.32	31.92	-15.1643	-0.0633	-0.3787
924	SLU 3	-0.65	-0.28	32.66	-15.5073	-0.0647	-0.3751
924	SLU 4	-0.66	-0.3	32.67	-15.5136	-0.0649	-0.3827
924	SLU 5	-0.67	-0.32	32.38	-15.3816	-0.0643	-0.3838
924	SLU 6	-0.66	-0.28	33.13	-15.7246	-0.0657	-0.3803
924	SLU 7	-0.67	-0.3	33.13	-15.7309	-0.0659	-0.3879
924	SLU 8	-0.65	-0.28	32.84	-15.5884	-0.0649	-0.3763
924	SLU 9	-0.67	-0.31	32.84	-15.5947	-0.0651	-0.3839
924	SLU 10	-0.71	-0.33	35.88	-17.0304	-0.0725	-0.406
924	SLU 11	-0.7	-0.28	36.63	-17.3735	-0.0739	-0.4024
924	SLU 12	-0.71	-0.31	36.63	-17.3797	-0.0741	-0.41
924	SLU 13	-0.71	-0.33	36.35	-17.2477	-0.0735	-0.4111
924	SLU 14	-0.71	-0.28	37.09	-17.5908	-0.0749	-0.4076
924	SLU 15	-0.72	-0.31	37.1	-17.597	-0.0751	-0.4152
924	SLU 16	-0.7	-0.29	36.8	-17.4546	-0.0741	-0.4036
924	SLU 17	-0.71	-0.31	36.81	-17.4609	-0.0743	-0.4112
924	SLU 18	-0.7	-0.29	37.57	-17.8198	-0.0761	-0.405
924	SLU 19	-0.72	-0.31	37.58	-17.8261	-0.0763	-0.4126
924	SLU 20	-0.71	-0.29	38.04	-18.0371	-0.0771	-0.4101
924	SLU 21	-0.73	-0.31	38.04	-18.0434	-0.0773	-0.4178
924	SLU 22	-0.69	-0.26	35.9	-17.0199	-0.0722	-0.3964
924	SLU 23	-0.71	-0.31	35.9	-17.0304	-0.0725	-0.4091
924	SLU 24	-0.7	-0.26	36.65	-17.3734	-0.0739	-0.4055
924	SLU 25	-0.72	-0.29	36.66	-17.3797	-0.0741	-0.4131
924	SLU 26	-0.72	-0.31	36.37	-17.2477	-0.0735	-0.4142
924	SLU 27	-0.71	-0.26	37.12	-17.5907	-0.0749	-0.4106
924	SLU 28	-0.73	-0.29	37.12	-17.597	-0.0751	-0.4182
924	SLU 29	-0.71	-0.27	36.83	-17.4545	-0.0742	-0.4067
924	SLU 30	-0.72	-0.3	36.83	-17.4608	-0.0744	-0.4143
924	SLU 31	-0.76	-0.32	39.87	-18.8966	-0.0818	-0.4364
924	SLU 32	-0.75	-0.27	40.62	-19.2396	-0.0831	-0.4328
924	SLU 33	-0.77	-0.3	40.62	-19.2458	-0.0833	-0.4404
924	SLU 34	-0.77	-0.32	40.33	-19.1138	-0.0827	-0.4415
924	SLU 35	-0.76	-0.27	41.08	-19.4569	-0.0841	-0.4379



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
924	SLU 36	-0.77	-0.3	41.09	-19.4631	-0.0843	-0.4455
924	SLU 37	-0.75	-0.27	40.79	-19.3207	-0.0834	-0.434
924	SLU 38	-0.77	-0.3	40.8	-19.327	-0.0836	-0.4416
924	SLU 39	-0.76	-0.27	41.56	-19.6859	-0.0854	-0.4354
924	SLU 40	-0.77	-0.3	41.56	-19.6922	-0.0856	-0.443
924	SLU 41	-0.77	-0.27	42.02	-19.9032	-0.0863	-0.4405
924	SLU 42	-0.78	-0.3	42.03	-19.9095	-0.0865	-0.4481
924	SLU 43	-0.81	-0.37	40.12	-19.0601	-0.0787	-0.4654
924	SLU 44	-0.83	-0.41	40.12	-19.0706	-0.079	-0.4781
924	SLU 45	-0.82	-0.36	40.87	-19.4136	-0.0804	-0.4745
924	SLU 46	-0.84	-0.39	40.88	-19.4199	-0.0806	-0.4821
924	SLU 47	-0.84	-0.41	40.59	-19.2879	-0.08	-0.4832
924	SLU 48	-0.83	-0.36	41.34	-19.6309	-0.0814	-0.4797
924	SLU 49	-0.85	-0.39	41.34	-19.6372	-0.0816	-0.4873
924	SLU 50	-0.83	-0.37	41.05	-19.4947	-0.0807	-0.4757
924	SLU 51	-0.84	-0.4	41.05	-19.501	-0.0809	-0.4833
924	SLU 52	-0.88	-0.42	44.09	-20.9368	-0.0882	-0.5054
924	SLU 53	-0.87	-0.37	44.84	-21.2798	-0.0896	-0.5018
924	SLU 54	-0.89	-0.4	44.84	-21.2861	-0.0898	-0.5094
924	SLU 55	-0.89	-0.42	44.55	-21.1541	-0.0892	-0.5105
924	SLU 56	-0.88	-0.37	45.3	-21.4971	-0.0906	-0.5069
924	SLU 57	-0.89	-0.4	45.3	-21.5034	-0.0908	-0.5146
924	SLU 58	-0.87	-0.37	45.01	-21.3609	-0.0899	-0.503
924	SLU 59	-0.89	-0.4	45.01	-21.3672	-0.0901	-0.5106
924	SLU 60	-0.88	-0.37	45.78	-21.7261	-0.0918	-0.5044
924	SLU 61	-0.89	-0.4	45.78	-21.7324	-0.092	-0.512
924	SLU 62	-0.89	-0.37	46.24	-21.9434	-0.0928	-0.5095
924	SLU 63	-0.9	-0.4	46.25	-21.9497	-0.093	-0.5171
924	SLU 64	-0.86	-0.35	44.1	-20.9262	-0.0879	-0.4958
924	SLU 65	-0.88	-0.4	44.11	-20.9367	-0.0883	-0.5085
924	SLU 66	-0.88	-0.35	44.86	-21.2797	-0.0896	-0.5049
924	SLU 67	-0.89	-0.38	44.86	-21.286	-0.0898	-0.5125
924	SLU 68	-0.89	-0.4	44.57	-21.154	-0.0893	-0.5136
924	SLU 69	-0.89	-0.35	45.32	-21.497	-0.0906	-0.51
924	SLU 70	-0.9	-0.38	45.33	-21.5033	-0.0908	-0.5176
924	SLU 71	-0.88	-0.36	45.03	-21.3608	-0.0899	-0.5061
924	SLU 72	-0.89	-0.38	45.04	-21.3671	-0.0901	-0.5137
924	SLU 73	-0.93	-0.4	48.07	-22.8029	-0.0975	-0.5358
924	SLU 74	-0.92	-0.36	48.82	-23.1459	-0.0988	-0.5322
924	SLU 75	-0.94	-0.38	48.83	-23.1522	-0.099	-0.5398
924	SLU 76	-0.94	-0.41	48.54	-23.0202	-0.0985	-0.5409
924	SLU 77	-0.93	-0.36	49.29	-23.3632	-0.0998	-0.5373
924	SLU 78	-0.95	-0.39	49.29	-23.3695	-0.1	-0.5449
924	SLU 79	-0.93	-0.36	49	-23.227	-0.0991	-0.5334
924	SLU 80	-0.94	-0.39	49	-23.2333	-0.0993	-0.541
924	SLU 81	-0.93	-0.36	49.77	-23.5922	-0.1011	-0.5348
924	SLU 82	-0.94	-0.39	49.77	-23.5985	-0.1013	-0.5424
924	SLU 83	-0.94	-0.36	50.23	-23.8095	-0.1021	-0.5399
924	SLU 84	-0.95	-0.39	50.24	-23.8158	-0.1023	-0.5475
924	SLE RA 1	-0.65	-0.27	33.05	-15.687	-0.0656	-0.3747
924	SLE RA 2	-0.67	-0.3	33.05	-15.694	-0.0658	-0.3832
924	SLE RA 3	-0.66	-0.27	33.55	-15.9226	-0.0667	-0.3808
924	SLE RA 4	-0.67	-0.29	33.55	-15.9268	-0.0669	-0.3859
924	SLE RA 5	-0.67	-0.31	33.36	-15.8388	-0.0665	-0.3866
924	SLE RA 6	-0.67	-0.27	33.86	-16.0675	-0.0674	-0.3842
924	SLE RA 7	-0.68	-0.29	33.86	-16.0717	-0.0675	-0.3893
924	SLE RA 8	-0.66	-0.28	33.67	-15.9767	-0.0669	-0.3816
924	SLE RA 9	-0.67	-0.29	33.67	-15.9809	-0.0671	-0.3866
924	SLE RA 10	-0.7	-0.31	35.7	-16.9381	-0.072	-0.4014
924	SLE RA 11	-0.69	-0.28	36.19	-17.1667	-0.0729	-0.399
924	SLE RA 12	-0.7	-0.3	36.2	-17.1709	-0.073	-0.404
924	SLE RA 13	-0.7	-0.31	36.01	-17.0829	-0.0726	-0.4048
924	SLE RA 14	-0.7	-0.28	36.51	-17.3116	-0.0735	-0.4024
924	SLE RA 15	-0.71	-0.3	36.51	-17.3158	-0.0737	-0.4075
924	SLE RA 16	-0.69	-0.28	36.31	-17.2208	-0.0731	-0.3997
924	SLE RA 17	-0.7	-0.3	36.31	-17.225	-0.0732	-0.4048
924	SLE RA 18	-0.7	-0.28	36.82	-17.4643	-0.0744	-0.4007
924	SLE RA 19	-0.71	-0.3	36.83	-17.4685	-0.0745	-0.4058
924	SLE RA 20	-0.7	-0.28	37.13	-17.6092	-0.075	-0.4041
924	SLE RA 21	-0.71	-0.3	37.14	-17.6133	-0.0752	-0.4092
924	SLE FR 1	-0.65	-0.27	33.05	-15.687	-0.0656	-0.3747
924	SLE FR 2	-0.65	-0.28	33.05	-15.6884	-0.0657	-0.3764
924	SLE FR 3	-0.65	-0.27	33.17	-15.7449	-0.0659	-0.3761
924	SLE FR 4	-0.67	-0.28	34.18	-16.2216	-0.0683	-0.3842
924	SLE FR 5	-0.67	-0.28	34.31	-16.2781	-0.0685	-0.3839
924	SLE FR 6	-0.67	-0.28	34.94	-16.5756	-0.07	-0.3877
924	SLE QP 1	-0.65	-0.27	33.05	-15.687	-0.0656	-0.3747
924	SLE QP 2	-0.66	-0.28	34.18	-16.2202	-0.0682	-0.3825
924	SLD 1	2.89	0.12	36.49	-16.901	-0.0727	1.6594
924	SLD 2	2.57	-0.17	36.93	-17.1279	-0.0727	1.4736
924	SLD 3	2.69	-0.83	37.07	-17.1974	-0.0754	1.5458
924	SLD 4	2.37	-1.12	37.51	-17.4243	-0.0755	1.36
924	SLD 5	0.76	1.34	33.91	-15.9343	-0.0654	0.4355
924	SLD 6	0.55	1.15	34.2	-16.0834	-0.0655	0.3134
924	SLD 7	0.1	-1.83	35.86	-16.9224	-0.0745	0.0569
924	SLD 8	-0.11	-2.02	36.14	-17.0715	-0.0746	-0.0652
924	SLD 9	-1.22	1.47	32.22	-15.3688	-0.0619	-0.6999
924	SLD 10	-1.43	1.28	32.51	-15.5179	-0.062	-0.822
924	SLD 11	-1.88	-1.7	34.17	-16.3569	-0.071	-1.0784
924	SLD 12	-2.09	-1.89	34.45	-16.5061	-0.071	-1.2005



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
924	SLD 13	-3.7	0.57	30.85	-15.0161	-0.061	-2.125
924	SLD 14	-4.02	0.28	31.29	-15.2429	-0.0611	-2.3108
924	SLD 15	-3.9	-0.38	31.44	-15.3125	-0.0637	-2.2386
924	SLD 16	-4.22	-0.67	31.87	-15.5394	-0.0638	-2.4244
924	SLV 1	7.65	0.61	39.6	-17.8257	-0.0788	4.3933
924	SLV 2	6.9	-0.07	40.62	-18.3541	-0.0789	3.9606
924	SLV 3	7.19	-1.54	40.93	-18.4981	-0.0849	4.129
924	SLV 4	6.44	-2.22	41.95	-19.0265	-0.0851	3.6963
924	SLV 5	2.66	3.37	33.62	-15.5906	-0.062	1.526
924	SLV 6	2.17	2.94	34.27	-15.9319	-0.0621	1.2465
924	SLV 7	1.12	-3.8	38.04	-17.832	-0.0826	0.6449
924	SLV 8	0.64	-4.24	38.7	-18.1733	-0.0827	0.3654
924	SLV 9	-1.97	3.69	29.66	-14.2671	-0.0538	-1.1304
924	SLV 10	-2.45	3.25	30.32	-14.6083	-0.0539	-1.4099
924	SLV 11	-3.5	-3.49	34.09	-16.5084	-0.0744	-2.0115
924	SLV 12	-3.99	-3.92	34.74	-16.8497	-0.0745	-2.291
924	SLV 13	-7.77	1.67	26.41	-13.4138	-0.0514	-4.4613
924	SLV 14	-8.52	0.99	27.43	-13.9422	-0.0516	-4.894
924	SLV 15	-8.23	-0.49	27.74	-14.0862	-0.0576	-4.7257
924	SLV 16	-8.98	-1.16	28.76	-14.6146	-0.0577	-5.1583
924	CRTFP Ux+	0	0	0	0	0	0
924	CRTFP Ux-	0	0	0	0	0	0
924	CRTFP Uy+	0	0	0	0	0	0
924	CRTFP Uy-	0	0	0	0	0	0
925	SLU 1	-0.43	-0.2	22.71	-11.4002	1.3911	-0.2347
925	SLU 2	-0.44	-0.23	22.72	-11.4111	1.3917	-0.2412
925	SLU 3	-0.44	-0.19	23.25	-11.6699	1.4242	-0.2409
925	SLU 4	-0.45	-0.21	23.26	-11.6764	1.4245	-0.2447
925	SLU 5	-0.45	-0.23	23.06	-11.5764	1.412	-0.2445
925	SLU 6	-0.45	-0.2	23.59	-11.8352	1.4445	-0.2442
925	SLU 7	-0.45	-0.21	23.59	-11.8418	1.4449	-0.2481
925	SLU 8	-0.44	-0.2	23.38	-11.7308	1.4317	-0.2414
925	SLU 9	-0.45	-0.22	23.38	-11.7373	1.4321	-0.2453
925	SLU 10	-0.48	-0.23	25.57	-12.8359	1.5656	-0.2597
925	SLU 11	-0.47	-0.2	26.1	-13.0947	1.5981	-0.2594
925	SLU 12	-0.48	-0.22	26.11	-13.1013	1.5985	-0.2633
925	SLU 13	-0.48	-0.23	25.9	-13.0012	1.586	-0.2631
925	SLU 14	-0.48	-0.2	26.43	-13.26	1.6185	-0.2628
925	SLU 15	-0.49	-0.22	26.44	-13.2666	1.6188	-0.2666
925	SLU 16	-0.47	-0.2	26.22	-13.1556	1.6057	-0.26
925	SLU 17	-0.48	-0.22	26.23	-13.1622	1.6061	-0.2638
925	SLU 18	-0.48	-0.2	26.78	-13.4356	1.6396	-0.2612
925	SLU 19	-0.48	-0.22	26.79	-13.4422	1.64	-0.2651
925	SLU 20	-0.48	-0.2	27.11	-13.6009	1.6599	-0.2646
925	SLU 21	-0.49	-0.22	27.12	-13.6075	1.6603	-0.2684
925	SLU 22	-0.47	-0.19	25.58	-12.8254	1.566	-0.2561
925	SLU 23	-0.48	-0.22	25.59	-12.8363	1.5666	-0.2626
925	SLU 24	-0.48	-0.18	26.12	-13.0952	1.5991	-0.2623
925	SLU 25	-0.48	-0.2	26.12	-13.1017	1.5994	-0.2661
925	SLU 26	-0.49	-0.22	25.92	-13.0016	1.5869	-0.2659
925	SLU 27	-0.48	-0.19	26.45	-13.2605	1.6194	-0.2656
925	SLU 28	-0.49	-0.2	26.46	-13.267	1.6198	-0.2695
925	SLU 29	-0.48	-0.19	26.24	-13.1561	1.6066	-0.2628
925	SLU 30	-0.49	-0.21	26.25	-13.1626	1.607	-0.2667
925	SLU 31	-0.51	-0.22	28.43	-14.2612	1.7406	-0.2811
925	SLU 32	-0.51	-0.19	28.96	-14.52	1.773	-0.2808
925	SLU 33	-0.52	-0.21	28.97	-14.5265	1.7734	-0.2847
925	SLU 34	-0.52	-0.22	28.77	-14.4265	1.7609	-0.2845
925	SLU 35	-0.51	-0.19	29.3	-14.6853	1.7934	-0.2842
925	SLU 36	-0.52	-0.21	29.3	-14.6918	1.7937	-0.288
925	SLU 37	-0.51	-0.19	29.09	-14.5809	1.7806	-0.2814
925	SLU 38	-0.52	-0.21	29.09	-14.5874	1.781	-0.2852
925	SLU 39	-0.51	-0.19	29.64	-14.8609	1.8145	-0.2826
925	SLU 40	-0.52	-0.21	29.65	-14.8674	1.8149	-0.2865
925	SLU 41	-0.52	-0.19	29.97	-15.0262	1.8348	-0.286
925	SLU 42	-0.53	-0.21	29.98	-15.0327	1.8352	-0.2898
925	SLU 43	-0.55	-0.26	28.55	-14.3316	1.7484	-0.2978
925	SLU 44	-0.56	-0.29	28.56	-14.3425	1.749	-0.3042
925	SLU 45	-0.56	-0.26	29.09	-14.6013	1.7815	-0.304
925	SLU 46	-0.56	-0.28	29.09	-14.6078	1.7819	-0.3078
925	SLU 47	-0.57	-0.29	28.89	-14.5078	1.7694	-0.3076
925	SLU 48	-0.56	-0.26	29.42	-14.7666	1.8019	-0.3073
925	SLU 49	-0.57	-0.28	29.43	-14.7731	1.8022	-0.3112
925	SLU 50	-0.56	-0.26	29.21	-14.6622	1.7891	-0.3045
925	SLU 51	-0.57	-0.28	29.22	-14.6687	1.7895	-0.3083
925	SLU 52	-0.59	-0.29	31.4	-15.7673	1.923	-0.3228
925	SLU 53	-0.59	-0.26	31.93	-16.0261	1.9555	-0.3225
925	SLU 54	-0.6	-0.28	31.94	-16.0327	1.9558	-0.3264
925	SLU 55	-0.6	-0.29	31.74	-15.9326	1.9433	-0.3261
925	SLU 56	-0.59	-0.26	32.27	-16.1914	1.9758	-0.3259
925	SLU 57	-0.6	-0.28	32.27	-16.198	1.9762	-0.3297
925	SLU 58	-0.59	-0.26	32.06	-16.087	1.9631	-0.323
925	SLU 59	-0.6	-0.28	32.06	-16.0935	1.9634	-0.3269
925	SLU 60	-0.59	-0.26	32.61	-16.367	1.997	-0.3243
925	SLU 61	-0.6	-0.28	32.62	-16.3736	1.9973	-0.3282
925	SLU 62	-0.6	-0.26	32.94	-16.5323	2.0173	-0.3276
925	SLU 63	-0.61	-0.28	32.95	-16.5389	2.0176	-0.3315
925	SLU 64	-0.58	-0.25	31.41	-15.7568	1.9234	-0.3192
925	SLU 65	-0.6	-0.28	31.42	-15.7677	1.924	-0.3256
925	SLU 66	-0.59	-0.25	31.95	-16.0266	1.9564	-0.3254



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
925	SLU 67	-0.6	-0.27	31.96	-16.0331	1.9568	-0.3292
925	SLU 68	-0.6	-0.28	31.75	-15.933	1.9443	-0.329
925	SLU 69	-0.6	-0.25	32.28	-16.1919	1.9768	-0.3287
925	SLU 70	-0.61	-0.27	32.29	-16.1984	1.9771	-0.3326
925	SLU 71	-0.59	-0.25	32.07	-16.0874	1.964	-0.3259
925	SLU 72	-0.6	-0.27	32.08	-16.094	1.9644	-0.3297
925	SLU 73	-0.63	-0.28	34.27	-17.1925	2.0979	-0.3442
925	SLU 74	-0.62	-0.25	34.8	-17.4514	2.1304	-0.3439
925	SLU 75	-0.63	-0.27	34.8	-17.4579	2.1308	-0.3478
925	SLU 76	-0.63	-0.28	34.6	-17.3579	2.1182	-0.3475
925	SLU 77	-0.63	-0.25	35.13	-17.6167	2.1507	-0.3473
925	SLU 78	-0.64	-0.27	35.13	-17.6232	2.1511	-0.3511
925	SLU 79	-0.63	-0.25	34.92	-17.5123	2.138	-0.3444
925	SLU 80	-0.63	-0.27	34.93	-17.5188	2.1383	-0.3483
925	SLU 81	-0.63	-0.25	35.47	-17.7923	2.1719	-0.3457
925	SLU 82	-0.64	-0.27	35.48	-17.7988	2.1722	-0.3496
925	SLU 83	-0.63	-0.25	35.81	-17.9576	2.1922	-0.349
925	SLU 84	-0.64	-0.27	35.81	-17.9641	2.1925	-0.3529
925	SLE RA 1	-0.44	-0.19	23.53	-11.8074	1.4411	-0.2408
925	SLE RA 2	-0.45	-0.21	23.54	-11.8147	1.4415	-0.2451
925	SLE RA 3	-0.45	-0.19	23.89	-11.9872	1.4631	-0.2449
925	SLE RA 4	-0.45	-0.2	23.9	-11.9916	1.4634	-0.2475
925	SLE RA 5	-0.45	-0.21	23.76	-11.9249	1.455	-0.2474
925	SLE RA 6	-0.45	-0.19	24.11	-12.0974	1.4767	-0.2472
925	SLE RA 7	-0.46	-0.21	24.12	-12.1018	1.4769	-0.2497
925	SLE RA 8	-0.45	-0.19	23.97	-12.0278	1.4682	-0.2453
925	SLE RA 9	-0.45	-0.21	23.98	-12.0322	1.4684	-0.2479
925	SLE RA 10	-0.47	-0.22	25.44	-12.7645	1.5574	-0.2575
925	SLE RA 11	-0.47	-0.19	25.79	-12.9371	1.5791	-0.2573
925	SLE RA 12	-0.47	-0.21	25.79	-12.9415	1.5793	-0.2599
925	SLE RA 13	-0.47	-0.22	25.66	-12.8747	1.571	-0.2597
925	SLE RA 14	-0.47	-0.19	26.01	-13.0473	1.5926	-0.2595
925	SLE RA 15	-0.48	-0.21	26.02	-13.0517	1.5929	-0.2621
925	SLE RA 16	-0.47	-0.2	25.87	-12.9777	1.5841	-0.2577
925	SLE RA 17	-0.47	-0.21	25.88	-12.982	1.5844	-0.2602
925	SLE RA 18	-0.47	-0.19	26.24	-13.1644	1.6067	-0.2585
925	SLE RA 19	-0.48	-0.21	26.25	-13.1687	1.607	-0.2611
925	SLE RA 20	-0.47	-0.2	26.46	-13.2746	1.6203	-0.2607
925	SLE RA 21	-0.48	-0.21	26.47	-13.2789	1.6205	-0.2633
925	SLE FR 1	-0.44	-0.19	23.53	-11.8074	1.4411	-0.2408
925	SLE FR 2	-0.44	-0.2	23.53	-11.8088	1.4411	-0.2417
925	SLE FR 3	-0.44	-0.19	23.62	-11.8515	1.4465	-0.2417
925	SLE FR 4	-0.45	-0.2	24.35	-12.2159	1.4908	-0.247
925	SLE FR 5	-0.45	-0.19	24.43	-12.2586	1.4962	-0.247
925	SLE FR 6	-0.45	-0.19	24.89	-12.4859	1.5239	-0.2497
925	SLE QP 1	-0.44	-0.19	23.53	-11.8074	1.4411	-0.2408
925	SLE QP 2	-0.45	-0.19	24.34	-12.2145	1.4908	-0.2461
925	SLD 1	1.96	0.04	26.02	-12.8173	1.5923	1.0627
925	SLD 2	1.74	0.15	26.32	-12.9794	1.6106	0.9483
925	SLD 3	1.83	-0.61	26.47	-13.0583	1.619	1.1438
925	SLD 4	1.61	-0.79	26.76	-13.2205	1.6373	1.0294
925	SLD 5	0.52	0.89	24.12	-12.0008	1.4774	0.0439
925	SLD 6	0.37	0.77	24.31	-12.1073	1.4894	-0.0312
925	SLD 7	0.07	-1.26	25.6	-12.8043	1.5665	0.3143
925	SLD 8	-0.07	-1.39	25.8	-12.9108	1.5785	0.2391
925	SLD 9	-0.82	1	22.89	-11.5182	1.403	-0.7314
925	SLD 10	-0.97	0.88	23.08	-11.6247	1.415	-0.8065
925	SLD 11	-1.27	-1.15	24.38	-12.3216	1.4921	-0.461
925	SLD 12	-1.41	-1.27	24.57	-12.4282	1.5041	-0.5362
925	SLD 13	-2.51	0.41	21.93	-11.2085	1.3442	-1.5217
925	SLD 14	-2.72	0.22	22.22	-11.3706	1.3625	-1.636
925	SLD 15	-2.64	-0.24	22.37	-11.4495	1.3709	-1.4406
925	SLD 16	-2.86	-0.42	22.66	-11.6117	1.3893	-1.5549
925	SLV 1	5.19	0.32	28.29	-13.6354	1.7293	2.8159
925	SLV 2	4.68	-0.11	28.97	-14.013	1.7719	2.5497
925	SLV 3	4.88	-1.15	29.3	-14.182	1.79	3.0047
925	SLV 4	4.36	-1.58	29.99	-14.5596	1.8327	2.7385
925	SLV 5	1.8	2.25	23.88	-11.7465	1.4628	0.4322
925	SLV 6	1.47	1.97	24.32	-11.9903	1.4904	0.2602
925	SLV 7	0.76	-2.62	27.25	-13.5684	1.6653	1.0615
925	SLV 8	0.44	-2.9	27.69	-13.8123	1.6929	0.8895
925	SLV 9	-1.33	2.51	21	-10.6167	1.2887	-1.3818
925	SLV 10	-1.66	2.24	21.44	-10.8605	1.3162	-1.5538
925	SLV 11	-2.37	-2.36	24.37	-12.4386	1.4912	-0.7525
925	SLV 12	-2.7	-2.64	24.81	-12.6825	1.5187	-0.9245
925	SLV 13	-5.26	1.19	18.7	-9.8694	1.1488	-3.2307
925	SLV 14	-5.77	0.76	19.39	-10.247	1.1915	-3.497
925	SLV 15	-5.57	-0.27	19.71	-10.416	1.2096	-3.0419
925	SLV 16	-6.08	-0.7	20.4	-10.7936	1.2523	-3.3082
925	CRTFP Ux+	0	0	0	0	0	0
925	CRTFP Ux-	0	0	0	0	0	0
925	CRTFP Uy+	0	0	0	0	0	0
925	CRTFP Uy-	0	0	0	0	0	0
928	SLU 1	-1.74	-0.94	110.14	-28.7487	-2.2079	-0.4941
928	SLU 2	-1.79	-1.08	110.21	-28.7694	-2.2199	-0.5113
928	SLU 3	-1.78	-0.94	112.78	-29.438	-2.2655	-0.5062
928	SLU 4	-1.81	-1.02	112.82	-29.4504	-2.2727	-0.5166
928	SLU 5	-1.82	-1.09	111.81	-29.189	-2.2522	-0.5181
928	SLU 6	-1.8	-0.95	114.38	-29.8576	-2.2978	-0.513
928	SLU 7	-1.83	-1.03	114.42	-29.87	-2.305	-0.5234





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
928	SLU 8	-1.78	-0.96	113.35	-29.5879	-2.2725	-0.5077
928	SLU 9	-1.82	-1.04	113.39	-29.6003	-2.2797	-0.5181
928	SLU 10	-1.94	-1.08	124.1	-32.3997	-2.5353	-0.5483
928	SLU 11	-1.92	-0.94	126.67	-33.0683	-2.5808	-0.5432
928	SLU 12	-1.96	-1.03	126.71	-33.0807	-2.5881	-0.5536
928	SLU 13	-1.96	-1.09	125.7	-32.8193	-2.5676	-0.5551
928	SLU 14	-1.94	-0.95	128.27	-33.4878	-2.6131	-0.55
928	SLU 15	-1.98	-1.04	128.31	-33.5003	-2.6204	-0.5604
928	SLU 16	-1.92	-0.96	127.24	-33.2182	-2.5878	-0.5447
928	SLU 17	-1.96	-1.05	127.28	-33.2306	-2.5951	-0.5551
928	SLU 18	-1.94	-0.94	129.98	-33.9348	-2.6584	-0.5469
928	SLU 19	-1.97	-1.03	130.02	-33.9472	-2.6657	-0.5573
928	SLU 20	-1.96	-0.95	131.59	-34.3544	-2.6907	-0.5537
928	SLU 21	-2	-1.04	131.63	-34.3668	-2.698	-0.5641
928	SLU 22	-1.89	-0.89	124.21	-32.4134	-2.53	-0.5354
928	SLU 23	-1.95	-1.03	124.28	-32.4342	-2.542	-0.5527
928	SLU 24	-1.93	-0.89	126.85	-33.1027	-2.5875	-0.5476
928	SLU 25	-1.97	-0.98	126.89	-33.1151	-2.5948	-0.5579
928	SLU 26	-1.97	-1.04	125.88	-32.8538	-2.5743	-0.5595
928	SLU 27	-1.95	-0.9	128.46	-33.5223	-2.6198	-0.5544
928	SLU 28	-1.99	-0.99	128.5	-33.5347	-2.6271	-0.5647
928	SLU 29	-1.93	-0.91	127.42	-33.2526	-2.5945	-0.549
928	SLU 30	-1.97	-1	127.46	-33.2651	-2.6018	-0.5594
928	SLU 31	-2.09	-1.04	138.17	-36.0644	-2.8574	-0.5897
928	SLU 32	-2.07	-0.9	140.74	-36.733	-2.9029	-0.5846
928	SLU 33	-2.11	-0.98	140.78	-36.7454	-2.9101	-0.5949
928	SLU 34	-2.11	-1.05	139.77	-36.484	-2.8897	-0.5965
928	SLU 35	-2.1	-0.91	142.35	-37.1526	-2.9352	-0.5914
928	SLU 36	-2.13	-0.99	142.39	-37.165	-2.9424	-0.6017
928	SLU 37	-2.08	-0.91	141.31	-36.8829	-2.9099	-0.5861
928	SLU 38	-2.11	-1	141.35	-36.8953	-2.9172	-0.5964
928	SLU 39	-2.09	-0.9	144.06	-37.5995	-2.9805	-0.5883
928	SLU 40	-2.13	-0.98	144.1	-37.612	-2.9877	-0.5986
928	SLU 41	-2.12	-0.91	145.66	-38.0191	-3.0128	-0.5951
928	SLU 42	-2.15	-0.99	145.7	-38.0316	-3.02	-0.6054
928	SLU 43	-2.2	-1.24	138.36	-36.1168	-2.7598	-0.6281
928	SLU 44	-2.26	-1.38	138.42	-36.1376	-2.7719	-0.6454
928	SLU 45	-2.24	-1.24	141	-36.8061	-2.8174	-0.6403
928	SLU 46	-2.28	-1.32	141.04	-36.8186	-2.8246	-0.6506
928	SLU 47	-2.28	-1.39	140.03	-36.5572	-2.8042	-0.6522
928	SLU 48	-2.27	-1.25	142.6	-37.2257	-2.8497	-0.6471
928	SLU 49	-2.3	-1.33	142.64	-37.2381	-2.8569	-0.6574
928	SLU 50	-2.25	-1.26	141.56	-36.956	-2.8244	-0.6417
928	SLU 51	-2.28	-1.34	141.6	-36.9685	-2.8317	-0.6521
928	SLU 52	-2.4	-1.38	152.31	-39.7678	-3.0873	-0.6824
928	SLU 53	-2.39	-1.24	154.89	-40.4364	-3.1328	-0.6773
928	SLU 54	-2.42	-1.33	154.93	-40.4488	-3.14	-0.6876
928	SLU 55	-2.43	-1.39	153.92	-40.1874	-3.1196	-0.6892
928	SLU 56	-2.41	-1.25	156.49	-40.856	-3.1651	-0.6841
928	SLU 57	-2.44	-1.33	156.53	-40.8684	-3.1723	-0.6944
928	SLU 58	-2.39	-1.26	155.45	-40.5863	-3.1398	-0.6787
928	SLU 59	-2.43	-1.34	155.49	-40.5987	-3.147	-0.6891
928	SLU 60	-2.41	-1.24	158.2	-41.3029	-3.2104	-0.681
928	SLU 61	-2.44	-1.33	158.24	-41.3154	-3.2176	-0.6913
928	SLU 62	-2.43	-1.25	159.8	-41.7225	-3.2427	-0.6878
928	SLU 63	-2.46	-1.34	159.84	-41.735	-3.2499	-0.6981
928	SLU 64	-2.36	-1.19	152.43	-39.7816	-3.0819	-0.6694
928	SLU 65	-2.42	-1.33	152.5	-39.8023	-3.094	-0.6867
928	SLU 66	-2.4	-1.19	155.07	-40.4708	-3.1395	-0.6816
928	SLU 67	-2.44	-1.28	155.11	-40.4833	-3.1467	-0.692
928	SLU 68	-2.44	-1.34	154.1	-40.2219	-3.1263	-0.6935
928	SLU 69	-2.42	-1.2	156.67	-40.8904	-3.1718	-0.6884
928	SLU 70	-2.46	-1.29	156.71	-40.9029	-3.179	-0.6988
928	SLU 71	-2.4	-1.21	155.64	-40.6208	-3.1465	-0.6831
928	SLU 72	-2.44	-1.29	155.68	-40.6332	-3.1537	-0.6934
928	SLU 73	-2.56	-1.33	166.39	-43.4326	-3.4093	-0.7237
928	SLU 74	-2.54	-1.19	168.96	-44.1011	-3.4549	-0.7186
928	SLU 75	-2.58	-1.28	169	-44.1136	-3.4621	-0.729
928	SLU 76	-2.58	-1.34	167.99	-43.8522	-3.4416	-0.7305
928	SLU 77	-2.56	-1.2	170.56	-44.5207	-3.4871	-0.7254
928	SLU 78	-2.6	-1.29	170.6	-44.5331	-3.4944	-0.7358
928	SLU 79	-2.54	-1.21	169.53	-44.251	-3.4619	-0.7201
928	SLU 80	-2.58	-1.3	169.57	-44.2635	-3.4691	-0.7304
928	SLU 81	-2.56	-1.19	172.27	-44.9677	-3.5324	-0.7223
928	SLU 82	-2.6	-1.28	172.31	-44.9801	-3.5397	-0.7327
928	SLU 83	-2.58	-1.2	173.88	-45.3873	-3.5647	-0.7291
928	SLU 84	-2.62	-1.29	173.92	-45.3997	-3.572	-0.7395
928	SLE RA 1	-1.78	-0.93	114.16	-29.7958	-2.2999	-0.5059
928	SLE RA 2	-1.82	-1.02	114.2	-29.8096	-2.3079	-0.5174
928	SLE RA 3	-1.81	-0.93	115.92	-30.2553	-2.3383	-0.514
928	SLE RA 4	-1.83	-0.98	115.95	-30.2636	-2.3431	-0.5209
928	SLE RA 5	-1.83	-1.03	115.27	-30.0893	-2.3295	-0.5219
928	SLE RA 6	-1.82	-0.93	116.99	-30.535	-2.3598	-0.5185
928	SLE RA 7	-1.85	-0.99	117.02	-30.5433	-2.3646	-0.5254
928	SLE RA 8	-1.81	-0.94	116.3	-30.3552	-2.343	-0.515
928	SLE RA 9	-1.83	-1	116.32	-30.3635	-2.3478	-0.5219
928	SLE RA 10	-1.91	-1.02	123.46	-32.2298	-2.5182	-0.542
928	SLE RA 11	-1.9	-0.93	125.18	-32.6755	-2.5485	-0.5386
928	SLE RA 12	-1.93	-0.98	125.21	-32.6838	-2.5534	-0.5455
928	SLE RA 13	-1.93	-1.03	124.53	-32.5095	-2.5397	-0.5466



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
928	SLE RA 14	-1.92	-0.93	126.25	-32.9552	-2.5701	-0.5432
928	SLE RA 15	-1.94	-0.99	126.28	-32.9635	-2.5749	-0.5501
928	SLE RA 16	-1.9	-0.94	125.56	-32.7754	-2.5532	-0.5396
928	SLE RA 17	-1.93	-1	125.59	-32.7837	-2.558	-0.5465
928	SLE RA 18	-1.92	-0.93	127.39	-33.2532	-2.6003	-0.5411
928	SLE RA 19	-1.94	-0.99	127.42	-33.2615	-2.6051	-0.548
928	SLE RA 20	-1.93	-0.94	128.46	-33.5329	-2.6218	-0.5457
928	SLE RA 21	-1.95	-0.99	128.49	-33.5412	-2.6266	-0.5526
928	SLE FR 1	-1.78	-0.93	114.16	-29.7958	-2.2999	-0.5059
928	SLE FR 2	-1.79	-0.94	114.17	-29.7985	-2.3015	-0.5082
928	SLE FR 3	-1.79	-0.93	114.59	-29.9077	-2.3085	-0.5077
928	SLE FR 4	-1.83	-0.95	118.14	-30.8358	-2.3916	-0.5187
928	SLE FR 5	-1.83	-0.93	118.56	-30.9449	-2.3986	-0.5183
928	SLE FR 6	-1.85	-0.93	120.78	-31.5245	-2.4501	-0.5235
928	SLE QP 1	-1.78	-0.93	114.16	-29.7958	-2.2999	-0.5059
928	SLE QP 2	-1.82	-0.93	118.13	-30.833	-2.39	-0.5164
928	SLD 1	8.84	-0.29	130.41	-33.6096	-2.9301	2.2694
928	SLD 2	7.84	-1.01	131.32	-33.8924	-2.897	2.0166
928	SLD 3	8.25	-3.1	132.75	-34.22	-3.0496	2.1126
928	SLD 4	7.26	-3.81	133.65	-34.5028	-3.0165	1.8598
928	SLD 5	2.44	3.64	118.12	-30.6897	-2.3767	0.6022
928	SLD 6	1.79	3.17	118.71	-30.8755	-2.3549	0.4361
928	SLD 7	0.49	-5.7	125.89	-32.7244	-2.7751	0.0796
928	SLD 8	-0.17	-6.17	126.49	-32.9102	-2.7533	-0.0865
928	SLD 9	-3.48	4.32	109.77	-28.7558	-2.0267	-0.9464
928	SLD 10	-4.13	3.85	110.37	-28.9416	-2.0049	-1.1125
928	SLD 11	-5.43	-5.03	117.55	-30.7905	-2.4251	-1.469
928	SLD 12	-6.08	-5.5	118.14	-30.9763	-2.4033	-1.6351
928	SLD 13	-10.9	1.96	102.6	-27.1632	-1.7635	-2.8927
928	SLD 14	-11.89	1.24	103.51	-27.446	-1.7304	-3.1455
928	SLD 15	-11.48	-0.85	104.94	-27.7736	-1.883	-3.0495
928	SLD 16	-12.48	-1.56	105.85	-28.0564	-1.8499	-3.3022
928	SLV 1	23.11	0.45	146.95	-37.3526	-3.6585	5.9992
928	SLV 2	20.79	-1.21	149.07	-38.011	-3.5813	5.4106
928	SLV 3	21.74	-5.9	152.27	-38.7408	-3.9297	5.6346
928	SLV 4	19.42	-7.56	154.38	-39.3993	-3.8525	5.0461
928	SLV 5	8.13	9.4	118.35	-30.5695	-2.3725	2.0929
928	SLV 6	6.64	8.33	119.72	-30.9948	-2.3227	1.7128
928	SLV 7	3.57	-11.76	136.06	-35.197	-3.2766	0.8777
928	SLV 8	2.08	-12.83	137.43	-35.6222	-3.2268	0.4976
928	SLV 9	-5.72	10.97	98.83	-26.0438	-1.5532	-1.5305
928	SLV 10	-7.22	9.9	100.2	-26.469	-1.5034	-1.9106
928	SLV 11	-10.28	-10.18	116.54	-30.6712	-2.4573	-2.7457
928	SLV 12	-11.77	-11.25	117.9	-31.0965	-2.4075	-3.1258
928	SLV 13	-23.06	5.71	81.88	-22.2667	-0.9275	-6.079
928	SLV 14	-25.38	4.05	83.99	-22.9252	-0.8504	-6.6675
928	SLV 15	-24.43	-0.64	87.19	-23.655	-1.1987	-6.4435
928	SLV 16	-26.75	-2.3	89.31	-24.3134	-1.1216	-7.0321
928	CRTFP Ux+	0	0	0	0	0	0
928	CRTFP Ux-	0	0	0	0	0	0
928	CRTFP Uy+	0	0	0	0	0	0
928	CRTFP Uy-	0	0	0	0	0	0
931	SLU 1	0.67	0.11	28.04	-8.1142	-1.7933	0.2403
931	SLU 2	0.65	0.1	28.01	-8.1151	-1.7913	0.2337
931	SLU 3	0.68	0.12	28.7	-8.302	-1.8352	0.2467
931	SLU 4	0.67	0.11	28.68	-8.3025	-1.834	0.2427
931	SLU 5	0.66	0.1	28.41	-8.2289	-1.8167	0.2379
931	SLU 6	0.69	0.12	29.09	-8.4158	-1.8606	0.2509
931	SLU 7	0.68	0.11	29.08	-8.4164	-1.8594	0.2469
931	SLU 8	0.69	0.11	28.84	-8.3418	-1.8441	0.2487
931	SLU 9	0.68	0.11	28.82	-8.3424	-1.8429	0.2447
931	SLU 10	0.7	0.14	31.54	-9.1285	-2.0166	0.2552
931	SLU 11	0.74	0.16	32.23	-9.3154	-2.0605	0.2683
931	SLU 12	0.73	0.15	32.21	-9.3159	-2.0593	0.2643
931	SLU 13	0.71	0.14	31.94	-9.2423	-2.0421	0.2594
931	SLU 14	0.75	0.16	32.62	-9.4292	-2.0859	0.2725
931	SLU 15	0.74	0.15	32.61	-9.4298	-2.0847	0.2685
931	SLU 16	0.74	0.15	32.37	-9.3552	-2.0694	0.2702
931	SLU 17	0.73	0.15	32.35	-9.3558	-2.0683	0.2663
931	SLU 18	0.74	0.17	33.08	-9.5619	-2.1152	0.2711
931	SLU 19	0.73	0.16	33.07	-9.5624	-2.114	0.2671
931	SLU 20	0.76	0.17	33.48	-9.6757	-2.1406	0.2753
931	SLU 21	0.75	0.16	33.46	-9.6763	-2.1394	0.2713
931	SLU 22	0.72	0.17	31.59	-9.1319	-2.0196	0.2637
931	SLU 23	0.71	0.16	31.56	-9.1329	-2.0176	0.257
931	SLU 24	0.74	0.17	32.24	-9.3197	-2.0614	0.2701
931	SLU 25	0.73	0.17	32.22	-9.3203	-2.0603	0.2661
931	SLU 26	0.72	0.16	31.96	-9.2467	-2.043	0.2612
931	SLU 27	0.75	0.17	32.64	-9.4336	-2.0868	0.2743
931	SLU 28	0.74	0.17	32.62	-9.4341	-2.0857	0.2703
931	SLU 29	0.75	0.17	32.38	-9.3596	-2.0704	0.272
931	SLU 30	0.74	0.16	32.36	-9.3602	-2.0692	0.2681
931	SLU 31	0.76	0.2	35.09	-10.1463	-2.2429	0.2786
931	SLU 32	0.79	0.21	35.77	-10.3331	-2.2867	0.2916
931	SLU 33	0.78	0.21	35.75	-10.3337	-2.2856	0.2877
931	SLU 34	0.77	0.2	35.48	-10.2601	-2.2681	0.2828
931	SLU 35	0.81	0.21	36.17	-10.447	-2.3122	0.2958
931	SLU 36	0.8	0.21	36.15	-10.4475	-2.311	0.2918
931	SLU 37	0.8	0.21	35.91	-10.373	-2.2957	0.2936
931	SLU 38	0.79	0.2	35.89	-10.3736	-2.2945	0.2896



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
931	SLU 39	0.8	0.22	36.63	-10.5796	-2.3415	0.2945
931	SLU 40	0.79	0.22	36.61	-10.5802	-2.3403	0.2905
931	SLU 41	0.81	0.22	37.02	-10.6935	-2.3669	0.2986
931	SLU 42	0.8	0.22	37.01	-10.694	-2.3657	0.2947
931	SLU 43	0.85	0.13	35.24	-10.1995	-2.2537	0.3044
931	SLU 44	0.83	0.12	35.21	-10.2004	-2.2517	0.2977
931	SLU 45	0.86	0.13	35.89	-10.3873	-2.2956	0.3108
931	SLU 46	0.85	0.13	35.88	-10.3878	-2.2944	0.3068
931	SLU 47	0.84	0.12	35.61	-10.3142	-2.2772	0.3019
931	SLU 48	0.88	0.13	36.29	-10.5011	-2.321	0.315
931	SLU 49	0.86	0.13	36.28	-10.5017	-2.3198	0.311
931	SLU 50	0.87	0.13	36.03	-10.4271	-2.3045	0.3128
931	SLU 51	0.86	0.12	36.02	-10.4277	-2.3033	0.3088
931	SLU 52	0.88	0.16	38.74	-11.2138	-2.4771	0.3193
931	SLU 53	0.92	0.17	39.42	-11.4007	-2.5209	0.3323
931	SLU 54	0.91	0.17	39.41	-11.4012	-2.5197	0.3284
931	SLU 55	0.9	0.16	39.14	-11.3276	-2.5025	0.3235
931	SLU 56	0.93	0.17	39.82	-11.5145	-2.5463	0.3365
931	SLU 57	0.92	0.17	39.8	-11.5151	-2.5451	0.3326
931	SLU 58	0.92	0.17	39.56	-11.4405	-2.5298	0.3343
931	SLU 59	0.91	0.16	39.55	-11.4411	-2.5287	0.3303
931	SLU 60	0.92	0.19	40.28	-11.6472	-2.5756	0.3352
931	SLU 61	0.91	0.18	40.26	-11.6477	-2.5744	0.3312
931	SLU 62	0.94	0.19	40.68	-11.761	-2.601	0.3394
931	SLU 63	0.93	0.18	40.66	-11.7616	-2.5998	0.3354
931	SLU 64	0.9	0.18	38.78	-11.2172	-2.48	0.3277
931	SLU 65	0.89	0.17	38.76	-11.2182	-2.478	0.3211
931	SLU 66	0.92	0.19	39.44	-11.405	-2.5218	0.3341
931	SLU 67	0.91	0.18	39.42	-11.4056	-2.5207	0.3302
931	SLU 68	0.9	0.17	39.15	-11.332	-2.5034	0.3253
931	SLU 69	0.93	0.19	39.84	-11.5189	-2.5473	0.3383
931	SLU 70	0.92	0.18	39.82	-11.5194	-2.5461	0.3344
931	SLU 71	0.93	0.18	39.58	-11.4449	-2.5308	0.3361
931	SLU 72	0.92	0.18	39.56	-11.4455	-2.5296	0.3321
931	SLU 73	0.94	0.21	42.28	-12.2316	-2.7033	0.3427
931	SLU 74	0.97	0.23	42.97	-12.4184	-2.7472	0.3557
931	SLU 75	0.96	0.22	42.95	-12.419	-2.746	0.3517
931	SLU 76	0.95	0.21	42.68	-12.3454	-2.7287	0.3469
931	SLU 77	0.99	0.23	43.36	-12.5323	-2.7726	0.3599
931	SLU 78	0.98	0.22	43.35	-12.5328	-2.7714	0.3559
931	SLU 79	0.98	0.22	43.11	-12.4583	-2.7561	0.3577
931	SLU 80	0.97	0.22	43.09	-12.4589	-2.7549	0.3537
931	SLU 81	0.98	0.24	43.82	-12.6649	-2.8019	0.3585
931	SLU 82	0.97	0.23	43.81	-12.6655	-2.8007	0.3546
931	SLU 83	0.99	0.24	44.22	-12.7788	-2.8273	0.3627
931	SLU 84	0.98	0.23	44.21	-12.7793	-2.8261	0.3587
931	SLE RA 1	0.68	0.13	29.05	-8.4049	-1.858	0.247
931	SLE RA 2	0.67	0.12	29.04	-8.4056	-1.8566	0.2426
931	SLE RA 3	0.69	0.13	29.49	-8.5301	-1.8859	0.2512
931	SLE RA 4	0.69	0.13	29.48	-8.5305	-1.8851	0.2486
931	SLE RA 5	0.68	0.12	29.3	-8.4815	-1.8736	0.2453
931	SLE RA 6	0.7	0.13	29.76	-8.606	-1.9028	0.254
931	SLE RA 7	0.69	0.13	29.75	-8.6064	-1.902	0.2514
931	SLE RA 8	0.7	0.13	29.58	-8.5567	-1.8918	0.2526
931	SLE RA 9	0.69	0.12	29.57	-8.5571	-1.891	0.2499
931	SLE RA 10	0.71	0.15	31.39	-9.0812	-2.0069	0.2569
931	SLE RA 11	0.73	0.16	31.84	-9.2057	-2.0361	0.2656
931	SLE RA 12	0.72	0.15	31.83	-9.2061	-2.0353	0.263
931	SLE RA 13	0.71	0.15	31.65	-9.1571	-2.0238	0.2597
931	SLE RA 14	0.74	0.16	32.11	-9.2816	-2.053	0.2684
931	SLE RA 15	0.73	0.15	32.1	-9.282	-2.0522	0.2658
931	SLE RA 16	0.73	0.15	31.94	-9.2323	-2.042	0.2669
931	SLE RA 17	0.73	0.15	31.93	-9.2327	-2.0413	0.2643
931	SLE RA 18	0.73	0.17	32.41	-9.3701	-2.0725	0.2675
931	SLE RA 19	0.73	0.16	32.4	-9.3705	-2.0717	0.2648
931	SLE RA 20	0.74	0.17	32.68	-9.446	-2.0895	0.2703
931	SLE RA 21	0.73	0.16	32.67	-9.4464	-2.0887	0.2676
931	SLE FR 1	0.68	0.13	29.05	-8.4049	-1.858	0.247
931	SLE FR 2	0.68	0.13	29.05	-8.4051	-1.8577	0.2461
931	SLE FR 3	0.69	0.13	29.16	-8.4353	-1.8647	0.2481
931	SLE FR 4	0.7	0.14	30.06	-8.6946	-1.9221	0.2522
931	SLE FR 5	0.7	0.14	30.17	-8.7248	-1.9291	0.2542
931	SLE FR 6	0.71	0.15	30.73	-8.8875	-1.9652	0.2572
931	SLE QP 1	0.68	0.13	29.05	-8.4049	-1.858	0.247
931	SLE QP 2	0.7	0.14	30.06	-8.6945	-1.9223	0.2531
931	SLD 1	3.25	0.25	27.01	-7.9146	-1.7264	1.1914
931	SLD 2	3	0.47	26.69	-7.8346	-1.7059	1.1182
931	SLD 3	3.39	-0.47	27.62	-8.079	-1.765	1.126
931	SLD 4	3.14	-0.25	27.3	-7.999	-1.7445	1.0528
931	SLD 5	1.29	1.22	28.28	-8.2254	-1.8087	0.6468
931	SLD 6	1.12	1.37	28.07	-8.1728	-1.7952	0.5987
931	SLD 7	1.77	-1.17	30.31	-8.7735	-1.9373	0.4289
931	SLD 8	1.6	-1.02	30.1	-8.7209	-1.9238	0.3808
931	SLD 9	-0.21	1.3	30.02	-8.6681	-1.9209	0.1255
931	SLD 10	-0.37	1.45	29.81	-8.6155	-1.9074	0.0774
931	SLD 11	0.27	-1.09	32.05	-9.2161	-2.0494	-0.0925
931	SLD 12	0.11	-0.94	31.85	-9.1635	-2.0359	-0.1406
931	SLD 13	-1.75	0.53	32.82	-9.39	-2.1002	-0.5465
931	SLD 14	-2	0.75	32.5	-9.31	-2.0797	-0.6197
931	SLD 15	-1.6	-0.19	33.43	-9.5544	-2.1388	-0.6119



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
931	SLD 16	-1.85	0.04	33.11	-9.4744	-2.1182	-0.6851
931	SLV 1	6.66	0.36	22.94	-6.8739	-1.465	2.4469
931	SLV 2	6.08	0.88	22.2	-6.6875	-1.4172	2.2764
931	SLV 3	7	-1.26	24.32	-7.246	-1.5524	2.2965
931	SLV 4	6.41	-0.74	23.58	-7.0596	-1.5046	2.1261
931	SLV 5	2.08	2.57	25.96	-7.6161	-1.6609	1.1688
931	SLV 6	1.7	2.91	25.48	-7.4957	-1.63	1.0587
931	SLV 7	3.2	-2.83	30.56	-8.8566	-1.9521	0.6676
931	SLV 8	2.82	-2.49	30.08	-8.7362	-1.9212	0.5575
931	SLV 9	-1.43	2.77	30.04	-8.6527	-1.9234	-0.0512
931	SLV 10	-1.8	3.11	29.56	-8.5324	-1.8925	-0.1613
931	SLV 11	-0.31	-2.63	34.64	-9.8932	-2.2146	-0.5524
931	SLV 12	-0.68	-2.29	34.17	-9.7729	-2.1837	-0.6625
931	SLV 13	-5.02	1.02	36.54	-10.3293	-2.3401	-1.6198
931	SLV 14	-5.6	1.54	35.81	-10.143	-2.2922	-1.7903
931	SLV 15	-4.68	-0.6	37.92	-10.7015	-2.4274	-1.7702
931	SLV 16	-5.27	-0.08	37.19	-10.5151	-2.3796	-1.9406
931	CRTFP Ux+	0	0	0	0	0	0
931	CRTFP Ux-	0	0	0	0	0	0
931	CRTFP Uy+	0	0	0	0	0	0
931	CRTFP Uy-	0	0	0	0	0	0
932	SLU 1	0.98	0.17	39.48	-10.3472	0.0601	0.3437
932	SLU 2	0.96	0.16	39.43	-10.344	0.0606	0.3353
932	SLU 3	1.01	0.18	40.4	-10.5821	0.0618	0.3526
932	SLU 4	0.99	0.17	40.36	-10.5802	0.0621	0.3476
932	SLU 5	0.97	0.16	39.98	-10.4864	0.0616	0.3415
932	SLU 6	1.02	0.18	40.95	-10.7246	0.0627	0.3589
932	SLU 7	1.01	0.17	40.92	-10.7227	0.0631	0.3538
932	SLU 8	1.02	0.17	40.59	-10.6321	0.0621	0.3561
932	SLU 9	1	0.16	40.56	-10.6301	0.0624	0.3511
932	SLU 10	1.04	0.22	44.36	-11.6168	0.0695	0.363
932	SLU 11	1.09	0.24	45.34	-11.855	0.0706	0.3803
932	SLU 12	1.07	0.23	45.3	-11.8531	0.0709	0.3753
932	SLU 13	1.05	0.21	44.92	-11.7593	0.0705	0.3692
932	SLU 14	1.1	0.24	45.89	-11.9975	0.0716	0.3866
932	SLU 15	1.09	0.23	45.86	-11.9956	0.0719	0.3815
932	SLU 16	1.1	0.23	45.53	-11.9049	0.0709	0.3838
932	SLU 17	1.08	0.22	45.5	-11.903	0.0712	0.3788
932	SLU 18	1.09	0.25	46.53	-12.1656	0.0728	0.3833
932	SLU 19	1.08	0.24	46.5	-12.1636	0.0731	0.3782
932	SLU 20	1.11	0.25	47.09	-12.308	0.0737	0.3895
932	SLU 21	1.1	0.24	47.06	-12.3061	0.0741	0.3844
932	SLU 22	1.06	0.25	44.44	-11.626	0.0691	0.3728
932	SLU 23	1.04	0.24	44.38	-11.6229	0.0696	0.3643
932	SLU 24	1.09	0.26	45.35	-11.861	0.0707	0.3817
932	SLU 25	1.07	0.25	45.32	-11.8591	0.0711	0.3767
932	SLU 26	1.06	0.24	44.94	-11.7653	0.0706	0.3706
932	SLU 27	1.11	0.26	45.91	-12.0035	0.0717	0.3879
932	SLU 28	1.09	0.25	45.88	-12.0016	0.072	0.3829
932	SLU 29	1.1	0.25	45.55	-11.9109	0.071	0.3852
932	SLU 30	1.08	0.24	45.52	-11.909	0.0714	0.3802
932	SLU 31	1.12	0.29	49.32	-12.8957	0.0785	0.392
932	SLU 32	1.17	0.31	50.29	-13.1339	0.0796	0.4094
932	SLU 33	1.15	0.31	50.26	-13.132	0.0799	0.4044
932	SLU 34	1.14	0.29	49.88	-13.0382	0.0795	0.3983
932	SLU 35	1.19	0.31	50.85	-13.2764	0.0806	0.4157
932	SLU 36	1.17	0.3	50.82	-13.2745	0.0809	0.4106
932	SLU 37	1.18	0.3	50.49	-13.1838	0.0799	0.4129
932	SLU 38	1.16	0.3	50.46	-13.1819	0.0802	0.4079
932	SLU 39	1.18	0.33	51.49	-13.4444	0.0817	0.4123
932	SLU 40	1.16	0.32	51.46	-13.4425	0.0821	0.4073
932	SLU 41	1.2	0.33	52.05	-13.5869	0.0827	0.4186
932	SLU 42	1.18	0.32	52.02	-13.585	0.083	0.4135
932	SLU 43	1.25	0.2	49.62	-13.0128	0.0751	0.4368
932	SLU 44	1.22	0.18	49.57	-13.0096	0.0756	0.4284
932	SLU 45	1.27	0.2	50.54	-13.2478	0.0767	0.4458
932	SLU 46	1.26	0.2	50.51	-13.2459	0.077	0.4407
932	SLU 47	1.24	0.18	50.13	-13.1521	0.0766	0.4346
932	SLU 48	1.29	0.2	51.1	-13.3903	0.0777	0.452
932	SLU 49	1.28	0.2	51.07	-13.3884	0.078	0.447
932	SLU 50	1.28	0.2	50.74	-13.2977	0.077	0.4493
932	SLU 51	1.27	0.19	50.71	-13.2958	0.0773	0.4442
932	SLU 52	1.3	0.24	54.51	-14.2825	0.0845	0.4561
932	SLU 53	1.35	0.26	55.48	-14.5207	0.0856	0.4735
932	SLU 54	1.34	0.25	55.45	-14.5188	0.0859	0.4684
932	SLU 55	1.32	0.24	55.07	-14.425	0.0854	0.4623
932	SLU 56	1.37	0.26	56.04	-14.6631	0.0865	0.4797
932	SLU 57	1.35	0.25	56	-14.6612	0.0869	0.4747
932	SLU 58	1.36	0.25	55.68	-14.5706	0.0859	0.477
932	SLU 59	1.35	0.24	55.64	-14.5687	0.0862	0.4719
932	SLU 60	1.36	0.28	56.68	-14.8312	0.0877	0.4764
932	SLU 61	1.35	0.27	56.65	-14.8293	0.088	0.4713
932	SLU 62	1.38	0.28	57.24	-14.9737	0.0887	0.4826
932	SLU 63	1.36	0.27	57.2	-14.9718	0.089	0.4776
932	SLU 64	1.33	0.27	54.58	-14.2917	0.084	0.4659
932	SLU 65	1.31	0.26	54.53	-14.2885	0.0846	0.4575
932	SLU 66	1.36	0.28	55.5	-14.5267	0.0857	0.4748
932	SLU 67	1.34	0.27	55.47	-14.5248	0.086	0.4698
932	SLU 68	1.32	0.26	55.08	-14.431	0.0856	0.4637
932	SLU 69	1.37	0.28	56.06	-14.6692	0.0867	0.4811



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
932	SLU 70	1.36	0.27	56.02	-14.6672	0.087	0.476
932	SLU 71	1.37	0.27	55.7	-14.5766	0.086	0.4784
932	SLU 72	1.35	0.27	55.66	-14.5747	0.0863	0.4733
932	SLU 73	1.38	0.32	59.47	-15.5614	0.0934	0.4852
932	SLU 74	1.43	0.34	60.44	-15.7996	0.0945	0.5026
932	SLU 75	1.42	0.33	60.4	-15.7977	0.0949	0.4975
932	SLU 76	1.4	0.32	60.02	-15.7039	0.0944	0.4914
932	SLU 77	1.45	0.34	60.99	-15.942	0.0955	0.5088
932	SLU 78	1.44	0.33	60.96	-15.9401	0.0958	0.5037
932	SLU 79	1.44	0.33	60.63	-15.8495	0.0949	0.5061
932	SLU 80	1.43	0.32	60.6	-15.8476	0.0952	0.501
932	SLU 81	1.44	0.35	61.64	-16.1101	0.0967	0.5055
932	SLU 82	1.43	0.35	61.6	-16.1082	0.097	0.5004
932	SLU 83	1.46	0.35	62.19	-16.2526	0.0977	0.5117
932	SLU 84	1.45	0.35	62.16	-16.2506	0.098	0.5067
932	SLE RA 1	1	0.19	40.9	-10.7125	0.0627	0.352
932	SLE RA 2	0.99	0.19	40.86	-10.7104	0.063	0.3464
932	SLE RA 3	1.02	0.2	41.51	-10.8692	0.0638	0.358
932	SLE RA 4	1.01	0.19	41.49	-10.8679	0.064	0.3546
932	SLE RA 5	1	0.18	41.23	-10.8054	0.0637	0.3505
932	SLE RA 6	1.03	0.2	41.88	-10.9642	0.0644	0.3621
932	SLE RA 7	1.02	0.19	41.86	-10.9629	0.0646	0.3587
932	SLE RA 8	1.03	0.19	41.64	-10.9025	0.064	0.3603
932	SLE RA 9	1.02	0.19	41.62	-10.9012	0.0642	0.3569
932	SLE RA 10	1.04	0.22	44.15	-11.559	0.0689	0.3648
932	SLE RA 11	1.07	0.24	44.8	-11.7178	0.0697	0.3764
932	SLE RA 12	1.06	0.23	44.78	-11.7165	0.0699	0.3731
932	SLE RA 13	1.05	0.22	44.52	-11.654	0.0696	0.369
932	SLE RA 14	1.09	0.24	45.17	-11.8128	0.0703	0.3806
932	SLE RA 15	1.08	0.23	45.15	-11.8115	0.0705	0.3772
932	SLE RA 16	1.08	0.23	44.93	-11.7511	0.0699	0.3788
932	SLE RA 17	1.07	0.23	44.91	-11.7498	0.0701	0.3754
932	SLE RA 18	1.08	0.25	45.6	-11.9248	0.0711	0.3784
932	SLE RA 19	1.07	0.24	45.58	-11.9235	0.0713	0.375
932	SLE RA 20	1.09	0.25	45.97	-12.0198	0.0718	0.3825
932	SLE RA 21	1.08	0.24	45.95	-12.0185	0.072	0.3792
932	SLE FR 1	1	0.19	40.9	-10.7125	0.0627	0.352
932	SLE FR 2	1	0.19	40.89	-10.7121	0.0627	0.3509
932	SLE FR 3	1.01	0.19	41.05	-10.7505	0.0629	0.3536
932	SLE FR 4	1.02	0.21	42.3	-11.0758	0.0653	0.3588
932	SLE FR 5	1.03	0.21	42.46	-11.1142	0.0655	0.3616
932	SLE FR 6	1.04	0.22	43.25	-11.3187	0.0669	0.3652
932	SLE QP 1	1	0.19	40.9	-10.7125	0.0627	0.352
932	SLE QP 2	1.03	0.21	42.31	-11.0762	0.0652	0.3599
932	SLD 1	4.74	0.3	37.9	-10.1968	0.0655	1.6573
932	SLD 2	4.38	0.65	37.43	-10.092	0.0654	1.5294
932	SLD 3	4.95	-0.73	38.73	-10.391	0.0678	1.7308
932	SLD 4	4.59	-0.38	38.26	-10.2862	0.0678	1.6028
932	SLD 5	1.89	1.74	39.81	-10.5366	0.0617	0.6606
932	SLD 6	1.65	1.96	39.5	-10.4677	0.0617	0.5765
932	SLD 7	2.59	-1.69	42.58	-11.1839	0.0696	0.9054
932	SLD 8	2.35	-1.47	42.27	-11.115	0.0695	0.8213
932	SLD 9	-0.29	1.89	42.34	-11.0374	0.0609	-0.1015
932	SLD 10	-0.54	2.11	42.04	-10.9685	0.0608	-0.1856
932	SLD 11	0.41	-1.54	45.11	-11.6848	0.0687	0.1433
932	SLD 12	0.17	-1.32	44.81	-11.6159	0.0687	0.0592
932	SLD 13	-2.53	0.8	46.35	-11.8663	0.0626	-0.883
932	SLD 14	-2.9	1.15	45.89	-11.7615	0.0626	-1.011
932	SLD 15	-2.32	-0.23	47.18	-12.0605	0.065	-0.8096
932	SLD 16	-2.69	0.12	46.72	-11.9557	0.0649	-0.9375
932	SLV 1	9.72	0.39	32.01	-9.0236	0.066	3.3954
932	SLV 2	8.87	1.19	30.93	-8.7795	0.0658	3.0974
932	SLV 3	10.21	-1.94	33.89	-9.4633	0.0713	3.5667
932	SLV 4	9.36	-1.14	32.81	-9.2192	0.0712	3.2687
932	SLV 5	3.04	3.66	36.55	-9.8357	0.0574	1.0624
932	SLV 6	2.49	4.18	35.85	-9.6781	0.0573	0.8699
932	SLV 7	4.67	-4.11	42.83	-11.3015	0.0751	1.6332
932	SLV 8	4.12	-3.59	42.13	-11.1438	0.075	1.4407
932	SLV 9	-2.07	4.01	42.49	-11.0087	0.0554	-0.7209
932	SLV 10	-2.62	4.53	41.79	-10.851	0.0553	-0.9134
932	SLV 11	-0.43	-3.76	48.76	-12.4744	0.0731	-0.1501
932	SLV 12	-0.99	-3.24	48.07	-12.3167	0.073	-0.3426
932	SLV 13	-7.3	1.56	51.8	-12.9333	0.0592	-2.5489
932	SLV 14	-8.16	2.36	50.72	-12.6892	0.0591	-2.8469
932	SLV 15	-6.81	-0.77	53.69	-13.373	0.0646	-2.3776
932	SLV 16	-7.67	0.03	52.6	-13.1289	0.0644	-2.6756
932	CRTFP Ux+	0	0	0	0	0	0
932	CRTFP Ux-	0	0	0	0	0	0
932	CRTFP Uy+	0	0	0	0	0	0
932	CRTFP Uy-	0	0	0	0	0	0
933	SLU 1	0.99	0.19	37.66	-8.7057	0.0614	0.3479
933	SLU 2	0.97	0.18	37.59	-8.697	0.0618	0.3396
933	SLU 3	1.02	0.2	38.52	-8.8977	0.063	0.357
933	SLU 4	1	0.19	38.48	-8.8925	0.0633	0.352
933	SLU 5	0.99	0.18	38.11	-8.8134	0.0628	0.346
933	SLU 6	1.04	0.2	39.05	-9.0142	0.064	0.3633
933	SLU 7	1.02	0.19	39.01	-9.0089	0.0642	0.3583
933	SLU 8	1.03	0.19	38.71	-8.9387	0.0633	0.3605
933	SLU 9	1.01	0.18	38.67	-8.9334	0.0636	0.3556
933	SLU 10	1.05	0.24	42.26	-9.7421	0.0709	0.3674



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
933	SLU 11	1.1	0.25	43.19	-9.9429	0.0721	0.3847
933	SLU 12	1.08	0.25	43.15	-9.9376	0.0723	0.3798
933	SLU 13	1.06	0.24	42.78	-9.8586	0.0718	0.3737
933	SLU 14	1.11	0.25	43.72	-10.0593	0.0731	0.391
933	SLU 15	1.1	0.25	43.68	-10.0541	0.0733	0.3861
933	SLU 16	1.11	0.25	43.38	-9.9838	0.0724	0.3883
933	SLU 17	1.09	0.24	43.34	-9.9785	0.0727	0.3833
933	SLU 18	1.1	0.27	44.33	-10.1988	0.0743	0.3875
933	SLU 19	1.09	0.26	44.28	-10.1935	0.0746	0.3826
933	SLU 20	1.12	0.27	44.85	-10.3152	0.0753	0.3939
933	SLU 21	1.11	0.26	44.81	-10.31	0.0756	0.3889
933	SLU 22	1.07	0.27	42.34	-9.7556	0.0705	0.3771
933	SLU 23	1.05	0.26	42.27	-9.7468	0.071	0.3688
933	SLU 24	1.1	0.28	43.21	-9.9476	0.0722	0.3862
933	SLU 25	1.09	0.27	43.17	-9.9423	0.0724	0.3812
933	SLU 26	1.07	0.26	42.8	-9.8632	0.0719	0.3752
933	SLU 27	1.12	0.27	43.74	-10.064	0.0732	0.3925
933	SLU 28	1.1	0.27	43.69	-10.0587	0.0734	0.3875
933	SLU 29	1.11	0.27	43.4	-9.9885	0.0725	0.3897
933	SLU 30	1.1	0.26	43.35	-9.9832	0.0728	0.3848
933	SLU 31	1.13	0.31	46.94	-10.7919	0.08	0.3966
933	SLU 32	1.18	0.33	47.88	-10.9927	0.0813	0.4139
933	SLU 33	1.17	0.33	47.84	-10.9874	0.0815	0.409
933	SLU 34	1.15	0.31	47.47	-10.9084	0.081	0.4029
933	SLU 35	1.2	0.33	48.4	-11.1091	0.0823	0.4202
933	SLU 36	1.18	0.33	48.36	-11.1039	0.0825	0.4153
933	SLU 37	1.19	0.32	48.06	-11.0336	0.0816	0.4175
933	SLU 38	1.18	0.32	48.02	-11.0283	0.0818	0.4125
933	SLU 39	1.19	0.35	49.01	-11.2486	0.0835	0.4167
933	SLU 40	1.17	0.34	48.97	-11.2433	0.0838	0.4118
933	SLU 41	1.21	0.35	49.54	-11.3651	0.0845	0.4231
933	SLU 42	1.19	0.34	49.5	-11.3598	0.0848	0.4181
933	SLU 43	1.26	0.22	47.35	-10.9575	0.0766	0.4422
933	SLU 44	1.24	0.21	47.28	-10.9488	0.077	0.434
933	SLU 45	1.29	0.23	48.21	-11.1495	0.0783	0.4513
933	SLU 46	1.27	0.22	48.17	-11.1443	0.0785	0.4464
933	SLU 47	1.25	0.21	47.81	-11.0652	0.078	0.4403
933	SLU 48	1.3	0.23	48.74	-11.266	0.0792	0.4576
933	SLU 49	1.29	0.22	48.7	-11.2607	0.0795	0.4527
933	SLU 50	1.3	0.22	48.4	-11.1904	0.0786	0.4549
933	SLU 51	1.28	0.21	48.36	-11.1852	0.0788	0.4499
933	SLU 52	1.32	0.27	51.95	-11.9939	0.0861	0.4618
933	SLU 53	1.37	0.28	52.88	-12.1947	0.0873	0.4791
933	SLU 54	1.35	0.28	52.84	-12.1894	0.0876	0.4741
933	SLU 55	1.33	0.27	52.47	-12.1103	0.0871	0.4681
933	SLU 56	1.38	0.28	53.41	-12.3111	0.0883	0.4854
933	SLU 57	1.37	0.28	53.37	-12.3058	0.0886	0.4805
933	SLU 58	1.38	0.28	53.07	-12.2356	0.0877	0.4826
933	SLU 59	1.36	0.27	53.03	-12.2303	0.0879	0.4777
933	SLU 60	1.37	0.3	54.02	-12.4506	0.0896	0.4819
933	SLU 61	1.36	0.29	53.97	-12.4453	0.0898	0.477
933	SLU 62	1.39	0.3	54.54	-12.567	0.0906	0.4882
933	SLU 63	1.38	0.29	54.5	-12.5618	0.0908	0.4833
933	SLU 64	1.34	0.3	52.03	-12.0073	0.0858	0.4714
933	SLU 65	1.32	0.29	51.96	-11.9986	0.0862	0.4632
933	SLU 66	1.37	0.31	52.9	-12.1993	0.0875	0.4805
933	SLU 67	1.36	0.3	52.86	-12.1941	0.0877	0.4756
933	SLU 68	1.34	0.29	52.49	-12.115	0.0872	0.4695
933	SLU 69	1.39	0.31	53.43	-12.3158	0.0884	0.4868
933	SLU 70	1.37	0.3	53.38	-12.3105	0.0887	0.4819
933	SLU 71	1.38	0.3	53.09	-12.2403	0.0878	0.4841
933	SLU 72	1.37	0.29	53.04	-12.235	0.088	0.4791
933	SLU 73	1.4	0.34	56.63	-13.0437	0.0953	0.491
933	SLU 74	1.45	0.36	57.57	-13.2445	0.0965	0.5083
933	SLU 75	1.43	0.36	57.53	-13.2392	0.0968	0.5033
933	SLU 76	1.42	0.34	57.16	-13.1602	0.0963	0.4973
933	SLU 77	1.47	0.36	58.09	-13.3609	0.0975	0.5146
933	SLU 78	1.45	0.36	58.05	-13.3557	0.0978	0.5097
933	SLU 79	1.46	0.35	57.75	-13.2854	0.0969	0.5118
933	SLU 80	1.44	0.35	57.71	-13.2801	0.0971	0.5069
933	SLU 81	1.46	0.38	58.7	-13.5004	0.0988	0.5111
933	SLU 82	1.44	0.37	58.66	-13.4951	0.099	0.5062
933	SLU 83	1.47	0.38	59.23	-13.6168	0.0998	0.5174
933	SLU 84	1.46	0.37	59.19	-13.6116	0.1	0.5125
933	SLE RA 1	1.02	0.21	38.99	-9.0057	0.064	0.3562
933	SLE RA 2	1	0.21	38.95	-8.9998	0.0643	0.3507
933	SLE RA 3	1.03	0.22	39.57	-9.1337	0.0651	0.3623
933	SLE RA 4	1.02	0.21	39.55	-9.1302	0.0652	0.359
933	SLE RA 5	1.01	0.21	39.3	-9.0775	0.0649	0.3549
933	SLE RA 6	1.04	0.22	39.92	-9.2113	0.0657	0.3665
933	SLE RA 7	1.04	0.21	39.9	-9.2078	0.0659	0.3632
933	SLE RA 8	1.04	0.21	39.7	-9.161	0.0653	0.3646
933	SLE RA 9	1.03	0.21	39.67	-9.1575	0.0655	0.3613
933	SLE RA 10	1.05	0.24	42.06	-9.6966	0.0703	0.3692
933	SLE RA 11	1.09	0.25	42.68	-9.8304	0.0711	0.3808
933	SLE RA 12	1.08	0.25	42.66	-9.8269	0.0713	0.3775
933	SLE RA 13	1.06	0.24	42.41	-9.7742	0.071	0.3735
933	SLE RA 14	1.1	0.25	43.04	-9.9081	0.0718	0.385
933	SLE RA 15	1.09	0.25	43.01	-9.9046	0.072	0.3817
933	SLE RA 16	1.09	0.25	42.81	-9.8577	0.0713	0.3832



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
933	SLE RA 17	1.08	0.25	42.78	-9.8542	0.0715	0.3799
933	SLE RA 18	1.09	0.27	43.44	-10.0011	0.0726	0.3827
933	SLE RA 19	1.08	0.26	43.41	-9.9975	0.0728	0.3794
933	SLE RA 20	1.1	0.27	43.79	-10.0787	0.0733	0.3869
933	SLE RA 21	1.09	0.26	43.76	-10.0752	0.0735	0.3836
933	SLE FR 1	1.02	0.21	38.99	-9.0057	0.064	0.3562
933	SLE FR 2	1.01	0.21	38.99	-9.0045	0.064	0.3551
933	SLE FR 3	1.02	0.21	39.13	-9.0367	0.0642	0.3579
933	SLE FR 4	1.03	0.23	40.32	-9.3031	0.0666	0.363
933	SLE FR 5	1.04	0.23	40.47	-9.3354	0.0668	0.3658
933	SLE FR 6	1.05	0.24	41.22	-9.5034	0.0683	0.3694
933	SLE QP 1	1.02	0.21	38.99	-9.0057	0.064	0.3562
933	SLE QP 2	1.04	0.23	40.33	-9.3043	0.0666	0.3641
933	SLD 1	4.75	0.25	35.86	-8.6722	0.0707	1.6627
933	SLD 2	4.39	0.61	35.4	-8.5802	0.0704	1.5341
933	SLD 3	4.96	-0.77	36.63	-8.817	0.0727	1.7362
933	SLD 4	4.6	-0.4	36.17	-8.7251	0.0724	1.6076
933	SLD 5	1.9	1.7	37.9	-8.9114	0.0648	0.6652
933	SLD 6	1.66	1.94	37.6	-8.851	0.0646	0.5807
933	SLD 7	2.6	-1.67	40.47	-9.3942	0.0715	0.9102
933	SLD 8	2.36	-1.43	40.17	-9.3338	0.0714	0.8257
933	SLD 9	-0.28	1.89	40.49	-9.2748	0.0618	-0.0974
933	SLD 10	-0.52	2.13	40.19	-9.2144	0.0616	-0.1819
933	SLD 11	0.42	-1.49	43.06	-9.7576	0.0686	0.1476
933	SLD 12	0.18	-1.25	42.76	-9.6972	0.0684	0.0631
933	SLD 13	-2.52	0.86	44.49	-9.8835	0.0607	-0.8793
933	SLD 14	-2.89	1.22	44.03	-9.7916	0.0605	-1.0079
933	SLD 15	-2.31	-0.16	45.26	-10.0284	0.0628	-0.8058
933	SLD 16	-2.68	0.21	44.8	-9.9364	0.0625	-0.9344
933	SLV 1	9.73	0.23	29.89	-7.8291	0.0762	3.4022
933	SLV 2	8.87	1.09	28.82	-7.6151	0.0756	3.1028
933	SLV 3	10.22	-2.06	31.64	-8.1574	0.0808	3.5736
933	SLV 4	9.36	-1.2	30.57	-7.9433	0.0801	3.2742
933	SLV 5	3.05	3.56	34.73	-8.401	0.0626	1.0675
933	SLV 6	2.5	4.11	34.04	-8.2627	0.0622	0.8741
933	SLV 7	4.69	-4.08	40.56	-9.4951	0.0779	1.6386
933	SLV 8	4.13	-3.53	39.87	-9.3568	0.0775	1.4453
933	SLV 9	-2.05	3.99	40.79	-9.2518	0.0557	-0.717
933	SLV 10	-2.61	4.54	40.1	-9.1136	0.0553	-0.9103
933	SLV 11	-0.42	-3.66	46.62	-10.3459	0.0709	-0.1458
933	SLV 12	-0.98	-3.11	45.93	-10.2076	0.0705	-0.3392
933	SLV 13	-7.29	1.66	50.08	-10.6653	0.053	-2.5459
933	SLV 14	-8.15	2.51	49.02	-10.4512	0.0524	-2.8453
933	SLV 15	-6.8	-0.63	51.83	-10.9935	0.0576	-2.3745
933	SLV 16	-7.66	0.22	50.77	-10.7795	0.057	-2.6739
933	CRTFP Ux+	0	0	0	0	0	0
933	CRTFP Ux-	0	0	0	0	0	0
933	CRTFP Uy+	0	0	0	0	0	0
933	CRTFP Uy-	0	0	0	0	0	0
934	SLU 1	1	0.22	35.94	-7.2276	0.0535	0.3518
934	SLU 2	0.98	0.21	35.86	-7.2143	0.0538	0.3438
934	SLU 3	1.03	0.23	36.76	-7.3811	0.055	0.361
934	SLU 4	1.01	0.22	36.71	-7.3731	0.0551	0.3562
934	SLU 5	1	0.21	36.36	-7.3075	0.0547	0.3502
934	SLU 6	1.05	0.23	37.26	-7.4742	0.0558	0.3675
934	SLU 7	1.03	0.23	37.21	-7.4663	0.056	0.3626
934	SLU 8	1.04	0.22	36.94	-7.4139	0.0552	0.3647
934	SLU 9	1.02	0.22	36.89	-7.406	0.0554	0.3598
934	SLU 10	1.06	0.27	40.27	-8.0537	0.0619	0.3717
934	SLU 11	1.11	0.29	41.17	-8.2204	0.063	0.3889
934	SLU 12	1.09	0.28	41.12	-8.2125	0.0632	0.3841
934	SLU 13	1.08	0.27	40.77	-8.1469	0.0627	0.3781
934	SLU 14	1.13	0.29	41.67	-8.3136	0.0639	0.3953
934	SLU 15	1.11	0.29	41.62	-8.3056	0.064	0.3905
934	SLU 16	1.12	0.28	41.35	-8.2533	0.0633	0.3925
934	SLU 17	1.1	0.28	41.3	-8.2453	0.0635	0.3877
934	SLU 18	1.11	0.31	42.24	-8.4267	0.0651	0.3916
934	SLU 19	1.1	0.3	42.19	-8.4187	0.0652	0.3868
934	SLU 20	1.13	0.31	42.74	-8.5198	0.0659	0.398
934	SLU 21	1.12	0.3	42.69	-8.5119	0.0661	0.3932
934	SLU 22	1.09	0.3	40.36	-8.0702	0.0617	0.3812
934	SLU 23	1.06	0.29	40.28	-8.0569	0.062	0.3732
934	SLU 24	1.11	0.31	41.18	-8.2236	0.0631	0.3904
934	SLU 25	1.1	0.3	41.14	-8.2157	0.0633	0.3856
934	SLU 26	1.08	0.29	40.78	-8.1501	0.0628	0.3796
934	SLU 27	1.13	0.31	41.68	-8.3168	0.064	0.3968
934	SLU 28	1.12	0.3	41.64	-8.3089	0.0641	0.392
934	SLU 29	1.12	0.3	41.36	-8.2565	0.0634	0.394
934	SLU 30	1.11	0.3	41.32	-8.2486	0.0635	0.3892
934	SLU 31	1.14	0.35	44.7	-8.8963	0.07	0.401
934	SLU 32	1.19	0.37	45.6	-9.063	0.0712	0.4183
934	SLU 33	1.18	0.36	45.55	-9.0551	0.0713	0.4134
934	SLU 34	1.16	0.35	45.2	-8.9895	0.0709	0.4074
934	SLU 35	1.21	0.37	46.1	-9.1562	0.072	0.4247
934	SLU 36	1.2	0.36	46.05	-9.1482	0.0722	0.4198
934	SLU 37	1.2	0.36	45.78	-9.0959	0.0715	0.4219
934	SLU 38	1.19	0.36	45.73	-9.0879	0.0716	0.417
934	SLU 39	1.2	0.38	46.67	-9.2693	0.0732	0.421
934	SLU 40	1.18	0.38	46.62	-9.2613	0.0734	0.4162
934	SLU 41	1.22	0.39	47.17	-9.3624	0.0741	0.4274



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
934	SLU 42	1.2	0.38	47.12	-9.3545	0.0742	0.4226
934	SLU 43	1.27	0.26	45.2	-9.107	0.0668	0.4473
934	SLU 44	1.25	0.25	45.12	-9.0937	0.0671	0.4393
934	SLU 45	1.3	0.27	46.02	-9.2605	0.0682	0.4565
934	SLU 46	1.29	0.26	45.98	-9.2525	0.0684	0.4517
934	SLU 47	1.27	0.25	45.62	-9.1869	0.0679	0.4457
934	SLU 48	1.32	0.27	46.52	-9.3536	0.0691	0.4629
934	SLU 49	1.3	0.26	46.48	-9.3457	0.0692	0.4581
934	SLU 50	1.31	0.26	46.2	-9.2933	0.0685	0.4601
934	SLU 51	1.3	0.26	46.15	-9.2854	0.0687	0.4553
934	SLU 52	1.33	0.31	49.53	-9.9331	0.0751	0.4672
934	SLU 53	1.38	0.33	50.44	-10.0998	0.0763	0.4844
934	SLU 54	1.37	0.32	50.39	-10.0919	0.0765	0.4796
934	SLU 55	1.35	0.31	50.03	-10.0263	0.076	0.4736
934	SLU 56	1.4	0.33	50.94	-10.193	0.0771	0.4908
934	SLU 57	1.38	0.32	50.89	-10.185	0.0773	0.486
934	SLU 58	1.39	0.32	50.61	-10.1327	0.0766	0.488
934	SLU 59	1.38	0.32	50.57	-10.1247	0.0767	0.4832
934	SLU 60	1.39	0.34	51.5	-10.3061	0.0783	0.4871
934	SLU 61	1.37	0.34	51.46	-10.2981	0.0785	0.4823
934	SLU 62	1.4	0.34	52	-10.3992	0.0792	0.4935
934	SLU 63	1.39	0.34	51.96	-10.3913	0.0793	0.4887
934	SLU 64	1.36	0.34	49.63	-9.9496	0.0749	0.4767
934	SLU 65	1.33	0.33	49.55	-9.9363	0.0752	0.4687
934	SLU 66	1.38	0.35	50.45	-10.103	0.0764	0.4859
934	SLU 67	1.37	0.34	50.4	-10.0951	0.0765	0.4811
934	SLU 68	1.35	0.33	50.05	-10.0295	0.0761	0.4751
934	SLU 69	1.4	0.35	50.95	-10.1962	0.0772	0.4923
934	SLU 70	1.39	0.34	50.9	-10.1883	0.0774	0.4875
934	SLU 71	1.39	0.34	50.63	-10.1359	0.0766	0.4895
934	SLU 72	1.38	0.33	50.58	-10.128	0.0768	0.4847
934	SLU 73	1.41	0.39	53.96	-10.7757	0.0833	0.4965
934	SLU 74	1.46	0.41	54.86	-10.9424	0.0844	0.5137
934	SLU 75	1.45	0.4	54.81	-10.9344	0.0846	0.5089
934	SLU 76	1.43	0.39	54.46	-10.8688	0.0841	0.5029
934	SLU 77	1.48	0.41	55.36	-11.0356	0.0853	0.5201
934	SLU 78	1.47	0.4	55.31	-11.0276	0.0855	0.5153
934	SLU 79	1.47	0.4	55.04	-10.9753	0.0847	0.5173
934	SLU 80	1.46	0.39	54.99	-10.9673	0.0849	0.5125
934	SLU 81	1.47	0.42	55.93	-11.1486	0.0865	0.5165
934	SLU 82	1.46	0.42	55.88	-11.1407	0.0866	0.5117
934	SLU 83	1.49	0.42	56.43	-11.2418	0.0873	0.5229
934	SLU 84	1.47	0.42	56.38	-11.2339	0.0875	0.5181
934	SLE RA 1	1.03	0.24	37.2	-7.4683	0.0559	0.3602
934	SLE RA 2	1.01	0.24	37.15	-7.4595	0.056	0.3549
934	SLE RA 3	1.04	0.25	37.75	-7.5706	0.0568	0.3664
934	SLE RA 4	1.03	0.25	37.72	-7.5653	0.0569	0.3632
934	SLE RA 5	1.02	0.24	37.48	-7.5216	0.0566	0.3591
934	SLE RA 6	1.06	0.25	38.08	-7.6328	0.0574	0.3706
934	SLE RA 7	1.05	0.25	38.05	-7.6275	0.0575	0.3674
934	SLE RA 8	1.05	0.24	37.87	-7.5926	0.057	0.3688
934	SLE RA 9	1.04	0.24	37.84	-7.5873	0.0571	0.3656
934	SLE RA 10	1.06	0.28	40.09	-8.0191	0.0614	0.3734
934	SLE RA 11	1.1	0.29	40.69	-8.1302	0.0622	0.3849
934	SLE RA 12	1.09	0.29	40.66	-8.1249	0.0623	0.3817
934	SLE RA 13	1.08	0.28	40.42	-8.0812	0.062	0.3777
934	SLE RA 14	1.11	0.29	41.02	-8.1923	0.0628	0.3892
934	SLE RA 15	1.1	0.29	40.99	-8.187	0.0629	0.386
934	SLE RA 16	1.1	0.28	40.81	-8.1521	0.0624	0.3873
934	SLE RA 17	1.09	0.28	40.78	-8.1468	0.0625	0.3841
934	SLE RA 18	1.1	0.3	41.4	-8.2677	0.0635	0.3868
934	SLE RA 19	1.09	0.3	41.37	-8.2624	0.0637	0.3835
934	SLE RA 20	1.11	0.3	41.74	-8.3298	0.0641	0.391
934	SLE RA 21	1.1	0.3	41.71	-8.3245	0.0642	0.3878
934	SLE FR 1	1.03	0.24	37.2	-7.4683	0.0559	0.3602
934	SLE FR 2	1.02	0.24	37.19	-7.4666	0.0559	0.3592
934	SLE FR 3	1.03	0.24	37.34	-7.4932	0.0561	0.3619
934	SLE FR 4	1.05	0.26	38.45	-7.7064	0.0582	0.3671
934	SLE FR 5	1.05	0.26	38.6	-7.733	0.0584	0.3699
934	SLE FR 6	1.06	0.27	39.3	-7.868	0.0597	0.3735
934	SLE QP 1	1.03	0.24	37.2	-7.4683	0.0559	0.3602
934	SLE QP 2	1.05	0.26	38.46	-7.7081	0.0582	0.3682
934	SLD 1	4.77	0.22	33.81	-7.2452	0.0665	1.6676
934	SLD 2	4.4	0.61	33.36	-7.1668	0.0662	1.5386
934	SLD 3	4.98	-0.78	34.53	-7.3485	0.068	1.7411
934	SLD 4	4.61	-0.4	34.08	-7.2701	0.0677	1.6121
934	SLD 5	1.91	1.7	36.04	-7.4266	0.0583	0.6696
934	SLD 6	1.67	1.96	35.75	-7.3751	0.0581	0.5848
934	SLD 7	2.61	-1.64	38.47	-7.7709	0.0636	0.9145
934	SLD 8	2.37	-1.39	38.17	-7.7194	0.0634	0.8298
934	SLD 9	-0.27	1.91	38.75	-7.6969	0.053	-0.0934
934	SLD 10	-0.51	2.16	38.46	-7.6454	0.0528	-0.1782
934	SLD 11	0.43	-1.44	41.18	-8.0412	0.0582	0.1516
934	SLD 12	0.19	-1.18	40.88	-7.9897	0.058	0.0668
934	SLD 13	-2.51	0.92	42.84	-8.1462	0.0486	-0.8757
934	SLD 14	-2.88	1.3	42.39	-8.0678	0.0483	-1.0047
934	SLD 15	-2.3	-0.09	43.57	-8.2495	0.0502	-0.8022
934	SLD 16	-2.67	0.3	43.12	-8.1711	0.0499	-0.9312
934	SLV 1	9.74	0.14	27.59	-6.6278	0.0776	3.4082
934	SLV 2	8.88	1.03	26.54	-6.4452	0.0769	3.1079





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
934	SLV 3	10.23	-2.14	29.24	-6.8623	0.0812	3.5796
934	SLV 4	9.37	-1.24	28.19	-6.6797	0.0805	3.2792
934	SLV 5	3.06	3.52	32.88	-7.06	0.0587	1.0723
934	SLV 6	2.51	4.09	32.2	-6.942	0.0583	0.8783
934	SLV 7	4.7	-4.06	38.38	-7.8416	0.0706	1.6434
934	SLV 8	4.14	-3.48	37.7	-7.7237	0.0701	1.4494
934	SLV 9	-2.04	4	39.22	-7.6926	0.0462	-0.7131
934	SLV 10	-2.6	4.58	38.55	-7.5747	0.0458	-0.9071
934	SLV 11	-0.41	-3.58	44.72	-8.4743	0.058	-0.1419
934	SLV 12	-0.97	-3	44.04	-8.3563	0.0576	-0.3359
934	SLV 13	-7.28	1.76	48.73	-8.7366	0.0358	-2.5429
934	SLV 14	-8.14	2.66	47.69	-8.554	0.0352	-2.8432
934	SLV 15	-6.79	-0.52	50.38	-8.9711	0.0394	-2.3715
934	SLV 16	-7.65	0.38	49.34	-8.7885	0.0387	-2.6719
934	CRTFP Ux+	0	0	0	0	0	0
934	CRTFP Ux-	0	0	0	0	0	0
934	CRTFP Uy+	0	0	0	0	0	0
934	CRTFP Uy-	0	0	0	0	0	0
935	SLU 1	1.01	0.26	34.54	-6.0065	0.0402	0.3555
935	SLU 2	0.99	0.26	34.45	-5.9902	0.0404	0.3477
935	SLU 3	1.04	0.27	35.32	-6.1284	0.0413	0.3648
935	SLU 4	1.02	0.27	35.27	-6.1186	0.0414	0.3601
935	SLU 5	1.01	0.26	34.93	-6.0643	0.041	0.3542
935	SLU 6	1.06	0.27	35.8	-6.2024	0.0419	0.3713
935	SLU 7	1.04	0.27	35.75	-6.1926	0.042	0.3666
935	SLU 8	1.05	0.26	35.49	-6.1546	0.0415	0.3685
935	SLU 9	1.03	0.26	35.44	-6.1448	0.0416	0.3638
935	SLU 10	1.07	0.32	38.65	-6.6588	0.0467	0.3757
935	SLU 11	1.12	0.34	39.52	-6.7969	0.0476	0.3928
935	SLU 12	1.1	0.33	39.47	-6.7871	0.0477	0.3881
935	SLU 13	1.09	0.32	39.13	-6.7328	0.0473	0.3821
935	SLU 14	1.14	0.34	40	-6.871	0.0482	0.3993
935	SLU 15	1.12	0.33	39.95	-6.8612	0.0483	0.3946
935	SLU 16	1.13	0.33	39.69	-6.8232	0.0478	0.3964
935	SLU 17	1.11	0.33	39.64	-6.8134	0.0479	0.3918
935	SLU 18	1.12	0.36	40.54	-6.9616	0.0493	0.3954
935	SLU 19	1.11	0.35	40.48	-6.9518	0.0494	0.3908
935	SLU 20	1.14	0.36	41.01	-7.0357	0.0499	0.4019
935	SLU 21	1.13	0.35	40.96	-7.0259	0.05	0.3973
935	SLU 22	1.1	0.34	38.75	-6.677	0.0466	0.385
935	SLU 23	1.07	0.34	38.66	-6.6607	0.0467	0.3772
935	SLU 24	1.12	0.35	39.53	-6.7989	0.0477	0.3943
935	SLU 25	1.11	0.35	39.48	-6.7891	0.0477	0.3897
935	SLU 26	1.09	0.34	39.14	-6.7348	0.0474	0.3837
935	SLU 27	1.14	0.35	40.01	-6.8729	0.0483	0.4008
935	SLU 28	1.13	0.35	39.96	-6.8631	0.0484	0.3961
935	SLU 29	1.13	0.35	39.7	-6.8251	0.0479	0.398
935	SLU 30	1.12	0.34	39.65	-6.8153	0.0479	0.3933
935	SLU 31	1.15	0.41	42.86	-7.3293	0.0531	0.4052
935	SLU 32	1.2	0.42	43.73	-7.4674	0.054	0.4223
935	SLU 33	1.19	0.42	43.68	-7.4576	0.0541	0.4176
935	SLU 34	1.17	0.41	43.34	-7.4033	0.0537	0.4117
935	SLU 35	1.22	0.42	44.21	-7.5415	0.0546	0.4288
935	SLU 36	1.21	0.42	44.16	-7.5317	0.0547	0.4241
935	SLU 37	1.21	0.41	43.9	-7.4937	0.0542	0.4259
935	SLU 38	1.2	0.41	43.85	-7.4839	0.0543	0.4213
935	SLU 39	1.21	0.44	44.74	-7.6321	0.0556	0.425
935	SLU 40	1.19	0.44	44.69	-7.6223	0.0557	0.4203
935	SLU 41	1.23	0.44	45.22	-7.7062	0.0563	0.4314
935	SLU 42	1.21	0.44	45.17	-7.6964	0.0563	0.4268
935	SLU 43	1.29	0.31	43.46	-7.5786	0.0501	0.452
935	SLU 44	1.26	0.3	43.37	-7.5623	0.0503	0.4442
935	SLU 45	1.31	0.32	44.24	-7.7005	0.0512	0.4614
935	SLU 46	1.3	0.32	44.19	-7.6907	0.0513	0.4567
935	SLU 47	1.28	0.31	43.85	-7.6363	0.0509	0.4507
935	SLU 48	1.33	0.32	44.72	-7.7745	0.0518	0.4679
935	SLU 49	1.32	0.32	44.67	-7.7647	0.0519	0.4632
935	SLU 50	1.32	0.31	44.41	-7.7267	0.0514	0.465
935	SLU 51	1.31	0.31	44.36	-7.7169	0.0515	0.4603
935	SLU 52	1.34	0.37	47.57	-8.2309	0.0566	0.4722
935	SLU 53	1.39	0.39	48.44	-8.369	0.0575	0.4893
935	SLU 54	1.38	0.38	48.39	-8.3592	0.0576	0.4846
935	SLU 55	1.36	0.37	48.05	-8.3049	0.0572	0.4787
935	SLU 56	1.41	0.39	48.92	-8.4431	0.0581	0.4958
935	SLU 57	1.4	0.38	48.87	-8.4333	0.0582	0.4911
935	SLU 58	1.4	0.38	48.61	-8.3953	0.0577	0.493
935	SLU 59	1.39	0.37	48.56	-8.3855	0.0578	0.4883
935	SLU 60	1.4	0.41	49.45	-8.5337	0.0592	0.492
935	SLU 61	1.39	0.4	49.4	-8.5239	0.0592	0.4873
935	SLU 62	1.42	0.41	49.93	-8.6078	0.0598	0.4985
935	SLU 63	1.4	0.4	49.88	-8.598	0.0599	0.4938
935	SLU 64	1.37	0.39	47.67	-8.2491	0.0565	0.4815
935	SLU 65	1.35	0.39	47.58	-8.2328	0.0566	0.4737
935	SLU 66	1.4	0.4	48.45	-8.371	0.0576	0.4909
935	SLU 67	1.38	0.4	48.4	-8.3612	0.0576	0.4862
935	SLU 68	1.37	0.39	48.06	-8.3068	0.0573	0.4802
935	SLU 69	1.41	0.4	48.93	-8.445	0.0582	0.4974
935	SLU 70	1.4	0.4	48.88	-8.4352	0.0583	0.4927
935	SLU 71	1.41	0.39	48.62	-8.3972	0.0577	0.4945
935	SLU 72	1.39	0.39	48.57	-8.3874	0.0578	0.4898



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
935	SLU 73	1.43	0.46	51.78	-8.9014	0.063	0.5017
935	SLU 74	1.48	0.47	52.65	-9.0395	0.0639	0.5188
935	SLU 75	1.46	0.47	52.6	-9.0297	0.064	0.5142
935	SLU 76	1.45	0.46	52.26	-8.9754	0.0636	0.5082
935	SLU 77	1.49	0.47	53.13	-9.1136	0.0645	0.5253
935	SLU 78	1.48	0.47	53.08	-9.1038	0.0646	0.5206
935	SLU 79	1.49	0.46	52.82	-9.0658	0.0641	0.5225
935	SLU 80	1.47	0.46	52.77	-9.056	0.0642	0.5178
935	SLU 81	1.48	0.49	53.66	-9.2042	0.0655	0.5215
935	SLU 82	1.47	0.49	53.61	-9.1944	0.0656	0.5168
935	SLU 83	1.5	0.49	54.14	-9.2783	0.0662	0.528
935	SLU 84	1.49	0.49	54.09	-9.2685	0.0662	0.5233
935	SLE RA 1	1.04	0.28	35.74	-6.1981	0.0421	0.3639
935	SLE RA 2	1.02	0.28	35.68	-6.1872	0.0422	0.3587
935	SLE RA 3	1.05	0.29	36.26	-6.2793	0.0428	0.3702
935	SLE RA 4	1.04	0.29	36.23	-6.2728	0.0428	0.367
935	SLE RA 5	1.03	0.28	36	-6.2366	0.0426	0.3631
935	SLE RA 6	1.07	0.29	36.58	-6.3287	0.0432	0.3745
935	SLE RA 7	1.06	0.29	36.55	-6.3222	0.0432	0.3714
935	SLE RA 8	1.06	0.29	36.38	-6.2968	0.0429	0.3726
935	SLE RA 9	1.05	0.28	36.34	-6.2903	0.043	0.3695
935	SLE RA 10	1.07	0.33	38.48	-6.6329	0.0464	0.3774
935	SLE RA 11	1.11	0.34	39.06	-6.7251	0.047	0.3888
935	SLE RA 12	1.1	0.33	39.03	-6.7185	0.047	0.3857
935	SLE RA 13	1.09	0.33	38.8	-6.6823	0.0468	0.3817
935	SLE RA 14	1.12	0.34	39.38	-6.7744	0.0474	0.3931
935	SLE RA 15	1.11	0.33	39.35	-6.7679	0.0475	0.39
935	SLE RA 16	1.11	0.33	39.18	-6.7426	0.0471	0.3912
935	SLE RA 17	1.1	0.33	39.14	-6.736	0.0472	0.3881
935	SLE RA 18	1.11	0.35	39.74	-6.8349	0.0481	0.3906
935	SLE RA 19	1.1	0.35	39.7	-6.8283	0.0481	0.3874
935	SLE RA 20	1.12	0.35	40.06	-6.8842	0.0485	0.3949
935	SLE RA 21	1.11	0.35	40.02	-6.8777	0.0486	0.3918
935	SLE FR 1	1.04	0.28	35.74	-6.1981	0.0421	0.3639
935	SLE FR 2	1.03	0.28	35.73	-6.1959	0.0421	0.3629
935	SLE FR 3	1.04	0.28	35.87	-6.2179	0.0422	0.3657
935	SLE FR 4	1.05	0.3	36.93	-6.387	0.0439	0.3709
935	SLE FR 5	1.06	0.3	37.07	-6.4089	0.044	0.3737
935	SLE FR 6	1.07	0.32	37.74	-6.5165	0.0451	0.3772
935	SLE QP 1	1.04	0.28	35.74	-6.1981	0.0421	0.3639
935	SLE QP 2	1.06	0.3	36.94	-6.3891	0.0439	0.3719
935	SLD 1	4.77	0.23	31.97	-6.0095	0.0564	1.6719
935	SLD 2	4.4	0.64	31.53	-5.9442	0.0562	1.5426
935	SLD 3	4.98	-0.78	32.67	-6.0818	0.0575	1.7453
935	SLD 4	4.61	-0.37	32.23	-6.0165	0.0573	1.6161
935	SLD 5	1.92	1.74	34.47	-6.1772	0.0459	0.6736
935	SLD 6	1.68	2	34.18	-6.1343	0.0458	0.5886
935	SLD 7	2.62	-1.62	36.8	-6.4182	0.0497	0.9184
935	SLD 8	2.38	-1.35	36.51	-6.3753	0.0496	0.8335
935	SLD 9	-0.26	1.96	37.37	-6.4029	0.0381	-0.0896
935	SLD 10	-0.51	2.23	37.08	-6.36	0.038	-0.1746
935	SLD 11	0.44	-1.39	39.71	-6.6439	0.0419	0.1552
935	SLD 12	0.2	-1.13	39.41	-6.601	0.0418	0.0703
935	SLD 13	-2.5	0.98	41.65	-6.7618	0.0304	-0.8722
935	SLD 14	-2.87	1.38	41.21	-6.6965	0.0302	-1.0015
935	SLD 15	-2.29	-0.03	42.35	-6.8341	0.0316	-0.7988
935	SLD 16	-2.66	0.38	41.91	-6.7688	0.0314	-0.928
935	SLV 1	9.75	0.1	25.33	-5.5025	0.0731	3.4134
935	SLV 2	8.89	1.04	24.3	-5.3506	0.0726	3.1124
935	SLV 3	10.24	-2.18	26.93	-5.6673	0.0757	3.5846
935	SLV 4	9.38	-1.24	25.9	-5.5153	0.0753	3.2836
935	SLV 5	3.07	3.53	31.22	-5.8996	0.0488	1.0767
935	SLV 6	2.51	4.14	30.56	-5.8015	0.0484	0.8822
935	SLV 7	4.71	-4.06	36.53	-6.4487	0.0575	1.6475
935	SLV 8	4.15	-3.45	35.86	-6.3505	0.0572	1.4531
935	SLV 9	-2.03	4.06	38.02	-6.4278	0.0306	-0.7093
935	SLV 10	-2.59	4.67	37.35	-6.3296	0.0303	-0.9037
935	SLV 11	-0.4	-3.54	43.32	-6.9768	0.0393	-0.1384
935	SLV 12	-0.96	-2.93	42.66	-6.8787	0.039	-0.3328
935	SLV 13	-7.26	1.84	47.99	-7.263	0.0125	-2.5398
935	SLV 14	-8.13	2.79	46.96	-7.111	0.012	-2.8408
935	SLV 15	-6.77	-0.43	49.58	-7.4277	0.0151	-2.3685
935	SLV 16	-7.64	0.51	48.55	-7.2757	0.0146	-2.6695
935	CRTFP Ux+	0	0	0	0	0	0
935	CRTFP Ux-	0	0	0	0	0	0
935	CRTFP Uy+	0	0	0	0	0	0
935	CRTFP Uy-	0	0	0	0	0	0
936	SLU 1	1.02	0.31	33.58	-5.1106	0.0243	0.3588
936	SLU 2	1	0.3	33.49	-5.0924	0.0243	0.3513
936	SLU 3	1.05	0.32	34.34	-5.2093	0.0249	0.3683
936	SLU 4	1.03	0.32	34.28	-5.1984	0.0249	0.3637
936	SLU 5	1.02	0.3	33.95	-5.1525	0.0247	0.3578
936	SLU 6	1.07	0.32	34.8	-5.2694	0.0253	0.3748
936	SLU 7	1.05	0.32	34.75	-5.2585	0.0253	0.3703
936	SLU 8	1.06	0.31	34.5	-5.2308	0.025	0.372
936	SLU 9	1.04	0.31	34.45	-5.2199	0.025	0.3674
936	SLU 10	1.08	0.38	37.53	-5.634	0.0285	0.3793
936	SLU 11	1.13	0.4	38.38	-5.7509	0.0291	0.3964
936	SLU 12	1.11	0.39	38.33	-5.74	0.0292	0.3918
936	SLU 13	1.1	0.38	37.99	-5.6941	0.0289	0.3859



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
936	SLU 14	1.15	0.4	38.84	-5.811	0.0295	0.4029
936	SLU 15	1.13	0.39	38.79	-5.8001	0.0295	0.3984
936	SLU 16	1.14	0.39	38.55	-5.7724	0.0293	0.4
936	SLU 17	1.12	0.38	38.49	-5.7615	0.0293	0.3955
936	SLU 18	1.13	0.42	39.35	-5.8843	0.0303	0.399
936	SLU 19	1.12	0.41	39.3	-5.8734	0.0303	0.3944
936	SLU 20	1.15	0.42	39.81	-5.9444	0.0307	0.4055
936	SLU 21	1.14	0.42	39.76	-5.9335	0.0307	0.401
936	SLU 22	1.1	0.4	37.63	-5.6531	0.0285	0.3885
936	SLU 23	1.08	0.39	37.54	-5.635	0.0285	0.3809
936	SLU 24	1.13	0.41	38.39	-5.7519	0.0292	0.398
936	SLU 25	1.12	0.41	38.34	-5.741	0.0292	0.3934
936	SLU 26	1.1	0.39	38.01	-5.6951	0.0289	0.3875
936	SLU 27	1.15	0.41	38.85	-5.812	0.0295	0.4045
936	SLU 28	1.14	0.41	38.8	-5.8011	0.0295	0.4
936	SLU 29	1.14	0.4	38.56	-5.7734	0.0293	0.4016
936	SLU 30	1.13	0.4	38.5	-5.7625	0.0293	0.3971
936	SLU 31	1.16	0.47	41.58	-6.1766	0.0328	0.409
936	SLU 32	1.21	0.49	42.43	-6.2935	0.0334	0.426
936	SLU 33	1.2	0.48	42.38	-6.2826	0.0334	0.4215
936	SLU 34	1.18	0.47	42.05	-6.2367	0.0331	0.4156
936	SLU 35	1.23	0.49	42.89	-6.3536	0.0337	0.4326
936	SLU 36	1.22	0.48	42.84	-6.3427	0.0337	0.4281
936	SLU 37	1.22	0.48	42.6	-6.315	0.0335	0.4297
936	SLU 38	1.21	0.47	42.54	-6.3041	0.0335	0.4252
936	SLU 39	1.22	0.51	43.4	-6.4269	0.0345	0.4286
936	SLU 40	1.2	0.51	43.35	-6.416	0.0346	0.4241
936	SLU 41	1.24	0.51	43.87	-6.487	0.0349	0.4352
936	SLU 42	1.22	0.51	43.81	-6.4761	0.0349	0.4306
936	SLU 43	1.3	0.37	42.26	-6.4577	0.0302	0.4563
936	SLU 44	1.28	0.37	42.17	-6.4395	0.0302	0.4487
936	SLU 45	1.32	0.38	43.02	-6.5564	0.0308	0.4658
936	SLU 46	1.31	0.38	42.97	-6.5455	0.0308	0.4612
936	SLU 47	1.29	0.37	42.64	-6.4996	0.0305	0.4553
936	SLU 48	1.34	0.38	43.48	-6.6165	0.0311	0.4723
936	SLU 49	1.33	0.38	43.43	-6.6056	0.0312	0.4678
936	SLU 50	1.33	0.37	43.19	-6.5779	0.0309	0.4694
936	SLU 51	1.32	0.37	43.14	-6.567	0.0309	0.4649
936	SLU 52	1.36	0.44	46.22	-6.9811	0.0344	0.4768
936	SLU 53	1.4	0.46	47.06	-7.098	0.035	0.4938
936	SLU 54	1.39	0.45	47.01	-7.0871	0.035	0.4893
936	SLU 55	1.37	0.44	46.68	-7.0412	0.0348	0.4834
936	SLU 56	1.42	0.46	47.53	-7.1581	0.0354	0.5004
936	SLU 57	1.41	0.46	47.47	-7.1472	0.0354	0.4958
936	SLU 58	1.41	0.45	47.23	-7.1195	0.0351	0.4975
936	SLU 59	1.4	0.45	47.18	-7.1086	0.0351	0.493
936	SLU 60	1.41	0.48	48.03	-7.2314	0.0362	0.4964
936	SLU 61	1.4	0.48	47.98	-7.2205	0.0362	0.4919
936	SLU 62	1.43	0.48	48.5	-7.2915	0.0365	0.503
936	SLU 63	1.42	0.48	48.45	-7.2806	0.0365	0.4984
936	SLU 64	1.38	0.46	46.31	-7.0003	0.0344	0.486
936	SLU 65	1.36	0.46	46.23	-6.9821	0.0344	0.4784
936	SLU 66	1.41	0.47	47.07	-7.099	0.035	0.4954
936	SLU 67	1.4	0.47	47.02	-7.0881	0.035	0.4909
936	SLU 68	1.38	0.46	46.69	-7.0422	0.0348	0.485
936	SLU 69	1.43	0.47	47.54	-7.1591	0.0354	0.502
936	SLU 70	1.41	0.47	47.48	-7.1482	0.0354	0.4974
936	SLU 71	1.42	0.46	47.24	-7.1205	0.0351	0.4991
936	SLU 72	1.41	0.46	47.19	-7.1096	0.0351	0.4946
936	SLU 73	1.44	0.53	50.27	-7.5237	0.0386	0.5065
936	SLU 74	1.49	0.55	51.11	-7.6406	0.0392	0.5235
936	SLU 75	1.47	0.54	51.06	-7.6297	0.0392	0.519
936	SLU 76	1.46	0.53	50.73	-7.5838	0.039	0.5131
936	SLU 77	1.51	0.55	51.58	-7.7007	0.0396	0.5301
936	SLU 78	1.49	0.55	51.52	-7.6898	0.0396	0.5255
936	SLU 79	1.5	0.54	51.28	-7.6621	0.0393	0.5272
936	SLU 80	1.49	0.54	51.23	-7.6512	0.0393	0.5227
936	SLU 81	1.49	0.57	52.09	-7.774	0.0404	0.5261
936	SLU 82	1.48	0.57	52.03	-7.7631	0.0404	0.5216
936	SLU 83	1.51	0.57	52.55	-7.8341	0.0408	0.5327
936	SLU 84	1.5	0.57	52.5	-7.8232	0.0408	0.5281
936	SLE RA 1	1.04	0.33	34.74	-5.2656	0.0255	0.3673
936	SLE RA 2	1.03	0.33	34.68	-5.2535	0.0255	0.3623
936	SLE RA 3	1.06	0.34	35.24	-5.3314	0.0259	0.3736
936	SLE RA 4	1.05	0.34	35.21	-5.3241	0.0259	0.3706
936	SLE RA 5	1.04	0.33	34.99	-5.2935	0.0258	0.3666
936	SLE RA 6	1.07	0.34	35.55	-5.3715	0.0262	0.378
936	SLE RA 7	1.07	0.34	35.52	-5.3642	0.0262	0.375
936	SLE RA 8	1.07	0.34	35.35	-5.3457	0.026	0.3761
936	SLE RA 9	1.06	0.33	35.32	-5.3385	0.026	0.373
936	SLE RA 10	1.08	0.38	37.37	-5.6145	0.0283	0.381
936	SLE RA 11	1.11	0.39	37.94	-5.6925	0.0287	0.3923
936	SLE RA 12	1.11	0.39	37.9	-5.6852	0.0287	0.3893
936	SLE RA 13	1.1	0.38	37.68	-5.6546	0.0286	0.3854
936	SLE RA 14	1.13	0.39	38.24	-5.7325	0.029	0.3967
936	SLE RA 15	1.12	0.39	38.21	-5.7253	0.029	0.3937
936	SLE RA 16	1.12	0.39	38.05	-5.7068	0.0288	0.3948
936	SLE RA 17	1.11	0.39	38.01	-5.6995	0.0288	0.3918
936	SLE RA 18	1.12	0.41	38.58	-5.7814	0.0295	0.3941
936	SLE RA 19	1.11	0.41	38.55	-5.7741	0.0295	0.391



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
936	SLE RA 20	1.13	0.41	38.89	-5.8215	0.0298	0.3984
936	SLE RA 21	1.12	0.41	38.86	-5.8142	0.0298	0.3954
936	SLE FR 1	1.04	0.33	34.74	-5.2656	0.0255	0.3673
936	SLE FR 2	1.04	0.33	34.72	-5.2632	0.0255	0.3663
936	SLE FR 3	1.05	0.33	34.86	-5.2816	0.0256	0.3691
936	SLE FR 4	1.06	0.36	35.88	-5.4179	0.0267	0.3743
936	SLE FR 5	1.07	0.36	36.01	-5.4364	0.0268	0.3771
936	SLE FR 6	1.08	0.37	36.66	-5.5235	0.0275	0.3807
936	SLE QP 1	1.04	0.33	34.74	-5.2656	0.0255	0.3673
936	SLE QP 2	1.07	0.36	35.89	-5.4203	0.0267	0.3753
936	SLD 1	4.78	0.27	30.48	-5.0381	0.0432	1.6756
936	SLD 2	4.41	0.69	30.04	-4.9841	0.0432	1.5462
936	SLD 3	4.99	-0.76	31.18	-5.091	0.0442	1.749
936	SLD 4	4.62	-0.33	30.74	-5.037	0.0442	1.6196
936	SLD 5	1.93	1.81	33.29	-5.2352	0.0301	0.6772
936	SLD 6	1.69	2.09	33	-5.1997	0.0301	0.5922
936	SLD 7	2.63	-1.61	35.61	-5.4113	0.0335	0.9219
936	SLD 8	2.39	-1.32	35.32	-5.3758	0.0335	0.8368
936	SLD 9	-0.25	2.04	36.46	-5.4648	0.02	-0.0861
936	SLD 10	-0.5	2.32	36.17	-5.4293	0.0199	-0.1712
936	SLD 11	0.45	-1.37	38.78	-5.641	0.0233	0.1585
936	SLD 12	0.2	-1.09	38.49	-5.6055	0.0233	0.0735
936	SLD 13	-2.49	1.04	41.04	-5.8037	0.0092	-0.8689
936	SLD 14	-2.86	1.47	40.6	-5.7497	0.0092	-0.9983
936	SLD 15	-2.28	0.02	41.74	-5.8565	0.0102	-0.7955
936	SLD 16	-2.65	0.45	41.3	-5.8025	0.0102	-0.9249
936	SLV 1	9.76	0.11	23.25	-4.5271	0.0653	3.4175
936	SLV 2	8.9	1.11	22.23	-4.4013	0.0653	3.1161
936	SLV 3	10.25	-2.21	24.83	-4.6482	0.0677	3.5886
936	SLV 4	9.38	-1.21	23.81	-4.5224	0.0676	3.2872
936	SLV 5	3.08	3.63	29.88	-4.9904	0.0348	1.0806
936	SLV 6	2.52	4.27	29.22	-4.9091	0.0347	0.886
936	SLV 7	4.71	-4.1	35.15	-5.3942	0.0426	1.6509
936	SLV 8	4.15	-3.46	34.49	-5.3129	0.0425	1.4563
936	SLV 9	-2.02	4.17	37.29	-5.5277	0.0109	-0.7056
936	SLV 10	-2.58	4.81	36.63	-5.4465	0.0108	-0.9003
936	SLV 11	-0.39	-3.56	42.56	-5.9315	0.0187	-0.1353
936	SLV 12	-0.95	-2.91	41.9	-5.8503	0.0187	-0.3299
936	SLV 13	-7.25	1.92	47.97	-6.3182	-0.0142	-2.5366
936	SLV 14	-8.12	2.92	46.95	-6.1925	-0.0143	-2.8379
936	SLV 15	-6.76	-0.4	49.55	-6.4394	-0.0118	-2.3655
936	SLV 16	-7.63	0.6	48.53	-6.3136	-0.0119	-2.6668
936	CRTFP Ux+	0	0	0	0	0	0
936	CRTFP Ux-	0	0	0	0	0	0
936	CRTFP Uy+	0	0	0	0	0	0
936	CRTFP Uy-	0	0	0	0	0	0
937	SLU 1	1.03	0.36	33.11	-4.5675	0.0074	0.3616
937	SLU 2	1.01	0.36	33.02	-4.5485	0.0073	0.3543
937	SLU 3	1.05	0.38	33.85	-4.6523	0.0076	0.3712
937	SLU 4	1.04	0.37	33.8	-4.6409	0.0075	0.3667
937	SLU 5	1.03	0.36	33.48	-4.6003	0.0074	0.3609
937	SLU 6	1.07	0.38	34.31	-4.704	0.0077	0.3778
937	SLU 7	1.06	0.37	34.26	-4.6926	0.0076	0.3734
937	SLU 8	1.07	0.37	34.02	-4.671	0.0076	0.3749
937	SLU 9	1.05	0.36	33.97	-4.6596	0.0075	0.3704
937	SLU 10	1.09	0.45	36.97	-5.0102	0.0093	0.3824
937	SLU 11	1.13	0.46	37.8	-5.114	0.0096	0.3993
937	SLU 12	1.12	0.46	37.75	-5.1026	0.0095	0.3949
937	SLU 13	1.1	0.45	37.43	-5.062	0.0094	0.3891
937	SLU 14	1.15	0.47	38.26	-5.1657	0.0096	0.406
937	SLU 15	1.14	0.46	38.21	-5.1544	0.0096	0.4015
937	SLU 16	1.14	0.46	37.97	-5.1327	0.0096	0.4031
937	SLU 17	1.13	0.45	37.92	-5.1213	0.0095	0.3986
937	SLU 18	1.14	0.49	38.75	-5.2271	0.0102	0.4019
937	SLU 19	1.13	0.49	38.7	-5.2157	0.0102	0.3975
937	SLU 20	1.16	0.49	39.2	-5.2788	0.0103	0.4085
937	SLU 21	1.15	0.49	39.15	-5.2674	0.0103	0.4041
937	SLU 22	1.11	0.46	37.07	-5.0296	0.0093	0.3915
937	SLU 23	1.09	0.46	36.98	-5.0107	0.0092	0.3841
937	SLU 24	1.14	0.47	37.81	-5.1144	0.0095	0.401
937	SLU 25	1.13	0.47	37.76	-5.103	0.0095	0.3966
937	SLU 26	1.11	0.46	37.44	-5.0624	0.0093	0.3907
937	SLU 27	1.16	0.48	38.27	-5.1661	0.0096	0.4076
937	SLU 28	1.15	0.47	38.22	-5.1548	0.0096	0.4032
937	SLU 29	1.15	0.47	37.98	-5.1331	0.0095	0.4047
937	SLU 30	1.14	0.46	37.93	-5.1217	0.0095	0.4003
937	SLU 31	1.17	0.54	40.93	-5.4724	0.0112	0.4123
937	SLU 32	1.22	0.56	41.76	-5.5761	0.0115	0.4292
937	SLU 33	1.21	0.56	41.71	-5.5648	0.0114	0.4248
937	SLU 34	1.19	0.55	41.39	-5.5241	0.0113	0.4189
937	SLU 35	1.24	0.56	42.22	-5.6279	0.0116	0.4358
937	SLU 36	1.22	0.56	42.17	-5.6165	0.0115	0.4314
937	SLU 37	1.23	0.55	41.93	-5.5948	0.0115	0.4329
937	SLU 38	1.22	0.55	41.88	-5.5834	0.0114	0.4285
937	SLU 39	1.23	0.59	42.71	-5.6892	0.0122	0.4317
937	SLU 40	1.21	0.59	42.66	-5.6779	0.0121	0.4273
937	SLU 41	1.24	0.59	43.16	-5.741	0.0123	0.4384
937	SLU 42	1.23	0.59	43.11	-5.7296	0.0122	0.4339
937	SLU 43	1.31	0.44	41.68	-5.7793	0.0089	0.4599
937	SLU 44	1.29	0.43	41.59	-5.7603	0.0089	0.4525



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
937	SLU 45	1.33	0.45	42.43	-5.8641	0.0091	0.4694
937	SLU 46	1.32	0.45	42.38	-5.8527	0.0091	0.465
937	SLU 47	1.3	0.44	42.05	-5.8121	0.0089	0.4591
937	SLU 48	1.35	0.45	42.88	-5.9158	0.0092	0.476
937	SLU 49	1.34	0.45	42.83	-5.9044	0.0092	0.4716
937	SLU 50	1.34	0.44	42.59	-5.8827	0.0091	0.4731
937	SLU 51	1.33	0.44	42.54	-5.8714	0.0091	0.4687
937	SLU 52	1.37	0.52	45.54	-6.222	0.0108	0.4807
937	SLU 53	1.41	0.54	46.38	-6.3258	0.0111	0.4976
937	SLU 54	1.4	0.54	46.33	-6.3144	0.011	0.4932
937	SLU 55	1.38	0.52	46	-6.2738	0.0109	0.4873
937	SLU 56	1.43	0.54	46.83	-6.3775	0.0112	0.5042
937	SLU 57	1.42	0.54	46.78	-6.3662	0.0111	0.4998
937	SLU 58	1.42	0.53	46.54	-6.3445	0.0111	0.5013
937	SLU 59	1.41	0.53	46.49	-6.3331	0.0111	0.4969
937	SLU 60	1.42	0.57	47.32	-6.4389	0.0118	0.5001
937	SLU 61	1.41	0.56	47.27	-6.4275	0.0117	0.4957
937	SLU 62	1.44	0.57	47.78	-6.4906	0.0119	0.5068
937	SLU 63	1.43	0.56	47.73	-6.4792	0.0118	0.5023
937	SLU 64	1.39	0.54	45.64	-6.2414	0.0109	0.4897
937	SLU 65	1.37	0.53	45.55	-6.2225	0.0108	0.4824
937	SLU 66	1.42	0.55	46.39	-6.3262	0.0111	0.4993
937	SLU 67	1.41	0.55	46.34	-6.3148	0.011	0.4948
937	SLU 68	1.39	0.53	46.01	-6.2742	0.0109	0.489
937	SLU 69	1.44	0.55	46.85	-6.3779	0.0112	0.5059
937	SLU 70	1.42	0.55	46.79	-6.3666	0.0111	0.5015
937	SLU 71	1.43	0.54	46.55	-6.3449	0.0111	0.503
937	SLU 72	1.42	0.54	46.5	-6.3335	0.011	0.4986
937	SLU 73	1.45	0.62	49.5	-6.6842	0.0128	0.5105
937	SLU 74	1.5	0.64	50.34	-6.7879	0.013	0.5274
937	SLU 75	1.49	0.63	50.29	-6.7766	0.013	0.523
937	SLU 76	1.47	0.62	49.96	-6.7359	0.0129	0.5172
937	SLU 77	1.52	0.64	50.79	-6.8397	0.0131	0.5341
937	SLU 78	1.5	0.64	50.74	-6.8283	0.0131	0.5296
937	SLU 79	1.51	0.63	50.5	-6.8066	0.0131	0.5312
937	SLU 80	1.5	0.63	50.45	-6.7952	0.013	0.5267
937	SLU 81	1.5	0.67	51.28	-6.901	0.0137	0.53
937	SLU 82	1.49	0.66	51.23	-6.8896	0.0137	0.5256
937	SLU 83	1.52	0.67	51.74	-6.9528	0.0138	0.5366
937	SLU 84	1.51	0.66	51.69	-6.9414	0.0138	0.5322
937	SLE RA 1	1.05	0.39	34.24	-4.6995	0.0079	0.3702
937	SLE RA 2	1.04	0.39	34.18	-4.6869	0.0079	0.3652
937	SLE RA 3	1.07	0.4	34.74	-4.756	0.0081	0.3765
937	SLE RA 4	1.06	0.4	34.7	-4.7485	0.008	0.3736
937	SLE RA 5	1.05	0.39	34.48	-4.7214	0.0079	0.3697
937	SLE RA 6	1.08	0.4	35.04	-4.7905	0.0081	0.3809
937	SLE RA 7	1.07	0.4	35.01	-4.783	0.0081	0.378
937	SLE RA 8	1.08	0.4	34.85	-4.7685	0.0081	0.379
937	SLE RA 9	1.07	0.39	34.81	-4.7609	0.008	0.376
937	SLE RA 10	1.09	0.45	36.81	-4.9947	0.0092	0.384
937	SLE RA 11	1.12	0.46	37.37	-5.0639	0.0094	0.3953
937	SLE RA 12	1.11	0.46	37.33	-5.0563	0.0094	0.3924
937	SLE RA 13	1.1	0.45	37.12	-5.0292	0.0093	0.3884
937	SLE RA 14	1.14	0.46	37.67	-5.0984	0.0095	0.3997
937	SLE RA 15	1.13	0.46	37.64	-5.0908	0.0094	0.3968
937	SLE RA 16	1.13	0.45	37.48	-5.0763	0.0094	0.3978
937	SLE RA 17	1.12	0.45	37.44	-5.0687	0.0094	0.3948
937	SLE RA 18	1.13	0.48	38	-5.1393	0.0098	0.397
937	SLE RA 19	1.12	0.47	37.96	-5.1317	0.0098	0.394
937	SLE RA 20	1.14	0.48	38.3	-5.1737	0.0099	0.4014
937	SLE RA 21	1.13	0.48	38.27	-5.1662	0.0099	0.3985
937	SLE FR 1	1.05	0.39	34.24	-4.6995	0.0079	0.3702
937	SLE FR 2	1.05	0.39	34.23	-4.697	0.0079	0.3692
937	SLE FR 3	1.06	0.39	34.36	-4.7133	0.008	0.3719
937	SLE FR 4	1.07	0.42	35.35	-4.8289	0.0085	0.3772
937	SLE FR 5	1.08	0.42	35.49	-4.8452	0.0085	0.38
937	SLE FR 6	1.09	0.44	36.12	-4.9194	0.0089	0.3836
937	SLE QP 1	1.05	0.39	34.24	-4.6995	0.0079	0.3702
937	SLE QP 2	1.07	0.42	35.37	-4.8314	0.0085	0.3782
937	SLD 1	4.79	0.33	29.39	-4.3635	0.0301	1.6785
937	SLD 2	4.42	0.79	28.95	-4.3175	0.0303	1.5491
937	SLD 3	5	-0.73	30.1	-4.4088	0.0288	1.7518
937	SLD 4	4.63	-0.27	29.66	-4.3628	0.029	1.6224
937	SLD 5	1.94	1.91	32.57	-4.6306	0.0169	0.6802
937	SLD 6	1.69	2.21	32.29	-4.6004	0.017	0.5952
937	SLD 7	2.64	-1.61	34.94	-4.7815	0.0126	0.9246
937	SLD 8	2.39	-1.31	34.65	-4.7513	0.0127	0.8395
937	SLD 9	-0.24	2.15	36.08	-4.9116	0.0043	-0.0831
937	SLD 10	-0.49	2.45	35.79	-4.8814	0.0044	-0.1682
937	SLD 11	0.46	-1.38	38.45	-5.0625	0	0.1612
937	SLD 12	0.21	-1.08	38.16	-5.0323	0.0001	0.0762
937	SLD 13	-2.48	1.11	41.07	-5.3001	-0.0119	-0.866
937	SLD 14	-2.85	1.56	40.63	-5.2541	-0.0118	-0.9954
937	SLD 15	-2.27	0.05	41.78	-5.3453	-0.0132	-0.7927
937	SLD 16	-2.64	0.51	41.34	-5.2993	-0.0131	-0.9221
937	SLV 1	9.77	0.18	21.4	-3.737	0.059	3.4204
937	SLV 2	8.9	1.24	20.37	-3.6299	0.0594	3.119
937	SLV 3	10.26	-2.22	23.01	-3.8415	0.056	3.5914
937	SLV 4	9.39	-1.16	21.99	-3.7344	0.0564	3.2899
937	SLV 5	3.09	3.79	28.9	-4.3632	0.0282	1.0838



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
937	SLV 6	2.53	4.48	28.24	-4.294	0.0284	0.8891
937	SLV 7	4.72	-4.19	34.29	-4.7114	0.0181	1.6535
937	SLV 8	4.16	-3.5	33.63	-4.6422	0.0184	1.4588
937	SLV 9	-2.01	4.34	37.11	-5.0207	-0.0014	-0.7024
937	SLV 10	-2.57	5.02	36.44	-4.9515	-0.0011	-0.8971
937	SLV 11	-0.38	-3.64	42.49	-5.3688	-0.0114	-0.1327
937	SLV 12	-0.94	-2.96	41.83	-5.2997	-0.0111	-0.3274
937	SLV 13	-7.24	1.99	48.75	-5.9285	-0.0394	-2.5335
937	SLV 14	-8.11	3.05	47.72	-5.8214	-0.039	-2.8349
937	SLV 15	-6.75	-0.4	50.36	-6.0329	-0.0424	-2.3626
937	SLV 16	-7.62	0.66	49.34	-5.9258	-0.042	-2.664
937	CRTFP Ux+	0	0	0	0	0	0
937	CRTFP Ux-	0	0	0	0	0	0
937	CRTFP Uy+	0	0	0	0	0	0
937	CRTFP Uy-	0	0	0	0	0	0
938	SLU 1	1.03	0.43	33.13	-4.3885	-0.0091	0.3638
938	SLU 2	1.01	0.42	33.05	-4.3694	-0.0093	0.3566
938	SLU 3	1.06	0.44	33.88	-4.4688	-0.0094	0.3734
938	SLU 4	1.05	0.43	33.83	-4.4573	-0.0095	0.3691
938	SLU 5	1.03	0.42	33.51	-4.4185	-0.0095	0.3633
938	SLU 6	1.08	0.44	34.34	-4.5179	-0.0096	0.3801
938	SLU 7	1.07	0.44	34.29	-4.5064	-0.0097	0.3758
938	SLU 8	1.07	0.43	34.05	-4.4867	-0.0095	0.3772
938	SLU 9	1.06	0.43	34	-4.4753	-0.0096	0.3729
938	SLU 10	1.09	0.52	36.97	-4.7993	-0.0095	0.3849
938	SLU 11	1.14	0.54	37.81	-4.8986	-0.0096	0.4017
938	SLU 12	1.13	0.54	37.76	-4.8872	-0.0097	0.3974
938	SLU 13	1.11	0.52	37.43	-4.8484	-0.0097	0.3916
938	SLU 14	1.16	0.55	38.26	-4.9477	-0.0098	0.4084
938	SLU 15	1.15	0.54	38.21	-4.9363	-0.0099	0.4041
938	SLU 16	1.15	0.54	37.97	-4.9166	-0.0097	0.4054
938	SLU 17	1.14	0.53	37.92	-4.9052	-0.0098	0.4011
938	SLU 18	1.15	0.58	38.74	-5.0027	-0.0094	0.4042
938	SLU 19	1.13	0.57	38.69	-4.9912	-0.0095	0.3999
938	SLU 20	1.17	0.58	39.2	-5.0518	-0.0096	0.4109
938	SLU 21	1.15	0.57	39.15	-5.0403	-0.0097	0.4066
938	SLU 22	1.12	0.54	37.07	-4.8187	-0.0094	0.3938
938	SLU 23	1.1	0.53	36.99	-4.7996	-0.0096	0.3866
938	SLU 24	1.14	0.55	37.82	-4.8989	-0.0097	0.4034
938	SLU 25	1.13	0.54	37.77	-4.8875	-0.0098	0.3991
938	SLU 26	1.12	0.53	37.45	-4.8487	-0.0098	0.3933
938	SLU 27	1.16	0.55	38.28	-4.948	-0.0098	0.4101
938	SLU 28	1.15	0.54	38.23	-4.9365	-0.0099	0.4058
938	SLU 29	1.16	0.54	37.99	-4.9169	-0.0098	0.4071
938	SLU 30	1.14	0.53	37.94	-4.9054	-0.0099	0.4028
938	SLU 31	1.18	0.63	40.91	-5.2295	-0.0098	0.4149
938	SLU 32	1.22	0.65	41.74	-5.3288	-0.0099	0.4317
938	SLU 33	1.21	0.65	41.69	-5.3173	-0.01	0.4274
938	SLU 34	1.2	0.63	41.37	-5.2786	-0.01	0.4216
938	SLU 35	1.24	0.65	42.2	-5.3779	-0.01	0.4384
938	SLU 36	1.23	0.65	42.15	-5.3664	-0.0101	0.4341
938	SLU 37	1.23	0.64	41.91	-5.3468	-0.01	0.4354
938	SLU 38	1.22	0.64	41.86	-5.3353	-0.0101	0.4311
938	SLU 39	1.23	0.68	42.67	-5.4328	-0.0097	0.4342
938	SLU 40	1.22	0.68	42.62	-5.4214	-0.0098	0.4299
938	SLU 41	1.25	0.69	43.13	-5.4819	-0.0099	0.4409
938	SLU 42	1.24	0.68	43.08	-5.4705	-0.01	0.4365
938	SLU 43	1.31	0.52	41.72	-5.5576	-0.0118	0.4627
938	SLU 44	1.29	0.51	41.64	-5.5385	-0.012	0.4555
938	SLU 45	1.34	0.53	42.47	-5.6378	-0.0121	0.4723
938	SLU 46	1.33	0.53	42.42	-5.6264	-0.0122	0.468
938	SLU 47	1.31	0.51	42.1	-5.5876	-0.0122	0.4622
938	SLU 48	1.36	0.53	42.93	-5.6869	-0.0122	0.479
938	SLU 49	1.35	0.53	42.88	-5.6755	-0.0123	0.4747
938	SLU 50	1.35	0.52	42.64	-5.6558	-0.0121	0.4716
938	SLU 51	1.34	0.52	42.59	-5.6444	-0.0123	0.4717
938	SLU 52	1.37	0.61	45.57	-5.9684	-0.0122	0.4838
938	SLU 53	1.42	0.64	46.4	-6.0677	-0.0122	0.5006
938	SLU 54	1.41	0.63	46.35	-6.0563	-0.0124	0.4963
938	SLU 55	1.39	0.62	46.02	-6.0175	-0.0123	0.4904
938	SLU 56	1.44	0.64	46.85	-6.1168	-0.0124	0.5072
938	SLU 57	1.43	0.63	46.8	-6.1054	-0.0125	0.5029
938	SLU 58	1.43	0.63	46.56	-6.0857	-0.0123	0.5043
938	SLU 59	1.42	0.62	46.51	-6.0742	-0.0124	0.5
938	SLU 60	1.43	0.67	47.33	-6.1718	-0.0121	0.5031
938	SLU 61	1.41	0.66	47.28	-6.1603	-0.0122	0.4988
938	SLU 62	1.45	0.67	47.79	-6.2208	-0.0122	0.5097
938	SLU 63	1.43	0.66	47.74	-6.2094	-0.0124	0.5054
938	SLU 64	1.4	0.63	45.66	-5.9878	-0.0121	0.4927
938	SLU 65	1.38	0.62	45.58	-5.9687	-0.0122	0.4855
938	SLU 66	1.43	0.64	46.41	-6.068	-0.0123	0.5023
938	SLU 67	1.41	0.63	46.36	-6.0565	-0.0124	0.498
938	SLU 68	1.4	0.62	46.04	-6.0178	-0.0124	0.4922
938	SLU 69	1.44	0.64	46.87	-6.1171	-0.0125	0.509
938	SLU 70	1.43	0.64	46.82	-6.1056	-0.0126	0.5046
938	SLU 71	1.44	0.63	46.58	-6.086	-0.0124	0.506
938	SLU 72	1.42	0.63	46.53	-6.0745	-0.0125	0.5017
938	SLU 73	1.46	0.72	49.5	-6.3986	-0.0124	0.5137
938	SLU 74	1.51	0.74	50.33	-6.4979	-0.0125	0.5305
938	SLU 75	1.49	0.74	50.28	-6.4864	-0.0126	0.5262



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
938	SLU 76	1.48	0.72	49.96	-6.4477	-0.0126	0.5204
938	SLU 77	1.52	0.75	50.79	-6.547	-0.0127	0.5372
938	SLU 78	1.51	0.74	50.74	-6.5355	-0.0128	0.5329
938	SLU 79	1.52	0.74	50.5	-6.5159	-0.0126	0.5343
938	SLU 80	1.5	0.73	50.45	-6.5044	-0.0127	0.53
938	SLU 81	1.51	0.78	51.26	-6.6019	-0.0123	0.533
938	SLU 82	1.5	0.77	51.21	-6.5904	-0.0124	0.5287
938	SLU 83	1.53	0.78	51.72	-6.651	-0.0125	0.5397
938	SLU 84	1.52	0.77	51.67	-6.6395	-0.0126	0.5354
938	SLE RA 1	1.06	0.46	34.26	-4.5114	-0.0092	0.3724
938	SLE RA 2	1.04	0.45	34.2	-4.4987	-0.0093	0.3676
938	SLE RA 3	1.08	0.47	34.76	-4.5649	-0.0094	0.3788
938	SLE RA 4	1.07	0.46	34.72	-4.5573	-0.0095	0.3759
938	SLE RA 5	1.06	0.45	34.51	-4.5314	-0.0095	0.372
938	SLE RA 6	1.09	0.47	35.06	-4.5976	-0.0095	0.3832
938	SLE RA 7	1.08	0.46	35.03	-4.59	-0.0096	0.3804
938	SLE RA 8	1.08	0.46	34.87	-4.5769	-0.0095	0.3813
938	SLE RA 9	1.07	0.46	34.84	-4.5693	-0.0095	0.3784
938	SLE RA 10	1.1	0.52	36.82	-4.7853	-0.0095	0.3864
938	SLE RA 11	1.13	0.54	37.37	-4.8515	-0.0095	0.3976
938	SLE RA 12	1.12	0.53	37.34	-4.8439	-0.0096	0.3948
938	SLE RA 13	1.11	0.52	37.12	-4.818	-0.0096	0.3909
938	SLE RA 14	1.14	0.54	37.68	-4.8842	-0.0096	0.4021
938	SLE RA 15	1.13	0.53	37.64	-4.8766	-0.0097	0.3992
938	SLE RA 16	1.14	0.53	37.48	-4.8635	-0.0096	0.4001
938	SLE RA 17	1.13	0.53	37.45	-4.8559	-0.0097	0.3973
938	SLE RA 18	1.13	0.56	37.99	-4.9209	-0.0094	0.3993
938	SLE RA 19	1.12	0.55	37.96	-4.9132	-0.0095	0.3964
938	SLE RA 20	1.15	0.56	38.3	-4.9536	-0.0095	0.4038
938	SLE RA 21	1.14	0.56	38.27	-4.946	-0.0096	0.4009
938	SLE FR 1	1.06	0.46	34.26	-4.5114	-0.0092	0.3724
938	SLE FR 2	1.05	0.46	34.25	-4.5089	-0.0092	0.3714
938	SLE FR 3	1.06	0.46	34.38	-4.5245	-0.0093	0.3742
938	SLE FR 4	1.08	0.49	35.37	-4.6317	-0.0093	0.3795
938	SLE FR 5	1.08	0.49	35.5	-4.6474	-0.0093	0.3822
938	SLE FR 6	1.09	0.51	36.13	-4.7162	-0.0093	0.3858
938	SLE QP 1	1.06	0.46	34.26	-4.5114	-0.0092	0.3724
938	SLE QP 2	1.08	0.49	35.38	-4.6343	-0.0093	0.3805
938	SLD 1	4.79	0.42	28.71	-4.0003	0.0164	1.6806
938	SLD 2	4.42	0.91	28.26	-3.9581	0.0168	1.5512
938	SLD 3	5	-0.69	29.45	-4.0485	0.0147	1.7538
938	SLD 4	4.63	-0.2	29	-4.0063	0.0151	1.6244
938	SLD 5	1.94	2.06	32.33	-4.3785	0.0011	0.6826
938	SLD 6	1.7	2.38	32.03	-4.3508	0.0013	0.5975
938	SLD 7	2.64	-1.63	34.81	-4.5392	-0.0049	0.9266
938	SLD 8	2.4	-1.31	34.52	-4.5114	-0.0046	0.8416
938	SLD 9	-0.24	2.29	36.24	-4.7571	-0.014	-0.0807
938	SLD 10	-0.48	2.61	35.95	-4.7294	-0.0137	-0.1657
938	SLD 11	0.46	-1.4	38.73	-4.9177	-0.0199	0.1634
938	SLD 12	0.22	-1.08	38.43	-4.89	-0.0196	0.0783
938	SLD 13	-2.47	1.18	41.75	-5.2622	-0.0336	-0.8635
938	SLD 14	-2.84	1.67	41.31	-5.22	-0.0332	-0.9929
938	SLD 15	-2.26	0.07	42.5	-5.3104	-0.0354	-0.7903
938	SLD 16	-2.63	0.56	42.05	-5.2682	-0.035	-0.9197
938	SLV 1	9.77	0.29	19.79	-3.1512	0.0509	3.4223
938	SLV 2	8.9	1.42	18.74	-3.0529	0.0518	3.121
938	SLV 3	10.26	-2.22	21.48	-3.2627	0.0468	3.593
938	SLV 4	9.39	-1.09	20.44	-3.1644	0.0477	3.2917
938	SLV 5	3.1	4.04	28.31	-4.0371	0.0148	1.0862
938	SLV 6	2.53	4.77	27.63	-3.9736	0.0154	0.8916
938	SLV 7	4.72	-4.33	33.96	-4.409	0.0012	1.6552
938	SLV 8	4.16	-3.6	33.29	-4.3455	0.0018	1.4606
938	SLV 9	-2	4.57	37.47	-4.923	-0.0203	-0.6997
938	SLV 10	-2.56	5.31	36.79	-4.8595	-0.0197	-0.8943
938	SLV 11	-0.38	-3.8	42.15	-5.2949	-0.034	-0.1307
938	SLV 12	-0.94	-3.06	43.42	-5.2314	-0.0334	-0.3253
938	SLV 13	-7.23	2.07	50.32	-6.1041	-0.0662	-2.5308
938	SLV 14	-8.1	3.2	49.28	-6.0058	-0.0653	-2.8321
938	SLV 15	-6.74	-0.44	52.02	-6.2157	-0.0703	-2.3601
938	SLV 16	-7.61	0.69	50.97	-6.1174	-0.0694	-2.6614
938	CRTFP Ux+	0	0	0	0	0	0
938	CRTFP Ux-	0	0	0	0	0	0
938	CRTFP Uy+	0	0	0	0	0	0
938	CRTFP Uy-	0	0	0	0	0	0
939	SLU 1	1.04	0.5	33.64	-4.5589	-0.0244	0.3653
939	SLU 2	1.02	0.49	33.56	-4.5399	-0.0247	0.3583
939	SLU 3	1.06	0.51	34.4	-4.6434	-0.0251	0.375
939	SLU 4	1.05	0.51	34.35	-4.6321	-0.0252	0.3708
939	SLU 5	1.04	0.49	34.03	-4.5918	-0.0251	0.365
939	SLU 6	1.08	0.52	34.86	-4.6953	-0.0255	0.3817
939	SLU 7	1.07	0.51	34.82	-4.684	-0.0257	0.3775
939	SLU 8	1.07	0.51	34.57	-4.6627	-0.0253	0.3787
939	SLU 9	1.06	0.5	34.52	-4.6513	-0.0254	0.3745
939	SLU 10	1.1	0.61	37.52	-4.9837	-0.0269	0.3866
939	SLU 11	1.14	0.63	38.36	-5.0872	-0.0273	0.4033
939	SLU 12	1.13	0.63	38.31	-5.0759	-0.0274	0.3991
939	SLU 13	1.12	0.61	37.98	-5.0356	-0.0273	0.3933
939	SLU 14	1.16	0.64	38.82	-5.1391	-0.0277	0.41
939	SLU 15	1.15	0.63	38.78	-5.1278	-0.0278	0.4058
939	SLU 16	1.15	0.63	38.53	-5.1065	-0.0275	0.407



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
939	SLU 17	1.14	0.62	38.48	-5.0951	-0.0276	0.4028
939	SLU 18	1.15	0.67	39.29	-5.1929	-0.0276	0.4058
939	SLU 19	1.14	0.66	39.24	-5.1815	-0.0277	0.4015
939	SLU 20	1.17	0.68	39.76	-5.2448	-0.028	0.4125
939	SLU 21	1.16	0.67	39.71	-5.2334	-0.0281	0.4083
939	SLU 22	1.12	0.62	37.61	-5.0031	-0.0267	0.3954
939	SLU 23	1.1	0.61	37.53	-4.9841	-0.027	0.3884
939	SLU 24	1.15	0.63	38.37	-5.0877	-0.0274	0.4051
939	SLU 25	1.14	0.62	38.33	-5.0763	-0.0275	0.4008
939	SLU 26	1.12	0.61	38	-5.0361	-0.0274	0.3951
939	SLU 27	1.17	0.64	38.84	-5.1396	-0.0278	0.4118
939	SLU 28	1.16	0.63	38.79	-5.1282	-0.0279	0.4076
939	SLU 29	1.16	0.63	38.54	-5.1069	-0.0276	0.4088
939	SLU 30	1.15	0.62	38.5	-5.0956	-0.0277	0.4046
939	SLU 31	1.18	0.73	41.49	-5.4279	-0.0292	0.4167
939	SLU 32	1.23	0.75	42.33	-5.5314	-0.0296	0.4334
939	SLU 33	1.22	0.75	42.28	-5.5201	-0.0297	0.4292
939	SLU 34	1.2	0.73	41.96	-5.4799	-0.0296	0.4234
939	SLU 35	1.25	0.76	42.8	-5.5834	-0.03	0.4401
939	SLU 36	1.24	0.75	42.75	-5.572	-0.0301	0.4359
939	SLU 37	1.24	0.75	42.5	-5.5507	-0.0298	0.4371
939	SLU 38	1.23	0.74	42.46	-5.5393	-0.0299	0.4329
939	SLU 39	1.23	0.79	43.26	-5.6371	-0.0299	0.4358
939	SLU 40	1.22	0.78	43.22	-5.6257	-0.03	0.4316
939	SLU 41	1.25	0.8	43.73	-5.689	-0.0303	0.4425
939	SLU 42	1.24	0.79	43.69	-5.6776	-0.0304	0.4383
939	SLU 43	1.32	0.61	42.36	-5.7742	-0.031	0.4646
939	SLU 44	1.3	0.6	42.29	-5.7553	-0.0312	0.4576
939	SLU 45	1.35	0.62	43.13	-5.8588	-0.0316	0.4743
939	SLU 46	1.33	0.61	43.08	-5.8474	-0.0318	0.4701
939	SLU 47	1.32	0.6	42.75	-5.8072	-0.0316	0.4643
939	SLU 48	1.36	0.63	43.59	-5.9107	-0.032	0.481
939	SLU 49	1.35	0.62	43.55	-5.8993	-0.0322	0.4768
939	SLU 50	1.36	0.62	43.3	-5.8781	-0.0318	0.478
939	SLU 51	1.34	0.61	43.25	-5.8667	-0.032	0.4738
939	SLU 52	1.38	0.72	46.25	-6.1991	-0.0334	0.4859
939	SLU 53	1.42	0.74	47.08	-6.3026	-0.0338	0.5026
939	SLU 54	1.41	0.73	47.04	-6.2912	-0.034	0.4984
939	SLU 55	1.4	0.72	46.71	-6.251	-0.0338	0.4926
939	SLU 56	1.44	0.75	47.55	-6.3545	-0.0342	0.5093
939	SLU 57	1.43	0.74	47.5	-6.3431	-0.0344	0.5051
939	SLU 58	1.44	0.74	47.25	-6.3218	-0.034	0.5063
939	SLU 59	1.42	0.73	47.21	-6.3105	-0.0342	0.5021
939	SLU 60	1.43	0.78	48.02	-6.4082	-0.0341	0.505
939	SLU 61	1.42	0.77	47.97	-6.3968	-0.0343	0.5008
939	SLU 62	1.45	0.79	48.48	-6.4601	-0.0345	0.5118
939	SLU 63	1.44	0.78	48.44	-6.4488	-0.0347	0.5075
939	SLU 64	1.4	0.73	46.34	-6.2184	-0.0333	0.4947
939	SLU 65	1.38	0.72	46.26	-6.1995	-0.0335	0.4876
939	SLU 66	1.43	0.74	47.1	-6.303	-0.0339	0.5043
939	SLU 67	1.42	0.73	47.05	-6.2916	-0.0341	0.5001
939	SLU 68	1.4	0.72	46.73	-6.2514	-0.0339	0.4944
939	SLU 69	1.45	0.75	47.57	-6.3549	-0.0343	0.5111
939	SLU 70	1.44	0.74	47.52	-6.3436	-0.0345	0.5068
939	SLU 71	1.44	0.74	47.27	-6.3223	-0.0341	0.5081
939	SLU 72	1.43	0.73	47.22	-6.3109	-0.0343	0.5039
939	SLU 73	1.46	0.84	50.22	-6.6433	-0.0357	0.516
939	SLU 74	1.51	0.86	51.06	-6.7468	-0.0361	0.5327
939	SLU 75	1.5	0.85	51.01	-6.7354	-0.0363	0.5284
939	SLU 76	1.48	0.84	50.69	-6.6952	-0.0361	0.5227
939	SLU 77	1.53	0.87	51.52	-6.7987	-0.0365	0.5394
939	SLU 78	1.52	0.86	51.48	-6.7874	-0.0367	0.5352
939	SLU 79	1.52	0.86	51.23	-6.7661	-0.0363	0.5364
939	SLU 80	1.51	0.85	51.18	-6.7547	-0.0364	0.5322
939	SLU 81	1.52	0.9	51.99	-6.8524	-0.0364	0.5351
939	SLU 82	1.5	0.89	51.95	-6.8411	-0.0366	0.5309
939	SLU 83	1.54	0.91	52.46	-6.9043	-0.0368	0.5418
939	SLU 84	1.52	0.9	52.41	-6.893	-0.037	0.5376
939	SLE RA 1	1.06	0.54	34.77	-4.6858	-0.0251	0.3739
939	SLE RA 2	1.05	0.53	34.72	-4.6732	-0.0253	0.3692
939	SLE RA 3	1.08	0.54	35.28	-4.7422	-0.0255	0.3804
939	SLE RA 4	1.07	0.54	35.25	-4.7346	-0.0256	0.3775
939	SLE RA 5	1.06	0.53	35.03	-4.7078	-0.0255	0.3737
939	SLE RA 6	1.09	0.55	35.59	-4.7768	-0.0258	0.3848
939	SLE RA 7	1.08	0.54	35.56	-4.7692	-0.0259	0.382
939	SLE RA 8	1.09	0.54	35.39	-4.755	-0.0256	0.3829
939	SLE RA 9	1.08	0.53	35.36	-4.7474	-0.0257	0.38
939	SLE RA 10	1.1	0.61	37.36	-4.969	-0.0267	0.3881
939	SLE RA 11	1.13	0.62	37.92	-5.038	-0.027	0.3992
939	SLE RA 12	1.12	0.62	37.89	-5.0304	-0.0271	0.3964
939	SLE RA 13	1.11	0.61	37.67	-5.0036	-0.027	0.3926
939	SLE RA 14	1.14	0.63	38.23	-5.0726	-0.0273	0.4037
939	SLE RA 15	1.14	0.62	38.2	-5.0651	-0.0274	0.4009
939	SLE RA 16	1.14	0.62	38.03	-5.0509	-0.0271	0.4017
939	SLE RA 17	1.13	0.61	38	-5.0433	-0.0272	0.3989
939	SLE RA 18	1.14	0.65	38.54	-5.1084	-0.0272	0.4009
939	SLE RA 19	1.13	0.64	38.51	-5.1009	-0.0273	0.3981
939	SLE RA 20	1.15	0.65	38.85	-5.1431	-0.0275	0.4053
939	SLE RA 21	1.14	0.65	38.82	-5.1355	-0.0276	0.4025
939	SLE FR 1	1.06	0.54	34.77	-4.6858	-0.0251	0.3739





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
939	SLE FR 2	1.06	0.53	34.76	-4.6833	-0.0251	0.373
939	SLE FR 3	1.07	0.54	34.9	-4.6996	-0.0252	0.3757
939	SLE FR 4	1.08	0.57	35.89	-4.8101	-0.0257	0.3811
939	SLE FR 5	1.09	0.57	36.03	-4.8264	-0.0258	0.3838
939	SLE FR 6	1.1	0.59	36.66	-4.8971	-0.0261	0.3874
939	SLE QP 1	1.06	0.54	34.77	-4.6858	-0.0251	0.3739
939	SLE QP 2	1.08	0.57	35.9	-4.8126	-0.0257	0.382
939	SLD 1	4.79	0.53	28.41	-3.9362	0.004	1.6818
939	SLD 2	4.42	1.05	27.95	-3.8932	0.0046	1.5526
939	SLD 3	5	-0.65	29.21	-3.9964	0.0017	1.755
939	SLD 4	4.63	-0.12	28.75	-3.9534	0.0023	1.6257
939	SLD 5	1.95	2.25	32.53	-4.4661	-0.0134	0.6841
939	SLD 6	1.7	2.59	32.22	-4.4378	-0.0131	0.5992
939	SLD 7	2.64	-1.67	35.19	-4.6667	-0.021	0.9279
939	SLD 8	2.4	-1.33	34.88	-4.6384	-0.0206	0.8429
939	SLD 9	-0.23	2.47	36.92	-4.9867	-0.0308	-0.0789
939	SLD 10	-0.48	2.81	36.62	-4.9584	-0.0304	-0.1639
939	SLD 11	0.47	-1.45	39.58	-5.1874	-0.0384	0.1648
939	SLD 12	0.22	-1.11	39.28	-5.1591	-0.038	0.0799
939	SLD 13	-2.46	1.26	43.06	-5.6718	-0.0538	-0.8617
939	SLD 14	-2.84	1.79	42.59	-5.6287	-0.0532	-0.991
939	SLD 15	-2.26	0.09	43.85	-5.732	-0.056	-0.7886
939	SLD 16	-2.63	0.61	43.39	-5.6889	-0.0554	-0.9179
939	SLV 1	9.77	0.43	18.4	-2.7622	0.0438	3.4232
939	SLV 2	8.9	1.65	17.32	-2.662	0.0452	3.1221
939	SLV 3	10.26	-2.23	20.21	-2.9016	0.0386	3.5937
939	SLV 4	9.39	-1.01	19.14	-2.8013	0.04	3.2926
939	SLV 5	3.1	4.36	28.08	-4.0034	0.0028	1.0878
939	SLV 6	2.54	5.15	27.38	-3.9387	0.0037	0.8934
939	SLV 7	4.73	-4.53	34.14	-4.468	-0.0146	1.6561
939	SLV 8	4.16	-3.74	33.44	-4.4032	-0.0137	1.4617
939	SLV 9	-2	4.88	38.36	-5.2219	-0.0377	-0.6977
939	SLV 10	-2.56	5.67	37.66	-5.1572	-0.0368	-0.8922
939	SLV 11	-0.37	-4.01	44.42	-5.6865	-0.0552	-0.1294
939	SLV 12	-0.93	-3.22	43.72	-5.6217	-0.0543	-0.3238
939	SLV 13	-7.22	2.15	52.67	-6.8238	-0.0914	-2.5286
939	SLV 14	-8.09	3.37	51.59	-6.7236	-0.09	-2.8297
939	SLV 15	-6.73	-0.51	54.49	-6.9632	-0.0966	-2.3581
939	SLV 16	-7.6	0.71	53.41	-6.8629	-0.0953	-2.6592
939	CRTFP Ux+	0	0	0	0	0	0
939	CRTFP Ux-	0	0	0	0	0	0
939	CRTFP Uy+	0	0	0	0	0	0
939	CRTFP Uy-	0	0	0	0	0	0
940	SLU 1	1.04	0.58	34.56	-5.0452	-0.0374	0.3662
940	SLU 2	1.02	0.56	34.49	-5.0264	-0.0377	0.3593
940	SLU 3	1.07	0.6	35.34	-5.1421	-0.0384	0.3759
940	SLU 4	1.05	0.58	35.3	-5.1309	-0.0386	0.3718
940	SLU 5	1.04	0.57	34.97	-5.0861	-0.0383	0.366
940	SLU 6	1.08	0.6	35.83	-5.2018	-0.039	0.3826
940	SLU 7	1.07	0.59	35.79	-5.1906	-0.0392	0.3785
940	SLU 8	1.08	0.59	35.52	-5.1645	-0.0386	0.3797
940	SLU 9	1.07	0.58	35.48	-5.1533	-0.0388	0.3755
940	SLU 10	1.1	0.7	38.54	-5.5252	-0.0416	0.3876
940	SLU 11	1.14	0.74	39.39	-5.6409	-0.0423	0.4042
940	SLU 12	1.13	0.72	39.35	-5.6296	-0.0424	0.4001
940	SLU 13	1.12	0.7	39.02	-5.5849	-0.0422	0.3944
940	SLU 14	1.16	0.74	39.88	-5.7005	-0.0429	0.411
940	SLU 15	1.15	0.73	39.83	-5.6893	-0.0431	0.4068
940	SLU 16	1.16	0.73	39.57	-5.6633	-0.0425	0.408
940	SLU 17	1.14	0.72	39.53	-5.652	-0.0427	0.4039
940	SLU 18	1.15	0.78	40.34	-5.7577	-0.0429	0.4067
940	SLU 19	1.14	0.77	40.3	-5.7464	-0.0431	0.4025
940	SLU 20	1.17	0.79	40.82	-5.8173	-0.0436	0.4134
940	SLU 21	1.16	0.77	40.78	-5.8061	-0.0437	0.4093
940	SLU 22	1.12	0.72	38.63	-5.5448	-0.0414	0.3963
940	SLU 23	1.1	0.7	38.56	-5.5261	-0.0417	0.3894
940	SLU 24	1.15	0.73	39.41	-5.6417	-0.0424	0.406
940	SLU 25	1.14	0.72	39.37	-5.6305	-0.0426	0.4019
940	SLU 26	1.12	0.7	39.04	-5.5857	-0.0423	0.3962
940	SLU 27	1.17	0.73	39.89	-5.7014	-0.043	0.4128
940	SLU 28	1.16	0.72	39.85	-5.6902	-0.0432	0.4086
940	SLU 29	1.16	0.72	39.59	-5.6641	-0.0426	0.4098
940	SLU 30	1.15	0.71	39.55	-5.6529	-0.0428	0.4056
940	SLU 31	1.18	0.84	42.61	-6.0248	-0.0456	0.4177
940	SLU 32	1.23	0.87	43.46	-6.1405	-0.0463	0.4344
940	SLU 33	1.22	0.86	43.42	-6.1293	-0.0464	0.4302
940	SLU 34	1.2	0.84	43.09	-6.0845	-0.0462	0.4245
940	SLU 35	1.25	0.87	43.94	-6.2002	-0.0469	0.4411
940	SLU 36	1.24	0.86	43.9	-6.189	-0.0471	0.437
940	SLU 37	1.24	0.86	43.64	-6.1629	-0.0465	0.4381
940	SLU 38	1.23	0.85	43.6	-6.1517	-0.0467	0.434
940	SLU 39	1.24	0.92	44.41	-6.2573	-0.0469	0.4368
940	SLU 40	1.22	0.9	44.37	-6.2461	-0.0471	0.4326
940	SLU 41	1.25	0.92	44.89	-6.317	-0.0476	0.4435
940	SLU 42	1.24	0.91	44.85	-6.3058	-0.0477	0.4394
940	SLU 43	1.32	0.71	43.53	-6.3874	-0.0472	0.4657
940	SLU 44	1.3	0.69	43.46	-6.3687	-0.0475	0.4588
940	SLU 45	1.35	0.73	44.32	-6.4843	-0.0482	0.4754
940	SLU 46	1.34	0.71	44.28	-6.4731	-0.0484	0.4713
940	SLU 47	1.32	0.69	43.94	-6.4284	-0.0482	0.4656



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
940	SLU 48	1.37	0.73	44.8	-6.544	-0.0489	0.4822
940	SLU 49	1.36	0.72	44.76	-6.5328	-0.049	0.478
940	SLU 50	1.36	0.72	44.49	-6.5067	-0.0485	0.4792
940	SLU 51	1.35	0.71	44.45	-6.4955	-0.0487	0.4751
940	SLU 52	1.38	0.83	47.51	-6.8674	-0.0514	0.4872
940	SLU 53	1.43	0.86	48.37	-6.9831	-0.0521	0.5038
940	SLU 54	1.42	0.85	48.33	-6.9719	-0.0523	0.4996
940	SLU 55	1.4	0.83	47.99	-6.9271	-0.052	0.4939
940	SLU 56	1.45	0.87	48.85	-7.0428	-0.0527	0.5105
940	SLU 57	1.43	0.86	48.81	-7.0316	-0.0529	0.5064
940	SLU 58	1.44	0.86	48.54	-7.0055	-0.0524	0.5075
940	SLU 59	1.43	0.84	48.5	-6.9943	-0.0525	0.5034
940	SLU 60	1.43	0.91	49.31	-7.0999	-0.0528	0.5062
940	SLU 61	1.42	0.9	49.27	-7.0887	-0.053	0.5021
940	SLU 62	1.45	0.91	49.8	-7.1596	-0.0534	0.5129
940	SLU 63	1.44	0.9	49.76	-7.1484	-0.0536	0.5088
940	SLU 64	1.41	0.85	47.6	-6.887	-0.0512	0.4958
940	SLU 65	1.39	0.82	47.53	-6.8683	-0.0515	0.4889
940	SLU 66	1.43	0.86	48.38	-6.984	-0.0522	0.5056
940	SLU 67	1.42	0.85	48.34	-6.9728	-0.0524	0.5014
940	SLU 68	1.41	0.83	48.01	-6.928	-0.0522	0.4957
940	SLU 69	1.45	0.86	48.87	-7.0437	-0.0529	0.5123
940	SLU 70	1.44	0.85	48.83	-7.0324	-0.053	0.5082
940	SLU 71	1.44	0.85	48.56	-7.0064	-0.0525	0.5093
940	SLU 72	1.43	0.84	48.52	-6.9952	-0.0527	0.5052
940	SLU 73	1.47	0.96	51.58	-7.3671	-0.0554	0.5173
940	SLU 74	1.51	1	52.43	-7.4828	-0.0561	0.5339
940	SLU 75	1.5	0.99	52.39	-7.4715	-0.0563	0.5297
940	SLU 76	1.48	0.97	52.06	-7.4268	-0.056	0.524
940	SLU 77	1.53	1	52.92	-7.5424	-0.0567	0.5406
940	SLU 78	1.52	0.99	52.88	-7.5312	-0.0569	0.5365
940	SLU 79	1.52	0.99	52.61	-7.5051	-0.0564	0.5376
940	SLU 80	1.51	0.98	52.57	-7.4939	-0.0566	0.5335
940	SLU 81	1.52	1.04	53.38	-7.5996	-0.0568	0.5363
940	SLU 82	1.51	1.03	53.34	-7.5883	-0.057	0.5322
940	SLU 83	1.54	1.05	53.87	-7.6592	-0.0574	0.543
940	SLU 84	1.53	1.04	53.82	-7.648	-0.0576	0.5389
940	SLE RA 1	1.06	0.62	35.72	-5.1879	-0.0385	0.3748
940	SLE RA 2	1.05	0.61	35.67	-5.1754	-0.0387	0.3702
940	SLE RA 3	1.08	0.63	36.24	-5.2525	-0.0392	0.3813
940	SLE RA 4	1.07	0.62	36.22	-5.2451	-0.0393	0.3785
940	SLE RA 5	1.06	0.61	36	-5.2152	-0.0391	0.3747
940	SLE RA 6	1.09	0.63	36.57	-5.2923	-0.0396	0.3858
940	SLE RA 7	1.09	0.62	36.54	-5.2848	-0.0397	0.383
940	SLE RA 8	1.09	0.62	36.36	-5.2675	-0.0394	0.3838
940	SLE RA 9	1.08	0.62	36.34	-5.26	-0.0395	0.381
940	SLE RA 10	1.1	0.7	38.37	-5.5079	-0.0413	0.3891
940	SLE RA 11	1.13	0.72	38.94	-5.5851	-0.0418	0.4002
940	SLE RA 12	1.13	0.71	38.92	-5.5776	-0.0419	0.3974
940	SLE RA 13	1.11	0.7	38.7	-5.5477	-0.0417	0.3936
940	SLE RA 14	1.15	0.72	39.27	-5.6248	-0.0422	0.4046
940	SLE RA 15	1.14	0.72	39.24	-5.6173	-0.0423	0.4019
940	SLE RA 16	1.14	0.72	39.06	-5.6	-0.042	0.4027
940	SLE RA 17	1.13	0.71	39.04	-5.5925	-0.0421	0.3999
940	SLE RA 18	1.14	0.75	39.58	-5.6629	-0.0422	0.4018
940	SLE RA 19	1.13	0.75	39.55	-5.6554	-0.0424	0.399
940	SLE RA 20	1.15	0.76	39.9	-5.7027	-0.0427	0.4063
940	SLE RA 21	1.14	0.75	39.87	-5.6952	-0.0428	0.4035
940	SLE FR 1	1.06	0.62	35.72	-5.1879	-0.0385	0.3748
940	SLE FR 2	1.06	0.62	35.71	-5.1854	-0.0386	0.3739
940	SLE FR 3	1.07	0.62	35.85	-5.2038	-0.0387	0.3766
940	SLE FR 4	1.08	0.66	36.87	-5.3279	-0.0397	0.382
940	SLE FR 5	1.09	0.66	37.01	-5.3463	-0.0398	0.3847
940	SLE FR 6	1.1	0.69	37.65	-5.4254	-0.0404	0.3883
940	SLE QP 1	1.06	0.62	35.72	-5.1879	-0.0385	0.3748
940	SLE QP 2	1.08	0.66	36.88	-5.3304	-0.0396	0.3829
940	SLD 1	4.79	0.65	28.46	-4.141	-0.0063	1.6824
940	SLD 2	4.42	1.22	27.97	-4.0929	-0.0055	1.5533
940	SLD 3	5	-0.61	29.32	-4.2208	-0.009	1.7555
940	SLD 4	4.63	-0.04	28.84	-4.1726	-0.0082	1.6263
940	SLD 5	1.95	2.47	33.12	-4.8612	-0.0257	0.685
940	SLD 6	1.7	2.84	32.8	-4.8296	-0.0252	0.6001
940	SLD 7	2.64	-1.73	36.01	-5.1271	-0.0347	0.9285
940	SLD 8	2.4	-1.36	35.69	-5.0954	-0.0342	0.8437
940	SLD 9	-0.23	2.68	38.06	-5.5654	-0.0451	-0.0779
940	SLD 10	-0.47	3.05	37.74	-5.5337	-0.0446	-0.1627
940	SLD 11	0.47	-1.52	40.95	-5.8313	-0.0541	0.1656
940	SLD 12	0.22	-1.15	40.63	-5.7996	-0.0536	0.0808
940	SLD 13	-2.46	1.36	44.91	-6.4882	-0.0711	-0.8605
940	SLD 14	-2.83	1.93	44.43	-6.44	-0.0703	-0.9897
940	SLD 15	-2.25	0.1	45.78	-6.568	-0.0738	-0.7875
940	SLD 16	-2.63	0.67	45.3	-6.5198	-0.073	-0.9166
940	SLV 1	9.77	0.6	17.19	-2.5478	0.0383	3.4233
940	SLV 2	8.9	1.92	16.06	-2.4356	0.0402	3.1225
940	SLV 3	10.25	-2.25	19.17	-2.7322	0.0321	3.5936
940	SLV 4	9.38	-0.93	18.04	-2.62	0.0339	3.2929
940	SLV 5	3.1	4.75	28.17	-4.2353	-0.0071	1.0887
940	SLV 6	2.54	5.6	27.44	-4.1628	-0.0059	0.8944
940	SLV 7	4.73	-4.77	34.76	-4.8501	-0.0279	1.6564
940	SLV 8	4.16	-3.92	34.03	-4.7777	-0.0267	1.4622



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
940	SLV 9	-1.99	5.24	39.72	-5.8832	-0.0526	-0.6964
940	SLV 10	-2.56	6.09	39	-5.8107	-0.0514	-0.8907
940	SLV 11	-0.37	-4.28	46.31	-6.498	-0.0733	-0.1287
940	SLV 12	-0.93	-3.42	45.59	-6.4256	-0.0722	-0.3229
940	SLV 13	-7.21	2.25	55.71	-8.0408	-0.1132	-2.5271
940	SLV 14	-8.08	3.58	54.59	-7.9286	-0.1114	-2.8278
940	SLV 15	-6.73	-0.6	57.69	-8.2252	-0.1195	-2.3568
940	SLV 16	-7.6	0.72	56.56	-8.1131	-0.1176	-2.6575
940	CRTFP Ux+	0	0	0	0	0	0
940	CRTFP Ux-	0	0	0	0	0	0
940	CRTFP Uy+	0	0	0	0	0	0
940	CRTFP Uy-	0	0	0	0	0	0
941	SLU 1	0.9	0.57	30.87	-4.9078	0.8317	0.3
941	SLU 2	0.88	0.55	30.82	-4.892	0.8301	0.2948
941	SLU 3	0.92	0.59	31.58	-5.0055	0.8506	0.3081
941	SLU 4	0.91	0.57	31.54	-4.9961	0.8497	0.305
941	SLU 5	0.9	0.55	31.25	-4.9523	0.8417	0.3006
941	SLU 6	0.94	0.59	32.01	-5.0658	0.8622	0.3138
941	SLU 7	0.93	0.58	31.98	-5.0564	0.8613	0.3107
941	SLU 8	0.93	0.58	31.74	-5.0283	0.8549	0.3115
941	SLU 9	0.92	0.57	31.7	-5.0189	0.8539	0.3084
941	SLU 10	0.95	0.69	34.42	-5.3875	0.9275	0.3153
941	SLU 11	0.99	0.72	35.18	-5.5009	0.9481	0.3285
941	SLU 12	0.98	0.71	35.15	-5.4915	0.9471	0.3254
941	SLU 13	0.97	0.69	34.86	-5.4477	0.9391	0.321
941	SLU 14	1.01	0.73	35.62	-5.5612	0.9597	0.3343
941	SLU 15	1	0.71	35.58	-5.5518	0.9587	0.3312
941	SLU 16	1	0.72	35.34	-5.5237	0.9523	0.332
941	SLU 17	0.99	0.7	35.31	-5.5143	0.9514	0.3289
941	SLU 18	0.99	0.77	36.02	-5.6155	0.9709	0.3292
941	SLU 19	0.98	0.76	35.99	-5.6061	0.9699	0.3261
941	SLU 20	1.01	0.77	36.45	-5.6758	0.9825	0.335
941	SLU 21	1	0.76	36.42	-5.6663	0.9815	0.3319
941	SLU 22	0.97	0.7	34.49	-5.4044	0.9296	0.3224
941	SLU 23	0.95	0.68	34.44	-5.3887	0.928	0.3172
941	SLU 24	0.99	0.71	35.2	-5.5022	0.9485	0.3305
941	SLU 25	0.98	0.7	35.17	-5.4927	0.9475	0.3273
941	SLU 26	0.97	0.68	34.88	-5.4489	0.9396	0.3229
941	SLU 27	1.01	0.72	35.63	-5.5624	0.9601	0.3362
941	SLU 28	1	0.7	35.6	-5.553	0.9591	0.3331
941	SLU 29	1	0.71	35.36	-5.525	0.9528	0.3339
941	SLU 30	0.99	0.69	35.33	-5.5155	0.9518	0.3308
941	SLU 31	1.02	0.82	38.05	-5.8841	1.0254	0.3377
941	SLU 32	1.06	0.85	38.81	-5.9976	1.0459	0.3509
941	SLU 33	1.05	0.84	38.78	-5.9881	1.0449	0.3478
941	SLU 34	1.04	0.82	38.48	-5.9444	1.037	0.3434
941	SLU 35	1.08	0.85	39.24	-6.0579	1.0575	0.3567
941	SLU 36	1.07	0.84	39.21	-6.0484	1.0566	0.3536
941	SLU 37	1.07	0.84	38.97	-6.0204	1.0502	0.3544
941	SLU 38	1.06	0.83	38.94	-6.0109	1.0492	0.3512
941	SLU 39	1.07	0.9	39.65	-6.1122	1.0688	0.3516
941	SLU 40	1.06	0.88	39.62	-6.1027	1.0678	0.3485
941	SLU 41	1.08	0.9	40.08	-6.1724	1.0804	0.3574
941	SLU 42	1.07	0.89	40.05	-6.163	1.0794	0.3543
941	SLU 43	1.14	0.7	38.89	-6.2098	1.0477	0.3823
941	SLU 44	1.13	0.68	38.83	-6.1941	1.046	0.3771
941	SLU 45	1.17	0.72	39.59	-6.3076	1.0666	0.3904
941	SLU 46	1.16	0.7	39.56	-6.2981	1.0656	0.3873
941	SLU 47	1.14	0.68	39.27	-6.2544	1.0576	0.3829
941	SLU 48	1.18	0.72	40.03	-6.3678	1.0782	0.3962
941	SLU 49	1.17	0.7	40	-6.3584	1.0772	0.393
941	SLU 50	1.17	0.71	39.75	-6.3304	1.0709	0.3938
941	SLU 51	1.17	0.7	39.72	-6.3209	1.0699	0.3907
941	SLU 52	1.19	0.82	42.44	-6.6895	1.1435	0.3976
941	SLU 53	1.23	0.85	43.2	-6.803	1.164	0.4109
941	SLU 54	1.22	0.84	43.17	-6.7936	1.163	0.4078
941	SLU 55	1.21	0.82	42.87	-6.7498	1.1551	0.4034
941	SLU 56	1.25	0.86	43.63	-6.8633	1.1756	0.4166
941	SLU 57	1.24	0.84	43.6	-6.8538	1.1746	0.4135
941	SLU 58	1.24	0.85	43.36	-6.8258	1.1683	0.4143
941	SLU 59	1.23	0.83	43.33	-6.8164	1.1673	0.4112
941	SLU 60	1.24	0.9	44.04	-6.9176	1.1868	0.4116
941	SLU 61	1.23	0.89	44.01	-6.9081	1.1859	0.4085
941	SLU 62	1.26	0.9	44.47	-6.9778	1.1984	0.4173
941	SLU 63	1.25	0.89	44.44	-6.9684	1.1975	0.4142
941	SLU 64	1.21	0.83	42.51	-6.7065	1.1456	0.4047
941	SLU 65	1.2	0.81	42.46	-6.6907	1.1439	0.3995
941	SLU 66	1.24	0.84	43.22	-6.8042	1.1645	0.4128
941	SLU 67	1.23	0.83	43.19	-6.7948	1.1635	0.4097
941	SLU 68	1.21	0.81	42.89	-6.751	1.1555	0.4053
941	SLU 69	1.26	0.85	43.65	-6.8645	1.1761	0.4185
941	SLU 70	1.25	0.83	43.62	-6.855	1.1751	0.4154
941	SLU 71	1.25	0.84	43.38	-6.827	1.1688	0.4162
941	SLU 72	1.24	0.82	43.35	-6.8176	1.1678	0.4131
941	SLU 73	1.27	0.95	46.07	-7.1861	1.2413	0.42
941	SLU 74	1.31	0.98	46.83	-7.2996	1.2619	0.4333
941	SLU 75	1.3	0.97	46.79	-7.2902	1.2609	0.4301
941	SLU 76	1.28	0.95	46.5	-7.2464	1.2529	0.4257
941	SLU 77	1.32	0.98	47.26	-7.3599	1.2735	0.439
941	SLU 78	1.31	0.97	47.23	-7.3505	1.2725	0.4359



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
941	SLU 79	1.32	0.97	46.99	-7.3224	1.2662	0.4367
941	SLU 80	1.31	0.96	46.95	-7.313	1.2652	0.4336
941	SLU 81	1.31	1.03	47.66	-7.4142	1.2847	0.434
941	SLU 82	1.3	1.01	47.63	-7.4048	1.2837	0.4308
941	SLU 83	1.33	1.03	48.1	-7.4745	1.2963	0.4397
941	SLU 84	1.32	1.02	48.07	-7.465	1.2953	0.4366
941	SLE RA 1	0.92	0.61	31.9	-5.0497	0.8597	0.3064
941	SLE RA 2	0.91	0.6	31.87	-5.0392	0.8586	0.3029
941	SLE RA 3	0.93	0.62	32.38	-5.1148	0.8723	0.3118
941	SLE RA 4	0.93	0.61	32.36	-5.1085	0.8716	0.3097
941	SLE RA 5	0.92	0.6	32.16	-5.0794	0.8663	0.3068
941	SLE RA 6	0.95	0.62	32.66	-5.155	0.88	0.3156
941	SLE RA 7	0.94	0.61	32.64	-5.1487	0.8794	0.3135
941	SLE RA 8	0.94	0.61	32.48	-5.13	0.8752	0.3141
941	SLE RA 9	0.93	0.61	32.46	-5.1237	0.8745	0.312
941	SLE RA 10	0.95	0.69	34.27	-5.3695	0.9235	0.3166
941	SLE RA 11	0.98	0.71	34.78	-5.4451	0.9372	0.3254
941	SLE RA 12	0.97	0.7	34.76	-5.4388	0.9366	0.3234
941	SLE RA 13	0.96	0.69	34.56	-5.4096	0.9313	0.3204
941	SLE RA 14	0.99	0.71	35.07	-5.4853	0.945	0.3293
941	SLE RA 15	0.98	0.7	35.05	-5.479	0.9443	0.3272
941	SLE RA 16	0.99	0.71	34.89	-5.4603	0.9401	0.3277
941	SLE RA 17	0.98	0.7	34.87	-5.454	0.9394	0.3256
941	SLE RA 18	0.98	0.74	35.34	-5.5215	0.9525	0.3259
941	SLE RA 19	0.98	0.73	35.32	-5.5152	0.9518	0.3238
941	SLE RA 20	0.99	0.74	35.63	-5.5617	0.9602	0.3297
941	SLE RA 21	0.99	0.73	35.61	-5.5554	0.9595	0.3277
941	SLE FR 1	0.92	0.61	31.9	-5.0497	0.8597	0.3064
941	SLE FR 2	0.92	0.61	31.9	-5.0476	0.8595	0.3057
941	SLE FR 3	0.92	0.61	32.02	-5.0657	0.8628	0.3079
941	SLE FR 4	0.94	0.65	32.93	-5.1891	0.8873	0.3116
941	SLE FR 5	0.94	0.65	33.05	-5.2073	0.8906	0.3138
941	SLE FR 6	0.95	0.68	33.62	-5.2856	0.9061	0.3161
941	SLE QP 1	0.92	0.61	31.9	-5.0497	0.8597	0.3064
941	SLE QP 2	0.94	0.65	32.94	-5.1912	0.8875	0.3123
941	SLD 1	4.14	0.67	24.83	-3.8771	0.6844	1.4412
941	SLD 2	3.82	1.2	24.39	-3.8298	0.6728	1.3146
941	SLD 3	4.32	-0.49	25.65	-3.9647	0.7053	1.5146
941	SLD 4	4	0.03	25.21	-3.9174	0.6937	1.388
941	SLD 5	1.68	2.33	29.35	-4.6726	0.797	0.5623
941	SLD 6	1.47	2.68	29.06	-4.6415	0.7893	0.4791
941	SLD 7	2.29	-1.56	32.06	-4.9646	0.8666	0.8068
941	SLD 8	2.07	-1.21	31.78	-4.9335	0.859	0.7236
941	SLD 9	-0.2	2.51	34.1	-5.4489	0.9161	-0.0991
941	SLD 10	-0.41	2.86	33.81	-5.4179	0.9084	-0.1823
941	SLD 11	0.4	-1.38	36.81	-5.7409	0.9857	0.1454
941	SLD 12	0.19	-1.03	36.52	-5.7098	0.978	0.0622
941	SLD 13	-2.13	1.27	40.66	-6.465	1.0813	-0.7635
941	SLD 14	-2.45	1.8	40.22	-6.4177	1.0697	-0.8901
941	SLD 15	-1.94	0.1	41.48	-6.5526	1.1022	-0.6901
941	SLD 16	-2.27	0.63	41.04	-6.5053	1.0906	-0.8167
941	SLV 1	8.44	0.66	13.99	-2.1169	0.4128	2.9541
941	SLV 2	7.69	1.89	12.97	-2.0067	0.3857	2.6593
941	SLV 3	8.86	-1.98	15.85	-2.3193	0.4604	3.1241
941	SLV 4	8.11	-0.75	14.83	-2.2092	0.4333	2.8293
941	SLV 5	2.68	4.45	24.61	-3.9809	0.6776	0.898
941	SLV 6	2.19	5.24	23.95	-3.9098	0.6601	0.7076
941	SLV 7	4.08	-4.36	30.8	-4.6557	0.8363	1.4646
941	SLV 8	3.6	-3.56	30.15	-4.5846	0.8188	1.2742
941	SLV 9	-1.72	4.86	35.73	-5.7979	0.9563	-0.6497
941	SLV 10	-2.21	5.66	35.07	-5.7267	0.9388	-0.8401
941	SLV 11	-0.32	-3.94	41.92	-6.4726	1.1149	-0.0831
941	SLV 12	-0.8	-3.15	41.26	-6.4015	1.0974	-0.2735
941	SLV 13	-6.23	2.05	51.04	-8.1733	1.3417	-2.2048
941	SLV 14	-6.98	3.28	50.02	-8.0631	1.3146	-2.4996
941	SLV 15	-5.81	-0.59	52.9	-8.3757	1.3893	-2.0348
941	SLV 16	-6.56	0.64	51.88	-8.2656	1.3622	-2.3296
941	CRTFP Ux+	0	0	0	0	0	0
941	CRTFP Ux-	0	0	0	0	0	0
941	CRTFP Uy+	0	0	0	0	0	0
941	CRTFP Uy-	0	0	0	0	0	0
942	SLU 1	0.66	0.47	23.4	-3.9454	3.06	0.1706
942	SLU 2	0.65	0.45	23.36	-3.9344	3.0556	0.1691
942	SLU 3	0.68	0.48	23.94	-4.0258	3.1303	0.1756
942	SLU 4	0.67	0.46	23.92	-4.0192	3.1277	0.1747
942	SLU 5	0.66	0.45	23.69	-3.9841	3.0987	0.1731
942	SLU 6	0.69	0.48	24.27	-4.0755	3.1735	0.1796
942	SLU 7	0.68	0.47	24.25	-4.0689	3.1708	0.1787
942	SLU 8	0.68	0.47	24.06	-4.0447	3.1463	0.1786
942	SLU 9	0.68	0.46	24.04	-4.0381	3.1437	0.1777
942	SLU 10	0.7	0.56	26.09	-4.3382	3.4125	0.1721
942	SLU 11	0.73	0.59	26.66	-4.4296	3.4873	0.1786
942	SLU 12	0.72	0.58	26.64	-4.423	3.4846	0.1777
942	SLU 13	0.71	0.56	26.42	-4.3879	3.4557	0.1761
942	SLU 14	0.74	0.59	26.99	-4.4793	3.5304	0.1827
942	SLU 15	0.73	0.58	26.97	-4.4727	3.5278	0.1817
942	SLU 16	0.73	0.58	26.79	-4.4485	3.5033	0.1817
942	SLU 17	0.73	0.57	26.77	-4.4419	3.5006	0.1808
942	SLU 18	0.73	0.63	27.3	-4.5222	3.57	0.175
942	SLU 19	0.72	0.61	27.28	-4.5156	3.5673	0.1741



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
942	SLU 20	0.74	0.63	27.63	-4.5719	3.6131	0.179
942	SLU 21	0.74	0.62	27.61	-4.5653	3.6104	0.1781
942	SLU 22	0.71	0.57	26.14	-4.3503	3.4191	0.1763
942	SLU 23	0.7	0.55	26.11	-4.3394	3.4146	0.1748
942	SLU 24	0.73	0.58	26.68	-4.4308	3.4894	0.1813
942	SLU 25	0.72	0.56	26.66	-4.4242	3.4867	0.1804
942	SLU 26	0.71	0.55	26.44	-4.389	3.4578	0.1788
942	SLU 27	0.74	0.58	27.01	-4.4805	3.5325	0.1853
942	SLU 28	0.74	0.57	26.99	-4.4739	3.5299	0.1844
942	SLU 29	0.74	0.57	26.8	-4.4497	3.5054	0.1844
942	SLU 30	0.73	0.56	26.78	-4.4431	3.5027	0.1834
942	SLU 31	0.75	0.66	28.84	-4.7432	3.7716	0.1779
942	SLU 32	0.78	0.69	29.41	-4.8346	3.8463	0.1844
942	SLU 33	0.77	0.68	29.39	-4.828	3.8437	0.1834
942	SLU 34	0.76	0.66	29.17	-4.7928	3.8147	0.1819
942	SLU 35	0.79	0.69	29.74	-4.8842	3.8895	0.1884
942	SLU 36	0.79	0.68	29.72	-4.8777	3.8868	0.1874
942	SLU 37	0.79	0.68	29.53	-4.8535	3.8623	0.1874
942	SLU 38	0.78	0.67	29.51	-4.8469	3.8597	0.1865
942	SLU 39	0.79	0.73	30.04	-4.9272	3.929	0.1807
942	SLU 40	0.78	0.71	30.02	-4.9206	3.9263	0.1798
942	SLU 41	0.8	0.73	30.37	-4.9768	3.9722	0.1847
942	SLU 42	0.79	0.72	30.35	-4.9703	3.9695	0.1838
942	SLU 43	0.84	0.57	29.48	-4.9901	3.855	0.2198
942	SLU 44	0.83	0.55	29.44	-4.9792	3.8505	0.2183
942	SLU 45	0.86	0.58	30.01	-5.0706	3.9253	0.2248
942	SLU 46	0.85	0.57	29.99	-5.064	3.9226	0.2239
942	SLU 47	0.84	0.55	29.77	-5.0288	3.8936	0.2223
942	SLU 48	0.87	0.58	30.34	-5.1203	3.9684	0.2288
942	SLU 49	0.86	0.57	30.32	-5.1137	3.9657	0.2279
942	SLU 50	0.86	0.58	30.14	-5.0895	3.9412	0.2278
942	SLU 51	0.86	0.56	30.12	-5.0829	3.9386	0.2269
942	SLU 52	0.88	0.66	32.17	-5.383	4.2074	0.2214
942	SLU 53	0.91	0.69	32.74	-5.4744	4.2822	0.2279
942	SLU 54	0.9	0.68	32.72	-5.4678	4.2795	0.2269
942	SLU 55	0.89	0.67	32.5	-5.4326	4.2506	0.2254
942	SLU 56	0.92	0.7	33.07	-5.5241	4.3254	0.2319
942	SLU 57	0.91	0.68	33.05	-5.5175	4.3227	0.2309
942	SLU 58	0.91	0.69	32.87	-5.4933	4.2982	0.2309
942	SLU 59	0.91	0.68	32.84	-5.4867	4.2955	0.23
942	SLU 60	0.91	0.73	33.37	-5.567	4.3649	0.2242
942	SLU 61	0.9	0.72	33.35	-5.5604	4.3622	0.2233
942	SLU 62	0.92	0.73	33.7	-5.6167	4.408	0.2282
942	SLU 63	0.92	0.72	33.68	-5.6101	4.4054	0.2273
942	SLU 64	0.89	0.67	32.22	-5.3951	4.214	0.2256
942	SLU 65	0.88	0.65	32.19	-5.3841	4.2095	0.224
942	SLU 66	0.91	0.68	32.76	-5.4755	4.2843	0.2305
942	SLU 67	0.9	0.67	32.74	-5.469	4.2816	0.2296
942	SLU 68	0.89	0.65	32.52	-5.4338	4.2527	0.228
942	SLU 69	0.92	0.68	33.09	-5.5252	4.3274	0.2345
942	SLU 70	0.92	0.67	33.07	-5.5186	4.3248	0.2336
942	SLU 71	0.92	0.68	32.88	-5.4944	4.3003	0.2336
942	SLU 72	0.91	0.66	32.86	-5.4879	4.2976	0.2326
942	SLU 73	0.93	0.76	34.92	-5.7879	4.5665	0.2271
942	SLU 74	0.96	0.79	35.49	-5.8793	4.6413	0.2336
942	SLU 75	0.95	0.78	35.47	-5.8728	4.6386	0.2327
942	SLU 76	0.94	0.77	35.25	-5.8376	4.6096	0.2311
942	SLU 77	0.97	0.8	35.82	-5.929	4.6844	0.2376
942	SLU 78	0.97	0.78	35.8	-5.9224	4.6817	0.2367
942	SLU 79	0.97	0.79	35.61	-5.8982	4.6573	0.2366
942	SLU 80	0.96	0.78	35.59	-5.8917	4.6546	0.2357
942	SLU 81	0.97	0.83	36.12	-5.9719	4.7239	0.2299
942	SLU 82	0.96	0.82	36.1	-5.9654	4.7213	0.229
942	SLU 83	0.98	0.83	36.45	-6.0216	4.7671	0.2339
942	SLU 84	0.97	0.82	36.43	-6.015	4.7644	0.233
942	SLE RA 1	0.68	0.5	24.18	-4.0611	3.1626	0.1723
942	SLE RA 2	0.67	0.48	24.16	-4.0538	3.1596	0.1712
942	SLE RA 3	0.69	0.5	24.54	-4.1147	3.2095	0.1756
942	SLE RA 4	0.68	0.49	24.53	-4.1103	3.2077	0.175
942	SLE RA 5	0.68	0.48	24.38	-4.0869	3.1884	0.1739
942	SLE RA 6	0.7	0.5	24.76	-4.1478	3.2383	0.1782
942	SLE RA 7	0.69	0.49	24.75	-4.1434	3.2365	0.1776
942	SLE RA 8	0.69	0.5	24.62	-4.1273	3.2202	0.1776
942	SLE RA 9	0.69	0.49	24.61	-4.1229	3.2184	0.177
942	SLE RA 10	0.7	0.56	25.98	-4.323	3.3976	0.1733
942	SLE RA 11	0.72	0.58	26.36	-4.3839	3.4475	0.1776
942	SLE RA 12	0.72	0.57	26.35	-4.3795	3.4457	0.177
942	SLE RA 13	0.71	0.56	26.2	-4.3561	3.4264	0.1759
942	SLE RA 14	0.73	0.58	26.58	-4.417	3.4762	0.1803
942	SLE RA 15	0.72	0.57	26.57	-4.4126	3.4744	0.1797
942	SLE RA 16	0.73	0.57	26.44	-4.3965	3.4581	0.1796
942	SLE RA 17	0.72	0.56	26.43	-4.3921	3.4563	0.179
942	SLE RA 18	0.72	0.6	26.78	-4.4456	3.5026	0.1752
942	SLE RA 19	0.72	0.59	26.77	-4.4413	3.5008	0.1745
942	SLE RA 20	0.73	0.6	27	-4.4788	3.5314	0.1778
942	SLE RA 21	0.73	0.6	26.99	-4.4744	3.5296	0.1772
942	SLE FR 1	0.68	0.5	24.18	-4.0611	3.1626	0.1723
942	SLE FR 2	0.67	0.49	24.18	-4.0596	3.162	0.1721
942	SLE FR 3	0.68	0.5	24.27	-4.0743	3.1741	0.1733
942	SLE FR 4	0.69	0.52	24.96	-4.175	3.264	0.1729



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
942	SLE FR 5	0.69	0.53	25.05	-4.1897	3.2761	0.1742
942	SLE FR 6	0.7	0.55	25.48	-4.2534	3.3326	0.1737
942	SLE QP 1	0.68	0.5	24.18	-4.0611	3.1626	0.1723
942	SLE QP 2	0.69	0.53	24.96	-4.1764	3.2646	0.1731
942	SLD 1	3.05	0.56	18.48	-3.0422	2.4232	0.9942
942	SLD 2	2.81	0.97	18.15	-3.0049	2.3794	0.8577
942	SLD 3	3.18	-0.35	19.12	-3.1165	2.5067	1.1261
942	SLD 4	2.94	0.06	18.79	-3.0792	2.4629	0.9895
942	SLD 5	1.24	1.84	22.1	-3.7301	2.8933	0.2438
942	SLD 6	1.08	2.11	21.88	-3.7056	2.8645	0.1541
942	SLD 7	1.68	-1.18	24.24	-3.9778	3.1718	0.6834
942	SLD 8	1.53	-0.91	24.02	-3.9533	3.143	0.5937
942	SLD 9	-0.15	1.97	25.9	-4.3996	3.3863	-0.2474
942	SLD 10	-0.3	2.24	25.68	-4.375	3.3575	-0.3371
942	SLD 11	0.3	-1.05	28.04	-4.6473	3.6647	0.1922
942	SLD 12	0.14	-0.78	27.82	-4.6228	3.6359	0.1024
942	SLD 13	-1.56	0.99	31.13	-5.2737	4.0663	-0.6433
942	SLD 14	-1.8	1.4	30.8	-5.2364	4.0225	-0.7798
942	SLD 15	-1.43	0.09	31.78	-5.348	4.1499	-0.5114
942	SLD 16	-1.67	0.5	31.44	-5.3107	4.106	-0.6479
942	SLV 1	6.21	0.57	9.81	-1.5227	1.2976	2.0979
942	SLV 2	5.65	1.52	9.03	-1.4358	1.1955	1.7799
942	SLV 3	6.52	-1.49	11.28	-1.6946	1.4881	2.3979
942	SLV 4	5.96	-0.53	10.5	-1.6077	1.386	2.0799
942	SLV 5	1.97	3.49	18.33	-3.1347	2.4033	0.3505
942	SLV 6	1.61	4.1	17.83	-3.0786	2.3374	0.1451
942	SLV 7	3	-3.36	23.21	-3.7075	3.0382	1.3506
942	SLV 8	2.65	-2.74	22.71	-3.6514	2.9722	1.1452
942	SLV 9	-1.27	3.79	27.22	-4.7015	3.557	-0.799
942	SLV 10	-1.62	4.41	26.71	-4.6453	3.4911	-1.0044
942	SLV 11	-0.23	-3.05	32.1	-5.2743	4.1919	0.2011
942	SLV 12	-0.59	-2.43	31.59	-5.2182	4.1259	-0.0042
942	SLV 13	-4.58	1.59	39.43	-6.7452	5.1432	-1.7337
942	SLV 14	-5.14	2.54	38.65	-6.6583	5.0412	-2.0517
942	SLV 15	-4.27	-0.47	40.89	-6.9171	5.3337	-1.4336
942	SLV 16	-4.83	0.49	40.11	-6.8302	5.2316	-1.7516
942	CRTFP Ux+	0	0	0	0	0	0
942	CRTFP Ux-	0	0	0	0	0	0
942	CRTFP Uy+	0	0	0	0	0	0
942	CRTFP Uy-	0	0	0	0	0	0
944	SLU 1	0.53	0.1	30.26	0.5941	7.5912	-0.0326
944	SLU 2	0.51	0.09	30.26	0.5943	7.5915	-0.0282
944	SLU 3	0.55	0.11	30.98	0.6084	7.7734	-0.034
944	SLU 4	0.54	0.1	30.99	0.6085	7.7736	-0.0314
944	SLU 5	0.52	0.08	30.7	0.6029	7.7015	-0.0283
944	SLU 6	0.56	0.11	31.42	0.617	7.8834	-0.0341
944	SLU 7	0.55	0.1	31.42	0.6172	7.8836	-0.0315
944	SLU 8	0.55	0.1	31.13	0.6113	7.8112	-0.0327
944	SLU 9	0.54	0.09	31.13	0.6115	7.8114	-0.0301
944	SLU 10	0.56	0.13	34.11	0.67	8.5534	-0.0396
944	SLU 11	0.59	0.15	34.83	0.684	8.7354	-0.0454
944	SLU 12	0.58	0.14	34.83	0.6842	8.7355	-0.0428
944	SLU 13	0.57	0.13	34.55	0.6786	8.6634	-0.0397
944	SLU 14	0.6	0.15	35.27	0.6927	8.8454	-0.0455
944	SLU 15	0.59	0.14	35.27	0.6928	8.8455	-0.0428
944	SLU 16	0.6	0.14	34.98	0.6869	8.7731	-0.0441
944	SLU 17	0.59	0.13	34.98	0.6871	8.7733	-0.0415
944	SLU 18	0.6	0.16	35.76	0.7021	8.9654	-0.0489
944	SLU 19	0.59	0.15	35.76	0.7023	8.9655	-0.0462
944	SLU 20	0.61	0.16	36.19	0.7107	9.0754	-0.0489
944	SLU 21	0.6	0.15	36.2	0.7109	9.0755	-0.0463
944	SLU 22	0.58	0.15	34.15	0.6708	8.5646	-0.0468
944	SLU 23	0.56	0.14	34.15	0.6711	8.5649	-0.0424
944	SLU 24	0.59	0.16	34.87	0.6852	8.7468	-0.0482
944	SLU 25	0.58	0.15	34.87	0.6853	8.747	-0.0456
944	SLU 26	0.57	0.14	34.59	0.6797	8.6749	-0.0425
944	SLU 27	0.6	0.16	35.31	0.6938	8.8569	-0.0483
944	SLU 28	0.59	0.15	35.31	0.6939	8.857	-0.0457
944	SLU 29	0.6	0.15	35.02	0.6881	8.7846	-0.0469
944	SLU 30	0.59	0.14	35.02	0.6882	8.7848	-0.0443
944	SLU 31	0.61	0.18	38	0.7468	9.5268	-0.0538
944	SLU 32	0.64	0.2	38.72	0.7608	9.7088	-0.0596
944	SLU 33	0.63	0.19	38.72	0.761	9.7089	-0.057
944	SLU 34	0.62	0.18	38.44	0.7554	9.6368	-0.0539
944	SLU 35	0.65	0.2	39.16	0.7694	9.8188	-0.0597
944	SLU 36	0.64	0.19	39.16	0.7696	9.8189	-0.057
944	SLU 37	0.65	0.2	38.87	0.7637	9.7466	-0.0583
944	SLU 38	0.64	0.19	38.87	0.7639	9.7467	-0.0557
944	SLU 39	0.65	0.22	39.65	0.7789	9.9388	-0.0631
944	SLU 40	0.64	0.21	39.65	0.7791	9.9389	-0.0604
944	SLU 41	0.66	0.22	40.08	0.7875	10.0488	-0.0631
944	SLU 42	0.65	0.21	40.08	0.7877	10.049	-0.0605
944	SLU 43	0.68	0.11	38	0.746	9.5348	-0.0375
944	SLU 44	0.66	0.1	38.01	0.7462	9.5351	-0.0332
944	SLU 45	0.69	0.12	38.73	0.7603	9.7171	-0.0389
944	SLU 46	0.68	0.11	38.73	0.7604	9.7172	-0.0363
944	SLU 47	0.67	0.1	38.44	0.7548	9.6451	-0.0332
944	SLU 48	0.7	0.12	39.16	0.7689	9.8271	-0.039
944	SLU 49	0.69	0.11	39.17	0.7691	9.8272	-0.0364
944	SLU 50	0.7	0.11	38.88	0.7632	9.7548	-0.0376



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
944	SLU 51	0.68	0.1	38.88	0.7633	9.755	-0.035
944	SLU 52	0.7	0.14	41.86	0.8219	10.497	-0.0445
944	SLU 53	0.74	0.16	42.58	0.8359	10.679	-0.0503
944	SLU 54	0.73	0.15	42.58	0.8361	10.6791	-0.0477
944	SLU 55	0.71	0.14	42.29	0.8305	10.607	-0.0446
944	SLU 56	0.75	0.16	43.01	0.8445	10.789	-0.0504
944	SLU 57	0.74	0.15	43.01	0.8447	10.7891	-0.0478
944	SLU 58	0.74	0.15	42.73	0.8388	10.7168	-0.049
944	SLU 59	0.73	0.14	42.73	0.839	10.7169	-0.0464
944	SLU 60	0.74	0.17	43.5	0.854	10.909	-0.0538
944	SLU 61	0.73	0.16	43.5	0.8542	10.9091	-0.0512
944	SLU 62	0.75	0.17	43.94	0.8626	11.019	-0.0538
944	SLU 63	0.74	0.16	43.94	0.8628	11.0192	-0.0512
944	SLU 64	0.72	0.17	41.89	0.8227	10.5082	-0.0517
944	SLU 65	0.7	0.15	41.9	0.823	10.5085	-0.0474
944	SLU 66	0.74	0.17	42.62	0.8371	10.6905	-0.0531
944	SLU 67	0.73	0.16	42.62	0.8372	10.6906	-0.0505
944	SLU 68	0.71	0.15	42.33	0.8316	10.6185	-0.0474
944	SLU 69	0.75	0.17	43.05	0.8457	10.8005	-0.0532
944	SLU 70	0.74	0.16	43.06	0.8458	10.8006	-0.0506
944	SLU 71	0.74	0.17	42.77	0.84	10.7282	-0.0518
944	SLU 72	0.73	0.16	42.77	0.8401	10.7284	-0.0492
944	SLU 73	0.75	0.19	45.75	0.8987	11.4704	-0.0587
944	SLU 74	0.79	0.21	46.46	0.9127	11.6524	-0.0645
944	SLU 75	0.77	0.2	46.47	0.9129	11.6525	-0.0619
944	SLU 76	0.76	0.19	46.18	0.9073	11.5804	-0.0588
944	SLU 77	0.8	0.21	46.9	0.9213	11.7624	-0.0646
944	SLU 78	0.78	0.2	46.9	0.9215	11.7626	-0.062
944	SLU 79	0.79	0.21	46.61	0.9156	11.6902	-0.0632
944	SLU 80	0.78	0.2	46.62	0.9158	11.6903	-0.0606
944	SLU 81	0.79	0.23	47.39	0.9308	11.8824	-0.068
944	SLU 82	0.78	0.22	47.39	0.931	11.8826	-0.0654
944	SLU 83	0.8	0.23	47.83	0.9394	11.9924	-0.068
944	SLU 84	0.79	0.22	47.83	0.9396	11.9926	-0.0654
944	SLE RA 1	0.55	0.12	31.37	0.616	7.8693	-0.0367
944	SLE RA 2	0.53	0.11	31.37	0.6162	7.8695	-0.0338
944	SLE RA 3	0.56	0.12	31.85	0.6255	7.9908	-0.0376
944	SLE RA 4	0.55	0.11	31.85	0.6257	7.9909	-0.0359
944	SLE RA 5	0.54	0.11	31.66	0.6219	7.9428	-0.0338
944	SLE RA 6	0.56	0.12	32.14	0.6313	8.0641	-0.0376
944	SLE RA 7	0.55	0.11	32.15	0.6314	8.0643	-0.0359
944	SLE RA 8	0.56	0.12	31.95	0.6275	8.016	-0.0367
944	SLE RA 9	0.55	0.11	31.95	0.6276	8.0161	-0.035
944	SLE RA 10	0.56	0.13	33.94	0.6666	8.5108	-0.0413
944	SLE RA 11	0.59	0.15	34.42	0.676	8.6321	-0.0452
944	SLE RA 12	0.58	0.14	34.42	0.6761	8.6322	-0.0435
944	SLE RA 13	0.57	0.13	34.23	0.6724	8.5841	-0.0414
944	SLE RA 14	0.59	0.15	34.71	0.6817	8.7054	-0.0452
944	SLE RA 15	0.59	0.14	34.71	0.6818	8.7055	-0.0435
944	SLE RA 16	0.59	0.14	34.52	0.6779	8.6573	-0.0443
944	SLE RA 17	0.58	0.14	34.52	0.678	8.6574	-0.0426
944	SLE RA 18	0.59	0.16	35.04	0.688	8.7854	-0.0475
944	SLE RA 19	0.58	0.15	35.04	0.6882	8.7855	-0.0458
944	SLE RA 20	0.6	0.16	35.33	0.6938	8.8588	-0.0475
944	SLE RA 21	0.59	0.15	35.33	0.6939	8.8589	-0.0458
944	SLE FR 1	0.55	0.12	31.37	0.616	7.8693	-0.0367
944	SLE FR 2	0.54	0.11	31.37	0.616	7.8693	-0.0361
944	SLE FR 3	0.55	0.12	31.49	0.6183	7.8986	-0.0367
944	SLE FR 4	0.56	0.13	32.47	0.6376	8.1442	-0.0393
944	SLE FR 5	0.56	0.13	32.59	0.6399	8.1735	-0.0399
944	SLE FR 6	0.57	0.14	33.2	0.652	8.3274	-0.0421
944	SLE QP 1	0.55	0.12	31.37	0.616	7.8693	-0.0367
944	SLE QP 2	0.56	0.13	32.47	0.6376	8.1441	-0.0399
944	SLD 1	3.16	0.55	28.13	0.5323	6.8153	-0.1899
944	SLD 2	2.9	0.73	27.89	0.5292	6.8002	-0.2298
944	SLD 3	3.31	-0.15	28.93	0.549	6.9589	-0.0128
944	SLD 4	3.04	0.03	28.69	0.5459	6.9437	-0.0528
944	SLD 5	1.17	1.3	29.99	0.5812	7.5304	-0.3463
944	SLD 6	0.99	1.42	29.83	0.5792	7.5205	-0.3725
944	SLD 7	1.66	-1.06	32.67	0.6369	8.009	0.2438
944	SLD 8	1.48	-0.94	32.51	0.6349	7.9991	0.2176
944	SLD 9	-0.36	1.2	32.43	0.6403	8.2892	-0.2974
944	SLD 10	-0.54	1.32	32.27	0.6383	8.2793	-0.3237
944	SLD 11	0.13	-1.16	35.11	0.6961	8.7678	0.2927
944	SLD 12	-0.05	-1.04	34.95	0.694	8.7579	0.2664
944	SLD 13	-1.92	0.23	36.25	0.7293	9.3446	-0.0271
944	SLD 14	-2.19	0.41	36.01	0.7262	9.3294	-0.067
944	SLD 15	-1.78	-0.48	37.05	0.7461	9.4881	0.15
944	SLD 16	-2.04	-0.3	36.81	0.743	9.473	0.11
944	SLV 1	6.65	1.1	22.33	0.3915	5.0363	-0.3842
944	SLV 2	6.03	1.52	21.77	0.3842	5.0011	-0.4772
944	SLV 3	7	-0.5	24.16	0.4294	5.3639	0.0165
944	SLV 4	6.37	-0.08	23.6	0.4222	5.3287	-0.0765
944	SLV 5	1.97	2.78	26.76	0.5074	6.721	-0.7349
944	SLV 6	1.57	3.05	26.4	0.5028	6.6983	-0.7949
944	SLV 7	3.12	-2.56	32.84	0.634	7.813	0.6008
944	SLV 8	2.72	-2.29	32.48	0.6293	7.7903	0.5407
944	SLV 9	-1.6	2.55	32.46	0.6459	8.498	-0.6206
944	SLV 10	-2	2.82	32.1	0.6412	8.4753	-0.6806
944	SLV 11	-0.45	-2.79	38.54	0.7724	9.59	0.7151



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
944	SLV 12	-0.85	-2.52	38.18	0.7678	9.5673	0.655
944	SLV 13	-5.25	0.34	41.35	0.853	10.9596	-0.0033
944	SLV 14	-5.87	0.76	40.78	0.8458	10.9244	-0.0963
944	SLV 15	-4.91	-1.26	43.17	0.891	11.2872	0.3974
944	SLV 16	-5.53	-0.84	42.61	0.8838	11.252	0.3044
944	CRTFP Ux+	0	0	0	0	0	0
944	CRTFP Ux-	0	0	0	0	0	0
944	CRTFP Uy+	0	0	0	0	0	0
944	CRTFP Uy-	0	0	0	0	0	0
947	SLU 1	-0.27	-0.18	21.52	0.0166	-5.8294	-0.0577
947	SLU 2	-0.28	-0.2	21.53	0.0166	-5.8353	-0.0657
947	SLU 3	-0.28	-0.18	22.04	0.017	-5.967	-0.0579
947	SLU 4	-0.28	-0.19	22.04	0.017	-5.9705	-0.0627
947	SLU 5	-0.28	-0.2	21.84	0.0168	-5.9181	-0.0664
947	SLU 6	-0.28	-0.18	22.35	0.0172	-6.0498	-0.0585
947	SLU 7	-0.29	-0.19	22.36	0.0172	-6.0533	-0.0634
947	SLU 8	-0.28	-0.18	22.15	0.017	-5.9951	-0.059
947	SLU 9	-0.28	-0.19	22.15	0.017	-5.9986	-0.0639
947	SLU 10	-0.31	-0.2	24.24	0.0186	-6.5909	-0.0658
947	SLU 11	-0.3	-0.18	24.75	0.019	-6.7226	-0.0579
947	SLU 12	-0.31	-0.19	24.76	0.019	-6.7261	-0.0628
947	SLU 13	-0.31	-0.2	24.55	0.0188	-6.6738	-0.0665
947	SLU 14	-0.31	-0.18	25.06	0.0192	-6.8055	-0.0586
947	SLU 15	-0.31	-0.19	25.07	0.0192	-6.809	-0.0634
947	SLU 16	-0.3	-0.18	24.86	0.019	-6.7507	-0.0591
947	SLU 17	-0.31	-0.19	24.86	0.019	-6.7542	-0.0639
947	SLU 18	-0.31	-0.18	25.4	0.0195	-6.909	-0.0577
947	SLU 19	-0.31	-0.19	25.4	0.0194	-6.9125	-0.0626
947	SLU 20	-0.31	-0.18	25.71	0.0197	-6.9918	-0.0584
947	SLU 21	-0.32	-0.19	25.71	0.0196	-6.9953	-0.0633
947	SLU 22	-0.3	-0.17	24.3	0.0189	-6.5962	-0.0551
947	SLU 23	-0.31	-0.19	24.31	0.0189	-6.602	-0.0631
947	SLU 24	-0.3	-0.17	24.81	0.0193	-6.7337	-0.0553
947	SLU 25	-0.31	-0.18	24.82	0.0193	-6.7372	-0.0601
947	SLU 26	-0.31	-0.19	24.62	0.0191	-6.6848	-0.0638
947	SLU 27	-0.31	-0.17	25.12	0.0195	-6.8165	-0.0559
947	SLU 28	-0.31	-0.19	25.13	0.0195	-6.8201	-0.0608
947	SLU 29	-0.3	-0.17	24.92	0.0193	-6.7618	-0.0564
947	SLU 30	-0.31	-0.19	24.92	0.0193	-6.7653	-0.0613
947	SLU 31	-0.33	-0.19	27.02	0.0209	-7.3577	-0.0632
947	SLU 32	-0.33	-0.17	27.53	0.0213	-7.4894	-0.0553
947	SLU 33	-0.34	-0.18	27.53	0.0213	-7.4929	-0.0602
947	SLU 34	-0.34	-0.19	27.33	0.0211	-7.4405	-0.0639
947	SLU 35	-0.33	-0.17	27.84	0.0215	-7.5722	-0.056
947	SLU 36	-0.34	-0.19	27.84	0.0215	-7.5757	-0.0608
947	SLU 37	-0.33	-0.17	27.63	0.0213	-7.5175	-0.0565
947	SLU 38	-0.34	-0.19	27.64	0.0213	-7.521	-0.0613
947	SLU 39	-0.33	-0.17	28.17	0.0218	-7.6757	-0.0551
947	SLU 40	-0.34	-0.18	28.18	0.0217	-7.6792	-0.06
947	SLU 41	-0.34	-0.17	28.48	0.022	-7.7585	-0.0558
947	SLU 42	-0.34	-0.18	28.49	0.0219	-7.762	-0.0607
947	SLU 43	-0.34	-0.23	27.03	0.0208	-7.3154	-0.0758
947	SLU 44	-0.35	-0.26	27.04	0.0208	-7.3212	-0.0839
947	SLU 45	-0.35	-0.23	27.55	0.0212	-7.4529	-0.076
947	SLU 46	-0.36	-0.25	27.55	0.0212	-7.4564	-0.0809
947	SLU 47	-0.36	-0.26	27.35	0.021	-7.4041	-0.0846
947	SLU 48	-0.35	-0.23	27.86	0.0214	-7.5358	-0.0767
947	SLU 49	-0.36	-0.25	27.86	0.0214	-7.5393	-0.0816
947	SLU 50	-0.35	-0.24	27.65	0.0212	-7.481	-0.0772
947	SLU 51	-0.36	-0.25	27.66	0.0212	-7.4845	-0.0821
947	SLU 52	-0.38	-0.26	29.75	0.0228	-8.0769	-0.084
947	SLU 53	-0.38	-0.23	30.26	0.0232	-8.2086	-0.0761
947	SLU 54	-0.38	-0.25	30.26	0.0232	-8.2121	-0.081
947	SLU 55	-0.38	-0.26	30.06	0.023	-8.1597	-0.0847
947	SLU 56	-0.38	-0.23	30.57	0.0234	-8.2914	-0.0768
947	SLU 57	-0.38	-0.25	30.57	0.0234	-8.2949	-0.0816
947	SLU 58	-0.38	-0.24	30.36	0.0232	-8.2367	-0.0773
947	SLU 59	-0.38	-0.25	30.37	0.0232	-8.2402	-0.0821
947	SLU 60	-0.38	-0.23	30.9	0.0237	-8.3949	-0.0759
947	SLU 61	-0.39	-0.25	30.91	0.0236	-8.3984	-0.0808
947	SLU 62	-0.38	-0.23	31.21	0.0239	-8.4777	-0.0766
947	SLU 63	-0.39	-0.23	31.22	0.0238	-8.4812	-0.0815
947	SLU 64	-0.37	-0.22	29.8	0.0231	-8.0821	-0.0733
947	SLU 65	-0.38	-0.25	29.81	0.0231	-8.088	-0.0813
947	SLU 66	-0.38	-0.22	30.32	0.0235	-8.2197	-0.0734
947	SLU 67	-0.38	-0.24	30.33	0.0235	-8.2232	-0.0783
947	SLU 68	-0.38	-0.25	30.12	0.0233	-8.1708	-0.082
947	SLU 69	-0.38	-0.23	30.63	0.0237	-8.3025	-0.0741
947	SLU 70	-0.39	-0.24	30.64	0.0237	-8.306	-0.079
947	SLU 71	-0.38	-0.23	30.43	0.0235	-8.2478	-0.0746
947	SLU 72	-0.38	-0.24	30.43	0.0235	-8.2513	-0.0795
947	SLU 73	-0.41	-0.25	32.52	0.0251	-8.8436	-0.0814
947	SLU 74	-0.4	-0.22	33.03	0.0255	-8.9753	-0.0735
947	SLU 75	-0.41	-0.24	33.04	0.0255	-8.9788	-0.0784
947	SLU 76	-0.41	-0.25	32.83	0.0253	-8.9265	-0.0821
947	SLU 77	-0.41	-0.23	33.34	0.0257	-9.0582	-0.0742
947	SLU 78	-0.41	-0.24	33.35	0.0257	-9.0617	-0.079
947	SLU 79	-0.4	-0.23	33.14	0.0255	-9.0034	-0.0747
947	SLU 80	-0.41	-0.24	33.14	0.0255	-9.0069	-0.0795
947	SLU 81	-0.41	-0.22	33.68	0.026	-9.1617	-0.0733





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
947	SLU 82	-0.41	-0.24	33.68	0.0259	-9.1652	-0.0782
947	SLU 83	-0.41	-0.23	33.99	0.0262	-9.2445	-0.074
947	SLU 84	-0.42	-0.24	33.99	0.0261	-9.248	-0.0789
947	SLE RA 1	-0.28	-0.17	22.32	0.0173	-6.0485	-0.0569
947	SLE RA 2	-0.29	-0.19	22.32	0.0172	-6.0524	-0.0623
947	SLE RA 3	-0.28	-0.17	22.66	0.0175	-6.1402	-0.057
947	SLE RA 4	-0.29	-0.18	22.66	0.0175	-6.1425	-0.0603
947	SLE RA 5	-0.29	-0.19	22.53	0.0174	-6.1076	-0.0628
947	SLE RA 6	-0.29	-0.18	22.87	0.0177	-6.1954	-0.0575
947	SLE RA 7	-0.29	-0.19	22.87	0.0176	-6.1978	-0.0607
947	SLE RA 8	-0.28	-0.18	22.73	0.0175	-6.1589	-0.0578
947	SLE RA 9	-0.29	-0.19	22.73	0.0175	-6.1613	-0.0611
947	SLE RA 10	-0.3	-0.19	24.13	0.0186	-6.5562	-0.0623
947	SLE RA 11	-0.3	-0.17	24.47	0.0189	-6.644	-0.0571
947	SLE RA 12	-0.3	-0.18	24.47	0.0188	-6.6463	-0.0603
947	SLE RA 13	-0.3	-0.19	24.34	0.0187	-6.6114	-0.0628
947	SLE RA 14	-0.3	-0.18	24.68	0.019	-6.6992	-0.0575
947	SLE RA 15	-0.31	-0.19	24.68	0.019	-6.7015	-0.0608
947	SLE RA 16	-0.3	-0.18	24.54	0.0189	-6.6627	-0.0579
947	SLE RA 17	-0.3	-0.19	24.54	0.0189	-6.665	-0.0611
947	SLE RA 18	-0.3	-0.17	24.9	0.0192	-6.7682	-0.057
947	SLE RA 19	-0.31	-0.18	24.9	0.0192	-6.7705	-0.0602
947	SLE RA 20	-0.31	-0.17	25.11	0.0193	-6.8234	-0.0574
947	SLE RA 21	-0.31	-0.18	25.11	0.0193	-6.8257	-0.0607
947	SLE FR 1	-0.28	-0.17	22.32	0.0173	-6.0485	-0.0569
947	SLE FR 2	-0.28	-0.18	22.32	0.0173	-6.0493	-0.058
947	SLE FR 3	-0.28	-0.17	22.4	0.0173	-6.0706	-0.0571
947	SLE FR 4	-0.29	-0.18	23.09	0.0178	-6.2652	-0.058
947	SLE FR 5	-0.29	-0.17	23.17	0.0179	-6.2865	-0.0571
947	SLE FR 6	-0.29	-0.17	23.61	0.0182	-6.4084	-0.0569
947	SLE QP 1	-0.28	-0.17	22.32	0.0173	-6.0485	-0.0569
947	SLE QP 2	-0.29	-0.17	23.09	0.0178	-6.2644	-0.0569
947	SLD 1	1.66	-0.1	26.46	0.0298	-7.2503	-0.033
947	SLD 2	1.47	-0.21	26.53	0.0288	-7.2709	-0.0707
947	SLD 3	1.56	-0.59	26.93	0.0305	-7.4341	-0.1925
947	SLD 4	1.37	-0.7	27	0.0295	-7.4547	-0.2302
947	SLD 5	0.49	0.61	23.38	0.0205	-6.2777	0.1988
947	SLD 6	0.37	0.54	23.42	0.0199	-6.2912	0.1741
947	SLD 7	0.14	-1.02	24.94	0.0229	-6.8905	-0.3327
947	SLD 8	0.01	-1.1	24.99	0.0223	-6.904	-0.3575
947	SLD 9	-0.59	0.75	21.19	0.0134	-5.6248	0.2436
947	SLD 10	-0.71	0.67	21.24	0.0128	-5.6384	0.2189
947	SLD 11	-0.94	-0.88	22.76	0.0158	-6.2376	-0.2879
947	SLD 12	-1.07	-0.96	22.81	0.0152	-6.2511	-0.3127
947	SLD 13	-1.94	0.36	19.18	0.0062	-5.0741	0.1163
947	SLD 14	-2.13	0.24	19.25	0.0052	-5.0947	0.0786
947	SLD 15	-2.05	-0.13	19.65	0.0069	-5.2579	-0.0432
947	SLD 16	-2.24	-0.25	19.72	0.0059	-5.2785	-0.0808
947	SLV 1	4.27	-0.02	30.99	0.0457	-8.5768	-0.0072
947	SLV 2	3.83	-0.29	31.15	0.0435	-8.6248	-0.095
947	SLV 3	4.02	-1.13	32.06	0.0474	-8.9961	-0.3681
947	SLV 4	3.58	-1.4	32.22	0.0452	-9.0441	-0.4559
947	SLV 5	1.53	1.6	23.8	0.0241	-6.314	0.5205
947	SLV 6	1.25	1.43	23.91	0.0226	-6.345	0.4639
947	SLV 7	0.71	-2.1	27.39	0.0296	-7.7115	-0.6825
947	SLV 8	0.42	-2.27	27.49	0.0282	-7.7425	-0.7392
947	SLV 9	-0.99	1.92	18.69	0.0075	-4.7864	0.6253
947	SLV 10	-1.28	1.75	18.8	0.006	-4.8173	0.5686
947	SLV 11	-1.82	-1.78	22.28	0.0131	-6.1839	-0.5777
947	SLV 12	-2.11	-1.95	22.38	0.0116	-6.2149	-0.6344
947	SLV 13	-4.15	1.05	13.96	-0.0095	-3.4848	0.342
947	SLV 14	-4.6	0.78	14.12	-0.0117	-3.5327	0.2543
947	SLV 15	-4.4	-0.06	15.03	-0.0078	-3.904	-0.0189
947	SLV 16	-4.84	-0.33	15.19	-0.01	-3.952	-0.1067
947	CRTFP Ux+	0	0	0	0	0	0
947	CRTFP Ux-	0	0	0	0	0	0
947	CRTFP Uy+	0	0	0	0	0	0
947	CRTFP Uy-	0	0	0	0	0	0
950	SLU 1	0.49	1.37	56.38	-1.5158	-0.0244	0.0041
950	SLU 2	0.45	1.33	56.44	-1.5169	-0.0229	0.0034
950	SLU 3	0.51	1.42	57.73	-1.5518	-0.0243	0.0043
950	SLU 4	0.48	1.4	57.76	-1.5525	-0.0234	0.0039
950	SLU 5	0.46	1.35	57.27	-1.5391	-0.0225	0.0036
950	SLU 6	0.52	1.44	58.55	-1.574	-0.0238	0.0045
950	SLU 7	0.5	1.42	58.59	-1.5747	-0.023	0.0041
950	SLU 8	0.52	1.41	58.03	-1.5602	-0.0235	0.0045
950	SLU 9	0.49	1.39	58.07	-1.5608	-0.0226	0.0041
950	SLU 10	0.5	1.48	63.82	-1.717	-0.0232	0.0042
950	SLU 11	0.55	1.57	65.11	-1.7519	-0.0246	0.0051
950	SLU 12	0.53	1.54	65.15	-1.7526	-0.0237	0.0047
950	SLU 13	0.51	1.5	64.65	-1.7392	-0.0228	0.0044
950	SLU 14	0.57	1.59	65.94	-1.7741	-0.0242	0.0053
950	SLU 15	0.54	1.57	65.97	-1.7748	-0.0233	0.0049
950	SLU 16	0.56	1.56	65.41	-1.7603	-0.0239	0.0053
950	SLU 17	0.54	1.54	65.45	-1.761	-0.023	0.0049
950	SLU 18	0.56	1.58	66.92	-1.8017	-0.0248	0.0052
950	SLU 19	0.53	1.56	66.96	-1.8023	-0.0239	0.0048
950	SLU 20	0.57	1.6	67.75	-1.8239	-0.0244	0.0054
950	SLU 21	0.55	1.58	67.79	-1.8245	-0.0235	0.005
950	SLU 22	0.54	1.59	63.88	-1.718	-0.0281	0.0048



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
950	SLU 23	0.5	1.55	63.94	-1.7191	-0.0266	0.0041
950	SLU 24	0.55	1.64	65.23	-1.754	-0.0279	0.005
950	SLU 25	0.53	1.62	65.27	-1.7547	-0.027	0.0046
950	SLU 26	0.51	1.58	64.77	-1.7413	-0.0261	0.0043
950	SLU 27	0.56	1.67	66.06	-1.7762	-0.0275	0.0052
950	SLU 28	0.54	1.64	66.09	-1.7769	-0.0266	0.0048
950	SLU 29	0.56	1.64	65.53	-1.7624	-0.0272	0.0052
950	SLU 30	0.54	1.61	65.57	-1.763	-0.0263	0.0048
950	SLU 31	0.54	1.7	71.32	-1.9192	-0.0269	0.0049
950	SLU 32	0.6	1.79	72.61	-1.9541	-0.0283	0.0058
950	SLU 33	0.57	1.77	72.65	-1.9548	-0.0274	0.0054
950	SLU 34	0.55	1.73	72.15	-1.9414	-0.0265	0.0051
950	SLU 35	0.61	1.82	73.44	-1.9763	-0.0278	0.006
950	SLU 36	0.59	1.79	73.48	-1.977	-0.0269	0.0056
950	SLU 37	0.61	1.79	72.92	-1.9625	-0.0275	0.006
950	SLU 38	0.58	1.76	72.95	-1.9632	-0.0266	0.0056
950	SLU 39	0.6	1.8	74.43	-2.0039	-0.0285	0.0059
950	SLU 40	0.58	1.78	74.46	-2.0045	-0.0276	0.0055
950	SLU 41	0.61	1.83	75.25	-2.0261	-0.0281	0.0061
950	SLU 42	0.59	1.8	75.29	-2.0267	-0.0272	0.0057
950	SLU 43	0.63	1.7	70.72	-1.9012	-0.0304	0.0051
950	SLU 44	0.59	1.66	70.78	-1.9023	-0.0289	0.0044
950	SLU 45	0.64	1.75	72.07	-1.9372	-0.0303	0.0053
950	SLU 46	0.62	1.73	72.1	-1.9379	-0.0294	0.0049
950	SLU 47	0.6	1.68	71.61	-1.9245	-0.0285	0.0046
950	SLU 48	0.65	1.77	72.89	-1.9594	-0.0299	0.0055
950	SLU 49	0.63	1.75	72.93	-1.9601	-0.029	0.0051
950	SLU 50	0.65	1.74	72.37	-1.9456	-0.0296	0.0055
950	SLU 51	0.63	1.72	72.41	-1.9463	-0.0287	0.0051
950	SLU 52	0.63	1.81	78.16	-2.1024	-0.0293	0.0052
950	SLU 53	0.69	1.9	79.45	-2.1374	-0.0306	0.0061
950	SLU 54	0.66	1.88	79.49	-2.138	-0.0298	0.0057
950	SLU 55	0.64	1.83	78.99	-2.1246	-0.0288	0.0054
950	SLU 56	0.7	1.92	80.28	-2.1596	-0.0302	0.0063
950	SLU 57	0.68	1.9	80.32	-2.1602	-0.0293	0.0059
950	SLU 58	0.7	1.89	79.75	-2.1457	-0.0299	0.0063
950	SLU 59	0.67	1.87	79.79	-2.1464	-0.029	0.0059
950	SLU 60	0.69	1.91	81.26	-2.1871	-0.0309	0.0062
950	SLU 61	0.67	1.89	81.3	-2.1877	-0.03	0.0058
950	SLU 62	0.7	1.93	82.09	-2.2093	-0.0305	0.0064
950	SLU 63	0.68	1.91	82.13	-2.2099	-0.0296	0.006
950	SLU 64	0.67	1.92	78.22	-2.1034	-0.0341	0.0058
950	SLU 65	0.63	1.89	78.28	-2.1045	-0.0326	0.0051
950	SLU 66	0.68	1.98	79.57	-2.1394	-0.034	0.006
950	SLU 67	0.66	1.95	79.61	-2.1401	-0.0331	0.0056
950	SLU 68	0.64	1.91	79.11	-2.1267	-0.0322	0.0053
950	SLU 69	0.7	2	80.4	-2.1616	-0.0336	0.0062
950	SLU 70	0.67	1.98	80.43	-2.1623	-0.0327	0.0058
950	SLU 71	0.69	1.97	79.87	-2.1478	-0.0333	0.0062
950	SLU 72	0.67	1.95	79.91	-2.1484	-0.0324	0.0058
950	SLU 73	0.68	2.04	85.66	-2.3046	-0.0329	0.0059
950	SLU 74	0.73	2.13	86.95	-2.3395	-0.0343	0.0068
950	SLU 75	0.71	2.1	86.99	-2.3402	-0.0334	0.0064
950	SLU 76	0.69	2.06	86.49	-2.3268	-0.0325	0.0061
950	SLU 77	0.74	2.15	87.78	-2.3617	-0.0339	0.007
950	SLU 78	0.72	2.13	87.82	-2.3624	-0.033	0.0066
950	SLU 79	0.74	2.12	87.26	-2.3479	-0.0336	0.007
950	SLU 80	0.72	2.1	87.29	-2.3486	-0.0327	0.0065
950	SLU 81	0.74	2.14	88.77	-2.3893	-0.0346	0.0069
950	SLU 82	0.71	2.11	88.8	-2.3899	-0.0337	0.0065
950	SLU 83	0.75	2.16	89.59	-2.4115	-0.0341	0.0071
950	SLU 84	0.72	2.14	89.63	-2.4121	-0.0332	0.0067
950	SLE RA 1	0.5	1.43	58.52	-1.5735	-0.0254	0.0043
950	SLE RA 2	0.48	1.4	58.56	-1.5743	-0.0244	0.0038
950	SLE RA 3	0.51	1.47	59.42	-1.5976	-0.0254	0.0044
950	SLE RA 4	0.5	1.45	59.44	-1.598	-0.0248	0.0042
950	SLE RA 5	0.49	1.42	59.11	-1.5891	-0.0242	0.004
950	SLE RA 6	0.52	1.48	59.97	-1.6124	-0.0251	0.0046
950	SLE RA 7	0.51	1.46	60	-1.6128	-0.0245	0.0043
950	SLE RA 8	0.52	1.46	59.62	-1.6031	-0.0249	0.0046
950	SLE RA 9	0.51	1.45	59.65	-1.6036	-0.0243	0.0043
950	SLE RA 10	0.51	1.5	63.48	-1.7077	-0.0246	0.0044
950	SLE RA 11	0.55	1.56	64.34	-1.731	-0.0256	0.0049
950	SLE RA 12	0.53	1.55	64.37	-1.7314	-0.025	0.0047
950	SLE RA 13	0.52	1.52	64.03	-1.7225	-0.0244	0.0045
950	SLE RA 14	0.55	1.58	64.89	-1.7458	-0.0253	0.0051
950	SLE RA 15	0.54	1.56	64.92	-1.7462	-0.0247	0.0048
950	SLE RA 16	0.55	1.56	64.54	-1.7366	-0.0251	0.0051
950	SLE RA 17	0.54	1.54	64.57	-1.737	-0.0245	0.0048
950	SLE RA 18	0.55	1.57	65.55	-1.7641	-0.0257	0.005
950	SLE RA 19	0.53	1.56	65.58	-1.7646	-0.0251	0.0048
950	SLE RA 20	0.56	1.59	66.1	-1.7789	-0.0255	0.0052
950	SLE RA 21	0.54	1.57	66.13	-1.7794	-0.0249	0.0049
950	SLE FR 1	0.5	1.43	58.52	-1.5735	-0.0254	0.0043
950	SLE FR 2	0.5	1.43	58.53	-1.5737	-0.0252	0.0042
950	SLE FR 3	0.51	1.44	58.74	-1.5795	-0.0253	0.0043
950	SLE FR 4	0.51	1.47	60.64	-1.6309	-0.0253	0.0044
950	SLE FR 5	0.52	1.48	60.85	-1.6366	-0.0254	0.0046
950	SLE FR 6	0.53	1.5	62.03	-1.6688	-0.0256	0.0047
950	SLE QP 1	0.5	1.43	58.52	-1.5735	-0.0254	0.0043



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
950	SLE QP 2	0.52	1.47	60.63	-1.6307	-0.0255	0.0045
950	SLD 1	6.36	1.91	57.29	-1.5454	0.1499	0.1344
950	SLD 2	5.82	2.04	57.15	-1.5424	0.1492	0.127
950	SLD 3	6.04	0.36	58.66	-1.5756	0.1674	0.1272
950	SLD 4	5.5	0.5	58.52	-1.5726	0.1667	0.1197
950	SLD 5	2.85	3.92	57.57	-1.5598	0.0007	0.0558
950	SLD 6	2.49	4.01	57.47	-1.5579	0.0003	0.0509
950	SLD 7	1.79	-1.23	62.15	-1.6606	0.059	0.0316
950	SLD 8	1.44	-1.13	62.06	-1.6586	0.0585	0.0267
950	SLD 9	-0.4	4.08	59.2	-1.6028	-0.1096	-0.0177
950	SLD 10	-0.76	4.17	59.11	-1.6009	-0.11	-0.0226
950	SLD 11	-1.45	-1.06	63.78	-1.7036	-0.0513	-0.0419
950	SLD 12	-1.81	-0.97	63.69	-1.7016	-0.0518	-0.0468
950	SLD 13	-4.46	2.44	62.74	-1.6888	-0.2178	-0.1107
950	SLD 14	-5	2.58	62.6	-1.6858	-0.2185	-0.1182
950	SLD 15	-4.78	0.9	64.11	-1.719	-0.2003	-0.118
950	SLD 16	-5.32	1.04	63.97	-1.7161	-0.201	-0.1254
950	SLV 1	14.18	2.42	52.84	-1.4319	0.3856	0.3084
950	SLV 2	12.92	2.75	52.52	-1.425	0.3839	0.2911
950	SLV 3	13.44	-1.07	55.96	-1.5004	0.4256	0.2915
950	SLV 4	12.18	-0.75	55.63	-1.4935	0.424	0.2742
950	SLV 5	5.95	7	53.62	-1.4684	0.0374	0.1243
950	SLV 6	5.14	7.21	53.42	-1.4639	0.0363	0.1131
950	SLV 7	3.5	-4.64	64.01	-1.6967	0.1708	0.068
950	SLV 8	2.68	-4.43	63.8	-1.6922	0.1698	0.0568
950	SLV 9	-1.64	7.38	57.46	-1.5692	-0.2208	-0.0478
950	SLV 10	-2.46	7.59	57.25	-1.5648	-0.2219	-0.059
950	SLV 11	-4.1	-4.26	67.84	-1.7975	-0.0874	-0.1041
950	SLV 12	-4.91	-4.05	67.63	-1.793	-0.0884	-0.1153
950	SLV 13	-11.14	3.69	65.63	-1.768	-0.475	-0.2652
950	SLV 14	-12.4	4.02	65.3	-1.7611	-0.4766	-0.2825
950	SLV 15	-11.88	0.2	68.74	-1.8365	-0.435	-0.2821
950	SLV 16	-13.14	0.52	68.42	-1.8295	-0.4366	-0.2994
950	CRTFP Ux+	0	0	0	0	0	0
950	CRTFP Ux-	0	0	0	0	0	0
950	CRTFP Uy+	0	0	0	0	0	0
950	CRTFP Uy-	0	0	0	0	0	0
953	SLU 1	-0.18	0.87	56.26	-1.5179	0.0787	0.0048
953	SLU 2	-0.21	0.82	56.3	-1.5185	0.077	0.0045
953	SLU 3	-0.18	0.91	57.59	-1.5537	0.0806	0.005
953	SLU 4	-0.2	0.88	57.62	-1.5541	0.0796	0.0048
953	SLU 5	-0.2	0.83	57.11	-1.5404	0.0778	0.0046
953	SLU 6	-0.18	0.92	58.4	-1.5756	0.0814	0.0051
953	SLU 7	-0.19	0.89	58.43	-1.576	0.0804	0.0049
953	SLU 8	-0.17	0.9	57.87	-1.5616	0.0803	0.0051
953	SLU 9	-0.19	0.87	57.9	-1.562	0.0793	0.0049
953	SLU 10	-0.22	0.95	63.55	-1.7147	0.0844	0.0051
953	SLU 11	-0.2	1.05	64.84	-1.7499	0.088	0.0056
953	SLU 12	-0.21	1.01	64.87	-1.7502	0.087	0.0054
953	SLU 13	-0.22	0.97	64.36	-1.7365	0.0852	0.0053
953	SLU 14	-0.19	1.06	65.65	-1.7717	0.0888	0.0058
953	SLU 15	-0.21	1.03	65.68	-1.7721	0.0878	0.0056
953	SLU 16	-0.19	1.03	65.12	-1.7578	0.0877	0.0058
953	SLU 17	-0.21	1	65.15	-1.7581	0.0867	0.0056
953	SLU 18	-0.2	1.07	66.61	-1.7981	0.0893	0.0058
953	SLU 19	-0.22	1.03	66.64	-1.7985	0.0883	0.0055
953	SLU 20	-0.2	1.08	67.42	-1.82	0.0901	0.0059
953	SLU 21	-0.22	1.05	67.45	-1.8203	0.0891	0.0057
953	SLU 22	-0.2	1.08	63.72	-1.7191	0.0903	0.0051
953	SLU 23	-0.23	1.03	63.76	-1.7197	0.0886	0.0047
953	SLU 24	-0.2	1.12	65.05	-1.7549	0.0922	0.0052
953	SLU 25	-0.22	1.09	65.08	-1.7552	0.0912	0.005
953	SLU 26	-0.23	1.04	64.57	-1.7415	0.0894	0.0049
953	SLU 27	-0.2	1.14	65.86	-1.7767	0.093	0.0054
953	SLU 28	-0.22	1.1	65.89	-1.7771	0.092	0.0052
953	SLU 29	-0.19	1.11	65.34	-1.7628	0.0919	0.0054
953	SLU 30	-0.21	1.08	65.36	-1.7631	0.0909	0.0052
953	SLU 31	-0.25	1.16	71.01	-1.9158	0.096	0.0054
953	SLU 32	-0.22	1.26	72.3	-1.951	0.0996	0.0059
953	SLU 33	-0.24	1.23	72.33	-1.9514	0.0986	0.0056
953	SLU 34	-0.24	1.18	71.82	-1.9376	0.0968	0.0055
953	SLU 35	-0.22	1.27	73.11	-1.9729	0.1004	0.006
953	SLU 36	-0.23	1.24	73.14	-1.9732	0.0994	0.0058
953	SLU 37	-0.21	1.24	72.59	-1.9589	0.0993	0.006
953	SLU 38	-0.23	1.21	72.61	-1.9593	0.0983	0.0058
953	SLU 39	-0.23	1.28	74.08	-1.9992	0.1009	0.006
953	SLU 40	-0.24	1.24	74.1	-1.9996	0.0999	0.0058
953	SLU 41	-0.22	1.29	74.89	-2.0211	0.1017	0.0062
953	SLU 42	-0.24	1.26	74.91	-2.0215	0.1007	0.0059
953	SLU 43	-0.22	1.06	70.57	-1.9044	0.0983	0.0062
953	SLU 44	-0.25	1.01	70.62	-1.905	0.0967	0.0059
953	SLU 45	-0.23	1.1	71.91	-1.9402	0.1002	0.0063
953	SLU 46	-0.24	1.07	71.94	-1.9405	0.0992	0.0061
953	SLU 47	-0.25	1.02	71.43	-1.9268	0.0974	0.006
953	SLU 48	-0.22	1.11	72.72	-1.962	0.101	0.0065
953	SLU 49	-0.24	1.08	72.75	-1.9624	0.1	0.0063
953	SLU 50	-0.22	1.09	72.19	-1.9481	0.0999	0.0065
953	SLU 51	-0.24	1.05	72.22	-1.9484	0.0989	0.0063
953	SLU 52	-0.27	1.14	77.87	-2.1011	0.1041	0.0065
953	SLU 53	-0.24	1.24	79.16	-2.1363	0.1076	0.007



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
953	SLU 54	-0.26	1.2	79.19	-2.1366	0.1066	0.0068
953	SLU 55	-0.27	1.16	78.68	-2.1229	0.1048	0.0067
953	SLU 56	-0.24	1.25	79.97	-2.1581	0.1084	0.0071
953	SLU 57	-0.26	1.22	80	-2.1585	0.1074	0.0069
953	SLU 58	-0.24	1.22	79.44	-2.1442	0.1073	0.0072
953	SLU 59	-0.25	1.19	79.47	-2.1445	0.1063	0.0069
953	SLU 60	-0.25	1.25	80.93	-2.1845	0.1089	0.0071
953	SLU 61	-0.27	1.22	80.96	-2.1849	0.1079	0.0069
953	SLU 62	-0.25	1.27	81.74	-2.2064	0.1097	0.0073
953	SLU 63	-0.26	1.23	81.77	-2.2067	0.1087	0.0071
953	SLU 64	-0.25	1.27	78.04	-2.1055	0.1099	0.0064
953	SLU 65	-0.27	1.22	78.08	-2.1061	0.1083	0.0061
953	SLU 66	-0.25	1.31	79.37	-2.1413	0.1118	0.0066
953	SLU 67	-0.26	1.28	79.4	-2.1417	0.1109	0.0064
953	SLU 68	-0.27	1.23	78.89	-2.1279	0.1091	0.0062
953	SLU 69	-0.24	1.33	80.18	-2.1632	0.1126	0.0067
953	SLU 70	-0.26	1.29	80.21	-2.1635	0.1116	0.0065
953	SLU 71	-0.24	1.3	79.66	-2.1492	0.1115	0.0068
953	SLU 72	-0.26	1.27	79.68	-2.1496	0.1105	0.0065
953	SLU 73	-0.29	1.35	85.33	-2.3022	0.1157	0.0067
953	SLU 74	-0.27	1.45	86.62	-2.3374	0.1193	0.0072
953	SLU 75	-0.28	1.42	86.65	-2.3378	0.1183	0.007
953	SLU 76	-0.29	1.37	86.14	-2.3241	0.1165	0.0069
953	SLU 77	-0.26	1.46	87.43	-2.3593	0.12	0.0074
953	SLU 78	-0.28	1.43	87.46	-2.3596	0.119	0.0072
953	SLU 79	-0.26	1.43	86.91	-2.3453	0.1189	0.0074
953	SLU 80	-0.28	1.4	86.93	-2.3457	0.1179	0.0072
953	SLU 81	-0.27	1.47	88.39	-2.3857	0.1205	0.0074
953	SLU 82	-0.29	1.43	88.42	-2.386	0.1195	0.0072
953	SLU 83	-0.27	1.48	89.2	-2.4075	0.1213	0.0075
953	SLU 84	-0.29	1.45	89.23	-2.4079	0.1203	0.0073
953	SLE RA 1	-0.18	0.93	58.39	-1.5754	0.082	0.0049
953	SLE RA 2	-0.2	0.9	58.42	-1.5758	0.0809	0.0047
953	SLE RA 3	-0.19	0.96	59.28	-1.5993	0.0833	0.005
953	SLE RA 4	-0.2	0.94	59.3	-1.5995	0.0826	0.0049
953	SLE RA 5	-0.2	0.91	58.96	-1.5904	0.0814	0.0048
953	SLE RA 6	-0.18	0.97	59.82	-1.6138	0.0838	0.0051
953	SLE RA 7	-0.19	0.95	59.84	-1.6141	0.0831	0.005
953	SLE RA 8	-0.18	0.95	59.47	-1.6045	0.0831	0.0051
953	SLE RA 9	-0.19	0.93	59.49	-1.6048	0.0824	0.005
953	SLE RA 10	-0.22	0.99	63.25	-1.7066	0.0858	0.0051
953	SLE RA 11	-0.2	1.05	64.11	-1.73	0.0882	0.0054
953	SLE RA 12	-0.21	1.03	64.13	-1.7303	0.0876	0.0053
953	SLE RA 13	-0.21	1	63.79	-1.7211	0.0864	0.0052
953	SLE RA 14	-0.2	1.06	64.65	-1.7446	0.0887	0.0055
953	SLE RA 15	-0.21	1.04	64.67	-1.7448	0.0881	0.0054
953	SLE RA 16	-0.19	1.04	64.3	-1.7353	0.088	0.0055
953	SLE RA 17	-0.2	1.02	64.32	-1.7355	0.0873	0.0054
953	SLE RA 18	-0.2	1.06	65.29	-1.7622	0.0891	0.0055
953	SLE RA 19	-0.21	1.04	65.31	-1.7624	0.0884	0.0054
953	SLE RA 20	-0.2	1.07	65.83	-1.7768	0.0896	0.0056
953	SLE RA 21	-0.21	1.05	65.85	-1.777	0.0889	0.0055
953	SLE FR 1	-0.18	0.93	58.39	-1.5754	0.082	0.0049
953	SLE FR 2	-0.19	0.93	58.39	-1.5755	0.0818	0.0049
953	SLE FR 3	-0.18	0.94	58.6	-1.5812	0.0822	0.0049
953	SLE FR 4	-0.19	0.96	60.47	-1.6315	0.0839	0.005
953	SLE FR 5	-0.19	0.97	60.68	-1.6373	0.0843	0.0051
953	SLE FR 6	-0.19	1	61.84	-1.6688	0.0855	0.0052
953	SLE QP 1	-0.18	0.93	58.39	-1.5754	0.082	0.0049
953	SLE QP 2	-0.19	0.97	60.46	-1.6314	0.0841	0.0051
953	SLD 1	5.51	2.12	65.72	-1.7722	0.2385	0.1285
953	SLD 2	4.98	1.96	65.47	-1.7651	0.2397	0.1208
953	SLD 3	5.19	0.61	67.08	-1.8023	0.2266	0.1358
953	SLD 4	4.67	0.44	66.84	-1.7953	0.2279	0.1281
953	SLD 5	2.08	3.65	60.02	-1.6292	0.1482	0.0324
953	SLD 6	1.74	3.54	59.85	-1.6246	0.149	0.0274
953	SLD 7	1.05	-1.41	64.56	-1.7297	0.1086	0.0568
953	SLD 8	0.7	-1.52	64.39	-1.725	0.1094	0.0517
953	SLD 9	-1.08	3.46	56.52	-1.5378	0.0588	-0.0415
953	SLD 10	-1.43	3.36	56.36	-1.5332	0.0596	-0.0466
953	SLD 11	-2.12	-1.6	61.06	-1.6383	0.0192	-0.0172
953	SLD 12	-2.46	-1.71	60.9	-1.6337	0.02	-0.0222
953	SLD 13	-5.05	1.5	54.08	-1.4676	-0.0596	-0.1179
953	SLD 14	-5.57	1.34	53.84	-1.4605	-0.0584	-0.1256
953	SLD 15	-5.36	-0.02	55.44	-1.4978	-0.0715	-0.1106
953	SLD 16	-5.88	-0.18	55.2	-1.4907	-0.0703	-0.1183
953	SLV 1	13.13	3.61	72.81	-1.9618	0.4453	0.2939
953	SLV 2	11.9	3.23	72.24	-1.9453	0.4481	0.2759
953	SLV 3	12.41	0.17	75.91	-2.0303	0.4177	0.3109
953	SLV 4	11.18	-0.21	75.34	-2.0139	0.4206	0.2929
953	SLV 5	5.12	7.04	59.57	-1.6294	0.2337	0.069
953	SLV 6	4.32	6.8	59.2	-1.6188	0.2356	0.0574
953	SLV 7	2.7	-4.42	69.89	-1.8579	0.1419	0.1258
953	SLV 8	1.91	-4.66	69.52	-1.8473	0.1438	0.1141
953	SLV 9	-2.29	6.6	51.4	-1.4156	0.0245	-0.104
953	SLV 10	-3.08	6.36	51.03	-1.4049	0.0263	-0.1156
953	SLV 11	-4.7	-4.86	61.72	-1.6441	-0.0673	-0.0472
953	SLV 12	-5.5	-5.1	61.35	-1.6334	-0.0655	-0.0588
953	SLV 13	-11.56	2.15	45.58	-1.249	-0.2523	-0.2827
953	SLV 14	-12.79	1.77	45.01	-1.2325	-0.2495	-0.3007



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
953	SLV 15	-12.28	-1.29	48.68	-1.3176	-0.2799	-0.2657
953	SLV 16	-13.51	-1.67	48.1	-1.3011	-0.277	-0.2837
953	CRTFP Ux+	0	0	0	0	0	0
953	CRTFP Ux-	0	0	0	0	0	0
953	CRTFP Uy+	0	0	0	0	0	0
953	CRTFP Uy-	0	0	0	0	0	0
992	SLU 1	-0.24	-0.18	22.44	0.0181	-6.0063	-0.0576
992	SLU 2	-0.25	-0.2	22.44	0.0181	-6.0127	-0.0657
992	SLU 3	-0.25	-0.18	22.97	0.0186	-6.1488	-0.0578
992	SLU 4	-0.26	-0.19	22.98	0.0185	-6.1527	-0.0626
992	SLU 5	-0.26	-0.2	22.76	0.0183	-6.0991	-0.0663
992	SLU 6	-0.25	-0.18	23.29	0.0188	-6.2352	-0.0585
992	SLU 7	-0.26	-0.19	23.3	0.0188	-6.239	-0.0633
992	SLU 8	-0.25	-0.18	23.08	0.0186	-6.179	-0.0589
992	SLU 9	-0.25	-0.19	23.08	0.0186	-6.1828	-0.0638
992	SLU 10	-0.28	-0.2	25.26	0.0203	-6.7806	-0.0657
992	SLU 11	-0.27	-0.18	25.8	0.0208	-6.9167	-0.0579
992	SLU 12	-0.28	-0.19	25.8	0.0208	-6.9206	-0.0627
992	SLU 13	-0.28	-0.2	25.59	0.0206	-6.8669	-0.0664
992	SLU 14	-0.28	-0.18	26.12	0.021	-7.0031	-0.0585
992	SLU 15	-0.28	-0.19	26.12	0.021	-7.0069	-0.0634
992	SLU 16	-0.27	-0.18	25.9	0.0208	-6.9468	-0.059
992	SLU 17	-0.28	-0.19	25.9	0.0208	-6.9507	-0.0639
992	SLU 18	-0.28	-0.18	26.47	0.0213	-7.1032	-0.0577
992	SLU 19	-0.28	-0.19	26.47	0.0213	-7.1071	-0.0625
992	SLU 20	-0.28	-0.18	26.79	0.0216	-7.1896	-0.0584
992	SLU 21	-0.29	-0.19	26.79	0.0215	-7.1934	-0.0632
992	SLU 22	-0.27	-0.17	25.34	0.0207	-6.7909	-0.055
992	SLU 23	-0.28	-0.19	25.34	0.0206	-6.7973	-0.0631
992	SLU 24	-0.27	-0.17	25.87	0.0211	-6.9335	-0.0552
992	SLU 25	-0.28	-0.18	25.88	0.0211	-6.9373	-0.06
992	SLU 26	-0.28	-0.19	25.66	0.0209	-6.8837	-0.0637
992	SLU 27	-0.28	-0.17	26.2	0.0213	-7.0198	-0.0559
992	SLU 28	-0.28	-0.19	26.2	0.0213	-7.0237	-0.0607
992	SLU 29	-0.27	-0.17	25.98	0.0211	-6.9636	-0.0564
992	SLU 30	-0.28	-0.19	25.98	0.0211	-6.9675	-0.0612
992	SLU 31	-0.3	-0.19	28.16	0.0229	-7.5652	-0.0631
992	SLU 32	-0.3	-0.17	28.7	0.0233	-7.7013	-0.0553
992	SLU 33	-0.3	-0.18	28.7	0.0233	-7.7052	-0.0601
992	SLU 34	-0.3	-0.19	28.49	0.0231	-7.6516	-0.0638
992	SLU 35	-0.3	-0.17	29.02	0.0236	-7.7877	-0.0559
992	SLU 36	-0.31	-0.19	29.02	0.0235	-7.7916	-0.0608
992	SLU 37	-0.3	-0.17	28.8	0.0234	-7.7315	-0.0564
992	SLU 38	-0.3	-0.19	28.81	0.0233	-7.7354	-0.0613
992	SLU 39	-0.3	-0.17	29.37	0.0239	-7.8879	-0.0551
992	SLU 40	-0.31	-0.18	29.37	0.0239	-7.8917	-0.06
992	SLU 41	-0.3	-0.17	29.69	0.0241	-7.9742	-0.0558
992	SLU 42	-0.31	-0.18	29.69	0.0241	-7.9781	-0.0606
992	SLU 43	-0.31	-0.23	28.17	0.0227	-7.5391	-0.0758
992	SLU 44	-0.32	-0.26	28.18	0.0227	-7.5456	-0.0838
992	SLU 45	-0.31	-0.23	28.71	0.0231	-7.6817	-0.0759
992	SLU 46	-0.32	-0.25	28.71	0.0231	-7.6855	-0.0808
992	SLU 47	-0.32	-0.26	28.5	0.0229	-7.6319	-0.0845
992	SLU 48	-0.32	-0.23	29.03	0.0234	-7.768	-0.0766
992	SLU 49	-0.32	-0.25	29.03	0.0233	-7.7719	-0.0815
992	SLU 50	-0.31	-0.24	28.81	0.0232	-7.7118	-0.0771
992	SLU 51	-0.32	-0.25	28.82	0.0231	-7.7157	-0.0819
992	SLU 52	-0.34	-0.26	31	0.0249	-8.3134	-0.0839
992	SLU 53	-0.34	-0.23	31.53	0.0254	-8.4496	-0.076
992	SLU 54	-0.34	-0.25	31.53	0.0253	-8.4534	-0.0809
992	SLU 55	-0.34	-0.26	31.32	0.0251	-8.3998	-0.0846
992	SLU 56	-0.34	-0.23	31.85	0.0256	-8.5359	-0.0767
992	SLU 57	-0.35	-0.25	31.86	0.0256	-8.5398	-0.0815
992	SLU 58	-0.34	-0.24	31.64	0.0254	-8.4797	-0.0772
992	SLU 59	-0.34	-0.25	31.64	0.0254	-8.4836	-0.082
992	SLU 60	-0.34	-0.23	32.2	0.0259	-8.6361	-0.0759
992	SLU 61	-0.35	-0.25	32.21	0.0259	-8.6399	-0.0807
992	SLU 62	-0.34	-0.23	32.53	0.0261	-8.7224	-0.0765
992	SLU 63	-0.35	-0.25	32.53	0.0261	-8.7263	-0.0814
992	SLU 64	-0.33	-0.22	31.07	0.0253	-8.3238	-0.0732
992	SLU 65	-0.34	-0.25	31.08	0.0252	-8.3302	-0.0812
992	SLU 66	-0.34	-0.22	31.61	0.0257	-8.4663	-0.0734
992	SLU 67	-0.34	-0.24	31.61	0.0257	-8.4702	-0.0782
992	SLU 68	-0.35	-0.25	31.4	0.0254	-8.4166	-0.0819
992	SLU 69	-0.34	-0.23	31.93	0.0259	-8.5527	-0.074
992	SLU 70	-0.35	-0.24	31.93	0.0259	-8.5565	-0.0789
992	SLU 71	-0.34	-0.23	31.72	0.0257	-8.4965	-0.0745
992	SLU 72	-0.34	-0.24	31.72	0.0257	-8.5003	-0.0794
992	SLU 73	-0.37	-0.25	33.9	0.0275	-9.0981	-0.0813
992	SLU 74	-0.36	-0.22	34.43	0.0279	-9.2342	-0.0734
992	SLU 75	-0.37	-0.24	34.44	0.0279	-9.2381	-0.0783
992	SLU 76	-0.37	-0.25	34.22	0.0277	-9.1844	-0.082
992	SLU 77	-0.36	-0.23	34.75	0.0281	-9.3206	-0.0741
992	SLU 78	-0.37	-0.24	34.76	0.0281	-9.3244	-0.0789
992	SLU 79	-0.36	-0.23	34.54	0.0279	-9.2643	-0.0746
992	SLU 80	-0.37	-0.24	34.54	0.0279	-9.2682	-0.0794
992	SLU 81	-0.37	-0.22	35.1	0.0285	-9.4207	-0.0733
992	SLU 82	-0.37	-0.24	35.11	0.0284	-9.4246	-0.0781
992	SLU 83	-0.37	-0.23	35.43	0.0287	-9.5071	-0.074
992	SLU 84	-0.38	-0.24	35.43	0.0287	-9.5109	-0.0788



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
992	SLE RA 1	-0.25	-0.17	23.26	0.0189	-6.2304	-0.0568
992	SLE RA 2	-0.26	-0.19	23.27	0.0188	-6.2347	-0.0622
992	SLE RA 3	-0.26	-0.17	23.62	0.0192	-6.3255	-0.057
992	SLE RA 4	-0.26	-0.18	23.62	0.0191	-6.3281	-0.0602
992	SLE RA 5	-0.26	-0.19	23.48	0.019	-6.2923	-0.0627
992	SLE RA 6	-0.26	-0.18	23.84	0.0193	-6.3831	-0.0574
992	SLE RA 7	-0.26	-0.19	23.84	0.0193	-6.3856	-0.0607
992	SLE RA 8	-0.25	-0.18	23.69	0.0192	-6.3456	-0.0577
992	SLE RA 9	-0.26	-0.19	23.7	0.0192	-6.3482	-0.061
992	SLE RA 10	-0.27	-0.19	25.15	0.0203	-6.7467	-0.0623
992	SLE RA 11	-0.27	-0.17	25.5	0.0206	-6.8374	-0.057
992	SLE RA 12	-0.27	-0.18	25.51	0.0206	-6.84	-0.0603
992	SLE RA 13	-0.27	-0.19	25.36	0.0205	-6.8042	-0.0627
992	SLE RA 14	-0.27	-0.18	25.72	0.0208	-6.895	-0.0575
992	SLE RA 15	-0.28	-0.19	25.72	0.0208	-6.8976	-0.0607
992	SLE RA 16	-0.27	-0.18	25.58	0.0207	-6.8575	-0.0578
992	SLE RA 17	-0.27	-0.19	25.58	0.0206	-6.8601	-0.061
992	SLE RA 18	-0.27	-0.17	25.95	0.021	-6.9618	-0.0569
992	SLE RA 19	-0.28	-0.18	25.95	0.021	-6.9643	-0.0602
992	SLE RA 20	-0.28	-0.18	26.17	0.0212	-7.0193	-0.0574
992	SLE RA 21	-0.28	-0.18	26.17	0.0211	-7.0219	-0.0606
992	SLE FR 1	-0.25	-0.17	23.26	0.0189	-6.2304	-0.0568
992	SLE FR 2	-0.25	-0.18	23.26	0.0189	-6.2313	-0.0579
992	SLE FR 3	-0.25	-0.17	23.35	0.0189	-6.2535	-0.057
992	SLE FR 4	-0.26	-0.18	24.07	0.0195	-6.4507	-0.0579
992	SLE FR 5	-0.26	-0.17	24.16	0.0196	-6.4729	-0.0571
992	SLE FR 6	-0.26	-0.17	24.61	0.0199	-6.5961	-0.0569
992	SLE QP 1	-0.25	-0.17	23.26	0.0189	-6.2304	-0.0568
992	SLE QP 2	-0.26	-0.17	24.07	0.0195	-6.4498	-0.0569
992	SLD 1	1.72	-0.1	28.12	0.0331	-7.5355	-0.0323
992	SLD 2	1.53	-0.21	28.13	0.0319	-7.5482	-0.07
992	SLD 3	1.61	-0.59	28.62	0.0339	-7.7118	-0.1915
992	SLD 4	1.42	-0.7	28.63	0.0328	-7.7245	-0.2292
992	SLD 5	0.53	0.61	24.53	0.0225	-6.5058	0.1987
992	SLD 6	0.41	0.54	24.54	0.0218	-6.5141	0.1739
992	SLD 7	0.17	-1.02	26.18	0.0253	-7.0936	-0.332
992	SLD 8	0.05	-1.1	26.19	0.0245	-7.1019	-0.3568
992	SLD 9	-0.56	0.75	21.95	0.0145	-5.7977	0.243
992	SLD 10	-0.69	0.67	21.96	0.0138	-5.8061	0.2182
992	SLD 11	-0.92	-0.88	23.6	0.0172	-6.3855	-0.2877
992	SLD 12	-1.05	-0.96	23.61	0.0165	-6.3938	-0.3125
992	SLD 13	-1.93	0.36	19.51	0.0063	-5.1752	0.1154
992	SLD 14	-2.13	0.24	19.52	0.0051	-5.1878	0.0777
992	SLD 15	-2.04	-0.13	20.01	0.0071	-5.3515	-0.0438
992	SLD 16	-2.24	-0.25	20.02	0.006	-5.3642	-0.0815
992	SLV 1	4.37	-0.01	33.56	0.0512	-8.9948	-0.0055
992	SLV 2	3.92	-0.28	33.59	0.0486	-9.0242	-0.0933
992	SLV 3	4.12	-1.12	34.7	0.0531	-9.398	-0.3659
992	SLV 4	3.67	-1.39	34.73	0.0505	-9.4274	-0.4537
992	SLV 5	1.59	1.6	25.19	0.0266	-6.5966	0.5202
992	SLV 6	1.3	1.43	25.21	0.0249	-6.6157	0.4635
992	SLV 7	0.75	-2.09	28.98	0.0329	-7.9408	-0.6809
992	SLV 8	0.46	-2.27	29	0.0312	-7.9598	-0.7376
992	SLV 9	-0.97	1.92	19.14	0.0078	-4.9399	0.6239
992	SLV 10	-1.27	1.75	19.16	0.0061	-4.9589	0.5672
992	SLV 11	-1.81	-1.78	22.93	0.0141	-6.284	-0.5773
992	SLV 12	-2.11	-1.95	22.95	0.0124	-6.303	-0.634
992	SLV 13	-4.18	1.04	13.41	-0.0115	-3.4722	0.3399
992	SLV 14	-4.64	0.77	13.44	-0.0141	-3.5017	0.2521
992	SLV 15	-4.43	-0.06	14.55	-0.0096	-3.8755	-0.0204
992	SLV 16	-4.89	-0.33	14.58	-0.0122	-3.9049	-0.1082
992	CRTFP Ux+	0	0	0	0	0	0
992	CRTFP Ux-	0	0	0	0	0	0
992	CRTFP Uy+	0	0	0	0	0	0
992	CRTFP Uy-	0	0	0	0	0	0
994	SLU 1	-0.4	-0.31	40.15	-9.7336	-6.9726	-0.1627
994	SLU 2	-0.42	-0.36	40.16	-9.7377	-6.975	-0.1751
994	SLU 3	-0.41	-0.31	41.11	-9.9674	-7.1393	-0.1652
994	SLU 4	-0.42	-0.34	41.12	-9.9699	-7.1407	-0.1726
994	SLU 5	-0.42	-0.36	40.74	-9.8793	-7.0749	-0.1766
994	SLU 6	-0.41	-0.32	41.69	-10.109	-7.2393	-0.1667
994	SLU 7	-0.42	-0.34	41.7	-10.1114	-7.2407	-0.1741
994	SLU 8	-0.41	-0.32	41.3	-10.0167	-7.1725	-0.1658
994	SLU 9	-0.42	-0.35	41.31	-10.0192	-7.1739	-0.1732
994	SLU 10	-0.46	-0.36	45.22	-10.9636	-7.8531	-0.1854
994	SLU 11	-0.45	-0.31	46.17	-11.1933	-8.0175	-0.1756
994	SLU 12	-0.46	-0.34	46.18	-11.1958	-8.0189	-0.1829
994	SLU 13	-0.46	-0.36	45.8	-11.1051	-7.9531	-0.1869
994	SLU 14	-0.45	-0.32	46.75	-11.3349	-8.1174	-0.1771
994	SLU 15	-0.46	-0.34	46.76	-11.3373	-8.1188	-0.1845
994	SLU 16	-0.45	-0.32	46.36	-11.2426	-8.0506	-0.1761
994	SLU 17	-0.46	-0.35	46.37	-11.245	-8.052	-0.1835
994	SLU 18	-0.46	-0.31	47.38	-11.4849	-8.2271	-0.1775
994	SLU 19	-0.47	-0.34	47.38	-11.4873	-8.2285	-0.1849
994	SLU 20	-0.46	-0.32	47.95	-11.6264	-8.327	-0.1791
994	SLU 21	-0.47	-0.34	47.96	-11.6289	-8.3285	-0.1865
994	SLU 22	-0.44	-0.3	45.35	-10.9806	-7.8752	-0.1709
994	SLU 23	-0.46	-0.34	45.36	-10.9847	-7.8775	-0.1832
994	SLU 24	-0.45	-0.3	46.31	-11.2145	-8.0419	-0.1733
994	SLU 25	-0.46	-0.33	46.32	-11.2169	-8.0433	-0.1807



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
994	SLU 26	-0.46	-0.35	45.93	-11.1263	-7.9774	-0.1847
994	SLU 27	-0.45	-0.3	46.89	-11.356	-8.1418	-0.1748
994	SLU 28	-0.46	-0.33	46.89	-11.3585	-8.1432	-0.1822
994	SLU 29	-0.45	-0.31	46.5	-11.2637	-8.075	-0.1739
994	SLU 30	-0.46	-0.33	46.51	-11.2662	-8.0764	-0.1813
994	SLU 31	-0.5	-0.34	50.41	-12.2106	-8.7556	-0.1935
994	SLU 32	-0.49	-0.3	51.37	-12.4403	-8.92	-0.1837
994	SLU 33	-0.5	-0.33	51.37	-12.4428	-8.9214	-0.1911
994	SLU 34	-0.5	-0.35	50.99	-12.3521	-8.8556	-0.1951
994	SLU 35	-0.49	-0.3	51.95	-12.5819	-9.0199	-0.1852
994	SLU 36	-0.5	-0.33	51.95	-12.5843	-9.0213	-0.1926
994	SLU 37	-0.49	-0.31	51.56	-12.4896	-8.9532	-0.1843
994	SLU 38	-0.5	-0.33	51.56	-12.4921	-8.9546	-0.1916
994	SLU 39	-0.5	-0.3	52.57	-12.7319	-9.1296	-0.1857
994	SLU 40	-0.51	-0.33	52.58	-12.7343	-9.131	-0.1931
994	SLU 41	-0.5	-0.3	53.15	-12.8734	-9.2296	-0.1872
994	SLU 42	-0.51	-0.33	53.16	-12.8759	-9.231	-0.1946
994	SLU 43	-0.51	-0.41	50.42	-12.2262	-8.755	-0.2088
994	SLU 44	-0.52	-0.45	50.42	-12.2302	-8.7573	-0.2211
994	SLU 45	-0.52	-0.41	51.38	-12.46	-8.9217	-0.2112
994	SLU 46	-0.53	-0.44	51.38	-12.4624	-8.9231	-0.2186
994	SLU 47	-0.53	-0.46	51	-12.3718	-8.8573	-0.2226
994	SLU 48	-0.52	-0.42	51.96	-12.6015	-9.0216	-0.2127
994	SLU 49	-0.53	-0.44	51.96	-12.604	-9.023	-0.2201
994	SLU 50	-0.51	-0.42	51.57	-12.5092	-8.9548	-0.2118
994	SLU 51	-0.52	-0.44	51.57	-12.5117	-8.9563	-0.2192
994	SLU 52	-0.56	-0.45	55.48	-13.4561	-9.6355	-0.2315
994	SLU 53	-0.55	-0.41	56.44	-13.6859	-9.7998	-0.2216
994	SLU 54	-0.56	-0.44	56.44	-13.6883	-9.8012	-0.229
994	SLU 55	-0.57	-0.46	56.06	-13.5977	-9.7354	-0.233
994	SLU 56	-0.56	-0.42	57.01	-13.8274	-9.8998	-0.2231
994	SLU 57	-0.57	-0.44	57.02	-13.8299	-9.9012	-0.2305
994	SLU 58	-0.55	-0.42	56.63	-13.7351	-9.833	-0.2222
994	SLU 59	-0.56	-0.44	56.63	-13.7376	-9.8344	-0.2296
994	SLU 60	-0.56	-0.41	57.64	-13.9774	-10.0095	-0.2236
994	SLU 61	-0.57	-0.44	57.65	-13.9799	-10.0109	-0.231
994	SLU 62	-0.57	-0.42	58.22	-14.1189	-10.1094	-0.2251
994	SLU 63	-0.58	-0.44	58.22	-14.1214	-10.1108	-0.2325
994	SLU 64	-0.55	-0.4	55.61	-13.4732	-9.6575	-0.2169
994	SLU 65	-0.56	-0.44	55.62	-13.4773	-9.6599	-0.2292
994	SLU 66	-0.56	-0.4	56.57	-13.707	-9.8242	-0.2193
994	SLU 67	-0.57	-0.42	56.58	-13.7094	-9.8256	-0.2267
994	SLU 68	-0.57	-0.44	56.2	-13.6188	-9.7598	-0.2307
994	SLU 69	-0.56	-0.4	57.15	-13.8485	-9.9241	-0.2209
994	SLU 70	-0.57	-0.43	57.16	-13.851	-9.9256	-0.2283
994	SLU 71	-0.55	-0.4	56.76	-13.7563	-9.8574	-0.2199
994	SLU 72	-0.56	-0.43	56.77	-13.7587	-9.8588	-0.2273
994	SLU 73	-0.6	-0.44	60.68	-14.7031	-10.538	-0.2396
994	SLU 74	-0.59	-0.4	61.63	-14.9329	-10.7023	-0.2297
994	SLU 75	-0.6	-0.43	61.64	-14.9353	-10.7038	-0.2371
994	SLU 76	-0.61	-0.45	61.26	-14.8447	-10.6379	-0.2411
994	SLU 77	-0.6	-0.4	62.21	-15.0744	-10.8023	-0.2312
994	SLU 78	-0.61	-0.43	62.22	-15.0769	-10.8037	-0.2386
994	SLU 79	-0.59	-0.41	61.82	-14.9821	-10.7355	-0.2303
994	SLU 80	-0.6	-0.43	61.83	-14.9846	-10.7369	-0.2377
994	SLU 81	-0.6	-0.4	62.84	-15.2244	-10.912	-0.2317
994	SLU 82	-0.61	-0.42	62.84	-15.2269	-10.9134	-0.2391
994	SLU 83	-0.61	-0.4	63.41	-15.366	-11.0119	-0.2332
994	SLU 84	-0.62	-0.43	63.42	-15.3684	-11.0133	-0.2406
994	SLE RA 1	-0.41	-0.31	41.64	-10.0899	-7.2305	-0.1651
994	SLE RA 2	-0.42	-0.34	41.64	-10.0926	-7.2321	-0.1733
994	SLE RA 3	-0.42	-0.31	42.28	-10.2458	-7.3416	-0.1667
994	SLE RA 4	-0.42	-0.33	42.28	-10.2474	-7.3426	-0.1716
994	SLE RA 5	-0.43	-0.34	42.03	-10.187	-7.2987	-0.1743
994	SLE RA 6	-0.42	-0.31	42.66	-10.3402	-7.4083	-0.1677
994	SLE RA 7	-0.43	-0.33	42.67	-10.3418	-7.4092	-0.1726
994	SLE RA 8	-0.42	-0.31	42.4	-10.2786	-7.3637	-0.1671
994	SLE RA 9	-0.42	-0.33	42.41	-10.2803	-7.3647	-0.172
994	SLE RA 10	-0.45	-0.34	45.01	-10.9099	-7.8175	-0.1802
994	SLE RA 11	-0.44	-0.31	45.65	-11.063	-7.9271	-0.1736
994	SLE RA 12	-0.45	-0.33	45.65	-11.0647	-7.928	-0.1785
994	SLE RA 13	-0.45	-0.34	45.4	-11.0042	-7.8841	-0.1812
994	SLE RA 14	-0.45	-0.31	46.03	-11.1574	-7.9937	-0.1746
994	SLE RA 15	-0.45	-0.33	46.04	-11.159	-7.9946	-0.1795
994	SLE RA 16	-0.44	-0.31	45.78	-11.0959	-7.9492	-0.174
994	SLE RA 17	-0.45	-0.33	45.78	-11.0975	-7.9501	-0.1789
994	SLE RA 18	-0.45	-0.31	46.45	-11.2574	-8.0668	-0.1749
994	SLE RA 19	-0.46	-0.33	46.46	-11.259	-8.0677	-0.1799
994	SLE RA 20	-0.45	-0.31	46.84	-11.3518	-8.1334	-0.1759
994	SLE RA 21	-0.46	-0.33	46.84	-11.3534	-8.1344	-0.1809
994	SLE FR 1	-0.41	-0.31	41.64	-10.0899	-7.2305	-0.1651
994	SLE FR 2	-0.41	-0.31	41.64	-10.0905	-7.2308	-0.1667
994	SLE FR 3	-0.41	-0.31	41.79	-10.1277	-7.2571	-0.1655
994	SLE FR 4	-0.43	-0.31	43.08	-10.4407	-7.4817	-0.1697
994	SLE FR 5	-0.42	-0.31	43.23	-10.4779	-7.508	-0.1684
994	SLE FR 6	-0.43	-0.31	44.04	-10.6737	-7.6486	-0.17
994	SLE QP 1	-0.41	-0.31	41.64	-10.0899	-7.2305	-0.1651
994	SLE QP 2	-0.42	-0.31	43.08	-10.4402	-7.4814	-0.168
994	SLD 1	3.09	-0.16	50.38	-11.7008	-8.7549	0.7798
994	SLD 2	2.74	-0.37	50.41	-11.7668	-8.7583	0.651



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
994	SLD 3	2.89	-1.03	51.27	-11.9075	-8.9149	0.6136
994	SLD 4	2.55	-1.24	51.3	-11.9735	-8.9182	0.4848
994	SLD 5	0.98	1.08	43.91	-10.4931	-7.6203	0.3913
994	SLD 6	0.76	0.94	43.94	-10.5364	-7.6225	0.3067
994	SLD 7	0.34	-1.8	46.88	-11.182	-8.1534	-0.1625
994	SLD 8	0.12	-1.93	46.9	-11.2254	-8.1556	-0.2472
994	SLD 9	-0.96	1.32	39.26	-9.6549	-6.8071	-0.0889
994	SLD 10	-1.19	1.18	39.28	-9.6983	-6.8094	-0.1735
994	SLD 11	-1.6	-1.56	42.22	-10.3439	-7.3403	-0.6427
994	SLD 12	-1.83	-1.7	42.25	-10.3873	-7.3425	-0.7273
994	SLD 13	-3.4	0.62	34.86	-8.9068	-6.0445	-0.8209
994	SLD 14	-3.74	0.41	34.89	-8.9729	-6.0479	-0.9497
994	SLD 15	-3.59	-0.24	35.75	-9.1135	-6.2045	-0.987
994	SLD 16	-3.93	-0.45	35.78	-9.1795	-6.2078	-1.1158
994	SLV 1	7.78	0	60.18	-13.3963	-10.4651	2.0429
994	SLV 2	6.98	-0.49	60.26	-13.5501	-10.473	1.743
994	SLV 3	7.34	-1.95	62.22	-13.8678	-10.8316	1.6665
994	SLV 4	6.54	-2.45	62.3	-14.0216	-10.8394	1.3665
994	SLV 5	2.85	2.83	45.1	-10.5853	-7.8194	1.1181
994	SLV 6	2.34	2.51	45.16	-10.6846	-7.8245	0.9243
994	SLV 7	1.37	-3.68	51.9	-12.157	-9.0408	-0.1367
994	SLV 8	0.85	-4	51.95	-12.2563	-9.0459	-0.3305
994	SLV 9	-1.7	3.38	34.21	-8.624	-5.9169	-0.0056
994	SLV 10	-2.21	3.06	34.26	-8.7233	-5.922	-0.1993
994	SLV 11	-3.18	-3.13	41.01	-10.1957	-7.1383	-1.2604
994	SLV 12	-3.7	-3.45	41.06	-10.295	-7.1433	-1.4541
994	SLV 13	-7.38	1.83	23.86	-6.8587	-4.1233	-1.7026
994	SLV 14	-8.18	1.34	23.94	-7.0125	-4.1312	-2.0025
994	SLV 15	-7.83	-0.12	25.9	-7.3302	-4.4898	-2.079
994	SLV 16	-8.63	-0.62	25.98	-7.484	-4.4976	-2.379
994	CRTFP Ux+	0	0	0	0	0	0
994	CRTFP Ux-	0	0	0	0	0	0
994	CRTFP Uy+	0	0	0	0	0	0
994	CRTFP Uy-	0	0	0	0	0	0
996	SLU 1	-0.37	-0.29	35.9	-10.3989	-0.9456	-0.1353
996	SLU 2	-0.38	-0.33	35.92	-10.4025	-0.946	-0.1419
996	SLU 3	-0.37	-0.29	36.76	-10.6459	-0.9681	-0.138
996	SLU 4	-0.38	-0.31	36.77	-10.6481	-0.9683	-0.142
996	SLU 5	-0.38	-0.33	36.43	-10.5539	-0.9595	-0.143
996	SLU 6	-0.38	-0.29	37.28	-10.7973	-0.9816	-0.1391
996	SLU 7	-0.38	-0.31	37.29	-10.7995	-0.9818	-0.143
996	SLU 8	-0.37	-0.29	36.94	-10.7017	-0.9726	-0.1375
996	SLU 9	-0.38	-0.32	36.94	-10.7039	-0.9728	-0.1414
996	SLU 10	-0.42	-0.33	40.43	-11.6915	-1.0644	-0.1543
996	SLU 11	-0.41	-0.29	41.28	-11.9349	-1.0865	-0.1504
996	SLU 12	-0.42	-0.31	41.28	-11.937	-1.0867	-0.1543
996	SLU 13	-0.42	-0.33	40.94	-11.8429	-1.0779	-0.1553
996	SLU 14	-0.41	-0.29	41.79	-12.0863	-1.1	-0.1514
996	SLU 15	-0.42	-0.31	41.8	-12.0884	-1.1002	-0.1554
996	SLU 16	-0.41	-0.29	41.45	-11.9907	-1.091	-0.1498
996	SLU 17	-0.42	-0.32	41.46	-11.9929	-1.0913	-0.1538
996	SLU 18	-0.42	-0.29	42.35	-12.2403	-1.1147	-0.153
996	SLU 19	-0.43	-0.31	42.36	-12.2425	-1.115	-0.1569
996	SLU 20	-0.42	-0.29	42.87	-12.3917	-1.1282	-0.154
996	SLU 21	-0.43	-0.31	42.87	-12.3939	-1.1285	-0.158
996	SLU 22	-0.4	-0.27	40.53	-11.7047	-1.0671	-0.1476
996	SLU 23	-0.42	-0.31	40.54	-11.7082	-1.0674	-0.1542
996	SLU 24	-0.41	-0.27	41.39	-11.9517	-1.0896	-0.1503
996	SLU 25	-0.42	-0.3	41.4	-11.9538	-1.0898	-0.1543
996	SLU 26	-0.42	-0.32	41.06	-11.8596	-1.081	-0.1553
996	SLU 27	-0.41	-0.28	41.91	-12.1031	-1.1031	-0.1514
996	SLU 28	-0.42	-0.3	41.91	-12.1052	-1.1033	-0.1553
996	SLU 29	-0.41	-0.28	41.56	-12.0075	-1.0941	-0.1497
996	SLU 30	-0.42	-0.3	41.57	-12.0096	-1.0943	-0.1537
996	SLU 31	-0.45	-0.31	45.06	-12.9972	-1.1859	-0.1665
996	SLU 32	-0.44	-0.27	45.9	-13.2407	-1.208	-0.1626
996	SLU 33	-0.45	-0.3	45.91	-13.2428	-1.2082	-0.1666
996	SLU 34	-0.46	-0.32	45.57	-13.1486	-1.1994	-0.1676
996	SLU 35	-0.45	-0.28	46.42	-13.3921	-1.2215	-0.1637
996	SLU 36	-0.46	-0.3	46.43	-13.3942	-1.2217	-0.1677
996	SLU 37	-0.44	-0.28	46.08	-13.2965	-1.2125	-0.1621
996	SLU 38	-0.45	-0.3	46.08	-13.2986	-1.2127	-0.1661
996	SLU 39	-0.45	-0.27	46.98	-13.5461	-1.2362	-0.1652
996	SLU 40	-0.46	-0.3	46.99	-13.5482	-1.2364	-0.1692
996	SLU 41	-0.46	-0.27	47.49	-13.6975	-1.2497	-0.1663
996	SLU 42	-0.46	-0.3	47.5	-13.6996	-1.25	-0.1703
996	SLU 43	-0.46	-0.38	45.09	-13.0709	-1.1876	-0.1717
996	SLU 44	-0.48	-0.42	45.1	-13.0745	-1.188	-0.1783
996	SLU 45	-0.47	-0.38	45.95	-13.3179	-1.2101	-0.1744
996	SLU 46	-0.48	-0.4	45.95	-13.32	-1.2103	-0.1783
996	SLU 47	-0.48	-0.42	45.62	-13.2259	-1.2015	-0.1794
996	SLU 48	-0.47	-0.38	46.46	-13.4693	-1.2236	-0.1755
996	SLU 49	-0.48	-0.41	46.47	-13.4714	-1.2238	-0.1794
996	SLU 50	-0.47	-0.38	46.12	-13.3737	-1.2146	-0.1738
996	SLU 51	-0.48	-0.41	46.13	-13.3759	-1.2149	-0.1778
996	SLU 52	-0.51	-0.42	49.61	-14.3635	-1.3064	-0.1906
996	SLU 53	-0.51	-0.38	50.46	-14.6069	-1.3285	-0.1867
996	SLU 54	-0.51	-0.4	50.47	-14.609	-1.3287	-0.1907
996	SLU 55	-0.52	-0.42	50.13	-14.5149	-1.3199	-0.1917
996	SLU 56	-0.51	-0.38	50.98	-14.7583	-1.342	-0.1878





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
996	SLU 57	-0.52	-0.41	50.98	-14.7604	-1.3422	-0.1918
996	SLU 58	-0.5	-0.38	50.63	-14.6627	-1.333	-0.1862
996	SLU 59	-0.51	-0.41	50.64	-14.6648	-1.3333	-0.1901
996	SLU 60	-0.51	-0.38	51.54	-14.9123	-1.3567	-0.1893
996	SLU 61	-0.52	-0.4	51.54	-14.9145	-1.357	-0.1933
996	SLU 62	-0.52	-0.38	52.05	-15.0637	-1.3703	-0.1904
996	SLU 63	-0.52	-0.4	52.06	-15.0659	-1.3705	-0.1944
996	SLU 64	-0.5	-0.36	49.72	-14.3767	-1.3091	-0.184
996	SLU 65	-0.51	-0.4	49.73	-14.3802	-1.3095	-0.1906
996	SLU 66	-0.51	-0.36	50.58	-14.6237	-1.3316	-0.1867
996	SLU 67	-0.52	-0.39	50.58	-14.6258	-1.3318	-0.1906
996	SLU 68	-0.52	-0.41	50.24	-14.5316	-1.323	-0.1917
996	SLU 69	-0.51	-0.37	51.09	-14.7751	-1.3451	-0.1877
996	SLU 70	-0.52	-0.39	51.1	-14.7772	-1.3453	-0.1917
996	SLU 71	-0.5	-0.37	50.75	-14.6795	-1.3361	-0.1861
996	SLU 72	-0.51	-0.39	50.76	-14.6816	-1.3364	-0.1901
996	SLU 73	-0.55	-0.4	54.24	-15.6692	-1.4279	-0.2029
996	SLU 74	-0.54	-0.36	55.09	-15.9127	-1.45	-0.199
996	SLU 75	-0.55	-0.39	55.1	-15.9148	-1.4502	-0.203
996	SLU 76	-0.55	-0.41	54.76	-15.8206	-1.4414	-0.204
996	SLU 77	-0.54	-0.37	55.6	-16.0641	-1.4635	-0.2001
996	SLU 78	-0.55	-0.39	55.61	-16.0662	-1.4637	-0.2041
996	SLU 79	-0.54	-0.37	55.26	-15.9685	-1.4545	-0.1985
996	SLU 80	-0.55	-0.39	55.27	-15.9706	-1.4548	-0.2024
996	SLU 81	-0.55	-0.36	56.16	-16.2181	-1.4782	-0.2016
996	SLU 82	-0.56	-0.39	56.17	-16.2202	-1.4785	-0.2056
996	SLU 83	-0.55	-0.37	56.68	-16.3695	-1.4917	-0.2027
996	SLU 84	-0.56	-0.39	56.69	-16.3716	-1.492	-0.2067
996	SLE RA 1	-0.38	-0.28	37.23	-10.772	-0.9803	-0.1388
996	SLE RA 2	-0.39	-0.31	37.23	-10.7744	-0.9805	-0.1432
996	SLE RA 3	-0.38	-0.28	37.8	-10.9367	-0.9953	-0.1406
996	SLE RA 4	-0.39	-0.3	37.8	-10.9381	-0.9954	-0.1433
996	SLE RA 5	-0.39	-0.31	37.58	-10.8753	-0.9896	-0.1439
996	SLE RA 6	-0.38	-0.28	38.14	-11.0376	-1.0043	-0.1413
996	SLE RA 7	-0.39	-0.3	38.15	-11.039	-1.0044	-0.144
996	SLE RA 8	-0.38	-0.29	37.91	-10.9739	-0.9983	-0.1403
996	SLE RA 9	-0.39	-0.3	37.92	-10.9753	-0.9985	-0.1429
996	SLE RA 10	-0.41	-0.31	40.24	-11.6337	-1.0595	-0.1515
996	SLE RA 11	-0.4	-0.28	40.81	-11.796	-1.0742	-0.1489
996	SLE RA 12	-0.41	-0.3	40.81	-11.7974	-1.0744	-0.1515
996	SLE RA 13	-0.41	-0.31	40.59	-11.7346	-1.0685	-0.1522
996	SLE RA 14	-0.41	-0.28	41.15	-11.8969	-1.0832	-0.1496
996	SLE RA 15	-0.41	-0.3	41.16	-11.8984	-1.0834	-0.1522
996	SLE RA 16	-0.4	-0.29	40.92	-11.8332	-1.0772	-0.1485
996	SLE RA 17	-0.41	-0.3	40.93	-11.8346	-1.0774	-0.1511
996	SLE RA 18	-0.41	-0.28	41.52	-11.9996	-1.093	-0.1506
996	SLE RA 19	-0.42	-0.3	41.53	-12.001	-1.0932	-0.1532
996	SLE RA 20	-0.41	-0.28	41.87	-12.1006	-1.1021	-0.1513
996	SLE RA 21	-0.42	-0.3	41.87	-12.102	-1.1022	-0.1539
996	SLE FR 1	-0.38	-0.28	37.23	-10.772	-0.9803	-0.1388
996	SLE FR 2	-0.38	-0.29	37.23	-10.7725	-0.9803	-0.1397
996	SLE FR 3	-0.38	-0.28	37.36	-10.8124	-0.9839	-0.1391
996	SLE FR 4	-0.39	-0.29	38.52	-11.1408	-1.0142	-0.1432
996	SLE FR 5	-0.39	-0.28	38.65	-11.1807	-1.0177	-0.1426
996	SLE FR 6	-0.39	-0.28	39.38	-11.3858	-1.0367	-0.1447
996	SLE QP 1	-0.38	-0.28	37.23	-10.772	-0.9803	-0.1388
996	SLE QP 2	-0.39	-0.28	38.52	-11.1403	-1.0141	-0.1424
996	SLD 1	2.94	-0.14	44.5	-12.0062	-1.1636	1.0174
996	SLD 2	2.62	-0.34	44.57	-12.1257	-1.1653	0.8998
996	SLD 3	2.76	-0.96	45.29	-12.2055	-1.1841	0.9493
996	SLD 4	2.44	-1.15	45.35	-12.325	-1.1859	0.8317
996	SLD 5	0.94	1.03	39.11	-11.0765	-1.0275	0.3299
996	SLD 6	0.73	0.91	39.15	-11.155	-1.0286	0.2526
996	SLD 7	0.34	-1.69	41.73	-11.7407	-1.096	0.1029
996	SLD 8	0.13	-1.81	41.77	-11.8193	-1.0971	0.0256
996	SLD 9	-0.9	1.25	35.26	-10.4613	-0.9311	-0.3103
996	SLD 10	-1.11	1.12	35.31	-10.5398	-0.9322	-0.3876
996	SLD 11	-1.5	-1.47	37.88	-11.1256	-0.9996	-0.5373
996	SLD 12	-1.72	-1.59	37.92	-11.2041	-1.0007	-0.6146
996	SLD 13	-3.21	0.59	31.68	-9.9556	-0.8423	-1.1164
996	SLD 14	-3.53	0.4	31.75	-10.0751	-0.8441	-1.2341
996	SLD 15	-3.39	-0.23	32.47	-10.1549	-0.8629	-1.1845
996	SLD 16	-3.71	-0.42	32.53	-10.2744	-0.8646	-1.3022
996	SLV 1	7.39	0.01	52.54	-13.1731	-1.3645	2.5701
996	SLV 2	6.65	-0.44	52.69	-13.4515	-1.3684	2.2962
996	SLV 3	6.97	-1.84	54.34	-13.6269	-1.4114	2.4122
996	SLV 4	6.22	-2.29	54.49	-13.9053	-1.4154	2.1383
996	SLV 5	2.72	2.68	39.97	-11.0138	-1.0473	0.9582
996	SLV 6	2.24	2.39	40.07	-11.1935	-1.0498	0.7813
996	SLV 7	1.31	-3.47	45.96	-12.5264	-1.2039	0.4319
996	SLV 8	0.82	-3.76	46.06	-12.7062	-1.2065	0.255
996	SLV 9	-1.6	3.2	30.97	-9.5744	-0.8218	-0.5397
996	SLV 10	-2.08	2.91	31.07	-9.7542	-0.8243	-0.7166
996	SLV 11	-3.01	-2.96	36.96	-11.087	-0.9784	-1.066
996	SLV 12	-3.49	-3.25	37.06	-11.2668	-0.9809	-1.2429
996	SLV 13	-6.99	1.72	22.54	-8.3753	-0.6128	-2.423
996	SLV 14	-7.74	1.28	22.7	-8.6537	-0.6168	-2.6969
996	SLV 15	-7.42	-0.13	24.34	-8.8291	-0.6598	-2.5809
996	SLV 16	-8.17	-0.57	24.49	-9.1075	-0.6638	-2.8548
996	CRTP Ux+	0	0	0	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
996	CRTFP Ux-	0	0	0	0	0	0
996	CRTFP Uy+	0	0	0	0	0	0
996	CRTFP Uy-	0	0	0	0	0	0
997	SLU 1	-0.41	-0.3	39.49	-10.3538	0.0805	-0.1419
997	SLU 2	-0.43	-0.35	39.5	-10.3579	0.0804	-0.1483
997	SLU 3	-0.42	-0.3	40.43	-10.5957	0.0826	-0.1448
997	SLU 4	-0.43	-0.33	40.44	-10.5982	0.0825	-0.1487
997	SLU 5	-0.43	-0.36	40.07	-10.5074	0.0816	-0.1493
997	SLU 6	-0.42	-0.31	40.99	-10.7452	0.0838	-0.1458
997	SLU 7	-0.43	-0.34	41	-10.7476	0.0838	-0.1497
997	SLU 8	-0.42	-0.31	40.62	-10.6528	0.083	-0.1439
997	SLU 9	-0.43	-0.34	40.63	-10.6553	0.0829	-0.1477
997	SLU 10	-0.47	-0.35	44.45	-11.6195	0.091	-0.1622
997	SLU 11	-0.46	-0.3	45.37	-11.8573	0.0933	-0.1587
997	SLU 12	-0.47	-0.33	45.38	-11.8597	0.0932	-0.1625
997	SLU 13	-0.47	-0.35	45.01	-11.769	0.0923	-0.1632
997	SLU 14	-0.46	-0.3	45.93	-12.0068	0.0945	-0.1597
997	SLU 15	-0.47	-0.33	45.95	-12.0092	0.0944	-0.1635
997	SLU 16	-0.46	-0.31	45.56	-11.9144	0.0937	-0.1578
997	SLU 17	-0.47	-0.34	45.57	-11.9168	0.0936	-0.1616
997	SLU 18	-0.47	-0.3	46.55	-12.1561	0.0957	-0.1618
997	SLU 19	-0.48	-0.33	46.56	-12.1585	0.0957	-0.1656
997	SLU 20	-0.47	-0.3	47.11	-12.3056	0.097	-0.1628
997	SLU 21	-0.48	-0.33	47.12	-12.308	0.0969	-0.1666
997	SLU 22	-0.45	-0.28	44.56	-11.6301	0.0913	-0.1561
997	SLU 23	-0.47	-0.33	44.58	-11.6342	0.0912	-0.1625
997	SLU 24	-0.46	-0.28	45.5	-11.8719	0.0934	-0.1591
997	SLU 25	-0.47	-0.31	45.51	-11.8744	0.0933	-0.1629
997	SLU 26	-0.47	-0.33	45.14	-11.7837	0.0924	-0.1635
997	SLU 27	-0.46	-0.29	46.06	-12.0214	0.0946	-0.1601
997	SLU 28	-0.47	-0.31	46.07	-12.0239	0.0946	-0.1639
997	SLU 29	-0.46	-0.29	45.69	-11.929	0.0938	-0.1581
997	SLU 30	-0.47	-0.32	45.7	-11.9315	0.0937	-0.162
997	SLU 31	-0.51	-0.33	49.52	-12.8957	0.1018	-0.1764
997	SLU 32	-0.5	-0.28	50.44	-13.1335	0.1041	-0.173
997	SLU 33	-0.51	-0.31	50.46	-13.136	0.104	-0.1768
997	SLU 34	-0.51	-0.33	50.09	-13.0452	0.1031	-0.1774
997	SLU 35	-0.5	-0.28	51.01	-13.283	0.1053	-0.1739
997	SLU 36	-0.51	-0.31	51.02	-13.2854	0.1052	-0.1778
997	SLU 37	-0.5	-0.29	50.63	-13.1906	0.1045	-0.1772
997	SLU 38	-0.51	-0.31	50.64	-13.1931	0.1044	-0.1758
997	SLU 39	-0.51	-0.28	51.62	-13.4323	0.1065	-0.176
997	SLU 40	-0.52	-0.31	51.63	-13.4348	0.1065	-0.1798
997	SLU 41	-0.51	-0.28	52.19	-13.5818	0.1078	-0.177
997	SLU 42	-0.52	-0.31	52.2	-13.5843	0.1077	-0.1808
997	SLU 43	-0.52	-0.4	49.59	-13.0224	0.101	-0.1796
997	SLU 44	-0.54	-0.45	49.61	-13.0265	0.1008	-0.186
997	SLU 45	-0.53	-0.4	50.53	-13.2643	0.103	-0.1825
997	SLU 46	-0.54	-0.43	50.54	-13.2667	0.103	-0.1864
997	SLU 47	-0.54	-0.45	50.17	-13.176	0.1021	-0.187
997	SLU 48	-0.53	-0.41	51.1	-13.4138	0.1043	-0.1835
997	SLU 49	-0.54	-0.43	51.11	-13.4162	0.1042	-0.1873
997	SLU 50	-0.52	-0.41	50.72	-13.3214	0.1034	-0.1816
997	SLU 51	-0.53	-0.44	50.73	-13.3239	0.1034	-0.1854
997	SLU 52	-0.58	-0.45	54.55	-14.2881	0.1115	-0.1999
997	SLU 53	-0.57	-0.4	55.48	-14.5258	0.1137	-0.1964
997	SLU 54	-0.58	-0.43	55.49	-14.5283	0.1136	-0.2002
997	SLU 55	-0.58	-0.45	55.12	-14.4376	0.1127	-0.2009
997	SLU 56	-0.57	-0.4	56.04	-14.6753	0.115	-0.1974
997	SLU 57	-0.58	-0.43	56.05	-14.6778	0.1149	-0.2012
997	SLU 58	-0.56	-0.41	55.67	-14.583	0.1141	-0.1955
997	SLU 59	-0.57	-0.44	55.68	-14.5854	0.114	-0.1993
997	SLU 60	-0.58	-0.4	56.66	-14.8247	0.1162	-0.1995
997	SLU 61	-0.59	-0.43	56.67	-14.8271	0.1161	-0.2033
997	SLU 62	-0.58	-0.4	57.22	-14.9741	0.1174	-0.2004
997	SLU 63	-0.59	-0.43	57.23	-14.9766	0.1174	-0.2043
997	SLU 64	-0.56	-0.38	54.67	-14.2986	0.1118	-0.1938
997	SLU 65	-0.58	-0.43	54.68	-14.3027	0.1116	-0.2002
997	SLU 66	-0.57	-0.38	55.61	-14.5405	0.1138	-0.1968
997	SLU 67	-0.58	-0.41	55.62	-14.543	0.1138	-0.2006
997	SLU 68	-0.58	-0.43	55.25	-14.4522	0.1129	-0.2012
997	SLU 69	-0.57	-0.38	56.17	-14.69	0.1151	-0.1978
997	SLU 70	-0.58	-0.41	56.18	-14.6925	0.115	-0.2016
997	SLU 71	-0.57	-0.39	55.8	-14.5976	0.1143	-0.1958
997	SLU 72	-0.58	-0.42	55.81	-14.6001	0.1142	-0.1997
997	SLU 73	-0.62	-0.43	59.63	-15.5643	0.1223	-0.2141
997	SLU 74	-0.61	-0.38	60.55	-15.8021	0.1245	-0.2107
997	SLU 75	-0.62	-0.41	60.56	-15.8045	0.1244	-0.2145
997	SLU 76	-0.62	-0.43	60.19	-15.7138	0.1235	-0.2151
997	SLU 77	-0.61	-0.38	61.12	-15.9516	0.1258	-0.2116
997	SLU 78	-0.62	-0.41	61.13	-15.954	0.1257	-0.2155
997	SLU 79	-0.61	-0.38	60.74	-15.8592	0.1249	-0.2097
997	SLU 80	-0.62	-0.41	60.75	-15.8617	0.1248	-0.2135
997	SLU 81	-0.62	-0.38	61.73	-16.1009	0.127	-0.2137
997	SLU 82	-0.63	-0.41	61.74	-16.1033	0.1269	-0.2175
997	SLU 83	-0.62	-0.38	62.3	-16.2504	0.1282	-0.2147
997	SLU 84	-0.63	-0.41	62.31	-16.2528	0.1282	-0.2185
997	SLE RA 1	-0.42	-0.3	40.94	-10.7185	0.0836	-0.146
997	SLE RA 2	-0.43	-0.33	40.95	-10.7212	0.0835	-0.1502
997	SLE RA 3	-0.43	-0.3	41.56	-10.8797	0.085	-0.1479



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
997	SLE RA 4	-0.43	-0.32	41.57	-10.8814	0.0849	-0.1505
997	SLE RA 5	-0.44	-0.33	41.32	-10.8209	0.0843	-0.1509
997	SLE RA 6	-0.43	-0.3	41.94	-10.9794	0.0858	-0.1486
997	SLE RA 7	-0.44	-0.32	41.95	-10.981	0.0858	-0.1511
997	SLE RA 8	-0.42	-0.3	41.69	-10.9178	0.0853	-0.1473
997	SLE RA 9	-0.43	-0.32	41.7	-10.9194	0.0852	-0.1499
997	SLE RA 10	-0.46	-0.33	44.24	-11.5622	0.0906	-0.1595
997	SLE RA 11	-0.45	-0.3	44.86	-11.7208	0.0921	-0.1572
997	SLE RA 12	-0.46	-0.31	44.87	-11.7224	0.092	-0.1597
997	SLE RA 13	-0.46	-0.33	44.62	-11.6619	0.0914	-0.1601
997	SLE RA 14	-0.46	-0.3	45.24	-11.8204	0.0929	-0.1579
997	SLE RA 15	-0.46	-0.32	45.24	-11.8221	0.0929	-0.1604
997	SLE RA 16	-0.45	-0.3	44.99	-11.7588	0.0924	-0.1566
997	SLE RA 17	-0.46	-0.32	44.99	-11.7605	0.0923	-0.1591
997	SLE RA 18	-0.46	-0.3	45.65	-11.92	0.0937	-0.1592
997	SLE RA 19	-0.47	-0.31	45.65	-11.9216	0.0937	-0.1618
997	SLE RA 20	-0.46	-0.3	46.02	-12.0196	0.0946	-0.1599
997	SLE RA 21	-0.47	-0.32	46.03	-12.0213	0.0945	-0.1624
997	SLE FR 1	-0.42	-0.3	40.94	-10.7185	0.0836	-0.146
997	SLE FR 2	-0.42	-0.3	40.94	-10.719	0.0836	-0.1468
997	SLE FR 3	-0.42	-0.3	41.09	-10.7583	0.0839	-0.1463
997	SLE FR 4	-0.43	-0.3	42.35	-11.0795	0.0866	-0.1508
997	SLE FR 5	-0.43	-0.3	42.5	-11.1188	0.087	-0.1502
997	SLE FR 6	-0.44	-0.3	43.29	-11.3192	0.0887	-0.1526
997	SLE QP 1	-0.42	-0.3	40.94	-10.7185	0.0836	-0.146
997	SLE QP 2	-0.43	-0.3	42.35	-11.0789	0.0866	-0.15
997	SLD 1	3.46	-0.12	48.62	-11.6613	0.1088	1.2151
997	SLD 2	3.09	-0.33	48.68	-11.8015	0.1095	1.0841
997	SLD 3	3.25	-1.07	49.48	-11.8472	0.1107	1.1406
997	SLD 4	2.88	-1.28	49.54	-11.9874	0.1114	1.0096
997	SLD 5	1.13	1.24	42.91	-10.9467	0.0903	0.396
997	SLD 6	0.88	1.1	42.96	-11.0389	0.0908	0.3099
997	SLD 7	0.42	-1.93	45.78	-11.5662	0.0966	0.1476
997	SLD 8	0.17	-2.07	45.82	-11.6583	0.0971	0.0615
997	SLD 9	-1.04	1.48	38.88	-10.4995	0.0762	-0.3614
997	SLD 10	-1.28	1.34	38.92	-10.5916	0.0767	-0.4475
997	SLD 11	-1.74	-1.69	41.74	-11.119	0.0825	-0.6098
997	SLD 12	-1.99	-1.83	41.78	-11.2111	0.083	-0.6959
997	SLD 13	-3.74	0.68	35.16	-10.1705	0.0619	-1.3095
997	SLD 14	-4.12	0.47	35.22	-10.3107	0.0626	-1.4405
997	SLD 15	-3.95	-0.27	36.02	-10.3563	0.0638	-1.384
997	SLD 16	-4.33	-0.48	36.08	-10.4965	0.0645	-1.515
997	SLV 1	8.68	0.08	57.04	-12.448	0.1385	3.0432
997	SLV 2	7.81	-0.41	57.18	-12.7745	0.1402	2.7381
997	SLV 3	8.19	-2.07	59	-12.8709	0.1428	2.8694
997	SLV 4	7.31	-2.56	59.15	-13.1974	0.1445	2.5643
997	SLV 5	3.21	3.16	43.75	-10.7917	0.0953	1.1244
997	SLV 6	2.64	2.85	43.84	-11.0026	0.0964	0.9273
997	SLV 7	1.55	-4	50.3	-12.2015	0.1098	0.545
997	SLV 8	0.99	-4.32	50.4	-12.4124	0.1109	0.3479
997	SLV 9	-1.85	3.73	34.3	-9.7454	0.0624	-0.6478
997	SLV 10	-2.42	3.41	34.4	-9.9563	0.0635	-0.8449
997	SLV 11	-3.51	-3.44	40.86	-11.1552	0.0769	-1.2272
997	SLV 12	-4.07	-3.76	40.95	-11.3661	0.078	-1.4243
997	SLV 13	-8.18	1.96	25.55	-8.9604	0.0287	-2.8642
997	SLV 14	-9.05	1.47	25.7	-9.2869	0.0304	-3.1693
997	SLV 15	-8.67	-0.19	27.52	-9.3834	0.0331	-3.038
997	SLV 16	-9.55	-0.68	27.66	-9.7099	0.0348	-3.3432
997	CRTFP Ux+	0	0	0	0	0	0
997	CRTFP Ux-	0	0	0	0	0	0
997	CRTFP Uy+	0	0	0	0	0	0
997	CRTFP Uy-	0	0	0	0	0	0
998	SLU 1	-0.39	-0.25	37.19	-8.7971	0.0636	-0.1343
998	SLU 2	-0.41	-0.3	37.21	-8.8017	0.0635	-0.1406
998	SLU 3	-0.4	-0.25	38.06	-8.9983	0.0653	-0.137
998	SLU 4	-0.41	-0.28	38.08	-9.0011	0.0652	-0.1408
998	SLU 5	-0.41	-0.3	37.74	-8.9268	0.0645	-0.1415
998	SLU 6	-0.4	-0.25	38.59	-9.1235	0.0663	-0.1378
998	SLU 7	-0.41	-0.28	38.61	-9.1263	0.0662	-0.1416
998	SLU 8	-0.39	-0.26	38.24	-9.0475	0.0656	-0.1359
998	SLU 9	-0.41	-0.28	38.26	-9.0502	0.0655	-0.1398
998	SLU 10	-0.45	-0.29	41.85	-9.8543	0.0718	-0.1539
998	SLU 11	-0.44	-0.24	42.71	-10.0509	0.0736	-0.1502
998	SLU 12	-0.45	-0.27	42.72	-10.0537	0.0735	-0.154
998	SLU 13	-0.45	-0.29	42.38	-9.9794	0.0728	-0.1547
998	SLU 14	-0.44	-0.24	43.23	-10.1761	0.0746	-0.151
998	SLU 15	-0.45	-0.27	43.25	-10.1788	0.0745	-0.1549
998	SLU 16	-0.43	-0.25	42.88	-10.1001	0.0739	-0.1492
998	SLU 17	-0.44	-0.28	42.9	-10.1028	0.0739	-0.153
998	SLU 18	-0.44	-0.24	43.82	-10.3008	0.0755	-0.1532
998	SLU 19	-0.46	-0.27	43.83	-10.3035	0.0754	-0.157
998	SLU 20	-0.45	-0.24	44.34	-10.426	0.0765	-0.154
998	SLU 21	-0.46	-0.27	44.36	-10.4287	0.0764	-0.1578
998	SLU 22	-0.43	-0.22	41.95	-9.862	0.072	-0.1478
998	SLU 23	-0.45	-0.27	41.97	-9.8665	0.0719	-0.1542
998	SLU 24	-0.44	-0.22	42.83	-10.0632	0.0736	-0.1505
998	SLU 25	-0.45	-0.25	42.85	-10.0659	0.0736	-0.1543
998	SLU 26	-0.45	-0.27	42.5	-9.9917	0.0729	-0.155
998	SLU 27	-0.44	-0.22	43.36	-10.1884	0.0746	-0.1514
998	SLU 28	-0.45	-0.25	43.37	-10.1911	0.0746	-0.1552



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
998	SLU 29	-0.43	-0.23	43.01	-10.1123	0.074	-0.1495
998	SLU 30	-0.44	-0.25	43.02	-10.1151	0.0739	-0.1533
998	SLU 31	-0.49	-0.26	46.62	-10.9191	0.0802	-0.1674
998	SLU 32	-0.48	-0.21	47.47	-11.1158	0.082	-0.1638
998	SLU 33	-0.49	-0.24	47.49	-11.1185	0.0819	-0.1676
998	SLU 34	-0.49	-0.26	47.14	-11.0443	0.0812	-0.1683
998	SLU 35	-0.48	-0.21	48	-11.241	0.083	-0.1646
998	SLU 36	-0.49	-0.24	48.02	-11.2437	0.0829	-0.1684
998	SLU 37	-0.47	-0.22	47.65	-11.1649	0.0823	-0.1627
998	SLU 38	-0.48	-0.25	47.66	-11.1676	0.0822	-0.1666
998	SLU 39	-0.48	-0.21	48.58	-11.3657	0.0839	-0.1667
998	SLU 40	-0.49	-0.24	48.6	-11.3684	0.0838	-0.1706
998	SLU 41	-0.49	-0.21	49.11	-11.4909	0.0849	-0.1676
998	SLU 42	-0.5	-0.24	49.13	-11.4936	0.0848	-0.1714
998	SLU 43	-0.49	-0.34	46.71	-11.0712	0.0798	-0.1699
998	SLU 44	-0.51	-0.38	46.73	-11.0757	0.0797	-0.1763
998	SLU 45	-0.5	-0.34	47.59	-11.2724	0.0815	-0.1726
998	SLU 46	-0.51	-0.36	47.6	-11.2751	0.0814	-0.1764
998	SLU 47	-0.51	-0.39	47.26	-11.2009	0.0807	-0.1771
998	SLU 48	-0.5	-0.34	48.11	-11.3976	0.0825	-0.1734
998	SLU 49	-0.51	-0.37	48.13	-11.4003	0.0824	-0.1773
998	SLU 50	-0.5	-0.34	47.76	-11.3215	0.0818	-0.1716
998	SLU 51	-0.51	-0.37	47.78	-11.3242	0.0818	-0.1754
998	SLU 52	-0.55	-0.38	51.37	-12.1283	0.088	-0.1895
998	SLU 53	-0.54	-0.33	52.23	-12.325	0.0898	-0.1858
998	SLU 54	-0.55	-0.36	52.24	-12.3277	0.0897	-0.1897
998	SLU 55	-0.55	-0.38	51.9	-12.2535	0.089	-0.1903
998	SLU 56	-0.54	-0.33	52.76	-12.4502	0.0908	-0.1867
998	SLU 57	-0.55	-0.36	52.77	-12.4529	0.0907	-0.1905
998	SLU 58	-0.54	-0.33	52.4	-12.3741	0.0901	-0.1848
998	SLU 59	-0.55	-0.36	52.42	-12.3768	0.0901	-0.1886
998	SLU 60	-0.55	-0.33	53.34	-12.5749	0.0917	-0.1888
998	SLU 61	-0.56	-0.35	53.35	-12.5776	0.0916	-0.1926
998	SLU 62	-0.55	-0.33	53.87	-12.7	0.0927	-0.1897
998	SLU 63	-0.56	-0.36	53.88	-12.7028	0.0926	-0.1935
998	SLU 64	-0.53	-0.31	51.47	-12.136	0.0882	-0.1835
998	SLU 65	-0.55	-0.35	51.5	-12.1406	0.0881	-0.1898
998	SLU 66	-0.54	-0.3	52.35	-12.3373	0.0899	-0.1862
998	SLU 67	-0.55	-0.33	52.37	-12.34	0.0898	-0.19
998	SLU 68	-0.55	-0.36	52.02	-12.2657	0.0891	-0.1907
998	SLU 69	-0.54	-0.31	52.88	-12.4624	0.0909	-0.187
998	SLU 70	-0.55	-0.34	52.9	-12.4652	0.0908	-0.1908
998	SLU 71	-0.54	-0.31	52.53	-12.3864	0.0902	-0.1851
998	SLU 72	-0.55	-0.34	52.54	-12.3891	0.0901	-0.1889
998	SLU 73	-0.59	-0.35	56.14	-13.1932	0.0964	-0.2031
998	SLU 74	-0.58	-0.3	57	-13.3898	0.0982	-0.1994
998	SLU 75	-0.59	-0.33	57.01	-13.3926	0.0981	-0.2032
998	SLU 76	-0.59	-0.35	56.67	-13.3183	0.0974	-0.2039
998	SLU 77	-0.58	-0.3	57.52	-13.515	0.0992	-0.2002
998	SLU 78	-0.59	-0.33	57.54	-13.5177	0.0991	-0.2041
998	SLU 79	-0.58	-0.3	57.17	-13.439	0.0985	-0.1984
998	SLU 80	-0.59	-0.33	57.19	-13.4417	0.0984	-0.2022
998	SLU 81	-0.59	-0.3	58.11	-13.6397	0.1001	-0.2024
998	SLU 82	-0.6	-0.32	58.12	-13.6425	0.1	-0.2062
998	SLU 83	-0.59	-0.3	58.63	-13.7649	0.1011	-0.2032
998	SLU 84	-0.6	-0.33	58.65	-13.7676	0.101	-0.207
998	SLE RA 1	-0.4	-0.24	38.55	-9.1014	0.066	-0.1381
998	SLE RA 2	-0.41	-0.27	38.56	-9.1044	0.0659	-0.1424
998	SLE RA 3	-0.41	-0.24	39.13	-9.2355	0.0671	-0.1399
998	SLE RA 4	-0.41	-0.26	39.14	-9.2373	0.0671	-0.1425
998	SLE RA 5	-0.41	-0.28	38.91	-9.1878	0.0666	-0.1429
998	SLE RA 6	-0.41	-0.24	39.49	-9.319	0.0678	-0.1405
998	SLE RA 7	-0.41	-0.26	39.49	-9.3208	0.0677	-0.143
998	SLE RA 8	-0.4	-0.25	39.25	-9.2683	0.0673	-0.1392
998	SLE RA 9	-0.41	-0.27	39.26	-9.2701	0.0673	-0.1418
998	SLE RA 10	-0.44	-0.27	41.66	-9.8061	0.0715	-0.1512
998	SLE RA 11	-0.43	-0.24	42.23	-9.9372	0.0727	-0.1488
998	SLE RA 12	-0.44	-0.25	42.24	-9.9391	0.0726	-0.1513
998	SLE RA 13	-0.44	-0.27	42.01	-9.8896	0.0721	-0.1518
998	SLE RA 14	-0.43	-0.24	42.58	-10.0207	0.0733	-0.1493
998	SLE RA 15	-0.44	-0.26	42.59	-10.0225	0.0733	-0.1519
998	SLE RA 16	-0.43	-0.24	42.35	-9.97	0.0729	-0.1481
998	SLE RA 17	-0.44	-0.26	42.36	-9.9718	0.0728	-0.1506
998	SLE RA 18	-0.44	-0.24	42.97	-10.1038	0.0739	-0.1508
998	SLE RA 19	-0.44	-0.25	42.98	-10.1057	0.0739	-0.1533
998	SLE RA 20	-0.44	-0.24	43.32	-10.1873	0.0746	-0.1513
998	SLE RA 21	-0.45	-0.26	43.33	-10.1891	0.0745	-0.1539
998	SLE FR 1	-0.4	-0.24	38.55	-9.1014	0.066	-0.1381
998	SLE FR 2	-0.4	-0.25	38.55	-9.102	0.066	-0.139
998	SLE FR 3	-0.4	-0.24	38.69	-9.1347	0.0663	-0.1384
998	SLE FR 4	-0.41	-0.25	39.88	-9.4027	0.0684	-0.1428
998	SLE FR 5	-0.41	-0.24	40.01	-9.4355	0.0687	-0.1421
998	SLE FR 6	-0.42	-0.24	40.76	-9.6026	0.07	-0.1444
998	SLE QP 1	-0.4	-0.24	38.55	-9.1014	0.066	-0.1381
998	SLE QP 2	-0.41	-0.24	39.87	-9.4021	0.0684	-0.1419
998	SLD 1	3.49	-0.02	45.52	-9.7254	0.0854	1.2253
998	SLD 2	3.11	-0.22	45.56	-9.8498	0.0864	1.0945
998	SLD 3	3.28	-0.96	46.33	-9.8754	0.0868	1.1506
998	SLD 4	2.9	-1.16	46.37	-9.9998	0.0878	1.0198
998	SLD 5	1.15	1.3	40.33	-9.2494	0.0712	0.4048



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
998	SLD 6	0.9	1.17	40.35	-9.3311	0.0719	0.3189
998	SLD 7	0.44	-1.86	43.03	-9.7494	0.0758	0.156
998	SLD 8	0.19	-1.99	43.06	-9.8311	0.0765	0.07
998	SLD 9	-1.02	1.51	36.69	-8.9731	0.0603	-0.3539
998	SLD 10	-1.26	1.38	36.71	-9.0548	0.061	-0.4398
998	SLD 11	-1.73	-1.65	39.39	-9.4731	0.0649	-0.6027
998	SLD 12	-1.97	-1.78	39.42	-9.5548	0.0655	-0.6887
998	SLD 13	-3.72	0.68	33.38	-8.8044	0.049	-1.3037
998	SLD 14	-4.1	0.48	33.42	-8.9288	0.05	-1.4345
998	SLD 15	-3.94	-0.27	34.19	-8.9544	0.0504	-1.3783
998	SLD 16	-4.31	-0.46	34.23	-9.0788	0.0514	-1.5091
998	SLV 1	8.71	0.24	53.11	-10.1635	0.1083	3.0562
998	SLV 2	7.84	-0.22	53.19	-10.4532	0.1106	2.7516
998	SLV 3	8.22	-1.9	54.96	-10.5048	0.1114	2.8821
998	SLV 4	7.34	-2.36	55.04	-10.7945	0.1137	2.5775
998	SLV 5	3.23	3.23	41.02	-9.0628	0.0751	1.1342
998	SLV 6	2.67	2.93	41.07	-9.2499	0.0766	0.9375
998	SLV 7	1.57	-3.9	47.2	-10.2005	0.0857	0.5539
998	SLV 8	1.01	-4.2	47.25	-10.3876	0.0872	0.3572
998	SLV 9	-1.83	3.72	32.5	-8.4166	0.0496	-0.641
998	SLV 10	-2.4	3.42	32.55	-8.6037	0.0511	-0.8377
998	SLV 11	-3.49	-3.41	38.68	-9.5543	0.0602	-1.2214
998	SLV 12	-4.05	-3.71	38.73	-9.7414	0.0616	-1.4181
998	SLV 13	-8.17	1.88	24.71	-8.0097	0.023	-2.8613
998	SLV 14	-9.04	1.42	24.79	-8.2994	0.0253	-3.1659
998	SLV 15	-8.66	-0.26	26.56	-8.351	0.0262	-3.0354
998	SLV 16	-9.54	-0.73	26.64	-8.6407	0.0285	-3.34
998	CRTFP Ux+	0	0	0	0	0	0
998	CRTFP Ux-	0	0	0	0	0	0
998	CRTFP Uy+	0	0	0	0	0	0
998	CRTFP Uy-	0	0	0	0	0	0
999	SLU 1	-0.37	-0.18	35.48	-7.7089	0.0436	-0.1262
999	SLU 2	-0.39	-0.23	35.5	-7.7139	0.0435	-0.1326
999	SLU 3	-0.38	-0.17	36.31	-7.8816	0.0447	-0.1287
999	SLU 4	-0.39	-0.2	36.33	-7.8846	0.0446	-0.1325
999	SLU 5	-0.39	-0.23	36	-7.8217	0.0442	-0.1333
999	SLU 6	-0.38	-0.18	36.81	-7.9893	0.0454	-0.1293
999	SLU 7	-0.39	-0.2	36.83	-7.9924	0.0453	-0.1332
999	SLU 8	-0.37	-0.18	36.48	-7.9244	0.0449	-0.1275
999	SLU 9	-0.38	-0.21	36.5	-7.9275	0.0449	-0.1314
999	SLU 10	-0.42	-0.21	39.92	-8.6229	0.049	-0.1451
999	SLU 11	-0.41	-0.16	40.73	-8.7905	0.0502	-0.1412
999	SLU 12	-0.42	-0.19	40.75	-8.7936	0.0502	-0.1451
999	SLU 13	-0.42	-0.21	40.42	-8.7307	0.0497	-0.1458
999	SLU 14	-0.41	-0.16	41.23	-8.8983	0.0509	-0.1419
999	SLU 15	-0.42	-0.19	41.25	-8.9013	0.0509	-0.1457
999	SLU 16	-0.41	-0.17	40.9	-8.8334	0.0505	-0.1401
999	SLU 17	-0.42	-0.2	40.92	-8.8364	0.0504	-0.1439
999	SLU 18	-0.42	-0.16	41.79	-9.0074	0.0515	-0.1441
999	SLU 19	-0.43	-0.19	41.81	-9.0105	0.0514	-0.148
999	SLU 20	-0.42	-0.16	42.29	-9.1152	0.0522	-0.1448
999	SLU 21	-0.43	-0.19	42.31	-9.1182	0.0521	-0.1486
999	SLU 22	-0.41	-0.14	40.02	-8.63	0.0491	-0.139
999	SLU 23	-0.42	-0.18	40.05	-8.6351	0.049	-0.1454
999	SLU 24	-0.41	-0.13	40.86	-8.8027	0.0502	-0.1415
999	SLU 25	-0.42	-0.16	40.87	-8.8057	0.0502	-0.1453
999	SLU 26	-0.43	-0.19	40.55	-8.7429	0.0497	-0.1461
999	SLU 27	-0.41	-0.14	41.36	-8.9105	0.0509	-0.1422
999	SLU 28	-0.43	-0.16	41.38	-8.9135	0.0508	-0.146
999	SLU 29	-0.41	-0.14	41.03	-8.8456	0.0505	-0.1404
999	SLU 30	-0.42	-0.17	41.04	-8.8486	0.0504	-0.1442
999	SLU 31	-0.46	-0.17	44.47	-9.5441	0.0545	-0.158
999	SLU 32	-0.45	-0.12	45.28	-9.7117	0.0557	-0.154
999	SLU 33	-0.46	-0.15	45.29	-9.7147	0.0557	-0.1579
999	SLU 34	-0.46	-0.17	44.97	-9.6518	0.0552	-0.1586
999	SLU 35	-0.45	-0.12	45.78	-9.8195	0.0564	-0.1547
999	SLU 36	-0.46	-0.15	45.8	-9.8225	0.0564	-0.1585
999	SLU 37	-0.45	-0.13	45.45	-9.7546	0.056	-0.1529
999	SLU 38	-0.46	-0.15	45.46	-9.7576	0.0559	-0.1567
999	SLU 39	-0.46	-0.12	46.34	-9.9286	0.057	-0.1569
999	SLU 40	-0.47	-0.15	46.35	-9.9316	0.0569	-0.1608
999	SLU 41	-0.46	-0.12	46.84	-10.0364	0.0577	-0.1576
999	SLU 42	-0.47	-0.15	46.86	-10.0394	0.0576	-0.1614
999	SLU 43	-0.47	-0.25	44.56	-9.7057	0.0548	-0.1597
999	SLU 44	-0.48	-0.29	44.59	-9.7108	0.0547	-0.1661
999	SLU 45	-0.47	-0.24	45.4	-9.8784	0.0559	-0.1621
999	SLU 46	-0.48	-0.27	45.41	-9.8814	0.0558	-0.166
999	SLU 47	-0.49	-0.29	45.09	-9.8186	0.0553	-0.1667
999	SLU 48	-0.47	-0.24	45.9	-9.9862	0.0566	-0.1628
999	SLU 49	-0.49	-0.27	45.91	-9.9892	0.0565	-0.1666
999	SLU 50	-0.47	-0.25	45.56	-9.9213	0.0561	-0.161
999	SLU 51	-0.48	-0.28	45.58	-9.9243	0.0561	-0.1648
999	SLU 52	-0.52	-0.28	49.01	-10.6198	0.0602	-0.1786
999	SLU 53	-0.51	-0.23	49.82	-10.7874	0.0614	-0.1747
999	SLU 54	-0.52	-0.26	49.83	-10.7904	0.0614	-0.1785
999	SLU 55	-0.52	-0.28	49.51	-10.7275	0.0609	-0.1793
999	SLU 56	-0.51	-0.23	50.32	-10.8952	0.0621	-0.1753
999	SLU 57	-0.52	-0.26	50.33	-10.8982	0.062	-0.1792
999	SLU 58	-0.51	-0.24	49.99	-10.8303	0.0617	-0.1735
999	SLU 59	-0.52	-0.26	50	-10.8333	0.0616	-0.1774



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
999	SLU 60	-0.52	-0.23	50.88	-11.0043	0.0627	-0.1776
999	SLU 61	-0.53	-0.25	50.89	-11.0073	0.0626	-0.1814
999	SLU 62	-0.52	-0.23	51.38	-11.1121	0.0633	-0.1782
999	SLU 63	-0.53	-0.26	51.39	-11.1151	0.0633	-0.1821
999	SLU 64	-0.5	-0.21	49.11	-10.6269	0.0603	-0.1725
999	SLU 65	-0.52	-0.25	49.13	-10.6319	0.0602	-0.1789
999	SLU 66	-0.51	-0.2	49.94	-10.7996	0.0614	-0.175
999	SLU 67	-0.52	-0.23	49.96	-10.8026	0.0613	-0.1788
999	SLU 68	-0.52	-0.25	49.63	-10.7397	0.0608	-0.1796
999	SLU 69	-0.51	-0.2	50.44	-10.9073	0.0621	-0.1756
999	SLU 70	-0.52	-0.23	50.46	-10.9103	0.062	-0.1795
999	SLU 71	-0.51	-0.21	50.11	-10.8424	0.0616	-0.1738
999	SLU 72	-0.52	-0.24	50.13	-10.8455	0.0616	-0.1777
999	SLU 73	-0.56	-0.24	53.55	-11.5409	0.0657	-0.1914
999	SLU 74	-0.55	-0.19	54.36	-11.7085	0.0669	-0.1875
999	SLU 75	-0.56	-0.21	54.38	-11.7116	0.0669	-0.1913
999	SLU 76	-0.56	-0.24	54.06	-11.6487	0.0664	-0.1921
999	SLU 77	-0.55	-0.19	54.87	-11.8163	0.0676	-0.1882
999	SLU 78	-0.56	-0.22	54.88	-11.8193	0.0676	-0.192
999	SLU 79	-0.54	-0.19	54.53	-11.7514	0.0672	-0.1864
999	SLU 80	-0.55	-0.22	54.55	-11.7544	0.0671	-0.1902
999	SLU 81	-0.56	-0.19	55.42	-11.9254	0.0682	-0.1904
999	SLU 82	-0.57	-0.21	55.44	-11.9285	0.0681	-0.1942
999	SLU 83	-0.56	-0.19	55.92	-12.0332	0.0688	-0.1911
999	SLU 84	-0.57	-0.21	55.94	-12.0362	0.0688	-0.1949
999	SLE RA 1	-0.38	-0.17	36.78	-7.9721	0.0452	-0.1299
999	SLE RA 2	-0.39	-0.2	36.79	-7.9754	0.0451	-0.1341
999	SLE RA 3	-0.38	-0.16	37.33	-8.0872	0.0459	-0.1315
999	SLE RA 4	-0.39	-0.18	37.34	-8.0892	0.0459	-0.1341
999	SLE RA 5	-0.39	-0.2	37.13	-8.0473	0.0455	-0.1346
999	SLE RA 6	-0.38	-0.17	37.67	-8.159	0.0464	-0.132
999	SLE RA 7	-0.39	-0.18	37.68	-8.1611	0.0463	-0.1345
999	SLE RA 8	-0.38	-0.17	37.44	-8.1158	0.0461	-0.1308
999	SLE RA 9	-0.39	-0.19	37.45	-8.1178	0.046	-0.1333
999	SLE RA 10	-0.42	-0.19	39.74	-8.5814	0.0488	-0.1425
999	SLE RA 11	-0.41	-0.15	40.28	-8.6932	0.0496	-0.1399
999	SLE RA 12	-0.42	-0.17	40.29	-8.6952	0.0496	-0.1424
999	SLE RA 13	-0.42	-0.19	40.07	-8.6533	0.0492	-0.1429
999	SLE RA 14	-0.41	-0.16	40.61	-8.765	0.05	-0.1403
999	SLE RA 15	-0.42	-0.17	40.62	-8.767	0.05	-0.1429
999	SLE RA 16	-0.41	-0.16	40.39	-8.7218	0.0497	-0.1391
999	SLE RA 17	-0.41	-0.18	40.4	-8.7238	0.0497	-0.1417
999	SLE RA 18	-0.41	-0.15	40.99	-8.8378	0.0504	-0.1418
999	SLE RA 19	-0.42	-0.17	41	-8.8398	0.0504	-0.1444
999	SLE RA 20	-0.41	-0.15	41.32	-8.9096	0.0509	-0.1422
999	SLE RA 21	-0.42	-0.17	41.33	-8.9116	0.0508	-0.1448
999	SLE FR 1	-0.38	-0.17	36.78	-7.9721	0.0452	-0.1299
999	SLE FR 2	-0.38	-0.17	36.78	-7.9728	0.0451	-0.1307
999	SLE FR 3	-0.38	-0.17	36.91	-8.0008	0.0453	-0.13
999	SLE FR 4	-0.39	-0.17	38.04	-8.2325	0.0467	-0.1343
999	SLE FR 5	-0.39	-0.16	38.17	-8.2605	0.0469	-0.1336
999	SLE FR 6	-0.4	-0.16	38.88	-8.4049	0.0478	-0.1358
999	SLE QP 1	-0.38	-0.17	36.78	-7.9721	0.0452	-0.1299
999	SLE QP 2	-0.39	-0.16	38.04	-8.2318	0.0467	-0.1334
999	SLD 1	3.51	0.12	43.21	-8.4331	0.0597	1.2354
999	SLD 2	3.14	-0.07	43.21	-8.5344	0.0607	1.1049
999	SLD 3	3.3	-0.82	43.99	-8.5602	0.0606	1.1607
999	SLD 4	2.93	-1.01	43.99	-8.6616	0.0616	1.0302
999	SLD 5	1.17	1.39	38.41	-8.0813	0.0491	0.4139
999	SLD 6	0.93	1.26	38.41	-8.1478	0.0497	0.3281
999	SLD 7	0.46	-1.76	41.01	-8.5051	0.0521	0.1647
999	SLD 8	0.22	-1.88	41.01	-8.5716	0.0528	0.0789
999	SLD 9	-0.99	1.56	35.07	-7.8919	0.0407	-0.3458
999	SLD 10	-1.24	1.43	35.07	-7.9585	0.0414	-0.4316
999	SLD 11	-1.7	-1.59	37.67	-8.3157	0.0437	-0.595
999	SLD 12	-1.95	-1.71	37.67	-8.3823	0.0444	-0.6808
999	SLD 13	-3.71	0.69	32.09	-7.802	0.0318	-1.2971
999	SLD 14	-4.08	0.5	32.09	-7.9034	0.0329	-1.4276
999	SLD 15	-3.92	-0.26	32.87	-7.9292	0.0327	-1.3718
999	SLD 16	-4.29	-0.45	32.87	-8.0305	0.0338	-1.5023
999	SLV 1	8.74	0.46	50.16	-8.7069	0.077	3.0686
999	SLV 2	7.87	0.03	50.16	-8.9428	0.0795	2.7647
999	SLV 3	8.25	-1.67	51.94	-8.9962	0.0791	2.8943
999	SLV 4	7.38	-2.11	51.94	-9.2322	0.0816	2.5903
999	SLV 5	3.26	3.34	38.97	-7.8947	0.0522	1.1442
999	SLV 6	2.69	3.06	38.97	-8.0471	0.0538	0.9479
999	SLV 7	1.6	-3.78	44.91	-8.8592	0.0592	0.563
999	SLV 8	1.04	-4.07	44.91	-9.0116	0.0608	0.3667
999	SLV 9	-1.81	3.74	31.16	-7.452	0.0326	-0.6336
999	SLV 10	-2.38	3.46	31.17	-7.6044	0.0342	-0.8299
999	SLV 11	-3.47	-3.39	37.1	-8.4165	0.0397	-1.2148
999	SLV 12	-4.03	-3.67	37.11	-8.5689	0.0413	-1.4111
999	SLV 13	-8.15	1.79	24.13	-7.2314	0.0119	-2.8572
999	SLV 14	-9.02	1.35	24.14	-7.4674	0.0143	-3.1612
999	SLV 15	-8.65	-0.35	25.92	-7.5207	0.014	-3.0316
999	SLV 16	-9.52	-0.79	25.92	-7.7567	0.0164	-3.3355
999	CRTFP Ux+	0	0	0	0	0	0
999	CRTFP Ux-	0	0	0	0	0	0
999	CRTFP Uy+	0	0	0	0	0	0
999	CRTFP Uy-	0	0	0	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
1000	SLU 1	-0.34	-0.09	34.43	-7.123	0.0225	-0.1176
1000	SLU 2	-0.36	-0.14	34.45	-7.1284	0.0224	-0.1241
1000	SLU 3	-0.35	-0.08	35.23	-7.2801	0.0231	-0.1198
1000	SLU 4	-0.36	-0.11	35.25	-7.2833	0.0231	-0.1237
1000	SLU 5	-0.36	-0.14	34.94	-7.2264	0.0228	-0.1246
1000	SLU 6	-0.35	-0.08	35.72	-7.3781	0.0235	-0.1203
1000	SLU 7	-0.36	-0.11	35.74	-7.3813	0.0234	-0.1242
1000	SLU 8	-0.35	-0.09	35.4	-7.3191	0.0232	-0.1186
1000	SLU 9	-0.36	-0.12	35.41	-7.3223	0.0232	-0.1225
1000	SLU 10	-0.4	-0.11	38.74	-7.9633	0.025	-0.1358
1000	SLU 11	-0.39	-0.06	39.52	-8.115	0.0257	-0.1316
1000	SLU 12	-0.4	-0.09	39.54	-8.1182	0.0257	-0.1355
1000	SLU 13	-0.4	-0.11	39.23	-8.0613	0.0254	-0.1363
1000	SLU 14	-0.39	-0.06	40.01	-8.213	0.0261	-0.1321
1000	SLU 15	-0.4	-0.09	40.03	-8.2163	0.026	-0.136
1000	SLU 16	-0.38	-0.07	39.69	-8.154	0.0258	-0.1304
1000	SLU 17	-0.39	-0.1	39.7	-8.1572	0.0258	-0.1342
1000	SLU 18	-0.39	-0.06	40.56	-8.3158	0.0262	-0.1344
1000	SLU 19	-0.4	-0.08	40.57	-8.319	0.0262	-0.1383
1000	SLU 20	-0.4	-0.06	41.04	-8.4138	0.0266	-0.1349
1000	SLU 21	-0.41	-0.09	41.06	-8.417	0.0265	-0.1388
1000	SLU 22	-0.38	-0.04	38.84	-7.9718	0.025	-0.1296
1000	SLU 23	-0.4	-0.08	38.87	-7.9772	0.025	-0.1361
1000	SLU 24	-0.39	-0.03	39.65	-8.1289	0.0256	-0.1319
1000	SLU 25	-0.4	-0.06	39.67	-8.1321	0.0256	-0.1358
1000	SLU 26	-0.4	-0.08	39.36	-8.0752	0.0253	-0.1366
1000	SLU 27	-0.39	-0.03	40.14	-8.2269	0.026	-0.1324
1000	SLU 28	-0.4	-0.06	40.15	-8.2301	0.0259	-0.1363
1000	SLU 29	-0.38	-0.04	39.82	-8.1679	0.0257	-0.1306
1000	SLU 30	-0.39	-0.07	39.83	-8.1711	0.0257	-0.1345
1000	SLU 31	-0.43	-0.06	43.16	-8.8121	0.0276	-0.1479
1000	SLU 32	-0.42	-0.01	43.94	-8.9638	0.0282	-0.1436
1000	SLU 33	-0.43	-0.03	43.96	-8.967	0.0282	-0.1475
1000	SLU 34	-0.43	-0.06	43.65	-8.9101	0.0279	-0.1484
1000	SLU 35	-0.42	-0.01	44.43	-9.0618	0.0286	-0.1441
1000	SLU 36	-0.43	-0.03	44.45	-9.0651	0.0285	-0.148
1000	SLU 37	-0.42	-0.02	44.11	-9.0028	0.0283	-0.1424
1000	SLU 38	-0.43	-0.04	44.12	-9.006	0.0283	-0.1463
1000	SLU 39	-0.43	0	44.98	-9.1646	0.0288	-0.1464
1000	SLU 40	-0.44	-0.03	44.99	-9.1678	0.0287	-0.1503
1000	SLU 41	-0.43	-0.01	45.46	-9.2626	0.0291	-0.1469
1000	SLU 42	-0.44	-0.03	45.48	-9.2658	0.0291	-0.1508
1000	SLU 43	-0.44	-0.14	43.24	-8.9689	0.0284	-0.1488
1000	SLU 44	-0.45	-0.18	43.27	-8.9743	0.0283	-0.1552
1000	SLU 45	-0.44	-0.13	44.05	-9.126	0.029	-0.151
1000	SLU 46	-0.45	-0.16	44.06	-9.1292	0.029	-0.1549
1000	SLU 47	-0.46	-0.18	43.75	-9.0723	0.0287	-0.1557
1000	SLU 48	-0.44	-0.13	44.53	-9.224	0.0294	-0.1515
1000	SLU 49	-0.46	-0.16	44.55	-9.2272	0.0293	-0.1554
1000	SLU 50	-0.44	-0.14	44.21	-9.1649	0.0291	-0.1498
1000	SLU 51	-0.45	-0.16	44.23	-9.1682	0.0291	-0.1537
1000	SLU 52	-0.49	-0.16	47.56	-9.8092	0.0309	-0.167
1000	SLU 53	-0.48	-0.11	48.34	-9.9609	0.0316	-0.1627
1000	SLU 54	-0.49	-0.13	48.35	-9.9641	0.0316	-0.1666
1000	SLU 55	-0.49	-0.16	48.04	-9.9072	0.0313	-0.1675
1000	SLU 56	-0.48	-0.11	48.82	-10.0589	0.032	-0.1632
1000	SLU 57	-0.49	-0.13	48.84	-10.0621	0.0319	-0.1671
1000	SLU 58	-0.47	-0.11	48.5	-9.9999	0.0317	-0.1615
1000	SLU 59	-0.48	-0.14	48.52	-10.0031	0.0317	-0.1654
1000	SLU 60	-0.48	-0.1	49.37	-10.1616	0.0321	-0.1655
1000	SLU 61	-0.5	-0.13	49.39	-10.1649	0.0321	-0.1694
1000	SLU 62	-0.49	-0.1	49.85	-10.2597	0.0325	-0.166
1000	SLU 63	-0.5	-0.13	49.87	-10.2629	0.0324	-0.1699
1000	SLU 64	-0.47	-0.08	47.66	-9.8177	0.0309	-0.1608
1000	SLU 65	-0.49	-0.13	47.69	-9.8231	0.0309	-0.1673
1000	SLU 66	-0.48	-0.08	48.46	-9.9748	0.0315	-0.163
1000	SLU 67	-0.49	-0.1	48.48	-9.978	0.0315	-0.1669
1000	SLU 68	-0.49	-0.13	48.17	-9.9211	0.0312	-0.1678
1000	SLU 69	-0.48	-0.08	48.95	-10.0728	0.0319	-0.1635
1000	SLU 70	-0.49	-0.1	48.97	-10.076	0.0318	-0.1674
1000	SLU 71	-0.47	-0.08	48.63	-10.0137	0.0316	-0.1618
1000	SLU 72	-0.49	-0.11	48.64	-10.017	0.0316	-0.1657
1000	SLU 73	-0.52	-0.1	51.98	-10.658	0.0335	-0.179
1000	SLU 74	-0.51	-0.05	52.76	-10.8097	0.0341	-0.1748
1000	SLU 75	-0.52	-0.08	52.77	-10.8129	0.0341	-0.1787
1000	SLU 76	-0.53	-0.11	52.46	-10.756	0.0338	-0.1795
1000	SLU 77	-0.51	-0.05	53.24	-10.9077	0.0345	-0.1753
1000	SLU 78	-0.53	-0.08	53.26	-10.9109	0.0344	-0.1792
1000	SLU 79	-0.51	-0.06	52.92	-10.8487	0.0342	-0.1735
1000	SLU 80	-0.52	-0.09	52.94	-10.8519	0.0342	-0.1774
1000	SLU 81	-0.52	-0.05	53.79	-11.0104	0.0346	-0.1776
1000	SLU 82	-0.53	-0.08	53.8	-11.0137	0.0346	-0.1815
1000	SLU 83	-0.52	-0.05	54.27	-11.1085	0.035	-0.1781
1000	SLU 84	-0.53	-0.08	54.29	-11.1117	0.0349	-0.182
1000	SLE RA 1	-0.35	-0.08	35.69	-7.3655	0.0232	-0.1211
1000	SLE RA 2	-0.37	-0.11	35.71	-7.3691	0.0232	-0.1254
1000	SLE RA 3	-0.36	-0.07	36.23	-7.4702	0.0236	-0.1225
1000	SLE RA 4	-0.37	-0.09	36.24	-7.4724	0.0236	-0.1251
1000	SLE RA 5	-0.37	-0.11	36.03	-7.4345	0.0234	-0.1257
1000	SLE RA 6	-0.36	-0.07	36.55	-7.5356	0.0239	-0.1229



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1000	SLE RA 7	-0.37	-0.09	36.56	-7.5377	0.0238	-0.1255
1000	SLE RA 8	-0.36	-0.08	36.34	-7.4962	0.0237	-0.1217
1000	SLE RA 9	-0.36	-0.09	36.35	-7.4984	0.0237	-0.1243
1000	SLE RA 10	-0.39	-0.09	38.57	-7.9257	0.0249	-0.1332
1000	SLE RA 11	-0.38	-0.06	39.09	-8.0269	0.0254	-0.1304
1000	SLE RA 12	-0.39	-0.07	39.1	-8.029	0.0253	-0.133
1000	SLE RA 13	-0.39	-0.09	38.89	-7.9911	0.0252	-0.1335
1000	SLE RA 14	-0.38	-0.06	39.41	-8.0922	0.0256	-0.1307
1000	SLE RA 15	-0.39	-0.07	39.42	-8.0944	0.0256	-0.1333
1000	SLE RA 16	-0.38	-0.06	39.2	-8.0528	0.0254	-0.1295
1000	SLE RA 17	-0.39	-0.08	39.21	-8.055	0.0254	-0.1321
1000	SLE RA 18	-0.39	-0.05	39.78	-8.1607	0.0257	-0.1322
1000	SLE RA 19	-0.39	-0.07	39.79	-8.1628	0.0257	-0.1348
1000	SLE RA 20	-0.39	-0.05	40.1	-8.226	0.026	-0.1326
1000	SLE RA 21	-0.4	-0.07	40.11	-8.2282	0.0259	-0.1352
1000	SLE FR 1	-0.35	-0.08	35.69	-7.3655	0.0232	-0.1211
1000	SLE FR 2	-0.36	-0.08	35.69	-7.3662	0.0232	-0.1219
1000	SLE FR 3	-0.36	-0.08	35.82	-7.3917	0.0233	-0.1212
1000	SLE FR 4	-0.37	-0.08	36.92	-7.6048	0.024	-0.1253
1000	SLE FR 5	-0.36	-0.07	37.04	-7.6302	0.0241	-0.1245
1000	SLE FR 6	-0.37	-0.06	37.73	-7.7631	0.0245	-0.1266
1000	SLE QP 1	-0.35	-0.08	35.69	-7.3655	0.0232	-0.1211
1000	SLE QP 2	-0.36	-0.07	36.91	-7.6041	0.024	-0.1244
1000	SLD 1	3.54	0.28	41.72	-7.7786	0.0335	1.2458
1000	SLD 2	3.17	0.1	41.69	-7.8546	0.0346	1.1155
1000	SLD 3	3.33	-0.67	42.49	-7.895	0.0342	1.1709
1000	SLD 4	2.96	-0.85	42.46	-7.971	0.0352	1.0407
1000	SLD 5	1.2	1.51	37.2	-7.4663	0.0256	0.4234
1000	SLD 6	0.95	1.39	37.18	-7.5163	0.0263	0.3378
1000	SLD 7	0.49	-1.66	39.76	-7.8543	0.0279	0.1739
1000	SLD 8	0.24	-1.77	39.73	-7.9043	0.0286	0.0884
1000	SLD 9	-0.97	1.64	34.09	-7.3038	0.0194	-0.3372
1000	SLD 10	-1.22	1.52	34.07	-7.3538	0.0201	-0.4228
1000	SLD 11	-1.68	-1.53	36.65	-7.6919	0.0217	-0.5866
1000	SLD 12	-1.93	-1.64	36.63	-7.7418	0.0223	-0.6722
1000	SLD 13	-3.69	0.71	31.37	-7.2371	0.0127	-1.2895
1000	SLD 14	-4.06	0.53	31.34	-7.3131	0.0137	-1.4197
1000	SLD 15	-3.9	-0.24	32.14	-7.3535	0.0134	-1.3643
1000	SLD 16	-4.27	-0.42	32.11	-7.4295	0.0144	-1.4946
1000	SLV 1	8.77	0.71	48.19	-8.0162	0.0464	3.0807
1000	SLV 2	7.91	0.29	48.11	-8.1932	0.0487	2.7774
1000	SLV 3	8.28	-1.44	49.94	-8.2811	0.048	2.9061
1000	SLV 4	7.41	-1.86	49.86	-8.4581	0.0503	2.6028
1000	SLV 5	3.28	3.49	37.65	-7.2952	0.0279	1.1543
1000	SLV 6	2.72	3.22	37.61	-7.4096	0.0294	0.9584
1000	SLV 7	1.62	-3.66	43.49	-8.1784	0.0332	0.5725
1000	SLV 8	1.06	-3.93	43.44	-8.2927	0.0347	0.3766
1000	SLV 9	-1.79	3.79	30.39	-6.9154	0.0133	-0.6254
1000	SLV 10	-2.35	3.52	30.34	-7.0297	0.0148	-0.8213
1000	SLV 11	-3.45	-3.36	36.22	-7.7986	0.0186	-1.2072
1000	SLV 12	-4.01	-3.63	36.18	-7.9129	0.0201	-1.4031
1000	SLV 13	-8.14	1.72	23.96	-6.75	-0.0024	-2.8516
1000	SLV 14	-9.01	1.3	23.89	-6.927	0	-3.155
1000	SLV 15	-8.64	-0.43	25.71	-7.015	-0.0008	-3.0262
1000	SLV 16	-9.5	-0.85	25.64	-7.192	0.0016	-3.3295
1000	CRTFP Ux+	0	0	0	0	0	0
1000	CRTFP Ux-	0	0	0	0	0	0
1000	CRTFP Uy+	0	0	0	0	0	0
1000	CRTFP Uy-	0	0	0	0	0	0
1001	SLU 1	-0.32	0.01	34.04	-7.0335	0.0022	-0.1085
1001	SLU 2	-0.34	-0.03	34.07	-7.039	0.0021	-0.115
1001	SLU 3	-0.33	0.02	34.83	-7.1879	0.0022	-0.1105
1001	SLU 4	-0.34	-0.01	34.85	-7.1912	0.0022	-0.1144
1001	SLU 5	-0.34	-0.03	34.55	-7.135	0.0021	-0.1154
1001	SLU 6	-0.33	0.02	35.31	-7.2839	0.0022	-0.1108
1001	SLU 7	-0.34	-0.01	35.33	-7.2871	0.0022	-0.1147
1001	SLU 8	-0.32	0.01	35	-7.2255	0.0022	-0.1091
1001	SLU 9	-0.33	-0.01	35.01	-7.2288	0.0022	-0.1131
1001	SLU 10	-0.37	0	38.32	-7.8684	0.0019	-0.1259
1001	SLU 11	-0.36	0.05	39.09	-8.0172	0.002	-0.1213
1001	SLU 12	-0.37	0.03	39.11	-8.0205	0.002	-0.1253
1001	SLU 13	-0.37	0	38.8	-7.9644	0.0019	-0.1262
1001	SLU 14	-0.36	0.05	39.57	-8.1132	0.002	-0.1217
1001	SLU 15	-0.37	0.03	39.59	-8.1165	0.002	-0.1256
1001	SLU 16	-0.35	0.04	39.25	-8.0549	0.002	-0.12
1001	SLU 17	-0.36	0.02	39.27	-8.0582	0.002	-0.1239
1001	SLU 18	-0.37	0.06	40.11	-8.2184	0.0018	-0.124
1001	SLU 19	-0.38	0.03	40.13	-8.2216	0.0018	-0.128
1001	SLU 20	-0.37	0.06	40.59	-8.3143	0.0019	-0.1243
1001	SLU 21	-0.38	0.03	40.61	-8.3176	0.0018	-0.1283
1001	SLU 22	-0.35	0.08	38.42	-7.88	0.0018	-0.1197
1001	SLU 23	-0.37	0.03	38.45	-7.8854	0.0018	-0.1262
1001	SLU 24	-0.36	0.09	39.22	-8.0343	0.0019	-0.1216
1001	SLU 25	-0.37	0.06	39.24	-8.0376	0.0018	-0.1256
1001	SLU 26	-0.37	0.03	38.93	-7.9814	0.0018	-0.1265
1001	SLU 27	-0.36	0.09	39.7	-8.1303	0.0019	-0.122
1001	SLU 28	-0.37	0.06	39.72	-8.1336	0.0019	-0.1259
1001	SLU 29	-0.35	0.08	39.38	-8.072	0.0019	-0.1203
1001	SLU 30	-0.37	0.05	39.4	-8.0752	0.0018	-0.1242
1001	SLU 31	-0.4	0.07	42.71	-8.7148	0.0015	-0.1371





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1001	SLU 32	-0.39	0.12	43.47	-8.8637	0.0016	-0.1325
1001	SLU 33	-0.4	0.09	43.49	-8.867	0.0016	-0.1364
1001	SLU 34	-0.4	0.07	43.19	-8.8108	0.0015	-0.1374
1001	SLU 35	-0.39	0.12	43.95	-8.9597	0.0017	-0.1328
1001	SLU 36	-0.4	0.09	43.97	-8.9629	0.0016	-0.1368
1001	SLU 37	-0.39	0.11	43.64	-8.9013	0.0016	-0.1312
1001	SLU 38	-0.4	0.09	43.65	-8.9046	0.0016	-0.1351
1001	SLU 39	-0.4	0.12	44.5	-9.0648	0.0015	-0.1352
1001	SLU 40	-0.41	0.1	44.52	-9.0681	0.0014	-0.1391
1001	SLU 41	-0.4	0.12	44.98	-9.1608	0.0015	-0.1355
1001	SLU 42	-0.41	0.1	45	-9.1641	0.0015	-0.1395
1001	SLU 43	-0.4	-0.01	42.74	-8.8534	0.0029	-0.1372
1001	SLU 44	-0.42	-0.05	42.77	-8.8589	0.0029	-0.1438
1001	SLU 45	-0.41	0	43.54	-9.0077	0.003	-0.1392
1001	SLU 46	-0.42	-0.03	43.56	-9.011	0.003	-0.1431
1001	SLU 47	-0.42	-0.05	43.25	-8.9549	0.0029	-0.1441
1001	SLU 48	-0.41	0	44.02	-9.1037	0.003	-0.1395
1001	SLU 49	-0.42	-0.03	44.04	-9.107	0.003	-0.1434
1001	SLU 50	-0.41	-0.01	43.7	-9.0454	0.003	-0.1379
1001	SLU 51	-0.42	-0.04	43.72	-9.0487	0.003	-0.1418
1001	SLU 52	-0.45	-0.02	47.03	-9.6882	0.0027	-0.1546
1001	SLU 53	-0.44	0.03	47.8	-9.8371	0.0028	-0.1501
1001	SLU 54	-0.45	0.01	47.81	-9.8404	0.0027	-0.154
1001	SLU 55	-0.46	-0.02	47.51	-9.7842	0.0027	-0.155
1001	SLU 56	-0.44	0.03	48.27	-9.9331	0.0028	-0.1504
1001	SLU 57	-0.45	0.01	48.29	-9.9364	0.0028	-0.1543
1001	SLU 58	-0.44	0.02	47.96	-9.8748	0.0028	-0.1487
1001	SLU 59	-0.45	0	47.97	-9.878	0.0027	-0.1527
1001	SLU 60	-0.45	0.04	48.82	-10.0382	0.0026	-0.1527
1001	SLU 61	-0.46	0.01	48.84	-10.0415	0.0026	-0.1567
1001	SLU 62	-0.45	0.04	49.3	-10.1342	0.0026	-0.1531
1001	SLU 63	-0.46	0.01	49.32	-10.1375	0.0026	-0.157
1001	SLU 64	-0.44	0.06	47.13	-9.6998	0.0026	-0.1484
1001	SLU 65	-0.46	0.01	47.16	-9.7053	0.0025	-0.1549
1001	SLU 66	-0.44	0.07	47.93	-9.8542	0.0026	-0.1504
1001	SLU 67	-0.45	0.04	47.94	-9.8574	0.0026	-0.1543
1001	SLU 68	-0.46	0.01	47.64	-9.8013	0.0026	-0.1553
1001	SLU 69	-0.44	0.07	48.41	-9.9502	0.0027	-0.1507
1001	SLU 70	-0.46	0.04	48.42	-9.9534	0.0026	-0.1546
1001	SLU 71	-0.44	0.06	48.09	-9.8918	0.0026	-0.149
1001	SLU 72	-0.45	0.03	48.11	-9.8951	0.0026	-0.153
1001	SLU 73	-0.49	0.05	51.41	-10.5347	0.0023	-0.1658
1001	SLU 74	-0.47	0.1	52.18	-10.6835	0.0024	-0.1612
1001	SLU 75	-0.49	0.07	52.2	-10.6868	0.0024	-0.1652
1001	SLU 76	-0.49	0.05	51.89	-10.6307	0.0023	-0.1661
1001	SLU 77	-0.48	0.1	52.66	-10.7795	0.0024	-0.1616
1001	SLU 78	-0.49	0.07	52.68	-10.7828	0.0024	-0.1655
1001	SLU 79	-0.47	0.09	52.34	-10.7212	0.0024	-0.1599
1001	SLU 80	-0.48	0.06	52.36	-10.7245	0.0024	-0.1638
1001	SLU 81	-0.48	0.1	53.21	-10.8846	0.0023	-0.1639
1001	SLU 82	-0.49	0.08	53.22	-10.8879	0.0022	-0.1678
1001	SLU 83	-0.48	0.1	53.69	-10.9806	0.0023	-0.1642
1001	SLU 84	-0.5	0.08	53.7	-10.9839	0.0022	-0.1682
1001	SLE RA 1	-0.33	0.03	35.29	-7.2754	0.0021	-0.1117
1001	SLE RA 2	-0.34	0	35.31	-7.279	0.002	-0.116
1001	SLE RA 3	-0.33	0.04	35.82	-7.3783	0.0021	-0.113
1001	SLE RA 4	-0.34	0.02	35.83	-7.3805	0.0021	-0.1156
1001	SLE RA 5	-0.34	0	35.63	-7.343	0.002	-0.1163
1001	SLE RA 6	-0.33	0.04	36.14	-7.4423	0.0021	-0.1132
1001	SLE RA 7	-0.34	0.02	36.15	-7.4444	0.0021	-0.1158
1001	SLE RA 8	-0.33	0.03	35.93	-7.4034	0.0021	-0.1121
1001	SLE RA 9	-0.34	0.01	35.94	-7.4056	0.0021	-0.1147
1001	SLE RA 10	-0.36	0.02	38.15	-7.8319	0.0019	-0.1233
1001	SLE RA 11	-0.35	0.06	38.66	-7.9312	0.0019	-0.1203
1001	SLE RA 12	-0.36	0.04	38.67	-7.9334	0.0019	-0.1229
1001	SLE RA 13	-0.36	0.02	38.47	-7.8959	0.0019	-0.1235
1001	SLE RA 14	-0.35	0.06	38.98	-7.9952	0.002	-0.1205
1001	SLE RA 15	-0.36	0.04	38.99	-7.9974	0.0019	-0.1231
1001	SLE RA 16	-0.35	0.05	38.76	-7.9563	0.0019	-0.1194
1001	SLE RA 17	-0.36	0.03	38.78	-7.9585	0.0019	-0.122
1001	SLE RA 18	-0.36	0.06	39.34	-8.0653	0.0018	-0.122
1001	SLE RA 19	-0.37	0.04	39.35	-8.0674	0.0018	-0.1247
1001	SLE RA 20	-0.36	0.06	39.66	-8.1293	0.0019	-0.1223
1001	SLE RA 21	-0.37	0.04	39.67	-8.1314	0.0018	-0.1249
1001	SLE FR 1	-0.33	0.03	35.29	-7.2754	0.0021	-0.1117
1001	SLE FR 2	-0.33	0.02	35.29	-7.2761	0.0021	-0.1126
1001	SLE FR 3	-0.33	0.03	35.42	-7.301	0.0021	-0.1118
1001	SLE FR 4	-0.34	0.03	36.51	-7.5131	0.002	-0.1157
1001	SLE FR 5	-0.34	0.04	36.63	-7.5379	0.002	-0.1149
1001	SLE FR 6	-0.34	0.04	37.32	-7.6703	0.002	-0.1169
1001	SLE QP 1	-0.33	0.03	35.29	-7.2754	0.0021	-0.1117
1001	SLE QP 2	-0.34	0.04	36.5	-7.5123	0.002	-0.1148
1001	SLD 1	3.57	0.44	41.04	-7.7301	0.0087	1.2562
1001	SLD 2	3.2	0.26	40.98	-7.7811	0.0096	1.1262
1001	SLD 3	3.36	-0.52	41.81	-7.8472	0.0095	1.1813
1001	SLD 4	2.99	-0.69	41.75	-7.8981	0.0105	1.0514
1001	SLD 5	1.23	1.64	36.71	-7.391	0.0025	0.4333
1001	SLD 6	0.98	1.53	36.67	-7.4245	0.0031	0.3479
1001	SLD 7	0.51	-1.55	39.28	-7.7813	0.0054	0.1837
1001	SLD 8	0.27	-1.66	39.24	-7.8148	0.006	0.0983



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1001	SLD 9	-0.95	1.74	33.77	-7.2099	-0.002	-0.3279
1001	SLD 10	-1.19	1.63	33.73	-7.2434	-0.0014	-0.4132
1001	SLD 11	-1.66	-1.45	36.34	-7.6002	0.0009	-0.5775
1001	SLD 12	-1.9	-1.56	36.3	-7.6337	0.0015	-0.6629
1001	SLD 13	-3.66	0.77	31.26	-7.1265	-0.0065	-1.2809
1001	SLD 14	-4.03	0.6	31.2	-7.1775	-0.0055	-1.4109
1001	SLD 15	-3.88	-0.19	32.03	-7.2436	-0.0056	-1.3558
1001	SLD 16	-4.25	-0.36	31.97	-7.2946	-0.0047	-1.4858
1001	SLV 1	8.81	0.93	47.14	-8.0255	0.0177	3.0922
1001	SLV 2	7.94	0.53	47	-8.1443	0.0198	2.7896
1001	SLV 3	8.31	-1.23	48.9	-8.292	0.0196	2.9175
1001	SLV 4	7.44	-1.64	48.76	-8.4107	0.0218	2.6149
1001	SLV 5	3.31	3.66	37.05	-7.2417	0.0033	1.1645
1001	SLV 6	2.75	3.4	36.96	-7.3184	0.0047	0.9691
1001	SLV 7	1.65	-3.56	42.92	-8.1298	0.0099	0.5823
1001	SLV 8	1.09	-3.82	42.83	-8.2065	0.0113	0.3869
1001	SLV 9	-1.77	3.89	30.18	-6.8182	-0.0073	-0.6165
1001	SLV 10	-2.33	3.63	30.09	-6.8949	-0.0059	-0.8119
1001	SLV 11	-3.43	-3.32	36.05	-7.7063	-0.0007	-1.1987
1001	SLV 12	-3.99	-3.59	35.96	-7.783	0.0007	-1.3941
1001	SLV 13	-8.12	1.71	24.25	-6.614	-0.0178	-2.8445
1001	SLV 14	-8.98	1.31	24.11	-6.7327	-0.0156	-3.1471
1001	SLV 15	-8.62	-0.45	26.01	-6.8804	-0.0158	-3.0191
1001	SLV 16	-9.48	-0.86	25.87	-6.9992	-0.0137	-3.3218
1001	CRTFP Ux+	0	0	0	0	0	0
1001	CRTFP Ux-	0	0	0	0	0	0
1001	CRTFP Uy+	0	0	0	0	0	0
1001	CRTFP Uy-	0	0	0	0	0	0
1002	SLU 1	-0.29	0.12	34.26	-7.4013	-0.0159	-0.0989
1002	SLU 2	-0.31	0.07	34.29	-7.4065	-0.0159	-0.1055
1002	SLU 3	-0.3	0.13	35.06	-7.5647	-0.0163	-0.1006
1002	SLU 4	-0.31	0.11	35.08	-7.5679	-0.0163	-0.1046
1002	SLU 5	-0.31	0.08	34.78	-7.5077	-0.0161	-0.1056
1002	SLU 6	-0.3	0.13	35.55	-7.6659	-0.0165	-0.1007
1002	SLU 7	-0.31	0.11	35.57	-7.669	-0.0166	-0.1047
1002	SLU 8	-0.29	0.12	35.23	-7.6036	-0.0164	-0.0992
1002	SLU 9	-0.3	0.1	35.25	-7.6067	-0.0164	-0.1031
1002	SLU 10	-0.34	0.12	38.59	-8.2933	-0.0186	-0.1154
1002	SLU 11	-0.33	0.17	39.37	-8.4515	-0.019	-0.1105
1002	SLU 12	-0.34	0.15	39.39	-8.4546	-0.019	-0.1145
1002	SLU 13	-0.34	0.12	39.08	-8.3944	-0.0189	-0.1156
1002	SLU 14	-0.33	0.18	39.85	-8.5526	-0.0193	-0.1107
1002	SLU 15	-0.34	0.15	39.87	-8.5558	-0.0193	-0.1146
1002	SLU 16	-0.32	0.17	39.53	-8.4903	-0.0191	-0.1091
1002	SLU 17	-0.33	0.14	39.55	-8.4935	-0.0191	-0.1131
1002	SLU 18	-0.33	0.18	40.41	-8.6681	-0.0198	-0.113
1002	SLU 19	-0.35	0.15	40.43	-8.6712	-0.0198	-0.117
1002	SLU 20	-0.33	0.18	40.89	-8.7692	-0.02	-0.1132
1002	SLU 21	-0.35	0.16	40.91	-8.7724	-0.02	-0.1172
1002	SLU 22	-0.32	0.2	38.7	-8.3094	-0.0188	-0.1091
1002	SLU 23	-0.34	0.16	38.73	-8.3147	-0.0188	-0.1158
1002	SLU 24	-0.33	0.21	39.5	-8.4729	-0.0192	-0.1108
1002	SLU 25	-0.34	0.19	39.52	-8.476	-0.0192	-0.1148
1002	SLU 26	-0.34	0.16	39.21	-8.4158	-0.019	-0.1159
1002	SLU 27	-0.33	0.22	39.99	-8.574	-0.0194	-0.111
1002	SLU 28	-0.34	0.19	40.01	-8.5772	-0.0195	-0.115
1002	SLU 29	-0.32	0.2	39.67	-8.5117	-0.0193	-0.1094
1002	SLU 30	-0.34	0.18	39.69	-8.5149	-0.0193	-0.1134
1002	SLU 31	-0.37	0.2	43.03	-9.2014	-0.0215	-0.1257
1002	SLU 32	-0.36	0.26	43.81	-9.3596	-0.0219	-0.1208
1002	SLU 33	-0.37	0.23	43.82	-9.3628	-0.0219	-0.1248
1002	SLU 34	-0.37	0.2	43.52	-9.3026	-0.0218	-0.1258
1002	SLU 35	-0.36	0.26	44.29	-9.4608	-0.0222	-0.1209
1002	SLU 36	-0.37	0.23	44.31	-9.4639	-0.0222	-0.1249
1002	SLU 37	-0.35	0.25	43.97	-9.3985	-0.022	-0.1194
1002	SLU 38	-0.37	0.22	43.99	-9.4016	-0.022	-0.1233
1002	SLU 39	-0.37	0.26	44.85	-9.5762	-0.0227	-0.1233
1002	SLU 40	-0.38	0.24	44.86	-9.5794	-0.0227	-0.1273
1002	SLU 41	-0.37	0.26	45.33	-9.6774	-0.0229	-0.1235
1002	SLU 42	-0.38	0.24	45.35	-9.6805	-0.0229	-0.1275
1002	SLU 43	-0.37	0.12	43.02	-9.3103	-0.0196	-0.125
1002	SLU 44	-0.39	0.08	43.05	-9.3155	-0.0196	-0.1316
1002	SLU 45	-0.37	0.14	43.82	-9.4737	-0.02	-0.1267
1002	SLU 46	-0.39	0.11	43.84	-9.4769	-0.02	-0.1307
1002	SLU 47	-0.39	0.08	43.53	-9.4167	-0.0199	-0.1318
1002	SLU 48	-0.38	0.14	44.3	-9.5749	-0.0203	-0.1269
1002	SLU 49	-0.39	0.11	44.32	-9.578	-0.0203	-0.1308
1002	SLU 50	-0.37	0.13	43.98	-9.5126	-0.0201	-0.1253
1002	SLU 51	-0.38	0.1	44	-9.5157	-0.0202	-0.1293
1002	SLU 52	-0.42	0.13	47.35	-10.2023	-0.0224	-0.1416
1002	SLU 53	-0.4	0.18	48.12	-10.3605	-0.0228	-0.1366
1002	SLU 54	-0.42	0.16	48.14	-10.3636	-0.0228	-0.1406
1002	SLU 55	-0.42	0.13	47.83	-10.3034	-0.0226	-0.1417
1002	SLU 56	-0.4	0.18	48.61	-10.4616	-0.023	-0.1368
1002	SLU 57	-0.42	0.16	48.63	-10.4648	-0.023	-0.1408
1002	SLU 58	-0.4	0.17	48.29	-10.3993	-0.0229	-0.1352
1002	SLU 59	-0.41	0.15	48.31	-10.4025	-0.0229	-0.1392
1002	SLU 60	-0.41	0.19	49.16	-10.5771	-0.0235	-0.1392
1002	SLU 61	-0.42	0.16	49.18	-10.5802	-0.0235	-0.1432
1002	SLU 62	-0.41	0.19	49.65	-10.6782	-0.0238	-0.1393



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1002	SLU 63	-0.42	0.16	49.67	-10.6814	-0.0238	-0.1433
1002	SLU 64	-0.4	0.21	47.46	-10.2185	-0.0225	-0.1353
1002	SLU 65	-0.42	0.16	47.49	-10.2237	-0.0225	-0.1419
1002	SLU 66	-0.41	0.22	48.26	-10.3819	-0.0229	-0.137
1002	SLU 67	-0.42	0.19	48.28	-10.385	-0.023	-0.141
1002	SLU 68	-0.42	0.17	47.97	-10.3248	-0.0228	-0.142
1002	SLU 69	-0.41	0.22	48.74	-10.483	-0.0232	-0.1371
1002	SLU 70	-0.42	0.2	48.76	-10.4862	-0.0232	-0.1411
1002	SLU 71	-0.4	0.21	48.42	-10.4207	-0.0231	-0.1356
1002	SLU 72	-0.41	0.19	48.44	-10.4239	-0.0231	-0.1395
1002	SLU 73	-0.45	0.21	51.79	-11.1105	-0.0253	-0.1518
1002	SLU 74	-0.43	0.26	52.56	-11.2687	-0.0257	-0.1469
1002	SLU 75	-0.45	0.24	52.58	-11.2718	-0.0257	-0.1509
1002	SLU 76	-0.45	0.21	52.27	-11.2116	-0.0255	-0.152
1002	SLU 77	-0.44	0.27	53.05	-11.3698	-0.0259	-0.1471
1002	SLU 78	-0.45	0.24	53.06	-11.3729	-0.0259	-0.151
1002	SLU 79	-0.43	0.25	52.73	-11.3075	-0.0258	-0.1455
1002	SLU 80	-0.44	0.23	52.74	-11.3106	-0.0258	-0.1495
1002	SLU 81	-0.44	0.27	53.6	-11.4853	-0.0264	-0.1495
1002	SLU 82	-0.45	0.24	53.62	-11.4884	-0.0264	-0.1534
1002	SLU 83	-0.44	0.27	54.09	-11.5864	-0.0267	-0.1496
1002	SLU 84	-0.45	0.25	54.1	-11.5895	-0.0267	-0.1536
1002	SLE RA 1	-0.3	0.14	35.53	-7.6608	-0.0167	-0.1018
1002	SLE RA 2	-0.31	0.11	35.55	-7.6642	-0.0167	-0.1062
1002	SLE RA 3	-0.3	0.15	36.06	-7.7697	-0.017	-0.1029
1002	SLE RA 4	-0.31	0.13	36.08	-7.7718	-0.017	-0.1056
1002	SLE RA 5	-0.31	0.11	35.87	-7.7317	-0.0169	-0.1063
1002	SLE RA 6	-0.31	0.15	36.39	-7.8371	-0.0171	-0.103
1002	SLE RA 7	-0.31	0.13	36.4	-7.8392	-0.0172	-0.1057
1002	SLE RA 8	-0.3	0.14	36.17	-7.7956	-0.017	-0.102
1002	SLE RA 9	-0.31	0.13	36.19	-7.7977	-0.017	-0.1046
1002	SLE RA 10	-0.33	0.14	38.42	-8.2554	-0.0185	-0.1128
1002	SLE RA 11	-0.32	0.18	38.93	-8.3609	-0.0188	-0.1096
1002	SLE RA 12	-0.33	0.16	38.95	-8.363	-0.0188	-0.1122
1002	SLE RA 13	-0.33	0.14	38.74	-8.3228	-0.0187	-0.1129
1002	SLE RA 14	-0.32	0.18	39.26	-8.4283	-0.019	-0.1097
1002	SLE RA 15	-0.33	0.16	39.27	-8.4304	-0.019	-0.1123
1002	SLE RA 16	-0.32	0.17	39.04	-8.3868	-0.0189	-0.1086
1002	SLE RA 17	-0.33	0.16	39.05	-8.3889	-0.0189	-0.1113
1002	SLE RA 18	-0.33	0.18	39.63	-8.5053	-0.0193	-0.1113
1002	SLE RA 19	-0.34	0.17	39.64	-8.5074	-0.0193	-0.1139
1002	SLE RA 20	-0.33	0.18	39.95	-8.5727	-0.0195	-0.1114
1002	SLE RA 21	-0.34	0.17	39.96	-8.5748	-0.0195	-0.114
1002	SLE FR 1	-0.3	0.14	35.53	-7.6608	-0.0167	-0.1018
1002	SLE FR 2	-0.3	0.14	35.53	-7.6615	-0.0167	-0.1027
1002	SLE FR 3	-0.3	0.14	35.66	-7.6877	-0.0168	-0.1018
1002	SLE FR 4	-0.31	0.15	36.76	-7.9148	-0.0175	-0.1055
1002	SLE FR 5	-0.31	0.15	36.89	-7.9411	-0.0175	-0.1047
1002	SLE FR 6	-0.32	0.16	37.58	-8.083	-0.018	-0.1065
1002	SLE QP 1	-0.3	0.14	35.53	-7.6608	-0.0167	-0.1018
1002	SLE QP 2	-0.31	0.15	36.76	-7.9141	-0.0175	-0.1046
1002	SLD 1	3.6	0.57	41.1	-8.2293	-0.0119	1.2666
1002	SLD 2	3.23	0.4	41.01	-8.2568	-0.0111	1.137
1002	SLD 3	3.39	-0.4	41.89	-8.3575	-0.0131	1.1917
1002	SLD 4	3.02	-0.57	41.8	-8.3849	-0.0123	1.0621
1002	SLD 5	1.25	1.78	36.87	-7.8094	-0.0141	0.4435
1002	SLD 6	1.01	1.67	36.81	-7.8275	-0.0136	0.3583
1002	SLD 7	0.54	-1.46	39.52	-8.2366	-0.0181	0.1938
1002	SLD 8	0.3	-1.57	39.46	-8.2546	-0.0176	0.1086
1002	SLD 9	-0.92	1.87	34.06	-7.5736	-0.0173	-0.3179
1002	SLD 10	-1.16	1.76	34	-7.5917	-0.0168	-0.4031
1002	SLD 11	-1.63	-1.36	36.7	-8.0008	-0.0214	-0.5676
1002	SLD 12	-1.87	-1.47	36.64	-8.0188	-0.0208	-0.6527
1002	SLD 13	-3.64	0.88	31.72	-7.4433	-0.0227	-1.2714
1002	SLD 14	-4.01	0.71	31.63	-7.4708	-0.0218	-1.401
1002	SLD 15	-3.85	-0.09	32.51	-7.5714	-0.0239	-1.3462
1002	SLD 16	-4.22	-0.26	32.42	-7.5989	-0.0231	-1.4759
1002	SLV 1	8.84	1.08	46.93	-8.6559	-0.0044	3.1029
1002	SLV 2	7.98	0.69	46.72	-8.7198	-0.0025	2.8011
1002	SLV 3	8.34	-1.11	48.73	-8.9474	-0.0072	2.9282
1002	SLV 4	7.48	-1.5	48.53	-9.0113	-0.0053	2.6264
1002	SLV 5	3.34	3.83	37.11	-7.6835	-0.0097	1.1748
1002	SLV 6	2.78	3.58	36.97	-7.7248	-0.0085	0.9798
1002	SLV 7	1.68	-3.49	43.13	-8.6551	-0.0189	0.5925
1002	SLV 8	1.12	-3.74	42.99	-8.6964	-0.0176	0.3976
1002	SLV 9	-1.74	4.05	30.52	-7.1318	-0.0173	-0.6068
1002	SLV 10	-2.3	3.8	30.39	-7.1731	-0.0161	-0.8018
1002	SLV 11	-3.4	-3.27	36.55	-8.1034	-0.0265	-1.1891
1002	SLV 12	-3.96	-3.52	36.41	-8.1447	-0.0252	-1.384
1002	SLV 13	-8.1	1.81	24.99	-6.8169	-0.0297	-2.8357
1002	SLV 14	-8.96	1.42	24.78	-6.8808	-0.0278	-3.1375
1002	SLV 15	-8.59	-0.39	26.8	-7.1084	-0.0324	-3.0104
1002	SLV 16	-9.46	-0.78	26.59	-7.1723	-0.0305	-3.3122
1002	CRTFP Ux+	0	0	0	0	0	0
1002	CRTFP Ux-	0	0	0	0	0	0
1002	CRTFP Uy+	0	0	0	0	0	0
1002	CRTFP Uy-	0	0	0	0	0	0
1003	SLU 1	-0.26	0.23	35	-8.1546	-0.0297	-0.0888
1003	SLU 2	-0.28	0.19	35.03	-8.1594	-0.0297	-0.0955
1003	SLU 3	-0.27	0.25	35.82	-8.3372	-0.0305	-0.0902



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
1003	SLU 4	-0.28	0.22	35.84	-8.34	-0.0305	-0.0942
1003	SLU 5	-0.28	0.19	35.52	-8.2718	-0.0302	-0.0955
1003	SLU 6	-0.27	0.25	36.32	-8.4496	-0.031	-0.0902
1003	SLU 7	-0.28	0.23	36.33	-8.4525	-0.031	-0.0942
1003	SLU 8	-0.26	0.24	35.99	-8.3794	-0.0307	-0.0887
1003	SLU 9	-0.28	0.21	36.01	-8.3823	-0.0307	-0.0928
1003	SLU 10	-0.31	0.24	39.45	-9.1564	-0.0344	-0.1044
1003	SLU 11	-0.29	0.3	40.24	-9.3342	-0.0352	-0.0992
1003	SLU 12	-0.31	0.28	40.26	-9.3371	-0.0352	-0.1032
1003	SLU 13	-0.31	0.25	39.95	-9.2688	-0.0349	-0.1044
1003	SLU 14	-0.29	0.3	40.74	-9.4466	-0.0357	-0.0991
1003	SLU 15	-0.31	0.28	40.76	-9.4495	-0.0357	-0.1032
1003	SLU 16	-0.29	0.29	40.41	-9.3764	-0.0354	-0.0977
1003	SLU 17	-0.3	0.27	40.43	-9.3793	-0.0354	-0.1017
1003	SLU 18	-0.3	0.31	41.31	-9.5789	-0.0364	-0.1015
1003	SLU 19	-0.31	0.28	41.33	-9.5818	-0.0364	-0.1056
1003	SLU 20	-0.3	0.31	41.81	-9.6913	-0.0369	-0.1015
1003	SLU 21	-0.31	0.29	41.83	-9.6942	-0.0369	-0.1056
1003	SLU 22	-0.29	0.33	39.56	-9.1782	-0.0346	-0.0981
1003	SLU 23	-0.31	0.29	39.59	-9.1829	-0.0346	-0.1048
1003	SLU 24	-0.3	0.34	40.38	-9.3607	-0.0354	-0.0996
1003	SLU 25	-0.31	0.32	40.4	-9.3636	-0.0354	-0.1036
1003	SLU 26	-0.31	0.29	40.09	-9.2954	-0.0351	-0.1048
1003	SLU 27	-0.3	0.35	40.88	-9.4731	-0.0358	-0.0995
1003	SLU 28	-0.31	0.32	40.9	-9.476	-0.0358	-0.1036
1003	SLU 29	-0.29	0.33	40.55	-9.403	-0.0356	-0.0981
1003	SLU 30	-0.3	0.31	40.57	-9.4058	-0.0356	-0.1021
1003	SLU 31	-0.34	0.34	44.01	-10.18	-0.0392	-0.1138
1003	SLU 32	-0.32	0.4	44.8	-10.3577	-0.04	-0.1085
1003	SLU 33	-0.33	0.37	44.82	-10.3606	-0.04	-0.1125
1003	SLU 34	-0.34	0.34	44.51	-10.2924	-0.0397	-0.1137
1003	SLU 35	-0.32	0.4	45.3	-10.4702	-0.0405	-0.1085
1003	SLU 36	-0.33	0.38	45.32	-10.473	-0.0405	-0.1125
1003	SLU 37	-0.32	0.39	44.97	-10.4	-0.0402	-0.107
1003	SLU 38	-0.33	0.36	44.99	-10.4029	-0.0402	-0.111
1003	SLU 39	-0.33	0.4	45.88	-10.6025	-0.0412	-0.1109
1003	SLU 40	-0.34	0.38	45.9	-10.6054	-0.0412	-0.1149
1003	SLU 41	-0.33	0.41	46.37	-10.7149	-0.0417	-0.1109
1003	SLU 42	-0.34	0.38	46.39	-10.7178	-0.0417	-0.1149
1003	SLU 43	-0.33	0.26	43.93	-10.2501	-0.037	-0.1122
1003	SLU 44	-0.35	0.22	43.96	-10.2549	-0.037	-0.1189
1003	SLU 45	-0.34	0.28	44.75	-10.4326	-0.0378	-0.1136
1003	SLU 46	-0.35	0.26	44.77	-10.4355	-0.0378	-0.1177
1003	SLU 47	-0.35	0.23	44.46	-10.3673	-0.0375	-0.1189
1003	SLU 48	-0.34	0.29	45.25	-10.545	-0.0383	-0.1136
1003	SLU 49	-0.35	0.26	45.27	-10.5479	-0.0383	-0.1177
1003	SLU 50	-0.33	0.27	44.92	-10.4749	-0.038	-0.1122
1003	SLU 51	-0.34	0.25	44.94	-10.4777	-0.038	-0.1162
1003	SLU 52	-0.38	0.28	48.38	-11.2519	-0.0417	-0.1279
1003	SLU 53	-0.36	0.34	49.18	-11.4297	-0.0424	-0.1226
1003	SLU 54	-0.38	0.31	49.19	-11.4325	-0.0424	-0.1266
1003	SLU 55	-0.38	0.28	48.88	-11.3643	-0.0421	-0.1278
1003	SLU 56	-0.36	0.34	49.67	-11.5421	-0.0429	-0.1226
1003	SLU 57	-0.38	0.31	49.69	-11.5449	-0.0429	-0.1266
1003	SLU 58	-0.36	0.33	49.34	-11.4719	-0.0426	-0.1211
1003	SLU 59	-0.37	0.3	49.36	-11.4748	-0.0426	-0.1251
1003	SLU 60	-0.37	0.34	50.25	-11.6744	-0.0436	-0.125
1003	SLU 61	-0.38	0.32	50.27	-11.6773	-0.0436	-0.129
1003	SLU 62	-0.37	0.35	50.74	-11.7868	-0.0441	-0.125
1003	SLU 63	-0.38	0.32	50.76	-11.7897	-0.0441	-0.129
1003	SLU 64	-0.36	0.36	48.5	-11.2736	-0.0418	-0.1215
1003	SLU 65	-0.38	0.32	48.53	-11.2784	-0.0418	-0.1282
1003	SLU 66	-0.37	0.38	49.32	-11.4562	-0.0426	-0.123
1003	SLU 67	-0.38	0.35	49.34	-11.459	-0.0426	-0.127
1003	SLU 68	-0.38	0.32	49.02	-11.3908	-0.0423	-0.1282
1003	SLU 69	-0.37	0.38	49.81	-11.5686	-0.0431	-0.123
1003	SLU 70	-0.38	0.36	49.83	-11.5715	-0.0431	-0.127
1003	SLU 71	-0.36	0.37	49.49	-11.4984	-0.0428	-0.1215
1003	SLU 72	-0.37	0.35	49.51	-11.5013	-0.0428	-0.1255
1003	SLU 73	-0.41	0.37	52.95	-12.2754	-0.0465	-0.1372
1003	SLU 74	-0.39	0.43	53.74	-12.4532	-0.0473	-0.1319
1003	SLU 75	-0.4	0.41	53.76	-12.4561	-0.0473	-0.136
1003	SLU 76	-0.41	0.38	53.44	-12.3878	-0.047	-0.1372
1003	SLU 77	-0.39	0.44	54.23	-12.5656	-0.0478	-0.1319
1003	SLU 78	-0.4	0.41	54.25	-12.5685	-0.0478	-0.1359
1003	SLU 79	-0.39	0.42	53.91	-12.4954	-0.0475	-0.1304
1003	SLU 80	-0.4	0.4	53.93	-12.4983	-0.0475	-0.1345
1003	SLU 81	-0.4	0.44	54.81	-12.6979	-0.0485	-0.1343
1003	SLU 82	-0.41	0.41	54.83	-12.7008	-0.0485	-0.1383
1003	SLU 83	-0.4	0.44	55.31	-12.8103	-0.049	-0.1343
1003	SLU 84	-0.41	0.42	55.33	-12.8132	-0.049	-0.1383
1003	SLE RA 1	-0.27	0.26	36.3	-8.447	-0.0311	-0.0914
1003	SLE RA 2	-0.28	0.23	36.32	-8.4502	-0.0311	-0.0959
1003	SLE RA 3	-0.27	0.27	36.85	-8.5688	-0.0316	-0.0924
1003	SLE RA 4	-0.28	0.25	36.86	-8.5707	-0.0316	-0.0951
1003	SLE RA 5	-0.28	0.23	36.65	-8.5252	-0.0315	-0.0959
1003	SLE RA 6	-0.27	0.27	37.18	-8.6437	-0.032	-0.0924
1003	SLE RA 7	-0.28	0.25	37.19	-8.6456	-0.032	-0.0951
1003	SLE RA 8	-0.27	0.26	36.96	-8.5969	-0.0318	-0.0914
1003	SLE RA 9	-0.28	0.25	36.97	-8.5988	-0.0318	-0.0941



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1003	SLE RA 10	-0.3	0.27	39.27	-9.1149	-0.0342	-0.1019
1003	SLE RA 11	-0.29	0.3	39.8	-9.2334	-0.0347	-0.0984
1003	SLE RA 12	-0.3	0.29	39.81	-9.2354	-0.0347	-0.101
1003	SLE RA 13	-0.3	0.27	39.6	-9.1899	-0.0345	-0.1019
1003	SLE RA 14	-0.29	0.31	40.13	-9.3084	-0.0351	-0.0984
1003	SLE RA 15	-0.3	0.29	40.14	-9.3103	-0.0351	-0.101
1003	SLE RA 16	-0.29	0.3	39.91	-9.2616	-0.0349	-0.0974
1003	SLE RA 17	-0.3	0.28	39.92	-9.2635	-0.0349	-0.1001
1003	SLE RA 18	-0.3	0.31	40.51	-9.3966	-0.0355	-0.1
1003	SLE RA 19	-0.3	0.29	40.52	-9.3985	-0.0356	-0.1026
1003	SLE RA 20	-0.3	0.31	40.84	-9.4715	-0.0359	-0.0999
1003	SLE RA 21	-0.3	0.29	40.85	-9.4735	-0.0359	-0.1026
1003	SLE FR 1	-0.27	0.26	36.3	-8.447	-0.0311	-0.0914
1003	SLE FR 2	-0.27	0.25	36.31	-8.4477	-0.0311	-0.0923
1003	SLE FR 3	-0.27	0.26	36.43	-8.477	-0.0313	-0.0914
1003	SLE FR 4	-0.28	0.27	37.57	-8.7326	-0.0325	-0.0949
1003	SLE FR 5	-0.28	0.27	37.7	-8.7619	-0.0326	-0.094
1003	SLE FR 6	-0.28	0.28	38.41	-8.9218	-0.0333	-0.0957
1003	SLE QP 1	-0.27	0.26	36.3	-8.447	-0.0311	-0.0914
1003	SLE QP 2	-0.28	0.27	37.56	-8.7319	-0.0325	-0.094
1003	SLD 1	3.63	1.03	41.75	-9.187	-0.0282	1.2769
1003	SLD 2	3.26	0.87	41.64	-9.1928	-0.0275	1.1477
1003	SLD 3	3.42	0.04	42.58	-9.3349	-0.0297	1.202
1003	SLD 4	3.05	-0.12	42.46	-9.3407	-0.029	1.0728
1003	SLD 5	1.28	2.03	37.59	-8.6431	-0.029	0.4539
1003	SLD 6	1.04	1.92	37.51	-8.6469	-0.0286	0.369
1003	SLD 7	0.57	-1.27	40.34	-9.1361	-0.034	0.2043
1003	SLD 8	0.33	-1.37	40.27	-9.1399	-0.0335	0.1194
1003	SLD 9	-0.89	1.92	34.86	-8.3239	-0.0314	-0.3074
1003	SLD 10	-1.13	1.81	34.79	-8.3278	-0.0309	-0.3923
1003	SLD 11	-1.6	-1.37	37.62	-8.8169	-0.0363	-0.557
1003	SLD 12	-1.84	-1.48	37.54	-8.8208	-0.0359	-0.6419
1003	SLD 13	-3.61	0.67	32.66	-8.1232	-0.0359	-1.2608
1003	SLD 14	-3.98	0.5	32.55	-8.129	-0.0352	-1.39
1003	SLD 15	-3.82	-0.32	33.49	-8.2711	-0.0374	-1.3357
1003	SLD 16	-4.19	-0.48	33.38	-8.2769	-0.0367	-1.4649
1003	SLV 1	8.87	2	47.39	-9.8016	-0.0225	3.1128
1003	SLV 2	8.01	1.63	47.12	-9.8152	-0.0209	2.8119
1003	SLV 3	8.37	-0.23	49.27	-10.1379	-0.0259	2.9382
1003	SLV 4	7.51	-0.61	49	-10.1515	-0.0242	2.6373
1003	SLV 5	3.37	4.25	37.7	-8.5404	-0.0246	1.1849
1003	SLV 6	2.81	4	37.53	-8.5492	-0.0236	0.9906
1003	SLV 7	1.71	-3.2	43.98	-9.6614	-0.0359	0.6029
1003	SLV 8	1.15	-3.45	43.81	-9.6702	-0.0348	0.4085
1003	SLV 9	-1.71	3.99	31.32	-7.7937	-0.0301	-0.5965
1003	SLV 10	-2.27	3.75	31.15	-7.8024	-0.029	-0.7908
1003	SLV 11	-3.37	-3.46	37.6	-8.9146	-0.0413	-1.1786
1003	SLV 12	-3.93	-3.7	37.43	-8.9234	-0.0403	-1.3729
1003	SLV 13	-8.07	1.15	26.13	-7.3124	-0.0407	-2.8252
1003	SLV 14	-8.93	0.78	25.86	-7.3259	-0.039	-3.1262
1003	SLV 15	-8.57	-1.08	28.01	-7.6487	-0.044	-2.9999
1003	SLV 16	-9.43	-1.46	27.74	-7.6622	-0.0424	-3.3008
1003	CRTFP Ux+	0	0	0	0	0	0
1003	CRTFP Ux-	0	0	0	0	0	0
1003	CRTFP Uy+	0	0	0	0	0	0
1003	CRTFP Uy-	0	0	0	0	0	0
1004	SLU 1	-0.23	0.34	36.08	-9.188	-0.0372	-0.0782
1004	SLU 2	-0.25	0.3	36.11	-9.1923	-0.0372	-0.085
1004	SLU 3	-0.24	0.36	36.93	-9.397	-0.0382	-0.0794
1004	SLU 4	-0.25	0.34	36.95	-9.3996	-0.0382	-0.0835
1004	SLU 5	-0.25	0.31	36.62	-9.3205	-0.0378	-0.0848
1004	SLU 6	-0.24	0.37	37.44	-9.5252	-0.0388	-0.0792
1004	SLU 7	-0.25	0.34	37.46	-9.5278	-0.0388	-0.0833
1004	SLU 8	-0.23	0.35	37.11	-9.4444	-0.0384	-0.0778
1004	SLU 9	-0.24	0.33	37.12	-9.447	-0.0384	-0.0819
1004	SLU 10	-0.28	0.37	40.7	-10.3376	-0.0429	-0.0929
1004	SLU 11	-0.26	0.43	41.52	-10.5423	-0.0438	-0.0873
1004	SLU 12	-0.27	0.4	41.54	-10.5449	-0.0438	-0.0914
1004	SLU 13	-0.28	0.37	41.21	-10.4658	-0.0435	-0.0927
1004	SLU 14	-0.26	0.43	42.03	-10.6705	-0.0444	-0.0871
1004	SLU 15	-0.27	0.41	42.05	-10.6731	-0.0444	-0.0912
1004	SLU 16	-0.26	0.42	41.69	-10.5897	-0.0441	-0.0858
1004	SLU 17	-0.27	0.39	41.71	-10.5923	-0.0441	-0.0898
1004	SLU 18	-0.27	0.43	42.63	-10.8242	-0.0453	-0.0895
1004	SLU 19	-0.28	0.41	42.65	-10.8267	-0.0453	-0.0936
1004	SLU 20	-0.27	0.44	43.15	-10.9524	-0.0459	-0.0893
1004	SLU 21	-0.28	0.42	43.16	-10.9549	-0.0459	-0.0934
1004	SLU 22	-0.26	0.45	40.81	-10.3652	-0.043	-0.0866
1004	SLU 23	-0.28	0.41	40.85	-10.3695	-0.043	-0.0934
1004	SLU 24	-0.26	0.47	41.67	-10.5742	-0.044	-0.0878
1004	SLU 25	-0.27	0.45	41.68	-10.5767	-0.044	-0.0919
1004	SLU 26	-0.28	0.42	41.36	-10.4977	-0.0436	-0.0932
1004	SLU 27	-0.26	0.48	42.18	-10.7023	-0.0446	-0.0876
1004	SLU 28	-0.27	0.46	42.2	-10.7049	-0.0446	-0.0917
1004	SLU 29	-0.26	0.46	41.84	-10.6215	-0.0442	-0.0862
1004	SLU 30	-0.27	0.44	41.86	-10.6241	-0.0442	-0.0903
1004	SLU 31	-0.3	0.48	45.43	-11.5148	-0.0487	-0.1013
1004	SLU 32	-0.29	0.54	46.25	-11.7195	-0.0497	-0.0957
1004	SLU 33	-0.3	0.51	46.27	-11.7221	-0.0497	-0.0998
1004	SLU 34	-0.3	0.48	45.95	-11.643	-0.0493	-0.1011



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1004	SLU 35	-0.29	0.54	46.77	-11.8477	-0.0503	-0.0955
1004	SLU 36	-0.3	0.52	46.78	-11.8502	-0.0503	-0.0996
1004	SLU 37	-0.28	0.53	46.43	-11.7669	-0.0499	-0.0941
1004	SLU 38	-0.29	0.51	46.45	-11.7694	-0.0499	-0.0982
1004	SLU 39	-0.29	0.55	47.37	-12.0013	-0.0511	-0.0979
1004	SLU 40	-0.3	0.52	47.39	-12.0039	-0.0511	-0.102
1004	SLU 41	-0.29	0.55	47.88	-12.1295	-0.0517	-0.0977
1004	SLU 42	-0.3	0.53	47.9	-12.1321	-0.0517	-0.1018
1004	SLU 43	-0.29	0.4	45.28	-11.5408	-0.0464	-0.0988
1004	SLU 44	-0.31	0.36	45.31	-11.5451	-0.0464	-0.1056
1004	SLU 45	-0.3	0.43	46.13	-11.7498	-0.0473	-0.1
1004	SLU 46	-0.31	0.4	46.15	-11.7524	-0.0473	-0.1041
1004	SLU 47	-0.31	0.37	45.82	-11.6733	-0.047	-0.1054
1004	SLU 48	-0.3	0.43	46.64	-11.878	-0.048	-0.0998
1004	SLU 49	-0.31	0.41	46.66	-11.8806	-0.048	-0.1039
1004	SLU 50	-0.29	0.42	46.31	-11.7972	-0.0476	-0.0984
1004	SLU 51	-0.31	0.39	46.32	-11.7998	-0.0476	-0.1025
1004	SLU 52	-0.34	0.43	49.9	-12.6904	-0.052	-0.1135
1004	SLU 53	-0.32	0.49	50.72	-12.8951	-0.053	-0.1079
1004	SLU 54	-0.33	0.47	50.74	-12.8977	-0.053	-0.112
1004	SLU 55	-0.34	0.44	50.41	-12.8186	-0.0526	-0.1133
1004	SLU 56	-0.32	0.5	51.23	-13.0233	-0.0536	-0.1077
1004	SLU 57	-0.33	0.47	51.25	-13.0259	-0.0536	-0.1118
1004	SLU 58	-0.32	0.48	50.89	-12.9425	-0.0532	-0.1063
1004	SLU 59	-0.33	0.46	50.91	-12.9451	-0.0532	-0.1104
1004	SLU 60	-0.33	0.5	51.83	-13.177	-0.0544	-0.1101
1004	SLU 61	-0.34	0.47	51.85	-13.1796	-0.0544	-0.1142
1004	SLU 62	-0.33	0.5	52.35	-13.3052	-0.0551	-0.1099
1004	SLU 63	-0.34	0.48	52.36	-13.3077	-0.0551	-0.114
1004	SLU 64	-0.32	0.52	50.01	-12.718	-0.0522	-0.1072
1004	SLU 65	-0.34	0.48	50.05	-12.7223	-0.0522	-0.114
1004	SLU 66	-0.32	0.54	50.87	-12.927	-0.0532	-0.1084
1004	SLU 67	-0.34	0.51	50.88	-12.9296	-0.0532	-0.1125
1004	SLU 68	-0.34	0.48	50.56	-12.8505	-0.0528	-0.1138
1004	SLU 69	-0.32	0.54	51.38	-13.0552	-0.0538	-0.1082
1004	SLU 70	-0.34	0.52	51.4	-13.0577	-0.0538	-0.1123
1004	SLU 71	-0.32	0.53	51.04	-12.9743	-0.0534	-0.1068
1004	SLU 72	-0.33	0.5	51.06	-12.9769	-0.0534	-0.1109
1004	SLU 73	-0.36	0.54	54.63	-13.8676	-0.0578	-0.1219
1004	SLU 74	-0.35	0.6	55.45	-14.0723	-0.0588	-0.1163
1004	SLU 75	-0.36	0.58	55.47	-14.0749	-0.0588	-0.1204
1004	SLU 76	-0.36	0.55	55.15	-13.9958	-0.0585	-0.1217
1004	SLU 77	-0.35	0.61	55.97	-14.2005	-0.0594	-0.1161
1004	SLU 78	-0.36	0.58	55.98	-14.203	-0.0594	-0.1202
1004	SLU 79	-0.34	0.59	55.63	-14.1197	-0.0591	-0.1147
1004	SLU 80	-0.35	0.57	55.65	-14.1222	-0.0591	-0.1188
1004	SLU 81	-0.35	0.61	56.57	-14.3541	-0.0603	-0.1185
1004	SLU 82	-0.37	0.59	56.59	-14.3567	-0.0603	-0.1226
1004	SLU 83	-0.35	0.62	57.08	-14.4823	-0.0609	-0.1183
1004	SLU 84	-0.37	0.59	57.1	-14.4849	-0.0609	-0.1224
1004	SLE RA 1	-0.24	0.37	37.43	-9.5243	-0.0389	-0.0806
1004	SLE RA 2	-0.25	0.35	37.45	-9.5272	-0.0389	-0.0851
1004	SLE RA 3	-0.24	0.39	38	-9.6637	-0.0395	-0.0814
1004	SLE RA 4	-0.25	0.37	38.01	-9.6654	-0.0395	-0.0841
1004	SLE RA 5	-0.25	0.35	37.79	-9.6127	-0.0393	-0.085
1004	SLE RA 6	-0.24	0.39	38.34	-9.7491	-0.0399	-0.0813
1004	SLE RA 7	-0.25	0.37	38.35	-9.7508	-0.0399	-0.084
1004	SLE RA 8	-0.24	0.38	38.12	-9.6953	-0.0397	-0.0804
1004	SLE RA 9	-0.25	0.36	38.13	-9.697	-0.0397	-0.0831
1004	SLE RA 10	-0.27	0.39	40.51	-10.2908	-0.0426	-0.0904
1004	SLE RA 11	-0.26	0.43	41.06	-10.4272	-0.0433	-0.0867
1004	SLE RA 12	-0.27	0.41	41.07	-10.4289	-0.0433	-0.0894
1004	SLE RA 13	-0.27	0.39	40.85	-10.3762	-0.043	-0.0903
1004	SLE RA 14	-0.26	0.43	41.4	-10.5127	-0.0437	-0.0866
1004	SLE RA 15	-0.27	0.42	41.41	-10.5144	-0.0437	-0.0893
1004	SLE RA 16	-0.26	0.42	41.17	-10.4588	-0.0435	-0.0856
1004	SLE RA 17	-0.26	0.41	41.19	-10.4605	-0.0434	-0.0884
1004	SLE RA 18	-0.26	0.44	41.8	-10.6151	-0.0443	-0.0882
1004	SLE RA 19	-0.27	0.42	41.81	-10.6168	-0.0443	-0.0909
1004	SLE RA 20	-0.26	0.44	42.14	-10.7006	-0.0447	-0.088
1004	SLE RA 21	-0.27	0.42	42.16	-10.7023	-0.0447	-0.0907
1004	SLE FR 1	-0.24	0.37	37.43	-9.5243	-0.0389	-0.0806
1004	SLE FR 2	-0.24	0.37	37.44	-9.5249	-0.0389	-0.0815
1004	SLE FR 3	-0.24	0.37	37.57	-9.5585	-0.039	-0.0806
1004	SLE FR 4	-0.25	0.39	38.75	-9.8522	-0.0405	-0.0838
1004	SLE FR 5	-0.25	0.39	38.88	-9.8858	-0.0406	-0.0828
1004	SLE FR 6	-0.25	0.4	39.62	-10.0697	-0.0416	-0.0844
1004	SLE QP 1	-0.24	0.37	37.43	-9.5243	-0.0389	-0.0806
1004	SLE QP 2	-0.25	0.39	38.74	-9.8516	-0.0405	-0.0829
1004	SLD 1	3.66	1.19	42.81	-10.4765	-0.0368	1.2871
1004	SLD 2	3.29	1.03	42.68	-10.4626	-0.0362	1.1583
1004	SLD 3	3.45	0.18	43.68	-10.65	-0.0384	1.2123
1004	SLD 4	3.08	0.03	43.55	-10.6361	-0.0378	1.0835
1004	SLD 5	1.32	2.18	38.67	-9.7784	-0.037	0.4646
1004	SLD 6	1.07	2.08	38.58	-9.7693	-0.0367	0.38
1004	SLD 7	0.6	-1.17	41.57	-10.3567	-0.0424	0.2152
1004	SLD 8	0.36	-1.27	41.48	-10.3476	-0.042	0.1306
1004	SLD 9	-0.86	2.05	36.01	-9.3556	-0.0389	-0.2963
1004	SLD 10	-1.1	1.95	35.92	-9.3465	-0.0386	-0.381
1004	SLD 11	-1.57	-1.3	38.9	-9.9339	-0.0443	-0.5457



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1004	SLD 12	-1.81	-1.4	38.82	-9.9248	-0.0439	-0.6303
1004	SLD 13	-3.58	0.76	33.94	-9.067	-0.0431	-1.2493
1004	SLD 14	-3.94	0.6	33.81	-9.0532	-0.0426	-1.3781
1004	SLD 15	-3.79	-0.25	34.81	-9.2405	-0.0447	-1.3241
1004	SLD 16	-4.16	-0.4	34.67	-9.2267	-0.0442	-1.4529
1004	SLV 1	8.9	2.22	48.29	-11.3197	-0.0319	3.1218
1004	SLV 2	8.04	1.86	47.97	-11.2874	-0.0306	2.8219
1004	SLV 3	8.4	-0.06	50.26	-11.7141	-0.0356	2.9474
1004	SLV 4	7.54	-0.42	49.95	-11.6818	-0.0342	2.6474
1004	SLV 5	3.4	4.45	38.66	-9.6994	-0.0326	1.1951
1004	SLV 6	2.85	4.22	38.46	-9.6786	-0.0317	1.0013
1004	SLV 7	1.74	-3.13	45.25	-11.0141	-0.0448	0.6134
1004	SLV 8	1.19	-3.37	45.05	-10.9933	-0.0439	0.4197
1004	SLV 9	-1.68	4.15	32.43	-8.7099	-0.037	-0.5855
1004	SLV 10	-2.24	3.92	32.23	-8.6891	-0.0362	-0.7792
1004	SLV 11	-3.34	-3.44	39.03	-10.0246	-0.0492	-1.1671
1004	SLV 12	-3.9	-3.67	38.82	-10.0037	-0.0484	-1.3608
1004	SLV 13	-8.04	1.2	27.53	-8.0213	-0.0467	-2.8132
1004	SLV 14	-8.9	0.84	27.22	-7.989	-0.0454	-3.1131
1004	SLV 15	-8.54	-1.07	29.51	-8.4157	-0.0504	-2.9877
1004	SLV 16	-9.4	-1.43	29.2	-8.3834	-0.0491	-3.2876
1004	CRTFP Ux+	0	0	0	0	0	0
1004	CRTFP Ux-	0	0	0	0	0	0
1004	CRTFP Uy+	0	0	0	0	0	0
1004	CRTFP Uy-	0	0	0	0	0	0
1005	SLU 1	-0.2	0.45	37.26	-10.3569	-0.0353	-0.0671
1005	SLU 2	-0.22	0.41	37.29	-10.3609	-0.0353	-0.0739
1005	SLU 3	-0.2	0.47	38.14	-10.5958	-0.0362	-0.068
1005	SLU 4	-0.22	0.45	38.16	-10.5982	-0.0362	-0.0721
1005	SLU 5	-0.22	0.42	37.82	-10.5071	-0.0358	-0.0736
1005	SLU 6	-0.2	0.48	38.67	-10.742	-0.0368	-0.0676
1005	SLU 7	-0.21	0.45	38.69	-10.7444	-0.0368	-0.0717
1005	SLU 8	-0.2	0.46	38.32	-10.6492	-0.0364	-0.0663
1005	SLU 9	-0.21	0.44	38.34	-10.6517	-0.0364	-0.0705
1005	SLU 10	-0.24	0.48	42.05	-11.672	-0.0406	-0.0807
1005	SLU 11	-0.22	0.55	42.9	-11.9069	-0.0415	-0.0748
1005	SLU 12	-0.24	0.52	42.92	-11.9093	-0.0415	-0.0789
1005	SLU 13	-0.24	0.49	42.58	-11.8182	-0.0412	-0.0804
1005	SLU 14	-0.22	0.55	43.43	-12.0531	-0.0421	-0.0744
1005	SLU 15	-0.23	0.53	43.45	-12.0555	-0.0421	-0.0786
1005	SLU 16	-0.22	0.54	43.09	-11.9603	-0.0417	-0.0732
1005	SLU 17	-0.23	0.51	43.1	-11.9627	-0.0417	-0.0773
1005	SLU 18	-0.23	0.56	44.06	-12.2298	-0.0429	-0.0768
1005	SLU 19	-0.24	0.53	44.08	-12.2323	-0.0429	-0.0809
1005	SLU 20	-0.23	0.56	44.6	-12.376	-0.0434	-0.0764
1005	SLU 21	-0.24	0.54	44.61	-12.3784	-0.0434	-0.0806
1005	SLU 22	-0.22	0.57	42.17	-11.7046	-0.0407	-0.0745
1005	SLU 23	-0.24	0.53	42.2	-11.7086	-0.0407	-0.0813
1005	SLU 24	-0.23	0.6	43.05	-11.9436	-0.0416	-0.0754
1005	SLU 25	-0.24	0.57	43.07	-11.946	-0.0416	-0.0795
1005	SLU 26	-0.24	0.54	42.74	-11.8548	-0.0413	-0.0809
1005	SLU 27	-0.22	0.6	43.59	-12.0898	-0.0422	-0.075
1005	SLU 28	-0.24	0.58	43.61	-12.0922	-0.0422	-0.0791
1005	SLU 29	-0.22	0.59	43.24	-11.997	-0.0418	-0.0737
1005	SLU 30	-0.23	0.56	43.26	-11.9994	-0.0418	-0.0778
1005	SLU 31	-0.26	0.61	46.97	-13.0197	-0.046	-0.0881
1005	SLU 32	-0.25	0.67	47.82	-13.2547	-0.0469	-0.0822
1005	SLU 33	-0.26	0.65	47.84	-13.2571	-0.0469	-0.0863
1005	SLU 34	-0.26	0.62	47.5	-13.1659	-0.0466	-0.0878
1005	SLU 35	-0.25	0.68	48.35	-13.4008	-0.0475	-0.0818
1005	SLU 36	-0.26	0.66	48.37	-13.4033	-0.0475	-0.0859
1005	SLU 37	-0.24	0.66	48	-13.3081	-0.0472	-0.0806
1005	SLU 38	-0.25	0.64	48.02	-13.3105	-0.0472	-0.0847
1005	SLU 39	-0.25	0.68	48.98	-13.5776	-0.0483	-0.0842
1005	SLU 40	-0.26	0.66	49	-13.58	-0.0483	-0.0883
1005	SLU 41	-0.25	0.69	49.51	-13.7238	-0.0489	-0.0838
1005	SLU 42	-0.26	0.67	49.53	-13.7262	-0.0489	-0.088
1005	SLU 43	-0.25	0.54	46.75	-13.0018	-0.044	-0.0846
1005	SLU 44	-0.27	0.5	46.78	-13.0059	-0.044	-0.0915
1005	SLU 45	-0.26	0.56	47.63	-13.2408	-0.0449	-0.0856
1005	SLU 46	-0.27	0.54	47.65	-13.2432	-0.0449	-0.0897
1005	SLU 47	-0.27	0.51	47.31	-13.152	-0.0446	-0.0911
1005	SLU 48	-0.26	0.57	48.16	-13.387	-0.0455	-0.0852
1005	SLU 49	-0.27	0.55	48.18	-13.3894	-0.0455	-0.0893
1005	SLU 50	-0.25	0.55	47.81	-13.2942	-0.0451	-0.0839
1005	SLU 51	-0.26	0.53	47.83	-13.2966	-0.0451	-0.088
1005	SLU 52	-0.29	0.58	51.54	-14.3169	-0.0493	-0.0983
1005	SLU 53	-0.28	0.64	52.39	-14.5519	-0.0502	-0.0924
1005	SLU 54	-0.29	0.61	52.41	-14.5543	-0.0502	-0.0965
1005	SLU 55	-0.29	0.58	52.08	-14.4631	-0.0499	-0.098
1005	SLU 56	-0.28	0.65	52.93	-14.6981	-0.0508	-0.092
1005	SLU 57	-0.29	0.62	52.94	-14.7005	-0.0508	-0.0961
1005	SLU 58	-0.27	0.63	52.58	-14.6053	-0.0505	-0.0907
1005	SLU 59	-0.28	0.61	52.59	-14.6077	-0.0505	-0.0949
1005	SLU 60	-0.28	0.65	53.55	-14.8748	-0.0516	-0.0944
1005	SLU 61	-0.29	0.62	53.57	-14.8772	-0.0516	-0.0985
1005	SLU 62	-0.28	0.65	54.09	-15.021	-0.0522	-0.094
1005	SLU 63	-0.29	0.63	54.1	-15.0234	-0.0522	-0.0981
1005	SLU 64	-0.28	0.67	51.66	-14.3496	-0.0494	-0.092
1005	SLU 65	-0.3	0.63	51.69	-14.3536	-0.0494	-0.0989



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1005	SLU 66	-0.28	0.69	52.55	-14.5886	-0.0503	-0.0929
1005	SLU 67	-0.29	0.66	52.56	-14.591	-0.0503	-0.0971
1005	SLU 68	-0.29	0.63	52.23	-14.4998	-0.05	-0.0985
1005	SLU 69	-0.28	0.7	53.08	-14.7347	-0.0509	-0.0926
1005	SLU 70	-0.29	0.67	53.1	-14.7371	-0.0509	-0.0967
1005	SLU 71	-0.27	0.68	52.73	-14.642	-0.0506	-0.0913
1005	SLU 72	-0.29	0.66	52.75	-14.6444	-0.0506	-0.0954
1005	SLU 73	-0.32	0.7	56.46	-15.6647	-0.0547	-0.1057
1005	SLU 74	-0.3	0.76	57.31	-15.8996	-0.0556	-0.0998
1005	SLU 75	-0.31	0.74	57.33	-15.902	-0.0556	-0.1039
1005	SLU 76	-0.31	0.71	56.99	-15.8109	-0.0553	-0.1054
1005	SLU 77	-0.3	0.77	57.84	-16.0458	-0.0562	-0.0994
1005	SLU 78	-0.31	0.75	57.86	-16.0482	-0.0562	-0.1035
1005	SLU 79	-0.29	0.76	57.49	-15.9531	-0.0559	-0.0981
1005	SLU 80	-0.31	0.73	57.51	-15.9555	-0.0559	-0.1023
1005	SLU 81	-0.3	0.77	58.47	-16.2226	-0.057	-0.1018
1005	SLU 82	-0.32	0.75	58.49	-16.225	-0.057	-0.1059
1005	SLU 83	-0.3	0.78	59	-16.3688	-0.0576	-0.1014
1005	SLU 84	-0.32	0.76	59.02	-16.3712	-0.0576	-0.1055
1005	SLE RA 1	-0.21	0.48	38.66	-10.7419	-0.0368	-0.0692
1005	SLE RA 2	-0.22	0.46	38.68	-10.7446	-0.0368	-0.0737
1005	SLE RA 3	-0.21	0.5	39.25	-10.9012	-0.0374	-0.0698
1005	SLE RA 4	-0.22	0.48	39.26	-10.9029	-0.0374	-0.0725
1005	SLE RA 5	-0.22	0.46	39.04	-10.8421	-0.0372	-0.0735
1005	SLE RA 6	-0.21	0.5	39.6	-10.9987	-0.0378	-0.0695
1005	SLE RA 7	-0.22	0.49	39.62	-11.0003	-0.0378	-0.0723
1005	SLE RA 8	-0.21	0.49	39.37	-10.9369	-0.0376	-0.0687
1005	SLE RA 9	-0.21	0.48	39.38	-10.9385	-0.0376	-0.0714
1005	SLE RA 10	-0.23	0.51	41.86	-11.6187	-0.0404	-0.0783
1005	SLE RA 11	-0.22	0.55	42.43	-11.7753	-0.041	-0.0743
1005	SLE RA 12	-0.23	0.53	42.44	-11.7769	-0.041	-0.0771
1005	SLE RA 13	-0.23	0.51	42.21	-11.7161	-0.0407	-0.0781
1005	SLE RA 14	-0.22	0.55	42.78	-11.8728	-0.0414	-0.0741
1005	SLE RA 15	-0.23	0.54	42.79	-11.8744	-0.0414	-0.0768
1005	SLE RA 16	-0.22	0.54	42.55	-11.8109	-0.0411	-0.0732
1005	SLE RA 17	-0.23	0.53	42.56	-11.8125	-0.0411	-0.076
1005	SLE RA 18	-0.23	0.56	43.2	-11.9906	-0.0419	-0.0757
1005	SLE RA 19	-0.23	0.54	43.21	-11.9922	-0.0419	-0.0784
1005	SLE RA 20	-0.23	0.56	43.55	-12.088	-0.0423	-0.0754
1005	SLE RA 21	-0.23	0.55	43.57	-12.0897	-0.0423	-0.0782
1005	SLE FR 1	-0.21	0.48	38.66	-10.7419	-0.0368	-0.0692
1005	SLE FR 2	-0.21	0.48	38.66	-10.7425	-0.0368	-0.0701
1005	SLE FR 3	-0.21	0.49	38.8	-10.7809	-0.037	-0.0691
1005	SLE FR 4	-0.22	0.5	40.03	-11.1171	-0.0383	-0.072
1005	SLE FR 5	-0.21	0.51	40.16	-11.1555	-0.0385	-0.071
1005	SLE FR 6	-0.22	0.52	40.93	-11.3663	-0.0393	-0.0724
1005	SLE QP 1	-0.21	0.48	38.66	-10.7419	-0.0368	-0.0692
1005	SLE QP 2	-0.21	0.51	40.02	-11.1165	-0.0383	-0.0711
1005	SLD 1	3.7	1.33	43.97	-11.9259	-0.0343	1.2975
1005	SLD 2	3.33	1.18	43.82	-11.8946	-0.0339	1.1692
1005	SLD 3	3.48	0.31	44.89	-12.1268	-0.0358	1.2228
1005	SLD 4	3.12	0.16	44.74	-12.0954	-0.0354	1.0945
1005	SLD 5	1.35	2.33	39.85	-11.0603	-0.0349	0.4757
1005	SLD 6	1.11	2.23	39.75	-11.0397	-0.0347	0.3914
1005	SLD 7	0.64	-1.08	42.89	-11.7299	-0.0399	0.2266
1005	SLD 8	0.4	-1.17	42.79	-11.7093	-0.0396	0.1423
1005	SLD 9	-0.82	2.18	37.25	-10.5238	-0.037	0.2846
1005	SLD 10	-1.06	2.09	37.15	-10.5032	-0.0367	-0.3689
1005	SLD 11	-1.53	-1.22	40.29	-11.1934	-0.042	-0.5336
1005	SLD 12	-1.78	-1.32	40.19	-11.1728	-0.0417	-0.6179
1005	SLD 13	-3.54	0.85	35.31	-10.1376	-0.0413	-1.2367
1005	SLD 14	-3.91	0.7	35.16	-10.1063	-0.0408	-1.365
1005	SLD 15	-3.75	-0.17	36.22	-10.3385	-0.0428	-1.3114
1005	SLD 16	-4.12	-0.32	36.07	-10.3072	-0.0423	-1.4397
1005	SLV 1	8.93	2.39	49.3	-13.0171	-0.029	3.1303
1005	SLV 2	8.08	2.06	48.95	-12.9442	-0.028	2.8315
1005	SLV 3	8.43	0.08	51.38	-13.4738	-0.0324	2.9561
1005	SLV 4	7.58	-0.26	51.03	-13.4008	-0.0314	2.6572
1005	SLV 5	3.43	4.64	39.72	-11.0068	-0.0306	1.2053
1005	SLV 6	2.88	4.42	39.49	-10.9596	-0.0299	1.0123
1005	SLV 7	1.77	-3.07	46.64	-12.5289	-0.0419	0.6244
1005	SLV 8	1.22	-3.29	46.41	-12.4818	-0.0412	0.4314
1005	SLV 9	-1.65	4.3	33.63	-9.7513	-0.0354	-0.5736
1005	SLV 10	-2.2	4.08	33.41	-9.7042	-0.0348	-0.7666
1005	SLV 11	-3.31	-3.41	40.55	-11.2734	-0.0467	-1.1546
1005	SLV 12	-3.86	-3.63	40.33	-11.2263	-0.0461	-1.3476
1005	SLV 13	-8	1.27	29.02	-8.8322	-0.0452	-2.7995
1005	SLV 14	-8.86	0.93	28.67	-8.7593	-0.0443	-3.0983
1005	SLV 15	-8.5	-1.04	31.09	-9.2889	-0.0486	-2.9738
1005	SLV 16	-9.36	-1.38	30.74	-9.2159	-0.0476	-3.2726
1005	CRTFP Ux+	0	0	0	0	0	0
1005	CRTFP Ux-	0	0	0	0	0	0
1005	CRTFP Uy+	0	0	0	0	0	0
1005	CRTFP Uy-	0	0	0	0	0	0
1006	SLU 1	-0.15	0.48	34.44	-10.3427	0.6253	-0.0594
1006	SLU 2	-0.17	0.45	34.47	-10.3465	0.6258	-0.0651
1006	SLU 3	-0.15	0.51	35.26	-10.5839	0.6401	-0.0605
1006	SLU 4	-0.16	0.49	35.27	-10.5862	0.6404	-0.0638
1006	SLU 5	-0.17	0.46	34.96	-10.4938	0.6347	-0.0647
1006	SLU 6	-0.15	0.51	35.75	-10.7312	0.649	-0.0601





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1006	SLU 7	-0.16	0.49	35.77	-10.7335	0.6493	-0.0635
1006	SLU 8	-0.15	0.5	35.43	-10.6374	0.6431	-0.0588
1006	SLU 9	-0.16	0.48	35.44	-10.6396	0.6434	-0.0621
1006	SLU 10	-0.18	0.53	38.89	-11.6693	0.7057	-0.0717
1006	SLU 11	-0.17	0.58	39.68	-11.9067	0.72	-0.0671
1006	SLU 12	-0.18	0.56	39.7	-11.909	0.7203	-0.0704
1006	SLU 13	-0.18	0.53	39.39	-11.8166	0.7146	-0.0713
1006	SLU 14	-0.17	0.59	40.17	-12.0541	0.7289	-0.0667
1006	SLU 15	-0.18	0.57	40.19	-12.0563	0.7292	-0.0701
1006	SLU 16	-0.16	0.58	39.85	-11.9602	0.723	-0.0654
1006	SLU 17	-0.17	0.55	39.87	-11.9625	0.7234	-0.0687
1006	SLU 18	-0.17	0.59	40.76	-12.2325	0.7394	-0.0689
1006	SLU 19	-0.18	0.57	40.78	-12.2347	0.7398	-0.0722
1006	SLU 20	-0.17	0.6	41.25	-12.3798	0.7484	-0.0685
1006	SLU 21	-0.18	0.58	41.27	-12.3821	0.7487	-0.0719
1006	SLU 22	-0.17	0.61	39	-11.7015	0.7078	-0.0675
1006	SLU 23	-0.18	0.57	39.03	-11.7053	0.7083	-0.0731
1006	SLU 24	-0.17	0.63	39.82	-11.9427	0.7226	-0.0685
1006	SLU 25	-0.18	0.61	39.84	-11.945	0.7229	-0.0719
1006	SLU 26	-0.18	0.58	39.53	-11.8526	0.7172	-0.0728
1006	SLU 27	-0.17	0.64	40.31	-12.09	0.7315	-0.0682
1006	SLU 28	-0.18	0.62	40.33	-12.0923	0.7318	-0.0716
1006	SLU 29	-0.16	0.62	39.99	-11.9962	0.7257	-0.0668
1006	SLU 30	-0.17	0.6	40.01	-11.9984	0.726	-0.0702
1006	SLU 31	-0.2	0.65	43.46	-13.0281	0.7882	-0.0798
1006	SLU 32	-0.18	0.71	44.24	-13.2656	0.8025	-0.0752
1006	SLU 33	-0.19	0.69	44.26	-13.2678	0.8028	-0.0785
1006	SLU 34	-0.2	0.66	43.95	-13.1755	0.7972	-0.0794
1006	SLU 35	-0.18	0.72	44.74	-13.4129	0.8114	-0.0748
1006	SLU 36	-0.19	0.69	44.76	-13.4151	0.8118	-0.0782
1006	SLU 37	-0.18	0.7	44.41	-13.319	0.8056	-0.0735
1006	SLU 38	-0.19	0.68	44.43	-13.3213	0.8059	-0.0768
1006	SLU 39	-0.19	0.72	45.32	-13.5913	0.822	-0.077
1006	SLU 40	-0.2	0.7	45.34	-13.5936	0.8223	-0.0803
1006	SLU 41	-0.19	0.73	45.82	-13.7386	0.8309	-0.0766
1006	SLU 42	-0.2	0.7	45.83	-13.7409	0.8312	-0.08
1006	SLU 43	-0.19	0.59	43.21	-12.9797	0.7845	-0.0745
1006	SLU 44	-0.21	0.55	43.24	-12.9834	0.7851	-0.0801
1006	SLU 45	-0.19	0.61	44.02	-13.2208	0.7993	-0.0755
1006	SLU 46	-0.2	0.59	44.04	-13.2231	0.7997	-0.0789
1006	SLU 47	-0.21	0.56	43.73	-13.1307	0.794	-0.0798
1006	SLU 48	-0.19	0.62	44.52	-13.3682	0.8083	-0.0752
1006	SLU 49	-0.2	0.6	44.54	-13.3704	0.8086	-0.0785
1006	SLU 50	-0.19	0.6	44.19	-13.2743	0.8024	-0.0738
1006	SLU 51	-0.2	0.58	44.21	-13.2766	0.8027	-0.0772
1006	SLU 52	-0.22	0.63	47.66	-14.3063	0.865	-0.0867
1006	SLU 53	-0.21	0.69	48.45	-14.5437	0.8793	-0.0821
1006	SLU 54	-0.22	0.67	48.47	-14.5459	0.8796	-0.0855
1006	SLU 55	-0.22	0.64	48.15	-14.4536	0.8739	-0.0864
1006	SLU 56	-0.2	0.69	48.94	-14.691	0.8882	-0.0818
1006	SLU 57	-0.21	0.67	48.96	-14.6933	0.8885	-0.0851
1006	SLU 58	-0.2	0.68	48.62	-14.5971	0.8823	-0.0804
1006	SLU 59	-0.21	0.66	48.64	-14.5994	0.8826	-0.0838
1006	SLU 60	-0.21	0.7	49.53	-14.8694	0.8987	-0.0839
1006	SLU 61	-0.22	0.68	49.54	-14.8717	0.899	-0.0873
1006	SLU 62	-0.21	0.7	50.02	-15.0167	0.9077	-0.0836
1006	SLU 63	-0.22	0.68	50.04	-15.019	0.908	-0.087
1006	SLU 64	-0.21	0.71	47.77	-14.3385	0.8671	-0.0826
1006	SLU 65	-0.22	0.68	47.8	-14.3422	0.8676	-0.0882
1006	SLU 66	-0.21	0.73	48.59	-14.5797	0.8819	-0.0836
1006	SLU 67	-0.22	0.71	48.6	-14.5819	0.8822	-0.087
1006	SLU 68	-0.22	0.68	48.29	-14.4896	0.8765	-0.0879
1006	SLU 69	-0.21	0.74	49.08	-14.727	0.8908	-0.0833
1006	SLU 70	-0.22	0.72	49.1	-14.7292	0.8911	-0.0866
1006	SLU 71	-0.2	0.72	48.76	-14.6331	0.8849	-0.0819
1006	SLU 72	-0.21	0.7	48.78	-14.6354	0.8852	-0.0853
1006	SLU 73	-0.24	0.75	52.22	-15.6651	0.9475	-0.0948
1006	SLU 74	-0.22	0.81	53.01	-15.9025	0.9618	-0.0902
1006	SLU 75	-0.23	0.79	53.03	-15.9048	0.9621	-0.0936
1006	SLU 76	-0.24	0.76	52.72	-15.8124	0.9564	-0.0945
1006	SLU 77	-0.22	0.82	53.51	-16.0498	0.9707	-0.0899
1006	SLU 78	-0.23	0.8	53.52	-16.0521	0.971	-0.0932
1006	SLU 79	-0.22	0.8	53.18	-15.9559	0.9649	-0.0885
1006	SLU 80	-0.23	0.78	53.2	-15.9582	0.9652	-0.0919
1006	SLU 81	-0.23	0.82	54.09	-16.2282	0.9813	-0.092
1006	SLU 82	-0.24	0.8	54.11	-16.2305	0.9816	-0.0954
1006	SLU 83	-0.23	0.83	54.58	-16.3755	0.9902	-0.0917
1006	SLU 84	-0.24	0.81	54.6	-16.3778	0.9905	-0.0951
1006	SLE RA 1	-0.15	0.52	35.74	-10.731	0.6488	-0.0618
1006	SLE RA 2	-0.17	0.5	35.76	-10.7335	0.6492	-0.0655
1006	SLE RA 3	-0.16	0.53	36.29	-10.8917	0.6587	-0.0624
1006	SLE RA 4	-0.16	0.52	36.3	-10.8933	0.6589	-0.0647
1006	SLE RA 5	-0.17	0.5	36.09	-10.8317	0.6551	-0.0653
1006	SLE RA 6	-0.15	0.54	36.62	-10.99	0.6647	-0.0622
1006	SLE RA 7	-0.16	0.53	36.63	-10.9915	0.6649	-0.0644
1006	SLE RA 8	-0.15	0.53	36.4	-10.9274	0.6607	-0.0613
1006	SLE RA 9	-0.16	0.51	36.41	-10.9289	0.661	-0.0635
1006	SLE RA 10	-0.18	0.55	38.71	-11.6154	0.7025	-0.0699
1006	SLE RA 11	-0.17	0.59	39.24	-11.7736	0.712	-0.0668
1006	SLE RA 12	-0.17	0.57	39.25	-11.7751	0.7122	-0.0691



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1006	SLE RA 13	-0.18	0.55	39.04	-11.7136	0.7084	-0.0697
1006	SLE RA 14	-0.16	0.59	39.57	-11.8718	0.7179	-0.0666
1006	SLE RA 15	-0.17	0.58	39.58	-11.8734	0.7182	-0.0688
1006	SLE RA 16	-0.16	0.58	39.35	-11.8093	0.714	-0.0657
1006	SLE RA 17	-0.17	0.57	39.36	-11.8108	0.7142	-0.0679
1006	SLE RA 18	-0.17	0.59	39.96	-11.9908	0.725	-0.068
1006	SLE RA 19	-0.18	0.58	39.97	-11.9923	0.7252	-0.0703
1006	SLE RA 20	-0.17	0.6	40.29	-12.089	0.7309	-0.0678
1006	SLE RA 21	-0.18	0.58	40.3	-12.0905	0.7311	-0.0701
1006	SLE FR 1	-0.15	0.52	35.74	-10.731	0.6488	-0.0618
1006	SLE FR 2	-0.16	0.51	35.75	-10.7315	0.6489	-0.0625
1006	SLE FR 3	-0.15	0.52	35.87	-10.7702	0.6512	-0.0617
1006	SLE FR 4	-0.16	0.54	37.01	-11.1094	0.6717	-0.0644
1006	SLE FR 5	-0.16	0.54	37.14	-11.1482	0.6741	-0.0636
1006	SLE FR 6	-0.16	0.56	37.85	-11.3609	0.6869	-0.0649
1006	SLE QP 1	-0.15	0.52	35.74	-10.731	0.6488	-0.0618
1006	SLE QP 2	-0.16	0.54	37.01	-11.1089	0.6717	-0.0636
1006	SLD 1	3.37	1.28	40.45	-11.9993	0.7397	1.0986
1006	SLD 2	3.04	1.17	40.31	-11.958	0.7372	0.9853
1006	SLD 3	3.18	0.35	41.31	-12.2019	0.755	1.1675
1006	SLD 4	2.85	0.23	41.16	-12.1606	0.7525	1.0542
1006	SLD 5	1.25	2.2	36.77	-11.0761	0.6694	0.2008
1006	SLD 6	1.03	2.12	36.67	-11.049	0.6677	0.1263
1006	SLD 7	0.61	-0.91	39.62	-11.7515	0.7203	0.4304
1006	SLD 8	0.39	-0.99	39.52	-11.7243	0.7186	0.356
1006	SLD 9	-0.71	2.07	34.49	-10.4935	0.6247	-0.4833
1006	SLD 10	-0.93	1.99	34.39	-10.4663	0.6231	-0.5577
1006	SLD 11	-1.35	-1.04	37.34	-11.1688	0.6756	-0.2536
1006	SLD 12	-1.57	-1.12	37.24	-11.1417	0.674	-0.3281
1006	SLD 13	-3.16	0.85	32.85	-10.0572	0.5909	-1.1815
1006	SLD 14	-3.49	0.73	32.71	-10.0159	0.5884	-1.2948
1006	SLD 15	-3.36	-0.08	33.7	-10.2598	0.6061	-1.1126
1006	SLD 16	-3.69	-0.2	33.56	-10.2185	0.6036	-1.2259
1006	SLV 1	8.1	2.24	45.1	-13.1992	0.8314	2.6556
1006	SLV 2	7.32	1.97	44.76	-13.103	0.8256	2.3918
1006	SLV 3	7.65	0.13	47.04	-13.6599	0.8661	2.8163
1006	SLV 4	6.88	-0.14	46.7	-13.5637	0.8603	2.5525
1006	SLV 5	3.13	4.3	36.55	-11.054	0.6679	0.5541
1006	SLV 6	2.63	4.12	36.33	-10.9919	0.6642	0.3838
1006	SLV 7	1.63	-2.73	43.02	-12.5895	0.7837	1.0896
1006	SLV 8	1.14	-2.91	42.8	-12.5273	0.7799	0.9192
1006	SLV 9	-1.45	3.99	31.21	-9.6905	0.5634	-1.0465
1006	SLV 10	-1.95	3.81	30.99	-9.6283	0.5597	-1.2169
1006	SLV 11	-2.95	-3.04	37.69	-11.2259	0.6792	-0.511
1006	SLV 12	-3.45	-3.22	37.47	-11.1638	0.6754	-0.6814
1006	SLV 13	-7.19	1.22	27.31	-8.6541	0.4831	-2.6798
1006	SLV 14	-7.96	0.95	26.97	-8.5579	0.4772	-2.9436
1006	SLV 15	-7.64	-0.88	29.25	-9.1148	0.5178	-2.5191
1006	SLV 16	-8.41	-1.16	28.91	-9.0186	0.512	-2.7829
1006	CRTFP Ux+	0	0	0	0	0	0
1006	CRTFP Ux-	0	0	0	0	0	0
1006	CRTFP Uy+	0	0	0	0	0	0
1006	CRTFP Uy-	0	0	0	0	0	0
1008	SLU 1	-0.32	1.39	90.8	-20.7581	-0.2113	-0.0612
1008	SLU 2	-0.37	1.3	90.89	-20.7703	-0.213	-0.0725
1008	SLU 3	-0.32	1.45	92.96	-21.2479	-0.2163	-0.0614
1008	SLU 4	-0.35	1.4	93.02	-21.2552	-0.2173	-0.0682
1008	SLU 5	-0.36	1.32	92.2	-21.0683	-0.2163	-0.0713
1008	SLU 6	-0.32	1.47	94.27	-21.5459	-0.2196	-0.0602
1008	SLU 7	-0.35	1.42	94.32	-21.5532	-0.2206	-0.067
1008	SLU 8	-0.31	1.43	93.41	-21.3541	-0.2179	-0.0586
1008	SLU 9	-0.34	1.38	93.46	-21.3614	-0.219	-0.0655
1008	SLU 10	-0.4	1.52	102.58	-23.4435	-0.2425	-0.0786
1008	SLU 11	-0.36	1.67	104.64	-23.9211	-0.2458	-0.0675
1008	SLU 12	-0.39	1.61	104.7	-23.9284	-0.2468	-0.0743
1008	SLU 13	-0.4	1.54	103.88	-23.7415	-0.2458	-0.0773
1008	SLU 14	-0.35	1.69	105.95	-24.2191	-0.2491	-0.0662
1008	SLU 15	-0.38	1.63	106.01	-24.2264	-0.2501	-0.073
1008	SLU 16	-0.34	1.64	105.09	-24.0273	-0.2475	-0.0647
1008	SLU 17	-0.37	1.59	105.15	-24.0346	-0.2485	-0.0715
1008	SLU 18	-0.37	1.69	107.49	-24.577	-0.2534	-0.0698
1008	SLU 19	-0.4	1.64	107.55	-24.5843	-0.2544	-0.0766
1008	SLU 20	-0.36	1.71	108.8	-24.875	-0.2568	-0.0685
1008	SLU 21	-0.39	1.66	108.85	-24.8823	-0.2578	-0.0753
1008	SLU 22	-0.36	1.72	102.85	-23.5042	-0.2384	-0.0682
1008	SLU 23	-0.41	1.64	102.94	-23.5164	-0.2401	-0.0795
1008	SLU 24	-0.36	1.79	105.01	-23.994	-0.2434	-0.0684
1008	SLU 25	-0.39	1.74	105.07	-24.0013	-0.2445	-0.0753
1008	SLU 26	-0.4	1.66	104.25	-23.8144	-0.2435	-0.0783
1008	SLU 27	-0.36	1.81	106.32	-24.292	-0.2468	-0.0672
1008	SLU 28	-0.39	1.76	106.37	-24.2993	-0.2478	-0.074
1008	SLU 29	-0.35	1.76	105.46	-24.1002	-0.2451	-0.0656
1008	SLU 30	-0.38	1.71	105.52	-24.1075	-0.2461	-0.0725
1008	SLU 31	-0.44	1.85	114.63	-26.1896	-0.2696	-0.0856
1008	SLU 32	-0.39	2	116.7	-26.6673	-0.2729	-0.0745
1008	SLU 33	-0.42	1.95	116.75	-26.6746	-0.274	-0.0813
1008	SLU 34	-0.43	1.87	115.93	-26.4876	-0.273	-0.0843
1008	SLU 35	-0.39	2.02	118	-26.9653	-0.2763	-0.0732
1008	SLU 36	-0.42	1.97	118.06	-26.9726	-0.2773	-0.08
1008	SLU 37	-0.38	1.98	117.15	-26.7734	-0.2746	-0.0717



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1008	SLU 38	-0.41	1.93	117.2	-26.7808	-0.2756	-0.0785
1008	SLU 39	-0.41	2.03	119.54	-27.3231	-0.2806	-0.0768
1008	SLU 40	-0.43	1.98	119.6	-27.3304	-0.2816	-0.0836
1008	SLU 41	-0.4	2.05	120.85	-27.6211	-0.2839	-0.0755
1008	SLU 42	-0.43	2	120.9	-27.6284	-0.285	-0.0823
1008	SLU 43	-0.4	1.69	113.9	-26.044	-0.2653	-0.0771
1008	SLU 44	-0.45	1.6	114	-26.0562	-0.267	-0.0885
1008	SLU 45	-0.41	1.75	116.07	-26.5338	-0.2703	-0.0774
1008	SLU 46	-0.44	1.7	116.12	-26.5411	-0.2713	-0.0842
1008	SLU 47	-0.45	1.62	115.3	-26.3541	-0.2704	-0.0872
1008	SLU 48	-0.4	1.77	117.37	-26.8318	-0.2737	-0.0761
1008	SLU 49	-0.43	1.72	117.43	-26.8391	-0.2747	-0.0829
1008	SLU 50	-0.4	1.73	116.52	-26.64	-0.272	-0.0746
1008	SLU 51	-0.42	1.68	116.57	-26.6473	-0.273	-0.0814
1008	SLU 52	-0.48	1.82	125.68	-28.7294	-0.2965	-0.0945
1008	SLU 53	-0.44	1.97	127.75	-29.207	-0.2998	-0.0834
1008	SLU 54	-0.47	1.92	127.81	-29.2143	-0.3008	-0.0902
1008	SLU 55	-0.48	1.84	126.99	-29.0274	-0.2999	-0.0932
1008	SLU 56	-0.44	1.99	129.06	-29.505	-0.3032	-0.0821
1008	SLU 57	-0.46	1.94	129.11	-29.5123	-0.3042	-0.089
1008	SLU 58	-0.43	1.94	128.2	-29.3132	-0.3015	-0.0806
1008	SLU 59	-0.46	1.89	128.26	-29.3205	-0.3025	-0.0874
1008	SLU 60	-0.45	2	130.6	-29.8629	-0.3075	-0.0857
1008	SLU 61	-0.48	1.94	130.65	-29.8702	-0.3085	-0.0925
1008	SLU 62	-0.45	2.02	131.9	-30.1609	-0.3108	-0.0845
1008	SLU 63	-0.48	1.96	131.96	-30.1682	-0.3118	-0.0913
1008	SLU 64	-0.44	2.02	125.96	-28.7901	-0.2925	-0.0841
1008	SLU 65	-0.49	1.94	126.05	-28.8023	-0.2942	-0.0955
1008	SLU 66	-0.44	2.09	128.12	-29.2799	-0.2975	-0.0844
1008	SLU 67	-0.47	2.04	128.17	-29.2872	-0.2985	-0.0912
1008	SLU 68	-0.48	1.96	127.36	-29.1003	-0.2975	-0.0942
1008	SLU 69	-0.44	2.11	129.42	-29.5779	-0.3008	-0.0831
1008	SLU 70	-0.47	2.06	129.48	-29.5852	-0.3019	-0.0899
1008	SLU 71	-0.43	2.07	128.57	-29.3861	-0.2992	-0.0816
1008	SLU 72	-0.46	2.01	128.62	-29.3934	-0.3002	-0.0884
1008	SLU 73	-0.52	2.15	137.73	-31.4755	-0.3237	-0.1015
1008	SLU 74	-0.48	2.3	139.8	-31.9531	-0.327	-0.0904
1008	SLU 75	-0.51	2.25	139.86	-31.9605	-0.328	-0.0972
1008	SLU 76	-0.52	2.17	139.04	-31.7735	-0.327	-0.1002
1008	SLU 77	-0.47	2.32	141.11	-32.2511	-0.3303	-0.0891
1008	SLU 78	-0.5	2.27	141.17	-32.2585	-0.3314	-0.096
1008	SLU 79	-0.47	2.28	140.25	-32.0593	-0.3287	-0.0876
1008	SLU 80	-0.49	2.23	140.31	-32.0666	-0.3297	-0.0944
1008	SLU 81	-0.49	2.33	142.65	-32.609	-0.3347	-0.0927
1008	SLU 82	-0.52	2.28	142.71	-32.6163	-0.3357	-0.0995
1008	SLU 83	-0.48	2.35	143.96	-32.907	-0.338	-0.0915
1008	SLU 84	-0.51	2.3	144.01	-32.9143	-0.339	-0.0983
1008	SLE RA 1	-0.33	1.48	94.24	-21.5427	-0.219	-0.0632
1008	SLE RA 2	-0.36	1.43	94.3	-21.5508	-0.2202	-0.0708
1008	SLE RA 3	-0.33	1.53	95.68	-21.8692	-0.2224	-0.0633
1008	SLE RA 4	-0.35	1.49	95.72	-21.8741	-0.223	-0.0679
1008	SLE RA 5	-0.36	1.44	95.17	-21.7495	-0.2224	-0.0699
1008	SLE RA 6	-0.33	1.54	96.55	-22.0679	-0.2246	-0.0625
1008	SLE RA 7	-0.35	1.51	96.59	-22.0728	-0.2253	-0.067
1008	SLE RA 8	-0.33	1.51	95.98	-21.94	-0.2235	-0.0615
1008	SLE RA 9	-0.34	1.48	96.02	-21.9449	-0.2242	-0.066
1008	SLE RA 10	-0.39	1.57	102.09	-23.333	-0.2398	-0.0748
1008	SLE RA 11	-0.36	1.67	103.47	-23.6514	-0.242	-0.0674
1008	SLE RA 12	-0.37	1.63	103.51	-23.6563	-0.2427	-0.0719
1008	SLE RA 13	-0.38	1.58	102.96	-23.5316	-0.2421	-0.0739
1008	SLE RA 14	-0.35	1.68	104.34	-23.85	-0.2443	-0.0665
1008	SLE RA 15	-0.37	1.65	104.38	-23.8549	-0.2449	-0.0711
1008	SLE RA 16	-0.35	1.65	103.77	-23.7222	-0.2432	-0.0655
1008	SLE RA 17	-0.37	1.62	103.81	-23.7271	-0.2438	-0.07
1008	SLE RA 18	-0.36	1.69	105.37	-24.0886	-0.2471	-0.0689
1008	SLE RA 19	-0.38	1.65	105.41	-24.0935	-0.2478	-0.0735
1008	SLE RA 20	-0.36	1.7	106.24	-24.2873	-0.2494	-0.0681
1008	SLE RA 21	-0.38	1.67	106.28	-24.2922	-0.25	-0.0726
1008	SLE FR 1	-0.33	1.48	94.24	-21.5427	-0.219	-0.0632
1008	SLE FR 2	-0.34	1.47	94.25	-21.5443	-0.2193	-0.0647
1008	SLE FR 3	-0.33	1.49	94.59	-21.6221	-0.2199	-0.0628
1008	SLE FR 4	-0.35	1.53	97.59	-22.3081	-0.2277	-0.0664
1008	SLE FR 5	-0.34	1.55	97.93	-22.3859	-0.2284	-0.0646
1008	SLE FR 6	-0.35	1.59	99.81	-22.8157	-0.2331	-0.066
1008	SLE QP 1	-0.33	1.48	94.24	-21.5427	-0.219	-0.0632
1008	SLE QP 2	-0.34	1.54	97.58	-22.3065	-0.2275	-0.0649
1008	SLD 1	8.81	3.37	106.1	-24.2284	-0.1213	2.141
1008	SLD 2	7.94	3.11	105.72	-24.1348	-0.1191	1.9365
1008	SLD 3	8.31	0.97	108.5	-24.6806	-0.1352	2.0203
1008	SLD 4	7.44	0.71	108.12	-24.587	-0.133	1.8157
1008	SLD 5	3.32	5.79	96.56	-22.214	-0.1749	0.8165
1008	SLD 6	2.75	5.62	96.31	-22.1525	-0.1735	0.682
1008	SLD 7	1.65	-2.23	104.57	-23.7212	-0.2213	0.4141
1008	SLD 8	1.08	-2.4	104.31	-23.6597	-0.2198	0.2797
1008	SLD 9	-1.76	5.49	90.84	-20.9532	-0.2351	-0.4095
1008	SLD 10	-2.33	5.32	90.59	-20.8917	-0.2337	-0.5439
1008	SLD 11	-3.43	-2.53	98.85	-22.4604	-0.2815	-0.8118
1008	SLD 12	-4	-2.7	98.6	-22.3989	-0.28	-0.9463
1008	SLD 13	-8.12	2.38	87.04	-20.0259	-0.322	-1.9455
1008	SLD 14	-8.99	2.12	86.65	-19.9323	-0.3197	-2.1501



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1008	SLD 15	-8.62	-0.02	89.44	-20.4781	-0.3359	-2.0662
1008	SLD 16	-9.49	-0.28	89.06	-20.3845	-0.3336	-2.2708
1008	SLV 1	21.06	5.72	117.6	-26.8185	0.0206	5.0951
1008	SLV 2	19.04	5.12	116.71	-26.6006	0.0258	4.6187
1008	SLV 3	19.9	0.28	123.06	-27.8462	-0.0111	4.8137
1008	SLV 4	17.88	-0.32	122.16	-27.6283	-0.0059	4.3373
1008	SLV 5	8.2	11.16	95.47	-22.1391	-0.1058	1.9923
1008	SLV 6	6.89	10.77	94.89	-21.9983	-0.1025	1.6846
1008	SLV 7	4.31	-6.98	113.65	-25.5648	-0.2116	1.0543
1008	SLV 8	3.01	-7.37	113.07	-25.424	-0.2082	0.7466
1008	SLV 9	-3.69	10.46	82.09	-19.1889	-0.2467	-0.8763
1008	SLV 10	-4.99	10.07	81.51	-19.0481	-0.2434	-1.184
1008	SLV 11	-7.57	-7.68	100.27	-22.6146	-0.3524	-1.8144
1008	SLV 12	-8.88	-8.07	99.69	-22.4739	-0.3491	-2.1221
1008	SLV 13	-18.56	3.41	73	-16.9846	-0.449	-4.4671
1008	SLV 14	-20.58	2.81	72.1	-16.7667	-0.4438	-4.9435
1008	SLV 15	-19.73	-2.03	78.45	-18.0124	-0.4807	-4.7485
1008	SLV 16	-21.74	-2.63	77.56	-17.7944	-0.4755	-5.2249
1008	CRTFP Ux+	0	0	0	0	0	0
1008	CRTFP Ux-	0	0	0	0	0	0
1008	CRTFP Uy+	0	0	0	0	0	0
1008	CRTFP Uy-	0	0	0	0	0	0
1010	SLU 1	-0.08	0.6	36.47	-10.9449	-0.65	-0.018
1010	SLU 2	-0.1	0.56	36.5	-10.9494	-0.6508	-0.0255
1010	SLU 3	-0.08	0.62	37.33	-11.1993	-0.6653	-0.0175
1010	SLU 4	-0.1	0.6	37.35	-11.2021	-0.6658	-0.022
1010	SLU 5	-0.1	0.57	37.03	-11.105	-0.6601	-0.0244
1010	SLU 6	-0.08	0.63	37.86	-11.3549	-0.6747	-0.0165
1010	SLU 7	-0.09	0.61	37.88	-11.3576	-0.6752	-0.021
1010	SLU 8	-0.08	0.62	37.52	-11.2559	-0.6686	-0.0159
1010	SLU 9	-0.09	0.59	37.54	-11.2587	-0.6691	-0.0204
1010	SLU 10	-0.11	0.65	41.2	-12.3516	-0.7342	-0.0268
1010	SLU 11	-0.09	0.72	42.02	-12.6015	-0.7487	-0.0189
1010	SLU 12	-0.1	0.69	42.05	-12.6043	-0.7492	-0.0234
1010	SLU 13	-0.11	0.66	41.72	-12.5072	-0.7435	-0.0258
1010	SLU 14	-0.09	0.72	42.55	-12.7571	-0.758	-0.0178
1010	SLU 15	-0.1	0.7	42.57	-12.7598	-0.7585	-0.0223
1010	SLU 16	-0.09	0.71	42.21	-12.6582	-0.752	-0.0173
1010	SLU 17	-0.1	0.69	42.23	-12.6609	-0.7525	-0.0217
1010	SLU 18	-0.1	0.73	43.17	-12.948	-0.7691	-0.02
1010	SLU 19	-0.11	0.71	43.19	-12.9508	-0.7696	-0.0244
1010	SLU 20	-0.09	0.74	43.7	-13.1036	-0.7784	-0.0189
1010	SLU 21	-0.1	0.72	43.72	-13.1063	-0.7789	-0.0234
1010	SLU 22	-0.09	0.74	41.3	-12.3793	-0.7356	-0.0192
1010	SLU 23	-0.11	0.7	41.33	-12.3838	-0.7365	-0.0267
1010	SLU 24	-0.09	0.76	42.16	-12.6337	-0.751	-0.0188
1010	SLU 25	-0.11	0.74	42.18	-12.6365	-0.7515	-0.0232
1010	SLU 26	-0.11	0.71	41.86	-12.5394	-0.7458	-0.0256
1010	SLU 27	-0.09	0.77	42.69	-12.7893	-0.7603	-0.0177
1010	SLU 28	-0.1	0.75	42.71	-12.792	-0.7608	-0.0222
1010	SLU 29	-0.09	0.76	42.34	-12.6904	-0.7543	-0.0172
1010	SLU 30	-0.1	0.73	42.37	-12.6931	-0.7548	-0.0216
1010	SLU 31	-0.12	0.79	46.03	-13.786	-0.8198	-0.028
1010	SLU 32	-0.1	0.86	46.85	-14.036	-0.8344	-0.0201
1010	SLU 33	-0.11	0.83	46.88	-14.0387	-0.8349	-0.0246
1010	SLU 34	-0.12	0.8	46.55	-13.9416	-0.8292	-0.027
1010	SLU 35	-0.1	0.86	47.38	-14.1915	-0.8437	-0.0191
1010	SLU 36	-0.11	0.84	47.4	-14.1942	-0.8442	-0.0235
1010	SLU 37	-0.1	0.85	47.04	-14.0926	-0.8377	-0.0185
1010	SLU 38	-0.11	0.83	47.06	-14.0953	-0.8382	-0.023
1010	SLU 39	-0.11	0.87	48	-14.3824	-0.8548	-0.0212
1010	SLU 40	-0.12	0.85	48.02	-14.3852	-0.8553	-0.0257
1010	SLU 41	-0.1	0.88	48.52	-14.538	-0.8641	-0.0201
1010	SLU 42	-0.12	0.86	48.55	-14.5407	-0.8646	-0.0246
1010	SLU 43	-0.1	0.73	45.75	-13.7365	-0.8156	-0.023
1010	SLU 44	-0.12	0.7	45.79	-13.7411	-0.8164	-0.0304
1010	SLU 45	-0.1	0.76	46.62	-13.991	-0.8309	-0.0225
1010	SLU 46	-0.12	0.74	46.64	-13.9937	-0.8314	-0.027
1010	SLU 47	-0.12	0.7	46.31	-13.8966	-0.8257	-0.0294
1010	SLU 48	-0.1	0.76	47.14	-14.1465	-0.8403	-0.0215
1010	SLU 49	-0.11	0.74	47.16	-14.1493	-0.8408	-0.0259
1010	SLU 50	-0.1	0.75	46.8	-14.0476	-0.8342	-0.0209
1010	SLU 51	-0.11	0.73	46.82	-14.0503	-0.8347	-0.0254
1010	SLU 52	-0.13	0.79	50.48	-15.1433	-0.8998	-0.0318
1010	SLU 53	-0.11	0.85	51.31	-15.3932	-0.9143	-0.0239
1010	SLU 54	-0.13	0.83	51.33	-15.3959	-0.9148	-0.0283
1010	SLU 55	-0.13	0.79	51.01	-15.2988	-0.9091	-0.0307
1010	SLU 56	-0.11	0.86	51.83	-15.5487	-0.9237	-0.0228
1010	SLU 57	-0.12	0.83	51.86	-15.5515	-0.9241	-0.0273
1010	SLU 58	-0.11	0.84	51.49	-15.4498	-0.9176	-0.0223
1010	SLU 59	-0.12	0.82	51.51	-15.4525	-0.9181	-0.0267
1010	SLU 60	-0.12	0.86	52.45	-15.7397	-0.9347	-0.0249
1010	SLU 61	-0.13	0.84	52.48	-15.7424	-0.9352	-0.0294
1010	SLU 62	-0.11	0.87	52.98	-15.8952	-0.944	-0.0239
1010	SLU 63	-0.13	0.85	53	-15.898	-0.9445	-0.0284
1010	SLU 64	-0.12	0.87	50.58	-15.1709	-0.9012	-0.0242
1010	SLU 65	-0.14	0.84	50.62	-15.1755	-0.9021	-0.0317
1010	SLU 66	-0.12	0.9	51.45	-15.4254	-0.9166	-0.0237
1010	SLU 67	-0.13	0.88	51.47	-15.4281	-0.9171	-0.0282
1010	SLU 68	-0.13	0.84	51.14	-15.331	-0.9114	-0.0306



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1010	SLU 69	-0.11	0.9	51.97	-15.5809	-0.926	-0.0227
1010	SLU 70	-0.12	0.88	51.99	-15.5837	-0.9264	-0.0272
1010	SLU 71	-0.11	0.89	51.63	-15.482	-0.9199	-0.0221
1010	SLU 72	-0.12	0.87	51.65	-15.4847	-0.9204	-0.0266
1010	SLU 73	-0.14	0.93	55.31	-16.5777	-0.9855	-0.033
1010	SLU 74	-0.12	0.99	56.14	-16.8276	-1	-0.0251
1010	SLU 75	-0.14	0.97	56.16	-16.8303	-1.0005	-0.0296
1010	SLU 76	-0.14	0.93	55.83	-16.7332	-0.9948	-0.032
1010	SLU 77	-0.12	1	56.66	-16.9832	-1.0093	-0.0241
1010	SLU 78	-0.13	0.97	56.68	-16.9859	-1.0098	-0.0285
1010	SLU 79	-0.12	0.98	56.32	-16.8842	-1.0033	-0.0235
1010	SLU 80	-0.13	0.96	56.34	-16.887	-1.0038	-0.028
1010	SLU 81	-0.13	1	57.28	-17.1741	-1.0204	-0.0262
1010	SLU 82	-0.14	0.98	57.31	-17.1768	-1.0209	-0.0306
1010	SLU 83	-0.13	1.01	57.81	-17.3296	-1.0297	-0.0251
1010	SLU 84	-0.14	0.99	57.83	-17.3324	-1.0302	-0.0296
1010	SLE RA 1	-0.09	0.64	37.85	-11.3547	-0.6744	-0.0184
1010	SLE RA 2	-0.1	0.62	37.87	-11.3577	-0.675	-0.0233
1010	SLE RA 3	-0.09	0.66	38.42	-11.5243	-0.6847	-0.018
1010	SLE RA 4	-0.09	0.64	38.44	-11.5262	-0.685	-0.021
1010	SLE RA 5	-0.1	0.62	38.22	-11.4614	-0.6812	-0.0226
1010	SLE RA 6	-0.08	0.66	38.77	-11.628	-0.6909	-0.0173
1010	SLE RA 7	-0.09	0.65	38.79	-11.6299	-0.6912	-0.0203
1010	SLE RA 8	-0.08	0.65	38.55	-11.5621	-0.6869	-0.017
1010	SLE RA 9	-0.09	0.64	38.56	-11.5639	-0.6872	-0.0199
1010	SLE RA 10	-0.11	0.68	41	-12.2925	-0.7306	-0.0242
1010	SLE RA 11	-0.09	0.72	41.55	-12.4591	-0.7403	-0.0189
1010	SLE RA 12	-0.1	0.7	41.57	-12.461	-0.7406	-0.0219
1010	SLE RA 13	-0.1	0.68	41.35	-12.3962	-0.7368	-0.0235
1010	SLE RA 14	-0.09	0.72	41.9	-12.5628	-0.7465	-0.0183
1010	SLE RA 15	-0.1	0.71	41.92	-12.5647	-0.7468	-0.0212
1010	SLE RA 16	-0.09	0.71	41.67	-12.4969	-0.7425	-0.0179
1010	SLE RA 17	-0.1	0.7	41.69	-12.4987	-0.7428	-0.0209
1010	SLE RA 18	-0.09	0.72	42.32	-12.6901	-0.7539	-0.0197
1010	SLE RA 19	-0.1	0.71	42.33	-12.692	-0.7542	-0.0226
1010	SLE RA 20	-0.09	0.73	42.67	-12.7938	-0.7601	-0.019
1010	SLE RA 21	-0.1	0.72	42.68	-12.7956	-0.7604	-0.0219
1010	SLE FR 1	-0.09	0.64	37.85	-11.3547	-0.6744	-0.0184
1010	SLE FR 2	-0.09	0.63	37.85	-11.3553	-0.6745	-0.0194
1010	SLE FR 3	-0.09	0.64	37.99	-11.3962	-0.6769	-0.0181
1010	SLE FR 4	-0.09	0.66	39.19	-11.7559	-0.6984	-0.0197
1010	SLE FR 5	-0.09	0.67	39.33	-11.7968	-0.7007	-0.0185
1010	SLE FR 6	-0.09	0.68	40.08	-12.0224	-0.7141	-0.019
1010	SLE QP 1	-0.09	0.64	37.85	-11.3547	-0.6744	-0.0184
1010	SLE QP 2	-0.09	0.66	39.19	-11.7553	-0.6983	-0.0188
1010	SLD 1	3.69	1.38	42.33	-12.7701	-0.7465	1.3066
1010	SLD 2	3.34	1.29	42.17	-12.7169	-0.7437	1.1819
1010	SLD 3	3.49	0.39	43.25	-12.9946	-0.763	1.2317
1010	SLD 4	3.13	0.31	43.1	-12.9415	-0.7602	1.107
1010	SLD 5	1.42	2.39	38.76	-11.7287	-0.6882	0.5147
1010	SLD 6	1.19	2.33	38.66	-11.6937	-0.6863	0.4327
1010	SLD 7	0.73	-0.9	41.83	-12.4772	-0.7432	0.2651
1010	SLD 8	0.5	-0.95	41.73	-12.4423	-0.7414	0.1832
1010	SLD 9	-0.68	2.28	36.65	-11.0684	-0.6552	-0.2207
1010	SLD 10	-0.91	2.23	36.54	-11.0335	-0.6533	-0.3026
1010	SLD 11	-1.37	-1	39.72	-11.8169	-0.7102	-0.4702
1010	SLD 12	-1.6	-1.06	39.61	-11.782	-0.7083	-0.5522
1010	SLD 13	-3.31	1.02	35.28	-10.5692	-0.6364	-1.1445
1010	SLD 14	-3.66	0.94	35.12	-10.516	-0.6336	-1.2693
1010	SLD 15	-3.52	0.04	36.2	-10.7937	-0.6529	-1.2194
1010	SLD 16	-3.87	-0.05	36.04	-10.7406	-0.6501	-1.3441
1010	SLV 1	8.76	2.29	46.58	-14.1375	-0.8116	3.0812
1010	SLV 2	7.93	2.09	46.21	-14.0138	-0.8051	2.7907
1010	SLV 3	8.28	0.06	48.67	-14.6479	-0.8491	2.9072
1010	SLV 4	7.45	-0.14	48.3	-14.5242	-0.8425	2.6167
1010	SLV 5	3.44	4.57	38.29	-11.7172	-0.6766	1.2254
1010	SLV 6	2.91	4.44	38.06	-11.6373	-0.6723	1.0378
1010	SLV 7	1.83	-2.87	45.27	-13.4186	-0.8015	0.6453
1010	SLV 8	1.3	-2.99	45.03	-13.3387	-0.7972	0.4577
1010	SLV 9	-1.48	4.32	33.34	-10.1719	-0.5993	-0.4952
1010	SLV 10	-2.01	4.19	33.11	-10.092	-0.5951	-0.6828
1010	SLV 11	-3.08	-3.12	40.32	-11.8733	-0.7242	-1.0753
1010	SLV 12	-3.61	-3.24	40.08	-11.7934	-0.7199	-1.2629
1010	SLV 13	-7.63	1.46	30.07	-8.9865	-0.554	-2.6542
1010	SLV 14	-8.45	1.27	29.71	-8.8628	-0.5475	-2.9447
1010	SLV 15	-8.11	-0.77	32.17	-9.4969	-0.5915	-2.8283
1010	SLV 16	-8.93	-0.96	31.8	-9.3732	-0.5849	-3.1187
1010	CRTFP Ux+	0	0	0	0	0	0
1010	CRTFP Ux-	0	0	0	0	0	0
1010	CRTFP Uy+	0	0	0	0	0	0
1010	CRTFP Uy-	0	0	0	0	0	0
1011	SLU 1	-0.05	0.65	38.79	-10.74	0.0546	-0.0184
1011	SLU 2	-0.07	0.62	38.83	-10.7455	0.0544	-0.0261
1011	SLU 3	-0.05	0.68	39.7	-10.9863	0.056	-0.0181
1011	SLU 4	-0.06	0.66	39.73	-10.9896	0.0559	-0.0227
1011	SLU 5	-0.07	0.63	39.39	-10.8963	0.0552	-0.0249
1011	SLU 6	-0.05	0.69	40.26	-11.137	0.0568	-0.0169
1011	SLU 7	-0.06	0.67	40.29	-11.1403	0.0567	-0.0215
1011	SLU 8	-0.05	0.67	39.9	-11.0415	0.0563	-0.0161
1011	SLU 9	-0.06	0.65	39.93	-11.0448	0.0561	-0.0207



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1011	SLU 10	-0.08	0.72	43.81	-12.109	0.062	-0.0282
1011	SLU 11	-0.06	0.78	44.68	-12.3498	0.0636	-0.0202
1011	SLU 12	-0.07	0.76	44.71	-12.3531	0.0635	-0.0248
1011	SLU 13	-0.08	0.73	44.37	-12.2598	0.0628	-0.027
1011	SLU 14	-0.05	0.79	45.24	-12.5005	0.0645	-0.019
1011	SLU 15	-0.07	0.77	45.27	-12.5038	0.0643	-0.0236
1011	SLU 16	-0.05	0.77	44.88	-12.405	0.0639	-0.0182
1011	SLU 17	-0.06	0.75	44.9	-12.4083	0.0638	-0.0227
1011	SLU 18	-0.06	0.79	45.9	-12.6879	0.0655	-0.0214
1011	SLU 19	-0.07	0.77	45.92	-12.6912	0.0654	-0.026
1011	SLU 20	-0.06	0.8	46.45	-12.8387	0.0663	-0.0202
1011	SLU 21	-0.07	0.78	46.48	-12.8419	0.0662	-0.0248
1011	SLU 22	-0.06	0.81	43.9	-12.1318	0.0626	-0.0214
1011	SLU 23	-0.08	0.77	43.95	-12.1373	0.0624	-0.0291
1011	SLU 24	-0.06	0.83	44.82	-12.378	0.064	-0.0211
1011	SLU 25	-0.07	0.81	44.85	-12.3813	0.0638	-0.0257
1011	SLU 26	-0.08	0.78	44.51	-12.2881	0.0632	-0.0279
1011	SLU 27	-0.06	0.84	45.38	-12.5288	0.0648	-0.0199
1011	SLU 28	-0.07	0.82	45.41	-12.5321	0.0647	-0.0245
1011	SLU 29	-0.05	0.82	45.02	-12.4333	0.0642	-0.0191
1011	SLU 30	-0.07	0.8	45.04	-12.4366	0.0641	-0.0237
1011	SLU 31	-0.09	0.87	48.93	-13.5008	0.07	-0.0311
1011	SLU 32	-0.06	0.93	49.8	-13.7416	0.0716	-0.0232
1011	SLU 33	-0.08	0.91	49.83	-13.7448	0.0715	-0.0278
1011	SLU 34	-0.08	0.88	49.48	-13.6516	0.0708	-0.03
1011	SLU 35	-0.06	0.94	50.35	-13.8923	0.0724	-0.022
1011	SLU 36	-0.07	0.92	50.38	-13.8956	0.0723	-0.0266
1011	SLU 37	-0.06	0.92	49.99	-13.7968	0.0719	-0.0211
1011	SLU 38	-0.07	0.9	50.02	-13.8001	0.0717	-0.0257
1011	SLU 39	-0.07	0.94	51.01	-14.0797	0.0735	-0.0244
1011	SLU 40	-0.08	0.92	51.04	-14.083	0.0734	-0.029
1011	SLU 41	-0.06	0.95	51.57	-14.2304	0.0743	-0.0232
1011	SLU 42	-0.08	0.93	51.6	-14.2337	0.0742	-0.0278
1011	SLU 43	-0.06	0.8	48.67	-13.4849	0.0682	-0.0229
1011	SLU 44	-0.09	0.76	48.71	-13.4903	0.068	-0.0306
1011	SLU 45	-0.06	0.83	49.58	-13.7311	0.0696	-0.0226
1011	SLU 46	-0.08	0.81	49.61	-13.7344	0.0695	-0.0272
1011	SLU 47	-0.08	0.77	49.27	-13.6411	0.0688	-0.0294
1011	SLU 48	-0.06	0.84	50.14	-13.8818	0.0704	-0.0214
1011	SLU 49	-0.07	0.82	50.17	-13.8851	0.0703	-0.026
1011	SLU 50	-0.06	0.82	49.78	-13.7864	0.0699	-0.0206
1011	SLU 51	-0.07	0.8	49.81	-13.7897	0.0698	-0.0252
1011	SLU 52	-0.09	0.86	53.69	-14.8539	0.0757	-0.0327
1011	SLU 53	-0.07	0.93	54.56	-15.0946	0.0773	-0.0247
1011	SLU 54	-0.08	0.9	54.59	-15.0979	0.0771	-0.0293
1011	SLU 55	-0.09	0.87	54.25	-15.0046	0.0765	-0.0315
1011	SLU 56	-0.07	0.94	55.12	-15.2453	0.0781	-0.0235
1011	SLU 57	-0.08	0.91	55.15	-15.2486	0.078	-0.0281
1011	SLU 58	-0.06	0.92	54.76	-15.1499	0.0775	-0.0227
1011	SLU 59	-0.08	0.89	54.78	-15.1532	0.0774	-0.0273
1011	SLU 60	-0.07	0.94	55.78	-15.4327	0.0791	-0.0259
1011	SLU 61	-0.09	0.92	55.8	-15.436	0.079	-0.0305
1011	SLU 62	-0.07	0.95	56.33	-15.5835	0.08	-0.0247
1011	SLU 63	-0.08	0.93	56.36	-15.5868	0.0798	-0.0293
1011	SLU 64	-0.07	0.95	53.78	-14.8766	0.0762	-0.0259
1011	SLU 65	-0.09	0.91	53.83	-14.8821	0.076	-0.0336
1011	SLU 66	-0.07	0.98	54.7	-15.1229	0.0776	-0.0256
1011	SLU 67	-0.08	0.96	54.73	-15.1262	0.0775	-0.0302
1011	SLU 68	-0.09	0.92	54.39	-15.0329	0.0768	-0.0324
1011	SLU 69	-0.07	0.99	55.26	-15.2736	0.0784	-0.0244
1011	SLU 70	-0.08	0.97	55.29	-15.2769	0.0783	-0.029
1011	SLU 71	-0.07	0.97	54.9	-15.1781	0.0779	-0.0236
1011	SLU 72	-0.08	0.95	54.93	-15.1814	0.0777	-0.0282
1011	SLU 73	-0.1	1.01	58.81	-16.2456	0.0836	-0.0357
1011	SLU 74	-0.08	1.08	59.68	-16.4864	0.0852	-0.0277
1011	SLU 75	-0.09	1.05	59.71	-16.4897	0.0851	-0.0323
1011	SLU 76	-0.1	1.02	59.36	-16.3964	0.0845	-0.0345
1011	SLU 77	-0.07	1.09	60.24	-16.6371	0.0861	-0.0265
1011	SLU 78	-0.09	1.06	60.26	-16.6404	0.0859	-0.0311
1011	SLU 79	-0.07	1.07	59.87	-16.5417	0.0855	-0.0257
1011	SLU 80	-0.08	1.04	59.9	-16.5449	0.0854	-0.0302
1011	SLU 81	-0.08	1.09	60.89	-16.8245	0.0871	-0.0289
1011	SLU 82	-0.09	1.07	60.92	-16.8278	0.087	-0.0335
1011	SLU 83	-0.08	1.1	61.45	-16.9753	0.088	-0.0277
1011	SLU 84	-0.09	1.08	61.48	-16.9786	0.0878	-0.0323
1011	SLE RA 1	-0.05	0.7	40.25	-11.1377	0.0569	-0.0193
1011	SLE RA 2	-0.07	0.67	40.28	-11.1413	0.0567	-0.0244
1011	SLE RA 3	-0.05	0.72	40.86	-11.3018	0.0578	-0.0191
1011	SLE RA 4	-0.06	0.7	40.88	-11.304	0.0577	-0.0221
1011	SLE RA 5	-0.07	0.68	40.65	-11.2418	0.0573	-0.0236
1011	SLE RA 6	-0.05	0.72	41.23	-11.4023	0.0584	-0.0183
1011	SLE RA 7	-0.06	0.71	41.25	-11.4045	0.0583	-0.0213
1011	SLE RA 8	-0.05	0.71	40.99	-11.3387	0.058	-0.0177
1011	SLE RA 9	-0.06	0.7	41.01	-11.3409	0.0579	-0.0208
1011	SLE RA 10	-0.07	0.74	43.6	-12.0503	0.0618	-0.0258
1011	SLE RA 11	-0.06	0.78	44.18	-12.2108	0.0629	-0.0205
1011	SLE RA 12	-0.07	0.77	44.2	-12.213	0.0628	-0.0235
1011	SLE RA 13	-0.07	0.74	43.97	-12.1508	0.0624	-0.025
1011	SLE RA 14	-0.06	0.79	44.55	-12.3113	0.0634	-0.0197
1011	SLE RA 15	-0.06	0.77	44.57	-12.3135	0.0634	-0.0227



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1011	SLE RA 16	-0.05	0.78	44.31	-12.2477	0.0631	-0.0191
1011	SLE RA 17	-0.06	0.76	44.33	-12.2499	0.063	-0.0222
1011	SLE RA 18	-0.06	0.79	44.99	-12.4363	0.0642	-0.0213
1011	SLE RA 19	-0.07	0.78	45.01	-12.4385	0.0641	-0.0243
1011	SLE RA 20	-0.06	0.8	45.36	-12.5368	0.0647	-0.0205
1011	SLE RA 21	-0.07	0.78	45.38	-12.539	0.0646	-0.0235
1011	SLE FR 1	-0.05	0.7	40.25	-11.1377	0.0569	-0.0193
1011	SLE FR 2	-0.06	0.69	40.25	-11.1384	0.0568	-0.0203
1011	SLE FR 3	-0.05	0.7	40.4	-11.1779	0.0571	-0.019
1011	SLE FR 4	-0.06	0.72	41.68	-11.528	0.059	-0.0209
1011	SLE FR 5	-0.05	0.73	41.82	-11.5675	0.0593	-0.0196
1011	SLE FR 6	-0.06	0.74	42.62	-11.787	0.0605	-0.0203
1011	SLE QP 1	-0.05	0.7	40.25	-11.1377	0.0569	-0.0193
1011	SLE QP 2	-0.06	0.73	41.67	-11.5273	0.0591	-0.0199
1011	SLD 1	4.12	1.48	44.7	-12.5117	0.0754	1.4401
1011	SLD 2	3.73	1.4	44.53	-12.4583	0.0751	1.3044
1011	SLD 3	3.89	0.41	45.68	-12.7377	0.0771	1.3605
1011	SLD 4	3.5	0.34	45.51	-12.6844	0.0768	1.2248
1011	SLD 5	1.61	2.58	41.12	-11.4893	0.0615	0.5631
1011	SLD 6	1.36	2.53	41.01	-11.4542	0.0613	0.4739
1011	SLD 7	0.85	-0.97	44.39	-12.2428	0.067	0.2978
1011	SLD 8	0.6	-1.02	44.28	-12.2077	0.0668	0.2086
1011	SLD 9	-0.71	2.47	39.06	-10.8468	0.0513	-0.2483
1011	SLD 10	-0.96	2.42	38.95	-10.8117	0.0511	-0.3375
1011	SLD 11	-1.47	-1.08	42.33	-11.6003	0.0568	-0.5136
1011	SLD 12	-1.72	-1.13	42.22	-11.5653	0.0566	-0.6029
1011	SLD 13	-3.61	1.12	37.83	-10.3702	0.0414	-1.2646
1011	SLD 14	-4	1.04	37.66	-10.3168	0.041	-1.4003
1011	SLD 15	-3.84	0.05	38.81	-10.5962	0.043	-1.3442
1011	SLD 16	-4.23	-0.03	38.64	-10.5428	0.0427	-1.4799
1011	SLV 1	9.71	2.44	48.78	-13.8387	0.0975	3.3954
1011	SLV 2	8.8	2.27	48.4	-13.7144	0.0967	3.0793
1011	SLV 3	9.18	0.03	51.01	-14.3525	0.1012	3.2098
1011	SLV 4	8.27	-0.14	50.62	-14.2281	0.1004	2.8936
1011	SLV 5	3.84	4.93	40.5	-11.463	0.065	1.3409
1011	SLV 6	3.25	4.82	40.25	-11.3827	0.0645	1.1368
1011	SLV 7	2.07	-3.11	47.91	-13.1755	0.0776	0.7221
1011	SLV 8	1.48	-3.23	47.66	-13.0952	0.0771	0.5179
1011	SLV 9	-1.59	4.68	35.68	-9.9593	0.0411	-0.5577
1011	SLV 10	-2.18	4.56	35.43	-9.879	0.0405	-0.7619
1011	SLV 11	-3.36	-3.37	43.09	-11.6718	0.0536	-1.1765
1011	SLV 12	-3.95	-3.48	42.84	-11.5915	0.0531	-1.3807
1011	SLV 13	-8.38	1.6	32.72	-8.8264	0.0177	-2.9334
1011	SLV 14	-9.29	1.42	32.33	-8.7021	0.0169	-3.2495
1011	SLV 15	-8.91	-0.82	34.94	-9.3401	0.0215	-3.1191
1011	SLV 16	-9.82	-0.99	34.55	-9.2158	0.0207	-3.4352
1011	CRTFP Ux+	0	0	0	0	0	0
1011	CRTFP Ux-	0	0	0	0	0	0
1011	CRTFP Uy+	0	0	0	0	0	0
1011	CRTFP Uy-	0	0	0	0	0	0
1012	SLU 1	-0.01	0.65	37.08	-9.35	0.0573	-0.005
1012	SLU 2	-0.04	0.61	37.14	-9.3567	0.057	-0.0128
1012	SLU 3	-0.01	0.68	37.96	-9.5605	0.0587	-0.0043
1012	SLU 4	-0.03	0.65	37.99	-9.5645	0.0586	-0.009
1012	SLU 5	-0.03	0.62	37.67	-9.4858	0.0579	-0.0114
1012	SLU 6	-0.01	0.69	38.49	-9.6896	0.0596	-0.0029
1012	SLU 7	-0.02	0.66	38.52	-9.6936	0.0595	-0.0077
1012	SLU 8	-0.01	0.67	38.14	-9.6082	0.059	-0.0022
1012	SLU 9	-0.02	0.64	38.18	-9.6122	0.0589	-0.0069
1012	SLU 10	-0.04	0.71	41.87	-10.5272	0.0651	-0.0136
1012	SLU 11	-0.01	0.77	42.7	-10.731	0.0667	-0.0051
1012	SLU 12	-0.03	0.75	42.73	-10.735	0.0666	-0.0098
1012	SLU 13	-0.03	0.72	42.4	-10.6563	0.0659	-0.0123
1012	SLU 14	-0.01	0.78	43.23	-10.8601	0.0676	-0.0038
1012	SLU 15	-0.02	0.76	43.26	-10.8641	0.0675	-0.0085
1012	SLU 16	-0.01	0.76	42.88	-10.7788	0.067	-0.003
1012	SLU 17	-0.02	0.74	42.91	-10.7828	0.0669	-0.0078
1012	SLU 18	-0.02	0.78	43.85	-11.0222	0.0687	-0.0061
1012	SLU 19	-0.03	0.76	43.88	-11.0262	0.0686	-0.0109
1012	SLU 20	-0.01	0.79	44.38	-11.1513	0.0696	-0.0048
1012	SLU 21	-0.03	0.77	44.41	-11.1553	0.0695	-0.0095
1012	SLU 22	-0.02	0.79	41.95	-10.5419	0.0656	-0.0067
1012	SLU 23	-0.04	0.76	42	-10.5486	0.0654	-0.0146
1012	SLU 24	-0.02	0.82	42.83	-10.7524	0.0671	-0.0061
1012	SLU 25	-0.03	0.8	42.86	-10.7564	0.067	-0.0108
1012	SLU 26	-0.04	0.77	42.53	-10.6777	0.0663	-0.0132
1012	SLU 27	-0.01	0.83	43.36	-10.8815	0.068	-0.0047
1012	SLU 28	-0.03	0.81	43.39	-10.8855	0.0678	-0.0094
1012	SLU 29	-0.01	0.81	43.01	-10.8001	0.0674	-0.004
1012	SLU 30	-0.02	0.79	43.04	-10.8041	0.0672	-0.0087
1012	SLU 31	-0.04	0.85	46.74	-11.7191	0.0734	-0.0154
1012	SLU 32	-0.02	0.91	47.56	-11.9229	0.0751	-0.0069
1012	SLU 33	-0.03	0.89	47.6	-11.9269	0.075	-0.0116
1012	SLU 34	-0.04	0.86	47.27	-11.8482	0.0743	-0.014
1012	SLU 35	-0.01	0.92	48.1	-12.052	0.076	-0.0055
1012	SLU 36	-0.03	0.9	48.13	-12.056	0.0759	-0.0102
1012	SLU 37	-0.01	0.91	47.75	-11.9707	0.0754	-0.0048
1012	SLU 38	-0.03	0.88	47.78	-11.9746	0.0753	-0.0095
1012	SLU 39	-0.02	0.93	48.72	-12.2141	0.0771	-0.0079
1012	SLU 40	-0.03	0.91	48.75	-12.2181	0.077	-0.0126



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1012	SLU 41	-0.02	0.94	49.25	-12.3432	0.078	-0.0065
1012	SLU 42	-0.03	0.91	49.28	-12.3472	0.0778	-0.0112
1012	SLU 43	-0.02	0.79	46.54	-11.7464	0.0716	-0.0059
1012	SLU 44	-0.04	0.76	46.59	-11.7531	0.0714	-0.0137
1012	SLU 45	-0.01	0.82	47.41	-11.9568	0.073	-0.0052
1012	SLU 46	-0.03	0.8	47.44	-11.9608	0.0729	-0.0099
1012	SLU 47	-0.03	0.77	47.12	-11.8822	0.0722	-0.0123
1012	SLU 48	-0.01	0.83	47.94	-12.0859	0.0739	-0.0038
1012	SLU 49	-0.02	0.81	47.98	-12.0899	0.0738	-0.0085
1012	SLU 50	-0.01	0.81	47.6	-12.0046	0.0733	-0.0031
1012	SLU 51	-0.02	0.79	47.63	-12.0086	0.0732	-0.0078
1012	SLU 52	-0.04	0.85	51.33	-12.9236	0.0794	-0.0145
1012	SLU 53	-0.02	0.91	52.15	-13.1274	0.0811	-0.006
1012	SLU 54	-0.03	0.89	52.18	-13.1314	0.0809	-0.0107
1012	SLU 55	-0.04	0.86	51.86	-13.0527	0.0803	-0.0132
1012	SLU 56	-0.01	0.92	52.68	-13.2565	0.0819	-0.0047
1012	SLU 57	-0.03	0.9	52.71	-13.2605	0.0818	-0.0094
1012	SLU 58	-0.01	0.9	52.34	-13.1751	0.0813	-0.0039
1012	SLU 59	-0.02	0.88	52.37	-13.1791	0.0812	-0.0086
1012	SLU 60	-0.02	0.93	53.31	-13.4186	0.083	-0.007
1012	SLU 61	-0.03	0.9	53.34	-13.4226	0.0829	-0.0117
1012	SLU 62	-0.02	0.94	53.84	-13.5477	0.0839	-0.0057
1012	SLU 63	-0.03	0.91	53.87	-13.5517	0.0838	-0.0104
1012	SLU 64	-0.02	0.94	51.41	-12.9383	0.08	-0.0076
1012	SLU 65	-0.04	0.9	51.46	-12.945	0.0797	-0.0155
1012	SLU 66	-0.02	0.97	52.28	-13.1487	0.0814	-0.007
1012	SLU 67	-0.03	0.94	52.31	-13.1527	0.0813	-0.0117
1012	SLU 68	-0.04	0.91	51.99	-13.074	0.0806	-0.0141
1012	SLU 69	-0.02	0.97	52.81	-13.2778	0.0823	-0.0056
1012	SLU 70	-0.03	0.95	52.84	-13.2818	0.0821	-0.0103
1012	SLU 71	-0.01	0.96	52.47	-13.1965	0.0817	-0.0049
1012	SLU 72	-0.03	0.93	52.5	-13.2005	0.0816	-0.0096
1012	SLU 73	-0.05	1	56.2	-14.1155	0.0878	-0.0163
1012	SLU 74	-0.02	1.06	57.02	-14.3193	0.0894	-0.0078
1012	SLU 75	-0.03	1.04	57.05	-14.3233	0.0893	-0.0125
1012	SLU 76	-0.04	1	56.73	-14.2446	0.0886	-0.0149
1012	SLU 77	-0.02	1.07	57.55	-14.4484	0.0903	-0.0064
1012	SLU 78	-0.03	1.05	57.58	-14.4524	0.0902	-0.0111
1012	SLU 79	-0.01	1.05	57.21	-14.367	0.0897	-0.0057
1012	SLU 80	-0.03	1.03	57.24	-14.371	0.0896	-0.0104
1012	SLU 81	-0.02	1.07	58.18	-14.6105	0.0914	-0.0088
1012	SLU 82	-0.04	1.05	58.21	-14.6145	0.0913	-0.0135
1012	SLU 83	-0.02	1.08	58.71	-14.7396	0.0923	-0.0074
1012	SLU 84	-0.03	1.06	58.74	-14.7436	0.0922	-0.0121
1012	SLE RA 1	-0.02	0.69	38.47	-9.6906	0.0597	-0.0055
1012	SLE RA 2	-0.03	0.67	38.51	-9.695	0.0595	-0.0107
1012	SLE RA 3	-0.01	0.71	39.06	-9.8309	0.0606	-0.005
1012	SLE RA 4	-0.02	0.69	39.08	-9.8335	0.0605	-0.0082
1012	SLE RA 5	-0.03	0.67	38.86	-9.7811	0.0601	-0.0098
1012	SLE RA 6	-0.01	0.71	39.41	-9.9169	0.0612	-0.0041
1012	SLE RA 7	-0.02	0.7	39.43	-9.9196	0.0611	-0.0073
1012	SLE RA 8	-0.01	0.7	39.18	-9.8627	0.0608	-0.0036
1012	SLE RA 9	-0.02	0.69	39.2	-9.8654	0.0607	-0.0068
1012	SLE RA 10	-0.03	0.73	41.67	-10.4754	0.0649	-0.0113
1012	SLE RA 11	-0.02	0.77	42.22	-10.6112	0.066	-0.0056
1012	SLE RA 12	-0.02	0.76	42.24	-10.6139	0.0659	-0.0087
1012	SLE RA 13	-0.03	0.73	42.02	-10.5614	0.0654	-0.0103
1012	SLE RA 14	-0.01	0.78	42.57	-10.6973	0.0666	-0.0047
1012	SLE RA 15	-0.02	0.76	42.59	-10.7	0.0665	-0.0078
1012	SLE RA 16	-0.01	0.76	42.34	-10.6431	0.0662	-0.0042
1012	SLE RA 17	-0.02	0.75	42.36	-10.6457	0.0661	-0.0073
1012	SLE RA 18	-0.02	0.78	42.99	-10.8054	0.0673	-0.0063
1012	SLE RA 19	-0.03	0.76	43.01	-10.808	0.0672	-0.0094
1012	SLE RA 20	-0.01	0.78	43.34	-10.8914	0.0679	-0.0053
1012	SLE RA 21	-0.02	0.77	43.36	-10.8941	0.0678	-0.0085
1012	SLE FR 1	-0.02	0.69	38.47	-9.6906	0.0597	-0.0055
1012	SLE FR 2	-0.02	0.68	38.48	-9.6915	0.0596	-0.0065
1012	SLE FR 3	-0.01	0.69	38.62	-9.725	0.0599	-0.0051
1012	SLE FR 4	-0.02	0.71	39.83	-10.0259	0.0619	-0.0068
1012	SLE FR 5	-0.01	0.72	39.97	-10.0594	0.0622	-0.0053
1012	SLE FR 6	-0.02	0.73	40.73	-10.248	0.0635	-0.0059
1012	SLE QP 1	-0.02	0.69	38.47	-9.6906	0.0597	-0.0055
1012	SLE QP 2	-0.02	0.72	39.83	-10.025	0.062	-0.0057
1012	SLD 1	4.17	1.44	42.34	-10.8403	0.0797	1.4592
1012	SLD 2	3.78	1.38	42.18	-10.7937	0.0793	1.3231
1012	SLD 3	3.94	0.39	43.27	-11.0384	0.0815	1.3794
1012	SLD 4	3.55	0.34	43.12	-10.9918	0.0811	1.2433
1012	SLD 5	1.66	2.53	39.19	-9.9776	0.0646	0.5791
1012	SLD 6	1.4	2.49	39.09	-9.9469	0.0643	0.4897
1012	SLD 7	0.9	-0.95	42.3	-10.6377	0.0706	0.3131
1012	SLD 8	0.64	-0.99	42.2	-10.6071	0.0704	0.2237
1012	SLD 9	-0.67	2.42	37.45	-9.4429	0.0535	-0.2351
1012	SLD 10	-0.93	2.38	37.35	-9.4123	0.0533	-0.3245
1012	SLD 11	-1.43	-1.06	40.56	-10.1031	0.0596	-0.5011
1012	SLD 12	-1.69	-1.09	40.46	-10.0725	0.0593	-0.5905
1012	SLD 13	-3.58	1.09	36.54	-9.0583	0.0428	-1.2548
1012	SLD 14	-3.97	1.04	36.38	-9.0117	0.0424	-1.3908
1012	SLD 15	-3.81	0.05	37.47	-9.2563	0.0446	-1.3346
1012	SLD 16	-4.2	-0.01	37.32	-9.2097	0.0442	-1.4706
1012	SLV 1	9.78	2.37	45.74	-11.9398	0.1035	3.421





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1012	SLV 2	8.87	2.23	45.37	-11.8313	0.1026	3.1042
1012	SLV 3	9.25	0.01	47.85	-12.3899	0.1077	3.2349
1012	SLV 4	8.34	-0.13	47.49	-12.2814	0.1067	2.918
1012	SLV 5	3.89	4.82	38.45	-9.9356	0.0683	1.3594
1012	SLV 6	3.3	4.73	38.22	-9.8655	0.0677	1.1548
1012	SLV 7	2.11	-3.06	45.51	-11.4359	0.0821	0.7389
1012	SLV 8	1.53	-3.14	45.28	-11.3658	0.0815	0.5343
1012	SLV 9	-1.56	4.58	34.38	-8.6842	0.0424	-0.5457
1012	SLV 10	-2.14	4.49	34.14	-8.6142	0.0418	-0.7504
1012	SLV 11	-3.33	-3.3	41.44	-10.1845	0.0562	-1.1662
1012	SLV 12	-3.92	-3.39	41.21	-10.1144	0.0556	-1.3709
1012	SLV 13	-8.37	1.56	32.16	-7.7686	0.0172	-2.9294
1012	SLV 14	-9.28	1.43	31.8	-7.6601	0.0163	-3.2463
1012	SLV 15	-8.9	-0.8	34.28	-8.2187	0.0214	-3.1156
1012	SLV 16	-9.81	-0.94	33.92	-8.1102	0.0204	-3.4324
1012	CRTFP Ux+	0	0	0	0	0	0
1012	CRTFP Ux-	0	0	0	0	0	0
1012	CRTFP Uy+	0	0	0	0	0	0
1012	CRTFP Uy-	0	0	0	0	0	0
1013	SLU 1	0.02	0.65	35.48	-8.1139	0.0485	0.0082
1013	SLU 2	0	0.61	35.54	-8.122	0.0483	0.0001
1013	SLU 3	0.03	0.68	36.31	-8.2927	0.0498	0.0092
1013	SLU 4	0.01	0.66	36.35	-8.2976	0.0496	0.0043
1013	SLU 5	0	0.62	36.05	-8.232	0.0491	0.0017
1013	SLU 6	0.03	0.69	36.82	-8.4026	0.0505	0.0107
1013	SLU 7	0.02	0.66	36.86	-8.4075	0.0504	0.0059
1013	SLU 8	0.03	0.67	36.49	-8.3338	0.05	0.0113
1013	SLU 9	0.02	0.65	36.53	-8.3387	0.0499	0.0065
1013	SLU 10	0	0.7	40.05	-9.1207	0.0551	0.0006
1013	SLU 11	0.03	0.77	40.83	-9.2913	0.0565	0.0096
1013	SLU 12	0.01	0.75	40.86	-9.2962	0.0564	0.0048
1013	SLU 13	0.01	0.71	40.56	-9.2307	0.0558	0.0021
1013	SLU 14	0.03	0.78	41.33	-9.4013	0.0572	0.0112
1013	SLU 15	0.02	0.75	41.37	-9.4062	0.0571	0.0063
1013	SLU 16	0.03	0.76	41.01	-9.3324	0.0567	0.0118
1013	SLU 17	0.02	0.74	41.04	-9.3373	0.0566	0.0069
1013	SLU 18	0.02	0.78	41.93	-9.5406	0.0582	0.0088
1013	SLU 19	0.01	0.76	41.96	-9.5455	0.0581	0.004
1013	SLU 20	0.03	0.79	42.43	-9.6505	0.0589	0.0104
1013	SLU 21	0.02	0.77	42.47	-9.6554	0.0588	0.0055
1013	SLU 22	0.02	0.79	40.11	-9.1278	0.0556	0.0077
1013	SLU 23	0	0.75	40.17	-9.1359	0.0554	-0.0004
1013	SLU 24	0.02	0.82	40.95	-9.3065	0.0568	0.0087
1013	SLU 25	0.01	0.8	40.98	-9.3114	0.0567	0.0038
1013	SLU 26	0	0.76	40.68	-9.2459	0.0562	0.0012
1013	SLU 27	0.03	0.83	41.45	-9.4165	0.0576	0.0102
1013	SLU 28	0.02	0.81	41.49	-9.4214	0.0575	0.0054
1013	SLU 29	0.03	0.81	41.13	-9.3477	0.0571	0.0108
1013	SLU 30	0.02	0.79	41.16	-9.3526	0.057	0.006
1013	SLU 31	0	0.84	44.69	-10.1346	0.0622	0.0001
1013	SLU 32	0.03	0.91	45.46	-10.3052	0.0636	0.0091
1013	SLU 33	0.01	0.89	45.5	-10.3101	0.0635	0.0043
1013	SLU 34	0	0.85	45.19	-10.2445	0.0629	0.0016
1013	SLU 35	0.03	0.92	45.97	-10.4152	0.0643	0.0107
1013	SLU 36	0.02	0.9	46	-10.4201	0.0642	0.0058
1013	SLU 37	0.03	0.9	45.64	-10.3463	0.0638	0.0113
1013	SLU 38	0.02	0.88	45.68	-10.3512	0.0637	0.0064
1013	SLU 39	0.02	0.92	46.56	-10.5544	0.0653	0.0083
1013	SLU 40	0.01	0.9	46.6	-10.5593	0.0652	0.0035
1013	SLU 41	0.03	0.93	47.07	-10.6644	0.066	0.0099
1013	SLU 42	0.01	0.91	47.1	-10.6693	0.0659	0.005
1013	SLU 43	0.03	0.79	44.53	-10.2004	0.0607	0.0108
1013	SLU 44	0.01	0.76	44.59	-10.2086	0.0605	0.0027
1013	SLU 45	0.03	0.82	45.37	-10.3792	0.0619	0.0118
1013	SLU 46	0.02	0.8	45.4	-10.3841	0.0618	0.007
1013	SLU 47	0.01	0.77	45.1	-10.3185	0.0612	0.0043
1013	SLU 48	0.04	0.83	45.88	-10.4891	0.0626	0.0134
1013	SLU 49	0.02	0.81	45.91	-10.494	0.0625	0.0085
1013	SLU 50	0.04	0.81	45.55	-10.4203	0.0621	0.0139
1013	SLU 51	0.03	0.79	45.58	-10.4252	0.062	0.0091
1013	SLU 52	0.01	0.85	49.11	-11.2073	0.0672	0.0032
1013	SLU 53	0.03	0.91	49.88	-11.3779	0.0686	0.0122
1013	SLU 54	0.02	0.89	49.92	-11.3828	0.0685	0.0074
1013	SLU 55	0.01	0.86	49.61	-11.3172	0.068	0.0047
1013	SLU 56	0.04	0.92	50.39	-11.4878	0.0694	0.0138
1013	SLU 57	0.02	0.9	50.42	-11.4927	0.0693	0.009
1013	SLU 58	0.04	0.9	50.06	-11.419	0.0689	0.0144
1013	SLU 59	0.03	0.88	50.1	-11.4239	0.0688	0.0095
1013	SLU 60	0.03	0.92	50.98	-11.6271	0.0703	0.0114
1013	SLU 61	0.02	0.9	51.02	-11.632	0.0702	0.0066
1013	SLU 62	0.04	0.93	51.49	-11.737	0.071	0.013
1013	SLU 63	0.02	0.91	51.53	-11.7419	0.0709	0.0082
1013	SLU 64	0.03	0.93	49.17	-11.2143	0.0678	0.0103
1013	SLU 65	0.01	0.9	49.23	-11.2225	0.0676	0.0022
1013	SLU 66	0.03	0.96	50	-11.3931	0.069	0.0113
1013	SLU 67	0.02	0.94	50.04	-11.398	0.0689	0.0065
1013	SLU 68	0.01	0.91	49.73	-11.3324	0.0683	0.0038
1013	SLU 69	0.04	0.97	50.51	-11.503	0.0697	0.0129
1013	SLU 70	0.02	0.95	50.55	-11.5079	0.0696	0.008
1013	SLU 71	0.04	0.95	50.18	-11.4342	0.0692	0.0134



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1013	SLU 72	0.02	0.93	50.22	-11.4391	0.0691	0.0086
1013	SLU 73	0.01	0.99	53.74	-12.2211	0.0743	0.0027
1013	SLU 74	0.03	1.05	54.52	-12.3918	0.0757	0.0117
1013	SLU 75	0.02	1.03	54.55	-12.3967	0.0756	0.0069
1013	SLU 76	0.01	1	54.25	-12.3311	0.075	0.0042
1013	SLU 77	0.04	1.06	55.02	-12.5017	0.0765	0.0133
1013	SLU 78	0.02	1.04	55.06	-12.5066	0.0763	0.0085
1013	SLU 79	0.04	1.04	54.7	-12.4329	0.076	0.0139
1013	SLU 80	0.03	1.02	54.73	-12.4378	0.0758	0.009
1013	SLU 81	0.03	1.06	55.62	-12.641	0.0774	0.0109
1013	SLU 82	0.02	1.04	55.65	-12.6459	0.0773	0.0061
1013	SLU 83	0.04	1.07	56.12	-12.7509	0.0781	0.0125
1013	SLU 84	0.02	1.05	56.16	-12.7558	0.078	0.0077
1013	SLE RA 1	0.02	0.69	36.8	-8.4036	0.0506	0.008
1013	SLE RA 2	0.01	0.66	36.84	-8.409	0.0504	0.0027
1013	SLE RA 3	0.02	0.71	37.36	-8.5227	0.0514	0.0087
1013	SLE RA 4	0.02	0.69	37.38	-8.526	0.0513	0.0055
1013	SLE RA 5	0.01	0.67	37.18	-8.4823	0.0509	0.0037
1013	SLE RA 6	0.03	0.71	37.7	-8.596	0.0519	0.0097
1013	SLE RA 7	0.02	0.7	37.72	-8.5993	0.0518	0.0065
1013	SLE RA 8	0.03	0.7	37.48	-8.5502	0.0515	0.0101
1013	SLE RA 9	0.02	0.69	37.5	-8.5534	0.0515	0.0069
1013	SLE RA 10	0.01	0.73	39.85	-9.0748	0.0549	0.003
1013	SLE RA 11	0.03	0.77	40.37	-9.1885	0.0559	0.009
1013	SLE RA 12	0.02	0.75	40.39	-9.1918	0.0558	0.0058
1013	SLE RA 13	0.01	0.73	40.19	-9.1481	0.0554	0.004
1013	SLE RA 14	0.03	0.77	40.71	-9.2618	0.0564	0.01
1013	SLE RA 15	0.02	0.76	40.73	-9.2651	0.0563	0.0068
1013	SLE RA 16	0.03	0.76	40.49	-9.2159	0.056	0.0104
1013	SLE RA 17	0.02	0.75	40.51	-9.2192	0.056	0.0072
1013	SLE RA 18	0.02	0.77	41.1	-9.3547	0.057	0.0085
1013	SLE RA 19	0.01	0.76	41.13	-9.3579	0.0569	0.0052
1013	SLE RA 20	0.03	0.78	41.44	-9.428	0.0575	0.0095
1013	SLE RA 21	0.02	0.77	41.46	-9.4312	0.0574	0.0063
1013	SLE FR 1	0.02	0.69	36.8	-8.4036	0.0506	0.008
1013	SLE FR 2	0.02	0.68	36.81	-8.4047	0.0505	0.007
1013	SLE FR 3	0.02	0.69	36.94	-8.4329	0.0508	0.0085
1013	SLE FR 4	0.02	0.71	38.1	-8.69	0.0525	0.0071
1013	SLE FR 5	0.02	0.72	38.23	-8.7182	0.0527	0.0086
1013	SLE FR 6	0.02	0.73	38.95	-8.8791	0.0538	0.0082
1013	SLE QP 1	0.02	0.69	36.8	-8.4036	0.0506	0.008
1013	SLE QP 2	0.02	0.71	38.09	-8.6889	0.0525	0.0082
1013	SLD 1	4.22	1.41	40.07	-9.3176	0.0705	1.4771
1013	SLD 2	3.83	1.37	39.92	-9.2784	0.0701	1.3407
1013	SLD 3	3.99	0.39	40.95	-9.4882	0.0722	1.3971
1013	SLD 4	3.6	0.35	40.81	-9.449	0.0718	1.2608
1013	SLD 5	1.7	2.48	37.36	-8.6257	0.0555	0.5945
1013	SLD 6	1.44	2.45	37.27	-8.6	0.0552	0.5049
1013	SLD 7	0.94	-0.93	40.32	-9.1945	0.0609	0.3279
1013	SLD 8	0.68	-0.95	40.23	-9.1687	0.0607	0.2383
1013	SLD 9	-0.63	2.38	35.96	-8.2091	0.0443	-0.222
1013	SLD 10	-0.89	2.35	35.86	-8.1833	0.044	-0.3116
1013	SLD 11	-1.4	-1.03	38.92	-8.7778	0.0498	-0.4885
1013	SLD 12	-1.65	-1.05	38.82	-8.7521	0.0495	-0.5781
1013	SLD 13	-3.55	1.08	35.37	-7.9288	0.0332	-1.2444
1013	SLD 14	-3.95	1.04	35.23	-7.8896	0.0328	-1.3808
1013	SLD 15	-3.78	0.06	36.26	-8.0994	0.0349	-1.3244
1013	SLD 16	-4.17	0.02	36.12	-8.0602	0.0344	-1.4607
1013	SLV 1	9.84	2.31	42.74	-10.1661	0.0948	3.4442
1013	SLV 2	8.93	2.21	42.41	-10.0749	0.0938	3.1267
1013	SLV 3	9.31	-0.01	44.76	-10.5539	0.0985	3.2577
1013	SLV 4	8.4	-0.11	44.42	-10.4627	0.0976	2.9402
1013	SLV 5	3.93	4.72	36.49	-8.5597	0.0597	1.3768
1013	SLV 6	3.35	4.66	36.27	-8.5008	0.059	1.1717
1013	SLV 7	2.16	-2.99	43.21	-9.8523	0.0721	0.7551
1013	SLV 8	1.57	-3.06	42.99	-9.7934	0.0715	0.55
1013	SLV 9	-1.52	4.49	33.19	-7.5844	0.0335	-0.5337
1013	SLV 10	-2.11	4.42	32.98	-7.5255	0.0328	-0.7387
1013	SLV 11	-3.3	-3.23	39.91	-8.877	0.0459	-1.1554
1013	SLV 12	-3.89	-3.29	39.7	-8.8181	0.0453	-1.3604
1013	SLV 13	-8.35	1.53	31.76	-6.9151	0.0074	-2.9239
1013	SLV 14	-9.26	1.43	31.43	-6.8239	0.0065	-3.2414
1013	SLV 15	-8.88	-0.78	33.78	-7.3029	0.0112	-3.1104
1013	SLV 16	-9.79	-0.88	33.45	-7.2117	0.0102	-3.4279
1013	CRTFP Ux+	0	0	0	0	0	0
1013	CRTFP Ux-	0	0	0	0	0	0
1013	CRTFP Uy+	0	0	0	0	0	0
1013	CRTFP Uy-	0	0	0	0	0	0
1014	SLU 1	0.06	0.66	34.25	-7.2027	0.0325	0.0213
1014	SLU 2	0.04	0.63	34.32	-7.2124	0.0323	0.013
1014	SLU 3	0.06	0.69	35.06	-7.3584	0.0333	0.0226
1014	SLU 4	0.05	0.67	35.1	-7.3642	0.0332	0.0176
1014	SLU 5	0.04	0.64	34.81	-7.3084	0.0328	0.0147
1014	SLU 6	0.07	0.7	35.55	-7.4544	0.0337	0.0244
1014	SLU 7	0.05	0.68	35.59	-7.4602	0.0336	0.0194
1014	SLU 8	0.07	0.68	35.23	-7.3947	0.0334	0.0248
1014	SLU 9	0.05	0.66	35.27	-7.4005	0.0333	0.0198
1014	SLU 10	0.04	0.71	38.66	-8.0851	0.0367	0.0147
1014	SLU 11	0.07	0.78	39.4	-8.2311	0.0377	0.0243
1014	SLU 12	0.05	0.76	39.44	-8.2369	0.0376	0.0193



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
1014	SLU 13	0.05	0.72	39.15	-8.1811	0.0372	0.0164
1014	SLU 14	0.07	0.79	39.89	-8.3271	0.0381	0.0261
1014	SLU 15	0.06	0.77	39.93	-8.3329	0.0381	0.0211
1014	SLU 16	0.07	0.77	39.58	-8.2674	0.0378	0.0265
1014	SLU 17	0.06	0.75	39.62	-8.2732	0.0377	0.0215
1014	SLU 18	0.07	0.79	40.46	-8.4495	0.0388	0.0237
1014	SLU 19	0.05	0.77	40.5	-8.4553	0.0387	0.0188
1014	SLU 20	0.07	0.8	40.95	-8.5455	0.0392	0.0255
1014	SLU 21	0.06	0.78	40.99	-8.5513	0.0392	0.0205
1014	SLU 22	0.06	0.8	38.71	-8.0856	0.0372	0.0221
1014	SLU 23	0.04	0.76	38.78	-8.0953	0.037	0.0138
1014	SLU 24	0.07	0.83	39.51	-8.2412	0.038	0.0234
1014	SLU 25	0.05	0.81	39.55	-8.247	0.0379	0.0184
1014	SLU 26	0.04	0.77	39.26	-8.1912	0.0375	0.0155
1014	SLU 27	0.07	0.84	40	-8.3372	0.0384	0.0251
1014	SLU 28	0.06	0.82	40.04	-8.343	0.0384	0.0202
1014	SLU 29	0.07	0.82	39.69	-8.2776	0.0381	0.0256
1014	SLU 30	0.06	0.8	39.73	-8.2834	0.038	0.0206
1014	SLU 31	0.04	0.85	43.12	-8.968	0.0414	0.0155
1014	SLU 32	0.07	0.91	43.86	-9.114	0.0424	0.0251
1014	SLU 33	0.06	0.89	43.9	-9.1198	0.0423	0.0201
1014	SLU 34	0.05	0.86	43.61	-9.064	0.0419	0.0172
1014	SLU 35	0.08	0.92	44.35	-9.2099	0.0429	0.0269
1014	SLU 36	0.06	0.9	44.39	-9.2157	0.0428	0.0219
1014	SLU 37	0.08	0.91	44.03	-9.1503	0.0425	0.0273
1014	SLU 38	0.06	0.89	44.07	-9.1561	0.0424	0.0223
1014	SLU 39	0.07	0.92	44.92	-9.3323	0.0435	0.0245
1014	SLU 40	0.05	0.9	44.96	-9.3381	0.0434	0.0195
1014	SLU 41	0.07	0.93	45.41	-9.4283	0.044	0.0263
1014	SLU 42	0.06	0.91	45.45	-9.4341	0.0439	0.0213
1014	SLU 43	0.08	0.81	43	-9.0609	0.0406	0.0274
1014	SLU 44	0.05	0.78	43.07	-9.0705	0.0404	0.0191
1014	SLU 45	0.08	0.84	43.81	-9.2165	0.0414	0.0287
1014	SLU 46	0.07	0.82	43.85	-9.2223	0.0413	0.0238
1014	SLU 47	0.06	0.79	43.56	-9.1665	0.0409	0.0209
1014	SLU 48	0.08	0.85	44.3	-9.3125	0.0419	0.0305
1014	SLU 49	0.07	0.83	44.33	-9.3183	0.0418	0.0255
1014	SLU 50	0.09	0.83	43.98	-9.2528	0.0415	0.0309
1014	SLU 51	0.07	0.81	44.02	-9.2586	0.0414	0.0259
1014	SLU 52	0.06	0.87	47.41	-9.9433	0.0449	0.0208
1014	SLU 53	0.08	0.93	48.15	-10.0892	0.0458	0.0305
1014	SLU 54	0.07	0.91	48.19	-10.095	0.0457	0.0255
1014	SLU 55	0.06	0.88	47.9	-10.0392	0.0453	0.0226
1014	SLU 56	0.09	0.94	48.64	-10.1852	0.0463	0.0322
1014	SLU 57	0.08	0.92	48.68	-10.191	0.0462	0.0272
1014	SLU 58	0.09	0.92	48.33	-10.1256	0.0459	0.0326
1014	SLU 59	0.08	0.9	48.36	-10.1314	0.0459	0.0277
1014	SLU 60	0.08	0.94	49.21	-10.3076	0.0469	0.0299
1014	SLU 61	0.07	0.92	49.25	-10.3134	0.0468	0.0249
1014	SLU 62	0.09	0.95	49.7	-10.4036	0.0474	0.0316
1014	SLU 63	0.07	0.93	49.74	-10.4094	0.0473	0.0266
1014	SLU 64	0.08	0.95	47.46	-9.9437	0.0453	0.0282
1014	SLU 65	0.05	0.91	47.52	-9.9534	0.0452	0.0199
1014	SLU 66	0.08	0.98	48.26	-10.0993	0.0461	0.0295
1014	SLU 67	0.07	0.96	48.3	-10.1052	0.046	0.0245
1014	SLU 68	0.06	0.92	48.01	-10.0494	0.0456	0.0216
1014	SLU 69	0.09	0.99	48.75	-10.1953	0.0466	0.0313
1014	SLU 70	0.07	0.97	48.79	-10.2011	0.0465	0.0263
1014	SLU 71	0.09	0.97	48.44	-10.1357	0.0462	0.0317
1014	SLU 72	0.07	0.95	48.48	-10.1415	0.0461	0.0267
1014	SLU 73	0.06	1	51.87	-10.8261	0.0496	0.0216
1014	SLU 74	0.09	1.07	52.61	-10.9721	0.0505	0.0312
1014	SLU 75	0.07	1.05	52.65	-10.9779	0.0504	0.0262
1014	SLU 76	0.06	1.01	52.36	-10.9221	0.05	0.0233
1014	SLU 77	0.09	1.08	53.1	-11.0681	0.051	0.033
1014	SLU 78	0.08	1.05	53.14	-11.0739	0.0509	0.028
1014	SLU 79	0.09	1.06	52.78	-11.0084	0.0507	0.0334
1014	SLU 80	0.08	1.04	52.82	-11.0142	0.0506	0.0284
1014	SLU 81	0.09	1.08	53.67	-11.1905	0.0516	0.0306
1014	SLU 82	0.07	1.06	53.71	-11.1963	0.0515	0.0257
1014	SLU 83	0.09	1.09	54.16	-11.2865	0.0521	0.0324
1014	SLU 84	0.08	1.06	54.19	-11.2923	0.052	0.0274
1014	SLE RA 1	0.06	0.7	35.53	-7.455	0.0338	0.0215
1014	SLE RA 2	0.04	0.68	35.57	-7.4614	0.0337	0.016
1014	SLE RA 3	0.06	0.72	36.06	-7.5587	0.0343	0.0224
1014	SLE RA 4	0.05	0.7	36.09	-7.5626	0.0343	0.0191
1014	SLE RA 5	0.05	0.68	35.9	-7.5254	0.034	0.0171
1014	SLE RA 6	0.07	0.73	36.39	-7.6227	0.0347	0.0236
1014	SLE RA 7	0.06	0.71	36.42	-7.6266	0.0346	0.0202
1014	SLE RA 8	0.07	0.71	36.18	-7.583	0.0344	0.0239
1014	SLE RA 9	0.06	0.7	36.21	-7.5868	0.0344	0.0205
1014	SLE RA 10	0.05	0.74	38.47	-8.0432	0.0367	0.0171
1014	SLE RA 11	0.07	0.78	38.96	-8.1406	0.0373	0.0235
1014	SLE RA 12	0.06	0.76	38.99	-8.1444	0.0372	0.0202
1014	SLE RA 13	0.05	0.74	38.79	-8.1072	0.037	0.0183
1014	SLE RA 14	0.07	0.78	39.29	-8.2045	0.0376	0.0247
1014	SLE RA 15	0.06	0.77	39.31	-8.2084	0.0375	0.0214
1014	SLE RA 16	0.07	0.77	39.08	-8.1648	0.0374	0.025
1014	SLE RA 17	0.06	0.76	39.1	-8.1686	0.0373	0.0217
1014	SLE RA 18	0.06	0.78	39.67	-8.2861	0.038	0.0232



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1014	SLE RA 19	0.05	0.77	39.69	-8.29	0.038	0.0198
1014	SLE RA 20	0.07	0.79	39.99	-8.3501	0.0383	0.0243
1014	SLE RA 21	0.06	0.78	40.02	-8.354	0.0383	0.021
1014	SLE FR 1	0.06	0.7	35.53	-7.455	0.0338	0.0215
1014	SLE FR 2	0.06	0.7	35.54	-7.4563	0.0338	0.0204
1014	SLE FR 3	0.06	0.7	35.66	-7.4806	0.0339	0.022
1014	SLE FR 4	0.06	0.72	36.78	-7.7056	0.0351	0.0209
1014	SLE FR 5	0.06	0.73	36.9	-7.7299	0.0352	0.0225
1014	SLE FR 6	0.06	0.74	37.6	-7.8706	0.0359	0.0223
1014	SLE QP 1	0.06	0.7	35.53	-7.455	0.0338	0.0215
1014	SLE QP 2	0.06	0.73	36.77	-7.7043	0.0351	0.022
1014	SLD 1	4.27	1.4	38.2	-8.1387	0.0529	1.4939
1014	SLD 2	3.87	1.37	38.07	-8.1068	0.0525	1.3574
1014	SLD 3	4.04	0.4	39.06	-8.2883	0.0541	1.4138
1014	SLD 4	3.65	0.37	38.93	-8.2564	0.0538	1.2773
1014	SLD 5	1.74	2.46	35.93	-7.6135	0.0385	0.6094
1014	SLD 6	1.48	2.44	35.84	-7.5925	0.0383	0.5197
1014	SLD 7	0.98	-0.89	38.77	-8.112	0.0428	0.3425
1014	SLD 8	0.72	-0.91	38.69	-8.0911	0.0426	0.2528
1014	SLD 9	-0.6	2.36	34.85	-7.3176	0.0276	-0.2087
1014	SLD 10	-0.85	2.34	34.76	-7.2966	0.0274	-0.2985
1014	SLD 11	-1.36	-0.99	37.7	-7.8161	0.0318	-0.4756
1014	SLD 12	-1.62	-1.01	37.61	-7.7951	0.0316	-0.5654
1014	SLD 13	-3.52	1.08	34.61	-7.1523	0.0164	-1.2333
1014	SLD 14	-3.92	1.05	34.48	-7.1204	0.016	-1.3698
1014	SLD 15	-3.75	0.08	35.47	-7.3018	0.0176	-1.3133
1014	SLD 16	-4.14	0.05	35.33	-7.2699	0.0173	-1.4499
1014	SLV 1	9.9	2.28	40.16	-8.7261	0.0767	3.4651
1014	SLV 2	8.99	2.21	39.85	-8.6518	0.0759	3.1471
1014	SLV 3	9.36	0	42.09	-9.0659	0.0797	3.2783
1014	SLV 4	8.45	-0.07	41.79	-8.9916	0.0788	2.9603
1014	SLV 5	3.98	4.66	34.9	-7.5083	0.0432	1.3931
1014	SLV 6	3.39	4.61	34.7	-7.4603	0.0427	1.1878
1014	SLV 7	2.2	-2.94	41.36	-8.6411	0.0531	0.7707
1014	SLV 8	1.61	-2.98	41.16	-8.5931	0.0525	0.5653
1014	SLV 9	-1.49	4.43	32.38	-6.8155	0.0176	-0.5213
1014	SLV 10	-2.08	4.39	32.18	-6.7676	0.0171	-0.7267
1014	SLV 11	-3.27	-3.16	38.84	-7.9484	0.0275	-1.1437
1014	SLV 12	-3.86	-3.21	38.64	-7.9004	0.0269	-1.3491
1014	SLV 13	-8.33	1.52	31.75	-6.417	-0.0087	-2.9163
1014	SLV 14	-9.24	1.45	31.45	-6.3427	-0.0095	-3.2343
1014	SLV 15	-8.86	-0.76	33.69	-6.7569	-0.0057	-3.103
1014	SLV 16	-9.78	-0.83	33.38	-6.6826	-0.0066	-3.421
1014	CRTFP Ux+	0	0	0	0	0	0
1014	CRTFP Ux-	0	0	0	0	0	0
1014	CRTFP Uy+	0	0	0	0	0	0
1014	CRTFP Uy-	0	0	0	0	0	0
1015	SLU 1	0.1	0.69	33.58	-6.7182	0.0123	0.0344
1015	SLU 2	0.07	0.65	33.65	-6.729	0.0122	0.0258
1015	SLU 3	0.1	0.71	34.37	-6.8618	0.0126	0.0361
1015	SLU 4	0.09	0.69	34.41	-6.8683	0.0125	0.0309
1015	SLU 5	0.08	0.66	34.13	-6.8178	0.0124	0.0278
1015	SLU 6	0.11	0.73	34.85	-6.9506	0.0127	0.038
1015	SLU 7	0.09	0.7	34.89	-6.9571	0.0127	0.0329
1015	SLU 8	0.11	0.71	34.54	-6.8958	0.0126	0.0383
1015	SLU 9	0.09	0.69	34.58	-6.9023	0.0125	0.0331
1015	SLU 10	0.08	0.74	37.9	-7.5365	0.0137	0.0288
1015	SLU 11	0.11	0.8	38.62	-7.6693	0.0141	0.0391
1015	SLU 12	0.09	0.78	38.66	-7.6758	0.014	0.0339
1015	SLU 13	0.08	0.75	38.38	-7.6253	0.0139	0.0308
1015	SLU 14	0.11	0.81	39.1	-7.7581	0.0142	0.041
1015	SLU 15	0.1	0.79	39.14	-7.7646	0.0142	0.0358
1015	SLU 16	0.11	0.79	38.79	-7.7033	0.0141	0.0413
1015	SLU 17	0.1	0.77	38.83	-7.7098	0.014	0.0361
1015	SLU 18	0.11	0.81	39.66	-7.8718	0.0144	0.0387
1015	SLU 19	0.09	0.79	39.7	-7.8782	0.0144	0.0336
1015	SLU 20	0.11	0.82	40.14	-7.9606	0.0146	0.0406
1015	SLU 21	0.1	0.8	40.18	-7.9671	0.0145	0.0355
1015	SLU 22	0.1	0.82	37.94	-7.5319	0.014	0.0365
1015	SLU 23	0.08	0.79	38.01	-7.5427	0.014	0.0279
1015	SLU 24	0.11	0.85	38.73	-7.6755	0.0143	0.0381
1015	SLU 25	0.09	0.83	38.77	-7.682	0.0143	0.033
1015	SLU 26	0.08	0.8	38.48	-7.6315	0.0141	0.0299
1015	SLU 27	0.11	0.86	39.2	-7.7643	0.0144	0.0401
1015	SLU 28	0.1	0.84	39.25	-7.7708	0.0144	0.0349
1015	SLU 29	0.11	0.84	38.9	-7.7095	0.0143	0.0404
1015	SLU 30	0.1	0.82	38.94	-7.716	0.0143	0.0352
1015	SLU 31	0.09	0.88	42.26	-8.3502	0.0154	0.0309
1015	SLU 32	0.11	0.94	42.98	-8.483	0.0158	0.0411
1015	SLU 33	0.1	0.92	43.02	-8.4895	0.0157	0.036
1015	SLU 34	0.09	0.89	42.74	-8.439	0.0156	0.0328
1015	SLU 35	0.12	0.95	43.46	-8.5718	0.0159	0.0431
1015	SLU 36	0.11	0.93	43.5	-8.5783	0.0159	0.0379
1015	SLU 37	0.12	0.93	43.15	-8.517	0.0158	0.0434
1015	SLU 38	0.11	0.91	43.19	-8.5235	0.0158	0.0382
1015	SLU 39	0.11	0.95	44.02	-8.6855	0.0162	0.0408
1015	SLU 40	0.1	0.93	44.06	-8.692	0.0161	0.0356
1015	SLU 41	0.12	0.96	44.5	-8.7743	0.0163	0.0427
1015	SLU 42	0.1	0.94	44.54	-8.7808	0.0163	0.0376
1015	SLU 43	0.12	0.85	42.16	-8.4547	0.0154	0.044



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1015	SLU 44	0.1	0.81	42.23	-8.4655	0.0153	0.0355
1015	SLU 45	0.13	0.87	42.95	-8.5983	0.0157	0.0457
1015	SLU 46	0.11	0.85	42.99	-8.6047	0.0156	0.0405
1015	SLU 47	0.1	0.82	42.71	-8.5543	0.0155	0.0374
1015	SLU 48	0.13	0.88	43.43	-8.6871	0.0158	0.0476
1015	SLU 49	0.12	0.86	43.47	-8.6935	0.0158	0.0425
1015	SLU 50	0.13	0.87	43.12	-8.6323	0.0157	0.0479
1015	SLU 51	0.12	0.85	43.16	-8.6388	0.0156	0.0428
1015	SLU 52	0.11	0.9	46.48	-9.273	0.0168	0.0385
1015	SLU 53	0.14	0.96	47.2	-9.4057	0.0171	0.0487
1015	SLU 54	0.12	0.94	47.24	-9.4122	0.0171	0.0435
1015	SLU 55	0.11	0.91	46.96	-9.3618	0.0169	0.0404
1015	SLU 56	0.14	0.97	47.68	-9.4946	0.0173	0.0506
1015	SLU 57	0.13	0.95	47.72	-9.501	0.0172	0.0455
1015	SLU 58	0.14	0.95	47.37	-9.4398	0.0172	0.0509
1015	SLU 59	0.13	0.93	47.41	-9.4463	0.0171	0.0458
1015	SLU 60	0.13	0.97	48.24	-9.6082	0.0175	0.0483
1015	SLU 61	0.12	0.95	48.28	-9.6147	0.0175	0.0432
1015	SLU 62	0.14	0.98	48.72	-9.697	0.0177	0.0503
1015	SLU 63	0.12	0.96	48.76	-9.7035	0.0176	0.0451
1015	SLU 64	0.13	0.98	46.52	-9.2684	0.0171	0.0461
1015	SLU 65	0.1	0.95	46.58	-9.2792	0.017	0.0375
1015	SLU 66	0.13	1.01	47.3	-9.412	0.0174	0.0478
1015	SLU 67	0.12	0.99	47.35	-9.4184	0.0174	0.0426
1015	SLU 68	0.11	0.96	47.06	-9.368	0.0172	0.0395
1015	SLU 69	0.14	1.02	47.78	-9.5008	0.0175	0.0497
1015	SLU 70	0.12	1	47.82	-9.5072	0.0175	0.0445
1015	SLU 71	0.14	1	47.48	-9.446	0.0174	0.05
1015	SLU 72	0.12	0.98	47.52	-9.4525	0.0174	0.0448
1015	SLU 73	0.11	1.04	50.84	-10.0867	0.0185	0.0405
1015	SLU 74	0.14	1.1	51.56	-10.2195	0.0189	0.0508
1015	SLU 75	0.13	1.08	51.6	-10.2259	0.0188	0.0456
1015	SLU 76	0.12	1.05	51.32	-10.1755	0.0187	0.0425
1015	SLU 77	0.15	1.11	52.04	-10.3083	0.019	0.0527
1015	SLU 78	0.13	1.09	52.08	-10.3147	0.019	0.0475
1015	SLU 79	0.15	1.09	51.73	-10.2535	0.0189	0.053
1015	SLU 80	0.13	1.07	51.77	-10.26	0.0189	0.0478
1015	SLU 81	0.14	1.11	52.6	-10.4219	0.0192	0.0504
1015	SLU 82	0.13	1.09	52.64	-10.4284	0.0192	0.0452
1015	SLU 83	0.15	1.12	53.08	-10.5107	0.0194	0.0523
1015	SLU 84	0.13	1.1	53.12	-10.5172	0.0193	0.0472
1015	SLE RA 1	0.1	0.73	34.82	-6.9507	0.0128	0.035
1015	SLE RA 2	0.08	0.7	34.87	-6.9579	0.0127	0.0293
1015	SLE RA 3	0.1	0.74	35.35	-7.0464	0.013	0.0361
1015	SLE RA 4	0.09	0.73	35.38	-7.0507	0.0129	0.0327
1015	SLE RA 5	0.08	0.71	35.19	-7.0171	0.0128	0.0306
1015	SLE RA 6	0.1	0.75	35.67	-7.1056	0.0131	0.0374
1015	SLE RA 7	0.09	0.74	35.7	-7.1099	0.013	0.034
1015	SLE RA 8	0.1	0.74	35.46	-7.0691	0.013	0.0376
1015	SLE RA 9	0.09	0.73	35.49	-7.0734	0.013	0.0342
1015	SLE RA 10	0.09	0.76	37.71	-7.4962	0.0137	0.0313
1015	SLE RA 11	0.11	0.8	38.19	-7.5847	0.014	0.0381
1015	SLE RA 12	0.1	0.79	38.21	-7.5891	0.0139	0.0347
1015	SLE RA 13	0.09	0.77	38.03	-7.5554	0.0138	0.0326
1015	SLE RA 14	0.11	0.81	38.51	-7.6439	0.0141	0.0394
1015	SLE RA 15	0.1	0.8	38.53	-7.6483	0.014	0.036
1015	SLE RA 16	0.11	0.8	38.3	-7.6074	0.014	0.0396
1015	SLE RA 17	0.1	0.78	38.33	-7.6117	0.0139	0.0362
1015	SLE RA 18	0.11	0.81	38.88	-7.7197	0.0142	0.0379
1015	SLE RA 19	0.1	0.8	38.9	-7.724	0.0142	0.0344
1015	SLE RA 20	0.11	0.82	39.2	-7.7789	0.0143	0.0392
1015	SLE RA 21	0.1	0.8	39.22	-7.7833	0.0143	0.0357
1015	SLE FR 1	0.1	0.73	34.82	-6.9507	0.0128	0.035
1015	SLE FR 2	0.09	0.72	34.83	-6.9521	0.0128	0.0339
1015	SLE FR 3	0.1	0.73	34.95	-6.9744	0.0128	0.0355
1015	SLE FR 4	0.1	0.75	36.05	-7.1828	0.0132	0.0347
1015	SLE FR 5	0.1	0.75	36.17	-7.2051	0.0133	0.0364
1015	SLE FR 6	0.1	0.77	36.85	-7.3352	0.0135	0.0364
1015	SLE QP 1	0.1	0.73	34.82	-6.9507	0.0128	0.035
1015	SLE QP 2	0.1	0.75	36.04	-7.1814	0.0132	0.0359
1015	SLD 1	4.31	1.42	36.95	-7.421	0.0314	1.5097
1015	SLD 2	3.92	1.4	36.83	-7.3955	0.0311	1.373
1015	SLD 3	4.08	0.42	37.79	-7.5597	0.0304	1.4296
1015	SLD 4	3.69	0.4	37.66	-7.5342	0.0301	1.2929
1015	SLD 5	1.78	2.47	35.07	-7.0473	0.0202	0.6239
1015	SLD 6	1.52	2.46	34.99	-7.0306	0.02	0.5341
1015	SLD 7	1.02	-0.86	37.85	-7.51	0.0169	0.3569
1015	SLD 8	0.76	-0.87	37.77	-7.4932	0.0168	0.2671
1015	SLD 9	-0.56	2.37	34.31	-6.8696	0.0097	-0.1953
1015	SLD 10	-0.82	2.36	34.23	-6.8528	0.0095	-0.2852
1015	SLD 11	-1.32	-0.95	37.09	-7.3322	0.0064	-0.4623
1015	SLD 12	-1.58	-0.97	37.01	-7.3155	0.0062	-0.5522
1015	SLD 13	-3.49	1.1	34.42	-6.8285	-0.0037	-1.2212
1015	SLD 14	-3.88	1.08	34.3	-6.803	-0.004	-1.3579
1015	SLD 15	-3.72	0.1	35.25	-6.9673	-0.0047	-1.3013
1015	SLD 16	-4.11	0.08	35.13	-6.9418	-0.005	-1.438
1015	SLV 1	9.95	2.27	38.2	-7.7468	0.0558	3.4835
1015	SLV 2	9.04	2.23	37.91	-7.6874	0.0552	3.1651
1015	SLV 3	9.41	0.02	40.09	-8.062	0.0535	3.2967
1015	SLV 4	8.5	-0.03	39.81	-8.0026	0.0529	2.9783



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1015	SLV 5	4.02	4.64	33.86	-6.8832	0.0296	1.4085
1015	SLV 6	3.43	4.61	33.67	-6.8448	0.0292	1.2029
1015	SLV 7	2.24	-2.89	40.18	-7.934	0.022	0.7858
1015	SLV 8	1.65	-2.92	40	-7.8956	0.0215	0.5802
1015	SLV 9	-1.45	4.42	32.08	-6.4672	0.0049	-0.5085
1015	SLV 10	-2.04	4.39	31.9	-6.4288	0.0045	-0.7141
1015	SLV 11	-3.23	-3.11	38.41	-7.518	-0.0027	-1.1312
1015	SLV 12	-3.82	-3.14	38.22	-7.4796	-0.0032	-1.3368
1015	SLV 13	-8.3	1.53	32.27	-6.3602	-0.0264	-2.9066
1015	SLV 14	-9.22	1.48	31.99	-6.3008	-0.0271	-3.2249
1015	SLV 15	-8.84	-0.73	34.17	-6.6754	-0.0287	-3.0934
1015	SLV 16	-9.75	-0.77	33.89	-6.616	-0.0294	-3.4117
1015	CRTFP Ux+	0	0	0	0	0	0
1015	CRTFP Ux-	0	0	0	0	0	0
1015	CRTFP Uy+	0	0	0	0	0	0
1015	CRTFP Uy-	0	0	0	0	0	0
1016	SLU 1	0.13	0.72	33.53	-6.7057	-0.0092	0.0475
1016	SLU 2	0.11	0.69	33.6	-6.7171	-0.0092	0.0387
1016	SLU 3	0.14	0.75	34.32	-6.8495	-0.0095	0.0495
1016	SLU 4	0.12	0.73	34.36	-6.8563	-0.0095	0.0442
1016	SLU 5	0.11	0.7	34.08	-6.8062	-0.0094	0.0408
1016	SLU 6	0.14	0.77	34.8	-6.9386	-0.0097	0.0516
1016	SLU 7	0.13	0.75	34.84	-6.9454	-0.0097	0.0463
1016	SLU 8	0.14	0.75	34.49	-6.884	-0.0096	0.0517
1016	SLU 9	0.13	0.73	34.53	-6.8908	-0.0096	0.0464
1016	SLU 10	0.12	0.78	37.86	-7.5267	-0.0108	0.0429
1016	SLU 11	0.15	0.84	38.58	-7.6591	-0.0111	0.0538
1016	SLU 12	0.13	0.82	38.62	-7.6659	-0.0111	0.0484
1016	SLU 13	0.12	0.79	38.34	-7.6158	-0.011	0.0451
1016	SLU 14	0.16	0.85	39.06	-7.7483	-0.0113	0.0559
1016	SLU 15	0.14	0.83	39.1	-7.7551	-0.0113	0.0506
1016	SLU 16	0.16	0.83	38.75	-7.6936	-0.0112	0.056
1016	SLU 17	0.14	0.81	38.79	-7.7004	-0.0112	0.0507
1016	SLU 18	0.15	0.85	39.62	-7.8624	-0.0115	0.0536
1016	SLU 19	0.13	0.83	39.66	-7.8691	-0.0115	0.0483
1016	SLU 20	0.15	0.86	40.1	-7.9515	-0.0117	0.0557
1016	SLU 21	0.14	0.84	40.14	-7.9583	-0.0117	0.0504
1016	SLU 22	0.14	0.86	37.89	-7.5188	-0.0106	0.0509
1016	SLU 23	0.12	0.83	37.96	-7.5302	-0.0106	0.042
1016	SLU 24	0.15	0.89	38.67	-7.6626	-0.0109	0.0529
1016	SLU 25	0.13	0.87	38.72	-7.6694	-0.0109	0.0476
1016	SLU 26	0.12	0.84	38.44	-7.6193	-0.0108	0.0442
1016	SLU 27	0.15	0.9	39.15	-7.7517	-0.0111	0.055
1016	SLU 28	0.14	0.88	39.2	-7.7585	-0.0111	0.0497
1016	SLU 29	0.15	0.88	38.85	-7.6971	-0.011	0.0551
1016	SLU 30	0.14	0.86	38.89	-7.7039	-0.011	0.0498
1016	SLU 31	0.13	0.92	42.21	-8.3398	-0.0122	0.0463
1016	SLU 32	0.16	0.98	42.93	-8.4722	-0.0125	0.0572
1016	SLU 33	0.14	0.96	42.97	-8.479	-0.0125	0.0518
1016	SLU 34	0.13	0.93	42.69	-8.4289	-0.0124	0.0484
1016	SLU 35	0.16	0.99	43.41	-8.5614	-0.0127	0.0593
1016	SLU 36	0.15	0.97	43.45	-8.5682	-0.0127	0.0539
1016	SLU 37	0.17	0.97	43.11	-8.5067	-0.0126	0.0594
1016	SLU 38	0.15	0.95	43.15	-8.5135	-0.0126	0.0541
1016	SLU 39	0.16	0.99	43.97	-8.6755	-0.0129	0.057
1016	SLU 40	0.14	0.97	44.01	-8.6822	-0.0129	0.0517
1016	SLU 41	0.16	1	44.45	-8.7646	-0.0131	0.0591
1016	SLU 42	0.15	0.98	44.49	-8.7714	-0.0131	0.0538
1016	SLU 43	0.17	0.89	42.1	-8.4387	-0.0114	0.0606
1016	SLU 44	0.14	0.86	42.17	-8.45	-0.0114	0.0517
1016	SLU 45	0.17	0.92	42.89	-8.5825	-0.0117	0.0626
1016	SLU 46	0.16	0.9	42.93	-8.5893	-0.0117	0.0573
1016	SLU 47	0.15	0.87	42.65	-8.5391	-0.0116	0.0539
1016	SLU 48	0.18	0.94	43.37	-8.6716	-0.0119	0.0647
1016	SLU 49	0.16	0.92	43.41	-8.6784	-0.0119	0.0594
1016	SLU 50	0.18	0.92	43.06	-8.6169	-0.0118	0.0648
1016	SLU 51	0.16	0.9	43.1	-8.6237	-0.0118	0.0595
1016	SLU 52	0.15	0.95	46.43	-9.2596	-0.0131	0.056
1016	SLU 53	0.19	1.01	47.15	-9.3921	-0.0134	0.0669
1016	SLU 54	0.17	0.99	47.19	-9.3989	-0.0134	0.0615
1016	SLU 55	0.16	0.96	46.91	-9.3488	-0.0133	0.0581
1016	SLU 56	0.19	1.02	47.63	-9.4812	-0.0135	0.069
1016	SLU 57	0.18	1	47.67	-9.488	-0.0135	0.0637
1016	SLU 58	0.19	1	47.32	-9.4266	-0.0135	0.0691
1016	SLU 59	0.18	0.98	47.36	-9.4334	-0.0135	0.0638
1016	SLU 60	0.19	1.02	48.18	-9.5953	-0.0138	0.0667
1016	SLU 61	0.17	1	48.22	-9.6021	-0.0138	0.0614
1016	SLU 62	0.19	1.03	48.66	-9.6844	-0.014	0.0688
1016	SLU 63	0.18	1.01	48.7	-9.6912	-0.014	0.0635
1016	SLU 64	0.18	1.03	46.45	-9.2518	-0.0129	0.064
1016	SLU 65	0.15	1	46.52	-9.2631	-0.0129	0.0551
1016	SLU 66	0.18	1.06	47.24	-9.3956	-0.0131	0.066
1016	SLU 67	0.17	1.04	47.28	-9.4024	-0.0131	0.0606
1016	SLU 68	0.16	1.01	47	-9.3522	-0.0131	0.0573
1016	SLU 69	0.19	1.07	47.72	-9.4847	-0.0133	0.0681
1016	SLU 70	0.17	1.05	47.76	-9.4915	-0.0133	0.0628
1016	SLU 71	0.19	1.05	47.41	-9.43	-0.0133	0.0682
1016	SLU 72	0.17	1.03	47.45	-9.4368	-0.0133	0.0629
1016	SLU 73	0.16	1.09	50.78	-10.0727	-0.0145	0.0594
1016	SLU 74	0.19	1.15	51.5	-10.2052	-0.0148	0.0702



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1016	SLU 75	0.18	1.13	51.54	-10.212	-0.0148	0.0649
1016	SLU 76	0.17	1.1	51.26	-10.1619	-0.0147	0.0615
1016	SLU 77	0.2	1.16	51.98	-10.2943	-0.015	0.0724
1016	SLU 78	0.19	1.14	52.02	-10.3011	-0.015	0.067
1016	SLU 79	0.2	1.14	51.67	-10.2397	-0.0149	0.0725
1016	SLU 80	0.19	1.12	51.71	-10.2465	-0.0149	0.0672
1016	SLU 81	0.19	1.16	52.54	-10.4084	-0.0152	0.0701
1016	SLU 82	0.18	1.14	52.58	-10.4152	-0.0152	0.0648
1016	SLU 83	0.2	1.17	53.02	-10.4975	-0.0154	0.0722
1016	SLU 84	0.19	1.15	53.06	-10.5043	-0.0154	0.0669
1016	SLE RA 1	0.13	0.76	34.78	-6.9381	-0.0096	0.0485
1016	SLE RA 2	0.12	0.74	34.82	-6.9456	-0.0096	0.0426
1016	SLE RA 3	0.14	0.78	35.3	-7.0339	-0.0098	0.0498
1016	SLE RA 4	0.13	0.77	35.33	-7.0384	-0.0098	0.0462
1016	SLE RA 5	0.12	0.75	35.14	-7.005	-0.0097	0.044
1016	SLE RA 6	0.14	0.79	35.62	-7.0933	-0.0099	0.0512
1016	SLE RA 7	0.13	0.78	35.65	-7.0979	-0.0099	0.0477
1016	SLE RA 8	0.14	0.78	35.42	-7.0569	-0.0098	0.0513
1016	SLE RA 9	0.13	0.77	35.44	-7.0614	-0.0098	0.0478
1016	SLE RA 10	0.13	0.8	37.66	-7.4854	-0.0107	0.0454
1016	SLE RA 11	0.15	0.84	38.14	-7.5737	-0.0109	0.0526
1016	SLE RA 12	0.14	0.83	38.17	-7.5782	-0.0109	0.0491
1016	SLE RA 13	0.13	0.81	37.98	-7.5448	-0.0108	0.0468
1016	SLE RA 14	0.15	0.85	38.46	-7.6331	-0.011	0.0541
1016	SLE RA 15	0.14	0.84	38.49	-7.6376	-0.011	0.0505
1016	SLE RA 16	0.15	0.84	38.26	-7.5966	-0.0109	0.0542
1016	SLE RA 17	0.14	0.82	38.28	-7.6012	-0.0109	0.0506
1016	SLE RA 18	0.15	0.85	38.83	-7.7091	-0.0111	0.0526
1016	SLE RA 19	0.14	0.83	38.86	-7.7137	-0.0111	0.049
1016	SLE RA 20	0.15	0.85	39.15	-7.7685	-0.0113	0.054
1016	SLE RA 21	0.14	0.84	39.18	-7.7731	-0.0113	0.0504
1016	SLE FR 1	0.13	0.76	34.78	-6.9381	-0.0096	0.0485
1016	SLE FR 2	0.13	0.76	34.79	-6.9396	-0.0096	0.0473
1016	SLE FR 3	0.14	0.77	34.9	-6.9618	-0.0096	0.049
1016	SLE FR 4	0.13	0.78	36	-7.1709	-0.01	0.0485
1016	SLE FR 5	0.14	0.79	36.12	-7.1931	-0.0101	0.0503
1016	SLE FR 6	0.14	0.81	36.8	-7.3236	-0.0104	0.0505
1016	SLE QP 1	0.13	0.76	34.78	-6.9381	-0.0096	0.0485
1016	SLE QP 2	0.14	0.79	35.99	-7.1694	-0.01	0.0497
1016	SLD 1	4.35	1.45	36.4	-7.222	0.0075	1.5244
1016	SLD 2	3.96	1.45	36.28	-7.2015	0.0073	1.3876
1016	SLD 3	4.12	0.45	37.23	-7.3624	0.0064	1.4443
1016	SLD 4	3.73	0.45	37.12	-7.3418	0.0062	1.3075
1016	SLD 5	1.82	2.5	34.86	-6.976	-0.0031	0.638
1016	SLD 6	1.56	2.5	34.79	-6.9624	-0.0033	0.5481
1016	SLD 7	1.06	-0.82	37.66	-7.4439	-0.0067	0.371
1016	SLD 8	0.8	-0.83	37.58	-7.4303	-0.0068	0.2811
1016	SLD 9	-0.52	2.41	34.4	-6.9084	-0.0133	-0.1817
1016	SLD 10	-0.78	2.4	34.33	-6.8949	-0.0134	-0.2716
1016	SLD 11	-1.29	-0.92	37.2	-7.3763	-0.0168	-0.4487
1016	SLD 12	-1.54	-0.93	37.12	-7.3628	-0.0169	-0.5386
1016	SLD 13	-3.45	1.13	34.87	-6.9969	-0.0263	-1.2081
1016	SLD 14	-3.85	1.12	34.75	-6.9763	-0.0265	-1.3449
1016	SLD 15	-3.68	0.13	35.7	-7.1373	-0.0274	-1.2882
1016	SLD 16	-4.07	0.12	35.59	-7.1167	-0.0276	-1.4249
1016	SLV 1	9.99	2.3	36.97	-7.2974	0.031	3.4992
1016	SLV 2	9.08	2.29	36.7	-7.2495	0.0305	3.1807
1016	SLV 3	9.46	0.05	38.87	-7.616	0.0285	3.3125
1016	SLV 4	8.55	0.03	38.61	-7.5681	0.028	2.9939
1016	SLV 5	4.06	4.67	33.45	-6.7329	0.0061	1.4229
1016	SLV 6	3.47	4.66	33.28	-6.702	0.0057	1.2171
1016	SLV 7	2.28	-2.86	39.79	-7.7948	-0.0021	0.8004
1016	SLV 8	1.69	-2.87	39.62	-7.7639	-0.0024	0.5946
1016	SLV 9	-1.42	4.44	32.37	-6.5749	-0.0177	-0.4952
1016	SLV 10	-2.01	4.43	32.2	-6.544	-0.018	-0.701
1016	SLV 11	-3.2	-3.09	38.71	-7.6368	-0.0258	-1.1177
1016	SLV 12	-3.79	-3.09	38.54	-7.6058	-0.0261	-1.3235
1016	SLV 13	-8.27	1.54	33.38	-6.7707	-0.0481	-2.8945
1016	SLV 14	-9.18	1.53	33.12	-6.7228	-0.0486	-3.213
1016	SLV 15	-8.8	-0.71	35.28	-7.0893	-0.0506	-3.0812
1016	SLV 16	-9.72	-0.73	35.02	-7.0413	-0.0511	-3.3998
1016	CRTFP Ux+	0	0	0	0	0	0
1016	CRTFP Ux-	0	0	0	0	0	0
1016	CRTFP Uy+	0	0	0	0	0	0
1016	CRTFP Uy-	0	0	0	0	0	0
1017	SLU 1	0.17	0.77	34.11	-7.1673	-0.0293	0.0605
1017	SLU 2	0.14	0.74	34.18	-7.1785	-0.0292	0.0513
1017	SLU 3	0.17	0.8	34.92	-7.3236	-0.0301	0.0627
1017	SLU 4	0.16	0.78	34.96	-7.3303	-0.0301	0.0573
1017	SLU 5	0.15	0.75	34.67	-7.2755	-0.0298	0.0536
1017	SLU 6	0.18	0.82	35.41	-7.4205	-0.0306	0.065
1017	SLU 7	0.16	0.8	35.45	-7.4272	-0.0306	0.0596
1017	SLU 8	0.18	0.8	35.1	-7.3612	-0.0304	0.065
1017	SLU 9	0.16	0.78	35.14	-7.368	-0.0303	0.0596
1017	SLU 10	0.16	0.83	38.53	-8.0579	-0.0338	0.0569
1017	SLU 11	0.19	0.89	39.27	-8.2029	-0.0347	0.0683
1017	SLU 12	0.17	0.87	39.31	-8.2096	-0.0346	0.0628
1017	SLU 13	0.16	0.84	39.02	-8.1548	-0.0343	0.0592
1017	SLU 14	0.2	0.91	39.76	-8.2999	-0.0352	0.0706
1017	SLU 15	0.18	0.89	39.8	-8.3066	-0.0352	0.0651



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1017	SLU 16	0.2	0.89	39.45	-8.2406	-0.0349	0.0706
1017	SLU 17	0.18	0.87	39.49	-8.2473	-0.0349	0.0651
1017	SLU 18	0.19	0.9	40.33	-8.4235	-0.0358	0.0684
1017	SLU 19	0.17	0.88	40.37	-8.4303	-0.0358	0.0629
1017	SLU 20	0.2	0.91	40.82	-8.5205	-0.0363	0.0707
1017	SLU 21	0.18	0.89	40.86	-8.5272	-0.0363	0.0652
1017	SLU 22	0.18	0.91	38.56	-8.0487	-0.0337	0.0652
1017	SLU 23	0.15	0.88	38.62	-8.0599	-0.0336	0.056
1017	SLU 24	0.19	0.94	39.36	-8.2049	-0.0345	0.0674
1017	SLU 25	0.17	0.92	39.4	-8.2116	-0.0345	0.062
1017	SLU 26	0.16	0.89	39.12	-8.1568	-0.0342	0.0583
1017	SLU 27	0.19	0.96	39.85	-8.3019	-0.035	0.0697
1017	SLU 28	0.18	0.94	39.89	-8.3086	-0.035	0.0642
1017	SLU 29	0.19	0.94	39.54	-8.2426	-0.0348	0.0697
1017	SLU 30	0.18	0.92	39.58	-8.2493	-0.0347	0.0642
1017	SLU 31	0.17	0.97	42.98	-8.9392	-0.0382	0.0616
1017	SLU 32	0.2	1.03	43.71	-9.0842	-0.0391	0.073
1017	SLU 33	0.19	1.01	43.75	-9.091	-0.039	0.0675
1017	SLU 34	0.18	0.98	43.47	-9.0362	-0.0387	0.0639
1017	SLU 35	0.21	1.04	44.2	-9.1812	-0.0396	0.0753
1017	SLU 36	0.19	1.03	44.24	-9.1879	-0.0396	0.0698
1017	SLU 37	0.21	1.03	43.89	-9.1219	-0.0393	0.0753
1017	SLU 38	0.19	1.01	43.93	-9.1286	-0.0393	0.0698
1017	SLU 39	0.2	1.04	44.77	-9.3049	-0.0402	0.0731
1017	SLU 40	0.19	1.02	44.81	-9.3116	-0.0402	0.0676
1017	SLU 41	0.21	1.05	45.26	-9.4018	-0.0407	0.0754
1017	SLU 42	0.19	1.03	45.3	-9.4085	-0.0407	0.0699
1017	SLU 43	0.21	0.96	42.83	-9.0154	-0.0366	0.077
1017	SLU 44	0.19	0.92	42.89	-9.0266	-0.0365	0.0679
1017	SLU 45	0.22	0.99	43.63	-9.1716	-0.0374	0.0793
1017	SLU 46	0.2	0.97	43.67	-9.1783	-0.0374	0.0738
1017	SLU 47	0.19	0.94	43.38	-9.1235	-0.0371	0.0702
1017	SLU 48	0.23	1	44.12	-9.2686	-0.0379	0.0816
1017	SLU 49	0.21	0.98	44.16	-9.2753	-0.0379	0.0761
1017	SLU 50	0.23	0.98	43.81	-9.2093	-0.0376	0.0816
1017	SLU 51	0.21	0.96	43.85	-9.216	-0.0376	0.0761
1017	SLU 52	0.2	1.01	47.24	-9.9059	-0.0411	0.0734
1017	SLU 53	0.24	1.08	47.98	-10.0509	-0.042	0.0848
1017	SLU 54	0.22	1.06	48.02	-10.0577	-0.0419	0.0794
1017	SLU 55	0.21	1.03	47.74	-10.0029	-0.0416	0.0757
1017	SLU 56	0.24	1.09	48.47	-10.1479	-0.0425	0.0871
1017	SLU 57	0.23	1.07	48.51	-10.1546	-0.0424	0.0816
1017	SLU 58	0.24	1.07	48.16	-10.0886	-0.0422	0.0871
1017	SLU 59	0.23	1.05	48.2	-10.0953	-0.0421	0.0816
1017	SLU 60	0.24	1.09	49.04	-10.2716	-0.0431	0.0849
1017	SLU 61	0.22	1.07	49.08	-10.2783	-0.0431	0.0795
1017	SLU 62	0.24	1.1	49.53	-10.3685	-0.0436	0.0872
1017	SLU 63	0.23	1.08	49.57	-10.3752	-0.0436	0.0817
1017	SLU 64	0.23	1.1	47.27	-9.8967	-0.041	0.0817
1017	SLU 65	0.2	1.06	47.34	-9.9079	-0.0409	0.0726
1017	SLU 66	0.23	1.13	48.07	-10.0529	-0.0418	0.084
1017	SLU 67	0.22	1.11	48.11	-10.0597	-0.0418	0.0785
1017	SLU 68	0.21	1.08	47.83	-10.0048	-0.0415	0.0749
1017	SLU 69	0.24	1.14	48.56	-10.1499	-0.0423	0.0862
1017	SLU 70	0.22	1.12	48.6	-10.1566	-0.0423	0.0808
1017	SLU 71	0.24	1.12	48.25	-10.0906	-0.042	0.0862
1017	SLU 72	0.22	1.1	48.29	-10.0973	-0.042	0.0808
1017	SLU 73	0.22	1.15	51.69	-10.7872	-0.0455	0.0781
1017	SLU 74	0.25	1.22	52.42	-10.9323	-0.0464	0.0895
1017	SLU 75	0.23	1.2	52.46	-10.939	-0.0463	0.084
1017	SLU 76	0.22	1.17	52.18	-10.8842	-0.046	0.0804
1017	SLU 77	0.26	1.23	52.91	-11.0292	-0.0469	0.0918
1017	SLU 78	0.24	1.21	52.96	-11.0359	-0.0468	0.0863
1017	SLU 79	0.26	1.21	52.6	-10.9699	-0.0466	0.0918
1017	SLU 80	0.24	1.19	52.64	-10.9767	-0.0465	0.0863
1017	SLU 81	0.25	1.22	53.48	-11.1529	-0.0475	0.0896
1017	SLU 82	0.23	1.2	53.53	-11.1596	-0.0475	0.0842
1017	SLU 83	0.26	1.24	53.98	-11.2499	-0.048	0.0919
1017	SLU 84	0.24	1.22	54.02	-11.2566	-0.048	0.0864
1017	SLE RA 1	0.17	0.81	35.38	-7.4191	-0.0306	0.0618
1017	SLE RA 2	0.15	0.79	35.43	-7.4266	-0.0305	0.0557
1017	SLE RA 3	0.18	0.83	35.92	-7.5233	-0.0311	0.0633
1017	SLE RA 4	0.17	0.82	35.95	-7.5278	-0.0311	0.0597
1017	SLE RA 5	0.16	0.8	35.76	-7.4912	-0.0309	0.0572
1017	SLE RA 6	0.18	0.84	36.25	-7.5879	-0.0315	0.0648
1017	SLE RA 7	0.17	0.83	36.27	-7.5924	-0.0314	0.0612
1017	SLE RA 8	0.18	0.83	36.04	-7.5484	-0.0313	0.0648
1017	SLE RA 9	0.17	0.82	36.07	-7.5529	-0.0312	0.0612
1017	SLE RA 10	0.16	0.85	38.33	-8.0128	-0.0336	0.0594
1017	SLE RA 11	0.19	0.89	38.82	-8.1095	-0.0341	0.067
1017	SLE RA 12	0.18	0.88	38.85	-8.114	-0.0341	0.0634
1017	SLE RA 13	0.17	0.86	38.66	-8.0775	-0.0339	0.061
1017	SLE RA 14	0.19	0.9	39.15	-8.1742	-0.0345	0.0685
1017	SLE RA 15	0.18	0.89	39.18	-8.1786	-0.0345	0.0649
1017	SLE RA 16	0.19	0.89	38.94	-8.1346	-0.0343	0.0686
1017	SLE RA 17	0.18	0.88	38.97	-8.1391	-0.0343	0.0649
1017	SLE RA 18	0.19	0.9	39.53	-8.2566	-0.0349	0.0671
1017	SLE RA 19	0.18	0.89	39.55	-8.2611	-0.0349	0.0634
1017	SLE RA 20	0.19	0.91	39.86	-8.3212	-0.0353	0.0686
1017	SLE RA 21	0.18	0.89	39.88	-8.3257	-0.0352	0.065





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1017	SLE FR 1	0.17	0.81	35.38	-7.4191	-0.0306	0.0618
1017	SLE FR 2	0.17	0.81	35.39	-7.4206	-0.0306	0.0606
1017	SLE FR 3	0.17	0.82	35.51	-7.445	-0.0307	0.0624
1017	SLE FR 4	0.17	0.83	36.64	-7.6719	-0.0319	0.0622
1017	SLE FR 5	0.18	0.84	36.76	-7.6962	-0.032	0.064
1017	SLE FR 6	0.18	0.86	37.46	-7.8379	-0.0327	0.0644
1017	SLE QP 1	0.17	0.81	35.38	-7.4191	-0.0306	0.0618
1017	SLE QP 2	0.18	0.84	36.63	-7.6704	-0.0319	0.0634
1017	SLD 1	4.39	1.51	36.58	-7.5345	-0.0148	1.5377
1017	SLD 2	4	1.51	36.47	-7.5169	-0.0149	1.4009
1017	SLD 3	4.16	0.5	37.44	-7.6888	-0.0162	1.4577
1017	SLD 4	3.77	0.51	37.33	-7.6711	-0.0164	1.3209
1017	SLD 5	1.86	2.56	35.33	-7.3988	-0.0246	0.6515
1017	SLD 6	1.6	2.57	35.26	-7.3872	-0.0247	0.5616
1017	SLD 7	1.09	-0.79	38.2	-7.9131	-0.0293	0.3848
1017	SLD 8	0.84	-0.79	38.12	-7.9015	-0.0294	0.2949
1017	SLD 9	-0.49	2.46	35.13	-7.4393	-0.0344	-0.1681
1017	SLD 10	-0.74	2.47	35.06	-7.4277	-0.0344	-0.258
1017	SLD 11	-1.25	-0.89	38	-7.9536	-0.0391	-0.4348
1017	SLD 12	-1.5	-0.89	37.92	-7.942	-0.0392	-0.5247
1017	SLD 13	-3.42	1.17	35.92	-7.6696	-0.0474	-1.1941
1017	SLD 14	-3.81	1.18	35.81	-7.652	-0.0475	-1.3309
1017	SLD 15	-3.64	0.16	36.78	-7.8239	-0.0488	-1.2741
1017	SLD 16	-4.04	0.17	36.67	-7.8063	-0.049	-1.4109
1017	SLV 1	10.03	2.36	36.57	-7.3575	0.0081	3.5121
1017	SLV 2	9.12	2.38	36.31	-7.3164	0.0078	3.1936
1017	SLV 3	9.5	0.08	38.52	-7.7073	0.0048	3.3256
1017	SLV 4	8.58	0.1	38.26	-7.6662	0.0045	3.007
1017	SLV 5	4.1	4.75	33.69	-7.053	-0.0149	1.4361
1017	SLV 6	3.51	4.76	33.53	-7.0265	-0.0151	1.2303
1017	SLV 7	2.32	-2.85	40.2	-8.2192	-0.0257	0.8142
1017	SLV 8	1.73	-2.84	40.03	-8.1926	-0.026	0.6084
1017	SLV 9	-1.38	4.51	33.22	-7.1481	-0.0378	-0.4816
1017	SLV 10	-1.97	4.52	33.06	-7.1216	-0.038	-0.6874
1017	SLV 11	-3.16	-3.08	39.72	-8.3143	-0.0486	-1.1035
1017	SLV 12	-3.75	-3.07	39.56	-8.2878	-0.0489	-1.3093
1017	SLV 13	-8.23	1.58	34.99	-7.6745	-0.0683	-2.8802
1017	SLV 14	-9.14	1.59	34.74	-7.6334	-0.0686	-3.1988
1017	SLV 15	-8.76	-0.7	36.94	-8.0244	-0.0715	-3.0668
1017	SLV 16	-9.68	-0.68	36.69	-7.9833	-0.0718	-3.3854
1017	CRTFP Ux+	0	0	0	0	0	0
1017	CRTFP Ux-	0	0	0	0	0	0
1017	CRTFP Uy+	0	0	0	0	0	0
1017	CRTFP Uy-	0	0	0	0	0	0
1018	SLU 1	0.2	0.83	35.24	-8.0515	-0.0453	0.0732
1018	SLU 2	0.18	0.8	35.31	-8.0622	-0.0452	0.0639
1018	SLU 3	0.21	0.86	36.08	-8.2312	-0.0466	0.0758
1018	SLU 4	0.19	0.84	36.12	-8.2375	-0.0465	0.0702
1018	SLU 5	0.18	0.81	35.82	-8.1736	-0.046	0.0663
1018	SLU 6	0.22	0.88	36.59	-8.3426	-0.0473	0.0783
1018	SLU 7	0.2	0.86	36.63	-8.349	-0.0473	0.0727
1018	SLU 8	0.22	0.86	36.26	-8.2744	-0.0469	0.0781
1018	SLU 9	0.2	0.84	36.3	-8.2808	-0.0468	0.0725
1018	SLU 10	0.2	0.89	39.83	-9.0712	-0.0521	0.0707
1018	SLU 11	0.23	0.95	40.6	-9.2402	-0.0534	0.0826
1018	SLU 12	0.21	0.94	40.64	-9.2466	-0.0533	0.077
1018	SLU 13	0.2	0.9	40.34	-9.1827	-0.0528	0.0731
1018	SLU 14	0.24	0.97	41.11	-9.3517	-0.0542	0.0851
1018	SLU 15	0.22	0.95	41.15	-9.358	-0.0541	0.0794
1018	SLU 16	0.24	0.95	40.79	-9.2835	-0.0537	0.0849
1018	SLU 17	0.22	0.93	40.83	-9.2899	-0.0536	0.0793
1018	SLU 18	0.23	0.96	41.71	-9.493	-0.0551	0.0829
1018	SLU 19	0.21	0.94	41.75	-9.4994	-0.055	0.0773
1018	SLU 20	0.24	0.97	42.22	-9.6045	-0.0559	0.0854
1018	SLU 21	0.22	0.96	42.26	-9.6109	-0.0558	0.0798
1018	SLU 22	0.22	0.97	39.85	-9.0624	-0.0521	0.0792
1018	SLU 23	0.19	0.94	39.92	-9.073	-0.052	0.0698
1018	SLU 24	0.23	1.01	40.69	-9.242	-0.0533	0.0818
1018	SLU 25	0.21	0.99	40.73	-9.2484	-0.0532	0.0762
1018	SLU 26	0.2	0.95	40.43	-9.1845	-0.0527	0.0723
1018	SLU 27	0.23	1.02	41.2	-9.3535	-0.0541	0.0842
1018	SLU 28	0.22	1	41.24	-9.3599	-0.054	0.0786
1018	SLU 29	0.23	1	40.88	-9.2853	-0.0536	0.0841
1018	SLU 30	0.22	0.98	40.91	-9.2917	-0.0536	0.0785
1018	SLU 31	0.21	1.03	44.44	-10.0821	-0.0588	0.0766
1018	SLU 32	0.25	1.1	45.21	-10.2511	-0.0602	0.0886
1018	SLU 33	0.23	1.08	45.25	-10.2575	-0.0601	0.0829
1018	SLU 34	0.22	1.05	44.95	-10.1936	-0.0596	0.0791
1018	SLU 35	0.25	1.11	45.72	-10.3626	-0.0609	0.091
1018	SLU 36	0.24	1.09	45.76	-10.3689	-0.0609	0.0854
1018	SLU 37	0.25	1.09	45.4	-10.2944	-0.0605	0.0909
1018	SLU 38	0.24	1.07	45.44	-10.3008	-0.0604	0.0853
1018	SLU 39	0.25	1.1	46.32	-10.5039	-0.0619	0.0889
1018	SLU 40	0.23	1.09	46.36	-10.5103	-0.0618	0.0833
1018	SLU 41	0.25	1.12	46.83	-10.6154	-0.0626	0.0913
1018	SLU 42	0.24	1.1	46.87	-10.6218	-0.0626	0.0857
1018	SLU 43	0.26	1.03	44.24	-10.1204	-0.0566	0.0932
1018	SLU 44	0.23	1	44.3	-10.131	-0.0565	0.0838
1018	SLU 45	0.27	1.06	45.07	-10.3	-0.0578	0.0958
1018	SLU 46	0.25	1.04	45.11	-10.3064	-0.0578	0.0901



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1018	SLU 47	0.24	1.01	44.81	-10.2425	-0.0573	0.0863
1018	SLU 48	0.27	1.08	45.58	-10.4115	-0.0586	0.0982
1018	SLU 49	0.26	1.06	45.62	-10.4178	-0.0585	0.0926
1018	SLU 50	0.27	1.06	45.26	-10.3433	-0.0582	0.0981
1018	SLU 51	0.26	1.04	45.3	-10.3497	-0.0581	0.0924
1018	SLU 52	0.25	1.09	48.82	-11.1401	-0.0633	0.0906
1018	SLU 53	0.29	1.15	49.59	-11.3091	-0.0647	0.1025
1018	SLU 54	0.27	1.14	49.63	-11.3154	-0.0646	0.0969
1018	SLU 55	0.26	1.1	49.33	-11.2515	-0.0641	0.0931
1018	SLU 56	0.29	1.17	50.11	-11.4205	-0.0655	0.105
1018	SLU 57	0.28	1.15	50.14	-11.4269	-0.0654	0.0994
1018	SLU 58	0.29	1.15	49.78	-11.3524	-0.065	0.1048
1018	SLU 59	0.28	1.13	49.82	-11.3587	-0.0649	0.0992
1018	SLU 60	0.29	1.16	50.7	-11.5619	-0.0664	0.1029
1018	SLU 61	0.27	1.14	50.74	-11.5683	-0.0663	0.0973
1018	SLU 62	0.29	1.17	51.21	-11.6734	-0.0672	0.1053
1018	SLU 63	0.28	1.16	51.25	-11.6797	-0.0671	0.0997
1018	SLU 64	0.28	1.17	48.85	-11.1313	-0.0634	0.0991
1018	SLU 65	0.25	1.14	48.91	-11.1419	-0.0633	0.0898
1018	SLU 66	0.28	1.21	49.68	-11.3109	-0.0646	0.1017
1018	SLU 67	0.27	1.19	49.72	-11.3173	-0.0645	0.0961
1018	SLU 68	0.26	1.15	49.42	-11.2534	-0.064	0.0922
1018	SLU 69	0.29	1.22	50.19	-11.4224	-0.0654	0.1041
1018	SLU 70	0.27	1.2	50.23	-11.4287	-0.0653	0.0985
1018	SLU 71	0.29	1.2	49.87	-11.3542	-0.0649	0.104
1018	SLU 72	0.27	1.18	49.91	-11.3606	-0.0648	0.0984
1018	SLU 73	0.27	1.23	53.44	-12.151	-0.0701	0.0966
1018	SLU 74	0.3	1.3	54.21	-12.32	-0.0714	0.1085
1018	SLU 75	0.29	1.28	54.25	-12.3263	-0.0714	0.1029
1018	SLU 76	0.27	1.25	53.95	-12.2624	-0.0709	0.099
1018	SLU 77	0.31	1.31	54.72	-12.4314	-0.0722	0.1109
1018	SLU 78	0.29	1.29	54.76	-12.4378	-0.0721	0.1053
1018	SLU 79	0.31	1.29	54.39	-12.3632	-0.0718	0.1108
1018	SLU 80	0.29	1.27	54.43	-12.3696	-0.0717	0.1052
1018	SLU 81	0.3	1.3	55.31	-12.5728	-0.0732	0.1088
1018	SLU 82	0.29	1.29	55.35	-12.5792	-0.0731	0.1032
1018	SLU 83	0.31	1.32	55.82	-12.6842	-0.0739	0.1113
1018	SLU 84	0.29	1.3	55.86	-12.6906	-0.0739	0.1057
1018	SLE RA 1	0.21	0.87	36.56	-8.3404	-0.0473	0.0749
1018	SLE RA 2	0.19	0.85	36.6	-8.3474	-0.0472	0.0687
1018	SLE RA 3	0.21	0.89	37.12	-8.4601	-0.0481	0.0767
1018	SLE RA 4	0.2	0.88	37.14	-8.4644	-0.048	0.0729
1018	SLE RA 5	0.2	0.86	36.94	-8.4217	-0.0477	0.0703
1018	SLE RA 6	0.22	0.9	37.46	-8.5344	-0.0486	0.0783
1018	SLE RA 7	0.21	0.89	37.48	-8.5387	-0.0485	0.0745
1018	SLE RA 8	0.22	0.89	37.24	-8.489	-0.0483	0.0782
1018	SLE RA 9	0.21	0.88	37.27	-8.4932	-0.0482	0.0745
1018	SLE RA 10	0.2	0.91	39.62	-9.0201	-0.0518	0.0732
1018	SLE RA 11	0.23	0.95	40.13	-9.1328	-0.0526	0.0812
1018	SLE RA 12	0.22	0.94	40.16	-9.1371	-0.0526	0.0774
1018	SLE RA 13	0.21	0.92	39.96	-9.0944	-0.0523	0.0749
1018	SLE RA 14	0.23	0.96	40.47	-9.2071	-0.0532	0.0828
1018	SLE RA 15	0.22	0.95	40.5	-9.2114	-0.0531	0.0791
1018	SLE RA 16	0.23	0.95	40.26	-9.1617	-0.0529	0.0827
1018	SLE RA 17	0.22	0.94	40.28	-9.1659	-0.0528	0.079
1018	SLE RA 18	0.23	0.96	40.87	-9.3014	-0.0538	0.0814
1018	SLE RA 19	0.22	0.95	40.9	-9.3056	-0.0537	0.0777
1018	SLE RA 20	0.23	0.97	41.21	-9.3757	-0.0543	0.083
1018	SLE RA 21	0.22	0.95	41.24	-9.3799	-0.0543	0.0793
1018	SLE FR 1	0.21	0.87	36.56	-8.3404	-0.0473	0.0749
1018	SLE FR 2	0.2	0.87	36.57	-8.3418	-0.0473	0.0737
1018	SLE FR 3	0.21	0.87	36.7	-8.3701	-0.0475	0.0756
1018	SLE FR 4	0.21	0.89	37.86	-8.6301	-0.0492	0.0756
1018	SLE FR 5	0.22	0.9	37.99	-8.6584	-0.0494	0.0775
1018	SLE FR 6	0.22	0.91	38.72	-8.8209	-0.0505	0.0782
1018	SLE QP 1	0.21	0.87	36.56	-8.3404	-0.0473	0.0749
1018	SLE QP 2	0.21	0.9	37.85	-8.6287	-0.0492	0.0769
1018	SLD 1	4.42	1.57	37.11	-8.3371	-0.0325	1.5498
1018	SLD 2	4.03	1.59	37.01	-8.3203	-0.0326	1.4131
1018	SLD 3	4.19	0.55	38.01	-8.5153	-0.0343	1.4699
1018	SLD 4	3.8	0.57	37.9	-8.4984	-0.0343	1.3332
1018	SLD 5	1.89	2.65	36.29	-8.274	-0.0415	0.6643
1018	SLD 6	1.63	2.66	36.22	-8.2629	-0.0416	0.5745
1018	SLD 7	1.13	-0.76	39.28	-8.8679	-0.0474	0.3981
1018	SLD 8	0.87	-0.75	39.21	-8.8568	-0.0474	0.3082
1018	SLD 9	-0.45	2.54	36.5	-8.4005	-0.051	-0.1544
1018	SLD 10	-0.7	2.56	36.43	-8.3894	-0.0511	-0.2443
1018	SLD 11	-1.21	-0.86	39.49	-8.9944	-0.0569	-0.4207
1018	SLD 12	-1.46	-0.85	39.42	-8.9833	-0.0569	-0.5106
1018	SLD 13	-3.38	1.23	37.8	-8.7589	-0.0641	-1.1794
1018	SLD 14	-3.77	1.25	37.7	-8.742	-0.0642	-1.3162
1018	SLD 15	-3.6	0.2	38.7	-8.9371	-0.0659	-1.2593
1018	SLD 16	-4	0.22	38.6	-8.9202	-0.0659	-1.3961
1018	SLV 1	10.06	2.43	36.13	-7.9522	-0.0101	3.5224
1018	SLV 2	9.15	2.48	35.88	-7.913	-0.0103	3.2039
1018	SLV 3	9.53	0.12	38.16	-8.356	-0.0142	3.3361
1018	SLV 4	8.61	0.17	37.92	-8.3167	-0.0143	3.0176
1018	SLV 5	4.13	4.86	34.29	-7.8201	-0.0314	1.4481
1018	SLV 6	3.54	4.89	34.14	-7.7948	-0.0315	1.2424
1018	SLV 7	2.36	-2.85	41.08	-9.166	-0.0448	0.8273



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1018	SLV 8	1.77	-2.82	40.92	-9.1407	-0.0449	0.6216
1018	SLV 9	-1.34	4.62	34.79	-8.1166	-0.0536	-0.4678
1018	SLV 10	-1.93	4.65	34.63	-8.0913	-0.0537	-0.6735
1018	SLV 11	-3.11	-3.1	41.57	-9.4625	-0.067	-1.0886
1018	SLV 12	-3.7	-3.07	41.41	-9.4372	-0.0671	-1.2943
1018	SLV 13	-8.19	1.63	37.79	-8.9406	-0.0841	-2.8639
1018	SLV 14	-9.1	1.67	37.54	-8.9013	-0.0843	-3.1824
1018	SLV 15	-8.72	-0.69	39.82	-9.3443	-0.0882	-3.0501
1018	SLV 16	-9.63	-0.64	39.58	-9.3051	-0.0883	-3.3686
1018	CRTFP Ux+	0	0	0	0	0	0
1018	CRTFP Ux-	0	0	0	0	0	0
1018	CRTFP Uy+	0	0	0	0	0	0
1018	CRTFP Uy-	0	0	0	0	0	0
1019	SLU 1	0.24	0.89	36.75	-9.2553	-0.054	0.0858
1019	SLU 2	0.21	0.86	36.81	-9.2652	-0.0538	0.0763
1019	SLU 3	0.25	0.92	37.63	-9.4665	-0.0554	0.0887
1019	SLU 4	0.23	0.91	37.66	-9.4725	-0.0553	0.083
1019	SLU 5	0.22	0.87	37.35	-9.3961	-0.0547	0.0789
1019	SLU 6	0.25	0.94	38.16	-9.5974	-0.0563	0.0913
1019	SLU 7	0.24	0.92	38.2	-9.6034	-0.0562	0.0856
1019	SLU 8	0.25	0.92	37.82	-9.5172	-0.0558	0.091
1019	SLU 9	0.24	0.9	37.86	-9.5231	-0.0557	0.0853
1019	SLU 10	0.23	0.96	41.56	-10.4486	-0.0619	0.0843
1019	SLU 11	0.27	1.02	42.38	-10.6499	-0.0635	0.0967
1019	SLU 12	0.25	1	42.41	-10.6559	-0.0634	0.091
1019	SLU 13	0.24	0.97	42.1	-10.5796	-0.0628	0.0869
1019	SLU 14	0.28	1.04	42.91	-10.7809	-0.0644	0.0993
1019	SLU 15	0.26	1.02	42.95	-10.7868	-0.0643	0.0936
1019	SLU 16	0.28	1.02	42.57	-10.7006	-0.0638	0.099
1019	SLU 17	0.26	1	42.61	-10.7065	-0.0637	0.0933
1019	SLU 18	0.27	1.03	43.54	-10.9459	-0.0655	0.0973
1019	SLU 19	0.26	1.01	43.57	-10.9518	-0.0654	0.0915
1019	SLU 20	0.28	1.04	44.07	-11.0768	-0.0664	0.0999
1019	SLU 21	0.26	1.02	44.11	-11.0828	-0.0663	0.0941
1019	SLU 22	0.26	1.04	41.59	-10.4419	-0.062	0.093
1019	SLU 23	0.23	1.01	41.65	-10.4518	-0.0619	0.0835
1019	SLU 24	0.27	1.07	42.46	-10.6531	-0.0634	0.0959
1019	SLU 25	0.25	1.05	42.5	-10.6591	-0.0634	0.0902
1019	SLU 26	0.24	1.02	42.18	-10.5827	-0.0627	0.0861
1019	SLU 27	0.27	1.09	43	-10.784	-0.0643	0.0985
1019	SLU 28	0.26	1.07	43.03	-10.79	-0.0642	0.0928
1019	SLU 29	0.27	1.07	42.66	-10.7037	-0.0638	0.0982
1019	SLU 30	0.26	1.05	42.69	-10.7097	-0.0637	0.0925
1019	SLU 31	0.25	1.1	46.4	-11.6352	-0.0699	0.0914
1019	SLU 32	0.29	1.17	47.21	-11.8365	-0.0715	0.1039
1019	SLU 33	0.27	1.15	47.25	-11.8425	-0.0714	0.0982
1019	SLU 34	0.26	1.12	46.93	-11.7661	-0.0708	0.094
1019	SLU 35	0.3	1.18	47.75	-11.9675	-0.0724	0.1065
1019	SLU 36	0.28	1.17	47.78	-11.9734	-0.0723	0.1007
1019	SLU 37	0.3	1.16	47.41	-11.8872	-0.0718	0.1062
1019	SLU 38	0.28	1.15	47.44	-11.8931	-0.0718	0.1005
1019	SLU 39	0.29	1.18	48.37	-12.1325	-0.0735	0.1044
1019	SLU 40	0.28	1.16	48.41	-12.1384	-0.0734	0.0987
1019	SLU 41	0.3	1.19	48.91	-12.2634	-0.0744	0.107
1019	SLU 42	0.28	1.17	48.94	-12.2694	-0.0743	0.1013
1019	SLU 43	0.3	1.11	46.12	-11.625	-0.0674	0.1091
1019	SLU 44	0.28	1.08	46.18	-11.6349	-0.0673	0.0996
1019	SLU 45	0.31	1.14	46.99	-11.8363	-0.0689	0.112
1019	SLU 46	0.3	1.12	47.03	-11.8422	-0.0688	0.1063
1019	SLU 47	0.28	1.09	46.71	-11.7659	-0.0682	0.1022
1019	SLU 48	0.32	1.15	47.53	-11.9672	-0.0698	0.1146
1019	SLU 49	0.3	1.14	47.56	-11.9732	-0.0697	0.1089
1019	SLU 50	0.32	1.13	47.19	-11.8869	-0.0692	0.1143
1019	SLU 51	0.3	1.12	47.22	-11.8929	-0.0691	0.1086
1019	SLU 52	0.3	1.17	50.93	-12.8184	-0.0753	0.1076
1019	SLU 53	0.34	1.24	51.74	-13.0197	-0.0769	0.12
1019	SLU 54	0.32	1.22	51.78	-13.0256	-0.0768	0.1143
1019	SLU 55	0.31	1.19	51.46	-12.9493	-0.0762	0.1102
1019	SLU 56	0.34	1.25	52.28	-13.1506	-0.0778	0.1226
1019	SLU 57	0.33	1.23	52.31	-13.1566	-0.0777	0.1169
1019	SLU 58	0.34	1.23	51.94	-13.0703	-0.0773	0.1223
1019	SLU 59	0.33	1.21	51.97	-13.0763	-0.0772	0.1166
1019	SLU 60	0.34	1.24	52.9	-13.3156	-0.0789	0.1206
1019	SLU 61	0.32	1.23	52.94	-13.3216	-0.0789	0.1148
1019	SLU 62	0.34	1.26	53.44	-13.4466	-0.0798	0.1232
1019	SLU 63	0.33	1.24	53.47	-13.4525	-0.0797	0.1174
1019	SLU 64	0.32	1.25	50.95	-12.8116	-0.0755	0.1163
1019	SLU 65	0.3	1.22	51.01	-12.8215	-0.0753	0.1068
1019	SLU 66	0.33	1.29	51.83	-13.0229	-0.0769	0.1192
1019	SLU 67	0.32	1.27	51.86	-13.0288	-0.0768	0.1135
1019	SLU 68	0.3	1.24	51.55	-12.9525	-0.0762	0.1093
1019	SLU 69	0.34	1.3	52.36	-13.1538	-0.0778	0.1218
1019	SLU 70	0.32	1.28	52.4	-13.1597	-0.0777	0.116
1019	SLU 71	0.34	1.28	52.02	-13.0735	-0.0772	0.1215
1019	SLU 72	0.32	1.26	52.06	-13.0794	-0.0772	0.1158
1019	SLU 73	0.32	1.32	55.76	-14.0005	-0.0834	0.1147
1019	SLU 74	0.35	1.39	56.58	-14.2063	-0.0849	0.1272
1019	SLU 75	0.34	1.37	56.61	-14.2122	-0.0849	0.1214
1019	SLU 76	0.33	1.33	56.3	-14.1359	-0.0842	0.1173
1019	SLU 77	0.36	1.4	57.11	-14.3372	-0.0858	0.1298



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1019	SLU 78	0.35	1.38	57.15	-14.3432	-0.0857	0.124
1019	SLU 79	0.36	1.38	56.77	-14.2569	-0.0853	0.1295
1019	SLU 80	0.35	1.36	56.81	-14.2629	-0.0852	0.1238
1019	SLU 81	0.36	1.39	57.74	-14.5022	-0.087	0.1277
1019	SLU 82	0.34	1.37	57.77	-14.5082	-0.0869	0.122
1019	SLU 83	0.36	1.41	58.27	-14.6332	-0.0879	0.1303
1019	SLU 84	0.35	1.39	58.31	-14.6391	-0.0878	0.1246
1019	SLE RA 1	0.25	0.93	38.13	-9.5943	-0.0563	0.0879
1019	SLE RA 2	0.23	0.91	38.17	-9.6009	-0.0562	0.0815
1019	SLE RA 3	0.25	0.96	38.72	-9.7351	-0.0572	0.0898
1019	SLE RA 4	0.24	0.94	38.74	-9.7391	-0.0572	0.086
1019	SLE RA 5	0.23	0.92	38.53	-9.6882	-0.0568	0.0833
1019	SLE RA 6	0.26	0.96	39.07	-9.8224	-0.0578	0.0915
1019	SLE RA 7	0.24	0.95	39.1	-9.8264	-0.0578	0.0877
1019	SLE RA 8	0.26	0.95	38.85	-9.7689	-0.0575	0.0914
1019	SLE RA 9	0.24	0.94	38.87	-9.7729	-0.0574	0.0875
1019	SLE RA 10	0.24	0.98	41.34	-10.3899	-0.0615	0.0868
1019	SLE RA 11	0.27	1.02	41.88	-10.5241	-0.0626	0.0951
1019	SLE RA 12	0.25	1.01	41.91	-10.528	-0.0625	0.0913
1019	SLE RA 13	0.25	0.99	41.7	-10.4772	-0.0621	0.0886
1019	SLE RA 14	0.27	1.03	42.24	-10.6114	-0.0632	0.0969
1019	SLE RA 15	0.26	1.02	42.26	-10.6153	-0.0631	0.093
1019	SLE RA 16	0.27	1.02	42.01	-10.5578	-0.0628	0.0967
1019	SLE RA 17	0.26	1	42.04	-10.5618	-0.0628	0.0929
1019	SLE RA 18	0.27	1.02	42.66	-10.7214	-0.064	0.0955
1019	SLE RA 19	0.26	1.01	42.68	-10.7253	-0.0639	0.0917
1019	SLE RA 20	0.27	1.03	43.01	-10.8087	-0.0645	0.0972
1019	SLE RA 21	0.26	1.02	43.04	-10.8126	-0.0645	0.0934
1019	SLE FR 1	0.25	0.93	38.13	-9.5943	-0.0563	0.0879
1019	SLE FR 2	0.24	0.93	38.14	-9.5956	-0.0563	0.0866
1019	SLE FR 3	0.25	0.94	38.27	-9.6292	-0.0565	0.0886
1019	SLE FR 4	0.25	0.96	39.5	-9.9337	-0.0586	0.0889
1019	SLE FR 5	0.25	0.96	39.63	-9.9673	-0.0588	0.0909
1019	SLE FR 6	0.26	0.98	40.39	-10.1578	-0.0601	0.0917
1019	SLE QP 1	0.25	0.93	38.13	-9.5943	-0.0563	0.0879
1019	SLE QP 2	0.25	0.96	39.49	-9.9324	-0.0586	0.0902
1019	SLD 1	4.46	1.64	38.31	-9.4994	-0.0424	1.5607
1019	SLD 2	4.06	1.67	38.21	-9.4815	-0.0424	1.4241
1019	SLD 3	4.23	0.6	39.26	-9.7069	-0.0442	1.481
1019	SLD 4	3.84	0.63	39.15	-9.6889	-0.0443	1.3444
1019	SLD 5	1.93	2.74	37.72	-9.4911	-0.0509	0.6766
1019	SLD 6	1.67	2.76	37.65	-9.4793	-0.0509	0.5868
1019	SLD 7	1.17	-0.74	40.87	-10.1826	-0.0571	0.411
1019	SLD 8	0.91	-0.71	40.8	-10.1708	-0.0571	0.3212
1019	SLD 9	-0.41	2.63	38.18	-9.6941	-0.06	-0.1408
1019	SLD 10	-0.67	2.66	38.11	-9.6822	-0.0601	-0.2306
1019	SLD 11	-1.17	-0.84	41.32	-10.3855	-0.0663	-0.4064
1019	SLD 12	-1.42	-0.82	41.25	-10.3737	-0.0663	-0.4962
1019	SLD 13	-3.33	1.29	39.82	-10.1759	-0.0729	-1.164
1019	SLD 14	-3.72	1.32	39.72	-10.158	-0.0729	-1.3007
1019	SLD 15	-3.56	0.25	40.77	-10.3834	-0.0748	-1.2437
1019	SLD 16	-3.95	0.28	40.66	-10.3654	-0.0748	-1.3803
1019	SLV 1	10.08	2.51	36.76	-8.9259	-0.0207	3.53
1019	SLV 2	9.17	2.59	36.52	-8.884	-0.0207	3.2118
1019	SLV 3	9.55	0.15	38.9	-9.3958	-0.025	3.3442
1019	SLV 4	8.64	0.23	38.66	-9.3539	-0.025	3.026
1019	SLV 5	4.16	4.99	35.47	-8.925	-0.0408	1.459
1019	SLV 6	3.57	5.04	35.31	-8.898	-0.0408	1.2535
1019	SLV 7	2.39	-2.88	42.6	-10.4914	-0.0549	0.8396
1019	SLV 8	1.81	-2.83	42.44	-10.4643	-0.055	0.6341
1019	SLV 9	-1.3	4.75	36.53	-9.4005	-0.0622	-0.4537
1019	SLV 10	-1.89	4.8	36.38	-9.3735	-0.0622	-0.6592
1019	SLV 11	-3.07	-3.12	43.67	-10.9669	-0.0764	-1.0731
1019	SLV 12	-3.66	-3.07	43.51	-10.9398	-0.0764	-1.2786
1019	SLV 13	-8.14	1.69	40.32	-10.5109	-0.0922	-2.8456
1019	SLV 14	-9.05	1.77	40.08	-10.469	-0.0922	-3.1639
1019	SLV 15	-8.67	-0.67	42.46	-10.9808	-0.0964	-3.0315
1019	SLV 16	-9.58	-0.59	42.22	-10.939	-0.0965	-3.3497
1019	CRTFP Ux+	0	0	0	0	0	0
1019	CRTFP Ux-	0	0	0	0	0	0
1019	CRTFP Uy+	0	0	0	0	0	0
1019	CRTFP Uy-	0	0	0	0	0	0
1020	SLU 1	0.28	0.95	38.35	-10.6058	-0.0513	0.0985
1020	SLU 2	0.25	0.92	38.41	-10.6152	-0.0511	0.0888
1020	SLU 3	0.29	0.98	39.27	-10.8523	-0.0526	0.1017
1020	SLU 4	0.27	0.96	39.31	-10.858	-0.0525	0.0958
1020	SLU 5	0.26	0.93	38.97	-10.7678	-0.0519	0.0915
1020	SLU 6	0.29	1	39.83	-11.0049	-0.0535	0.1044
1020	SLU 7	0.28	0.98	39.87	-11.0105	-0.0534	0.0986
1020	SLU 8	0.29	0.98	39.48	-10.911	-0.0529	0.104
1020	SLU 9	0.28	0.96	39.51	-10.9166	-0.0528	0.0982
1020	SLU 10	0.27	1.02	43.4	-11.992	-0.0587	0.098
1020	SLU 11	0.31	1.08	44.26	-12.2291	-0.0602	0.1109
1020	SLU 12	0.29	1.07	44.29	-12.2348	-0.0601	0.105
1020	SLU 13	0.28	1.03	43.96	-12.1446	-0.0595	0.1007
1020	SLU 14	0.32	1.1	44.82	-12.3817	-0.061	0.1136
1020	SLU 15	0.3	1.08	44.86	-12.3873	-0.0609	0.1078
1020	SLU 16	0.32	1.08	44.47	-12.2877	-0.0605	0.1132
1020	SLU 17	0.3	1.06	44.5	-12.2934	-0.0604	0.1073
1020	SLU 18	0.31	1.09	45.48	-12.5727	-0.0621	0.1116



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1020	SLU 19	0.3	1.07	45.51	-12.5783	-0.062	0.1058
1020	SLU 20	0.32	1.11	46.04	-12.7252	-0.0629	0.1144
1020	SLU 21	0.3	1.09	46.07	-12.7309	-0.0628	0.1085
1020	SLU 22	0.3	1.1	43.43	-11.9888	-0.0589	0.1069
1020	SLU 23	0.27	1.07	43.48	-11.9982	-0.0587	0.0972
1020	SLU 24	0.31	1.14	44.35	-12.2353	-0.0602	0.1101
1020	SLU 25	0.29	1.12	44.38	-12.241	-0.0601	0.1042
1020	SLU 26	0.28	1.09	44.04	-12.1508	-0.0595	0.0999
1020	SLU 27	0.32	1.15	44.91	-12.3879	-0.061	0.1128
1020	SLU 28	0.3	1.13	44.94	-12.3935	-0.061	0.107
1020	SLU 29	0.32	1.13	44.55	-12.2939	-0.0605	0.1124
1020	SLU 30	0.3	1.11	44.58	-12.2996	-0.0604	0.1065
1020	SLU 31	0.3	1.17	48.47	-13.375	-0.0663	0.1063
1020	SLU 32	0.33	1.24	49.33	-13.6121	-0.0678	0.1192
1020	SLU 33	0.32	1.22	49.37	-13.6177	-0.0677	0.1134
1020	SLU 34	0.31	1.19	49.03	-13.5276	-0.0671	0.1091
1020	SLU 35	0.34	1.25	49.89	-13.7647	-0.0686	0.122
1020	SLU 36	0.33	1.23	49.93	-13.7703	-0.0685	0.1161
1020	SLU 37	0.34	1.23	49.54	-13.6707	-0.0681	0.1216
1020	SLU 38	0.32	1.21	49.57	-13.6764	-0.068	0.1157
1020	SLU 39	0.34	1.24	50.55	-13.9556	-0.0697	0.12
1020	SLU 40	0.32	1.23	50.59	-13.9613	-0.0696	0.1142
1020	SLU 41	0.34	1.26	51.11	-14.1082	-0.0705	0.1228
1020	SLU 42	0.33	1.24	51.15	-14.1138	-0.0704	0.1169
1020	SLU 43	0.35	1.18	48.12	-13.3134	-0.0641	0.1252
1020	SLU 44	0.32	1.15	48.18	-13.3228	-0.0639	0.1154
1020	SLU 45	0.36	1.21	49.04	-13.5599	-0.0654	0.1284
1020	SLU 46	0.34	1.19	49.07	-13.5656	-0.0653	0.1225
1020	SLU 47	0.33	1.16	48.74	-13.4754	-0.0647	0.1182
1020	SLU 48	0.37	1.23	49.6	-13.7125	-0.0662	0.1311
1020	SLU 49	0.35	1.21	49.63	-13.7181	-0.0661	0.1252
1020	SLU 50	0.37	1.21	49.24	-13.6185	-0.0657	0.1307
1020	SLU 51	0.35	1.19	49.28	-13.6242	-0.0656	0.1248
1020	SLU 52	0.35	1.25	53.16	-14.6996	-0.0715	0.1246
1020	SLU 53	0.39	1.31	54.03	-14.9367	-0.073	0.1375
1020	SLU 54	0.37	1.3	54.06	-14.9424	-0.0729	0.1317
1020	SLU 55	0.36	1.26	53.73	-14.8522	-0.0723	0.1274
1020	SLU 56	0.39	1.33	54.59	-15.0893	-0.0738	0.1403
1020	SLU 57	0.38	1.31	54.62	-15.0949	-0.0737	0.1344
1020	SLU 58	0.39	1.31	54.23	-14.9953	-0.0733	0.1399
1020	SLU 59	0.38	1.29	54.27	-15.001	-0.0732	0.134
1020	SLU 60	0.39	1.32	55.25	-15.2803	-0.0749	0.1383
1020	SLU 61	0.37	1.3	55.28	-15.2859	-0.0748	0.1325
1020	SLU 62	0.4	1.34	55.81	-15.4328	-0.0757	0.1411
1020	SLU 63	0.38	1.32	55.84	-15.4385	-0.0756	0.1352
1020	SLU 64	0.38	1.33	53.19	-14.6964	-0.0716	0.1336
1020	SLU 65	0.35	1.3	53.25	-14.7058	-0.0715	0.1238
1020	SLU 66	0.38	1.37	54.11	-14.9429	-0.073	0.1367
1020	SLU 67	0.37	1.35	54.15	-14.9485	-0.0729	0.1309
1020	SLU 68	0.35	1.32	53.81	-14.8584	-0.0723	0.1266
1020	SLU 69	0.39	1.38	54.67	-15.0955	-0.0738	0.1395
1020	SLU 70	0.38	1.36	54.71	-15.1011	-0.0737	0.1336
1020	SLU 71	0.39	1.36	54.32	-15.0015	-0.0733	0.1391
1020	SLU 72	0.37	1.34	54.35	-15.0072	-0.0732	0.1332
1020	SLU 73	0.37	1.4	58.24	-16.0826	-0.079	0.133
1020	SLU 74	0.41	1.47	59.1	-16.3197	-0.0806	0.1459
1020	SLU 75	0.39	1.45	59.13	-16.3253	-0.0805	0.1401
1020	SLU 76	0.38	1.42	58.8	-16.2351	-0.0799	0.1358
1020	SLU 77	0.42	1.48	59.66	-16.4723	-0.0814	0.1487
1020	SLU 78	0.4	1.47	59.7	-16.4779	-0.0813	0.1428
1020	SLU 79	0.42	1.46	59.31	-16.3783	-0.0809	0.1482
1020	SLU 80	0.4	1.44	59.34	-16.3839	-0.0808	0.1424
1020	SLU 81	0.41	1.48	60.32	-16.6632	-0.0825	0.1467
1020	SLU 82	0.4	1.46	60.35	-16.6689	-0.0824	0.1408
1020	SLU 83	0.42	1.49	60.88	-16.8158	-0.0833	0.1494
1020	SLU 84	0.4	1.47	60.91	-16.8214	-0.0832	0.1436
1020	SLE RA 1	0.28	0.99	39.8	-11.001	-0.0534	0.1009
1020	SLE RA 2	0.26	0.97	39.84	-11.0072	-0.0533	0.0944
1020	SLE RA 3	0.29	1.01	40.42	-11.1653	-0.0543	0.103
1020	SLE RA 4	0.28	1	40.44	-11.1691	-0.0543	0.0991
1020	SLE RA 5	0.27	0.98	40.22	-11.1089	-0.0539	0.0962
1020	SLE RA 6	0.29	1.02	40.79	-11.267	-0.0549	0.1048
1020	SLE RA 7	0.28	1.01	40.81	-11.2708	-0.0548	0.1009
1020	SLE RA 8	0.29	1.01	40.55	-11.2044	-0.0546	0.1046
1020	SLE RA 9	0.28	1	40.57	-11.2081	-0.0545	0.1007
1020	SLE RA 10	0.28	1.04	43.17	-11.9251	-0.0584	0.1005
1020	SLE RA 11	0.31	1.08	43.74	-12.0832	-0.0594	0.1091
1020	SLE RA 12	0.3	1.07	43.76	-12.0869	-0.0593	0.1052
1020	SLE RA 13	0.29	1.05	43.54	-12.0268	-0.0589	0.1024
1020	SLE RA 14	0.31	1.09	44.12	-12.1849	-0.0599	0.111
1020	SLE RA 15	0.3	1.08	44.14	-12.1886	-0.0599	0.1071
1020	SLE RA 16	0.31	1.08	43.88	-12.1222	-0.0596	0.1107
1020	SLE RA 17	0.3	1.07	43.9	-12.126	-0.0595	0.1068
1020	SLE RA 18	0.31	1.09	44.55	-12.3122	-0.0606	0.1097
1020	SLE RA 19	0.3	1.07	44.58	-12.316	-0.0606	0.1058
1020	SLE RA 20	0.31	1.1	44.93	-12.4139	-0.0612	0.1115
1020	SLE RA 21	0.3	1.08	44.95	-12.4177	-0.0611	0.1076
1020	SLE FR 1	0.28	0.99	39.8	-11.001	-0.0534	0.1009
1020	SLE FR 2	0.28	0.99	39.81	-11.0022	-0.0534	0.0996
1020	SLE FR 3	0.29	0.99	39.95	-11.0417	-0.0537	0.1016



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1020	SLE FR 4	0.29	1.01	41.24	-11.3956	-0.0556	0.1022
1020	SLE FR 5	0.29	1.02	41.38	-11.435	-0.0558	0.1043
1020	SLE FR 6	0.3	1.04	42.18	-11.6566	-0.057	0.1053
1020	SLE QP 1	0.28	0.99	39.8	-11.001	-0.0534	0.1009
1020	SLE QP 2	0.29	1.02	41.23	-11.3943	-0.0556	0.1035
1020	SLD 1	4.49	1.7	39.6	-10.8393	-0.0404	1.5707
1020	SLD 2	4.09	1.75	39.5	-10.819	-0.0404	1.4342
1020	SLD 3	4.26	0.63	40.59	-11.0747	-0.042	1.4913
1020	SLD 4	3.87	0.69	40.49	-11.0544	-0.042	1.3548
1020	SLD 5	1.96	2.83	39.26	-10.8745	-0.0486	0.6886
1020	SLD 6	1.71	2.86	39.19	-10.8611	-0.0486	0.5989
1020	SLD 7	1.21	-0.72	42.56	-11.6591	-0.0539	0.4237
1020	SLD 8	0.95	-0.69	42.49	-11.6457	-0.0539	0.334
1020	SLD 9	-0.37	2.72	39.97	-11.143	-0.0573	-0.127
1020	SLD 10	-0.63	2.76	39.9	-11.1296	-0.0573	-0.2166
1020	SLD 11	-1.12	-0.83	43.27	-11.9276	-0.0626	-0.3918
1020	SLD 12	-1.38	-0.79	43.2	-11.9142	-0.0626	-0.4815
1020	SLD 13	-3.29	1.35	41.97	-11.7343	-0.0693	-1.1477
1020	SLD 14	-3.68	1.4	41.87	-11.714	-0.0693	-1.2842
1020	SLD 15	-3.51	0.29	42.96	-11.9697	-0.0709	-1.2272
1020	SLD 16	-3.91	0.34	42.86	-11.9493	-0.0708	-1.3637
1020	SLV 1	10.11	2.57	37.44	-10.103	-0.02	3.5356
1020	SLV 2	9.19	2.69	37.2	-10.0557	-0.02	3.2177
1020	SLV 3	9.58	0.16	39.69	-10.6361	-0.0236	3.3503
1020	SLV 4	8.66	0.28	39.44	-10.5888	-0.0236	3.0325
1020	SLV 5	4.2	5.12	36.73	-10.2066	-0.0394	1.4691
1020	SLV 6	3.61	5.2	36.58	-10.176	-0.0394	1.2638
1020	SLV 7	2.43	-2.92	44.21	-11.9836	-0.0515	0.8515
1020	SLV 8	1.84	-2.84	44.05	-11.953	-0.0515	0.6463
1020	SLV 9	-1.26	4.87	38.4	-10.8357	-0.0597	-0.4392
1020	SLV 10	-1.85	4.95	38.25	-10.8051	-0.0597	-0.6445
1020	SLV 11	-3.03	-3.16	45.88	-12.6127	-0.0718	-1.0568
1020	SLV 12	-3.61	-3.08	45.72	-12.5821	-0.0718	-1.262
1020	SLV 13	-8.08	1.76	43.01	-12.1999	-0.0876	-2.8254
1020	SLV 14	-8.99	1.88	42.77	-12.1526	-0.0876	-3.1432
1020	SLV 15	-8.61	-0.66	45.26	-12.733	-0.0913	-3.0107
1020	SLV 16	-9.52	-0.53	45.01	-12.6857	-0.0912	-3.3285
1020	CRTFP Ux+	0	0	0	0	0	0
1020	CRTFP Ux-	0	0	0	0	0	0
1020	CRTFP Uy+	0	0	0	0	0	0
1020	CRTFP Uy-	0	0	0	0	0	0
1021	SLU 1	0.29	0.89	35.98	-10.7808	0.6444	0.0843
1021	SLU 2	0.26	0.86	36.03	-10.7893	0.6454	0.0758
1021	SLU 3	0.3	0.92	36.85	-11.0345	0.6598	0.0868
1021	SLU 4	0.28	0.91	36.88	-11.0396	0.6604	0.0816
1021	SLU 5	0.27	0.88	36.56	-10.946	0.6548	0.0781
1021	SLU 6	0.3	0.94	37.38	-11.1911	0.6692	0.0891
1021	SLU 7	0.29	0.92	37.4	-11.1962	0.6698	0.084
1021	SLU 8	0.3	0.92	37.04	-11.0941	0.6633	0.089
1021	SLU 9	0.29	0.9	37.07	-11.0992	0.6639	0.0839
1021	SLU 10	0.29	0.96	40.73	-12.2013	0.7291	0.0834
1021	SLU 11	0.32	1.02	41.55	-12.4465	0.7436	0.0944
1021	SLU 12	0.31	1	41.57	-12.4516	0.7442	0.0893
1021	SLU 13	0.29	0.98	41.26	-12.358	0.7386	0.0857
1021	SLU 14	0.33	1.03	42.07	-12.6031	0.753	0.0967
1021	SLU 15	0.31	1.02	42.1	-12.6082	0.7536	0.0916
1021	SLU 16	0.33	1.02	41.74	-12.5061	0.7471	0.0966
1021	SLU 17	0.31	1	41.77	-12.5112	0.7476	0.0915
1021	SLU 18	0.32	1.03	42.7	-12.798	0.7641	0.0951
1021	SLU 19	0.31	1.01	42.72	-12.8031	0.7647	0.09
1021	SLU 20	0.33	1.04	43.22	-12.9546	0.7735	0.0975
1021	SLU 21	0.32	1.03	43.25	-12.9597	0.7741	0.0924
1021	SLU 22	0.31	1.03	40.76	-12.2028	0.7296	0.0903
1021	SLU 23	0.29	1.01	40.81	-12.2113	0.7305	0.0818
1021	SLU 24	0.32	1.07	41.62	-12.4565	0.745	0.0927
1021	SLU 25	0.3	1.05	41.65	-12.4616	0.7456	0.0876
1021	SLU 26	0.29	1.02	41.34	-12.368	0.74	0.0841
1021	SLU 27	0.33	1.08	42.15	-12.6131	0.7544	0.0951
1021	SLU 28	0.31	1.07	42.18	-12.6182	0.755	0.09
1021	SLU 29	0.33	1.06	41.82	-12.5161	0.7484	0.095
1021	SLU 30	0.31	1.05	41.85	-12.5212	0.749	0.0899
1021	SLU 31	0.31	1.11	45.51	-13.6233	0.8143	0.0894
1021	SLU 32	0.35	1.16	46.32	-13.8685	0.8288	0.1004
1021	SLU 33	0.33	1.15	46.35	-13.8736	0.8293	0.0953
1021	SLU 34	0.32	1.12	46.03	-13.78	0.8238	0.0917
1021	SLU 35	0.35	1.18	46.85	-14.0251	0.8382	0.1027
1021	SLU 36	0.34	1.16	46.88	-14.0302	0.8388	0.0976
1021	SLU 37	0.35	1.16	46.52	-13.9281	0.8322	0.1026
1021	SLU 38	0.34	1.14	46.54	-13.9332	0.8328	0.0975
1021	SLU 39	0.35	1.17	47.47	-14.22	0.8492	0.1011
1021	SLU 40	0.33	1.16	47.5	-14.2251	0.8498	0.096
1021	SLU 41	0.36	1.19	48	-14.3766	0.8587	0.1035
1021	SLU 42	0.34	1.17	48.03	-14.3817	0.8593	0.0984
1021	SLU 43	0.36	1.11	45.14	-13.5275	0.8085	0.1075
1021	SLU 44	0.34	1.08	45.19	-13.536	0.8095	0.099
1021	SLU 45	0.37	1.14	46	-13.7812	0.8239	0.11
1021	SLU 46	0.36	1.13	46.03	-13.7863	0.8245	0.1049
1021	SLU 47	0.35	1.1	45.72	-13.6927	0.8189	0.1013
1021	SLU 48	0.38	1.16	46.53	-13.9378	0.8334	0.1123
1021	SLU 49	0.37	1.14	46.56	-13.9429	0.8339	0.1072



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1021	SLU 50	0.38	1.14	46.2	-13.8408	0.8274	0.1122
1021	SLU 51	0.36	1.12	46.23	-13.8459	0.828	0.1071
1021	SLU 52	0.37	1.18	49.89	-14.948	0.8932	0.1066
1021	SLU 53	0.4	1.24	50.7	-15.1932	0.9077	0.1176
1021	SLU 54	0.38	1.22	50.73	-15.1983	0.9083	0.1125
1021	SLU 55	0.37	1.19	50.41	-15.1047	0.9027	0.1089
1021	SLU 56	0.41	1.25	51.23	-15.3498	0.9171	0.1199
1021	SLU 57	0.39	1.24	51.26	-15.355	0.9177	0.1148
1021	SLU 58	0.41	1.23	50.9	-15.2528	0.9112	0.1198
1021	SLU 59	0.39	1.22	50.92	-15.258	0.9117	0.1147
1021	SLU 60	0.4	1.24	51.85	-15.5447	0.9282	0.1184
1021	SLU 61	0.39	1.23	51.88	-15.5498	0.9288	0.1133
1021	SLU 62	0.41	1.26	52.38	-15.7013	0.9376	0.1207
1021	SLU 63	0.39	1.24	52.41	-15.7064	0.9382	0.1156
1021	SLU 64	0.39	1.25	49.92	-14.9495	0.8937	0.1135
1021	SLU 65	0.36	1.23	49.96	-14.958	0.8946	0.105
1021	SLU 66	0.4	1.29	50.78	-15.2032	0.9091	0.116
1021	SLU 67	0.38	1.27	50.81	-15.2083	0.9097	0.1109
1021	SLU 68	0.37	1.24	50.49	-15.1147	0.9041	0.1073
1021	SLU 69	0.41	1.3	51.31	-15.3598	0.9185	0.1183
1021	SLU 70	0.39	1.29	51.34	-15.3649	0.9191	0.1132
1021	SLU 71	0.4	1.28	50.98	-15.2628	0.9126	0.1182
1021	SLU 72	0.39	1.27	51	-15.2679	0.9131	0.1131
1021	SLU 73	0.39	1.32	54.66	-16.37	0.9784	0.1126
1021	SLU 74	0.42	1.38	55.48	-16.6152	0.9929	0.1236
1021	SLU 75	0.41	1.37	55.51	-16.6203	0.9935	0.1185
1021	SLU 76	0.4	1.34	55.19	-16.5267	0.9879	0.1149
1021	SLU 77	0.43	1.4	56.01	-16.7718	1.0023	0.1259
1021	SLU 78	0.42	1.38	56.04	-16.777	1.0029	0.1208
1021	SLU 79	0.43	1.38	55.67	-16.6749	0.9963	0.1258
1021	SLU 80	0.41	1.36	55.7	-16.68	0.9969	0.1207
1021	SLU 81	0.43	1.39	56.63	-16.9667	1.0134	0.1244
1021	SLU 82	0.41	1.37	56.66	-16.9718	1.0139	0.1193
1021	SLU 83	0.43	1.4	57.16	-17.1233	1.0228	0.1267
1021	SLU 84	0.42	1.39	57.19	-17.1284	1.0234	0.1216
1021	SLE RA 1	0.29	0.93	37.35	-11.1871	0.6687	0.086
1021	SLE RA 2	0.28	0.91	37.38	-11.1928	0.6694	0.0803
1021	SLE RA 3	0.3	0.95	37.92	-11.3562	0.679	0.0876
1021	SLE RA 4	0.29	0.94	37.94	-11.3596	0.6794	0.0842
1021	SLE RA 5	0.28	0.92	37.73	-11.2972	0.6757	0.0819
1021	SLE RA 6	0.3	0.96	38.28	-11.4606	0.6853	0.0892
1021	SLE RA 7	0.29	0.95	38.3	-11.4641	0.6857	0.0858
1021	SLE RA 8	0.3	0.95	38.05	-11.396	0.6813	0.0891
1021	SLE RA 9	0.29	0.94	38.07	-11.3994	0.6817	0.0857
1021	SLE RA 10	0.29	0.98	40.51	-12.1341	0.7252	0.0854
1021	SLE RA 11	0.32	1.02	41.06	-12.2976	0.7349	0.0927
1021	SLE RA 12	0.31	1.01	41.08	-12.301	0.7352	0.0893
1021	SLE RA 13	0.3	0.99	40.86	-12.2386	0.7315	0.0869
1021	SLE RA 14	0.32	1.03	41.41	-12.402	0.7412	0.0943
1021	SLE RA 15	0.31	1.02	41.43	-12.4054	0.7415	0.0909
1021	SLE RA 16	0.32	1.02	41.19	-12.3373	0.7372	0.0942
1021	SLE RA 17	0.31	1	41.2	-12.3407	0.7376	0.0908
1021	SLE RA 18	0.32	1.02	41.82	-12.5319	0.7485	0.0932
1021	SLE RA 19	0.31	1.01	41.84	-12.5353	0.7489	0.0898
1021	SLE RA 20	0.32	1.03	42.18	-12.6363	0.7548	0.0948
1021	SLE RA 21	0.31	1.02	42.19	-12.6397	0.7552	0.0914
1021	SLE FR 1	0.29	0.93	37.35	-11.1871	0.6687	0.086
1021	SLE FR 2	0.29	0.93	37.35	-11.1882	0.6688	0.0848
1021	SLE FR 3	0.3	0.94	37.49	-11.2289	0.6712	0.0866
1021	SLE FR 4	0.3	0.96	38.7	-11.5917	0.6928	0.087
1021	SLE FR 5	0.3	0.96	38.83	-11.6323	0.6952	0.0888
1021	SLE FR 6	0.31	0.98	39.59	-11.8595	0.7086	0.0896
1021	SLE QP 1	0.29	0.93	37.35	-11.1871	0.6687	0.086
1021	SLE QP 2	0.3	0.96	38.69	-11.5905	0.6927	0.0881
1021	SLD 1	4.11	1.26	36.84	-11.001	0.6682	1.3458
1021	SLD 2	3.75	1.33	36.75	-10.9801	0.6664	1.2206
1021	SLD 3	3.9	0.28	37.77	-11.2313	0.685	1.4191
1021	SLD 4	3.54	0.34	37.68	-11.2104	0.6832	1.294
1021	SLD 5	1.82	2.53	36.75	-11.0681	0.6601	0.3765
1021	SLD 6	1.58	2.57	36.69	-11.0544	0.659	0.2942
1021	SLD 7	1.13	-0.75	39.84	-11.8358	0.7162	0.6211
1021	SLD 8	0.9	-0.71	39.77	-11.822	0.715	0.5389
1021	SLD 9	-0.3	2.62	37.61	-11.359	0.6703	-0.3626
1021	SLD 10	-0.53	2.67	37.55	-11.3453	0.6692	-0.4448
1021	SLD 11	-0.98	-0.65	40.69	-12.1267	0.7263	-0.1179
1021	SLD 12	-1.22	-0.61	40.63	-12.1129	0.7252	-0.2002
1021	SLD 13	-2.94	1.58	39.71	-11.9707	0.7021	-1.1177
1021	SLD 14	-3.3	1.64	39.61	-11.9498	0.7004	-1.2428
1021	SLD 15	-3.15	0.59	40.63	-12.201	0.7189	-1.0443
1021	SLD 16	-3.5	0.66	40.54	-12.1801	0.7172	-1.1695
1021	SLV 1	9.2	1.63	34.39	-10.218	0.6357	3.0305
1021	SLV 2	8.37	1.78	34.17	-10.1694	0.6316	2.739
1021	SLV 3	8.72	-0.6	36.49	-10.7396	0.6738	3.2016
1021	SLV 4	7.89	-0.45	36.27	-10.691	0.6697	2.9102
1021	SLV 5	3.84	4.51	34.26	-10.3961	0.6185	0.7617
1021	SLV 6	3.31	4.61	34.12	-10.3647	0.6159	0.5735
1021	SLV 7	2.24	-2.91	41.25	-12.1348	0.7455	1.3321
1021	SLV 8	1.71	-2.81	41.11	-12.1034	0.7428	1.1439
1021	SLV 9	-1.1	4.73	36.27	-11.0777	0.6425	-0.9676
1021	SLV 10	-1.64	4.83	36.13	-11.0463	0.6398	-1.1558



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1021	SLV 11	-2.7	-2.69	43.27	-12.8164	0.7694	-0.3972
1021	SLV 12	-3.24	-2.59	43.12	-12.785	0.7668	-0.5854
1021	SLV 13	-7.29	2.37	41.11	-12.4901	0.7156	-2.7339
1021	SLV 14	-8.12	2.52	40.89	-12.4415	0.7115	-3.0253
1021	SLV 15	-7.77	0.14	43.21	-13.0117	0.7537	-2.5627
1021	SLV 16	-8.6	0.29	42.99	-12.9631	0.7496	-2.8542
1021	CRTFP Ux+	0	0	0	0	0	0
1021	CRTFP Ux-	0	0	0	0	0	0
1021	CRTFP Uy+	0	0	0	0	0	0
1021	CRTFP Uy-	0	0	0	0	0	0
1023	SLU 1	0.81	2.15	90.31	-20.6434	0.1764	0.1824
1023	SLU 2	0.75	2.09	90.43	-20.6625	0.1779	0.1673
1023	SLU 3	0.84	2.23	92.48	-21.135	0.1811	0.1878
1023	SLU 4	0.8	2.19	92.55	-21.1464	0.182	0.1788
1023	SLU 5	0.77	2.12	91.76	-20.9645	0.1811	0.1718
1023	SLU 6	0.86	2.26	93.81	-21.437	0.1843	0.1924
1023	SLU 7	0.82	2.23	93.88	-21.4484	0.1852	0.1833
1023	SLU 8	0.85	2.22	92.97	-21.2474	0.1828	0.1915
1023	SLU 9	0.81	2.18	93.04	-21.2588	0.1837	0.1824
1023	SLU 10	0.82	2.32	102.21	-23.3715	0.2032	0.1844
1023	SLU 11	0.91	2.46	104.26	-23.844	0.2065	0.205
1023	SLU 12	0.87	2.43	104.33	-23.8554	0.2074	0.196
1023	SLU 13	0.84	2.36	103.53	-23.6734	0.2064	0.189
1023	SLU 14	0.93	2.5	105.59	-24.1459	0.2097	0.2096
1023	SLU 15	0.89	2.46	105.66	-24.1574	0.2106	0.2005
1023	SLU 16	0.93	2.45	104.74	-23.9564	0.2082	0.2086
1023	SLU 17	0.89	2.42	104.81	-23.9678	0.2091	0.1996
1023	SLU 18	0.92	2.48	107.14	-24.5134	0.2126	0.2069
1023	SLU 19	0.88	2.45	107.21	-24.5248	0.2135	0.1978
1023	SLU 20	0.94	2.52	108.46	-24.8154	0.2158	0.2115
1023	SLU 21	0.9	2.48	108.53	-24.8268	0.2167	0.2024
1023	SLU 22	0.88	2.5	102.32	-23.388	0.1996	0.1981
1023	SLU 23	0.82	2.44	102.43	-23.4071	0.2011	0.1829
1023	SLU 24	0.91	2.58	104.49	-23.8796	0.2044	0.2035
1023	SLU 25	0.87	2.55	104.56	-23.891	0.2053	0.1945
1023	SLU 26	0.84	2.48	103.76	-23.7091	0.2043	0.1875
1023	SLU 27	0.93	2.62	105.82	-24.1816	0.2076	0.2081
1023	SLU 28	0.89	2.58	105.89	-24.193	0.2085	0.199
1023	SLU 29	0.92	2.57	104.97	-23.992	0.206	0.2072
1023	SLU 30	0.88	2.53	105.04	-24.0034	0.2069	0.1981
1023	SLU 31	0.89	2.68	114.21	-26.1161	0.2265	0.2001
1023	SLU 32	0.98	2.82	116.27	-26.5886	0.2298	0.2207
1023	SLU 33	0.94	2.78	116.34	-26.6	0.2307	0.2116
1023	SLU 34	0.91	2.71	115.54	-26.418	0.2297	0.2047
1023	SLU 35	1	2.85	117.59	-26.8905	0.233	0.2252
1023	SLU 36	0.96	2.82	117.66	-26.902	0.2339	0.2162
1023	SLU 37	1	2.81	116.75	-26.701	0.2314	0.2243
1023	SLU 38	0.96	2.77	116.82	-26.7124	0.2323	0.2153
1023	SLU 39	0.99	2.83	119.14	-27.258	0.2359	0.2226
1023	SLU 40	0.95	2.8	119.21	-27.2694	0.2368	0.2135
1023	SLU 41	1.01	2.87	120.47	-27.56	0.2391	0.2271
1023	SLU 42	0.97	2.83	120.54	-27.5714	0.24	0.2181
1023	SLU 43	1.03	2.67	113.29	-25.8955	0.2213	0.2317
1023	SLU 44	0.97	2.61	113.41	-25.9145	0.2228	0.2166
1023	SLU 45	1.06	2.75	115.46	-26.387	0.2261	0.2372
1023	SLU 46	1.02	2.72	115.53	-26.3984	0.227	0.2281
1023	SLU 47	0.99	2.64	114.73	-26.2165	0.226	0.2212
1023	SLU 48	1.08	2.79	116.79	-26.689	0.2293	0.2417
1023	SLU 49	1.04	2.75	116.86	-26.7004	0.2302	0.2327
1023	SLU 50	1.07	2.74	115.94	-26.4994	0.2277	0.2408
1023	SLU 51	1.03	2.7	116.01	-26.5108	0.2286	0.2317
1023	SLU 52	1.04	2.84	125.18	-28.6235	0.2482	0.2338
1023	SLU 53	1.13	2.99	127.24	-29.096	0.2515	0.2544
1023	SLU 54	1.09	2.95	127.31	-29.1074	0.2524	0.2453
1023	SLU 55	1.06	2.88	126.51	-28.9255	0.2514	0.2383
1023	SLU 56	1.15	3.02	128.57	-29.398	0.2547	0.2589
1023	SLU 57	1.11	2.99	128.64	-29.4094	0.2556	0.2498
1023	SLU 58	1.15	2.97	127.72	-29.2084	0.2531	0.258
1023	SLU 59	1.11	2.94	127.79	-29.2198	0.254	0.2489
1023	SLU 60	1.14	3	130.11	-29.7654	0.2576	0.2562
1023	SLU 61	1.1	2.97	130.18	-29.7769	0.2585	0.2472
1023	SLU 62	1.16	3.04	131.44	-30.0674	0.2608	0.2608
1023	SLU 63	1.12	3	131.51	-30.0788	0.2617	0.2517
1023	SLU 64	1.1	3.02	125.29	-28.64	0.2446	0.2474
1023	SLU 65	1.04	2.96	125.41	-28.6591	0.2461	0.2323
1023	SLU 66	1.13	3.1	127.47	-29.1316	0.2493	0.2529
1023	SLU 67	1.09	3.07	127.54	-29.143	0.2502	0.2438
1023	SLU 68	1.06	3	126.74	-28.9611	0.2493	0.2368
1023	SLU 69	1.15	3.14	128.79	-29.4336	0.2525	0.2574
1023	SLU 70	1.11	3.1	128.86	-29.445	0.2534	0.2483
1023	SLU 71	1.14	3.09	127.95	-29.244	0.251	0.2565
1023	SLU 72	1.1	3.06	128.02	-29.2554	0.2519	0.2474
1023	SLU 73	1.11	3.2	137.19	-31.3681	0.2714	0.2495
1023	SLU 74	1.2	3.34	139.24	-31.8406	0.2747	0.27
1023	SLU 75	1.16	3.3	139.31	-31.852	0.2756	0.261
1023	SLU 76	1.13	3.23	138.52	-31.6701	0.2746	0.254
1023	SLU 77	1.22	3.37	140.57	-32.1426	0.2779	0.2746
1023	SLU 78	1.18	3.34	140.64	-32.154	0.2788	0.2655
1023	SLU 79	1.22	3.33	139.73	-31.953	0.2763	0.2737
1023	SLU 80	1.18	3.29	139.8	-31.9644	0.2772	0.2646





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1023	SLU 81	1.21	3.36	142.12	-32.51	0.2808	0.2719
1023	SLU 82	1.17	3.32	142.19	-32.5215	0.2817	0.2629
1023	SLU 83	1.23	3.39	143.45	-32.812	0.284	0.2765
1023	SLU 84	1.19	3.36	143.52	-32.8234	0.2849	0.2674
1023	SLE RA 1	0.83	2.25	93.74	-21.4276	0.183	0.1869
1023	SLE RA 2	0.79	2.21	93.82	-21.4403	0.184	0.1768
1023	SLE RA 3	0.85	2.3	95.19	-21.7553	0.1862	0.1905
1023	SLE RA 4	0.82	2.28	95.24	-21.7629	0.1868	0.1845
1023	SLE RA 5	0.8	2.23	94.7	-21.6416	0.1861	0.1798
1023	SLE RA 6	0.86	2.33	96.07	-21.9566	0.1883	0.1935
1023	SLE RA 7	0.84	2.3	96.12	-21.9642	0.1889	0.1875
1023	SLE RA 8	0.86	2.29	95.51	-21.8302	0.1873	0.1929
1023	SLE RA 9	0.83	2.27	95.56	-21.8379	0.1879	0.1869
1023	SLE RA 10	0.84	2.36	101.67	-23.2463	0.2009	0.1882
1023	SLE RA 11	0.9	2.46	103.04	-23.5613	0.2031	0.202
1023	SLE RA 12	0.87	2.43	103.09	-23.5689	0.2037	0.1959
1023	SLE RA 13	0.85	2.39	102.56	-23.4476	0.2031	0.1913
1023	SLE RA 14	0.91	2.48	103.93	-23.7626	0.2052	0.205
1023	SLE RA 15	0.89	2.46	103.97	-23.7702	0.2058	0.1989
1023	SLE RA 16	0.91	2.45	103.36	-23.6362	0.2042	0.2044
1023	SLE RA 17	0.88	2.43	103.41	-23.6438	0.2048	0.1983
1023	SLE RA 18	0.9	2.47	104.96	-24.0076	0.2072	0.2032
1023	SLE RA 19	0.88	2.45	105	-24.0152	0.2078	0.1972
1023	SLE RA 20	0.92	2.49	105.84	-24.2089	0.2093	0.2062
1023	SLE RA 21	0.89	2.47	105.89	-24.2165	0.2099	0.2002
1023	SLE FR 1	0.83	2.25	93.74	-21.4276	0.183	0.1869
1023	SLE FR 2	0.82	2.24	93.76	-21.4301	0.1832	0.1848
1023	SLE FR 3	0.84	2.26	94.09	-21.5081	0.1839	0.1881
1023	SLE FR 4	0.85	2.31	97.12	-22.2041	0.1905	0.1897
1023	SLE FR 5	0.86	2.32	97.46	-22.2821	0.1911	0.193
1023	SLE FR 6	0.87	2.36	99.35	-22.7176	0.1951	0.195
1023	SLE QP 1	0.83	2.25	93.74	-21.4276	0.183	0.1869
1023	SLE QP 2	0.85	2.31	97.11	-22.2016	0.1903	0.1918
1023	SLD 1	10.17	2.99	91.61	-21.0134	0.3297	2.3141
1023	SLD 2	9.28	3.21	91.37	-20.9678	0.3286	2.1062
1023	SLD 3	9.66	0.57	94.02	-21.4694	0.3478	2.4353
1023	SLD 4	8.78	0.79	93.77	-21.4239	0.3466	2.2274
1023	SLD 5	4.57	6.15	91.85	-21.1617	0.2049	0.6817
1023	SLD 6	3.99	6.29	91.69	-21.1317	0.2041	0.5451
1023	SLD 7	2.89	-1.92	99.87	-22.6817	0.2651	1.0858
1023	SLD 8	2.31	-1.77	99.71	-22.6517	0.2644	0.9492
1023	SLD 9	-0.6	6.4	94.5	-21.7514	0.1161	-0.5657
1023	SLD 10	-1.18	6.55	94.34	-21.7215	0.1154	-0.7023
1023	SLD 11	-2.28	-1.66	102.52	-23.2715	0.1764	-0.1615
1023	SLD 12	-2.86	-1.52	102.36	-23.2415	0.1757	-0.2982
1023	SLD 13	-7.07	3.84	100.44	-22.9793	0.0339	-1.8439
1023	SLD 14	-7.96	4.06	100.19	-22.9337	0.0328	-2.0518
1023	SLD 15	-7.58	1.42	102.84	-23.4353	0.052	-1.7227
1023	SLD 16	-8.46	1.64	102.6	-23.3898	0.0508	-1.9306
1023	SLV 1	22.64	3.81	84.32	-19.4342	0.5171	5.1572
1023	SLV 2	20.58	4.31	83.74	-19.328	0.5145	4.673
1023	SLV 3	21.46	-1.67	89.77	-20.4674	0.5583	5.44
1023	SLV 4	19.41	-1.16	89.19	-20.3612	0.5557	4.9558
1023	SLV 5	9.53	10.98	85.1	-19.8227	0.2262	1.3362
1023	SLV 6	8.2	11.31	84.73	-19.7541	0.2245	1.0235
1023	SLV 7	5.61	-7.28	103.27	-23.2667	0.3637	2.2788
1023	SLV 8	4.28	-6.95	102.9	-23.1981	0.362	1.9661
1023	SLV 9	-2.58	11.58	91.31	-21.2051	0.0185	-1.5826
1023	SLV 10	-3.9	11.91	90.94	-21.1365	0.0169	-1.8953
1023	SLV 11	-6.49	-6.68	109.48	-24.649	0.156	-0.64
1023	SLV 12	-7.82	-6.35	109.11	-24.5805	0.1543	-0.9527
1023	SLV 13	-17.7	5.79	105.02	-24.042	-0.1752	-4.5723
1023	SLV 14	-19.76	6.3	104.44	-23.9358	-0.1778	-5.0564
1023	SLV 15	-18.87	0.32	110.47	-25.0752	-0.1339	-4.2895
1023	SLV 16	-20.93	0.82	109.89	-24.969	-0.1365	-4.7737
1023	CRTFP Ux+	0	0	0	0	0	0
1023	CRTFP Ux-	0	0	0	0	0	0
1023	CRTFP Uy+	0	0	0	0	0	0
1023	CRTFP Uy-	0	0	0	0	0	0
1025	SLU 1	0.35	0.79	34.47	-10.3406	-0.6243	0.1334
1025	SLU 2	0.32	0.76	34.51	-10.3477	-0.625	0.1242
1025	SLU 3	0.36	0.82	35.3	-10.5829	-0.6392	0.1374
1025	SLU 4	0.34	0.8	35.32	-10.5871	-0.6396	0.1319
1025	SLU 5	0.33	0.78	35.02	-10.4968	-0.6341	0.1272
1025	SLU 6	0.36	0.83	35.8	-10.732	-0.6482	0.1405
1025	SLU 7	0.35	0.82	35.83	-10.7363	-0.6487	0.135
1025	SLU 8	0.36	0.81	35.48	-10.6388	-0.6424	0.1394
1025	SLU 9	0.35	0.8	35.5	-10.6431	-0.6429	0.1339
1025	SLU 10	0.35	0.85	39.01	-11.699	-0.7059	0.137
1025	SLU 11	0.39	0.9	39.79	-11.9342	-0.7201	0.1502
1025	SLU 12	0.37	0.89	39.81	-11.9384	-0.7205	0.1447
1025	SLU 13	0.36	0.86	39.51	-11.8481	-0.715	0.14
1025	SLU 14	0.4	0.92	40.3	-12.0833	-0.7292	0.1532
1025	SLU 15	0.38	0.9	40.32	-12.0876	-0.7296	0.1477
1025	SLU 16	0.39	0.9	39.97	-11.9901	-0.7233	0.1522
1025	SLU 17	0.38	0.89	40	-11.9944	-0.7238	0.1467
1025	SLU 18	0.39	0.91	40.89	-12.271	-0.7399	0.1516
1025	SLU 19	0.38	0.9	40.92	-12.2753	-0.7403	0.1461
1025	SLU 20	0.4	0.92	41.4	-12.4201	-0.7489	0.1547
1025	SLU 21	0.38	0.91	41.42	-12.4244	-0.7494	0.1492



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
1025	SLU 22	0.38	0.92	39.05	-11.7091	-0.7067	0.1463
1025	SLU 23	0.35	0.9	39.09	-11.7162	-0.7075	0.1372
1025	SLU 24	0.39	0.95	39.87	-11.9514	-0.7216	0.1504
1025	SLU 25	0.37	0.94	39.9	-11.9557	-0.7221	0.1449
1025	SLU 26	0.36	0.91	39.59	-11.8653	-0.7166	0.1402
1025	SLU 27	0.39	0.96	40.38	-12.1005	-0.7307	0.1534
1025	SLU 28	0.38	0.95	40.4	-12.1048	-0.7312	0.1479
1025	SLU 29	0.39	0.94	40.06	-12.0073	-0.7249	0.1523
1025	SLU 30	0.38	0.93	40.08	-12.0116	-0.7254	0.1468
1025	SLU 31	0.38	0.98	43.58	-13.0675	-0.7884	0.1499
1025	SLU 32	0.42	1.04	44.37	-13.3027	-0.8026	0.1631
1025	SLU 33	0.4	1.02	44.39	-13.307	-0.803	0.1576
1025	SLU 34	0.39	1	44.09	-13.2166	-0.7975	0.1529
1025	SLU 35	0.43	1.05	44.87	-13.4518	-0.8116	0.1662
1025	SLU 36	0.41	1.04	44.9	-13.4561	-0.8121	0.1607
1025	SLU 37	0.42	1.03	44.55	-13.3587	-0.8058	0.1651
1025	SLU 38	0.41	1.02	44.57	-13.3629	-0.8063	0.1596
1025	SLU 39	0.42	1.04	45.47	-13.6396	-0.8223	0.1646
1025	SLU 40	0.41	1.03	45.49	-13.6438	-0.8228	0.1591
1025	SLU 41	0.43	1.06	45.97	-13.7887	-0.8314	0.1676
1025	SLU 42	0.41	1.04	46	-13.7929	-0.8319	0.1621
1025	SLU 43	0.44	0.97	43.24	-12.9735	-0.7833	0.169
1025	SLU 44	0.41	0.95	43.28	-12.9806	-0.784	0.1598
1025	SLU 45	0.45	1.01	44.07	-13.2158	-0.7981	0.173
1025	SLU 46	0.43	0.99	44.09	-13.2201	-0.7986	0.1675
1025	SLU 47	0.42	0.97	43.79	-13.1297	-0.7931	0.1628
1025	SLU 48	0.46	1.02	44.57	-13.365	-0.8072	0.176
1025	SLU 49	0.44	1.01	44.6	-13.3692	-0.8077	0.1705
1025	SLU 50	0.45	1	44.25	-13.2718	-0.8014	0.175
1025	SLU 51	0.44	0.99	44.28	-13.276	-0.8019	0.1695
1025	SLU 52	0.45	1.04	47.78	-14.3319	-0.8649	0.1726
1025	SLU 53	0.48	1.09	48.56	-14.5671	-0.8791	0.1858
1025	SLU 54	0.47	1.08	48.59	-14.5714	-0.8795	0.1803
1025	SLU 55	0.45	1.05	48.28	-14.481	-0.874	0.1756
1025	SLU 56	0.49	1.11	49.07	-14.7163	-0.8882	0.1888
1025	SLU 57	0.47	1.09	49.09	-14.7205	-0.8886	0.1833
1025	SLU 58	0.49	1.09	48.75	-14.6231	-0.8823	0.1878
1025	SLU 59	0.47	1.08	48.77	-14.6273	-0.8828	0.1823
1025	SLU 60	0.48	1.1	49.66	-14.904	-0.8989	0.1872
1025	SLU 61	0.47	1.09	49.69	-14.9082	-0.8993	0.1817
1025	SLU 62	0.49	1.11	50.17	-15.0531	-0.9079	0.1902
1025	SLU 63	0.48	1.1	50.19	-15.0573	-0.9084	0.1847
1025	SLU 64	0.47	1.11	47.82	-14.3421	-0.8657	0.1819
1025	SLU 65	0.44	1.09	47.86	-14.3492	-0.8665	0.1728
1025	SLU 66	0.48	1.14	48.65	-14.5844	-0.8806	0.186
1025	SLU 67	0.46	1.13	48.67	-14.5886	-0.8811	0.1805
1025	SLU 68	0.45	1.1	48.36	-14.4983	-0.8756	0.1758
1025	SLU 69	0.49	1.15	49.15	-14.7335	-0.8897	0.189
1025	SLU 70	0.47	1.14	49.17	-14.7377	-0.8902	0.1835
1025	SLU 71	0.48	1.13	48.83	-14.6403	-0.8839	0.1879
1025	SLU 72	0.47	1.12	48.85	-14.6446	-0.8843	0.1824
1025	SLU 73	0.48	1.17	52.35	-15.7005	-0.9474	0.1855
1025	SLU 74	0.51	1.23	53.14	-15.9357	-0.9616	0.1987
1025	SLU 75	0.5	1.21	53.16	-15.9399	-0.962	0.1932
1025	SLU 76	0.48	1.19	52.86	-15.8496	-0.9565	0.1885
1025	SLU 77	0.52	1.24	53.64	-16.0848	-0.9706	0.2017
1025	SLU 78	0.5	1.23	53.67	-16.0891	-0.9711	0.1962
1025	SLU 79	0.52	1.22	53.32	-15.9916	-0.9648	0.2007
1025	SLU 80	0.5	1.21	53.35	-15.9959	-0.9653	0.1952
1025	SLU 81	0.51	1.23	54.24	-16.2725	-0.9813	0.2002
1025	SLU 82	0.5	1.22	54.26	-16.2768	-0.9818	0.1947
1025	SLU 83	0.52	1.25	54.74	-16.4216	-0.9904	0.2032
1025	SLU 84	0.51	1.23	54.77	-16.4259	-0.9909	0.1977
1025	SLE RA 1	0.35	0.82	35.78	-10.7316	-0.6478	0.1371
1025	SLE RA 2	0.34	0.81	35.81	-10.7363	-0.6483	0.131
1025	SLE RA 3	0.36	0.84	36.33	-10.8931	-0.6578	0.1398
1025	SLE RA 4	0.35	0.83	36.35	-10.896	-0.658	0.1361
1025	SLE RA 5	0.34	0.82	36.14	-10.8357	-0.6544	0.133
1025	SLE RA 6	0.37	0.85	36.67	-10.9925	-0.6638	0.1418
1025	SLE RA 7	0.36	0.84	36.68	-10.9954	-0.6641	0.1381
1025	SLE RA 8	0.36	0.84	36.45	-10.9304	-0.6599	0.1411
1025	SLE RA 9	0.35	0.83	36.47	-10.9332	-0.6602	0.1374
1025	SLE RA 10	0.36	0.87	38.8	-11.6372	-0.7023	0.1395
1025	SLE RA 11	0.38	0.9	39.33	-11.794	-0.7117	0.1483
1025	SLE RA 12	0.37	0.89	39.34	-11.7968	-0.712	0.1446
1025	SLE RA 13	0.36	0.88	39.14	-11.7366	-0.7083	0.1415
1025	SLE RA 14	0.39	0.91	39.66	-11.8934	-0.7178	0.1503
1025	SLE RA 15	0.38	0.9	39.68	-11.8962	-0.718	0.1466
1025	SLE RA 16	0.39	0.9	39.45	-11.8313	-0.7139	0.1496
1025	SLE RA 17	0.38	0.89	39.46	-11.8341	-0.7142	0.146
1025	SLE RA 18	0.38	0.91	40.06	-12.0185	-0.7249	0.1493
1025	SLE RA 19	0.37	0.9	40.07	-12.0214	-0.7252	0.1456
1025	SLE RA 20	0.39	0.92	40.4	-12.118	-0.731	0.1513
1025	SLE RA 21	0.38	0.91	40.41	-12.1208	-0.7312	0.1476
1025	SLE FR 1	0.35	0.82	35.78	-10.7316	-0.6478	0.1371
1025	SLE FR 2	0.35	0.82	35.78	-10.7325	-0.6479	0.1359
1025	SLE FR 3	0.36	0.83	35.91	-10.7713	-0.6502	0.1379
1025	SLE FR 4	0.36	0.85	37.07	-11.1186	-0.671	0.1395
1025	SLE FR 5	0.37	0.85	37.2	-11.1574	-0.6734	0.1415
1025	SLE FR 6	0.37	0.87	37.92	-11.3751	-0.6864	0.1432



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1025	SLE QP 1	0.35	0.82	35.78	-10.7316	-0.6478	0.1371
1025	SLE QP 2	0.36	0.85	37.06	-11.1177	-0.6709	0.1407
1025	SLD 1	3.99	1.07	34.72	-10.5383	-0.6212	1.4061
1025	SLD 2	3.65	1.18	34.63	-10.5168	-0.6196	1.2894
1025	SLD 3	3.79	0.13	35.57	-10.7379	-0.6363	1.3348
1025	SLD 4	3.45	0.23	35.48	-10.7164	-0.6347	1.2182
1025	SLD 5	1.81	2.33	35.08	-10.645	-0.6334	0.6492
1025	SLD 6	1.58	2.4	35.02	-10.6309	-0.6324	0.5726
1025	SLD 7	1.16	-0.82	37.93	-11.3103	-0.6837	0.4118
1025	SLD 8	0.93	-0.75	37.87	-11.2961	-0.6827	0.3351
1025	SLD 9	-0.21	2.45	36.26	-10.9392	-0.6592	-0.0536
1025	SLD 10	-0.43	2.52	36.2	-10.9251	-0.6582	-0.1303
1025	SLD 11	-0.86	-0.7	39.11	-11.6044	-0.7095	-0.2911
1025	SLD 12	-1.08	-0.63	39.05	-11.5903	-0.7085	-0.3677
1025	SLD 13	-2.72	1.46	38.64	-11.5189	-0.7072	-0.9367
1025	SLD 14	-3.07	1.57	38.55	-11.4974	-0.7056	-1.0534
1025	SLD 15	-2.92	0.52	39.5	-11.7185	-0.7223	-1.008
1025	SLD 16	-3.26	0.62	39.41	-11.697	-0.7207	-1.1246
1025	SLV 1	8.84	1.33	31.59	-9.7678	-0.5549	3.1003
1025	SLV 2	8.05	1.58	31.39	-9.7178	-0.5512	2.8287
1025	SLV 3	8.38	-0.81	33.53	-10.2202	-0.5892	2.9347
1025	SLV 4	7.59	-0.56	33.33	-10.1702	-0.5854	2.6631
1025	SLV 5	3.74	4.2	32.52	-10.0352	-0.5849	1.3267
1025	SLV 6	3.22	4.36	32.39	-10.0029	-0.5825	1.1513
1025	SLV 7	2.21	-2.94	38.98	-11.5432	-0.6989	0.7748
1025	SLV 8	1.7	-2.78	38.85	-11.5109	-0.6966	0.5994
1025	SLV 9	-0.98	4.47	35.28	-10.7244	-0.6453	-0.3179
1025	SLV 10	-1.49	4.63	35.15	-10.6921	-0.643	-0.4933
1025	SLV 11	-2.5	-2.66	41.74	-12.2324	-0.7594	-0.8698
1025	SLV 12	-3.01	-2.5	41.61	-12.2001	-0.757	-1.0452
1025	SLV 13	-6.87	2.25	40.8	-12.0652	-0.7564	-2.3817
1025	SLV 14	-7.66	2.5	40.59	-12.0151	-0.7527	-2.6533
1025	SLV 15	-7.32	0.11	42.74	-12.5176	-0.7907	-2.5472
1025	SLV 16	-8.11	0.36	42.53	-12.4675	-0.787	-2.8188
1025	CRTFP Ux+	0	0	0	0	0	0
1025	CRTFP Ux-	0	0	0	0	0	0
1025	CRTFP Uy+	0	0	0	0	0	0
1025	CRTFP Uy-	0	0	0	0	0	0
1026	SLU 1	0.42	0.77	37.19	-10.36	0.036	0.1428
1026	SLU 2	0.39	0.75	37.24	-10.367	0.036	0.133
1026	SLU 3	0.43	0.81	38.08	-10.5995	0.037	0.1469
1026	SLU 4	0.41	0.79	38.11	-10.6037	0.037	0.141
1026	SLU 5	0.4	0.76	37.78	-10.5143	0.0366	0.1362
1026	SLU 6	0.44	0.82	38.62	-10.7468	0.0376	0.1501
1026	SLU 7	0.42	0.8	38.65	-10.751	0.0376	0.1442
1026	SLU 8	0.44	0.8	38.28	-10.6546	0.0373	0.1492
1026	SLU 9	0.42	0.79	38.3	-10.6588	0.0373	0.1433
1026	SLU 10	0.43	0.84	42.06	-11.7075	0.0416	0.1464
1026	SLU 11	0.47	0.9	42.91	-11.94	0.0426	0.1603
1026	SLU 12	0.45	0.88	42.93	-11.9442	0.0426	0.1544
1026	SLU 13	0.44	0.85	42.61	-11.8548	0.0423	0.1496
1026	SLU 14	0.48	0.91	43.45	-12.0873	0.0432	0.1635
1026	SLU 15	0.46	0.89	43.48	-12.0915	0.0432	0.1576
1026	SLU 16	0.48	0.89	43.1	-11.9951	0.0429	0.1626
1026	SLU 17	0.46	0.88	43.13	-11.9993	0.0429	0.1567
1026	SLU 18	0.47	0.9	44.09	-12.275	0.0441	0.1619
1026	SLU 19	0.46	0.89	44.11	-12.2792	0.0441	0.156
1026	SLU 20	0.48	0.92	44.63	-12.4223	0.0447	0.1651
1026	SLU 21	0.47	0.9	44.66	-12.4265	0.0447	0.1592
1026	SLU 22	0.46	0.91	42.11	-11.7194	0.0417	0.1554
1026	SLU 23	0.43	0.89	42.15	-11.7264	0.0417	0.1456
1026	SLU 24	0.47	0.94	43	-11.9589	0.0427	0.1595
1026	SLU 25	0.45	0.93	43.03	-11.9631	0.0427	0.1536
1026	SLU 26	0.44	0.9	42.7	-11.8737	0.0423	0.1488
1026	SLU 27	0.48	0.96	43.54	-12.1062	0.0433	0.1627
1026	SLU 28	0.46	0.94	43.57	-12.1104	0.0433	0.1568
1026	SLU 29	0.47	0.94	43.19	-12.014	0.0429	0.1618
1026	SLU 30	0.46	0.92	43.22	-12.0182	0.0429	0.1559
1026	SLU 31	0.47	0.98	46.98	-13.0669	0.0473	0.1589
1026	SLU 32	0.51	1.03	47.82	-13.2994	0.0483	0.1728
1026	SLU 33	0.49	1.02	47.85	-13.3036	0.0483	0.1669
1026	SLU 34	0.48	0.99	47.52	-13.2142	0.0479	0.1621
1026	SLU 35	0.52	1.05	48.37	-13.4467	0.0489	0.176
1026	SLU 36	0.5	1.03	48.39	-13.4509	0.0489	0.1701
1026	SLU 37	0.51	1.03	48.02	-13.3545	0.0485	0.1751
1026	SLU 38	0.5	1.01	48.05	-13.3587	0.0485	0.1692
1026	SLU 39	0.51	1.04	49	-13.6344	0.0497	0.1745
1026	SLU 40	0.49	1.03	49.03	-13.6386	0.0497	0.1686
1026	SLU 41	0.52	1.05	49.55	-13.7817	0.0503	0.1777
1026	SLU 42	0.5	1.04	49.57	-13.7859	0.0503	0.1718
1026	SLU 43	0.53	0.96	46.67	-13.0019	0.0449	0.1814
1026	SLU 44	0.5	0.93	46.71	-13.0089	0.0449	0.1716
1026	SLU 45	0.54	0.99	47.56	-13.2414	0.0459	0.1854
1026	SLU 46	0.53	0.98	47.58	-13.2456	0.0459	0.1796
1026	SLU 47	0.51	0.95	47.25	-13.1562	0.0455	0.1747
1026	SLU 48	0.55	1	48.1	-13.3887	0.0465	0.1886
1026	SLU 49	0.54	0.99	48.12	-13.3929	0.0465	0.1827
1026	SLU 50	0.55	0.98	47.75	-13.2965	0.0461	0.1877
1026	SLU 51	0.53	0.97	47.78	-13.3007	0.0461	0.1819
1026	SLU 52	0.54	1.03	51.54	-14.3494	0.0505	0.1849



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1026	SLU 53	0.58	1.08	52.38	-14.5819	0.0515	0.1988
1026	SLU 54	0.56	1.07	52.41	-14.5861	0.0515	0.1929
1026	SLU 55	0.55	1.04	52.08	-14.4967	0.0511	0.1881
1026	SLU 56	0.59	1.09	52.92	-14.7292	0.0521	0.202
1026	SLU 57	0.57	1.08	52.95	-14.7334	0.0521	0.1961
1026	SLU 58	0.59	1.08	52.58	-14.637	0.0518	0.2011
1026	SLU 59	0.57	1.06	52.6	-14.6412	0.0518	0.1952
1026	SLU 60	0.59	1.09	53.56	-14.9169	0.0529	0.2005
1026	SLU 61	0.57	1.07	53.59	-14.9211	0.0529	0.1946
1026	SLU 62	0.6	1.1	54.1	-15.0642	0.0535	0.2036
1026	SLU 63	0.58	1.09	54.13	-15.0684	0.0535	0.1977
1026	SLU 64	0.57	1.1	51.58	-14.3613	0.0506	0.1939
1026	SLU 65	0.54	1.07	51.63	-14.3683	0.0506	0.1841
1026	SLU 66	0.58	1.13	52.47	-14.6008	0.0515	0.198
1026	SLU 67	0.56	1.11	52.5	-14.605	0.0515	0.1921
1026	SLU 68	0.55	1.09	52.17	-14.5156	0.0512	0.1873
1026	SLU 69	0.59	1.14	53.01	-14.7481	0.0522	0.2012
1026	SLU 70	0.57	1.13	53.04	-14.7523	0.0522	0.1953
1026	SLU 71	0.59	1.12	52.67	-14.6559	0.0518	0.2003
1026	SLU 72	0.57	1.11	52.69	-14.6601	0.0518	0.1944
1026	SLU 73	0.58	1.16	56.45	-15.7088	0.0562	0.1975
1026	SLU 74	0.62	1.22	57.3	-15.9413	0.0572	0.2114
1026	SLU 75	0.6	1.2	57.32	-15.9455	0.0571	0.2055
1026	SLU 76	0.59	1.18	56.99	-15.8561	0.0568	0.2007
1026	SLU 77	0.63	1.23	57.84	-16.0886	0.0578	0.2146
1026	SLU 78	0.61	1.22	57.87	-16.0928	0.0578	0.2087
1026	SLU 79	0.63	1.21	57.49	-15.9964	0.0574	0.2137
1026	SLU 80	0.61	1.2	57.52	-16.0006	0.0574	0.2078
1026	SLU 81	0.62	1.23	58.48	-16.2763	0.0586	0.213
1026	SLU 82	0.61	1.21	58.5	-16.2805	0.0586	0.2071
1026	SLU 83	0.63	1.24	59.02	-16.4236	0.0592	0.2162
1026	SLU 84	0.62	1.22	59.05	-16.4278	0.0592	0.2103
1026	SLE RA 1	0.43	0.81	38.6	-10.7484	0.0377	0.1464
1026	SLE RA 2	0.41	0.8	38.63	-10.753	0.0377	0.1399
1026	SLE RA 3	0.44	0.83	39.19	-10.908	0.0383	0.1491
1026	SLE RA 4	0.43	0.82	39.21	-10.9108	0.0383	0.1452
1026	SLE RA 5	0.42	0.81	38.99	-10.8512	0.0381	0.142
1026	SLE RA 6	0.44	0.84	39.55	-11.0062	0.0387	0.1513
1026	SLE RA 7	0.43	0.83	39.57	-11.009	0.0387	0.1473
1026	SLE RA 8	0.44	0.83	39.32	-10.9448	0.0385	0.1507
1026	SLE RA 9	0.43	0.82	39.34	-10.9476	0.0385	0.1467
1026	SLE RA 10	0.44	0.86	41.85	-11.6467	0.0414	0.1488
1026	SLE RA 11	0.46	0.89	42.41	-11.8017	0.042	0.158
1026	SLE RA 12	0.45	0.89	42.43	-11.8045	0.042	0.1541
1026	SLE RA 13	0.44	0.87	42.21	-11.7449	0.0418	0.1509
1026	SLE RA 14	0.47	0.9	42.77	-11.8999	0.0425	0.1602
1026	SLE RA 15	0.46	0.89	42.79	-11.9027	0.0425	0.1562
1026	SLE RA 16	0.47	0.89	42.54	-11.8384	0.0422	0.1596
1026	SLE RA 17	0.46	0.88	42.56	-11.8413	0.0422	0.1556
1026	SLE RA 18	0.47	0.9	43.19	-12.0251	0.043	0.1591
1026	SLE RA 19	0.45	0.89	43.21	-12.0279	0.043	0.1552
1026	SLE RA 20	0.47	0.91	43.56	-12.1233	0.0434	0.1613
1026	SLE RA 21	0.46	0.9	43.57	-12.1261	0.0434	0.1573
1026	SLE FR 1	0.43	0.81	38.6	-10.7484	0.0377	0.1464
1026	SLE FR 2	0.42	0.81	38.6	-10.7493	0.0377	0.1451
1026	SLE FR 3	0.43	0.82	38.74	-10.7876	0.0378	0.1473
1026	SLE FR 4	0.44	0.84	39.98	-11.1323	0.0393	0.1489
1026	SLE FR 5	0.44	0.84	40.12	-11.1707	0.0394	0.1511
1026	SLE FR 6	0.45	0.86	40.9	-11.3867	0.0403	0.1528
1026	SLE QP 1	0.43	0.81	38.6	-10.7484	0.0377	0.1464
1026	SLE QP 2	0.44	0.84	39.98	-11.1314	0.0393	0.1502
1026	SLD 1	4.23	1.06	37.15	-10.5534	0.047	1.4779
1026	SLD 2	3.86	1.2	37.05	-10.5295	0.0469	1.3463
1026	SLD 3	4.45	0.03	38.06	-10.7478	0.0485	1.5537
1026	SLD 4	4.07	0.16	37.96	-10.724	0.0485	1.4221
1026	SLD 5	1.32	2.45	37.77	-10.6673	0.0393	0.457
1026	SLD 6	1.07	2.54	37.71	-10.6516	0.0392	0.3705
1026	SLD 7	2.04	-1	40.8	-11.3155	0.0444	0.7098
1026	SLD 8	1.79	-0.91	40.73	-11.2999	0.0443	0.6233
1026	SLD 9	-0.91	2.59	39.22	-10.9629	0.0342	-0.3228
1026	SLD 10	-1.16	2.68	39.16	-10.9472	0.0342	-0.4093
1026	SLD 11	-0.19	-0.86	42.25	-11.6112	0.0393	-0.0701
1026	SLD 12	-0.44	-0.77	42.19	-11.5955	0.0393	-0.1566
1026	SLD 13	-3.19	1.52	41.99	-11.5388	0.0301	-1.1216
1026	SLD 14	-3.57	1.65	41.9	-11.5149	0.03	-1.2532
1026	SLD 15	-2.98	0.48	42.9	-11.7333	0.0316	-1.0458
1026	SLD 16	-3.35	0.62	42.81	-11.7094	0.0316	-1.1774
1026	SLV 1	9.32	1.32	33.38	-9.7845	0.0574	3.2564
1026	SLV 2	8.44	1.63	33.16	-9.7288	0.0572	2.9499
1026	SLV 3	9.82	-1.03	35.44	-10.2255	0.0608	3.4332
1026	SLV 4	8.94	-0.71	35.22	-10.1699	0.0607	3.1267
1026	SLV 5	2.49	4.48	34.92	-10.0679	0.0394	0.867
1026	SLV 6	1.92	4.69	34.77	-10.032	0.0394	0.669
1026	SLV 7	4.17	-3.33	41.78	-11.5382	0.051	1.4563
1026	SLV 8	3.61	-3.13	41.63	-11.5023	0.051	1.2583
1026	SLV 9	-2.73	4.81	38.32	-10.7604	0.0276	-0.9578
1026	SLV 10	-3.29	5.01	38.18	-10.7245	0.0275	-1.1558
1026	SLV 11	-1.04	-3.01	45.18	-12.2307	0.0392	-0.3685
1026	SLV 12	-1.61	-2.8	45.04	-12.1948	0.0391	-0.5665
1026	SLV 13	-8.06	2.39	44.74	-12.0928	0.0178	-2.8262



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1026	SLV 14	-8.94	2.71	44.52	-12.0372	0.0177	-3.1328
1026	SLV 15	-7.56	0.05	46.8	-12.5339	0.0213	-2.6494
1026	SLV 16	-8.44	0.36	46.57	-12.4783	0.0212	-2.956
1026	CRTFP Ux+	0	0	0	0	0	0
1026	CRTFP Ux-	0	0	0	0	0	0
1026	CRTFP Uy+	0	0	0	0	0	0
1026	CRTFP Uy-	0	0	0	0	0	0
1027	SLU 1	0.45	0.66	36.04	-9.2553	0.0362	0.1546
1027	SLU 2	0.42	0.63	36.08	-9.262	0.0362	0.1446
1027	SLU 3	0.47	0.69	36.9	-9.4657	0.0371	0.1589
1027	SLU 4	0.45	0.67	36.92	-9.4697	0.0371	0.1529
1027	SLU 5	0.43	0.64	36.61	-9.3913	0.0368	0.148
1027	SLU 6	0.48	0.7	37.42	-9.595	0.0378	0.1623
1027	SLU 7	0.46	0.68	37.45	-9.599	0.0377	0.1563
1027	SLU 8	0.47	0.68	37.09	-9.5139	0.0374	0.1613
1027	SLU 9	0.46	0.67	37.11	-9.5179	0.0374	0.1553
1027	SLU 10	0.47	0.72	40.73	-10.4419	0.0419	0.159
1027	SLU 11	0.51	0.77	41.54	-10.6456	0.0429	0.1733
1027	SLU 12	0.49	0.75	41.57	-10.6496	0.0429	0.1674
1027	SLU 13	0.48	0.73	41.25	-10.5712	0.0425	0.1624
1027	SLU 14	0.52	0.78	42.06	-10.7749	0.0435	0.1767
1027	SLU 15	0.5	0.76	42.09	-10.7789	0.0435	0.1707
1027	SLU 16	0.51	0.76	41.73	-10.6938	0.0431	0.1757
1027	SLU 17	0.5	0.75	41.76	-10.6978	0.0431	0.1697
1027	SLU 18	0.51	0.78	42.68	-10.9408	0.0443	0.1752
1027	SLU 19	0.5	0.76	42.7	-10.9449	0.0443	0.1692
1027	SLU 20	0.52	0.79	43.2	-11.0701	0.045	0.1785
1027	SLU 21	0.51	0.77	43.22	-11.0742	0.045	0.1725
1027	SLU 22	0.49	0.79	40.77	-10.4526	0.042	0.1682
1027	SLU 23	0.46	0.76	40.82	-10.4594	0.042	0.1582
1027	SLU 24	0.51	0.81	41.63	-10.6631	0.043	0.1725
1027	SLU 25	0.49	0.8	41.66	-10.6671	0.043	0.1665
1027	SLU 26	0.47	0.77	41.34	-10.5887	0.0426	0.1615
1027	SLU 27	0.52	0.82	42.15	-10.7924	0.0436	0.1759
1027	SLU 28	0.5	0.81	42.18	-10.7964	0.0436	0.1699
1027	SLU 29	0.51	0.81	41.82	-10.7113	0.0432	0.1748
1027	SLU 30	0.49	0.79	41.85	-10.7153	0.0432	0.1689
1027	SLU 31	0.51	0.84	45.46	-11.6393	0.0477	0.1726
1027	SLU 32	0.55	0.9	46.28	-11.843	0.0487	0.1869
1027	SLU 33	0.53	0.88	46.3	-11.847	0.0487	0.1809
1027	SLU 34	0.52	0.85	45.99	-11.7686	0.0483	0.176
1027	SLU 35	0.56	0.91	46.8	-11.9723	0.0493	0.1903
1027	SLU 36	0.54	0.89	46.82	-11.9763	0.0493	0.1843
1027	SLU 37	0.55	0.89	46.46	-11.8912	0.049	0.1893
1027	SLU 38	0.54	0.87	46.49	-11.8952	0.0489	0.1833
1027	SLU 39	0.55	0.9	47.41	-12.1382	0.0502	0.1888
1027	SLU 40	0.54	0.89	47.44	-12.1423	0.0502	0.1828
1027	SLU 41	0.56	0.91	47.93	-12.2675	0.0508	0.1921
1027	SLU 42	0.55	0.9	47.96	-12.2716	0.0508	0.1861
1027	SLU 43	0.57	0.81	45.23	-11.6213	0.045	0.1963
1027	SLU 44	0.55	0.79	45.27	-11.628	0.045	0.1863
1027	SLU 45	0.59	0.84	46.09	-11.8317	0.046	0.2006
1027	SLU 46	0.57	0.83	46.11	-11.8358	0.046	0.1947
1027	SLU 47	0.56	0.8	45.8	-11.7573	0.0456	0.1897
1027	SLU 48	0.6	0.85	46.61	-11.961	0.0466	0.204
1027	SLU 49	0.58	0.84	46.64	-11.9651	0.0466	0.198
1027	SLU 50	0.59	0.83	46.27	-11.8799	0.0463	0.203
1027	SLU 51	0.58	0.82	46.3	-11.884	0.0463	0.197
1027	SLU 52	0.59	0.87	49.92	-12.8079	0.0507	0.2007
1027	SLU 53	0.63	0.92	50.73	-13.0116	0.0517	0.2151
1027	SLU 54	0.61	0.91	50.76	-13.0157	0.0517	0.2091
1027	SLU 55	0.6	0.88	50.44	-12.9373	0.0513	0.2041
1027	SLU 56	0.64	0.93	51.25	-13.1409	0.0523	0.2184
1027	SLU 57	0.62	0.92	51.28	-13.145	0.0523	0.2124
1027	SLU 58	0.64	0.92	50.92	-13.0598	0.052	0.2174
1027	SLU 59	0.62	0.9	50.95	-13.0639	0.052	0.2114
1027	SLU 60	0.63	0.93	51.86	-13.3069	0.0532	0.2169
1027	SLU 61	0.62	0.92	51.89	-13.3109	0.0532	0.2109
1027	SLU 62	0.64	0.94	52.39	-13.4362	0.0538	0.2202
1027	SLU 63	0.63	0.93	52.41	-13.4402	0.0538	0.2142
1027	SLU 64	0.61	0.94	49.96	-12.8187	0.0509	0.2099
1027	SLU 65	0.59	0.91	50.01	-12.8254	0.0508	0.1999
1027	SLU 66	0.63	0.97	50.82	-13.0291	0.0518	0.2142
1027	SLU 67	0.61	0.95	50.85	-13.0331	0.0518	0.2083
1027	SLU 68	0.6	0.93	50.53	-12.9547	0.0514	0.2033
1027	SLU 69	0.64	0.98	51.34	-13.1584	0.0524	0.2176
1027	SLU 70	0.62	0.96	51.37	-13.1625	0.0524	0.2116
1027	SLU 71	0.63	0.96	51.01	-13.0773	0.0521	0.2166
1027	SLU 72	0.62	0.95	51.03	-13.0814	0.0521	0.2106
1027	SLU 73	0.63	1	54.65	-14.0053	0.0566	0.2143
1027	SLU 74	0.67	1.05	55.46	-14.209	0.0575	0.2286
1027	SLU 75	0.65	1.03	55.49	-14.2131	0.0575	0.2227
1027	SLU 76	0.64	1.01	55.17	-14.1346	0.0572	0.2177
1027	SLU 77	0.68	1.06	55.99	-14.3383	0.0582	0.232
1027	SLU 78	0.66	1.05	56.01	-14.3424	0.0581	0.226
1027	SLU 79	0.68	1.04	55.65	-14.2572	0.0578	0.231
1027	SLU 80	0.66	1.03	55.68	-14.2613	0.0578	0.225
1027	SLU 81	0.67	1.06	56.6	-14.5043	0.059	0.2305
1027	SLU 82	0.66	1.04	56.62	-14.5083	0.059	0.2245
1027	SLU 83	0.68	1.07	57.12	-14.6336	0.0596	0.2338



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1027	SLU 84	0.67	1.05	57.15	-14.6376	0.0596	0.2278
1027	SLE RA 1	0.46	0.69	37.39	-9.5974	0.0378	0.1585
1027	SLE RA 2	0.45	0.68	37.42	-9.6019	0.0378	0.1518
1027	SLE RA 3	0.47	0.71	37.96	-9.7376	0.0385	0.1614
1027	SLE RA 4	0.46	0.7	37.98	-9.7403	0.0385	0.1574
1027	SLE RA 5	0.45	0.69	37.77	-9.6881	0.0382	0.1541
1027	SLE RA 6	0.48	0.72	38.31	-9.8239	0.0389	0.1636
1027	SLE RA 7	0.47	0.71	38.33	-9.8266	0.0389	0.1596
1027	SLE RA 8	0.48	0.71	38.09	-9.7698	0.0387	0.1629
1027	SLE RA 9	0.47	0.7	38.11	-9.7725	0.0387	0.1589
1027	SLE RA 10	0.47	0.73	40.52	-10.3885	0.0416	0.1614
1027	SLE RA 11	0.5	0.77	41.06	-10.5242	0.0423	0.171
1027	SLE RA 12	0.49	0.76	41.08	-10.5269	0.0423	0.167
1027	SLE RA 13	0.48	0.74	40.87	-10.4747	0.042	0.1637
1027	SLE RA 14	0.51	0.78	41.41	-10.6105	0.0427	0.1732
1027	SLE RA 15	0.5	0.77	41.43	-10.6132	0.0427	0.1692
1027	SLE RA 16	0.5	0.76	41.19	-10.5564	0.0425	0.1725
1027	SLE RA 17	0.49	0.75	41.2	-10.5591	0.0425	0.1685
1027	SLE RA 18	0.5	0.77	41.82	-10.7211	0.0433	0.1722
1027	SLE RA 19	0.49	0.76	41.83	-10.7238	0.0433	0.1682
1027	SLE RA 20	0.51	0.78	42.16	-10.8073	0.0437	0.1744
1027	SLE RA 21	0.5	0.77	42.18	-10.81	0.0437	0.1704
1027	SLE FR 1	0.46	0.69	37.39	-9.5974	0.0378	0.1585
1027	SLE FR 2	0.46	0.69	37.4	-9.5983	0.0378	0.1572
1027	SLE FR 3	0.47	0.7	37.53	-9.6318	0.038	0.1594
1027	SLE FR 4	0.47	0.71	38.73	-9.9354	0.0395	0.1613
1027	SLE FR 5	0.48	0.72	38.86	-9.969	0.0396	0.1635
1027	SLE FR 6	0.48	0.73	39.6	-10.1592	0.0406	0.1653
1027	SLE QP 1	0.46	0.69	37.39	-9.5974	0.0378	0.1585
1027	SLE QP 2	0.48	0.72	38.72	-9.9345	0.0395	0.1626
1027	SLD 1	4.27	0.93	35.64	-9.4082	0.0475	1.4924
1027	SLD 2	3.9	1.08	35.55	-9.3833	0.0476	1.3603
1027	SLD 3	4.49	-0.09	36.51	-9.5767	0.049	1.5683
1027	SLD 4	4.11	0.06	36.42	-9.5517	0.049	1.4361
1027	SLD 5	1.35	2.3	36.5	-9.5256	0.0397	0.4701
1027	SLD 6	1.11	2.4	36.44	-9.5092	0.0397	0.3832
1027	SLD 7	2.08	-1.1	39.39	-10.087	0.0445	0.723
1027	SLD 8	1.83	-1	39.33	-10.0706	0.0445	0.6361
1027	SLD 9	-0.88	2.44	38.11	-9.7983	0.0344	-0.3109
1027	SLD 10	-1.13	2.53	38.05	-9.7819	0.0344	-0.3978
1027	SLD 11	-0.15	-0.96	41	-10.3597	0.0392	-0.058
1027	SLD 12	-0.4	-0.87	40.94	-10.3433	0.0393	-0.1449
1027	SLD 13	-3.16	1.38	41.02	-10.3173	0.0299	-1.1109
1027	SLD 14	-3.54	1.53	40.93	-10.2923	0.0299	-1.2431
1027	SLD 15	-2.94	0.36	41.89	-10.4857	0.0314	-1.0351
1027	SLD 16	-3.32	0.51	41.8	-10.4607	0.0314	-1.1673
1027	SLV 1	9.36	1.17	31.55	-8.7079	0.0584	3.274
1027	SLV 2	8.48	1.52	31.32	-8.6497	0.0585	2.9661
1027	SLV 3	9.87	-1.14	33.51	-9.0901	0.0617	3.4509
1027	SLV 4	8.99	-0.79	33.29	-9.0319	0.0618	3.1431
1027	SLV 5	2.53	4.3	33.62	-8.9968	0.0402	0.8809
1027	SLV 6	1.96	4.52	33.48	-8.9592	0.0402	0.682
1027	SLV 7	4.21	-3.4	40.18	-10.271	0.0511	1.4707
1027	SLV 8	3.64	-3.17	40.04	-10.2334	0.0512	1.2719
1027	SLV 9	-2.69	4.61	37.4	-9.6356	0.0278	-0.9467
1027	SLV 10	-3.26	4.84	37.26	-9.598	0.0278	-1.1455
1027	SLV 11	-1.01	-3.08	43.96	-10.9097	0.0387	-0.3568
1027	SLV 12	-1.58	-2.86	43.82	-10.8721	0.0388	-0.5557
1027	SLV 13	-8.03	2.22	44.15	-10.837	0.0171	-2.8179
1027	SLV 14	-8.92	2.57	43.93	-10.7788	0.0172	-3.1257
1027	SLV 15	-7.53	-0.09	46.12	-11.2193	0.0204	-2.6409
1027	SLV 16	-8.41	0.26	45.89	-11.1611	0.0205	-2.9488
1027	CRTFP Ux+	0	0	0	0	0	0
1027	CRTFP Ux-	0	0	0	0	0	0
1027	CRTFP Uy+	0	0	0	0	0	0
1027	CRTFP Uy-	0	0	0	0	0	0
1028	SLU 1	0.49	0.54	35.04	-8.3297	0.0266	0.166
1028	SLU 2	0.46	0.51	35.09	-8.3364	0.0266	0.1559
1028	SLU 3	0.5	0.56	35.87	-8.5158	0.0273	0.1706
1028	SLU 4	0.48	0.55	35.9	-8.5199	0.0273	0.1645
1028	SLU 5	0.47	0.52	35.59	-8.4507	0.0271	0.1594
1028	SLU 6	0.51	0.57	36.38	-8.6301	0.0278	0.1741
1028	SLU 7	0.49	0.56	36.4	-8.6341	0.0278	0.168
1028	SLU 8	0.51	0.55	36.05	-8.5582	0.0276	0.173
1028	SLU 9	0.49	0.54	36.08	-8.5623	0.0276	0.1669
1028	SLU 10	0.5	0.59	39.57	-9.3793	0.031	0.1713
1028	SLU 11	0.54	0.64	40.36	-9.5587	0.0318	0.186
1028	SLU 12	0.53	0.62	40.38	-9.5627	0.0318	0.18
1028	SLU 13	0.51	0.6	40.07	-9.4936	0.0315	0.1748
1028	SLU 14	0.55	0.64	40.86	-9.6729	0.0322	0.1895
1028	SLU 15	0.54	0.63	40.89	-9.677	0.0322	0.1834
1028	SLU 16	0.55	0.63	40.54	-9.6011	0.032	0.1884
1028	SLU 17	0.53	0.61	40.56	-9.6051	0.032	0.1823
1028	SLU 18	0.55	0.64	41.45	-9.8195	0.0329	0.1881
1028	SLU 19	0.53	0.63	41.47	-9.8235	0.0329	0.182
1028	SLU 20	0.56	0.65	41.95	-9.9338	0.0334	0.1915
1028	SLU 21	0.54	0.64	41.98	-9.9378	0.0334	0.1854
1028	SLU 22	0.53	0.65	39.61	-9.3882	0.0312	0.1806
1028	SLU 23	0.5	0.63	39.65	-9.3949	0.0312	0.1705
1028	SLU 24	0.54	0.68	40.44	-9.5743	0.0319	0.1852



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1028	SLU 25	0.52	0.66	40.47	-9.5783	0.0319	0.1792
1028	SLU 26	0.51	0.64	40.16	-9.5092	0.0316	0.174
1028	SLU 27	0.55	0.68	40.95	-9.6885	0.0324	0.1887
1028	SLU 28	0.53	0.67	40.97	-9.6926	0.0324	0.1826
1028	SLU 29	0.55	0.67	40.62	-9.6167	0.0321	0.1876
1028	SLU 30	0.53	0.65	40.65	-9.6207	0.0321	0.1815
1028	SLU 31	0.54	0.7	44.14	-10.4378	0.0356	0.1859
1028	SLU 32	0.59	0.75	44.92	-10.6171	0.0363	0.2007
1028	SLU 33	0.57	0.74	44.95	-10.6212	0.0363	0.1946
1028	SLU 34	0.55	0.71	44.64	-10.552	0.0361	0.1894
1028	SLU 35	0.6	0.76	45.43	-10.7314	0.0368	0.2041
1028	SLU 36	0.58	0.74	45.46	-10.7354	0.0368	0.198
1028	SLU 37	0.59	0.74	45.1	-10.6596	0.0365	0.203
1028	SLU 38	0.58	0.73	45.13	-10.6636	0.0365	0.1969
1028	SLU 39	0.59	0.76	46.02	-10.878	0.0375	0.2027
1028	SLU 40	0.57	0.74	46.04	-10.882	0.0375	0.1966
1028	SLU 41	0.6	0.77	46.52	-10.9922	0.038	0.2061
1028	SLU 42	0.58	0.75	46.55	-10.9963	0.0379	0.2001
1028	SLU 43	0.62	0.66	43.99	-10.4657	0.0331	0.2108
1028	SLU 44	0.59	0.63	44.03	-10.4725	0.033	0.2007
1028	SLU 45	0.63	0.68	44.82	-10.6518	0.0338	0.2154
1028	SLU 46	0.61	0.67	44.84	-10.6559	0.0338	0.2093
1028	SLU 47	0.6	0.64	44.54	-10.5867	0.0335	0.2042
1028	SLU 48	0.64	0.69	45.32	-10.7661	0.0342	0.2189
1028	SLU 49	0.62	0.68	45.35	-10.7701	0.0342	0.2128
1028	SLU 50	0.64	0.68	45	-10.6942	0.034	0.2178
1028	SLU 51	0.62	0.66	45.02	-10.6983	0.034	0.2117
1028	SLU 52	0.63	0.71	48.52	-11.5153	0.0375	0.2161
1028	SLU 53	0.67	0.76	49.3	-11.6947	0.0382	0.2308
1028	SLU 54	0.66	0.74	49.33	-11.6987	0.0382	0.2247
1028	SLU 55	0.64	0.72	49.02	-11.6296	0.0379	0.2196
1028	SLU 56	0.68	0.77	49.81	-11.8089	0.0387	0.2343
1028	SLU 57	0.67	0.75	49.83	-11.813	0.0387	0.2282
1028	SLU 58	0.68	0.75	49.48	-11.7371	0.0384	0.2332
1028	SLU 59	0.66	0.74	49.51	-11.7411	0.0384	0.2271
1028	SLU 60	0.68	0.77	50.39	-11.9555	0.0394	0.2329
1028	SLU 61	0.66	0.75	50.42	-11.9595	0.0394	0.2268
1028	SLU 62	0.69	0.77	50.9	-12.0698	0.0398	0.2363
1028	SLU 63	0.67	0.76	50.92	-12.0738	0.0398	0.2302
1028	SLU 64	0.66	0.77	48.56	-11.5242	0.0376	0.2254
1028	SLU 65	0.63	0.75	48.6	-11.5309	0.0376	0.2153
1028	SLU 66	0.67	0.8	49.39	-11.7103	0.0383	0.23
1028	SLU 67	0.66	0.78	49.41	-11.7143	0.0383	0.2239
1028	SLU 68	0.64	0.76	49.11	-11.6452	0.0381	0.2188
1028	SLU 69	0.68	0.81	49.89	-11.8245	0.0388	0.2335
1028	SLU 70	0.67	0.79	49.92	-11.8286	0.0388	0.2274
1028	SLU 71	0.68	0.79	49.57	-11.7527	0.0385	0.2324
1028	SLU 72	0.66	0.78	49.59	-11.7568	0.0385	0.2263
1028	SLU 73	0.67	0.82	53.08	-12.5738	0.042	0.2307
1028	SLU 74	0.72	0.87	53.87	-12.7531	0.0427	0.2454
1028	SLU 75	0.7	0.86	53.9	-12.7572	0.0427	0.2394
1028	SLU 76	0.69	0.83	53.59	-12.688	0.0425	0.2342
1028	SLU 77	0.73	0.88	54.38	-12.8674	0.0432	0.2489
1028	SLU 78	0.71	0.87	54.4	-12.8714	0.0432	0.2428
1028	SLU 79	0.72	0.87	54.05	-12.7956	0.043	0.2478
1028	SLU 80	0.71	0.85	54.08	-12.7996	0.043	0.2417
1028	SLU 81	0.72	0.88	54.96	-13.014	0.0439	0.2475
1028	SLU 82	0.71	0.87	54.99	-13.018	0.0439	0.2414
1028	SLU 83	0.73	0.89	55.47	-13.1282	0.0444	0.2509
1028	SLU 84	0.72	0.87	55.49	-13.1323	0.0444	0.2449
1028	SLE RA 1	0.5	0.57	36.35	-8.6321	0.0279	0.1702
1028	SLE RA 2	0.48	0.55	36.38	-8.6366	0.0279	0.1634
1028	SLE RA 3	0.51	0.59	36.9	-8.7562	0.0284	0.1733
1028	SLE RA 4	0.49	0.58	36.92	-8.7589	0.0284	0.1692
1028	SLE RA 5	0.49	0.56	36.71	-8.7128	0.0282	0.1658
1028	SLE RA 6	0.51	0.59	37.24	-8.8324	0.0287	0.1756
1028	SLE RA 7	0.5	0.58	37.26	-8.8351	0.0287	0.1715
1028	SLE RA 8	0.51	0.58	37.02	-8.7845	0.0285	0.1748
1028	SLE RA 9	0.5	0.57	37.04	-8.7872	0.0285	0.1708
1028	SLE RA 10	0.51	0.6	39.37	-9.3319	0.0309	0.1737
1028	SLE RA 11	0.54	0.64	39.89	-9.4514	0.0314	0.1835
1028	SLE RA 12	0.52	0.63	39.91	-9.4541	0.0313	0.1795
1028	SLE RA 13	0.51	0.61	39.7	-9.408	0.0312	0.176
1028	SLE RA 14	0.54	0.64	40.23	-9.5276	0.0317	0.1859
1028	SLE RA 15	0.53	0.63	40.24	-9.5303	0.0317	0.1818
1028	SLE RA 16	0.54	0.63	40.01	-9.4797	0.0315	0.1851
1028	SLE RA 17	0.53	0.62	40.03	-9.4824	0.0315	0.1811
1028	SLE RA 18	0.54	0.64	40.62	-9.6253	0.0321	0.1849
1028	SLE RA 19	0.53	0.63	40.63	-9.628	0.0321	0.1808
1028	SLE RA 20	0.55	0.65	40.95	-9.7015	0.0324	0.1872
1028	SLE RA 21	0.54	0.64	40.97	-9.7042	0.0324	0.1832
1028	SLE FR 1	0.5	0.57	36.35	-8.6321	0.0279	0.1702
1028	SLE FR 2	0.49	0.57	36.35	-8.633	0.0279	0.1688
1028	SLE FR 3	0.5	0.57	36.48	-8.6626	0.028	0.1711
1028	SLE FR 4	0.51	0.59	37.63	-8.931	0.0292	0.1733
1028	SLE FR 5	0.51	0.59	37.76	-8.9605	0.0293	0.1755
1028	SLE FR 6	0.52	0.61	38.48	-9.1287	0.03	0.1775
1028	SLE QP 1	0.5	0.57	36.35	-8.6321	0.0279	0.1702
1028	SLE QP 2	0.51	0.59	37.63	-8.9301	0.0292	0.1746
1028	SLD 1	4.31	0.81	34.28	-8.43	0.0383	1.5059



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1028	SLD 2	3.93	0.97	34.18	-8.4021	0.0384	1.3732
1028	SLD 3	4.53	-0.2	35.12	-8.5782	0.0394	1.5818
1028	SLD 4	4.15	-0.03	35.02	-8.5503	0.0396	1.4491
1028	SLD 5	1.39	2.15	35.38	-8.5603	0.0302	0.4826
1028	SLD 6	1.14	2.26	35.31	-8.5419	0.0303	0.3954
1028	SLD 7	2.11	-1.2	38.16	-9.0543	0.0339	0.7356
1028	SLD 8	1.86	-1.09	38.09	-9.036	0.034	0.6484
1028	SLD 9	-0.84	2.27	37.16	-8.8242	0.0243	-0.2992
1028	SLD 10	-1.09	2.38	37.1	-8.8059	0.0244	-0.3864
1028	SLD 11	-0.12	-1.07	39.94	-9.3182	0.0281	-0.0462
1028	SLD 12	-0.37	-0.97	39.88	-9.2999	0.0282	-0.1334
1028	SLD 13	-3.13	1.22	40.24	-9.3098	0.0188	-1.0999
1028	SLD 14	-3.51	1.38	40.14	-9.2819	0.019	-1.2326
1028	SLD 15	-2.91	0.21	41.07	-9.458	0.0199	-1.024
1028	SLD 16	-3.29	0.38	40.97	-9.4301	0.0201	-1.1567
1028	SLV 1	9.4	1.06	29.82	-7.7641	0.0505	3.2894
1028	SLV 2	8.52	1.44	29.59	-7.6991	0.0509	2.9804
1028	SLV 3	9.91	-1.21	31.72	-8.1007	0.0531	3.4664
1028	SLV 4	9.02	-0.83	31.49	-8.0357	0.0535	3.1574
1028	SLV 5	2.56	4.11	32.45	-8.081	0.0316	0.894
1028	SLV 6	1.99	4.36	32.31	-8.039	0.0319	0.6945
1028	SLV 7	4.25	-3.46	38.77	-9.2031	0.0402	1.484
1028	SLV 8	3.68	-3.22	38.62	-9.1611	0.0404	1.2844
1028	SLV 9	-2.66	4.4	36.64	-8.6991	0.0179	-0.9352
1028	SLV 10	-3.23	4.64	36.49	-8.6571	0.0182	-1.1348
1028	SLV 11	-0.97	-3.17	42.95	-9.8212	0.0265	-0.3453
1028	SLV 12	-1.54	-2.93	42.8	-9.7792	0.0268	-0.5448
1028	SLV 13	-8	2.02	43.77	-9.8245	0.0049	-2.8082
1028	SLV 14	-8.89	2.4	43.54	-9.7595	0.0053	-3.1172
1028	SLV 15	-7.5	-0.25	45.66	-10.1611	0.0075	-2.6312
1028	SLV 16	-8.38	0.12	45.43	-10.0961	0.0079	-2.9402
1028	CRTFP Ux+	0	0	0	0	0	0
1028	CRTFP Ux-	0	0	0	0	0	0
1028	CRTFP Uy+	0	0	0	0	0	0
1028	CRTFP Uy-	0	0	0	0	0	0
1029	SLU 1	0.52	0.42	34.45	-7.7291	0.0106	0.1773
1029	SLU 2	0.49	0.4	34.49	-7.7358	0.0106	0.167
1029	SLU 3	0.53	0.44	35.26	-7.8994	0.0109	0.1821
1029	SLU 4	0.51	0.43	35.29	-7.9034	0.0109	0.1759
1029	SLU 5	0.5	0.4	34.99	-7.8402	0.0108	0.1706
1029	SLU 6	0.54	0.45	35.76	-8.0038	0.0111	0.1857
1029	SLU 7	0.52	0.43	35.78	-8.0078	0.0111	0.1795
1029	SLU 8	0.54	0.43	35.44	-7.9379	0.011	0.1845
1029	SLU 9	0.52	0.42	35.46	-7.9419	0.0111	0.1783
1029	SLU 10	0.54	0.46	38.87	-8.6864	0.0128	0.1834
1029	SLU 11	0.58	0.51	39.64	-8.85	0.0131	0.1985
1029	SLU 12	0.56	0.49	39.67	-8.854	0.0131	0.1924
1029	SLU 13	0.55	0.47	39.37	-8.7908	0.013	0.187
1029	SLU 14	0.59	0.51	40.14	-8.9544	0.0133	0.2021
1029	SLU 15	0.57	0.5	40.16	-8.9584	0.0133	0.196
1029	SLU 16	0.59	0.5	39.82	-8.8885	0.0132	0.2009
1029	SLU 17	0.57	0.49	39.84	-8.8925	0.0132	0.1947
1029	SLU 18	0.58	0.52	40.7	-9.0871	0.0137	0.2007
1029	SLU 19	0.57	0.5	40.73	-9.0911	0.0137	0.1946
1029	SLU 20	0.6	0.52	41.2	-9.1915	0.0139	0.2043
1029	SLU 21	0.58	0.51	41.22	-9.1955	0.0139	0.1982
1029	SLU 22	0.56	0.52	38.91	-8.6934	0.0129	0.1929
1029	SLU 23	0.53	0.5	38.95	-8.7	0.0129	0.1826
1029	SLU 24	0.58	0.54	39.72	-8.8636	0.0132	0.1977
1029	SLU 25	0.56	0.53	39.75	-8.8676	0.0132	0.1916
1029	SLU 26	0.54	0.51	39.45	-8.8044	0.0131	0.1862
1029	SLU 27	0.59	0.55	40.22	-8.968	0.0134	0.2014
1029	SLU 28	0.57	0.53	40.24	-8.972	0.0134	0.1952
1029	SLU 29	0.58	0.54	39.9	-8.9022	0.0133	0.2001
1029	SLU 30	0.57	0.52	39.92	-8.9062	0.0134	0.194
1029	SLU 31	0.58	0.57	43.33	-9.6506	0.0151	0.1991
1029	SLU 32	0.62	0.61	44.1	-9.8142	0.0154	0.2142
1029	SLU 33	0.61	0.6	44.13	-9.8182	0.0154	0.208
1029	SLU 34	0.59	0.57	43.83	-9.755	0.0153	0.2027
1029	SLU 35	0.63	0.62	44.6	-9.9186	0.0156	0.2178
1029	SLU 36	0.62	0.6	44.62	-9.9226	0.0156	0.2116
1029	SLU 37	0.63	0.6	44.28	-9.8527	0.0155	0.2166
1029	SLU 38	0.61	0.59	44.3	-9.8567	0.0155	0.2104
1029	SLU 39	0.63	0.62	45.16	-10.0513	0.016	0.2164
1029	SLU 40	0.61	0.61	45.19	-10.0553	0.016	0.2102
1029	SLU 41	0.64	0.63	45.66	-10.1557	0.0162	0.22
1029	SLU 42	0.62	0.61	45.68	-10.1597	0.0162	0.2138
1029	SLU 43	0.66	0.51	43.25	-9.7173	0.013	0.2251
1029	SLU 44	0.63	0.49	43.3	-9.7239	0.013	0.2148
1029	SLU 45	0.67	0.53	44.07	-9.8875	0.0133	0.2299
1029	SLU 46	0.65	0.52	44.09	-9.8915	0.0133	0.2237
1029	SLU 47	0.64	0.49	43.79	-9.8283	0.0132	0.2184
1029	SLU 48	0.68	0.54	44.56	-9.9919	0.0135	0.2335
1029	SLU 49	0.66	0.52	44.59	-9.9959	0.0135	0.2273
1029	SLU 50	0.68	0.52	44.24	-9.9261	0.0134	0.2323
1029	SLU 51	0.66	0.51	44.27	-9.9301	0.0134	0.2261
1029	SLU 52	0.67	0.55	47.68	-10.6745	0.0152	0.2312
1029	SLU 53	0.72	0.6	48.45	-10.8381	0.0155	0.2463
1029	SLU 54	0.7	0.58	48.47	-10.8421	0.0155	0.2402
1029	SLU 55	0.68	0.56	48.17	-10.7789	0.0154	0.2348





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
1029	SLU 56	0.73	0.6	48.94	-10.9425	0.0157	0.2499
1029	SLU 57	0.71	0.59	48.97	-10.9465	0.0157	0.2438
1029	SLU 58	0.72	0.59	48.62	-10.8766	0.0156	0.2487
1029	SLU 59	0.71	0.58	48.65	-10.8806	0.0156	0.2425
1029	SLU 60	0.72	0.61	49.51	-11.0752	0.0161	0.2485
1029	SLU 61	0.71	0.59	49.54	-11.0792	0.0161	0.2424
1029	SLU 62	0.73	0.61	50	-11.1796	0.0163	0.2521
1029	SLU 63	0.72	0.6	50.03	-11.1836	0.0163	0.246
1029	SLU 64	0.7	0.61	47.71	-10.6815	0.0153	0.2407
1029	SLU 65	0.67	0.59	47.76	-10.6882	0.0153	0.2304
1029	SLU 66	0.72	0.63	48.53	-10.8518	0.0156	0.2456
1029	SLU 67	0.7	0.62	48.55	-10.8558	0.0156	0.2394
1029	SLU 68	0.68	0.6	48.25	-10.7926	0.0155	0.234
1029	SLU 69	0.73	0.64	49.02	-10.9562	0.0158	0.2492
1029	SLU 70	0.71	0.63	49.05	-10.9602	0.0158	0.243
1029	SLU 71	0.72	0.63	48.7	-10.8903	0.0157	0.2479
1029	SLU 72	0.71	0.61	48.73	-10.8943	0.0157	0.2418
1029	SLU 73	0.72	0.66	52.14	-11.6388	0.0175	0.2469
1029	SLU 74	0.76	0.7	52.91	-11.8023	0.0178	0.262
1029	SLU 75	0.75	0.69	52.93	-11.8063	0.0178	0.2558
1029	SLU 76	0.73	0.66	52.63	-11.7431	0.0177	0.2505
1029	SLU 77	0.77	0.71	53.4	-11.9067	0.018	0.2656
1029	SLU 78	0.76	0.69	53.43	-11.9107	0.018	0.2594
1029	SLU 79	0.77	0.7	53.08	-11.8409	0.0179	0.2644
1029	SLU 80	0.75	0.68	53.11	-11.8449	0.0179	0.2582
1029	SLU 81	0.77	0.71	53.97	-12.0395	0.0184	0.2642
1029	SLU 82	0.75	0.7	54	-12.0435	0.0184	0.258
1029	SLU 83	0.78	0.72	54.46	-12.1439	0.0186	0.2678
1029	SLU 84	0.76	0.7	54.49	-12.1479	0.0186	0.2616
1029	SLE RA 1	0.53	0.45	35.72	-8.0046	0.0113	0.1817
1029	SLE RA 2	0.51	0.43	35.75	-8.0091	0.0113	0.1749
1029	SLE RA 3	0.54	0.46	36.27	-8.1181	0.0115	0.1849
1029	SLE RA 4	0.53	0.45	36.28	-8.1208	0.0115	0.1808
1029	SLE RA 5	0.52	0.44	36.08	-8.0787	0.0114	0.1773
1029	SLE RA 6	0.55	0.47	36.59	-8.1877	0.0116	0.1874
1029	SLE RA 7	0.53	0.46	36.61	-8.1904	0.0116	0.1832
1029	SLE RA 8	0.54	0.46	36.38	-8.1438	0.0115	0.1865
1029	SLE RA 9	0.53	0.45	36.4	-8.1465	0.0116	0.1824
1029	SLE RA 10	0.54	0.48	38.67	-8.6428	0.0127	0.1858
1029	SLE RA 11	0.57	0.51	39.18	-8.7518	0.0129	0.1959
1029	SLE RA 12	0.56	0.5	39.2	-8.7545	0.0129	0.1918
1029	SLE RA 13	0.55	0.48	39	-8.7124	0.0129	0.1882
1029	SLE RA 14	0.58	0.51	39.51	-8.8214	0.0131	0.1983
1029	SLE RA 15	0.57	0.5	39.53	-8.8241	0.0131	0.1942
1029	SLE RA 16	0.58	0.5	39.3	-8.7775	0.013	0.1975
1029	SLE RA 17	0.56	0.49	39.32	-8.7802	0.013	0.1934
1029	SLE RA 18	0.58	0.51	39.89	-8.9099	0.0133	0.1974
1029	SLE RA 19	0.56	0.5	39.91	-8.9126	0.0133	0.1933
1029	SLE RA 20	0.58	0.52	40.22	-8.9795	0.0135	0.1998
1029	SLE RA 21	0.57	0.51	40.24	-8.9822	0.0135	0.1957
1029	SLE FR 1	0.53	0.45	35.72	-8.0046	0.0113	0.1817
1029	SLE FR 2	0.53	0.45	35.73	-8.0055	0.0113	0.1804
1029	SLE FR 3	0.53	0.45	35.85	-8.0325	0.0113	0.1827
1029	SLE FR 4	0.54	0.47	36.98	-8.2771	0.0119	0.185
1029	SLE FR 5	0.55	0.47	37.11	-8.3041	0.0119	0.1874
1029	SLE FR 6	0.55	0.48	37.81	-8.4573	0.0123	0.1895
1029	SLE QP 1	0.53	0.45	35.72	-8.0046	0.0113	0.1817
1029	SLE QP 2	0.54	0.47	36.97	-8.2762	0.0119	0.1864
1029	SLD 1	4.35	0.7	33.32	-7.7668	0.0231	1.5184
1029	SLD 2	3.96	0.87	33.21	-7.7331	0.0235	1.3853
1029	SLD 3	4.56	-0.29	34.14	-7.9047	0.0224	1.5943
1029	SLD 4	4.18	-0.12	34.03	-7.871	0.0227	1.4611
1029	SLD 5	1.42	2.01	34.66	-7.9202	0.0163	0.4947
1029	SLD 6	1.17	2.12	34.59	-7.8981	0.0166	0.4072
1029	SLD 7	2.15	-1.29	37.38	-8.3799	0.0138	0.7476
1029	SLD 8	1.89	-1.18	37.31	-8.3578	0.0141	0.6601
1029	SLD 9	-0.81	2.12	36.64	-8.1946	0.0097	-0.2873
1029	SLD 10	-1.06	2.23	36.57	-8.1725	0.0099	-0.3748
1029	SLD 11	-0.09	-1.18	39.36	-8.6543	0.0072	-0.0344
1029	SLD 12	-0.34	-1.07	39.29	-8.6322	0.0074	-0.1219
1029	SLD 13	-3.09	1.06	39.92	-8.6814	0.001	-1.0883
1029	SLD 14	-3.48	1.23	39.81	-8.6477	0.0014	-1.2214
1029	SLD 15	-2.88	0.07	40.74	-8.8194	0.0003	-1.0125
1029	SLD 16	-3.26	0.24	40.63	-8.7857	0.0006	-1.1456
1029	SLV 1	9.44	0.96	28.44	-7.0878	0.0382	3.3028
1029	SLV 2	8.55	1.37	28.19	-7.0094	0.039	2.9928
1029	SLV 3	9.94	-1.28	30.3	-7.4012	0.0365	3.4797
1029	SLV 4	9.06	-0.87	30.05	-7.3227	0.0373	3.1697
1029	SLV 5	2.6	3.95	31.64	-7.458	0.0223	0.9066
1029	SLV 6	2.03	4.21	31.48	-7.4073	0.0228	0.7064
1029	SLV 7	4.28	-3.52	37.83	-8.5026	0.0165	1.4963
1029	SLV 8	3.71	-3.26	37.67	-8.4519	0.017	1.2961
1029	SLV 9	-2.62	4.2	36.28	-8.1005	0.0067	-0.9233
1029	SLV 10	-3.2	4.46	36.12	-8.0499	0.0073	-1.1235
1029	SLV 11	-0.94	-3.27	42.46	-9.1451	0.001	-0.3336
1029	SLV 12	-1.51	-3.01	42.3	-9.0944	0.0015	-0.5338
1029	SLV 13	-7.97	1.81	43.9	-9.2297	-0.0135	-2.7968
1029	SLV 14	-8.86	2.22	43.65	-9.1512	-0.0127	-3.1068
1029	SLV 15	-7.46	-0.43	45.75	-9.5431	-0.0153	-2.6199
1029	SLV 16	-8.35	-0.03	45.51	-9.4646	-0.0144	-2.9299



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
1029	CRTFP Ux+	0	0	0	0	0	0
1029	CRTFP Ux-	0	0	0	0	0	0
1029	CRTFP Uy+	0	0	0	0	0	0
1029	CRTFP Uy-	0	0	0	0	0	0
1030	SLU 1	0.55	0.31	34.42	-7.5569	-0.0094	0.1883
1030	SLU 2	0.52	0.29	34.47	-7.5631	-0.0093	0.1778
1030	SLU 3	0.56	0.33	35.24	-7.7224	-0.0096	0.1933
1030	SLU 4	0.54	0.31	35.26	-7.7262	-0.0096	0.1871
1030	SLU 5	0.53	0.29	34.96	-7.6644	-0.0094	0.1816
1030	SLU 6	0.57	0.33	35.73	-7.8237	-0.0097	0.1971
1030	SLU 7	0.55	0.32	35.75	-7.8274	-0.0097	0.1909
1030	SLU 8	0.57	0.32	35.41	-7.7595	-0.0096	0.1958
1030	SLU 9	0.55	0.31	35.43	-7.7632	-0.0096	0.1895
1030	SLU 10	0.57	0.35	38.82	-8.481	-0.01	0.1952
1030	SLU 11	0.61	0.39	39.59	-8.6403	-0.0103	0.2108
1030	SLU 12	0.59	0.38	39.62	-8.644	-0.0102	0.2045
1030	SLU 13	0.58	0.35	39.31	-8.5823	-0.0101	0.199
1030	SLU 14	0.62	0.4	40.08	-8.7416	-0.0104	0.2145
1030	SLU 15	0.61	0.38	40.11	-8.7453	-0.0103	0.2083
1030	SLU 16	0.62	0.38	39.76	-8.6774	-0.0103	0.2132
1030	SLU 17	0.6	0.37	39.79	-8.6811	-0.0102	0.2069
1030	SLU 18	0.62	0.4	40.64	-8.8682	-0.0103	0.2131
1030	SLU 19	0.6	0.39	40.67	-8.8719	-0.0103	0.2069
1030	SLU 20	0.63	0.41	41.14	-8.9695	-0.0104	0.2169
1030	SLU 21	0.61	0.39	41.16	-8.9732	-0.0104	0.2106
1030	SLU 22	0.6	0.41	38.85	-8.4868	-0.0099	0.2049
1030	SLU 23	0.57	0.38	38.9	-8.493	-0.0098	0.1945
1030	SLU 24	0.61	0.42	39.67	-8.6523	-0.0101	0.21
1030	SLU 25	0.59	0.41	39.69	-8.6561	-0.0101	0.2038
1030	SLU 26	0.58	0.39	39.39	-8.5943	-0.0099	0.1983
1030	SLU 27	0.62	0.43	40.16	-8.7536	-0.0102	0.2138
1030	SLU 28	0.6	0.41	40.18	-8.7573	-0.0102	0.2075
1030	SLU 29	0.62	0.42	39.84	-8.6894	-0.0101	0.2125
1030	SLU 30	0.6	0.4	39.87	-8.6931	-0.0101	0.2062
1030	SLU 31	0.62	0.44	43.25	-9.4109	-0.0105	0.2119
1030	SLU 32	0.66	0.48	44.02	-9.5702	-0.0108	0.2274
1030	SLU 33	0.64	0.47	44.05	-9.5739	-0.0107	0.2212
1030	SLU 34	0.63	0.45	43.74	-9.5122	-0.0106	0.2157
1030	SLU 35	0.67	0.49	44.51	-9.6715	-0.0109	0.2312
1030	SLU 36	0.65	0.47	44.54	-9.6752	-0.0108	0.2249
1030	SLU 37	0.67	0.48	44.19	-9.6073	-0.0108	0.2299
1030	SLU 38	0.65	0.46	44.22	-9.611	-0.0107	0.2236
1030	SLU 39	0.67	0.49	45.07	-9.7981	-0.0109	0.2298
1030	SLU 40	0.65	0.48	45.1	-9.8018	-0.0108	0.2235
1030	SLU 41	0.68	0.5	45.57	-9.8994	-0.011	0.2336
1030	SLU 42	0.66	0.48	45.59	-9.9031	-0.0109	0.2273
1030	SLU 43	0.69	0.38	43.23	-9.5052	-0.012	0.239
1030	SLU 44	0.66	0.35	43.27	-9.5114	-0.012	0.2286
1030	SLU 45	0.71	0.39	44.04	-9.6707	-0.0122	0.2441
1030	SLU 46	0.69	0.38	44.07	-9.6744	-0.0122	0.2379
1030	SLU 47	0.68	0.35	43.77	-9.6127	-0.0121	0.2324
1030	SLU 48	0.72	0.4	44.54	-9.772	-0.0123	0.2479
1030	SLU 49	0.7	0.38	44.56	-9.7757	-0.0123	0.2416
1030	SLU 50	0.72	0.38	44.22	-9.7078	-0.0122	0.2465
1030	SLU 51	0.7	0.37	44.24	-9.7115	-0.0122	0.2403
1030	SLU 52	0.71	0.41	47.63	-10.4293	-0.0126	0.246
1030	SLU 53	0.76	0.45	48.4	-10.5886	-0.0129	0.2615
1030	SLU 54	0.74	0.44	48.42	-10.5923	-0.0129	0.2553
1030	SLU 55	0.73	0.42	48.12	-10.5306	-0.0127	0.2498
1030	SLU 56	0.77	0.46	48.89	-10.6899	-0.013	0.2653
1030	SLU 57	0.75	0.44	48.92	-10.6936	-0.013	0.259
1030	SLU 58	0.77	0.45	48.57	-10.6256	-0.0129	0.2639
1030	SLU 59	0.75	0.43	48.6	-10.6294	-0.0128	0.2577
1030	SLU 60	0.77	0.46	49.45	-10.8165	-0.013	0.2639
1030	SLU 61	0.75	0.45	49.48	-10.8202	-0.0129	0.2576
1030	SLU 62	0.78	0.47	49.94	-10.9177	-0.0131	0.2676
1030	SLU 63	0.76	0.45	49.97	-10.9215	-0.013	0.2614
1030	SLU 64	0.74	0.47	47.66	-10.4351	-0.0126	0.2557
1030	SLU 65	0.71	0.44	47.71	-10.4413	-0.0125	0.2453
1030	SLU 66	0.76	0.48	48.47	-10.6006	-0.0128	0.2608
1030	SLU 67	0.74	0.47	48.5	-10.6043	-0.0127	0.2545
1030	SLU 68	0.72	0.45	48.2	-10.5426	-0.0126	0.249
1030	SLU 69	0.77	0.49	48.97	-10.7019	-0.0129	0.2645
1030	SLU 70	0.75	0.47	48.99	-10.7056	-0.0128	0.2583
1030	SLU 71	0.76	0.48	48.65	-10.6377	-0.0128	0.2632
1030	SLU 72	0.75	0.46	48.67	-10.6414	-0.0127	0.257
1030	SLU 73	0.76	0.51	52.06	-11.3592	-0.0131	0.2627
1030	SLU 74	0.81	0.55	52.83	-11.5185	-0.0134	0.2782
1030	SLU 75	0.79	0.53	52.85	-11.5222	-0.0134	0.2719
1030	SLU 76	0.77	0.51	52.55	-11.4605	-0.0132	0.2664
1030	SLU 77	0.82	0.55	53.32	-11.6198	-0.0135	0.282
1030	SLU 78	0.8	0.54	53.35	-11.6235	-0.0135	0.2757
1030	SLU 79	0.82	0.54	53	-11.5555	-0.0134	0.2806
1030	SLU 80	0.8	0.52	53.03	-11.5593	-0.0134	0.2744
1030	SLU 81	0.81	0.56	53.88	-11.7463	-0.0135	0.2806
1030	SLU 82	0.8	0.54	53.91	-11.7501	-0.0134	0.2743
1030	SLU 83	0.83	0.56	54.37	-11.8476	-0.0136	0.2843
1030	SLU 84	0.81	0.55	54.4	-11.8514	-0.0135	0.2781
1030	SLE RA 1	0.56	0.34	35.69	-7.8226	-0.0096	0.193
1030	SLE RA 2	0.54	0.32	35.72	-7.8268	-0.0095	0.1861



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1030	SLE RA 3	0.57	0.35	36.23	-7.933	-0.0097	0.1964
1030	SLE RA 4	0.56	0.34	36.25	-7.9354	-0.0097	0.1922
1030	SLE RA 5	0.55	0.33	36.05	-7.8943	-0.0096	0.1886
1030	SLE RA 6	0.58	0.35	36.56	-8.0005	-0.0098	0.1989
1030	SLE RA 7	0.57	0.34	36.58	-8.003	-0.0097	0.1948
1030	SLE RA 8	0.58	0.35	36.35	-7.9577	-0.0097	0.198
1030	SLE RA 9	0.56	0.34	36.36	-7.9601	-0.0097	0.1939
1030	SLE RA 10	0.57	0.36	38.62	-8.4387	-0.0099	0.1977
1030	SLE RA 11	0.6	0.39	39.13	-8.5449	-0.0101	0.208
1030	SLE RA 12	0.59	0.38	39.15	-8.5474	-0.0101	0.2039
1030	SLE RA 13	0.58	0.37	38.95	-8.5062	-0.01	0.2002
1030	SLE RA 14	0.61	0.39	39.46	-8.6124	-0.0102	0.2105
1030	SLE RA 15	0.6	0.38	39.48	-8.6149	-0.0102	0.2064
1030	SLE RA 16	0.61	0.39	39.25	-8.5696	-0.0101	0.2096
1030	SLE RA 17	0.6	0.38	39.27	-8.5721	-0.0101	0.2055
1030	SLE RA 18	0.61	0.4	39.84	-8.6968	-0.0102	0.2096
1030	SLE RA 19	0.6	0.39	39.85	-8.6993	-0.0101	0.2054
1030	SLE RA 20	0.62	0.4	40.16	-8.7643	-0.0102	0.2121
1030	SLE RA 21	0.6	0.39	40.18	-8.7668	-0.0102	0.2079
1030	SLE FR 1	0.56	0.34	35.69	-7.8226	-0.0096	0.193
1030	SLE FR 2	0.56	0.34	35.7	-7.8234	-0.0095	0.1916
1030	SLE FR 3	0.56	0.34	35.82	-7.8496	-0.0096	0.194
1030	SLE FR 4	0.57	0.35	36.94	-8.0857	-0.0097	0.1966
1030	SLE FR 5	0.58	0.36	37.06	-8.1119	-0.0098	0.199
1030	SLE FR 6	0.58	0.37	37.76	-8.2597	-0.0099	0.2013
1030	SLE QP 1	0.56	0.34	35.69	-7.8226	-0.0096	0.193
1030	SLE QP 2	0.58	0.36	36.93	-8.0849	-0.0097	0.198
1030	SLD 1	4.38	0.59	32.92	-7.5255	0.003	1.5298
1030	SLD 2	3.99	0.78	32.8	-7.482	0.0036	1.3963
1030	SLD 3	4.59	-0.39	33.74	-7.666	0.0022	1.6056
1030	SLD 4	4.21	-0.2	33.62	-7.6225	0.0028	1.4721
1030	SLD 5	1.46	1.88	34.51	-7.7117	-0.0048	0.5064
1030	SLD 6	1.2	2	34.43	-7.6831	-0.0045	0.4187
1030	SLD 7	2.18	-1.39	37.24	-8.1801	-0.0075	0.759
1030	SLD 8	1.93	-1.27	37.16	-8.1515	-0.0071	0.6713
1030	SLD 9	-0.77	1.98	36.71	-8.0182	-0.0124	-0.2753
1030	SLD 10	-1.03	2.1	36.63	-7.9896	-0.012	-0.363
1030	SLD 11	-0.05	-1.29	39.44	-8.4866	-0.015	-0.0228
1030	SLD 12	-0.31	-1.17	39.36	-8.458	-0.0146	-0.1105
1030	SLD 13	-3.06	0.92	40.25	-8.5472	-0.0222	-1.0761
1030	SLD 14	-3.44	1.11	40.13	-8.5037	-0.0216	-1.2096
1030	SLD 15	-2.84	-0.06	41.07	-8.6878	-0.023	-1.0004
1030	SLD 16	-3.23	0.12	40.95	-8.6442	-0.0224	-1.1338
1030	SLV 1	9.47	0.87	27.55	-6.7797	0.02	3.314
1030	SLV 2	8.58	1.3	27.27	-6.6784	0.0214	3.0031
1030	SLV 3	9.97	-1.35	29.42	-7.0989	0.0182	3.4907
1030	SLV 4	9.08	-0.92	29.13	-6.9976	0.0195	3.1798
1030	SLV 5	2.63	3.8	31.34	-7.2267	0.0017	0.9185
1030	SLV 6	2.06	4.08	31.16	-7.1613	0.0026	0.7178
1030	SLV 7	4.31	-3.6	37.55	-8.2907	-0.0044	1.5075
1030	SLV 8	3.74	-3.32	37.37	-8.2253	-0.0035	1.3068
1030	SLV 9	-2.59	4.03	36.5	-7.9445	-0.016	-0.9108
1030	SLV 10	-3.16	4.31	36.31	-7.879	-0.0151	-1.1116
1030	SLV 11	-0.91	-3.37	42.71	-9.0085	-0.0221	-0.3218
1030	SLV 12	-1.48	-3.09	42.52	-8.943	-0.0212	-0.5226
1030	SLV 13	-7.93	1.64	44.73	-9.1721	-0.039	-2.7838
1030	SLV 14	-8.82	2.07	44.45	-9.0708	-0.0376	-3.0947
1030	SLV 15	-7.43	-0.59	46.6	-9.4913	-0.0408	-2.6071
1030	SLV 16	-8.32	-0.15	46.31	-9.39	-0.0394	-2.918
1030	CRTFP Ux+	0	0	0	0	0	0
1030	CRTFP Ux-	0	0	0	0	0	0
1030	CRTFP Uy+	0	0	0	0	0	0
1030	CRTFP Uy-	0	0	0	0	0	0
1031	SLU 1	0.58	0.22	35.06	-7.878	-0.0313	0.199
1031	SLU 2	0.55	0.2	35.1	-7.8831	-0.0311	0.1884
1031	SLU 3	0.59	0.24	35.89	-8.0514	-0.032	0.2043
1031	SLU 4	0.57	0.22	35.91	-8.0545	-0.032	0.198
1031	SLU 5	0.56	0.2	35.6	-7.989	-0.0316	0.1923
1031	SLU 6	0.6	0.24	36.39	-8.1573	-0.0325	0.2082
1031	SLU 7	0.58	0.22	36.41	-8.1604	-0.0324	0.2019
1031	SLU 8	0.6	0.23	36.06	-8.0897	-0.0322	0.2068
1031	SLU 9	0.58	0.21	36.08	-8.0928	-0.0321	0.2005
1031	SLU 10	0.6	0.25	39.52	-8.8371	-0.0349	0.2068
1031	SLU 11	0.64	0.29	40.31	-9.0054	-0.0358	0.2227
1031	SLU 12	0.63	0.28	40.33	-9.0085	-0.0357	0.2163
1031	SLU 13	0.61	0.26	40.02	-8.943	-0.0353	0.2107
1031	SLU 14	0.66	0.3	40.81	-9.1113	-0.0362	0.2266
1031	SLU 15	0.64	0.28	40.83	-9.1144	-0.0361	0.2202
1031	SLU 16	0.65	0.29	40.48	-9.0437	-0.0359	0.2251
1031	SLU 17	0.63	0.27	40.51	-9.0468	-0.0358	0.2188
1031	SLU 18	0.65	0.31	41.38	-9.2408	-0.0366	0.2252
1031	SLU 19	0.63	0.29	41.4	-9.2439	-0.0365	0.2188
1031	SLU 20	0.66	0.31	41.88	-9.3467	-0.0371	0.2291
1031	SLU 21	0.64	0.29	41.9	-9.3498	-0.037	0.2228
1031	SLU 22	0.63	0.31	39.55	-8.8426	-0.0349	0.2166
1031	SLU 23	0.6	0.28	39.59	-8.8478	-0.0348	0.2061
1031	SLU 24	0.64	0.32	40.38	-9.0161	-0.0357	0.222
1031	SLU 25	0.62	0.31	40.4	-9.0192	-0.0356	0.2157
1031	SLU 26	0.61	0.28	40.09	-8.9537	-0.0352	0.21
1031	SLU 27	0.65	0.32	40.88	-9.122	-0.0361	0.2259



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1031	SLU 28	0.64	0.31	40.91	-9.1251	-0.036	0.2196
1031	SLU 29	0.65	0.31	40.56	-9.0544	-0.0358	0.2245
1031	SLU 30	0.63	0.3	40.58	-9.0575	-0.0357	0.2181
1031	SLU 31	0.65	0.34	44.02	-9.8018	-0.0385	0.2244
1031	SLU 32	0.7	0.38	44.8	-9.97	-0.0394	0.2403
1031	SLU 33	0.68	0.36	44.83	-9.9731	-0.0393	0.234
1031	SLU 34	0.66	0.34	44.52	-9.9077	-0.0389	0.2284
1031	SLU 35	0.71	0.38	45.3	-10.0759	-0.0399	0.2442
1031	SLU 36	0.69	0.36	45.33	-10.079	-0.0398	0.2379
1031	SLU 37	0.7	0.37	44.98	-10.0084	-0.0395	0.2428
1031	SLU 38	0.68	0.35	45	-10.0115	-0.0394	0.2365
1031	SLU 39	0.7	0.39	45.87	-10.2054	-0.0402	0.2428
1031	SLU 40	0.68	0.37	45.89	-10.2085	-0.0402	0.2365
1031	SLU 41	0.71	0.39	46.37	-10.3113	-0.0407	0.2468
1031	SLU 42	0.7	0.38	46.4	-10.3144	-0.0406	0.2404
1031	SLU 43	0.73	0.26	44.03	-9.9106	-0.0394	0.2526
1031	SLU 44	0.7	0.24	44.07	-9.9158	-0.0393	0.242
1031	SLU 45	0.75	0.27	44.86	-10.084	-0.0402	0.2579
1031	SLU 46	0.73	0.26	44.88	-10.0871	-0.0401	0.2516
1031	SLU 47	0.71	0.24	44.57	-10.0217	-0.0397	0.246
1031	SLU 48	0.76	0.28	45.36	-10.1899	-0.0406	0.2619
1031	SLU 49	0.74	0.26	45.39	-10.193	-0.0405	0.2555
1031	SLU 50	0.75	0.27	45.03	-10.1224	-0.0403	0.2604
1031	SLU 51	0.74	0.25	45.06	-10.1255	-0.0402	0.2541
1031	SLU 52	0.75	0.29	48.49	-10.8697	-0.043	0.2604
1031	SLU 53	0.8	0.33	49.28	-11.038	-0.0439	0.2763
1031	SLU 54	0.78	0.32	49.31	-11.0411	-0.0438	0.27
1031	SLU 55	0.76	0.3	49	-10.9756	-0.0434	0.2643
1031	SLU 56	0.81	0.33	49.78	-11.1439	-0.0444	0.2802
1031	SLU 57	0.79	0.32	49.81	-11.147	-0.0443	0.2739
1031	SLU 58	0.81	0.32	49.46	-11.0763	-0.044	0.2788
1031	SLU 59	0.79	0.31	49.48	-11.0794	-0.0439	0.2724
1031	SLU 60	0.81	0.34	50.35	-11.2734	-0.0447	0.2788
1031	SLU 61	0.79	0.33	50.37	-11.2765	-0.0447	0.2725
1031	SLU 62	0.82	0.35	50.85	-11.3793	-0.0452	0.2827
1031	SLU 63	0.8	0.33	50.88	-11.3824	-0.0451	0.2764
1031	SLU 64	0.78	0.35	48.53	-10.8753	-0.043	0.2703
1031	SLU 65	0.75	0.32	48.57	-10.8805	-0.0429	0.2597
1031	SLU 66	0.8	0.36	49.36	-11.0487	-0.0438	0.2756
1031	SLU 67	0.78	0.34	49.38	-11.0518	-0.0437	0.2693
1031	SLU 68	0.76	0.32	49.07	-10.9864	-0.0433	0.2636
1031	SLU 69	0.81	0.36	49.86	-11.1546	-0.0443	0.2795
1031	SLU 70	0.79	0.35	49.88	-11.1577	-0.0442	0.2732
1031	SLU 71	0.8	0.35	49.53	-11.0871	-0.0439	0.2781
1031	SLU 72	0.79	0.34	49.55	-11.0902	-0.0438	0.2718
1031	SLU 73	0.8	0.38	52.99	-11.8344	-0.0466	0.2781
1031	SLU 74	0.85	0.42	53.78	-12.0027	-0.0475	0.294
1031	SLU 75	0.83	0.4	53.8	-12.0058	-0.0475	0.2876
1031	SLU 76	0.82	0.38	53.49	-11.9403	-0.0471	0.282
1031	SLU 77	0.86	0.42	54.28	-12.1086	-0.048	0.2979
1031	SLU 78	0.84	0.4	54.3	-12.1117	-0.0479	0.2916
1031	SLU 79	0.86	0.41	53.95	-12.041	-0.0477	0.2964
1031	SLU 80	0.84	0.39	53.98	-12.0441	-0.0476	0.2901
1031	SLU 81	0.86	0.43	54.85	-12.2381	-0.0484	0.2965
1031	SLU 82	0.84	0.41	54.87	-12.2412	-0.0483	0.2901
1031	SLU 83	0.87	0.43	55.35	-12.344	-0.0488	0.3004
1031	SLU 84	0.85	0.41	55.37	-12.3471	-0.0487	0.2941
1031	SLE RA 1	0.59	0.25	36.34	-8.1536	-0.0323	0.204
1031	SLE RA 2	0.57	0.23	36.37	-8.157	-0.0322	0.197
1031	SLE RA 3	0.6	0.26	36.89	-8.2692	-0.0328	0.2076
1031	SLE RA 4	0.59	0.25	36.91	-8.2713	-0.0328	0.2034
1031	SLE RA 5	0.58	0.23	36.7	-8.2276	-0.0325	0.1996
1031	SLE RA 6	0.61	0.26	37.23	-8.3398	-0.0331	0.2102
1031	SLE RA 7	0.6	0.25	37.24	-8.3419	-0.0331	0.206
1031	SLE RA 8	0.61	0.25	37.01	-8.2948	-0.0329	0.2092
1031	SLE RA 9	0.59	0.24	37.03	-8.2968	-0.0328	0.205
1031	SLE RA 10	0.61	0.27	39.32	-8.793	-0.0347	0.2092
1031	SLE RA 11	0.64	0.29	39.84	-8.9052	-0.0353	0.2198
1031	SLE RA 12	0.62	0.28	39.86	-8.9073	-0.0353	0.2156
1031	SLE RA 13	0.61	0.27	39.65	-8.8636	-0.035	0.2118
1031	SLE RA 14	0.64	0.3	40.18	-8.9758	-0.0356	0.2224
1031	SLE RA 15	0.63	0.29	40.19	-8.9778	-0.0356	0.2182
1031	SLE RA 16	0.64	0.29	39.96	-8.9307	-0.0354	0.2215
1031	SLE RA 17	0.63	0.28	39.97	-8.9328	-0.0353	0.2172
1031	SLE RA 18	0.64	0.3	40.55	-9.0621	-0.0359	0.2215
1031	SLE RA 19	0.63	0.29	40.57	-9.0642	-0.0358	0.2173
1031	SLE RA 20	0.65	0.3	40.89	-9.1327	-0.0362	0.2241
1031	SLE RA 21	0.64	0.29	40.9	-9.1348	-0.0361	0.2199
1031	SLE FR 1	0.59	0.25	36.34	-8.1536	-0.0323	0.204
1031	SLE FR 2	0.59	0.24	36.35	-8.1543	-0.0323	0.2026
1031	SLE FR 3	0.59	0.25	36.48	-8.1818	-0.0324	0.2051
1031	SLE FR 4	0.6	0.26	37.61	-8.4268	-0.0334	0.2078
1031	SLE FR 5	0.61	0.26	37.74	-8.4544	-0.0335	0.2103
1031	SLE FR 6	0.62	0.27	38.45	-8.6079	-0.0341	0.2127
1031	SLE QP 1	0.59	0.25	36.34	-8.1536	-0.0323	0.204
1031	SLE QP 2	0.61	0.26	37.61	-8.4261	-0.0334	0.2093
1031	SLD 1	4.4	0.82	33.17	-7.7753	-0.0189	1.5401
1031	SLD 2	4.02	1.02	33.02	-7.7169	-0.018	1.4063
1031	SLD 3	4.62	-0.16	34.02	-7.9333	-0.0203	1.6157
1031	SLD 4	4.24	0.04	33.87	-7.8749	-0.0194	1.482



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1031	SLD 5	1.49	1.88	35.02	-8.0017	-0.0271	0.5177
1031	SLD 6	1.23	2.01	34.92	-7.9632	-0.0265	0.4298
1031	SLD 7	2.21	-1.38	37.84	-8.5284	-0.0317	0.7698
1031	SLD 8	1.95	-1.25	37.74	-8.49	-0.0311	0.6819
1031	SLD 9	-0.74	1.78	37.47	-8.3623	-0.0356	-0.2634
1031	SLD 10	-0.99	1.91	37.37	-8.3239	-0.0351	-0.3513
1031	SLD 11	-0.02	-1.48	40.29	-8.8891	-0.0402	-0.0113
1031	SLD 12	-0.28	-1.35	40.2	-8.8506	-0.0396	-0.0992
1031	SLD 13	-3.03	0.49	41.34	-8.9774	-0.0474	-1.0635
1031	SLD 14	-3.41	0.69	41.2	-8.919	-0.0465	-1.1972
1031	SLD 15	-2.81	-0.49	42.19	-9.1354	-0.0487	-0.9878
1031	SLD 16	-3.19	-0.29	42.04	-9.077	-0.0479	-1.1216
1031	SLV 1	9.49	1.52	27.24	-6.9075	0.0005	3.3229
1031	SLV 2	8.6	1.98	26.91	-6.7714	0.0025	3.0114
1031	SLV 3	10	-0.69	29.17	-7.2662	-0.0026	3.4993
1031	SLV 4	9.1	-0.23	28.83	-7.1301	-0.0006	3.1878
1031	SLV 5	2.66	3.92	31.64	-7.4501	-0.0188	0.9297
1031	SLV 6	2.09	4.22	31.42	-7.3622	-0.0175	0.7285
1031	SLV 7	4.34	-3.46	38.05	-8.6457	-0.0293	1.5176
1031	SLV 8	3.76	-3.16	37.83	-8.5578	-0.0279	1.3164
1031	SLV 9	-2.55	3.69	37.38	-8.2945	-0.0388	-0.8979
1031	SLV 10	-3.13	3.99	37.16	-8.2066	-0.0375	-1.0991
1031	SLV 11	-0.87	-3.69	43.79	-9.4901	-0.0492	-0.31
1031	SLV 12	-1.45	-3.39	43.57	-9.4022	-0.0479	-0.5112
1031	SLV 13	-7.89	0.76	46.38	-9.7222	-0.0661	-2.7693
1031	SLV 14	-8.78	1.22	46.05	-9.5861	-0.0641	-3.0808
1031	SLV 15	-7.39	-1.46	48.31	-10.0809	-0.0693	-2.5929
1031	SLV 16	-8.28	-1	47.97	-9.9448	-0.0673	-2.9044
1031	CRTFP Ux+	0	0	0	0	0	0
1031	CRTFP Ux-	0	0	0	0	0	0
1031	CRTFP Uy+	0	0	0	0	0	0
1031	CRTFP Uy-	0	0	0	0	0	0
1032	SLU 1	0.6	0.16	36.38	-8.7202	-0.053	0.2093
1032	SLU 2	0.57	0.13	36.41	-8.7237	-0.0528	0.1987
1032	SLU 3	0.62	0.17	37.24	-8.915	-0.0543	0.2149
1032	SLU 4	0.6	0.15	37.26	-8.9171	-0.0542	0.2085
1032	SLU 5	0.58	0.13	36.93	-8.8423	-0.0535	0.2028
1032	SLU 6	0.63	0.17	37.76	-9.0336	-0.0551	0.219
1032	SLU 7	0.61	0.15	37.78	-9.0357	-0.055	0.2126
1032	SLU 8	0.63	0.16	37.42	-8.9574	-0.0545	0.2175
1032	SLU 9	0.61	0.14	37.44	-8.9595	-0.0544	0.2111
1032	SLU 10	0.63	0.19	41	-9.7863	-0.0596	0.2179
1032	SLU 11	0.67	0.22	41.83	-9.9776	-0.0611	0.2341
1032	SLU 12	0.66	0.21	41.85	-9.9797	-0.061	0.2278
1032	SLU 13	0.64	0.19	41.52	-9.905	-0.0604	0.222
1032	SLU 14	0.69	0.22	42.35	-10.0962	-0.0619	0.2382
1032	SLU 15	0.67	0.21	42.37	-10.0983	-0.0618	0.2318
1032	SLU 16	0.68	0.21	42.01	-10.0201	-0.0613	0.2367
1032	SLU 17	0.66	0.2	42.03	-10.0222	-0.0612	0.2303
1032	SLU 18	0.68	0.23	42.93	-10.2383	-0.0627	0.2368
1032	SLU 19	0.66	0.22	42.95	-10.2404	-0.0626	0.2304
1032	SLU 20	0.69	0.24	43.45	-10.3569	-0.0635	0.2408
1032	SLU 21	0.68	0.22	43.47	-10.359	-0.0633	0.2345
1032	SLU 22	0.66	0.23	41.04	-9.7928	-0.0597	0.228
1032	SLU 23	0.63	0.21	41.07	-9.7963	-0.0595	0.2173
1032	SLU 24	0.67	0.24	41.9	-9.9876	-0.061	0.2336
1032	SLU 25	0.65	0.23	41.92	-9.9897	-0.0609	0.2272
1032	SLU 26	0.64	0.21	41.59	-9.9149	-0.0603	0.2214
1032	SLU 27	0.68	0.25	42.42	-10.1062	-0.0618	0.2376
1032	SLU 28	0.67	0.23	42.44	-10.1083	-0.0617	0.2312
1032	SLU 29	0.68	0.24	42.08	-10.03	-0.0612	0.2361
1032	SLU 30	0.66	0.22	42.1	-10.0321	-0.0611	0.2297
1032	SLU 31	0.68	0.26	45.66	-10.8589	-0.0663	0.2365
1032	SLU 32	0.73	0.3	46.48	-11.0502	-0.0678	0.2528
1032	SLU 33	0.71	0.28	46.5	-11.0523	-0.0677	0.2464
1032	SLU 34	0.69	0.26	46.18	-10.9776	-0.0671	0.2406
1032	SLU 35	0.74	0.3	47	-11.1688	-0.0686	0.2568
1032	SLU 36	0.72	0.29	47.02	-11.1709	-0.0685	0.2505
1032	SLU 37	0.74	0.29	46.66	-11.0927	-0.0681	0.2553
1032	SLU 38	0.72	0.28	46.68	-11.0948	-0.0679	0.2489
1032	SLU 39	0.74	0.31	47.59	-11.3109	-0.0694	0.2554
1032	SLU 40	0.72	0.3	47.61	-11.313	-0.0693	0.249
1032	SLU 41	0.75	0.31	48.11	-11.4295	-0.0702	0.2595
1032	SLU 42	0.73	0.3	48.13	-11.4316	-0.0701	0.2531
1032	SLU 43	0.77	0.18	45.69	-10.9685	-0.0665	0.2657
1032	SLU 44	0.73	0.15	45.73	-10.972	-0.0663	0.2551
1032	SLU 45	0.78	0.19	46.55	-11.1633	-0.0679	0.2713
1032	SLU 46	0.76	0.17	46.57	-11.1654	-0.0678	0.2649
1032	SLU 47	0.75	0.15	46.25	-11.0906	-0.0671	0.2592
1032	SLU 48	0.79	0.19	47.07	-11.2819	-0.0687	0.2754
1032	SLU 49	0.78	0.17	47.09	-11.284	-0.0685	0.269
1032	SLU 50	0.79	0.18	46.73	-11.2057	-0.0681	0.2739
1032	SLU 51	0.77	0.16	46.75	-11.2078	-0.068	0.2675
1032	SLU 52	0.79	0.21	50.32	-12.0346	-0.0731	0.2743
1032	SLU 53	0.84	0.24	51.14	-12.2259	-0.0747	0.2906
1032	SLU 54	0.82	0.23	51.16	-12.228	-0.0746	0.2842
1032	SLU 55	0.8	0.21	50.84	-12.1533	-0.0739	0.2784
1032	SLU 56	0.85	0.24	51.66	-12.3446	-0.0755	0.2946
1032	SLU 57	0.83	0.23	51.68	-12.3466	-0.0753	0.2882
1032	SLU 58	0.84	0.23	51.32	-12.2684	-0.0749	0.2931



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1032	SLU 59	0.83	0.22	51.34	-12.2705	-0.0748	0.2867
1032	SLU 60	0.84	0.25	52.25	-12.4866	-0.0763	0.2932
1032	SLU 61	0.83	0.24	52.27	-12.4887	-0.0761	0.2868
1032	SLU 62	0.86	0.26	52.77	-12.6052	-0.0771	0.2973
1032	SLU 63	0.84	0.24	52.79	-12.6073	-0.0769	0.2909
1032	SLU 64	0.82	0.25	50.35	-12.0411	-0.0733	0.2844
1032	SLU 65	0.79	0.23	50.39	-12.0446	-0.0731	0.2737
1032	SLU 66	0.84	0.26	51.21	-12.2359	-0.0746	0.29
1032	SLU 67	0.82	0.25	51.23	-12.238	-0.0745	0.2836
1032	SLU 68	0.8	0.23	50.91	-12.1632	-0.0738	0.2778
1032	SLU 69	0.85	0.27	51.73	-12.3545	-0.0754	0.294
1032	SLU 70	0.83	0.25	51.75	-12.3566	-0.0753	0.2877
1032	SLU 71	0.84	0.26	51.39	-12.2783	-0.0748	0.2925
1032	SLU 72	0.82	0.24	51.41	-12.2804	-0.0747	0.2861
1032	SLU 73	0.84	0.28	54.97	-13.1072	-0.0799	0.2929
1032	SLU 74	0.89	0.32	55.8	-13.2985	-0.0814	0.3092
1032	SLU 75	0.87	0.3	55.82	-13.3006	-0.0813	0.3028
1032	SLU 76	0.86	0.28	55.49	-13.2259	-0.0807	0.297
1032	SLU 77	0.9	0.32	56.32	-13.4172	-0.0822	0.3133
1032	SLU 78	0.88	0.31	56.34	-13.4192	-0.0821	0.3069
1032	SLU 79	0.9	0.31	55.98	-13.341	-0.0816	0.3117
1032	SLU 80	0.88	0.3	56	-13.3431	-0.0815	0.3053
1032	SLU 81	0.9	0.33	56.91	-13.5592	-0.083	0.3118
1032	SLU 82	0.88	0.32	56.93	-13.5613	-0.0829	0.3054
1032	SLU 83	0.91	0.33	57.43	-13.6778	-0.0838	0.3159
1032	SLU 84	0.89	0.32	57.45	-13.6799	-0.0836	0.3095
1032	SLE RA 1	0.62	0.18	37.71	-9.0266	-0.0549	0.2146
1032	SLE RA 2	0.6	0.16	37.73	-9.029	-0.0547	0.2076
1032	SLE RA 3	0.63	0.19	38.28	-9.1565	-0.0558	0.2184
1032	SLE RA 4	0.62	0.18	38.3	-9.1579	-0.0557	0.2141
1032	SLE RA 5	0.61	0.16	38.08	-9.1081	-0.0553	0.2103
1032	SLE RA 6	0.64	0.19	38.63	-9.2356	-0.0563	0.2211
1032	SLE RA 7	0.62	0.18	38.64	-9.237	-0.0562	0.2168
1032	SLE RA 8	0.63	0.18	38.4	-9.1848	-0.0559	0.2201
1032	SLE RA 9	0.62	0.17	38.42	-9.1862	-0.0558	0.2158
1032	SLE RA 10	0.63	0.2	40.79	-9.7374	-0.0593	0.2204
1032	SLE RA 11	0.67	0.22	41.34	-9.8649	-0.0603	0.2312
1032	SLE RA 12	0.65	0.21	41.35	-9.8663	-0.0602	0.2269
1032	SLE RA 13	0.64	0.2	41.14	-9.8165	-0.0598	0.2231
1032	SLE RA 14	0.67	0.22	41.69	-9.944	-0.0608	0.2339
1032	SLE RA 15	0.66	0.21	41.7	-9.9454	-0.0607	0.2297
1032	SLE RA 16	0.67	0.22	41.46	-9.8932	-0.0605	0.2329
1032	SLE RA 17	0.66	0.21	41.47	-9.8946	-0.0604	0.2286
1032	SLE RA 18	0.67	0.23	42.08	-10.0387	-0.0614	0.2329
1032	SLE RA 19	0.66	0.22	42.09	-10.0401	-0.0613	0.2287
1032	SLE RA 20	0.68	0.23	42.42	-10.1178	-0.0619	0.2357
1032	SLE RA 21	0.67	0.22	42.44	-10.1192	-0.0618	0.2314
1032	SLE FR 1	0.62	0.18	37.71	-9.0266	-0.0549	0.2146
1032	SLE FR 2	0.61	0.18	37.71	-9.0271	-0.0548	0.2132
1032	SLE FR 3	0.62	0.18	37.85	-9.0583	-0.0551	0.2157
1032	SLE FR 4	0.63	0.19	39.02	-9.3307	-0.0568	0.2187
1032	SLE FR 5	0.64	0.19	39.16	-9.3619	-0.057	0.2212
1032	SLE FR 6	0.64	0.2	39.89	-9.5327	-0.0581	0.2238
1032	SLE QP 1	0.62	0.18	37.71	-9.0266	-0.0549	0.2146
1032	SLE QP 2	0.63	0.19	39.02	-9.3303	-0.0568	0.2201
1032	SLD 1	4.43	0.76	34.1	-8.546	-0.0406	1.5492
1032	SLD 2	4.04	0.97	33.93	-8.4668	-0.0394	1.4152
1032	SLD 3	4.64	-0.22	35	-8.7374	-0.0427	1.6247
1032	SLD 4	4.26	-0.01	34.83	-8.6582	-0.0415	1.4907
1032	SLD 5	1.51	1.81	36.21	-8.8188	-0.0489	0.5283
1032	SLD 6	1.26	1.95	36.1	-8.7668	-0.0482	0.4403
1032	SLD 7	2.23	-1.45	39.21	-9.4569	-0.056	0.7799
1032	SLD 8	1.98	-1.32	39.09	-9.4048	-0.0552	0.6918
1032	SLD 9	-0.71	1.7	38.95	-9.2557	-0.0584	-0.2515
1032	SLD 10	-0.96	1.84	38.83	-9.2037	-0.0576	-0.3396
1032	SLD 11	0.01	-1.56	41.94	-9.8938	-0.0655	0
1032	SLD 12	-0.25	-1.42	41.82	-9.8417	-0.0647	-0.0881
1032	SLD 13	-2.99	0.4	43.21	-10.0023	-0.0721	-1.0504
1032	SLD 14	-3.38	0.61	43.04	-9.9232	-0.071	-1.1844
1032	SLD 15	-2.78	-0.58	44.11	-10.1938	-0.0742	-0.9749
1032	SLD 16	-3.16	-0.37	43.93	-10.1146	-0.0731	-1.1089
1032	SLV 1	9.51	1.48	27.54	-7.5004	-0.0188	3.3297
1032	SLV 2	8.62	1.97	27.13	-7.316	-0.0161	3.0176
1032	SLV 3	10.01	-0.74	29.58	-7.9344	-0.0236	3.5056
1032	SLV 4	9.12	-0.25	29.17	-7.7501	-0.0209	3.1936
1032	SLV 5	2.69	3.86	32.55	-8.1549	-0.0386	0.9401
1032	SLV 6	2.11	4.18	32.29	-8.0358	-0.0368	0.7385
1032	SLV 7	4.36	-3.54	39.35	-9.6017	-0.0546	1.5266
1032	SLV 8	3.79	-3.22	39.08	-9.4826	-0.0529	1.3251
1032	SLV 9	-2.52	3.61	38.95	-9.1779	-0.0608	-0.8848
1032	SLV 10	-3.1	3.93	38.69	-9.0589	-0.059	-1.0863
1032	SLV 11	-0.84	-3.79	45.75	-10.6247	-0.0768	-0.2983
1032	SLV 12	-1.42	-3.47	45.48	-10.5056	-0.0751	-0.4998
1032	SLV 13	-7.85	0.64	48.87	-10.9105	-0.0927	-2.7533
1032	SLV 14	-8.74	1.13	48.46	-10.7261	-0.09	-3.0654
1032	SLV 15	-7.35	-1.58	50.91	-11.3445	-0.0975	-2.5773
1032	SLV 16	-8.24	-1.09	50.5	-11.1601	-0.0948	-2.8894
1032	CRTFP Ux+	0	0	0	0	0	0
1032	CRTFP Ux-	0	0	0	0	0	0
1032	CRTFP Uy+	0	0	0	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
Ind.	N.br.						
1032	CRTPP Uy-	0	0	0	0	0	0
1033	SLU 1	0.63	0.12	38.34	-10.0749	-0.0722	0.2194
1033	SLU 2	0.6	0.09	38.37	-10.0761	-0.0719	0.2087
1033	SLU 3	0.65	0.13	39.25	-10.3042	-0.074	0.2252
1033	SLU 4	0.63	0.11	39.27	-10.3049	-0.0738	0.2188
1033	SLU 5	0.61	0.09	38.92	-10.2154	-0.073	0.2129
1033	SLU 6	0.66	0.13	39.8	-10.4435	-0.0751	0.2294
1033	SLU 7	0.64	0.11	39.82	-10.4442	-0.0749	0.223
1033	SLU 8	0.65	0.12	39.44	-10.3535	-0.0743	0.2278
1033	SLU 9	0.63	0.1	39.46	-10.3542	-0.0742	0.2214
1033	SLU 10	0.66	0.15	43.21	-11.3188	-0.0814	0.2287
1033	SLU 11	0.7	0.18	44.1	-11.5469	-0.0835	0.2453
1033	SLU 12	0.68	0.17	44.11	-11.5476	-0.0834	0.2388
1033	SLU 13	0.67	0.15	43.76	-11.4581	-0.0825	0.2329
1033	SLU 14	0.71	0.18	44.65	-11.6862	-0.0846	0.2495
1033	SLU 15	0.7	0.17	44.66	-11.6869	-0.0844	0.2431
1033	SLU 16	0.71	0.17	44.29	-11.5962	-0.0838	0.2478
1033	SLU 17	0.69	0.16	44.3	-11.5969	-0.0837	0.2414
1033	SLU 18	0.71	0.2	45.26	-11.8502	-0.0858	0.248
1033	SLU 19	0.69	0.18	45.28	-11.8509	-0.0856	0.2416
1033	SLU 20	0.72	0.2	45.81	-11.9895	-0.0868	0.2522
1033	SLU 21	0.7	0.18	45.83	-11.9902	-0.0867	0.2458
1033	SLU 22	0.68	0.19	43.25	-11.3273	-0.0816	0.2389
1033	SLU 23	0.65	0.17	43.28	-11.3285	-0.0813	0.2282
1033	SLU 24	0.7	0.2	44.16	-11.5566	-0.0834	0.2448
1033	SLU 25	0.68	0.19	44.18	-11.5573	-0.0833	0.2384
1033	SLU 26	0.67	0.17	43.83	-11.4678	-0.0824	0.2324
1033	SLU 27	0.71	0.2	44.71	-11.6959	-0.0845	0.249
1033	SLU 28	0.7	0.19	44.73	-11.6966	-0.0844	0.2426
1033	SLU 29	0.71	0.19	44.35	-11.6059	-0.0838	0.2474
1033	SLU 30	0.69	0.18	44.37	-11.6066	-0.0836	0.2409
1033	SLU 31	0.71	0.22	48.13	-12.5712	-0.0909	0.2483
1033	SLU 32	0.76	0.26	49.01	-12.7993	-0.0929	0.2648
1033	SLU 33	0.74	0.24	49.02	-12.8	-0.0928	0.2584
1033	SLU 34	0.72	0.22	48.67	-12.7105	-0.092	0.2525
1033	SLU 35	0.77	0.26	49.56	-12.9386	-0.094	0.269
1033	SLU 36	0.75	0.24	49.57	-12.9393	-0.0939	0.2626
1033	SLU 37	0.77	0.25	49.2	-12.8486	-0.0933	0.2674
1033	SLU 38	0.75	0.23	49.21	-12.8493	-0.0931	0.261
1033	SLU 39	0.77	0.27	50.17	-13.1026	-0.0952	0.2675
1033	SLU 40	0.75	0.26	50.19	-13.1033	-0.095	0.2611
1033	SLU 41	0.78	0.27	50.72	-13.2419	-0.0963	0.2718
1033	SLU 42	0.76	0.26	50.74	-13.2426	-0.0961	0.2653
1033	SLU 43	0.8	0.13	48.16	-12.6679	-0.0906	0.2785
1033	SLU 44	0.77	0.1	48.19	-12.6691	-0.0903	0.2678
1033	SLU 45	0.81	0.14	49.07	-12.8973	-0.0924	0.2843
1033	SLU 46	0.8	0.12	49.09	-12.898	-0.0922	0.2779
1033	SLU 47	0.78	0.1	48.74	-12.8084	-0.0914	0.272
1033	SLU 48	0.83	0.14	49.62	-13.0366	-0.0935	0.2885
1033	SLU 49	0.81	0.12	49.64	-13.0373	-0.0933	0.2821
1033	SLU 50	0.82	0.13	49.26	-12.9466	-0.0927	0.2869
1033	SLU 51	0.8	0.11	49.28	-12.9473	-0.0926	0.2805
1033	SLU 52	0.82	0.16	53.03	-13.9118	-0.0998	0.2878
1033	SLU 53	0.87	0.19	53.91	-14.14	-0.1019	0.3044
1033	SLU 54	0.85	0.18	53.93	-14.1407	-0.1018	0.298
1033	SLU 55	0.84	0.16	53.58	-14.0512	-0.1009	0.292
1033	SLU 56	0.88	0.19	54.46	-14.2793	-0.103	0.3086
1033	SLU 57	0.87	0.18	54.48	-14.28	-0.1028	0.3022
1033	SLU 58	0.88	0.18	54.1	-14.1893	-0.1023	0.307
1033	SLU 59	0.86	0.17	54.12	-14.19	-0.1021	0.3005
1033	SLU 60	0.88	0.21	55.08	-14.4432	-0.1042	0.3071
1033	SLU 61	0.86	0.19	55.1	-14.444	-0.104	0.3007
1033	SLU 62	0.89	0.21	55.63	-14.5826	-0.1053	0.3113
1033	SLU 63	0.87	0.19	55.65	-14.5833	-0.1051	0.3049
1033	SLU 64	0.85	0.2	53.07	-13.9204	-0.1	0.298
1033	SLU 65	0.82	0.18	53.1	-13.9215	-0.0998	0.2873
1033	SLU 66	0.87	0.21	53.98	-14.1497	-0.1018	0.3039
1033	SLU 67	0.85	0.2	54	-14.1504	-0.1017	0.2975
1033	SLU 68	0.84	0.18	53.65	-14.0609	-0.1008	0.2916
1033	SLU 69	0.88	0.21	54.53	-14.289	-0.1029	0.3081
1033	SLU 70	0.86	0.2	54.55	-14.2897	-0.1028	0.3017
1033	SLU 71	0.88	0.2	54.17	-14.199	-0.1022	0.3065
1033	SLU 72	0.86	0.19	54.19	-14.1997	-0.102	0.3001
1033	SLU 73	0.88	0.23	57.94	-15.1643	-0.1093	0.3074
1033	SLU 74	0.93	0.27	58.83	-15.3924	-0.1114	0.3239
1033	SLU 75	0.91	0.25	58.84	-15.3931	-0.1112	0.3175
1033	SLU 76	0.89	0.23	58.49	-15.3036	-0.1104	0.3116
1033	SLU 77	0.94	0.27	59.38	-15.5317	-0.1124	0.3281
1033	SLU 78	0.92	0.25	59.39	-15.5324	-0.1123	0.3217
1033	SLU 79	0.94	0.26	59.02	-15.4417	-0.1117	0.3265
1033	SLU 80	0.92	0.24	59.03	-15.4424	-0.1115	0.3201
1033	SLU 81	0.94	0.28	59.99	-15.6957	-0.1136	0.3266
1033	SLU 82	0.92	0.27	60.01	-15.6964	-0.1135	0.3202
1033	SLU 83	0.95	0.28	60.54	-15.835	-0.1147	0.3309
1033	SLU 84	0.93	0.27	60.56	-15.8357	-0.1145	0.3245
1033	SLE RA 1	0.64	0.14	39.75	-10.4327	-0.0749	0.225
1033	SLE RA 2	0.62	0.12	39.76	-10.4335	-0.0747	0.2178
1033	SLE RA 3	0.66	0.15	40.35	-10.5856	-0.0761	0.2289
1033	SLE RA 4	0.64	0.14	40.36	-10.5861	-0.076	0.2246
1033	SLE RA 5	0.63	0.12	40.13	-10.5264	-0.0754	0.2206



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1033	SLE RA 6	0.66	0.15	40.72	-10.6785	-0.0768	0.2317
1033	SLE RA 7	0.65	0.14	40.73	-10.6789	-0.0767	0.2274
1033	SLE RA 8	0.66	0.14	40.48	-10.6185	-0.0763	0.2306
1033	SLE RA 9	0.65	0.13	40.49	-10.6189	-0.0762	0.2263
1033	SLE RA 10	0.66	0.16	42.99	-11.262	-0.081	0.2312
1033	SLE RA 11	0.69	0.18	43.58	-11.4141	-0.0824	0.2422
1033	SLE RA 12	0.68	0.17	43.59	-11.4145	-0.0823	0.2379
1033	SLE RA 13	0.67	0.16	43.36	-11.3549	-0.0818	0.234
1033	SLE RA 14	0.7	0.18	43.95	-11.5069	-0.0831	0.245
1033	SLE RA 15	0.69	0.17	43.96	-11.5074	-0.083	0.2408
1033	SLE RA 16	0.7	0.18	43.71	-11.4469	-0.0826	0.2439
1033	SLE RA 17	0.69	0.17	43.72	-11.4474	-0.0825	0.2397
1033	SLE RA 18	0.7	0.19	44.36	-11.6162	-0.0839	0.244
1033	SLE RA 19	0.69	0.18	44.37	-11.6167	-0.0838	0.2398
1033	SLE RA 20	0.71	0.19	44.73	-11.7091	-0.0846	0.2468
1033	SLE RA 21	0.69	0.18	44.74	-11.7096	-0.0845	0.2426
1033	SLE FR 1	0.64	0.14	39.75	-10.4327	-0.0749	0.225
1033	SLE FR 2	0.64	0.14	39.75	-10.4329	-0.0748	0.2235
1033	SLE FR 3	0.65	0.14	39.89	-10.4699	-0.0751	0.2261
1033	SLE FR 4	0.66	0.15	41.13	-10.7879	-0.0775	0.2293
1033	SLE FR 5	0.66	0.16	41.28	-10.8249	-0.0779	0.2318
1033	SLE FR 6	0.67	0.17	42.05	-11.0245	-0.0794	0.2345
1033	SLE QP 1	0.64	0.14	39.75	-10.4327	-0.0749	0.225
1033	SLE QP 2	0.66	0.16	41.13	-10.7878	-0.0776	0.2307
1033	SLD 1	4.45	0.74	35.68	-9.8257	-0.0599	1.5572
1033	SLD 2	4.06	0.97	35.47	-9.7203	-0.0584	1.423
1033	SLD 3	4.66	-0.25	36.66	-10.066	-0.0627	1.6325
1033	SLD 4	4.28	-0.02	36.44	-9.9606	-0.0613	1.4983
1033	SLD 5	1.54	1.79	38.06	-10.1536	-0.0682	0.5385
1033	SLD 6	1.29	1.94	37.92	-10.0843	-0.0673	0.4503
1033	SLD 7	2.26	-1.5	41.3	-10.9545	-0.0777	0.7893
1033	SLD 8	2	-1.36	41.16	-10.8852	-0.0767	0.7011
1033	SLD 9	-0.68	1.67	41.1	-10.6903	-0.0784	-0.2397
1033	SLD 10	-0.93	1.82	40.96	-10.6211	-0.0775	-0.3279
1033	SLD 11	0.03	-1.63	44.34	-11.4912	-0.0879	0.011
1033	SLD 12	-0.22	-1.48	44.2	-11.422	-0.0869	-0.0772
1033	SLD 13	-2.96	0.33	45.82	-11.6149	-0.0939	-1.0369
1033	SLD 14	-3.34	0.56	45.6	-11.5095	-0.0924	-1.1711
1033	SLD 15	-2.74	-0.65	46.79	-11.8552	-0.0967	-0.9617
1033	SLD 16	-3.13	-0.43	46.57	-11.7498	-0.0953	-1.0959
1033	SLV 1	9.52	1.49	28.41	-8.5436	-0.0362	3.3344
1033	SLV 2	8.63	2.01	27.9	-8.2982	-0.0329	3.0218
1033	SLV 3	10.02	-0.75	30.62	-9.088	-0.0427	3.5098
1033	SLV 4	9.13	-0.22	30.11	-8.8425	-0.0393	3.1973
1033	SLV 5	2.72	3.86	34.05	-9.3314	-0.056	0.9497
1033	SLV 6	2.14	4.2	33.73	-9.1729	-0.0538	0.7479
1033	SLV 7	4.38	-3.6	41.41	-11.1458	-0.0774	1.5345
1033	SLV 8	3.81	-3.26	41.09	-10.9873	-0.0753	1.3327
1033	SLV 9	-2.48	3.57	41.17	-10.5882	-0.0799	-0.8713
1033	SLV 10	-3.06	3.91	40.85	-10.4297	-0.0777	-1.0732
1033	SLV 11	-0.81	-3.88	48.53	-12.4027	-0.1013	-0.2865
1033	SLV 12	-1.39	-3.54	48.21	-12.2441	-0.0991	-0.4884
1033	SLV 13	-7.81	0.54	52.15	-12.733	-0.1158	-2.7359
1033	SLV 14	-8.7	1.06	51.64	-12.4876	-0.1125	-3.0484
1033	SLV 15	-7.31	-1.7	54.35	-13.2773	-0.1223	-2.5605
1033	SLV 16	-8.2	-1.17	53.85	-13.0319	-0.1189	-2.873
1033	CRTFP Ux+	0	0	0	0	0	0
1033	CRTFP Ux-	0	0	0	0	0	0
1033	CRTFP Uy+	0	0	0	0	0	0
1033	CRTFP Uy-	0	0	0	0	0	0
1034	SLU 1	0.65	0.12	40.83	-11.9105	-0.0859	0.2293
1034	SLU 2	0.62	0.09	40.85	-11.909	-0.0856	0.2186
1034	SLU 3	0.67	0.12	41.8	-12.1869	-0.0881	0.2354
1034	SLU 4	0.65	0.11	41.81	-12.186	-0.0879	0.229
1034	SLU 5	0.64	0.09	41.43	-12.0766	-0.0869	0.223
1034	SLU 6	0.68	0.12	42.39	-12.3544	-0.0894	0.2398
1034	SLU 7	0.67	0.11	42.4	-12.3535	-0.0892	0.2334
1034	SLU 8	0.68	0.11	42	-12.2456	-0.0885	0.2381
1034	SLU 9	0.66	0.1	42.01	-12.2447	-0.0884	0.2316
1034	SLU 10	0.68	0.15	46.02	-13.3987	-0.0971	0.2394
1034	SLU 11	0.73	0.18	46.98	-13.6765	-0.0996	0.2562
1034	SLU 12	0.71	0.17	46.99	-13.6756	-0.0994	0.2498
1034	SLU 13	0.69	0.15	46.61	-13.5662	-0.0984	0.2438
1034	SLU 14	0.74	0.18	47.56	-13.844	-0.1009	0.2606
1034	SLU 15	0.72	0.16	47.58	-13.8432	-0.1007	0.2542
1034	SLU 16	0.74	0.17	47.18	-13.7352	-0.1	0.2589
1034	SLU 17	0.72	0.16	47.19	-13.7343	-0.0998	0.2525
1034	SLU 18	0.74	0.2	48.22	-14.0385	-0.1023	0.259
1034	SLU 19	0.72	0.18	48.23	-14.0377	-0.1021	0.2526
1034	SLU 20	0.75	0.2	48.81	-14.2061	-0.1036	0.2634
1034	SLU 21	0.73	0.18	48.82	-14.2052	-0.1034	0.257
1034	SLU 22	0.71	0.19	46.07	-13.4103	-0.0973	0.2497
1034	SLU 23	0.68	0.17	46.09	-13.4089	-0.097	0.239
1034	SLU 24	0.73	0.2	47.04	-13.6867	-0.0995	0.2558
1034	SLU 25	0.71	0.18	47.05	-13.6858	-0.0993	0.2494
1034	SLU 26	0.69	0.17	46.68	-13.5764	-0.0983	0.2434
1034	SLU 27	0.74	0.2	47.63	-13.8542	-0.1008	0.2602
1034	SLU 28	0.72	0.18	47.64	-13.8534	-0.1006	0.2538
1034	SLU 29	0.74	0.19	47.24	-13.7454	-0.0999	0.2585
1034	SLU 30	0.72	0.17	47.25	-13.7445	-0.0998	0.2521





Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1034	SLU 31	0.74	0.22	51.26	-14.8985	-0.1085	0.2599
1034	SLU 32	0.79	0.25	52.22	-15.1763	-0.111	0.2767
1034	SLU 33	0.77	0.24	52.23	-15.1755	-0.1108	0.2702
1034	SLU 34	0.75	0.22	51.85	-15.066	-0.1098	0.2642
1034	SLU 35	0.8	0.25	52.8	-15.3439	-0.1123	0.281
1034	SLU 36	0.78	0.24	52.82	-15.343	-0.1121	0.2746
1034	SLU 37	0.8	0.25	52.42	-15.235	-0.1114	0.2793
1034	SLU 38	0.78	0.23	52.43	-15.2342	-0.1112	0.2729
1034	SLU 39	0.8	0.27	53.46	-15.5384	-0.1137	0.2795
1034	SLU 40	0.78	0.26	53.47	-15.5375	-0.1135	0.2731
1034	SLU 41	0.81	0.27	54.05	-15.7059	-0.115	0.2839
1034	SLU 42	0.79	0.26	54.06	-15.705	-0.1148	0.2774
1034	SLU 43	0.83	0.12	51.28	-14.9694	-0.1078	0.2911
1034	SLU 44	0.8	0.1	51.3	-14.968	-0.1075	0.2804
1034	SLU 45	0.85	0.13	52.25	-15.2458	-0.11	0.2972
1034	SLU 46	0.83	0.12	52.27	-15.2449	-0.1098	0.2908
1034	SLU 47	0.81	0.1	51.89	-15.1355	-0.1088	0.2848
1034	SLU 48	0.86	0.13	52.84	-15.4133	-0.1113	0.3016
1034	SLU 49	0.84	0.12	52.85	-15.4125	-0.1111	0.2952
1034	SLU 50	0.86	0.12	52.46	-15.3045	-0.1104	0.2999
1034	SLU 51	0.84	0.11	52.47	-15.3036	-0.1102	0.2934
1034	SLU 52	0.86	0.16	56.47	-16.4576	-0.119	0.3012
1034	SLU 53	0.91	0.19	57.43	-16.7354	-0.1214	0.318
1034	SLU 54	0.89	0.17	57.44	-16.7345	-0.1213	0.3116
1034	SLU 55	0.87	0.16	57.06	-16.6251	-0.1203	0.3056
1034	SLU 56	0.92	0.19	58.02	-16.903	-0.1228	0.3224
1034	SLU 57	0.9	0.17	58.03	-16.9021	-0.1226	0.316
1034	SLU 58	0.91	0.18	57.63	-16.7941	-0.1219	0.3207
1034	SLU 59	0.9	0.17	57.64	-16.7932	-0.1217	0.3142
1034	SLU 60	0.91	0.21	58.67	-17.0975	-0.1242	0.3208
1034	SLU 61	0.9	0.19	58.68	-17.0966	-0.124	0.3144
1034	SLU 62	0.93	0.21	59.26	-17.265	-0.1255	0.3252
1034	SLU 63	0.91	0.19	59.27	-17.2641	-0.1253	0.3188
1034	SLU 64	0.89	0.2	56.52	-16.4693	-0.1192	0.3115
1034	SLU 65	0.86	0.18	56.54	-16.4678	-0.1189	0.3008
1034	SLU 66	0.91	0.21	57.5	-16.7456	-0.1214	0.3176
1034	SLU 67	0.89	0.19	57.51	-16.7448	-0.1212	0.3112
1034	SLU 68	0.87	0.18	57.13	-16.6353	-0.1202	0.3052
1034	SLU 69	0.92	0.21	58.08	-16.9132	-0.1227	0.322
1034	SLU 70	0.9	0.19	58.09	-16.9123	-0.1225	0.3156
1034	SLU 71	0.91	0.2	57.7	-16.8043	-0.1218	0.3203
1034	SLU 72	0.9	0.18	57.71	-16.8035	-0.1216	0.3139
1034	SLU 73	0.92	0.23	61.71	-17.9574	-0.1304	0.3216
1034	SLU 74	0.97	0.26	62.67	-18.2353	-0.1328	0.3384
1034	SLU 75	0.95	0.25	62.68	-18.2344	-0.1327	0.332
1034	SLU 76	0.93	0.23	62.3	-18.125	-0.1317	0.326
1034	SLU 77	0.98	0.26	63.26	-18.4028	-0.1341	0.3428
1034	SLU 78	0.96	0.25	63.27	-18.4019	-0.134	0.3364
1034	SLU 79	0.97	0.26	62.87	-18.294	-0.1333	0.3411
1034	SLU 80	0.95	0.24	62.88	-18.2931	-0.1331	0.3347
1034	SLU 81	0.97	0.28	63.91	-18.5973	-0.1356	0.3413
1034	SLU 82	0.95	0.27	63.92	-18.5964	-0.1354	0.3348
1034	SLU 83	0.99	0.28	64.5	-18.7648	-0.1369	0.3456
1034	SLU 84	0.97	0.27	64.51	-18.764	-0.1367	0.3392
1034	SLE RA 1	0.67	0.14	42.33	-12.339	-0.0892	0.2351
1034	SLE RA 2	0.65	0.12	42.34	-12.3381	-0.089	0.228
1034	SLE RA 3	0.68	0.14	42.98	-12.5233	-0.0906	0.2392
1034	SLE RA 4	0.67	0.13	42.98	-12.5227	-0.0905	0.2349
1034	SLE RA 5	0.66	0.12	42.73	-12.4497	-0.0899	0.2309
1034	SLE RA 6	0.69	0.14	43.37	-12.635	-0.0915	0.2421
1034	SLE RA 7	0.68	0.13	43.37	-12.6344	-0.0914	0.2379
1034	SLE RA 8	0.69	0.14	43.11	-12.5624	-0.0909	0.241
1034	SLE RA 9	0.67	0.13	43.12	-12.5618	-0.0908	0.2367
1034	SLE RA 10	0.69	0.16	45.79	-13.3311	-0.0966	0.2419
1034	SLE RA 11	0.72	0.18	46.43	-13.5164	-0.0983	0.2531
1034	SLE RA 12	0.71	0.17	46.43	-13.5158	-0.0982	0.2488
1034	SLE RA 13	0.7	0.16	46.18	-13.4428	-0.0975	0.2448
1034	SLE RA 14	0.73	0.18	46.82	-13.6281	-0.0992	0.256
1034	SLE RA 15	0.72	0.17	46.82	-13.6275	-0.099	0.2517
1034	SLE RA 16	0.73	0.17	46.56	-13.5555	-0.0986	0.2549
1034	SLE RA 17	0.71	0.16	46.57	-13.5549	-0.0984	0.2506
1034	SLE RA 18	0.73	0.19	47.25	-13.7577	-0.1001	0.255
1034	SLE RA 19	0.71	0.18	47.26	-13.7571	-0.1	0.2507
1034	SLE RA 20	0.74	0.19	47.65	-13.8694	-0.101	0.2579
1034	SLE RA 21	0.72	0.18	47.65	-13.8688	-0.1009	0.2536
1034	SLE FR 1	0.67	0.14	42.33	-12.339	-0.0892	0.2351
1034	SLE FR 2	0.67	0.13	42.33	-12.3388	-0.0891	0.2337
1034	SLE FR 3	0.67	0.14	42.48	-12.3837	-0.0895	0.2363
1034	SLE FR 4	0.68	0.15	43.81	-12.7644	-0.0924	0.2397
1034	SLE FR 5	0.69	0.15	43.96	-12.8093	-0.0928	0.2423
1034	SLE FR 6	0.7	0.16	44.79	-13.0484	-0.0946	0.2451
1034	SLE QP 1	0.67	0.14	42.33	-12.339	-0.0892	0.2351
1034	SLE QP 2	0.69	0.15	43.8	-12.7646	-0.0925	0.2411
1034	SLD 1	4.47	0.75	37.79	-11.56	-0.074	1.5644
1034	SLD 2	4.08	0.99	37.53	-11.4258	-0.0723	1.43
1034	SLD 3	4.68	-0.24	38.86	-11.8622	-0.0774	1.6394
1034	SLD 4	4.3	0	38.6	-11.7281	-0.0757	1.505
1034	SLD 5	1.57	1.8	40.43	-11.9688	-0.0821	0.5484
1034	SLD 6	1.31	1.96	40.25	-11.8807	-0.081	0.4601
1034	SLD 7	2.28	-1.52	43.99	-12.9762	-0.0934	0.7983



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1034	SLD 8	2.03	-1.37	43.82	-12.8881	-0.0923	0.71
1034	SLD 9	-0.65	1.67	43.79	-12.6412	-0.0927	-0.2278
1034	SLD 10	-0.9	1.83	43.62	-12.553	-0.0915	-0.3161
1034	SLD 11	0.06	-1.66	47.36	-13.6486	-0.104	0.0221
1034	SLD 12	-0.19	-1.5	47.18	-13.5605	-0.1029	-0.0662
1034	SLD 13	-2.92	0.31	49.01	-13.8012	-0.1093	-1.0228
1034	SLD 14	-3.31	0.55	48.75	-13.6671	-0.1076	-1.1572
1034	SLD 15	-2.71	-0.69	50.08	-14.1034	-0.1127	-0.9478
1034	SLD 16	-3.09	-0.45	49.82	-13.9693	-0.111	-1.0822
1034	SLV 1	9.53	1.52	29.77	-9.9547	-0.0493	3.3372
1034	SLV 2	8.63	2.08	29.15	-9.6423	-0.0453	3.0242
1034	SLV 3	10.03	-0.74	32.19	-10.639	-0.057	3.512
1034	SLV 4	9.13	-0.18	31.57	-10.3266	-0.053	3.1991
1034	SLV 5	2.74	3.89	36.02	-10.9378	-0.0685	0.9588
1034	SLV 6	2.16	4.26	35.62	-10.7361	-0.066	0.7567
1034	SLV 7	4.4	-3.64	44.1	-13.2188	-0.0941	1.5417
1034	SLV 8	3.82	-3.28	43.7	-13.017	-0.0916	1.3396
1034	SLV 9	-2.45	3.58	43.91	-12.5122	-0.0933	-0.8574
1034	SLV 10	-3.03	3.95	43.51	-12.3105	-0.0908	-1.0595
1034	SLV 11	-0.78	-3.95	51.99	-14.7932	-0.1189	-0.2746
1034	SLV 12	-1.36	-3.59	51.59	-14.5914	-0.1164	-0.4767
1034	SLV 13	-7.76	0.48	56.04	-15.2027	-0.1319	-2.7169
1034	SLV 14	-8.66	1.05	55.42	-14.8903	-0.128	-3.0298
1034	SLV 15	-7.26	-1.78	58.46	-15.8869	-0.1396	-2.5421
1034	SLV 16	-8.16	-1.21	57.84	-15.5746	-0.1357	-2.855
1034	CRTFP Ux+	0	0	0	0	0	0
1034	CRTFP Ux-	0	0	0	0	0	0
1034	CRTFP Uy+	0	0	0	0	0	0
1034	CRTFP Uy-	0	0	0	0	0	0
1035	SLU 1	0.76	0.16	49.96	-11.0043	1.7098	0.1737
1035	SLU 2	0.72	0.13	49.98	-11.0045	1.7115	0.1666
1035	SLU 3	0.78	0.17	51.16	-11.2656	1.7502	0.1782
1035	SLU 4	0.76	0.15	51.17	-11.2657	1.7513	0.1739
1035	SLU 5	0.74	0.13	50.7	-11.1623	1.736	0.1701
1035	SLU 6	0.79	0.16	51.88	-11.4234	1.7747	0.1817
1035	SLU 7	0.77	0.15	51.89	-11.4236	1.7757	0.1774
1035	SLU 8	0.79	0.16	51.41	-11.3199	1.7587	0.1807
1035	SLU 9	0.76	0.14	51.42	-11.3201	1.7597	0.1764
1035	SLU 10	0.79	0.2	56.34	-12.3995	1.9256	0.1799
1035	SLU 11	0.84	0.23	57.52	-12.6606	1.9643	0.1915
1035	SLU 12	0.82	0.22	57.53	-12.6607	1.9654	0.1872
1035	SLU 13	0.8	0.2	57.06	-12.5573	1.95	0.1834
1035	SLU 14	0.86	0.23	58.24	-12.8184	1.9888	0.195
1035	SLU 15	0.84	0.22	58.25	-12.8185	1.9898	0.1907
1035	SLU 16	0.85	0.22	57.76	-12.7149	1.9728	0.194
1035	SLU 17	0.83	0.21	57.77	-12.715	1.9738	0.1897
1035	SLU 18	0.85	0.26	59.04	-12.9971	2.0156	0.1927
1035	SLU 19	0.83	0.24	59.05	-12.9973	2.0167	0.1884
1035	SLU 20	0.87	0.25	59.77	-13.1549	2.0401	0.1962
1035	SLU 21	0.85	0.24	59.78	-13.1551	2.0411	0.1919
1035	SLU 22	0.82	0.24	56.4	-12.4122	1.9275	0.1861
1035	SLU 23	0.79	0.22	56.42	-12.4125	1.9292	0.1789
1035	SLU 24	0.84	0.25	57.6	-12.6735	1.968	0.1906
1035	SLU 25	0.82	0.24	57.61	-12.6737	1.969	0.1863
1035	SLU 26	0.8	0.22	57.14	-12.5703	1.9537	0.1824
1035	SLU 27	0.86	0.25	58.32	-12.8313	1.9924	0.1941
1035	SLU 28	0.84	0.24	58.33	-12.8315	1.9935	0.1898
1035	SLU 29	0.85	0.24	57.85	-12.7278	1.9764	0.1931
1035	SLU 30	0.83	0.23	57.86	-12.728	1.9774	0.1888
1035	SLU 31	0.86	0.29	62.77	-13.8075	2.1433	0.1922
1035	SLU 32	0.91	0.32	63.96	-14.0685	2.182	0.2039
1035	SLU 33	0.89	0.31	63.97	-14.0687	2.1831	0.1996
1035	SLU 34	0.87	0.29	63.5	-13.9653	2.1678	0.1957
1035	SLU 35	0.93	0.32	64.68	-14.2263	2.2065	0.2074
1035	SLU 36	0.91	0.3	64.69	-14.2265	2.2075	0.2031
1035	SLU 37	0.92	0.31	64.2	-14.1228	2.1905	0.2064
1035	SLU 38	0.9	0.3	64.21	-14.123	2.1915	0.2021
1035	SLU 39	0.92	0.34	65.48	-14.405	2.2333	0.2051
1035	SLU 40	0.9	0.33	65.49	-14.4052	2.2344	0.2008
1035	SLU 41	0.94	0.34	66.2	-14.5629	2.2578	0.2086
1035	SLU 42	0.91	0.33	66.21	-14.563	2.2588	0.2043
1035	SLU 43	0.96	0.18	62.74	-13.8228	2.1481	0.2216
1035	SLU 44	0.92	0.15	62.76	-13.8231	2.1498	0.2144
1035	SLU 45	0.98	0.18	63.94	-14.0841	2.1885	0.2261
1035	SLU 46	0.96	0.17	63.95	-14.0843	2.1896	0.2218
1035	SLU 47	0.94	0.15	63.48	-13.9809	2.1742	0.2179
1035	SLU 48	0.99	0.18	64.67	-14.242	2.213	0.2296
1035	SLU 49	0.97	0.17	64.68	-14.2421	2.214	0.2253
1035	SLU 50	0.99	0.17	64.19	-14.1385	2.197	0.2286
1035	SLU 51	0.97	0.16	64.2	-14.1386	2.198	0.2243
1035	SLU 52	0.99	0.22	69.12	-15.2181	2.3639	0.2277
1035	SLU 53	1.05	0.25	70.3	-15.4791	2.4026	0.2394
1035	SLU 54	1.03	0.24	70.31	-15.4793	2.4036	0.2351
1035	SLU 55	1.01	0.22	69.84	-15.3759	2.3883	0.2312
1035	SLU 56	1.06	0.25	71.02	-15.6369	2.4271	0.2429
1035	SLU 57	1.04	0.24	71.03	-15.6371	2.4281	0.2386
1035	SLU 58	1.06	0.24	70.55	-15.5334	2.4111	0.2419
1035	SLU 59	1.04	0.23	70.56	-15.5336	2.4121	0.2376
1035	SLU 60	1.06	0.27	71.82	-15.8156	2.4539	0.2406
1035	SLU 61	1.04	0.26	71.83	-15.8158	2.4549	0.2363



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
1035	SLU 62	1.07	0.27	72.55	-15.9735	2.4784	0.2441
1035	SLU 63	1.05	0.26	72.56	-15.9736	2.4794	0.2398
1035	SLU 64	1.03	0.26	69.18	-15.2308	2.3658	0.234
1035	SLU 65	0.99	0.24	69.2	-15.231	2.3675	0.2268
1035	SLU 66	1.05	0.27	70.38	-15.4921	2.4062	0.2385
1035	SLU 67	1.03	0.25	70.39	-15.4922	2.4073	0.2342
1035	SLU 68	1.01	0.24	69.92	-15.3888	2.392	0.2303
1035	SLU 69	1.06	0.27	71.1	-15.6499	2.4307	0.242
1035	SLU 70	1.04	0.25	71.11	-15.6501	2.4317	0.2377
1035	SLU 71	1.06	0.26	70.63	-15.5464	2.4147	0.2409
1035	SLU 72	1.04	0.25	70.64	-15.5466	2.4157	0.2367
1035	SLU 73	1.06	0.31	75.56	-16.626	2.5816	0.2401
1035	SLU 74	1.12	0.34	76.74	-16.8871	2.6203	0.2518
1035	SLU 75	1.09	0.32	76.75	-16.8872	2.6214	0.2475
1035	SLU 76	1.07	0.3	76.28	-16.7838	2.6061	0.2436
1035	SLU 77	1.13	0.34	77.46	-17.0449	2.6448	0.2553
1035	SLU 78	1.11	0.32	77.47	-17.045	2.6458	0.251
1035	SLU 79	1.12	0.33	76.98	-16.9414	2.6288	0.2542
1035	SLU 80	1.1	0.31	76.99	-16.9415	2.6298	0.25
1035	SLU 81	1.12	0.36	78.26	-17.2236	2.6716	0.253
1035	SLU 82	1.1	0.34	78.27	-17.2238	2.6727	0.2487
1035	SLU 83	1.14	0.36	78.99	-17.3814	2.6961	0.2565
1035	SLU 84	1.12	0.34	79	-17.3816	2.6971	0.2522
1035	SLE RA 1	0.78	0.18	51.8	-11.4065	1.772	0.1773
1035	SLE RA 2	0.75	0.17	51.81	-11.4067	1.7731	0.1725
1035	SLE RA 3	0.79	0.19	52.6	-11.5807	1.799	0.1803
1035	SLE RA 4	0.77	0.18	52.61	-11.5809	1.7997	0.1774
1035	SLE RA 5	0.76	0.17	52.29	-11.5119	1.7894	0.1748
1035	SLE RA 6	0.8	0.19	53.08	-11.686	1.8153	0.1826
1035	SLE RA 7	0.78	0.18	53.09	-11.6861	1.816	0.1797
1035	SLE RA 8	0.79	0.18	52.77	-11.617	1.8046	0.1819
1035	SLE RA 9	0.78	0.17	52.77	-11.6171	1.8053	0.179
1035	SLE RA 10	0.8	0.21	56.05	-12.3367	1.9159	0.1814
1035	SLE RA 11	0.83	0.23	56.84	-12.5107	1.9417	0.1891
1035	SLE RA 12	0.82	0.22	56.85	-12.5108	1.9424	0.1863
1035	SLE RA 13	0.81	0.21	56.53	-12.4419	1.9322	0.1837
1035	SLE RA 14	0.84	0.23	57.32	-12.6159	1.958	0.1915
1035	SLE RA 15	0.83	0.22	57.33	-12.6161	1.9587	0.1886
1035	SLE RA 16	0.84	0.23	57	-12.5469	1.9473	0.1908
1035	SLE RA 17	0.83	0.22	57.01	-12.5471	1.948	0.1879
1035	SLE RA 18	0.84	0.25	57.86	-12.7351	1.9759	0.1899
1035	SLE RA 19	0.83	0.24	57.86	-12.7352	1.9766	0.1871
1035	SLE RA 20	0.85	0.25	58.34	-12.8403	1.9922	0.1923
1035	SLE RA 21	0.84	0.24	58.34	-12.8404	1.9929	0.1894
1035	SLE FR 1	0.78	0.18	51.8	-11.4065	1.772	0.1773
1035	SLE FR 2	0.77	0.18	51.8	-11.4066	1.7722	0.1763
1035	SLE FR 3	0.78	0.18	51.99	-11.4486	1.7785	0.1782
1035	SLE FR 4	0.79	0.2	53.62	-11.8051	1.8334	0.1801
1035	SLE FR 5	0.8	0.2	53.81	-11.8472	1.8397	0.182
1035	SLE FR 6	0.81	0.22	54.83	-12.0708	1.8739	0.1836
1035	SLE QP 1	0.78	0.18	51.8	-11.4065	1.772	0.1773
1035	SLE QP 2	0.79	0.2	53.62	-11.8051	1.8332	0.1811
1035	SLD 1	5.07	0.89	45.59	-10.3578	1.5578	1.1812
1035	SLD 2	4.63	1.18	45.27	-10.2584	1.5578	1.0651
1035	SLD 3	5.31	-0.26	46.95	-10.6483	1.5897	1.2562
1035	SLD 4	4.87	0.03	46.63	-10.5489	1.5897	1.14
1035	SLD 5	1.79	2.09	49.21	-10.9481	1.7022	0.3882
1035	SLD 6	1.5	2.28	49	-10.8827	1.7022	0.3118
1035	SLD 7	2.6	-1.72	53.74	-11.9164	1.8085	0.638
1035	SLD 8	2.31	-1.53	53.53	-11.8511	1.8085	0.5617
1035	SLD 9	-0.72	1.93	53.71	-11.7591	1.8578	-0.1996
1035	SLD 10	-1.01	2.12	53.5	-11.6938	1.8578	-0.2759
1035	SLD 11	0.09	-1.87	58.24	-12.7275	1.9641	0.0503
1035	SLD 12	-0.2	-1.68	58.03	-12.6621	1.9641	-0.026
1035	SLD 13	-3.28	0.37	60.6	-13.0613	2.0766	-0.7779
1035	SLD 14	-3.72	0.66	60.28	-12.9619	2.0766	-0.8941
1035	SLD 15	-3.04	-0.77	61.96	-13.3518	2.1085	-0.7029
1035	SLD 16	-3.48	-0.48	61.64	-13.2524	2.1085	-0.8191
1035	SLV 1	10.8	1.76	34.87	-8.4263	1.1893	2.522
1035	SLV 2	9.77	2.44	34.13	-8.1947	1.1893	2.2514
1035	SLV 3	11.37	-0.82	37.95	-9.0845	1.2621	2.695
1035	SLV 4	10.34	-0.15	37.21	-8.853	1.2621	2.4244
1035	SLV 5	3.12	4.47	43.45	-9.8331	1.5296	0.6677
1035	SLV 6	2.45	4.91	42.97	-9.6836	1.5296	0.493
1035	SLV 7	5	-4.14	53.72	-12.0273	1.7722	1.2444
1035	SLV 8	4.33	-3.71	53.24	-11.8778	1.7722	1.0697
1035	SLV 9	-2.75	4.11	53.99	-11.7324	1.8941	-0.7075
1035	SLV 10	-3.41	4.55	53.51	-11.5828	1.8941	-0.8823
1035	SLV 11	-0.86	-4.51	64.27	-13.9266	2.1367	-0.1308
1035	SLV 12	-1.53	-4.07	63.79	-13.7771	2.1367	-0.3056
1035	SLV 13	-8.75	0.55	70.03	-14.7572	2.4043	-2.0623
1035	SLV 14	-9.78	1.23	69.28	-14.5256	2.4043	-2.3329
1035	SLV 15	-8.18	-2.03	73.11	-15.4154	2.4771	-1.8893
1035	SLV 16	-9.21	-1.36	72.36	-15.1839	2.4771	-2.1598
1035	CRTFP Ux+	0	0	0	0	0	0
1035	CRTFP Ux-	0	0	0	0	0	0
1035	CRTFP Uy+	0	0	0	0	0	0
1035	CRTFP Uy-	0	0	0	0	0	0
18638	SLU 1	1	-37.12	30.05	5.4621	0.0828	-0.0015
18638	SLU 2	0.96	-41.72	30.13	5.4609	0.0817	-0.0011



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
18638	SLU 3	1.13	-39.02	37.32	5.7497	0.1221	-0.0019
18638	SLU 4	1.11	-41.78	37.37	5.7489	0.1214	-0.0017
18638	SLU 5	1.11	-41.13	38.42	5.6512	0.1283	-0.0016
18638	SLU 6	1.29	-38.43	45.61	5.9399	0.1687	-0.0024
18638	SLU 7	1.26	-41.19	45.66	5.9392	0.168	-0.0021
18638	SLU 8	1.31	-35.94	46.63	5.8426	0.1761	-0.0024
18638	SLU 9	1.29	-38.7	46.68	5.8419	0.1754	-0.0022
18638	SLU 10	1.03	-56.37	32.79	6.3037	0.0847	-0.0013
18638	SLU 11	1.2	-53.66	39.97	6.5925	0.1251	-0.0021
18638	SLU 12	1.17	-56.42	40.02	6.5917	0.1244	-0.0019
18638	SLU 13	1.18	-55.78	41.08	6.494	0.1313	-0.0017
18638	SLU 14	1.36	-53.07	48.27	6.7827	0.1717	-0.0025
18638	SLU 15	1.33	-55.83	48.31	6.782	0.1711	-0.0023
18638	SLU 16	1.38	-50.59	49.29	6.6854	0.1791	-0.0026
18638	SLU 17	1.36	-53.35	49.34	6.6847	0.1784	-0.0024
18638	SLU 18	1.1	-58.04	33.84	6.6661	0.0871	-0.0018
18638	SLU 19	1.07	-60.8	33.89	6.6654	0.0864	-0.0015
18638	SLU 20	1.25	-57.45	42.13	6.8564	0.1338	-0.0022
18638	SLU 21	1.23	-60.21	42.18	6.8557	0.1331	-0.002
18638	SLU 22	1.28	-57.67	37.44	6.4418	0.1184	-0.0018
18638	SLU 23	1.23	-62.27	37.52	6.4406	0.1173	-0.0015
18638	SLU 24	1.41	-59.56	44.71	6.7294	0.1577	-0.0023
18638	SLU 25	1.38	-62.32	44.76	6.7287	0.157	-0.002
18638	SLU 26	1.39	-61.68	45.81	6.6309	0.1639	-0.0019
18638	SLU 27	1.56	-58.97	53	6.9196	0.2043	-0.0027
18638	SLU 28	1.54	-61.73	53.05	6.9189	0.2037	-0.0025
18638	SLU 29	1.59	-56.49	54.02	6.8224	0.2117	-0.0028
18638	SLU 30	1.56	-59.25	54.07	6.8216	0.211	-0.0025
18638	SLU 31	1.3	-76.91	40.18	7.2834	0.1203	-0.0016
18638	SLU 32	1.48	-74.21	47.37	7.5722	0.1607	-0.0025
18638	SLU 33	1.45	-76.97	47.41	7.5715	0.1601	-0.0022
18638	SLU 34	1.46	-76.32	48.47	7.4737	0.167	-0.0021
18638	SLU 35	1.63	-73.62	55.66	7.7625	0.2074	-0.0029
18638	SLU 36	1.61	-76.38	55.71	7.7617	0.2067	-0.0027
18638	SLU 37	1.66	-71.13	56.68	7.6652	0.2147	-0.003
18638	SLU 38	1.63	-73.89	56.73	7.6644	0.214	-0.0027
18638	SLU 39	1.37	-78.59	41.23	7.6458	0.1228	-0.0021
18638	SLU 40	1.35	-81.35	41.28	7.6451	0.1221	-0.0019
18638	SLU 41	1.53	-78	49.53	7.8361	0.1694	-0.0026
18638	SLU 42	1.5	-80.76	49.58	7.8354	0.1687	-0.0023
18638	SLU 43	1.21	-41.21	36.53	6.7648	0.0954	-0.0018
18638	SLU 44	1.16	-45.81	36.61	6.7636	0.0943	-0.0014
18638	SLU 45	1.34	-43.11	43.8	7.0524	0.1347	-0.0022
18638	SLU 46	1.31	-45.87	43.85	7.0517	0.134	-0.002
18638	SLU 47	1.32	-45.22	44.9	6.9539	0.1409	-0.0019
18638	SLU 48	1.5	-42.52	52.09	7.2427	0.1813	-0.0027
18638	SLU 49	1.47	-45.28	52.14	7.2419	0.1806	-0.0024
18638	SLU 50	1.52	-40.03	53.11	7.1454	0.1887	-0.0027
18638	SLU 51	1.49	-42.79	53.16	7.1446	0.188	-0.0025
18638	SLU 52	1.23	-60.46	39.27	7.6064	0.0973	-0.0016
18638	SLU 53	1.41	-57.75	46.45	7.8952	0.1377	-0.0024
18638	SLU 54	1.38	-60.51	46.5	7.8945	0.137	-0.0022
18638	SLU 55	1.39	-59.87	47.56	7.7967	0.1439	-0.0021
18638	SLU 56	1.56	-57.16	54.75	8.0855	0.1844	-0.0029
18638	SLU 57	1.54	-59.92	54.79	8.0847	0.1837	-0.0026
18638	SLU 58	1.59	-54.68	55.77	7.9882	0.1917	-0.0029
18638	SLU 59	1.56	-57.44	55.82	7.9874	0.191	-0.0027
18638	SLU 60	1.3	-62.13	40.32	7.9688	0.0997	-0.0021
18638	SLU 61	1.28	-64.89	40.37	7.9681	0.0991	-0.0018
18638	SLU 62	1.46	-61.54	48.61	8.1591	0.1464	-0.0025
18638	SLU 63	1.43	-64.3	48.66	8.1584	0.1457	-0.0023
18638	SLU 64	1.48	-61.76	43.92	7.7446	0.131	-0.0022
18638	SLU 65	1.44	-66.36	44	7.7434	0.1299	-0.0018
18638	SLU 66	1.61	-63.65	51.19	8.0321	0.1703	-0.0026
18638	SLU 67	1.59	-66.41	51.24	8.0314	0.1696	-0.0024
18638	SLU 68	1.59	-65.77	52.29	7.9336	0.1765	-0.0022
18638	SLU 69	1.77	-63.06	59.48	8.2224	0.217	-0.003
18638	SLU 70	1.74	-65.82	59.53	8.2217	0.2163	-0.0028
18638	SLU 71	1.79	-60.58	60.5	8.1251	0.2243	-0.0031
18638	SLU 72	1.77	-63.34	60.55	8.1244	0.2236	-0.0029
18638	SLU 73	1.51	-81	46.66	8.5862	0.1329	-0.002
18638	SLU 74	1.68	-78.3	53.84	8.8749	0.1734	-0.0028
18638	SLU 75	1.66	-81.06	53.89	8.8742	0.1727	-0.0025
18638	SLU 76	1.66	-80.41	54.95	8.7764	0.1796	-0.0024
18638	SLU 77	1.84	-77.71	62.14	9.0652	0.22	-0.0032
18638	SLU 78	1.81	-80.47	62.19	9.0645	0.2193	-0.003
18638	SLU 79	1.86	-75.22	63.16	8.9679	0.2273	-0.0033
18638	SLU 80	1.84	-77.98	63.21	8.9672	0.2267	-0.003
18638	SLU 81	1.58	-82.68	47.71	8.9486	0.1354	-0.0024
18638	SLU 82	1.55	-85.44	47.76	8.9478	0.1347	-0.0022
18638	SLU 83	1.74	-82.09	56.01	9.1388	0.182	-0.0029
18638	SLU 84	1.71	-84.85	56.06	9.1381	0.1813	-0.0027
18638	SLE RA 1	1.08	-42.99	32.16	5.742	0.093	-0.0016
18638	SLE RA 2	1.05	-46.06	32.21	5.7412	0.0922	-0.0013
18638	SLE RA 3	1.17	-44.25	37.01	5.9337	0.1192	-0.0019
18638	SLE RA 4	1.15	-46.09	37.04	5.9333	0.1187	-0.0017
18638	SLE RA 5	1.15	-45.66	37.74	5.8681	0.1233	-0.0016
18638	SLE RA 6	1.27	-43.86	42.53	6.0606	0.1502	-0.0022
18638	SLE RA 7	1.25	-45.7	42.57	6.0601	0.1498	-0.002
18638	SLE RA 8	1.29	-42.2	43.21	5.9957	0.1552	-0.0022



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
18638	SLE RA 9	1.27	-44.04	43.25	5.9952	0.1547	-0.0021
18638	SLE RA 10	1.1	-55.82	33.98	6.3031	0.0942	-0.0015
18638	SLE RA 11	1.21	-54.02	38.78	6.4956	0.1212	-0.002
18638	SLE RA 12	1.2	-55.86	38.81	6.4951	0.1207	-0.0018
18638	SLE RA 13	1.2	-55.43	39.51	6.4299	0.1253	-0.0018
18638	SLE RA 14	1.32	-53.62	44.3	6.6224	0.1523	-0.0023
18638	SLE RA 15	1.3	-55.46	44.34	6.622	0.1518	-0.0021
18638	SLE RA 16	1.33	-51.97	44.99	6.5576	0.1572	-0.0023
18638	SLE RA 17	1.32	-53.81	45.02	6.5571	0.1567	-0.0022
18638	SLE RA 18	1.14	-56.94	34.69	6.5447	0.0959	-0.0018
18638	SLE RA 19	1.13	-58.78	34.72	6.5442	0.0954	-0.0016
18638	SLE RA 20	1.25	-56.55	40.22	6.6715	0.127	-0.0021
18638	SLE RA 21	1.23	-58.39	40.25	6.6711	0.1265	-0.0019
18638	SLE FR 1	1.08	-42.99	32.16	5.742	0.093	-0.0016
18638	SLE FR 2	1.07	-43.6	32.17	5.7419	0.0928	-0.0015
18638	SLE FR 3	1.12	-42.83	34.37	5.7928	0.1054	-0.0017
18638	SLE FR 4	1.09	-47.79	32.93	5.9827	0.0937	-0.0016
18638	SLE FR 5	1.14	-47.02	35.13	6.0336	0.1063	-0.0018
18638	SLE FR 6	1.11	-49.96	33.42	6.1434	0.0944	-0.0017
18638	SLE QP 1	1.08	-42.99	32.16	5.742	0.093	-0.0016
18638	SLE QP 2	1.1	-47.17	32.92	5.9828	0.0938	-0.0016
18638	SLD 1	29.39	-63.9	32.15	6.0295	1.519	0.0157
18638	SLD 2	28.67	69.82	31.48	4.8009	1.4867	0.0229
18638	SLD 3	27.88	-304.23	33.06	8.2132	1.4405	0.0171
18638	SLD 4	27.16	-170.51	32.4	6.9846	1.4082	0.0244
18638	SLD 5	12.01	288.42	31.42	2.9043	0.6462	0.0001
18638	SLD 6	11.53	376.3	30.98	2.0969	0.625	0.0049
18638	SLD 7	6.97	-512.67	34.47	10.1833	0.3846	0.0048
18638	SLD 8	6.49	-424.79	34.03	9.3758	0.3633	0.0096
18638	SLD 9	-4.3	330.44	31.8	2.5898	-0.1756	-0.0129
18638	SLD 10	-4.77	418.32	31.37	1.7824	-0.1969	-0.0081
18638	SLD 11	-9.34	-470.65	34.85	9.8688	-0.4373	-0.0082
18638	SLD 12	-9.81	-382.77	34.42	9.0613	-0.4585	-0.0034
18638	SLD 13	-24.96	76.16	33.44	4.9811	-1.2205	-0.0276
18638	SLD 14	-25.68	209.88	32.78	3.7525	-1.2528	-0.0204
18638	SLD 15	-26.47	-164.17	34.35	7.1648	-1.299	-0.0262
18638	SLD 16	-27.2	-30.45	33.69	5.9361	-1.3313	-0.0189
18638	SLV 1	67.32	-93.91	31.13	6.157	3.4292	0.0389
18638	SLV 2	65.64	217.51	29.59	3.2957	3.3539	0.0558
18638	SLV 3	63.79	-638.87	33.21	11.1067	3.2461	0.0422
18638	SLV 4	62.1	-327.45	31.67	8.2454	3.1709	0.0591
18638	SLV 5	26.62	711.47	29.48	-0.9771	1.3851	0.0026
18638	SLV 6	25.53	912.6	28.49	-2.8252	1.3365	0.0135
18638	SLV 7	14.83	-1105.06	36.44	15.5219	0.7749	0.0136
18638	SLV 8	13.75	-903.92	35.44	13.6738	0.7264	0.0245
18638	SLV 9	-11.55	809.57	30.39	-1.7082	-0.5387	-0.0278
18638	SLV 10	-12.64	1010.71	29.4	-3.5562	-0.5873	-0.0169
18638	SLV 11	-23.33	-1006.95	37.35	14.7909	-1.1488	-0.0168
18638	SLV 12	-24.42	-805.82	36.35	12.9428	-1.1974	-0.0059
18638	SLV 13	-59.91	233.1	34.16	3.7203	-2.9832	-0.0624
18638	SLV 14	-61.59	544.52	32.62	0.8589	-3.0585	-0.0455
18638	SLV 15	-63.44	-311.86	36.25	8.67	-3.1663	-0.0591
18638	SLV 16	-65.12	-0.44	34.71	5.8087	-3.2415	-0.0422
18638	CRTFP Ux+	0	0	0	0	0	0
18638	CRTFP Ux-	0	0	0	0	0	0
18638	CRTFP Uy+	0	0	0	0	0	0
18638	CRTFP Uy-	0	0	0	0	0	0
18639	SLU 1	0.85	21.51	27.33	12.3289	0.0017	-0.0189
18639	SLU 2	0.79	0.76	27.52	12.4427	-0.0024	-0.0175
18639	SLU 3	0.74	19.37	34.09	12.5407	-0.0312	-0.0204
18639	SLU 4	0.71	6.92	34.21	12.609	-0.0337	-0.0196
18639	SLU 5	0.66	0.12	35.25	12.3633	-0.0409	-0.0192
18639	SLU 6	0.61	18.72	41.82	12.4612	-0.0697	-0.0221
18639	SLU 7	0.58	6.27	41.93	12.5295	-0.0722	-0.0213
18639	SLU 8	0.6	20.21	42.78	12.1701	-0.0753	-0.0223
18639	SLU 9	0.56	7.77	42.89	12.2384	-0.0778	-0.0215
18639	SLU 10	0.87	-5.9	29.85	14.3276	-0.0005	-0.0193
18639	SLU 11	0.82	12.71	36.42	14.4255	-0.0293	-0.0222
18639	SLU 12	0.78	0.26	36.53	14.4938	-0.0318	-0.0214
18639	SLU 13	0.74	-6.55	37.57	14.2482	-0.039	-0.021
18639	SLU 14	0.69	12.06	44.14	14.3461	-0.0679	-0.0239
18639	SLU 15	0.65	-0.39	44.25	14.4144	-0.0703	-0.0231
18639	SLU 16	0.67	13.55	45.11	14.0549	-0.0735	-0.0241
18639	SLU 17	0.63	1.11	45.22	14.1232	-0.0759	-0.0232
18639	SLU 18	0.96	11.99	30.65	15.0216	0.0044	-0.0214
18639	SLU 19	0.92	-0.45	30.77	15.0899	0.002	-0.0206
18639	SLU 20	0.83	11.35	38.38	14.9422	-0.0341	-0.0231
18639	SLU 21	0.79	-1.1	38.49	15.0105	-0.0366	-0.0223
18639	SLU 22	0.99	9	34.08	14.1925	-0.0131	-0.0233
18639	SLU 23	0.93	-11.75	34.27	14.3063	-0.0172	-0.0219
18639	SLU 24	0.88	6.86	40.84	14.4042	-0.046	-0.0248
18639	SLU 25	0.84	-5.59	40.95	14.4725	-0.0485	-0.024
18639	SLU 26	0.8	-12.39	41.99	14.2269	-0.0557	-0.0236
18639	SLU 27	0.75	6.21	48.56	14.3248	-0.0845	-0.0265
18639	SLU 28	0.71	-6.24	48.67	14.3931	-0.087	-0.0257
18639	SLU 29	0.73	7.7	49.52	14.0336	-0.0901	-0.0267
18639	SLU 30	0.69	-4.74	49.64	14.1019	-0.0926	-0.0259
18639	SLU 31	1	-18.41	36.59	16.1912	-0.0153	-0.0237
18639	SLU 32	0.95	0.19	43.16	16.2891	-0.0441	-0.0266
18639	SLU 33	0.92	-12.25	43.27	16.3574	-0.0466	-0.0258



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
18639	SLU 34	0.87	-19.06	44.31	16.1117	-0.0538	-0.0254
18639	SLU 35	0.82	-0.45	50.88	16.2097	-0.0827	-0.0283
18639	SLU 36	0.79	-12.9	51	16.278	-0.0851	-0.0275
18639	SLU 37	0.8	1.04	51.85	15.9185	-0.0882	-0.0285
18639	SLU 38	0.77	-11.41	51.96	15.9868	-0.0907	-0.0276
18639	SLU 39	1.1	-0.52	37.4	16.8851	-0.0104	-0.0258
18639	SLU 40	1.06	-12.96	37.51	16.9534	-0.0128	-0.025
18639	SLU 41	0.97	-1.17	45.12	16.8057	-0.0489	-0.0275
18639	SLU 42	0.93	-13.61	45.23	16.874	-0.0514	-0.0267
18639	SLU 43	1.06	32.25	33.22	15.3886	0.0073	-0.0231
18639	SLU 44	1	11.51	33.41	15.5025	0.0032	-0.0217
18639	SLU 45	0.95	30.11	39.98	15.6004	-0.0256	-0.0246
18639	SLU 46	0.92	17.66	40.09	15.6687	-0.0281	-0.0238
18639	SLU 47	0.87	10.86	41.13	15.423	-0.0353	-0.0234
18639	SLU 48	0.83	29.46	47.7	15.521	-0.0642	-0.0263
18639	SLU 49	0.79	17.01	47.82	15.5893	-0.0666	-0.0255
18639	SLU 50	0.81	30.96	48.67	15.2298	-0.0698	-0.0265
18639	SLU 51	0.77	18.51	48.78	15.2981	-0.0722	-0.0256
18639	SLU 52	1.08	4.85	35.73	17.3873	0.0051	-0.0234
18639	SLU 53	1.03	23.45	42.31	17.4853	-0.0237	-0.0264
18639	SLU 54	0.99	11	42.42	17.5536	-0.0262	-0.0255
18639	SLU 55	0.95	4.2	43.46	17.3079	-0.0334	-0.0251
18639	SLU 56	0.9	22.8	50.03	17.4059	-0.0623	-0.0281
18639	SLU 57	0.86	10.35	50.14	17.4741	-0.0647	-0.0272
18639	SLU 58	0.88	24.3	50.99	17.1147	-0.0679	-0.0282
18639	SLU 59	0.84	11.85	51.11	17.183	-0.0703	-0.0274
18639	SLU 60	1.17	22.74	36.54	18.0813	0.01	-0.0256
18639	SLU 61	1.13	10.29	36.66	18.1496	0.0076	-0.0248
18639	SLU 62	1.04	22.09	44.27	18.0019	-0.0285	-0.0273
18639	SLU 63	1.01	9.64	44.38	18.0702	-0.031	-0.0265
18639	SLU 64	1.2	19.74	39.97	17.2522	-0.0075	-0.0275
18639	SLU 65	1.14	-1	40.15	17.366	-0.0116	-0.0261
18639	SLU 66	1.09	17.6	46.72	17.464	-0.0404	-0.029
18639	SLU 67	1.05	5.15	46.84	17.5323	-0.0429	-0.0282
18639	SLU 68	1.01	-1.65	47.88	17.2866	-0.0501	-0.0278
18639	SLU 69	0.96	16.95	54.45	17.3845	-0.0789	-0.0307
18639	SLU 70	0.92	4.5	54.56	17.4528	-0.0814	-0.0299
18639	SLU 71	0.94	18.45	55.41	17.0934	-0.0845	-0.0309
18639	SLU 72	0.9	6	55.53	17.1617	-0.087	-0.03
18639	SLU 73	1.21	-7.67	42.48	19.2509	-0.0097	-0.0278
18639	SLU 74	1.16	10.94	49.05	19.3488	-0.0385	-0.0308
18639	SLU 75	1.13	-1.51	49.16	19.4171	-0.041	-0.0299
18639	SLU 76	1.08	-8.31	50.2	19.1715	-0.0482	-0.0295
18639	SLU 77	1.03	10.29	56.77	19.2694	-0.0771	-0.0325
18639	SLU 78	1	-2.16	56.89	19.3377	-0.0795	-0.0316
18639	SLU 79	1.01	11.78	57.74	18.9782	-0.0827	-0.0326
18639	SLU 80	0.98	-0.66	57.85	19.0465	-0.0851	-0.0318
18639	SLU 81	1.31	10.23	43.29	19.9449	-0.0048	-0.03
18639	SLU 82	1.27	-2.22	43.4	20.0132	-0.0072	-0.0291
18639	SLU 83	1.18	9.58	51.01	19.8655	-0.0433	-0.0317
18639	SLU 84	1.14	-2.87	51.12	19.9338	-0.0458	-0.0308
18639	SLE RA 1	0.89	17.94	29.26	12.8613	-0.0025	-0.0202
18639	SLE RA 2	0.85	4.11	29.39	12.9372	-0.0052	-0.0192
18639	SLE RA 3	0.82	16.51	33.77	13.0025	-0.0245	-0.0212
18639	SLE RA 4	0.79	8.21	33.84	13.048	-0.0261	-0.0206
18639	SLE RA 5	0.76	3.67	34.54	12.8843	-0.0309	-0.0204
18639	SLE RA 6	0.73	16.07	38.92	12.9496	-0.0501	-0.0223
18639	SLE RA 7	0.71	7.78	38.99	12.9951	-0.0518	-0.0218
18639	SLE RA 8	0.72	17.07	39.56	12.7555	-0.0539	-0.0224
18639	SLE RA 9	0.69	8.77	39.63	12.801	-0.0555	-0.0219
18639	SLE RA 10	0.9	-0.34	30.94	14.1938	-0.004	-0.0204
18639	SLE RA 11	0.87	12.07	35.32	14.2591	-0.0232	-0.0224
18639	SLE RA 12	0.84	3.77	35.39	14.3046	-0.0248	-0.0218
18639	SLE RA 13	0.81	-0.77	36.08	14.1409	-0.0297	-0.0215
18639	SLE RA 14	0.78	11.63	40.47	14.2062	-0.0489	-0.0235
18639	SLE RA 15	0.76	3.34	40.54	14.2517	-0.0505	-0.0229
18639	SLE RA 16	0.77	12.63	41.11	14.012	-0.0526	-0.0236
18639	SLE RA 17	0.74	4.33	41.18	14.0576	-0.0543	-0.023
18639	SLE RA 18	0.96	11.59	31.47	14.6565	-0.0007	-0.0218
18639	SLE RA 19	0.94	3.29	31.55	14.702	-0.0023	-0.0213
18639	SLE RA 20	0.88	11.16	36.62	14.6035	-0.0264	-0.023
18639	SLE RA 21	0.85	2.86	36.7	14.649	-0.028	-0.0224
18639	SLE FR 1	0.89	17.94	29.26	12.8613	-0.0025	-0.0202
18639	SLE FR 2	0.88	15.17	29.29	12.8765	-0.003	-0.02
18639	SLE FR 3	0.86	17.76	31.32	12.8402	-0.0128	-0.0206
18639	SLE FR 4	0.91	13.27	29.95	13.4151	-0.0025	-0.0205
18639	SLE FR 5	0.88	15.86	31.98	13.3787	-0.0122	-0.0211
18639	SLE FR 6	0.93	14.76	30.37	13.7589	-0.0016	-0.021
18639	SLE QP 1	0.89	17.94	29.26	12.8613	-0.0025	-0.0202
18639	SLE QP 2	0.91	16.03	29.92	13.3999	-0.002	-0.0207
18639	SLD 1	31.47	307.25	28.82	12.7006	1.238	-0.4
18639	SLD 2	30.62	171.1	29.49	13.9931	1.2049	-0.3774
18639	SLD 3	33.19	56.96	29.58	15.4653	1.307	-0.4212
18639	SLD 4	32.35	-79.19	30.24	16.7578	1.2738	-0.3986
18639	SLD 5	7.62	507.32	28.34	8.7662	0.2714	-0.1064
18639	SLD 6	7.06	417.84	28.77	9.6156	0.2496	-0.0915
18639	SLD 7	13.36	-326.98	30.84	17.9818	0.5012	-0.177
18639	SLD 8	12.81	-416.46	31.28	18.8312	0.4794	-0.1621
18639	SLD 9	-10.98	448.52	28.57	7.9686	-0.4833	-0.1208
18639	SLD 10	-11.53	359.05	29.01	8.818	-0.5051	0.1356



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
18639	SLD 11	-5.23	-385.78	31.08	17.1842	-0.2536	0.0502
18639	SLD 12	-5.79	-475.25	31.51	18.0336	-0.2753	0.0651
18639	SLD 13	-30.52	111.26	29.61	10.042	-1.2777	0.3572
18639	SLD 14	-31.36	-24.89	30.27	11.3345	-1.3109	0.3799
18639	SLD 15	-28.8	-139.03	30.36	12.8067	-1.2088	0.3361
18639	SLD 16	-29.64	-275.18	31.03	14.0991	-1.2419	0.3587
18639	SLV 1	72.43	687.57	27.38	11.8693	2.9004	-0.9086
18639	SLV 2	70.46	370.5	28.91	14.8792	2.8232	-0.8559
18639	SLV 3	76.46	120.09	29.09	18.132	3.0615	-0.9581
18639	SLV 4	74.49	-196.98	30.63	21.1419	2.9844	-0.9054
18639	SLV 5	16.59	1133	26.29	2.9217	0.6377	-0.2211
18639	SLV 6	15.32	928.21	27.28	4.8658	0.5879	-0.187
18639	SLV 7	30.03	-758.59	32.01	23.7974	1.1748	-0.3861
18639	SLV 8	28.76	-963.38	33.01	25.7415	1.125	-0.352
18639	SLV 9	-26.93	995.44	26.84	1.0583	-1.1289	0.3107
18639	SLV 10	-28.2	790.65	27.84	3.0023	-1.1787	0.3448
18639	SLV 11	-13.5	-896.15	32.57	21.934	-0.5918	0.1457
18639	SLV 12	-14.77	-1100.93	33.56	23.878	-0.6416	0.1798
18639	SLV 13	-72.67	229.05	29.22	5.6579	-2.9883	0.864
18639	SLV 14	-74.63	-88.03	30.76	8.6678	-3.0655	0.9168
18639	SLV 15	-68.63	-338.43	30.94	11.9206	-2.8272	0.8145
18639	SLV 16	-70.6	-655.5	32.47	14.9305	-2.9043	0.8673
18639	CRTFP Ux+	0	0	0	0	0	0
18639	CRTFP Ux-	0	0	0	0	0	0
18639	CRTFP Uy+	0	0	0	0.0001	0	0
18639	CRTFP Uy-	0	0	0	-0.0001	0	0

## 1.3 Pressioni massime sul terreno

**Nodo:** Nodo che interagisce col terreno.

**Ind.:** indice del nodo.

**Pressione minima:** situazione in cui si verifica la pressione minima nel nodo.

**Cont.:** nome breve della condizione o combinazione di carico a cui si riferisce la pressione minima.

**uz:** spostamento massimo verticale del nodo. [m]

**Valore:** pressione minima sul terreno del nodo. [kN/m<sup>2</sup>]

**Pressione massima:** situazione in cui si verifica la pressione massima nel nodo.

**Cont.:** nome breve della condizione o combinazione di carico a cui si riferisce la pressione massima.

**uz:** spostamento minimo verticale del nodo. [m]

**Valore:** pressione massima sul terreno del nodo. [kN/m<sup>2</sup>]

Compressione estrema massima -166.674 al nodo di indice 252, di coordinate x = -24.4, y = -3.28, z = -1.59, nel contesto SLV 1.

Spostamento estremo minimo -0.005558 al nodo di indice 252, di coordinate x = -24.4, y = -3.28, z = -1.59, nel contesto SLV 1.

Spostamento estremo massimo -0.0007729 al nodo di indice 900, di coordinate x = -0.47, y = 5.53, z = -1.59, nel contesto SLV 2.

Nodo	Ind.	Cont.	Pressione minima		Cont.	Pressione massima	
			uz	Valore		uz	Valore
11	SLU 83		-0.0040653	-121.959	SLU 2	-0.002589	-77.671
12	SLU 83		-0.0040396	-121.188	SLU 2	-0.0025776	-77.327
13	SLU 83		-0.0040128	-120.384	SLU 2	-0.0025656	-76.969
14	SLU 83		-0.003985	-119.551	SLU 2	-0.0025534	-76.601
15	SLU 83		-0.0039556	-118.667	SLV 3	-0.0025222	-75.667
16	SLU 83		-0.0039204	-117.612	SLV 4	-0.0024587	-73.762
17	SLU 83		-0.0038787	-116.362	SLV 4	-0.0023902	-71.707
18	SLU 84		-0.0040241	-120.724	SLU 1	-0.0025584	-76.753
20	SLU 84		-0.0039972	-119.916	SLU 1	-0.0025461	-76.383
22	SLU 84		-0.0039642	-118.926	SLU 1	-0.0025301	-75.903
24	SLU 84		-0.0039319	-117.958	SLU 1	-0.0025148	-75.444
26	SLU 83		-0.0039013	-117.038	SLU 2	-0.0025003	-75.01
27	SLU 83		-0.0038676	-116.027	SLV 4	-0.0024393	-73.178
28	SLU 83		-0.0038235	-114.705	SLV 4	-0.0023693	-71.079
29	SLU 84		-0.0038117	-114.35	SLV 4	-0.002414	-72.421
30	SLU 83		-0.00377	-113.101	SLV 4	-0.0023458	-70.374
31	SLU 84		-0.0038313	-114.938	SLU 1	-0.0024513	-73.54
32	SLU 84		-0.003974	-119.219	SLU 1	-0.0025225	-75.674
33	SLU 84		-0.0039408	-118.224	SLU 1	-0.0025059	-75.176
34	SLU 84		-0.0038944	-116.831	SLU 1	-0.0024808	-74.424
35	SLU 84		-0.0038416	-115.247	SLU 1	-0.0024518	-73.555
36	SLU 84		-0.0037507	-112.521	SLV 2	-0.0023809	-71.427
37	SLU 84		-0.0037095	-111.285	SLV 4	-0.0023149	-69.447
38	SLU 84		-0.003768	-113.041	SLU 1	-0.0024074	-72.223
39	SLU 84		-0.0037813	-113.44	SLU 1	-0.0024128	-72.385
41	SLU 84		-0.0039188	-117.565	SLU 1	-0.0024836	-74.507
42	SLU 84		-0.0038809	-116.428	SLU 1	-0.0024635	-73.906
43	SLU 84		-0.0038329	-114.986	SLU 1	-0.0024366	-73.098
44	SLU 84		-0.0037819	-113.458	SLU 1	-0.0024073	-72.22
45	SLU 84		-0.0037401	-112.203	SLU 1	-0.0023826	-71.477
46	SLU 84		-0.0036905	-110.714	SLV 2	-0.0023411	-70.234
47	SLU 84		-0.0036466	-109.399	SLV 2	-0.002277	-68.311
48	SLU 84		-0.0037139	-111.418	SLU 1	-0.0023684	-71.051
49	SLU 84		-0.0038624	-115.872	SLU 1	-0.0024437	-73.311
50	SLU 84		-0.0038231	-114.693	SLU 1	-0.0024223	-72.669
51	SLU 84		-0.0037783	-113.348	SLU 1	-0.0023967	-71.901
52	SLU 84		-0.0037332	-111.996	SLU 1	-0.0023707	-71.122
53	SLU 84		-0.003694	-110.819	SLU 1	-0.0023481	-70.442
54	SLU 84		-0.0036624	-109.872	SLU 1	-0.0023305	-69.916



Nodo		Pressione minima		Pressione massima		
Ind.	Cont.	uz	Valore	Cont.	uz	Valore
55	SLU 84	-0.0036319	-108.958	SLV 2	-0.0022984	-68.952
56	SLU 84	-0.0035838	-107.514	SLV 2	-0.0022343	-67.03
57	SLU 84	-0.0038039	-114.116	SLV 10	-0.0023819	-71.457
58	SLU 84	-0.0037655	-112.966	SLV 6	-0.0023777	-71.331
59	SLU 84	-0.0037279	-111.837	SLU 1	-0.0023596	-70.787
60	SLU 84	-0.0036879	-110.636	SLU 1	-0.0023366	-70.097
61	SLU 84	-0.003649	-109.47	SLU 1	-0.0023143	-69.429
62	SLU 84	-0.0036118	-108.354	SLU 1	-0.0022932	-68.797
63	SLU 84	-0.0035741	-107.222	SLV 2	-0.0022542	-67.627
64	SLU 84	-0.003522	-105.659	SLV 2	-0.0021894	-65.681
65	SLU 84	-0.0037713	-113.139	SLV 10	-0.0023317	-69.95
66	SLU 84	-0.0037326	-111.977	SLV 6	-0.002328	-69.84
67	SLU 84	-0.0036959	-110.877	SLV 6	-0.0023151	-69.452
68	SLU 84	-0.0036558	-109.673	SLV 6	-0.0022968	-68.904
69	SLU 84	-0.0036152	-108.456	SLV 6	-0.0022765	-68.295
70	SLU 84	-0.0035751	-107.252	SLV 6	-0.0022547	-67.642
71	SLU 84	-0.0035343	-106.028	SLV 2	-0.0022234	-66.701
72	SLU 84	-0.0034808	-104.425	SLV 2	-0.0021584	-64.753
130	SLU 83	-0.0047331	-141.994	SLV 12	-0.0026747	-80.242
131	SLU 83	-0.0047263	-141.789	SLV 12	-0.0026944	-80.832
132	SLU 83	-0.0047341	-142.022	SLV 12	-0.0027209	-81.628
133	SLU 83	-0.0047557	-142.67	SLV 12	-0.0027536	-82.608
134	SLU 83	-0.004788	-143.64	SLV 12	-0.0027901	-83.704
135	SLU 83	-0.0048255	-144.765	SLV 12	-0.0028253	-84.76
136	SLU 83	-0.004829	-144.869	SLV 8	-0.0028307	-84.921
137	SLU 83	-0.0048347	-145.041	SLV 16	-0.0025834	-77.501
138	SLU 83	-0.004787	-143.609	SLV 16	-0.0026284	-78.851
139	SLU 83	-0.0047516	-142.547	SLV 12	-0.0026628	-79.885
153	SLU 83	-0.0045391	-136.172	SLV 7	-0.0026442	-79.327
156	SLU 83	-0.0045926	-137.779	SLV 7	-0.0026669	-80.008
158	SLU 83	-0.004618	-138.54	SLV 7	-0.0026733	-80.199
160	SLU 83	-0.0046239	-138.716	SLV 7	-0.0026646	-79.937
162	SLU 83	-0.0046213	-138.639	SLV 7	-0.0026478	-79.434
164	SLU 83	-0.004618	-138.539	SLV 7	-0.0026279	-78.838
166	SLU 83	-0.0046196	-138.588	SLV 3	-0.0025821	-77.464
168	SLU 83	-0.0046296	-138.887	SLV 3	-0.0025264	-75.792
169	SLU 83	-0.0046471	-139.414	SLV 3	-0.0024793	-74.38
170	SLU 83	-0.0046783	-140.348	SLV 3	-0.0024299	-72.898
171	SLU 83	-0.0047192	-141.576	SLV 3	-0.0023859	-71.578
172	SLU 83	-0.004529	-135.871	SLV 8	-0.0026948	-80.844
173	SLU 83	-0.0044407	-133.222	SLV 8	-0.0026394	-79.183
174	SLU 83	-0.0043549	-130.646	SLV 8	-0.0025874	-77.622
175	SLU 83	-0.0042926	-128.778	SLV 8	-0.0025511	-76.532
176	SLU 83	-0.0042658	-127.973	SLV 7	-0.0025345	-76.035
177	SLU 83	-0.0042767	-128.301	SLV 7	-0.0025394	-76.182
178	SLU 83	-0.0043187	-129.56	SLV 7	-0.0025621	-76.862
179	SLU 83	-0.0043753	-131.259	SLV 7	-0.0025921	-77.764
180	SLU 83	-0.0044211	-132.633	SLV 7	-0.0026138	-78.415
181	SLU 83	-0.0046051	-138.152	SLV 16	-0.0025718	-77.153
182	SLU 83	-0.0045485	-136.455	SLV 16	-0.002602	-78.061
183	SLU 83	-0.0045056	-135.168	SLV 12	-0.0026013	-78.039
184	SLU 83	-0.0044829	-134.487	SLV 12	-0.0026087	-78.26
185	SLU 83	-0.0044847	-134.54	SLV 12	-0.0026291	-78.874
186	SLU 83	-0.0045115	-135.346	SLV 12	-0.0026629	-79.887
187	SLU 83	-0.0045589	-136.766	SLV 12	-0.0027067	-81.2
188	SLU 83	-0.0046129	-138.387	SLV 12	-0.002749	-82.469
189	SLU 83	-0.0046578	-139.733	SLV 8	-0.0027725	-83.176
190	SLU 83	-0.0046681	-140.043	SLV 16	-0.0025451	-76.354
192	SLU 83	-0.0043828	-131.483	SLV 7	-0.0026006	-78.019
194	SLU 83	-0.0044239	-132.717	SLV 7	-0.0026165	-78.496
195	SLU 83	-0.00444	-133.2	SLV 7	-0.0026186	-78.559
196	SLU 83	-0.0044374	-133.122	SLV 7	-0.0026067	-78.201
197	SLU 83	-0.0044282	-132.847	SLV 7	-0.0025883	-77.648
198	SLU 83	-0.0044235	-132.706	SLV 7	-0.0025702	-77.107
199	SLU 83	-0.0044308	-132.924	SLV 3	-0.0025212	-75.635
200	SLU 83	-0.0044532	-133.596	SLV 3	-0.0024774	-74.321
201	SLU 83	-0.0044899	-134.697	SLV 3	-0.0024404	-73.213
202	SLU 83	-0.0045371	-136.114	SLV 3	-0.002409	-72.269
203	SLU 83	-0.0045896	-137.689	SLV 3	-0.0023801	-71.403
204	SLU 83	-0.0044231	-132.693	SLV 16	-0.0025172	-75.517
205	SLU 83	-0.0043455	-130.365	SLV 16	-0.0025289	-75.867
206	SLU 83	-0.0042801	-128.404	SLV 12	-0.002528	-75.841
207	SLU 83	-0.00424	-127.2	SLV 12	-0.0025221	-75.664
208	SLU 83	-0.0042346	-127.039	SLV 12	-0.0025358	-76.075
209	SLU 83	-0.0042672	-128.017	SLV 12	-0.0025709	-77.128
210	SLU 83	-0.004334	-130.019	SLV 12	-0.0026243	-78.729
211	SLU 83	-0.004425	-132.75	SLV 8	-0.002683	-80.49
212	SLU 83	-0.0045316	-135.949	SLV 8	-0.0027363	-82.088
213	SLU 83	-0.0045051	-135.152	SLV 16	-0.0025084	-75.251
216	SLU 83	-0.0042545	-127.636	SLV 7	-0.0025724	-77.171
218	SLU 83	-0.0042742	-128.226	SLV 7	-0.0025767	-77.301
219	SLU 83	-0.004275	-128.251	SLV 7	-0.0025708	-77.123
220	SLU 83	-0.0042588	-127.765	SLV 7	-0.0025524	-76.573
221	SLU 83	-0.0042399	-127.196	SLV 7	-0.0025304	-75.913
222	SLU 83	-0.004232	-126.961	SLV 3	-0.0025037	-75.112
223	SLU 83	-0.0042445	-127.335	SLV 3	-0.0024609	-73.826
224	SLU 83	-0.0042797	-128.391	SLV 3	-0.002429	-72.87
225	SLU 83	-0.0043332	-129.996	SLV 3	-0.0024065	-72.195
226	SLU 83	-0.0043962	-131.885	SLV 3	-0.0023897	-71.691
227	SLU 83	-0.0044628	-133.883	SLV 3	-0.0023749	-71.247





Nodo	Pressione minima			Pressione massima		
Ind.	Cont.	uz	Valore	Cont.	uz	Valore
228	SLU 83	-0.0042342	-127.026	SLV 16	-0.0024549	-73.648
229	SLU 83	-0.0041416	-124.248	SLV 16	-0.0024512	-73.537
230	SLU 83	-0.0040527	-121.582	SLV 12	-0.0024511	-73.534
231	SLU 83	-0.0039945	-119.834	SLV 12	-0.002432	-72.959
232	SLU 83	-0.0039815	-119.444	SLV 12	-0.0024386	-73.159
233	SLU 83	-0.0040192	-120.575	SLV 12	-0.0024745	-74.235
234	SLU 83	-0.0041068	-123.203	SLV 12	-0.002537	-76.111
235	SLU 83	-0.0042372	-127.116	SLV 8	-0.0026096	-78.287
236	SLU 83	-0.0043907	-131.721	SLV 8	-0.0026885	-80.655
237	SLU 83	-0.0043275	-129.824	SLV 16	-0.0024592	-73.775
239	SLU 83	-0.0041337	-124.012	SLV 7	-0.0025454	-76.362
241	SLU 83	-0.0041351	-124.053	SLV 7	-0.0025408	-76.223
242	SLU 83	-0.0041215	-123.644	SLV 7	-0.0025277	-75.832
243	SLU 83	-0.0040885	-122.654	SLV 7	-0.0025011	-75.032
244	SLU 83	-0.0040562	-121.685	SLV 7	-0.0024735	-74.205
245	SLU 83	-0.0040429	-121.288	SLV 3	-0.0024358	-73.073
246	SLU 83	-0.0040589	-121.766	SLV 3	-0.0023989	-71.967
247	SLU 83	-0.0041061	-123.183	SLV 3	-0.0023777	-71.33
248	SLU 83	-0.0041765	-125.296	SLV 3	-0.0023684	-71.052
249	SLU 83	-0.0042498	-127.494	SLV 3	-0.0023633	-70.899
250	SLU 83	-0.0043237	-129.712	SLV 3	-0.0023585	-70.754
252	SLV 1	-0.0055558	-166.674	SLV 16	-0.0009858	-29.575
267	SLU 83	-0.0041361	-124.084	SLV 16	-0.002108	-63.24
269	SLU 83	-0.0042068	-126.204	SLV 16	-0.0022162	-66.486
273	SLU 83	-0.0040982	-122.945	SLV 16	-0.0023705	-71.114
274	SLU 83	-0.0040148	-120.445	SLV 16	-0.0023667	-71.002
275	SLU 83	-0.0039291	-117.874	SLV 16	-0.0023587	-70.762
276	SLU 83	-0.0038161	-114.484	SLV 16	-0.0023483	-70.448
277	SLU 83	-0.0037427	-112.28	SLV 12	-0.0023356	-70.067
278	SLU 83	-0.0037226	-111.678	SLV 12	-0.0023358	-70.075
279	SLU 83	-0.0037629	-112.888	SLV 12	-0.0023705	-71.115
280	SLU 83	-0.0038645	-115.935	SLV 8	-0.0024324	-72.971
281	SLU 83	-0.004024	-120.719	SLV 8	-0.0025143	-75.428
282	SLU 83	-0.0040769	-122.308	SLV 8	-0.0025415	-76.246
283	SLU 83	-0.0041931	-125.792	SLV 8	-0.0026033	-78.098
285	SLU 83	-0.0040005	-120.014	SLV 7	-0.0025067	-75.202
287	SLU 83	-0.0039911	-119.732	SLV 7	-0.002499	-74.969
288	SLU 83	-0.0039734	-119.202	SLV 7	-0.0024848	-74.545
289	SLU 83	-0.0039209	-117.627	SLV 7	-0.0024489	-73.468
290	SLU 83	-0.0038743	-116.228	SLV 7	-0.0024156	-72.468
291	SLU 83	-0.0038537	-115.611	SLV 3	-0.002366	-70.98
292	SLU 83	-0.0038702	-116.105	SLV 3	-0.0023327	-69.982
293	SLU 83	-0.0039254	-117.762	SLV 3	-0.0023177	-69.531
294	SLU 83	-0.0040122	-120.366	SLV 3	-0.002316	-69.481
295	SLU 83	-0.0040782	-122.347	SLV 3	-0.0023143	-69.429
296	SLU 83	-0.0041421	-124.262	SLV 3	-0.0023085	-69.255
300	SLU 83	-0.0041956	-125.869	SLV 3	-0.0021531	-64.594
302	SLU 83	-0.0041196	-123.588	SLV 3	-0.0020614	-61.843
317	SLV 14	-0.0051278	-153.835	SLV 3	-0.0008987	-26.962
320	SLV 14	-0.0052901	-158.703	SLV 3	-0.0008753	-26.259
321	SLV 14	-0.0047149	-141.447	SLV 3	-0.0008656	-25.967
322	SLV 14	-0.0042154	-126.462	SLV 3	-0.000868	-26.041
323	SLV 14	-0.0038024	-114.073	SLV 3	-0.0008845	-26.535
324	SLV 1	-0.0054898	-164.695	SLV 16	-0.0009366	-28.097
325	SLV 1	-0.0049206	-147.619	SLV 16	-0.0009267	-27.801
326	SLV 1	-0.0044119	-132.358	SLV 16	-0.0009263	-27.79
327	SLV 1	-0.0039802	-119.407	SLV 16	-0.0009381	-28.144
328	SLV 1	-0.0036303	-108.91	SLV 16	-0.0009632	-28.897
329	SLV 1	-0.0033603	-100.809	SLV 16	-0.0010024	-30.071
330	SLV 1	-0.0031647	-94.94	SLV 16	-0.001056	-31.681
331	SLV 1	-0.0030367	-91.102	SLV 16	-0.001125	-33.749
332	SLU 83	-0.0030376	-91.128	SLV 16	-0.00121	-36.299
333	SLU 83	-0.0031035	-93.104	SLV 16	-0.0013116	-39.347
334	SLU 83	-0.003216	-96.48	SLV 16	-0.0014297	-42.89
335	SLU 83	-0.0033676	-101.027	SLV 16	-0.0015627	-46.88
336	SLU 83	-0.0035459	-106.377	SLV 16	-0.0017065	-51.195
337	SLU 83	-0.0037311	-111.934	SLV 16	-0.0018531	-55.593
338	SLU 83	-0.0038919	-116.757	SLV 16	-0.0019888	-59.663
339	SLU 83	-0.003984	-119.521	SLV 16	-0.0020932	-62.796
340	SLU 83	-0.004015	-120.45	SLV 16	-0.0021641	-64.923
341	SLU 83	-0.0039951	-119.854	SLV 16	-0.0022155	-66.465
342	SLU 83	-0.0039376	-118.129	SLV 16	-0.0022486	-67.458
343	SLU 83	-0.0038475	-115.424	SLV 16	-0.0022605	-67.814
344	SLU 83	-0.0037728	-113.183	SLV 16	-0.0022625	-67.876
345	SLU 83	-0.0036903	-110.709	SLV 16	-0.0022561	-67.684
346	SLU 83	-0.0035781	-107.344	SLV 16	-0.0022443	-67.33
347	SLU 83	-0.003501	-105.029	SLV 12	-0.0022411	-67.234
348	SLU 83	-0.0034788	-104.363	SLU 2	-0.002237	-67.111
349	SLU 83	-0.0035206	-105.619	SLU 2	-0.002261	-67.83
350	SLU 83	-0.0036267	-108.8	SLV 8	-0.0023207	-69.62
351	SLU 83	-0.0037882	-113.647	SLV 8	-0.0024012	-72.036
352	SLU 83	-0.0040416	-121.248	SLV 8	-0.0025347	-76.042
353	SLV 14	-0.0034766	-104.297	SLV 3	-0.0009157	-27.47
354	SLV 14	-0.003233	-96.991	SLV 3	-0.0009619	-28.858
355	SLV 14	-0.0030647	-91.942	SLV 3	-0.0010237	-30.71
356	SLV 14	-0.002964	-88.92	SLV 3	-0.0011015	-33.045
357	SLU 83	-0.0029918	-89.754	SLV 3	-0.0011959	-35.877
358	SLU 83	-0.0030832	-92.497	SLV 3	-0.001307	-39.21
359	SLU 83	-0.0032193	-96.579	SLV 3	-0.0014338	-43.014
360	SLU 83	-0.0033904	-101.711	SLV 3	-0.0015732	-47.197



Nodo		Pressione minima		Pressione massima		
Ind.	Cont.	uz	Valore	Cont.	uz	Valore
361	SLU 83	-0.0035811	-107.432	SLV 3	-0.0017189	-51.567
362	SLU 83	-0.0037668	-113.003	SLV 3	-0.0018594	-55.782
363	SLU 83	-0.0039421	-118.264	SLV 3	-0.0020101	-60.303
364	SLU 83	-0.0039095	-117.284	SLV 3	-0.0019764	-59.292
365	SLU 83	-0.0040323	-120.968	SLV 3	-0.0021218	-63.654
366	SLU 83	-0.0040182	-120.545	SLV 3	-0.0021018	-63.053
367	SLU 83	-0.004041	-121.231	SLV 3	-0.0021761	-65.282
368	SLU 83	-0.0040084	-120.251	SLV 3	-0.0022163	-66.489
369	SLU 83	-0.0039433	-118.298	SLV 3	-0.0022396	-67.188
370	SLU 83	-0.0038879	-116.637	SLV 3	-0.002251	-67.53
371	SLU 83	-0.003826	-114.78	SLV 3	-0.002255	-67.651
372	SLU 83	-0.0037435	-112.304	SLV 3	-0.0022578	-67.733
373	SLU 83	-0.0036897	-110.69	SLV 3	-0.0022703	-68.109
374	SLU 83	-0.0036769	-110.306	SLV 3	-0.0023015	-69.045
375	SLU 83	-0.0037052	-111.156	SLV 3	-0.0023524	-70.572
376	SLU 83	-0.0037632	-112.897	SLV 7	-0.0023982	-71.946
377	SLU 83	-0.003827	-114.81	SLV 7	-0.0024378	-73.133
378	SLU 83	-0.0038644	-115.933	SLV 7	-0.0024615	-73.846
379	SLU 83	-0.0038762	-116.287	SLV 7	-0.0024672	-74.017
382	SLU 83	-0.0039443	-118.329	SLV 16	-0.0020391	-61.174
384	SLU 83	-0.004013	-120.39	SLV 16	-0.0021457	-64.372
385	SLV 14	-0.0047573	-142.719	SLV 3	-0.0008634	-25.901
386	SLU 83	-0.0040112	-120.335	SLV 3	-0.0021005	-63.015
389	SLU 83	-0.0039381	-118.144	SLV 3	-0.0020122	-60.367
391	SLV 1	-0.0050854	-152.561	SLV 16	-0.0009241	-27.723
393	SLU 83	-0.0037884	-113.653	SLU 2	-0.0024141	-72.422
396	SLU 83	-0.00381	-114.301	SLV 16	-0.0019958	-59.873
398	SLU 83	-0.0038734	-116.202	SLV 16	-0.0020981	-62.944
399	SLV 14	-0.0044612	-133.835	SLV 3	-0.0008414	-25.241
400	SLU 83	-0.0038762	-116.286	SLV 3	-0.0020662	-61.986
403	SLU 83	-0.0038114	-114.343	SLV 3	-0.0019872	-59.616
405	SLV 1	-0.0047196	-141.589	SLV 16	-0.0008816	-26.448
407	SLU 83	-0.0037453	-112.36	SLU 2	-0.0023847	-71.542
410	SLU 83	-0.0037166	-111.498	SLV 16	-0.00197	-59.1
412	SLU 83	-0.0037747	-113.242	SLV 16	-0.0020682	-62.046
413	SLV 14	-0.0042542	-127.627	SLV 3	-0.0008349	-25.046
414	SLU 84	-0.0037795	-113.385	SLV 3	-0.0020469	-61.408
417	SLU 84	-0.0037228	-111.683	SLV 3	-0.0019771	-59.314
419	SLV 1	-0.0044652	-133.955	SLV 16	-0.0008586	-25.757
421	SLU 83	-0.003747	-112.409	SLU 2	-0.0023836	-71.509
423	SLU 83	-0.0033466	-100.399	SLV 4	-0.0021275	-63.826
425	SLU 83	-0.0036517	-109.55	SLV 16	-0.0019563	-58.69
427	SLU 83	-0.0037046	-111.138	SLV 16	-0.0020503	-61.51
428	SLV 14	-0.0041412	-124.237	SLV 3	-0.0008442	-25.326
429	SLU 84	-0.0037084	-111.253	SLV 3	-0.0020367	-61.1
432	SLU 84	-0.0036597	-109.792	SLV 3	-0.0019762	-59.287
434	SLV 1	-0.0043184	-129.552	SLV 16	-0.0008531	-25.594
436	SLU 83	-0.0037856	-113.568	SLU 2	-0.0024058	-72.175
439	SLU 83	-0.0036074	-108.221	SLV 16	-0.001951	-58.53
441	SLU 83	-0.0036552	-109.656	SLV 16	-0.0020404	-61.213
442	SLV 14	-0.0041199	-123.598	SLV 3	-0.0008685	-26.056
443	SLU 84	-0.0036543	-109.628	SLV 3	-0.0020307	-60.922
446	SLU 84	-0.0036136	-108.407	SLV 3	-0.0019801	-59.402
448	SLV 1	-0.0042707	-128.121	SLV 16	-0.0008627	-25.882
450	SLU 84	-0.0038454	-115.363	SLU 1	-0.0024413	-73.238
453	SLU 83	-0.0035793	-107.379	SLV 16	-0.0019503	-58.51
455	SLU 84	-0.0036221	-108.663	SLV 16	-0.0020336	-61.008
456	SLV 14	-0.0041819	-125.456	SLV 3	-0.0009059	-27.178
457	SLU 84	-0.0036118	-108.353	SLV 3	-0.0020247	-60.741
460	SLU 84	-0.003579	-107.369	SLV 3	-0.0019852	-59.555
467	SLV 1	-0.0043097	-129.29	SLV 16	-0.0008843	-26.528
468	SLU 84	-0.0039029	-117.087	SLU 1	-0.002475	-74.249
472	SLU 84	-0.0039307	-117.922	SLU 1	-0.0024909	-74.728
474	SLU 84	-0.0035653	-106.958	SLV 16	-0.0019504	-58.511
476	SLU 84	-0.003603	-108.089	SLV 14	-0.0020267	-60.801
477	SLV 14	-0.0043117	-129.35	SLV 3	-0.0009534	-28.603
478	SLU 84	-0.0035781	-107.343	SLV 3	-0.0020149	-60.446
481	SLU 84	-0.0035532	-106.595	SLV 3	-0.0019881	-59.642
484	SLV 1	-0.0044179	-132.537	SLV 16	-0.0009145	-27.434
486	SLU 84	-0.0035121	-105.363	SLV 1	-0.0021595	-64.786
487	SLU 84	-0.0037127	-111.382	SLV 1	-0.0022919	-68.757
488	SLU 84	-0.0039856	-119.567	SLV 1	-0.0024575	-73.724
489	SLU 84	-0.0040295	-120.884	SLV 3	-0.0024897	-74.691
490	SLU 84	-0.0039431	-118.292	SLU 1	-0.0024973	-74.918
492	SLU 84	-0.0035632	-106.895	SLV 13	-0.0019509	-58.528
494	SLU 84	-0.0035958	-107.875	SLV 13	-0.0020204	-60.613
495	SLV 14	-0.0044852	-134.556	SLV 3	-0.0010064	-30.193
496	SLU 84	-0.0035525	-106.574	SLV 1	-0.0020015	-60.046
499	SLU 84	-0.0035354	-106.061	SLV 1	-0.0019867	-59.602
503	SLU 84	-0.0039264	-117.792	SLU 1	-0.0024848	-74.544
506	SLV 1	-0.00457	-137.101	SLV 16	-0.0009496	-28.488
509	SLU 84	-0.0035708	-107.124	SLV 13	-0.0019508	-58.523
511	SLU 84	-0.0035984	-107.953	SLV 13	-0.002016	-60.481
512	SLV 14	-0.0046665	-139.996	SLV 3	-0.001058	-31.741
513	SLU 84	-0.0035357	-106.072	SLV 1	-0.0019867	-59.601
516	SLU 84	-0.0035264	-105.793	SLV 1	-0.0019826	-59.477
519	SLU 84	-0.0038784	-116.351	SLU 1	-0.0024528	-73.584
522	SLV 2	-0.004729	-141.869	SLV 15	-0.0009837	-29.511
525	SLV 14	-0.0048042	-144.127	SLV 3	-0.0010981	-32.942
526	SLU 84	-0.0035841	-107.522	SLV 13	-0.0019534	-58.603



Nodo		Pressione minima		Pressione massima		
Ind.	Cont.	uz	Valore	Cont.	uz	Valore
528	SLU 84	-0.0036067	-108.2	SLV 13	-0.0020149	-60.447
529	SLU 84	-0.0035305	-105.914	SLV 2	-0.0019674	-59.023
532	SLU 84	-0.0035289	-105.868	SLV 2	-0.0019755	-59.264
535	SLU 84	-0.0038068	-114.203	SLU 1	-0.0024061	-72.182
537	SLV 4	-0.0049968	-149.905	SLV 13	-0.0009462	-28.386
538	SLV 4	-0.0047972	-143.917	SLV 13	-0.0010414	-31.243
539	SLV 4	-0.0046314	-138.941	SLV 13	-0.0011413	-34.239
540	SLV 4	-0.0044798	-134.393	SLV 13	-0.0012412	-37.235
541	SLV 4	-0.0043319	-129.956	SLV 13	-0.0013384	-40.153
542	SLV 4	-0.0041835	-125.504	SLV 13	-0.0014322	-42.965
543	SLU 84	-0.0040828	-122.484	SLV 15	-0.0015222	-45.666
544	SLU 84	-0.0040365	-121.095	SLV 15	-0.0016083	-48.25
545	SLU 84	-0.0039848	-119.545	SLV 15	-0.0016896	-50.689
546	SLU 84	-0.0039265	-117.795	SLV 15	-0.0017641	-52.924
547	SLU 84	-0.0038604	-115.812	SLV 15	-0.0018282	-54.845
548	SLU 84	-0.0037872	-113.616	SLV 13	-0.0018769	-56.306
549	SLU 84	-0.0037125	-111.374	SLV 13	-0.0019054	-57.163
550	SLU 84	-0.0036487	-109.46	SLV 13	-0.0019143	-57.428
551	SLU 84	-0.0035998	-107.994	SLV 13	-0.0019848	-59.544
552	SLU 84	-0.0036249	-108.747	SLV 13	-0.0020545	-61.634
553	SLU 84	-0.0036484	-109.451	SLV 13	-0.0021418	-64.254
554	SLU 84	-0.0036616	-109.848	SLV 13	-0.002237	-67.111
555	SLU 84	-0.0036608	-109.823	SLU 1	-0.0023158	-69.473
556	SLU 84	-0.0036446	-109.338	SLU 1	-0.0023044	-69.131
557	SLU 84	-0.0036137	-108.411	SLU 1	-0.0022841	-68.523
558	SLU 84	-0.0035729	-107.187	SLU 1	-0.0022579	-67.738
559	SLU 84	-0.0035355	-106.066	SLV 1	-0.0021711	-65.132
560	SLU 84	-0.0035129	-105.388	SLV 1	-0.0021103	-63.308
561	SLU 84	-0.0035875	-107.626	SLV 1	-0.0021641	-64.924
562	SLU 84	-0.003638	-109.141	SLV 2	-0.0023007	-69.021
563	SLU 84	-0.0036279	-108.838	SLV 2	-0.0022299	-66.898
564	SLU 84	-0.0036188	-108.563	SLV 2	-0.0021501	-64.504
565	SLU 84	-0.0036041	-108.124	SLV 2	-0.0020703	-62.11
566	SLU 84	-0.0035816	-107.448	SLV 2	-0.0020032	-60.095
567	SLU 84	-0.0035541	-106.623	SLV 2	-0.001961	-58.83
568	SLU 84	-0.0035309	-105.926	SLV 2	-0.0019604	-58.813
569	SLU 84	-0.0035322	-105.966	SLV 2	-0.0019721	-59.162
570	SLU 84	-0.003564	-106.919	SLV 2	-0.0020012	-60.036
571	SLU 84	-0.0036126	-108.377	SLV 2	-0.0020162	-60.486
572	SLU 84	-0.0037037	-111.11	SLV 1	-0.0020326	-60.979
573	SLU 84	-0.0037807	-113.422	SLV 3	-0.0020135	-60.406
574	SLU 84	-0.0038518	-115.554	SLV 3	-0.0019625	-58.875
575	SLU 84	-0.0039141	-117.423	SLV 3	-0.00189	-56.7
576	SLU 84	-0.0039684	-119.053	SLV 3	-0.0018046	-54.137
577	SLU 84	-0.0040167	-120.501	SLV 3	-0.0017119	-51.356
578	SLU 84	-0.0040609	-121.826	SLV 3	-0.0016151	-48.453
579	SLU 84	-0.0041028	-123.083	SLV 3	-0.0015158	-45.474
580	SLV 14	-0.0042437	-127.311	SLV 3	-0.0014148	-42.445
581	SLV 14	-0.0044147	-132.441	SLV 3	-0.0013133	-39.399
582	SLV 14	-0.0046057	-138.172	SLV 3	-0.0012136	-36.409
583	SLV 14	-0.0048385	-145.154	SLV 3	-0.001121	-33.629
584	SLV 14	-0.0051452	-154.356	SLV 3	-0.0010434	-31.303
586	SLV 4	-0.0048414	-145.242	SLV 13	-0.0010054	-30.163
594	SLV 4	-0.004854	-145.619	SLV 13	-0.0010105	-30.314
607	SLU 84	-0.0036788	-110.363	SLV 13	-0.0019153	-57.458
611	SLU 84	-0.0035943	-107.83	SLV 13	-0.0019524	-58.573
614	SLU 84	-0.0036151	-108.453	SLV 13	-0.0020128	-60.385
623	SLU 84	-0.0035201	-105.602	SLV 1	-0.0021919	-65.758
625	SLU 84	-0.0034977	-104.932	SLV 1	-0.0021467	-64.402
627	SLU 84	-0.0035384	-106.151	SLV 1	-0.0021662	-64.987
634	SLU 84	-0.0037126	-111.379	SLV 6	-0.0023402	-70.205
639	SLU 84	-0.0035726	-107.179	SLU 1	-0.0022652	-67.955
648	SLU 84	-0.003543	-106.289	SLV 2	-0.0019545	-58.636
651	SLU 84	-0.0035443	-106.329	SLV 2	-0.0019664	-58.991
654	SLU 84	-0.0036544	-109.632	SLV 2	-0.0020283	-60.848
667	SLV 14	-0.0048354	-145.063	SLV 3	-0.0011137	-33.411
669	SLU 84	-0.0035572	-106.715	SLV 2	-0.0020014	-60.043
671	SLU 84	-0.0036487	-109.461	SLV 4	-0.0020255	-60.766
673	SLV 4	-0.0049871	-149.614	SLV 13	-0.0009541	-28.622
674	SLV 4	-0.0047874	-143.622	SLV 13	-0.0010493	-31.48
675	SLV 4	-0.0046214	-138.641	SLV 13	-0.0011492	-34.476
676	SLV 4	-0.0044695	-134.086	SLV 13	-0.001249	-37.471
677	SLV 4	-0.0043213	-129.64	SLV 13	-0.0013463	-40.389
678	SLV 4	-0.0041726	-125.177	SLV 13	-0.00144	-43.2
679	SLU 84	-0.0040818	-122.455	SLV 13	-0.0015299	-45.898
680	SLU 84	-0.0040351	-121.054	SLV 13	-0.0016159	-48.477
681	SLU 84	-0.003983	-119.489	SLV 15	-0.001697	-50.91
682	SLU 84	-0.0039241	-117.722	SLV 15	-0.0017712	-53.137
683	SLU 84	-0.0038573	-115.718	SLV 15	-0.001835	-55.049
684	SLU 84	-0.0037833	-113.499	SLV 13	-0.0018835	-56.504
685	SLU 84	-0.0037078	-111.234	SLV 13	-0.0019121	-57.363
686	SLU 84	-0.0036435	-109.304	SLV 13	-0.0019215	-57.646
687	SLU 84	-0.0036107	-108.322	SLV 13	-0.0019235	-57.706
688	SLU 84	-0.0035993	-107.979	SLV 13	-0.0019501	-58.504
689	SLU 84	-0.0036117	-108.35	SLV 13	-0.0019862	-59.586
690	SLU 84	-0.0036318	-108.954	SLV 13	-0.0020457	-61.371
691	SLU 84	-0.0036511	-109.532	SLV 13	-0.0021257	-63.77
692	SLU 84	-0.0036601	-109.803	SLV 13	-0.0022136	-66.407
693	SLU 84	-0.003655	-109.649	SLV 13	-0.0022983	-68.948
694	SLU 84	-0.0036344	-109.031	SLU 1	-0.0022939	-68.816



Nodo		Pressione minima		Pressione massima		
Ind.	Cont.	uz	Valore	Cont.	uz	Valore
695	SLU 84	-0.0035989	-107.968	SLU 1	-0.002271	-68.129
696	SLU 84	-0.0035534	-106.603	SLU 1	-0.0022421	-67.262
697	SLU 84	-0.0035118	-105.354	SLU 1	-0.0022161	-66.484
698	SLU 84	-0.0034895	-104.684	SLV 1	-0.0021968	-65.904
699	SLU 84	-0.0035255	-105.766	SLV 1	-0.0021737	-65.212
700	SLU 84	-0.0035467	-106.402	SLV 1	-0.0021768	-65.305
701	SLU 84	-0.0035551	-106.654	SLV 1	-0.002178	-65.34
702	SLU 84	-0.0035663	-106.989	SLV 6	-0.002177	-65.311
703	SLU 84	-0.003576	-107.281	SLV 6	-0.0021853	-65.559
704	SLU 84	-0.0036465	-109.395	SLV 6	-0.0022801	-68.404
705	SLU 84	-0.0036381	-109.142	SLU 1	-0.0022979	-68.937
706	SLU 84	-0.0036068	-108.203	SLU 1	-0.0022789	-68.367
707	SLU 84	-0.0035476	-106.429	SLU 1	-0.0022429	-67.286
708	SLU 84	-0.0035123	-105.369	SLU 1	-0.0022216	-66.647
709	SLU 84	-0.0035002	-105.007	SLV 1	-0.0021919	-65.758
710	SLU 84	-0.0034895	-104.684	SLV 1	-0.0021192	-63.575
711	SLU 84	-0.0034791	-104.374	SLV 1	-0.0020381	-61.144
712	SLU 84	-0.0034631	-103.892	SLV 2	-0.0019577	-58.731
713	SLU 84	-0.0034389	-103.168	SLV 2	-0.00189	-56.699
714	SLU 84	-0.0034096	-102.289	SLV 2	-0.0018473	-55.419
715	SLU 84	-0.0033785	-101.355	SLV 2	-0.0018709	-56.128
716	SLU 84	-0.0035505	-106.514	SLV 2	-0.0019985	-59.954
717	SLU 84	-0.0036477	-109.43	SLV 4	-0.0020249	-60.746
718	SLU 84	-0.0036877	-110.632	SLV 4	-0.0020316	-60.949
719	SLU 84	-0.0037666	-112.999	SLV 4	-0.002013	-60.391
720	SLU 84	-0.0038395	-115.185	SLV 4	-0.0019633	-58.899
721	SLU 84	-0.0039035	-117.105	SLV 4	-0.0018923	-56.769
722	SLU 84	-0.0039595	-118.784	SLV 4	-0.0018082	-54.247
723	SLU 84	-0.0040093	-120.278	SLV 3	-0.0017167	-51.5
724	SLU 84	-0.0040548	-121.645	SLV 3	-0.0016206	-48.618
725	SLU 84	-0.0040981	-122.942	SLV 3	-0.001522	-45.659
726	SLV 14	-0.0042304	-126.913	SLV 3	-0.0014216	-42.648
727	SLV 14	-0.0044025	-132.076	SLV 3	-0.0013206	-39.619
728	SLV 14	-0.0045946	-137.837	SLV 3	-0.0012216	-36.647
729	SLV 14	-0.0048283	-144.849	SLV 3	-0.0011295	-33.884
730	SLV 16	-0.0051354	-154.062	SLV 1	-0.0010521	-31.564
731	SLV 16	-0.0047848	-143.544	SLV 1	-0.0011121	-33.364
734	SLU 84	-0.0035562	-106.687	SLV 2	-0.0020014	-60.043
736	SLU 84	-0.0036457	-109.37	SLV 4	-0.0020231	-60.693
737	SLV 15	-0.0046223	-138.668	SLV 2	-0.0010821	-32.464
739	SLU 83	-0.0034013	-102.04	SLU 2	-0.0021304	-63.911
741	SLU 83	-0.0033926	-101.779	SLV 3	-0.0020783	-62.348
742	SLV 15	-0.0044025	-132.075	SLV 2	-0.0010399	-31.196
745	SLV 4	-0.0044663	-133.989	SLV 13	-0.000981	-29.43
746	SLU 84	-0.0035912	-107.737	SLV 13	-0.0019472	-58.416
748	SLU 84	-0.0036513	-109.538	SLV 13	-0.0019775	-59.325
749	SLU 83	-0.0035008	-105.025	SLV 16	-0.0021684	-65.053
751	SLU 83	-0.003481	-104.43	SLU 2	-0.00219	-65.701
752	SLU 84	-0.003653	-109.59	SLV 4	-0.0020423	-61.27
754	SLU 83	-0.0036338	-109.013	SLV 4	-0.0020157	-60.472
755	SLU 83	-0.0034008	-102.024	SLV 3	-0.002112	-63.359
757	SLU 83	-0.0033933	-101.799	SLV 3	-0.0020438	-61.315
758	SLU 83	-0.0035263	-105.788	SLV 16	-0.0020766	-62.299
760	SLU 83	-0.0035065	-105.196	SLV 16	-0.0021052	-63.156
762	SLV 4	-0.0042881	-128.644	SLV 13	-0.0009617	-28.852
763	SLV 15	-0.0041692	-125.075	SLV 2	-0.0009949	-29.846
765	SLU 84	-0.0037061	-111.183	SLV 2	-0.0020706	-62.117
767	SLU 83	-0.0036725	-110.176	SLV 4	-0.0020384	-61.151
768	SLU 84	-0.0035936	-107.809	SLV 13	-0.0019771	-59.314
770	SLU 84	-0.0036631	-109.893	SLV 13	-0.0020074	-60.223
771	SLU 83	-0.0034242	-102.725	SLV 3	-0.0021067	-63.202
773	SLU 83	-0.0034179	-102.538	SLV 3	-0.0020399	-61.197
774	SLU 83	-0.0035592	-106.776	SLV 16	-0.0020173	-60.518
776	SLU 83	-0.0035396	-106.189	SLV 16	-0.0020471	-61.412
778	SLV 4	-0.0041419	-124.256	SLV 13	-0.0009447	-28.342
779	SLV 15	-0.0039484	-118.451	SLV 2	-0.0009522	-28.567
781	SLU 84	-0.0037592	-112.775	SLV 2	-0.0021012	-63.036
783	SLU 83	-0.0037112	-111.336	SLV 2	-0.0020646	-61.939
784	SLU 84	-0.0035862	-107.585	SLV 13	-0.0019949	-59.847
786	SLU 84	-0.0036653	-109.958	SLV 13	-0.002024	-60.719
787	SLU 83	-0.0034623	-103.868	SLV 3	-0.0021239	-63.716
789	SLU 83	-0.0034573	-103.719	SLV 3	-0.0020581	-61.744
790	SLU 83	-0.0035954	-107.863	SLV 16	-0.0019859	-59.576
792	SLU 83	-0.0035761	-107.283	SLV 16	-0.0020168	-60.503
794	SLV 4	-0.0040459	-121.376	SLV 13	-0.0009334	-28.003
795	SLV 15	-0.0037529	-112.586	SLV 2	-0.0009142	-27.427
797	SLU 84	-0.0038079	-114.236	SLV 2	-0.0021255	-63.766
799	SLU 83	-0.0037453	-112.359	SLV 2	-0.0020863	-62.589
800	SLU 84	-0.0035661	-106.982	SLV 13	-0.0019925	-59.774
802	SLU 84	-0.0036549	-109.648	SLV 13	-0.0020227	-60.682
803	SLU 83	-0.0035088	-105.265	SLV 3	-0.0021552	-64.656
805	SLU 83	-0.0035052	-105.155	SLV 3	-0.0020904	-62.713
806	SLU 83	-0.0036336	-109.007	SLV 16	-0.0019747	-59.24
808	SLU 83	-0.0036145	-108.434	SLV 16	-0.0020067	-60.202
810	SLV 4	-0.004015	-120.451	SLV 13	-0.0009311	-27.932
811	SLV 15	-0.0035856	-107.567	SLV 2	-0.0008813	-26.44
813	SLU 84	-0.0038542	-115.627	SLV 2	-0.0021393	-64.179
815	SLU 83	-0.003777	-113.31	SLV 2	-0.0020963	-62.888
816	SLU 84	-0.0035418	-106.255	SLV 13	-0.0019736	-59.208
818	SLU 84	-0.0036407	-109.221	SLV 13	-0.0020062	-60.186



Nodo		Pressione minima		Pressione massima		
Ind.	Cont.	uz	Valore	Cont.	uz	Valore
819	SLU 83	-0.0035602	-106.807	SLV 1	-0.0021932	-65.797
821	SLU 83	-0.0035579	-106.737	SLV 1	-0.0021299	-63.896
822	SLU 83	-0.0036736	-110.208	SLV 16	-0.0019754	-59.262
824	SLU 83	-0.0036548	-109.645	SLV 16	-0.0020085	-60.256
826	SLV 4	-0.0040636	-121.907	SLV 13	-0.0009414	-28.241
827	SLV 15	-0.0034429	-103.288	SLV 2	-0.0008527	-25.581
829	SLU 84	-0.003905	-117.149	SLV 2	-0.0021444	-64.333
831	SLU 83	-0.0038129	-114.388	SLV 2	-0.0020958	-62.873
832	SLU 84	-0.0035334	-106.002	SLV 13	-0.0019432	-58.296
834	SLU 84	-0.0036425	-109.274	SLV 13	-0.0019784	-59.353
835	SLU 83	-0.0036154	-108.461	SLV 2	-0.0022204	-66.612
837	SLU 83	-0.0036144	-108.432	SLV 2	-0.0021631	-64.894
838	SLU 83	-0.0037117	-111.509	SLV 14	-0.0019766	-59.299
840	SLU 83	-0.0036985	-110.955	SLV 14	-0.0020098	-60.294
842	SLV 4	-0.0042064	-126.192	SLV 13	-0.0009688	-29.064
843	SLV 15	-0.0033169	-99.508	SLV 2	-0.0008266	-24.799
845	SLU 84	-0.0039708	-119.125	SLV 2	-0.0021425	-64.275
847	SLU 83	-0.0038639	-115.917	SLV 2	-0.0020875	-62.626
848	SLU 84	-0.0035731	-107.192	SLV 13	-0.0019065	-57.196
850	SLU 84	-0.0036926	-110.779	SLV 13	-0.0019445	-58.335
851	SLU 83	-0.0036761	-110.282	SLV 2	-0.0022396	-67.187
853	SLU 83	-0.0036765	-110.295	SLV 2	-0.002184	-65.52
854	SLU 83	-0.003767	-113.009	SLV 14	-0.0019735	-59.206
856	SLU 83	-0.0037488	-112.465	SLV 14	-0.0020069	-60.207
858	SLV 4	-0.0044599	-133.798	SLV 13	-0.0010189	-30.566
859	SLV 15	-0.0031973	-95.918	SLV 2	-0.0008009	-24.027
861	SLU 84	-0.0040669	-122.008	SLV 2	-0.0021333	-64
863	SLU 83	-0.003945	-118.349	SLV 2	-0.0020719	-62.156
864	SLV 4	-0.0049442	-148.327	SLV 13	-0.0010519	-31.556
865	SLV 4	-0.0043567	-130.701	SLV 13	-0.0010274	-30.821
866	SLV 4	-0.0038234	-114.701	SLV 13	-0.0010148	-30.445
867	SLV 4	-0.0033666	-100.999	SLV 13	-0.0010199	-30.596
868	SLV 4	-0.0029983	-89.948	SLV 13	-0.001046	-31.379
869	SLU 83	-0.0027884	-83.653	SLV 13	-0.001095	-32.85
870	SLU 83	-0.0027083	-81.249	SLV 13	-0.0011673	-35.02
871	SLU 83	-0.0027099	-81.298	SLV 13	-0.0012617	-37.851
872	SLU 83	-0.0027861	-83.584	SLV 13	-0.0013748	-41.243
873	SLU 83	-0.0029259	-87.778	SLV 13	-0.0015007	-45.021
874	SLU 83	-0.0031133	-93.399	SLV 13	-0.0016302	-48.906
875	SLU 84	-0.003326	-99.779	SLV 13	-0.0017498	-52.494
876	SLU 84	-0.0035326	-105.978	SLV 13	-0.0018408	-55.225
877	SLU 84	-0.003597	-107.91	SLV 13	-0.0018621	-55.863
878	SLU 84	-0.0037487	-112.461	SLV 2	-0.0022639	-67.916
880	SLU 84	-0.0037505	-112.515	SLV 2	-0.0022091	-66.272
881	SLU 83	-0.0038302	-114.906	SLV 14	-0.0019743	-59.23
883	SLU 83	-0.0038124	-114.372	SLV 14	-0.0020087	-60.26
885	SLV 4	-0.0048413	-145.238	SLV 13	-0.0010976	-32.929
886	SLU 83	-0.0042048	-126.145	SLV 2	-0.0021143	-63.429
888	SLU 83	-0.0040771	-122.313	SLV 2	-0.0020503	-61.508
889	SLU 83	-0.0040131	-120.393	SLV 2	-0.0020166	-60.497
890	SLU 83	-0.0038513	-115.539	SLV 2	-0.0019161	-57.483
891	SLU 83	-0.0036663	-109.99	SLV 2	-0.0017848	-53.543
892	SLU 83	-0.0034923	-104.768	SLV 2	-0.0016431	-49.292
893	SLU 83	-0.0033501	-100.503	SLV 2	-0.0015042	-45.126
894	SLU 83	-0.0032514	-97.541	SLV 2	-0.0013756	-41.269
895	SLU 83	-0.0032012	-96.035	SLV 2	-0.0012606	-37.819
896	SLV 15	-0.0032184	-96.551	SLV 2	-0.0011597	-34.792
897	SLV 15	-0.0033714	-101.141	SLV 2	-0.0010717	-32.152
898	SLV 15	-0.00357	-107.1	SLV 2	-0.0009943	-29.828
899	SLV 15	-0.0038059	-114.177	SLV 2	-0.0009245	-27.734
900	SLV 15	-0.0030724	-92.173	SLV 2	-0.0007729	-23.188
902	SLV 15	-0.0040648	-121.943	SLV 2	-0.0008589	-25.767
904	SLU 84	-0.0038448	-115.345	SLV 2	-0.0023005	-69.015
906	SLU 84	-0.0038481	-115.443	SLV 2	-0.0022464	-67.391
907	SLU 84	-0.0039189	-117.567	SLV 14	-0.0019863	-59.59
909	SLU 84	-0.0039016	-117.047	SLV 14	-0.0020218	-60.653
910	SLU 83	-0.0043143	-129.428	SLV 2	-0.0020901	-62.702
913	SLV 4	-0.0053615	-160.844	SLV 13	-0.0012097	-36.291
926	SLU 84	-0.0040175	-120.526	SLV 13	-0.0017951	-53.854
929	SLU 84	-0.0042405	-127.214	SLV 13	-0.0018606	-55.819
943	SLU 84	-0.0044476	-133.428	SLV 2	-0.0020347	-61.042
948	SLU 84	-0.0044143	-132.428	SLV 13	-0.0018137	-54.412
949	SLU 84	-0.0039844	-119.531	SLV 2	-0.0023612	-70.835
951	SLU 84	-0.0039891	-119.673	SLV 2	-0.0023076	-69.228
952	SLU 84	-0.0040524	-121.571	SLV 14	-0.002019	-60.571
954	SLU 84	-0.0040354	-121.061	SLV 14	-0.0020557	-61.671
955	SLU 84	-0.0047406	-142.218	SLV 13	-0.0017973	-53.92
956	SLU 84	-0.004426	-132.78	SLV 13	-0.0017559	-52.676
957	SLU 84	-0.0041341	-124.024	SLV 13	-0.0016959	-50.876
958	SLU 84	-0.0038906	-116.718	SLV 13	-0.0016393	-49.179
959	SLU 84	-0.0037107	-111.32	SLV 13	-0.001601	-48.031
960	SLU 84	-0.0036011	-108.034	SLV 14	-0.0015848	-47.545
961	SLU 84	-0.0035624	-106.873	SLV 14	-0.001599	-47.971
962	SLU 84	-0.0035894	-107.683	SLV 14	-0.001644	-49.321
963	SLU 84	-0.0036713	-110.138	SLV 14	-0.0017159	-51.477
964	SLU 84	-0.0037901	-113.703	SLV 14	-0.0018067	-54.202
965	SLU 84	-0.0039193	-117.579	SLV 14	-0.0019036	-57.108
966	SLU 84	-0.0040205	-120.614	SLV 14	-0.0019876	-59.629
967	SLU 84	-0.0040442	-121.326	SLV 14	-0.0020342	-61.026
968	SLU 84	-0.0039882	-119.645	SLV 14	-0.0020463	-61.388



Nodo	Pressione minima			Pressione massima		
	Ind.	Cont.	Valore	Cont.	Valore	
969	SLU 84	uz	-0.0038461	SLV 14	uz	-0.0020223
970	SLU 84		-115.384	SLV 14		-60.669
971	SLU 84		-0.003673	SLV 14		-59.651
972	SLU 84		-0.0035106	SLV 14		-58.94
973	SLU 84		-0.003387	SLV 14		-58.957
974	SLU 84		-0.0033193	SLV 10		-59.799
975	SLU 84		-0.0033156	SLV 10		-60.366
976	SLU 84		-0.0033759	SLV 10		-61.983
977	SLU 84		-0.0034919	SLV 6		-64.015
978	SLU 84		-0.0036463	SLV 6		-66.238
979	SLU 84		-0.0038109	SLV 6		-68.643
980	SLU 84		-0.003944	SLV 6		-70.563
981	SLU 84		-0.0039906	SLV 2		-70.028
982	SLU 84		-0.0039594	SLV 2		-68.143
983	SLU 84		-0.0038559	SLV 2		-64.964
984	SLU 84		-0.0037304	SLV 2		-61.344
985	SLU 84		-0.0036214	SLV 2		-57.935
986	SLU 84		-0.0035552	SLV 2		-55.182
987	SLU 84		-0.0035489	SLV 2		-53.368
988	SLU 84		-0.0036122	SLV 2		-52.652
989	SLU 84		-0.0037478	SLV 2		-53.088
990	SLU 84		-0.0039516	SLV 2		-54.619
991	SLU 84		-0.0042106	SLV 2		-57.063
992	SLU 84		-0.0045017	SLV 2		-60.063
993	SLU 84		-0.0046004	SLV 13		-52.258
995	SLV 3		-0.004881	SLV 14		-49.603
1007	SLU 84		-0.0042559	SLV 14		-62.562
1009	SLU 84		-0.0042391	SLV 14		-63.673
1022	SLU 84		-0.0041944	SLV 6		-73.547
1024	SLU 84		-0.0041998	SLV 2		-72.25
1035	SLU 84		-0.0047546	SLV 2		-57.805

## 1.4 Cedimenti fondazioni superficiali

**Nodo:** nodo che interagisce col terreno.

**Ind.:** indice del nodo.

**spostamento nodale massimo:** situazione in cui si verifica lo spostamento massimo verticale nel nodo calcolato dal solutore ad elementi finiti. Lo spostamento massimo con segno è quello con valore massimo lungo l'asse Z, dove valori positivi rappresentano spostamenti verso l'alto.

**Cont.:** nome breve della condizione o combinazione di carico a cui si riferisce lo spostamento.

**uz:** spostamento verticale del nodo calcolato dal solutore ad elementi finiti. Lo spostamento è dotato di segno. [m]

**Press.:** pressione sul terreno corrispondente allo spostamento. Valori positivi indicano trazione, valori negativi indicano compressione. [kN/m²]

**spostamento nodale minimo:** situazione in cui si verifica lo spostamento minimo verticale del nodo calcolato dal solutore ad elementi finiti. Lo spostamento minimo con segno è quello con valore minimo lungo l'asse Z, dove valori negativi rappresentano spostamenti verso il basso.

**Cont.:** nome breve della condizione o combinazione di carico a cui si riferisce lo spostamento.

**uz:** spostamento verticale del nodo calcolato dal solutore ad elementi finiti. Lo spostamento è dotato di segno. [m]

**Press.:** pressione sul terreno corrispondente allo spostamento. Valori positivi indicano trazione, valori negativi indicano compressione. [kN/m²]

**Cedimento elastico:** cedimento teorico elastico massimo.

**Cont.:** nome breve della combinazione di carico in cui è stato calcolato il cedimento teorico elastico massimo.

**v.:** valore del cedimento teorico elastico massimo. [m]

**Cedimento edometrico:** cedimento teorico edometrico massimo.

**Cont.:** nome breve della combinazione di carico in cui è stato calcolato il cedimento teorico edometrico massimo.

**v.:** valore del cedimento teorico edometrico massimo. [m]

**Cedimento di consolidazione:** cedimento teorico di consolidazione massimo.

**Cont.:** nome breve della combinazione di carico in cui è stato calcolato il cedimento teorico di consolidazione massimo.

**v.:** valore del cedimento teorico di consolidazione massimo. [m]

Spostamento estremo minimo -0.0042482 al nodo di indice 252, di coordinate x = -24.4, y = -3.28, z = -1.59, nel contesto SLD 1.

Spostamento estremo massimo -0.0014305 al nodo di indice 900, di coordinate x = -0.47, y = 5.53, z = -1.59, nel contesto SLD 2.

Cedimento elastico estremo massimo 0.001742 al nodo di indice 472, di coordinate x = -11.36, y = -0.56, z = -1.59, nel contesto SLE rara 21.

Nodo	spostamento nodale massimo				spostamento nodale minimo				Cedimento elastico		Cedimento edometrico		Cedimento di consolidazione	
	Ind.	Cont.	uz	Press.	Cont.	uz	Press.		Cont.	v.	Cont.	v.	Cont.	v.
11	SLE RA 2	-2.7E-03	-80.128		SLE RA 20	-3.0E-03	-90.352		SLE RA 20	1.13E-03				
12	SLE RA 2	-2.7E-03	-79.763		SLE RA 20	-3.0E-03	-89.805		SLE RA 20	1.16E-03				
13	SLE RA 2	-2.6E-03	-79.383		SLE RA 20	-3.0E-03	-89.234		SLE RA 20	1.16E-03				
14	SLE RA 2	-2.6E-03	-78.99		SLE RA 20	-3.0E-03	-88.643		SLE RA 20	1.14E-03				
15	SLE RA 2	-2.6E-03	-78.564		SLE RA 20	-2.9E-03	-88.015		SLE RA 20	1.10E-03				
16	SLD 4	-2.6E-03	-77.678		SLE RA 20	-2.9E-03	-87.259		SLE RA 20	1.03E-03				
17	SLD 4	-2.5E-03	-76.377		SLE RA 20	-2.9E-03	-86.357		SLE RA 20	9.49E-04				
18	SLE RA 1	-2.6E-03	-79.209		SLE RA 21	-3.0E-03	-89.406		SLE RA 20	1.24E-03				
20	SLE RA 1	-2.6E-03	-78.817		SLE RA 21	-3.0E-03	-88.83		SLE RA 20	1.27E-03				
22	SLE RA 1	-2.6E-03	-78.311		SLE RA 21	-2.9E-03	-88.12		SLE RA 20	1.26E-03				
24	SLE RA 1	-2.6E-03	-77.825		SLE RA 21	-2.9E-03	-87.428		SLE RA 20	1.24E-03				
26	SLE RA 2	-2.6E-03	-77.366		SLE RA 20	-2.9E-03	-86.771		SLE RA 20	1.22E-03				
27	SLD 4	-2.6E-03	-76.75		SLE RA 20	-2.9E-03	-86.046		SLE RA 20	1.16E-03				
28	SLD 4	-2.5E-03	-75.4		SLE RA 20	-2.8E-03	-85.089		SLE RA 20	1.07E-03				
29	SLE RA 1	-2.5E-03	-75.629		SLE RA 21	-2.8E-03	-84.771		SLE RA 21	1.21E-03				
30	SLD 4	-2.5E-03	-74.42		SLE RA 20	-2.8E-03	-83.867		SLE RA 21	1.15E-03				
31	SLE RA 1	-2.5E-03	-75.878		SLE RA 21	-2.8E-03	-85.183		SLE RA 21	1.27E-03				
32	SLE RA 1	-2.6E-03	-78.123		SLE RA 21	-2.9E-03	-88.263		SLE RA 21	1.31E-03				
33	SLE RA 1	-2.6E-03	-77.6		SLE RA 21	-2.9E-03	-87.546		SLE RA 21	1.32E-03				
34	SLE RA 1	-2.6E-03	-76.816		SLE RA 21	-2.9E-03	-86.535		SLE RA 21	1.33E-03				
35	SLE RA 1	-2.5E-03	-75.912		SLE RA 21	-2.8E-03	-85.382		SLE RA 21	1.32E-03				



Nodo Ind.	spostamento nodale massimo			spostamento nodale minimo			Cedimento elastico		Cedimento edometrico		Cedimento di consolidazione	
	Cont.	uz	Press.	Cont.	uz	Press.	Cont.	v.	Cont.	v.	Cont.	v.
36	SLE RA 1	-2.5E-03	-74.301	SLE RA 21	-2.8E-03	-83.383	SLE RA 21	1.25E-03				
37	SLD 4	-2.4E-03	-73.258	SLE RA 21	-2.7E-03	-82.487	SLE RA 21	1.20E-03				
38	SLE RA 1	-2.5E-03	-74.545	SLE RA 21	-2.8E-03	-83.752	SLE RA 21	1.30E-03				
39	SLE RA 1	-2.5E-03	-74.719	SLE RA 21	-2.8E-03	-84.033	SLE RA 21	1.33E-03				
41	SLE RA 1	-2.6E-03	-76.945	SLE RA 21	-2.9E-03	-87.011	SLE RA 21	1.31E-03				
42	SLE RA 1	-2.5E-03	-76.318	SLE RA 21	-2.9E-03	-86.187	SLE RA 21	1.35E-03				
43	SLE RA 1	-2.5E-03	-75.478	SLE RA 21	-2.8E-03	-85.134	SLE RA 21	1.36E-03				
44	SLE RA 1	-2.5E-03	-74.569	SLE RA 21	-2.8E-03	-84.015	SLE RA 21	1.36E-03				
45	SLE RA 1	-2.5E-03	-73.805	SLE RA 21	-2.8E-03	-83.091	SLE RA 21	1.34E-03				
46	SLE RA 1	-2.4E-03	-72.985	SLE RA 21	-2.7E-03	-82.01	SLE RA 21	1.27E-03				
47	SLD 2	-2.4E-03	-71.974	SLE RA 21	-2.7E-03	-81.054	SLE RA 21	1.20E-03				
48	SLE RA 1	-2.4E-03	-73.363	SLE RA 21	-2.8E-03	-82.519	SLE RA 21	1.31E-03				
49	SLE RA 1	-2.5E-03	-75.737	SLE RA 21	-2.9E-03	-85.729	SLE RA 21	0.001291				
50	SLE RA 1	-2.5E-03	-75.071	SLE RA 21	-2.8E-03	-84.871	SLE RA 21	1.33E-03				
51	SLE RA 1	-2.5E-03	-74.275	SLE RA 21	-2.8E-03	-83.886	SLE RA 21	1.34E-03				
52	SLE RA 1	-2.4E-03	-73.469	SLE RA 21	-2.8E-03	-82.895	SLE RA 21	1.34E-03				
53	SLE RA 1	-2.4E-03	-72.767	SLE RA 21	-2.7E-03	-82.032	SLE RA 21	1.32E-03				
54	SLE RA 1	-2.4E-03	-72.222	SLE RA 21	-2.7E-03	-81.34	SLE RA 21	1.30E-03				
55	SLE RA 1	-2.4E-03	-71.703	SLE RA 21	-2.7E-03	-80.675	SLE RA 21	1.26E-03				
56	SLD 2	-2.4E-03	-70.626	SLE RA 21	-2.7E-03	-79.622	SLE RA 21	0.001193				
57	SLE RA 1	-2.5E-03	-74.478	SLE RA 21	-2.8E-03	-84.398	SLE RA 21	1.24E-03				
58	SLE RA 1	-2.5E-03	-73.822	SLE RA 21	-2.8E-03	-83.559	SLE RA 21	1.27E-03				
59	SLE RA 1	-2.4E-03	-73.157	SLE RA 21	-2.8E-03	-82.732	SLE RA 21	1.28E-03				
60	SLE RA 1	-2.4E-03	-72.443	SLE RA 21	-2.7E-03	-81.852	SLE RA 21	1.29E-03				
61	SLE RA 1	-2.4E-03	-71.752	SLE RA 21	-2.7E-03	-80.998	SLE RA 21	1.28E-03				
62	SLE RA 1	-2.4E-03	-71.097	SLE RA 21	-2.7E-03	-80.182	SLE RA 21	1.25E-03				
63	SLE RA 1	-2.3E-03	-70.436	SLE RA 21	-2.6E-03	-79.355	SLE RA 21	0.001217				
64	SLD 2	-2.3E-03	-69.262	SLE RA 21	-2.6E-03	-78.213	SLE RA 21	0.00116				
65	SLD 10	-2.5E-03	-73.615	SLE RA 21	-2.8E-03	-83.656	SLE RA 21	1.19E-03				
66	SLE RA 1	-2.4E-03	-73.109	SLE RA 21	-2.8E-03	-82.808	SLE RA 21	0.001232				
67	SLE RA 1	-2.4E-03	-72.459	SLE RA 21	-2.7E-03	-82.003	SLE RA 21	1.23E-03				
68	SLE RA 1	-2.4E-03	-71.738	SLE RA 21	-2.7E-03	-81.119	SLE RA 21	1.24E-03				
69	SLE RA 1	-2.4E-03	-71.009	SLE RA 21	-2.7E-03	-80.226	SLE RA 21	1.23E-03				
70	SLE RA 1	-2.3E-03	-70.292	SLE RA 21	-2.6E-03	-79.344	SLE RA 21	1.21E-03				
71	SLE RA 1	-2.3E-03	-69.568	SLE RA 21	-2.6E-03	-78.448	SLE RA 21	1.18E-03				
72	SLD 2	-2.3E-03	-68.341	SLE RA 21	-2.6E-03	-77.276	SLE RA 21	1.12E-03				
130	SLD 12	-3.0E-03	-89.775	SLE RA 20	-3.5E-03	-105.416	SLE RA 20	1.25E-05				
131	SLD 12	-3.0E-03	-89.931	SLE RA 20	-3.5E-03	-105.261	SLE RA 20	0.000015				
132	SLD 12	-3.0E-03	-90.34	SLE RA 20	-3.5E-03	-105.427	SLE RA 20	1.78E-05				
133	SLD 12	-3.0E-03	-90.985	SLE RA 20	-0.00353	-105.899	SLE RA 20	3.16E-05				
134	SLD 12	-0.00306	-91.8	SLE RA 20	-3.6E-03	-106.608	SLE RA 20	4.19E-05				
135	SLD 12	-3.1E-03	-92.657	SLE RA 20	-3.6E-03	-107.429	SLE RA 20	0.000049				
136	SLD 8	-3.1E-03	-92.738	SLE RA 20	-3.6E-03	-107.496	SLE RA 20	0.000058				
137	SLD 16	-3.0E-03	-89.963	SLD 1	-3.6E-03	-108.769						
138	SLD 16	-3.0E-03	-89.974	SLD 1	-3.6E-03	-106.779	SLE RA 20	1.16E-06				
139	SLD 12	-3.0E-03	-89.849	SLE RA 20	-3.5E-03	-105.827	SLE RA 20	0.000009				
153	SLD 7	-2.9E-03	-86.943	SLE RA 20	-3.4E-03	-101.02	SLE RA 20	2.22E-04				
156	SLD 7	-2.9E-03	-87.89	SLE RA 20	-3.4E-03	-102.22	SLE RA 20	1.82E-04				
158	SLD 7	-2.9E-03	-88.294	SLE RA 20	-3.4E-03	-102.792	SLE RA 20	1.31E-04				
160	SLD 7	-2.9E-03	-88.28	SLE RA 20	-3.4E-03	-102.934	SLE RA 20	9.85E-05				
162	SLD 7	-2.9E-03	-88.065	SLE RA 20	-3.4E-03	-102.887	SLE RA 20	6.89E-05				
164	SLD 7	-2.9E-03	-87.8	SLE RA 20	-3.4E-03	-102.823	SLE RA 20	4.07E-05				
166	SLD 3	-2.9E-03	-87.379	SLE RA 20	-3.4E-03	-102.868	SLE RA 20	1.45E-05				
168	SLD 3	-2.9E-03	-86.803	SLD 14	-3.4E-03	-103.419	SLE RA 20	1.15E-05				
169	SLD 3	-2.9E-03	-86.422	SLD 14	-3.5E-03	-104.578	SLE RA 20	7.75E-06				
170	SLD 3	-2.9E-03	-86.168	SLD 14	-3.5E-03	-106.161	SLE RA 20	2.57E-07				
171	SLD 3	-2.9E-03	-86.096	SLD 14	-3.6E-03	-107.954						
172	SLD 8	-2.9E-03	-87.497	SLE RA 20	-3.4E-03	-100.812	SLE RA 20	2.18E-04				
173	SLD 8	-2.9E-03	-85.745	SLE RA 20	-3.3E-03	-98.842	SLE RA 20	2.26E-04				
174	SLD 8	-2.8E-03	-84.067	SLE RA 20	-3.2E-03	-96.927	SLE RA 20	2.40E-04				
175	SLD 8	-2.8E-03	-82.87	SLE RA 20	-3.2E-03	-95.537	SLE RA 20	2.63E-04				
176	SLD 7	-2.7E-03	-82.34	SLE RA 20	-3.2E-03	-94.935	SLE RA 20	2.97E-04				
177	SLD 7	-2.8E-03	-82.528	SLE RA 20	-3.2E-03	-95.174	SLE RA 20	3.37E-04				
178	SLD 7	-2.8E-03	-83.309	SLE RA 20	-3.2E-03	-96.104	SLE RA 20	3.73E-04				
179	SLD 7	-2.8E-03	-84.364	SLE RA 20	-3.2E-03	-97.363	SLE RA 20	3.90E-04				
180	SLD 7	-2.8E-03	-85.194	SLE RA 20	-3.3E-03	-98.386	SLE RA 20	3.80E-04				
181	SLD 16	-2.9E-03	-87.12	SLE RA 20	-3.4E-03	-102.555	SLE RA 20	5.02E-05				
182	SLD 12	-2.9E-03	-86.75	SLE RA 20	-3.4E-03	-101.299	SLE RA 20	9.32E-05				
183	SLD 12	-2.9E-03	-86.194	SLE RA 20	-3.3E-03	-100.346	SLE RA 20	1.24E-04				
184	SLD 12	-2.9E-03	-86.006	SLE RA 20	-3.3E-03	-99.838	SLE RA 20	1.48E-04				
185	SLD 12	-2.9E-03	-86.266	SLE RA 20	-3.3E-03	-99.871	SLE RA 20	1.69E-04				
186	SLD 12	-2.9E-03	-86.984	SLE RA 20	-3.3E-03	-100.459	SLE RA 20	0.000193				
187	SLD 12	-2.9E-03	-88.064	SLE RA 20	-3.4E-03	-101.501	SLE RA 20	2.10E-04				
188	SLD 12	-3.0E-03	-89.202	SLE RA 20	-3.4E-03	-102.689	SLE RA 20	2.21E-04				
189	SLD 8	-3.0E-03	-89.994	SLE RA 20	-3.5E-03	-103.674	SLE RA 20	2.43E-04				
190	SLD 16	-2.9E-03	-87.523	SLD 1	-3.5E-03	-104.37	SLE RA 20	2.33E-06				
192	SLD 7	-2.8E-03	-84.554	SLE RA 20	-3.3E-03	-97.526	SLE RA 20	4.00E-04				
194	SLD 7	-2.8E-03	-85.274	SLE RA 20	-3.3E-03	-98.452	SLE RA 20	3.80E-04				
195	SLD 7	-2.9E-03	-85.517	SLE RA 20	-3.3E-03	-98.82	SLE RA 20	3.45E-04				
196	SLD 7	-2.8E-03	-85.366	SLE RA 20	-3.3E-03	-98.773	SLE RA 20	0.0003				
197	SLD 7	-2.8E-03	-85.055	SLE RA 20	-3.3E-03	-98.581	SLE RA 20	2.56E-04				
198	SLD 7	-2.8E-03	-84.8	SLE RA 20	-3.3E-03	-98.487	SLE RA 20	2.11E-04				
199	SLD 3	-2.8E-03	-84.386	SLE RA 20	-3.3E-03	-98.658	SLE RA 20	1.65E-04				
200	SLD 3	-2.8E-03	-84.111	SLE RA 20	-3.3E-03	-99.162	SLE RA 20	0.000126				
201	SLD 3	-2.8E-03	-84.085	SLD 14	-3.3E-03	-100.467	SLE RA 20	8.95E-05				
202	SLD 3	-2.8E-03	-84.25	SLD 14	-3.4E-03	-102.288	SLE RA 20	4.06E-05				
203	SLD 3	-2.8E-03	-84.507	SLD 14	-3.5E-03	-104.224	SLE RA 20	1.44E-06				
204	SLD 16	-2.8E-03	-84.29	SLE RA 20	-3.3E-03	-98.495	SLE RA 20	1.71E-04				
205	SLD 16	-2.8E-03	-83.524	SLE RA 20	-3.2E-03	-96.773	SLE RA 20	2.23E-04				
206	SLD 12	-2.8E-03	-82.638	SLE RA 20	-3.2E-03	-95.32	SLE RA 20	2.63E-04				





Nodo	spostamento nodale massimo			spostamento nodale minimo			Cedimento elastico		Cedimento edometrico		Cedimento di consolidazione	
Ind.	Cont.	uz	Press.	Cont.	uz	Press.	Cont.	v.	Cont.	v.	Cont.	v.
207	SLD 12	-2.7E-03	-82.076	SLE RA 20	-3.1E-03	-94.425	SLE RA 20	0.000297				
208	SLD 12	-2.7E-03	-82.164	SLE RA 20	-3.1E-03	-94.3	SLE RA 20	3.27E-04				
209	SLD 12	-2.8E-03	-82.963	SLE RA 20	-3.2E-03	-95.016	SLE RA 20	3.51E-04				
210	SLD 12	-2.8E-03	-84.39	SLE RA 20	-3.2E-03	-96.487	SLE RA 20	3.68E-04				
211	SLD 8	-2.9E-03	-86.166	SLE RA 20	-3.3E-03	-98.497	SLE RA 20	3.77E-04				
212	SLD 8	-2.9E-03	-88.052	SLE RA 20	-3.4E-03	-100.852	SLE RA 20	3.61E-04				
213	SLD 16	-2.8E-03	-85.142	SLE RA 20	-3.3E-03	-100.315	SLE RA 20	9.99E-05				
216	SLD 7	-2.8E-03	-82.687	SLE RA 20	-3.2E-03	-94.655	SLE RA 20	0.000563				
218	SLD 7	-2.8E-03	-83.013	SLE RA 20	-3.2E-03	-95.107	SLE RA 20	5.54E-04				
219	SLD 7	-2.8E-03	-82.978	SLE RA 20	-3.2E-03	-95.136	SLE RA 20	5.23E-04				
220	SLD 7	-2.8E-03	-82.588	SLE RA 20	-3.2E-03	-94.788	SLE RA 20	4.81E-04				
221	SLD 7	-2.7E-03	-82.121	SLE RA 20	-3.1E-03	-94.379	SLE RA 20	4.31E-04				
222	SLD 3	-2.7E-03	-81.805	SLE RA 20	-3.1E-03	-94.217	SLE RA 20	0.000377				
223	SLD 3	-2.7E-03	-81.431	SLE RA 20	-3.2E-03	-94.503	SLE RA 20	0.000322				
224	SLD 3	-2.7E-03	-81.46	SLE RA 20	-3.2E-03	-95.292	SLE RA 20	2.74E-04				
225	SLD 3	-2.7E-03	-81.817	SLE RA 20	-3.2E-03	-96.486	SLE RA 20	2.21E-04				
226	SLD 3	-2.7E-03	-82.353	SLD 14	-3.3E-03	-98.394	SLE RA 20	1.58E-04				
227	SLD 3	-2.8E-03	-82.956	SLD 14	-3.4E-03	-100.561	SLE RA 20	8.09E-05				
228	SLD 16	-2.7E-03	-81.279	SLE RA 20	-3.1E-03	-94.281	SLE RA 20	3.07E-04				
229	SLD 16	-2.7E-03	-80.142	SLE RA 20	-3.1E-03	-92.225	SLE RA 20	3.45E-04				
230	SLD 12	-2.6E-03	-79.012	SLE RA 20	-3.0E-03	-90.251	SLE RA 20	3.85E-04				
231	SLD 12	-2.6E-03	-78.067	SLE RA 20	-3.0E-03	-88.954	SLE RA 20	4.24E-04				
232	SLD 12	-2.6E-03	-77.975	SLE RA 20	-3.0E-03	-88.66	SLE RA 20	4.54E-04				
233	SLD 12	-2.6E-03	-78.841	SLE RA 20	-3.0E-03	-89.489	SLE RA 20	0.000486				
234	SLD 12	-2.7E-03	-80.625	SLE RA 20	-3.0E-03	-91.423	SLE RA 20	5.07E-04				
235	SLD 8	-2.8E-03	-83.033	SLE RA 20	-3.1E-03	-94.306	SLE RA 20	0.000513				
236	SLD 8	-2.9E-03	-85.791	SLE RA 20	-3.3E-03	-97.702	SLE RA 20	5.13E-04				
237	SLD 16	-2.7E-03	-82.428	SLE RA 20	-3.2E-03	-96.351	SLE RA 20	2.55E-04				
239	SLD 7	-2.7E-03	-80.923	SLE RA 20	-3.1E-03	-91.951	SLE RA 20	6.77E-04				
241	SLD 7	-2.7E-03	-80.924	SLE RA 20	-3.1E-03	-91.996	SLE RA 20	6.86E-04				
242	SLD 7	-2.7E-03	-80.63	SLE RA 20	-3.1E-03	-91.705	SLE RA 20	6.61E-04				
243	SLD 7	-2.7E-03	-79.942	SLE RA 20	-3.0E-03	-90.985	SLE RA 20	6.27E-04				
244	SLD 7	-2.6E-03	-79.251	SLE RA 20	-3.0E-03	-90.281	SLE RA 20	0.00058				
245	SLD 3	-2.6E-03	-78.716	SLE RA 20	-0.003	-89.999	SLE RA 20	5.28E-04				
246	SLD 3	-2.6E-03	-78.462	SLE RA 20	-3.0E-03	-90.363	SLE RA 20	0.000473				
247	SLD 3	-2.6E-03	-78.769	SLE RA 20	-3.0E-03	-91.42	SLE RA 20	4.16E-04				
248	SLD 3	-2.6E-03	-79.495	SLE RA 20	-3.1E-03	-92.99	SLE RA 20	3.58E-04				
249	SLD 3	-2.7E-03	-80.301	SLE RA 20	-3.2E-03	-94.62	SLE RA 20	2.96E-04				
250	SLD 3	-2.7E-03	-81.115	SLD 14	-3.2E-03	-96.681	SLE RA 20	2.28E-04				
252	SLD 16	-2.3E-03	-68.802	SLD 1	-4.2E-03	-127.446	SLE RA 20	4.96E-05				
267	SLD 16	-2.5E-03	-75.692	SLD 1	-3.1E-03	-94.389	SLE RA 20	3.06E-04				
269	SLD 16	-2.6E-03	-77.9	SLD 1	-3.2E-03	-95.044	SLE RA 20	3.76E-04				
273	SLD 16	-2.6E-03	-78.603	SLE RA 20	-3.0E-03	-91.238	SLE RA 20	4.35E-04				
274	SLD 16	-2.6E-03	-77.578	SLE RA 20	-3.0E-03	-89.389	SLE RA 20	4.40E-04				
275	SLD 16	-2.5E-03	-76.469	SLE RA 20	-2.9E-03	-87.488	SLE RA 20	4.57E-04				
276	SLD 16	-0.0025	-75.001	SLE RA 20	-2.8E-03	-84.979	SLE RA 20	4.87E-04				
277	SLD 12	-2.5E-03	-73.905	SLE RA 20	-2.8E-03	-83.344	SLE RA 20	5.20E-04				
278	SLD 12	-2.5E-03	-73.646	SLE RA 20	-2.8E-03	-82.893	SLE RA 20	5.55E-04				
279	SLD 12	-2.5E-03	-74.525	SLE RA 20	-2.8E-03	-83.78	SLE RA 20	5.60E-04				
280	SLD 8	-2.5E-03	-76.459	SLE RA 20	-2.9E-03	-86.024	SLE RA 20	5.79E-04				
281	SLD 8	-2.6E-03	-79.321	SLE RA 20	-3.0E-03	-89.552	SLE RA 20	6.11E-04				
282	SLD 8	-2.7E-03	-80.274	SLE RA 20	-3.0E-03	-90.723	SLE RA 20	6.07E-04				
283	SLD 8	-2.7E-03	-82.391	SLE RA 20	-3.1E-03	-93.294	SLE RA 20	5.95E-04				
285	SLD 7	-2.6E-03	-78.866	SLE RA 20	-3.0E-03	-88.971	SLE RA 20	0.000784				
287	SLD 7	-2.6E-03	-78.702	SLE RA 20	-3.0E-03	-88.778	SLE RA 20	7.78E-04				
288	SLD 7	-2.6E-03	-78.346	SLE RA 20	-2.9E-03	-88.396	SLE RA 20	7.89E-04				
289	SLD 7	-2.6E-03	-77.316	SLE RA 20	-2.9E-03	-87.244	SLE RA 20	7.48E-04				
290	SLD 7	-2.5E-03	-76.388	SLE RA 20	-2.9E-03	-86.223	SLE RA 20	6.93E-04				
291	SLD 3	-2.5E-03	-75.602	SLE RA 20	-2.9E-03	-85.779	SLE RA 20	6.30E-04				
292	SLD 3	-2.5E-03	-75.403	SLE RA 20	-2.9E-03	-86.156	SLE RA 20	5.76E-04				
293	SLD 3	-2.5E-03	-75.886	SLE RA 20	-2.9E-03	-87.391	SLE RA 20	5.23E-04				
294	SLD 3	-2.6E-03	-76.902	SLE RA 20	-3.0E-03	-89.324	SLE RA 20	4.71E-04				
295	SLD 3	-2.6E-03	-77.663	SLE RA 20	-3.0E-03	-90.793	SLE RA 20	4.37E-04				
296	SLD 3	-2.6E-03	-78.344	SLE RA 20	-3.1E-03	-92.212	SLE RA 20	0.000417				
300	SLD 3	-2.6E-03	-76.996	SLD 14	-3.2E-03	-95.595	SLE RA 20	2.91E-04				
302	SLD 3	-2.5E-03	-74.932	SLD 14	-3.2E-03	-94.561	SLE RA 20	2.19E-04				
317	SLD 3	-2.1E-03	-63.267	SLD 14	-3.9E-03	-117.53	SLE RA 21	4.94E-05				
320	SLD 3	-2.1E-03	-64.163	SLD 14	-4.0E-03	-120.8	SLE RA 21	5.19E-05				
321	SLD 3	-2.0E-03	-59.015	SLD 14	-3.6E-03	-108.399	SLE RA 21	6.53E-05				
322	SLD 3	-1.8E-03	-54.779	SLD 14	-3.3E-03	-97.724	SLE RA 21	5.99E-05				
323	SLD 3	-1.7E-03	-51.586	SLD 14	-3.0E-03	-89.022	SLE RA 21	4.44E-05				
324	SLD 16	-2.2E-03	-67.185	SLD 1	-4.2E-03	-125.606	SLE RA 20	5.36E-05				
325	SLD 16	-2.1E-03	-62.087	SLD 1	-3.8E-03	-113.332	SLE RA 20	6.39E-05				
326	SLD 16	-1.9E-03	-57.712	SLD 1	-3.4E-03	-102.436	SLE RA 20	5.74E-05				
327	SLD 16	-1.8E-03	-54.258	SLD 1	-3.1E-03	-93.293	SLE RA 20	4.34E-05				
328	SLD 16	-1.7E-03	-51.792	SLD 1	-2.9E-03	-86.016	SLE RA 20	3.08E-05				
329	SLD 16	-1.7E-03	-50.31	SLD 1	-2.7E-03	-80.57	SLE RA 20	0.000022				
330	SLD 16	-1.7E-03	-49.779	SLD 1	-2.6E-03	-76.842	SLE RA 20	0.000017				
331	SLD 16	-1.7E-03	-50.156	SLD 1	-2.5E-03	-74.695	SLE RA 20	1.52E-05				
332	SLD 16	-1.7E-03	-51.398	SLD 1	-2.5E-03	-73.988	SLE RA 20	1.63E-05				
333	SLD 16	-1.8E-03	-53.46	SLD 1	-2.5E-03	-74.583	SLE RA 20	2.04E-05				
334	SLD 16	-1.9E-03	-56.278	SLD 1	-2.5E-03	-76.325	SLE RA 20	2.82E-05				
335	SLD 16	-2.0E-03	-59.742	SLD 1	-2.6E-03	-79.012	SLE RA 20	7.06E-05				
336	SLD 16	-2.1E-03	-63.658	SLD 1	-2.7E-03	-82.339	SLE RA 20	1.63E-04				
337	SLD 16	-2.3E-03	-67.691	SLD 1	-2.9E-03	-85.833	SLE RA 20	2.94E-04				
338	SLD 16	-2.4E-03	-71.3	SLD 1	-3.0E-03	-88.758	SLE RA 20	3.72E-04				
339	SLD 16	-2.5E-03	-73.71	SLD 1	-3.0E-03	-90.088	SLE RA 20	4.49E-04				
340	SLD 16	-2.5E-03	-74.979	SLD 1	-3.0E-03	-90.072	SLE RA 20	4.94E-04				
341	SLD 16	-2.5E-03	-75.407	SLE RA 20	-3.0E-03	-88.92	SLE RA 20	0.000543				
342	SLD 16	-2.5E-03	-75.159	SLE RA 20	-2.9E-03	-87.649	SLE RA 20	5.33E-04				





Nodo	spostamento nodale massimo				spostamento nodale minimo			Cedimento elastico		Cedimento edometrico		Cedimento di consolidazione	
	Ind.	Cont.	uz	Press.	Cont.	uz	Press.	Cont.	v.	Cont.	v.	Cont.	v.
343	SLD 16	-2.5E-03	-74.256	SLE RA 20	-2.9E-03	-85.651	SLE RA 20	5.24E-04					
344	SLD 16	-2.4E-03	-73.408	SLE RA 20	-2.8E-03	-83.995	SLE RA 20	0.000523					
345	SLD 16	-2.4E-03	-72.357	SLE RA 20	-2.7E-03	-82.165	SLE RA 20	5.27E-04					
346	SLD 16	-2.4E-03	-70.882	SLE RA 20	-2.7E-03	-79.675	SLE RA 20	5.42E-04					
347	SLE RA 2	-2.3E-03	-69.635	SLE RA 20	-2.6E-03	-77.959	SLE RA 20	5.68E-04					
348	SLE RA 2	-2.3E-03	-69.131	SLE RA 20	-2.6E-03	-77.46	SLE RA 20	5.82E-04					
349	SLE RA 2	-2.3E-03	-69.872	SLE RA 20	-2.6E-03	-78.382	SLE RA 20	6.20E-04					
350	SLE RA 2	-2.4E-03	-71.862	SLE RA 20	-2.7E-03	-80.725	SLE RA 20	6.51E-04					
351	SLE RA 2	-2.5E-03	-74.934	SLE RA 20	-0.00281	-84.3	SLE RA 20	6.91E-04					
352	SLD 8	-2.7E-03	-79.727	SLE RA 20	-3.0E-03	-89.908	SLE RA 20	6.72E-04					
353	SLD 3	-1.6E-03	-49.455	SLD 14	-2.7E-03	-82.312	SLE RA 21	2.99E-05					
354	SLD 3	-1.6E-03	-48.354	SLD 14	-2.6E-03	-77.495	SLE RA 21	2.01E-05					
355	SLD 3	-1.6E-03	-48.231	SLD 14	-2.5E-03	-74.422	SLE RA 21	1.48E-05					
356	SLD 3	-1.6E-03	-49.031	SLD 14	-2.4E-03	-72.934	SLE RA 21	1.38E-05					
357	SLD 3	-1.7E-03	-50.702	SLD 14	-2.4E-03	-72.875	SLE RA 20	1.47E-05					
358	SLD 3	-1.8E-03	-53.185	SLD 14	-2.5E-03	-74.093	SLE RA 20	1.89E-05					
359	SLD 3	-1.9E-03	-56.39	SLD 14	-2.5E-03	-76.41	SLE RA 20	2.64E-05					
360	SLD 3	-2.0E-03	-60.166	SLD 14	-2.7E-03	-79.586	SLE RA 20	4.29E-05					
361	SLD 3	-2.1E-03	-64.252	SLD 14	-2.8E-03	-83.255	SLE RA 20	0.000118					
362	SLD 3	-2.3E-03	-68.215	SLD 14	-2.9E-03	-86.848	SLE RA 20	2.19E-04					
363	SLD 3	-2.4E-03	-72.191	SLD 14	-3.0E-03	-90.011	SLE RA 20	3.58E-04					
364	SLD 3	-2.4E-03	-71.378	SLD 14	-3.0E-03	-89.493	SLE RA 20	0.000324					
365	SLD 3	-2.5E-03	-74.676	SLD 14	-3.0E-03	-91.196	SLE RA 20	4.51E-04					
366	SLD 3	-2.5E-03	-74.255	SLD 14	-3.0E-03	-91.044	SLE RA 20	4.39E-04					
367	SLD 3	-2.5E-03	-75.473	SLD 14	-3.0E-03	-90.746	SLE RA 20	4.76E-04					
368	SLD 3	-2.5E-03	-75.602	SLD 14	-3.0E-03	-89.261	SLE RA 20	4.91E-04					
369	SLD 3	-2.5E-03	-75.131	SLE RA 20	-2.9E-03	-87.779	SLE RA 20	5.10E-04					
370	SLD 3	-2.5E-03	-74.621	SLE RA 20	-2.9E-03	-86.549	SLE RA 20	5.28E-04					
371	SLD 3	-2.5E-03	-73.937	SLE RA 20	-2.8E-03	-85.172	SLE RA 20	5.51E-04					
372	SLD 3	-2.4E-03	-72.984	SLE RA 20	-2.8E-03	-83.333	SLE RA 20	6.08E-04					
373	SLD 3	-2.4E-03	-72.486	SLE RA 20	-2.7E-03	-82.13	SLE RA 20	6.70E-04					
374	SLD 3	-2.4E-03	-72.7	SLE RA 20	-2.7E-03	-81.835	SLE RA 20	7.34E-04					
375	SLE RA 2	-2.4E-03	-73.468	SLE RA 20	-2.7E-03	-82.451	SLE RA 20	7.96E-04					
376	SLE RA 2	-2.5E-03	-74.509	SLE RA 20	-2.8E-03	-83.725	SLE RA 20	8.50E-04					
377	SLE RA 2	-2.5E-03	-75.665	SLE RA 20	-2.8E-03	-85.126	SLE RA 20	8.89E-04					
378	SLE RA 2	-2.5E-03	-76.299	SLE RA 20	-2.9E-03	-85.943	SLE RA 20	9.02E-04					
379	SLE RA 2	-2.5E-03	-76.458	SLE RA 20	-2.9E-03	-86.195	SLE RA 20	8.76E-04					
382	SLD 16	-2.4E-03	-72.552	SLD 1	-3.0E-03	-89.624	SLE RA 20	0.000418					
384	SLD 16	-2.5E-03	-74.717	SLD 1	-3.0E-03	-90.242	SLE RA 20	5.00E-04					
385	SLD 3	-2.0E-03	-59.332	SLD 14	-3.6E-03	-109.287	SLE RA 21	6.55E-05					
386	SLD 3	-2.5E-03	-74.155	SLD 14	-3.0E-03	-90.85	SLE RA 20	4.56E-04					
389	SLD 3	-2.4E-03	-72.17	SLD 14	-3.0E-03	-89.861	SLE RA 20	3.72E-04					
391	SLD 16	-2.1E-03	-63.447	SLD 1	-3.9E-03	-116.838	SLE RA 20	6.32E-05					
393	SLE RA 2	-2.5E-03	-74.685	SLE RA 20	-2.8E-03	-84.228	SLE RA 20	9.59E-04					
396	SLD 16	-2.3E-03	-70.408	SLD 1	-2.9E-03	-86.202	SLE RA 20	5.44E-04					
398	SLD 16	-2.4E-03	-72.457	SLD 1	-2.9E-03	-86.719	SLE RA 20	6.18E-04					
399	SLD 3	-1.9E-03	-56.323	SLD 14	-3.4E-03	-102.754	SLE RA 21	6.54E-05					
400	SLD 3	-2.4E-03	-72.126	SLD 14	-2.9E-03	-87.311	SLE RA 20	5.43E-04					
403	SLD 3	-2.3E-03	-70.355	SLD 14	-2.9E-03	-86.439	SLE RA 20	4.61E-04					
405	SLD 16	-0.00198	-59.401	SLD 1	-3.6E-03	-108.635	SLE RA 20	5.99E-05					
407	SLE RA 2	-2.5E-03	-73.788	SLE RA 20	-2.8E-03	-83.255	SLE RA 20	1.05E-03					
410	SLD 16	-2.3E-03	-68.964	SLD 1	-2.8E-03	-83.738	SLE RA 20	6.32E-04					
412	SLD 16	-2.4E-03	-70.898	SLD 1	-2.8E-03	-84.154	SLE RA 20	6.96E-04					
413	SLD 3	-1.8E-03	-54.411	SLD 14	-3.3E-03	-98.263	SLE RA 21	5.62E-05					
414	SLD 3	-2.4E-03	-70.732	SLD 14	-2.8E-03	-84.684	SLE RA 20	6.29E-04					
417	SLD 3	-2.3E-03	-69.173	SLD 14	-2.8E-03	-83.929	SLE RA 21	5.55E-04					
419	SLD 16	-1.9E-03	-56.728	SLD 1	-3.4E-03	-102.983	SLE RA 20	4.84E-05					
421	SLE RA 2	-2.5E-03	-73.765	SLE RA 20	-2.8E-03	-83.274	SLE RA 20	1.18E-03					
423	SLE RA 2	-2.2E-03	-66.037	SLE RA 20	-2.5E-03	-74.432	SLE RA 20	8.52E-04					
425	SLD 16	-2.3E-03	-68.005	SLD 1	-2.7E-03	-81.939	SLE RA 20	6.98E-04					
427	SLD 16	-2.3E-03	-69.824	SLE RA 20	-2.7E-03	-82.394	SLE RA 20	7.69E-04					
428	SLD 3	-1.8E-03	-53.644	SLD 14	-3.2E-03	-95.919	SLE RA 21	4.82E-05					
429	SLD 3	-2.3E-03	-69.75	SLD 14	-2.8E-03	-82.679	SLE RA 21	7.27E-04					
432	SLD 3	-2.3E-03	-68.403	SLD 14	-2.7E-03	-82.036	SLE RA 21	6.31E-04					
434	SLD 16	-1.8E-03	-55.357	SLD 1	-3.3E-03	-99.789	SLE RA 20	3.95E-05					
436	SLE RA 2	-2.5E-03	-74.465	SLE RA 20	-2.8E-03	-84.115	SLE RA 20	1.33E-03					
439	SLD 16	-2.2E-03	-67.389	SLD 1	-2.7E-03	-80.624	SLE RA 20	7.85E-04					
441	SLD 16	-2.3E-03	-69.089	SLE RA 20	-2.7E-03	-81.271	SLE RA 20	8.55E-04					
442	SLD 3	-1.8E-03	-53.985	SLD 14	-3.2E-03	-95.669	SLE RA 21	4.59E-05					
443	SLD 3	-2.3E-03	-69.016	SLE RA 21	-2.7E-03	-81.28	SLE RA 21	8.38E-04					
446	SLD 3	-2.3E-03	-67.887	SLD 14	-2.7E-03	-80.564	SLE RA 21	7.51E-04					
448	SLD 16	-1.8E-03	-55.157	SLD 1	-3.3E-03	-98.846	SLE RA 20	0.000037					
450	SLE RA 1	-2.5E-03	-75.578	SLE RA 21	-2.8E-03	-85.426	SLE RA 20	1.51E-03					
453	SLD 16	-2.2E-03	-67.016	SLD 1	-2.7E-03	-79.71	SLE RA 20	8.88E-04					
455	SLD 16	-2.3E-03	-68.576	SLE RA 21	-2.7E-03	-80.508	SLE RA 20	9.48E-04					
456	SLD 3	-1.8E-03	-55.321	SLD 14	-3.2E-03	-97.314	SLE RA 21	7.43E-05					
457	SLD 3	-2.3E-03	-68.411	SLE RA 21	-2.7E-03	-80.313	SLE RA 21	9.16E-04					
460	SLD 3	-2.3E-03	-67.516	SLE RA 21	-2.7E-03	-79.574	SLE RA 21	8.37E-04					
467	SLD 16	-1.9E-03	-55.956	SLD 1	-3.3E-03	-99.861	SLE RA 20	4.16E-05					
468	SLE RA 1	-2.6E-03	-76.639	SLE RA 21	-2.9E-03	-86.683	SLE RA 21	1.67E-03					
472	SLE RA 1	-2.6E-03	-77.144	SLE RA 21	-2.9E-03	-87.29	SLE RA 21	0.001742					
474	SLD 16	-2.2E-03	-66.804	SLE RA 21	-2.6E-03	-79.214	SLE RA 21	1.00E-03					
476	SLD 14	-2.3E-03	-68.213	SLE RA 21	-2.7E-03	-80.052	SLE RA 21	1.05E-03					
477	SLD 3	-1.9E-03	-57.454	SLD 14	-0.00335	-100.499	SLE RA 21	1.30E-04					
478	SLD 3	-2.3E-03	-67.851	SLE RA 21	-2.7E-03	-79.539	SLE RA 21	1.02E-03					
481	SLD 3	-2.2E-03	-67.213	SLE RA 21	-2.6E-03	-78.974	SLE RA 21	9.48E-04					
484	SLD 16	-1.9E-03	-57.535	SLD 1	-3.4E-03	-102.436	SLE RA 20	8.47E-05					
486	SLD 1	-2.3E-03	-68.591	SLE RA 21	-2.6E-03	-78.004	SLE RA 21	1.17E-03					
487	SLD 1	-2.4E-03	-72.578	SLE RA 21	-2.7E-03	-82.445	SLE RA 21	1.23E-03					
488	SLD 1	-2.6E-03	-77.814	SLE RA 21	-2.9E-03	-88.485	SLE RA 21	1.28E-03					



Nodo	spostamento nodale massimo				spostamento nodale minimo				Cedimento elastico		Cedimento edometrico		Cedimento di consolidazione	
	Ind.	Cont.	uz	Press.	Cont.	uz	Press.		Cont.	v.	Cont.	v.	Cont.	v.
489	SLD 3		-2.6E-03	-78.749	SLE RA 21	-3.0E-03	-89.46		SLE RA 21	0.001373				
490	SLE RA 1		-2.6E-03	-77.351	SLE RA 21	-2.9E-03	-87.552		SLE RA 21	1.67E-03				
492	SLD 13		-2.2E-03	-66.73	SLE RA 21	-2.6E-03	-79.133		SLE RA 21	1.12E-03				
494	SLD 13		-2.3E-03	-67.991	SLE RA 21	-2.7E-03	-79.859		SLE RA 21	1.16E-03				
495	SLD 3		-2.0E-03	-60.08	SLD 14	-3.5E-03	-104.668		SLE RA 21	0.000204				
496	SLD 1		-2.2E-03	-67.334	SLE RA 21	-2.6E-03	-78.942		SLE RA 21	0.001114				
499	SLD 1		-2.2E-03	-66.942	SLE RA 21	-2.6E-03	-78.549		SLE RA 21	1.06E-03				
503	SLE RA 1		-2.6E-03	-76.983	SLE RA 21	-2.9E-03	-87.167		SLE RA 21	1.69E-03				
506	SLD 16		-2.0E-03	-59.595	SLD 1	-3.5E-03	-105.995		SLE RA 21	1.59E-04				
509	SLD 13		-2.2E-03	-66.758	SLE RA 21	-2.6E-03	-79.267		SLE RA 21	1.09E-03				
511	SLD 13		-2.3E-03	-67.905	SLE RA 21	-2.7E-03	-79.88		SLE RA 15	1.18E-03				
512	SLD 3		-2.1E-03	-62.743	SLD 14	-3.6E-03	-108.994		SLE RA 21	2.86E-04				
513	SLD 1		-2.2E-03	-66.898	SLE RA 21	-2.6E-03	-78.54		SLE RA 21	1.19E-03				
516	SLD 1		-2.2E-03	-66.732	SLE RA 21	-2.6E-03	-78.32		SLE RA 21	0.001156				
519	SLE RA 1		-2.5E-03	-76.01	SLE RA 21	-2.9E-03	-86.085		SLE RA 21	1.67E-03				
522	SLD 15		-2.1E-03	-61.69	SLD 2	-3.7E-03	-109.69		SLE RA 21	2.34E-04				
525	SLD 3		-2.2E-03	-64.783	SLD 14	-3.7E-03	-112.286		SLE RA 21	3.04E-04				
526	SLD 13		-2.2E-03	-66.892	SLE RA 21	-2.7E-03	-79.525		SLE RA 21	1.13E-03				
528	SLD 13		-2.3E-03	-67.932	SLE RA 21	-2.7E-03	-80.027		SLE RA 21	1.16E-03				
529	SLD 2		-2.2E-03	-66.535	SLE RA 21	-2.6E-03	-78.391		SLE RA 21	0.001235				
532	SLD 2		-2.2E-03	-66.616	SLE RA 21	-2.6E-03	-78.342		SLE RA 21	1.09E-03				
535	SLE RA 1		-2.5E-03	-74.581	SLE RA 21	-2.8E-03	-84.48		SLE RA 21	1.60E-03				
537	SLD 13		-2.1E-03	-63.187	SLD 4	-3.8E-03	-115.104		SLE RA 21	2.01E-04				
538	SLD 13		-2.1E-03	-63.511	SLD 4	-3.7E-03	-111.649		SLE RA 21	3.05E-04				
539	SLD 13		-2.1E-03	-64.223	SLD 4	-3.6E-03	-108.957		SLE RA 21	3.26E-04				
540	SLD 13		-2.2E-03	-65.058	SLD 4	-3.6E-03	-106.57		SLE RA 21	4.15E-04				
541	SLD 13		-2.2E-03	-65.869	SLD 4	-3.5E-03	-104.24		SLE RA 21	4.34E-04				
542	SLD 13		-0.00222	-66.601	SLD 4	-3.4E-03	-101.869		SLE RA 21	4.46E-04				
543	SLD 15		-2.2E-03	-67.238	SLD 2	-3.3E-03	-99.427		SLE RA 21	4.80E-04				
544	SLD 15		-2.3E-03	-67.773	SLD 2	-3.2E-03	-96.909		SLE RA 21	5.33E-04				
545	SLD 15		-2.3E-03	-68.188	SLD 2	-3.1E-03	-94.304		SLE RA 21	6.03E-04				
546	SLD 15		-2.3E-03	-68.443	SLD 2	-3.1E-03	-91.606		SLE RA 21	6.91E-04				
547	SLD 15		-2.3E-03	-68.479	SLD 2	-3.0E-03	-88.829		SLE RA 21	7.72E-04				
548	SLD 13		-2.3E-03	-68.242	SLD 4	-2.9E-03	-86.059		SLE RA 21	8.98E-04				
549	SLD 13		-2.3E-03	-67.737	SLD 4	-2.8E-03	-83.519		SLE RA 21	1.03E-03				
550	SLD 13		-2.2E-03	-67.11	SLD 4	-2.7E-03	-81.562		SLE RA 21	1.15E-03				
551	SLD 13		-2.2E-03	-67.453	SLE RA 21	-2.7E-03	-79.861		SLE RA 21	1.15E-03				
552	SLD 13		-2.3E-03	-68.622	SLE RA 21	-2.7E-03	-80.414		SLE RA 21	0.001174				
553	SLD 13		-2.3E-03	-69.994	SLE RA 21	-2.7E-03	-80.926		SLE RA 21	1.26E-03				
554	SLD 13		-2.4E-03	-71.348	SLE RA 21	-2.7E-03	-81.211		SLE RA 21	1.22E-03				
555	SLE RA 1		-2.4E-03	-71.898	SLE RA 21	-2.7E-03	-81.185		SLE RA 21	1.19E-03				
556	SLE RA 1		-2.4E-03	-71.544	SLE RA 21	-2.7E-03	-80.822		SLE RA 21	1.18E-03				
557	SLE RA 1		-2.4E-03	-70.911	SLE RA 21	-2.7E-03	-80.137		SLE RA 21	1.20E-03				
558	SLE RA 1		-2.3E-03	-70.092	SLE RA 21	-2.6E-03	-79.235		SLE RA 21	1.23E-03				
559	SLD 1		-2.3E-03	-68.977	SLE RA 21	-2.6E-03	-78.412		SLE RA 21	1.26E-03				
560	SLD 1		-2.3E-03	-67.926	SLE RA 21	-2.6E-03	-77.919		SLE RA 21	1.29E-03				
561	SLD 1		-2.3E-03	-69.455	SLE RA 21	-2.7E-03	-79.611		SLE RA 21	1.28E-03				
562	SLE RA 1		-2.4E-03	-71.694	SLE RA 21	-2.7E-03	-80.778		SLE RA 21	1.61E-03				
563	SLD 2		-2.4E-03	-70.966	SLE RA 21	-2.7E-03	-80.549		SLE RA 21	1.54E-03				
564	SLD 2		-2.3E-03	-69.837	SLE RA 21	-2.7E-03	-80.341		SLE RA 21	1.51E-03				
565	SLD 2		-2.3E-03	-68.646	SLE RA 21	-2.7E-03	-80.015		SLE RA 21	1.37E-03				
566	SLD 2		-2.3E-03	-67.532	SLE RA 21	-2.7E-03	-79.517		SLE RA 21	1.29E-03				
567	SLD 2		-2.2E-03	-66.687	SLE RA 21	-2.6E-03	-78.911		SLE RA 21	1.24E-03				
568	SLD 2		-2.2E-03	-66.43	SLE RA 21	-2.6E-03	-78.388		SLE RA 21	1.24E-03				
569	SLD 2		-2.2E-03	-66.59	SLE RA 21	-2.6E-03	-78.402		SLE RA 21	1.09E-03				
570	SLD 2		-2.2E-03	-67.322	SLE RA 21	-2.6E-03	-79.086		SLE RA 21	1.02E-03				
571	SLD 2		-2.3E-03	-68.081	SLE RA 21	-2.7E-03	-80.16		SLE RA 21	1.09E-03				
572	SLD 1		-2.3E-03	-69.353	SLE RA 21	-2.7E-03	-82.175		SLE RA 21	9.69E-04				
573	SLD 3		-2.3E-03	-70.008	SLD 14	-2.8E-03	-84.344		SLE RA 21	8.50E-04				
574	SLD 3		-2.3E-03	-70.19	SLD 14	-2.9E-03	-87.082		SLE RA 21	7.41E-04				
575	SLD 3		-2.3E-03	-70.001	SLD 14	-3.0E-03	-89.856		SLE RA 21	6.76E-04				
576	SLD 3		-2.3E-03	-69.559	SLD 14	-3.1E-03	-92.578		SLE RA 21	6.06E-04				
577	SLD 3		-2.3E-03	-68.959	SLD 14	-3.2E-03	-95.229		SLE RA 21	0.000556				
578	SLD 3		-2.3E-03	-68.262	SLD 14	-3.3E-03	-97.824		SLE RA 21	5.24E-04				
579	SLD 3		-2.3E-03	-67.512	SLD 14	-3.3E-03	-100.396		SLE RA 21	0.000505				
580	SLD 3		-2.2E-03	-66.747	SLD 14	-3.4E-03	-103.009		SLE RA 21	4.76E-04				
581	SLD 3		-2.2E-03	-66.043	SLD 14	-3.5E-03	-105.797		SLE RA 21	4.62E-04				
582	SLD 3		-2.2E-03	-65.551	SLD 14	-3.6E-03	-109.03		SLE RA 21	4.17E-04				
583	SLD 3		-2.2E-03	-65.567	SLD 14	-3.8E-03	-113.216		SLE RA 21	3.27E-04				
584	SLD 3		-2.2E-03	-66.543	SLD 14	-4.0E-03	-119.116		SLE RA 21	2.61E-04				
586	SLD 13		-2.1E-03	-63.12	SLD 4	-3.7E-03	-112.285		SLE RA 21	2.78E-04				
594	SLD 13		-2.1E-03	-63.336	SLD 4	-3.8E-03	-112.598		SLE RA 21	2.79E-04				
607	SLD 13		-2.2E-03	-67.457	SLD 4	-2.7E-03	-82.381		SLE RA 21	1.11E-03				
611	SLD 13		-2.2E-03	-66.955	SLE RA 21	-2.7E-03	-79.72		SLE RA 21	1.13E-03				
614	SLD 13		-2.3E-03	-67.959	SLE RA 21	-2.7E-03	-80.181		SLE RA 21	1.16E-03				
623	SLE RA 1		-2.3E-03	-69.002	SLE RA 21	-2.6E-03	-78.052		SLE RA 21	1.27E-03				
625	SLD 1		-2.3E-03	-68.208	SLE RA 21	-2.6E-03	-77.57		SLE RA 21	1.29E-03				
627	SLD 1		-2.3E-03	-68.914	SLE RA 21	-2.6E-03	-78.494		SLE RA 21	1.27E-03				
634	SLE RA 1		-2.4E-03	-72.714	SLE RA 21	-2.7E-03	-82.376		SLE RA 21	1.55E-03				
639	SLE RA 1		-2.3E-03	-70.254	SLE RA 21	-2.6E-03	-79.287		SLE RA 21	1.59E-03				
648	SLD 2		-2.2E-03	-66.461	SLE RA 21	-2.6E-03	-78.636		SLE RA 21	1.22E-03				
651	SLD 2		-2.2E-03	-66.624	SLE RA 21	-2.6E-03	-78.65		SLE RA 21	1.09E-03				
654	SLD 2		-2.3E-03	-68.713	SLE RA 21	-2.7E-03	-81.076		SLE RA 21	1.06E-03				
667	SLD 3		-2.2E-03	-65.385	SLD 14	-3.8E-03	-113.088		SLE RA 21	3.24E-04				
669	SLD 2		-2.2E-03	-67.228	SLE RA 21	-2.6E-03	-78.918		SLE RA 21	1.02E-03				
671	SLD 4		-2.3E-03	-68.603	SLE RA 21	-2.7E-03	-80.942		SLE RA 21	1.06E-03				
673	SLD 13		-2.1E-03	-63.272	SLD 4	-3.8E-03	-114.963		SLE RA 21	1.91E-04				
674	SLD 13		-2.1E-03	-63.595	SLD 4	-3.7E-03	-111.507		SLE RA 21	2.94E-04				
675	SLD 13		-2.1E-03	-64.306	SLD 4	-3.6E-03	-108.81		SLE RA 21	3.22E-04				
676	SLD 13		-2.2E-03	-65.139	SLD 4	-3.5E-03	-106.418		SLE RA 21	4.12E-04				



Nodo	spostamento nodale massimo			spostamento nodale minimo			Cedimento elastico		Cedimento edometrico		Cedimento di consolidazione		
	Ind.	Cont.	uz	Press.	Cont.	uz	Press.	Cont.	v.	Cont.	v.	Cont.	v.
677	SLD 13	-2.2E-03	-65.948	SLD 4	-3.5E-03	-104.082	SLE RA 21	4.34E-04					
678	SLD 13	-2.2E-03	-66.675	SLD 4	-3.4E-03	-101.702	SLE RA 21	4.51E-04					
679	SLD 13	-2.2E-03	-67.306	SLD 4	-3.3E-03	-99.251	SLE RA 21	4.92E-04					
680	SLD 13	-2.3E-03	-67.834	SLD 4	-3.2E-03	-96.719	SLE RA 21	5.51E-04					
681	SLD 15	-2.3E-03	-68.239	SLD 2	-3.1E-03	-94.1	SLE RA 21	6.28E-04					
682	SLD 15	-2.3E-03	-68.482	SLD 2	-3.0E-03	-91.384	SLE RA 21	7.25E-04					
683	SLD 15	-2.3E-03	-68.505	SLD 2	-3.0E-03	-88.588	SLE RA 21	8.09E-04					
684	SLD 13	-2.3E-03	-68.256	SLD 4	-2.9E-03	-85.795	SLE RA 21	9.39E-04					
685	SLD 13	-2.3E-03	-67.741	SLD 4	-2.8E-03	-83.228	SLE RA 21	1.07E-03					
686	SLD 13	-2.2E-03	-67.115	SLD 4	-2.7E-03	-81.246	SLE RA 21	1.03E-03					
687	SLD 13	-2.2E-03	-66.762	SLD 4	-2.7E-03	-80.277	SLE RA 21	1.06E-03					
688	SLD 13	-2.2E-03	-66.958	SLE RA 21	-2.7E-03	-79.81	SLE RA 21	1.12E-03					
689	SLD 13	-2.3E-03	-67.558	SLE RA 21	-2.7E-03	-80.084	SLE RA 21	1.14E-03					
690	SLD 13	-2.3E-03	-68.544	SLE RA 21	-2.7E-03	-80.526	SLE RA 21	0.001241					
691	SLD 13	-2.3E-03	-69.777	SLE RA 21	-2.7E-03	-80.946	SLE RA 21	1.20E-03					
692	SLD 13	-2.4E-03	-70.991	SLE RA 21	-2.7E-03	-81.138	SLE RA 21	1.17E-03					
693	SLE RA 1	-2.4E-03	-71.696	SLE RA 21	-2.7E-03	-81.018	SLE RA 21	0.001158					
694	SLE RA 1	-2.4E-03	-71.263	SLE RA 21	-2.7E-03	-80.558	SLE RA 21	0.001165					
695	SLE RA 1	-2.4E-03	-70.549	SLE RA 21	-2.7E-03	-79.772	SLE RA 21	1.19E-03					
696	SLE RA 1	-2.3E-03	-69.644	SLE RA 21	-2.6E-03	-78.767	SLE RA 21	1.23E-03					
697	SLE RA 1	-2.3E-03	-68.823	SLE RA 21	-2.6E-03	-77.853	SLE RA 21	0.001261					
698	SLE RA 1	-2.3E-03	-68.374	SLE RA 21	-2.6E-03	-77.371	SLE RA 21	1.27E-03					
699	SLD 1	-2.3E-03	-68.853	SLE RA 21	-2.6E-03	-78.192	SLE RA 21	1.23E-03					
700	SLD 1	-2.3E-03	-69.131	SLE RA 21	-2.6E-03	-78.669	SLE RA 21	1.20E-03					
701	SLD 1	-2.3E-03	-69.237	SLE RA 21	-2.6E-03	-78.863	SLE RA 21	1.17E-03					
702	SLD 6	-2.3E-03	-69.278	SLE RA 21	-2.6E-03	-79.127	SLE RA 21	1.12E-03					
703	SLD 6	-2.3E-03	-69.496	SLE RA 21	-2.6E-03	-79.344	SLE RA 21	1.15E-03					
704	SLE RA 1	-2.4E-03	-71.41	SLE RA 21	-2.7E-03	-80.896	SLE RA 21	1.46E-03					
705	SLE RA 1	-2.4E-03	-71.281	SLE RA 21	-2.7E-03	-80.703	SLE RA 21	1.51E-03					
706	SLE RA 1	-2.4E-03	-70.699	SLE RA 21	-2.7E-03	-80.007	SLE RA 21	1.53E-03					
707	SLE RA 1	-2.3E-03	-69.595	SLE RA 21	-2.6E-03	-78.693	SLE RA 21	1.54E-03					
708	SLE RA 1	-2.3E-03	-68.945	SLE RA 21	-2.6E-03	-77.906	SLE RA 21	1.50E-03					
709	SLE RA 1	-2.3E-03	-68.721	SLE RA 21	-2.6E-03	-77.637	SLE RA 21	1.47E-03					
710	SLD 1	-2.3E-03	-67.822	SLE RA 21	-2.6E-03	-77.393	SLE RA 21	1.41E-03					
711	SLD 1	-2.2E-03	-66.662	SLE RA 21	-2.6E-03	-77.16	SLE RA 21	1.37E-03					
712	SLD 2	-2.2E-03	-65.448	SLE RA 21	-2.6E-03	-76.803	SLE RA 21	1.27E-03					
713	SLD 2	-2.1E-03	-64.308	SLE RA 21	-2.5E-03	-76.27	SLE RA 21	1.20E-03					
714	SLD 2	-2.1E-03	-63.436	SLE RA 21	-2.5E-03	-75.624	SLE RA 21	1.16E-03					
715	SLD 2	-2.1E-03	-63.433	SLE RA 21	-2.5E-03	-74.951	SLE RA 21	1.08E-03					
716	SLD 2	-2.2E-03	-67.11	SLE RA 21	-2.6E-03	-78.769	SLE RA 21	1.02E-03					
717	SLD 4	-2.3E-03	-68.58	SLE RA 21	-2.7E-03	-80.918	SLE RA 21	1.06E-03					
718	SLD 4	-2.3E-03	-69.132	SLE RA 21	-2.7E-03	-81.804	SLE RA 21	1.01E-03					
719	SLD 4	-2.3E-03	-69.816	SLD 13	-2.8E-03	-83.888	SLE RA 21	0.000893					
720	SLD 4	-2.3E-03	-70.036	SLD 13	-2.9E-03	-86.664	SLE RA 21	7.79E-04					
721	SLD 4	-2.3E-03	-69.887	SLD 13	-3.0E-03	-89.47	SLE RA 21	7.09E-04					
722	SLD 4	-2.3E-03	-69.483	SLD 13	-3.1E-03	-92.223	SLE RA 21	6.30E-04					
723	SLD 3	-2.3E-03	-68.915	SLD 14	-3.2E-03	-94.907	SLE RA 21	5.73E-04					
724	SLD 3	-2.3E-03	-68.246	SLD 14	-3.3E-03	-97.535	SLE RA 21	5.34E-04					
725	SLD 3	-2.3E-03	-67.52	SLD 14	-3.3E-03	-100.139	SLE RA 21	5.10E-04					
726	SLD 3	-2.2E-03	-66.778	SLD 14	-3.4E-03	-102.783	SLE RA 21	4.77E-04					
727	SLD 3	-2.2E-03	-66.096	SLD 14	-0.00352	-105.599	SLE RA 21	4.60E-04					
728	SLD 3	-2.2E-03	-65.625	SLD 14	-3.6E-03	-108.859	SLE RA 21	4.13E-04					
729	SLD 3	-2.2E-03	-65.662	SLD 14	-3.8E-03	-113.071	SLE RA 21	3.23E-04					
730	SLD 1	-2.2E-03	-66.645	SLD 16	-4.0E-03	-118.98	SLE RA 21	2.58E-04					
731	SLD 1	-2.2E-03	-64.918	SLD 16	-3.7E-03	-111.991	SLE RA 21	2.98E-04					
734	SLD 2	-2.2E-03	-67.21	SLE RA 21	-2.6E-03	-78.89	SLE RA 21	1.00E-03					
736	SLD 4	-2.3E-03	-68.528	SLE RA 21	-2.7E-03	-80.868	SLE RA 21	1.05E-03					
737	SLD 2	-2.1E-03	-62.878	SLD 15	-3.6E-03	-108.254	SLE RA 21	2.69E-04					
739	SLE RA 2	-2.2E-03	-66.277	SLE RA 20	-0.00251	-75.301	SLE RA 21	1.16E-03					
741	SLD 3	-2.2E-03	-65.96	SLE RA 20	-2.5E-03	-75.107	SLE RA 21	1.15E-03					
742	SLD 2	-2.0E-03	-60.085	SLD 15	-3.4E-03	-103.187	SLE RA 21	0.000177					
745	SLD 13	-2.0E-03	-59.373	SLD 4	-3.5E-03	-104.046	SLE RA 21	1.06E-04					
746	SLD 13	-2.2E-03	-66.803	SLE RA 21	-2.7E-03	-79.598	SLE RA 21	9.09E-04					
748	SLD 13	-2.3E-03	-67.874	SLE RA 21	-2.7E-03	-80.92	SLE RA 21	9.86E-04					
749	SLD 16	-2.3E-03	-68.502	SLE RA 20	-2.6E-03	-77.555	SLE RA 20	1.04E-03					
751	SLE RA 2	-2.3E-03	-68.114	SLE RA 20	-2.6E-03	-77.119	SLE RA 20	1.03E-03					
752	SLD 4	-2.3E-03	-68.83	SLE RA 21	-2.7E-03	-81.006	SLE RA 21	9.35E-04					
754	SLD 4	-2.3E-03	-68.277	SLE RA 20	-2.7E-03	-80.588	SLE RA 21	8.70E-04					
755	SLE RA 2	-2.2E-03	-66.133	SLE RA 20	-2.5E-03	-75.242	SLE RA 21	9.58E-04					
757	SLD 3	-2.2E-03	-65.466	SLE RA 20	-2.5E-03	-75.076	SLE RA 21	9.59E-04					
758	SLD 16	-2.3E-03	-67.613	SLE RA 20	-2.6E-03	-78.098	SLE RA 20	9.15E-04					
760	SLD 16	-2.3E-03	-67.749	SLE RA 20	-2.6E-03	-77.664	SLE RA 20	9.05E-04					
762	SLD 13	-1.9E-03	-57.43	SLD 4	-3.3E-03	-100.067	SLE RA 21	4.72E-05					
763	SLD 2	-1.9E-03	-57.115	SLD 15	-3.3E-03	-97.806	SLE RA 21	9.14E-05					
765	SLD 2	-2.3E-03	-69.802	SLE RA 21	-2.7E-03	-82.173	SLE RA 21	8.04E-04					
767	SLD 4	-2.3E-03	-69.012	SLE RA 20	-2.7E-03	-81.438	SLE RA 21	7.46E-04					
768	SLD 13	-0.00224	-67.2	SLE RA 21	-2.7E-03	-79.64	SLE RA 21	7.74E-04					
770	SLD 13	-2.3E-03	-68.378	SLE RA 21	-2.7E-03	-81.169	SLE RA 21	8.42E-04					
771	SLE RA 2	-2.2E-03	-66.521	SLE RA 20	-2.5E-03	-75.729	SLE RA 21	8.07E-04					
773	SLD 3	-2.2E-03	-65.669	SLE RA 20	-2.5E-03	-75.591	SLE RA 20	8.13E-04					
774	SLD 16	-2.2E-03	-67.232	SLE RA 20	-2.6E-03	-78.812	SLE RA 20	8.17E-04					
776	SLD 16	-2.2E-03	-67.384	SLE RA 20	-2.6E-03	-78.381	SLE RA 20	0.000803					
778	SLD 13	-1.9E-03	-55.808	SLD 4	-3.2E-03	-96.79	SLE RA 21	3.73E-05					
779	SLD 2	-1.8E-03	-54.303	SLD 15	-3.1E-03	-92.715	SLE RA 21	4.03E-05					
781	SLD 2	-2.4E-03	-70.807	SLE RA 21	-2.8E-03	-83.34	SLE RA 21	6.94E-04					
783	SLD 2	-2.3E-03	-69.796	SLE RA 20	-2.7E-03	-82.288	SLE RA 20	6.55E-04					
784	SLD 13	-2.2E-03	-67.327	SLE RA 21	-2.6E-03	-79.466	SLE RA 21	6.55E-04					
786	SLD 13	-2.3E-03	-68.597	SLE RA 21	-2.7E-03	-81.207	SLE RA 21	7.20E-04					
787	SLD 3	-2.2E-03	-67.249	SLE RA 20	-2.6E-03	-76.557	SLE RA 21	6.77E-04					
789	SLD 3	-2.2E-03	-66.354	SLE RA 20	-2.5E-03	-76.447	SLE RA 20	6.86E-04					



Nodo		spostamento nodale massimo		spostamento nodale minimo		Cedimento elastico		Cedimento edometrico		Cedimento di consolidazione		
Ind.	Cont.	uz	Press.	Cont.	uz	Press.	Cont.	v.	Cont.	v.	Cont.	v.
790	SLD 16	-2.2E-03	-67.252	SLE RA 20	-2.7E-03	-79.604	SLE RA 20	7.11E-04				
792	SLD 16	-2.2E-03	-67.421	SLE RA 20	-2.6E-03	-79.178	SLE RA 20	6.96E-04				
794	SLD 13	-1.8E-03	-54.74	SLD 4	-3.2E-03	-94.639	SLE RA 21	3.21E-05				
795	SLD 2	-1.7E-03	-51.807	SLD 15	-2.9E-03	-88.206	SLE RA 21	3.11E-05				
797	SLD 2	-2.4E-03	-71.679	SLE RA 21	-2.8E-03	-84.413	SLE RA 20	5.94E-04				
799	SLD 2	-2.3E-03	-70.469	SLE RA 20	-2.8E-03	-83.039	SLE RA 20	5.69E-04				
800	SLD 13	-2.2E-03	-67.051	SLE RA 21	-2.6E-03	-79.016	SLE RA 21	5.81E-04				
802	SLD 13	-2.3E-03	-68.449	SLE RA 21	-2.7E-03	-80.973	SLE RA 21	0.000611				
803	SLE RA 2	-2.3E-03	-68.199	SLE RA 20	-2.6E-03	-77.585	SLE RA 21	5.76E-04				
805	SLD 3	-2.2E-03	-67.336	SLE RA 20	-2.6E-03	-77.503	SLE RA 21	5.86E-04				
806	SLD 16	-2.3E-03	-67.558	SLE RA 20	-2.7E-03	-80.441	SLE RA 20	6.22E-04				
808	SLD 16	-2.3E-03	-67.744	SLE RA 20	-2.7E-03	-80.02	SLE RA 20	6.07E-04				
810	SLD 13	-1.8E-03	-54.422	SLD 4	-3.1E-03	-93.961	SLE RA 21	3.26E-05				
811	SLD 2	-1.7E-03	-49.661	SLD 15	-2.8E-03	-84.346	SLE RA 20	2.59E-05				
813	SLD 2	-2.4E-03	-72.388	SLE RA 21	-2.8E-03	-85.435	SLE RA 20	5.21E-04				
815	SLD 2	-2.4E-03	-70.961	SLE RA 20	-2.8E-03	-83.738	SLE RA 20	0.000499				
816	SLD 13	-2.2E-03	-66.526	SLE RA 21	-2.6E-03	-78.478	SLE RA 21	4.86E-04				
818	SLD 13	-2.3E-03	-68.068	SLE RA 21	-2.7E-03	-80.656	SLE RA 21	5.34E-04				
819	SLE RA 2	-2.3E-03	-69.272	SLE RA 20	-2.6E-03	-78.727	SLE RA 21	4.98E-04				
821	SLD 1	-2.3E-03	-68.482	SLE RA 20	-2.6E-03	-78.676	SLE RA 21	5.08E-04				
822	SLD 16	-2.3E-03	-68.043	SLE RA 20	-2.7E-03	-81.324	SLE RA 20	5.49E-04				
824	SLD 16	-2.3E-03	-68.246	SLE RA 20	-2.7E-03	-80.91	SLE RA 20	5.35E-04				
826	SLD 13	-1.8E-03	-55.056	SLD 4	-3.2E-03	-95.092	SLE RA 21	0.000039				
827	SLD 2	-1.6E-03	-47.819	SLD 15	-2.7E-03	-81.05	SLE RA 20	2.44E-05				
829	SLD 2	-2.4E-03	-73.037	SLE RA 21	-2.9E-03	-86.555	SLE RA 20	0.000461				
831	SLD 2	-2.4E-03	-71.368	SLE RA 20	-2.8E-03	-84.531	SLE RA 20	4.41E-04				
832	SLD 13	-2.2E-03	-66.051	SLE RA 21	-2.6E-03	-78.297	SLE RA 21	4.18E-04				
834	SLD 13	-2.3E-03	-67.744	SLE RA 21	-0.00269	-80.7	SLE RA 21	0.000471				
835	SLD 2	-2.3E-03	-70.333	SLE RA 20	-2.7E-03	-79.958	SLE RA 21	4.51E-04				
837	SLD 2	-2.3E-03	-69.597	SLE RA 20	-2.7E-03	-79.937	SLE RA 21	4.62E-04				
838	SLD 14	-2.3E-03	-68.573	SLD 3	-2.7E-03	-82.392	SLE RA 20	5.11E-04				
840	SLD 14	-2.3E-03	-68.779	SLE RA 20	-2.7E-03	-81.876	SLE RA 20	4.96E-04				
842	SLD 13	-1.9E-03	-56.866	SLD 4	-3.3E-03	-98.391	SLE RA 21	0.00005				
843	SLD 2	-1.5E-03	-46.174	SLD 15	-2.6E-03	-78.133	SLE RA 20	2.57E-05				
845	SLD 2	-2.5E-03	-73.775	SLD 15	-2.9E-03	-88.011	SLE RA 20	4.03E-04				
847	SLD 2	-2.4E-03	-71.853	SLD 15	-2.9E-03	-85.68	SLE RA 20	3.94E-04				
848	SLD 13	-2.2E-03	-66.071	SLD 4	-2.6E-03	-79.387	SLE RA 21	0.00036				
850	SLD 13	-2.3E-03	-67.92	SLD 4	-2.7E-03	-82.305	SLE RA 21	0.000407				
851	SLD 2	-2.4E-03	-71.316	SLE RA 20	-2.7E-03	-81.317	SLE RA 21	4.07E-04				
853	SLD 2	-2.4E-03	-70.618	SLE RA 20	-2.7E-03	-81.327	SLE RA 21	4.18E-04				
854	SLD 14	-2.3E-03	-69.12	SLD 3	-2.8E-03	-83.925	SLE RA 21	0.000462				
856	SLD 14	-2.3E-03	-69.332	SLE RA 20	-2.8E-03	-82.992	SLE RA 21	4.48E-04				
858	SLD 13	-2.0E-03	-60.11	SLD 4	-3.5E-03	-104.254	SLE RA 21	5.89E-05				
859	SLD 2	-1.5E-03	-44.591	SLD 15	-2.5E-03	-75.354	SLE RA 20	2.64E-05				
861	SLD 2	-2.5E-03	-74.774	SLD 15	-3.0E-03	-90.93	SLE RA 20	3.61E-04				
863	SLD 2	-2.4E-03	-72.594	SLD 15	-2.9E-03	-88.249	SLE RA 20	3.50E-04				
864	SLD 13	-2.2E-03	-64.972	SLD 4	-3.8E-03	-114.911	SLE RA 21	5.03E-05				
865	SLD 13	-2.0E-03	-59.403	SLD 4	-3.4E-03	-102.119	SLE RA 21	5.87E-05				
866	SLD 13	-1.8E-03	-54.556	SLD 4	-3.0E-03	-90.59	SLE RA 21	5.09E-05				
867	SLD 13	-1.7E-03	-50.742	SLD 4	-2.7E-03	-80.853	SLE RA 21	3.57E-05				
868	SLD 13	-1.6E-03	-48.138	SLD 4	-2.4E-03	-73.189	SLE RA 21	2.21E-05				
869	SLD 13	-1.6E-03	-46.821	SLD 4	-2.3E-03	-67.708	SLE RA 20	1.34E-05				
870	SLD 13	-1.6E-03	-46.794	SLD 4	-2.1E-03	-64.403	SLE RA 20	1.05E-05				
871	SLD 13	-1.6E-03	-47.998	SLD 4	-2.1E-03	-63.181	SLE RA 20	0.000011				
872	SLD 13	-1.7E-03	-50.307	SLD 4	-2.1E-03	-63.876	SLE RA 20	1.73E-05				
873	SLD 13	-1.8E-03	-53.517	SLD 4	-2.2E-03	-66.244	SLE RA 21	4.42E-05				
874	SLD 13	-1.9E-03	-57.324	SLD 4	-2.3E-03	-69.942	SLE RA 21	1.24E-04				
875	SLD 13	-2.0E-03	-61.293	SLD 4	-2.5E-03	-74.49	SLE RA 21	2.15E-04				
876	SLD 13	-2.2E-03	-64.826	SLD 4	-2.6E-03	-79.227	SLE RA 21	2.74E-04				
877	SLD 13	-2.2E-03	-65.834	SLD 4	-2.7E-03	-80.792	SLE RA 21	2.95E-04				
878	SLD 2	-2.4E-03	-72.503	SLE RA 21	-2.8E-03	-82.941	SLE RA 21	3.74E-04				
880	SLD 2	-2.4E-03	-71.831	SLE RA 21	-2.8E-03	-82.981	SLE RA 21	3.83E-04				
881	SLD 14	-2.3E-03	-69.874	SLD 3	-2.9E-03	-85.797	SLE RA 21	4.22E-04				
883	SLD 14	-2.3E-03	-70.101	SLD 3	-2.8E-03	-84.831	SLE RA 21	4.09E-04				
885	SLD 13	-2.2E-03	-65.066	SLD 4	-0.00377	-113.101	SLE RA 21	5.53E-05				
886	SLD 2	-2.5E-03	-76.133	SLD 15	-3.2E-03	-95.185	SLE RA 20	2.97E-04				
888	SLD 2	-2.5E-03	-73.854	SLD 15	-3.1E-03	-92.369	SLE RA 20	0.000272				
889	SLD 2	-2.4E-03	-72.691	SLD 15	-3.0E-03	-90.978	SLE RA 20	2.40E-04				
890	SLD 2	-2.3E-03	-69.55	SLD 15	-2.9E-03	-87.642	SLE RA 20	0.00017				
891	SLD 2	-2.2E-03	-65.747	SLD 15	-2.8E-03	-84.038	SLE RA 20	9.34E-05				
892	SLD 2	-2.1E-03	-61.938	SLD 15	-2.7E-03	-80.882	SLE RA 20	3.88E-05				
893	SLD 2	-2.0E-03	-58.534	SLD 15	-2.6E-03	-78.613	SLE RA 20	2.94E-05				
894	SLD 2	-1.9E-03	-55.767	SLD 15	-2.6E-03	-77.47	SLE RA 20	2.41E-05				
895	SLD 2	-1.8E-03	-53.736	SLD 15	-2.6E-03	-77.556	SLE RA 20	2.22E-05				
896	SLD 2	-1.7E-03	-52.457	SLD 15	-2.6E-03	-78.887	SLE RA 20	2.36E-05				
897	SLD 2	-1.7E-03	-51.886	SLD 15	-2.7E-03	-81.407	SLE RA 20	2.77E-05				
898	SLD 2	-1.7E-03	-51.933	SLD 15	-2.8E-03	-84.996	SLE RA 20	3.16E-05				
899	SLD 2	-1.7E-03	-52.463	SLD 15	-3.0E-03	-89.449	SLE RA 20	2.87E-05				
900	SLD 2	-1.4E-03	-42.916	SLD 15	-2.4E-03	-72.445	SLE RA 20	1.83E-05				
902	SLD 2	-1.8E-03	-53.281	SLD 15	-3.1E-03	-94.429	SLE RA 20	1.99E-05				
904	SLD 2	-2.5E-03	-74.121	SLE RA 21	-2.8E-03	-85.085	SLE RA 21	3.38E-04				
906	SLD 2	-2.4E-03	-73.473	SLE RA 21	-2.8E-03	-85.158	SLE RA 21	3.46E-04				
907	SLD 14	-2.4E-03	-71.062	SLD 3	-2.9E-03	-88.253	SLE RA 21	3.76E-04				
909	SLD 14	-2.4E-03	-71.308	SLD 3	-2.9E-03	-87.282	SLE RA 21	3.65E-04				
910	SLD 2	-2.6E-03	-77.094	SLD 15	-3.3E-03	-98.673	SLE RA 20	2.40E-04				
913	SLD 13	-2.4E-03	-71.927	SLD 4	-4.2E-03	-125.208	SLE RA 21	5.51E-05				
926	SLD 13	-2.3E-03	-69.918	SLD 4	-3.1E-03	-93.964	SLE RA 21	2.21E-04				
929	SLD 13	-2.4E-03	-73.305	SLD 4	-3.3E-03	-99.485	SLE RA 21	2.61E-04				
943	SLD 2	-2.6E-03	-77.931	SLD 15	-3.4E-03	-103.236	SLE RA 20	1.81E-04				
948	SLD 13	-2.5E-03	-74.744	SLD 4	-3.5E-03	-105.17	SLE RA 21	0.00022				



Nodo	spostamento nodale massimo				spostamento nodale minimo				Cedimento elastico		Cedimento edometrico		Cedimento di consolidazione	
Ind.	Cont.	uz	Press.		Cont.	uz	Press.		Cont.	v.		Cont.	v.	
949	SLD 2	-2.6E-03	-76.548		SLE RA 21	-2.9E-03	-88.187		SLE RA 21	2.58E-04				
951	SLD 2	-2.5E-03	-75.924		SLE RA 21	-2.9E-03	-88.294		SLE RA 21	2.64E-04				
952	SLD 14	-2.4E-03	-73.031		SLD 3	-3.1E-03	-91.727		SLE RA 21	2.91E-04				
954	SLD 14	-2.4E-03	-73.296		SLD 3	-3.0E-03	-90.749		SLE RA 21	2.82E-04				
955	SLD 13	-2.6E-03	-78.331		SLD 4	-3.8E-03	-114.845		SLE RA 21	1.70E-04				
956	SLD 13	-2.5E-03	-74.152		SLD 4	-3.5E-03	-106.28		SLE RA 21	1.94E-04				
957	SLD 13	-2.3E-03	-69.995		SLD 4	-3.3E-03	-98.604		SLE RA 21	1.78E-04				
958	SLD 13	-2.2E-03	-66.441		SLD 4	-3.1E-03	-92.275		SLE RA 21	1.40E-04				
959	SLD 13	-2.1E-03	-63.855		SLD 4	-2.9E-03	-87.541		SLE RA 21	1.01E-04				
960	SLD 14	-2.1E-03	-62.364		SLD 3	-2.8E-03	-84.552		SLE RA 21	7.54E-05				
961	SLD 14	-2.1E-03	-62.081		SLD 3	-2.8E-03	-83.212		SLE RA 21	6.94E-05				
962	SLD 14	-2.1E-03	-62.95		SLD 3	-2.8E-03	-83.37		SLE RA 21	8.57E-05				
963	SLD 14	-2.2E-03	-64.798		SLD 3	-2.8E-03	-84.762		SLE RA 21	1.25E-04				
964	SLD 14	-2.2E-03	-67.316		SLD 3	-2.9E-03	-86.979		SLE RA 21	1.82E-04				
965	SLD 14	-2.3E-03	-70.033		SLD 3	-3.0E-03	-89.42		SLE RA 21	2.52E-04				
966	SLD 14	-2.4E-03	-72.265		SLD 3	-3.0E-03	-91.227		SLE RA 21	2.69E-04				
967	SLD 14	-2.4E-03	-73.128		SLD 3	-3.0E-03	-91.294		SLE RA 21	2.82E-04				
968	SLD 14	-2.4E-03	-72.63		SLD 3	-3.0E-03	-89.514		SLE RA 21	2.53E-04				
969	SLD 14	-2.4E-03	-70.682		SLD 3	-2.9E-03	-85.729		SLE RA 21	2.22E-04				
970	SLD 14	-2.3E-03	-68.25		SLE RA 21	-2.7E-03	-81.345		SLE RA 21	1.41E-04				
971	SLD 14	-2.2E-03	-66.071		SLE RA 21	-2.6E-03	-77.76		SLE RA 21	7.15E-05				
972	SLD 14	-2.2E-03	-64.649		SLE RA 21	-2.5E-03	-75.031		SLE RA 21	3.42E-05				
973	SLD 10	-2.1E-03	-64.167		SLE RA 21	-2.5E-03	-73.535		SLE RA 21	2.92E-05				
974	SLD 10	-2.1E-03	-64.358		SLE RA 21	-2.4E-03	-73.451		SLE RA 21	0.000029				
975	SLD 10	-2.2E-03	-65.733		SLE RA 21	-2.5E-03	-74.777		SLE RA 21	3.36E-05				
976	SLD 6	-2.3E-03	-67.925		SLE RA 21	-2.6E-03	-77.332		SLE RA 21	6.45E-05				
977	SLD 6	-2.4E-03	-70.637		SLE RA 21	-2.7E-03	-80.735		SLE RA 21	1.31E-04				
978	SLD 6	-2.5E-03	-73.548		SLE RA 21	-2.8E-03	-84.365		SLE RA 21	2.09E-04				
979	SLD 6	-2.5E-03	-75.895		SLE RA 21	-0.00291	-87.3		SLE RA 21	2.33E-04				
980	SLD 2	-2.5E-03	-76.285		SLE RA 21	-2.9E-03	-88.329		SLE RA 21	2.55E-04				
981	SLD 2	-2.5E-03	-75.128		SLE RA 21	-2.9E-03	-87.642		SLE RA 21	2.41E-04				
982	SLD 2	-2.4E-03	-72.592		SLE RA 21	-2.8E-03	-85.366		SLE RA 21	2.29E-04				
983	SLD 2	-2.3E-03	-69.618		SLE RA 21	-2.8E-03	-82.606		SLE RA 21	1.62E-04				
984	SLD 2	-2.2E-03	-66.925		SLD 15	-2.7E-03	-80.406		SLE RA 21	1.05E-04				
985	SLD 2	-2.2E-03	-65.008		SLD 15	-2.7E-03	-79.733		SLE RA 21	6.73E-05				
986	SLD 2	-2.1E-03	-64.183		SLD 15	-2.7E-03	-80.385		SLE RA 21	5.13E-05				
987	SLD 2	-2.2E-03	-64.629		SLD 15	-2.8E-03	-82.567		SLE RA 21	5.67E-05				
988	SLD 2	-2.2E-03	-66.401		SLD 15	-2.9E-03	-86.338		SLE RA 21	7.96E-05				
989	SLD 2	-2.3E-03	-69.427		SLD 15	-3.1E-03	-91.601		SLE RA 21	1.12E-04				
990	SLD 2	-2.4E-03	-73.48		SLD 15	-3.3E-03	-98.067		SLE RA 21	1.41E-04				
991	SLD 2	-2.6E-03	-78.14		SLD 15	-3.5E-03	-105.217		SLE RA 20	1.49E-04				
993	SLD 13	-2.5E-03	-76.004		SLD 4	-3.7E-03	-111.523		SLE RA 21	1.62E-04				
995	SLD 14	-2.6E-03	-77.305		SLD 3	-4.0E-03	-118.728		SLE RA 21	9.09E-05				
1007	SLD 14	-2.5E-03	-76.239		SLD 3	-3.2E-03	-96.784		SLE RA 21	2.16E-04				
1009	SLD 14	-2.6E-03	-76.511		SLD 3	-3.2E-03	-95.804		SLE RA 21	2.11E-04				
1022	SLD 6	-2.7E-03	-80.071		SLE RA 21	-3.1E-03	-92.847		SLE RA 21	1.97E-04				
1024	SLD 2	-2.7E-03	-79.683		SLE RA 21	-3.1E-03	-92.966		SLE RA 21	2.01E-04				
1035	SLD 2	-0.00267	-80.1		SLD 15	-3.8E-03	-113.467		SLE RA 21	0.000062				

## 1.5 Baricentri delle rigidzze

**Quota:** quota alla quale è stato valutato il baricentro delle rigidzze. esprimibile come livello, falda, piano orizzontale alla Z specificata. [m]

**Posizione:** posizione in pianta del baricentro delle rigidzze.

**X:** coordinata X. [m]

**Y:** coordinata Y. [m]

**Baricentro masse:** posizione in pianta del baricentro delle masse.

**X:** coordinata X. [m]

**Y:** coordinata Y. [m]

**Distanza:** distanza in pianta tra il baricentro delle rigidzze e il baricentro delle masse.

**X:** coordinata X. [m]

**Y:** coordinata Y. [m]

Quota	Posizione		Baricentro masse		Distanza	
	X	Y	X	Y	X	Y
Terra	-12.043	-4.042	-12.359	-3.181	0.316	-0.861
Rialzato	-12.131	1.032	-12.36	1.266	0.229	-0.234
Primo	-12.199	1.581	-12.39	3.47	0.191	-1.888
Secondo	-12.329	0.852	-12.399	1.23	0.07	-0.377
Terzo	-12.418	0.518	-12.382	1.235	-0.036	-0.717
Sottotetto	-12.429	0.234	-12.373	1.583	-0.056	-1.349

## 1.6 Risposta modale

**Modo:** identificativo del modo di vibrare.

**Periodo:** periodo. [s]

**Massa X:** massa partecipante in direzione globale X. Il valore è adimensionale.

**Massa Y:** massa partecipante in direzione globale Y. Il valore è adimensionale.

**Massa Z:** massa partecipante in direzione globale Z. Il valore è adimensionale.

**Massa rot. X:** massa rotazionale partecipante attorno la direzione globale X. Il valore è adimensionale.

**Massa rot. Y:** massa rotazionale partecipante attorno la direzione globale Y. Il valore è adimensionale.



**Massa rot. Z:** massa rotazionale partecipante attorno la direzione globale Z. Il valore è adimensionale.

**Massa sX:** massa partecipante in direzione Sisma X. Il valore è adimensionale.

**Massa sY:** massa partecipante in direzione Sisma Y. Il valore è adimensionale.

#### Totale masse partecipanti:

Traslazione X: 0.992483

Traslazione Y: 0.984194

Traslazione Z: 0

Rotazione X: 0.712187

Rotazione Y: 0.971804

Rotazione Z: 0.696083

Modo	Periodo	Massa X	Massa Y	Massa Z	Massa rot. X	Massa rot. Y	Massa rot. Z	Massa sX	Massa sY
1	1.216385679	0.000000402	0	0	0.000000005	0.000000184	0.000000271	0.000000402	0
2	1.121720971	0.000004988	0.000000008	0	0	0.00000409	0.000000763	0.000004988	0.000000008
3	1.071850891	0.001202187	0.001658275	0	0.000443479	0.000391088	0.000051337	0.001202187	0.001658275
4	1.065196637	0.001050737	0.001757781	0	0.000470815	0.000356866	0.003763947	0.001050737	0.001757781
5	0.964799317	0.002118094	0.00286171	0	0.000771797	0.000577082	0.00002289	0.002118094	0.00286171
6	0.95761061	0.002141565	0.002788575	0	0.000754384	0.000602354	0.006568932	0.002141565	0.002788575
7	0.898723838	0.000026284	0.000000003	0	0.000000055	0.000016425	0.00000463	0.000026284	0.000000003
8	0.843197663	0.000103175	0.000000137	0	0	0.000042783	0.000010654	0.000103175	0.000000137
9	0.830206096	0.000786188	0.000000077	0	0.00000002	0.000036501	0.000069302	0.000786188	0.000000077
10	0.766209913	0.000225114	0.000000003	0	0.000000129	0.000002451	0.000028101	0.000225114	0.000000003
11	0.734491107	0.000712681	0.000016521	0	0.000006402	0.000157709	0.000001089	0.000712681	0.000016521
12	0.725884129	0.000451945	0.000002126	0	0.000000383	0.000010153	0.000061665	0.000451945	0.000002126
13	0.719727271	0.000999032	0.000067199	0	0.000019586	0.000268394	0.000099796	0.000999032	0.000067199
14	0.655632395	0.000019362	0.006352938	0	0.00174342	0.000060691	0.00933253	0.000019362	0.006352938
15	0.650808874	0.005758926	0.000443613	0	0.00016488	0.006683723	0.000003688	0.005758926	0.000443613
16	0.638726818	0.001348252	0.006686489	0	0.001750944	0.001086269	0.002521878	0.001348252	0.006686489
17	0.631258324	0.013606488	0.000121428	0	0.000014861	0.014252324	0.000652361	0.013606488	0.000121428
18	0.587019635	0.004811726	0.002506799	0	0.00068542	0.00217673	0.002698534	0.004811726	0.002506799
19	0.580609531	0.011209211	0.001413218	0	0.000473529	0.00566236	0.000181082	0.011209211	0.001413218
20	0.533223058	0.02782757	0.000087006	0	0.000013171	0.032816955	0.000871149	0.02782757	0.000087006
21	0.517948352	0.000874153	0.002760385	0	0.000475096	0.001215735	0.001831844	0.000874153	0.002760385
22	0.470707441	0.002993406	0.000988279	0	0.000452754	0.004103923	0.000821288	0.002993406	0.000988279
23	0.435763776	0.004637666	0.00570055	0	0.002559043	0.004614123	0.005910529	0.004637666	0.00570055
24	0.411944841	0.015869287	0.004053549	0	0.00091982	0.012103825	0.003417739	0.015869287	0.004053549
25	0.380237623	0.011784014	0.005444019	0	0.000828223	0.007856087	0.00430194	0.011784014	0.005444019
26	0.337957464	0.170921603	0.012271401	0	0.009608356	0.164271618	0.015355236	0.170921603	0.012271401
27	0.322244903	0.054766187	0.093663191	0	0.088276191	0.061283058	0.047749211	0.054766187	0.093663191
28	0.296679938	0.231045165	0.011492418	0	0.013063308	0.317000645	0.018046339	0.231045165	0.011492418
29	0.266527268	0.024313584	0.07087948	0	0.065132551	0.032702629	0.052760161	0.024313584	0.07087948
30	0.239782019	0.262098559	0.002170332	0	0.001648513	0.274266786	0.005811542	0.262098559	0.002170332
31	0.19804937	0.001763433	0.058645604	0	0.043451724	0.000769312	0.039880792	0.001763433	0.058645604
32	0.151660595	0.017631747	0.010739498	0	0.007339775	0.001381573	0.001859402	0.017631747	0.010739498
33	0.130445712	0.00013285	0.609489457	0	0.403349276	0.000000015	0.425934909	0.00013285	0.609489457
34	0.077393815	0.051629455	0.039178433	0	0.036493079	0.010095628	0.032478775	0.051629455	0.039178433
35	0.074256751	0.067618155	0.029953454	0	0.031276155	0.01493412	0.012978446	0.067618155	0.029953454

## 1.7 Equilibrio globale forze

**Contributo:** Nome attribuito al sistema risultante.

**Fx:** Componente X di forza del sistema risultante. [kN]

**Fy:** Componente Y di forza del sistema risultante. [kN]

**Fz:** Componente Z di forza del sistema risultante. [kN]

**Mx:** Componente di momento attorno l'asse X del sistema risultante. [kN\*m]

**My:** Componente di momento attorno l'asse Y del sistema risultante. [kN\*m]

**Mz:** Componente di momento attorno l'asse Z del sistema risultante. [kN\*m]

#### Bilancio in condizione di carico: Pesi strutturali

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	-0.46378	6.70894	-14128.53016	-13947.1532	-174644.3352	-80.6857
Reazioni	0.46378	-6.70894	14128.53016	13940.6799	174644.9503	80.6857
P-Delta	0	0	0	0	0	0
Totale	0	0	0	-6.4733	0.6151	0

#### Bilancio in condizione di carico: Permanenti portati

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	0	-2783.20733	-4350.3107	-34524.8644	0
Reazioni	0	0	2783.20733	4343.4897	34522.9621	0
P-Delta	0	0	0	0	0	0
Totale	0	0	0	-6.821	-1.9023	0

#### Bilancio in condizione di carico: Variabile A

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	0	-1929.62635	-2521.4106	-23914.1335	0
Reazioni	0	0	1929.62635	2517.2311	23913.5896	0
P-Delta	0	0	0	0	0	0
Totale	0	0	0	-4.1795	-0.5439	0

#### Bilancio in condizione di carico: Neve

Contributo	Fx	Fy	Fz	Mx	My	Mz
------------	----	----	----	----	----	----



Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	0	-342.11118	-389.8086	-4249.5713	0
Reazioni	0	0	342.11118	390.0261	4247.982	0
P-Delta	0	0	0	0	0	0
Totale	0	0	0	0.2175	-1.5893	0

#### Bilancio in condizione di carico: Variabile H

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	0	-261.94538	-353.5225	-3251.9327	0
Reazioni	0	0	261.94538	352.7403	3251.0025	0
P-Delta	0	0	0	0	0	0
Totale	0	0	0	-0.7822	-0.9302	0

#### Bilancio in condizione di carico: Vento

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	28.3629	0	-249.1932	0	-450.9516
Reazioni	0	-28.3629	0	249.4709	-0.0097	450.9516
P-Delta	0	0	0	0	0	0
Totale	0	0	0	0.2777	-0.0097	0

#### Bilancio in condizione di carico: Sisma X SLV

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	5496.87023	0	0	0	59028.9333	-6261.0844
Reazioni	-5496.87023	0	0	-64.9485	-59008.3334	6261.0844
P-Delta	0	0	0	0	0	0
Totale	0	0	0	-64.9485	20.6	0

#### Bilancio in condizione di carico: Sisma Y SLV

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	5041.54206	0	-54139.3261	0	-62519.8923
Reazioni	0	-5041.54206	0	54129.051	1.0798	62519.8923
P-Delta	0	0	0	0	0	0
Totale	0	0	0	-10.2751	1.0798	0

#### Bilancio in condizione di carico: Eccentricità Y per sisma X SLV

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	0	0	0	0	-2590.9845
Reazioni	0	0	0	-1.3812	0.2265	2590.9845
P-Delta	0	0	0	0	0	0
Totale	0	0	0	-1.3812	0.2265	0

#### Bilancio in condizione di carico: Eccentricità X per sisma Y SLV

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	0	0	0	0	1111.5245
Reazioni	0	0	0	0.5925	-0.0971	-1111.5245
P-Delta	0	0	0	0	0	0
Totale	0	0	0	0.5925	-0.0971	0

#### Bilancio in condizione di carico: Sisma X SLD

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	2350.41951	0	0	0	25240.3187	-2677.1916
Reazioni	-2350.41951	0	0	-27.7715	-25231.5103	2677.1916
P-Delta	0	0	0	0	0	0
Totale	0	0	0	-27.7715	8.8084	0

#### Bilancio in condizione di carico: Sisma Y SLD

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	2235.62578	0	-24007.5897	0	-27723.8752
Reazioni	0	-2235.62578	0	24003.0332	0.4788	27723.8752
P-Delta	0	0	0	0	0	0
Totale	0	0	0	-4.5564	0.4788	0

#### Bilancio in condizione di carico: Eccentricità Y per sisma X SLD

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	0	0	0	0	-1107.8851
Reazioni	0	0	0	-0.5906	0.0968	1107.8851
P-Delta	0	0	0	0	0	0
Totale	0	0	0	-0.5906	0.0968	0

#### Bilancio in condizione di carico: Eccentricità X per sisma Y SLD

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	0	0	0	0	492.8954
Reazioni	0	0	0	0.2628	-0.0431	-492.8954
P-Delta	0	0	0	0	0	0
Totale	0	0	0	0.2628	-0.0431	0

#### Bilancio in condizione di carico: Rig Ux

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0.01	0	0	0	0.1503	-0.0158
Reazioni	-0.01	0	0	-0.0002	-0.1503	0.0158
P-Delta	0	0	0	0	0	0
Totale	0	0	0	-0.0002	0	0

#### Bilancio in condizione di carico: Rig Uy

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	0.01	0	-0.1503	0	-0.1237
Reazioni	0	-0.01	0	0.1503	0	0.1237



Contributo	Fx	Fy	Fz	Mx	My	Mz
P-Delta	0	0	0	0	0	0
Totale	0	0	0	0	0	0

Bilancio in condizione di carico: Rig Rz

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	0	0	0	0	0.0001
Reazioni	0	0	0	0	0	-0.0001
P-Delta	0	0	0	0	0	0
Totale	0	0	0	0	0	0

## 1.8 Risposta di spettro

**Spettro:** condizione elementare corrispondente allo spettro.

**N.b.:** nome breve della condizione elementare.

**Fx:** componente della forza lungo l'asse X. [kN]

**Fy:** componente della forza lungo l'asse Y. [kN]

**Fz:** componente della forza lungo l'asse Z. [kN]

**Mx:** componente della coppia attorno all'asse X. [kN\*m]

**My:** componente della coppia attorno all'asse Y. [kN\*m]

**Mz:** componente della coppia attorno all'asse Z. [kN\*m]

**Max X:** massima reazione lungo l'asse X.

**Valore:** valore massimo della reazione. [kN]

**Angolo:** angolo d'ingresso del sisma che provoca il valore massimo della reazione. [deg]

**Max Y:** massima reazione lungo l'asse Y.

**Valore:** valore massimo della reazione. [kN]

**Angolo:** angolo d'ingresso del sisma che provoca il valore massimo della reazione. [deg]

**Max Z:** massima reazione lungo l'asse Z.

**Valore:** valore massimo della reazione. [kN]

**Angolo:** angolo d'ingresso del sisma che provoca il valore massimo della reazione. [deg]

Spettro	Fx	Fy	Fz	Mx	My	Mz	Max X		Max Y		Max Z	
							Valore	Angolo	Valore	Angolo	Valore	Angolo
SLV X	3418.3184	341.7454	0	3.024E03	3.262E04	6.327E03	3418.5284	1	3853.3271	91	0	0
SLV Y	341.7454	3853.0068	0	2.887E04	3.142E03	4.791E04	3418.5284	1	3853.3271	91	0	0
X SLD	1460.9777	146.6574	0	1.297E03	1.394E04	2.706E03	1461.0684	1	1702.8617	91	0	0
Y SLD	146.6574	1702.7299	0	1.275E04	1.344E03	2.117E04	1461.0684	1	1702.8617	91	0	0

## 1.9 Annotazioni solutore

**Informazioni:** informazioni fornite dal solutore al termine del calcolo del modello.

Informazioni

## 1.10 Statistiche soluzione

Tipo di equazioni	Lineari
Tecnica di soluzione	Intel MKL PARDISO
Numero equazioni	103581
Elemento min. diagonale	968.9187022
Elemento max diagonale	151709757661905
Rapporto max/min	156576353947.103
Elementi non nulli	4423730



TABULATI DI CALCOLO – VERIFICHE  
CIVICO 39  
STATO DI PROGETTO



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# 1 Verifiche

## 1.1 Verifica regolarità strutturale

Le unità di misura elencate nel capitolo sono in [m, daN] ove non espressamente specificato.

**Livello:**

**Descr:** descrizione livello.

**Quota:** quota livello. [m]

**Q:** quota livello. [m]

**Qinf:** quota livello precedente. [m]

**Comb:** combinazione.

**A1:** a1 (Distribuzione masse).

**A1n:** a1 numeratore (distanza tra centro massa vs. centro rigidezza [se presente] o centro dell'ingombro del piano). [m]

**A1d:** a1 denominatore (ingombro del piano nella medesima direzione [x o y globale]). [m]

**A1r:** a1 rapporto (distanza centro massa/rigidezza su ingombro del piano).

**A2:** a2 (Distribuzione rigidezze).

**A2n:** a2 numeratore (rigidezza max [x o y globale]).

**A2d:** a2 denominatore (rigidezza min [x o y globale]).

**A2r:** a2 rapporto (rigidezza max/min).

**A3:** a3 (Forma compatta).

**A3n:** a3 numeratore (area convessa). [m<sup>2</sup>]

**A3d:** a3 denominatore (area piano). [m<sup>2</sup>]

**A3r:** a3 rapporto (area convessa/area piano).

**B:** b (Rapporto lati).

**Bn:** b numeratore (lato max [x o y globale]). [m]

**Bd:** b denominatore (lato min [x o y globale]). [m]

**Br:** b rapporto (lato max/min).

**C:** c (Rapporto rigidezze piano).

**Cn:** c numeratore (rigidezza elementi verticali).

**Cd:** c denominatore (rigidezza piano).

**Cr:** c rapporto (rigidezza elementi verticali/rigidezza piano).

**E1:** e1 (Variazione masse).

**E1n:** e1 numeratore (massa max). [daN]

**E1d:** e1 denominatore (massa min). [daN]

**E1r:** e1 rapporto (massa max/min).

**E2:** e2 (Riduzione rigidezze).

**E2n:** e2 numeratore (rigidezza relativa alla traslazione KUmax). [daN/m]

**E2d:** e2 denominatore (rigidezza relativa alla traslazione KUmin). [daN/m]

**E2r:** e2 rapporto (variazione massima in decremento Kmax/Kmin).

**E3:** e3 (Incremento rigidezze).

**E3n:** e3 numeratore (rigidezza relativa alla traslazione KUmax). [daN/m]

**E3d:** e3 denominatore (rigidezza relativa alla traslazione KUmin). [daN/m]

**E3r:** e3 rapporto (variazione massima in incremento Kmax/Kmin).

**F:** f (Rapporto Capacità/Domanda).

**Fn:** f numeratore (rapporto capacità/domanda massimo [c/d max]). [daN]

**Fd:** f denominatore (rapporto capacità/domanda minimo [c/d min]). [daN]

**Fr:** f rapporto (variazione massima [rapporto (c/d max)/(c/d min)]).

**G1:** g1 (Rastremazione di piano).

**G1n:** g1 numeratore (L1). [m]

**G1d:** g1 denominatore (L2). [m]

**G1r:** g1 rapporto (L1/L2).

**G2:** g2 (Rastremazione totale).

**G2n:** g2 numeratore (L0). [m]

**G2d:** g2 denominatore (Li). [m]

**G2r:** g2 rapporto (L0/Li).

**Capacità/Domanda in X:**

**VrdX:** taglio resistente complessivo in direzione X. [daN]

**VedX:** taglio agente complessivo in direzione X. [daN]

**|Rd/Ed|:** |Rd/Ed| (rapporto capacità/domanda in termini di resistenza a taglio).

**Capacità/Domanda in Y:**

**VrdY:** taglio resistente complessivo in direzione Y. [daN]

**VedY:** taglio agente complessivo in direzione Y. [daN]



## Verifica regolarità strutturale

Controllo regolarità edificio secondo D.M. 17-01-18 (N.T.C.) §7.2.1 - §C7.2.1

### Avvertenze

La seguente procedura valuta la regolarità della costruzione secondo quanto indicato nelle NTC 2018 §7.2.1.

Tali valutazioni sono a carattere puramente informativo e vengono condotte sulla base del modello e delle verifiche presenti alla sua generazione, con le limitazioni indicate nella manualistica.

In ogni caso l'impostazione di regolarità della costruzione, in pianta ed elevazione, va indicata nelle preferenze di analisi dall'utente utilizzatore del software.

### Sintesi dei risultati

Orizzontamenti considerati nella valutazione

Livelli di fondazione o di struttura scatolare non dissipativa: Fondazione ascensore(L1), Fondazione(L2),

Livelli di elevazione considerati: Rialzato(L4), Primo(L5), Secondo(L6), Terzo(L7), Sottotetto(L8),

#### Regolarità in pianta - NO

L'edificio risulta NON regolare in pianta, in base alle condizioni indicate in NTC 2018 §7.2.1

Ok - Criterio A1 (Distribuzione masse) rispettato, con rapporto massimo 0,19 (limite=0,2) al livello Primo

N.V. - Criterio A2 (Distribuzione rigidezze) non valutabile al livello Rialzato

No - Criterio A3 (Forma compatta) NON rispettato, con rapporto massimo 1978460.2/1569541.7=1.3 (limite=1,05) al livello Primo

Ok - Criterio B (Rapporto lati) rispettato, con rapporto massimo 2,48 (limite=4) al livello Primo

Ok - Criterio C (Rapporto rigidezze piano) rispettato, con rapporto massimo 0 (limite=0,1) al livello Rialzato

#### Regolarità in altezza - NO

L'edificio risulta NON regolare in altezza, in base alle condizioni indicate in NTC 2018 §7.2.1

Ok - Criterio D (Altezza elementi sismoresistenti) rispettato, con rapporto massimo 1 (limite=1,01)

No - Criterio E1 (Variazione masse) NON rispettato, con rapporto massimo 172755.5/87369.3=2 (limite=1,25) tra il livello Primo ed il precedente

N.V. - Criterio E2 (Riduzione rigidezze) non valutabile tra il livello Primo ed il precedente

N.V. - Criterio E3 (Incremento rigidezze) non valutabile tra il livello Primo ed il precedente

No - Criterio F (Rapporto Capacità/Domanda) NON rispettato, con rapporto massimo 3325.2/14.2=233.7 (limite=1) tra il livello Terzo ed il precedente

No - Criterio G1 (Rastremazione di piano) NON rispettato, con rapporto massimo 166/998=0.2 (limite=0,1) tra il livello Secondo ed il precedente

Ok - Criterio G2 (Rastremazione totale) rispettato, con rapporto massimo 0,01 (limite=0,3) tra il livello Terzo ed il precedente

### Valori per piano

#### Verifiche di regolarità in pianta

Livello		A1			A2			A3			B			C		
Descr	Quota	A1n	A1d	A1r	A2n	A2d	A2r	A3n	A3d	A3r	Bn	Bd	Br	Cn	Cd	Cr
Rialzato	1.11	0.23	11.81	0.02				280.1458	255.2282	1.1	24.98	11.81	2.12	0	+∞	0
Primo	4.83	1.89	9.98	0.19				197.846	156.9542	1.26	24.78	9.98	2.48	0	+∞	0
Secondo	8.35	0.38	11.64	0.03				273.4594	258.49	1.06	24.78	11.64	2.13	0	+∞	0
Terzo	11.87	0.72	11.64	0.06				273.4594	254.3484	1.08	24.78	11.64	2.13	0	+∞	0
Sottotetto	15.03	1.35	11.7	0.12				275.3619	259.0886	1.06	24.89	11.69	2.13	0	+∞	0

#### Verifiche di regolarità in elevazione

Rapporto di regolarità per la condizione D (Altezza elementi sismoresistenti): 16.62/16.62=0.01.

Livello			E1			E2			E3			F			G1			G2		
Descr	Q	Qjnf	E1n	E1d	E1r	E2n	E2d	E2r	E3n	E3d	E3r	Fn	Fd	Fr	G1n	G1d	G1r	G2n	G2d	G2r
Primo	4.83	1.11	172756	87369	1.98							13.1	8.1	1.62	0.13	11.81	0.01	0.13	11.81	0.01
Secondo	8.35	4.83	141508	87369	1.62							3325.2	19.6	169.78	1.66	9.98	0.17	0.13	11.81	0.01
Terzo	11.87	8.35	141508	141508	1							3325.2	14.2	233.72	0	11.64	0	0.13	11.81	0.01
Sottotetto	15.03	11.87	184966	141508	1.31							214	58.5	3.66	0.05	24.78	0	0	0.01	0

#### Dettaglio delle resistenze di piano a taglio (per valutazione punto F)

Livello		Capacità/Domanda in X					Capacità/Domanda in Y				
Descr	Q	Comb	VrdX	VedX	Rd/Ed		VrdY	VedY	Rd/Ed		
Rialzato	1.11	SLD 1	1214013	-136389	8.9		974600	-23550	41.4		
Rialzato	1.11	SLD 2	1213881	-136545	8.9		974618	-23793	41		
Rialzato	1.11	SLD 3	1215871	-135791	9		974235	22736	42.8		
Rialzato	1.11	SLD 4	1215837	-135948	8.9		974245	22494	43.3		
Rialzato	1.11	SLD 5	1212686	-41696	29.1		977942	-78987	12.4		
Rialzato	1.11	SLD 6	1212666	-41799	29		977948	-79146	12.4		
Rialzato	1.11	SLD 7	1218531	-39704	30.7		976812	75303	13		
Rialzato	1.11	SLD 8	1218511	-39807	30.6		976805	75143	13		
Rialzato	1.11	SLD 9	1212534	40090	30.2		979441	-80181	12.2		
Rialzato	1.11	SLD 10	1212515	39987	30.3		979416	-80340	12.2		
Rialzato	1.11	SLD 11	1218323	42082	29		978232	74108	13.2		
Rialzato	1.11	SLD 12	1218360	41979	29		978196	73949	13.2		
Rialzato	1.11	SLD 13	1213247	136231	8.9		980532	-27532	35.6		
Rialzato	1.11	SLD 14	1213432	136074	8.9		980487	-27774	35.3		
Rialzato	1.11	SLD 15	1214733	136829	8.9		980176	18755	52.3		
Rialzato	1.11	SLD 16	1214910	136672	8.9		980130	18512	52.9		
Rialzato	1.11	SLV 1	1200460	-319558	3.8		969004	-49900	19.4		
Rialzato	1.11	SLV 2	1200121	-319923	3.8		968525	-50466	19.2		
Rialzato	1.11	SLV 3	1205511	-318072	3.8		968515	54938	17.6		
Rialzato	1.11	SLV 4	1205316	-318437	3.8		968294	54372	17.8		
Rialzato	1.11	SLV 5	1206640	-97959	12.3		977341	-175640	5.6		
Rialzato	1.11	SLV 6	1206203	-98194	12.3		977412	-176005	5.6		
Rialzato	1.11	SLV 7	1221979	-93006	13.1		974458	173820	5.6		
Rialzato	1.11	SLV 8	1222095	-93241	13.1		974435	173455	5.6		
Rialzato	1.11	SLV 9	1207794	93525	12.9		960029	-178493	5.4		
Rialzato	1.11	SLV 10	1207752	93289	12.9		960164	-178858	5.4		
Rialzato	1.11	SLV 11	1220433	98478	12.4		978538	170967	5.7		



Livello			Capacità/Domanda in X			Capacità/Domanda in Y		
Descr	Q	Comb	VrdX	VedX	Rd/Ed	VrdY	VedY	Rd/Ed
Rialzato	1.11	SLV 12	1220674	98242	12.4	978438	170602	5.7
Rialzato	1.11	SLV 13	1198824	318720	3.8	954590	-59410	16.1
Rialzato	1.11	SLV 14	1199427	318355	3.8	955846	-59975	15.9
Rialzato	1.11	SLV 15	1205564	320206	3.8	960043	45428	21.1
Rialzato	1.11	SLV 16	1202898	319841	3.8	961210	44862	21.4
Primo	4.83	SLD 1	714748	-114305	6.3	498746	-12858	38.8
Primo	4.83	SLD 2	714748	-114462	6.2	498743	-13101	38.1
Primo	4.83	SLD 3	714748	-116010	6.2	498689	14319	34.8
Primo	4.83	SLD 4	714748	-116167	6.2	498686	14077	35.4
Primo	4.83	SLD 5	714748	-31536	22.7	500229	-47211	10.6
Primo	4.83	SLD 6	714748	-31639	22.6	500227	-47371	10.6
Primo	4.83	SLD 7	714748	-37221	19.2	499819	43380	11.5
Primo	4.83	SLD 8	714748	-37324	19.2	499816	43221	11.6
Primo	4.83	SLD 9	714748	37726	18.9	500458	-49444	10.1
Primo	4.83	SLD 10	714748	37623	19	500456	-49603	10.1
Primo	4.83	SLD 11	714748	32042	22.3	500048	41148	12.2
Primo	4.83	SLD 12	714748	31939	22.4	500045	40988	12.2
Primo	4.83	SLD 13	714748	116570	6.1	500582	-20299	24.7
Primo	4.83	SLD 14	714748	116413	6.1	500579	-20542	24.4
Primo	4.83	SLD 15	714748	114865	6.2	500459	6878	72.8
Primo	4.83	SLD 16	714748	114708	6.2	500456	6635	75.4
Primo	4.83	SLV 1	708488	-267861	2.6	495789	-24749	20
Primo	4.83	SLV 2	708488	-268226	2.6	495782	-25314	19.6
Primo	4.83	SLV 3	687938	-271827	2.5	495655	36731	13.5
Primo	4.83	SLV 4	687938	-272191	2.5	495649	36166	13.7
Primo	4.83	SLV 5	714748	-74139	9.6	499607	-102749	4.9
Primo	4.83	SLV 6	714748	-74375	9.6	499603	-103114	4.8
Primo	4.83	SLV 7	709060	-87359	8.1	499162	102183	4.9
Primo	4.83	SLV 8	714748	-87594	8.2	499158	101818	4.9
Primo	4.83	SLV 9	714748	87997	8.1	500882	-108041	4.6
Primo	4.83	SLV 10	714748	87761	8.1	500877	-108406	4.6
Primo	4.83	SLV 11	714748	74778	9.6	499934	96891	5.2
Primo	4.83	SLV 12	714748	74542	9.6	499928	96526	5.2
Primo	4.83	SLV 13	708924	272594	2.6	499990	-42388	11.8
Primo	4.83	SLV 14	708924	272229	2.6	499988	-42954	11.6
Primo	4.83	SLV 15	714748	268629	2.7	499839	19091	26.2
Primo	4.83	SLV 16	708924	268264	2.6	499838	18526	27
Secondo	8.35	SLD 1	920839	-90533	10.2	549221	-1569	350.1
Secondo	8.35	SLD 2	920845	-90689	10.2	549244	-1812	303.2
Secondo	8.35	SLD 3	917972	-90681	10.1	548792	1396	393.1
Secondo	8.35	SLD 4	917947	-90838	10.1	548815	1153	475.9
Secondo	8.35	SLD 5	921040	-26766	34.4	549440	-7104	77.3
Secondo	8.35	SLD 6	921006	-26869	34.3	549455	-7263	75.6
Secondo	8.35	SLD 7	919980	-27261	33.7	548010	2779	197.2
Secondo	8.35	SLD 8	919946	-27364	33.6	548025	2619	209.2
Secondo	8.35	SLD 9	920763	27766	33.2	549196	-8847	62.1
Secondo	8.35	SLD 10	920730	27663	33.3	549211	-9007	61
Secondo	8.35	SLD 11	919703	27271	33.7	547766	1035	529.1
Secondo	8.35	SLD 12	919670	27168	33.9	547781	876	625.6
Secondo	8.35	SLD 13	920078	91240	10.1	548407	-7381	74.3
Secondo	8.35	SLD 14	920027	91084	10.1	548429	-7624	71.9
Secondo	8.35	SLD 15	919760	91092	10.1	547978	-4416	124.1
Secondo	8.35	SLD 16	919709	90935	10.1	548000	-4659	117.6
Secondo	8.35	SLV 1	911664	-211817	4.3	549963	731	752.6
Secondo	8.35	SLV 2	911679	-212182	4.3	550001	165	3325.2
Secondo	8.35	SLV 3	905409	-212216	4.3	549049	7094	77.4
Secondo	8.35	SLV 4	905424	-212581	4.3	549102	6528	84.1
Secondo	8.35	SLV 5	921516	-62737	14.7	544287	-11513	47.3
Secondo	8.35	SLV 6	921526	-62973	14.6	544094	-11879	45.8
Secondo	8.35	SLV 7	905170	-64065	14.1	525668	9697	54.2
Secondo	8.35	SLV 8	905093	-64301	14.1	525758	9332	56.3
Secondo	8.35	SLV 9	921015	64703	14.2	542811	-15560	34.9
Secondo	8.35	SLV 10	920929	64468	14.3	543014	-15925	34.1
Secondo	8.35	SLV 11	913046	63375	14.4	521944	5651	92.4
Secondo	8.35	SLV 12	907130	63139	14.4	522683	5285	98.9
Secondo	8.35	SLV 13	916815	212983	4.3	547617	-12756	42.9
Secondo	8.35	SLV 14	916681	212618	4.3	548172	-13322	41.1
Secondo	8.35	SLV 15	916286	212585	4.3	547147	-6393	85.6
Secondo	8.35	SLV 16	916105	212220	4.3	547200	-6959	78.6
Terzo	11.87	SLD 1	915076	-56298	16.3	563253	15854	35.5
Terzo	11.87	SLD 2	915073	-56455	16.2	563254	15611	36.1
Terzo	11.87	SLD 3	914679	-55759	16.4	562969	-15365	36.6
Terzo	11.87	SLD 4	914677	-55915	16.4	562970	-15608	36.1
Terzo	11.87	SLD 5	922410	-17539	52.6	563534	49968	11.3
Terzo	11.87	SLD 6	922408	-17642	52.3	563534	49809	11.3
Terzo	11.87	SLD 7	921089	-15741	58.5	562587	-54094	10.4
Terzo	11.87	SLD 8	921087	-15844	58.1	562587	-54254	10.4
Terzo	11.87	SLD 9	921928	16246	56.7	563490	48026	11.7
Terzo	11.87	SLD 10	921926	16143	57.1	563491	47866	11.8
Terzo	11.87	SLD 11	920607	18044	51	562543	-56037	10
Terzo	11.87	SLD 12	920605	17941	51.3	562544	-56196	10
Terzo	11.87	SLD 13	920904	56318	16.4	563108	9380	60
Terzo	11.87	SLD 14	920902	56161	16.4	563109	9137	61.6
Terzo	11.87	SLD 15	920508	56857	16.2	562824	-21839	25.8
Terzo	11.87	SLD 16	920505	56701	16.2	562825	-22082	25.5
Terzo	11.87	SLV 1	882651	-131640	6.7	563528	40174	14
Terzo	11.87	SLV 2	882644	-132005	6.7	563530	39609	14.2
Terzo	11.87	SLV 3	882312	-130492	6.8	562885	-30746	18.3



Livello			Capacità/Domanda in X			Capacità/Domanda in Y		
Descr	Q	Comb	VrdX	VedX	Rd/Ed	VrdY	VedY	Rd/Ed
Terzo	11.87	SLV 4	888247	-130857	6.8	562888	-31311	18
Terzo	11.87	SLV 5	905848	-41029	22.1	548471	117532	4.7
Terzo	11.87	SLV 6	897676	-41265	21.8	548432	117167	4.7
Terzo	11.87	SLV 7	906238	-37203	24.4	540576	-118868	4.5
Terzo	11.87	SLV 8	906234	-37438	24.2	540762	-119233	4.5
Terzo	11.87	SLV 9	915975	37841	24.2	547032	113005	4.8
Terzo	11.87	SLV 10	915971	37605	24.4	547043	112640	4.9
Terzo	11.87	SLV 11	906978	41667	21.8	527945	-123395	4.3
Terzo	11.87	SLV 12	906974	41431	21.9	528089	-123760	4.3
Terzo	11.87	SLV 13	904480	131259	6.9	563190	25083	22.5
Terzo	11.87	SLV 14	898481	130894	6.9	563192	24518	23
Terzo	11.87	SLV 15	904797	132407	6.8	562547	-45837	12.3
Terzo	11.87	SLV 16	896309	132042	6.8	562549	-46402	12.1
Sottotetto	15.03	SLD 1	706815	-13389	52.8	535263	27073	19.8
Sottotetto	15.03	SLD 2	706801	-13546	52.2	535267	26831	19.9
Sottotetto	15.03	SLD 3	706475	-13111	53.9	542831	-24045	22.6
Sottotetto	15.03	SLD 4	706461	-13267	53.2	542835	-24286	22.4
Sottotetto	15.03	SLD 5	729776	-4268	171	535168	83324	6.4
Sottotetto	15.03	SLD 6	729767	-4371	167	535170	83166	6.4
Sottotetto	15.03	SLD 7	714806	-3340	214	551821	-87067	6.3
Sottotetto	15.03	SLD 8	714797	-3443	207.6	551823	-87226	6.3
Sottotetto	15.03	SLD 9	729592	3851	189.5	534984	80458	6.6
Sottotetto	15.03	SLD 10	729583	3748	194.6	534986	80299	6.7
Sottotetto	15.03	SLD 11	722938	4779	151.3	551637	-89934	6.1
Sottotetto	15.03	SLD 12	722928	4676	154.6	551639	-90093	6.1
Sottotetto	15.03	SLD 13	720778	13675	52.7	546759	17518	31.2
Sottotetto	15.03	SLD 14	720764	13519	53.3	546763	17277	31.6
Sottotetto	15.03	SLD 15	720438	13954	51.6	556950	-33600	16.6
Sottotetto	15.03	SLD 16	720424	13797	52.2	556966	-33841	16.5
Sottotetto	15.03	SLV 1	707447	-31333	22.6	524501	66033	7.9
Sottotetto	15.03	SLV 2	707414	-31697	22.3	523634	65471	8
Sottotetto	15.03	SLV 3	704422	-30748	22.9	527157	-49893	10.6
Sottotetto	15.03	SLV 4	704016	-31112	22.6	527166	-50455	10.4
Sottotetto	15.03	SLV 5	718128	-10081	71.2	512897	193359	2.7
Sottotetto	15.03	SLV 6	724126	-10317	70.2	512342	192996	2.7
Sottotetto	15.03	SLV 7	697712	-8131	85.8	539699	-193061	2.8
Sottotetto	15.03	SLV 8	697373	-8367	83.3	539635	-193424	2.8
Sottotetto	15.03	SLV 9	721035	8775	82.2	523872	186656	2.8
Sottotetto	15.03	SLV 10	721014	8539	84.4	524556	186293	2.8
Sottotetto	15.03	SLV 11	716295	10725	66.8	525616	-199765	2.6
Sottotetto	15.03	SLV 12	716274	10489	68.3	525488	-200128	2.6
Sottotetto	15.03	SLV 13	709819	31520	22.5	546410	43687	12.5
Sottotetto	15.03	SLV 14	711203	31156	22.8	546418	43125	12.7
Sottotetto	15.03	SLV 15	699377	32105	21.8	527000	-72239	7.3
Sottotetto	15.03	SLV 16	698956	31741	22	527885	-72801	7.3

## 1.2 Verifiche travate C.A.

Le unità di misura elencate nel capitolo sono in [m, daN, deg] ove non espressamente specificato.

**N°:** indice progressivo della sezione.

**Descrizione:** descrizione della sezione.

**Tipo:** tipo di sezione.

**Base:** base della sezione. [m]

**Altezza:** altezza della sezione. [m]

**Copriferro sup.:** distanza del bordo della staffa dalla superficie superiore del getto. [m]

**Copriferro inf.:** distanza del bordo della staffa dalla superficie inferiore del getto. [m]

**Copriferro lat.:** distanza del bordo della staffa dalle superfici laterali del getto. [m]

**x:** distanza da asse appoggio sinistro. [m]

**A sup.:** area efficace di armatura longitudinale superiore. [m<sup>2</sup>]

**C.b. sup.:** distanza dal bordo del baricentro dell'armatura longitudinale superiore. [m]

**A inf.:** area efficace di armatura longitudinale inferiore. [m<sup>2</sup>]

**C.b. inf.:** distanza dal bordo del baricentro dell'armatura longitudinale inferiore. [m]

**M+ela:** momento flettente desunto dal solutore che tende le fibre inferiori. [daN\*m]

**Comb.:** combinazione.

**M+des:** momento flettente di progetto che tende le fibre inferiori. [daN\*m]

**M+ult:** momento ultimo per trazione delle fibre inferiori. [daN\*m]

**x/d:** rapporto tra posizione asse neutro e altezza utile.

**coeff:** coefficiente di sicurezza.

**M-ela:** momento flettente desunto dal solutore che tende le fibre superiori. [daN\*m]

**M-des:** momento flettente di progetto che tende le fibre superiori. [daN\*m]

**M-ult:** momento ultimo per trazione delle fibre superiori. [daN\*m]

**Verifica:** stato di verifica.

**A st:** area di staffe per unità di lunghezza. [m<sup>2</sup>]

**A sl:** area di armatura longitudinale tesa per valutazione resistenza taglio in assenza di armature a taglio. [m<sup>2</sup>]

**A sag:** area equivalente di barre piegate per unità di lunghezza. [m<sup>2</sup>]

**Vela:** taglio elastico. [daN]



**Vdes:** taglio di progetto. [daN]  
**Vrd:** resistenza a taglio della sezione senza armature. [daN]  
**Vrcd:** sforzo di taglio che produce il cedimento delle bielle. [daN]  
**Vrsd:** resistenza a taglio per la presenza delle armature. [daN]  
**Vult:** taglio ultimo. [daN]  
**cotg $\theta$ :** cotg dell'angolo di inclinazione dei puntoni in calcestruzzo.  
**Rara:** famiglia di combinazione di verifica.  
**Mela:** momento elastico. [daN\*m]  
**Mdes:** momento di progetto. [daN\*m]  
 **$\sigma_c$ :** tensione di compressione nel calcestruzzo. [daN/m<sup>2</sup>]  
 **$\sigma_{clim}$ :** tensione limite di compressione nel calcestruzzo. [daN/m<sup>2</sup>]  
 **$\sigma_f$ :** tensione di trazione nell'acciaio. [daN/m<sup>2</sup>]  
 **$\sigma_{flim}$ :** tensione limite di trazione nell'acciaio. [daN/m<sup>2</sup>]  
 **$\sigma_{climite}$ :** tensione di compressione limite nel calcestruzzo. [daN/m<sup>2</sup>]  
 **$\sigma_f$ :** tensione di trazione nell'acciaio. [daN/m<sup>2</sup>]  
 **$\sigma_{flimite}$ :** tensione di trazione limite nell'acciaio. [daN/m<sup>2</sup>]  
**Quasi permanente:** famiglia di combinazione di verifica.  
 **$\sigma_{FRP}$ :** tensione di trazione nell'FRP. [daN/m<sup>2</sup>]  
 **$\sigma_{FRP lim}$ :** tensione limite di trazione nell'FRP. [daN/m<sup>2</sup>]  
**d:** altezza utile. [m]  
**A<sub>f</sub>:** area di armatura inferiore per unità di lunghezza. [m]  
**M:** momento flettente. [daN\*m/m]  
**Comb:** combinazione.  
**Mult:** momento ultimo. [daN\*m/m]  
**V:** sforzo di taglio. [daN/m]  
**Vult:** sforzo di taglio ultimo. [daN/m]  
**Size X:** misura dell'impronta al suolo lungo X. [m]  
**Size Y:** misura dell'impronta al suolo lungo Y. [m]  
**Sis.:** indicazione combinazione sismica.  
**Cnd:** indicazione condizione di carico (BT breve termine o LT lungo termine).  
**F<sub>x</sub>:** componente orizzontale del carico lungo x. [daN]  
**F<sub>y</sub>:** componente orizzontale del carico lungo y. [daN]  
**F<sub>z</sub>:** componente verticale del carico. [daN]  
**IncX:** inclinazione del carico lungo x. [deg]  
**IncY:** inclinazione del carico lungo y. [deg]  
**Phi:** angolo di attrito di progetto. [deg]  
**Ad:** adesione di progetto. [daN/m<sup>2</sup>]  
**RPl:** resistenza passiva laterale unitaria di progetto. [daN/m]  
 **$\gamma_R$ :** coefficiente parziale sulla resistenza di progetto.  
**Rd:** resistenza di progetto. [daN]  
**Ed:** azione di progetto. [daN]  
**Rd/Ed:** coefficiente di sicurezza allo scorrimento.  
**Aste:** numero delle aste del tratto in verifica.  
**Size X:** misura dell'impronta al suolo lungo la direzione X locale. [m]  
**Size Y:** misura dell'impronta al suolo lungo la direzione Y locale. [m]  
**Type:** indicazione del tipo di combinazione statica o sismica.  
**Cond:** indicazione della condizione di carico (BT breve termine o LT lungo termine).  
**Rd/Ed:** coefficiente di sicurezza alla capacità portante.  
**M<sub>x</sub>:** momento risultante agente attorno x. [daN\*m]  
**M<sub>y</sub>:** momento risultante agente attorno y. [daN\*m]  
**Inc.x:** inclinazione del carico lungo x. [deg]  
**Inc.y:** inclinazione del carico lungo y. [deg]  
**Ecc.x:** eccentricità del carico lungo x. [m]  
**Ecc.y:** eccentricità del carico lungo y. [m]  
**B':** larghezza efficace. [m]  
**L':** lunghezza efficace. [m]  
**qd:** sovraccarico di progetto. [daN/m<sup>2</sup>]  
 **$\gamma_s$ :** peso specifico di progetto del suolo. [daN/m<sup>3</sup>]  
**Fi:** angolo di attrito di progetto. [deg]  
**Coes:** coesione di progetto. [daN/m<sup>2</sup>]  
**Amax:** accelerazione normalizzata max al suolo.  
**N:**  
**Nq:** fattore di capacità portante per il termine di sovraccarico.  
**Nc:** fattore di capacità portante per il termine coesivo.  
**Ng:** fattore di capacità portante per il termine attritivo.  
**S:**  
**Sq:** fattore correttivo di capacità portante per forma (shape), per il termine di sovraccarico.  
**Sc:** fattore correttivo di capacità portante per forma (shape), per il termine coesivo.  
**Sg:** fattore correttivo di capacità portante per forma (shape), per il termine attritivo.  
**D:**  
**Dq:** fattore correttivo di capacità portante per approfondimento (deep), per il termine di sovraccarico.  
**Dc:** fattore correttivo di capacità portante per approfondimento (deep), per il termine coesivo.

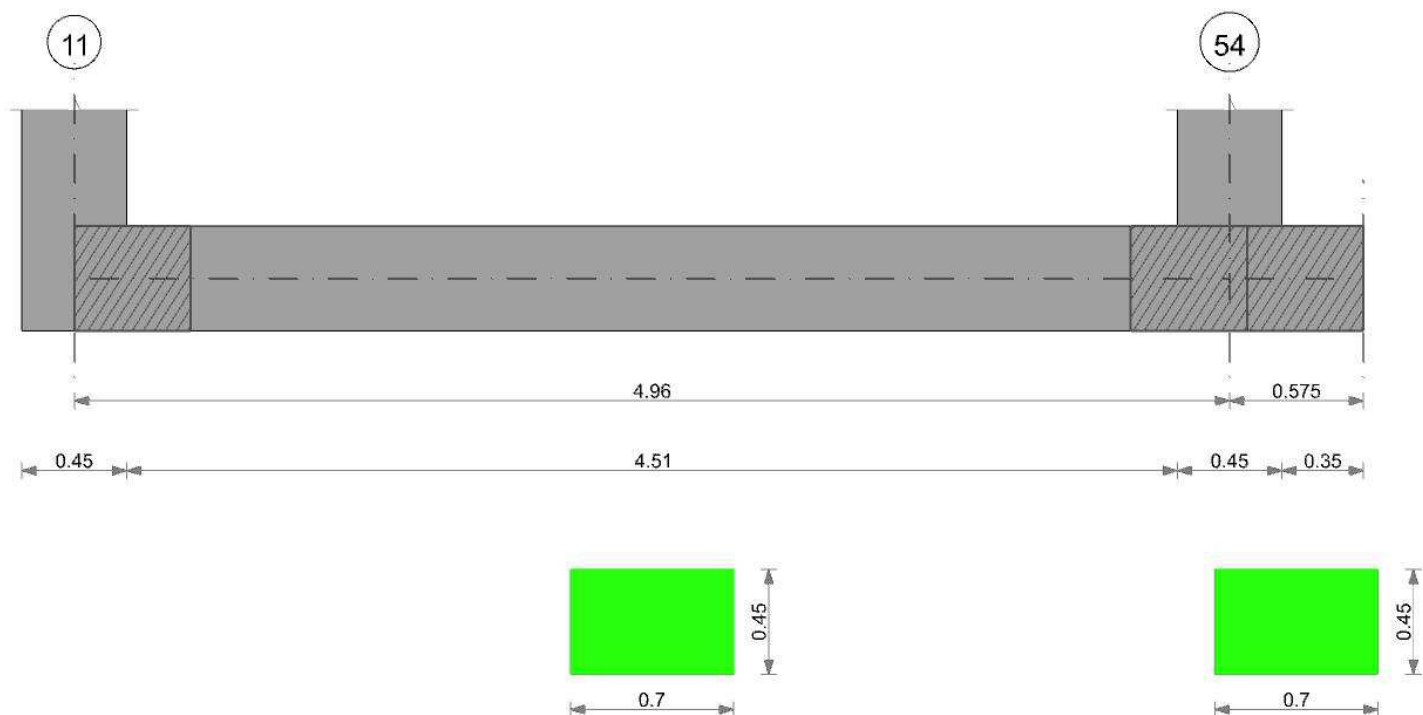


**Dg:** fattore correttivo di capacità portante per approfondimento (deep), per il termine attritivo.  
**I:**  
**Iq:** fattore correttivo di capacità portante per inclinazione del carico, per il termine di sovraccarico.  
**Ic:** fattore correttivo di capacità portante per inclinazione del carico, per il termine coesivo.  
**Ig:** fattore correttivo di capacità portante per inclinazione del carico, per il termine attritivo.  
**B:**  
**Bq:** fattore correttivo di capacità portante per inclinazione della base, per il termine di sovraccarico.  
**Bc:** fattore correttivo di capacità portante per inclinazione della base, per il termine coesivo.  
**Bg:** fattore correttivo di capacità portante per inclinazione della base, per il termine attritivo.  
**G:**  
**Gq:** fattore correttivo di capacità portante per inclinazione del pendio, per il termine di sovraccarico.  
**Gc:** fattore correttivo di capacità portante per inclinazione del pendio, per il termine coesivo.  
**Gg:** fattore correttivo di capacità portante per inclinazione del pendio, per il termine attritivo.  
**P:**  
**Pq:** fattore correttivo di capacità portante per punzonamento, per il termine di sovraccarico.  
**Pc:** fattore correttivo di capacità portante per punzonamento, per il termine coesivo.  
**Pg:** fattore correttivo di capacità portante per punzonamento, per il termine attritivo.  
**E:**  
**Eq:** fattore correttivo di capacità portante per sisma (earthquake), per il termine di sovraccarico.  
**Ec:** fattore correttivo di capacità portante per sisma (earthquake), per il termine coesivo.  
**Eg:** fattore correttivo di capacità portante per sisma (earthquake), per il termine attritivo.  
**Tipo:** tipologia di cedimento considerato (E = elastico, D = edometrico, Z = consolidazione primaria).  
**Assoluto:** cedimento assoluto massimo.  
**Sa adm:** cedimento assoluto ammissibile. [m]  
**Sa:** cedimento assoluto massimo. [m]  
**Nodo:** nodo dove avviene il cedimento assoluto massimo.  
**Differenziale:** cedimento differenziale massimo.  
**Sd adm:** cedimento differenziale ammissibile. [m]  
**Sd:** cedimento differenziale massimo. [m]  
**Nodo I:** nodo dove avviene il cedimento differenziale massimo.  
**Nodo j:** nodo dove avviene il cedimento differenziale massimo.  
**Relativo:** cedimento relativo massimo.  
**Sr adm:** cedimento relativo ammissibile. [m]  
**Sr:** cedimento relativo massimo. [m]  
**Nodo:** nodo dove avviene il cedimento relativo massimo.  
**Rapp. inflessione:** rapporto di inflessione (cedimento relativo max su lunghezza complessiva tratta).  
**RI adm:** rapporto di inflessione ammissibile.  
**RI:** rapporto di inflessione (cedimento relativo max su lunghezza complessiva tratta).  
**Rotazione rigida:** rotazione rigida valutata tra primo ed ultimo punto.  
**RR adm:** rotazione rigida ammissibile. [deg]  
**RR:** rotazione rigida massima (tra primo ed ultimo punto). [deg]  
**Rotazione assoluta:** rotazione assoluta dei singoli tratti.  
**R Adm:** rotazione assoluta ammissibile. [deg]  
**R Max:** rotazione assoluta massima. [deg]  
**Nodo I:** dal nodo.  
**Nodo J:** al nodo.  
**Distorsione angolare positiva:** distorsione angolare positiva (concavità verso l'alto).  
**D+ adm:** distorsione angolare ammissibile. [deg]  
**D+:** distorsione angolare massima positiva (concavità verso l'alto). [deg]  
**Nodo:** nodo dove avviene la distorsione angolare massima positiva (concavità verso l'alto).  
**Distorsione angolare negativa:** distorsione angolare negativa (concavità verso il basso).  
**D- adm:** distorsione angolare ammissibile. [deg]  
**D-:** distorsione angolare massima negativa (concavità verso il basso). [deg]  
**Nodo:** nodo dove avviene la distorsione angolare massima negativa (concavità verso il basso).  
**Bordo:** bordo interessato dalla fessura.  
**Rara:** famiglia di combinazione per verifica inferiore.  
**Dmax:** distanza massima tra le fessure. [m]  
**Esm:** dilatazione media delle barre di armatura.  
**Wd:** valore di calcolo di apertura delle fessure. [m]  
**Frequente:** famiglia di combinazione per verifica inferiore.  
**Quasi permanente:** famiglia di combinazione per verifica inferiore.  
**Frequente:** famiglia di combinazione di verifica.

## CORDOLO 1

Geometria





#### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

#### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copri ferro sup.	Copri ferro inf.	Copri ferro lat.
1	R 70x45	Rettangolare	0.7	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

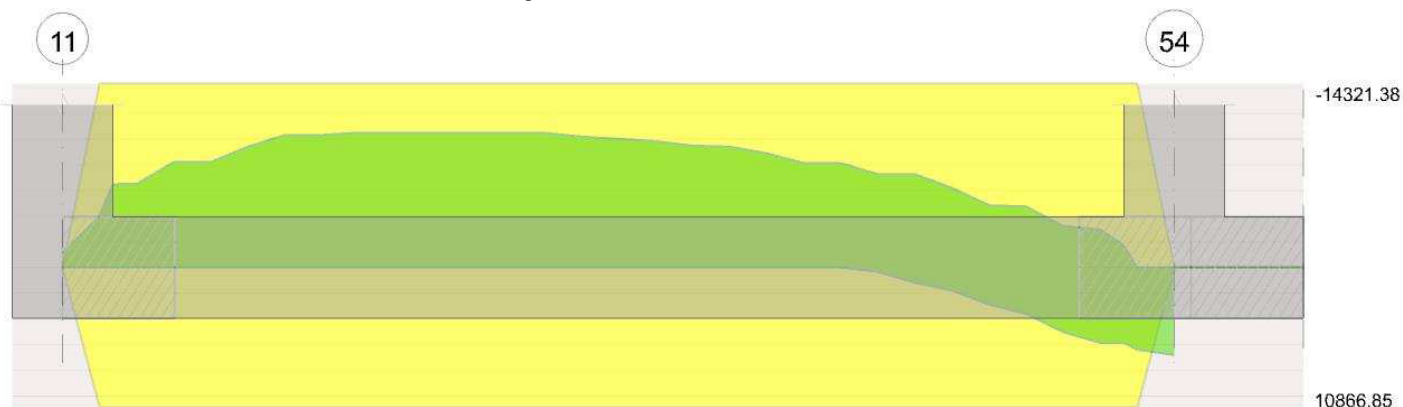
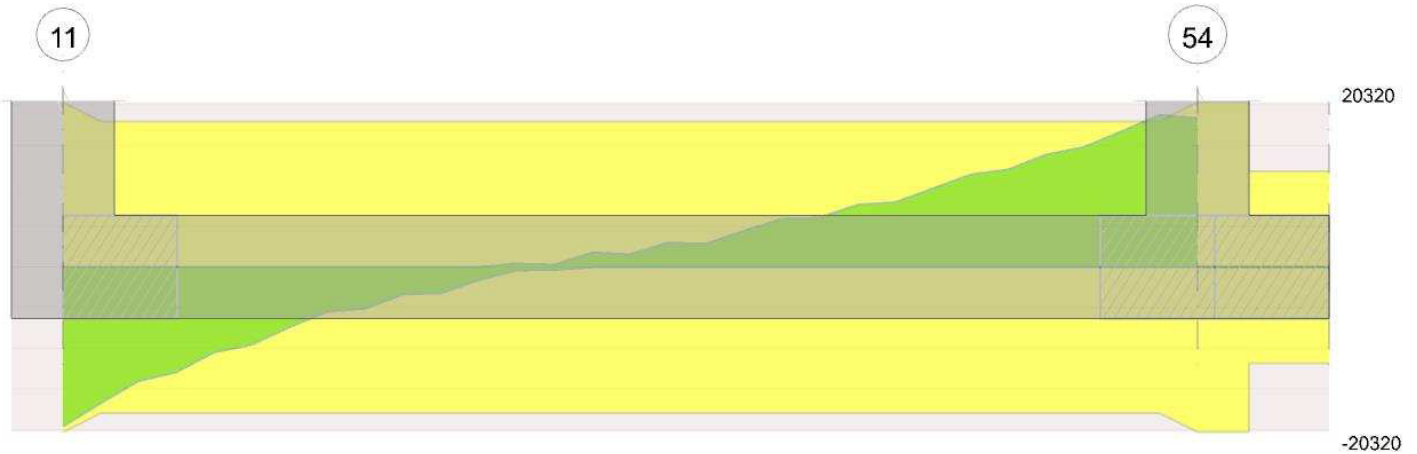


Diagramma verifica stato limite ultimo taglio



Output campate

Campata 1 tra i fili 11 - 54, sezione R 70x45, aste 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0	0	0	0	0						-904.01	SLU 83	-904.01	0	0	0	No
0.23	0.001018	0.052	0.000763	0.052							-4470.56	SLU 84	-5897.58	-15057.39	0.129	2.55	Si
2.48	0.001018	0.052	0.000763	0.052							-9066.53	SLU 84	-9323.01	-15057.39	0.129	1.62	Si
4.73	0.001018	0.052	0.000763	0.052	4705.7	SLU 83	4705.7	11571.27	0.119	2.46							Si
4.96	0	0	0	0	6416.14	SLU 83	6416.14	0	0	0							No

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0	0	0	0	0						-1147.8	SLV 4	-1147.8	0	0	0	No
0.23	0.001018	0.052	0.000763	0.052							-4972.49	SLV 4	-6488.94	-14321.38	0.232	2.21	Si
2.48	0.001018	0.052	0.000763	0.052							-9815.77	SLV 4	-10010.39	-14321.38	0.232	1.43	Si
4.73	0.001018	0.052	0.000763	0.052	5857.22	SLV 16	5857.22	10866.85	0.2	1.86	471.63	SLV 1	-1721.18	-14321.38	0.232	8.32	Si
4.96	0	0	0	0	6802.79	SLV 16	6802.79	0	0	0							No

Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0	0	0	0	0						-842.79	SLD 4	-842.79	0	0	0	No
0.23	0.001018	0.052	0.000763	0.052							-3859.48	SLD 4	-5060.14	-14321.38	0.232	2.83	Si
2.48	0.001018	0.052	0.000763	0.052							-7698.34	SLD 4	-7881.87	-14321.38	0.232	1.82	Si
4.73	0.001018	0.052	0.000763	0.052	4315.45	SLD 16	4315.45	10866.85	0.2	2.52	2013.4	SLD 1	-38.41	-14321.38	0.232	372.9	Si
4.96	0	0	0	0	5377.7	SLD 16	5377.7	0	0	0							No

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000128	0.001018	0	-18147	SLU 84	-18147	-12624	-100005	-20320	-20320	1	1.12	Si
0.23	0.0000128	0.001018	0	-14761	SLU 84	-14761	-11926	-88449	-17972	-17972	1	1.22	Si
2.48	0.0000128	0.001018	0	1425	SLU 84	1425	11926	88449	17972	17972	1	12.61	Si
4.73	0.0000128	0.000763	0	18011	SLU 84	18011	10870	88449	17972	17972	1	1	No
4.79	0.0000128	0.000763	0	18739	SLU 84	18739	10870	88449	17972	17972	1	0.96	Si
4.96	0.0000128	0.000763	0	18328	SLU 84	18328	11837	100005	20320	20320	1	1.11	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000128	0.001018	0	-19625	SLV 4	-19625	-12624	-100005	-20320	-20320	1	1.04	Si
0.23	0.0000128	0.001018	0	-15753	SLV 4	-15753	-11926	-88449	-17972	-17972	1	1.14	Si
2.48	0.0000128	0.001018	0	1574	SLV 4	1574	11926	88449	17972	17972	1	11.42	Si
4.73	0.0000128	0.000763	0	15020	SLV 4	15020	10870	88449	17972	17972	1	1.2	Si
4.96	0.0000128	0.000763	0	15748	SLV 4	15748	11837	100005	20320	20320	1	1.29	Si

Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000128	0.001018	0	-15417	SLD 4	-15417	-12624	-100005	-20320	-20320	1	1.32	Si
0.23	0.0000128	0.001018	0	-12449	SLD 4	-12449	-11926	-88449	-17972	-17972	1	1.44	Si
2.48	0.0000128	0.001018	0	1226	SLD 4	1226	11926	88449	17972	17972	1	14.66	Si
4.73	0.0000128	0.000763	0	13361	SLD 4	13361	10870	88449	17972	17972	1	1.35	Si
4.79	0.0000128	0.000763	0	13904	SLD 4	13904	10870	88449	17972	17972	1	1.29	Si
4.96	0.0000128	0.000763	0	13789	SLD 4	13789	11837	100005	20320	20320	1	1.47	Si

Verifiche delle tensioni in esercizio

Termine delle tensioni in esercizio															
x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	$\sigma$ c	$\sigma$ c lim.	$\sigma$ f.	$\sigma$ f lim.	Mela	Comb.	Mdes	$\sigma$ c	$\sigma$ c lim.	$\sigma$ FRP	$\sigma$ FRP lim.	
0	-668.38	20	-668.38	-28291	1494000	0	36000000	-615.16	2	-615.16	-26038	1120500			Si
0.23	-3300.23	21	-4353.15	161574	1494000	2382341	36000000	-3027.97	2	-3992.57	148191	1120500			Si
2.48	-6685.57	21	-6875.42	255193	1494000	3762700	36000000	-6113.93	2	-6289.28	233437	1120500			Si
4.73	3468.84	20	3468.84	126559	1494000	1931276	36000000	3164.42	2	3164.42	115453	1120500			Si
4.96	4728.17	20	4728.17	200134	1494000	0	36000000	4313.76	2	4313.76	182593	1120500			Si



## Verifica di apertura delle fessure

x	Bordo	Rara				Frequente				Quasi permanente				Verifica
		Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	
1.98	superiore	0.388	0.00057	0.000222	21	0.388	0.00054	0.000208	6	0.388	0.00052	0.000203	2	Si

## Verifiche geotecniche

### Verifiche geotecniche di scorrimento sul piano di posa

Size X	Size Y	Comb.	Sis.	Cnd	Fx	Fy	Fz	IncX	IncY	Phi	Ad	RPI	yR	Rd	Ed	Rd/Ed	Verifica
5.18	1.3	SLU 2	ST	LT	808	235	-42860	1	0	19	0	0	1.1	13037	841	15.49	Si
5.18	1.3	SLV 14	SIS	LT	10465	-1578	-30438	19	-3	19	0	0	1.1	9258	10584	0.87	No

### Verifiche geotecniche di capacità portante sul piano di posa

Aste					Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
531,532,533,534,535,536,537,538,539,540,541,542,543					5.18	1.3	SLU 84	ST	BT	2.3	221756	65730	3.37	Si
531,532,533,534,535,536,537,538,539,540,541,542,543					5.18	1.3	SLV 4	SIS	BT	2.3	187993	61715	3.05	Si
531,532,533,534,535,536,537,538,539,540,541,542,543					5.18	1.3	SLD 4	SIS	BT	2.3	205045	52413	3.91	Si

### Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	182	-65730	-8200.13	-3883.13	0	0	-0.06	-0.12	1.05	5.07	1496	2060	0	14430	
0	3045	-61715	-9786.75	-16695.74	0	3	-0.27	-0.16	0.98	4.64	1496	2060	0	14430	0.07
0	1405	-52413	-7374.74	-8702.15	0	2	-0.17	-0.14	1.02	4.85	1496	2060	0	14430	0.03

### Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E			
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg	
1	5	0	0	0.04	0	0	0.23	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	
1	5	0	0	0.04	0	0	0.23	0	0	0.02	0	0	0	0	0	0	0	1	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.23	0	0	0.01	0	0	0	0	0	0	0	1	1	1	1	0	0	0

### Verifiche geotecniche - Cedimenti assoluti e differenziali

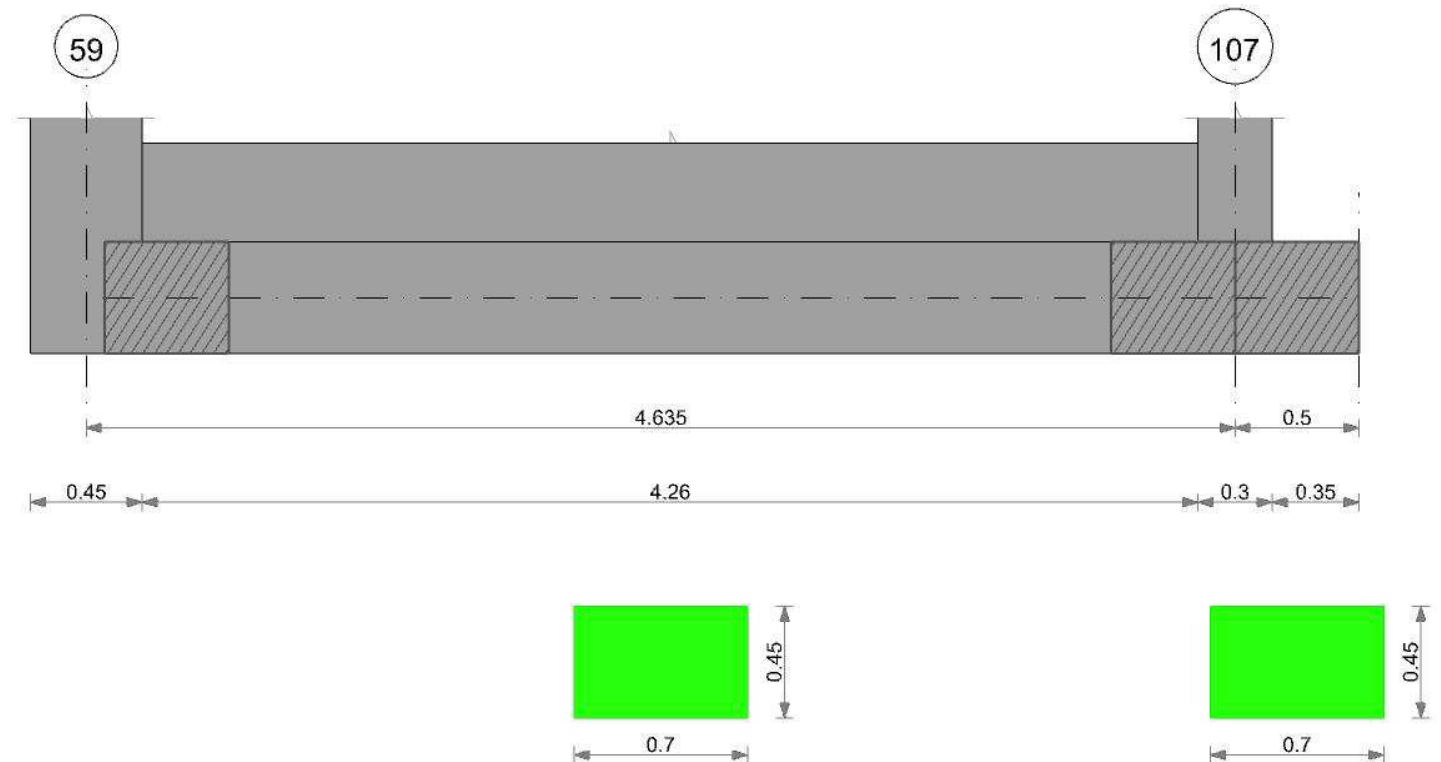
Tipo	Assoluto				Differenziale				Relativo				Rapp. inflessione				Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Comb.	Sr adm	Sr	Nodo	Comb.	Ri adm	Ri	Comb.	
E	0.05	0	877	SLE RA 21	0.05	0	877	864	SLE RA 21	0.05	0	877	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	877	SLE RA 1	0.05	0	877	877	SLE RA 1	0.05	0	877	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	877	SLE RA 1	0.05	0	877	877	SLE RA 1	0.05	0	877	SLE RA 1	0.0033	0	SLE RA 1	Si

### Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0	SLE RA 21	0.19	0	877	864	SLE RA 21	0.19	0	877	SLE RA 1	0.1	0	877	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	877	864	SLE RA 1	0.19	0	877	SLE RA 1	0.1	0	877	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	877	864	SLE RA 1	0.19	0	877	SLE RA 1	0.1	0	877	SLE RA 1	Si

## CORDOLO 2

### Geometria



### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000



## Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 70x45	Rettangolare	0.7	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

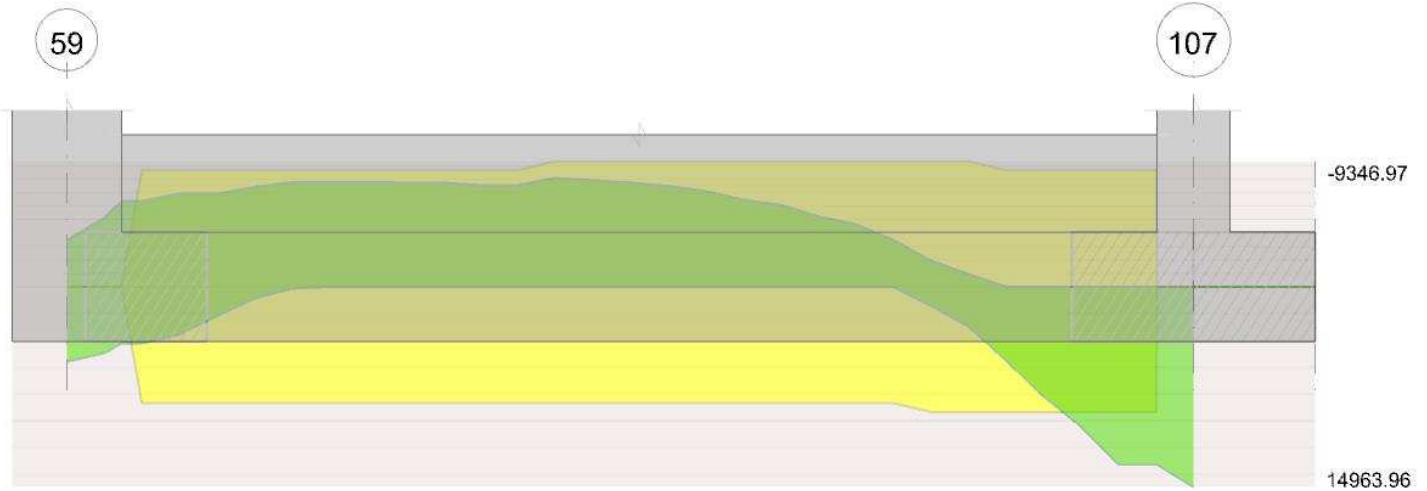
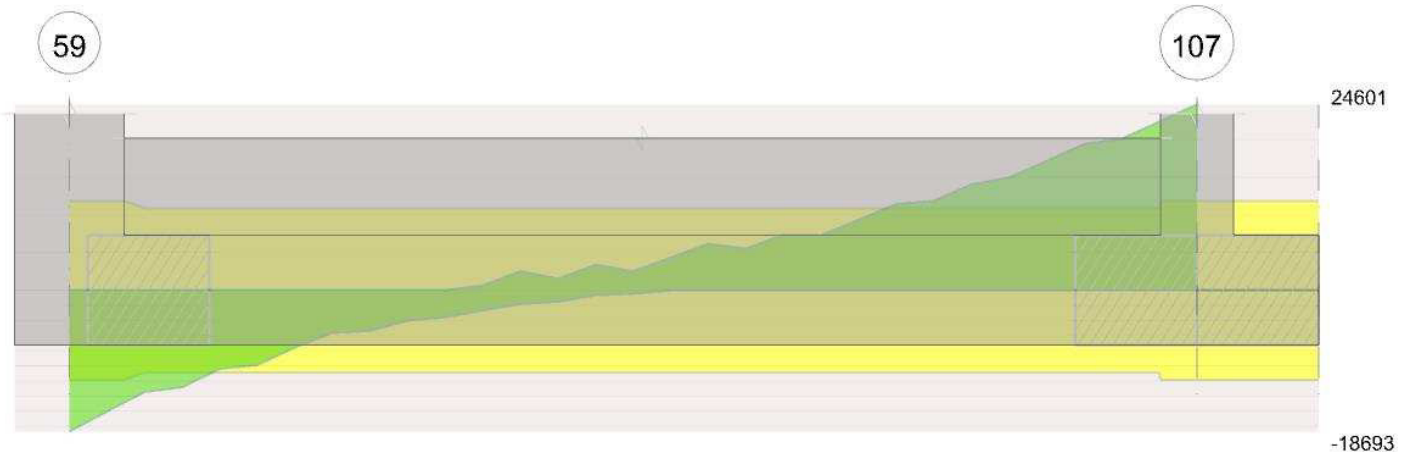


Diagramma verifica stato limite ultimo taglio



## Output campate

### Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 59 - 107, sezione R 70x45, aste 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565

### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0003	3844	SLV 4	0.119	5227	9921	SLV 4	15877	Si
0.23	0.41	0.0003	3639	SLV 4	0.119	5227	9460	SLU 84	15877	Si
2.32	0.41	0.0003	2770	SLU 84	0.029	5426	7149	SLU 84	15877	Si
4.48	0.41	0.0003	3207	SLU 84	0.029	5426	8275	SLU 84	15877	Si
4.63	0.41	0.0003	3204	SLU 84	0.029	5426	8269	SLU 84	15877	Si

### Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0003	3111	SLD 4	0.098	6064	8029	SLD 4	15877	Si
0.23	0.41	0.0003	2959	SLD 4	0.098	6064	7636	SLD 4	15877	Si
2.32	0.41	0.0003	2161	SLD 3	0.098	6064	5577	SLD 3	15877	Si
4.48	0.41	0.0003	2411	SLD 3	0.098	6064	6222	SLD 3	15877	Si
4.63	0.41	0.0003	2404	SLD 3	0.098	6064	6203	SLD 3	15877	Si

### Verifiche delle tensioni di esercizio

Rara									Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma_c$	$\sigma_{climite}$	$\sigma_f$	$\sigma_{flimite}$	M	Comb	$\sigma_c$	$\sigma_{climite}$	
0	0.41	0.00000341	2817	SLE RA 21	79734	1494000	988705	36000000	2563	SLE QP 2	72551	1120500	Si
0.23	0.41	0.00000341	2694	SLE RA 21	76270	1494000	945744	36000000	2451	SLE QP 2	69378	1120500	Si
2.32	0.41	0.00000341	2033	SLE RA 21	57556	1494000	713692	36000000	1844	SLE QP 2	52197	1120500	Si
4.48	0.41	0.00000341	2353	SLE RA 21	66606	1494000	825915	36000000	2133	SLE QP 2	60376	1120500	Si
4.63	0.41	0.00000341	2351	SLE RA 21	66556	1494000	825299	36000000	2131	SLE QP 2	60328	1120500	Si

### Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola



## Verifiche geotecniche

### Verifiche geotecniche di scorrimento sul piano di posa

Size X	Size Y	Comb.	Sis.	Cnd	Fx	Fy	Fz	IncX	IncY	Phi	Ad	RPI	yR	Rd	Ed	Rd/Ed	Verifica
4.86	1.3	SLU 33	ST	LT	466	-178	-61705	0	0	19	0	0	1.1	18769	499	37.64	Si
4.86	1.3	SLV 14	SIS	LT	10756	-1438	-36191	17	-2	19	0	0	1.1	11008	10852	1.01	Si

### Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
554,555,556,557,558,559,560,561,562,563,564,565	4.86	1.3	SLU 84	ST	BT	2.3	225343	76483	2.95	Si
554,555,556,557,558,559,560,561,562,563,564,565	4.86	1.3	SLV 4	SIS	BT	2.3	198079	68664	2.88	Si
554,555,556,557,558,559,560,561,562,563,564,565	4.86	1.3	SLD 4	SIS	BT	2.3	212076	59420	3.57	Si

### Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	-175	-76483	-6704.51	-2732.48	0	0	-0.04	-0.09	1.12	4.79	1496	2060	0	14430	
0	1727	-68664	-8701.69	-10459.22	0	1	-0.15	-0.13	1.05	4.56	1496	2060	0	14430	0.07
0	699	-59420	-6321.57	-5564.84	0	1	-0.09	-0.11	1.09	4.67	1496	2060	0	14430	0.03

### Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N		S		D		I		B		G		P		E	
Nq	Nc	Sq	Sg	Dq	Dc	Iq	Ik	Bq	Bc	Gq	Gc	Pq	Pc	Eq	Eg
1	5	0	0.05	0	0.23	0	0	0	0	0	0	1	1	0	0
1	5	0	0.05	0	0.23	0	0.01	0	0	0	0	1	1	0	0
1	5	0	0	0	0.23	0	0	0	0	0	0	1	1	0	0

### Verifiche geotecniche - Cedimenti assoluti e differenziali

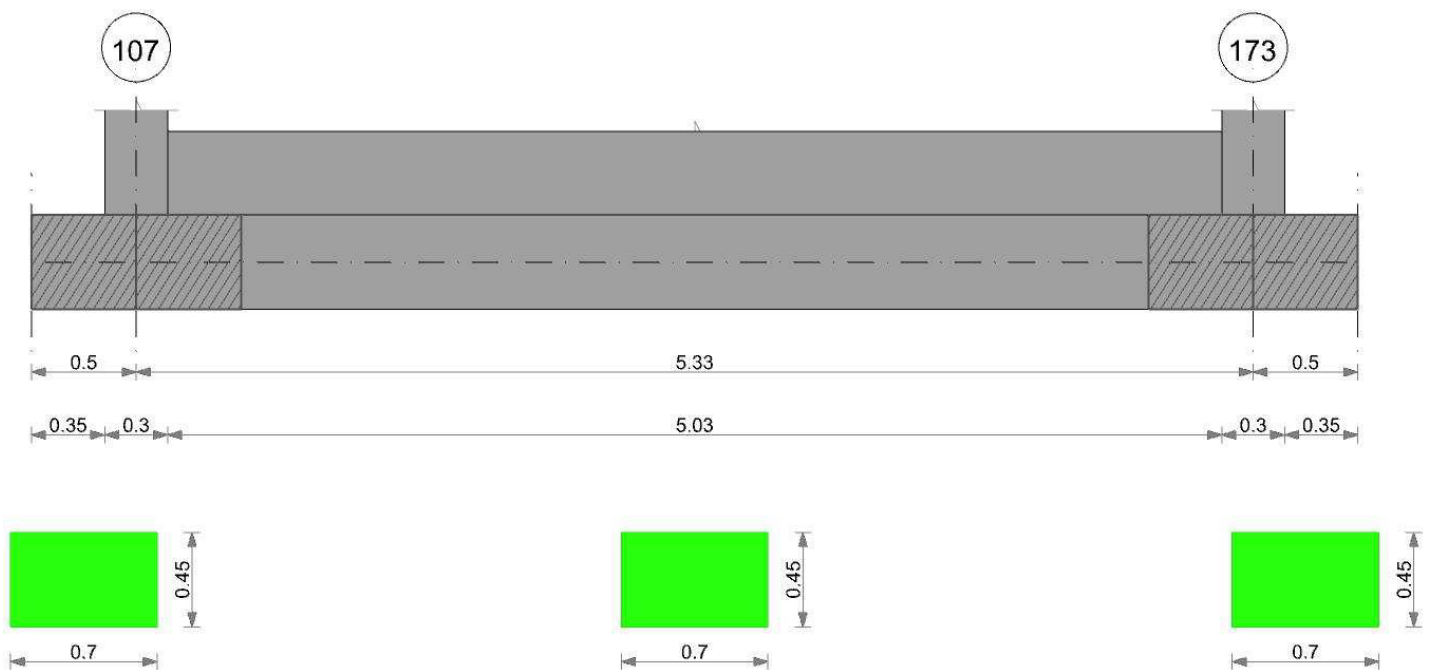
Tipo	Assoluto				Differenziale				Relativo				Rapp. inflessione				Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0	967	SLE RA 21	0.05	0	967	955	SLE RA 21	0.05	0	967	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	967	SLE RA 1	0.05	0	967	967	SLE RA 1	0.05	0	967	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	967	SLE RA 1	0.05	0	967	967	SLE RA 1	0.05	0	967	SLE RA 1	0.0033	0	SLE RA 1	Si

### Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta				Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.
E	0.19	0	SLE RA 21	0.19	0	967	955	SLE RA 21	0.19	0	967	SLE RA 1	0.1	0	967	SLE RA 1
D	0.19	0	SLE RA 1	0.19	0	967	955	SLE RA 1	0.19	0	967	SLE RA 1	0.1	0	967	SLE RA 1
Z	0.19	0	SLE RA 1	0.19	0	967	955	SLE RA 1	0.19	0	967	SLE RA 1	0.1	0	967	SLE RA 1

## CORDOLO 3

### Geometria



### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 70x45	Rettangolare	0.7	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

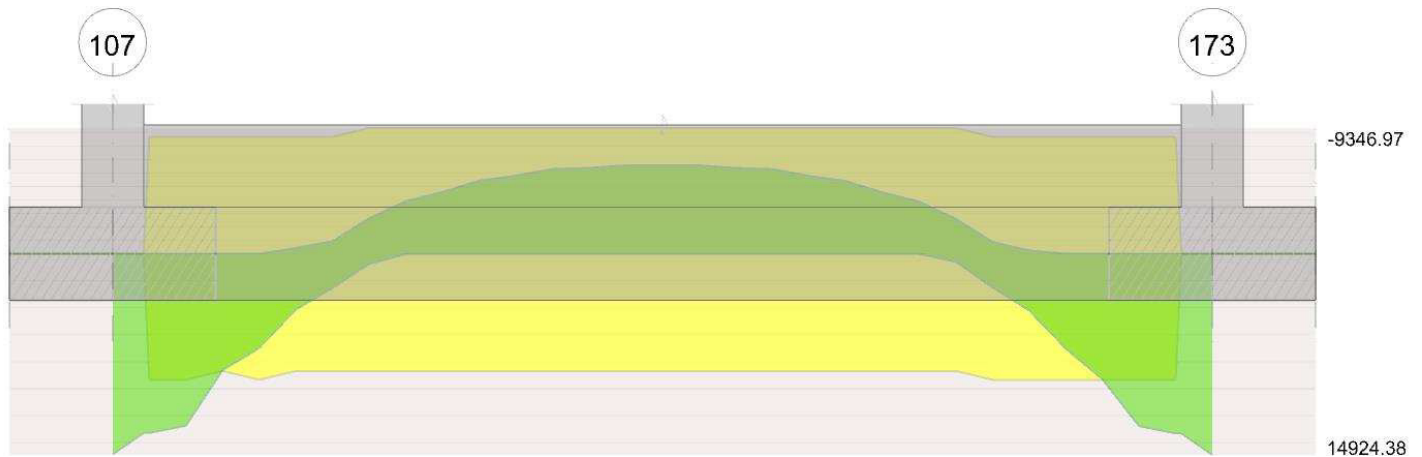
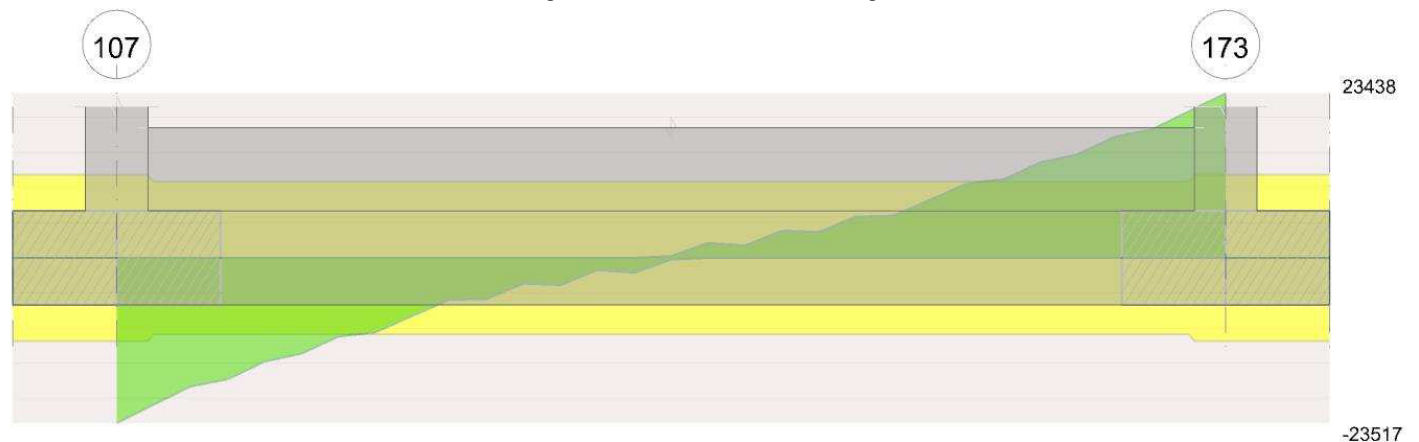


Diagramma verifica stato limite ultimo taglio



Output campate

#### Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 107 - 173, sezione R 70x45, aste 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587

#### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0003	3204	SLU 84	0.023	4058	8269	SLU 84	15877	Si
0.15	0.41	0.0003	3198	SLU 84	0.023	4058	8252	SLU 84	15877	Si
2.66	0.41	0.0003	2542	SLU 84	0.023	4058	6561	SLU 84	15877	Si
5.18	0.41	0.0003	3152	SLU 84	0.023	4058	8135	SLU 84	15877	Si
5.33	0.41	0.0003	3156	SLU 84	0.023	4058	8145	SLU 84	15877	Si

#### Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0003	2404	SLD 3	0.085	4549	6203	SLD 3	15877	Si
0.15	0.41	0.0003	2393	SLD 3	0.085	4549	6176	SLD 3	15877	Si
2.66	0.41	0.0003	1783	SLD 7	0.085	4549	4600	SLD 7	15877	Si
5.18	0.41	0.0003	2227	SLD 15	0.085	4549	5746	SLD 15	15877	Si
5.33	0.41	0.0003	2236	SLD 15	0.085	4549	5770	SLD 15	15877	Si

#### Verifiche delle tensioni di esercizio

Rara									Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma c$	$\sigma c$ limite	$\sigma f$	$\sigma f$ limite	M	Comb	$\sigma c$	$\sigma c$ limite	
0	0.41	0.0000255	2351	SLE RA 21	67318	1494000	834747	36000000	2131	SLE QP 2	61018	1120500	Si
0.15	0.41	0.0000255	2346	SLE RA 21	67176	1494000	832981	36000000	2126	SLE QP 2	60885	1120500	Si
2.66	0.41	0.0000255	1864	SLE RA 21	53367	1494000	661750	36000000	1685	SLE QP 2	48246	1120500	Si
5.18	0.41	0.0000255	2312	SLE RA 21	66203	1494000	820918	36000000	2092	SLE QP 2	59900	1120500	Si
5.33	0.41	0.0000255	2315	SLE RA 21	66280	1494000	821869	36000000	2095	SLE QP 2	59973	1120500	Si

#### Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

#### Verifiche geotecniche

##### Verifiche geotecniche di scorrimento sul piano di posa

Size X	Size Y	Comb.	Sis.	Cnd	Fx	Fy	Fz	IncX	IncY	Phi	Ad	RPI	yR	Rd	Ed	Rd/Ed	Verifica
5.33	1.3	SLU 27	ST	LT	-170	-1237	-61030	0	-1	19	0	0	1.1	18564	1249	14.87	Si
5.33	1.3	SLV 14	SIS	LT	11909	-2200	-51652	13	-2	19	0	0	1.1	15711	12111	1.3	Si

##### Verifiche geotecniche di capacità portante sul piano di posa

Aste		Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
575,576,577,578,579,580,581,582,583,584,585,586,587		5.33	1.3	SLU 84	ST	BT	2.3	251400	82432	3.05	Si



Aste	Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
575,576,577,578,579,580,581,582,583,584,585,586,587	5.33	1.3	SLV 7	SIS	BT	2.3	226114	62155	3.64	Si
575,576,577,578,579,580,581,582,583,584,585,586,587	5.33	1.3	SLD 7	SIS	BT	2.3	241153	58970	4.09	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	-1579	-82432	-6646.26	-567.52	0	-1	-0.01	-0.08	1.14	5.32	1496	2060	0	14430	
0	3895	-62155	-7458.62	-4371.49	0	4	-0.07	-0.12	1.06	5.19	1496	2060	0	14430	0.07
0	1120	-58970	-5788.08	-2116.14	0	1	-0.04	-0.1	1.1	5.26	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ik	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.04	0	0	0.23	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.23	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.23	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0

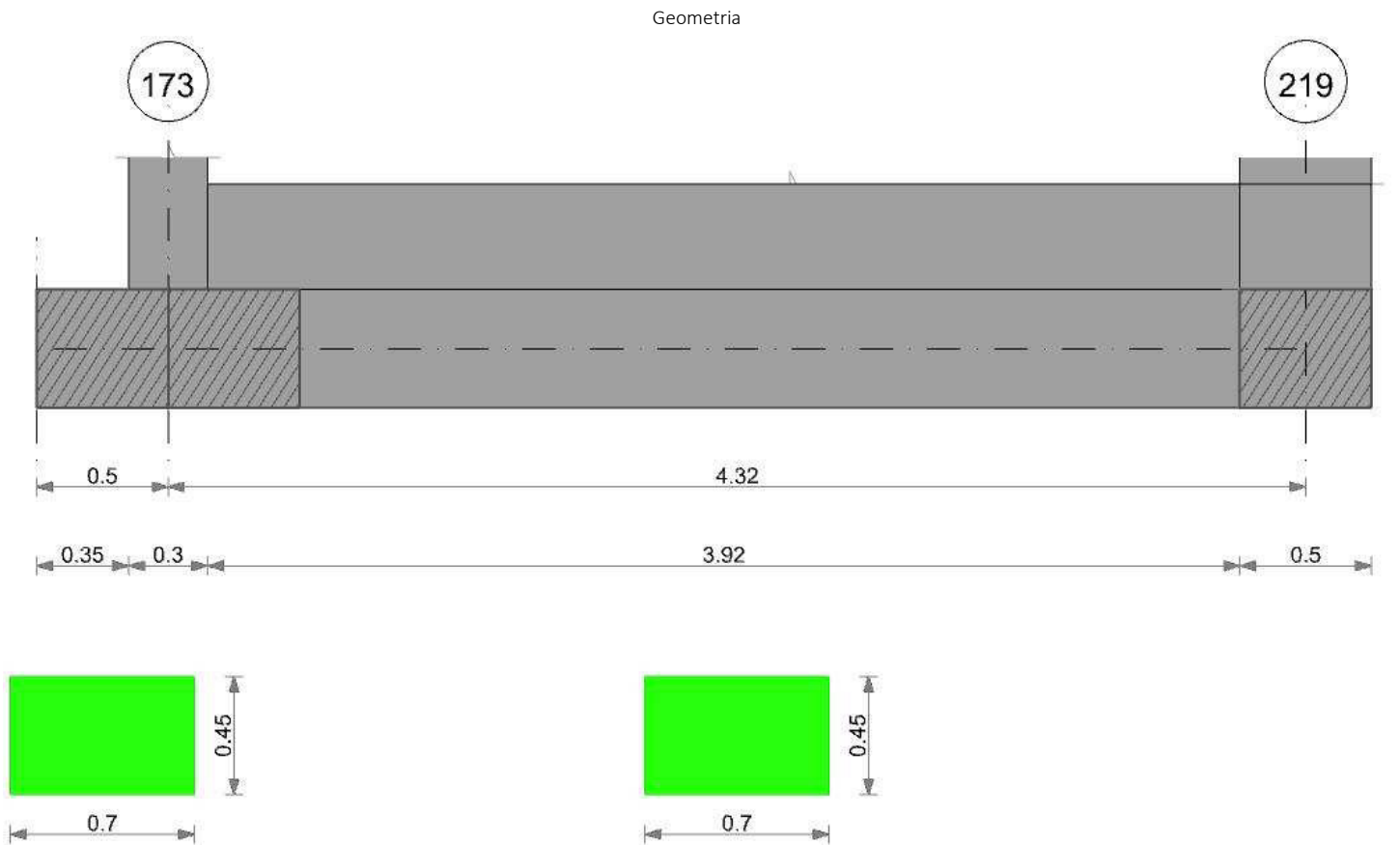
Verifiche geotecniche - Cedimenti assoluti e differenziali

Tipo	Assoluto				Differenziale				Relativo				Rapp. inflessione				Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0	967	SLE RA 21	0.05	0	967	980	SLE RA 20	0.05	0	980	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	980	SLE RA 1	0.05	0	980	980	SLE RA 1	0.05	0	980	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	980	SLE RA 1	0.05	0	980	980	SLE RA 1	0.05	0	980	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0	SLE RA 20	0.19	0	980	967	SLE RA 20	0.19	0	980	SLE RA 1	0.1	0	980	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	980	967	SLE RA 1	0.19	0	980	SLE RA 1	0.1	0	980	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	980	967	SLE RA 1	0.19	0	980	SLE RA 1	0.1	0	980	SLE RA 1	Si

CORDOLO 4



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

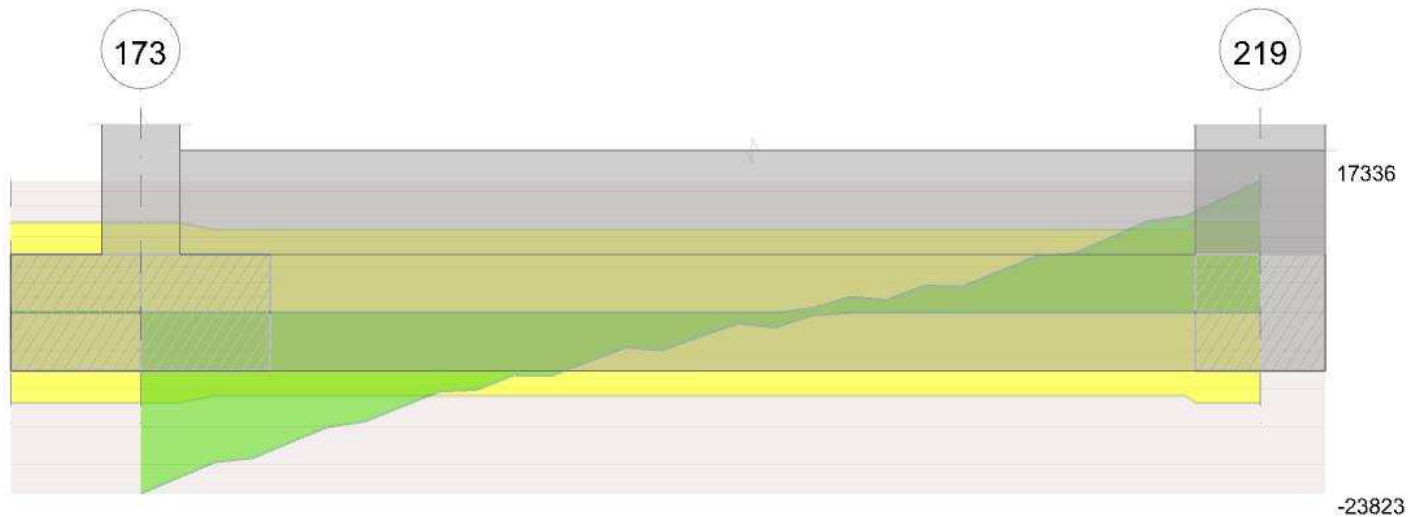
Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 70x45	Rettangolare	0.7	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione



Diagramma verifica stato limite ultimo taglio



Output campate

#### Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 173 - 219, sezione R 70x45, aste 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598

#### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	3156	SLU 84	0.02	3335	8145	SLU 84	15877	Si
0.15	0.41	0.0002	3155	SLU 84	0.02	3335	8143	SLU 84	15877	Si
2.16	0.41	0.0002	2754	SLU 84	0.02	3335	7106	SLU 84	15877	Si
4.07	0.41	0.0002	3448	SLU 84	0.02	3335	8897	SLU 84	15877	No
4.32	0.41	0.0002	3617	SLU 84	0.02	3335	9333	SLU 84	15877	No

#### Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	2236	SLD 15	0.077	3746	5770	SLD 15	15877	Si
0.15	0.41	0.0002	2242	SLD 15	0.077	3746	5786	SLD 15	15877	Si
2.16	0.41	0.0002	2061	SLD 15	0.077	3746	5319	SLD 15	15877	Si
4.07	0.41	0.0002	2684	SLD 15	0.077	3746	6926	SLD 15	15877	Si
4.32	0.41	0.0002	2822	SLD 15	0.077	3746	7282	SLD 15	15877	Si

#### Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma c$	$\sigma c$ limite	$\sigma f$	$\sigma f$ limite	M	Comb	$\sigma c$	$\sigma c$ limite	
0	0.41	0.00000209	2315	SLE RA 21	66682	1494000	826854	36000000	2095	SLE QP 2	60336	1120500	Si
0.15	0.41	0.00000209	2314	SLE RA 21	66669	1494000	826698	36000000	2094	SLE QP 2	60328	1120500	Si
2.16	0.41	0.00000209	2020	SLE RA 21	58195	1494000	721622	36000000	1829	SLE QP 2	52694	1120500	Si
4.07	0.41	0.00000209	2533	SLE RA 21	72973	1494000	904863	36000000	2301	SLE QP 2	66289	1120500	Si
4.32	0.41	0.00000209	2658	SLE RA 21	76562	1494000	949373	36000000	2415	SLE QP 2	69579	1120500	Si

#### Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

#### Verifiche geotecniche

#### Verifiche geotecniche di scorrimento sul piano di posa





Size X	Size Y	Comb.	Sis.	Cnd	Fx	Fy	Fz	IncX	IncY	Phi	Ad	RPI	yR	Rd	Ed	Rd/Ed	Verifica
4.57	1.3	SLU 35	ST	LT	-709	-692	-57138	-1	-1	19	0	0	1.1	17380	991	17.54	Si
4.57	1.3	SLV 1	SIS	LT	-10451	-1447	-37665	-16	-2	19	0	0	1.1	11457	10551	1.09	Si

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
588,589,590,591,592,593,594,595,596,597,598	4.57	1.3	SLU 84	ST	BT	2.3	217663	70146	3.1	Si
588,589,590,591,592,593,594,595,596,597,598	4.57	1.3	SLV 15	SIS	BT	2.3	195738	58924	3.32	Si
588,589,590,591,592,593,594,595,596,597,598	4.57	1.3	SLD 15	SIS	BT	2.3	207778	52740	3.94	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	-790	-70146	-5379.83	1248.28	0	-1	0.02	-0.08	1.15	4.53	1496	2060	0	14430	
0	853	-58924	-6016	8941.46	0	1	0.15	-0.1	1.1	4.27	1496	2060	0	14430	0.07
0	82	-52740	-4657.83	4339.29	0	0	0.08	-0.09	1.12	4.41	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N		S		D		I		B		G		P		E	
Nq	Nc	Sq	Sg	Dq	Dc	Iq	lc	Bq	Bc	Gq	Gc	Pq	Pc	Eq	Ec
1	5	0	0.05	0	0.23	0	0	0	0	0	0	1	1	1	0
1	5	0	0.05	0	0.23	0	0	0	0	0	0	1	1	1	0
1	5	0	0.05	0	0.23	0	0	0	0	0	0	1	1	1	0

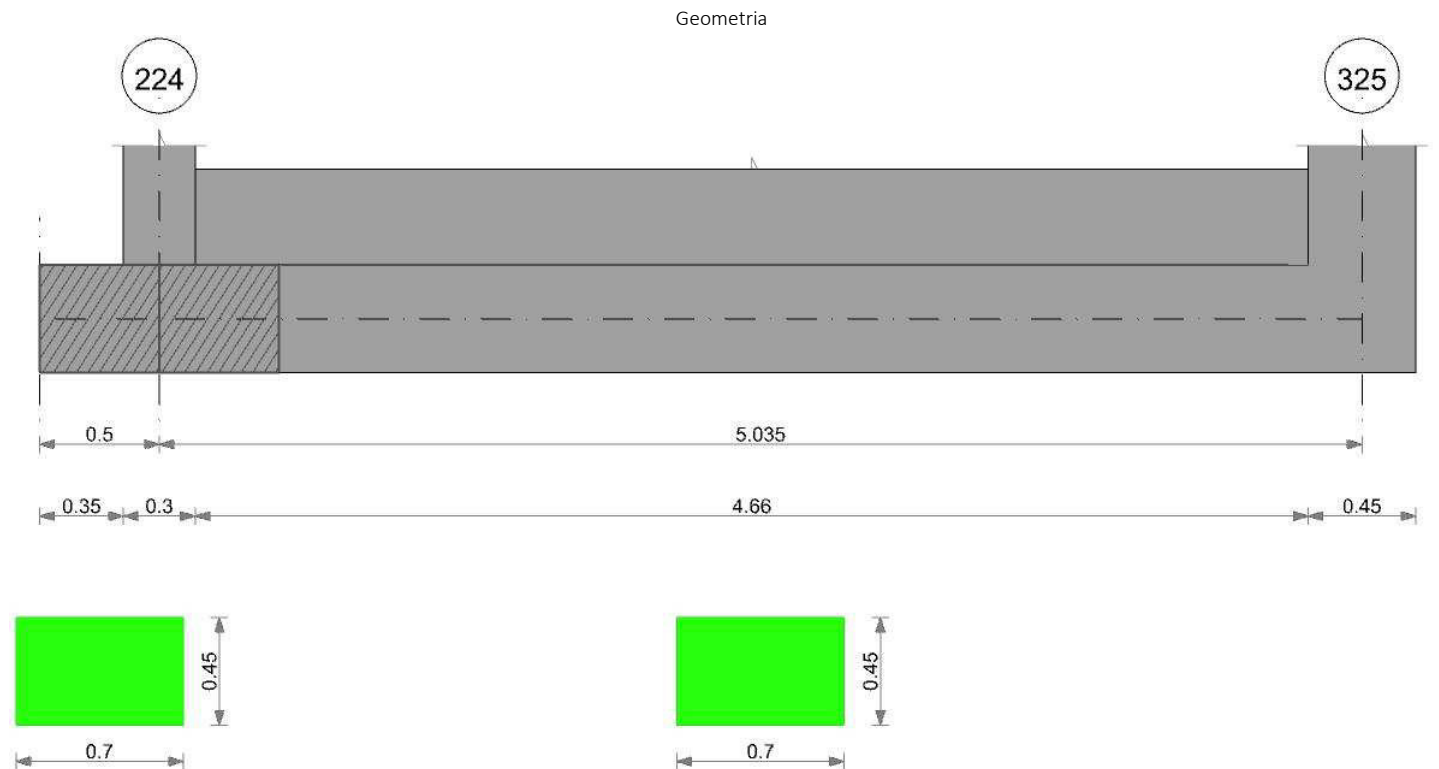
Verifiche geotecniche - Cedimenti assoluti e differenziali

Tipo	Assoluto				Differenziale				Relativo				Rapp. inflessione				Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Sr adm	Sr	Nodo	Comb.	Ri adm	Ri	Comb.		
E	0.05	0	980	SLE RA 21	0.05	0	980	991	0.05	0	991	SLE RA 1	0.0033	0	SLE RA 1	Si	
D	0.05	0	991	SLE RA 1	0.05	0	991	991	0.05	0	991	SLE RA 1	0.0033	0	SLE RA 1	Si	
Z	0.05	0	991	SLE RA 1	0.05	0	991	991	0.05	0	991	SLE RA 1	0.0033	0	SLE RA 1	Si	

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta				Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0	SLE RA 21	0.19	0	991	980	0.19	0	991	SLE RA 1	0.1	0	991	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	991	980	0.19	0	991	SLE RA 1	0.1	0	991	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	991	980	0.19	0	991	SLE RA 1	0.1	0	991	SLE RA 1	Si

CORDOLO 5



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000  
Calcestruzzo: C25/30 Rck 3000000

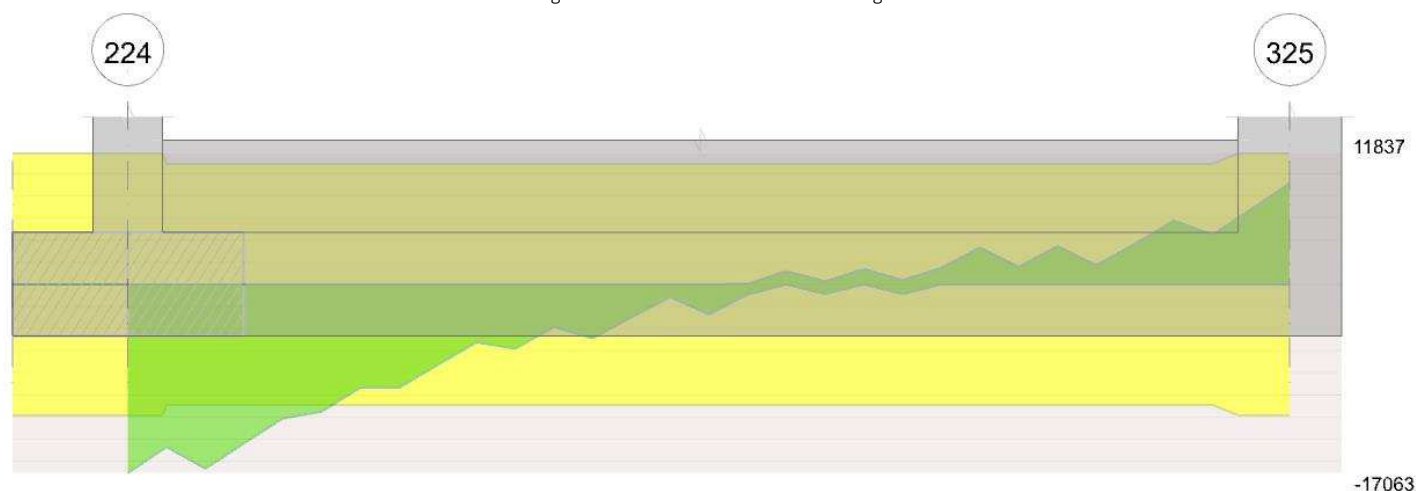
Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 70x45	Rettangolare	0.7	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione



Diagramma verifica stato limite ultimo taglio



Output campate

#### Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 224 - 325, sezione R 70x45, aste 629, 628, 627, 626, 625, 624, 623, 622, 621, 620, 619, 618

#### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	3234	SLU 83	0.017	2747	8346	SLU 83	15877	No
0.15	0.41	0.0002	3200	SLU 83	0.017	2747	8259	SLU 83	15877	No
2.52	0.41	0.0002	2430	SLV 15	0.085	2672	6390	SLU 83	15877	Si
4.81	0.41	0.0002	3202	SLV 15	0.085	2672	8264	SLV 15	15877	No
5.04	0.41	0.0002	3324	SLV 15	0.085	2672	8579	SLV 15	15877	No

#### Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	2436	SLD 15	0.07	3092	6287	SLD 15	15877	Si
0.15	0.41	0.0002	2411	SLD 15	0.07	3092	6223	SLD 15	15877	Si
2.52	0.41	0.0002	1986	SLD 15	0.07	3092	5125	SLD 15	15877	Si
4.81	0.41	0.0002	2420	SLD 15	0.07	3092	6244	SLD 15	15877	Si
5.04	0.41	0.0002	2498	SLD 15	0.07	3092	6446	SLD 15	15877	Si

#### Verifiche delle tensioni di esercizio

Rara									Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma c$	$\sigma c$ limite	$\sigma f$	$\sigma f$ limite	M	Comb	$\sigma c$	$\sigma c$ limite	
0	0.41	0.00000172	2376	SLE RA 20	68791	1494000	853002	36000000	2158	SLE QP 2	62475	1120500	Si
0.15	0.41	0.00000172	2351	SLE RA 20	68072	1494000	844097	36000000	2136	SLE QP 2	61824	1120500	Si
2.52	0.41	0.00000172	1820	SLE RA 20	52687	1494000	653313	36000000	1654	SLE QP 2	47872	1120500	Si
4.81	0.41	0.00000172	2012	SLE RA 20	58239	1494000	722161	36000000	1834	SLE QP 2	53101	1120500	Si
5.04	0.41	0.00000172	2061	SLE RA 20	59671	1494000	739919	36000000	1880	SLE QP 2	54427	1120500	Si

#### Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

#### Verifiche geotecniche

##### Verifiche geotecniche di scorrimento sul piano di posa

Size X	Size Y	Comb.	Sis.	Cnd	Fx	Fy	Fz	IncX	IncY	Phi	Ad	RPI	yR	Rd	Ed	Rd/Ed	Verifica
5.26	1.3	SLU 6	ST	LT	-1224	-438	-47969	-1	-1	19	0	0	1.1	14591	1300	11.22	Si
5.26	1.3	SLV 3	SIS	LT	-11830	2468	-34640	-19	4	19	0	0	1.1	10537	12085	0.87	No

##### Verifiche geotecniche di capacità portante sul piano di posa



Aste	Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
629,628,627,626,625,624,623,622,621,620,619,618	5.26	1.3	SLU 83	ST	BT	2.3	214965	71383	3.01	Si
629,628,627,626,625,624,623,622,621,620,619,618	5.26	1.3	SLV 15	SIS	BT	2.3	201419	67320	2.99	Si
629,628,627,626,625,624,623,622,621,620,619,618	5.26	1.3	SLD 15	SIS	BT	2.3	214871	57017	3.77	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	-784	-71383	-10234.3	-5324.53	0	-1	-0.07	-0.14	1.01	5.11	1496	2060	0	14430	0.07
0	687	-67320	-11360.86	7191	0	1	0.11	-0.17	0.96	5.05	1496	2060	0	14430	0.07
0	35	-57017	-8844	1073.34	0	0	0.02	-0.16	0.99	5.22	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	lc	lg	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.04	0	0	0.23	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.23	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.23	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

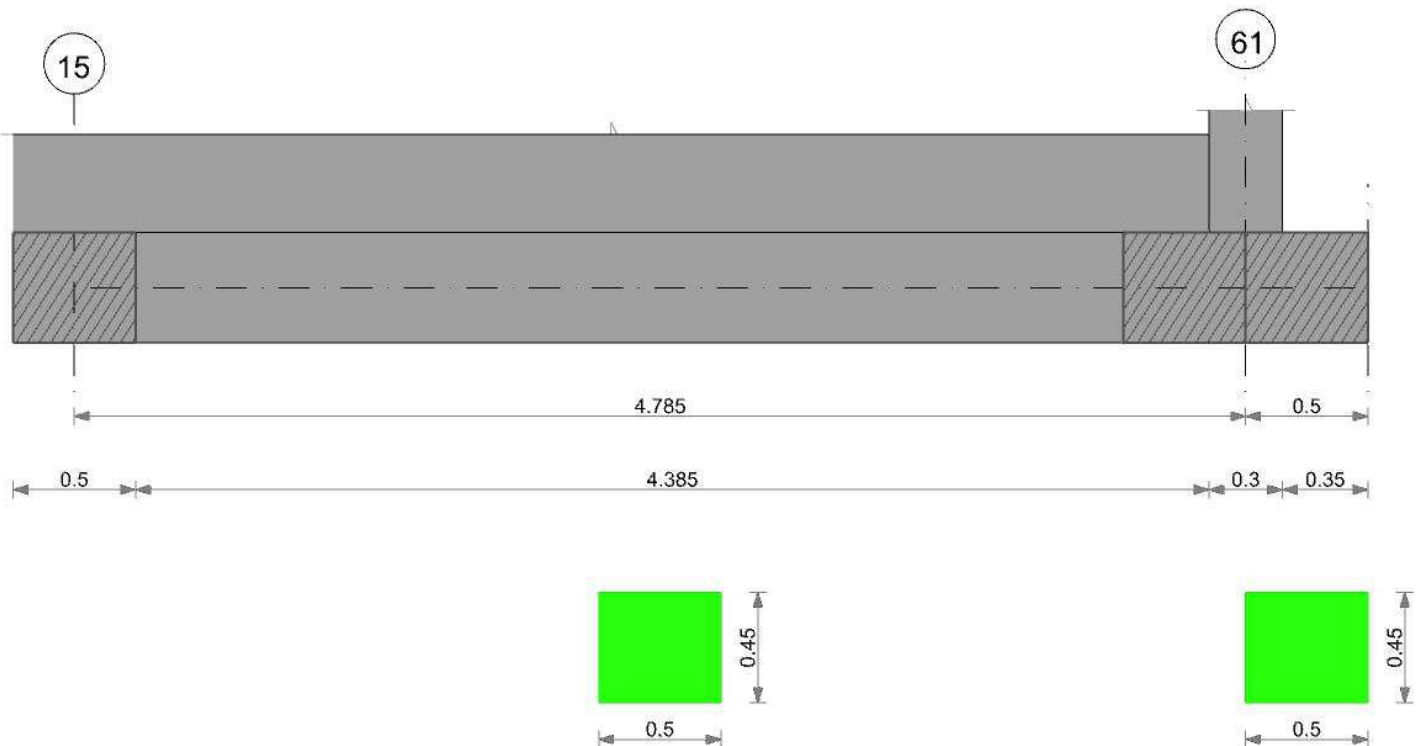
Tipo	Assoluto				Differenziale				Relativo				Rapp. inflessione				Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Comb.	Sr adm	Sr	Nodo	Comb.	Ri adm	Ri	Comb.	
E	0.05	0	888	SLE RA 20	0.05	0	888	902	SLE RA 20	0.05	0	902	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	902	SLE RA 1	0.05	0	902	902	SLE RA 1	0.05	0	902	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	902	SLE RA 1	0.05	0	902	902	SLE RA 1	0.05	0	902	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta				Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.
E	0.19	0	SLE RA 20	0.19	0	902	888	SLE RA 20	0.19	0	902	SLE RA 1	0.1	0	902	SLE RA 1
D	0.19	0	SLE RA 1	0.19	0	902	888	SLE RA 1	0.19	0	902	SLE RA 1	0.1	0	902	SLE RA 1
Z	0.19	0	SLE RA 1	0.19	0	902	888	SLE RA 1	0.19	0	902	SLE RA 1	0.1	0	902	SLE RA 1

## CORDOLO 6

Geometria



### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

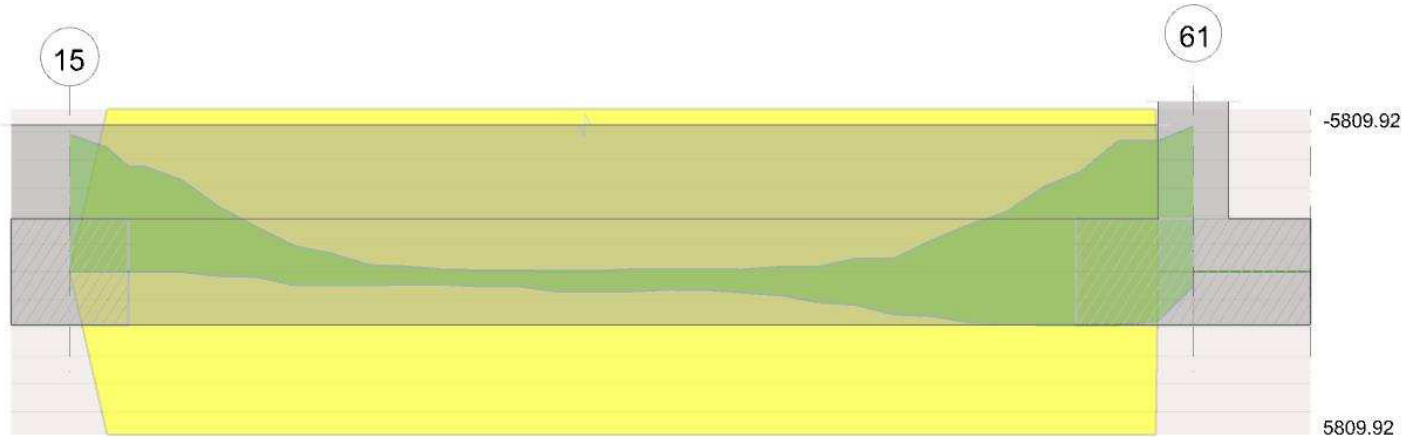
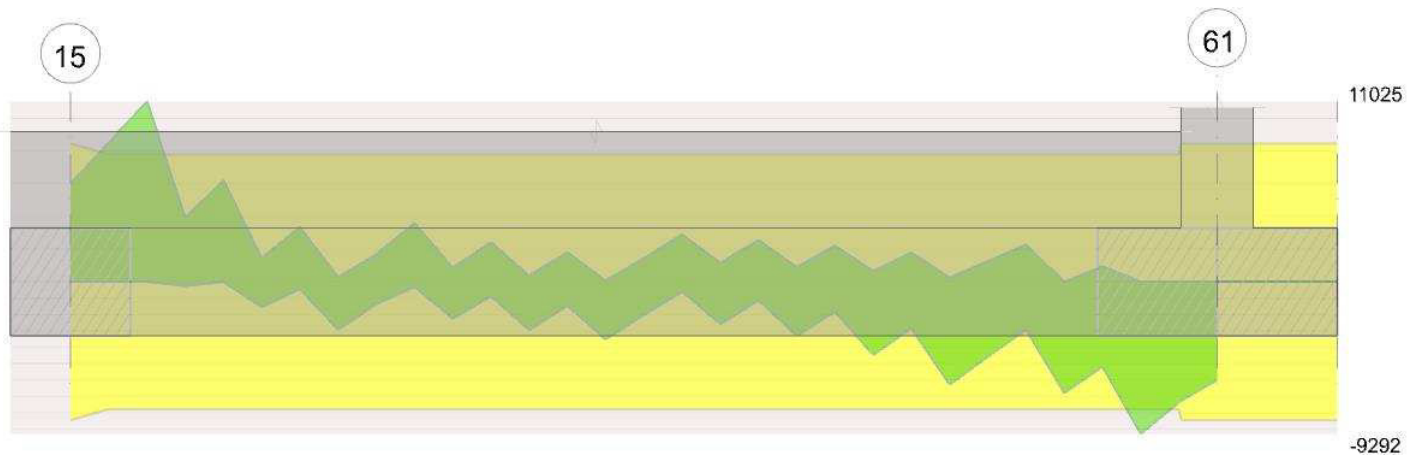


Diagramma verifica stato limite ultimo taglio



Output campate

#### Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 15 - 61, sezione R 50x45, aste 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368

#### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	2287	SLV 4	0.085	2637	7956	SLV 4	15877	Si
0.25	0.41	0.0002	2217	SLV 4	0.085	2637	7713	SLV 4	15877	Si
2.39	0.41	0.0002	1769	SLV 4	0.085	2637	6159	SLU 84	15877	Si
4.64	0.41	0.0002	1576	SLU 84	0.017	2711	5481	SLU 84	15877	Si
4.79	0.41	0.0002	1565	SLU 84	0.017	2711	5444	SLU 84	15877	Si

#### Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	1715	SLD 4	0.07	3051	5964	SLD 4	15877	Si
0.25	0.41	0.0002	1674	SLD 4	0.07	3051	5822	SLD 4	15877	Si
2.39	0.41	0.0002	1433	SLD 4	0.07	3051	4984	SLD 4	15877	Si
4.64	0.41	0.0002	1168	SLD 4	0.07	3051	4062	SLD 4	15877	Si
4.79	0.41	0.0002	1157	SLD 4	0.07	3051	4025	SLD 4	15877	Si

#### Verifiche delle tensioni di esercizio

				Rara					Quasi permanente					Verifica
x	d	Af		M	Comb	$\sigma c$	$\sigma c$ limite	$\sigma f$	$\sigma f$ limite	M	Comb	$\sigma c$	$\sigma c$ limite	
0	0.41	0.0000017		1411	SLE RA 21	40853	1494000	506577	36000000	1287	SLE QP 2	37276	1120500	Si
0.25	0.41	0.0000017		1391	SLE RA 21	40271	1494000	499365	36000000	1268	SLE QP 2	36726	1120500	Si
2.39	0.41	0.0000017		1302	SLE RA 21	37699	1494000	467469	36000000	1182	SLE QP 2	34234	1120500	Si
4.64	0.41	0.0000017		1157	SLE RA 21	33514	1494000	415573	36000000	1048	SLE QP 2	30334	1120500	Si
4.79	0.41	0.0000017		1149	SLE RA 21	33286	1494000	412752	36000000	1040	SLE QP 2	30125	1120500	Si

#### Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

#### Verifiche geotecniche

##### Verifiche geotecniche di scorrimento sul piano di posa

Size X	Size Y	Comb.	Sis.	Cnd	Fx	Fy	Fz	IncX	IncY	Phi	Ad	RPI	yR	Rd	Ed	Rd/Ed	Verifica
5.04	1.1	SLU 47	ST	LT	753	273	-59490	1	0	19	0	0	1.1	18095	801	22.59	Si
5.04	1.1	SLV 13	SIS	LT	7799	-2855	-29907	15	-5	19	0	0	1.1	9097	8305	1.1	Si

##### Verifiche geotecniche di capacità portante sul piano di posa

Aste					Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
356,357,358,359,360,361,362,363,364,365,366,367,368					5.04	1.1	SLU 84	ST	BT	2.3	232918	72288	3.22	Si



Aste	Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
356,357,358,359,360,361,362,363,364,365,366,367,368	5.04	1.1	SLV 4	SIS	BT	2.3	205962	69401	2.97	Si
356,357,358,359,360,361,362,363,364,365,366,367,368	5.04	1.1	SLD 4	SIS	BT	2.3	219028	58091	3.77	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	141	-72288	-57.84	-4264.94	0	0	-0.06	0	1.1	4.92	1496	2060	0	14430	
0	3087	-69401	-1347.35	-17019.26	0	3	-0.25	-0.02	1.06	4.54	1496	2060	0	14430	0.07
0	1407	-58091	-611.15	-8998.59	0	1	-0.15	-0.01	1.08	4.73	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.04	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.05	0	0	0.27	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.05	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

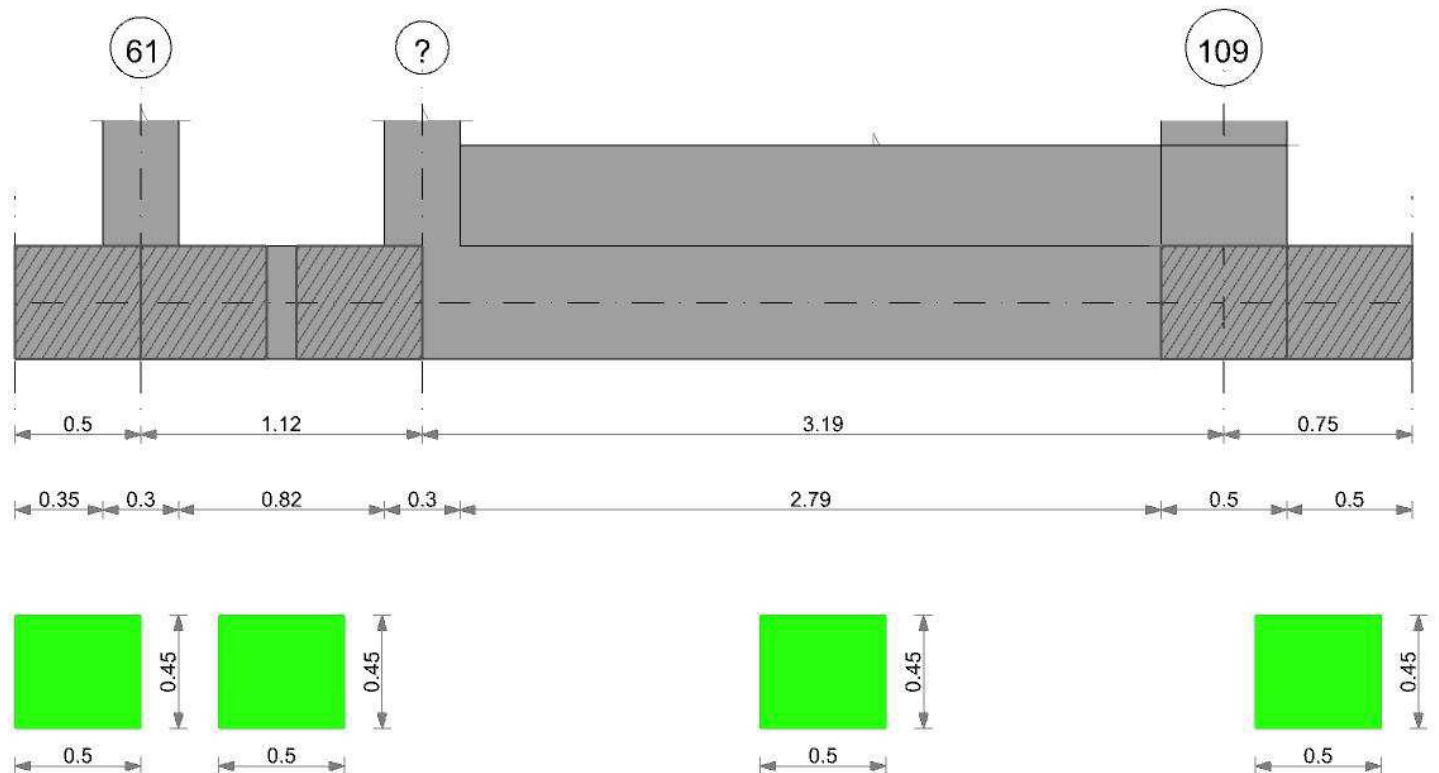
Tipo	Assoluto				Differenziale				Relativo				Rapp. inflessione				Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Comb.	Sr adm	Sr	Nodo	Comb.	Ri adm	Ri	Comb.	
E	0.05	0.001	686	SLE RA 21	0.05	0.001	686	673	SLE RA 21	0.05	0	686	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	686	SLE RA 1	0.05	0	686	686	SLE RA 1	0.05	0	686	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	686	SLE RA 1	0.05	0	686	686	SLE RA 1	0.05	0	686	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.01	SLE RA 21	0.19	0.01	686	673	SLE RA 21	0.19	0	686	SLE RA 1	0.1	0	686	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	686	673	SLE RA 1	0.19	0	686	SLE RA 1	0.1	0	686	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	686	673	SLE RA 1	0.19	0	686	SLE RA 1	0.1	0	686	SLE RA 1	Si

## CORDOLO 7

Geometria



### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione



Diagramma verifica stato limite ultimo taglio



#### Output campate

Campata 2 tra i fili 61 - ?, sezione R 50x45, asta 544

#### Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000823	0.052	0.000283	0.052							-1161.32	SLU 81	-1161.32	-12063.16	0.138	10.39	Si
0.15	0.000823	0.052	0.0004	0.052							-1888.37	SLU 83	-2558.97	-12061.17	0.137	4.71	Si
0.56	0.000823	0.052	0.000509	0.052							-3102.25	SLU 83	-3276.74	-12059.84	0.137	3.68	Si
0.9	0.000823	0.052	0.000509	0.052							-3253.67	SLU 83	-3287.41	-12059.84	0.137	3.67	Si
0.97	0.000823	0.052	0.000509	0.052							-3185.11	SLU 83	-3287.08	-12059.84	0.137	3.67	Si
1.12	0.000823	0.052	0.000509	0.052							-2933.51	SLU 83	-2933.51	-12059.84	0.137	4.11	Si

#### Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000823	0.052	0.000283	0.052	3218.96	SLV 14	2641.95	4127.78	0.15	1.56	-4719.31	SLV 3	-4560.55	-11479.46	0.252	2.52	Si
0.15	0.000823	0.052	0.0004	0.052	1661.69	SLV 14	1661.69	5753.79	0.174	3.46	-4150.16	SLV 3	-4150.16	-11484.22	0.249	2.77	Si
0.56	0.000823	0.052	0.000509	0.052							-2416.84	SLV 10	-3756.56	-11488.1	0.247	3.06	Si
0.97	0.000823	0.052	0.000509	0.052	1228.19	SLV 3	1228.19	7261.11	0.193	5.91	-5505.58	SLV 14	-5505.58	-11488.1	0.247	2.09	Si
1.12	0.000823	0.052	0.000509	0.052	2602.43	SLV 3	2075.75	7261.11	0.193	3.5	-6549.24	SLV 14	-6205.77	-11488.1	0.247	1.85	Si

#### Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000823	0.052	0.000283	0.052	949.07	SLD 14	582.32	4127.78	0.15	7.09	-2449.42	SLD 3	-2449.42	-11479.46	0.252	4.69	Si
0.15	0.000823	0.052	0.0004	0.052							-2487.97	SLD 3	-2487.97	-11484.22	0.249	4.62	Si
0.56	0.000823	0.052	0.000509	0.052							-2221.83	SLD 10	-2864.14	-11488.1	0.247	4.01	Si
0.97	0.000823	0.052	0.000509	0.052							-3581.67	SLD 14	-3581.67	-11488.1	0.247	3.21	Si
1.12	0.000823	0.052	0.000509	0.052							-3934.2	SLD 14	-3839.44	-11488.1	0.247	2.99	Si

#### Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcl	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000174	0.000823	0	-6909	SLU 84	-6909	-8875	-63117	-24344	-24344	1	3.52	Si
0.15	0.0000174	0.000823	0	-5596	SLU 84	-5596	-8875	-63117	-24344	-24344	1	4.35	Si
0.56	0.0000174	0.000823	0	-2033	SLU 84	-2033	-8875	-63117	-24344	-24344	1	11.98	Si
0.97	0.0000174	0.000823	0	1517	SLU 82	1517	8875	63117	24344	24344	1	16.05	Si
1.12	0.0000174	0.000823	0	2810	SLU 84	2810	8875	63117	24344	24344	1	8.66	Si



#### Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000174	0.000823	0	4390	SLV 3	4390	8875	63117	24344	24344	1	5.55	Si
0	0.0000174	0.0004	0	-13755	SLV 14	-13755	-7764	-63178	-24368	-24368	1	1.77	Si
0.15	0.0000174	0.000823	0	5472	SLV 3	5472	8875	63117	24344	24344	1	4.45	Si
0.15	0.0000174	0.0004	0	-13070	SLV 14	-13070	-7764	-63178	-24368	-24368	1	1.86	Si
0.56	0.0000174	0.000823	0	8399	SLV 3	8399	8875	63117	24344	24344	1	2.9	Si
0.56	0.0000174	0.000823	0	-11203	SLV 14	-11203	-8875	-63117	-24344	-24344	1	2.17	Si
0.97	0.0000174	0.000509	0	11301	SLV 3	11301	7764	63178	24368	24368	1	2.16	Si
0.97	0.0000174	0.000823	0	-9336	SLV 14	-9336	-8875	-63117	-24344	-24344	1	2.61	Si
1.12	0.0000174	0.000509	0	12358	SLV 3	12358	7764	63178	24368	24368	1	1.97	Si
1.12	0.0000174	0.000823	0	-8647	SLV 14	-8647	-8875	-63117	-24344	-24344	1	2.82	Si

#### Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000174	0.0004	0	-8569	SLD 14	-8569	-7764	-63178	-24368	-24368	1	2.84	Si
0.15	0.0000174	0.000823	0	172	SLD 3	172	8875	63117	24344	24344	1	141.13	Si
0.15	0.0000174	0.000823	0	-7771	SLD 14	-7771	-8875	-63117	-24344	-24344	1	3.13	Si
0.56	0.0000174	0.000823	0	2796	SLD 3	2796	8875	63117	24344	24344	1	8.71	Si
0.56	0.0000174	0.000823	0	-5600	SLD 14	-5600	-8875	-63117	-24344	-24344	1	4.35	Si
0.97	0.0000174	0.000823	0	5402	SLD 3	5402	8875	63117	24344	24344	1	4.51	Si
0.97	0.0000174	0.000823	0	-3437	SLD 14	-3437	-8875	-63117	-24344	-24344	1	7.08	Si
1.12	0.0000174	0.000823	0	6354	SLD 3	6354	8875	63117	24344	24344	1	3.83	Si
1.12	0.0000174	0.000823	0	-2643	SLD 14	-2643	-8875	-63117	-24344	-24344	1	9.21	Si

#### Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	$\sigma c$	$\sigma c \text{ lim.}$	$\sigma f$	$\sigma f \text{ lim.}$	Mela	Comb.	Mdes	$\sigma c$	$\sigma c \text{ lim.}$	$\sigma \text{ FRP}$	$\sigma \text{ FRP lim.}$	
0	-841.29	18	-841.29	45321	1494000	645778	36000000	-750.18	2	-750.18	40413	1120500			Si
0.15	-1380.35	20	-1878.29	99337	1494000	1431691	36000000	-1244.24	2	-1700.28	89922	1120500			Si
0.56	-2283.41	20	-2415.64	125613	1494000	1829584	36000000	-2072	2	-2194.2	114098	1120500			Si
0.97	-2352.73	20	-2424.29	126063	1494000	1836134	36000000	-2138.69	2	-2202.52	114531	1120500			Si
1.12	-2170.27	20	-2170.27	112854	1494000	1643745	36000000	-1973.41	2	-1973.41	102617	1120500			Si

#### Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

#### Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 61 - ?, sezione R 50x45, asta 544

Campata 3 tra i fili ? - 109, sezione R 50x45, aste 545, 546, 547, 548, 549, 550, 551, 552, 553

#### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0009	1543	SLU 84	0.073	13570	5368	SLU 84	34033	Si
0.15	0.41	0.0009	1547	SLU 84	0.072	13292	5379	SLU 84	33314	Si
1.6	0.41	0.0009	1572	SLU 84	0.072	13292	5469	SLU 84	33314	Si
2.94	0.41	0.0009	1511	SLU 84	0.072	13292	5257	SLU 84	33314	Si
3.19	0.41	0.0009	1500	SLU 84	0.072	13292	5217	SLU 84	33314	Si

#### Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0009	1130	SLD 4	0.155	15077	3929	SLD 4	39138	Si
0.15	0.41	0.0009	1129	SLD 4	0.154	14769	3926	SLD 4	38311	Si
1.6	0.41	0.0009	1087	SLD 4	0.154	14769	3782	SLD 4	38311	Si
2.94	0.41	0.0009	1026	SLD 16	0.154	14769	3570	SLD 16	38311	Si
3.19	0.41	0.0009	1022	SLD 16	0.154	14769	3556	SLD 16	38311	Si

#### Verifiche delle tensioni di esercizio

x	d	Af	Rara					Quasi permanente					Verifica
			M	Comb	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	σ f	
0	0.41	0.00000869	1133	SLE RA 21	30016	1494000	372194	36000000	1025	SLE QP 2	27154	1120500	Si
0.15	0.41	0.00000851	1136	SLE RA 21	30148	1494000	373837	36000000	1027	SLE QP 2	27272	1120500	Si
1.6	0.41	0.00000851	1155	SLE RA 21	30645	1494000	379993	36000000	1043	SLE QP 2	27691	1120500	Si
2.94	0.41	0.00000851	1109	SLE RA 21	29445	1494000	365116	36000000	1001	SLE QP 2	26570	1120500	Si
3.19	0.41	0.00000851	1101	SLE RA 21	29224	1494000	362384	36000000	993	SLE QP 2	26365	1120500	Si

#### Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

#### Verifiche geotecniche

##### Verifiche geotecniche di scorrimento sul piano di posa

Size X	Size Y	Comb.	Sis.	Cnd	Fx	Fy	Fz	IncX	IncY	Phi	Ad	RPI	yR	Rd	Ed	Rd/Ed	Verifica
4.31	1.1	SLU 47	ST	LT	399	231	-45967	0	0	19	0	0	1.1	13982	461	30.32	Si
4.31	1.1	SLV 13	SIS	LT	6564	-1686	-34635	11	-3	19	0	0	1.1	10535	6777	1.55	Si

##### Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
544,545,546,547,548,549,550,551,552,553	4.31	1.1	SLU 83	ST	BT	2.3	205303	56021	3.66	Si
544,545,546,547,548,549,550,551,552,553	4.31	1.1	SLV 4	SIS	BT	2.3	182317	42174	4.32	Si
544,545,546,547,548,549,550,551,552,553	4.31	1.1	SLD 4	SIS	BT	2.3	194766	40017	4.87	Si

##### Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	104	-56021	12.29	-39.22	0	0	0	0	1.1	4.31	1496	2060	0	14430	
0	1904	-42174	-839.75	-6686.91	0	3	-0.16	-0.02	1.06	3.99	1496	2060	0	14430	0.07
0	892	-40017	-367.04	-2889.89	0	1	-0.07	-0.01	1.08	4.17	1496	2060	0	14430	0.03

##### Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ik	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.05	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0





N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.05	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.05	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0

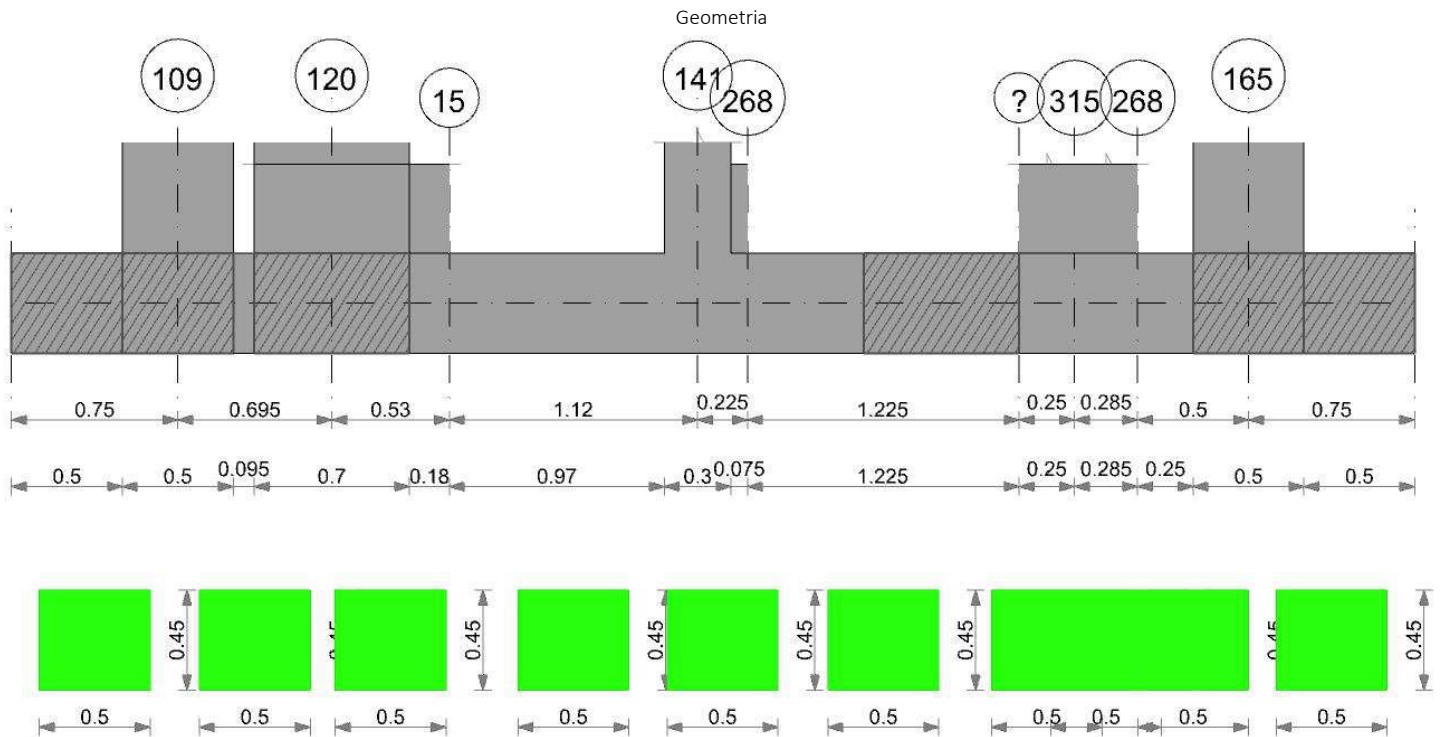
Verifiche geotecniche - Cedimenti assoluti e differenziali

Tipo	Assoluto				Differenziale				Relativo				Rapp. inflessione				Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Comb.	Sr adm	Sr	Nodo	Comb.	Ri adm	Ri	Comb.	
E	0.05	0.001	697	SLE RA 21	0.05	0	697	686	SLE RA 20	0.05	0	688	SLE RA 10	0.0033	0	SLE RA 1	Si
D	0.05	0	697	SLE RA 1	0.05	0	697	697	SLE RA 1	0.05	0	688	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	697	SLE RA 1	0.05	0	697	697	SLE RA 1	0.05	0	688	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0	SLE RA 20	0.19	0.01	688	686	SLE RA 21	0.19	0	688	SLE RA 10	0.1	0	697	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	697	688	SLE RA 1	0.19	0	697	SLE RA 1	0.1	0	688	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	697	688	SLE RA 1	0.19	0	697	SLE RA 1	0.1	0	688	SLE RA 1	Si

CORDOLO 8



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

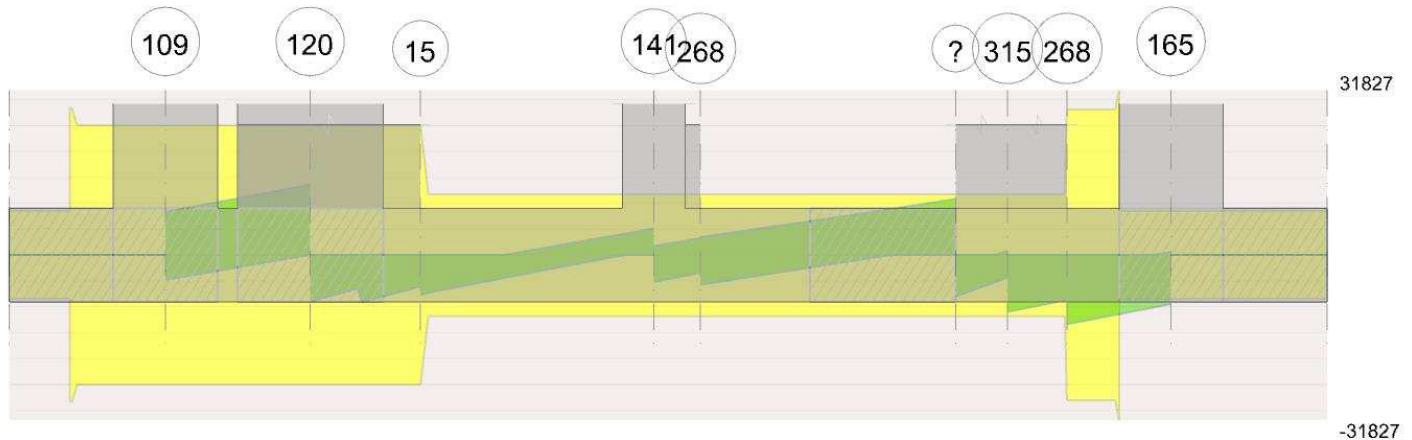
N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione





Diagramma verifica stato limite ultimo taglio



#### Output campate

Campata 2 tra i fili 109 - 120, sezione R 50x45, asta 566

#### Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000942	0.053	0.000628	0.053							-4373.6	SLU 84	-4040.8	-13662.92	0.147	3.38	Si
0.25	0.000942	0.053	0.000628	0.053							-3371.68	SLU 84	-3371.68	-13662.92	0.147	4.05	Si
0.35	0.000942	0.053	0.000628	0.053							-2814.67	SLU 84	-3371.68	-13662.92	0.147	4.05	Si
0.35	0.000942	0.053	0.000628	0.053							-2798.97	SLU 84	-2798.78	-13662.92	0.147	4.88	Si
0.7	0.000942	0.053	0.000628	0.053	89.78	SLU 57	89.78	9390.61	0.127	104.6							Si

#### Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000942	0.053	0.000628	0.053	304.18	SLV 5	304.18	8866.46	0.211	29.15	-6162.45	SLV 12	-5066.99	-13063.86	0.261	2.58	Si
0.25	0.000942	0.053	0.000628	0.053							-4066.29	SLV 8	-4066.29	-13063.86	0.261	3.21	Si
0.35	0.000942	0.053	0.000628	0.053							-3250.51	SLV 8	-4066.29	-13063.86	0.261	3.21	Si
0.35	0.000942	0.053	0.000628	0.053							-3228.59	SLV 8	-3228.59	-13063.86	0.261	4.05	Si
0.7	0.000942	0.053	0.000628	0.053	2356.62	SLV 16	877.79	8866.46	0.211	10.1	-2263.77	SLV 1	-2263.77	-13063.86	0.261	5.77	Si

#### Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000942	0.053	0.000628	0.053							-4351.95	SLD 12	-3749.47	-13063.86	0.261	3.48	Si
0.25	0.000942	0.053	0.000628	0.053							-3055.8	SLD 8	-3055.8	-13063.86	0.261	4.28	Si
0.35	0.000942	0.053	0.000628	0.053							-2487	SLD 8	-3055.8	-13063.86	0.261	4.28	Si
0.35	0.000942	0.053	0.000628	0.053							-2471.43	SLD 8	-2471.43	-13063.86	0.261	5.29	Si
0.7	0.000942	0.053	0.000628	0.053	1036.13	SLD 16	679.7	8866.46	0.211	13.04	-943.29	SLD 1	-943.29	-13063.86	0.261	13.85	Si

#### Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000179	0.000942	0	2659	SLU 84	2659	9278	63019	25025	25025	1	9.41	Si
0.25	0.0000179	0.000942	0	5353	SLU 84	5353	9278	63019	25025	25025	1	4.67	Si
0.35	0.0000179	0.000942	0	6378	SLU 84	6378	9278	63019	25025	25025	1	3.92	Si
0.35	0.0000179	0.000942	0	6405	SLU 84	6405	9278	63019	25025	25025	1	3.91	Si
0.7	0.0000179	0.000628	0	10174	SLU 84	10174	8105	63019	25025	25025	1	2.46	Si

#### Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000179	0.000942	0	8295	SLV 12	8295	9278	63019	25025	25025	1	3.02	Si
0	0.0000179	0.000628	0	-4763	SLV 5	-4763	-8105	-63019	-25025	-25025	1	5.25	Si
0.25	0.0000179	0.000942	0	10176	SLV 12	10176	9278	63019	25025	25025	1	2.46	Si



x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0.25	0.0000179	0.000942	0	-3030	SLV 5	-3030	-9278	-63019	-25025	-25025	1	8.26	Si
0.35	0.0000179	0.000942	0	10896	SLV 12	10896	9278	63019	25025	25025	1	2.3	Si
0.35	0.0000179	0.000942	0	-2375	SLV 5	-2375	-9278	-63019	-25025	-25025	1	10.54	Si
0.35	0.0000179	0.000942	0	10916	SLV 12	10916	9278	63019	25025	25025	1	2.29	Si
0.35	0.0000179	0.000942	0	-2358	SLV 5	-2358	-9278	-63019	-25025	-25025	1	10.61	Si
0.7	0.0000179	0.000628	0	13592	SLV 12	13592	8105	63019	25025	25025	1	1.84	Si

#### Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000179	0.000942	0	4632	SLD 12	4632	9278	63019	25025	25025	1	5.4	Si
0	0.0000179	0.000942	0	-1101	SLD 5	-1101	-9278	-63019	-25025	-25025	1	22.73	Si
0.25	0.0000179	0.000942	0	6472	SLD 12	6472	9278	63019	25025	25025	1	3.87	Si
0.35	0.0000179	0.000942	0	7174	SLD 12	7174	9278	63019	25025	25025	1	3.49	Si
0.35	0.0000179	0.000942	0	7192	SLD 12	7192	9278	63019	25025	25025	1	3.48	Si
0.7	0.0000179	0.000628	0	9785	SLD 12	9785	8105	63019	25025	25025	1	2.56	Si

#### Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	$\sigma_c$	$\sigma_{c\ lim.}$	$\sigma_f$	$\sigma_{f\ lim.}$	Mela	Comb.	Mdes	$\sigma_c$	$\sigma_{c\ lim.}$	$\sigma_{FRP}$	$\sigma_{FRP\ lim.}$	
0	-3238.54	21	-2990.48	151985	1494000	2214643	360000000	-2929.13	2	-2708.09	137633	1120500			Si
0.25	-2494.53	21	-2494.53	126779	1494000	1847358	360000000	-2261.45	2	-2261.45	114934	1120500			Si
0.35	-2081.87	21	-2494.53	126779	1494000	1847358	360000000	-1889.49	2	-2261.45	114934	1120500			Si
0.35	-2070.24	21	-2070.1	105209	1494000	1533045	360000000	-1879	2	-1878.88	95490	1120500			Si
0.7	64.49	15	64.49	3184	1494000	49161	360000000	46.42	2	46.42	2292	1120500			Si

#### Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

Campata 4 tra i fili 15 - 141, sezione R 50x45, asta 569

#### Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000942	0.053	0.000628	0.053	1611.43	SLU 84	1611.43	9390.61	0.127	5.83							Si
0.04	0.000942	0.053	0.000628	0.053	1332.3	SLU 84	1611.43	9390.61	0.127	5.83							Si
0.56	0.000942	0.053	0.000628	0.053							-972.15	SLU 83	-1077.97	-13662.92	0.147	12.67	Si
0.97	0.000942	0.053	0.000628	0.053							-675.37	SLU 77	-1030.62	-13662.92	0.147	13.26	Si
1.12	0.000942	0.053	0.000628	0.053							-156.25	SLU 27	-156.25	-13662.92	0.147	87.45	Si

#### Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000942	0.053	0.000628	0.053	2812.17	SLV 16	2812.17	8866.46	0.211	3.15	-657.81	SLV 1	-1076.93	-13063.86	0.261	12.13	Si
0.04	0.000942	0.053	0.000628	0.053	2541.84	SLV 16	2812.17	8866.46	0.211	3.15	-762.65	SLV 1	-1138.62	-13063.86	0.261	11.47	Si
0.56	0.000942	0.053	0.000628	0.053	179.89	SLV 12	596.15	8866.46	0.211	14.87	-1494.73	SLV 5	-1596.42	-13063.86	0.261	8.18	Si
0.97	0.000942	0.053	0.000628	0.053	651.94	SLV 7	651.94	8866.46	0.211	13.6	-1574.93	SLV 10	-1613.73	-13063.86	0.261	8.1	Si
1.12	0.000942	0.053	0.000628	0.053	1239.83	SLV 7	906.69	8866.46	0.211	9.78	-1399.57	SLV 10	-1399.57	-13063.86	0.261	9.33	Si

#### Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000942	0.053	0.000628	0.053	1820.65	SLD 16	1820.65	8866.46	0.211	4.87	333.72	SLD 1	-305.83	-13063.86	0.261	42.72	Si
0.04	0.000942	0.053	0.000628	0.053	1597.74	SLD 16	1820.65	8866.46	0.211	4.87	181.45	SLD 1	-411.49	-13063.86	0.261	31.75	Si
0.56	0.000942	0.053	0.000628	0.053	-289.05	SLD 12	54.36	8866.46	0.211	163.09	-1025.79	SLD 5	-1108.38	-13063.86	0.261	11.79	Si
0.97	0.000942	0.053	0.000628	0.053	28.3	SLD 7	28.3	8866.46	0.211	313.35	-951.28	SLD 10	-1099.39	-13063.86	0.261	11.88	Si
1.12	0.000942	0.053	0.000628	0.053	499.67	SLD 7	223.35	8866.46	0.211	39.7	-659.41	SLD 10	-659.41	-13063.86	0.261	19.81	Si

#### Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000179	0.000628	0	-7684	SLU 83	-7684	-8105	-63019	-25025	-25025	1	3.26	Si
0.04	0.0000084	0.000628	0	-7273	SLU 83	-7273	-8105	-63019	-11771	-11771	1	1.62	Si
0.56	0.0000084	0.000942	0	-1529	SLU 83	-1529	-9278	-63019	-11771	-11771	1	7.7	Si
0.97	0.0000084	0.000942	0	2985	SLU 84	2985	9278	63019	11771	11771	1	3.94	Si
1.12	0.0000084	0.000942	0	4639	SLU 84	4639	9278	63019	11771	11771	1	2.54	Si

#### Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000179	0.000628	0	-7552	SLV 14	-7552	-8105	-63019	-25025	-25025	1	3.31	Si
0.04	0.0000084	0.000628	0	-7257	SLV 14	-7257	-8105	-63019	-11771	-11771	1	1.62	Si
0.56	0.0000084	0.000942	0	1107	SLV 3	1107	9278	63019	11771	11771	1	10.63	Si
0.56	0.0000084	0.000942	0	-3175	SLV 14	-3175	-9278	-63019	-11771	-11771	1	3.71	Si
0.97	0.0000084	0.000628	0	4019	SLV 3	4019	8105	63019	11771	11771	1	2.93	Si
0.97	0.0000084	0.000942	0	-38	SLV 14	-38	-9278	-63019	-11771	-11771	1	305.84	Si
1.12	0.0000084	0.000628	0	5101	SLV 3	5101	8105	63019	11771	11771	1	2.31	Si

#### Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000179	0.000628	0	-6184	SLD 14	-6184	-8105	-63019	-25025	-25025	1	4.05	Si
0.04	0.0000084	0.000628	0	-5900	SLD 14	-5900	-8105	-63019	-11771	-11771	1	1.99	Si
0.56	0.0000084	0.000942	0	-1950	SLD 14	-1950	-9278	-63019	-11771	-11771	1	6.04	Si
0.97	0.0000084	0.000942	0	2860	SLD 3	2860	9278	63019	11771	11771	1	4.12	Si
1.12	0.0000084	0.000628	0	3958	SLD 3	3958	8105	63019	11771	11771	1	2.97	Si

#### Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	$\sigma c$	$\sigma c \text{ lim.}$	$\sigma f.$	$\sigma f \text{ lim.}$	Mela	Comb.	Mdes	$\sigma c$	$\sigma c \text{ lim.}$	$\sigma \text{ FRP}$	$\sigma \text{ FRP lim.}$	
0	1194.85	21	1194.85	58991	1494000	910889	36000000	1077.18	2	1077.18	53181	1120500			Si
0.56	-707.82	20	-785.18	39905	1494000	581474	36000000	-657.42	2	-729.61	37081	1120500			Si
0.97	-486.98	14	-749.87	38111	1494000	555327	36000000	-461.49	2	-698.52	35501	1120500			Si



x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	$\sigma c$	$\sigma c \text{ lim.}$	$\sigma f.$	$\sigma f \text{ lim.}$	Mela	Comb.	Mdes	$\sigma c$	$\sigma c \text{ lim.}$	$\sigma FRP$	$\sigma FRP \text{ lim.}$	
1.12	-93	6	-93	4726	1494000	68869	36000000	-87.28	1	-87.28	4436	1120500			Si

#### Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

Campata 6 tra i fili 268 - ?, sezione R 50x45, asta 571

#### Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000942	0.053	0.000628	0.053							-833.34	SLU 83	-962.86	-13662.92	0.147	14.19	Si
0.61	0.000942	0.053	0.000628	0.053	-179	SLU 5	394.06	9390.61	0.127	23.83	-300.55	SLU 81	-740.56	-13662.92	0.147	18.45	Si
1.1	0.000942	0.053	0.000628	0.053	2144.85	SLU 84	3035.83	9390.61	0.127	3.09							Si
1.23	0.000942	0.053	0.000628	0.053	3035.83	SLU 84	3035.83	9390.61	0.127	3.09							Si

#### Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon c2 = 0.002$ ,  $\epsilon yd = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000942	0.053	0.000628	0.053	1174.59	SLV 16	1174.59	8866.46	0.211	7.55	-2317.96	SLV 1	-2317.96	-13063.86	0.261	5.64	Si
0.61	0.000942	0.053	0.000628	0.053	787.12	SLV 7	1833.93	8866.46	0.211	4.83	-1209.34	SLV 10	-1340.94	-13063.86	0.261	9.74	Si
1.1	0.000942	0.053	0.000628	0.053	4116.24	SLV 3	5152.76	8866.46	0.211	1.72	-1263.36	SLV 14	-1364.11	-13063.86	0.261	9.58	Si
1.23	0.000942	0.053	0.000628	0.053	5152.76	SLV 3	5152.76	8866.46	0.211	1.72	-1103.4	SLV 14	-1311.15	-13063.86	0.261	9.96	Si

#### Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon c2 = 0.002$ ,  $\epsilon yd = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000942	0.053	0.000628	0.053	177.49	SLD 16	177.49	8866.46	0.211	49.96	-1320.85	SLD 1	-1320.85	-13063.86	0.261	9.89	Si
0.61	0.000942	0.053	0.000628	0.053	226.86	SLD 7	928.84	8866.46	0.211	9.55	-649.08	SLD 10	-865.81	-13063.86	0.261	15.09	Si
1.1	0.000942	0.053	0.000628	0.053	2579.44	SLD 3	3365.01	8866.46	0.211	2.63	273.44	SLD 14	-190.96	-13063.86	0.261	68.41	Si
1.23	0.000942	0.053	0.000628	0.053	3365.01	SLD 3	3365.01	8866.46	0.211	2.63							Si

#### Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotg $\theta$	coeff	Verifica
0	0.0000084	0.000942	0	-1710	SLU 84	-1710	-9278	-63019	-11771	-11771	1	6.88	Si
0.61	0.0000084	0.000942	0	3853	SLU 83	3853	9278	63019	11771	11771	1	3.06	Si
1.23	0.0000084	0.000628	0	9475	SLU 83	9475	8105	63019	11771	11771	1	1.24	Si

#### Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotg $\theta$	coeff	Verifica
0	0.0000084	0.000942	0	3455	SLV 1	3455	9278	63019	11771	11771	1	3.41	Si
0	0.0000084	0.000628	0	-5735	SLV 16	-5735	-8105	-63019	-11771	-11771	1	2.05	Si
0.61	0.0000084	0.000628	0	7025	SLV 1	7025	8105	63019	11771	11771	1	1.68	Si
0.61	0.0000084	0.000942	0	-1848	SLV 16	-1848	-9278	-63019	-11771	-11771	1	6.37	Si
1.23	0.0000084	0.000628	0	10792	SLV 3	10792	8105	63019	11771	11771	1	1.09	Si

#### Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotg $\theta$	coeff	Verifica
0	0.0000084	0.000942	0	824	SLD 1	824	9278	63019	11771	11771	1	14.28	Si
0	0.0000084	0.000628	0	-3104	SLD 16	-3104	-8105	-63019	-11771	-11771	1	3.79	Si
0.61	0.0000084	0.000942	0	4484	SLD 1	4484	9278	63019	11771	11771	1	2.62	Si
1.23	0.0000084	0.000628	0	8255	SLD 3	8255	8105	63019	11771	11771	1	1.43	Si

#### Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	$\sigma c$	$\sigma c \text{ lim.}$	$\sigma f.$	$\sigma f \text{ lim.}$	Mela	Comb.	Mdes	$\sigma c$	$\sigma c \text{ lim.}$	$\sigma FRP$	$\sigma FRP \text{ lim.}$	
0	-605.72	20	-702.21	35689	1494000	520035	36000000	-571.68	2	-657.99	33441	1120500			Si
0.61	-215.86	18	-539.6	27424	1494000	399611	36000000	-211.11	2	-508.03	25820	1120500			Si
1.23	2241.39	21	2241.39	110659	1494000	1708713	36000000	2024.68	2	2024.68	99960	1120500			Si

#### Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

Campata 9 tra i fili 268 - 165, sezione R 50x45, asta 574

#### Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000942	0.053	0.000628	0.053	1110.39	SLU 84	1110.39	9390.61	0.127	8.46	698.58	SLU 1	-893.95	-13662.92	0.147	15.28	Si
0.25	0	0	0	0	-985.58	SLU 1	266.54	0	0	0	-1597.2	SLU 84	-1598.56	0	0	0	No
0.25	0	0	0	0	-986.43	SLU 1	264.88	0	0	0	-1598.56	SLU 84	-1598.56	0	0	0	No
0.5	0	0	0	0							-3612.58	SLU 84	-2777.88	0	0	0	No

#### Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon c2 = 0.002$ ,  $\epsilon yd = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000942	0.053	0.000628	0.053	2163.08	SLV 3	2163.08	8866.46	0.211	4.1	-668.58	SLV 14	-2136.46	-13063.86	0.261	6.11	Si
0.25	0	0	0	0	632.29	SLV 2	1560.47	0	0	0	-2749.88	SLV 15	-2751.08	0	0	0	No
0.25	0	0	0	0	631.68	SLV 2	1559.43	0	0	0	-2751.08	SLV 15	-2751.08	0	0	0	No
0.5	0	0	0	0	124.3	SLV 6	74.43	0	0	0	-4924.33	SLV 11	-3821.51	0	0	0	No

#### Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon c2 = 0.002$ ,  $\epsilon yd = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000942	0.053	0.000628	0.053	1353.77	SLD 3	1353.77	8866.46	0.211	6.55	140.73	SLD 14	-1252.18	-13063.86	0.261	10.43	Si



x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.25	0	0	0	0	-333.48	SLD 2	771.7	0	0	0	-1784.11	SLD 15	-1785.14	0	0	0	No
0.25	0	0	0	0	-334.26	SLD 2	770.62	0	0	0	-1785.14	SLD 15	-1785.14	0	0	0	No
0.5	0	0	0	0							-3508.45	SLD 11	-2694.37	0	0	0	No

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000201	0	0	-12217	SLU 84	-12217	-7751	-63019	-28078	-28078	1	2.3	Si
0.25	0.0000201	0	0	-9436	SLU 84	-9436	-8455	-71432	-31827	-31827	1	3.37	Si
0.25	0.0000201	0	0	-9435	SLU 84	-9435	-8455	-71432	-31827	-31827	1	3.37	Si
0.27	0	0	0	-9252	SLU 84	-9252	-8455	-71432	0	-8455	1	0.91	Si
0.5	0	0	0	-6681	SLU 84	-6681	-8455	-71432	0	-8455	1	1.27	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000201	0	0	-13345	SLV 11	-13345	-7751	-63019	-28078	-28078	1	2.1	Si
0.25	0.0000201	0	0	-11385	SLV 11	-11385	-8455	-71432	-31827	-31827	1	2.8	Si
0.25	0.0000201	0	0	-11384	SLV 11	-11384	-8455	-71432	-31827	-31827	1	2.8	Si
0.27	0	0	0	-11256	SLV 11	-11256	-8455	-71432	0	-8455	1	0.75	Si
0.5	0	0	0	582	SLV 6	582	8455	71432	0	8455	1	14.53	Si
0.5	0	0	0	-9457	SLV 11	-9457	-8455	-71432	0	-8455	1	0.89	Si

Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000201	0	0	-10445	SLD 11	-10445	-7751	-63019	-28078	-28078	1	2.69	Si
0.25	0.0000201	0	0	-8537	SLD 11	-8537	-8455	-71432	-31827	-31827	1	3.73	Si
0.25	0.0000201	0	0	-8536	SLD 11	-8536	-8455	-71432	-31827	-31827	1	3.73	Si
0.27	0	0	0	-8410	SLD 11	-8410	-8455	-71432	0	-8455	1	1.01	Si
0.5	0	0	0	-6652	SLD 11	-6652	-8455	-71432	0	-8455	1	1.27	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	$\sigma$ c	$\sigma$ c lim.	$\sigma$ f.	$\sigma$ f lim.	Mela	Comb.	Mdes	$\sigma$ c	$\sigma$ c lim.	$\sigma$ FRP	$\sigma$ FRP lim.	
0	821.59	21	821.59	40562	1494000	626332	36000000	747.25	2	747.25	36892	1120500			Si
0.25	-1180.46	21	-1181.47	-70013	1494000	0	36000000	-1058.79	2	-1059.7	-62797	1120500			Si
0.25	-1181.47	21	-1181.47	-70013	1494000	0	36000000	-1059.7	2	-1059.7	-62797	1120500			Si
0.5	-2672.06	21	-2053.83	-121708	1494000	0	36000000	-2400.02	2	-1845.57	-109367	1120500			Si

Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 109 - 120, sezione R 50x45, asta 566

Campata 3 tra i fili 120 - 15, sezione R 50x45, aste 567, 568

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0009	1507	SLU 84	0.075	13958	5241	SLU 84	35038	Si
0.26	0.41	0.0009	1518	SLU 84	0.075	13958	5280	SLU 84	35038	Si
0.35	0.41	0.0009	1520	SLU 84	0.075	13958	5286	SLU 84	35038	Si
0.53	0.41	0.0009	1521	SLU 84	0.075	13958	5292	SLU 84	35038	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0009	1043	SLD 16	0.158	15508	3627	SLD 16	40294	Si
0.26	0.41	0.0009	1053	SLD 16	0.158	15508	3662	SLD 16	40294	Si
0.35	0.41	0.0009	1055	SLD 16	0.158	15508	3668	SLD 16	40294	Si
0.53	0.41	0.0009	1056	SLD 16	0.158	15508	3673	SLD 16	40294	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000895	1107	SLE RA 21	29215	1494000	362272	36000000	998	SLE QP 2	26335	1120500	Si
0.26	0.41	0.00000895	1115	SLE RA 21	29438	1494000	365034	36000000	1005	SLE QP 2	26532	1120500	Si
0.35	0.41	0.00000895	1116	SLE RA 21	29475	1494000	365493	36000000	1006	SLE QP 2	26564	1120500	Si
0.53	0.41	0.00000895	1118	SLE RA 21	29508	1494000	365905	36000000	1007	SLE QP 2	26591	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Campata 4 tra i fili 15 - 141, sezione R 50x45, asta 569

Campata 5 tra i fili 141 - 268, sezione R 50x45, asta 570

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	1527	SLU 84	0.036	6674	5311	SLU 84	16481	Si
0.11	0.41	0.0004	1529	SLU 84	0.036	6674	5319	SLU 84	16481	Si
0.15	0.41	0.0004	1530	SLU 84	0.036	6674	5322	SLU 84	16481	Si
0.22	0.41	0.0004	1532	SLU 84	0.036	6674	5328	SLU 84	16481	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	1062	SLD 11	0.109	7446	3695	SLD 11	18953	Si
0.11	0.41	0.0004	1064	SLD 11	0.109	7446	3700	SLD 11	18953	Si
0.15	0.41	0.0004	1064	SLD 11	0.109	7446	3702	SLD 11	18953	Si
0.22	0.41	0.0004	1065	SLD 11	0.109	7446	3706	SLD 11	18953	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000421	1122	SLE RA 21	31439	1494000	389838	36000000	1011	SLE QP 2	28321	1120500	Si
0.11	0.41	0.00000421	1124	SLE RA 21	31485	1494000	390420	36000000	1012	SLE QP 2	28364	1120500	Si



Rara									Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma c$	$\sigma c$ limite	$\sigma f$	$\sigma f$ limite	M	Comb	$\sigma c$	$\sigma c$ limite	
0.15	0.41	0.00000421	1124	SLE RA 21	31502	1494000	390628	36000000	1013	SLE QP 2	28379	1120500	Si
0.22	0.41	0.00000421	1126	SLE RA 21	31539	1494000	391082	36000000	1014	SLE QP 2	28413	1120500	Si

**Verifiche di apertura delle fessure**

La campata non presenta apertura delle fessure nella suola

Campata 6 tra i fili 268 - ?, sezione R 50x45, asta 571

Campata 7 tra i fili ? - 315, sezione R 50x45, asta 572

**Verifiche di resistenza della suola di fondazione**

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	1567	SLU 84	0.036	6674	5449	SLU 84	16481	Si
0.12	0.41	0.0004	1570	SLU 84	0.036	6674	5460	SLU 84	16481	Si
0.25	0.41	0.0004	1562	SLU 84	0.036	6674	5435	SLU 84	16481	Si

**Verifiche di resistenza della suola di fondazione in condizioni SLD**

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	1079	SLD 11	0.109	7446	3754	SLD 11	18953	Si
0.12	0.41	0.0004	1079	SLD 11	0.109	7446	3751	SLD 11	18953	Si
0.25	0.41	0.0004	1070	SLD 11	0.109	7446	3721	SLD 11	18953	Si

**Verifiche delle tensioni di esercizio**

Rara									Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma c$	$\sigma c$ limite	$\sigma f$	$\sigma f$ limite	M	Comb	$\sigma c$	$\sigma c$ limite	
0	0.41	0.00000421	1151	SLE RA 21	32258	1494000	399994	36000000	1038	SLE QP 2	29085	1120500	Si
0.12	0.41	0.00000421	1154	SLE RA 21	32322	1494000	400793	36000000	1040	SLE QP 2	29151	1120500	Si
0.25	0.41	0.00000421	1148	SLE RA 21	32168	1494000	398888	36000000	1036	SLE QP 2	29019	1120500	Si

**Verifiche di apertura delle fessure**

La campata non presenta apertura delle fessure nella suola

Campata 8 tra i fili 315 - 268, sezione R 50x45, asta 573

**Verifiche di resistenza della suola di fondazione**

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	1562	SLU 84	0.036	6674	5435	SLU 84	16481	Si
0.14	0.41	0.0004	1556	SLU 84	0.036	6674	5411	SLU 84	16481	Si
0.28	0.41	0.001	1547	SLU 84	0.085	15602	5381	SLU 84	39314	Si

**Verifiche di resistenza della suola di fondazione in condizioni SLD**

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	1070	SLD 11	0.109	7446	3721	SLD 11	18953	Si
0.14	0.41	0.0004	1063	SLD 12	0.109	7446	3696	SLD 12	18953	Si
0.28	0.41	0.001	1054	SLD 12	0.167	17333	3667	SLD 12	45211	Si

**Verifiche delle tensioni di esercizio**

Rara									Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma c$	$\sigma c$ limite	$\sigma f$	$\sigma f$ limite	M	Comb	$\sigma c$	$\sigma c$ limite	
0	0.41	0.00000421	1148	SLE RA 21	32168	1494000	398888	36000000	1036	SLE QP 2	29019	1120500	Si
0.14	0.41	0.00000421	1143	SLE RA 21	32027	1494000	397129	36000000	1031	SLE QP 2	28895	1120500	Si
0.28	0.41	0.00001004	1137	SLE RA 21	29614	1494000	367213	36000000	1026	SLE QP 2	26722	1120500	Si

**Verifiche di apertura delle fessure**

La campata non presenta apertura delle fessure nella suola

Campata 9 tra i fili 268 - 165, sezione R 50x45, asta 574

**Verifiche geotecniche**

**Verifiche geotecniche di scorrimento sul piano di posa**

Size X	Size Y	Comb.	Sis.	Cnd	Fx	Fy	Fz	IncX	IncY	Phi	Ad	RPI	yR	Rd	Ed	Rd/Ed	Verifica
4.83	1.1	SLU 32	ST	LT	-75	-228	-49857	0	0	19	0	0	1.1	15166	240	63.24	Si
4.83	1.1	SLV 1	SIS	LT	-6999	-1638	-40143	-10	-2	19	0	0	1.1	12211	7188	1.7	Si

**Verifiche geotecniche di capacità portante sul piano di posa**

Aste		Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
566,567,568,569,570,571,572,573,574		4.83	1.1	SLU 83	ST	BT	2.3	219274	62123	3.53	Si
566,567,568,569,570,571,572,573,574		4.83	1.1	SLV 11	SIS	BT	2.3	213833	45430	4.71	Si
566,567,568,569,570,571,572,573,574		4.83	1.1	SLD 14	SIS	BT	2.3	214016	42943	4.98	Si

**Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd**

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	-214	-62123	1273.74	783.89	0	0	0.01	0.02	1.06	4.8	1496	2060	0	14430	
0	4398	-45430	-986.22	1406.22	0	6	0.03	-0.02	1.06	4.77	1496	2060	0	14430	0.07
0	-610	-42943	1223.89	1293.18	0	-1	0.03	0.03	1.04	4.77	1496	2060	0	14430	0.03

**Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd**

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ik	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.04	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.27	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0

**Verifiche geotecniche - Cedimenti assoluti e differenziali**

Tipo	Assoluto				Differenziale				Relativo				Rapp. inflessione				Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Comb.	Sr adm	Sr	Nodo	Comb.	Ri adm	Ri	Comb.	
E	0.05	0.002	707	SLE RA 21	0.05	0	707	702	SLE RA 20	0.05	0	702	SLE RA 20	0.0033	0	SLE RA 20	Si
D	0.05	0	707	SLE RA 1	0.05	0	707	707	SLE RA 1	0.05	0	706	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	707	SLE RA 1	0.05	0	707	707	SLE RA 1	0.05	0	706	SLE RA 1	0.0033	0	SLE RA 1	Si

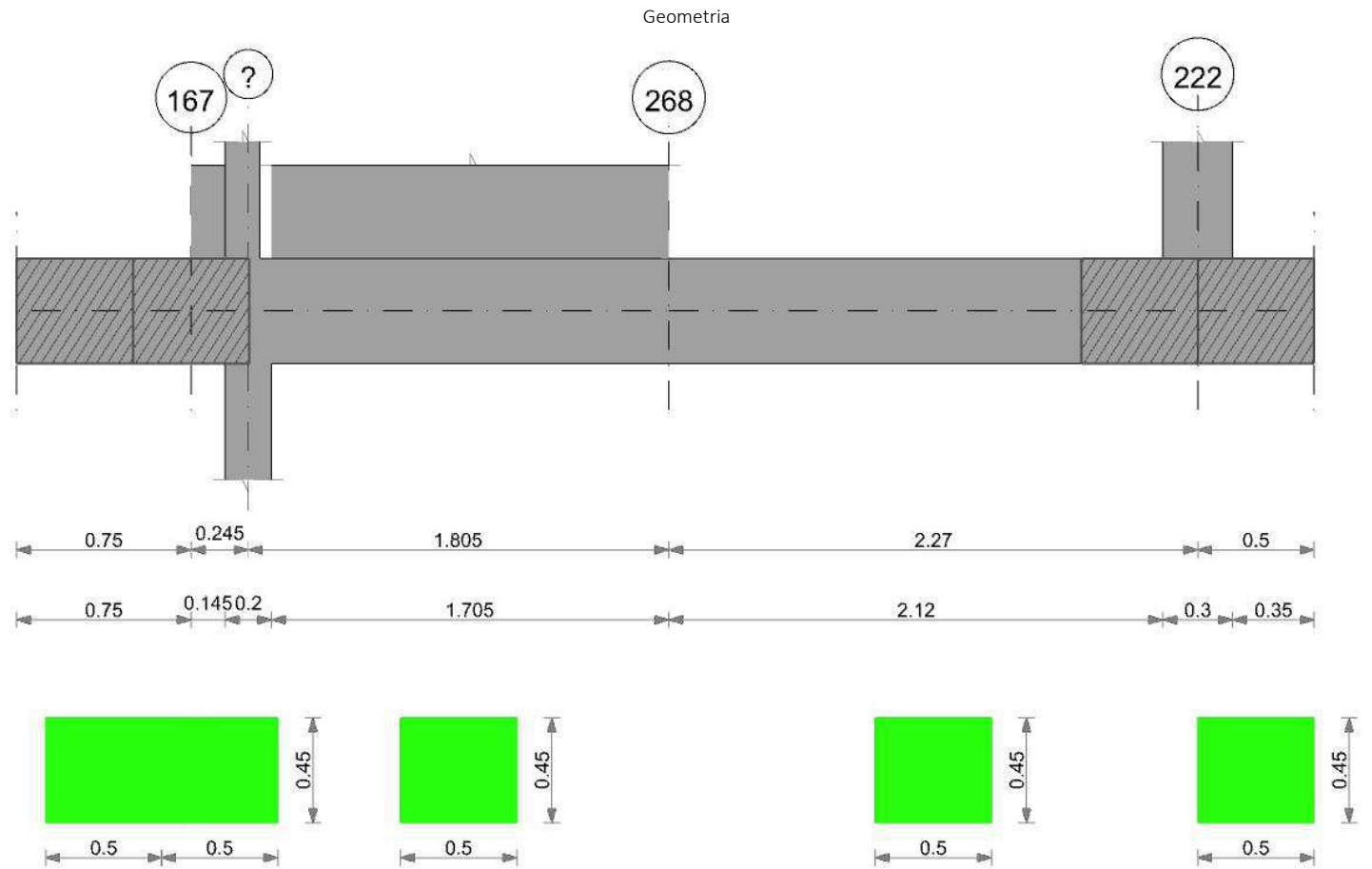
**Verifiche geotecniche - Rotazioni assolute e differenziali**

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0	SLE RA 21	0.19	0.02	704	703	SLE RA 21	0.19	0.01	704	SLE RA 20	0.1	0.01	703	SLE RA 20	Si
D	0.19	0	SLE RA 1	0.19	0	707	706	SLE RA 1	0.19	0	707	SLE RA 1	0.1	0	706	SLE RA 1	Si



Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
Z	0.19	0	SLE RA 1	0.19	0	707	706	SLE RA 1	0.19	0	707	SLE RA 1	0.1	0	706	SLE RA 1	Si

CORDOLO 9



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione



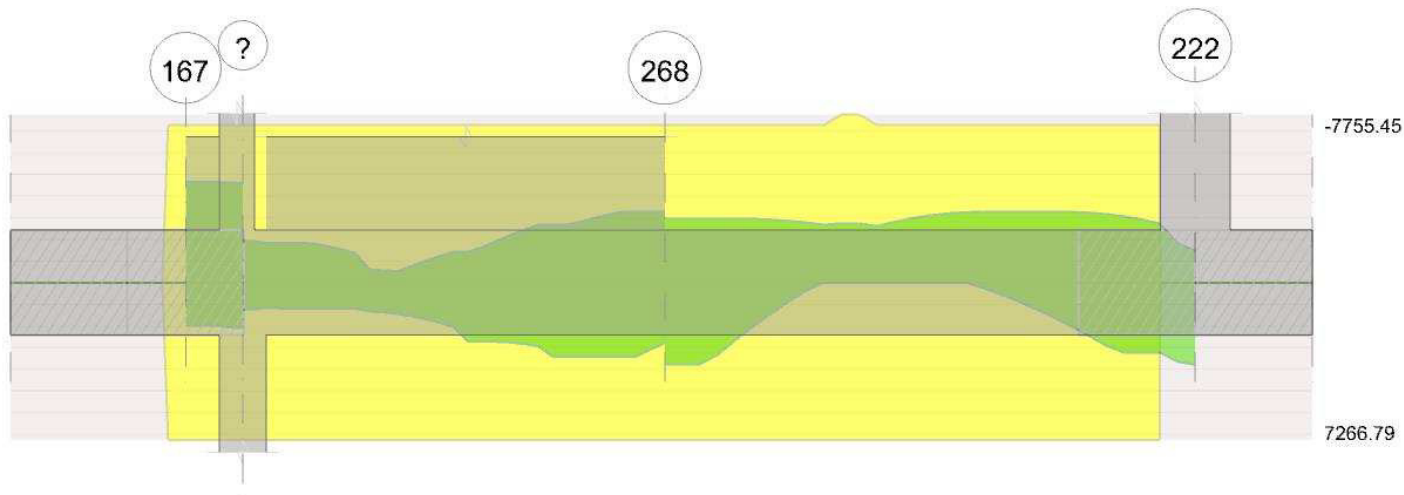
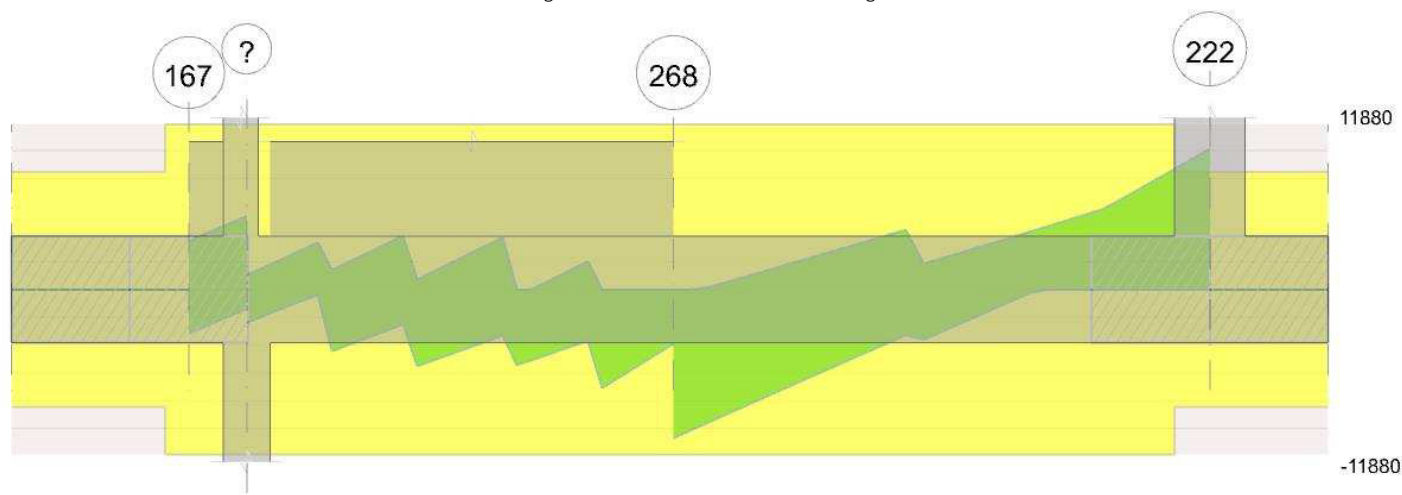


Diagramma verifica stato limite ultimo taglio



#### Output campate

Campata 4 tra i fili 268 - 222, sezione R 50x45, aste 605, 606

#### Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000509	0.052	0.000509	0.052	704.22	SLU 83	704.22	7755.45	0.113	11.01	367.93	SLU 2	-515.12	-7755.45	0.113	15.06	Si
1.14	0.000509	0.052	0.000509	0.052							-2746.59	SLU 83	-2766.92	-7755.45	0.113	2.8	Si
2.12	0	0	0	0	769.27	SLU 70	769.27	0	0	0	529.01	SLU 18	-514.94	0	0	0	No
2.27	0	0	0	0	1986.77	SLU 78	1395.98	0	0	0							No

#### Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000509	0.052	0.000509	0.052	3760.9	SLV 16	3760.9	7266.79	0.197	1.93	-2906.19	SLV 1	-2944.31	-7266.79	0.197	2.47	Si
1.14	0.000509	0.052	0.000509	0.052							-2738.03	SLV 14	-3098.14	-7266.79	0.197	2.35	Si
2.12	0	0	0	0	3233.79	SLV 3	3233.79	0	0	0	-2131.81	SLV 14	-2719.46	0	0	0	No
2.27	0	0	0	0	4272.31	SLV 3	3789	0	0	0	-1471.07	SLV 14	-1471.07	0	0	0	No

#### Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000509	0.052	0.000509	0.052	1852.75	SLD 16	1852.75	7266.79	0.197	3.92	-998.04	SLD 1	-1473.5	-7266.79	0.197	4.93	Si
1.14	0.000509	0.052	0.000509	0.052							-2220.88	SLD 14	-2357.29	-7266.79	0.197	3.08	Si
2.12	0	0	0	0	1699.47	SLD 3	1699.47	0	0	0	-597.49	SLD 14	-1331.5	0	0	0	No
2.27	0	0	0	0	2629.89	SLD 3	2189.45	0	0	0							No

#### Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcl	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000085	0.000509	0	-8475	SLU 83	-8475	-7764	-63178	-11880	-11880	1	1.4	Si
1.14	0.0000085	0.000509	0	-668	SLU 83	-668	-7764	-63178	-11880	-11880	1	17.77	Si
2.12	0.0000085	0	0	8660	SLU 84	8660	8455	71432	13432	13432	1	1.55	Si
2.27	0	0	0	10121	SLU 84	10121	8455	71432	0	8455	1	0.84	Si



#### Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000085	0.000509	0	-10690	SLV 14	-10690	-7764	-63178	-11880	-11880	1	1.11	Si
1.14	0.0000085	0.000509	0	2234	SLV 1	2234	7764	63178	11880	11880	1	5.32	Si
1.14	0.0000085	0.000509	0	-3036	SLV 16	-3036	-7764	-63178	-11880	-11880	1	3.91	Si
2.12	0.0000085	0	0	7403	SLV 3	7403	8455	71432	13432	13432	1	1.81	Si
2.27	0	0	0	8219	SLV 3	8219	8455	71432	0	8455	1	1.03	Si

#### Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000085	0.000509	0	-7798	SLD 14	-7798	-7764	-63178	-11880	-11880	1	1.52	Si
1.14	0.0000085	0.000509	0	725	SLD 1	725	7764	63178	11880	11880	1	16.38	Si
1.14	0.0000085	0.000509	0	-1527	SLD 16	-1527	-7764	-63178	-11880	-11880	1	7.78	Si
2.12	0.0000085	0	0	6533	SLD 3	6533	8455	71432	13432	13432	1	2.06	Si
2.27	0	0	0	7446	SLD 3	7446	8455	71432	0	8455	1	1.14	Si

#### Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	504.77	20	504.77	26699	1494000	400488	36000000	427.36	2	427.36	22604	1120500			Si
1.14	-2021.75	20	-2035.78	107680	1494000	1615195	36000000	-1831.66	2	-1842.04	97432	1120500			Si
2.12	580.52	7	580.52	34401	1494000	0	36000000	554.15	1	554.15	32839	1120500			Si
2.27	1482.69	15	1045.38	61948	1494000	0	36000000	1400.62	2	992.21	58798	1120500			Si

#### Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

#### Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 167 - ?, sezione R 50x45, asta 599

#### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	1500	SLU 84	0.036	6718	5218	SLU 84	16592	Si
0.12	0.41	0.0004	1497	SLU 84	0.036	6718	5205	SLU 84	16592	Si
0.15	0.41	0.0004	1496	SLU 84	0.036	6718	5203	SLU 84	16592	Si
0.25	0.41	0.0004	1494	SLU 84	0.036	6718	5197	SLU 84	16592	Si

#### Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	1026	SLD 16	0.109	7495	3569	SLD 16	19081	Si
0.12	0.41	0.0004	1027	SLD 16	0.109	7495	3573	SLD 16	19081	Si
0.15	0.41	0.0004	1028	SLD 16	0.109	7495	3574	SLD 16	19081	Si
0.25	0.41	0.0004	1030	SLD 16	0.109	7495	3582	SLD 16	19081	Si

#### Verifiche delle tensioni di esercizio

x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	Verifica
0	0.41	0.00000424	1102	SLE RA 21	30862	1494000	382685	36000000	995	SLE QP 2	27871	1120500	Si
0.12	0.41	0.00000424	1099	SLE RA 21	30787	1494000	381756	36000000	993	SLE QP 2	27806	1120500	Si
0.15	0.41	0.00000424	1099	SLE RA 21	30776	1494000	381623	36000000	992	SLE QP 2	27797	1120500	Si
0.25	0.41	0.00000424	1097	SLE RA 21	30737	1494000	381138	36000000	991	SLE QP 2	27762	1120500	Si

#### Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Campata 3 tra i fili ? - 268, sezione R 50x45, aste 600, 601, 602, 603, 604

#### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	1494	SLU 84	0.036	6718	5197	SLU 84	16592	Si
0.1	0.41	0.0004	1492	SLU 84	0.036	6718	5191	SLU 84	16592	Si
0.9	0.41	0.0004	1480	SLU 84	0.036	6718	5148	SLU 84	16592	Si
1.8	0.41	0.0004	1449	SLU 84	0.036	6718	5041	SLU 84	16592	Si

#### Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	1030	SLD 16	0.109	7495	3582	SLD 16	19081	Si
0.1	0.41	0.0004	1032	SLD 16	0.109	7495	3590	SLD 16	19081	Si
0.9	0.41	0.0004	1058	SLD 16	0.109	7495	3679	SLD 16	19081	Si
1.8	0.41	0.0004	1061	SLD 15	0.109	7495	3689	SLD 15	19081	Si

#### Verifiche delle tensioni di esercizio

x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	Verifica
0	0.41	0.00000424	1097	SLE RA 21	30737	1494000	381138	36000000	991	SLE QP 2	27762	1120500	Si
0.1	0.41	0.00000424	1096	SLE RA 21	30701	1494000	380687	36000000	990	SLE QP 2	27730	1120500	Si
0.9	0.41	0.00000424	1087	SLE RA 21	30442	1494000	377487	36000000	982	SLE QP 2	27498	1120500	Si
1.8	0.41	0.00000424	1064	SLE RA 21	29805	1494000	369580	36000000	962	SLE QP 2	26934	1120500	Si

#### Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Campata 4 tra i fili 268 - 222, sezione R 50x45, aste 605, 606

#### Verifiche geotecniche

#### Verifiche geotecniche di scorrimento sul piano di posa

Size X	Size Y	Comb.	Sis.	Cnd	Fx	Fy	Fz	IncX	IncY	Phi	Ad	RPI	yR	Rd	Ed	Rd/Ed	Verifica
4.32	1.1	SLU 27	ST	LT	-453	-277	-37538	-1	0	19	0	0	1.1	11418	531	21.49	Si
4.32	1.1	SLV 2	SIS	LT	-6065	-1806	-29945	-11	-3	19	0	0	1.1	9108	6329	1.44	Si

#### Verifiche geotecniche di capacità portante sul piano di posa





Aste	Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
599,600,601,602,603,604,605,606	4.32	1.1	SLU 83	ST	BT	2.3	198270	50905	3.89	Si
599,600,601,602,603,604,605,606	4.32	1.1	SLV 14	SIS	BT	2.3	191123	39480	4.84	Si
599,600,601,602,603,604,605,606	4.32	1.1	SLD 14	SIS	BT	2.3	196004	36903	5.31	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	-362	-50905	849.72	-547.75	0	0	-0.01	0.02	1.07	4.3	1496	2060	0	14430	0
0	-1024	-39480	676.4	3294.21	0	-1	0.08	0.02	1.07	4.15	1496	2060	0	14430	0.07
0	-582	-36903	628.01	1213.8	0	-1	0.03	0.02	1.07	4.25	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	lc	lg	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.05	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.05	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.05	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

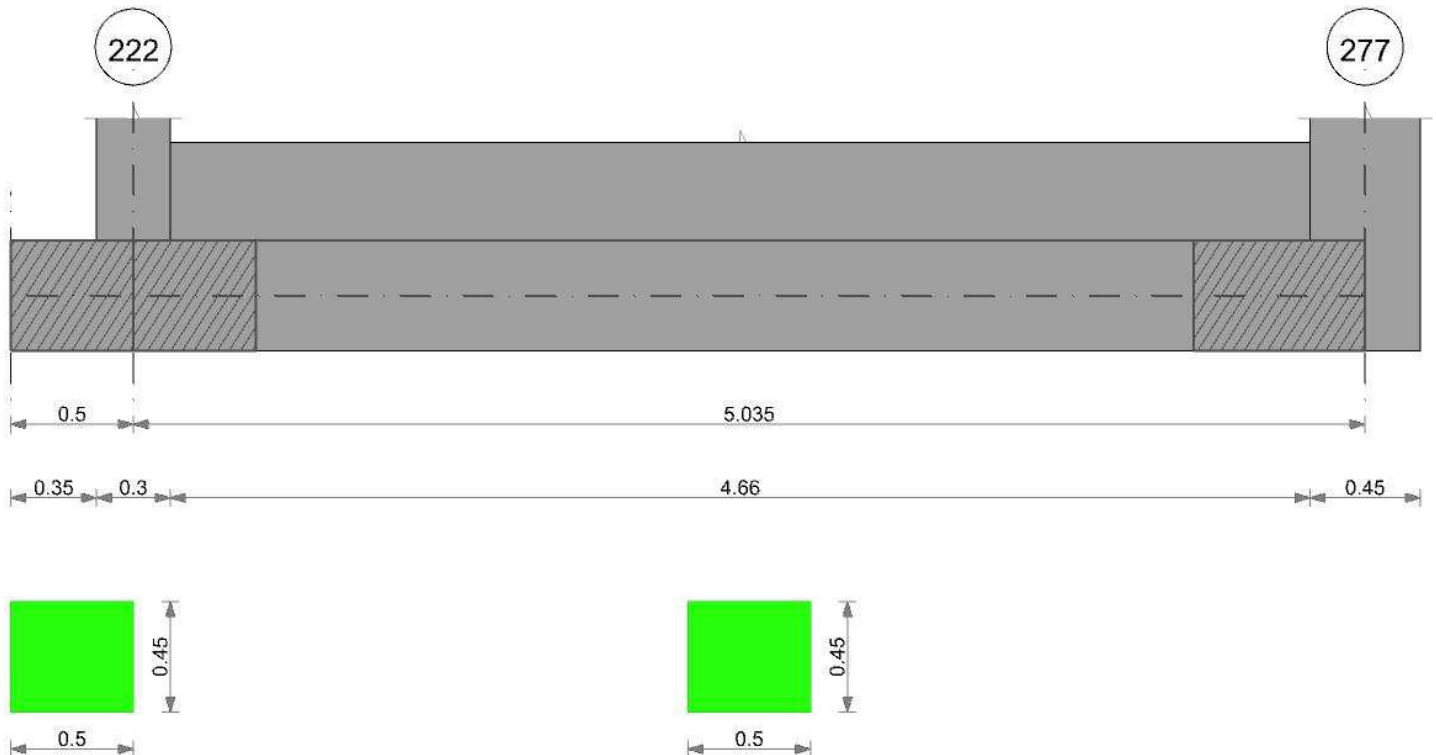
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	Ri adm	Ri	Comb.	
E	0.05	0.002	708	SLE RA 21	0.05	0	708	716	SLE RA 20	0.05	0	714	SLE RA 16	0.0033	0	SLE RA 16	Si
D	0.05	0	716	SLE RA 1	0.05	0	716	716	SLE RA 1	0.05	0	714	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	716	SLE RA 1	0.05	0	716	716	SLE RA 1	0.05	0	714	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Rotazioni assolute e distorsioni																	
Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.01	SLE RA 20	0.19	0.01	714	709	SLE RA 20	0.19	0	709	SLE RA 18	0.1	0.01	714	SLE RA 16	Si
D	0.19	0	SLE RA 1	0.19	0	716	714	SLE RA 1	0.19	0	716	SLE RA 1	0.1	0	714	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	716	714	SLE RA 1	0.19	0	716	SLE RA 1	0.1	0	714	SLE RA 1	Si

## CORDOLO 10

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

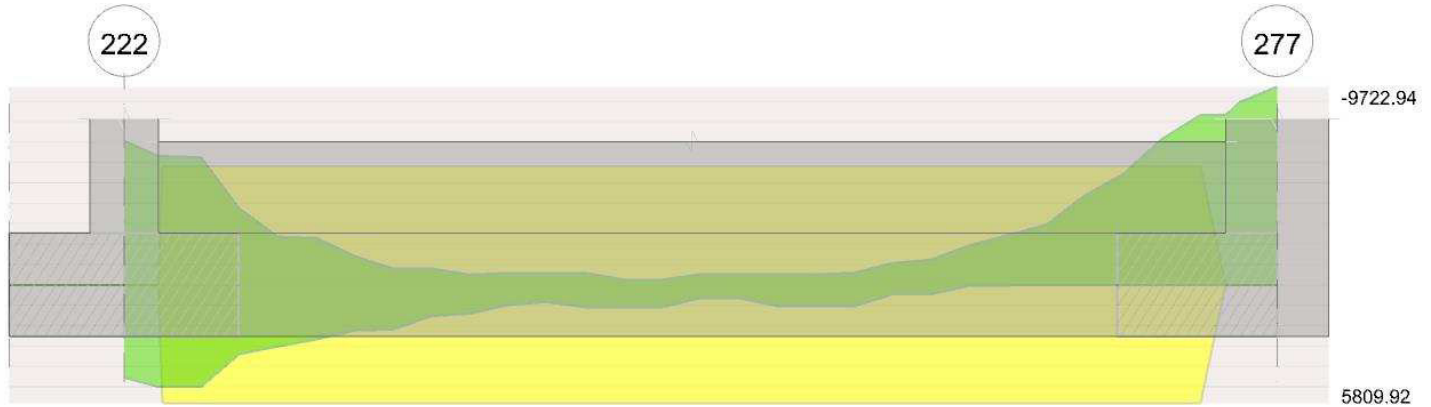
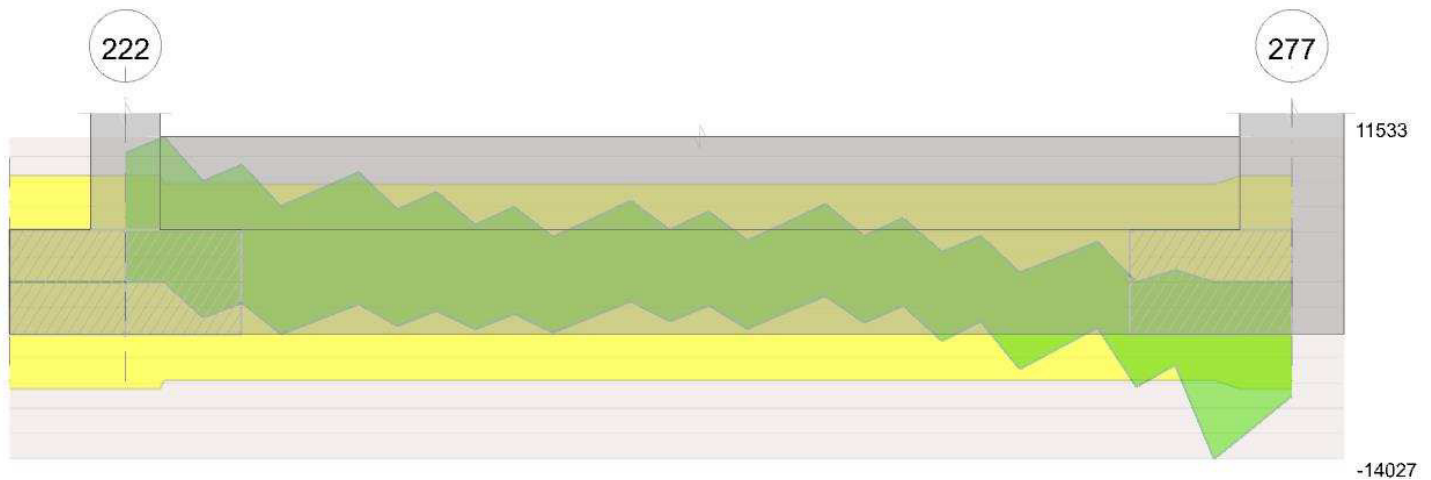


Diagramma verifica stato limite ultimo taglio



Output campate

#### Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 222 - 277, sezione R 50x45, aste 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653

#### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	1567	SLU 84	0.017	2681	5451	SLU 84	15877	Si
0.15	0.41	0.0002	1581	SLU 84	0.017	2681	5500	SLU 84	15877	Si
2.52	0.41	0.0002	1730	SLV 14	0.084	2609	6133	SLU 84	15877	Si
4.81	0.41	0.0002	2270	SLV 16	0.084	2609	7897	SLV 16	15877	Si
5.04	0.41	0.0002	2361	SLV 16	0.084	2609	8212	SLV 16	15877	Si

#### Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	1141	SLD 13	0.069	3019	3969	SLD 13	15877	Si
0.15	0.41	0.0002	1153	SLD 13	0.069	3019	4011	SLD 13	15877	Si
2.52	0.41	0.0002	1415	SLD 14	0.069	3019	4922	SLD 14	15877	Si
4.81	0.41	0.0002	1722	SLD 16	0.069	3019	5990	SLD 16	15877	Si
5.04	0.41	0.0002	1781	SLD 16	0.069	3019	6194	SLD 16	15877	Si

#### Verifiche delle tensioni di esercizio

Termine della tensione di esercizio			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma c$	$\sigma c$ limite	$\sigma f$	$\sigma f$ limite	M	Comb	$\sigma c$	$\sigma c$ limite	
0	0.41	0.00000168	1152	SLE RA 21	33359	1494000	413649	36000000	1044	SLE QP 2	30251	1120500	Si
0.15	0.41	0.00000168	1162	SLE RA 21	33655	1494000	417323	36000000	1054	SLE QP 2	30523	1120500	Si
2.52	0.41	0.00000168	1297	SLE RA 21	37579	1494000	465982	36000000	1180	SLE QP 2	34183	1120500	Si
4.81	0.41	0.00000168	1438	SLE RA 21	41639	1494000	516329	36000000	1313	SLE QP 2	38040	1120500	Si
5.04	0.41	0.00000168	1475	SLE RA 21	42729	1494000	529845	36000000	1348	SLE QP 2	39055	1120500	Si

#### Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

#### Verifiche geotecniche

##### Verifiche geotecniche di scorrimento sul piano di posa

Size X	Size Y	Comb.	Sis.	Cnd	Fx	Fy	Fz	IncX	IncY	Phi	Ad	RPI	yR	Rd	Ed	Rd/Ed	Verifica
5.26	1.1	SLU 27	ST	LT	-818	-310	-51448	-1	0	19	0	0	1.1	15649	874	17.9	Si
5.26	1.1	SLV 3	SIS	LT	-7629	1598	-29975	-14	3	19	0	0	1.1	9118	7795	1.17	Si

##### Verifiche geotecniche di capacità portante sul piano di posa

Aste					Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
641,642,643,644,645,646,647,648,649,650,651,652,653					5.26	1.1	SLU 83	ST	BT	2.3	241836	69422	3.48	Si
641,642,643,644,645,646,647,648,649,650,651,652,653					5.26	1.1	SLV 14	SIS	BT	2.3	218750	65666	3.33	Si



Aste	Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
641,642,643,644,645,646,647,648,649,650,651,652,653	5.26	1.1	SLD 14	SIS	BT	2.3	230193	55446	4.15	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	-468	-69422	231.22	4075.16	0	0	0.06	0	1.09	5.14	1496	2060	0	14430	
0	-2135	-65666	1008.5	15837.03	0	-2	0.24	0.02	1.07	4.78	1496	2060	0	14430	0.07
0	-1087	-55446	519.36	8415.65	0	-1	0.15	0.01	1.08	4.96	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.04	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0

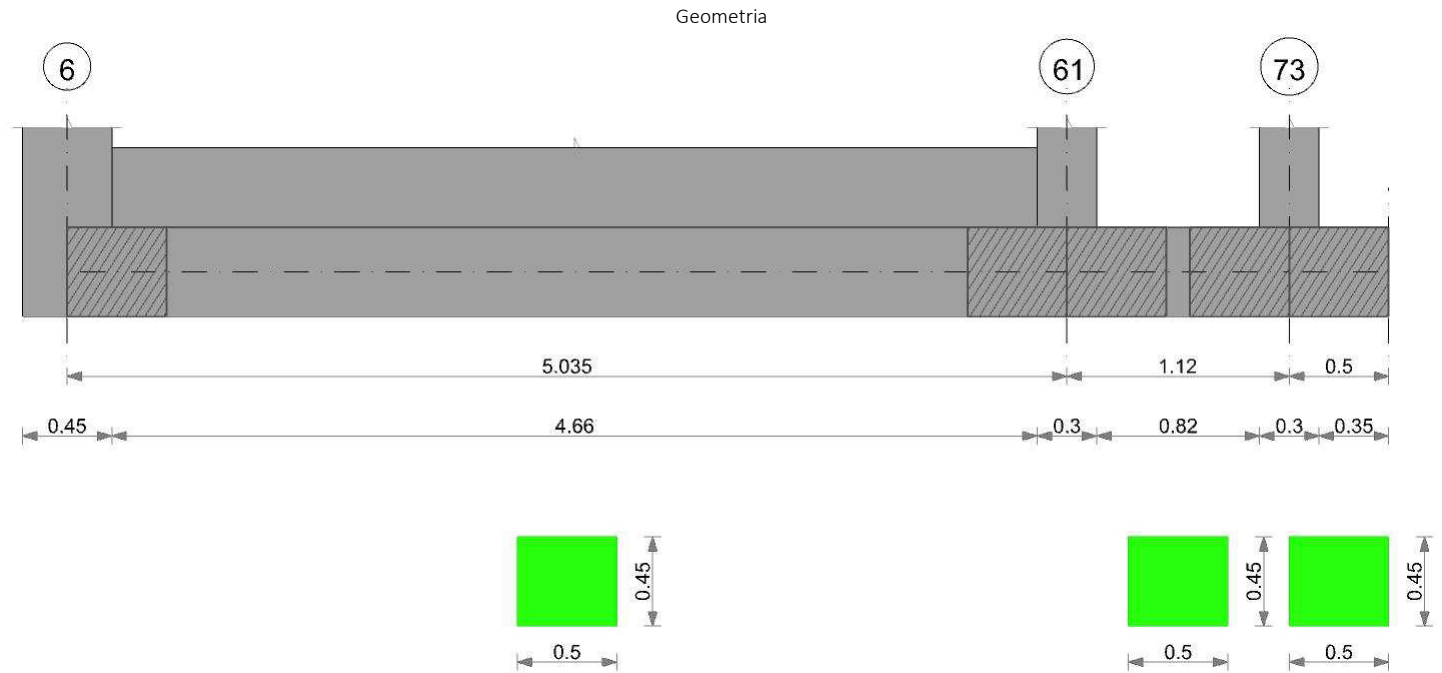
Verifiche geotecniche - Cedimenti assoluti e differenziali

Tipo	Assoluto				Differenziale				Relativo				Rapp. inflessione				Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Comb.	Sr adm	Sr	Nodo	Comb.	Ri adm	Ri	Comb.	
E	0.05	0.001	717	SLE RA 21	0.05	0.001	717	730	SLE RA 21	0.05	0	730	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	730	SLE RA 1	0.05	0	730	730	SLE RA 1	0.05	0	730	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	730	SLE RA 1	0.05	0	730	730	SLE RA 1	0.05	0	730	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.01	SLE RA 21	0.19	0.01	730	717	SLE RA 21	0.19	0	730	SLE RA 1	0.1	0	730	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	730	717	SLE RA 1	0.19	0	730	SLE RA 1	0.1	0	730	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	730	717	SLE RA 1	0.19	0	730	SLE RA 1	0.1	0	730	SLE RA 1	Si

## CORDOLO 11



### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

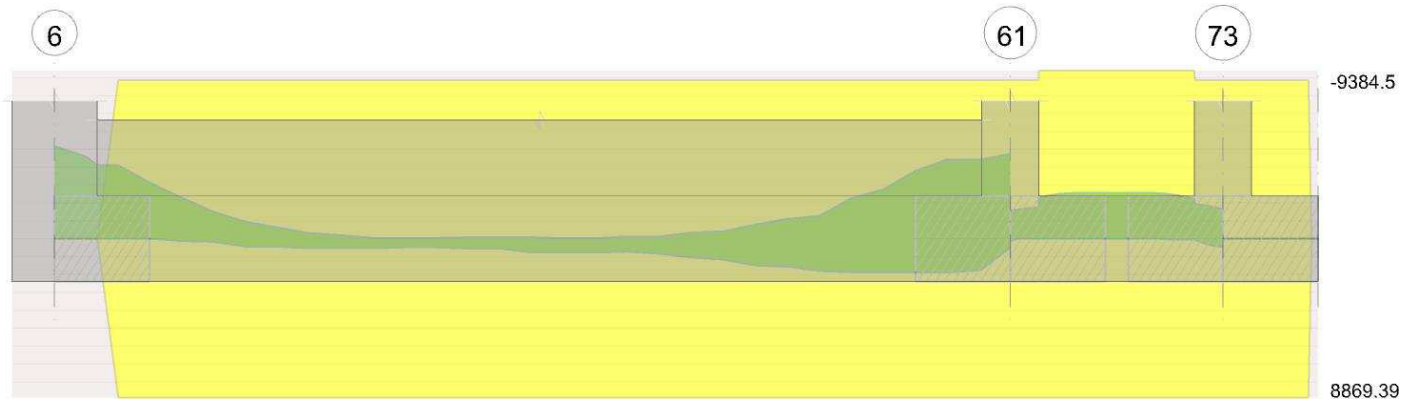


Diagramma verifica stato limite ultimo taglio



#### Output campate

Campata 2 tra i fili 61 - 73, sezione R 50x45, asta 746

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000628	0.053	0.000628	0.053							-1011.36	SLU 49	-1011.36	-9384.5	0.124	9.28	Si
0.15	0.000628	0.053	0.000628	0.053							-1696.91	SLU 84	-2302.34	-9384.5	0.124	4.08	Si
0.56	0.000628	0.053	0.000628	0.053							-2560.55	SLU 83	-2560.55	-9384.5	0.124	3.67	Si
0.6	0.000628	0.053	0.000628	0.053							-2546.46	SLU 83	-2560.55	-9384.5	0.124	3.67	Si
0.97	0.000628	0.053	0.000628	0.053							-1556.41	SLU 83	-2222.5	-9384.5	0.124	4.22	Si
1.12	0.000628	0.053	0.000628	0.053							-734.63	SLU 81	-734.63	-9384.5	0.124	12.77	Si

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2}=0.002$ ,  $\epsilon_{yd}=0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000628	0.053	0.000628	0.053	153.09	SLV 1	153.09	8869.39	0.216	57.94	-1557.96	SLV 16	-1557.96	-8869.39	0.216	5.69	Si
0.15	0.000628	0.053	0.000628	0.053							-1760.65	SLV 16	-1812.82	-8869.39	0.216	4.89	Si
0.56	0.000628	0.053	0.000628	0.053							-1963.24	SLV 6	-2087.86	-8869.39	0.216	4.25	Si
0.63	0.000628	0.053	0.000628	0.053							-2042.2	SLV 5	-2090.93	-8869.39	0.216	4.24	Si
0.97	0.000628	0.053	0.000628	0.053	35.02	SLV 4	35.02	8869.39	0.216	253.24	-1949.64	SLV 13	-2089.15	-8869.39	0.216	4.25	Si
1.12	0.000628	0.053	0.000628	0.053	929.24	SLV 4	439.32	8869.39	0.216	20.19	-1662.69	SLV 13	-1662.69	-8869.39	0.216	5.33	Si

Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2}=0.002$ ,  $\epsilon_{yd}=0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000628	0.053	0.000628	0.053							-1068.38	SLD 16	-1068.38	-8869.39	0.216	8.3	Si
0.15	0.000628	0.053	0.000628	0.053							-1442.44	SLD 16	-1675.95	-8869.39	0.216	5.29	Si
0.56	0.000628	0.053	0.000628	0.053							-1821	SLD 6	-1830.51	-8869.39	0.216	4.85	Si
0.6	0.000628	0.053	0.000628	0.053							-1830.42	SLD 5	-1830.51	-8869.39	0.216	4.85	Si
0.97	0.000628	0.053	0.000628	0.053							-1382.15	SLD 13	-1718.15	-8869.39	0.216	5.16	Si
1.12	0.000628	0.053	0.000628	0.053	188.03	SLD 4	188.03	8869.39	0.216	47.17	-921.49	SLD 13	-921.49	-8869.39	0.216	9.63	Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcl	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000108	0.000628	0	-6104	SLU 83	-6104	-8105	-63019	-15060	-15060	1	2.47	Si
0.15	0.0000108	0.000628	0	-4413	SLU 83	-4413	-8105	-63019	-15060	-15060	1	3.41	Si
0.56	0.0000108	0.000628	0	704	SLU 51	704	8105	63019	15060	15060	1	21.4	Si
0.56	0.0000108	0.000628	0	-65	SLU 39	-65	-8105	-63019	-15060	-15060	1	230.28	Si
0.97	0.0000108	0.000628	0	4755	SLU 78	4755	8105	63019	15060	15060	1	3.17	Si
1.12	0.0000108	0.000628	0	6416	SLU 84	6416	8105	63019	15060	15060	1	2.35	Si



#### Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000108	0.000628	0	-6015	SLV 1	-6015	-8105	-63019	-15060	-15060	1	2.5	Si
0.15	0.0000108	0.000628	0	-4739	SLV 1	-4739	-8105	-63019	-15060	-15060	1	3.18	Si
0.56	0.0000108	0.000628	0	2122	SLV 16	2122	8105	63019	15060	15060	1	7.1	Si
0.56	0.0000108	0.000628	0	-1513	SLV 1	-1513	-8105	-63019	-15060	-15060	1	9.95	Si
0.97	0.0000108	0.000628	0	5391	SLV 4	5391	8105	63019	15060	15060	1	2.79	Si
1.12	0.0000108	0.000628	0	6642	SLV 4	6642	8105	63019	15060	15060	1	2.27	Si

#### Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000108	0.000628	0	-4818	SLD 1	-4818	-8105	-63019	-15060	-15060	1	3.13	Si
0.15	0.0000108	0.000628	0	-3620	SLD 1	-3620	-8105	-63019	-15060	-15060	1	4.16	Si
0.56	0.0000108	0.000628	0	1083	SLD 16	1083	8105	63019	15060	15060	1	13.91	Si
0.56	0.0000108	0.000628	0	-473	SLD 1	-473	-8105	-63019	-15060	-15060	1	31.81	Si
0.97	0.0000108	0.000628	0	4238	SLD 4	4238	8105	63019	15060	15060	1	3.55	Si
1.12	0.0000108	0.000628	0	5417	SLD 4	5417	8105	63019	15060	15060	1	2.78	Si

#### Verifiche delle tensioni in esercizio

x	Rara								Quasi permanente						Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	-741.9	7	-741.9	38334	1494000	575012	36000000	-706.75	1	-706.75	36518	1120500			Si
0.15	-1280.13	21	-1712.74	88498	1494000	1327468	36000000	-1204.95	2	-1580.57	81669	1120500			Si
0.56	-1885.11	20	-1886.99	97502	1494000	1462525	36000000	-1711.78	2	-1717.93	88766	1120500			Si
0.97	-1112.34	20	-1617.63	83583	1494000	1253752	36000000	-957.31	2	-1440.03	74407	1120500			Si
1.12	-493.58	18	-493.58	25503	1494000	382551	36000000	-366.73	2	-366.73	18949	1120500			Si

#### Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

#### Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 6 - 61, sezione R 50x45, aste 759, 758, 757, 756, 755, 754, 753, 752, 751, 750, 749, 748, 747

#### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	2292	SLV 4	0.085	2672	7973	SLV 4	15877	Si
0.23	0.41	0.0002	2232	SLV 4	0.085	2672	7763	SLV 4	15877	Si
2.52	0.41	0.0002	1775	SLV 2	0.085	2672	6173	SLV 2	15877	Si
4.88	0.41	0.0002	1578	SLU 84	0.017	2747	5488	SLU 84	15877	Si
5.03	0.41	0.0005	1568	SLU 84	0.045	8504	5453	SLU 84	21085	Si

#### Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	1717	SLD 4	0.07	3092	5972	SLD 4	15877	Si
0.23	0.41	0.0002	1682	SLD 4	0.07	3092	5849	SLD 4	15877	Si
2.52	0.41	0.0002	1436	SLD 2	0.07	3092	4995	SLD 2	15877	Si
4.88	0.41	0.0002	1172	SLD 4	0.07	3092	4078	SLD 4	15877	Si
5.03	0.41	0.0005	1162	SLD 4	0.123	9470	4043	SLD 4	24248	Si

#### Verifiche delle tensioni di esercizio

x	d	Af	Rara						Quasi permanente				Verifica
			M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000172	1411	SLE RA 21	40847	1494000	506506	36000000	1288	SLE QP 2	37278	1120500	Si
0.23	0.41	0.00000172	1393	SLE RA 21	40339	1494000	500201	36000000	1271	SLE QP 2	36797	1120500	Si
2.52	0.41	0.00000172	1303	SLE RA 21	37707	1494000	467571	36000000	1183	SLE QP 2	34252	1120500	Si
4.88	0.41	0.00000172	1159	SLE RA 21	33556	1494000	416091	36000000	1050	SLE QP 2	30387	1120500	Si
5.03	0.41	0.00000539	1152	SLE RA 21	31786	1494000	394144	36000000	1043	SLE QP 2	28782	1120500	Si

#### Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

#### Campata 2 tra i fili 61 - 73, sezione R 50x45, asta 746

#### Verifiche geotecniche

#### Verifiche geotecniche di scorrimento sul piano di posa

Size X	Size Y	Comb.	Sis.	Cnd	Fx	Fy	Fz	IncX	IncY	Phi	Ad	RPI	yR	Rd	Ed	Rd/Ed	Verifica
6.38	1.1	SLU 47	ST	LT	926	420	-71763	1	0	19	0	0	1.1	21829	1016	21.47	Si
6.38	1.1	SLV 13	SIS	LT	9923	-3319	-38259	15	-5	19	0	0	1.1	11637	10464	1.11	Si

#### Verifiche geotecniche di capacità portante sul piano di posa

Aste				Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
759,758,757,756,755,754,753,752,751,750,749,748,747,746				6.38	1.1	SLU 84	ST	BT	2.3	290991	87084	3.34	Si
759,758,757,756,755,754,753,752,751,750,749,748,747,746				6.38	1.1	SLV 4	SIS	BT	2.3	257108	81451	3.16	Si
759,758,757,756,755,754,753,752,751,750,749,748,747,746				6.38	1.1	SLD 4	SIS	BT	2.3	273774	69083	3.96	Si

#### Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	281	-87084	-121.97	-8083.98	0	0	-0.09	0	1.1	6.19	1496	2060	0	14430	
0	3753	-81451	-1645.59	-26786.56	0	3	-0.33	-0.02	1.06	5.72	1496	2060	0	14430	0.07
0	1754	-69083	-766.25	-14677.1	0	1	-0.21	-0.01	1.08	5.96	1496	2060	0	14430	0.03

#### Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.04	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.27	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0

#### Verifiche geotecniche - Cedimenti assoluti e differenziali

Tipo	Assoluto				Differenziale				Relativo				Rapp. inflessione				Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Comb.	Sr adm	Sr	Nodo	Comb.	Ri adm	Ri	Comb.	
E	0.05	0.001	551	SLE RA 21	0.05	0.001	551	537	SLE RA 21	0.05	0	550	SLE RA 21	0.0033	0	SLE RA 1	Si

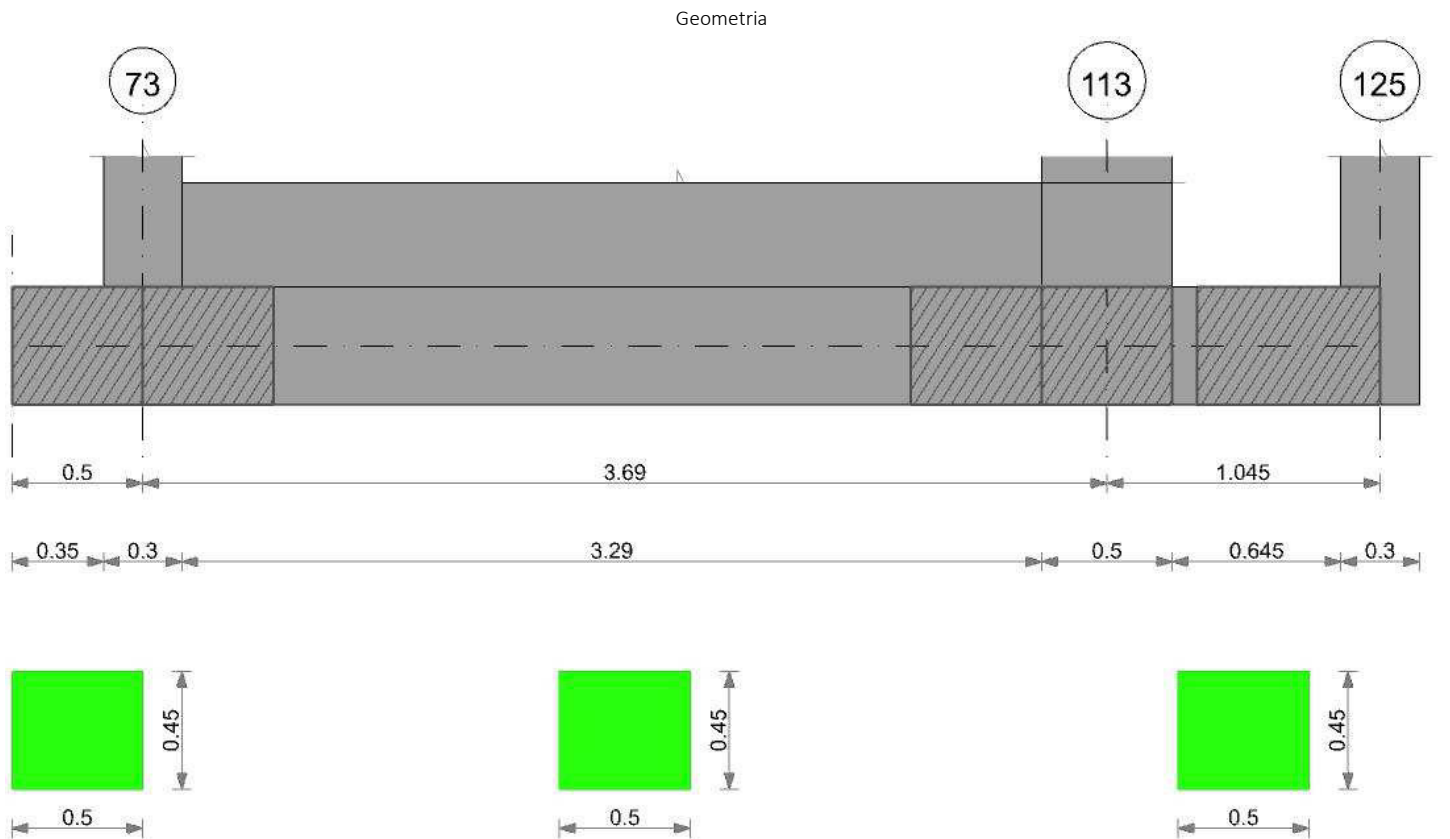


Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Comb.	Sr adm	Sr	Nodo	Comb.	Ri adm	Ri	Comb.	
D	0.05	0	551	SLE RA 1	0.05	0	551	551	SLE RA 1	0.05	0	550	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	551	SLE RA 1	0.05	0	551	551	SLE RA 1	0.05	0	550	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.01	SLE RA 21	0.19	0.01	550	537	SLE RA 21	0.19	0.01	550	SLE RA 21	0.1	0	551	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	551	550	SLE RA 1	0.19	0	551	SLE RA 1	0.1	0	550	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	551	550	SLE RA 1	0.19	0	551	SLE RA 1	0.1	0	550	SLE RA 1	Si

CORDOLO 12



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000  
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

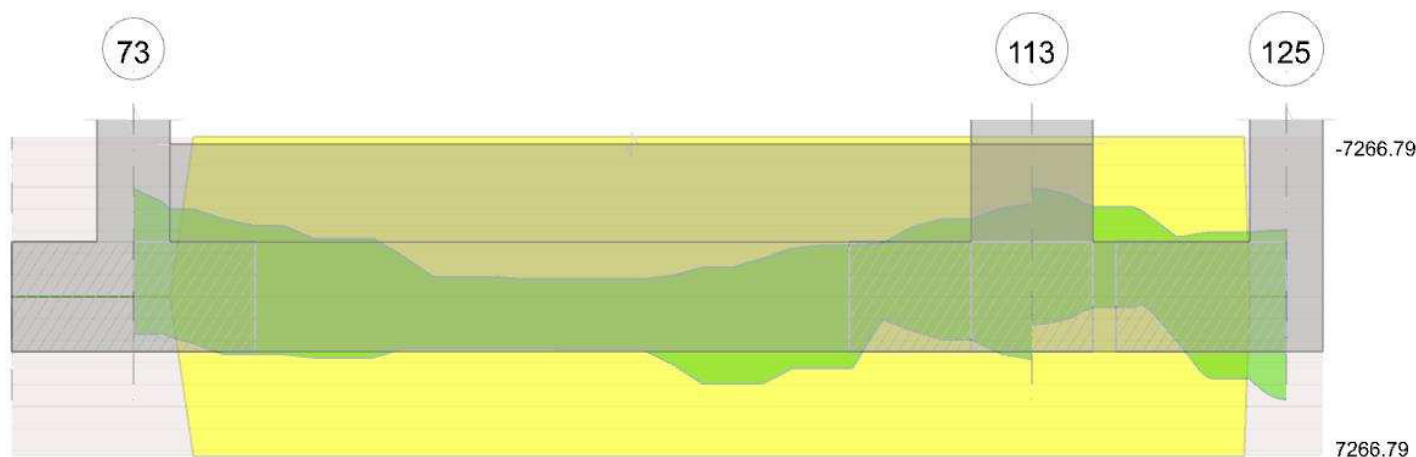
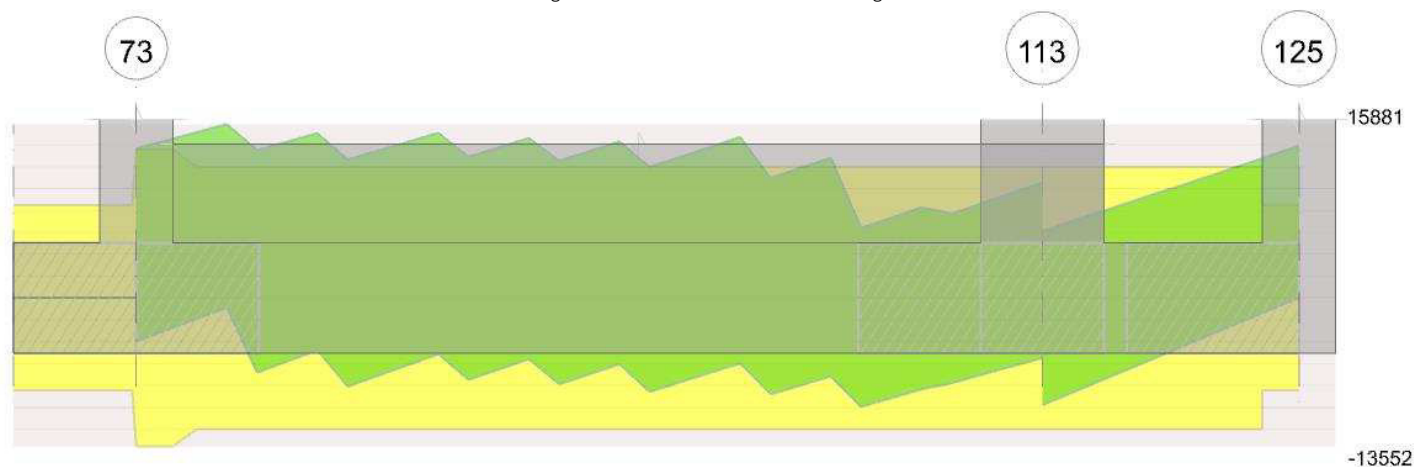


Diagramma verifica stato limite ultimo taglio



#### Output campate

Campata 3 tra i fili 113 - 125, sezione R 50x45, asta 725

#### Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000509	0.052	0.000509	0.052							-2338.81	SLU 83	-2338.81	-7755.45	0.113	3.32	Si
0.25	0.000509	0.052	0.000509	0.052							-2666.52	SLU 83	-2666.52	-7755.45	0.113	2.91	Si
0.52	0.000509	0.052	0.000509	0.052							-2015.93	SLU 84	-2563.79	-7755.45	0.113	3.02	Si
0.9	0	0	0	0	624.93	SLU 83	624.93	0	0	0	347.17	SLU 2	-907.14	0	0	0	No
1.05	0	0	0	0	2251.52	SLU 83	1262.52	0	0	0							No

#### Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000509	0.052	0.000509	0.052	2861.25	SLV 16	1251.86	7266.79	0.197	5.8	-5990.64	SLV 1	-4895.75	-7266.79	0.197	1.48	Si
0.25	0.000509	0.052	0.000509	0.052	485.77	SLV 14	485.77	7266.79	0.197	14.96	-4065.04	SLV 3	-4065.04	-7266.79	0.197	1.79	Si
0.52	0.000509	0.052	0.000509	0.052	-485.05	SLV 9	1062.47	7266.79	0.197	6.84	-2220.58	SLV 8	-3300.73	-7266.79	0.197	2.2	Si
0.9	0	0	0	0	3719.58	SLV 1	3719.58	0	0	0	-2905.43	SLV 16	-2905.43	0	0	0	No
1.05	0	0	0	0	6010.01	SLV 1	4675.88	0	0	0	-3018.09	SLV 16	-3008.34	0	0	0	No

#### Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000509	0.052	0.000509	0.052	326.31	SLD 16	326.31	7266.79	0.197	22.27	-3455.69	SLD 1	-3134.41	-7266.79	0.197	2.32	Si
0.25	0.000509	0.052	0.000509	0.052							-2762.29	SLD 3	-2762.29	-7266.79	0.197	2.63	Si
0.52	0.000509	0.052	0.000509	0.052	-971.02	SLD 9	71.91	7266.79	0.197	101.06	-1734.61	SLD 8	-2397.57	-7266.79	0.197	3.03	Si
0.9	0	0	0	0	1826.4	SLD 1	1826.4	0	0	0	-1012.24	SLD 16	-1400.18	0	0	0	No
1.05	0	0	0	0	3429.23	SLD 1	2479.62	0	0	0	-437.31	SLD 16	-437.31	0	0	0	No

#### Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcl	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000086	0.000509	0	-2731	SLU 84	-2731	-7764	-63178	-11986	-11986	1	4.39	Si
0.25	0.0000086	0.000509	0	466	SLU 62	466	7764	63178	11986	11986	1	25.71	Si
0.52	0.0000086	0	0	3810	SLU 83	3810	7764	63178	11986	11986	1	3.15	Si
0.9	0.0000086	0	0	8501	SLU 83	8501	8455	71432	13552	13552	1	1.59	Si
1.05	0	0	0	10409	SLU 83	10409	8455	71432	0	8455	1	0.81	Si





#### Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000086	0.000509	0	6120	SLV 1	6120	7764	63178	11986	11986	1	1.96	Si
0	0.0000086	0.000509	0	-9784	SLV 16	-9784	-7764	-63178	-11986	-11986	1	1.23	Si
0.25	0.0000086	0.000509	0	7953	SLV 1	7953	7764	63178	11986	11986	1	1.51	Si
0.25	0.0000086	0.000509	0	-7436	SLV 16	-7436	-7764	-63178	-11986	-11986	1	1.61	Si
0.52	0.0000086	0	0	9960	SLV 1	9960	7764	63178	11986	11986	1	1.2	Si
0.52	0.0000086	0	0	-4879	SLV 16	-4879	-7764	-63178	-11986	-11986	1	2.46	Si
0.9	0.0000086	0	0	12751	SLV 1	12751	8455	71432	13552	13552	1	1.06	Si
0.9	0.0000086	0	0	-1372	SLV 16	-1372	-8455	-71432	-13552	-13552	1	9.88	Si
1.05	0	0	0	13887	SLV 1	13887	8455	71432	0	8455	1	0.61	Si

#### Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000086	0.000509	0	1570	SLD 1	1570	7764	63178	11986	11986	1	7.63	Si
0	0.0000086	0.000509	0	-5234	SLD 16	-5234	-7764	-63178	-11986	-11986	1	2.29	Si
0.25	0.0000086	0.000509	0	3551	SLD 1	3551	7764	63178	11986	11986	1	3.38	Si
0.25	0.0000086	0.000509	0	-3034	SLD 16	-3034	-7764	-63178	-11986	-11986	1	3.95	Si
0.52	0.0000086	0	0	5715	SLD 1	5715	7764	63178	11986	11986	1	2.1	Si
0.52	0.0000086	0	0	-633	SLD 16	-633	-7764	-63178	-11986	-11986	1	18.92	Si
0.9	0.0000086	0	0	8710	SLD 1	8710	8455	71432	13552	13552	1	1.56	Si
1.05	0	0	0	9928	SLD 1	9928	8455	71432	0	8455	1	0.85	Si

#### Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	-1736.61	20	-1736.61	91855	1494000	1377827	36000000	-1564.69	2	-1564.69	82762	1120500			Si
0.25	-1974.46	20	-1974.46	104436	1494000	1566542	36000000	-1789.63	2	-1789.63	94660	1120500			Si
0.52	-1489.94	21	-1897.09	100344	1494000	1505155	36000000	-1352.82	2	-1720.65	91011	1120500			Si
0.9	462.88	20	462.88	27430	1494000	0	36000000	407.08	2	407.08	24123	1120500			Si
1.05	1664.92	20	934.14	55357	1494000	0	36000000	1495.96	2	833.77	49409	1120500			Si

#### Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

#### Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 73 - 113, sezione R 50x45, aste 734, 733, 732, 731, 730, 729, 728, 727, 726

#### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	1544	SLU 84	0.036	6777	5369	SLU 84	16740	Si
0.15	0.41	0.0004	1547	SLU 84	0.036	6777	5380	SLU 84	16740	Si
1.84	0.41	0.0004	1571	SLU 84	0.036	6777	5465	SLU 84	16740	Si
3.44	0.41	0.0004	1507	SLU 84	0.036	6777	5240	SLU 84	16740	Si
3.69	0.41	0.0004	1500	SLU 84	0.036	6777	5219	SLU 84	16740	Si

#### Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	1125	SLD 4	0.11	7560	3912	SLD 4	19251	Si
0.15	0.41	0.0004	1124	SLD 4	0.11	7560	3909	SLD 4	19251	Si
1.84	0.41	0.0004	1068	SLD 8	0.11	7560	3714	SLD 8	19251	Si
3.44	0.41	0.0004	1051	SLD 16	0.11	7560	3654	SLD 16	19251	Si
3.69	0.41	0.0004	1051	SLD 16	0.11	7560	3657	SLD 16	19251	Si

#### Verifiche delle tensioni di esercizio

x	d	Af	Rara						Quasi permanente				Verifica
			M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000428	1134	SLE RA 21	31751	1494000	393715	36000000	1027	SLE QP 2	28746	1120500	Si
0.15	0.41	0.00000428	1137	SLE RA 21	31817	1494000	394530	36000000	1029	SLE QP 2	28804	1120500	Si
1.84	0.41	0.00000428	1154	SLE RA 21	32309	1494000	400626	36000000	1043	SLE QP 2	29203	1120500	Si
3.44	0.41	0.00000428	1107	SLE RA 21	30978	1494000	384123	36000000	998	SLE QP 2	27949	1120500	Si
3.69	0.41	0.00000428	1102	SLE RA 21	30853	1494000	382571	36000000	994	SLE QP 2	27829	1120500	Si

#### Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Campata 3 tra i fili 113 - 125, sezione R 50x45, asta 725

#### Verifiche geotecniche

#### Verifiche geotecniche di scorrimento sul piano di posa

Size X	Size Y	Comb.	Sis.	Cnd	Fx	Fy	Fz	IncX	IncY	Phi	Ad	RPI	yR	Rd	Ed	Rd/Ed	Verifica
4.89	1.1	SLU 27	ST	LT	224	-117	-45197	0	0	19	0	0	1.1	13748	253	54.34	Si
4.89	1.1	SLV 15	SIS	LT	7454	800	-42374	10	1	19	0	0	1.1	12889	7497	1.72	Si

#### Verifiche geotecniche di capacità portante sul piano di posa

Aste				Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
734,733,732,731,730,729,728,727,726,725				4.89	1.1	SLU 84	ST	BT	2.3	230621	61384	3.76	Si
734,733,732,731,730,729,728,727,726,725				4.89	1.1	SLV 8	SIS	BT	2.3	205238	43594	4.71	Si
734,733,732,731,730,729,728,727,726,725				4.89	1.1	SLD 8	SIS	BT	2.3	219219	42751	5.13	Si

#### Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	-112	-61384	-4.29	-784.35	0	0	-0.01	0	1.1	4.86	1496	2060	0	14430	
0	4128	-43594	-1830.25	-2647.34	0	5	-0.06	-0.04	1.02	4.76	1496	2060	0	14430	0.07
0	1792	-42751	-811.05	-1455.36	0	2	-0.03	-0.02	1.06	4.82	1496	2060	0	14430	0.03

#### Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.05	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.27	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0





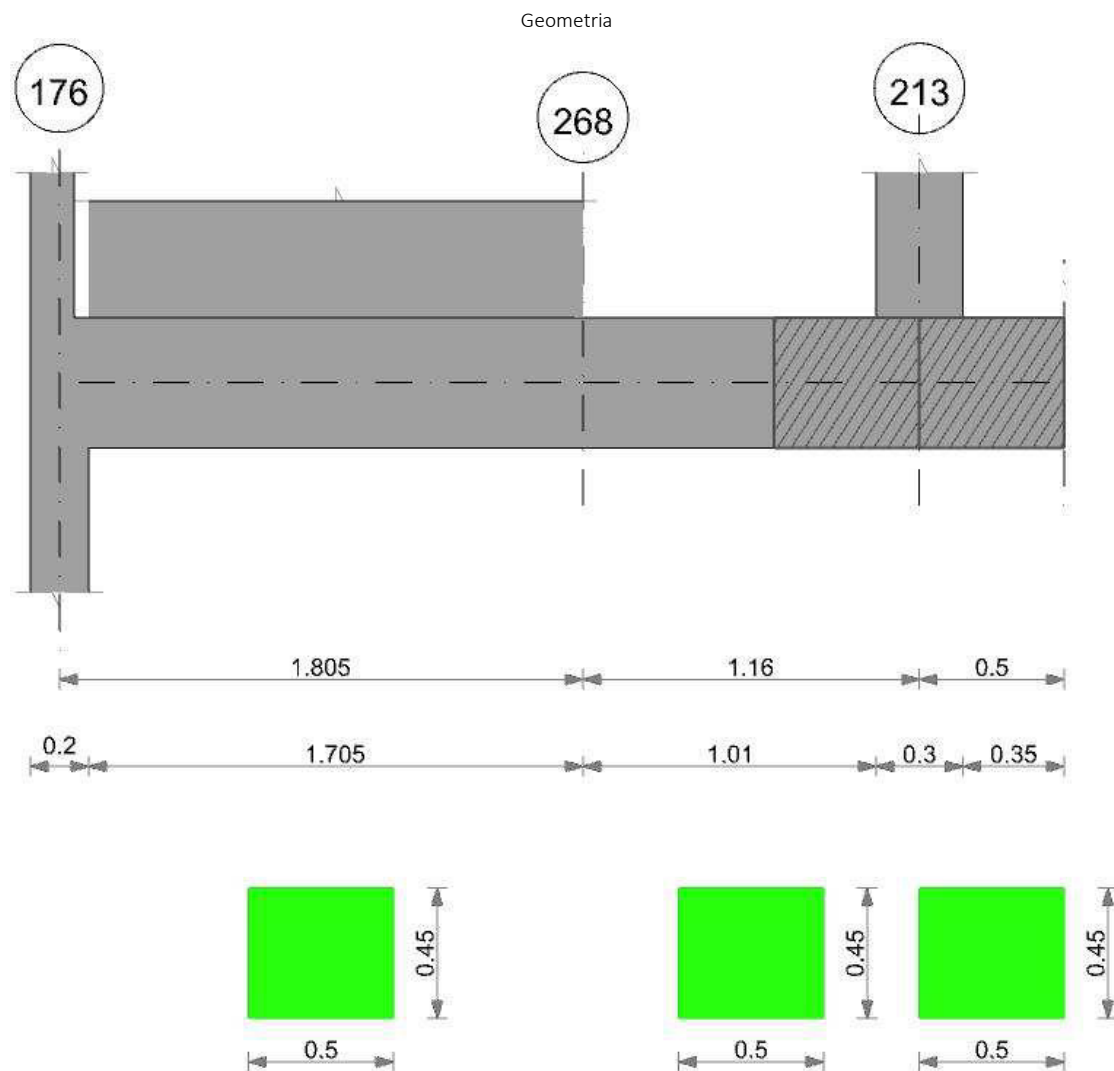
#### Verifiche geotecniche - Cedimenti assoluti e differenziali

Tipo	Assoluto				Differenziale					Relativo				Rapp. Inflexione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Comb.	Sr adm	Sr	Nodo	Comb.	Ri adm	Ri	Comb.	
E	0.05	0.001	560	SLE RA 21	0.05	0	560	551	SLE RA 20	0.05	0	560	SLE RA 20	0.0033	0	SLE RA 1	Si
D	0.05	0	561	SLE RA 1	0.05	0	561	561	SLE RA 1	0.05	0	560	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	561	SLE RA 1	0.05	0	561	561	SLE RA 1	0.05	0	560	SLE RA 1	0.0033	0	SLE RA 1	Si

#### Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0	SLE RA 20	0.19	0	560	551	SLE RA 20	0.19	0	560	SLE RA 20	0.1	0	561	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	561	560	SLE RA 1	0.19	0	561	SLE RA 1	0.1	0	560	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	561	560	SLE RA 1	0.19	0	561	SLE RA 1	0.1	0	560	SLE RA 1	Si

#### CORDOLO 13



#### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

#### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

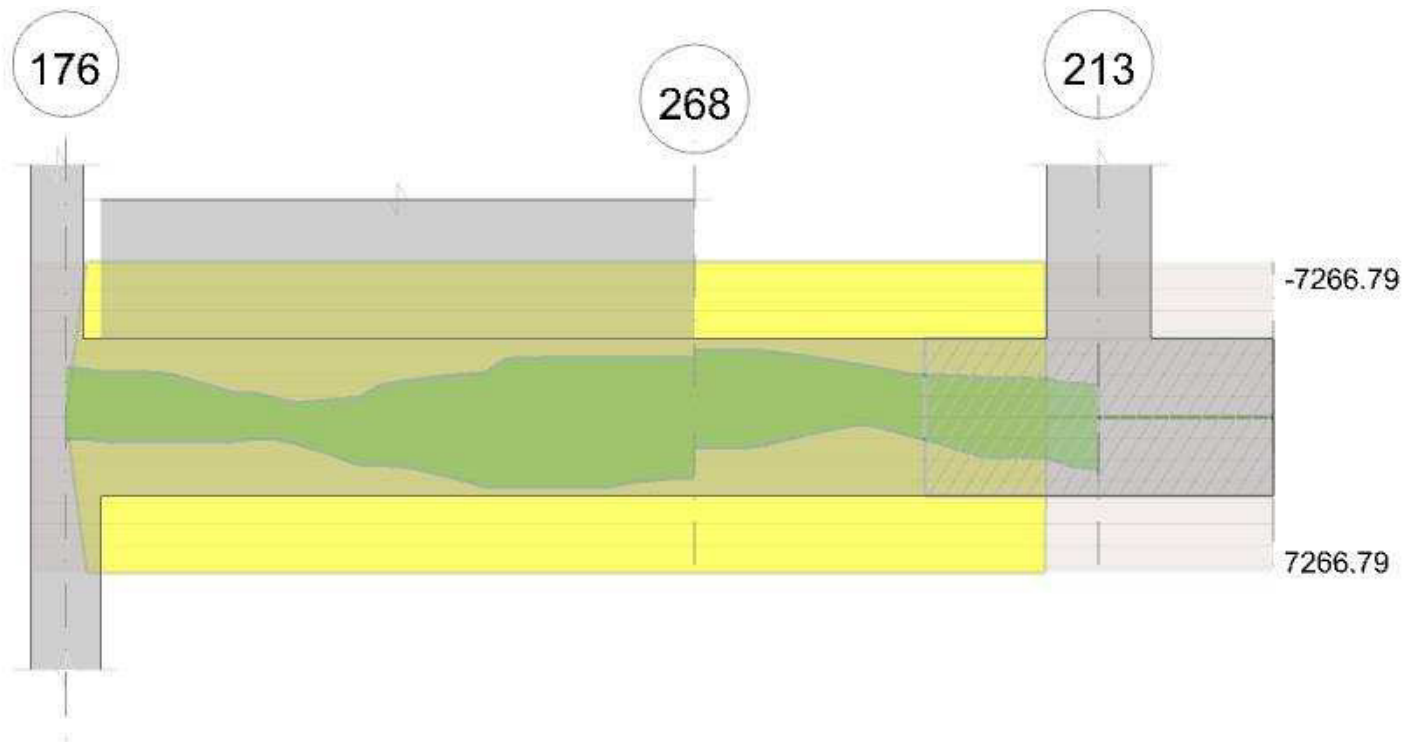
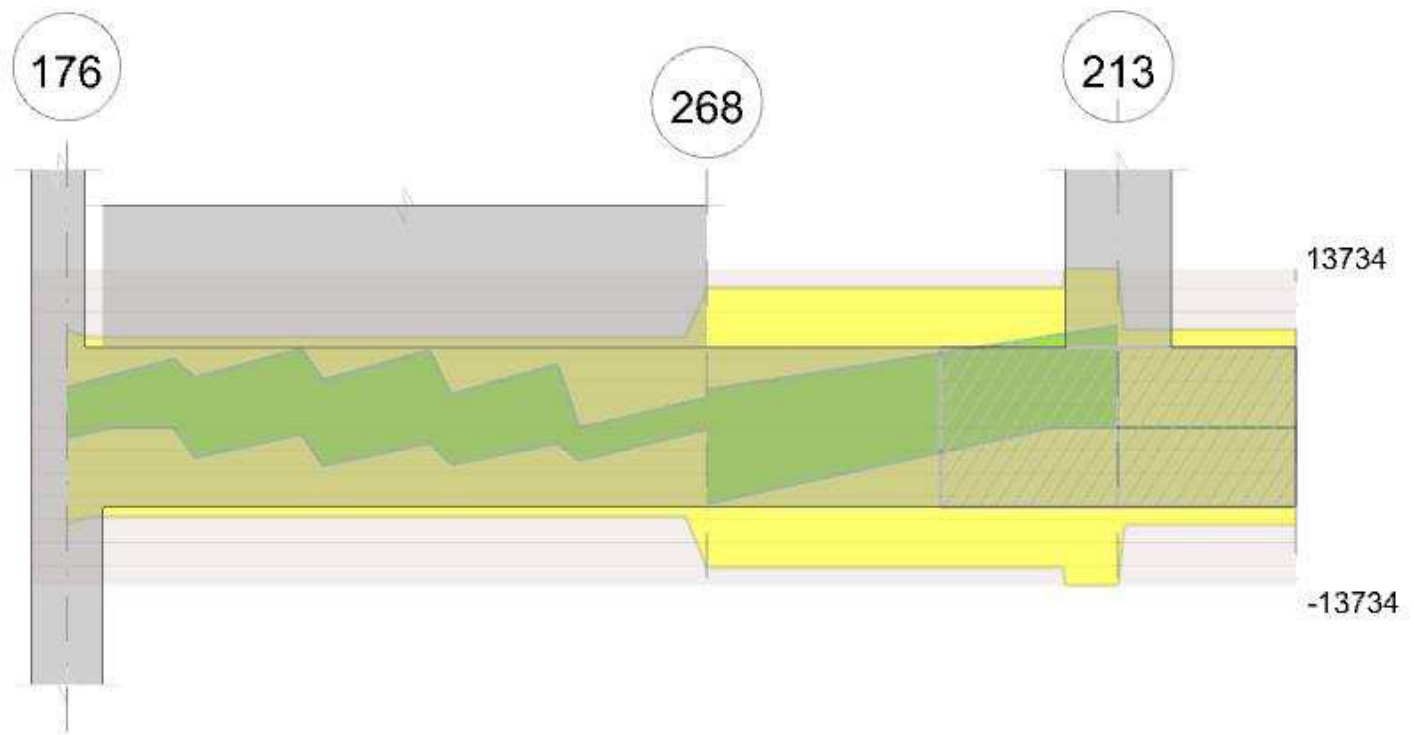


Diagramma verifica stato limite ultimo taglio



#### Output campate

Campata 2 tra i fili 268 - 213, sezione R 50x45, asta 665

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000509	0.052	0.000509	0.052							-1305.34	SLU 83	-1571.55	-7755.45	0.113	4.93	Si
0.58	0.000509	0.052	0.000509	0.052							-1386.39	SLU 83	-1602.22	-7755.45	0.113	4.84	Si
1.01	0	0	0	0	248.6	SLU 51	248.6	0	0	0	-63.43	SLU 39	-727.72	0	0	0	No
1.16	0	0	0	0	928.97	SLU 72	630.16	0	0	0							No

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$



x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000509	0.052	0.000509	0.052	1411.58	SLV 15	1411.58	7266.79	0.197	5.15	-3146.35	SLV 2	-3146.35	-7266.79	0.197	2.31	Si
0.58	0.000509	0.052	0.000509	0.052	163.94	SLV 11	685.23	7266.79	0.197	10.6	-1919.9	SLV 6	-2144.47	-7266.79	0.197	3.39	Si
1.01	0	0	0	0	1893.7	SLV 7	1893.7	0	0	0	-1692.78	SLV 10	-1812.74	0	0	0	No
1.16	0	0	0	0	2760.88	SLV 7	2417.94	0	0	0	-1483.72	SLV 10	-1483.72	0	0	0	No

#### Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000509	0.052	0.000509	0.052	106.4	SLD 15	106.4	7266.79	0.197	68.29	-1841.17	SLD 2	-1841.17	-7266.79	0.197	3.95	Si
0.58	0.000509	0.052	0.000509	0.052							-1336.8	SLD 6	-1512.94	-7266.79	0.197	4.8	Si
1.01	0	0	0	0	888.27	SLD 7	888.27	0	0	0	-687.35	SLD 10	-1027.33	0	0	0	No
1.16	0	0	0	0	1569.8	SLD 7	1291.95	0	0	0	-292.64	SLD 10	-292.64	0	0	0	No

#### Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000087	0.000509	0	-2681	SLU 82	-2681	-7764	-63178	-12147	-12147	1	4.53	Si
0.58	0.0000087	0.000509	0	2351	SLU 80	2351	7764	63178	12147	12147	1	5.17	Si
1.01	0.0000087	0	0	5994	SLU 84	5994	8455	71432	13734	13734	1	2.29	Si
1.16	0.0000087	0	0	7279	SLU 84	7279	8455	71432	13734	13734	1	1.89	Si

#### Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000087	0.000509	0	3226	SLV 3	3226	7764	63178	12147	12147	1	3.77	Si
0	0.0000087	0.000509	0	-6639	SLV 14	-6639	-7764	-63178	-12147	-12147	1	1.83	Si
0.58	0.0000087	0.000509	0	6006	SLV 3	6006	7764	63178	12147	12147	1	2.02	Si
0.58	0.0000087	0.000509	0	-2692	SLV 14	-2692	-7764	-63178	-12147	-12147	1	4.51	Si
1.01	0.0000087	0	0	8050	SLV 3	8050	7764	63178	12147	12147	1	1.51	Si
1.01	0.0000087	0	0	8072	SLV 3	8072	8455	71432	13734	13734	1	1.7	Si
1.16	0.0000087	0	0	8795	SLV 3	8795	8455	71432	13734	13734	1	1.56	Si

#### Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000087	0.000509	0	406	SLD 3	406	7764	63178	12147	12147	1	29.95	Si
0	0.0000087	0.000509	0	-3819	SLD 14	-3819	-7764	-63178	-12147	-12147	1	3.18	Si
0.58	0.0000087	0.000509	0	3521	SLD 3	3521	7764	63178	12147	12147	1	3.45	Si
0.58	0.0000087	0.000509	0	-207	SLD 14	-207	-7764	-63178	-12147	-12147	1	58.55	Si
1.01	0.0000087	0	0	5828	SLD 3	5828	8455	71432	13734	13734	1	2.36	Si
1.16	0.0000087	0	0	6634	SLD 3	6634	8455	71432	13734	13734	1	2.07	Si

#### Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	$\sigma$ c	$\sigma$ c lim.	$\sigma$ f.	$\sigma$ f lim.	Mela	Comb.	Mdes	$\sigma$ c	$\sigma$ c lim.	$\sigma$ FRP	$\sigma$ FRP lim.	
0	-951.21	20	-1145.46	60588	1494000	908813	36000000	-867.38	2	-1033.44	54662	1120500			Si
0.58	-1003.75	20	-1165.33	61638	1494000	924571	36000000	-877.98	2	-1037.35	54869	1120500			Si
1.01	162.93	9	162.93	9655	1494000	0	36000000	133.69	1	133.69	7922	1120500			Si
1.16	703.05	9	475.45	28175	1494000	0	36000000	658.17	1	436.87	25889	1120500			Si

#### Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

#### Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 176 - 268, sezione R 50x45, aste 670, 669, 668, 667, 666

#### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	1562	SLU 84	0.018	2949	5435	SLU 84	15877	Si
0.1	0.41	0.0002	1561	SLU 84	0.018	2949	5429	SLU 84	15877	Si
0.9	0.41	0.0002	1550	SLU 84	0.018	2949	5390	SLU 84	15877	Si
1.8	0.41	0.0004	1521	SLU 84	0.037	6867	5290	SLU 84	16965	Si

#### Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	1078	SLD 15	0.073	3317	3750	SLD 15	15877	Si
0.1	0.41	0.0002	1080	SLD 15	0.073	3317	3758	SLD 15	15877	Si
0.9	0.41	0.0002	1106	SLD 15	0.073	3317	3848	SLD 15	15877	Si
1.8	0.41	0.0004	1111	SLD 15	0.111	7660	3864	SLD 15	19510	Si

#### Verifiche delle tensioni di esercizio

x	d	Af	Rara					Quasi permanente					Verifica
			M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.0000185	1149	SLE RA 21	33217	1494000	411894	36000000	1041	SLE QP 2	30087	1120500	Si
0.1	0.41	0.0000185	1148	SLE RA 21	33180	1494000	411435	36000000	1040	SLE QP 2	30055	1120500	Si
0.9	0.41	0.0000185	1140	SLE RA 21	32940	1494000	408455	36000000	1032	SLE QP 2	29839	1120500	Si
1.8	0.41	0.0000433	1119	SLE RA 21	31288	1494000	387973	36000000	1014	SLE QP 2	28356	1120500	Si

#### Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Campata 2 tra i fili 268 - 213, sezione R 50x45, asta 665

#### Verifiche geotecniche

#### Verifiche geotecniche di scorrimento sul piano di posa

Size X	Size Y	Comb.	Sis.	Cnd	Fx	Fy	Fz	IncX	IncY	Phi	Ad	RPI	yR	Rd	Ed	Rd/Ed	Verifica
3.06	1.1	SLU 24	ST	LT	-190	-209	-25808	0	0	19	0	0	1.1	7850	282	27.84	Si
3.06	1.1	SLV 2	SIS	LT	-3948	-1223	-20998	-11	-3	19	0	0	1.1	6387	4133	1.55	Si

#### Verifiche geotecniche di capacità portante sul piano di posa



Aste	Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
670,669,668,667,666,665	3.06	1.1	SLU 84	ST	BT	2.3	144748	35382	4.09	Si
670,669,668,667,666,665	3.06	1.1	SLV 15	SIS	BT	2.3	136918	27737	4.94	Si
670,669,668,667,666,665	3.06	1.1	SLD 14	SIS	BT	2.3	141663	25494	5.56	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
-247	-262	-35382	307.53	-377.75	0	0	-0.01	0.01	1.08	3.04	1496	2060	0	14430	0.07
3592	876	-27737	-273.47	2036.94	7	2	0.07	-0.01	1.08	2.92	1496	2060	0	14430	0.07
1522	-403	-25494	287.59	756.3	3	-1	0.03	0.01	1.08	3.01	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

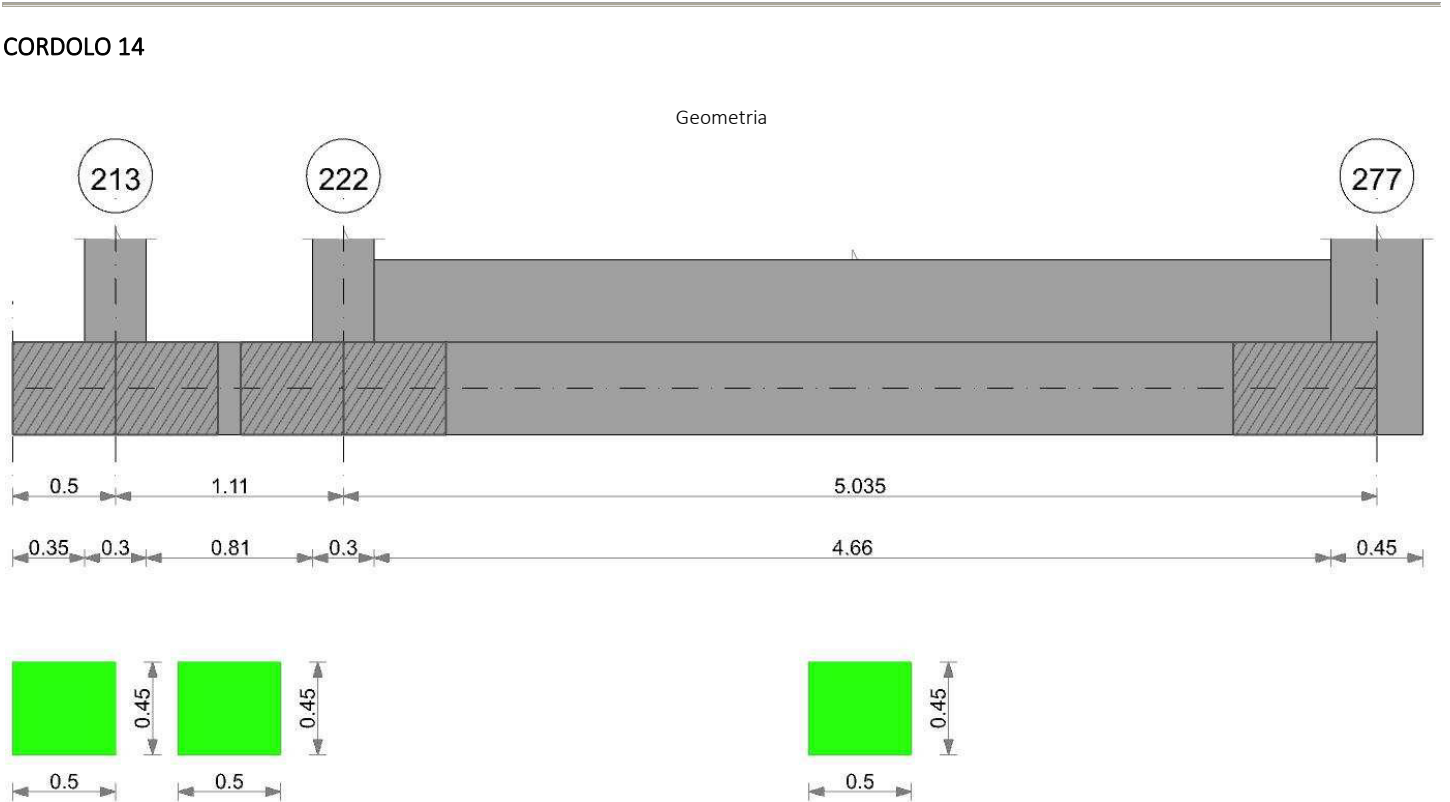
N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.07	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.07	0	0	0.27	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.07	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

Tipo	Assoluto				Differenziale				Relativo				Rapp. inflessione				Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Comb.	Sr adm	Sr	Nodo	Comb.	Ri adm	Ri	Comb.	
E	0.05	0.002	562	SLE RA 21	0.05	0	562	568	SLE RA 1	0.05	0	567	SLE RA 13	0.0033	0	SLE RA 13	Si
D	0.05	0	568	SLE RA 1	0.05	0	568	568	SLE RA 1	0.05	0	567	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	568	SLE RA 1	0.05	0	568	568	SLE RA 1	0.05	0	567	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta				Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.
E	0.19	0.01	SLE RA 21	0.19	0.01	567	562	SLE RA 21	0.19	0	568	SLE RA 1	0.1	0.01	567	SLE RA 13
D	0.19	0	SLE RA 1	0.19	0	568	567	SLE RA 1	0.19	0	568	SLE RA 1	0.1	0	567	SLE RA 1
Z	0.19	0	SLE RA 1	0.19	0	568	567	SLE RA 1	0.19	0	568	SLE RA 1	0.1	0	567	SLE RA 1



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

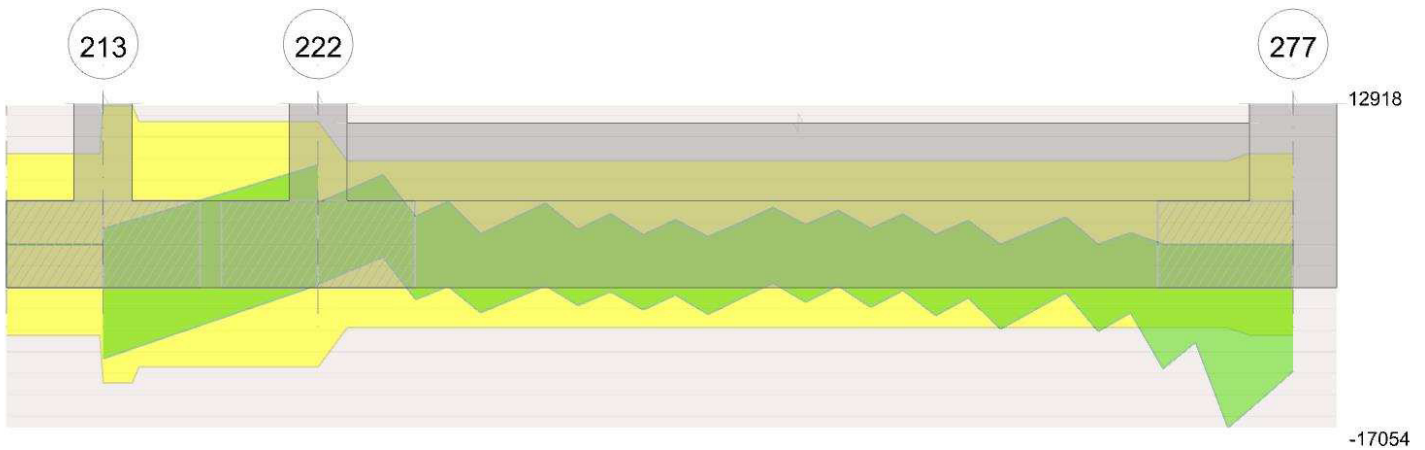
Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione



Diagramma verifica stato limite ultimo taglio



#### Output campate

Campata 2 tra i fili 213 - 222, sezione R 50x45, asta 460

#### Verifiche a flessione in famiglia SLV

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0	0	0	0	0						-1701.14	SLU 81	-1701.14	0	0	0	No
0.15	0	0	0	0	0						-2372.58	SLU 83	-2985.46	0	0	0	No
0.56	0.000509	0.052	0.000469	0.052							-3455.62	SLU 83	-3590.39	-7752.71	0.113	2.16	Si
0.96	0.000509	0.052	0.000509	0.052							-3460.03	SLU 84	-3591.34	-7755.45	0.113	2.16	Si
1.11	0.000509	0.052	0.000509	0.052							-3185.41	SLU 84	-3185.41	-7755.45	0.113	2.43	Si

#### Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0	0	0	0	1050.37	SLV 11	518.23	0	0	0	-3168.61	SLV 6	-3041.73	0	0	0	No
0.15	0	0	0	0	0						-3070.11	SLV 10	-3070.11	0	0	0	No
0.56	0.000509	0.052	0.000469	0.052							-3905.97	SLV 15	-4708.5	-7267.41	0.198	1.54	Si
0.96	0.000509	0.052	0.000509	0.052	678.36	SLV 2	678.36	7266.79	0.197	10.71	-5544.08	SLV 15	-5544.08	-7266.79	0.197	1.31	Si
1.11	0.000509	0.052	0.000509	0.052	1405.73	SLV 2	1125.34	7266.79	0.197	6.46	-5956.79	SLV 15	-5853.43	-7266.79	0.197	1.24	Si

#### Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0	0	0	0	0						-1989.93	SLD 6	-1989.93	0	0	0	No
0.15	0	0	0	0	0						-2216.89	SLD 10	-2447.43	0	0	0	No
0.56	0.000509	0.052	0.000469	0.052							-3016.95	SLD 15	-3434.39	-7267.41	0.198	2.12	Si
0.96	0.000509	0.052	0.000509	0.052							-3768.87	SLD 15	-3768.87	-7266.79	0.197	1.93	Si
1.11	0.000509	0.052	0.000509	0.052							-3857.57	SLD 15	-3857.57	-7266.79	0.197	1.88	Si

#### Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcl	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000082	0	0	-6457	SLU 78	-6457	-8455	-71432	-12918	-12918	1	2	Si
0.15	0.0000082	0	0	-5214	SLU 78	-5214	-8455	-71432	-12918	-12918	1	2.48	Si
0.56	0.0000082	0	0	-2054	SLU 49	-2054	-7764	-63178	-11425	-11425	1	5.56	Si
0.96	0.0000082	0.000509	0	1735	SLU 81	1735	7764	63178	11425	11425	1	6.59	Si
1.11	0.0000082	0.000509	0	3029	SLU 83	3029	7764	63178	11425	11425	1	3.77	Si

#### Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcl	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000082	0	0	1451	SLV 6	1451	8455	71432	12918	12918	1	8.91	Si
0	0.0000082	0	0	-10642	SLV 11	-10642	-8455	-71432	-12918	-12918	1	1.21	Si
0.15	0.0000082	0	0	2233	SLV 6	2233	8455	71432	12918	12918	1	5.78	Si



x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0.15	0.0000082	0	0	-9710	SLV 11	-9710	-8455	-71432	-12918	-12918	1	1.33	Si
0.19	0.0000082	0	0	2417	SLV 6	2417	7764	63178	11425	11425	1	4.73	Si
0.19	0.0000082	0	0	-9493	SLV 11	-9493	-7764	-63178	-11425	-11425	1	1.2	Si
0.56	0.0000082	0	0	4366	SLV 6	4366	7764	63178	11425	11425	1	2.62	Si
0.56	0.0000082	0	0	-7206	SLV 11	-7206	-7764	-63178	-11425	-11425	1	1.59	Si
0.96	0.0000082	0.000509	0	6541	SLV 6	6541	7764	63178	11425	11425	1	1.75	Si
0.96	0.0000082	0.000509	0	-4706	SLV 11	-4706	-7764	-63178	-11425	-11425	1	2.43	Si
1.11	0.0000082	0.000509	0	7360	SLV 6	7360	7764	63178	11425	11425	1	1.55	Si
1.11	0.0000082	0.000509	0	-3775	SLV 11	-3775	-7764	-63178	-11425	-11425	1	3.03	Si

#### Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000082	0	0	-7250	SLD 11	-7250	-8455	-71432	-12918	-12918	1	1.78	Si
0.15	0.0000082	0	0	-6360	SLD 11	-6360	-8455	-71432	-12918	-12918	1	2.03	Si
0.56	0.0000082	0	0	1122	SLD 6	1122	7764	63178	11425	11425	1	10.19	Si
0.56	0.0000082	0	0	-3962	SLD 11	-3962	-7764	-63178	-11425	-11425	1	2.88	Si
0.96	0.0000082	0.000509	0	3389	SLD 6	3389	7764	63178	11425	11425	1	3.37	Si
0.96	0.0000082	0.000509	0	-1554	SLD 11	-1554	-7764	-63178	-11425	-11425	1	7.35	Si
1.11	0.0000082	0.000509	0	4240	SLD 6	4240	7764	63178	11425	11425	1	2.69	Si
1.11	0.0000082	0.000509	0	-655	SLD 11	-655	-7764	-63178	-11425	-11425	1	17.44	Si

#### Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	-1231.37	18	-1231.37	-72970	1494000	0	36000000	-1059.12	2	-1059.12	-62763	1120500			Si
0.15	-1737.1	20	-2201.4	-130454	1494000	0	36000000	-1543.4	2	-1992.08	-118049	1120500			Si
0.56	-2563.5	20	-2674.99	142365	1494000	2127262	36000000	-2353.37	2	-2478.8	131923	1120500			Si
0.96	-2593.83	21	-2678.74	141688	1494000	2125320	36000000	-2432.86	2	-2488.92	131647	1120500			Si
1.11	-2401.22	21	-2401.22	127009	1494000	1905135	36000000	-2275.53	2	-2275.53	120361	1120500			Si

#### Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

#### Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 213 - 222, sezione R 50x45, asta 460

Campata 3 tra i fili 222 - 277, sezione R 50x45, aste 459, 458, 457, 456, 455, 454, 453, 452, 451, 450, 449, 448, 447

#### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	1550	SLU 84	0.034	6464	5391	SLU 84	15957	Si
0.15	0.41	0.0002	1564	SLU 84	0.017	2747	5441	SLU 84	15877	Si
2.52	0.41	0.0002	1712	SLV 14	0.085	2672	6120	SLU 84	15877	Si
4.81	0.41	0.0002	2271	SLV 14	0.085	2672	7899	SLV 14	15877	Si
5.03	0.41	0.0002	2366	SLV 14	0.085	2672	8229	SLV 14	15877	Si

#### Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	1127	SLD 15	0.107	7214	3920	SLD 15	18350	Si
0.15	0.41	0.0002	1139	SLD 15	0.07	3092	3963	SLD 15	15877	Si
2.52	0.41	0.0002	1406	SLD 14	0.07	3092	4890	SLD 14	15877	Si
4.81	0.41	0.0002	1722	SLD 14	0.07	3092	5989	SLD 14	15877	Si
5.03	0.41	0.0002	1783	SLD 14	0.07	3092	6202	SLD 14	15877	Si

#### Verifiche delle tensioni di esercizio

x	d	Af	Rara						Quasi permanente				Verifica
			M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000408	1139	SLE RA 21	31972	1494000	396456	36000000	1033	SLE QP 2	29000	1120500	Si
0.15	0.41	0.00000172	1150	SLE RA 21	33288	1494000	412776	36000000	1043	SLE QP 2	30197	1120500	Si
2.52	0.41	0.00000172	1295	SLE RA 21	37477	1494000	464719	36000000	1178	SLE QP 2	34092	1120500	Si
4.81	0.41	0.00000172	1436	SLE RA 21	41569	1494000	515455	36000000	1312	SLE QP 2	37981	1120500	Si
5.03	0.41	0.00000172	1475	SLE RA 21	42707	1494000	529570	36000000	1349	SLE QP 2	39041	1120500	Si

#### Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

#### Verifiche geotecniche

##### Verifiche geotecniche di scorrimento sul piano di posa

Size X	Size Y	Comb.	Sis.	Cnd	Fx	Fy	Fz	IncX	IncY	Phi	Ad	RPI	yR	Rd	Ed	Rd/Ed	Verifica
6.37	1.1	SLU 6	ST	LT	-936	-205	-56192	-1	0	19	0	0	1.1	17092	958	17.84	Si
6.37	1.1	SLV 2	SIS	LT	-9215	-2698	-39108	-13	-4	19	0	0	1.1	11896	9602	1.24	Si

##### Verifiche geotecniche di capacità portante sul piano di posa

Aste				Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
460,459,458,457,456,455,454,453,452,451,450,449,448,447				6.37	1.1	SLU 83	ST	BT	2.3	289369	83814	3.45	Si
460,459,458,457,456,455,454,453,452,451,450,449,448,447				6.37	1.1	SLV 14	SIS	BT	2.3	260132	77254	3.37	Si
460,459,458,457,456,455,454,453,452,451,450,449,448,447				6.37	1.1	SLD 14	SIS	BT	2.3	274789	66078	4.16	Si

##### Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	-468	-83814	231	8033.84	0	0	0.1	0	1.09	6.18	1496	2060	0	14430	
0	-2322	-77254	1094.9	26031.45	0	-2	0.34	0.01	1.07	5.7	1496	2060	0	14430	0.07
0	-1165	-66078	556.34	14337.83	0	-1	0.22	0.01	1.08	5.94	1496	2060	0	14430	0.03

##### Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ik	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.04	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0

##### Verifiche geotecniche - Cedimenti assoluti e differenziali

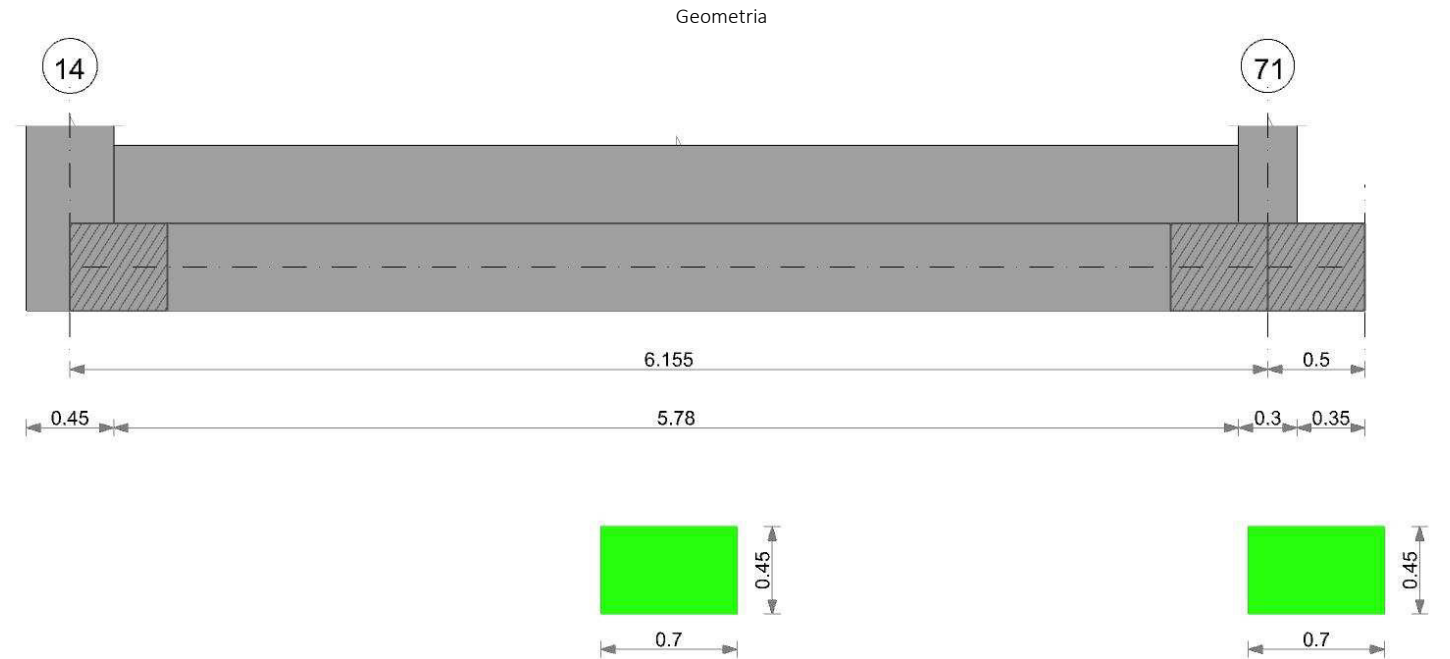


Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	Ri adm	Ri	Comb.	
E	0.05	0.001	569	SLE RA 21	0.05	0.001	569	584	SLE RA 21	0.05	0	571	SLE RA 20	0.0033	0	SLE RA 1	Si
D	0.05	0	584	SLE RA 1	0.05	0	584	584	SLE RA 1	0.05	0	571	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	584	SLE RA 1	0.05	0	584	584	SLE RA 1	0.05	0	571	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta				Distorsione angolare positiva				Distorsione angolare negativa				Verifica	
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.01	SLE RA 21	0.19	0.01	584	571	SLE RA 21	0.19	0.01	571	SLE RA 20	0.1	0	584	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	584	571	SLE RA 1	0.19	0	584	SLE RA 1	0.1	0	571	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	584	571	SLE RA 1	0.19	0	584	SLE RA 1	0.1	0	571	SLE RA 1	Si

CORDOLO 15



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

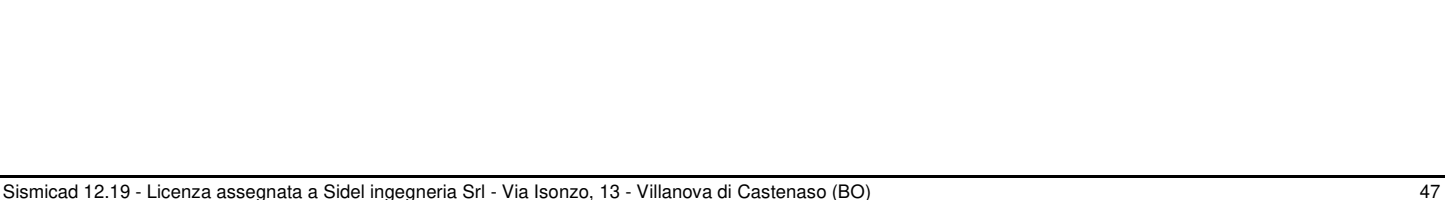
Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 70x45	Rettangolare	0.7	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione



Diagramma verifica stato limite ultimo taglio







Output campate

Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 14 - 71, sezione R 70x45, aste 785, 784, 783, 782, 781, 780, 779, 778, 777, 776, 775, 774, 773, 772, 771

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0003	4608	SLV 1	0.119	5189	11892	SLV 1	15877	Si
0.23	0.41	0.0003	4322	SLV 1	0.119	5189	11153	SLV 1	15877	Si
3.08	0.41	0.0003	2361	SLV 1	0.119	5189	6094	SLV 1	15877	Si
6	0.41	0.0003	3129	SLU 83	0.029	5386	8076	SLU 83	15877	Si
6.15	0.41	0.0003	3150	SLU 83	0.029	5386	8129	SLU 83	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0003	3434	SLD 1	0.098	6020	8863	SLD 1	15877	Si
0.23	0.41	0.0003	3228	SLD 1	0.098	6020	8331	SLD 1	15877	Si
3.08	0.41	0.0003	1890	SLD 1	0.098	6020	4876	SLD 1	15877	Si
6	0.41	0.0003	2360	SLD 1	0.098	6020	6091	SLD 1	15877	Si
6.15	0.41	0.0003	2368	SLD 1	0.098	6020	6110	SLD 1	15877	Si

Verifiche delle tensioni di esercizio

Rara										Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma_c$	$\sigma_{climite}$	$\sigma_f$	$\sigma_{flimite}$		M	Comb	$\sigma_c$	$\sigma_{climite}$	
0	0.41	0.00000339	2791	SLE RA 20	79024	1494000	979892	36000000		2557	SLE QP 2	72411	1120500	Si
0.23	0.41	0.00000339	2632	SLE RA 20	74535	1494000	924231	36000000		2411	SLE QP 2	68275	1120500	Si
3.08	0.41	0.00000339	1685	SLE RA 20	47709	1494000	591588	36000000		1537	SLE QP 2	43517	1120500	Si
6	0.41	0.00000339	2309	SLE RA 20	65397	1494000	810927	36000000		2108	SLE QP 2	59683	1120500	Si
6.15	0.41	0.00000339	2325	SLE RA 20	65836	1494000	816366	36000000		2122	SLE QP 2	60082	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche di scorrimento sul piano di posa

Size X	Size Y	Comb.	Sis.	Cnd	Fx	Fy	Fz	IncX	IncY	Phi	Ad	RPI	yR	Rd	Ed	Rd/Ed	Verifica
6.38	1.3	SLU 27	ST	LT	1543	115	-68510	1	0	19	0	0	1.1	20839	1547	13.47	Si
6.38	1.3	SLV 13	SIS	LT	15559	-3809	-41824	20	-5	19	0	0	1.1	12722	16018	0.79	No

Verifiche geotecniche di capacità portante sul piano di posa

Aste				Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
785,784,783,782,781,780,779,778,777,776,775,774,773,772,771				6.38	1.3	SLU 83	ST	BT	2.3	270597	92112	2.94	Si
785,784,783,782,781,780,779,778,777,776,775,774,773,772,771				6.38	1.3	SLV 1	SIS	BT	2.3	241636	90453	2.67	Si
785,784,783,782,781,780,779,778,777,776,775,774,773,772,771				6.38	1.3	SLD 1	SIS	BT	2.3	256399	75289	3.41	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	107	-92112	12251.05	-2664.87	0	0	-0.03	0.13	1.03	6.32	1496	2060	0	14430	0.07
0	-1080	-90453	13384.26	-25106.49	0	-1	-0.28	0.15	1	5.82	1496	2060	0	14430	0.07
0	-404	-75289	10492.82	-11807.22	0	0	-0.16	0.14	1.02	6.07	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	lc	lg	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.03	0	0	0.23	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.03	0	0	0.23	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.03	0	0	0.23	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

Tipo	Assoluto				Differenziale				Relativo				Rapp. inflessione				Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Comb.	Sr adm	Sr	Nodo	Comb.	Ri adm	Ri	Comb.	
E	0.05	0	339	SLE RA 20	0.05	0	339	324	SLE RA 20	0.05	0	339	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	339	SLE RA 1	0.05	0	339	339	SLE RA 1	0.05	0	339	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	339	SLE RA 1	0.05	0	339	339	SLE RA 1	0.05	0	339	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

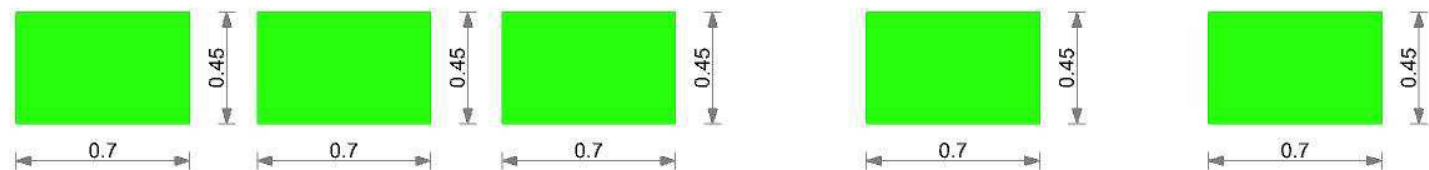
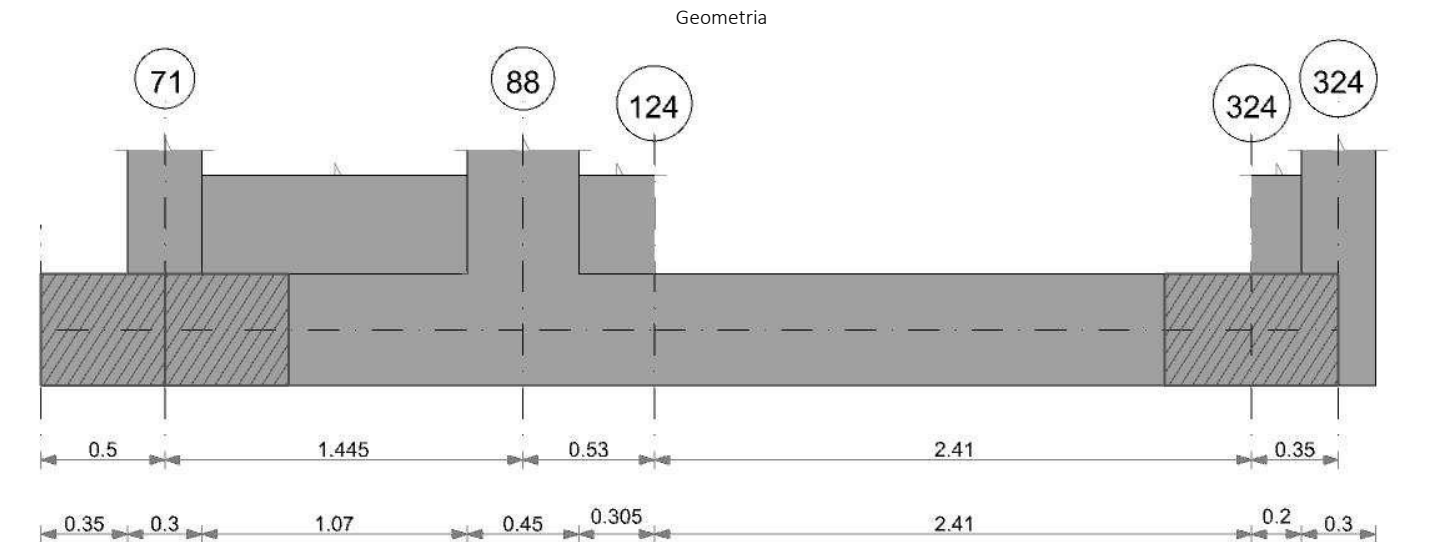
Tipo	Rotazione rigida			Rotazione assoluta			Distorsione angolare positiva			Distorsione angolare negativa			Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	
E	0.19	0	SLE RA 20	0.19	0	339	324	SLE RA 20	0.19	0	339	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	339	324	SLE RA 1	0.19	0	339	SLE RA 1	Si





Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
Z	0.19	0	SLE RA 1	0.19	0	339	324	SLE RA 1	0.19	0	339	SLE RA 1	0.1	0	339	SLE RA 1	Si

# CORDOLO 16



## Caratteristiche dei materiali

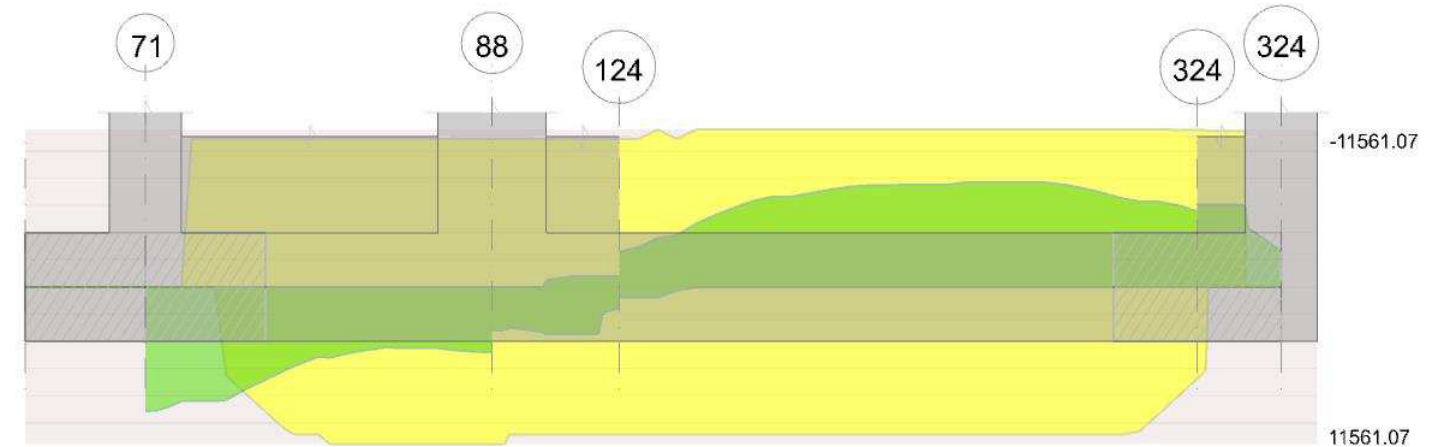
Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

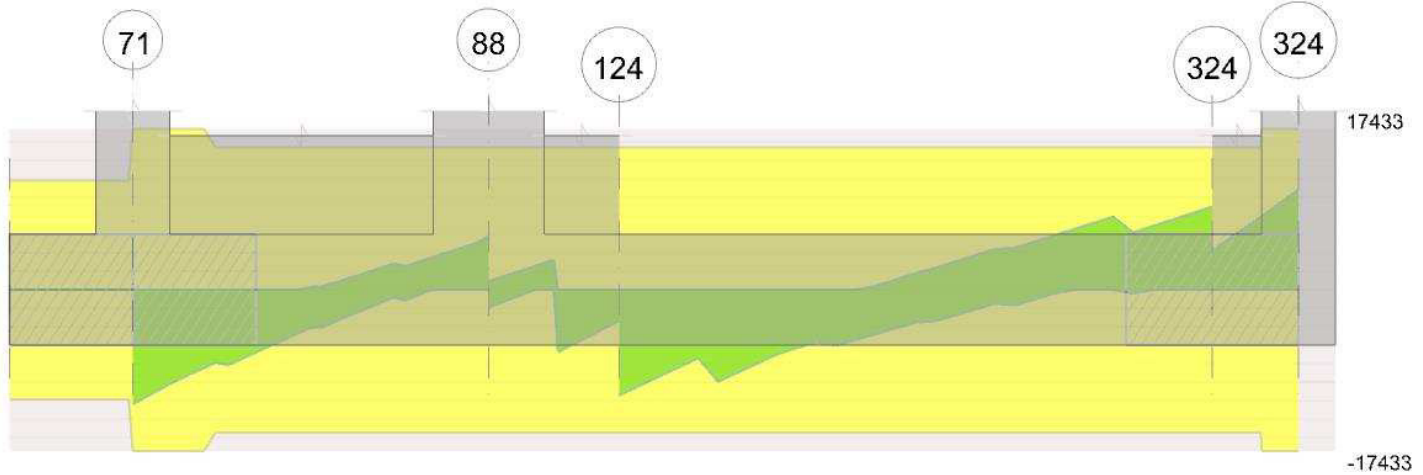
## Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 70x45	Rettangolare	0.7	0.45	0.035	0.035	0.035

## Diagramma verifica stato limite ultimo flessione



## Diagramma verifica stato limite ultimo taglio



#### Output campate

Campata 4 tra i fili 124 - 324, sezione R 70x45, aste 715, 714, 713, 712, 711, 710

#### Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000763	0.052	0.000763	0.052							-642.71	SLU 83	-2400.66	-11561.07	0.116	4.82	Si
1.21	0.000763	0.052	0.000763	0.052							-7451.94	SLU 83	-7489.91	-11561.07	0.116	1.54	Si
1.77	0.000763	0.052	0.000763	0.052							-7201.59	SLU 83	-7680.57	-11561.07	0.116	1.51	Si
2.41	0.000763	0.052	0.000465	0.052							-4308.34	SLU 84	-5551.84	-11541.17	0.112	2.08	Si

#### Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000763	0.052	0.000763	0.052	771.3	SLV 16	771.3	10870.29	0.203	14.09	-1571.45	SLV 1	-2558.77	-10870.29	0.203	4.25	Si
1.21	0.000763	0.052	0.000763	0.052							-5468.28	SLV 5	-5837.81	-10870.29	0.203	1.86	Si
1.69	0.000763	0.052	0.000763	0.052							-5707.06	SLV 5	-6002.17	-10870.29	0.203	1.81	Si
2.41	0.000763	0.052	0.000465	0.052							-3675.56	SLV 15	-4054.08	-10874.01	0.207	2.68	Si

#### Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000763	0.052	0.000763	0.052	101.87	SLD 16	101.87	10870.29	0.203	106.71	-902.02	SLD 1	-2006.2	-10870.29	0.203	5.42	Si
1.21	0.000763	0.052	0.000763	0.052							-5218.16	SLD 5	-5377.55	-10870.29	0.203	2.02	Si
1.69	0.000763	0.052	0.000763	0.052							-5331.87	SLD 5	-5533.98	-10870.29	0.203	1.96	Si
2.41	0.000763	0.052	0.000465	0.052							-3237.77	SLD 15	-3878.43	-10874.01	0.207	2.8	Si

#### Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.000011	0.000763	0	-11439	SLU 83	-11439	-10870	-88449	-15418	-15418	1	1.35	Si
1.21	0.000011	0.000763	0	-1261	SLU 84	-1261	-10870	-88449	-15418	-15418	1	12.22	Si
2.41	0.000011	0.000763	0	8469	SLU 83	8469	10870	88449	15418	15418	1	1.82	Si

#### Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.000011	0.000763	0	-9162	SLV 13	-9162	-10870	-88449	-15418	-15418	1	1.68	Si
1.21	0.000011	0.000763	0	1785	SLV 1	1785	10870	88449	15418	15418	1	8.64	Si
1.21	0.000011	0.000763	0	-3531	SLV 16	-3531	-10870	-88449	-15418	-15418	1	4.37	Si
2.41	0.000011	0.000763	0	8987	SLV 1	8987	10870	88449	15418	15418	1	1.72	Si

#### Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.000011	0.000763	0	-8355	SLD 13	-8355	-10870	-88449	-15418	-15418	1	1.85	Si
1.21	0.000011	0.000763	0	265	SLD 1	265	10870	88449	15418	15418	1	58.24	Si
1.21	0.000011	0.000763	0	-2011	SLD 16	-2011	-10870	-88449	-15418	-15418	1	7.67	Si
2.41	0.000011	0.000763	0	7108	SLD 1	7108	10870	88449	15418	15418	1	2.17	Si

#### Verifiche delle tensioni in esercizio

x	Rara								Quasi permanente								Verifica
	Mela	Comb.	Mdes	$\sigma_c$	$\sigma_{clim.}$	$\sigma_f$	$\sigma_{flim.}$	Mela	Comb.	Mdes	$\sigma_c$	$\sigma_{clim.}$	$\sigma_{FRP}$	$\sigma_{FRP lim.}$			
0	-468	20	-1767.27	66261	1494000	993912	36000000	-400.08	2	-1591.18	59659	1120500					Si
1.21	-5503.92	20	-5533.31	207462	1494000	3111935	36000000	-5021.05	2	-5044.21	189124	1120500					Si
2.41	-3181.6	21	-4102.1	158992	1494000	2336094	36000000	-2911.03	2	-3746.39	145205	1120500					Si

#### Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

#### Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 71 - 88, sezione R 70x45, aste 721, 720, 719, 718

#### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	3150	SLU 83	0.031	5824	8129	SLU 83	15877	Si



x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0.15	0.41	0.0004	3168	SLU 83	0.031	5824	8175	SLU 83	15877	Si
0.72	0.41	0.0004	3160	SLU 83	0.031	5824	8155	SLU 83	15877	Si
1.22	0.41	0.0004	3081	SLU 83	0.031	5824	7951	SLU 83	15877	Si
1.44	0.41	0.0004	3027	SLU 83	0.031	5824	7812	SLU 83	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	2368	SLD 1	0.102	6505	6110	SLD 1	15877	Si
0.15	0.41	0.0004	2372	SLD 1	0.102	6505	6122	SLD 1	15877	Si
0.72	0.41	0.0004	2330	SLD 1	0.102	6505	6012	SLD 1	15877	Si
1.22	0.41	0.0004	2237	SLD 1	0.102	6505	5773	SLD 1	15877	Si
1.44	0.41	0.0004	2183	SLD 1	0.102	6505	5633	SLD 1	15877	Si

Verifiche delle tensioni di esercizio

Rara									Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma c$	$\sigma c$ limite	$\sigma f$	$\sigma f$ limite	M	Comb	$\sigma c$	$\sigma c$ limite	
0	0.41	0.00000367	2325	SLE RA 20	65597	1494000	813403	36000000	2122	SLE QP 2	59864	1120500	Si
0.15	0.41	0.00000367	2338	SLE RA 20	65968	1494000	818008	36000000	2134	SLE QP 2	60202	1120500	Si
0.72	0.41	0.00000367	2333	SLE RA 20	65813	1494000	816086	36000000	2128	SLE QP 2	60050	1120500	Si
1.22	0.41	0.00000367	2274	SLE RA 20	64164	1494000	795633	36000000	2074	SLE QP 2	58525	1120500	Si
1.44	0.41	0.00000367	2234	SLE RA 20	63044	1494000	781740	36000000	2038	SLE QP 2	57489	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Campata 3 tra i fili 88 - 124, sezione R 70x45, aste 717, 716

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	3027	SLU 83	0.031	5824	7812	SLU 83	15877	Si
0.23	0.41	0.0004	2971	SLU 83	0.031	5824	7666	SLU 83	15877	Si
0.27	0.41	0.0004	2960	SLU 83	0.031	5824	7638	SLU 83	15877	Si
0.53	0.41	0.0004	2886	SLU 83	0.031	5824	7446	SLU 83	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	2183	SLD 1	0.102	6505	5633	SLD 1	15877	Si
0.23	0.41	0.0004	2127	SLD 1	0.102	6505	5489	SLD 1	15877	Si
0.27	0.41	0.0004	2116	SLD 1	0.102	6505	5462	SLD 1	15877	Si
0.53	0.41	0.0004	2046	SLD 1	0.102	6505	5281	SLD 1	15877	Si

Verifiche delle tensioni di esercizio

Rara									Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma c$	$\sigma c$ limite	$\sigma f$	$\sigma f$ limite	M	Comb	$\sigma c$	$\sigma c$ limite	
0	0.41	0.00000367	2234	SLE RA 20	63044	1494000	781740	36000000	2038	SLE QP 2	57489	1120500	Si
0.23	0.41	0.00000367	2193	SLE RA 20	61866	1494000	767133	36000000	1999	SLE QP 2	56400	1120500	Si
0.27	0.41	0.00000367	2185	SLE RA 20	61640	1494000	764340	36000000	1992	SLE QP 2	56192	1120500	Si
0.53	0.41	0.00000367	2130	SLE RA 20	60090	1494000	745116	36000000	1941	SLE QP 2	54757	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Campata 4 tra i fili 124 - 324, sezione R 70x45, aste 715, 714, 713, 712, 711, 710

Campata 5 tra i fili 324 - 324, sezione R 70x45, asta 709

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	2974	SLU 83	0.031	5824	7674	SLU 83	15877	Si
0.18	0.41	0.0004	3082	SLU 83	0.031	5824	7952	SLU 83	15877	Si
0.2	0.41	0.0004	3098	SLU 83	0.031	5824	7995	SLU 83	15877	Si
0.35	0.41	0.0004	3202	SLU 83	0.031	5824	8263	SLU 83	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	2063	SLD 9	0.102	6505	5325	SLD 9	15877	Si
0.18	0.41	0.0004	2142	SLD 9	0.102	6505	5527	SLD 9	15877	Si
0.2	0.41	0.0004	2154	SLD 9	0.102	6505	5558	SLD 9	15877	Si
0.35	0.41	0.0004	2229	SLD 9	0.102	6505	5752	SLD 9	15877	Si

Verifiche delle tensioni di esercizio

Rara									Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma c$	$\sigma c$ limite	$\sigma f$	$\sigma f$ limite	M	Comb	$\sigma c$	$\sigma c$ limite	
0	0.41	0.00000367	2194	SLE RA 20	61899	1494000	767547	36000000	1991	SLE QP 2	56171	1120500	Si
0.18	0.41	0.00000367	2273	SLE RA 20	64143	1494000	795368	36000000	2062	SLE QP 2	58194	1120500	Si
0.2	0.41	0.00000367	2286	SLE RA 20	64488	1494000	799652	36000000	2074	SLE QP 2	58506	1120500	Si
0.35	0.41	0.00000367	2362	SLE RA 20	66651	1494000	826472	36000000	2143	SLE QP 2	60458	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche - Cedimenti assoluti e differenziali

Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.001	351	SLE RA 20	0.05	0	351	339	SLE RA 20	0.05	0	351	SLE RA 10	0.0033	0	SLE RA 20	Si
D	0.05	0	352	SLE RA 1	0.05	0	352	352	SLE RA 1	0.05	0	351	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	352	SLE RA 1	0.05	0	352	352	SLE RA 1	0.05	0	351	SLE RA 1	0.0033	0	SLE RA 1	Si

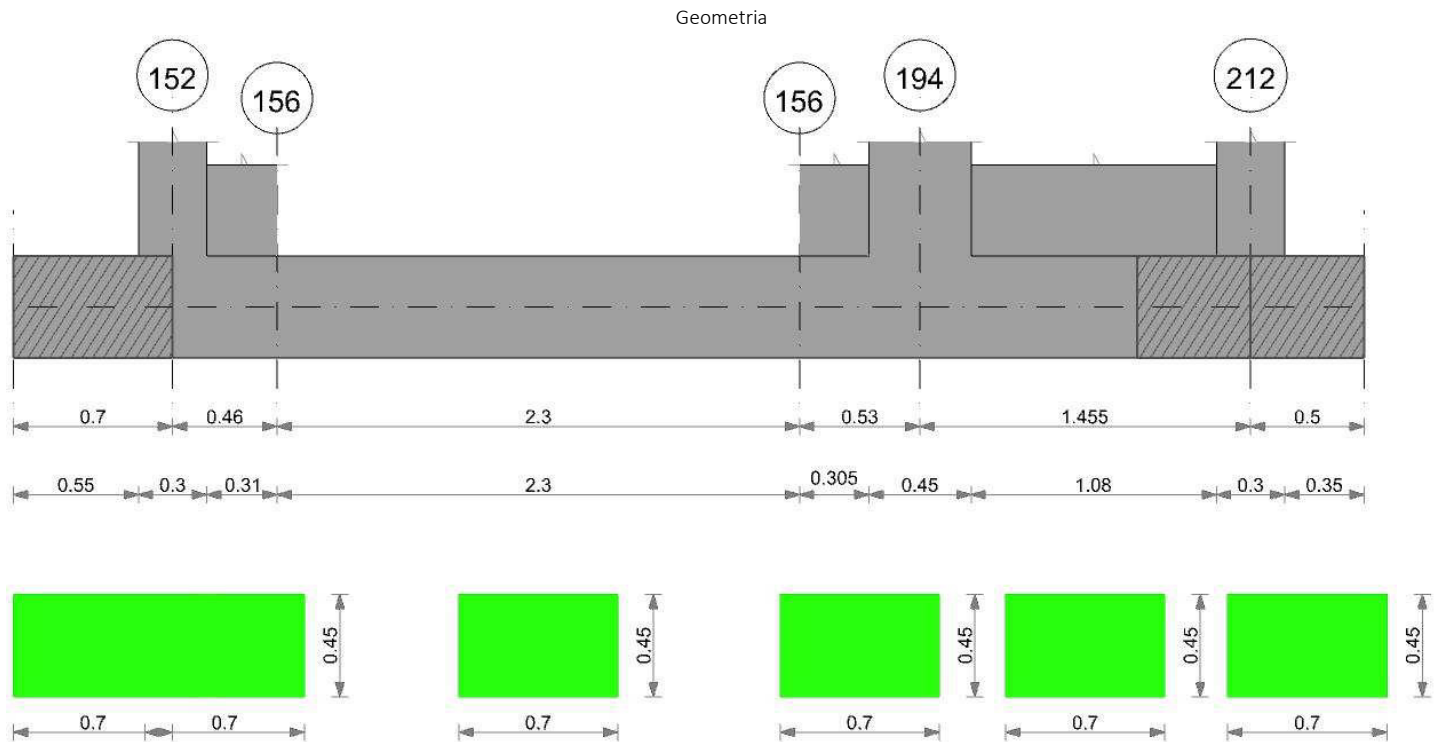
Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0	SLE RA 20	0.19	0	351	345	SLE RA 20	0.19	0.01	351	SLE RA 10	0.1	0	345	SLE RA 20	Si
D	0.19	0	SLE RA 1	0.19	0	352	351	SLE RA 1	0.19	0	352	SLE RA 1	0.1	0	351	SLE RA 1	Si



Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
Z	0.19	0	SLE RA 1	0.19	0	352	351	SLE RA 1	0.19	0	352	SLE RA 1	0.1	0	351	SLE RA 1	Si

# CORDOLO 17



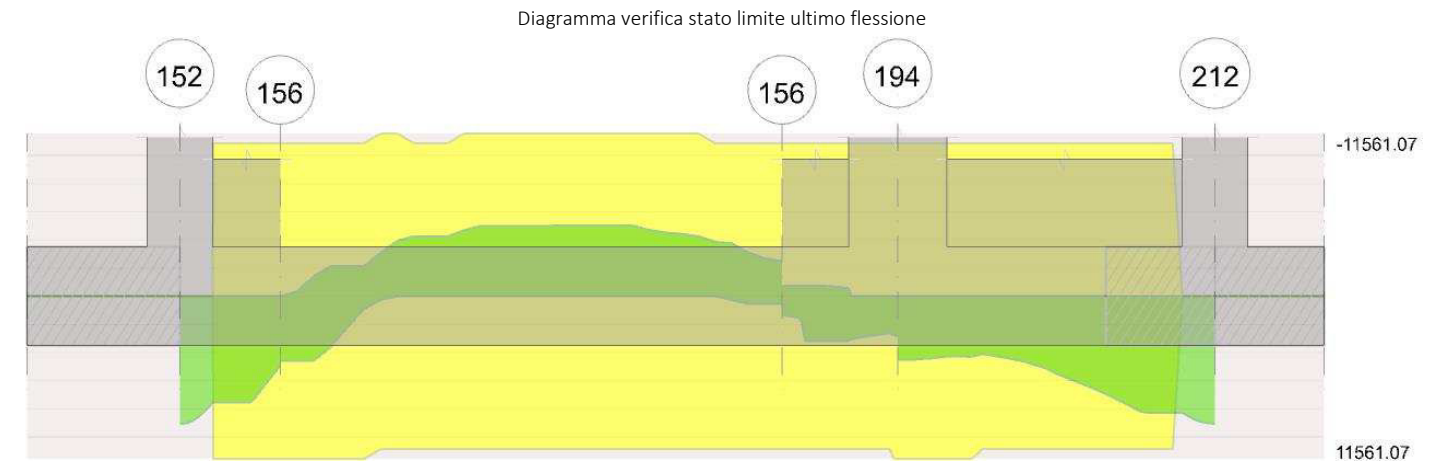
## Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

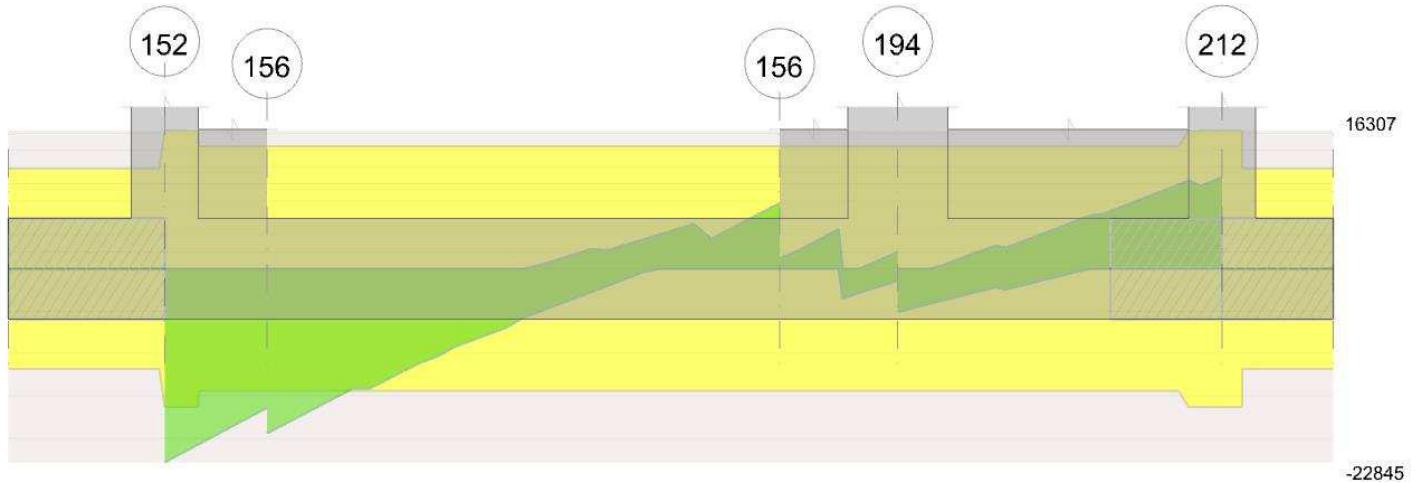
Calcestruzzo: C25/30 Rck 3000000

## Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 70x45	Rettangolare	0.7	0.45	0.035	0.035	0.035



## Diagramma verifica stato limite ultimo taglio



#### Output campate

Campata 3 tra i fili 156 - 156, sezione R 70x45, aste 682, 681, 680, 679, 678, 677

#### Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000763	0.052	0.000763	0.052	4585.62	SLU 83	4585.62	11561.07	0.116	2.52							Si
1.15	0.000763	0.052	0.000763	0.052							-4302.14	SLU 83	-5002.72	-11561.07	0.116	2.31	Si
1.3	0.000763	0.052	0.000763	0.052							-4830.6	SLU 83	-5045.94	-11561.07	0.116	2.29	Si
2.3	0.000763	0.052	0.000763	0.052							-1027.07	SLU 83	-2185.28	-11561.07	0.116	5.29	Si

#### Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000763	0.052	0.000763	0.052	3780.46	SLV 14	3780.46	10870.29	0.203	2.88							Si
1.15	0.000763	0.052	0.000763	0.052							-3329.67	SLV 14	-4519.15	-10870.29	0.203	2.41	Si
1.3	0.000763	0.052	0.000763	0.052							-4092.56	SLV 14	-4626.34	-10870.29	0.203	2.35	Si
2.3	0.000763	0.052	0.000763	0.052	546.3	SLV 3	546.3	10870.29	0.203	19.9	-1850.31	SLV 14	-2504.76	-10870.29	0.203	4.34	Si

#### Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000763	0.052	0.000763	0.052	3379.83	SLD 14	3379.83	10870.29	0.203	3.22							Si
1.15	0.000763	0.052	0.000763	0.052							-3086.65	SLD 14	-3862.78	-10870.29	0.203	2.81	Si
1.3	0.000763	0.052	0.000763	0.052							-3613.38	SLD 14	-3920.65	-10870.29	0.203	2.77	Si
2.3	0.000763	0.052	0.000763	0.052							-1165.82	SLD 14	-1898.17	-10870.29	0.203	5.73	Si

#### Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000103	0.000763	0	-19436	SLU 83	-19436	-10870	-88449	-14422	-14422	1	0.74	No
1.15	0.0000103	0.000763	0	-4467	SLU 83	-4467	-10870	-88449	-14422	-14422	1	3.23	Si
2.3	0.0000103	0.000763	0	7745	SLU 84	7745	10870	88449	14422	14422	1	1.86	Si

#### Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000103	0.000763	0	-17291	SLV 14	-17291	-10870	-88449	-14422	-14422	1	0.83	No
1.15	0.0000103	0.000763	0	-5770	SLV 14	-5770	-10870	-88449	-14422	-14422	1	2.5	Si
2.3	0.0000103	0.000763	0	6048	SLV 2	6048	10870	88449	14422	14422	1	2.38	Si

#### Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000103	0.000763	0	-14901	SLD 14	-14901	-10870	-88449	-14422	-14422	1	0.97	No
1.15	0.0000103	0.000763	0	-4171	SLD 14	-4171	-10870	-88449	-14422	-14422	1	3.46	Si
2.3	0.0000103	0.000763	0	5608	SLD 2	5608	10870	88449	14422	14422	1	2.57	Si

#### Verifiche delle tensioni in esercizio

x	Rara								Quasi permanente								Verifica
	Mela	Comb.	Mdes	$\sigma_c$	$\sigma_{clim}$	$\sigma_f$	$\sigma_{flim}$		Mela	Comb.	Mdes	$\sigma_c$	$\sigma_{clim}$	$\sigma_{FRP}$	$\sigma_{FRP lim}$		
0	3387.95	20	3387.95	127026	1494000	1905386	36000000		3077.71	2	3077.71	115394	1120500				Si
1.15	-3177.58	20	-3695.16	138544	1494000	2078156	36000000		-2903.48	2	-3369.71	126342	1120500				Si
2.3	-749.19	20	-1606.64	60238	1494000	903576	36000000		-652.01	2	-1442.61	54088	1120500				Si

#### Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

#### Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 152 - 156, sezione R 70x45, asta 683

#### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb.	x/d	Mult	V	Comb.	Vult	Verifica
0	0.41	0.0003	3042	SLU 83	0.029	5452	7851	SLU 83	15877	Si
0.15	0.41	0.0003	3039	SLU 83	0.029	5452	7841	SLU 83	15877	Si



x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0.23	0.41	0.0003	3033	SLU 83	0.029	5452	7828	SLU 83	15877	Si
0.46	0.41	0.0003	3009	SLU 83	0.029	5452	7764	SLU 83	15877	Si

**Verifiche di resistenza della suola di fondazione in condizioni SLD**

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0003	2102	SLD 10	0.099	6093	5424	SLD 10	15877	Si
0.15	0.41	0.0003	2100	SLD 10	0.099	6093	5420	SLD 10	15877	Si
0.23	0.41	0.0003	2097	SLD 10	0.099	6093	5412	SLD 10	15877	Si
0.46	0.41	0.0003	2081	SLD 10	0.099	6093	5372	SLD 10	15877	Si

**Verifiche delle tensioni di esercizio**

Rara									Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma c$	$\sigma c$ limite	$\sigma f$	$\sigma f$ limite	M	Comb	$\sigma c$	$\sigma c$ limite	
0	0.41	0.0000343	2243	SLE RA 20	63487	1494000	787240	36000000	2034	SLE QP 2	57572	1120500	Si
0.15	0.41	0.0000343	2240	SLE RA 20	63410	1494000	786286	36000000	2032	SLE QP 2	57517	1120500	Si
0.23	0.41	0.0000343	2237	SLE RA 20	63302	1494000	784950	36000000	2029	SLE QP 2	57427	1120500	Si
0.46	0.41	0.0000343	2219	SLE RA 20	62792	1494000	778625	36000000	2013	SLE QP 2	56987	1120500	Si

**Verifiche di apertura delle fessure**

La campata non presenta apertura delle fessure nella suola

Campata 3 tra i fili 156 - 156, sezione R 70x45, aste 682, 681, 680, 679, 678, 677

Campata 4 tra i fili 156 - 194, sezione R 70x45, aste 676, 675

**Verifiche di resistenza della suola di fondazione**

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0003	3008	SLU 83	0.029	5452	7762	SLU 83	15877	Si
0.26	0.41	0.0003	3063	SLU 83	0.029	5452	7906	SLU 83	15877	Si
0.3	0.41	0.0003	3072	SLU 83	0.029	5452	7927	SLU 83	15877	Si
0.53	0.41	0.0003	3113	SLU 83	0.029	5452	8034	SLU 83	15877	Si

**Verifiche di resistenza della suola di fondazione in condizioni SLD**

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0003	2166	SLD 14	0.099	6093	5589	SLD 14	15877	Si
0.26	0.41	0.0003	2222	SLD 14	0.099	6093	5735	SLD 14	15877	Si
0.3	0.41	0.0003	2231	SLD 14	0.099	6093	5757	SLD 14	15877	Si
0.53	0.41	0.0003	2276	SLD 14	0.099	6093	5873	SLD 14	15877	Si

**Verifiche delle tensioni di esercizio**

Rara									Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma c$	$\sigma c$ limite	$\sigma f$	$\sigma f$ limite	M	Comb	$\sigma c$	$\sigma c$ limite	
0	0.41	0.0000343	2220	SLE RA 20	62829	1494000	779079	36000000	2024	SLE QP 2	57288	1120500	Si
0.26	0.41	0.0000343	2261	SLE RA 20	63999	1494000	793586	36000000	2063	SLE QP 2	58379	1120500	Si
0.3	0.41	0.0000343	2267	SLE RA 20	64169	1494000	795692	36000000	2068	SLE QP 2	58538	1120500	Si
0.53	0.41	0.0000343	2298	SLE RA 20	65044	1494000	806549	36000000	2097	SLE QP 2	59354	1120500	Si

**Verifiche di apertura delle fessure**

La campata non presenta apertura delle fessure nella suola

Campata 5 tra i fili 194 - 212, sezione R 70x45, aste 674, 673, 672, 671

**Verifiche di resistenza della suola di fondazione**

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0003	3113	SLU 83	0.029	5452	8034	SLU 83	15877	Si
0.23	0.41	0.0003	3146	SLU 83	0.029	5452	8120	SLU 83	15877	Si
0.73	0.41	0.0003	3195	SLU 83	0.029	5452	8245	SLU 83	15877	Si
1.3	0.41	0.0003	3194	SLU 83	0.029	5452	8244	SLU 83	15877	Si
1.45	0.41	0.0003	3181	SLU 83	0.029	5452	8209	SLU 83	15877	Si

**Verifiche di resistenza della suola di fondazione in condizioni SLD**

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0003	2276	SLD 14	0.099	6093	5873	SLD 14	15877	Si
0.23	0.41	0.0003	2312	SLD 14	0.099	6093	5967	SLD 14	15877	Si
0.73	0.41	0.0003	2375	SLD 14	0.099	6093	6129	SLD 14	15877	Si
1.3	0.41	0.0003	2401	SLD 14	0.099	6093	6196	SLD 14	15877	Si
1.45	0.41	0.0003	2396	SLD 14	0.099	6093	6184	SLD 14	15877	Si

**Verifiche delle tensioni di esercizio**

Rara									Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma c$	$\sigma c$ limite	$\sigma f$	$\sigma f$ limite	M	Comb	$\sigma c$	$\sigma c$ limite	
0	0.41	0.0000343	2298	SLE RA 20	65044	1494000	806549	36000000	2097	SLE QP 2	59354	1120500	Si
0.23	0.41	0.0000343	2323	SLE RA 20	65738	1494000	815154	36000000	2120	SLE QP 2	60001	1120500	Si
0.73	0.41	0.0000343	2358	SLE RA 20	66752	1494000	827726	36000000	2153	SLE QP 2	60948	1120500	Si
1.3	0.41	0.0000343	2358	SLE RA 20	66736	1494000	827532	36000000	2153	SLE QP 2	60944	1120500	Si
1.45	0.41	0.0000343	2348	SLE RA 20	66451	1494000	823990	36000000	2144	SLE QP 2	60683	1120500	Si

**Verifiche di apertura delle fessure**

La campata non presenta apertura delle fessure nella suola

**Verifiche geotecniche**

**Verifiche geotecniche - Cedimenti assoluti e differenziali**

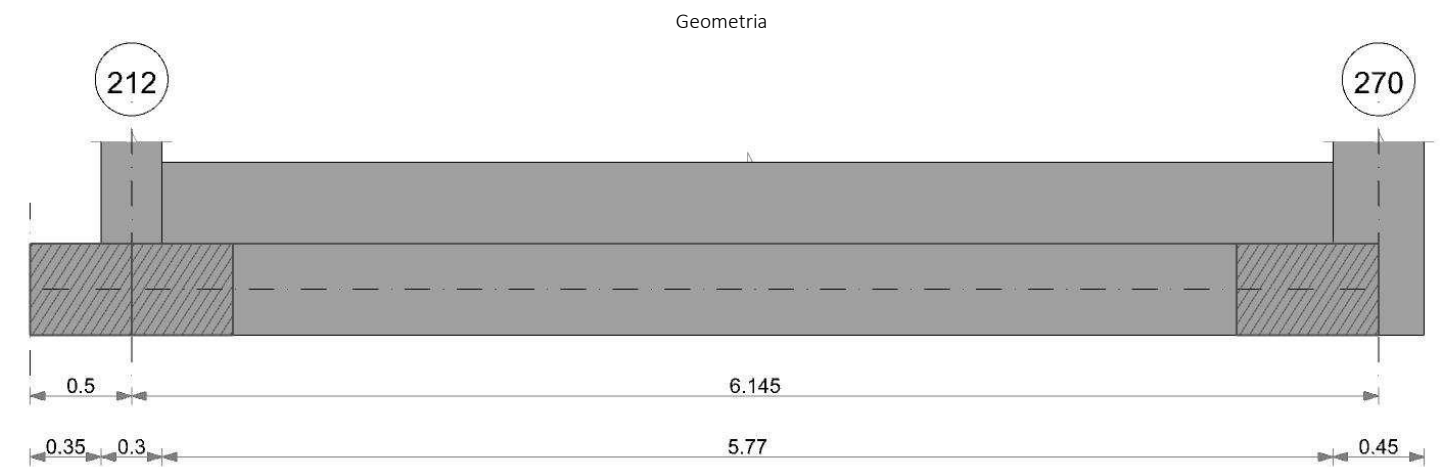
Criteri geotecnici - Scandimenti assoluti e differenziali																	
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.001	378	SLE RA 20	0.05	0	378	366	SLE RA 20	0.05	0	371	SLE RA 20	0.0033	0	SLE RA 20	Si
D	0.05	0	366	SLE RA 1	0.05	0	366	366	SLE RA 1	0.05	0	369	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	366	SLE RA 1	0.05	0	366	366	SLE RA 1	0.05	0	369	SLE RA 1	0.0033	0	SLE RA 1	Si

**Verifiche geotecniche - Rotazioni assolute e differenziali**

Rotazioni assolute e distorsioni																	
Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.01	SLE RA 20	0.19	0.01	371	377	SLE RA 20	0.19	0.01	377	SLE RA 20	0.1	0	371	SLE RA 20	Si
D	0.19	0	SLE RA 1	0.19	0	366	369	SLE RA 1	0.19	0	366	SLE RA 1	0.1	0	369	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	366	369	SLE RA 1	0.19	0	366	SLE RA 1	0.1	0	369	SLE RA 1	Si



CORDOLO 18



**Caratteristiche dei materiali**  
Acciaio: B450C Fyk 45000000  
Calcestruzzo: C25/30 Rck 3000000

**Elenco delle sezioni**

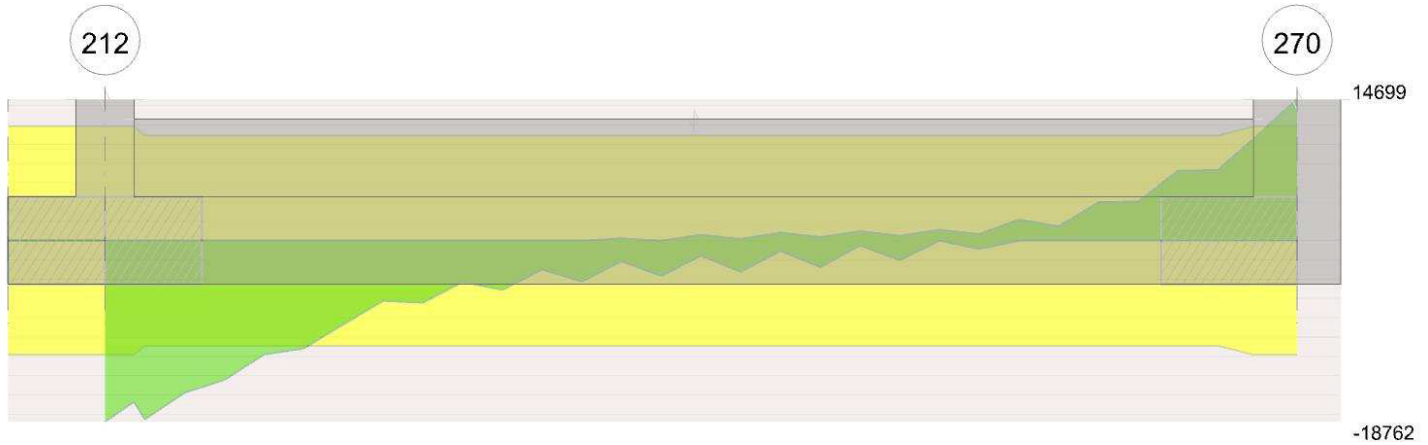
N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 70x45	Rettangolare	0.7	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione



Diagramma verifica stato limite ultimo taglio





Output campate

#### Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 212 - 270, sezione R 70x45, aste 317, 316, 315, 314, 313, 312, 311, 310, 309, 308, 307, 306, 305, 304, 303

#### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	3112	SLU 83	0.017	2772	8032	SLU 83	15877	No
0.15	0.41	0.0002	3086	SLU 83	0.017	2772	7965	SLU 83	15877	No
3.07	0.41	0.0002	2321	SLV 14	0.086	2696	5990	SLV 14	15877	Si
5.92	0.41	0.0002	4147	SLV 14	0.086	2696	10704	SLV 14	15877	No
6.15	0.41	0.0002	4427	SLV 14	0.086	2696	11427	SLV 14	15877	No

#### Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	2365	SLD 14	0.071	3120	6104	SLD 14	15877	Si
0.15	0.41	0.0002	2352	SLD 14	0.071	3120	6069	SLD 14	15877	Si
3.07	0.41	0.0002	1849	SLD 14	0.071	3120	4771	SLD 14	15877	Si
5.92	0.41	0.0002	3088	SLD 14	0.071	3120	7969	SLD 14	15877	Si
6.15	0.41	0.0002	3289	SLD 14	0.071	3120	8489	SLD 14	15877	No

#### Verifiche delle tensioni di esercizio

Termine della tensione di esercizio			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma c$	$\sigma c$ limite	$\sigma f$	$\sigma f$ limite	M	Comb	$\sigma c$	$\sigma c$ limite	
0	0.41	0.00000174	2297	SLE RA 20	66480	1494000	824356	36000000	2098	SLE QP 2	60709	1120500	Si
0.15	0.41	0.00000174	2278	SLE RA 20	65924	1494000	817463	36000000	2080	SLE QP 2	60201	1120500	Si
3.07	0.41	0.00000174	1639	SLE RA 21	47439	1494000	588241	36000000	1495	SLE QP 2	43282	1120500	Si
5.92	0.41	0.00000174	2507	SLE RA 21	72548	1494000	899595	36000000	2296	SLE QP 2	66457	1120500	Si
6.15	0.41	0.00000174	2662	SLE RA 21	77037	1494000	955259	36000000	2439	SLE QP 2	70593	1120500	Si

#### Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

#### Verifiche geotecniche

##### Verifiche geotecniche di scorrimento sul piano di posa

Size X	Size Y	Comb.	Sis.	Cnd	Fx	Fy	Fz	IncX	IncY	Phi	Ad	RPI	yR	Rd	Ed	Rd/Ed	Verifica
6.37	1.3	SLU 23	ST	LT	-755	-272	-62377	-1	0	19	0	0	1.1	18974	802	23.65	Si
6.37	1.3	SLV 2	SIS	LT	-14784	-3763	-39090	-21	-5	19	0	0	1.1	11890	15255	0.78	No

##### Verifiche geotecniche di capacità portante sul piano di posa

Aste													Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
317,316,315,314,313,312,311,310,309,308,307,306,305,304,303													6.37	1.3	SLU 83	ST	BT	2.3	269865	86411	3.12	Si
317,316,315,314,313,312,311,310,309,308,307,306,305,304,303													6.37	1.3	SLV 14	SIS	BT	2.3	239322	85334	2.8	Si
317,316,315,314,313,312,311,310,309,308,307,306,305,304,303													6.37	1.3	SLD 14	SIS	BT	2.3	254810	70881	3.59	Si

##### Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	-463	-86411	11694.39	1226.49	0	0	0.01	0.14	1.03	6.34	1496	2060	0	14430	
0	-1899	-85334	13198.95	21472.99	0	-1	0.25	0.15	0.99	5.87	1496	2060	0	14430	0.07
0	-983	-70881	10201.64	9693.98	0	-1	0.14	0.14	1.01	6.1	1496	2060	0	14430	0.03

##### Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.03	0	0	0.23	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.03	0	0	0.23	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.03	0	0	0.23	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0

##### Verifiche geotecniche - Cedimenti assoluti e differenziali

Tipo	Assoluto				Differenziale				Relativo				Rapp. inflessione				Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Comb.	Sr adm	Sr	Nodo	Comb.	Ri adm	Ri	Comb.	
E	0.05	0	363	SLE RA 20	0.05	0	363	320	SLE RA 20	0.05	0	320	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	320	SLE RA 1	0.05	0	320	320	SLE RA 1	0.05	0	320	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	320	SLE RA 1	0.05	0	320	320	SLE RA 1	0.05	0	320	SLE RA 1	0.0033	0	SLE RA 1	Si

##### Verifiche geotecniche - Rotazioni assolute e differenziali

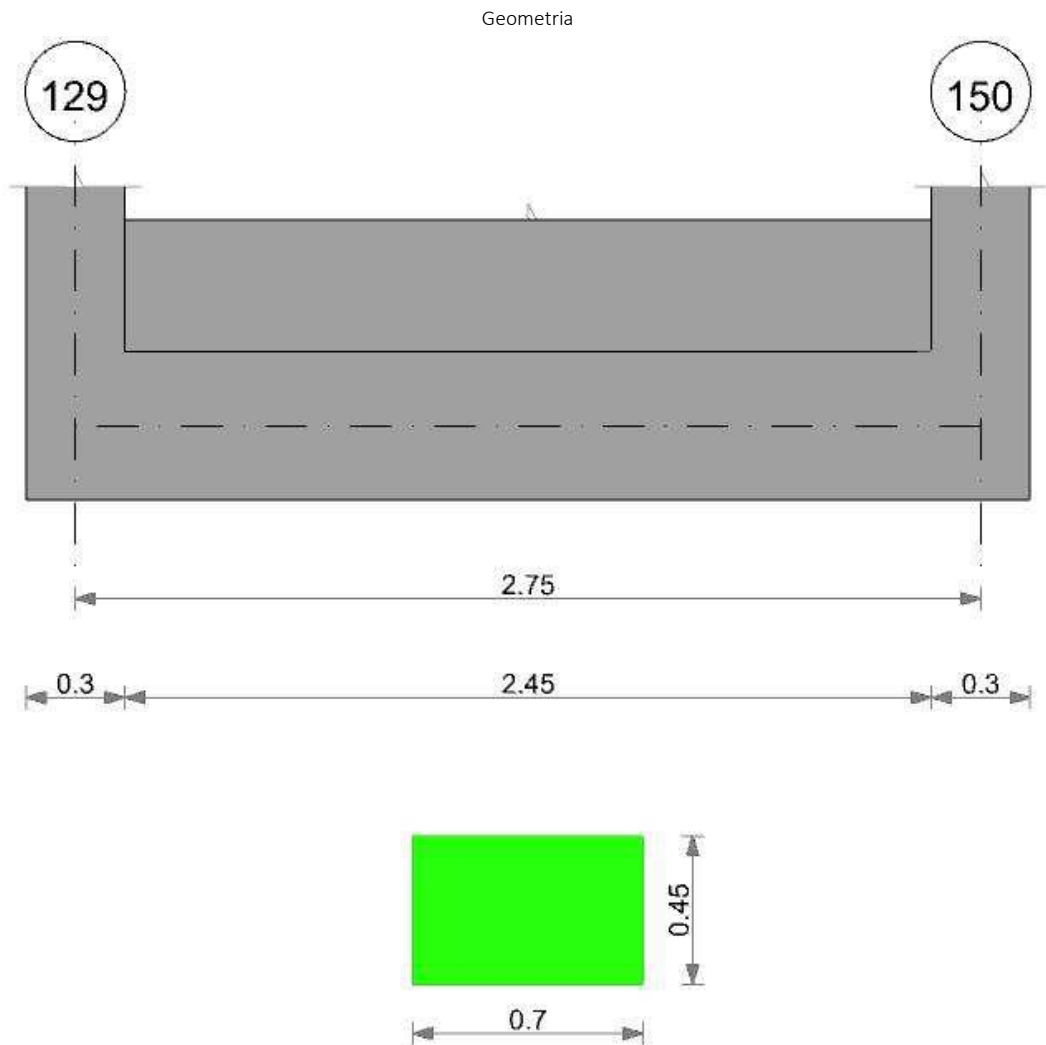
Forme geometriche: Rotazioni assolute e differenziali																	
Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0	SLE RA 20	0.19	0	320	363	SLE RA 20	0.19	0	320	SLE RA 1	0.1	0	320	SLE RA 1	Si





Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
D	0.19	0	SLE RA 1	0.19	0	320	363	SLE RA 1	0.19	0	320	SLE RA 1	0.1	0	320	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	320	363	SLE RA 1	0.19	0	320	SLE RA 1	0.1	0	320	SLE RA 1	Si

CORDOLO 19



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000  
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 70x45	Rettangolare	0.7	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

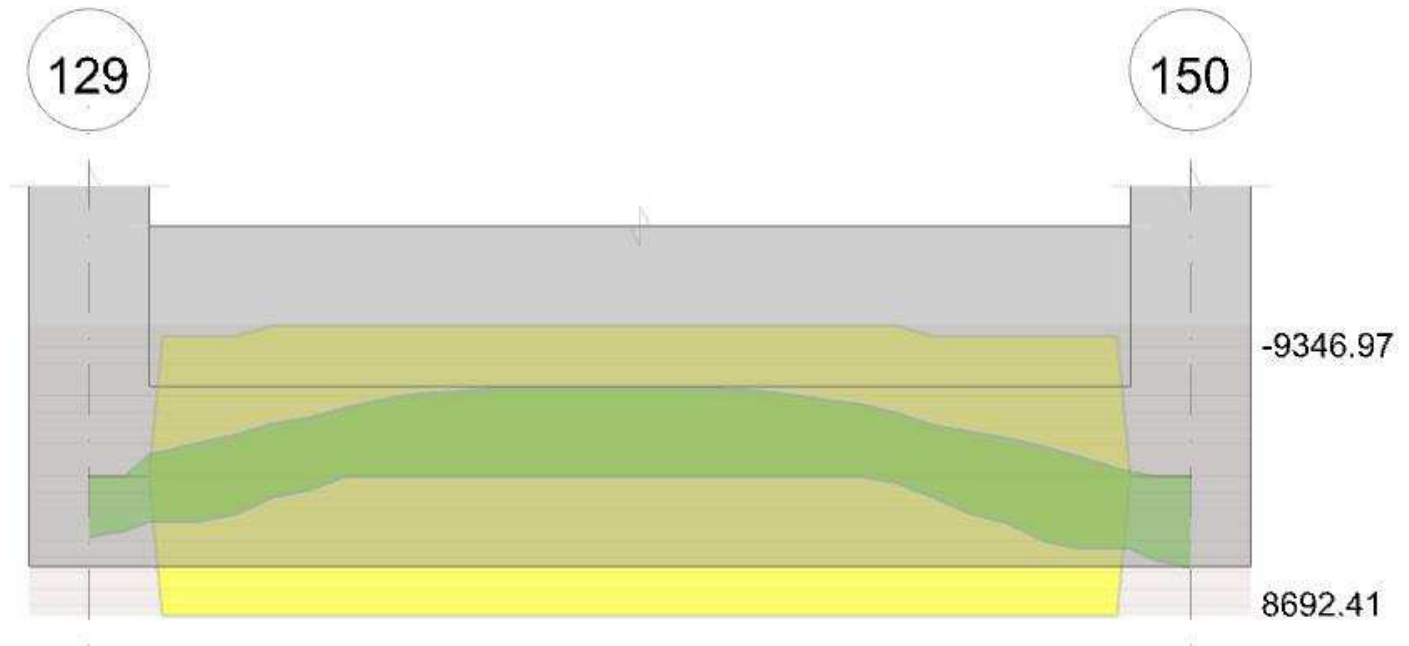
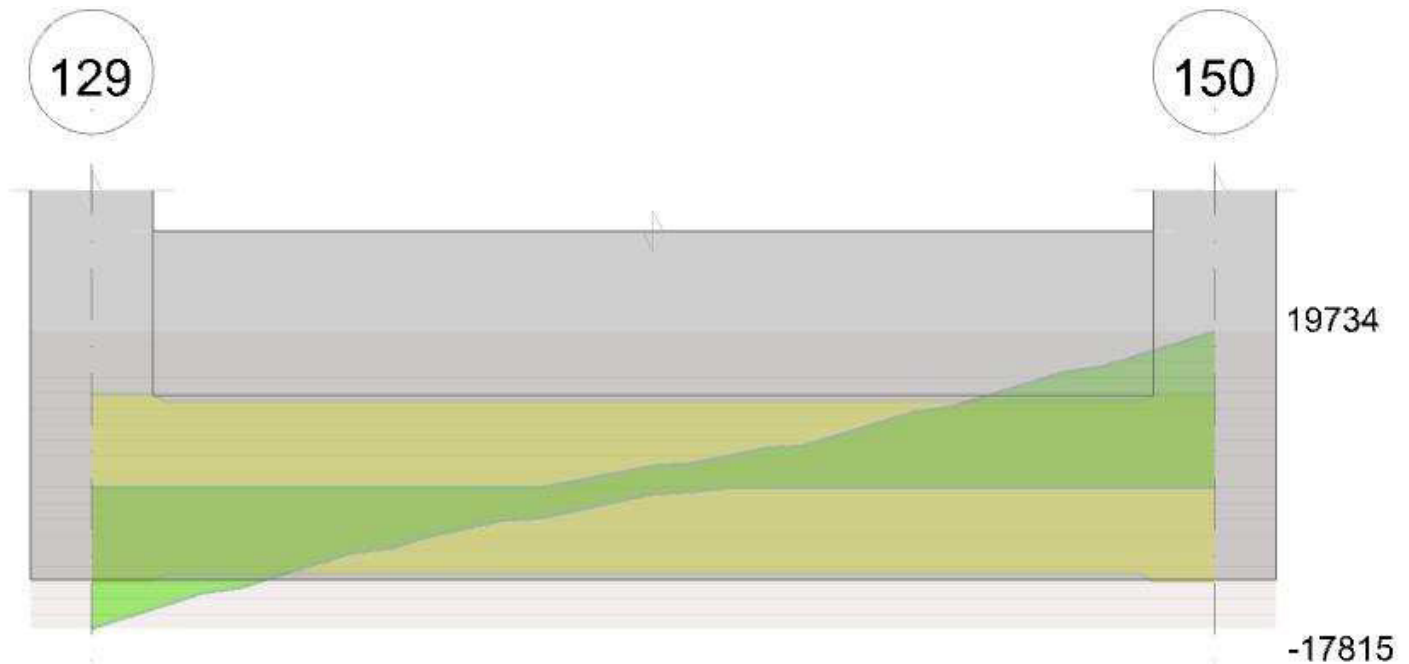


Diagramma verifica stato limite ultimo taglio



Output campate

#### Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 129 - 150, sezione R 70x45, aste 701, 702, 703, 704, 705, 706, 707, 708

#### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0003	3641	SLU 83	0.029	5501	9397	SLU 83	15877	Si
0.15	0.41	0.0003	3608	SLU 83	0.029	5501	9310	SLU 83	15877	Si
1.38	0.41	0.0003	3404	SLU 83	0.029	5501	8784	SLU 83	15877	Si
2.6	0.41	0.0003	3529	SLU 83	0.029	5501	9106	SLU 83	15877	Si
2.75	0.41	0.0003	3544	SLU 83	0.029	5501	9146	SLU 83	15877	Si

#### Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0003	2605	SLD 9	0.099	6147	6722	SLD 9	15877	Si
0.15	0.41	0.0003	2581	SLD 9	0.099	6147	6660	SLD 9	15877	Si
1.38	0.41	0.0003	2433	SLD 10	0.099	6147	6278	SLD 10	15877	Si
2.6	0.41	0.0003	2527	SLD 10	0.099	6147	6522	SLD 10	15877	Si
2.75	0.41	0.0003	2540	SLD 10	0.099	6147	6555	SLD 10	15877	Si

#### Verifiche delle tensioni di esercizio



			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma c$	$\sigma c$ limite	$\sigma f$	$\sigma f$ limite	M	Comb	$\sigma c$	$\sigma c$ limite	
0	0.41	0.00000346	2690	SLE RA 20	76094	1494000	943568	36000000	2447	SLE QP 2	69239	1120500	Si
0.15	0.41	0.00000346	2665	SLE RA 20	75388	1494000	934809	36000000	2424	SLE QP 2	68583	1120500	Si
1.38	0.41	0.00000346	2513	SLE RA 20	71101	1494000	881652	36000000	2284	SLE QP 2	64615	1120500	Si
2.6	0.41	0.00000346	2605	SLE RA 20	73711	1494000	914011	36000000	2369	SLE QP 2	67036	1120500	Si
2.75	0.41	0.00000346	2617	SLE RA 20	74033	1494000	918011	36000000	2380	SLE QP 2	67343	1120500	Si

#### Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

#### Verifiche geotecniche

##### Verifiche geotecniche di scorrimento sul piano di posa

Size X	Size Y	Comb.	Sis.	Cnd	Fx	Fy	Fz	IncX	IncY	Phi	Ad	RPI	yR	Rd	Ed	Rd/Ed	Verifica
3.05	1.3	SLU 41	ST	LT	90	-138	-41725	0	0	19	0	0	1.1	12692	165	77.01	Si
3.05	1.3	SLV 4	SIS	LT	-6848	1137	-32692	-12	2	19	0	0	1.1	9944	6942	1.43	Si

##### Verifiche geotecniche di capacità portante sul piano di posa

Aste					Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
701,702,703,704,705,706,707,708					3.05	1.3	SLU 83	ST	BT	2.3	160973	50506	3.19	Si
701,702,703,704,705,706,707,708					3.05	1.3	SLV 9	SIS	BT	2.3	146461	38882	3.77	Si
701,702,703,704,705,706,707,708					3.05	1.3	SLD 9	SIS	BT	2.3	154751	36595	4.23	Si

##### Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
110	-115	-50506	1718.85	-169.71	0	0	0	0.03	1.23	3.04	1496	2060	0	14430	
1828	-3125	-38882	2851.29	640.45	3	-5	0.02	0.07	1.15	3.02	1496	2060	0	14430	0.07
823	-1399	-36595	1903.44	203.86	1	-2	0.01	0.05	1.2	3.04	1496	2060	0	14430	0.03

##### Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ik	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.08	0	0	0.23	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.08	0	0	0.23	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.08	0	0	0.23	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0

##### Verifiche geotecniche - Cedimenti assoluti e differenziali

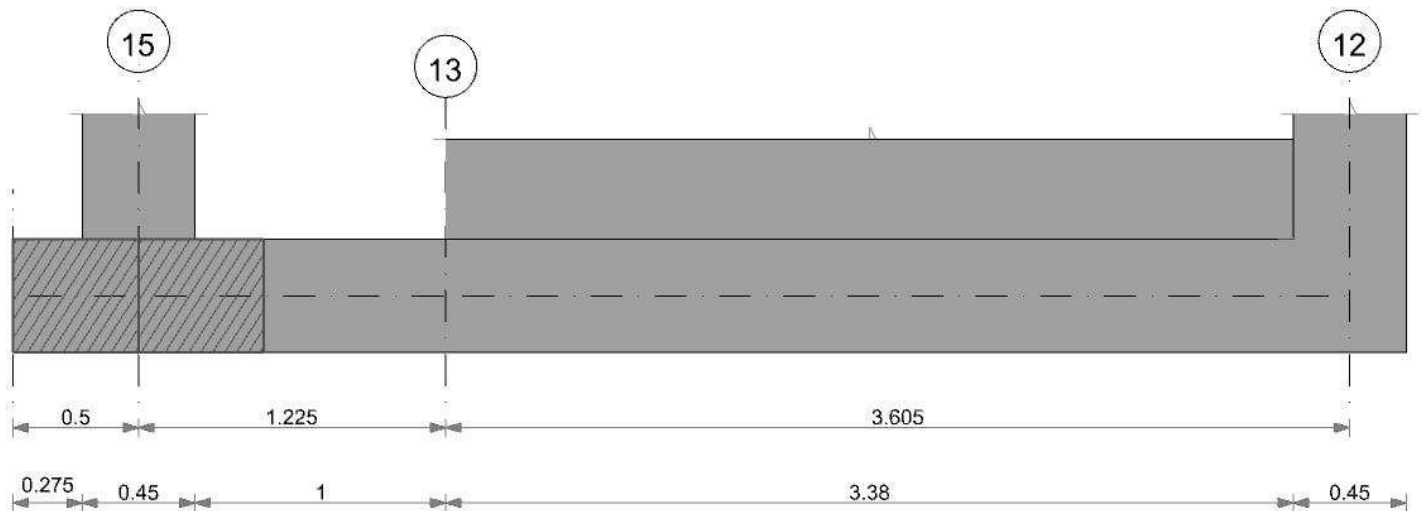
Tipo	Assoluto				Differenziale				Relativo				Rapp. inflessione				Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Comb.	Sr adm	Sr	Nodo	Comb.	Ri adm	Ri	Comb.	
E	0.05	0	180	SLE RA 20	0.05	0	180	172	SLE RA 21	0.05	0	180	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	180	SLE RA 1	0.05	0	180	180	SLE RA 1	0.05	0	180	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	180	SLE RA 1	0.05	0	180	180	SLE RA 1	0.05	0	180	SLE RA 1	0.0033	0	SLE RA 1	Si

##### Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0	SLE RA 21	0.19	0	180	172	SLE RA 21	0.19	0	180	SLE RA 1	0.1	0	180	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	180	172	SLE RA 1	0.19	0	180	SLE RA 1	0.1	0	180	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	180	172	SLE RA 1	0.19	0	180	SLE RA 1	0.1	0	180	SLE RA 1	Si

CORDOLO 20

Geometria



#### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

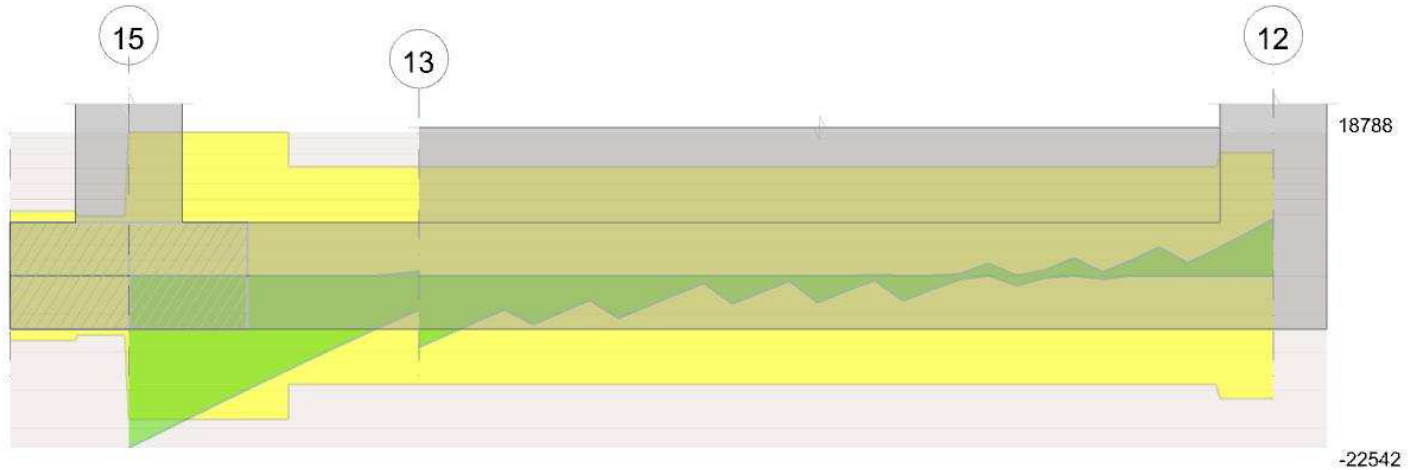
#### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copri ferro sup.	Copri ferro inf.	Copri ferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione



Diagramma verifica stato limite ultimo taglio



#### Output campate

Campata 2 tra i fili 15 - 13, sezione R 50x45, asta 302

#### Verifiche a flessione in famiglia SLV

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000509	0.052	0.000763	0.052	13115.21	SLU 84	10978.79	11254.02	0.132	1.03							Si
0.23	0.000509	0.052	0.000763	0.052	9179.62	SLU 84	9179.62	11254.02	0.132	1.23							Si
0.61	0.000509	0.052	0.000509	0.052	3982.24	SLU 84	6143.37	7755.45	0.113	1.26							Si
1.22	0.000509	0.052	0.000509	0.052	-136.26	SLU 8	512.4	7755.45	0.113	15.14	-231.74	SLU 82	-231.74	-7755.45	0.113	33.47	Si

#### Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000509	0.052	0.000763	0.052	15682.6	SLV 4	13151.88	10716.86	0.238	0.81							No
0.23	0.000509	0.052	0.000763	0.052	11004.61	SLV 4	11004.61	10716.86	0.238	0.97							No
0.61	0.000509	0.052	0.000509	0.052	4755.86	SLV 4	7367.94	7266.79	0.197	0.99							No
1.22	0.000509	0.052	0.000509	0.052	600.12	SLV 9	833.53	7266.79	0.197	8.72	-900.88	SLV 8	-900.88	-7266.79	0.197	8.07	Si

#### Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000509	0.052	0.000763	0.052	11745.18	SLD 4	9838.84	10716.86	0.238	1.09							Si
0.23	0.000509	0.052	0.000763	0.052	8227.29	SLD 4	8227.29	10716.86	0.238	1.3							Si
0.61	0.000509	0.052	0.000509	0.052	3554.78	SLD 4	5502.82	7266.79	0.197	1.32							Si
1.22	0.000509	0.052	0.000509	0.052	179.11	SLD 9	555.77	7266.79	0.197	13.08	-479.87	SLD 8	-479.87	-7266.79	0.197	15.14	Si

#### Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcl	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000134	0.000692	0	-19016	SLV 4	-19016	-8381	-63178	-18788	-18788	1	0.99	Si
0.23	0.0000134	0.000509	0	-15993	SLV 4	-15993	-7764	-63178	-18788	-18788	1	1.17	Si
0.61	0.0000134	0.000509	0	-10836	SLV 4	-10836	-7764	-63178	-18788	-18788	1	1.73	Si
1.22	0.0000102	0.000509	0	-2998	SLV 4	-2998	-7764	-63178	-14244	-14244	1	4.75	Si

#### Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcl	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000134	0.000692	0	-22542	SLV 4	-22542	-8381	-63178	-18788	-18788	1	0.83	Si
0.23	0.0000134	0.000509	0	-19087	SLV 4	-19087	-7764	-63178	-18788	-18788	1	0.98	No
0.61	0.0000134	0.000509	0	-13217	SLV 4	-13217	-7764	-63178	-18788	-18788	1	1.42	Si
1.22	0.0000102	0.000509	0	545	SLV 13	545	7764	63178	14244	14244	1	26.13	Si
1.22	0.0000102	0.000509	0	-4454	SLV 4	-4454	-7764	-63178	-14244	-14244	1	3.2	Si

#### Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcl	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000134	0.000692	0	-16975	SLD 4	-16975	-8381	-63178	-18788	-18788	1	1.11	Si
0.23	0.0000134	0.000509	0	-14325	SLD 4	-14325	-7764	-63178	-18788	-18788	1	1.31	Si
0.61	0.0000134	0.000509	0	-9815	SLD 4	-9815	-7764	-63178	-18788	-18788	1	1.91	Si
1.22	0.0000102	0.000509	0	-3027	SLD 4	-3027	-7764	-63178	-14244	-14244	1	4.71	Si

#### Verifiche delle tensioni in esercizio

x	Rara								Quasi permanente								Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.			
0	9656.17	21	8081.21	727080	1494000	29401155	36000000	8803.92	2	7364.1	662561	1120500					Si
0.23	6755.34	21	67790	1494000	24577379	36000000	6152.96	2	6152.96	553592	1120500						Si
0.61	2926.88	21	4518.32	238989	1494000	3584840	36000000	2659.06	2	4110.44	217416	1120500					Si
1.22	-169.25	19	-169.25	8952	1494000	134286	36000000	-150.38	2	-150.38	7954	1120500					Si

#### Verifica di apertura delle fessure

x	Bordo	Rara				Frequente				Quasi permanente				Verifica
		Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	
0	inferiore	0.375	0.00086	0.000321	21	0.375	0.00089	0.000333	6	0.375	0.00085	0.00032	2	No
0.23	inferiore	0.375	0.00072	0.000268	21	0.375	0.00067	0.000251	6	0.375	0.00065	0.000244	2	Si
0.53	inferiore	0.506	0.00084	0.000424	21	0.506	0.00078	0.000396	6	0.506	0.00076	0.000386	2	No



## Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 15 - 13, sezione R 50x45, asta 302

Campata 3 tra i fili 13 - 12, sezione R 50x45, aste 301, 300, 299, 298, 297, 296, 295, 294, 293

### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0005	2029	SLV 4	0.145	7698	7057	SLV 4	19893	Si
1.8	0.41	0.0005	1812	SLV 4	0.145	7698	6302	SLV 4	19893	Si
3.38	0.41	0.0005	2320	SLV 4	0.145	7698	8069	SLV 4	19893	Si
3.6	0.41	0.0005	2473	SLV 4	0.145	7698	8602	SLV 4	19893	Si

### Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0005	1534	SLD 4	0.12	8948	5336	SLD 4	22877	Si
1.8	0.41	0.0005	1373	SLD 4	0.12	8948	4774	SLD 4	22877	Si
3.38	0.41	0.0005	1765	SLD 4	0.12	8948	6139	SLD 4	22877	Si
3.6	0.41	0.0005	1884	SLD 4	0.12	8948	6553	SLD 4	22877	Si

### Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma c$	$\sigma c$ limite	$\sigma f$	$\sigma f$ limite	M	Comb	$\sigma c$	$\sigma c$ limite	
0	0.41	0.00000508	1277	SLE RA 21	35394	1494000	438883	36000000	1165	SLE QP 2	32271	1120500	Si
1.8	0.41	0.00000508	1146	SLE RA 21	31753	1494000	393743	36000000	1045	SLE QP 2	28943	1120500	Si
3.38	0.41	0.00000508	1480	SLE RA 21	41004	1494000	508450	36000000	1350	SLE QP 2	37413	1120500	Si
3.6	0.41	0.00000508	1582	SLE RA 21	43820	1494000	543370	36000000	1443	SLE QP 2	39992	1120500	Si

### Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

### Verifiche geotecniche

#### Verifiche geotecniche di scorrimento sul piano di posa

Size X	Size Y	Comb.	Sis.	Cnd	Fx	Fy	Fz	IncX	IncY	Phi	Ad	RPI	yR	Rd	Ed	Rd/Ed	Verifica
5.05	1.1	SLU 48	ST	LT	-145	-879	-57862	0	-1	19	0	0	1.1	17600	891	19.75	Si
5.05	1.1	SLV 13	SIS	LT	-3620	-7367	-19963	-10	-20	19	0	0	1.1	6072	8208	0.74	No

#### Verifiche geotecniche di capacità portante sul piano di posa

Aste										Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
302,301,300,299,298,297,296,295,294,293										5.05	1.1	SLU 83	ST	BT	2.3	195059	68527	2.85	Si
302,301,300,299,298,297,296,295,294,293										5.05	1.1	SLV 1	SIS	BT	2.3	164422	72280	2.27	Si
302,301,300,299,298,297,296,295,294,293										5.05	1.1	SLD 4	SIS	BT	2.3	183225	58995	3.11	Si

#### Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	-967	-68527	-6695.28	-138.78	0	-1	0	-0.1	0.9	5.05	1496	2060	0	14430	
0	6845	-72280	-10970.22	-2216.57	0	5	-0.03	-0.15	0.8	4.99	1496	2060	0	14430	0.07
0	2156	-58995	-7160.36	417.54	0	2	0.01	-0.12	0.86	5.04	1496	2060	0	14430	0.03

#### Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ik	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.04	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.03	0	0	0.27	0	0	0.04	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.03	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0

#### Verifiche geotecniche - Cedimenti assoluti e differenziali

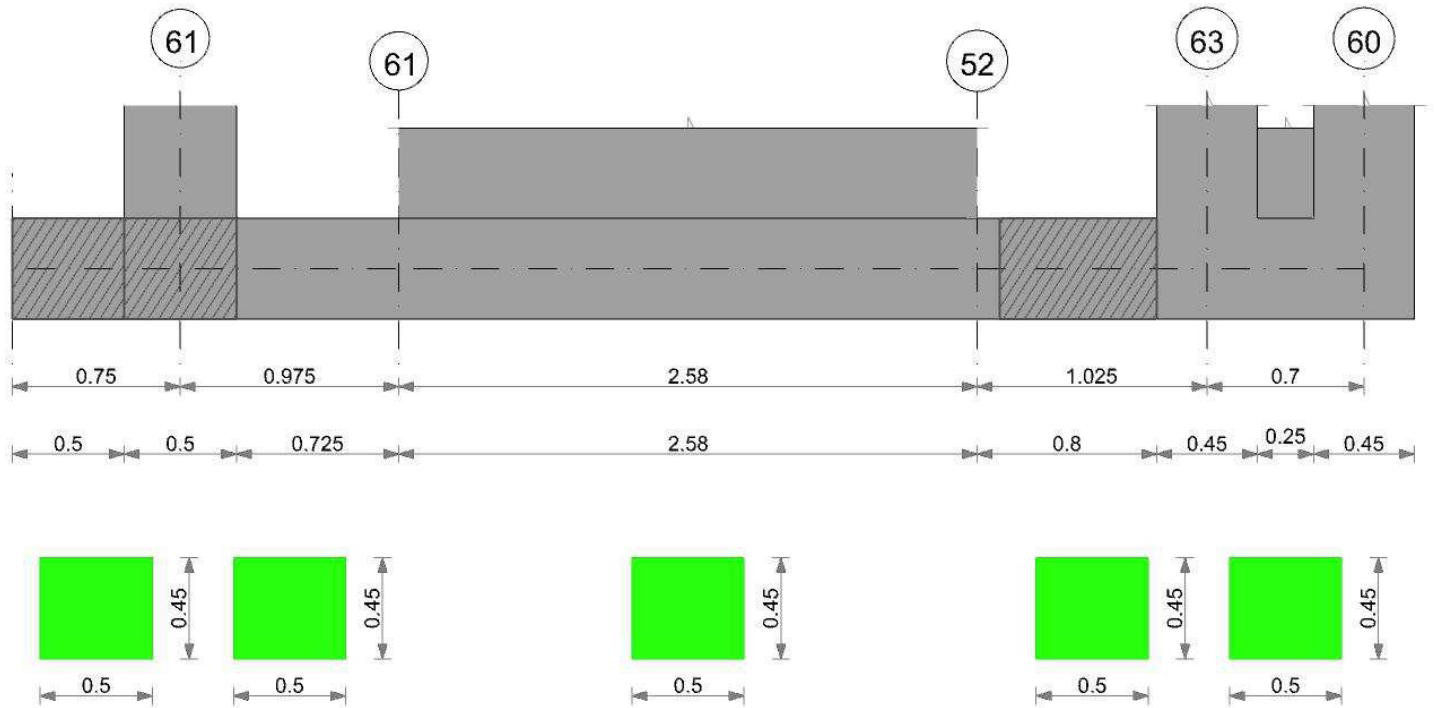
Tipo	Assoluto				Differenziale				Relativo				Rapp. inflessione				Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Comb.	Sr adm	Sr	Nodo	Comb.	Ri adm	Ri	Comb.	
E	0.05	0	594	SLE RA 21	0.05	0	594	913	SLE RA 21	0.05	0	745	SLE FR 6	0.0033	0	SLE FR 6	Si
D	0.05	0	594	SLE RA 1	0.05	0	594	594	SLE RA 1	0.05	0	745	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	594	SLE RA 1	0.05	0	594	594	SLE RA 1	0.05	0	745	SLE RA 1	0.0033	0	SLE RA 1	Si

#### Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0	SLE RA 21	0.19	0.01	594	745	SLE RA 20	0.19	0	594	SLE RA 1	0.1	0.01	745	SLE FR 6	Si
D	0.19	0	SLE RA 1	0.19	0	594	745	SLE RA 1	0.19	0	594	SLE RA 1	0.1	0	745	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	594	745	SLE RA 1	0.19	0	594	SLE RA 1	0.1	0	745	SLE RA 1	Si

CORDOLO 21

Geometria



#### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copri ferro sup.	Copri ferro inf.	Copri ferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

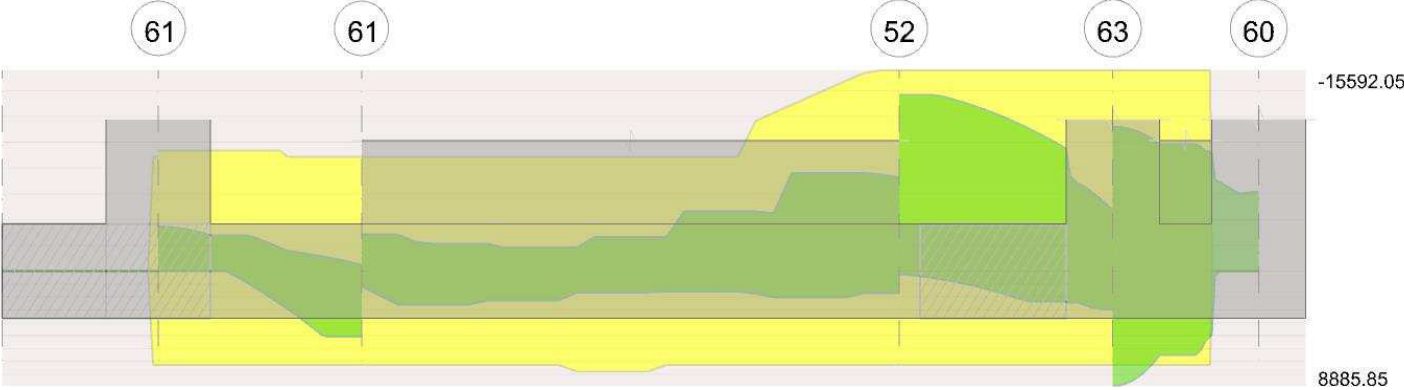
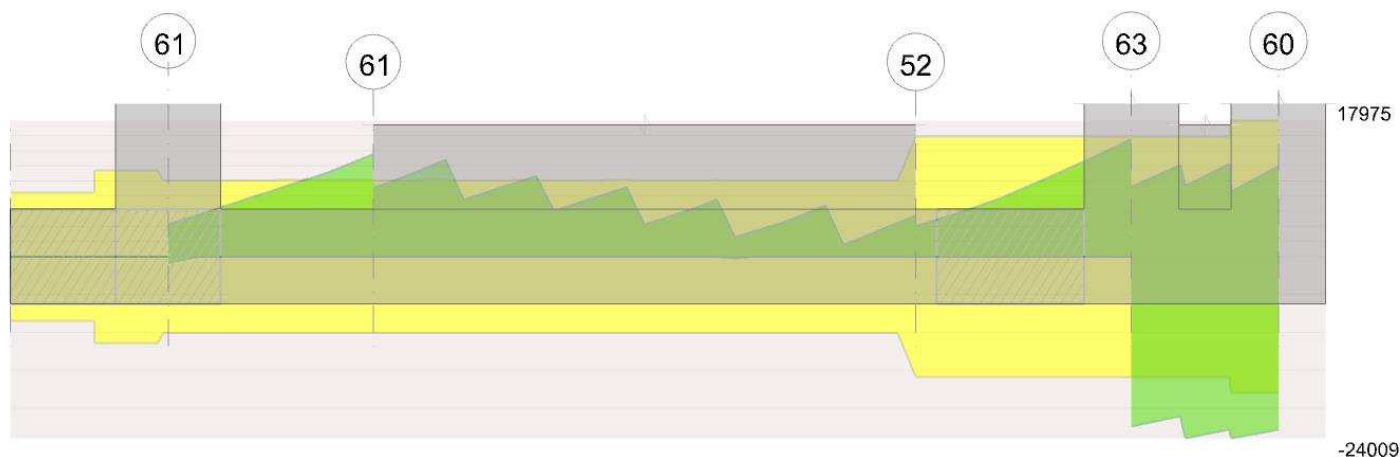


Diagramma verifica stato limite ultimo taglio



#### Output camptate

Campata 2 tra i fili 61 - 61, sezione R 50x45, asta 387

#### Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000628	0.053	0.000509	0.052							-3782	SLU 84	-3459.11	-9373.94	0.122	2.71	Si
0.25	0.000628	0.053	0.000509	0.052							-2788.06	SLU 84	-2788.06	-9373.94	0.122	3.36	Si
0.49	0.000628	0.053	0.000509	0.052	-768.12	SLU 1	429.62	7773.51	0.117	18.09	-1198.62	SLU 84	-2457.96	-9373.94	0.122	3.81	Si
0.81	0.000628	0.053	0.000509	0.052	2007.99	SLU 83	4055.61	7773.51	0.117	1.92							Si
0.98	0.000628	0.053	0.000509	0.052	4055.61	SLU 83	4055.61	7773.51	0.117	1.92							Si

#### Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000628	0.053	0.000509	0.052							-3425.89	SLV 1	-2933.75	-8872.37	0.218	3.02	Si
0.25	0.000628	0.053	0.000509	0.052							-2233.02	SLV 4	-2233.02	-8872.37	0.218	3.97	Si
0.49	0.000628	0.053	0.000509	0.052	-166.71	SLV 1	1501.86	7263.39	0.196	4.84	-1468.01	SLV 16	-1966.95	-8872.37	0.218	4.51	Si
0.88	0.000628	0.053	0.000509	0.052	3853.43	SLV 1	5082.49	7263.39	0.196	1.43	-152.87	SLV 16	-861.19	-8872.37	0.218	10.3	Si
0.98	0.000628	0.053	0.000509	0.052	5082.49	SLV 1	5082.49	7263.39	0.196	1.43	312.46	SLV 16	-499.59	-8872.37	0.218	17.76	Si

#### Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000628	0.053	0.000509	0.052							-2914.22	SLD 1	-2581.64	-8872.37	0.218	3.44	Si
0.25	0.000628	0.053	0.000509	0.052							-2026.04	SLD 4	-2026.04	-8872.37	0.218	4.38	Si
0.49	0.000628	0.053	0.000509	0.052	-537.58	SLD 1	798.59	7263.39	0.196	9.1	-1097.14	SLD 16	-1787.39	-8872.37	0.218	4.96	Si
0.88	0.000628	0.053	0.000509	0.052	2709.92	SLD 1	3720.56	7263.39	0.196	1.95	990.65	SLD 16	-96.15	-8872.37	0.218	92.28	Si
0.98	0.000628	0.053	0.000509	0.052	3720.56	SLD 1	3720.56	7263.39	0.196	1.95							Si

#### Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000072	0.000628	0	2573	SLU 84	2573	8105	63019	10078	10078	1	3.92	Si
0.25	0.0000072	0.000628	0	5368	SLU 84	5368	8105	63019	10078	10078	1	1.88	Si
0.49	0.0000072	0.000628	0	8028	SLU 84	8028	8105	63019	10078	10078	1	1.26	Si
0.98	0.0000072	0.000509	0	13526	SLU 84	13526	7764	63178	10104	10104	1	0.75	No

#### Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000072	0.000628	0	4244	SLV 1	4244	8105	63019	10078	10078	1	2.37	Si
0	0.0000072	0.000628	0	-852	SLV 16	-852	-8105	-63019	-10078	-10078	1	11.83	Si
0.25	0.0000072	0.000628	0	6494	SLV 1	6494	8105	63019	10078	10078	1	1.55	Si
0.49	0.0000072	0.000628	0	8640	SLV 1	8640	8105	63019	10078	10078	1	1.17	Si
0.98	0.0000072	0.000509	0	13068	SLV 1	13068	7764	63178	10104	10104	1	0.77	No

#### Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000072	0.000628	0	2805	SLD 5	2805	8105	63019	10078	10078	1	3.59	Si
0.25	0.0000072	0.000628	0	4825	SLD 1	4825	8105	63019	10078	10078	1	2.09	Si
0.49	0.0000072	0.000628	0	6767	SLD 1	6767	8105	63019	10078	10078	1	1.49	Si
0.98	0.0000072	0.000509	0	10775	SLD 1	10775	7764	63178	10104	10104	1	0.94	No

#### Verifiche delle tensioni in esercizio

x	Rara								Quasi permanente								Verifica
	Mela	Comb.	Mdes	$\sigma_c$	$\sigma_{clim.}$	$\sigma_f$	$\sigma_{flim.}$		Mela	Comb.	Mdes	$\sigma_c$	$\sigma_{clim.}$	$\sigma_{FRP}$	$\sigma_{FRP lim.}$		
0	-2783.82	21	-2548.1	133948	1494000	1987178	36000000		-2538.2	2	-2325.31	122236	1120500				Si
0.25	-2055.78	21	-2055.78	108067	1494000	1603229	36000000		-1878.24	2	-1878.24	98735	1120500				Si
0.49	-888.61	21	-1813.53	95333	1494000	1414311	36000000		-817.36	2	-1658.21	87168	1120500				Si
0.98	2974.68	20	2974.68	154657	1494000	2345578	36000000		2697.48	2	2697.48	140245	1120500				Si

#### Verifica di apertura delle fessure

La campata non presenta apertura delle fessure





Campata 4 tra i fili 52 - 63, sezione R 50x45, asta 380

#### Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.001137	0.053	0.000509	0.052							-10055.54	SLU 83	-10055.54	-16326.36	0.165	1.62	Si
0.17	0.001137	0.053	0.000509	0.052							-9375.3	SLU 83	-10055.54	-16326.36	0.165	1.62	Si
0.51	0.001137	0.053	0.000509	0.052							-6992.5	SLU 83	-8415.43	-16326.36	0.165	1.94	Si
0.8	0.001137	0.053	0.000509	0.052							-3891.87	SLU 83	-5947.94	-16326.36	0.165	2.74	Si
1.02	0.001137	0.053	0.000509	0.052							-738.62	SLU 84	-738.62	-16326.36	0.165	22.1	Si

#### Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.001137	0.053	0.000509	0.052	53.66	SLV 16	201.97	7255.57	0.189	35.92	-13659.2	SLV 1	-13659.2	-15592.05	0.288	1.14	Si
0.17	0.001137	0.053	0.000509	0.052	189.17	SLV 16	539.88	7255.57	0.189	13.44	-12871.06	SLV 1	-13659.2	-15592.05	0.288	1.14	Si
0.51	0.001137	0.053	0.000509	0.052	1039.59	SLV 16	1801.86	7255.57	0.189	4.03	-10498.19	SLV 1	-11878.87	-15592.05	0.288	1.31	Si
0.8	0.001137	0.053	0.000509	0.052	2365.27	SLV 16	2365.27	7255.57	0.189	3.07	-7636	SLV 1	-9519.07	-15592.05	0.288	1.64	Si
1.02	0.001137	0.053	0.000509	0.052	3786.47	SLV 14	2952.42	7255.57	0.189	2.46	-4798.03	SLV 3	-4798.03	-15592.05	0.288	3.25	Si

#### Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.001137	0.053	0.000509	0.052							-9737.43	SLD 1	-9737.43	-15592.05	0.288	1.6	Si
0.17	0.001137	0.053	0.000509	0.052							-9134.79	SLD 1	-9737.43	-15592.05	0.288	1.6	Si
0.51	0.001137	0.053	0.000509	0.052							-7195.55	SLD 1	-8337.5	-15592.05	0.288	1.87	Si
0.8	0.001137	0.053	0.000509	0.052							-4772.6	SLD 1	-6372.6	-15592.05	0.288	2.45	Si
1.02	0.001137	0.053	0.000509	0.052	1329.18	SLD 14	299.19	7255.57	0.189	24.25	-2340.74	SLD 3	-2340.74	-15592.05	0.288	6.66	Si

#### Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcl	Vrsl	Vult	cotgθ	coeff	Verifica
0	0.0000113	0.001137	0	3000	SLU 83	3000	9883	63090	15875	15875	1	5.29	Si
0.51	0.0000113	0.001137	0	9010	SLU 83	9010	9883	63090	15875	15875	1	1.76	Si
0.8	0.0000113	0.001137	0	12577	SLU 83	12577	9883	63090	15875	15875	1	1.26	Si
1.02	0.0000113	0.001137	0	15499	SLU 83	15499	9883	63090	15875	15875	1	1.02	Si

#### Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcl	Vrsl	Vult	cotgθ	coeff	Verifica
0	0.0000113	0.001137	0	4051	SLV 5	4051	9883	63090	15875	15875	1	3.92	Si
0.51	0.0000113	0.001137	0	8760	SLV 1	8760	9883	63090	15875	15875	1	1.81	Si
0.8	0.0000113	0.001137	0	11762	SLV 1	11762	9883	63090	15875	15875	1	1.35	Si
1.02	0.0000113	0.001137	0	14320	SLV 1	14320	9883	63090	15875	15875	1	1.11	Si

#### Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcl	Vrsl	Vult	cotgθ	coeff	Verifica
0	0.0000113	0.001137	0	2924	SLD 5	2924	9883	63090	15875	15875	1	5.43	Si
0.51	0.0000113	0.001137	0	7236	SLD 1	7236	9883	63090	15875	15875	1	2.19	Si
0.8	0.0000113	0.001137	0	9894	SLD 1	9894	9883	63090	15875	15875	1	1.6	Si
1.02	0.0000113	0.001137	0	12114	SLD 1	12114	9883	63090	15875	15875	1	1.31	Si

#### Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	-7413.06	20	-7413.06	577302	1494000	18457116	36000000	-6802.77	2	-6802.77	529775	1120500			Si
0.51	-5154.17	20	-6203.29	483090	1494000	15445017	36000000	-4729.3	2	-5691.17	443208	1120500			Si
0.8	-2868.48	20	-4384.12	224427	1494000	3177586	36000000	-2635.37	2	-4023.69	205976	1120500			Si
1.02	-544.04	21	-544.04	27850	1494000	394317	36000000	-505.78	2	-505.78	25891	1120500			Si

#### Verifica di apertura delle fessure

x	Bordo	Rara				Frequente				Quasi permanente				Verifica
		Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	
0	superiore	0.299	0.00054	0.000161	20	0.299	0.00053	0.000159	6	0.299	0.00051	0.000154	2	Si
0.17	superiore	0.299	0.00054	0.000161	20	0.299	0.00053	0.000159	6	0.299	0.00051	0.000154	2	Si
0.51	superiore	0.299	0.00045	0.000135	20	0.299	0.00042	0.000126	6	0.299	0.00041	0.000124	2	Si

#### Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 61 - 61, sezione R 50x45, asta 387

Campata 3 tra i fili 61 - 52, sezione R 50x45, aste 386, 385, 384, 383, 382, 381

#### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	2005	SLU 84	0.03	5726	6169	SLU 84	15877	Si
1.29	0.41	0.0004	2007	SLU 84	0.03	5726	6177	SLU 84	15877	Si
2.58	0.41	0.0006	2031	SLU 84	0.048	8946	6250	SLU 84	20158	Si

#### Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	1465	SLD 4	0.101	6396	4509	SLD 4	15877	Si
1.29	0.41	0.0004	1454	SLD 4	0.101	6396	4473	SLD 4	15877	Si
2.58	0.41	0.0006	1501	SLD 4	0.126	9959	4619	SLD 4	23182	Si

#### Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma c$	$\sigma c$ limite	$\sigma f$	$\sigma f$ limite	M	Comb	$\sigma c$	$\sigma c$ limite	
0	0.41	0.0000036	1472	SLE RA 21	41561	1494000	515353	36000000	1331	SLE QP 2	37580	1120500	Si
1.29	0.41	0.0000036	1473	SLE RA 21	41592	1494000	515747	36000000	1331	SLE QP 2	37585	1120500	Si
2.58	0.41	0.00000567	1491	SLE RA 21	40994	1494000	508326	36000000	1349	SLE QP 2	37098	1120500	Si



#### Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Campata 4 tra i fili 52 - 63, sezione R 50x45, asta 380

Campata 5 tra i fili 63 - 60, sezione R 50x45, aste 379, 378, 377

#### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0006	2378	SLU 84	0.048	8946	7318	SLU 84	20158	Si
0.23	0.41	0.0006	2407	SLV 4	0.153	8563	7645	SLU 84	20158	Si
0.35	0.41	0.0006	2514	SLV 4	0.153	8563	7834	SLU 84	20158	Si
0.48	0.41	0.0006	2628	SLV 4	0.153	8563	8085	SLV 4	20158	Si
0.7	0.41	0.0006	2856	SLV 3	0.153	8563	8787	SLV 3	20158	Si

#### Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0006	1864	SLD 4	0.126	9959	5735	SLD 4	23182	Si
0.23	0.41	0.0006	1980	SLD 4	0.126	9959	6091	SLD 4	23182	Si
0.35	0.41	0.0006	2049	SLD 4	0.126	9959	6306	SLD 4	23182	Si
0.48	0.41	0.0006	2123	SLD 4	0.126	9959	6533	SLD 4	23182	Si
0.7	0.41	0.0006	2270	SLD 3	0.126	9959	6986	SLD 3	23182	Si

#### Verifiche delle tensioni di esercizio

				Rara					Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma c$	$\sigma c$ limite	$\sigma f$	$\sigma f$ limite	M	Comb	$\sigma c$	$\sigma c$ limite	
0	0.41	0.00000567	1747	SLE RA 21	48052	1494000	595840	36000000	1587	SLE QP 2	43652	1120500	Si
0.23	0.41	0.00000567	1826	SLE RA 21	50206	1494000	622553	36000000	1660	SLE QP 2	45645	1120500	Si
0.35	0.41	0.00000567	1871	SLE RA 21	51457	1494000	638064	36000000	1702	SLE QP 2	46802	1120500	Si
0.48	0.41	0.00000567	1919	SLE RA 21	52771	1494000	654358	36000000	1746	SLE QP 2	48015	1120500	Si
0.7	0.41	0.00000567	2013	SLE RA 21	55359	1494000	686446	36000000	1833	SLE QP 2	50403	1120500	Si

#### Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

#### Verifiche geotecniche

##### Verifiche geotecniche di scorrimento sul piano di posa

Size X	Size Y	Comb.	Sis.	Cnd	Fx	Fy	Fz	IncX	IncY	Phi	Ad	RPI	yR	Rd	Ed	Rd/Ed	Verifica
5.51	1.1	SLU 44	ST	LT	557	-744	-58706	1	-1	19	0	0	1.1	17857	929	19.21	Si
5.51	1.1	SLV 16	SIS	LT	800	-9366	-40495	1	-13	19	0	0	1.1	12318	9400	1.31	Si

##### Verifiche geotecniche di capacità portante sul piano di posa

Aste					Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
387,386,385,384,383,382,381,380,379,378,377					5.51	1.1	SLU 84	ST	BT	2.3	250333	72366	3.46	Si
387,386,385,384,383,382,381,380,379,378,377					5.51	1.1	SLV 4	SIS	BT	2.3	212418	60842	3.49	Si
387,386,385,384,383,382,381,380,379,378,377					5.51	1.1	SLD 4	SIS	BT	2.3	234064	54417	4.3	Si

##### Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	-844	-72366	176.16	6468.25	0	-1	0.09	0	1.1	5.33	1496	2060	0	14430	
0	7144	-60842	-3364.48	11312.66	0	7	0.19	-0.06	0.99	5.13	1496	2060	0	14430	0.07
0	2711	-54417	-1366.83	7396.22	0	3	0.14	-0.03	1.05	5.23	1496	2060	0	14430	0.03

##### Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ik	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.04	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.27	0	0	0.03	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0

##### Verifiche geotecniche - Cedimenti assoluti e differenziali

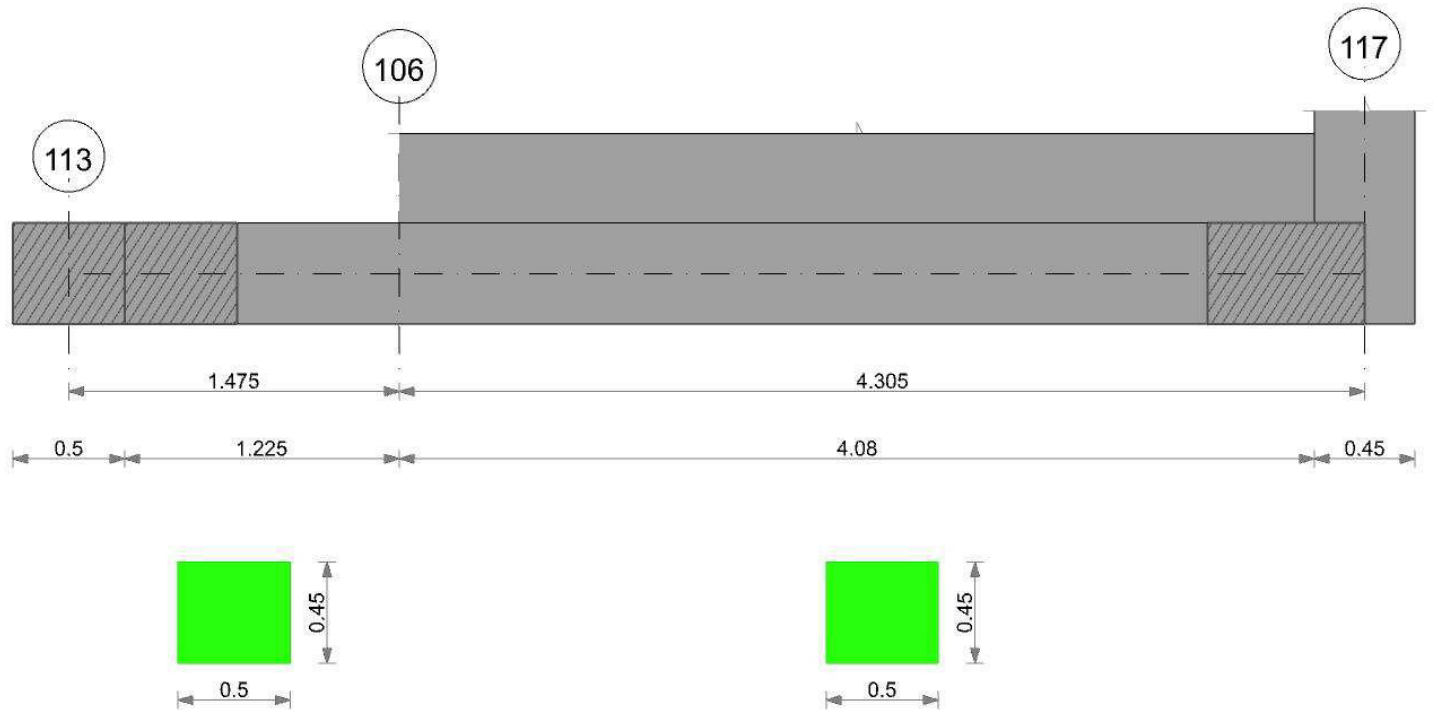
Tipo	Assoluto				Differenziale				Relativo				Rapp. inflessione				Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo i	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	Ri adm	Ri	Comb.	
E	0.05	0.001	687	SLE RA 21	0.05	0.001	687	995	SLE RA 21	0.05	0	748	SLE RA 21	0.0033	0	SLE RA 1	Si
D	0.05	0	687	SLE RA 1	0.05	0	687	687	SLE RA 1	0.05	0	748	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	687	SLE RA 1	0.05	0	687	687	SLE RA 1	0.05	0	748	SLE RA 1	0.0033	0	SLE RA 1	Si

##### Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.01	SLE RA 21	0.19	0.01	929	995	SLE RA 21	0.19	0.01	748	SLE RA 21	0.1	0.01	850	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	687	748	SLE RA 1	0.19	0	687	SLE RA 1	0.1	0	748	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	687	748	SLE RA 1	0.19	0	687	SLE RA 1	0.1	0	748	SLE RA 1	Si

CORDOLO 22

Geometria



#### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

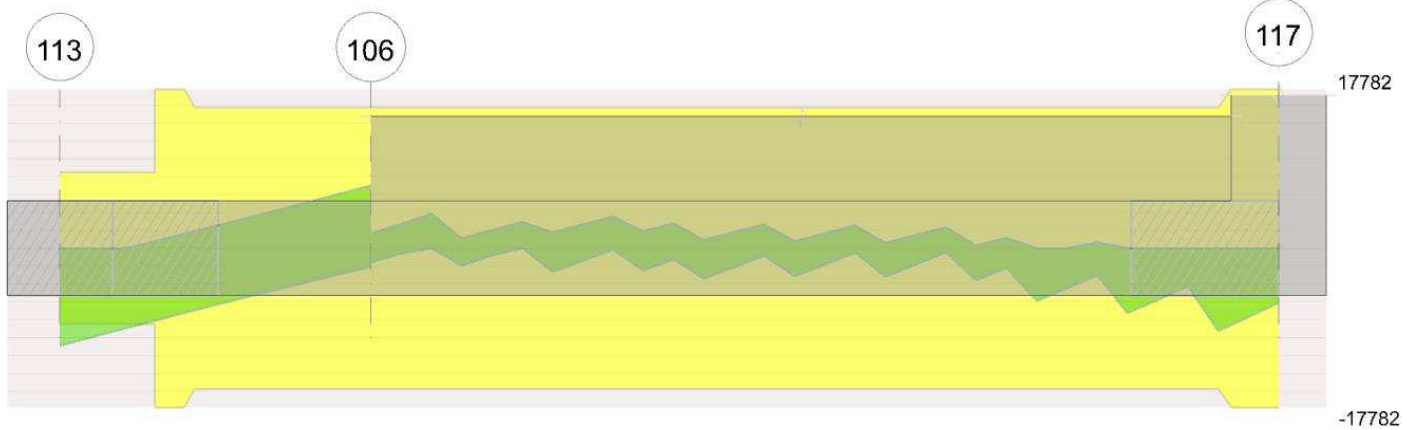
#### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione



Diagramma verifica stato limite ultimo taglio



#### Output campate

Campata 1 tra i fili 113 - 106, sezione R 50x45, asta 411

#### Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0	0	0	0	2546.42	SLU 84	1712.74	0	0	0	0	0	0	0	0	0	No
0.25	0	0	0	0	802.49	SLU 84	802.49	0	0	0	463.93	SLU 1	-219.21	0	0	0	No
0.74	0.000509	0.052	0.000509	0.052							-1269.08	SLU 83	-1579.19	-7755.45	0.113	4.91	Si
1.47	0.000509	0.052	0.000509	0.052							-1048.3	SLU 63	-1466.99	-7755.45	0.113	5.29	Si

#### Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0	0	0	0	5385.32	SLV 16	4461.76	0	0	0	-2057.41	SLV 1	-2057.41	0	0	0	No
0.25	0	0	0	0	3317.54	SLV 16	3317.54	0	0	0	-2318.42	SLV 1	-2343.1	0	0	0	No
0.74	0.000509	0.052	0.000509	0.052	247.44	SLV 16	1232.6	7266.79	0.197	5.9	-1999.48	SLV 1	-2244.08	-7266.79	0.197	3.24	Si
1.47	0.000509	0.052	0.000509	0.052	1460.36	SLV 5	1460.36	7266.79	0.197	4.98	-2887.27	SLV 12	-2887.27	-7266.79	0.197	2.52	Si

#### Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0	0	0	0	3260.73	SLD 16	2546.19	0	0	0	0	0	0	0	0	0	No
0.25	0	0	0	0	1708.27	SLD 16	1708.27	0	0	0	-709.15	SLD 1	-1080.47	0	0	0	No
0.74	0.000509	0.052	0.000509	0.052	-395.41	SLD 16	239.14	7266.79	0.197	30.39	-1356.62	SLD 1	-1375.71	-7266.79	0.197	5.28	Si
1.47	0.000509	0.052	0.000509	0.052	242.25	SLD 5	242.25	7266.79	0.197	30	-1669.15	SLD 12	-1685.8	-7266.79	0.197	4.31	Si

#### Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcl	Vrsl	Vult	cotgθ	coeff	Verifica
0	0	0	0	-9524	SLU 84	-9524	-8455	-71432	0	-8455	1	0.89	Si
0.25		0	0	-7282	SLU 84	-7282	-8455	-71432	0	-8455	1	1.16	Si
0.74	0.0000112		0	-2927	SLU 84	-2927	-7764	-63178	-15727	-15727	1	5.37	Si
1.47	0.0000112	0.000509	0	3679	SLU 83	3679	7764	63178	15727	15727	1	4.27	Si

#### Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcl	Vrsl	Vult	cotgθ	coeff	Verifica
0	0	0	0	-10908	SLV 12	-10908	-8455	-71432	0	-8455	1	0.78	Si
0.25	0	0	0	-9332	SLV 12	-9332	-8455	-71432	0	-8455	1	0.91	No
0.74	0.0000112	0	0	2473	SLV 5	2473	7764	63178	15727	15727	1	6.36	Si
0.74	0.0000112	0	0	-6347	SLV 12	-6347	-7764	-63178	-15727	-15727	1	2.48	Si
1.47	0.0000112	0.000509	0	7009	SLV 5	7009	7764	63178	15727	15727	1	2.24	Si
1.47	0.0000112	0.000509	0	-2071	SLV 12	-2071	-7764	-63178	-15727	-15727	1	7.6	Si

#### Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcl	Vrsl	Vult	cotgθ	coeff	Verifica
0	0	0	0	-8356	SLD 12	-8356	-8455	-71432	0	-8455	1	1.01	Si
0.25		0	0	-6820	SLD 12	-6820	-8455	-71432	0	-8455	1	1.24	Si
0.74	0.0000112		0	-3871	SLD 12	-3871	-7764	-63178	-15727	-15727	1	4.06	Si
1.47	0.0000112	0.000509	0	4460	SLD 5	4460	7764	63178	15727	15727	1	3.53	Si

#### Verifiche delle tensioni in esercizio

x	Rara								Quasi permanente								Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.			
0	1886.13	21	1269.83	75249	1494000	0	36000000	1663.96	2	1106.87	65592	1120500					Si
0.25	596.18	21	596.18	35329	1494000	0	36000000	499.56	2	499.56	29604	1120500					Si
0.74	-939.29	20	-1171.6	61970	1494000	929551	36000000	-876.02	2	-1083.53	57312	1120500					Si
1.47	-789.18	21	-1096.37	57991	1494000	869860	36000000	-713.45	2	-1000.21	52904	1120500					Si

#### Verifica di apertura delle fessure

La campata non presenta apertura delle fessure



## Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 113 - 106, sezione R 50x45, asta 411

Campata 2 tra i fili 106 - 117, sezione R 50x45, aste 410, 409, 408, 407, 406, 405, 404, 403, 402, 401, 400

### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0006	1897	SLU 83	0.047	8852	5837	SLU 83	19942	Si
2.15	0.41	0.0006	2021	SLU 83	0.047	8852	6218	SLU 83	19942	Si
4.08	0.41	0.0006	2297	SLU 84	0.047	8852	7069	SLU 84	19942	Si
4.31	0.41	0.0006	2378	SLU 84	0.047	8852	7316	SLU 84	19942	Si

### Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0006	1298	SLD 1	0.126	9855	3995	SLD 1	22933	Si
2.15	0.41	0.0006	1468	SLD 3	0.126	9855	4517	SLD 3	22933	Si
4.08	0.41	0.0006	1720	SLD 3	0.126	9855	5293	SLD 3	22933	Si
4.31	0.41	0.0006	1786	SLD 3	0.126	9855	5496	SLD 3	22933	Si

### Verifiche delle tensioni di esercizio

Rara									Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma c$	$\sigma c$ limite	$\sigma f$	$\sigma f$ limite	M	Comb	$\sigma c$	$\sigma c$ limite	
0	0.41	0.00000561	1391	SLE RA 20	38293	1494000	474829	36000000	1255	SLE QP 2	34538	1120500	Si
2.15	0.41	0.00000561	1481	SLE RA 20	40769	1494000	505537	36000000	1339	SLE QP 2	36848	1120500	Si
4.08	0.41	0.00000561	1686	SLE RA 21	46390	1494000	575230	36000000	1528	SLE QP 2	42054	1120500	Si
4.31	0.41	0.00000561	1745	SLE RA 21	48017	1494000	595412	36000000	1582	SLE QP 2	43547	1120500	Si

### Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

## Verifiche geotecniche

### Verifiche geotecniche di scorrimento sul piano di posa

Size X	Size Y	Comb.	Sis.	Cnd	Fx	Fy	Fz	IncX	IncY	Phi	Ad	RPI	yR	Rd	Ed	Rd/Ed	Verifica
6.25	1.1	SLU 32	ST	LT	-862	-66	-59310	-1	0	19	0	0	1.1	18041	865	20.86	Si
6.25	1.1	SLV 14	SIS	LT	-1435	-9127	-44221	-2	-12	19	0	0	1.1	13451	9239	1.46	Si

### Verifiche geotecniche di capacità portante sul piano di posa

Aste				Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
411,410,409,408,407,406,405,404,403,402,401,400				6.25	1.1	SLU 83	ST	BT	2.3	288437	73631	3.92	Si
411,410,409,408,407,406,405,404,403,402,401,400				6.25	1.1	SLV 3	SIS	LT	2.3	228460	56708	4.03	Si
411,410,409,408,407,406,405,404,403,402,401,400				6.25	1.1	SLD 3	SIS	BT	2.3	262093	53129	4.93	Si

### Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	-76	-73631	-30.24	4849.68	0	0	0.07	0	1.1	6.12	1496	2060	0	14430	
0	9004	-56708	-4232.78	11085.54	0	9	0.2	-0.07	0.95	5.86	1496	2060	37	0	0.07
0	3813	-53129	-1818.79	6665.05	0	4	0.13	-0.03	1.03	6	1496	2060	0	14430	0.03

### Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ik	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.04	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
43	56	66	1.12	1.13	0.94	1.16	1.27	1	0.72	0.72	0.61	1	1	1	1	1	1	1	1	1	0.96	0.98	0.96
1	5	0	0	0.03	0	0	0.27	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0

### Verifiche geotecniche - Cedimenti assoluti e differenziali

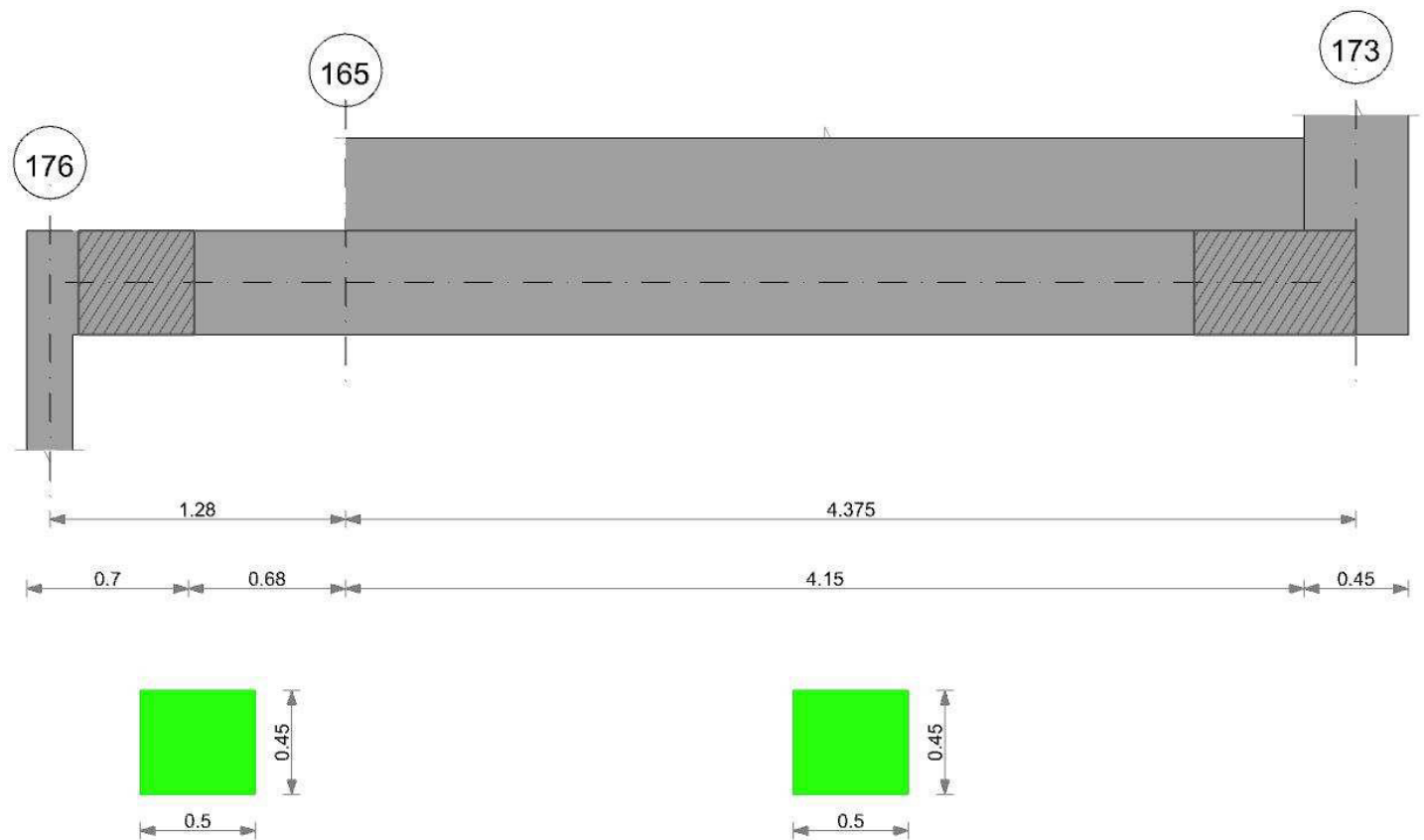
Tipo	Assoluto			Differenziale			Relativo			Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Sd adm	Sd	Nodo I	Sr adm	Sr	Nodo	RI adm	RI	Comb.	
E	0.05	0.001	625	0.05	0.001	625	0.05	0	751	0.0033	0	SLE RA 2	Si
D	0.05	0	625	0.05	0	625	0.05	0	751	0.0033	0	SLE RA 1	Si
Z	0.05	0	625	0.05	0	625	0.05	0	751	0.0033	0	SLE RA 1	Si

### Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta			Distorsione angolare positiva			Distorsione angolare negativa			Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	D+ adm	D+	Nodo	D- adm	D-	Nodo	
E	0.19	0.01	SLE RA 20	0.19	0.01	625	0.19	0	625	0.19	0	751	Si
D	0.19	0	SLE RA 1	0.19	0	625	0.19	0	625	0.19	0	751	Si
Z	0.19	0	SLE RA 1	0.19	0	625	0.19	0	625	0.19	0	751	Si

## CORDOLO 23

Geometria



#### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

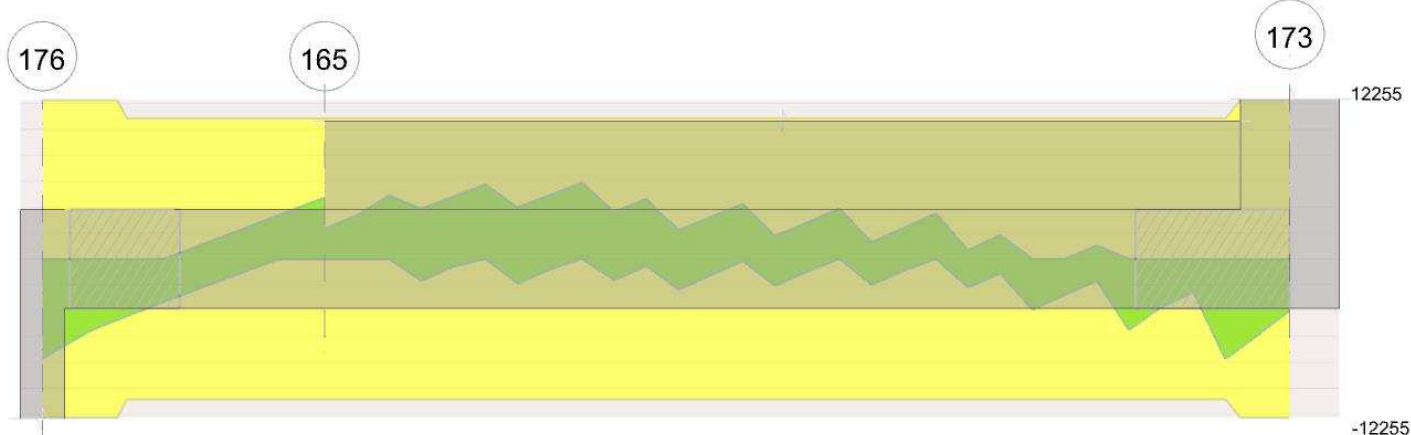
#### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione



Diagramma verifica stato limite ultimo taglio



#### Output campate

Campata 1 tra i fili 176 - 165, sezione R 50x45, asta 423

#### Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0	0	0	0	0						-94.06	SLU 62	-94.06	0	0	0	No
0.1	0	0	0	0	0						-731.34	SLU 83	-1672.68	0	0	0	No
0.64	0.000509	0.052	0.000509	0.052							-2710.14	SLU 84	-2806.99	-7755.45	0.113	2.76	Si
1.28	0.000509	0.052	0.000509	0.052							-1797.29	SLU 78	-2396.4	-7755.45	0.113	3.24	Si

#### Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0	0	0	0	576.42	SLV 7	307.83	0	0	0	-652.27	SLV 10	-652.27	0	0	0	No
0.1	0	0	0	0	6.35	SLV 7	6.35	0	0	0	-974.61	SLV 10	-1485.06	0	0	0	No
0.64	0.000509	0.052	0.000509	0.052							-2443.89	SLV 11	-2751	-7266.79	0.197	2.64	Si
1.28	0.000509	0.052	0.000509	0.052	142.75	SLV 10	142.75	7266.79	0.197	50.91	-2784.21	SLV 7	-2904.62	-7266.79	0.197	2.5	Si

#### Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0	0	0	0	225.44	SLD 7	96.79	0	0	0	-301.29	SLD 10	-301.29	0	0	0	No
0.1	0	0	0	0							-693.89	SLD 10	-1286.58	0	0	0	No
0.64	0.000509	0.052	0.000509	0.052							-2124.11	SLD 11	-2304.54	-7266.79	0.197	3.15	Si
1.28	0.000509	0.052	0.000509	0.052							-1961.75	SLD 7	-2234.62	-7266.79	0.197	3.25	Si

#### Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000077	0	0	-7707	SLU 84	-7707	-8455	-71432	-12255	-12255	1	1.59	Si
0.1	0.0000077	0	0	-6713	SLU 84	-6713	-8455	-71432	-12255	-12255	1	1.83	Si
0.64	0.0000077	0	0	-1471	SLU 67	-1471	-7764	-63178	-10839	-10839	1	7.37	Si
1.28	0.0000077	0.000509	0	4653	SLU 83	4653	7764	63178	10839	10839	1	2.33	Si

#### Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000077	0	0	-7060	SLV 11	-7060	-8455	-71432	-12255	-12255	1	1.74	Si
0.1	0.0000077	0	0	-6360	SLV 11	-6360	-8455	-71432	-12255	-12255	1	1.93	Si
0.64	0.0000077	0	0	569	SLV 10	569	7764	63178	10839	10839	1	19.06	Si
0.64	0.0000077	0	0	-2745	SLV 7	-2745	-7764	-63178	-10839	-10839	1	3.95	Si
1.28	0.0000077	0.000509	0	4741	SLV 10	4741	7764	63178	10839	10839	1	2.29	Si

#### Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000077	0	0	-6063	SLD 11	-6063	-8455	-71432	-12255	-12255	1	2.02	Si
0.1	0.0000077	0	0	-5380	SLD 11	-5380	-8455	-71432	-12255	-12255	1	2.28	Si
0.64	0.0000077	0	0	-1810	SLD 7	-1810	-7764	-63178	-10839	-10839	1	5.99	Si
1.28	0.0000077	0.000509	0	3750	SLD 10	3750	7764	63178	10839	10839	1	2.89	Si

#### Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	$\sigma$ c	$\sigma$ c lim.	$\sigma$ f.	$\sigma$ f lim.	Mela	Comb.	Mdes	$\sigma$ c	$\sigma$ c lim.	$\sigma$ FRP	$\sigma$ FRP lim.	
0	-61.86	20	-61.86	-3666	1494000	0	36000000	-37.93	2	-37.93	-2247	1120500			Si
0.1	-541.84	20	-1240.66	-73521	1494000	0	36000000	-484.13	2	-1136.69	-67359	1120500			Si
0.64	-2014.99	21	-2090.97	110599	1494000	1658982	36000000	-1872.17	2	-1955.34	103424	1120500			Si
1.28	-1359.41	15	-1796.52	95024	1494000	1425363	36000000	-1320.73	2	-1711.44	90524	1120500			Si

#### Verifica di apertura delle fessure

La campata non presenta apertura delle fessure



## Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 176 - 165, sezione R 50x45, asta 423

Campata 2 tra i fili 165 - 173, sezione R 50x45, aste 422, 421, 420, 419, 418, 417, 416, 415, 414, 413, 412

### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	1841	SLU 83	0.033	6137	5665	SLU 83	15877	Si
2.19	0.41	0.0004	1963	SLU 83	0.033	6137	6041	SLU 83	15877	Si
4.15	0.41	0.0004	2271	SLU 84	0.033	6137	6988	SLU 84	15877	Si
4.38	0.41	0.0004	2353	SLU 84	0.033	6137	7239	SLU 84	15877	Si

### Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	1270	SLD 14	0.105	6852	3908	SLD 14	15877	Si
2.19	0.41	0.0004	1366	SLD 16	0.105	6852	4204	SLD 16	15877	Si
4.15	0.41	0.0004	1619	SLD 15	0.105	6852	4983	SLD 15	15877	Si
4.38	0.41	0.0004	1682	SLD 15	0.105	6852	5175	SLD 15	15877	Si

### Verifiche delle tensioni di esercizio

Rara									Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma c$	$\sigma c$ limite	$\sigma f$	$\sigma f$ limite	M	Comb	$\sigma c$	$\sigma c$ limite	
0	0.41	0.00000387	1349	SLE RA 20	37964	1494000	470750	36000000	1213	SLE QP 2	34134	1120500	Si
2.19	0.41	0.00000387	1437	SLE RA 20	40452	1494000	501609	36000000	1294	SLE QP 2	36409	1120500	Si
4.15	0.41	0.00000387	1666	SLE RA 21	46883	1494000	581349	36000000	1508	SLE QP 2	42443	1120500	Si
4.38	0.41	0.00000387	1726	SLE RA 21	48581	1494000	602399	36000000	1564	SLE QP 2	44009	1120500	Si

### Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

## Verifiche geotecniche

### Verifiche geotecniche di scorrimento sul piano di posa

Size X	Size Y	Comb.	Sis.	Cnd	Fx	Fy	Fz	IncX	IncY	Phi	Ad	RPI	yR	Rd	Ed	Rd/Ed	Verifica
5.98	1.1	SLU 27	ST	LT	-1213	312	-53087	-1	0	19	0	0	1.1	16148	1253	12.89	Si
5.98	1.1	SLV 1	SIS	LT	-1769	9335	-44821	-2	12	19	0	0	1.1	13633	9502	1.43	Si

### Verifiche geotecniche di capacità portante sul piano di posa

Aste				Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
423,422,421,420,419,418,417,416,415,414,413,412				5.98	1.1	SLU 83	ST	BT	2.3	274694	72078	3.81	Si
423,422,421,420,419,418,417,416,415,414,413,412				5.98	1.1	SLV 16	SIS	LT	2.3	220873	53703	4.11	Si
423,422,421,420,419,418,417,416,415,414,413,412				5.98	1.1	SLD 16	SIS	BT	2.3	254948	51159	4.98	Si

### Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	410	-72078	-202.97	4453.56	0	0	0.06	0	1.09	5.86	1496	2060	0	14430	
0	-8773	-53703	4124.21	5613.05	0	-9	0.1	0.08	0.95	5.77	1496	2060	37	0	0.07
0	-3589	-51159	1684.25	4142.44	0	-4	0.08	0.03	1.03	5.82	1496	2060	0	14430	0.03

### Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E			
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ik	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg	
1	5	0	0	0.04	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	
43	56	66	1.12	1.13	0.93	1.16	1.27	1	0.72	0.71	0.6	1	1	1	1	1	1	1	1	1	0.96	0.98	0.96	
1	5	0	0	0.04	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	1	0	0	0

### Verifiche geotecniche - Cedimenti assoluti e differenziali

Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Comb.	Sr adm	Sr	Nodo	Comb.	Ri adm	Ri	Comb.	
E	0.05	0.002	639	SLE RA 21	0.05	0.001	639	1024	SLE RA 20	0.05	0	741	SLE RA 2	0.0033	0	SLE RA 2	Si
D	0.05	0	639	SLE RA 1	0.05	0	639	639	SLE RA 1	0.05	0	741	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	639	SLE RA 1	0.05	0	639	639	SLE RA 1	0.05	0	741	SLE RA 1	0.0033	0	SLE RA 1	Si

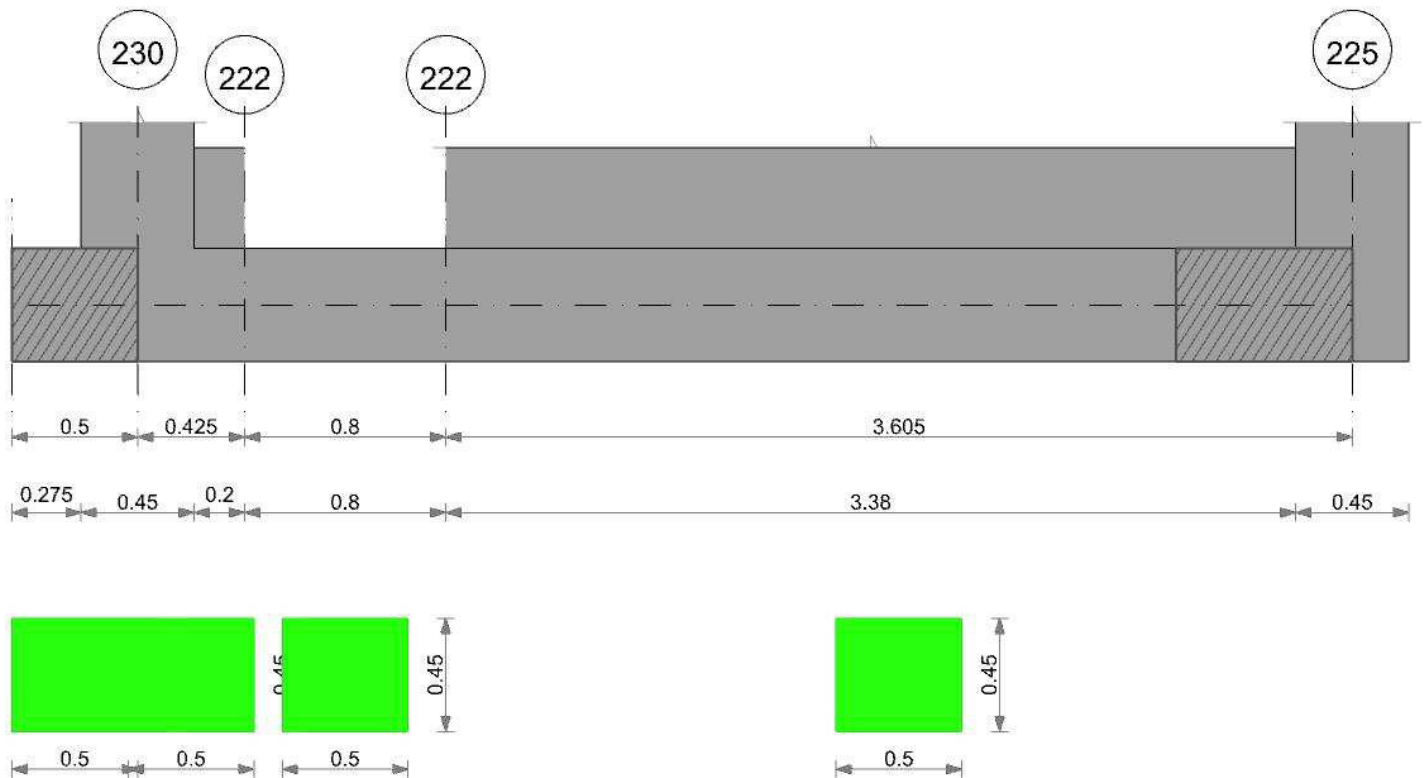
### Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.01	SLE RA 20	0.19	0.02	639	741	SLE RA 21	0.19	0	639	SLE RA 1	0.1	0.01	741	SLE RA 2	Si
D	0.19	0	SLE RA 1	0.19	0	639	741	SLE RA 1	0.19	0	639	SLE RA 1	0.1	0	741	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	639	741	SLE RA 1	0.19	0	639	SLE RA 1	0.1	0	741	SLE RA 1	Si

## CORDOLO 24

Geometria





#### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

#### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

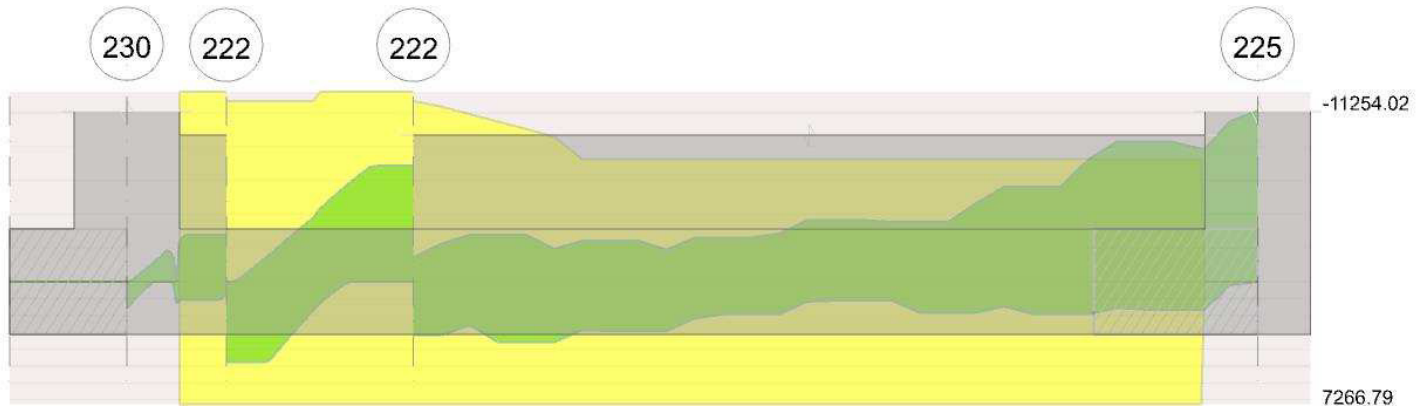
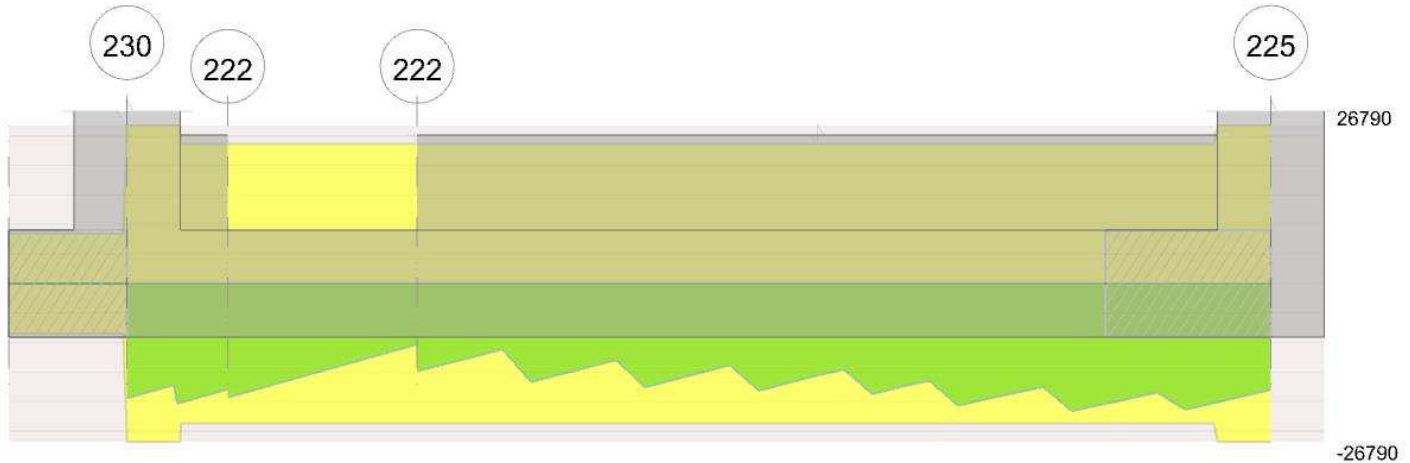


Diagramma verifica stato limite ultimo taglio



#### Output campate

Campata 3 tra i fili 222 - 222, sezione R 50x45, asta 469

#### Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000763	0.052	0.000509	0.052	4966.96	SLU 84	4966.96	7767.92	0.117	1.56							Si
0.4	0.000763	0.052	0.000509	0.052	-1183.7	SLU 1	987.16	7767.92	0.117	7.87	-1850.79	SLU 84	-4324.72	-11254.02	0.132	2.6	Si
0.8	0.000763	0.052	0.000509	0.052							-6868.83	SLU 84	-6868.83	-11254.02	0.132	1.64	Si

#### Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000763	0.052	0.000509	0.052	4772.01	SLV 14	4772.01	7262.8	0.194	1.52							Si
0.4	0.000763	0.052	0.000509	0.052	-487.87	SLV 6	1295.84	7262.8	0.194	5.6	-2040.16	SLV 11	-4110.11	-10716.86	0.238	2.61	Si
0.8	0.000763	0.052	0.000509	0.052							-6477.03	SLV 15	-6477.03	-10716.86	0.238	1.65	Si

#### Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000763	0.052	0.000509	0.052	3923.01	SLD 14	3923.01	7262.8	0.194	1.85							Si
0.4	0.000763	0.052	0.000509	0.052	-922.25	SLD 6	916.28	7262.8	0.194	7.93	-1605.78	SLD 11	-3437.32	-10716.86	0.238	3.12	Si
0.8	0.000763	0.052	0.000509	0.052							-5409.07	SLD 15	-5409.07	-10716.86	0.238	1.98	Si

#### Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcl	Vrsl	Vult	cotgθ	coeff	Verifica
0	0.0000169	0.000509	0	-19302	SLU 84	-19302	-7764	-63178	-23694	-23694	1	1.23	Si
0.4	0.0000169	0.000763	0	-14791	SLU 84	-14791	-8659	-63178	-23694	-23694	1	1.6	Si
0.8	0.0000169	0.000763	0	-10298	SLU 84	-10298	-8659	-63178	-23694	-23694	1	2.3	Si

#### Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcl	Vrsl	Vult	cotgθ	coeff	Verifica
0	0.0000169	0.000509	0	-17479	SLV 16	-17479	-7764	-63178	-23694	-23694	1	1.36	Si
0.4	0.0000169	0.000763	0	-13875	SLV 16	-13875	-8659	-63178	-23694	-23694	1	1.71	Si
0.8	0.0000169	0.000763	0	-10306	SLV 16	-10306	-8659	-63178	-23694	-23694	1	2.3	Si

#### Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcl	Vrsl	Vult	cotgθ	coeff	Verifica
0	0.0000169	0.000509	0	-14863	SLD 16	-14863	-7764	-63178	-23694	-23694	1	1.59	Si
0.4	0.0000169	0.000763	0	-11582	SLD 16	-11582	-8659	-63178	-23694	-23694	1	2.05	Si
0.8	0.0000169	0.000763	0	-8323	SLD 16	-8323	-8659	-63178	-23694	-23694	1	2.85	Si

#### Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	$\sigma_c$	$\sigma_{clim.}$	$\sigma_f$	$\sigma_{flim.}$	Mela	Comb.	Mdes	$\sigma_c$	$\sigma_{clim.}$	$\sigma_{FRP}$	$\sigma_{FRP lim.}$	
0	3641.41	21	3641.41	185390	1494000	2848534	36000000	3288.68	2	3288.68	167432	1120500			Si
0.4	-1369.96	21	-3187.04	166207	1494000	2433860	36000000	-1264.02	2	-2912.31	151879	1120500			Si
0.8	-5054.27	21	-5054.27	454741	1494000	18388490	36000000	-4603.52	2	-4603.52	414186	1120500			Si

#### Verifica di apertura delle fessure

x	Bordo	Rara				Frequente				Quasi permanente				Verifica
		Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	
0.75	superiore	0.375	0.00054	0.000201	21	0.375	0.0005	0.000187	6	0.375	0.00049	0.000183	2	Si
0.8	superiore	0.375	0.00054	0.000201	21	0.375	0.0005	0.000187	6	0.375	0.00049	0.000183	2	Si

#### Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 230 - 222, sezione R 50x45, aste 471, 470

#### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0008	2007	SLU 84	0.071	13206	6175	SLU 84	30044	Si
0.21	0.41	0.0008	2003	SLU 84	0.071	13206	6164	SLU 84	30044	Si
0.23	0.41	0.0008	2003	SLU 84	0.071	13206	6164	SLU 84	30044	Si



x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0.42	0.41	0.0008	2001	SLU 84	0.071	13206	6158	SLU 84	30044	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0008	1462	SLD 15	0.153	14673	4498	SLD 15	34551	Si
0.21	0.41	0.0008	1459	SLD 13	0.153	14673	4488	SLD 13	34551	Si
0.23	0.41	0.0008	1459	SLD 13	0.153	14673	4488	SLD 13	34551	Si
0.42	0.41	0.0008	1457	SLD 13	0.153	14673	4483	SLD 13	34551	Si

Verifiche delle tensioni di esercizio

Rara										Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma c$	$\sigma c$ limite	$\sigma f$	$\sigma f$ limite	M	Comb	$\sigma c$	$\sigma c$ limite		
0	0.41	0.00000845	1475	SLE RA 21	39180	1494000	485830	36000000	1338	SLE QP 2	35537	1120500		Si
0.21	0.41	0.00000845	1472	SLE RA 21	39105	1494000	484899	36000000	1335	SLE QP 2	35463	1120500		Si
0.23	0.41	0.00000845	1472	SLE RA 21	39102	1494000	484866	36000000	1335	SLE QP 2	35460	1120500		Si
0.42	0.41	0.00000845	1471	SLE RA 21	39063	1494000	484386	36000000	1334	SLE QP 2	35420	1120500		Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Campata 3 tra i fili 222 - 222, sezione R 50x45, asta 469

Campata 4 tra i fili 222 - 225, sezione R 50x45, aste 468, 467, 466, 465, 464, 463, 462, 461

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0008	1994	SLU 83	0.071	13206	6135	SLU 83	30044	Si
1.8	0.41	0.0008	2085	SLU 83	0.071	13206	6415	SLU 83	30044	Si
3.38	0.41	0.0008	2229	SLU 83	0.071	13206	6857	SLU 83	30044	Si
3.6	0.41	0.0008	2275	SLU 83	0.071	13206	7000	SLU 83	30044	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0008	1451	SLD 13	0.153	14673	4464	SLD 13	34551	Si
1.8	0.41	0.0008	1516	SLD 15	0.153	14673	4665	SLD 15	34551	Si
3.38	0.41	0.0008	1666	SLD 15	0.153	14673	5125	SLD 15	34551	Si
3.6	0.41	0.0008	1714	SLD 15	0.153	14673	5273	SLD 15	34551	Si

Verifiche delle tensioni di esercizio

Rara										Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma c$	$\sigma c$ limite	$\sigma f$	$\sigma f$ limite	M	Comb	$\sigma c$	$\sigma c$ limite		
0	0.41	0.00000845	1465	SLE RA 20	38906	1494000	482434	36000000	1328	SLE QP 2	35267	1120500		Si
1.8	0.41	0.00000845	1531	SLE RA 20	40673	1494000	504348	36000000	1389	SLE QP 2	36886	1120500		Si
3.38	0.41	0.00000845	1637	SLE RA 20	43493	1494000	539310	36000000	1487	SLE QP 2	39489	1120500		Si
3.6	0.41	0.00000845	1672	SLE RA 20	44398	1494000	550539	36000000	1518	SLE QP 2	40322	1120500		Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche di scorrimento sul piano di posa

Size X	Size Y	Comb.	Sis.	Cnd	Fx	Fy	Fz	IncX	IncY	Phi	Ad	RPI	yR	Rd	Ed	Rd/Ed	Verifica
5.05	1.1	SLU 48	ST	LT	-75	932	-50974	0	1	19	0	0	1.1	15505	935	16.58	Si
5.05	1.1	SLV 3	SIS	LT	874	7826	-35672	1	12	19	0	0	1.1	10851	7874	1.38	Si

Verifiche geotecniche di capacità portante sul piano di posa

Aste					Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
471,470,469,468,467,466,465,464,463,462,461					5.05	1.1	SLU 83	ST	BT	2.3	231581	60910	3.8	Si
471,470,469,468,467,466,465,464,463,462,461					5.05	1.1	SLV 15	SIS	BT	2.3	207119	48974	4.23	Si
471,470,469,468,467,466,465,464,463,462,461					5.05	1.1	SLD 15	SIS	BT	2.3	225622	44914	5.02	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	1039	-60910	-585.84	2014.3	0	1	0.03	-0.01	1.08	4.99	1496	2060	0	14430	
0	-5591	-48974	2434.91	3421.45	0	-7	0.07	0.05	1	4.92	1496	2060	0	14430	0.07
0	-1966	-44914	805.64	2260.42	0	-3	0.05	0.02	1.06	4.95	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

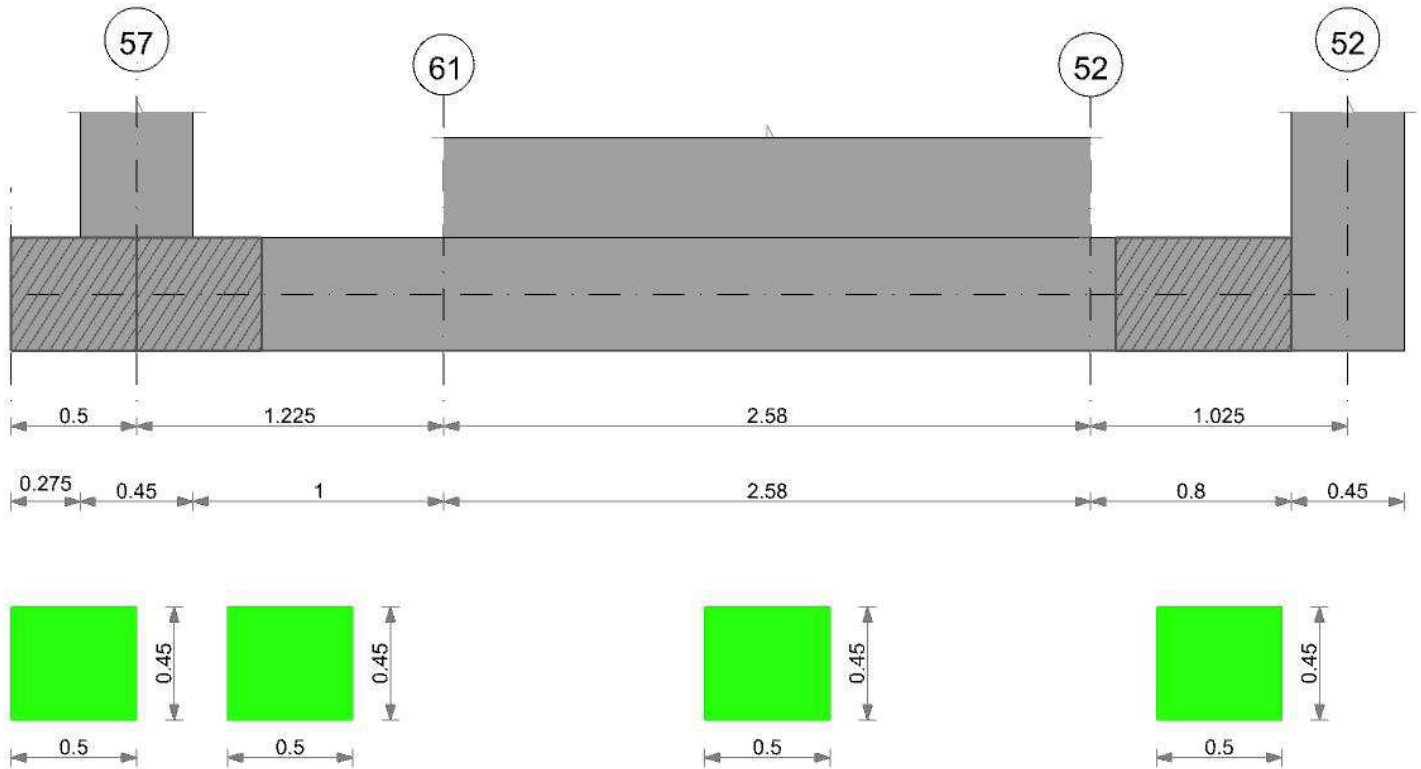
N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ik	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.04	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0
1	5	0	0	0.04	0	0	0.27	0	0	0.03	0	0	0	0	0	0	0	1	1	1	1	0	0
1	5	0	0	0.04	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	1	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

Tipo	Assoluto				Differenziale				Relativo				Rapp. inflessione				Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Comb.	Sr adm	Sr	Nodo	Comb.	Ri adm	Ri	Comb.	
E	0.05	0.001	654	SLE RA 21	0.05	0.001	654	888	SLE RA 21	0.05	0	736	SLE RA 21	0.0033	0	SLE RA 2	Si
D	0.05	0	654	SLE RA 1	0.05	0	654	654	SLE RA 1	0.05	0	736	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	654	SLE RA 1	0.05	0	654	654	SLE RA 1	0.05	0	736	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.01	SLE RA 21	0.19	0.01	736	754	SLE RA 21	0.19	0.01	736	SLE RA 21	0.1	0	754	SLE RA 2	Si
D	0.19	0	SLE RA 1	0.19	0	654	736	SLE RA 1	0.19	0	654	SLE RA 1	0.1	0	736	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	654	736	SLE RA 1	0.19	0	654	SLE RA 1	0.1	0	736	SLE RA 1	Si



#### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

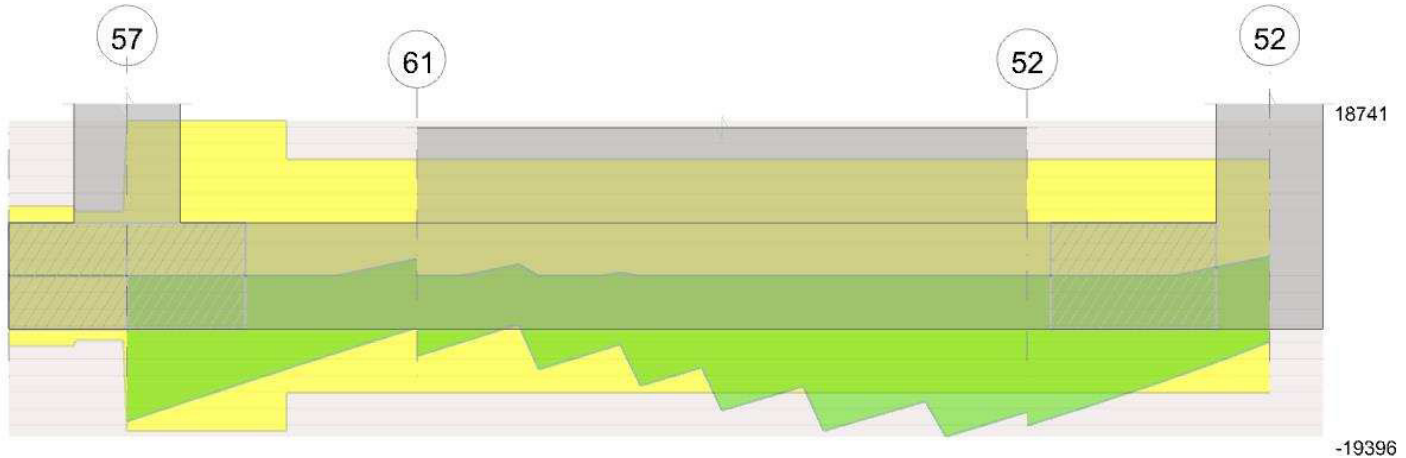
#### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione



Diagramma verifica stato limite ultimo taglio



#### Output campate

Campata 2 tra i fili 57 - 61, sezione R 50x45, asta 376

#### Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000942	0.053	0.000942	0.053	7918.32	SLU 84	6013.47	13658.02	0.143	2.27							Si
0.23	0.000942	0.053	0.000942	0.053	4394.82	SLU 84	4394.82	13658.02	0.143	3.11							Si
0.61	0.000942	0.053	0.000942	0.053	-228.39	SLU 1	1637.77	13658.02	0.143	8.34	-331.22	SLU 78	-1934.96	-13658.02	0.143	7.06	Si
1.23	0.000942	0.053	0.000942	0.053							-4354.75	SLU 84	-4354.75	-13658.02	0.143	3.14	Si

#### Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000942	0.053	0.000942	0.053	9403.43	SLV 3	7435.75	13077.02	0.254	1.76							Si
0.23	0.000942	0.053	0.000942	0.053	5701.92	SLV 3	5701.92	13077.02	0.254	2.29	154.74	SLV 14	-460.56	-13077.02	0.254	28.39	Si
0.61	0.000942	0.053	0.000942	0.053	581.72	SLV 1	2714.89	13077.02	0.254	4.82	-1051.09	SLV 16	-1946.23	-13077.02	0.254	6.72	Si
1.23	0.000942	0.053	0.000942	0.053							-5128.79	SLV 4	-5128.79	-13077.02	0.254	2.55	Si

#### Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000942	0.053	0.000942	0.053	7050.15	SLD 3	5477.39	13077.02	0.254	2.39							Si
0.23	0.000942	0.053	0.000942	0.053	4114.81	SLD 3	4114.81	13077.02	0.254	3.18							Si
0.61	0.000942	0.053	0.000942	0.053	115.61	SLD 1	1780.23	13077.02	0.254	7.35	-584.97	SLD 16	-1588.29	-13077.02	0.254	8.23	Si
1.23	0.000942	0.053	0.000942	0.053							-3868.03	SLD 4	-3868.03	-13077.02	0.254	3.38	Si

#### Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrzd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000134	0.000942	0	-16954	SLU 84	-16954	-9278	-63019	-18741	-18741	1	1.11	Si
0.23	0.0000134	0.000942	0	-14388	SLU 84	-14388	-9278	-63019	-18741	-18741	1	1.3	Si
0.61	0.0000134	0.000942	0	-9997	SLU 84	-9997	-9278	-63019	-18741	-18741	1	1.87	Si
1.23	0.0000101	0.000942	0	-3158	SLU 84	-3158	-9278	-63019	-14132	-14132	1	4.47	Si

#### Verifiche a taglio in famiglia SLD

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrzd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000134	0.000942	0	-17554	SLV 3	-17554	-9278	-63019	-18741	-18741	1	1.07	Si
0.23	0.0000134	0.000942	0	-15412	SLV 3	-15412	-9278	-63019	-18741	-18741	1	1.22	Si
0.61	0.0000134	0.000942	0	-11773	SLV 3	-11773	-9278	-63019	-18741	-18741	1	1.59	Si
1.23	0.0000101	0.000942	0	2037	SLV 14	2037	9278	63019	14132	14132	1	6.94	Si
1.23	0.0000101	0.000942	0	-6211	SLV 3	-6211	-9278	-63019	-14132	-14132	1	2.28	Si

#### Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrzd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000134	0.000942	0	-14016	SLD 3	-14016	-9278	-63019	-18741	-18741	1	1.34	Si
0.23	0.0000134	0.000942	0	-12112	SLD 3	-12112	-9278	-63019	-18741	-18741	1	1.55	Si
0.61	0.0000134	0.000942	0	-8865	SLD 3	-8865	-9278	-63019	-18741	-18741	1	2.11	Si
1.23	0.0000101	0.000942	0	-3856	SLD 3	-3856	-9278	-63019	-14132	-14132	1	3.66	Si

#### Verifiche delle tensioni in esercizio

x	Rara								Quasi permanente								Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.			
0	5817.47	21	4415.82	214437	1494000	3216550	36000000	5289.56	2	4012.65	194859	1120500					Si
0.23	3225.13	21	3225.13	156616	1494000	2349238	36000000	2928.33	2	2928.33	142203	1120500					Si
0.61	-250.04	15	-1428.43	69366	1494000	1040489	36000000	-234.68	2	-1306.87	63463	1120500					Si
1.23	-3203.12	21	-3203.12	155547	1494000	2333203	36000000	-2917.81	2	-2917.81	141692	1120500					Si

#### Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

Campata 4 tra i fili 52 - 52, sezione R 50x45, asta 369

#### Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000942	0.053	0.000942	0.053							-1211.74	SLU 83	-3935.37	-13658.02	0.143	3.47	Si
0.51	0.000942	0.053	0.000942	0.053							-8068.03	SLU 83	-9759.73	-13658.02	0.143	1.4	Si



x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.8	0.000942	0.053	0.000942	0.053							-10607.42	SLU 84	-10607.42	-13658.02	0.143	1.29	Si
1.02	0.000942	0.053	0.000942	0.053							-11907.62	SLU 84	-11410.95	-13658.02	0.143	1.2	Si

#### Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000942	0.053	0.000942	0.053	2355.76	SLV 16	2355.76	13077.02	0.254	5.55	-4131.52	SLV 1	-6997.79	-13077.02	0.254	1.87	Si
0.51	0.000942	0.053	0.000942	0.053	773.37	SLV 16	1110.1	13077.02	0.254	11.78	-11670.68	SLV 1	-13809.22	-13077.02	0.254	0.95	No
0.8	0.000942	0.053	0.000942	0.053	736.84	SLV 14	736.84	13077.02	0.254	17.75	-14974.93	SLV 3	-14974.93	-13077.02	0.254	0.87	No
1.02	0.000942	0.053	0.000942	0.053	1083.7	SLV 14	855.22	13077.02	0.254	15.29	-17008.63	SLV 3	-16143.68	-13077.02	0.254	0.81	No

#### Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000942	0.053	0.000942	0.053	504.15	SLD 16	504.15	13077.02	0.254	25.94	-2279.91	SLD 1	-4542.08	-13077.02	0.254	2.88	Si
0.51	0.000942	0.053	0.000942	0.053							-8108.44	SLD 1	-9660.34	-13077.02	0.254	1.35	Si
0.8	0.000942	0.053	0.000942	0.053							-10476.86	SLD 3	-10476.86	-13077.02	0.254	1.25	Si
1.02	0.000942	0.053	0.000942	0.053							-11829.92	SLD 3	-11277.68	-13077.02	0.254	1.16	Si

#### Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000101	0.000942	0	-16290	SLU 84	-16290	-9278	-63019	-14132	-14132	1	0.87	No
0.51	0.0000101	0.000942	0	-10519	SLU 84	-10519	-9278	-63019	-14132	-14132	1	1.34	Si
0.8	0.0000101	0.000942	0	-7143	SLU 84	-7143	-9278	-63019	-14132	-14132	1	1.98	Si
1.02	0.0000101	0.000942	0	-4385	SLU 84	-4385	-9278	-63019	-14132	-14132	1	3.22	Si

#### Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000101	0.000942	0	-18061	SLV 3	-18061	-9278	-63019	-14132	-14132	1	0.78	No
0.51	0.0000101	0.000942	0	-13301	SLV 3	-13301	-9278	-63019	-14132	-14132	1	1.06	Si
0.8	0.0000101	0.000942	0	1052	SLV 14	1052	9278	63019	14132	14132	1	13.43	Si
0.8	0.0000101	0.000942	0	-10389	SLV 3	-10389	-9278	-63019	-14132	-14132	1	1.36	Si
1.02	0.0000101	0.000942	0	2308	SLV 14	2308	9278	63019	14132	14132	1	6.12	Si
1.02	0.0000101	0.000942	0	-7924	SLV 3	-7924	-9278	-63019	-14132	-14132	1	1.78	Si

#### Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000101	0.000942	0	-13926	SLD 3	-13926	-9278	-63019	-14132	-14132	1	1.01	Si
0.51	0.0000101	0.000942	0	-9667	SLD 3	-9667	-9278	-63019	-14132	-14132	1	1.46	Si
0.8	0.0000101	0.000942	0	-7118	SLD 3	-7118	-9278	-63019	-14132	-14132	1	1.99	Si
1.02	0.0000101	0.000942	0	-4999	SLD 3	-4999	-9278	-63019	-14132	-14132	1	2.83	Si

#### Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	-914.73	20	-2913.85	141500	1494000	2122497	36000000	-887.88	2	-2702.3	131227	1120500			Si
0.51	-5944.47	20	-7182.7	565431	1494000	21395933	36000000	-5448.66	2	-6563.57	516692	1120500			Si
0.8	-7802.19	21	-7802.19	614198	1494000	23241269	36000000	-7119.05	2	-7119.05	560420	1120500			Si
1.02	-8749.53	21	-8388.95	660389	1494000	24989132	36000000	-7962.46	2	-7644.23	601763	1120500			Si

#### Verifica di apertura delle fessure

x	Bordo	Rara				Frequente				Quasi permanente				Verifica
		Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	
0.51	superiore	0.349	0.00062	0.000217	21	0.349	0.0006	0.00021	6	0.349	0.00058	0.000202	2	Si
0.8	superiore	0.349	0.00068	0.000236	21	0.349	0.00068	0.000239	6	0.349	0.00066	0.00023	2	Si
1.02	superiore	0.349	0.00073	0.000254	21	0.349	0.00076	0.000266	6	0.349	0.00073	0.000256	2	Si

#### Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 57 - 61, sezione R 50x45, asta 376

Campata 3 tra i fili 61 - 52, sezione R 50x45, aste 375, 374, 373, 372, 371, 370

#### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0005	1967	SLU 84	0.043	7989	6052	SLU 84	17964	Si
1.29	0.41	0.0005	1951	SLU 84	0.043	7989	6003	SLU 84	17964	Si
2.58	0.41	0.0005	1955	SLU 84	0.043	7989	6017	SLU 84	17964	Si

#### Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0005	1438	SLD 4	0.119	8901	4424	SLD 4	20659	Si
1.29	0.41	0.0005	1408	SLD 4	0.119	8901	4334	SLD 4	20659	Si
2.58	0.41	0.0005	1439	SLD 4	0.119	8901	4429	SLD 4	20659	Si

#### Verifiche delle tensioni di esercizio

x	d	Af	Rara					Quasi permanente					Verifica
			M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000505	1444	SLE RA 21	40017	1494000	496211	36000000	1306	SLE QP 2	36187	1120500	Si
1.29	0.41	0.00000505	1432	SLE RA 21	39676	1494000	491981	36000000	1294	SLE QP 2	35854	1120500	Si
2.58	0.41	0.00000505	1435	SLE RA 21	39776	1494000	493218	36000000	1299	SLE QP 2	35995	1120500	Si

#### Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola



Campata 4 tra i fili 52 - 52, sezione R 50x45, asta 369

#### Verifiche geotecniche

##### Verifiche geotecniche di scorrimento sul piano di posa

Size X	Size Y	Comb.	Sis.	Cnd	Fx	Fy	Fz	IncX	IncY	Phi	Ad	RPI	yR	Rd	Ed	Rd/Ed	Verifica
5.05	1.1	SLU 44	ST	LT	525	-673	-51300	1	-1	19	0	0	1.1	15604	854	18.28	Si
5.05	1.1	SLV 16	SIS	LT	934	-8309	-36659	1	-13	19	0	0	1.1	11151	8362	1.33	Si

##### Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb.	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
376,375,374,373,372,371,370,369	5.05	1.1	SLU 84	ST	BT	2.3	233820	63129	3.7	Si
376,375,374,373,372,371,370,369	5.05	1.1	SLV 4	SIS	BT	2.3	207511	51644	4.02	Si
376,375,374,373,372,371,370,369	5.05	1.1	SLD 4	SIS	BT	2.3	226441	46877	4.83	Si

##### Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	-759	-63129	581.26	803.92	0	-1	0.01	0.01	1.08	5.03	1496	2060	0	14430	
0	6390	-51644	-2637.45	2602.16	0	7	0.05	-0.05	1	4.95	1496	2060	0	14430	0.07
0	2421	-46877	-896.62	1455.98	0	3	0.03	-0.02	1.06	4.99	1496	2060	0	14430	0.03

##### Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.04	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0
1	5	0	0	0.04	0	0	0.27	0	0	0.03	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0

##### Verifiche geotecniche - Cedimenti assoluti e differenziali

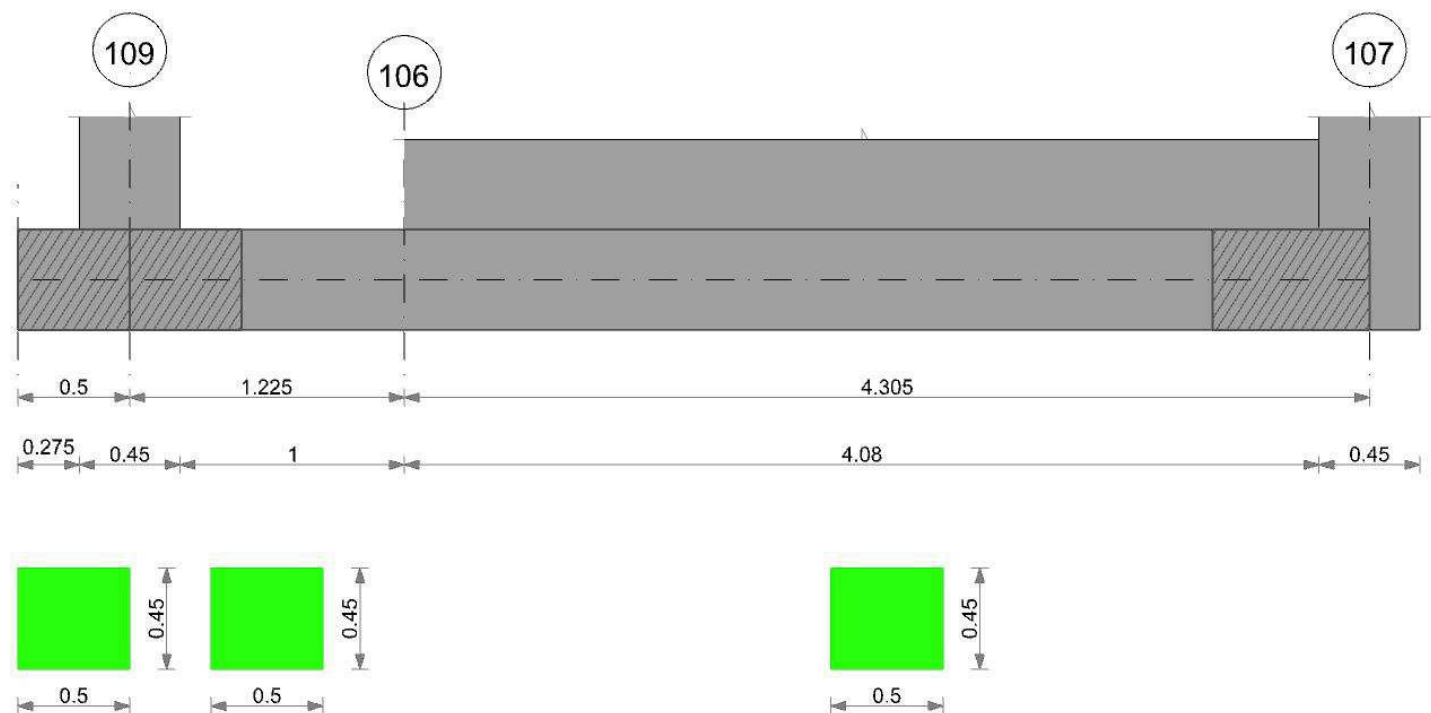
Tipo	Assoluto				Differenziale				Relativo				Rapp. inflessione				Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.001	607	SLE RA 21	0.05	0.001	607	926	SLE RA 21	0.05	0	848	SLE FR 3	0.0033	0	SLE FR 3	Si
D	0.05	0	607	SLE RA 1	0.05	0	607	607	SLE RA 1	0.05	0	746	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	607	SLE RA 1	0.05	0	607	607	SLE RA 1	0.05	0	746	SLE RA 1	0.0033	0	SLE RA 1	Si

##### Verifiche geotecniche - Rotazioni assolute e differenziali

Criteri generali di accettazione																	
Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.01	SLE RA 21	0.19	0.01	746	848	SLE RA 21	0.19	0	746	SLE RA 21	0.1	0.01	848	SLE FR 3	Si
D	0.19	0	SLE RA 1	0.19	0	607	746	SLE RA 1	0.19	0	607	SLE RA 1	0.1	0	746	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	607	746	SLE RA 1	0.19	0	607	SLE RA 1	0.1	0	746	SLE RA 1	Si

## CORDOLO 26

### Geometria



#### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

#### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035





Diagramma verifica stato limite ultimo flessione

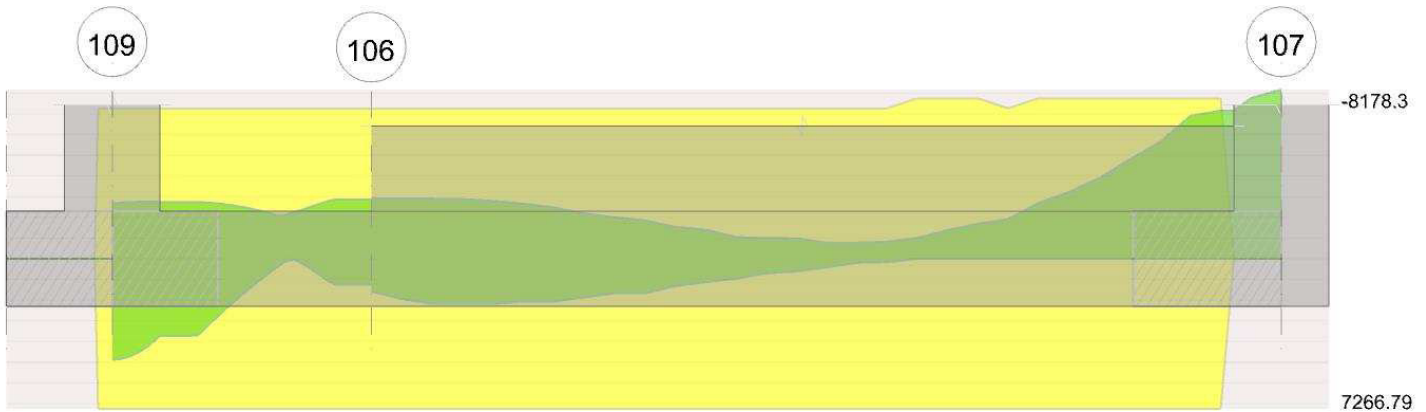
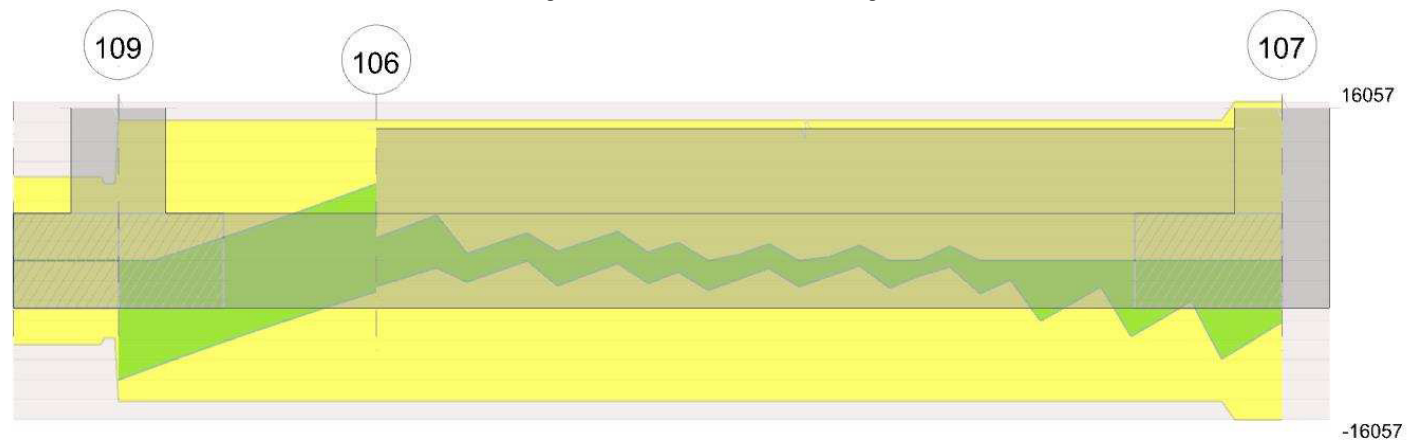


Diagramma verifica stato limite ultimo taglio



## Output campate

Campata 2 tra i fili 109 - 106, sezione R 50x45, asta 399

## Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000509	0.052	0.000509	0.052	2740.18	SLU 84	1635.13	7755.45	0.113	4.74							Si
0.23	0.000509	0.052	0.000509	0.052	802.9	SLU 84	802.9	7755.45	0.113	9.66	439.29	SLU 1	-375.89	-7755.45	0.113	20.63	Si
0.61	0.000509	0.052	0.000509	0.052							-1257.63	SLU 83	-1650.97	-7755.45	0.113	4.7	Si
1.06	0.000509	0.052	0.000509	0.052							-1601.84	SLU 84	-1726.54	-7755.45	0.113	4.49	Si
1.22	0.000509	0.052	0.000509	0.052							-1189.12	SLU 84	-1624.94	-7755.45	0.113	4.77	Si

## Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$ 

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000509	0.052	0.000509	0.052	6232.43	SLV 16	4883	7266.79	0.197	1.49	-2664.69	SLV 1	-2664.69	-7266.79	0.197	2.73	Si
0.23	0.000509	0.052	0.000509	0.052	3728.27	SLV 16	3728.27	7266.79	0.197	1.95	-2741.16	SLV 1	-2741.16	-7266.79	0.197	2.65	Si
0.61	0.000509	0.052	0.000509	0.052	325.8	SLV 16	1760.91	7266.79	0.197	4.13	-2063.86	SLV 1	-2505.95	-7266.79	0.197	2.9	Si
1.22	0.000509	0.052	0.000509	0.052	1266.73	SLV 1	1266.73	7266.79	0.197	5.74	-2869.48	SLV 16	-2869.48	-7266.79	0.197	2.53	Si

## Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$ 

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000509	0.052	0.000509	0.052	3688.66	SLD 16	2689.47	7266.79	0.197	2.7	-120.92	SLD 1	-120.92	-7266.79	0.197	60.1	Si
0.23	0.000509	0.052	0.000509	0.052	1878.34	SLD 16	1878.34	7266.79	0.197	3.87	-891.23	SLD 1	-1250.74	-7266.79	0.197	5.81	Si
0.61	0.000509	0.052	0.000509	0.052	-358.2	SLD 16	540.47	7266.79	0.197	13.45	-1379.87	SLD 1	-1379.87	-7266.79	0.197	5.27	Si
1.22	0.000509	0.052	0.000509	0.052	85.03	SLD 1	85.03	7266.79	0.197	85.46	-1687.77	SLD 16	-1687.77	-7266.79	0.197	4.31	Si

## Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcl	Vrsl	Vult	cotgθ	coeff	Verifica
0	0.0000101	0.000509	0	-9844	SLU 84	-9844	-7764	-63178	-14201	-14201	1	1.44	Si
0.23	0.0000101	0.000509	0	-7398	SLU 84	-7398	-7764	-63178	-14201	-14201	1	1.92	Si
0.61	0.0000101	0.000509	0	-3202	SLU 84	-3202	-7764	-63178	-14201	-14201	1	4.44	Si
1.22	0.0000101	0.000509	0	3451	SLU 83	3451	7764	63178	14201	14201	1	4.11	Si

## Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcl	Vrsl	Vult	cotgθ	coeff	Verifica
0	0.0000101	0.000509	0	-12025	SLV 16	-12025	-7764	-63178	-14201	-14201	1	1.18	Si
0.23	0.0000101	0.000509	0	422	SLV 1	422	7764	63178	14201	14201	1	33.65	Si
0.23	0.0000101	0.000509	0	-10264	SLV 16	-10264	-7764	-63178	-14201	-14201	1	1.38	Si
0.61	0.0000101	0.000509	0	3140	SLV 1	3140	7764	63178	14201	14201	1	4.52	Si





x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0.61	0.0000101	0.000509	0	-7352	SLV 16	-7352	-7764	-63178	-14201	-14201	1	1.93	Si
1.22	0.0000101	0.000509	0	7759	SLV 1	7759	7764	63178	14201	14201	1	1.83	Si
1.22	0.0000101	0.000509	0	-3102	SLV 16	-3102	-7764	-63178	-14201	-14201	1	4.58	Si

#### Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000101	0.000509	0	-8903	SLD 16	-8903	-7764	-63178	-14201	-14201	1	1.6	Si
0.23	0.0000101	0.000509	0	-7210	SLD 16	-7210	-7764	-63178	-14201	-14201	1	1.97	Si
0.61	0.0000101	0.000509	0	141	SLD 1	141	7764	63178	14201	14201	1	100.86	Si
0.61	0.0000101	0.000509	0	-4354	SLD 16	-4354	-7764	-63178	-14201	-14201	1	3.26	Si
1.22	0.0000101	0.000509	0	4654	SLD 1	4654	7764	63178	14201	14201	1	3.05	Si

#### Verifiche delle tensioni in esercizio

x	Rara								Quasi permanente						Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	2006.7	21	1193.53	63130	1494000	946947	36000000	1783.87	2	1047.18	55389	1120500			Si
0.23	581.42	21	581.42	30753	1494000	461299	36000000	493.55	2	493.55	26106	1120500			Si
0.61	-932.64	20	-1221.11	64589	1494000	968833	36000000	-869.03	2	-1129.07	59720	1120500			Si
1.22	-877.01	21	-1199.63	63452	1494000	951785	36000000	-801.37	2	-1101.14	58243	1120500			Si

#### Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

#### Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 109 - 106, sezione R 50x45, asta 399

Campata 3 tra i fili 106 - 107, sezione R 50x45, aste 398, 397, 396, 395, 394, 393, 392, 391, 390, 389, 388

#### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0005	1910	SLU 83	0.043	8008	5876	SLU 83	18007	Si
2.15	0.41	0.0005	2033	SLU 83	0.043	8008	6254	SLU 83	18007	Si
4.08	0.41	0.0005	2308	SLU 84	0.043	8008	7102	SLU 84	18007	Si
4.3	0.41	0.0005	2388	SLU 84	0.043	8008	7348	SLU 84	18007	Si

#### Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0005	1318	SLD 1	0.119	8922	4055	SLD 1	20708	Si
2.15	0.41	0.0005	1489	SLD 3	0.119	8922	4581	SLD 3	20708	Si
4.08	0.41	0.0005	1741	SLD 3	0.119	8922	5357	SLD 3	20708	Si
4.3	0.41	0.0005	1807	SLD 3	0.119	8922	5560	SLD 3	20708	Si

#### Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000507	1401	SLE RA 20	38814	1494000	481297	36000000	1264	SLE QP 2	35019	1120500	Si
2.15	0.41	0.00000507	1490	SLE RA 20	41293	1494000	512039	36000000	1347	SLE QP 2	37330	1120500	Si
4.08	0.41	0.00000507	1694	SLE RA 21	46932	1494000	581954	36000000	1536	SLE QP 2	42554	1120500	Si
4.3	0.41	0.00000507	1753	SLE RA 21	48570	1494000	602271	36000000	1590	SLE QP 2	44058	1120500	Si

#### Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

#### Verifiche geotecniche

##### Verifiche geotecniche di scorrimento sul piano di posa

Size X	Size Y	Comb.	Sis.	Cnd	Fx	Fy	Fz	IncX	IncY	Phi	Ad	RPI	yR	Rd	Ed	Rd/Ed	Verifica
5.75	1.1	SLU 32	ST	LT	-860	-66	-59190	-1	0	19	0	0	1.1	18004	863	20.87	Si
5.75	1.1	SLV 14	SIS	LT	-1267	-9127	-43312	-2	-12	19	0	0	1.1	13175	9215	1.43	Si

##### Verifiche geotecniche di capacità portante sul piano di posa

Aste				Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
399,398,397,396,395,394,393,392,391,390,389,388				5.75	1.1	SLU 83	ST	BT	2.3	265550	73444	3.62	Si
399,398,397,396,395,394,393,392,391,390,389,388				5.75	1.1	SLV 3	SIS	LT	2.3	211565	57274	3.69	Si
399,398,397,396,395,394,393,392,391,390,389,388				5.75	1.1	SLD 3	SIS	BT	2.3	240640	53272	4.52	Si

##### Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	-76	-73444	-30.24	4809.87	0	0	0.07	0	1.1	5.62	1496	2060	0	14430	
0	9004	-57274	-4232.78	11172.11	0	9	0.2	-0.07	0.95	5.36	1496	2060	37	0	0.07
0	3813	-53272	-1818.79	6687.06	0	4	0.13	-0.03	1.03	5.5	1496	2060	0	14430	0.03

##### Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ik	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.04	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
43	56	66	1.13	1.14	0.93	1.16	1.27	1	0.73	0.72	0.61	1	1	1	1	1	1	1	1	1	0.96	0.98	0.96
1	5	0	0	0.04	0	0	0.27	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0

##### Verifiche geotecniche - Cedimenti assoluti e differenziali

Tipo	Assoluto				Differenziale				Relativo				Rapp. inflessione				Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Comb.	Sr adm	Sr	Nodo	Comb.	Ri adm	Ri	Comb.	
E	0.05	0.001	623	SLE RA 21	0.05	0.001	623	1007	SLE RA 20	0.05	0	749	SLE RA 2	0.0033	0	SLE RA 2	Si
D	0.05	0	623	SLE RA 1	0.05	0	623	623	SLE RA 1	0.05	0	749	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	623	SLE RA 1	0.05	0	623	623	SLE RA 1	0.05	0	749	SLE RA 1	0.0033	0	SLE RA 1	Si

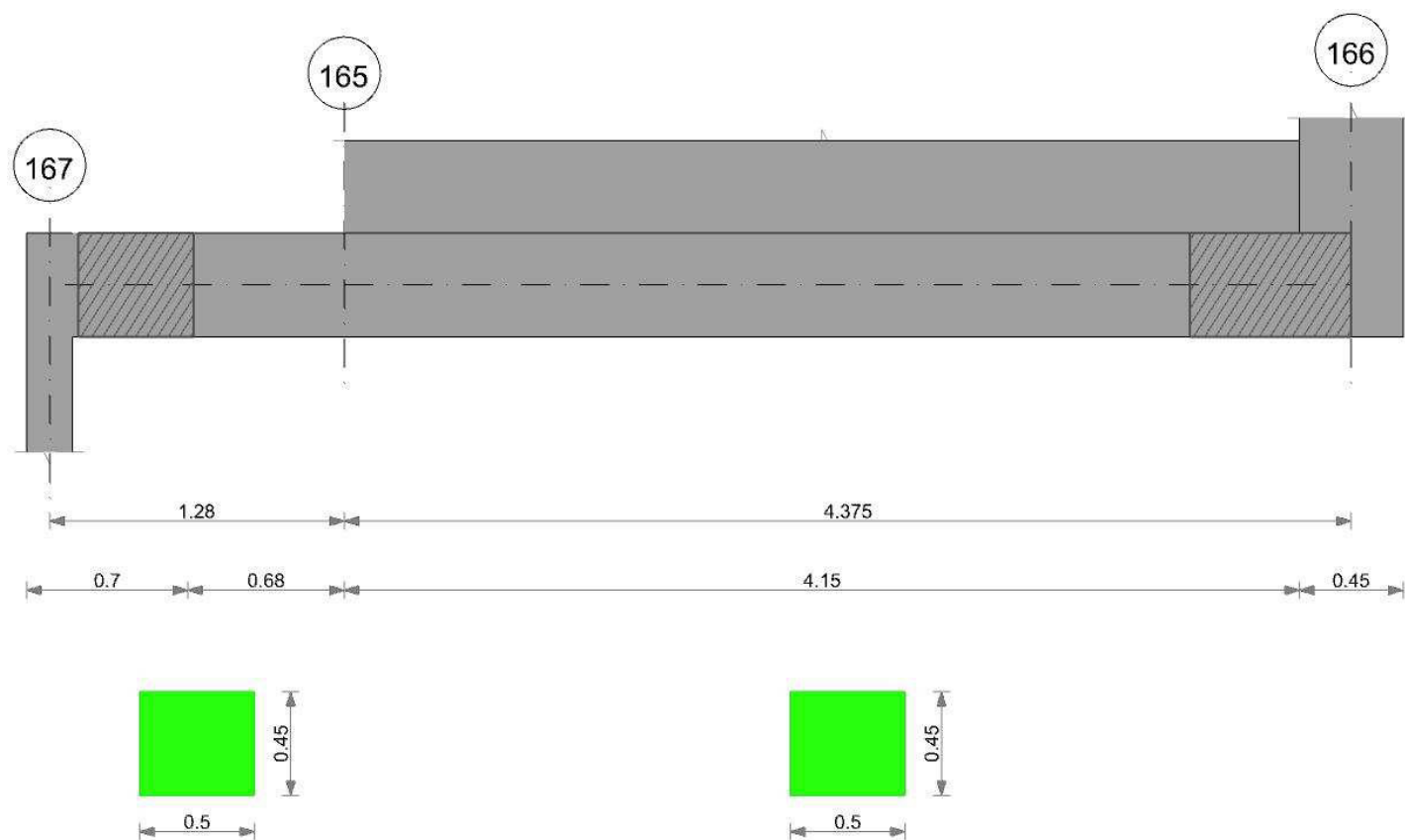
##### Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.01	SLE RA 20	0.19	0.01	749	1007	SLE RA 20	0.19	0	749	SLE RA 20	0.1	0	749	SLE RA 2	Si
D	0.19	0	SLE RA 1	0.19	0	623	749	SLE RA 1	0.19	0	623	SLE RA 1	0.1	0	749	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	623	749	SLE RA 1	0.19	0	623	SLE RA 1	0.1	0	749	SLE RA 1	Si



## CORDOLO 27

Geometria



### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

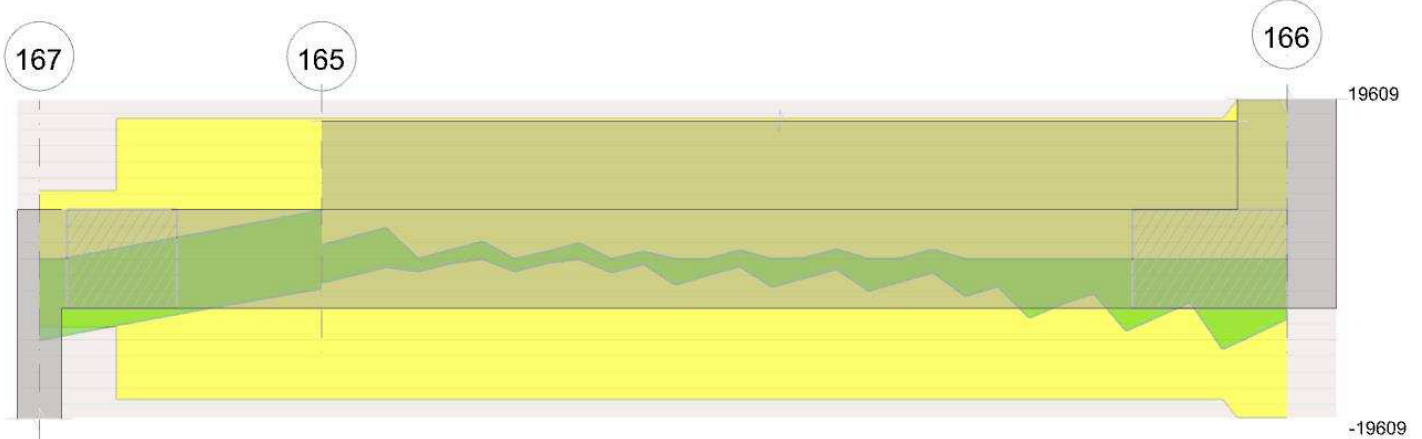
### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione



Diagramma verifica stato limite ultimo taglio



#### Output campate

Campata 1 tra i fili 167 - 165, sezione R 50x45, asta 435

#### Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0	0	0	0	0						-728.57	SLU 81	-728.57	0	0	0	No
0.1	0	0	0	0	0						-1245.96	SLU 81	-2047.08	0	0	0	No
0.64	0.000763	0.052	0.000509	0.052							-3145.32	SLU 84	-3434.47	-11254.02	0.132	3.28	Si
1.28	0.000763	0.052	0.000509	0.052							-3400.86	SLU 84	-3546.15	-11254.02	0.132	3.17	Si

#### Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0	0	0	0	1093.33	SLV 7	879.4	0	0	0	-2165.75	SLV 10	-2165.75	0	0	0	No
0.1	0	0	0	0	406.49	SLV 8	406.49	0	0	0	-2189.88	SLV 9	-2191.97	0	0	0	No
0.64	0.000763	0.052	0.000509	0.052							-2806.17	SLV 11	-3539.61	-10716.86	0.238	3.03	Si
1.28	0.000763	0.052	0.000509	0.052	306.71	SLV 10	306.71	7262.8	0.194	23.68	-5060.92	SLV 7	-5060.92	-10716.86	0.238	2.12	Si

#### Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0	0	0	0	181.08	SLD 7	21.56	0	0	0	-1253.5	SLD 10	-1253.5	0	0	0	No
0.1	0	0	0	0							-1462.86	SLD 9	-1751.97	0	0	0	No
0.64	0.000763	0.052	0.000509	0.052							-2459.81	SLD 11	-2894.53	-10716.86	0.238	3.7	Si
1.28	0.000763	0.052	0.000509	0.052							-3560.1	SLD 7	-3560.1	-10716.86	0.238	3.01	Si

#### Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0	0	0	-7847	SLU 84	-7847	-8455	-71432	0	-8455	1	1.08	Si
0.1	0	0	0	-7073	SLU 84	-7073	-8455	-71432	0	-8455	1	1.2	Si
0.64	0.0000124	0	0	-2959	SLU 84	-2959	-7764	-63178	-17343	-17343	1	5.86	Si
1.28	0.0000124	0.000763	0	1856	SLU 81	1856	8659	63178	17343	17343	1	9.35	Si

#### Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0	0	0	-10057	SLV 7	-10057	-8455	-71432	0	-8455	1	0.84	Si
0.1	0	0	0	-9525	SLV 7	-9525	-8455	-71432	0	-8455	1	0.89	No
0.64	0.0000124		0	2712	SLV 10	2712	7764	63178	17343	17343	1	6.39	Si
0.64	0.0000124		0	-6752	SLV 7	-6752	-7764	-63178	-17343	-17343	1	2.57	Si
1.28	0.0000124	0.000509		6003	SLV 10	6003	7764	63178	17343	17343	1	2.89	Si
1.28	0.0000124	0.000763	0	-3655	SLV 7	-3655	-8659	-63178	-17343	-17343	1	4.75	Si

#### Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica	
0	0	0	0	0	-7396	SLD 7	-7396	-8455	-71432	0	-8455	1	1.14	Si
0.1	0	0	0	0	-6871	SLD 7	-6871	-8455	-71432	0	-8455	1	1.23	Si
0.64	0.0000124	0	0	0	65	SLD 10	65	7764	63178	17343	17343	1	265.04	Si
0.64	0.0000124	0	0	0	-4105	SLD 7	-4105	-7764	-63178	-17343	-17343	1	4.22	Si
1.28	0.0000124	0.000763	0	0	3301	SLD 10	3301	8659	63178	17343	17343	1	5.25	Si
1.28	0.0000124	0.000763	0	0	-953	SLD 7	-953	-8659	-63178	-17343	-17343	1	18.2	Si

#### Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	$\sigma$ c	$\sigma$ c lim.	$\sigma$ f.	$\sigma$ f lim.	Mela	Comb.	Mdes	$\sigma$ c	$\sigma$ c lim.	$\sigma$ FRP	$\sigma$ FRP lim.	
0	-536.75	18	-536.75	-31807	1494000	0	36000000	-536.21	2	-536.21	-31775	1120500			Si
0.1	-922.05	18	-1519.1	-90020	1494000	0	36000000	-891.69	2	-1439.41	-85299	1120500			Si
0.64	-2340.86	21	-2560.05	133509	1494000	1955046	36000000	-2187.88	2	-2386.44	124455	1120500			Si
1.28	-2551.52	21	-2652.14	138311	1494000	2025368	36000000	-2377.1	2	-2469.12	128766	1120500			Si

#### Verifica di apertura delle fessure

La campata non presenta apertura delle fessure



## Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 167 - 165, sezione R 50x45, asta 435

Campata 2 tra i fili 165 - 166, sezione R 50x45, aste 434, 433, 432, 431, 430, 429, 428, 427, 426, 425, 424

### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0006	1847	SLU 83	0.052	9742	5682	SLU 83	21991	Si
2.19	0.41	0.0006	1964	SLU 83	0.052	9742	6044	SLU 83	21991	Si
4.15	0.41	0.0006	2268	SLU 84	0.052	9742	6978	SLU 84	21991	Si
4.38	0.41	0.0006	2349	SLU 84	0.052	9742	7229	SLU 84	21991	Si

### Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0006	1256	SLD 14	0.132	10839	3864	SLD 14	25289	Si
2.19	0.41	0.0006	1350	SLD 16	0.132	10839	4155	SLD 16	25289	Si
4.15	0.41	0.0006	1602	SLD 11	0.132	10839	4930	SLD 11	25289	Si
4.38	0.41	0.0006	1669	SLD 11	0.132	10839	5134	SLD 11	25289	Si

### Verifiche delle tensioni di esercizio

Rara									Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma c$	$\sigma c$ limite	$\sigma f$	$\sigma f$ limite	M	Comb	$\sigma c$	$\sigma c$ limite	
0	0.41	0.00000619	1353	SLE RA 20	36966	1494000	458376	36000000	1216	SLE QP 2	33227	1120500	Si
2.19	0.41	0.00000619	1438	SLE RA 20	39291	1494000	487203	36000000	1294	SLE QP 2	35355	1120500	Si
4.15	0.41	0.00000619	1663	SLE RA 21	45446	1494000	563532	36000000	1506	SLE QP 2	41135	1120500	Si
4.38	0.41	0.00000619	1724	SLE RA 21	47092	1494000	583935	36000000	1561	SLE QP 2	42653	1120500	Si

### Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

## Verifiche geotecniche

### Verifiche geotecniche di scorrimento sul piano di posa

Size X	Size Y	Comb.	Sis.	Cnd	Fx	Fy	Fz	IncX	IncY	Phi	Ad	RPI	yR	Rd	Ed	Rd/Ed	Verifica
5.98	1.1	SLU 27	ST	LT	-1177	294	-50995	-1	0	19	0	0	1.1	15512	1213	12.79	Si
5.98	1.1	SLV 1	SIS	LT	-1843	8968	-43958	-2	12	19	0	0	1.1	13371	9156	1.46	Si

### Verifiche geotecniche di capacità portante sul piano di posa

Aste				Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
435,434,433,432,431,430,429,428,427,426,425,424				5.98	1.1	SLU 83	ST	BT	2.3	274921	69236	3.97	Si
435,434,433,432,431,430,429,428,427,426,425,424				5.98	1.1	SLV 16	SIS	LT	2.3	218161	50691	4.3	Si
435,434,433,432,431,430,429,428,427,426,425,424				5.98	1.1	SLD 16	SIS	BT	2.3	255009	48762	5.23	Si

### Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	387	-69236	-190.95	4142.28	0	0	0.06	0	1.09	5.86	1496	2060	0	14430	
0	-8438	-50691	3970.01	5210.01	0	-9	0.1	0.08	0.94	5.77	1496	2060	37	0	0.07
0	-3455	-48762	1623.19	3868.78	0	-4	0.08	0.03	1.03	5.82	1496	2060	0	14430	0.03

### Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ik	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.04	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
43	56	66	1.12	1.13	0.93	1.16	1.27	1	0.71	0.71	0.59	1	1	1	1	1	1	1	1	1	0.96	0.98	0.96
1	5	0	0	0.04	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0

### Verifiche geotecniche - Cedimenti assoluti e differenziali

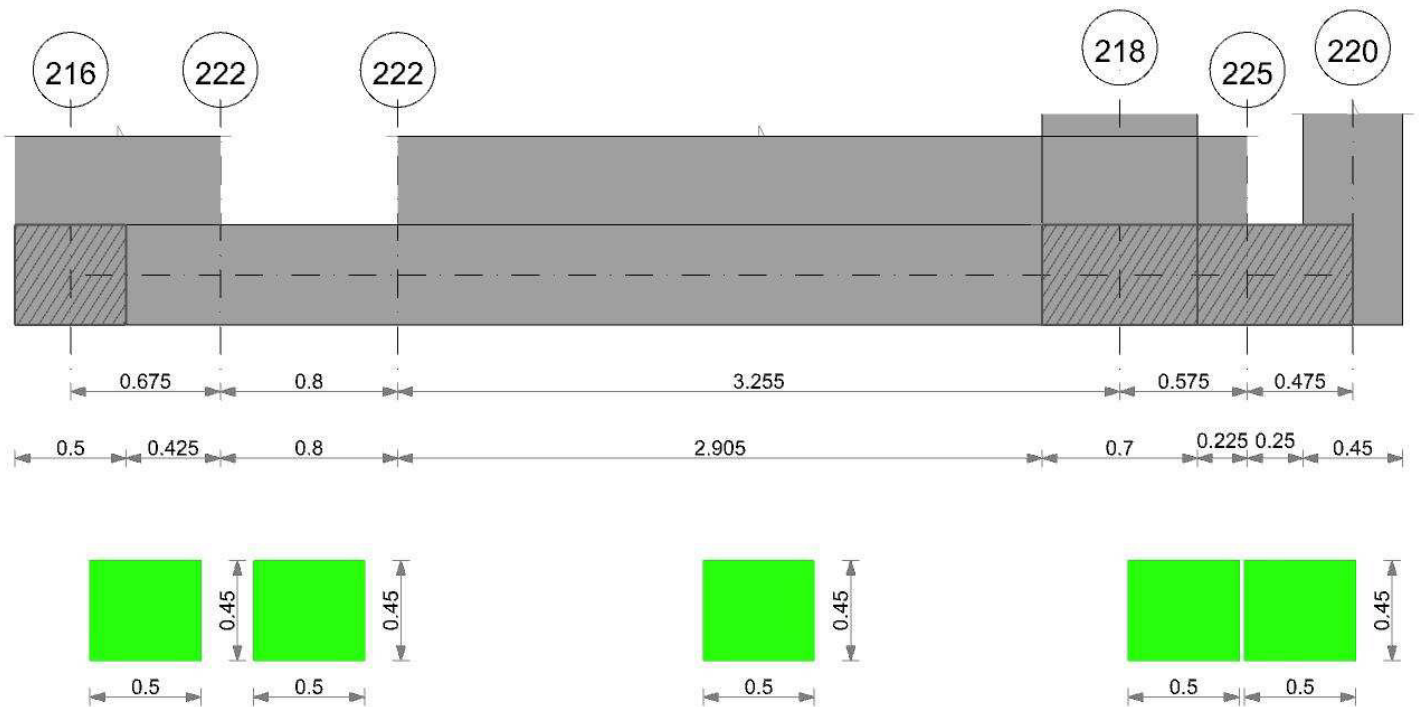
Tipo	Assoluto				Differenziale				Relativo				Rapp. inflessione				Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Comb.	Sr adm	Sr	Nodo	Comb.	Ri adm	Ri	Comb.	
E	0.05	0.002	707	SLE RA 21	0.05	0.001	707	1022	SLE RA 20	0.05	0	739	SLE RA 2	0.0033	0	SLE RA 2	Si
D	0.05	0	707	SLE RA 1	0.05	0	707	707	SLE RA 1	0.05	0	739	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	707	SLE RA 1	0.05	0	707	707	SLE RA 1	0.05	0	739	SLE RA 1	0.0033	0	SLE RA 1	Si

### Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.01	SLE RA 20	0.19	0.02	707	739	SLE RA 21	0.19	0	707	SLE RA 1	0.1	0.01	739	SLE RA 2	Si
D	0.19	0	SLE RA 1	0.19	0	707	739	SLE RA 1	0.19	0	707	SLE RA 1	0.1	0	739	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	707	739	SLE RA 1	0.19	0	707	SLE RA 1	0.1	0	739	SLE RA 1	Si

## CORDOLO 28

Geometria



#### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

#### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

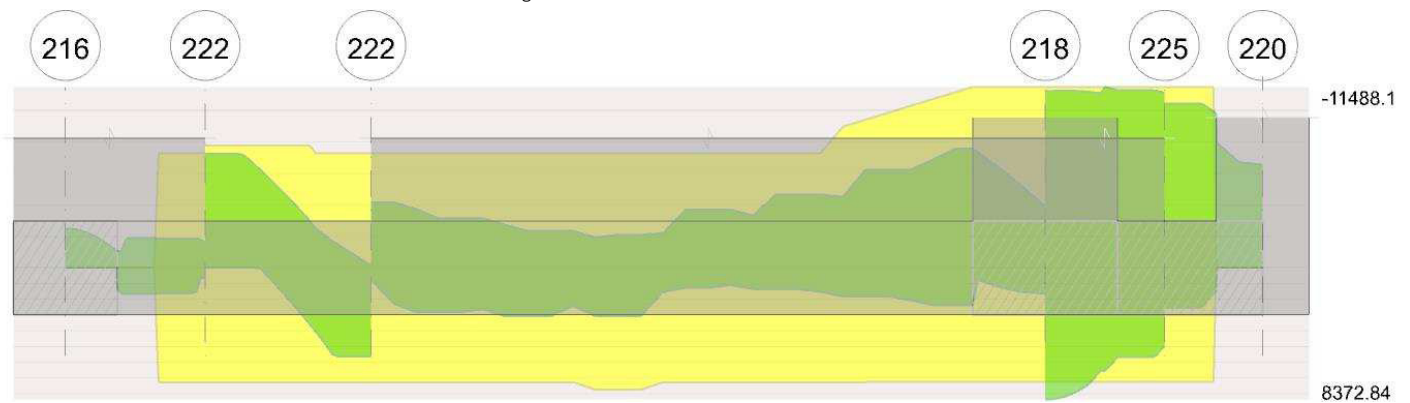


Diagramma verifica stato limite ultimo taglio



#### Output campate

Campata 2 tra i fili 222 - 222, sezione R 50x45, asta 329

#### Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000509	0.052	0.000509	0.052							-7243.33	SLU 84	-7243.33	-7755.45	0.113	1.07	Si
0.03	0.000509	0.052	0.000509	0.052							-6938.52	SLU 84	-7243.33	-7755.45	0.113	1.07	Si
0.4	0.000509	0.052	0.000509	0.052	-1181.7	SLU 1	1152.36	7755.45	0.113	6.73	-1847.71	SLU 84	-4487.51	-7755.45	0.113	1.73	Si
0.8	0.000509	0.052	0.000509	0.052	5329.16	SLU 84	5329.16	7755.45	0.113	1.46							Si

#### Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000509	0.052	0.000509	0.052							-6635.71	SLV 16	-6635.71	-7266.79	0.197	1.1	Si
0.05	0.000509	0.052	0.000509	0.052							-6024.12	SLV 16	-6635.71	-7266.79	0.197	1.1	Si
0.4	0.000509	0.052	0.000509	0.052	-484.53	SLV 6	1979.31	7266.79	0.197	3.67	-2039.24	SLV 11	-4029.46	-7266.79	0.197	1.8	Si
0.8	0.000509	0.052	0.000509	0.052	5632.82	SLV 14	5632.82	7266.79	0.197	1.29	1447.81	SLV 3	-130.98	-7266.79	0.197	55.48	Si

#### Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000509	0.052	0.000509	0.052							-5618.69	SLD 16	-5618.69	-7266.79	0.197	1.29	Si
0.05	0.000509	0.052	0.000509	0.052							-5122.26	SLD 16	-5618.69	-7266.79	0.197	1.29	Si
0.4	0.000509	0.052	0.000509	0.052	-919.57	SLD 6	1286.22	7266.79	0.197	5.65	-1604.19	SLD 11	-3455.26	-7266.79	0.197	2.1	Si
0.8	0.000509	0.052	0.000509	0.052	4437.65	SLD 14	4437.65	7266.79	0.197	1.64							Si

#### Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000113	0.000509	0	11284	SLU 84	11284	7764	63178	15852	15852	1	1.4	Si
0.4	0.0000113	0.000509	0	15703	SLU 84	15703	7764	63178	15852	15852	1	1.01	Si
0.8	0.0000113	0.000509	0	20195	SLU 84	20195	7764	63178	15852	15852	1	0.78	No

#### Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000113	0.000509	0	11757	SLV 14	11757	7764	63178	15852	15852	1	1.35	Si
0.4	0.0000113	0.000509	0	15266	SLV 14	15266	7764	63178	15852	15852	1	1.04	Si
0.8	0.0000113	0.000509	0	18845	SLV 14	18845	7764	63178	15852	15852	1	0.84	No

#### Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000113	0.000509	0	9330	SLD 14	9330	7764	63178	15852	15852	1	1.7	Si
0.4	0.0000113	0.000509	0	12536	SLD 14	12536	7764	63178	15852	15852	1	1.26	Si
0.8	0.0000113	0.000509	0	15798	SLD 14	15798	7764	63178	15852	15852	1	1	Si

#### Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	$\sigma c$	$\sigma c \text{ lim.}$	$\sigma f.$	$\sigma f \text{ lim.}$	Mela	Comb.	Mdes	$\sigma c$	$\sigma c \text{ lim.}$	$\sigma \text{ FRP}$	$\sigma \text{ FRP lim.}$	
0	-5331.97	21	-5331.97	563875	1494000	28698253	36000000	-4863.69	2	-4863.69	514352	1120500			Si
0.4	-1367.68	21	-3307.79	174960	1494000	2624405	36000000	-1261.88	2	-3025.47	160027	1120500			Si
0.8	3910.01	21	3910.01	206814	1494000	3102205	36000000	3540.31	2	3540.31	187259	1120500			Si

#### Verifica di apertura delle fessure

x	Bordo	Rara				Frequente				Quasi permanente				Verifica
		Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	
0	superiore	0.493	0.00084	0.000412	21	0.493	0.00078	0.000385	6	0.493	0.00076	0.000376	2	No
0.05	superiore	0.493	0.00084	0.000412	21	0.493	0.00078	0.000385	6	0.493	0.00076	0.000376	2	No

Campata 5 tra i fili 225 - 220, sezione R 50x45, asta 318

#### Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000823	0.052	0.000509	0.052							-5903.76	SLU 84	-6522.21	-12059.84	0.137	1.85	Si
0.24	0.000823	0.052	0.000509	0.052							-6624.59	SLU 84	-6639.96	-12059.84	0.137	1.82	Si
0.25	0	0	0	0							-6639.96	SLU 84	-6639.96	0	0	0	No
0.48	0	0	0	0							-6537.22	SLU 83	-6537.22	0	0	0	No



### Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000823	0.052	0.000509	0.052	2544.24	SLV 3	2544.24	7261.11	0.193	2.85	-10440.8	SLV 14	-10440.8	-11488.1	0.247	1.1	Si
0.24	0.000823	0.052	0.000509	0.052	-766.09	SLV 1	1694.23	7261.11	0.193	4.29	-8125.64	SLV 16	-9932.17	-11488.1	0.247	1.16	Si
0.25	0	0	0	0	-925.97	SLV 1	1514.2	0	0	0	-7987.7	SLV 16	-9817.51	0	0	0	No
0.48	0	0	0	0	0	0	0	0	0	0	-5347.29	SLV 15	-5347.29	0	0	0	No

### Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000823	0.052	0.000509	0.052	0	0	0	0	0	0	-6721.44	SLD 14	-6721.44	-11488.1	0.247	1.71	Si
0.24	0.000823	0.052	0.000509	0.052	0	0	0	0	0	0	-6017.2	SLD 16	-6017.63	-11488.1	0.247	1.74	Si
0.25	0	0	0	0	0	0	0	0	0	0	-5964.67	SLD 16	-6571.31	0	0	0	No
0.48	0	0	0	0	0	0	0	0	0	0	-4804.18	SLD 15	-4804.18	0	0	0	No

### Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcl	Vrsl	Vult	cotgθ	coeff	Verifica
0	0.0000122	0	0	-4769	SLU 83	-4769	-7759	-63117	-17138	-17138	1	3.59	Si
0.02	0.0000115	0	0	-4548	SLU 83	-4548	-7759	-63117	-16088	-16088	1	3.54	Si
0.24	0.0000115	0	0	-1404	SLU 83	-1404	-7759	-63117	-16088	-16088	1	11.46	Si
0.25	0.0000115	0	0	-1224	SLU 83	-1224	-8455	-71432	-18208	-18208	1	14.87	Si
0.48	0.0000115	0	0	2143	SLU 84	2143	8455	71432	18208	18208	1	8.5	Si

### Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcl	Vrsl	Vult	cotgθ	coeff	Verifica
0	0.0000122	0	0	8549	SLV 14	8549	7759	63117	17138	17138	1	2	Si
0	0.0000122	0	0	-14995	SLV 3	-14995	-7764	-63178	-17154	-17154	1	1.14	Si
0.02	0.0000115	0	0	8739	SLV 14	8739	7759	63117	16088	16088	1	1.84	Si
0.02	0.0000115	0	0	-14887	SLV 3	-14887	-7764	-63178	-16104	-16104	1	1.08	Si
0.24	0.0000115	0	0	11489	SLV 14	11489	7759	63117	16088	16088	1	1.4	Si
0.24	0.0000115	0	0	-13399	SLV 3	-13399	-7759	-63117	-16088	-16088	1	1.2	Si
0.25	0.0000115	0	0	11650	SLV 14	11650	8455	71432	18208	18208	1	1.56	Si
0.25	0.0000115	0	0	-13316	SLV 3	-13316	-8455	-71432	-18208	-18208	1	1.37	Si
0.48	0.0000115	0	0	14643	SLV 14	14643	8455	71432	18208	18208	1	1.24	Si
0.48	0.0000115	0	0	-11853	SLV 3	-11853	-8455	-71432	-18208	-18208	1	1.54	Si

### Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcl	Vrsl	Vult	cotgθ	coeff	Verifica
0	0.0000122	0	0	1813	SLD 14	1813	7759	63117	17138	17138	1	9.45	Si
0	0.0000122	0	0	-8259	SLD 3	-8259	-7759	-63117	-17138	-17138	1	2.08	Si
0.02	0.0000115	0	0	1979	SLD 14	1979	7759	63117	16088	16088	1	8.13	Si
0.02	0.0000115	0	0	-8127	SLD 3	-8127	-7759	-63117	-16088	-16088	1	1.98	Si
0.24	0.0000115	0	0	4367	SLD 14	4367	7759	63117	16088	16088	1	3.68	Si
0.24	0.0000115	0	0	-6276	SLD 3	-6276	-7759	-63117	-16088	-16088	1	2.56	Si
0.25	0.0000115	0	0	4505	SLD 14	4505	8455	71432	18208	18208	1	4.04	Si
0.25	0.0000115	0	0	-6171	SLD 3	-6171	-8455	-71432	-18208	-18208	1	2.95	Si
0.48	0.0000115	0	0	7059	SLD 14	7059	8455	71432	18208	18208	1	2.58	Si
0.48	0.0000115	0	0	-4268	SLD 3	-4268	-8455	-71432	-18208	-18208	1	4.27	Si

### Verifiche delle tensioni in esercizio

x	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	Verifica
0	-4341.93	21	-4799.92	249595	1494000	3635416	36000000	-3948.28	2	-4374.01	227448	1120500			Si
0.24	-4876.08	21	-4887.56	254152	1494000	3701789	36000000	-4445.87	2	-4456.84	231755	1120500			Si
0.25	-4887.56	21	-4887.56	++	1494000	++	36000000	-4456.84	2	-4456.84	++	1120500			No
0.33	-4923.15	21	-4923.15	++	1494000	++	36000000	-4492.53	2	-4492.53	++	1120500			No
0.48	-4814.18	20	-4814.18	++	1494000	++	36000000	-4394.92	2	-4394.92	++	1120500			No

### Verifica di apertura delle fessure

x	Bordo	Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	Verifica
0.25	superiore	0	0	++	21	0	0	++	6	0	0	++	2	No
0.48	superiore	0	0	++	20	0	0	++	6	0	0	++	2	No

### Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 216 - 222, sezione R 50x45, aste 331, 330

### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	1950	SLU 84	0.02	3468	5999	SLU 84	15877	Si
0.25	0.41	0.0002	1946	SLU 84	0.02	3468	5989	SLU 84	15877	Si
0.34	0.41	0.0002	1946	SLU 84	0.02	3468	5988	SLU 84	15877	Si
0.68	0.41	0.0006	1945	SLU 84	0.048	8921	5984	SLU 84	20101	Si

### Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	1415	SLD 15	0.079	3893	4352	SLD 15	15877	Si
0.25	0.41	0.0002	1411	SLD 15	0.079	3893	4341	SLD 15	15877	Si
0.34	0.41	0.0002	1410	SLD 15	0.079	3893	4339	SLD 15	15877	Si
0.68	0.41	0.0006	1408	SLD 15	0.126	9932	4332	SLD 15	23116	Si

### Verifiche delle tensioni di esercizio

x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	Verifica
0	0.41	0.00000217	1433	SLE RA 21	41235	1494000	511315	36000000	1300	SLE QP 2	37393	1120500	Si





Rara									Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma c$	$\sigma c$ limite	$\sigma f$	$\sigma f$ limite	M	Comb	$\sigma c$	$\sigma c$ limite	
0.25	0.41	0.00000217	1430	SLE RA 21	41159	1494000	510374	36000000	1297	SLE QP 2	37317	1120500	Si
0.34	0.41	0.00000217	1430	SLE RA 21	41151	1494000	510266	36000000	1296	SLE QP 2	37306	1120500	Si
0.68	0.41	0.00000565	1429	SLE RA 21	39300	1494000	487323	36000000	1295	SLE QP 2	35620	1120500	Si

#### Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Campata 2 tra i fili 222 - 222, sezione R 50x45, asta 329

Campata 3 tra i fili 222 - 218, sezione R 50x45, aste 328, 327, 326, 325, 324, 323, 322, 321

#### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0006	2006	SLU 84	0.048	8921	6173	SLU 84	20101	Si
1.63	0.41	0.0005	2134	SLU 84	0.044	8295	6565	SLU 84	18663	Si
2.91	0.41	0.0005	2279	SLU 84	0.044	8295	7011	SLU 84	18663	Si
3.26	0.41	0.0006	2356	SLU 83	0.052	9638	7249	SLU 83	21752	Si

#### Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0006	1455	SLD 13	0.126	9932	4475	SLD 13	23116	Si
1.63	0.41	0.0005	1551	SLD 15	0.122	9239	4771	SLD 15	21463	Si
2.91	0.41	0.0005	1694	SLD 15	0.122	9239	5212	SLD 15	21463	Si
3.26	0.41	0.0006	1773	SLD 15	0.131	10725	5456	SLD 15	25014	Si

#### Verifiche delle tensioni di esercizio

Rara									Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma c$	$\sigma c$ limite	$\sigma f$	$\sigma f$ limite	M	Comb	$\sigma c$	$\sigma c$ limite	
0	0.41	0.00000565	1474	SLE RA 21	40530	1494000	502570	36000000	1335	SLE QP 2	36730	1120500	Si
1.63	0.41	0.00000525	1567	SLE RA 21	43325	1494000	537234	36000000	1421	SLE QP 2	39285	1120500	Si
2.91	0.41	0.00000525	1674	SLE RA 21	46279	1494000	573862	36000000	1520	SLE QP 2	42008	1120500	Si
3.26	0.41	0.00000612	1731	SLE RA 20	47329	1494000	586878	36000000	1572	SLE QP 2	42980	1120500	Si

#### Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Campata 4 tra i fili 218 - 225, sezione R 50x45, aste 320, 319

#### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0006	2356	SLU 83	0.052	9638	7249	SLU 83	21752	Si
0.29	0.41	0.0006	2425	SLU 83	0.052	9638	7462	SLU 83	21752	Si
0.35	0.41	0.0006	2442	SLU 83	0.052	9638	7513	SLU 83	21752	Si
0.57	0.41	0.0006	2510	SLU 84	0.052	9638	7722	SLU 84	21752	Si

#### Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0006	1773	SLD 15	0.131	10725	5456	SLD 15	25014	Si
0.29	0.41	0.0006	1847	SLD 15	0.131	10725	5682	SLD 15	25014	Si
0.35	0.41	0.0006	1866	SLD 15	0.131	10725	5740	SLD 15	25014	Si
0.57	0.41	0.0006	1943	SLD 15	0.131	10725	5979	SLD 15	25014	Si

#### Verifiche delle tensioni di esercizio

Rara									Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma c$	$\sigma c$ limite	$\sigma f$	$\sigma f$ limite	M	Comb	$\sigma c$	$\sigma c$ limite	
0	0.41	0.00000612	1731	SLE RA 20	47329	1494000	586878	36000000	1572	SLE QP 2	42980	1120500	Si
0.29	0.41	0.00000612	1782	SLE RA 20	48727	1494000	604214	36000000	1619	SLE QP 2	44265	1120500	Si
0.35	0.41	0.00000612	1794	SLE RA 20	49062	1494000	608367	36000000	1630	SLE QP 2	44572	1120500	Si
0.57	0.41	0.00000612	1844	SLE RA 21	50429	1494000	625317	36000000	1676	SLE QP 2	45824	1120500	Si

#### Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Campata 5 tra i fili 225 - 220, sezione R 50x45, asta 318

#### Verifiche geotecniche

##### Verifiche geotecniche di scorrimento sul piano di posa

Size X	Size Y	Comb.	Sis.	Cnd	Fx	Fy	Fz	IncX	IncY	Phi	Ad	RPI	yR	Rd	Ed	Rd/Ed	Verifica
6.26	1.1	SLU 48	ST	LT	-158	1206	-67753	0	1	19	0	0	1.1	20609	1217	16.94	Si
6.26	1.1	SLV 3	SIS	LT	922	10463	-46746	1	13	19	0	0	1.1	14219	10504	1.35	Si

##### Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
331,330,329,328,327,326,325,324,323,322,321,320,319,318	6.26	1.1	SLU 83	ST	BT	2.3	278788	81129	3.44	Si
331,330,329,328,327,326,325,324,323,322,321,320,319,318	6.26	1.1	SLV 15	SIS	BT	2.3	245483	66600	3.69	Si
331,330,329,328,327,326,325,324,323,322,321,320,319,318	6.26	1.1	SLD 15	SIS	BT	2.3	268978	60372	4.46	Si

##### Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	1351	-81129	-681.78	9220.73	0	1	0.11	-0.01	1.08	6.03	1496	2060	0	14430	
0	-7464	-66600	3247.78	13139.28	0	-6	0.2	0.05	1	5.86	1496	2060	0	14430	0.07
0	-2641	-60372	1113.83	9205.64	0	-3	0.15	0.02	1.06	5.95	1496	2060	0	14430	0.03

##### Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.04	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.03	0	0	0.27	0	0	0.03	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0

##### Verifiche geotecniche - Cedimenti assoluti e differenziali

Tipo	Assoluto				Differenziale				Relativo				Rapp. inflessione				Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Comb.	Sr adm	Sr	Nodo	Comb.	Ri adm	Ri	Comb.	
E	0.05	0.001	570	SLE RA 21	0.05	0.001	570	1035	SLE RA 21	0.05	0	752	SLE RA 20	0.0033	0	SLE RA 2	Si



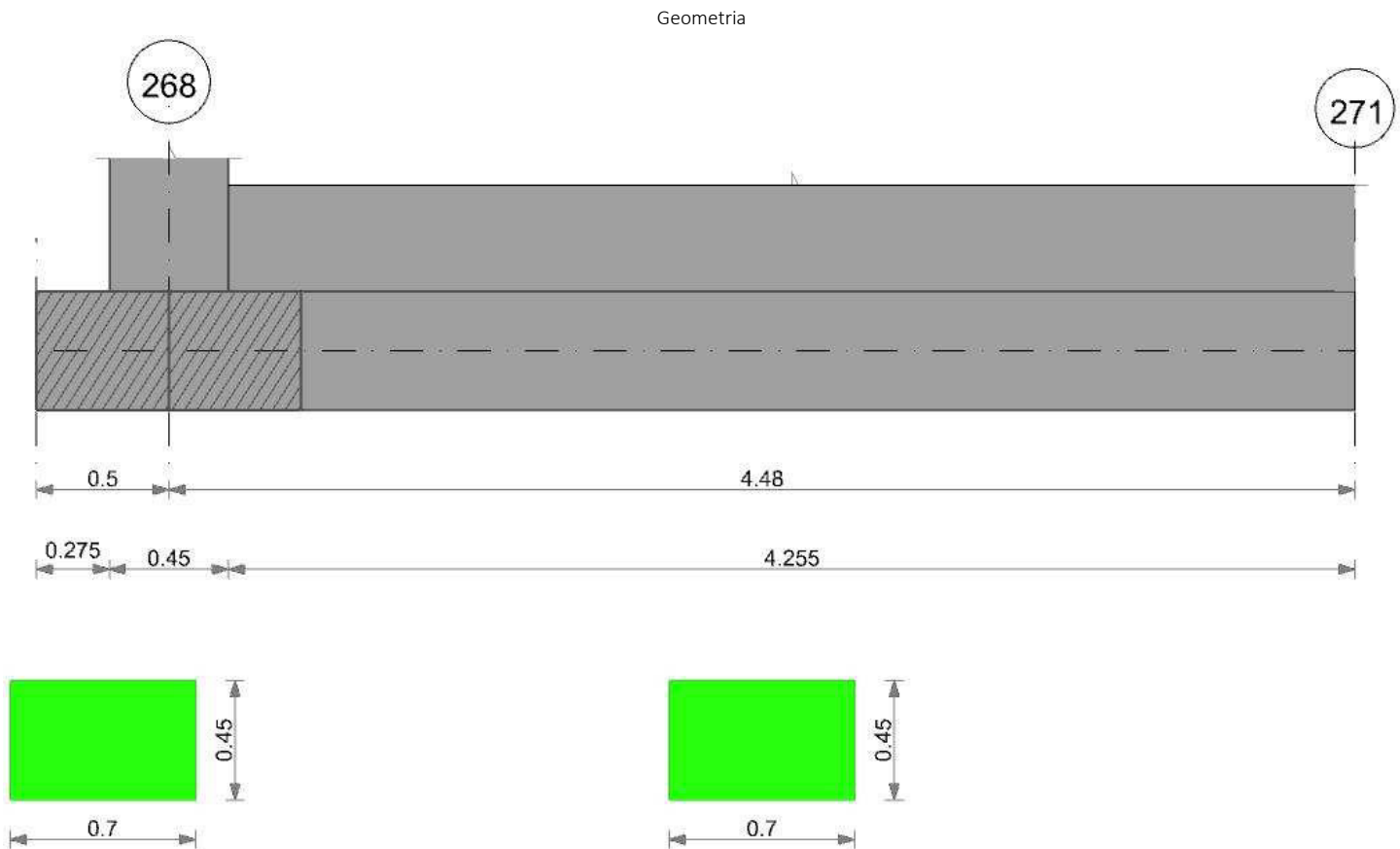


Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Comb.	Sr adm	Sr	Nodo	Comb.	Ri adm	Ri	Comb.	
D	0.05	0	570	SLE RA 1	0.05	0	570	570	SLE RA 1	0.05	0	734	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	570	SLE RA 1	0.05	0	570	570	SLE RA 1	0.05	0	734	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.01	SLE RA 21	0.19	0.01	943	1035	SLE RA 20	0.19	0.01	752	SLE RA 20	0.1	0	943	SLE RA 2	Si
D	0.19	0	SLE RA 1	0.19	0	570	734	SLE RA 1	0.19	0	570	SLE RA 1	0.1	0	734	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	570	734	SLE RA 1	0.19	0	570	SLE RA 1	0.1	0	734	SLE RA 1	Si

CORDOLO 29



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000  
Calcestruzzo: C25/30 Rck 3000000

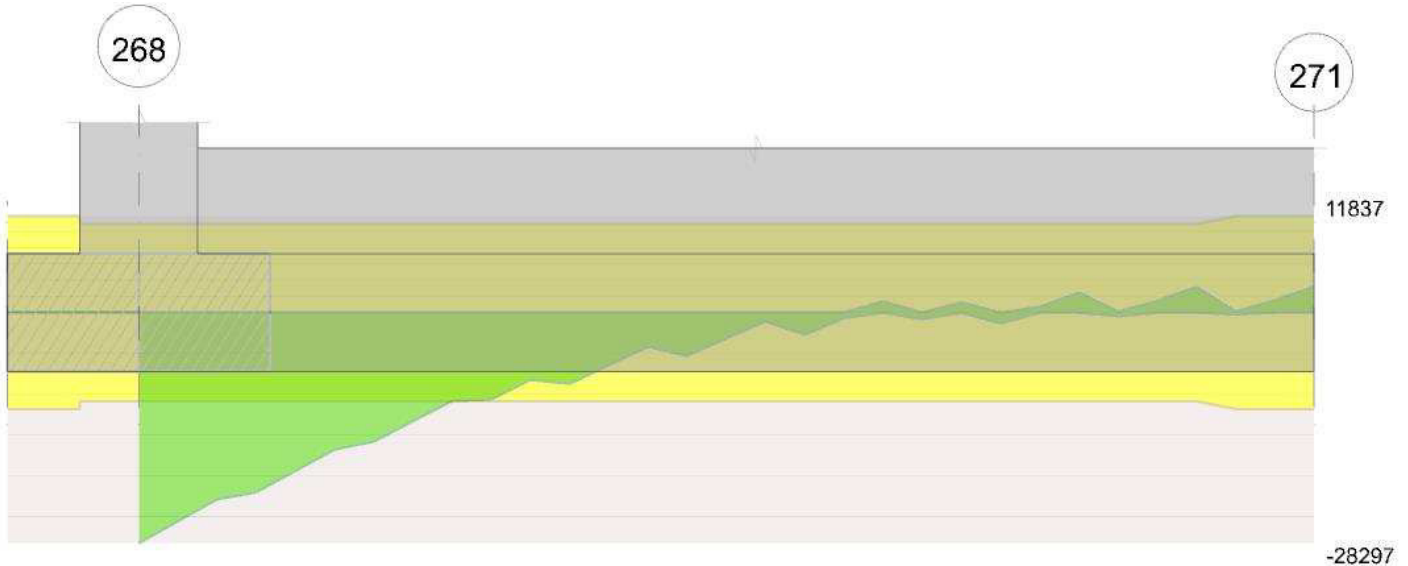
Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 70x45	Rettangolare	0.7	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione



Diagramma verifica stato limite ultimo taglio



Output campate

#### Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 268 - 271, sezione R 70x45, aste 617, 616, 615, 614, 613, 612, 611, 610, 609, 608, 607

#### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	4019	SLV 14	0.085	2655	10370	SLV 14	15877	No
0.23	0.41	0.0002	3969	SLV 16	0.085	2655	10242	SLV 16	15877	No
2.24	0.41	0.0002	3128	SLV 15	0.085	2655	8073	SLV 15	15877	No
4.48	0.41	0.0002	2430	SLV 15	0.085	2655	6272	SLV 15	15877	Si

#### Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	3058	SLD 14	0.07	3073	7892	SLD 14	15877	Si
0.23	0.41	0.0002	3035	SLD 16	0.07	3073	7832	SLD 16	15877	Si
2.24	0.41	0.0002	2376	SLD 15	0.07	3073	6132	SLD 15	15877	Si
4.48	0.41	0.0002	1838	SLD 15	0.07	3073	4743	SLD 15	15877	Si

#### Verifiche delle tensioni di esercizio

Caratteristiche della tensione di esercizio			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma_c$	$\sigma_c$ limite	$\sigma_f$	$\sigma_f$ limite	M	Comb	$\sigma_c$	$\sigma_c$ limite	
0	0.41	0.00000171	2564	SLE RA 21	74243	1494000	920619	36000000	2342	SLE QP 2	67809	1120500	Si
0.23	0.41	0.00000171	2560	SLE RA 21	74126	1494000	919160	36000000	2338	SLE QP 2	67696	1120500	Si
2.24	0.41	0.00000171	1990	SLE RA 21	57631	1494000	714628	36000000	1815	SLE QP 2	52556	1120500	Si
4.48	0.41	0.00000171	1532	SLE RA 20	44370	1494000	550186	36000000	1394	SLE QP 2	40371	1120500	Si

#### Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

#### Verifiche geotecniche

#### Verifiche geotecniche di scorrimento sul piano di posa



Size X	Size Y	Comb.	Sis.	Cnd	Fx	Fy	Fz	IncX	IncY	Phi	Ad	RPI	yR	Rd	Ed	Rd/Ed	Verifica
4.48	1.3	SLU 39	ST	LT	-849	896	-55533	-1	1	19	0	0	1.1	16892	1235	13.68	Si
4.48	1.3	SLV 3	SIS	LT	2679	6527	-23045	7	16	19	0	0	1.1	7010	7055	0.99	No

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
617,616,615,614,613,612,611,610,609,608,607	4.48	1.3	SLU 83	ST	BT	2.3	176456	67804	2.6	Si
617,616,615,614,613,612,611,610,609,608,607	4.48	1.3	SLV 14	SIS	BT	2.3	152776	70814	2.16	Si
617,616,615,614,613,612,611,610,609,608,607	4.48	1.3	SLD 14	SIS	BT	2.3	165567	57129	2.9	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	1119	-67804	9418.87	-11666.67	0	1	-0.17	0.14	1.02	4.14	1496	2060	0	14430	
0	-4931	-70814	13272.1	-15275.05	0	-4	-0.22	0.19	0.93	4.05	1496	2060	0	14430	0.07
0	-1655	-57129	9329.16	-11064.12	0	-2	-0.19	0.16	0.97	4.09	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.05	0	0	0.23	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.05	0	0	0.23	0	0	0.03	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.05	0	0	0.23	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0

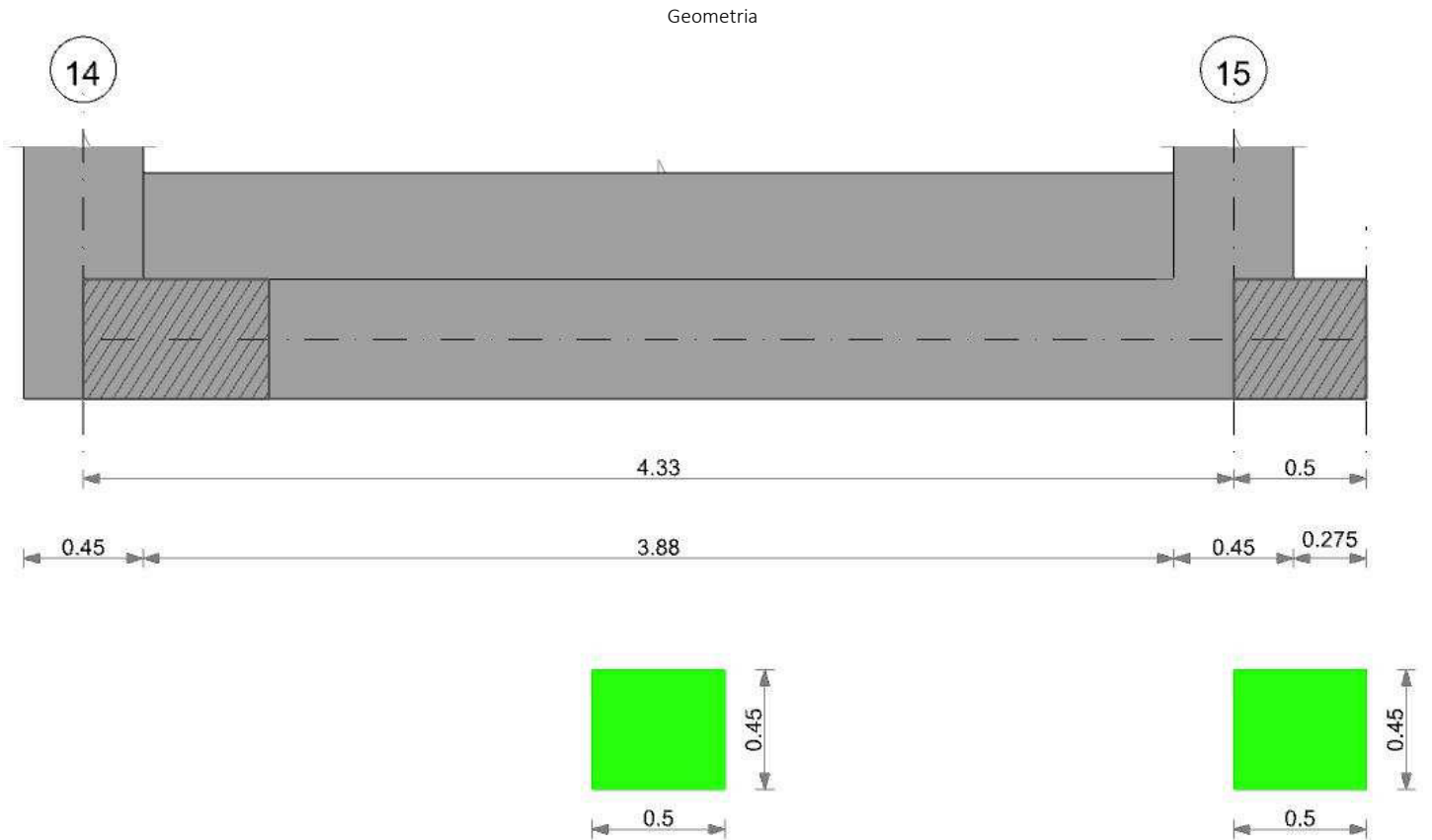
Verifiche geotecniche - Cedimenti assoluti e differenziali

Tipo	Assoluto				Differenziale				Relativo				Rapp. inflessione				Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Comb.	Sr adm	Sr	Nodo	Comb.	Ri adm	Ri	Comb.	
E	0.05	0	667	SLE RA 21	0.05	0	667	900	SLE RA 21	0.05	0	667	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	667	SLE RA 1	0.05	0	667	667	SLE RA 1	0.05	0	667	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	667	SLE RA 1	0.05	0	667	667	SLE RA 1	0.05	0	667	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta				Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.
E	0.19	0	SLE RA 21	0.19	0	667	900	SLE RA 21	0.19	0	667	SLE RA 1	0.1	0	667	SLE RA 1
D	0.19	0	SLE RA 1	0.19	0	667	900	SLE RA 1	0.19	0	667	SLE RA 1	0.1	0	667	SLE RA 1
Z	0.19	0	SLE RA 1	0.19	0	667	900	SLE RA 1	0.19	0	667	SLE RA 1	0.1	0	667	SLE RA 1

CORDOLO 30



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000  
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035



Diagramma verifica stato limite ultimo flessione

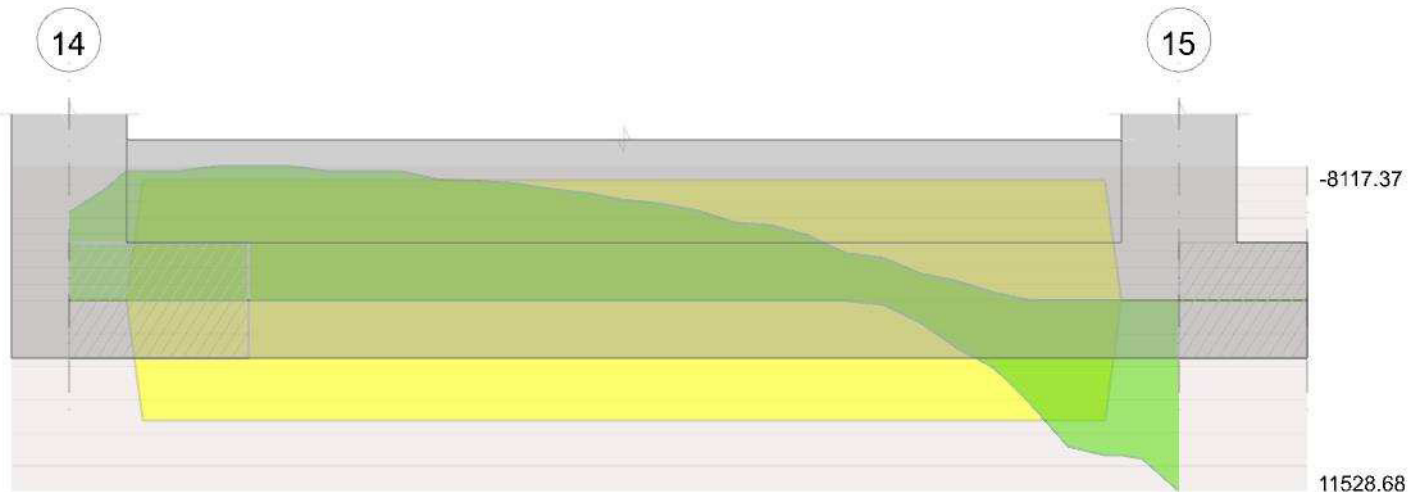
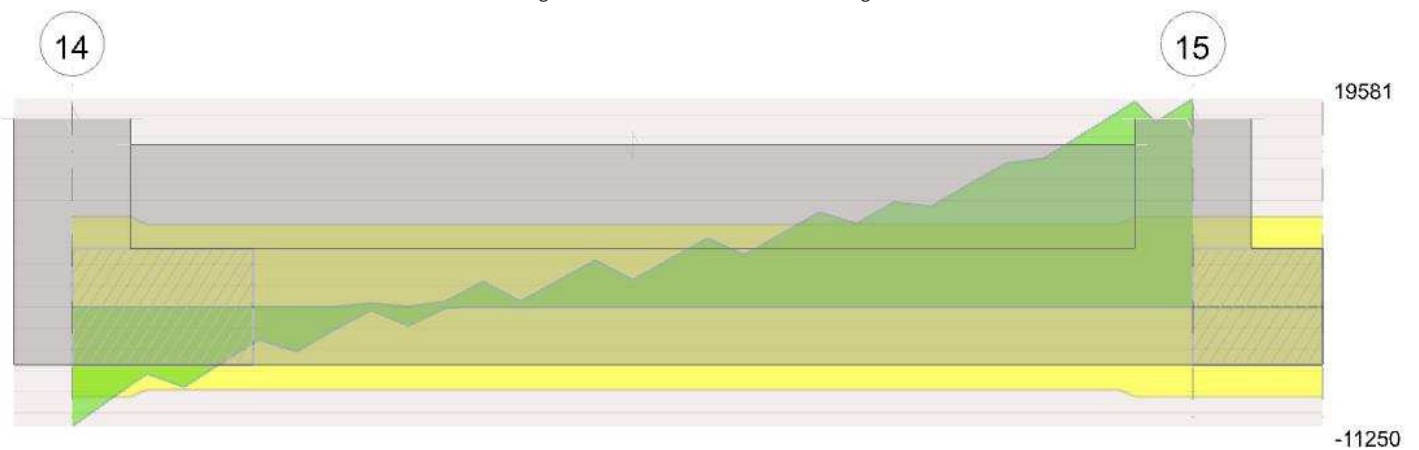


Diagramma verifica stato limite ultimo taglio



Output campate

## Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 14 - 15, sezione R 50x45, aste 796, 795, 794, 793, 792, 791, 790, 789, 788, 787, 786

## Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	2569	SLV 1	0.087	2741	8937	SLV 1	15877	Si
0.23	0.41	0.0002	2437	SLV 1	0.087	2741	8476	SLV 1	15877	Si
2.17	0.41	0.0002	1933	SLV 1	0.087	2741	6723	SLV 1	15877	Si
4.11	0.41	0.0002	2212	SLV 4	0.087	2741	7695	SLV 4	15877	Si
4.33	0.41	0.0002	2221	SLV 4	0.087	2741	7726	SLV 4	15877	Si

## Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	1921	SLD 1	0.071	3173	6681	SLD 1	15877	Si
0.23	0.41	0.0002	1821	SLD 1	0.071	3173	6335	SLD 1	15877	Si
2.17	0.41	0.0002	1449	SLD 1	0.071	3173	5041	SLD 1	15877	Si
4.11	0.41	0.0002	1668	SLD 4	0.071	3173	5802	SLD 4	15877	Si
4.33	0.41	0.0002	1675	SLD 4	0.071	3173	5827	SLD 4	15877	Si

## Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma_c$	$\sigma_c$ limite	$\sigma_f$	$\sigma_f$ limite	M	Comb	$\sigma_c$	$\sigma_c$ limite	
0	0.41	0.00000177	1567	SLE RA 20	45332	1494000	562114	36000000	1436	SLE QP 2	41550	1120500	Si
0.23	0.41	0.00000177	1486	SLE RA 20	42979	1494000	532944	36000000	1361	SLE QP 2	39378	1120500	Si
2.17	0.41	0.00000177	1192	SLE RA 20	34479	1494000	427543	36000000	1088	SLE QP 2	31488	1120500	Si
4.11	0.41	0.00000177	1384	SLE RA 21	40031	1494000	496390	36000000	1262	SLE QP 2	36514	1120500	Si
4.33	0.41	0.00000177	1390	SLE RA 21	40229	1494000	498840	36000000	1268	SLE QP 2	36692	1120500	Si

## Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

## Verifiche geotecniche

## Verifiche geotecniche di scorrimento sul piano di posa

Size X	Size Y	Comb.	Sis.	Cnd	Fx	Fy	Fz	IncX	IncY	Phi	Ad	RPI	yR	Rd	Ed	Rd/Ed	Verifica
4.56	1.1	SLU 27	ST	LT	-165	-652	-46540	0	-1	19	0	0	1.1	14156	673	21.03	Si
4.56	1.1	SLV 13	SIS	LT	-3265	-7727	-19044	-10	-22	19	0	0	1.1	5793	8389	0.69	No



#### Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
796,795,794,793,792,791,790,789,788,787,786	4.56	1.1	SLU 83	ST	BT	2.3	183345	62537	2.93	Si
796,795,794,793,792,791,790,789,788,787,786	4.56	1.1	SLV 1	SIS	BT	2.3	157730	69514	2.27	Si
796,795,794,793,792,791,790,789,788,787,786	4.56	1.1	SLD 1	SIS	BT	2.3	170599	54480	3.13	Si

#### Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	-826	-62537	-4879.24	-850.79	0	-1	-0.01	-0.08	0.94	4.53	1496	2060	0	14430	
0	5776	-69514	-8874.99	-2671.45	0	5	-0.04	-0.13	0.84	4.48	1496	2060	0	14430	0.07
0	2130	-54480	-5693.42	-1528.33	0	2	-0.03	-0.1	0.89	4.5	1496	2060	0	14430	0.03

#### Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N		S		D		I		B		G		P		E	
Nq	Nc	Sq	Sc	Dq	Dc	Iq	Ik	Bq	Bc	Gq	Gc	Pq	Pc	Eq	Ec
1	5	0	0.04	0	0.27	0	0	0	0	0	0	1	1	0	0
1	5	0	0.04	0	0.27	0	0.04	0	0	0	0	1	1	0	0
1	5	0	0.04	0	0.27	0	0.01	0	0	0	0	1	1	0	0

#### Verifiche geotecniche - Cedimenti assoluti e differenziali

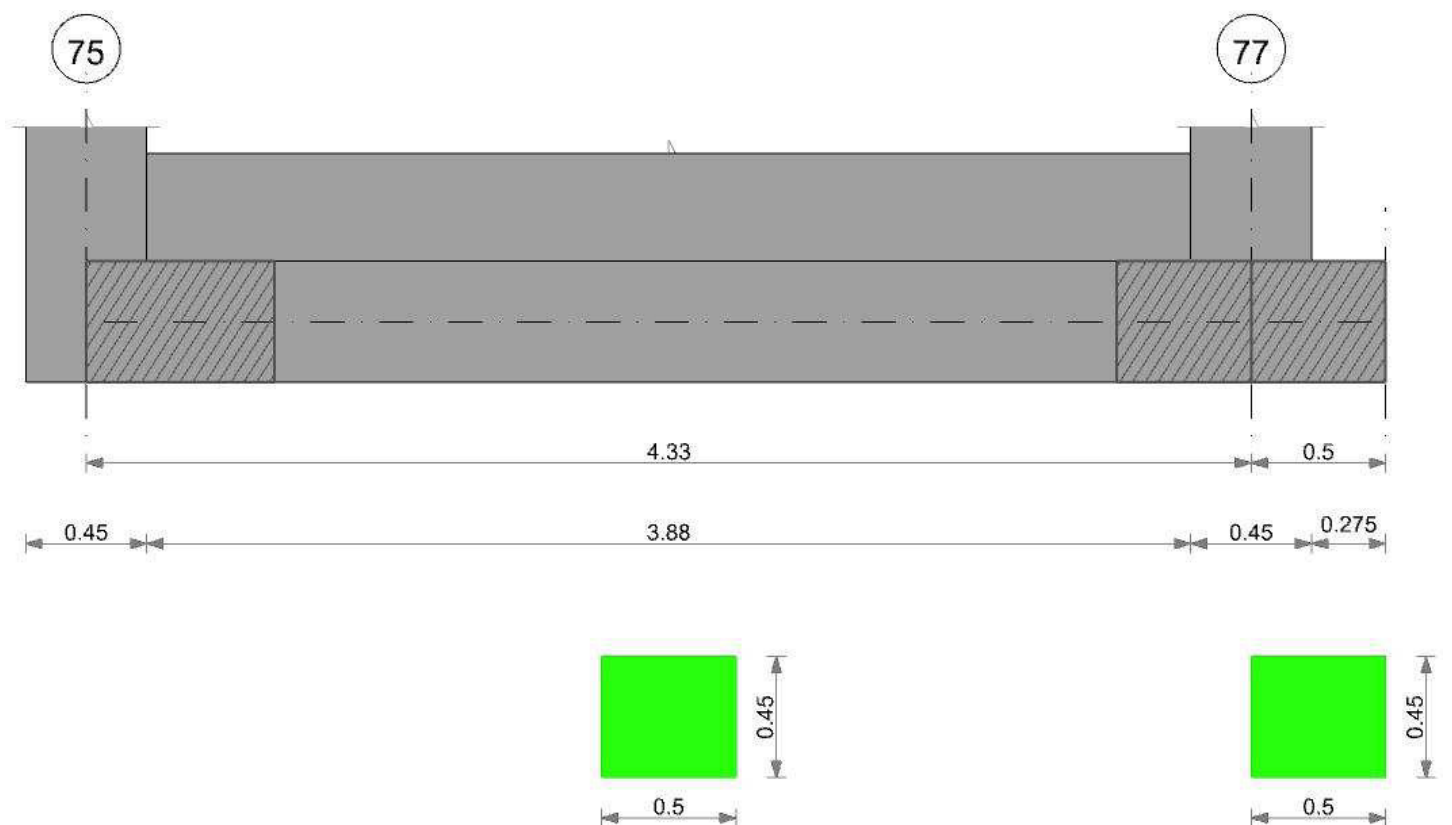
Tipo	Assoluto				Differenziale				Relativo				Rapp. inflessione				Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Sr adm	Sr	Nodo	Comb.	Ri adm	Ri	Nodo	Comb.	
E	0.05	0	594	SLE RA 21	0.05	0	594	252	0.05	0	594	SLE RA 1	0.0033	0	594	SLE RA 1	Si
D	0.05	0	594	SLE RA 1	0.05	0	594	594	0.05	0	594	SLE RA 1	0.0033	0	594	SLE RA 1	Si
Z	0.05	0	594	SLE RA 1	0.05	0	594	594	0.05	0	594	SLE RA 1	0.0033	0	594	SLE RA 1	Si

#### Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta				Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0	SLE RA 21	0.19	0	594	252	0.19	0	594	SLE RA 1	0.1	0	594	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	594	252	0.19	0	594	SLE RA 1	0.1	0	594	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	594	252	0.19	0	594	SLE RA 1	0.1	0	594	SLE RA 1	Si

#### CORDOLO 31

##### Geometria



#### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

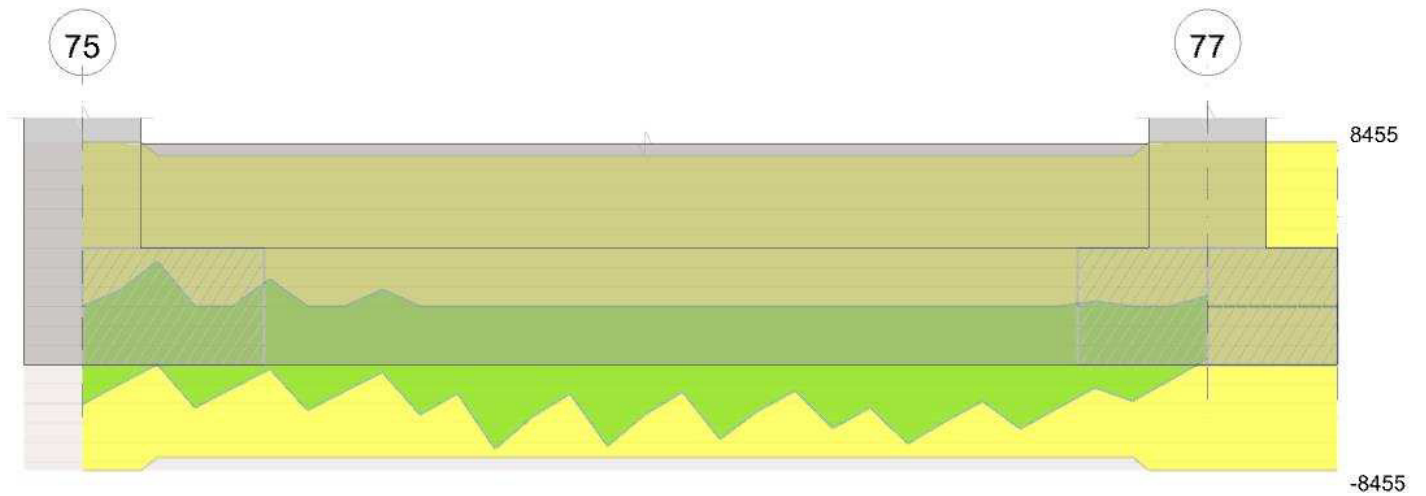
#### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione



Diagramma verifica stato limite ultimo taglio



Output campate

#### Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 75 - 77, sezione R 50x45, aste 745, 744, 743, 742, 741, 740, 739, 738, 737, 736, 735

#### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	2357	SLU 83	0.018	2820	7253	SLU 83	15877	Si
0.23	0.41	0.0002	2282	SLU 83	0.018	2820	7023	SLU 83	15877	Si
2.17	0.41	0.0002	1996	SLU 83	0.018	2820	6141	SLU 83	15877	Si
4.11	0.41	0.0002	1979	SLU 84	0.018	2820	6090	SLU 84	15877	Si
4.33	0.41	0.0002	1982	SLU 84	0.018	2820	6099	SLU 84	15877	Si

#### Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	1770	SLD 1	0.071	3173	5447	SLD 1	15877	Si
0.23	0.41	0.0002	1709	SLD 1	0.071	3173	5257	SLD 1	15877	Si
2.17	0.41	0.0002	1459	SLD 1	0.071	3173	4489	SLD 1	15877	Si
4.11	0.41	0.0002	1435	SLD 4	0.071	3173	4417	SLD 4	15877	Si
4.33	0.41	0.0002	1437	SLD 4	0.071	3173	4423	SLD 4	15877	Si

#### Verifiche delle tensioni di esercizio

				Rara				Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma_c$	$\sigma_{climite}$	$\sigma_f$	$\sigma_{flimite}$	M	Comb	$\sigma_c$	$\sigma_{climite}$
0	0.41	0.00000177	1740	SLE RA 20	50348	1494000	624309	36000000	1589	SLE QP 2	45974	1120500
0.23	0.41	0.00000177	1685	SLE RA 20	48743	1494000	604408	36000000	1538	SLE QP 2	44492	1120500
2.17	0.41	0.00000177	1470	SLE RA 20	42536	1494000	527445	36000000	1337	SLE QP 2	38692	1120500
4.11	0.41	0.00000177	1454	SLE RA 21	42080	1494000	521790	36000000	1317	SLE QP 2	38093	1120500
4.33	0.41	0.00000177	1456	SLE RA 21	42129	1494000	522400	36000000	1318	SLE QP 2	38122	1120500

#### Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

#### Verifiche geotecniche

##### Verifiche geotecniche di scorrimento sul piano di posa

Size X	Size Y	Comb.	Sis.	Cnd	Fx	Fy	Fz	IncX	IncY	Phi	Ad	RPI	yR	Rd	Ed	Rd/Ed	Verifica
4.56	1.1	SLU 47	ST	LT	774	-562	-48312	1	-1	19	0	0	1.1	14695	957	15.36	Si
4.56	1.1	SLV 13	SIS	LT	-1579	-7904	-33988	-3	-13	19	0	0	1.1	10338	8060	1.28	Si



#### Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
745,744,743,742,741,740,739,738,737,736,735	4.56	1.1	SLU 83	ST	BT	2.3	209945	58060	3.62	Si
745,744,743,742,741,740,739,738,737,736,735	4.56	1.1	SLV 13	SIS	LT	2.3	127944	33988	3.76	Si
745,744,743,742,741,740,739,738,737,736,735	4.56	1.1	SLD 1	SIS	BT	2.3	199789	42901	4.66	Si

#### Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	-648	-58060	417.48	-2170.1	0	-1	-0.04	0.01	1.09	4.48	1496	2060	0	14430	
0	-7904	-33988	3774.83	-2530.3	0	-13	-0.07	0.11	0.88	4.41	1496	2060	37	0	0.07
0	2437	-42901	-1083.43	-2338.77	0	3	-0.05	-0.03	1.05	4.45	1496	2060	0	14430	0.03

#### Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N		S		D		I		B		G		P		E	
Nq	Nc	Sq	Sc	Dq	Dc	Iq	Ik	Bq	Bc	Gq	Gc	Pq	Pc	Eq	Ec
1	5	0	0.05	0	0.27	0	0	0	0	0	0	1	1	0	0
43	56	66	1.15	1.16	1.27	0.62	0.61	1	1	1	1	1	1	0.96	0.98
1	5	0	0.05	0	0.27	0	0	0	0	0	0	1	1	0	0

#### Verifiche geotecniche - Cedimenti assoluti e differenziali

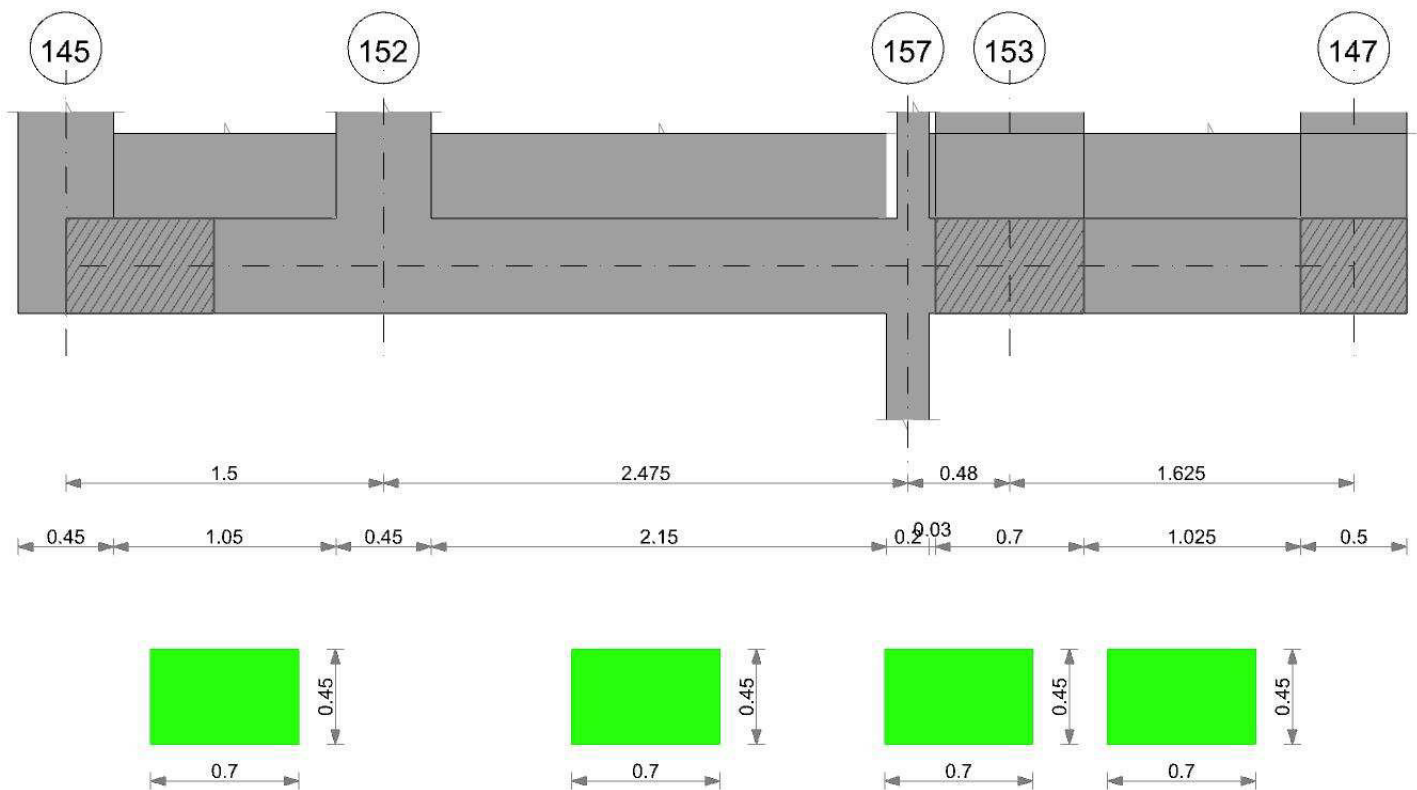
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Comb.	Sr adm	Sr	Nodo	Comb.	Ri adm	Ri	Comb.	
E	0.05	0.001	614	SLE RA 21	0.05	0.001	614	269	SLE RA 21	0.05	0	614	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	614	SLE RA 1	0.05	0	614	614	SLE RA 1	0.05	0	614	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	614	SLE RA 1	0.05	0	614	614	SLE RA 1	0.05	0	614	SLE RA 1	0.0033	0	SLE RA 1	Si

#### Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta				Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.01	SLE RA 21	0.19	0.01	614	269	0.19	0	614	SLE RA 1	0.1	0	614	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	614	269	0.19	0	614	SLE RA 1	0.1	0	614	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	614	269	0.19	0	614	SLE RA 1	0.1	0	614	SLE RA 1	Si

#### CORDOLO 32

##### Geometria



#### Caratteristiche dei materiali

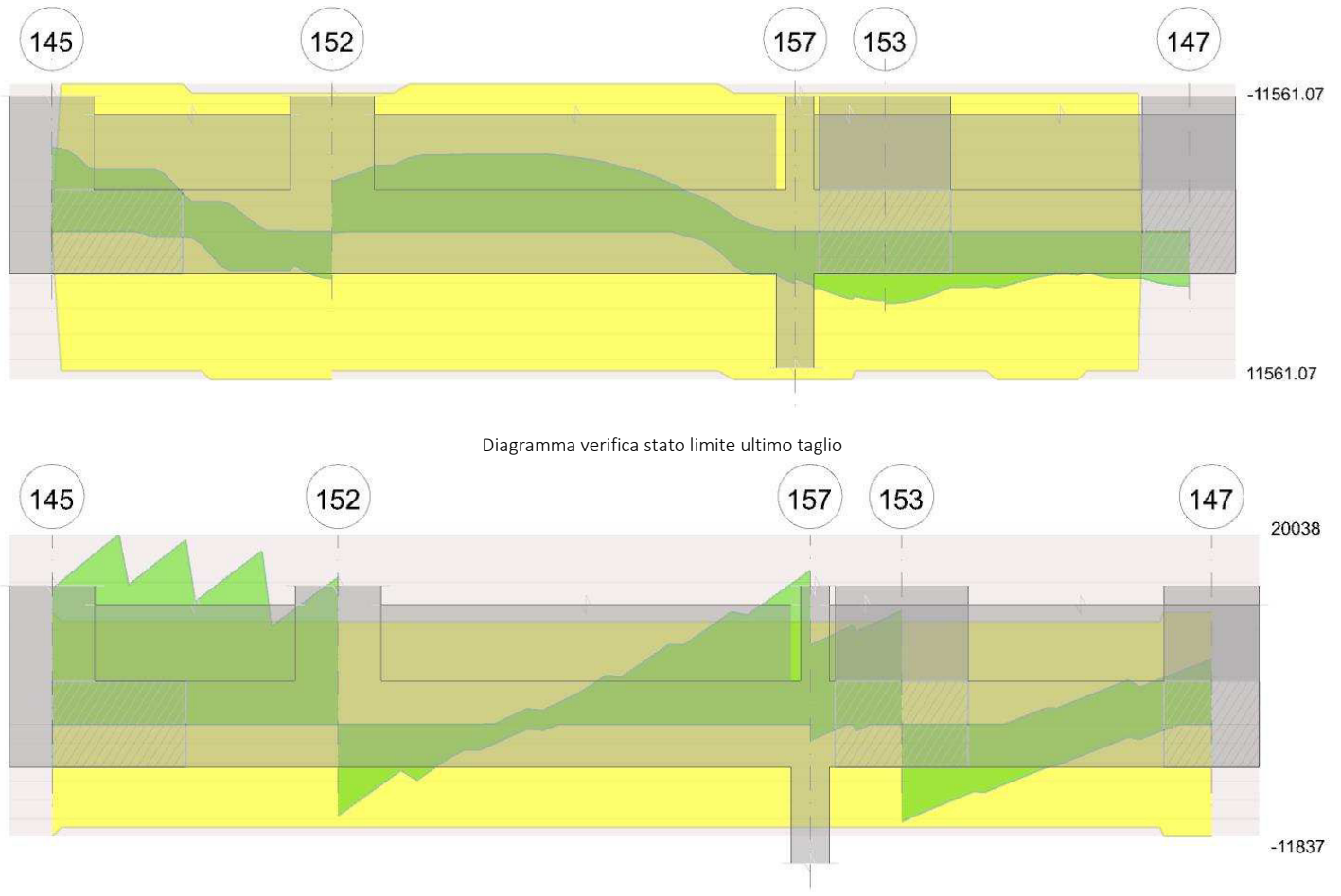
Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

#### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 70x45	Rettangolare	0.7	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione



Output campate

Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 145 - 152, sezione R 70x45, aste 700, 699, 698, 697

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0005	4391	SLU 83	0.043	8001	10332	SLU 83	15877	Si
0.23	0.41	0.0005	4285	SLU 83	0.043	8001	10082	SLU 83	15877	Si
0.75	0.41	0.0005	4083	SLU 83	0.043	8001	9606	SLU 83	15877	Si
1.28	0.41	0.0005	3896	SLU 83	0.043	8001	9167	SLU 83	15877	Si
1.5	0.41	0.0005	3807	SLU 83	0.043	8001	8958	SLU 83	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0005	3167	SLD 10	0.119	8913	7451	SLD 10	15877	Si
0.23	0.41	0.0005	3075	SLD 10	0.119	8913	7235	SLD 10	15877	Si
0.75	0.41	0.0005	2894	SLD 10	0.119	8913	6809	SLD 10	15877	Si
1.28	0.41	0.0005	2727	SLD 10	0.119	8913	6416	SLD 10	15877	Si
1.5	0.41	0.0005	2651	SLD 10	0.119	8913	6237	SLD 10	15877	Si

Verifiche delle tensioni di esercizio

				Rara					Quasi permanente					Verifica
x	d	Af		M	Comb	$\sigma_c$	$\sigma_c$ limite	$\sigma_f$	$\sigma_f$ limite	M	Comb	$\sigma_c$	$\sigma_c$ limite	
0	0.41	0.00000506		3243	SLE RA 20	89870	1494000	1114392	36000000	2951	SLE QP 2	81767	1120500	Si
0.23	0.41	0.00000506		3164	SLE RA 20	87684	1494000	1087282	36000000	2877	SLE QP 2	79742	1120500	Si
0.75	0.41	0.00000506		3013	SLE RA 20	83499	1494000	1035383	36000000	2737	SLE QP 2	75855	1120500	Si
1.28	0.41	0.00000506		2874	SLE RA 20	79643	1494000	987568	36000000	2608	SLE QP 2	72273	1120500	Si
1.5	0.41	0.00000506		2808	SLE RA 20	77808	1494000	964824	36000000	2547	SLE QP 2	70573	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Campata 2 tra i fili 152 - 157, sezione R 70x45, aste 696, 695, 694, 693, 692, 691, 690

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0005	3807	SLU 83	0.043	8001	8958	SLU 83	15877	Si
0.23	0.41	0.0005	3718	SLU 83	0.043	8001	8748	SLU 83	15877	Si
1.24	0.41	0.0005	3526	SLU 83	0.043	8001	8296	SLU 83	15877	Si
2.37	0.41	0.0005	3686	SLU 84	0.043	8001	8672	SLU 84	15877	Si
2.47	0.41	0.0005	3701	SLU 84	0.043	8001	8709	SLU 84	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD





x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0005	2651	SLD 10	0.119	8913	6237	SLD 10	15877	Si
0.23	0.41	0.0005	2574	SLD 10	0.119	8913	6057	SLD 10	15877	Si
1.24	0.41	0.0005	2395	SLD 10	0.119	8913	5636	SLD 10	15877	Si
2.37	0.41	0.0005	2478	SLD 14	0.119	8913	5830	SLD 14	15877	Si
2.47	0.41	0.0005	2489	SLD 14	0.119	8913	5856	SLD 14	15877	Si

#### Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma c$	$\sigma c$ limite	$\sigma f$	$\sigma f$ limite	M	Comb	$\sigma c$	$\sigma c$ limite	
0	0.41	0.00000506	2808	SLE RA 20	77808	1494000	964824	36000000	2547	SLE QP 2	70573	1120500	Si
0.23	0.41	0.00000506	2741	SLE RA 20	75964	1494000	941954	36000000	2485	SLE QP 2	68865	1120500	Si
1.24	0.41	0.00000506	2597	SLE RA 20	71978	1494000	892525	36000000	2350	SLE QP 2	65132	1120500	Si
2.37	0.41	0.00000506	2714	SLE RA 21	75202	1494000	932501	36000000	2453	SLE QP 2	67980	1120500	Si
2.47	0.41	0.00000506	2725	SLE RA 21	75518	1494000	936423	36000000	2463	SLE QP 2	68260	1120500	Si

#### Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Campata 3 tra i fili 157 - 153, sezione R 70x45, aste 689, 688

#### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0005	3701	SLU 84	0.043	8001	8709	SLU 84	15877	Si
0.1	0.41	0.0005	3716	SLU 84	0.043	8001	8743	SLU 84	15877	Si
0.13	0.41	0.0005	3719	SLU 84	0.043	8001	8752	SLU 84	15877	Si
0.24	0.41	0.0005	3732	SLU 84	0.043	8001	8780	SLU 84	15877	Si
0.48	0.41	0.0005	3745	SLU 84	0.043	8001	8812	SLU 84	15877	Si

#### Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0005	2489	SLD 14	0.119	8913	5856	SLD 14	15877	Si
0.1	0.41	0.0005	2499	SLD 14	0.119	8913	5880	SLD 14	15877	Si
0.13	0.41	0.0005	2502	SLD 14	0.119	8913	5887	SLD 14	15877	Si
0.24	0.41	0.0005	2511	SLD 14	0.119	8913	5909	SLD 14	15877	Si
0.48	0.41	0.0005	2522	SLD 16	0.119	8913	5935	SLD 16	15877	Si

#### Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma c$	$\sigma c$ limite	$\sigma f$	$\sigma f$ limite	M	Comb	$\sigma c$	$\sigma c$ limite	
0	0.41	0.00000506	2725	SLE RA 21	75518	1494000	936423	36000000	2463	SLE QP 2	68260	1120500	Si
0.1	0.41	0.00000506	2735	SLE RA 21	75803	1494000	939957	36000000	2472	SLE QP 2	68512	1120500	Si
0.13	0.41	0.00000506	2738	SLE RA 21	75881	1494000	940924	36000000	2475	SLE QP 2	68581	1120500	Si
0.24	0.41	0.00000506	2747	SLE RA 21	76125	1494000	943949	36000000	2482	SLE QP 2	68795	1120500	Si
0.48	0.41	0.00000506	2756	SLE RA 21	76388	1494000	947209	36000000	2490	SLE QP 2	69017	1120500	Si

#### Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Campata 4 tra i fili 153 - 147, sezione R 70x45, aste 687, 686, 685, 684

#### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0005	3745	SLU 84	0.043	8001	8812	SLU 84	15877	Si
0.35	0.41	0.0005	3732	SLU 84	0.043	8001	8781	SLU 84	15877	Si
0.81	0.41	0.0005	3675	SLU 84	0.043	8001	8647	SLU 84	15877	Si
1.37	0.41	0.0005	3561	SLU 84	0.043	8001	8378	SLU 84	15877	Si
1.62	0.41	0.0005	3495	SLU 84	0.043	8001	8224	SLU 84	15877	Si

#### Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0005	2522	SLD 16	0.119	8913	5935	SLD 16	15877	Si
0.35	0.41	0.0005	2520	SLD 12	0.119	8913	5928	SLD 12	15877	Si
0.81	0.41	0.0005	2495	SLD 12	0.119	8913	5871	SLD 12	15877	Si
1.37	0.41	0.0005	2436	SLD 12	0.119	8913	5733	SLD 12	15877	Si
1.62	0.41	0.0005	2400	SLD 11	0.119	8913	5648	SLD 11	15877	Si

#### Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma c$	$\sigma c$ limite	$\sigma f$	$\sigma f$ limite	M	Comb	$\sigma c$	$\sigma c$ limite	
0	0.41	0.00000506	2756	SLE RA 21	76388	1494000	947209	36000000	2490	SLE QP 2	69017	1120500	Si
0.35	0.41	0.00000506	2746	SLE RA 21	76103	1494000	943672	36000000	2480	SLE QP 2	68739	1120500	Si
0.81	0.41	0.00000506	2703	SLE RA 21	74918	1494000	928988	36000000	2441	SLE QP 2	67639	1120500	Si
1.37	0.41	0.00000506	2618	SLE RA 21	72557	1494000	899710	36000000	2362	SLE QP 2	65464	1120500	Si
1.62	0.41	0.00000506	2569	SLE RA 21	71206	1494000	882955	36000000	2317	SLE QP 2	64222	1120500	Si

#### Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

#### Verifiche geotecniche

##### Verifiche geotecniche - Cedimenti assoluti e differenziali

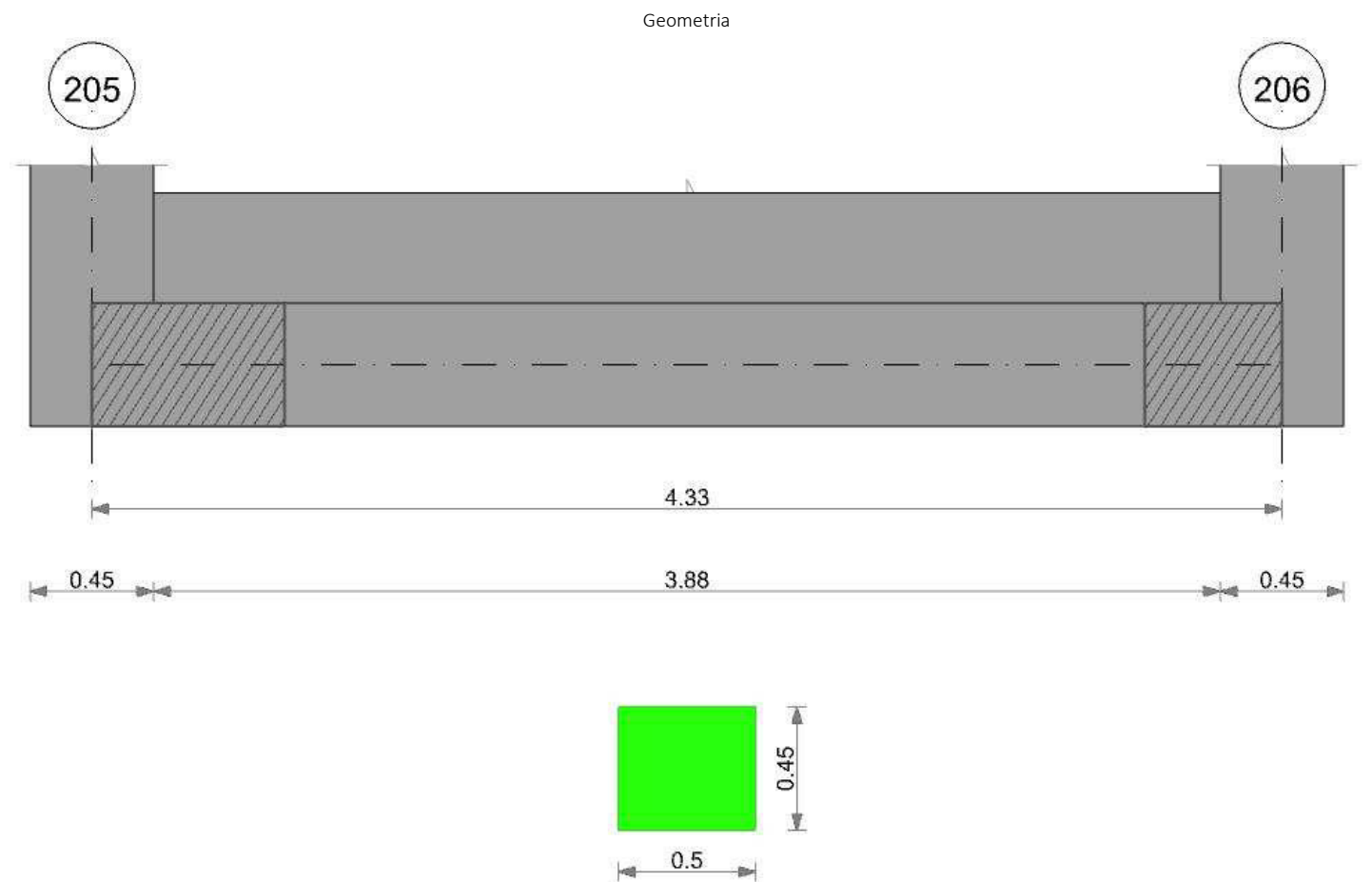
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo i	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.002	490	SLE RA 21	0.05	0.001	490	153	SLE RA 21	0.05	0.001	468	SLE RA 20	0.0033	0	SLE RA 2	Si
D	0.05	0	634	SLE RA 1	0.05	0	634	634	SLE RA 1	0.05	0	490	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	634	SLE RA 1	0.05	0	634	634	SLE RA 1	0.05	0	490	SLE RA 1	0.0033	0	SLE RA 1	Si

##### Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.01	SLE RA 21	0.19	0.02	285	153	SLE RA 20	0.19	0.02	468	SLE RA 21	0.1	0	285	SLE RA 2	Si
D	0.19	0	SLE RA 1	0.19	0	634	490	SLE RA 1	0.19	0	634	SLE RA 1	0.1	0	490	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	634	490	SLE RA 1	0.19	0	634	SLE RA 1	0.1	0	490	SLE RA 1	Si



CORDOLO 33



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

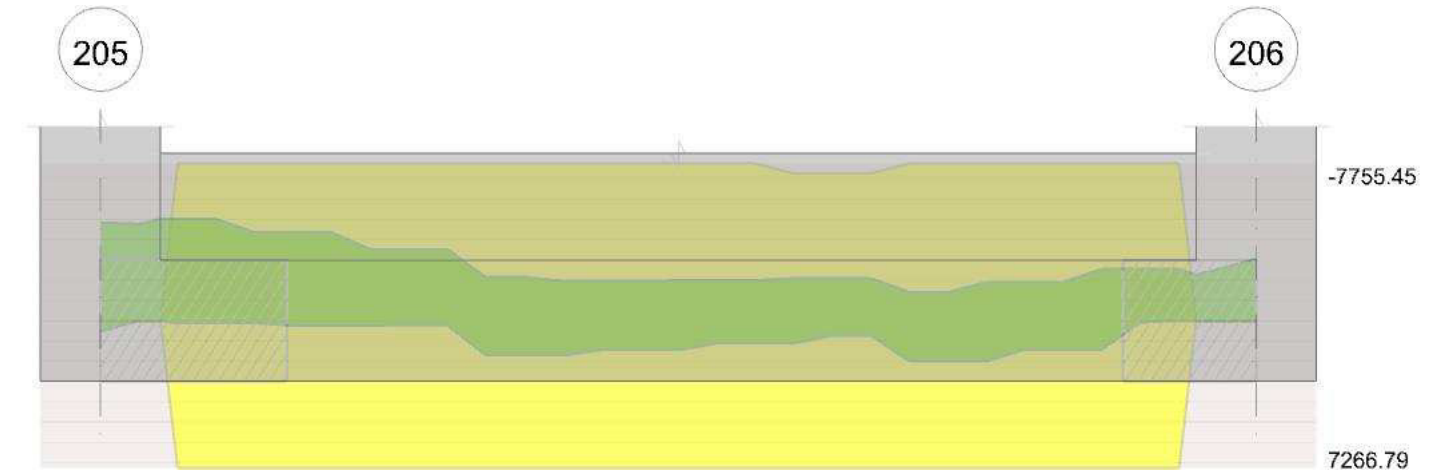
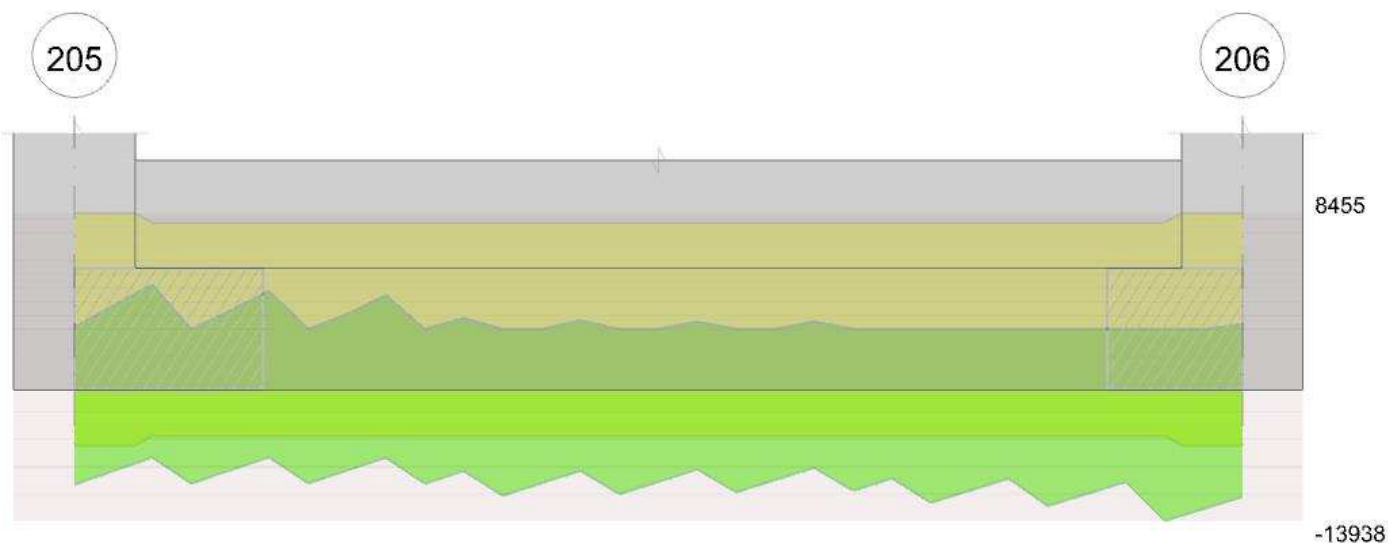


Diagramma verifica stato limite ultimo taglio



Output campate

Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 205 - 206, sezione R 50x45, aste 446, 445, 444, 443, 442, 441, 440, 439, 438, 437, 436

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	2350	SLU 83	0.017	2687	7231	SLU 83	15877	Si
0.23	0.41	0.0002	2279	SLU 83	0.017	2687	7013	SLU 83	15877	Si
2.16	0.41	0.0002	1993	SLU 84	0.017	2687	6132	SLU 84	15877	Si
4.1	0.41	0.0002	1931	SLU 84	0.017	2687	5941	SLU 84	15877	Si
4.33	0.41	0.0002	1937	SLU 84	0.017	2687	5959	SLU 84	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	1782	SLD 14	0.07	3025	5483	SLD 14	15877	Si
0.23	0.41	0.0002	1721	SLD 14	0.07	3025	5296	SLD 14	15877	Si
2.16	0.41	0.0002	1462	SLD 14	0.07	3025	4498	SLD 14	15877	Si
4.1	0.41	0.0002	1408	SLD 15	0.07	3025	4333	SLD 15	15877	Si
4.33	0.41	0.0002	1415	SLD 15	0.07	3025	4352	SLD 15	15877	Si

Verifiche delle tensioni di esercizio

Caratteristiche della tensione di esercizio			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma_c$	$\sigma_c$ limite	$\sigma_f$	$\sigma_f$ limite	M	Comb	$\sigma_c$	$\sigma_c$ limite	
0	0.41	0.00000168	1735	SLE RA 20	50259	1494000	623212	36000000	1585	SLE QP 2	45918	1120500	Si
0.23	0.41	0.00000168	1683	SLE RA 20	48735	1494000	604317	36000000	1537	SLE QP 2	44513	1120500	Si
2.16	0.41	0.00000168	1469	SLE RA 21	42543	1494000	527535	36000000	1338	SLE QP 2	38751	1120500	Si
4.1	0.41	0.00000168	1420	SLE RA 21	41126	1494000	509965	36000000	1288	SLE QP 2	37294	1120500	Si
4.33	0.41	0.00000168	1424	SLE RA 21	41245	1494000	511437	36000000	1291	SLE QP 2	37382	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche di scorrimento sul piano di posa

Size X	Size Y	Comb.	Sis.	Cnd	Fx	Fy	Fz	IncX	IncY	Phi	Ad	RPI	yR	Rd	Ed	Rd/Ed	Verifica
4.78	1.1	SLU 47	ST	LT	420	439	-48414	0	1	19	0	0	1.1	14727	607	24.25	Si
4.78	1.1	SLV 2	SIS	LT	-1745	7787	-33821	-3	13	19	0	0	1.1	10288	7981	1.29	Si

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
446,445,444,443,442,441,440,439,438,437,436	4.78	1.1	SLU 84	ST	BT	2.3	219893	57979	3.79	Si
446,445,444,443,442,441,440,439,438,437,436	4.78	1.1	SLV 14	SIS	BT	2.3	188965	46976	4.02	Si
446,445,444,443,442,441,440,439,438,437,436	4.78	1.1	SLD 14	SIS	BT	2.3	208353	43037	4.84	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	503	-57979	-328.86	-2797.53	0	0	-0.05	-0.01	1.09	4.68	1496	2060	0	14430	
0	-6383	-46976	2873.88	-4050.3	0	-8	-0.09	0.06	0.98	4.61	1496	2060	0	14430	0.07
0	-2525	-43037	1096.92	-2890.86	0	-3	-0.07	0.03	1.05	4.65	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.05	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.27	0	0	0.03	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.05	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

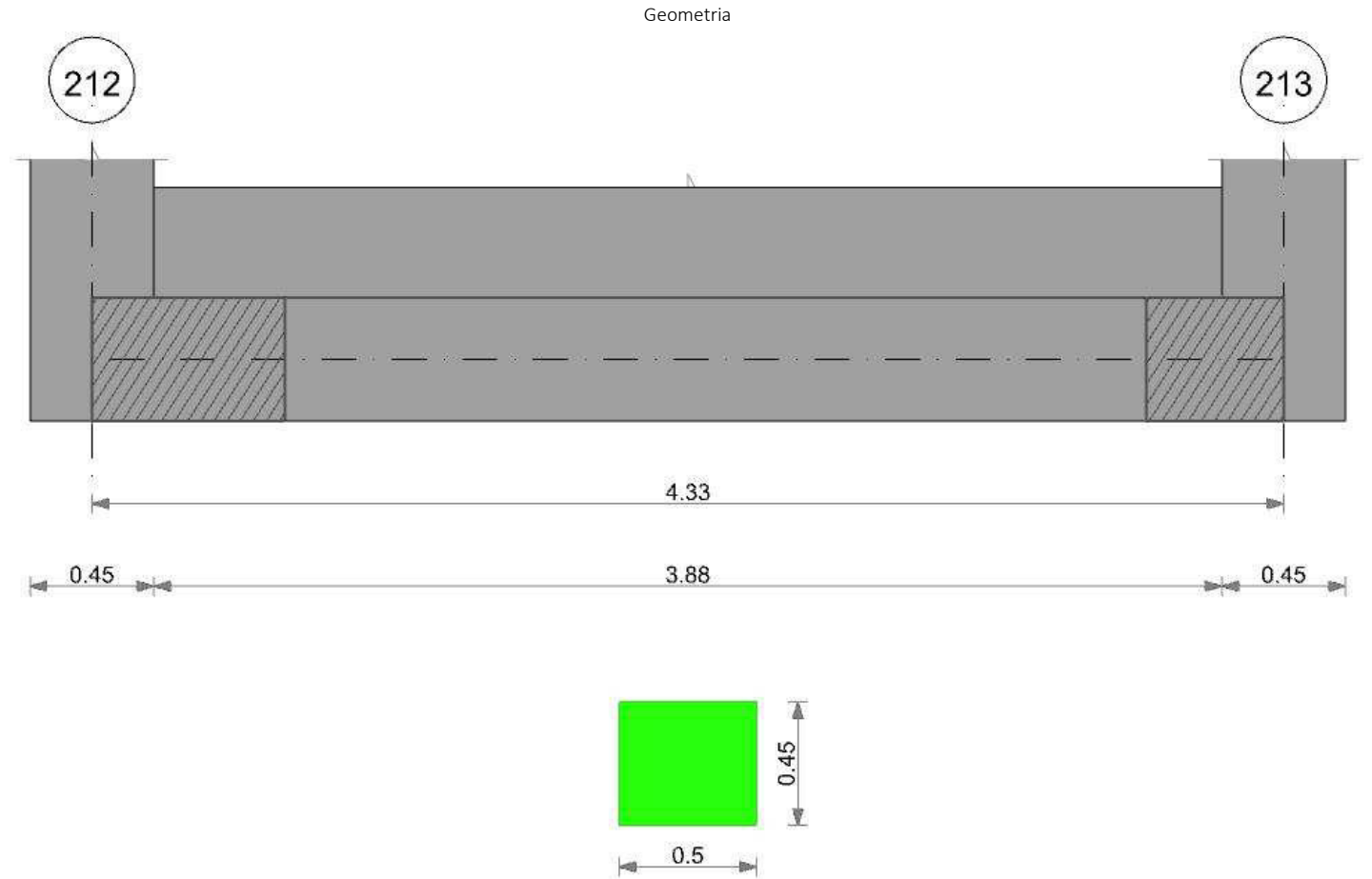
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sradm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.001	648	SLE RA 21	0.05	0.001	648	300	SLE RA 21	0.05	0	648	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	648	SLE RA 1	0.05	0	648	648	SLE RA 1	0.05	0	648	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	648	SLE RA 1	0.05	0	648	648	SLE RA 1	0.05	0	648	SLE RA 1	0.0033	0	SLE RA 1	Si



Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.01	SLE RA 21	0.19	0.01	648	300	SLE RA 21	0.19	0	648	SLE RA 1	0.1	0	648	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	648	300	SLE RA 1	0.19	0	648	SLE RA 1	0.1	0	648	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	648	300	SLE RA 1	0.19	0	648	SLE RA 1	0.1	0	648	SLE RA 1	Si

CORDOLO 34



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000  
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

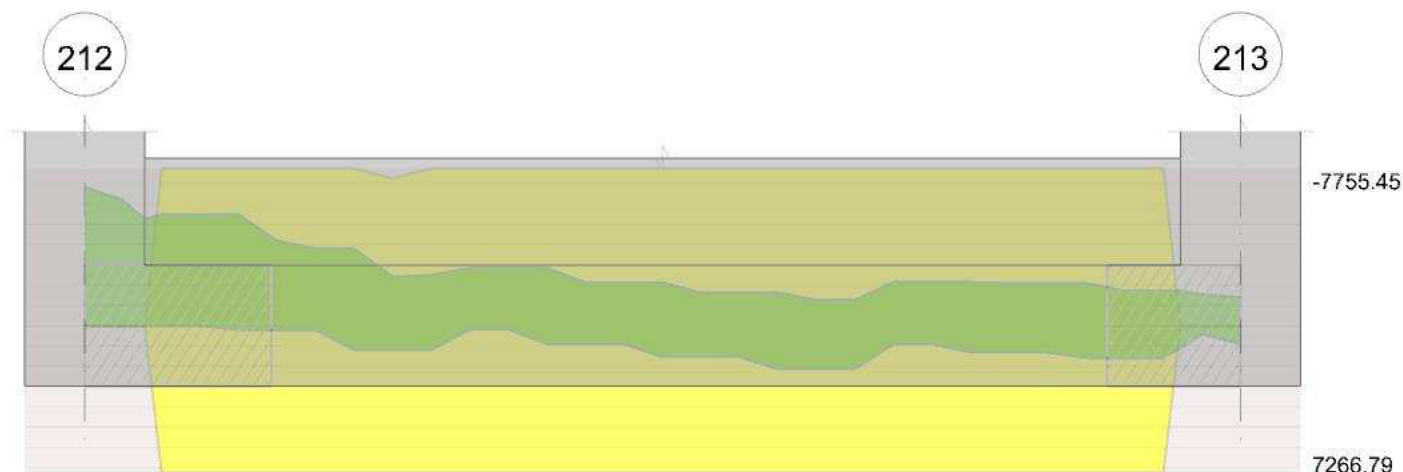
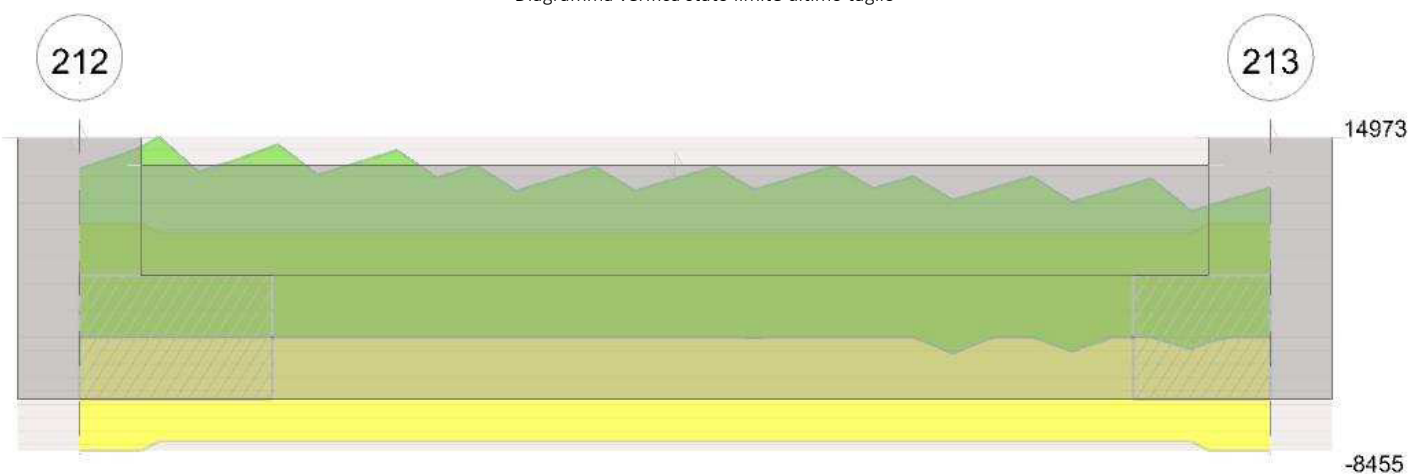


Diagramma verifica stato limite ultimo taglio



Output campate

#### Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 212 - 213, sezione R 50x45, aste 664, 663, 662, 661, 660, 659, 658, 657, 656, 655, 654

#### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	2301	SLU 83	0.017	2687	7081	SLU 83	15877	Si
0.23	0.41	0.0002	2231	SLU 83	0.017	2687	6865	SLU 83	15877	Si
2.16	0.41	0.0002	1968	SLU 84	0.017	2687	6058	SLU 84	15877	Si
4.1	0.41	0.0002	1929	SLU 84	0.017	2687	5938	SLU 84	15877	Si
4.33	0.41	0.0002	1936	SLU 84	0.017	2687	5958	SLU 84	15877	Si

#### Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	1759	SLD 14	0.07	3025	5414	SLD 14	15877	Si
0.23	0.41	0.0002	1699	SLD 14	0.07	3025	5229	SLD 14	15877	Si
2.16	0.41	0.0002	1450	SLD 14	0.07	3025	4464	SLD 14	15877	Si
4.1	0.41	0.0002	1404	SLD 15	0.07	3025	4321	SLD 15	15877	Si
4.33	0.41	0.0002	1410	SLD 15	0.07	3025	4341	SLD 15	15877	Si

#### Verifiche delle tensioni di esercizio

Rara									Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma_c$	$\sigma_{climite}$	$\sigma_f$	$\sigma_{flimite}$	M	Comb	$\sigma_c$	$\sigma_{climite}$	
0	0.41	0.00000168	1699	SLE RA 20	49197	1494000	610047	36000000	1552	SLE QP 2	44948	1120500	Si
0.23	0.41	0.00000168	1646	SLE RA 20	47687	1494000	591320	36000000	1504	SLE QP 2	43555	1120500	Si
2.16	0.41	0.00000168	1450	SLE RA 21	42003	1494000	520835	36000000	1321	SLE QP 2	38258	1120500	Si
4.1	0.41	0.00000168	1418	SLE RA 21	41076	1494000	509341	36000000	1286	SLE QP 2	37249	1120500	Si
4.33	0.41	0.00000168	1423	SLE RA 21	41207	1494000	510963	36000000	1289	SLE QP 2	37348	1120500	Si

#### Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

#### Verifiche geotecniche

##### Verifiche geotecniche di scorrimento sul piano di posa

Size X	Size Y	Comb.	Sis.	Cnd	Fx	Fy	Fz	IncX	IncY	Phi	Ad	RPI	yR	Rd	Ed	Rd/Ed	Verifica
4.78	1.1	SLU 47	ST	LT	414	439	-47967	0	1	19	0	0	1.1	14591	603	24.19	Si
4.78	1.1	SLV 2	SIS	LT	-2017	7788	-33336	-3	13	19	0	0	1.1	10140	8044	1.26	Si

##### Verifiche geotecniche di capacità portante sul piano di posa



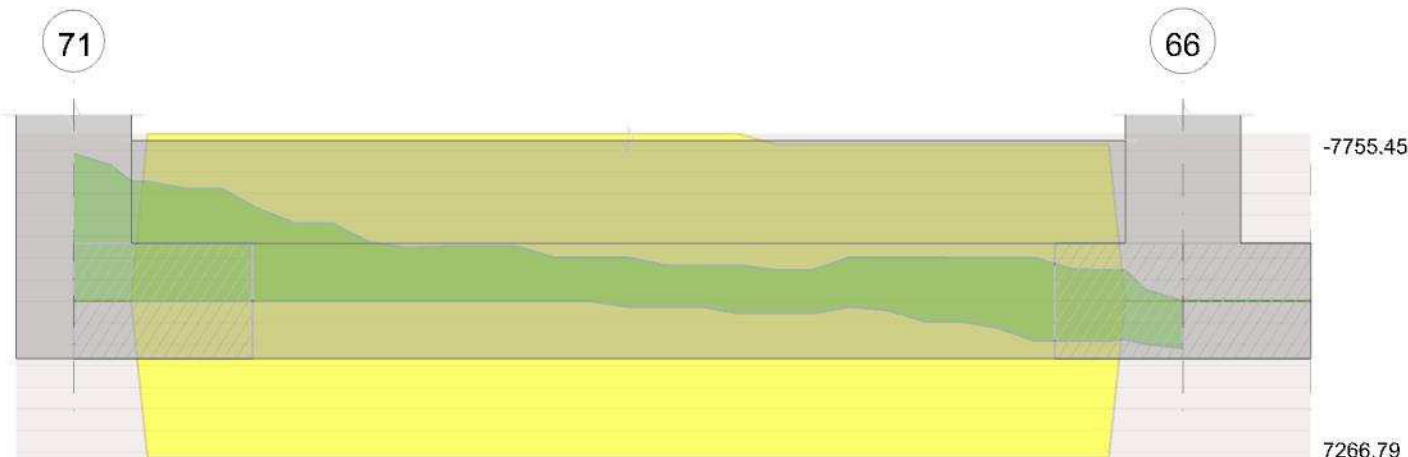
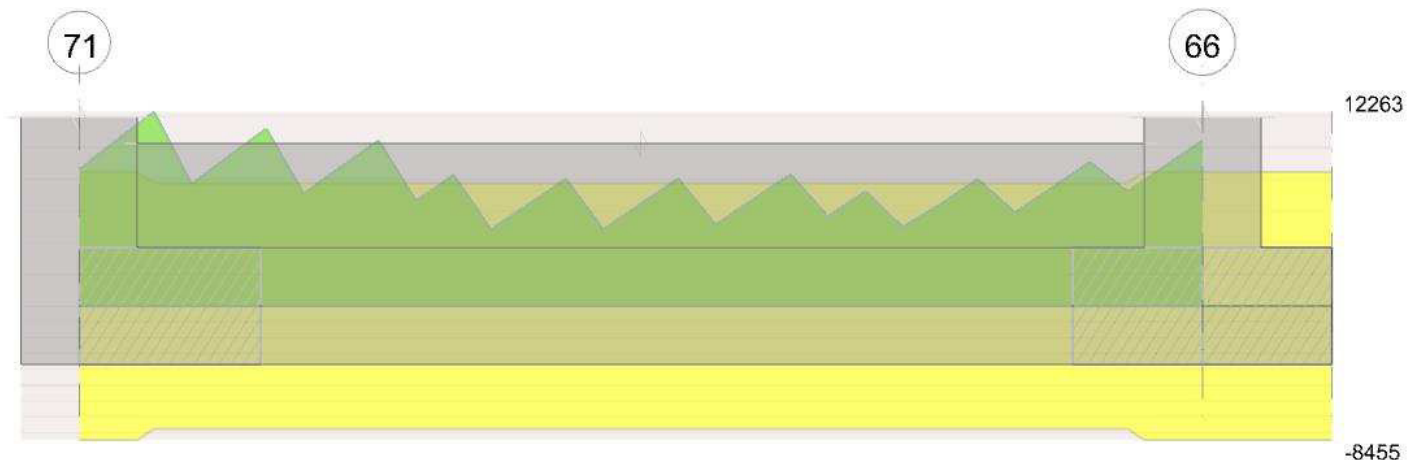


Diagramma verifica stato limite ultimo taglio



Output campate

#### Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 71 - 66, sezione R 50x45, aste 770, 769, 768, 767, 766, 765, 764, 763, 762, 761, 760

#### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	2312	SLU 83	0.018	2820	7115	SLU 83	15877	Si
0.23	0.41	0.0002	2238	SLU 83	0.018	2820	6886	SLU 83	15877	Si
2.17	0.41	0.0002	1967	SLU 83	0.018	2820	6053	SLU 83	15877	Si
4.11	0.41	0.0002	1966	SLU 84	0.018	2820	6048	SLU 84	15877	Si
4.33	0.41	0.0002	1969	SLU 84	0.018	2820	6058	SLU 84	15877	Si

#### Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	1756	SLD 1	0.071	3173	5404	SLD 1	15877	Si
0.23	0.41	0.0002	1695	SLD 1	0.071	3173	5216	SLD 1	15877	Si
2.17	0.41	0.0002	1455	SLD 1	0.071	3173	4476	SLD 1	15877	Si
4.11	0.41	0.0002	1439	SLD 4	0.071	3173	4428	SLD 4	15877	Si
4.33	0.41	0.0002	1441	SLD 4	0.071	3173	4435	SLD 4	15877	Si

#### Verifiche delle tensioni di esercizio

Caratteristiche del terreno (EN 1997-1)				Rara						Quasi permanente				Verifica
x	d	Af		M	Comb	$\sigma c$	$\sigma c$ limite	$\sigma f$	$\sigma f$ limite	M	Comb	$\sigma c$	$\sigma c$ limite	
0	0.41	0.00000177		1707	SLE RA 20	49386	1494000	612392	36000000	1559	SLE QP 2	45099	1120500	Si
0.23	0.41	0.00000177		1652	SLE RA 20	47791	1494000	592608	36000000	1508	SLE QP 2	43625	1120500	Si
2.17	0.41	0.00000177		1449	SLE RA 20	41921	1494000	519819	36000000	1318	SLE QP 2	38136	1120500	Si
4.11	0.41	0.00000177		1444	SLE RA 21	41790	1494000	518191	36000000	1308	SLE QP 2	37837	1120500	Si
4.33	0.41	0.00000177		1446	SLE RA 21	41847	1494000	518909	36000000	1309	SLE QP 2	37874	1120500	Si

#### Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

#### Verifiche geotecniche

##### Verifiche geotecniche di scorrimento sul piano di posa

Size X	Size Y	Comb.	Sis.	Cnd	Fx	Fy	Fz	IncX	IncY	Phi	Ad	RPI	yR	Rd	Ed	Rd/Ed	Verifica
4.56	1.1	SLU 47	ST	LT	703	-562	-47788	1	-1	19	0	0	1.1	14536	900	16.15	Si
4.56	1.1	SLV 13	SIS	LT	-1847	-7904	-32869	-3	-14	19	0	0	1.1	9998	8117	1.23	Si

##### Verifiche geotecniche di capacità portante sul piano di posa



Aste	Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
770,769,768,767,766,765,764,763,762,761,760	4.56	1.1	SLU 83	ST	BT	2.3	210257	57411	3.66	Si
770,769,768,767,766,765,764,763,762,761,760	4.56	1.1	SLV 13	SIS	LT	2.3	123606	32869	3.76	Si
770,769,768,767,766,765,764,763,762,761,760	4.56	1.1	SLD 1	SIS	BT	2.3	200128	42825	4.67	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	-648	-57411	417.48	-1927.4	0	-1	-0.03	0.01	1.09	4.49	1496	2060	0	14430	0
0	-7904	-32869	3774.83	-2425.58	0	-14	-0.07	0.11	0.87	4.41	1496	2060	37	0	0.07
0	2437	-42825	-1083.43	-2159.89	0	3	-0.05	-0.03	1.05	4.45	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	lc	lg	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.05	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
43	56	66	1.15	1.15	0.92	1.16	1.27	1	0.6	0.59	0.46	1	1	1	1	1	1	1	1	1	0.96	0.98	0.96
1	5	0	0	0.05	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

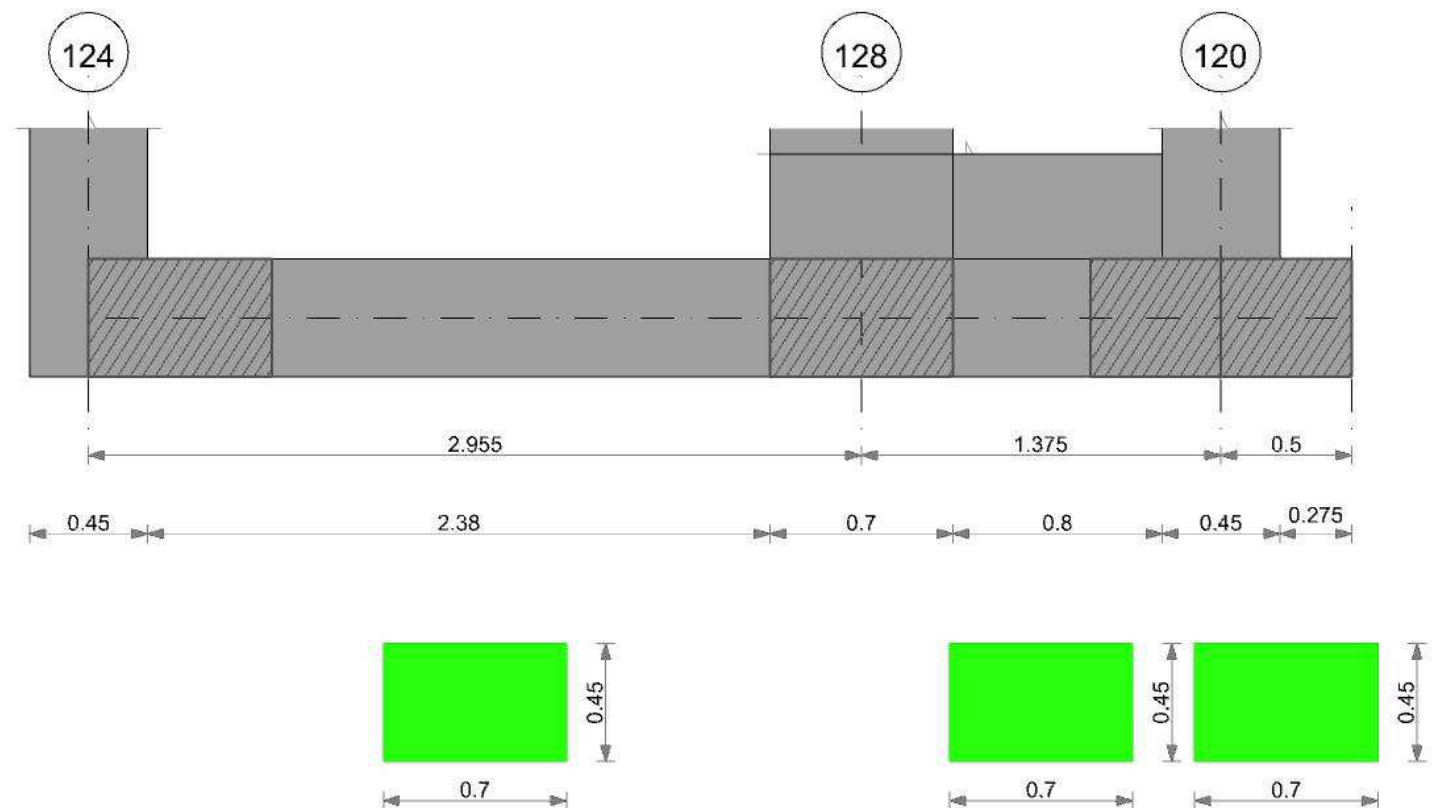
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	Ri adm	Ri	Comb.	
E	0.05	0.001	611	SLE RA 21	0.05	0.001	611	267	SLE RA 21	0.05	0	611	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	611	SLE RA 1	0.05	0	611	611	SLE RA 1	0.05	0	611	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	611	SLE RA 1	0.05	0	611	611	SLE RA 1	0.05	0	611	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Rotazioni assolute e angolari																	
Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.01	SLE RA 21	0.19	0.01	611	267	SLE RA 21	0.19	0	611	SLE RA 1	0.1	0	611	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	611	267	SLE RA 1	0.19	0	611	SLE RA 1	0.1	0	611	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	611	267	SLE RA 1	0.19	0	611	SLE RA 1	0.1	0	611	SLE RA 1	Si

## CORDOLO 36

Geometria



### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 70x45	Rettangolare	0.7	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione



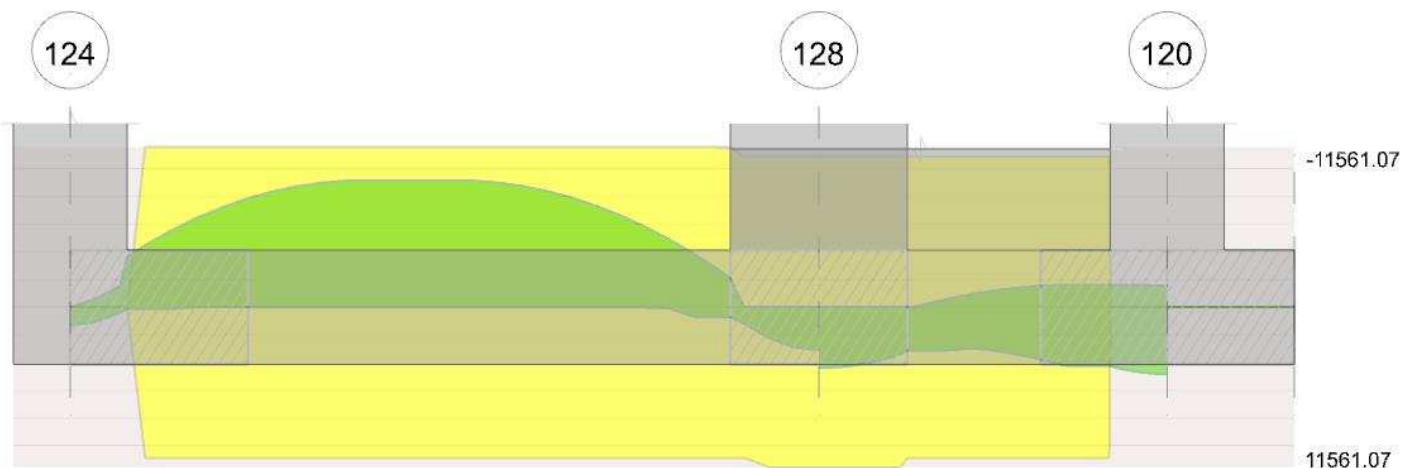
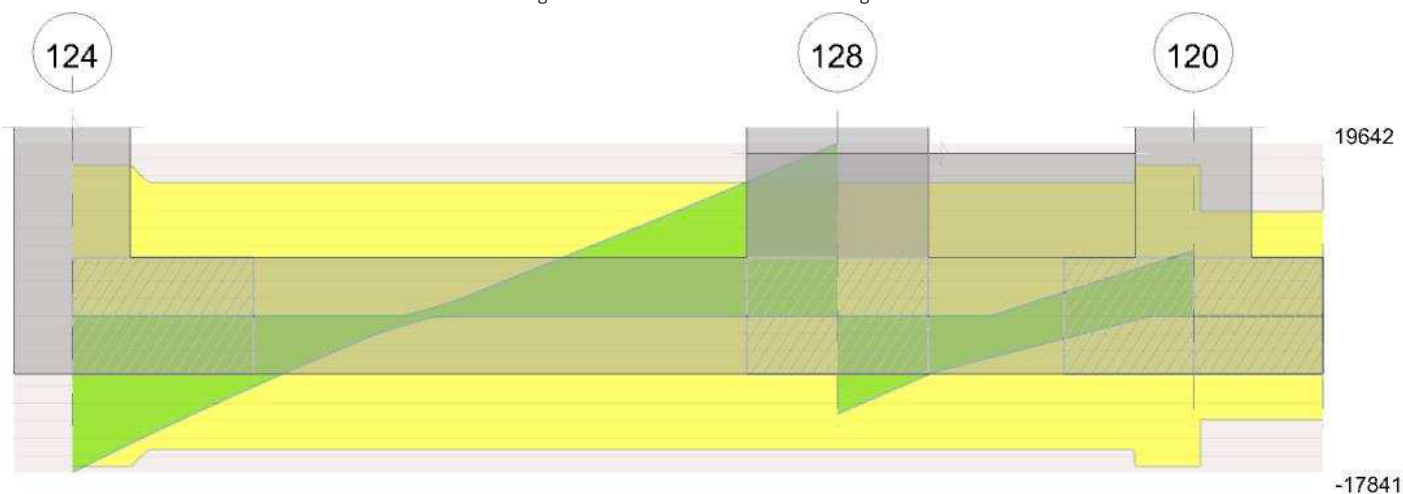


Diagramma verifica stato limite ultimo taglio



#### Output campate

Campata 1 tra i fili 124 - 128, sezione R 70x45, aste 724, 723

#### Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0	0	0	0	2370.64	SLU 84	385.7	0	0	0	-1271.35	SLU 83	-3655.75	0	0	0	No
0.23	0	0	0	0							-9064.28	SLU 83	-9167.6	-11561.07	0.116	1.26	Si
1.48	0.000763	0.052	0.000763	0.052	435.71	SLU 63	435.71	11561.07	0.116	26.53	191	SLU 24	-2110.87	-11561.07	0.116	5.48	Si
2.61	0.000763	0.052	0.000763	0.052	6522.45	SLU 84	3089.35	11561.07	0.116	3.74							Si
2.96	0.000763	0.052	0.000763	0.052													

#### Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0	0	0	0	2756.19	SLV 15	1305.09	0	0	0	-1816.92	SLV 6	-3411.37	0	0	0	No
0.23	0	0	0	0	122.78	SLV 11	122.78	0	0	0	-6808.78	SLV 9	-6897.36	-10870.29	0.203	1.58	Si
1.48	0.000763	0.052	0.000763	0.052	692.09	SLV 12	692.09	10870.29	0.203	15.71	-225.16	SLV 5	-1946	-10870.29	0.203	5.59	Si
2.61	0.000763	0.052	0.000763	0.052	4795.02	SLV 16	2468.7	10870.29	0.203	4.4							Si
2.96	0.000763	0.052	0.000763	0.052													

#### Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0	0	0	0	2104.08	SLD 15	709.81	0	0	0	-1272.3	SLD 6	-2877.18	0	0	0	No
0.23	0	0	0	0							-6426.47	SLD 9	-10870.29	-10870.29	0.203	1.67	Si
1.48	0.000763	0.052	0.000763	0.052	435.45	SLD 12	435.45	10870.29	0.203	24.96	31.48	SLD 5	-1675.44	-10870.29	0.203	6.49	Si
2.61	0.000763	0.052	0.000763	0.052	4532.77	SLD 12	2220.22	10870.29	0.203	4.9							Si
2.96	0.000763	0.052	0.000763	0.052													

#### Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrzd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000109	0	0	-17841	SLU 83	-17841	-11837	-100005	-17220	-17220	1	0.97	Si
0.23	0.0000109	0	0	-14561	SLU 83	-14561	-11837	-100005	-17220	-17220	1	1.18	Si
1.48	0.0000109	0.000763	0	1642	SLU 83	1642	10870	88449	15230	15230	1	9.27	Si
2.61	0.0000109	0.000763	0	15251	SLU 84	15251	10870	88449	15230	15230	1	1	No
2.96	0.0000109	0.000763	0	19642	SLU 84	19642	10870	88449	15230	15230	1	0.78	Si



#### Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000109	0	0	-13170	SLV 13	-13170	-11837	-100005	-17220	-17220	1	1.31	Si
0.23	0.0000109	0	0	-10825	SLV 13	-10825	-11837	-100005	-17220	-17220	1	1.59	Si
1.48	0.0000109	0.000763	0	1515	SLV 2	1515	10870	88449	15230	15230	1	10.05	Si
2.61	0.0000109	0.000763	0	10762	SLV 14	10762	10870	88449	15230	15230	1	1.42	Si
2.96	0.0000109	0.000763	0	13946	SLV 14	13946	10870	88449	15230	15230	1	1.09	Si

#### Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000109	0	0	-12536	SLD 13	-12536	-11837	-100005	-17220	-17220	1	1.37	Si
0.23	0.0000109	0	0	-10264	SLD 13	-10264	-11837	-100005	-17220	-17220	1	1.68	Si
1.48	0.0000109	0.000763	0	1272	SLD 2	1272	10870	88449	15230	15230	1	11.97	Si
2.61	0.0000109	0.000763	0	10462	SLD 14	10462	10870	88449	15230	15230	1	1.46	Si
2.96	0.0000109	0.000763	0	13509	SLD 14	13509	10870	88449	15230	15230	1	1.13	Si

#### Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	$\sigma c$	$\sigma c \text{ lim.}$	$\sigma f$	$\sigma f \text{ lim.}$	Mela	Comb.	Mdes	$\sigma c$	$\sigma c \text{ lim.}$	$\sigma \text{ FRP}$	$\sigma \text{ FRP lim.}$	
0	1749.82	21	281.16	11901	1494000	0	36000000	1612.54	2	260.34	11019	1120500			Si
0.23	-942.41	20	-2704.93	-114494	1494000	0	36000000	-847.07	2	-2459.04	-104087	1120500			Si
1.48	-6700.13	20	-6776.79	254085	1494000	3811268	36000000	-6124.81	2	-6192.7	232185	1120500			Si
2.61	310.16	21	310.16	11629	1494000	174434	36000000	233.46	2	233.46	8753	1120500			Si
2.96	4818.01	21	2282.03	85561	1494000	1283417	36000000	4328.88	2	2024.78	75916	1120500			Si

#### Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

#### Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 124 - 128, sezione R 70x45, aste 724, 723

Campata 2 tra i fili 128 - 120, sezione R 70x45, asta 722

#### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	3278	SLU 84	0.031	5754	7713	SLU 84	15877	Si
0.35	0.41	0.0004	3314	SLU 84	0.031	5754	7799	SLU 84	15877	Si
0.69	0.41	0.0004	3325	SLU 84	0.031	5754	7823	SLU 84	15877	Si
1.15	0.41	0.0004	3318	SLU 84	0.031	5754	7807	SLU 84	15877	Si
1.38	0.41	0.0004	3306	SLU 84	0.031	5754	7780	SLU 84	15877	Si

#### Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	2278	SLD 16	0.101	6427	5360	SLD 16	15877	Si
0.35	0.41	0.0004	2309	SLD 16	0.101	6427	5433	SLD 16	15877	Si
0.69	0.41	0.0004	2320	SLD 16	0.101	6427	5458	SLD 16	15877	Si
1.15	0.41	0.0004	2311	SLD 16	0.101	6427	5438	SLD 16	15877	Si
1.38	0.41	0.0004	2297	SLD 16	0.101	6427	5404	SLD 16	15877	Si

#### Verifiche delle tensioni di esercizio

			Rara							Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite		
0	0.41	0.00000362	2411	SLE RA 21	68081	1494000	844207	36000000	2175	SLE QP 2	61394	1120500	Si	
0.35	0.41	0.00000362	2438	SLE RA 21	68820	1494000	853365	36000000	2198	SLE QP 2	62052	1120500	Si	
0.69	0.41	0.00000362	2444	SLE RA 21	69009	1494000	855708	36000000	2204	SLE QP 2	62217	1120500	Si	
1.15	0.41	0.00000362	2438	SLE RA 21	68837	1494000	853580	36000000	2198	SLE QP 2	62057	1120500	Si	
1.38	0.41	0.00000362	2429	SLE RA 21	68581	1494000	850400	36000000	2190	SLE QP 2	61823	1120500	Si	

#### Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

#### Verifiche geotecniche

##### Verifiche geotecniche di scorrimento sul piano di posa

Size X	Size Y	Comb.	Sis.	Cnd	Fx	Fy	Fz	IncX	IncY	Phi	Ad	RPI	yR	Rd	Ed	Rd/Ed	Verifica
4.56	1.3	SLU 47	ST	LT	177	-521	-54153	0	-1	19	0	0	1.1	16472	551	29.92	Si
4.56	1.3	SLV 4	SIS	LT	1882	7748	-42157	3	10	19	0	0	1.1	12823	7973	1.61	Si

##### Verifiche geotecniche di capacità portante sul piano di posa

Aste					Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
724,723,722					4.56	1.3	SLU 83	ST	BT	2.3	242433	65291	3.71	Si
724,723,722					4.56	1.3	SLV 13	SIS	BT	2.3	204026	47632	4.28	Si
724,723,722					4.56	1.3	SLD 13	SIS	BT	2.3	225428	46064	4.89	Si

##### Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	-613	-65291	810.63	-1246.91	0	-1	-0.02	0.01	1.28	4.52	1496	2060	0	14430	
0	-8622	-47632	4310.22	-1574.12	0	-10	-0.03	0.09	1.12	4.49	1496	2060	0	14430	0.07
0	-3936	-46064	2158.6	-1238.93	0	-5	-0.03	0.05	1.21	4.5	1496	2060	0	14430	0.03

##### Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.06	0	0	0.23	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0
1	5	0	0	0.05	0	0	0.23	0	0	0.04	0	0	0	0	0	0	0	1	1	1	1	0	0
1	5	0	0	0.05	0	0	0.23	0	0	0.02	0	0	0	0	0	0	0	1	1	1	1	0	0

##### Verifiche geotecniche - Cedimenti assoluti e differenziali

Scheda di calcolo della verifica																	
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Comb.	Sr adm	Sr	Nodo	Comb.	Ri adm	Ri	Comb.	
E	0.05	0.001	627	SLE RA 21	0.05	0.001	627	282	SLE RA 21	0.05	0	486	SLE RA 21	0.0033	0	SLE RA 1	Si
D	0.05	0	627	SLE RA 1	0.05	0	627	627	SLE RA 1	0.05	0	486	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	627	SIF RA 1	0.05	0	627	627	SIF RA 1	0.05	0	486	SIF RA 1	0.0033	0	SIF RA 1	Si

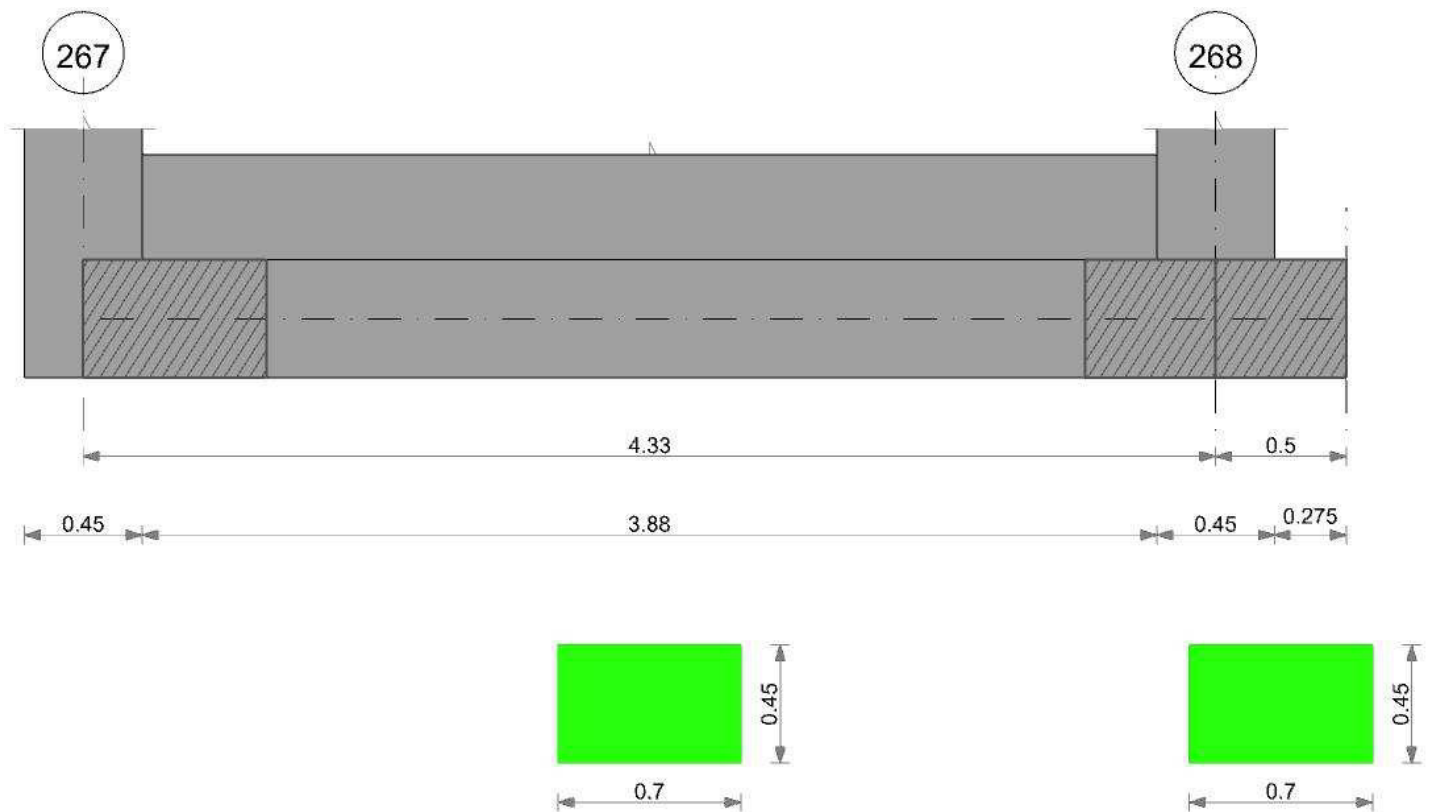


#### Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.01	SLE RA 21	0.19	0.01	486	282	SLE RA 21	0.19	0.01	486	SLE RA 21	0.1	0	627	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	627	486	SLE RA 1	0.19	0	627	SLE RA 1	0.1	0	486	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	627	486	SLE RA 1	0.19	0	627	SLE RA 1	0.1	0	486	SLE RA 1	Si

#### CORDOLO 37

Geometria



#### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

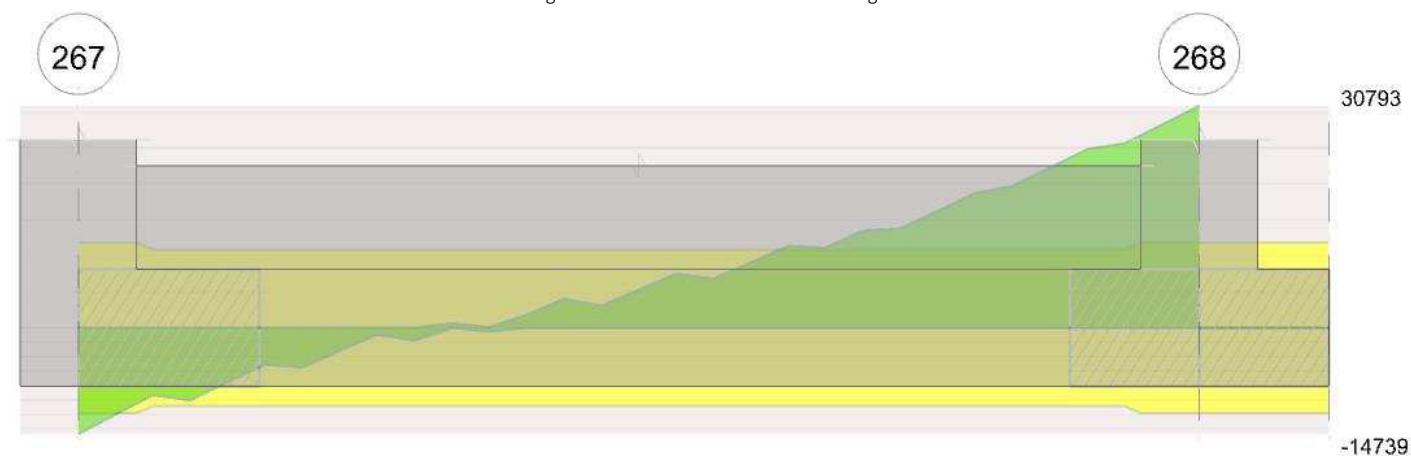
#### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 70x45	Rettangolare	0.7	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione



Diagramma verifica stato limite ultimo taglio



Output campate

#### Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 267 - 268, sezione R 70x45, aste 640, 639, 638, 637, 636, 635, 634, 633, 632, 631, 630

#### Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	4281	SLV 14	0.087	2741	11049	SLV 14	15877	No
0.23	0.41	0.0002	4083	SLV 14	0.087	2741	10539	SLV 14	15877	No
2.16	0.41	0.0002	3393	SLV 14	0.087	2741	8756	SLV 14	15877	No
4.1	0.41	0.0002	4016	SLV 14	0.087	2741	10365	SLV 14	15877	No
4.33	0.41	0.0002	4019	SLV 14	0.087	2741	10370	SLV 14	15877	No

#### Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	3191	SLD 14	0.071	3173	8235	SLD 14	15877	No
0.23	0.41	0.0002	3044	SLD 14	0.071	3173	7857	SLD 14	15877	Si
2.16	0.41	0.0002	2553	SLD 14	0.071	3173	6589	SLD 14	15877	Si
4.1	0.41	0.0002	3055	SLD 14	0.071	3173	7885	SLD 14	15877	Si
4.33	0.41	0.0002	3058	SLD 14	0.071	3173	7892	SLD 14	15877	Si

#### Verifiche delle tensioni di esercizio

Rara									Quasi permanente				Verifica
x	d	Af	M	Comb	$\sigma_c$	$\sigma_{climite}$	$\sigma_f$	$\sigma_{flimite}$	M	Comb	$\sigma_c$	$\sigma_{climite}$	
0	0.41	0.00000177	2593	SLE RA 21	75023	1494000	930280	36000000	2376	SLE QP 2	68746	1120500	Si
0.23	0.41	0.00000177	2476	SLE RA 21	71624	1494000	888140	36000000	2268	SLE QP 2	65609	1120500	Si
2.16	0.41	0.00000177	2108	SLE RA 21	60994	1494000	756326	36000000	1926	SLE QP 2	55732	1120500	Si
4.1	0.41	0.00000177	2560	SLE RA 21	74069	1494000	918456	36000000	2338	SLE QP 2	67655	1120500	Si
4.33	0.41	0.00000177	2564	SLE RA 21	74188	1494000	919927	36000000	2342	SLE QP 2	67758	1120500	Si

#### Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

#### Verifiche geotecniche

##### Verifiche geotecniche di scorrimento sul piano di posa

Size X	Size Y	Comb.	Sis.	Cnd	Fx	Fy	Fz	IncX	IncY	Phi	Ad	RPI	yR	Rd	Ed	Rd/Ed	Verifica
4.55	1.3	SLU 39	ST	LT	-761	763	-59077	-1	1	19	0	0	1.1	17970	1077	16.68	Si
4.55	1.3	SLV 2	SIS	LT	-3889	9321	-23121	-10	22	19	0	0	1.1	7033	10100	0.7	No





## Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 70x45	Rettangolare	0.7	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

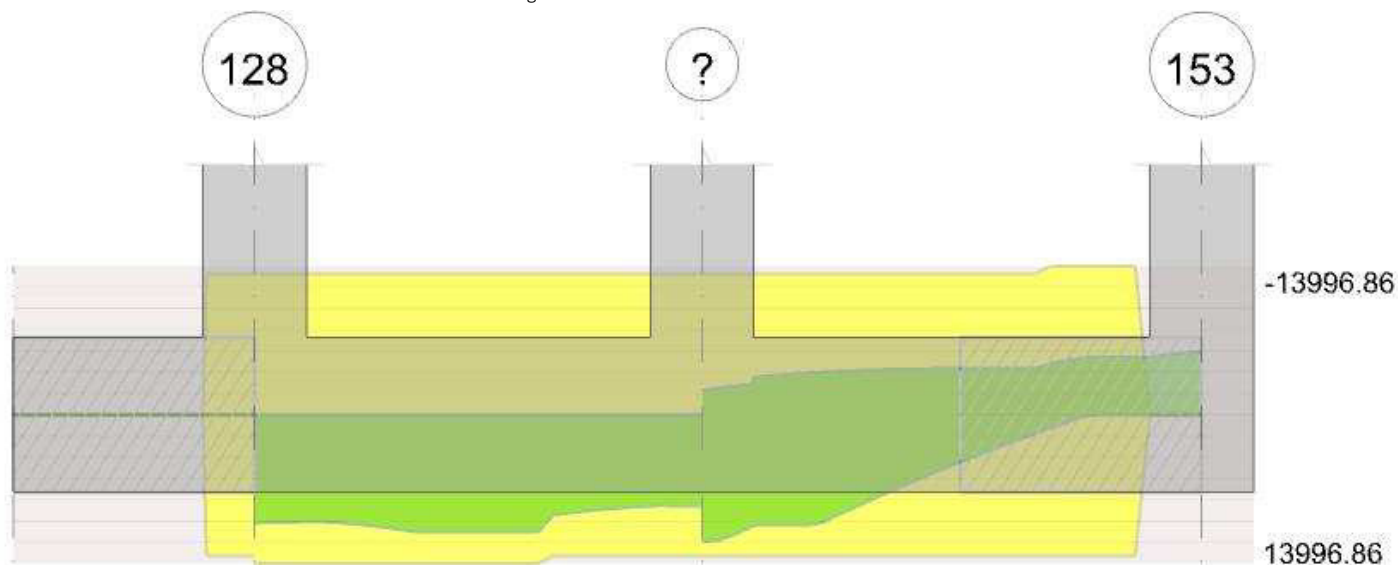
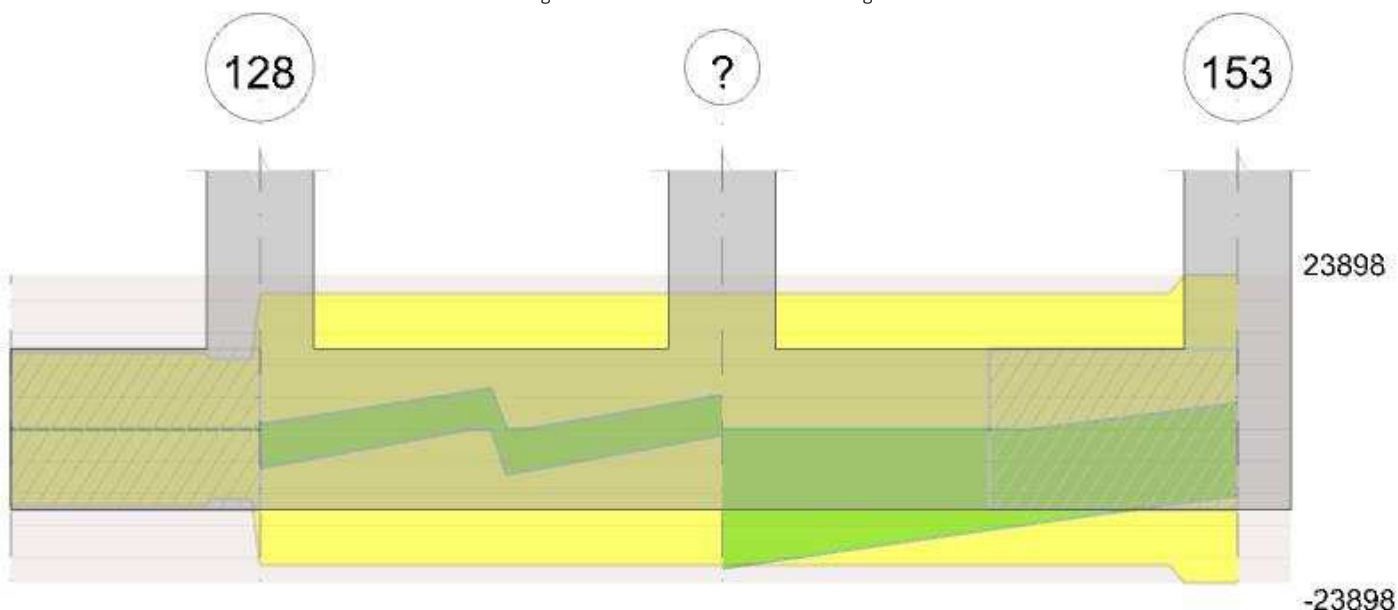


Diagramma verifica stato limite ultimo taglio



## Output campate

Campata 2 tra i fili 128 - ?, sezione R 70x45, aste 477, 478

## Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000942	0.053	0.000942	0.053	10428.2	SLU 83	10159.64	13996.86	0.128	1.38							Si
0.15	0.000942	0.053	0.000942	0.053	10044.54	SLU 83	10044.54	13996.86	0.128	1.39							Si
0.65	0.000942	0.053	0.000942	0.053	11036.55	SLU 83	11036.55	13996.86	0.128	1.27							Si
0.82	0.000942	0.053	0.000942	0.053	8005.73	SLU 83	11036.55	13996.86	0.128	1.27							Si
1.15	0.000942	0.053	0.000942	0.053	7522.19	SLU 83	7597.08	13996.86	0.128	1.84							Si
1.3	0.000942	0.053	0.000942	0.053	7825.51	SLU 83	7591.24	13996.86	0.128	1.84							Si

## Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000942	0.053	0.000942	0.053	7462.92	SLV 1	7453.97	13265.61	0.222	1.78							Si
0.15	0.000942	0.053	0.000942	0.053	7601.33	SLV 2	8070.25	13265.61	0.222	1.64							Si
0.65	0.000942	0.053	0.000942	0.053	9621.11	SLV 2	9621.11	13265.61	0.222	1.38							Si
0.82	0.000942	0.053	0.000942	0.053	8912.51	SLV 13	9621.11	13265.61	0.222	1.38							Si
1.15	0.000942	0.053	0.000942	0.053	8525.2	SLV 13	8591.65	13265.61	0.222	1.54							Si
1.3	0.000942	0.053	0.000942	0.053	8744.26	SLV 13	8552.71	13265.61	0.222	1.55							Si



#### Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000942	0.053	0.000942	0.053	7194.6	SLD 1	7076.91	13265.61	0.222	1.87							Si
0.15	0.000942	0.053	0.000942	0.053	7084.9	SLD 2	7240.82	13265.61	0.222	1.83							Si
0.65	0.000942	0.053	0.000942	0.053	8256.67	SLD 2	8256.67	13265.61	0.222	1.61							Si
0.82	0.000942	0.053	0.000942	0.053	6817.38	SLD 13	8256.67	13265.61	0.222	1.61							Si
1.15	0.000942	0.053	0.000942	0.053	6483.59	SLD 13	6531.28	13265.61	0.222	2.03							Si
1.3	0.000942	0.053	0.000942	0.053	6701.43	SLD 13	6525.72	13265.61	0.222	2.03							Si

#### Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000151	0.000942	0	-3796	SLU 70	-3796	-11611	-88226	-21083	-21083	1	5.55	Si
0.15	0.0000151	0.000942	0	-1987	SLU 70	-1987	-11611	-88226	-21083	-21083	1	10.61	Si
0.65	0.0000151	0.000942	0	5565	SLU 84	5565	11611	88226	21083	21083	1	3.79	Si
0.69	0.0000151	0.000942	0	-5792	SLU 84	-5792	-11611	-88226	-21083	-21083	1	3.64	Si
1.15	0.0000151	0.000942	0	942	SLU 81	942	11611	88226	21083	21083	1	22.38	Si
1.3	0.0000151	0.000942	0	3126	SLU 83	3126	11611	88226	21083	21083	1	6.74	Si

#### Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000151	0.000942	0	717	SLV 2	717	11611	88226	21083	21083	1	29.41	Si
0	0.0000151	0.000942	0	-6024	SLV 15	-6024	-11611	-88226	-21083	-21083	1	3.5	Si
0.15	0.0000151	0.000942	0	1965	SLV 2	1965	11611	88226	21083	21083	1	10.73	Si
0.15	0.0000151	0.000942	0	-4533	SLV 15	-4533	-11611	-88226	-21083	-21083	1	4.65	Si
0.65	0.0000151	0.000942	0	6311	SLV 2	6311	11611	88226	21083	21083	1	3.34	Si
0.69	0.0000151	0.000942	0	-7017	SLV 11	-7017	-11611	-88226	-21083	-21083	1	3	Si
1.15	0.0000151	0.000942	0	3777	SLV 6	3777	11611	88226	21083	21083	1	5.58	Si
1.15	0.0000151	0.000942	0	-2405	SLV 11	-2405	-11611	-88226	-21083	-21083	1	8.77	Si
1.3	0.0000151	0.000942	0	5222	SLV 6	5222	11611	88226	21083	21083	1	4.04	Si
1.3	0.0000151	0.000942	0	-895	SLV 11	-895	-11611	-88226	-21083	-21083	1	23.57	Si

#### Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000151	0.000942	0	-4097	SLD 15	-4097	-11611	-88226	-21083	-21083	1	5.15	Si
0.15	0.0000151	0.000942	0	107	SLD 2	107	11611	88226	21083	21083	1	197.85	Si
0.15	0.0000151	0.000942	0	-2675	SLD 15	-2675	-11611	-88226	-21083	-21083	1	7.88	Si
0.65	0.0000151	0.000942	0	4688	SLD 2	4688	11611	88226	21083	21083	1	4.5	Si
0.69	0.0000151	0.000942	0	-5215	SLD 11	-5215	-11611	-88226	-21083	-21083	1	4.04	Si
1.15	0.0000151	0.000942	0	2046	SLD 6	2046	11611	88226	21083	21083	1	10.31	Si
1.15	0.0000151	0.000942	0	-674	SLD 11	-674	-11611	-88226	-21083	-21083	1	31.28	Si
1.3	0.0000151	0.000942	0	3509	SLD 6	3509	11611	88226	21083	21083	1	6.01	Si

#### Verifiche delle tensioni in esercizio

x	Mela	Comb.	Mdes	σ c	σ c lim.	σ f	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	Verifica
0	7702.8	20	7502.44	498062	1494000	22085654	36000000	6992.85	2	6793.67	451009	1120500			Si
0.15	7415.33	20	7415.33	492279	1494000	21829222	36000000	6697.36	2	6697.36	444615	1120500			Si
0.65	8132.99	20	8132.99	539922	1494000	23941859	36000000	7234.24	2	7234.24	480257	1120500			Si
1.15	5551.93	20	5603.16	204924	1494000	3073860	36000000	4949.47	2	4987.25	182398	1120500			Si
1.3	5779.15	20	5604.57	204976	1494000	3074633	36000000	5163.04	2	5000.9	182898	1120500			Si

#### Verifica di apertura delle fessure

x	Bordo	Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	Verifica
0	inferiore	0.442	0.00064	0.000284	20	0.442	0.0006	0.000264	6	0.442	0.00058	0.000257	2	Si
0.15	inferiore	0.442	0.00064	0.000281	20	0.442	0.00059	0.000261	6	0.442	0.00057	0.000254	2	Si
0.65	inferiore	0.442	0.0007	0.000308	20	0.442	0.00064	0.000283	6	0.442	0.00062	0.000274	2	Si
0.82	inferiore	0.442	0.0007	0.000308	20	0.442	0.00064	0.000283	6	0.442	0.00062	0.000274	2	Si

#### Campata 3 tra i fili ? - 153, sezione R 70x45, asta 479

#### Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000942	0.053	0.000942	0.053	7972.94	SLU 83	7138.57	13996.86	0.128	1.96							Si
0.15	0.000942	0.053	0.000942	0.053	5707.41	SLU 83	5707.41	13996.86	0.128	2.45							Si
0.73	0.000942	0.053	0.000942	0.053	-832.44	SLU 1	672.3	13996.86	0.128	20.82	-1262.48	SLU 78	-2827.65	-13996.86	0.128	4.95	Si
1.3	0	0	0	0							-5402.34	SLU 84	-5402.34	0	0	0	No
1.45	0	0	0	0							-6041.08	SLU 84	-5884.01	0	0	0	No

#### Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000942	0.053	0.000942	0.053	12787.52	SLV 13	11926.95	13265.61	0.222	1.11	-2299.06	SLV 4	-2299.06	-13265.61	0.222	5.77	Si
0.15	0.000942	0.053	0.000942	0.053	10395.51	SLV 13	10395.51	13265.61	0.222	1.28	-2926.78	SLV 4	-3525.58	-13265.61	0.222	3.76	Si
0.73	0.000942	0.053	0.000942	0.053	2496.1	SLV 13	4749.07	13265.61	0.222	2.79	-4256.45	SLV 4	-4319.74	-13265.61	0.222	3.07	Si
1.3	0	0	0	0							-3871.47	SLV 4	-4168.09	0	0	0	No
1.45	0	0	0	0							-4685.4	SLV 14	-4277.81	0	0	0	No

#### Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000942	0.053	0.000942	0.053	8475.15	SLD 13	7788.57	13265.61	0.222	1.7							Si
0.15	0.000942	0.053	0.000942	0.053	6587.55	SLD 13	6587.55	13265.61	0.222	2.01	881.18	SLD 4	-313.13	-13265.61	0.222	42.36	Si
0.73	0.000942	0.053	0.000942	0.053	566.26	SLD 13	2241.47	13265.61	0.222	5.92	-2326.61	SLD 4	-2958.37	-13265.61	0.222	4.48	Si





x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
1.3	0	0	0	0							-3741.62	SLD 4	-3741.62	0	0	0	No
1.45	0	0	0	0							-4329.59	SLD 14	-4096.6	0	0	0	No

#### Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000151	0.000942	0	-20752	SLU 83	-20752	-11611	-88226	-21083	-21083	1	1.02	Si
0.15	0.0000151	0.000942	0	-19082	SLU 83	-19082	-11611	-88226	-21083	-21083	1	1.1	Si
0.73	0.0000151	0.000942	0	-12720	SLU 83	-12720	-11611	-88226	-21083	-21083	1	1.66	Si
1.3	0.0000151	0	0	-6433	SLU 83	-6433	-11837	-100005	-23898	-23898	1	3.71	Si
1.45	0.0000151	0	0	-4800	SLU 83	-4800	-11837	-100005	-23898	-23898	1	4.98	Si

#### Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000151	0.000942	0	-21637	SLV 13	-21637	-11611	-88226	-21083	-21083	1	0.97	Si
0.15	0.0000151	0.000942	0	-20419	SLV 13	-20419	-11611	-88226	-21083	-21083	1	1.03	Si
0.73	0.0000151	0.000942	0	-15825	SLV 13	-15825	-11611	-88226	-21083	-21083	1	1.33	Si
1.3	0.0000151	0	0	2954	SLV 4	2954	11837	100005	23898	23898	1	8.09	Si
1.3	0.0000151	0	0	-11417	SLV 13	-11417	-11837	-100005	-23898	-23898	1	2.09	Si
1.45	0.0000151	0	0	4030	SLV 4	4030	11837	100005	23898	23898	1	5.93	Si
1.45	0.0000151	0	0	-10299	SLV 13	-10299	-11837	-100005	-23898	-23898	1	2.32	Si

#### Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000151	0.000942	0	-17175	SLD 13	-17175	-11611	-88226	-21083	-21083	1	1.23	Si
0.15	0.0000151	0.000942	0	-16014	SLD 13	-16014	-11611	-88226	-21083	-21083	1	1.32	Si
0.73	0.0000151	0.000942	0	-11608	SLD 13	-11608	-11611	-88226	-21083	-21083	1	1.82	Si
1.3	0.0000151	0	0	-7309	SLD 13	-7309	-11837	-100005	-23898	-23898	1	3.27	Si
1.45	0.0000151	0	0	-6204	SLD 13	-6204	-11837	-100005	-23898	-23898	1	3.85	Si

#### Verifiche delle tensioni in esercizio

x	Rara								Quasi permanente								Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.		Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.		
0	5886.2	20	5270.24	192748	1494000	2891221	36000000	5244.23	2	4687.93	171451	1120500					Si
0.15	4213.68	20	4213.68	154107	1494000	2311600	36000000	3734.37	2	3734.37	136577	1120500					Si
0.73	-929.63	15	-2087.58	76349	1494000	1145232	36000000	-880.18	2	-1939.64	70938	1120500					Si
1.3	-3989.27	21	-3989.27	-168858	1494000	0	36000000	-3643.89	2	-3643.89	-154239	1120500					Si
1.45	-4461.23	21	-4345.13	-183921	1494000	0	36000000	-4063.58	2	-3961.24	-167671	1120500					Si

#### Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

#### Verifiche geotecniche

##### Verifiche geotecniche di scorrimento sul piano di posa

Size X	Size Y	Comb.	Sis.	Cnd	Fx	Fy	Fz	IncX	IncY	Phi	Ad	RPI	yR	Rd	Ed	Rd/Ed	Verifica
2.9	1.3	SLU 44	ST	LT	66	103	-33249	0	0	19	0	0	1.1	10114	123	82.37	Si
2.9	1.3	SLV 2	SIS	LT	-4202	-790	-26112	-9	-2	19	0	0	1.1	7943	4275	1.86	Si

##### Verifiche geotecniche di capacità portante sul piano di posa

Aste		Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
477,478,479		2.9	1.3	SLU 83	ST	BT	2.3	159260	40760	3.91	Si
477,478,479		2.9	1.3	SLV 13	SIS	BT	2.3	148509	29653	5.01	Si
477,478,479		2.9	1.3	SLD 13	SIS	BT	2.3	154643	28665	5.39	Si

##### Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	FI	Coes	Amax
67	1	-40760	469.65	258.25	0	0	0.01	0.01	1.28	2.89	1496	2060	0	14430	
4074	-750	-29653	667.26	1794.62	8	-1	0.06	0.02	1.25	2.78	1496	2060	0	14430	0.07
1772	-317	-28665	454.42	873.37	4	-1	0.03	0.02	1.27	2.84	1496	2060	0	14430	0.03

##### Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.09	0	0	0.23	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.09	0	0	0.23	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.09	0	0	0.23	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0

##### Verifiche geotecniche - Cedimenti assoluti e differenziali

Tipo	Assoluto				Differenziale				Relativo				Rapp. inflessione				Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Comb.	Sr adm	Sr	Nodo	Comb.	Ri adm	Ri	Comb.	
E	0.05	0.002	490	SLE RA 21	0.05	0	490	487	SLE RA 21	0.05	0	489	SLE RA 21	0.0033	0	SLE RA 21	Si
D	0.05	0	490	SLE RA 1	0.05	0	490	490	SLE RA 1	0.05	0	489	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	490	SLE RA 1	0.05	0	490	490	SLE RA 1	0.05	0	489	SLE RA 1	0.0033	0	SLE RA 1	Si

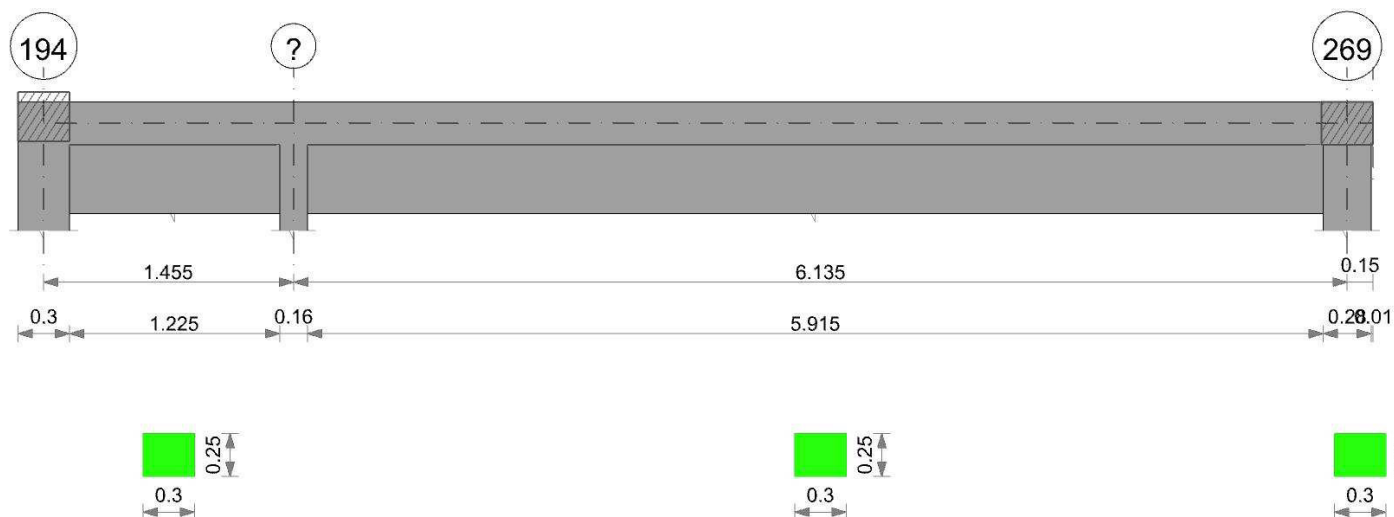
##### Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.01	SLE RA 21	0.19	0.02	490	489	SLE RA 21	0.19	0	490	SLE RA 1	0.1	0.01	489	SLE RA 21	Si
D	0.19	0	SLE RA 1	0.19	0	490	489	SLE RA 1	0.19	0	490	SLE RA 1	0.1	0	489	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	490	489	SLE RA 1	0.19	0	490	SLE RA 1	0.1	0	489	SLE RA 1	Si

## CORDOLO SOTTOTETTO 1

Geometria





#### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

#### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 30x25	Rettangolare	0.3	0.25	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

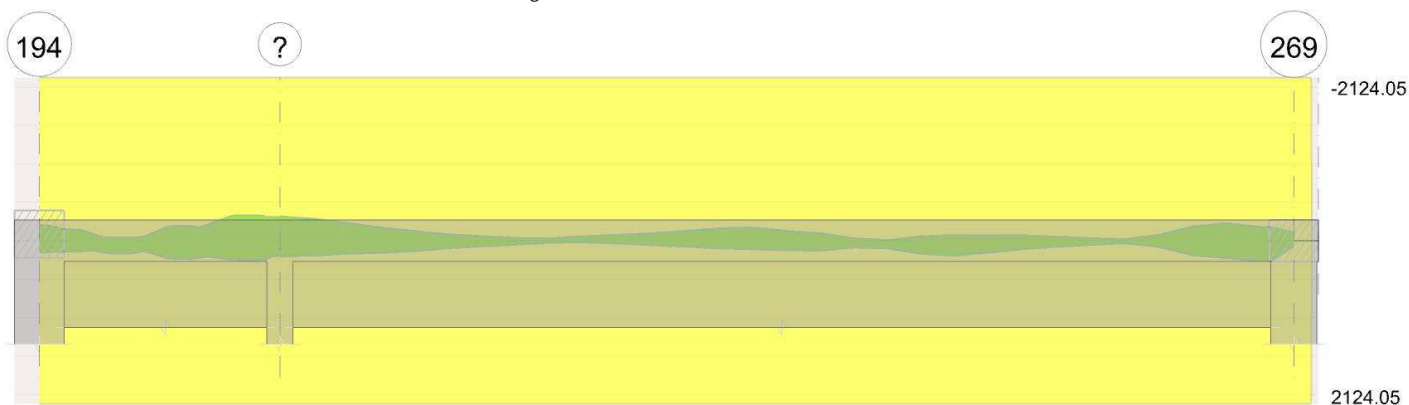
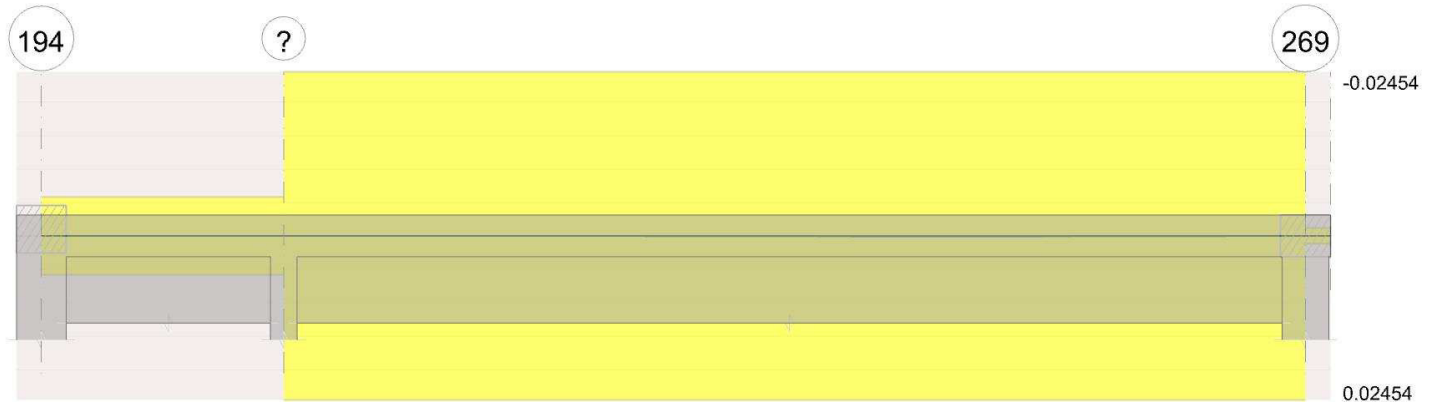


Diagramma verifica stato limite ultimo taglio

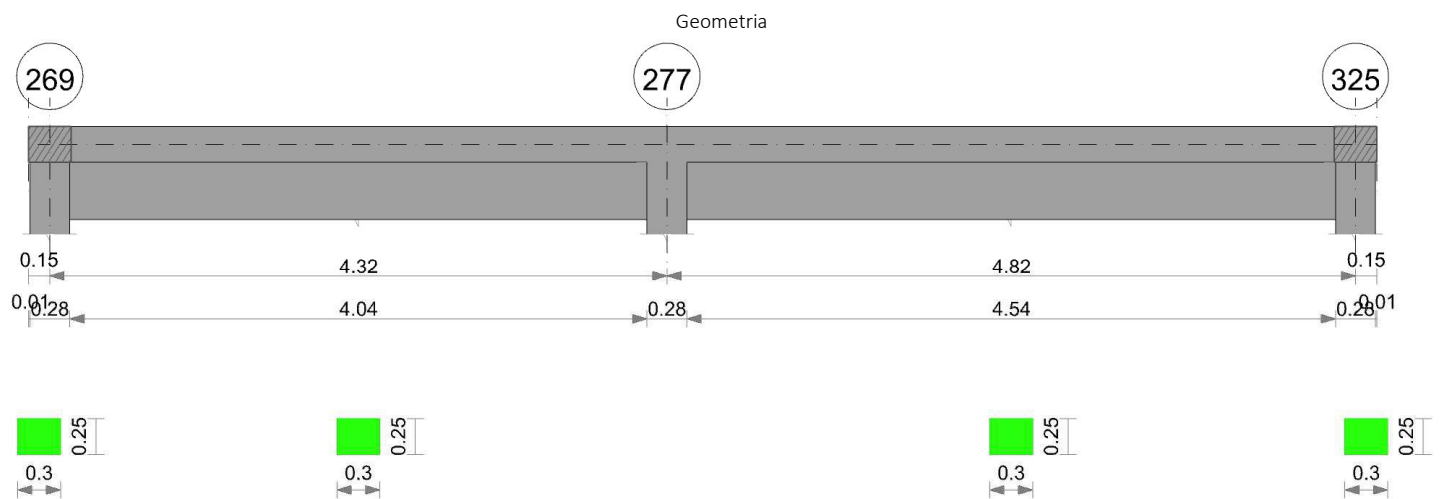


Diagramma verifica stato limite esercizio quasi permanente freccia



Output campate

## CORDOLO SOTTOTETTO 2



### Caratteristiche dei materiali

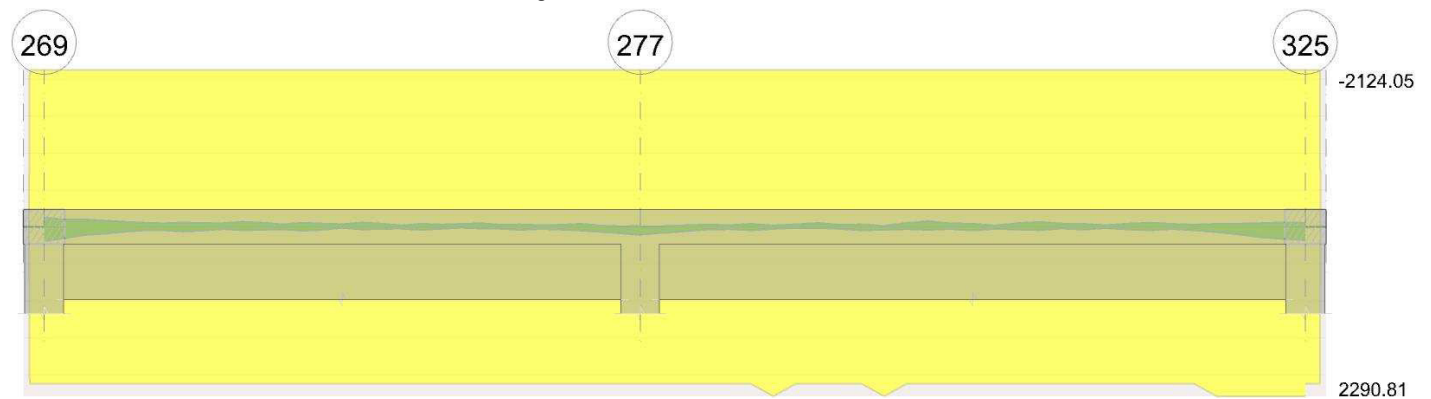
Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 30x25	Rettangolare	0.3	0.25	0.035	0.035	0.035

### Diagramma verifica stato limite ultimo flessione



### Diagramma verifica stato limite ultimo taglio

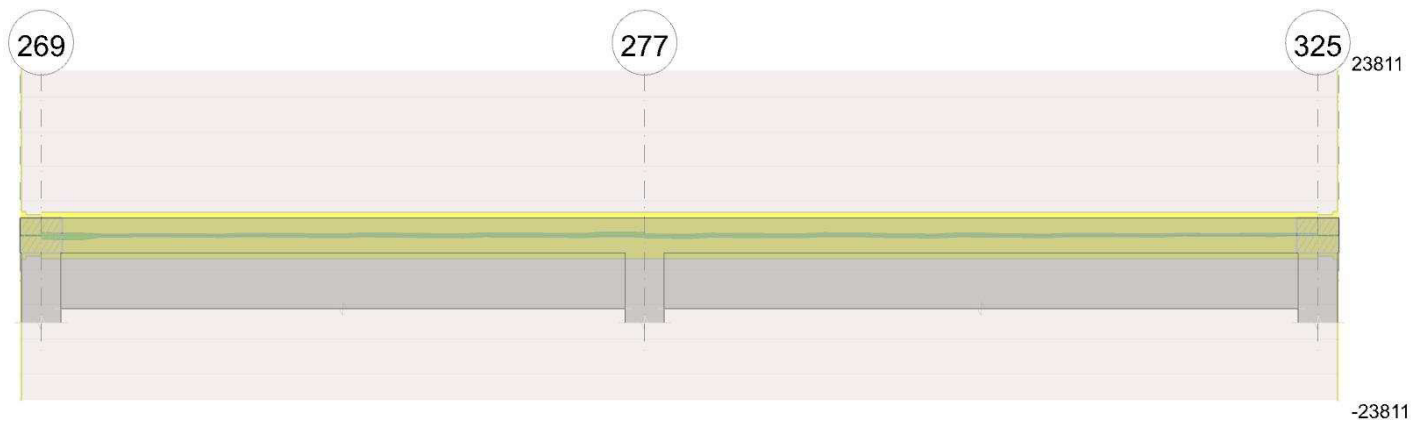
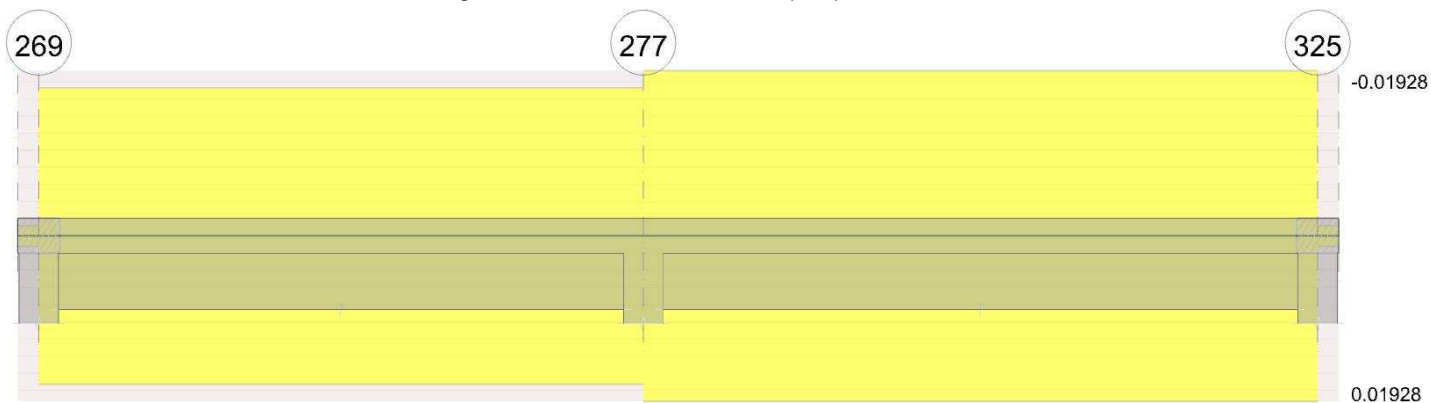


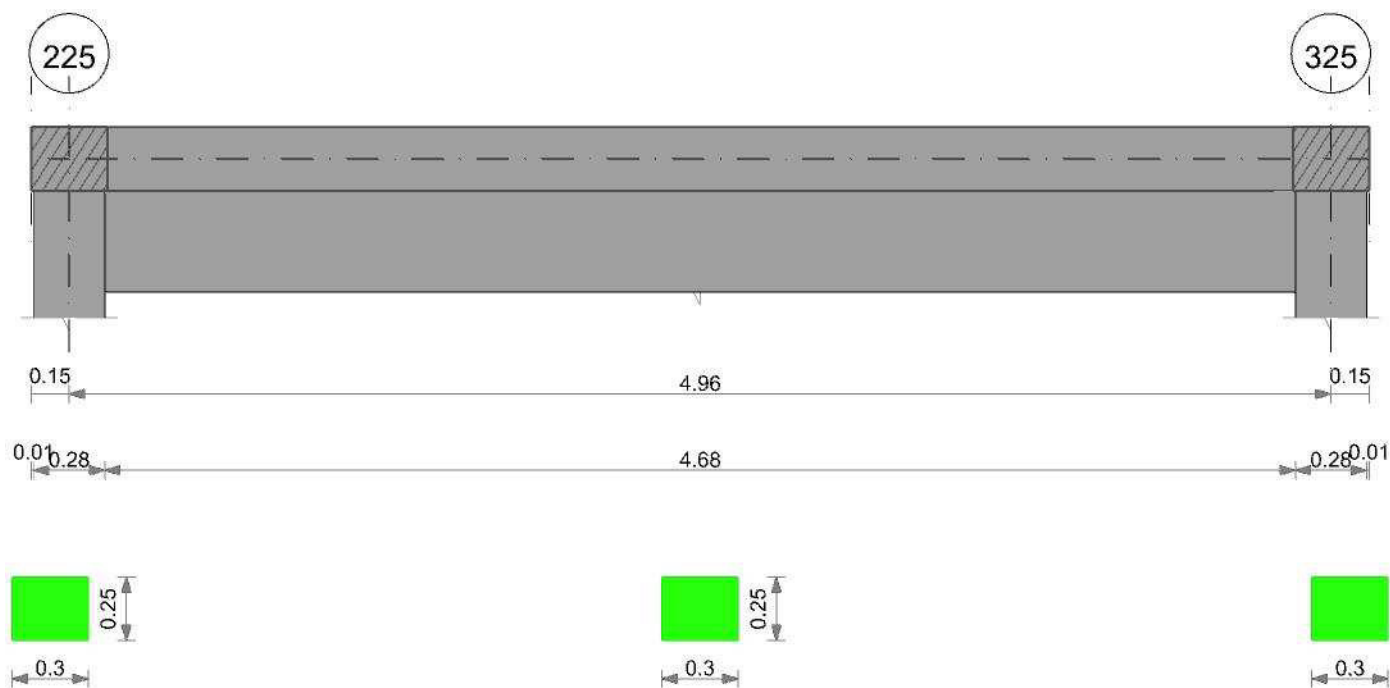
Diagramma verifica stato limite esercizio quasi permanente freccia



Output campate

### CORDOLO SOTTOTETTO 3

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000  
Calcestruzzo: C25/30 Rck 3000000



#### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 30x25	Rettangolare	0.3	0.25	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

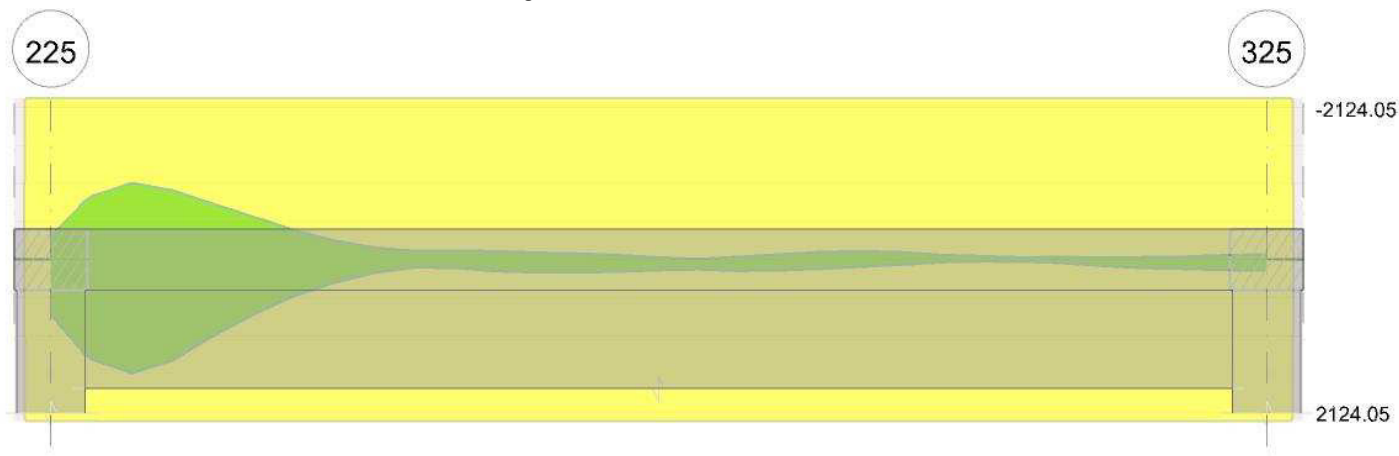


Diagramma verifica stato limite ultimo taglio

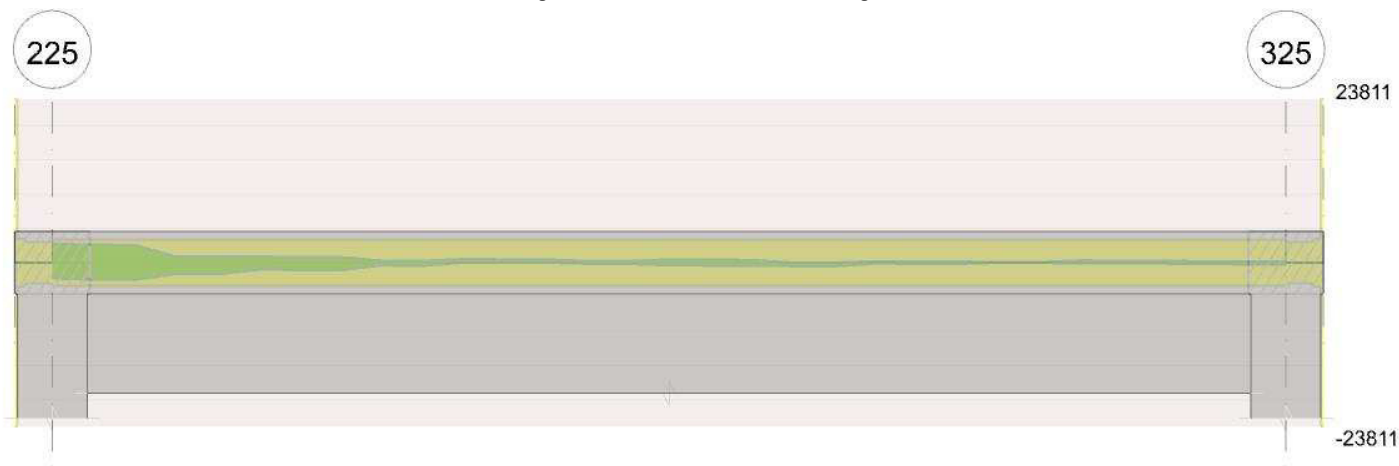
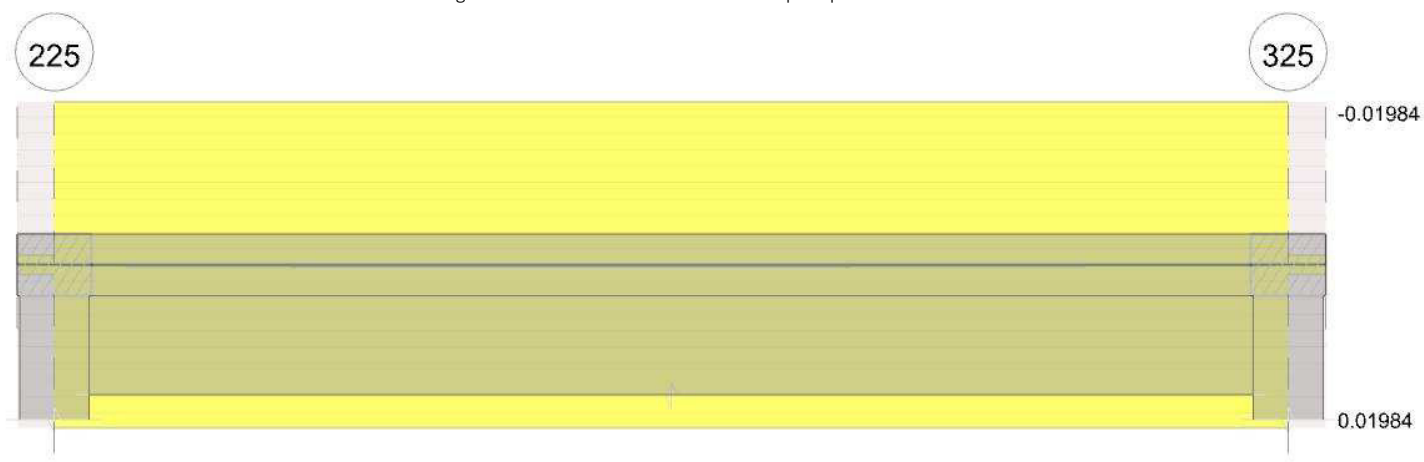


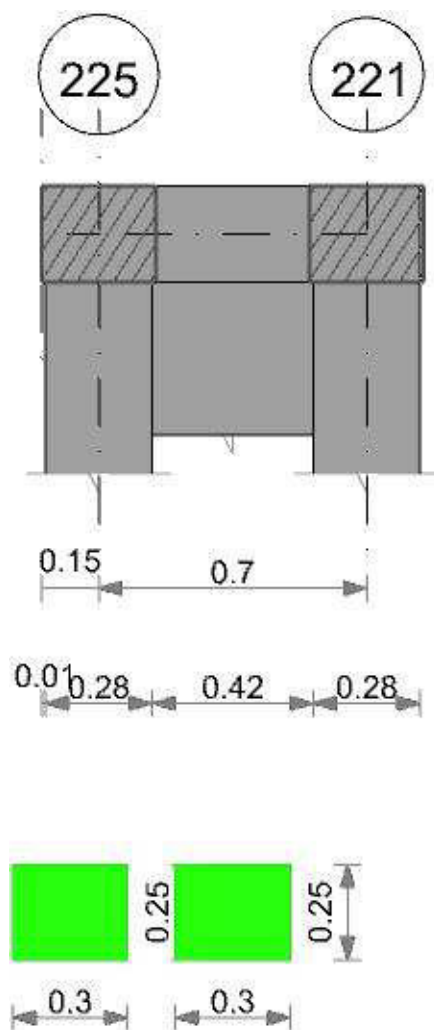
Diagramma verifica stato limite esercizio quasi permanente freccia



Output campate

#### CORDOLO SOTTOTETTO 4

Geometria



#### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

#### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 30x25	Rettangolare	0.3	0.25	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

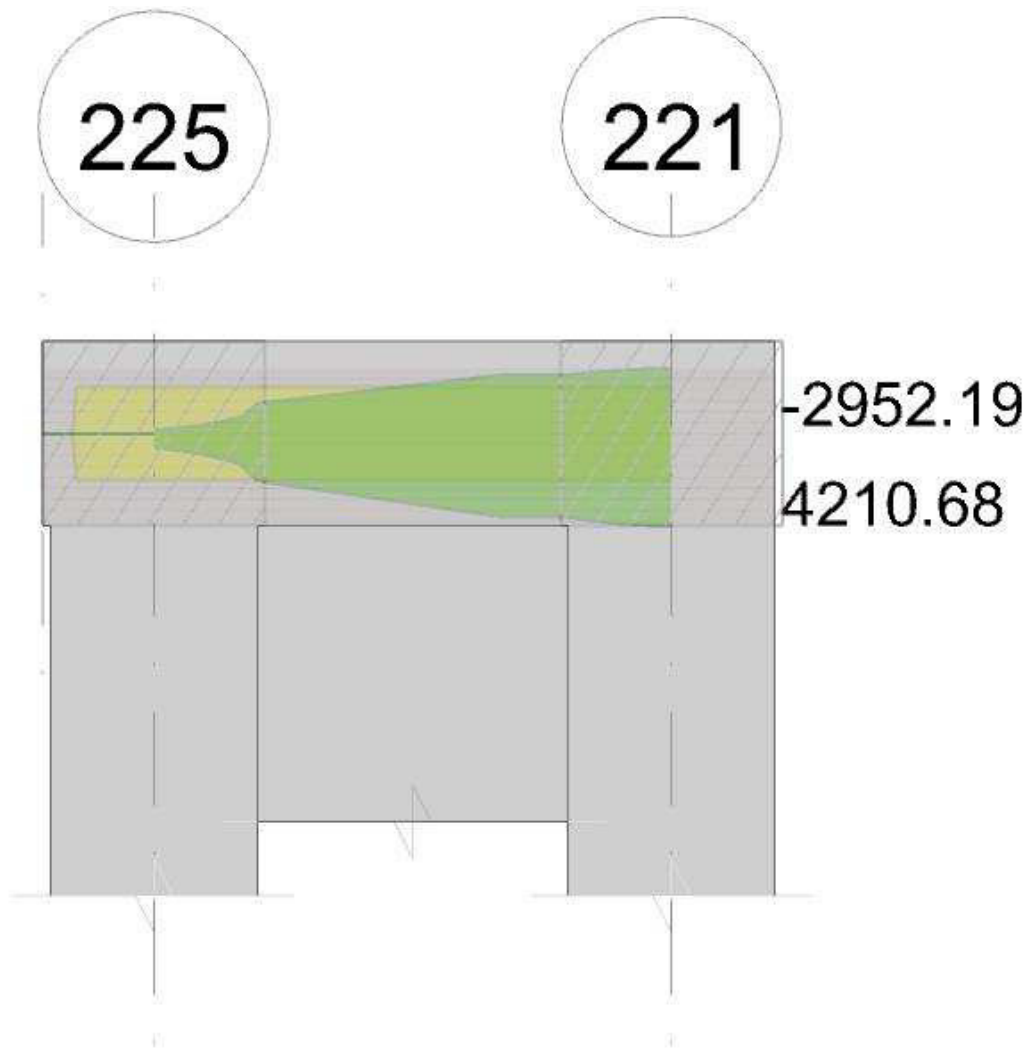


Diagramma verifica stato limite ultimo taglio

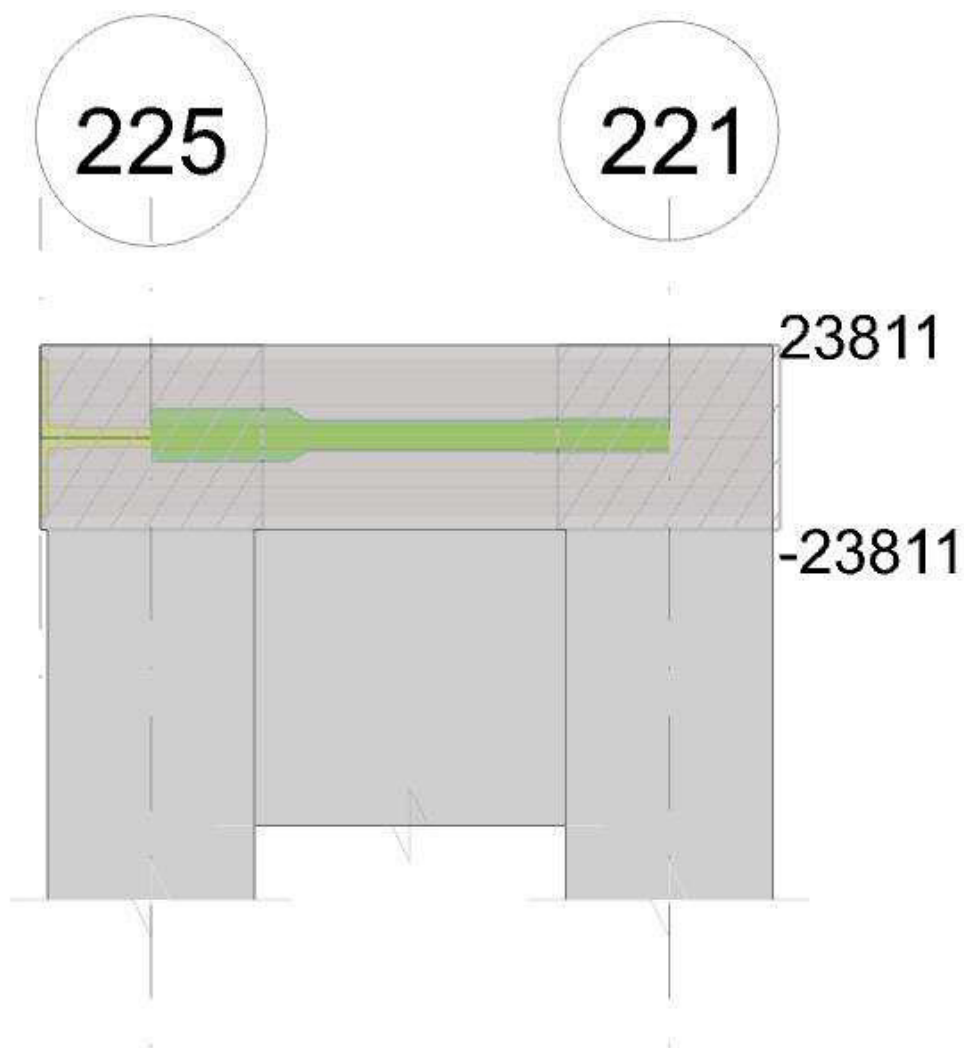
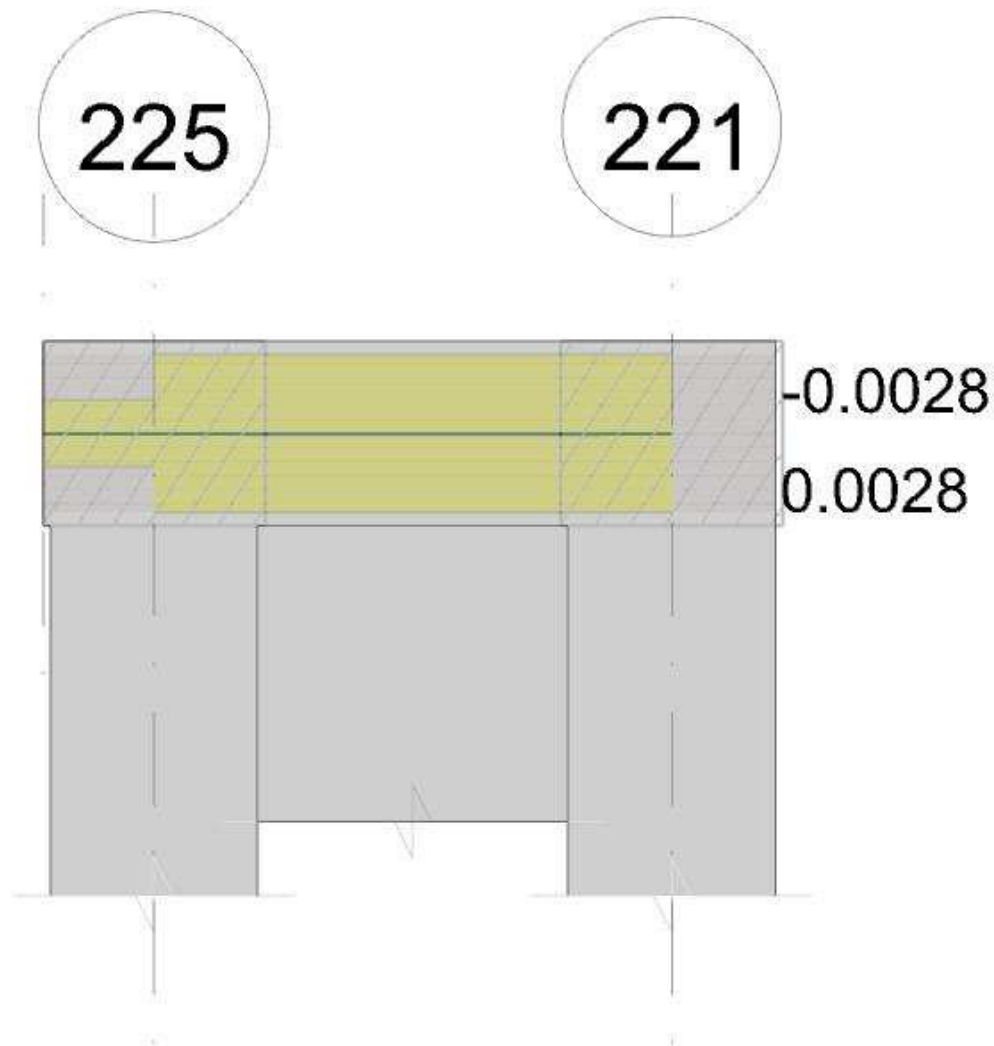
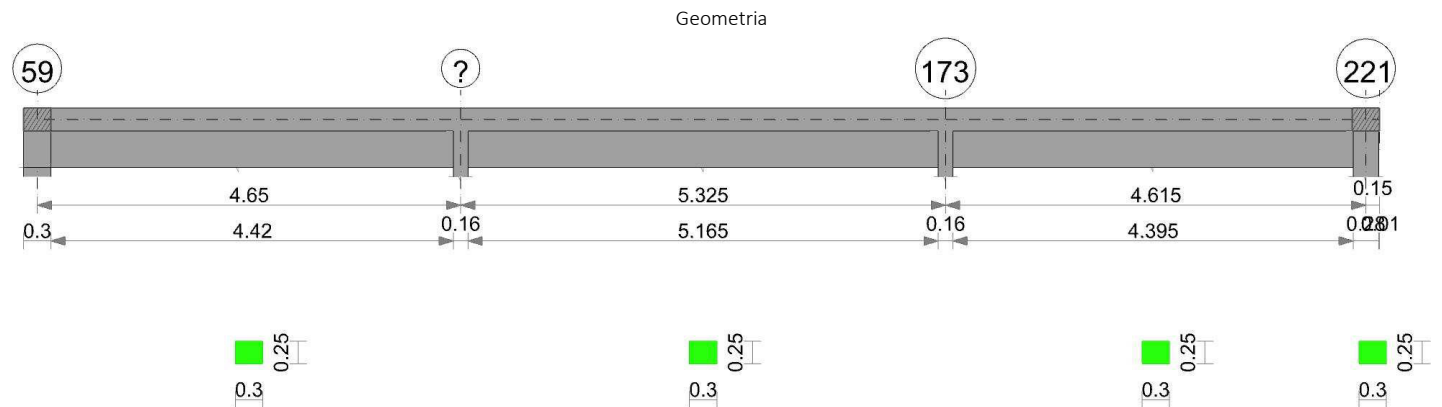


Diagramma verifica stato limite esercizio quasi permanente freccia



Output campate

CORDOLO SOTTOTETTO 5



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000  
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 30x25	Rettangolare	0.3	0.25	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione





Diagramma verifica stato limite ultimo taglio

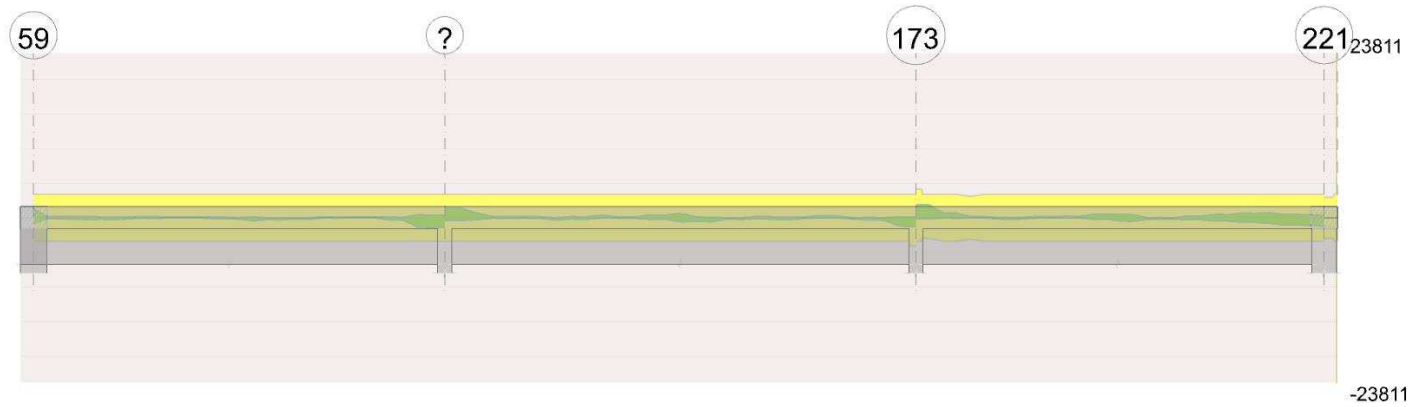


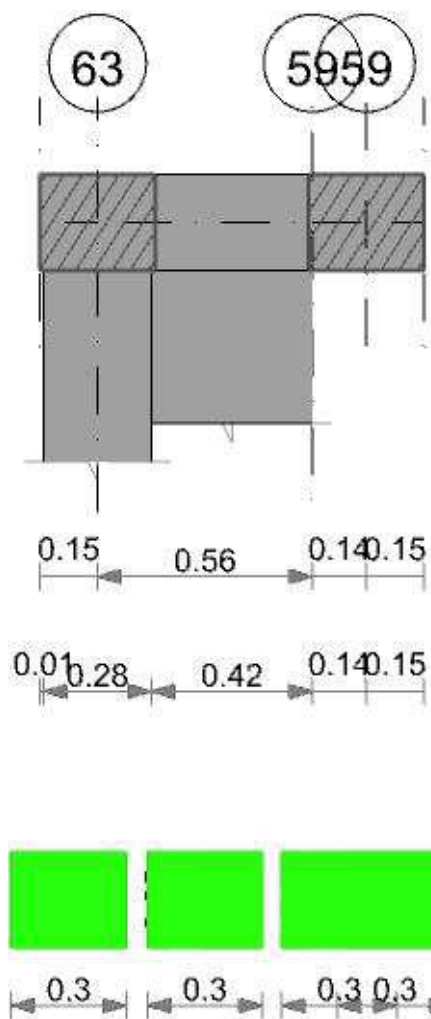
Diagramma verifica stato limite esercizio quasi permanente freccia



Output campate

## CORDOLO SOTTOTETTO 6

Geometria



#### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

#### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 30x25	Rettangolare	0.3	0.25	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

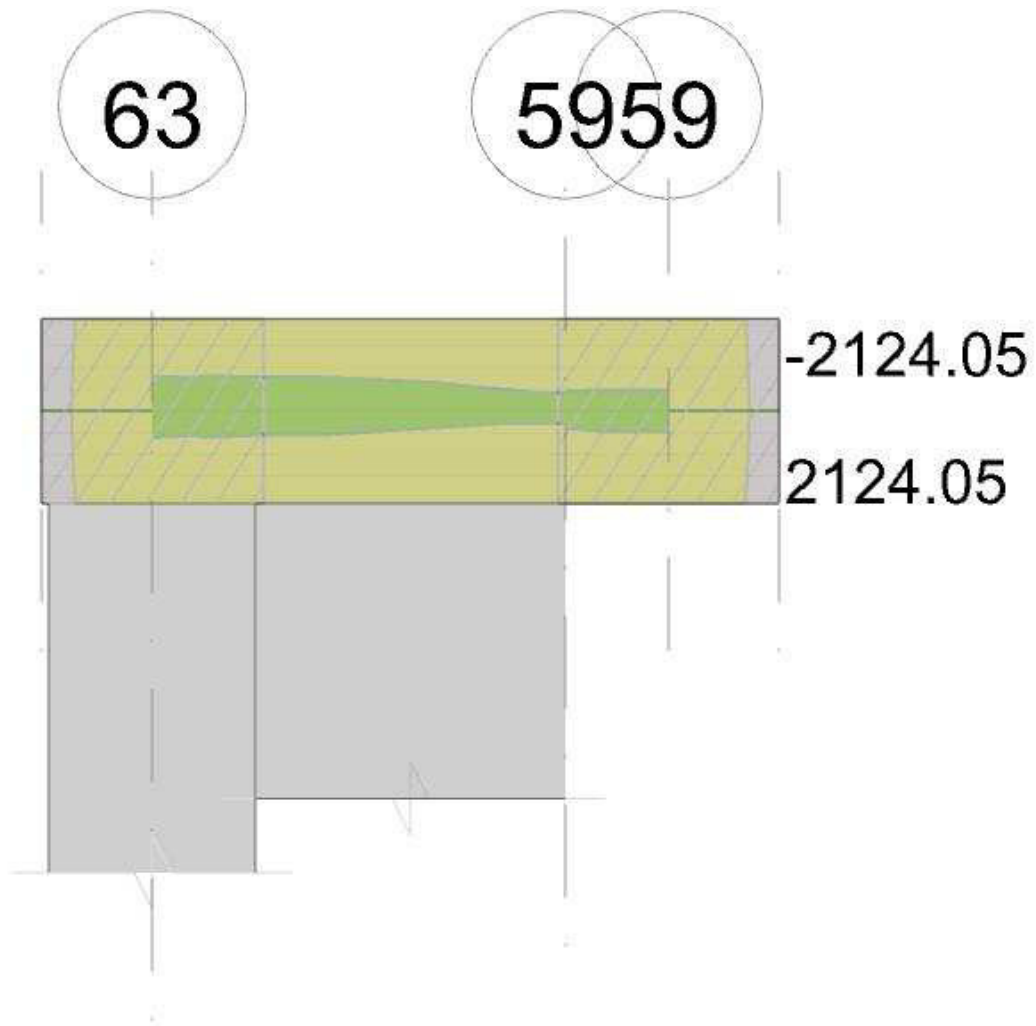


Diagramma verifica stato limite ultimo taglio

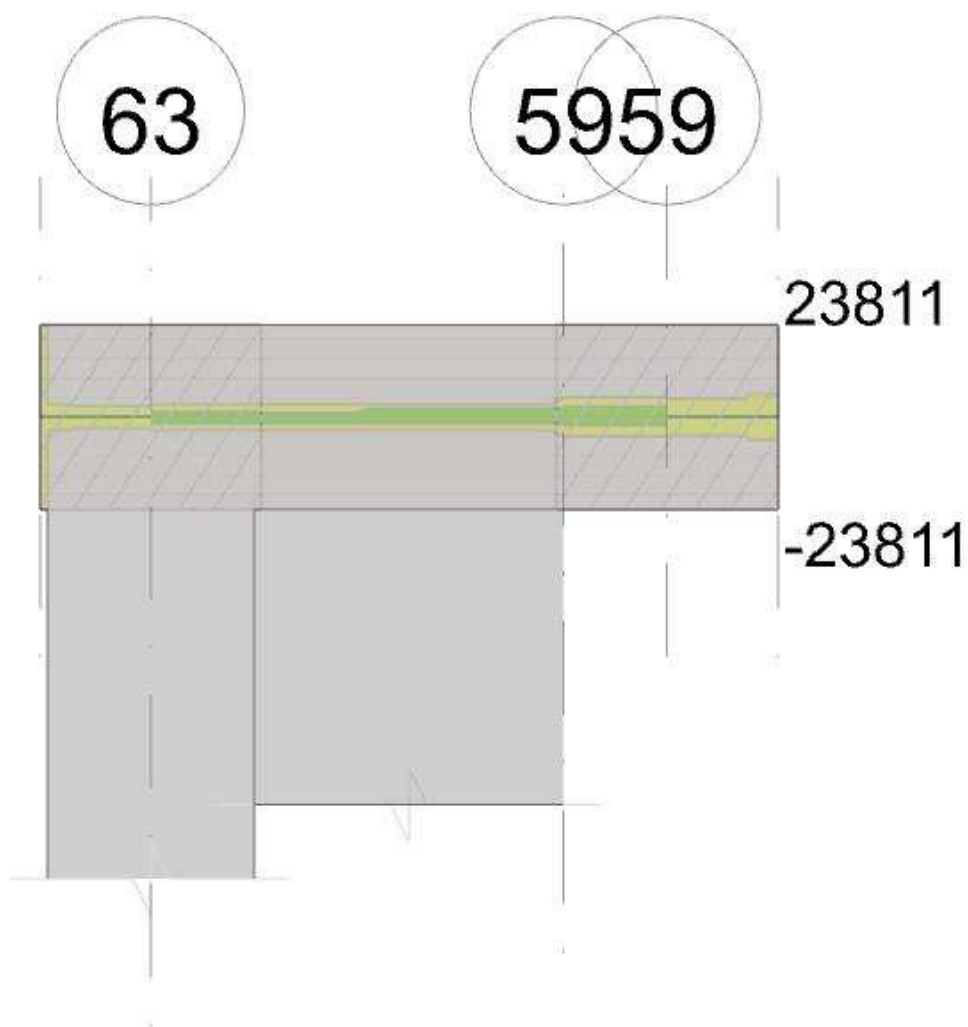
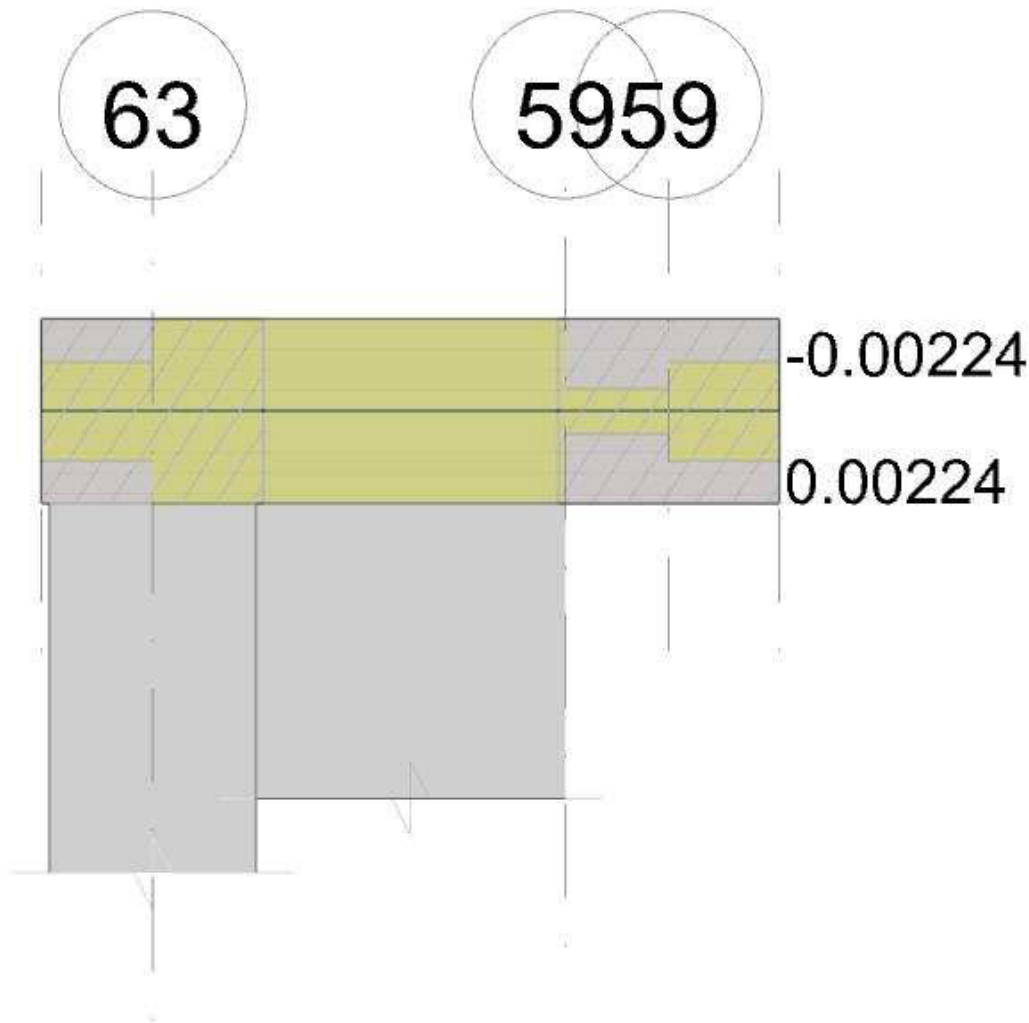


Diagramma verifica stato limite esercizio quasi permanente freccia



#### Output campate

Campata 3 tra i fili 59 - 59, sezione R 30x25, asta 897

#### Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000308	0.05	0.000308	0.05	-7.63	SLU 5	116.02	2290.81	0.221	19.75	-115.95	SLU 81	-115.95	-2290.81	0.221	19.76	Si
0.07	0.000308	0.05	0.000308	0.05	86.05	SLU 30	193.02	2290.81	0.221	11.87	-77.25	SLU 60	-115.95	-2290.81	0.221	19.76	Si
0.12	0.000308	0.05	0.000308	0.05	157.46	SLU 30	193.02	2290.81	0.221	11.87	-60.48	SLU 60	-95.2	-2290.81	0.221	24.06	Si
0.14	0.000308	0.05	0.000308	0.05	193.02	SLU 30	193.02	2290.81	0.221	11.87	-52.29	SLU 60	-84.44	-2290.81	0.221	27.13	Si

#### Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000308	0.05	0.000308	0.05	276.16	SLV 11	388.77	2124.05	0.281	5.46	-408.66	SLV 6	-451.83	-2124.05	0.281	4.7	Si
0.07	0.000308	0.05	0.000308	0.05	360.64	SLV 7	464.87	2124.05	0.281	4.57	-438.6	SLV 10	-490.14	-2124.05	0.281	4.33	Si
0.13	0.000308	0.05	0.000308	0.05	450.55	SLV 7	464.87	2124.05	0.281	4.57	-482.73	SLV 10	-490.14	-2124.05	0.281	4.33	Si
0.14	0.000308	0.05	0.000308	0.05	464.87	SLV 7	464.87	2124.05	0.281	4.57	-490.14	SLV 10	-490.14	-2124.05	0.281	4.33	Si

#### Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000308	0.05	0.000308	0.05	80.41	SLD 11	148.54	2124.05	0.281	14.3	-212.9	SLD 6	-212.9	-2124.05	0.281	9.98	Si
0.07	0.000308	0.05	0.000308	0.05	132.22	SLD 7	191.97	2124.05	0.281	11.06	-210.18	SLD 10	-217.23	-2124.05	0.281	9.78	Si
0.13	0.000308	0.05	0.000308	0.05	183.85	SLD 7	191.97	2124.05	0.281	11.06	-216.03	SLD 10	-217.23	-2124.05	0.281	9.78	Si
0.14	0.000308	0.05	0.000308	0.05	191.97	SLD 7	191.97	2124.05	0.281	11.06	-217.23	SLD 10	-217.23	-2124.05	0.281	9.78	Si

#### Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcl	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000072	0.000308	0	1683	SLU 38	1683	3366	19049	5058	5058	1	3	Si
0.07	0.0000072	0.000308	0	1670	SLU 38	1670	3366	19049	5058	5058	1	3.03	Si
0.14	0.0000072	0.000308	0	1657	SLU 38	1657	3366	19049	5058	5058	1	3.05	Si

#### Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcl	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000072	0.000308	0	2663	SLV 3	2663	3366	19049	5058	5058	1	1.9	Si
0	0.0000072	0.000308	0	-1871	SLV 14	-1871	-3366	-19049	-5058	-5058	1	2.7	Si



x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrzd	Vrsd	Vult	cotgθ	coeff	Verifica
0.07	0.0000072	0.000308	0	2650	SLV 3	2650	3366	19049	5058	5058	1	1.91	Si
0.07	0.0000072	0.000308	0	-1884	SLV 14	-1884	-3366	-19049	-5058	-5058	1	2.68	Si
0.14	0.0000072	0.000308	0	2637	SLV 3	2637	3366	19049	5058	5058	1	1.92	Si
0.14	0.0000072	0.000308	0	-1897	SLV 14	-1897	-3366	-19049	-5058	-5058	1	2.67	Si

#### Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrzd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000072	0.000308	0	1366	SLD 3	1366	3366	19049	5058	5058	1	3.7	Si
0	0.0000072	0.000308	0	-573	SLD 14	-573	-3366	-19049	-5058	-5058	1	8.82	Si
0.07	0.0000072	0.000308	0	1352	SLD 3	1352	3366	19049	5058	5058	1	3.74	Si
0.07	0.0000072	0.000308	0	-586	SLD 14	-586	-3366	-19049	-5058	-5058	1	8.62	Si
0.14	0.0000072	0.000308	0	1339	SLD 3	1339	3366	19049	5058	5058	1	3.78	Si
0.14	0.0000072	0.000308	0	-600	SLD 14	-600	-3366	-19049	-5058	-5058	1	8.44	Si

#### Verifiche delle tensioni in esercizio

x	Rara								Quasi permanente								Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.		Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.		
0	-82.8	18	-82.8	23386	1494000	350789	36000000	-66.25	2	-66.25	18711	1120500					Si
0.07	38.92	9	105.24	29722	1494000	445833	36000000										Si
0.07	-49.21	18	-82.8	23386	1494000	350789	36000000	-38.98	2	-66.25	18711	1120500					Si
0.14	105.24	9	105.24	29722	1494000	445833	36000000										Si
0.14	-16.53	18	-58.5	16521	1494000	247822	36000000	-12.63	2	-46.5	13135	1120500					Si

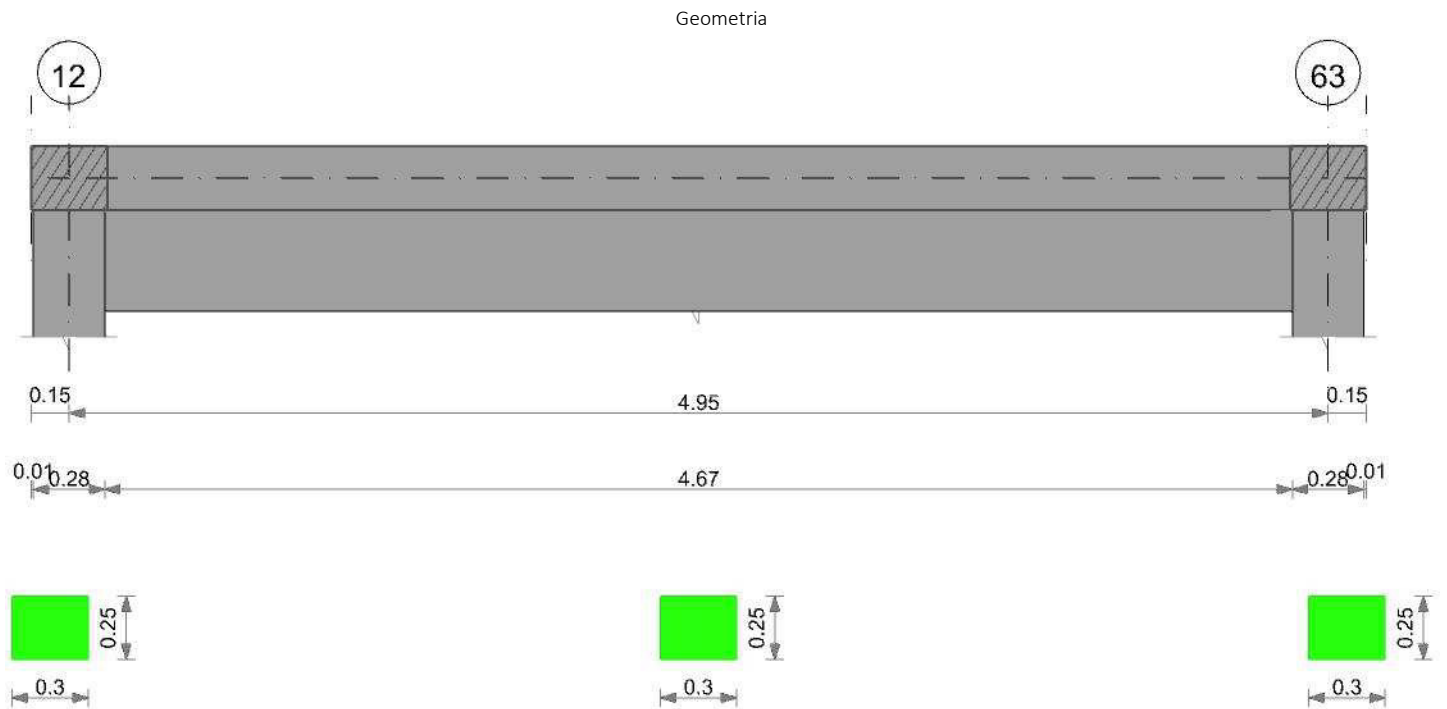
#### Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

#### Verifica di deformabilità

x	Rara				Frequente				Quasi permanente							Verifica
	Elastica+	Elastica-	Fess.+	Fess.-	Elastica+	Elastica-	Fess.+	Fess.-	Elastica+	Elastica-	Fess. viscosa+	Comb.	Fess. viscosa-	Comb.	l/f	
0.06	0	0	0	0	0	0	0	0	0	0	0	1	0	1	9999	Si
0.07	0	0	0	0	0	0	0	0	0	0	0	1	0	1	9999	Si

### CORDOLO SOTTOTETTO 7



#### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

#### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 30x25	Rettangolare	0.3	0.25	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

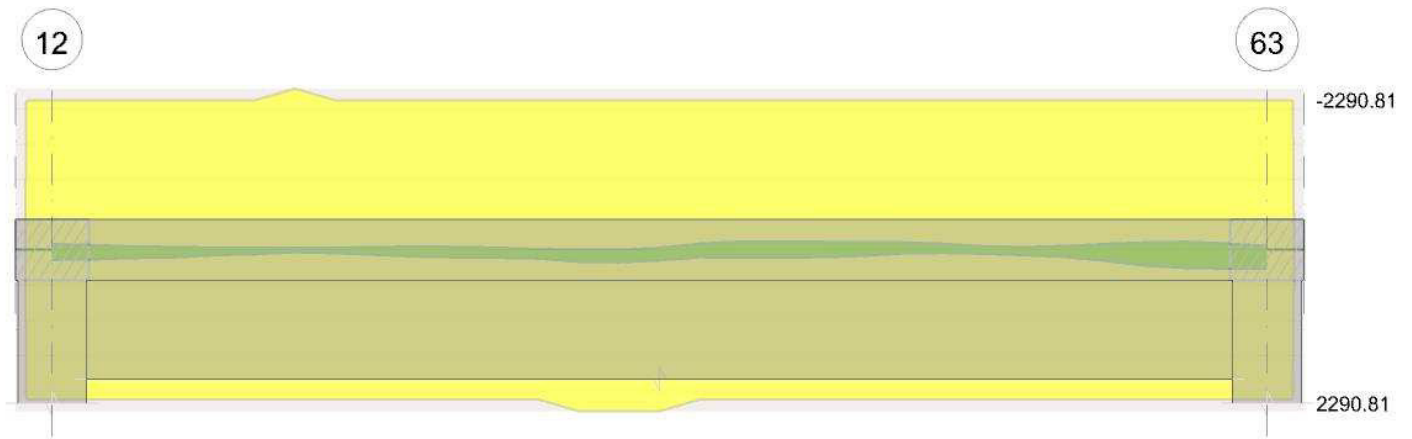


Diagramma verifica stato limite ultimo taglio

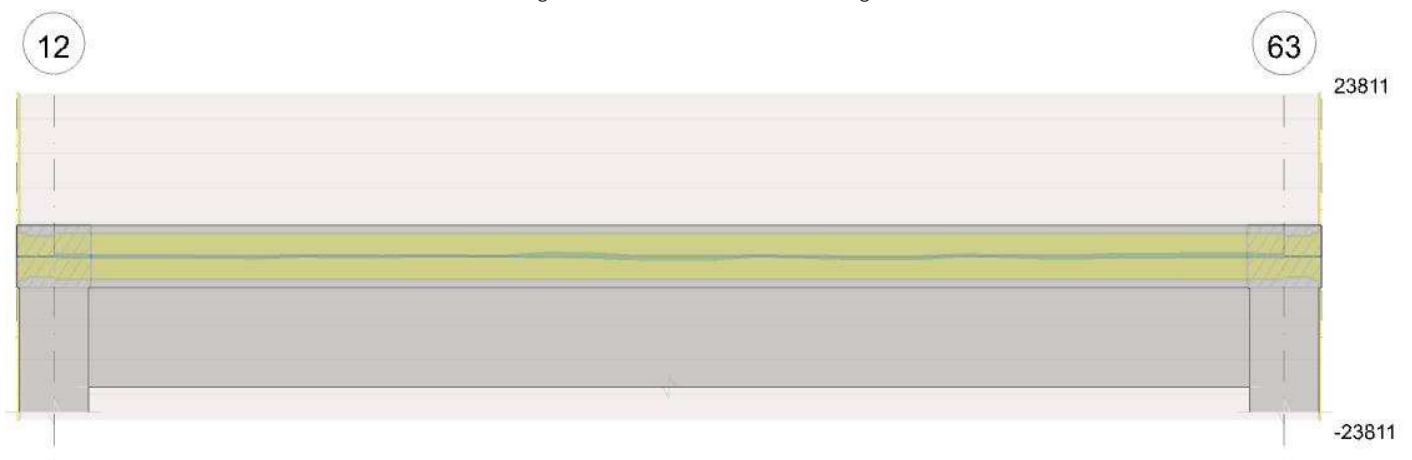
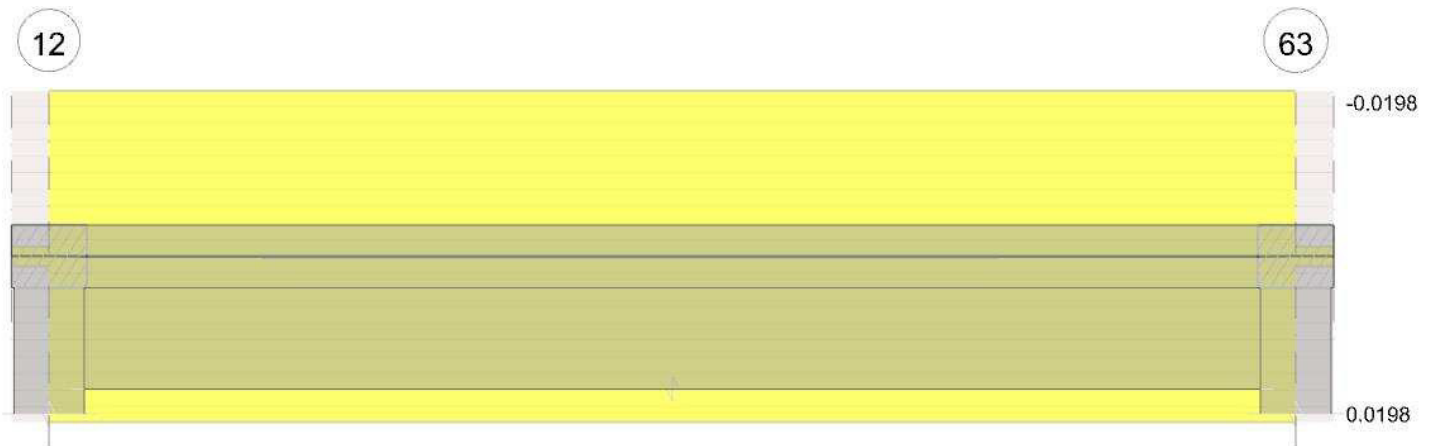


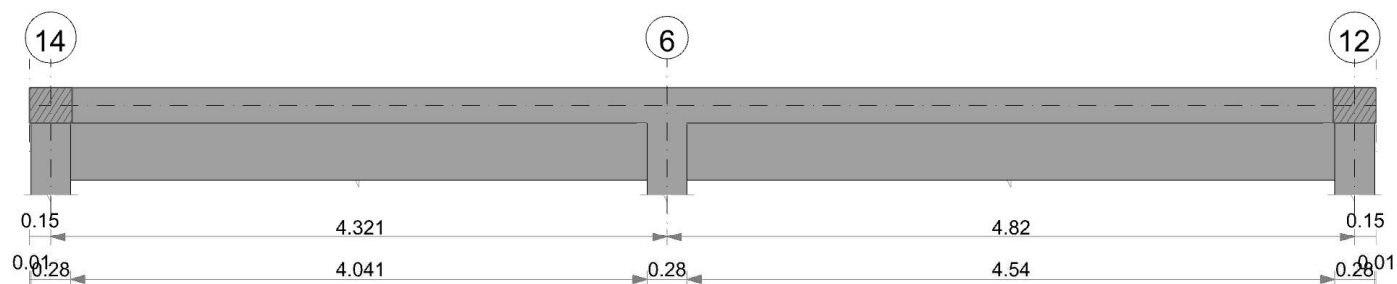
Diagramma verifica stato limite esercizio quasi permanente freccia



Output campate

CORDOLO SOTTOTETTO 8

Geometria



#### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

#### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 30x25	Rettangolare	0.3	0.25	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

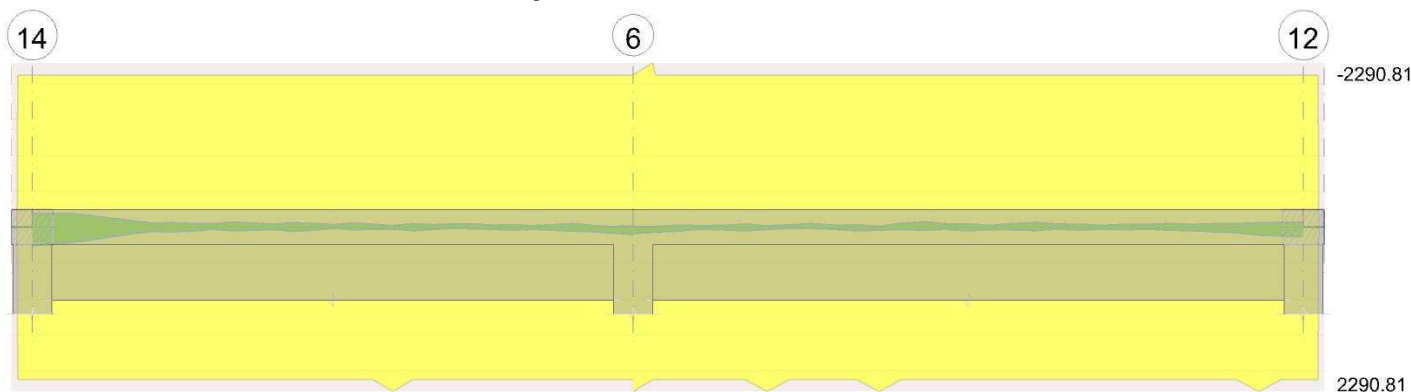


Diagramma verifica stato limite ultimo taglio

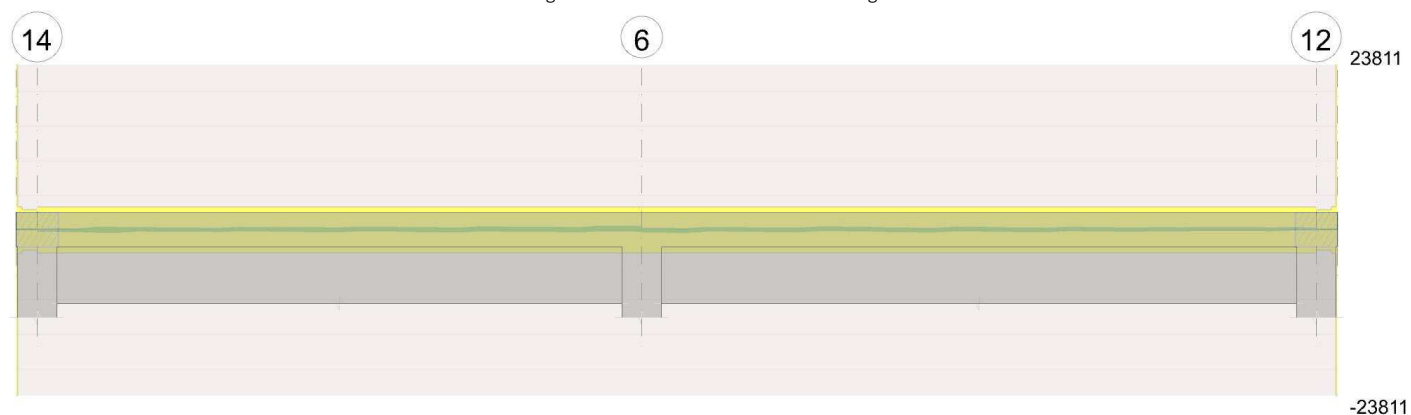
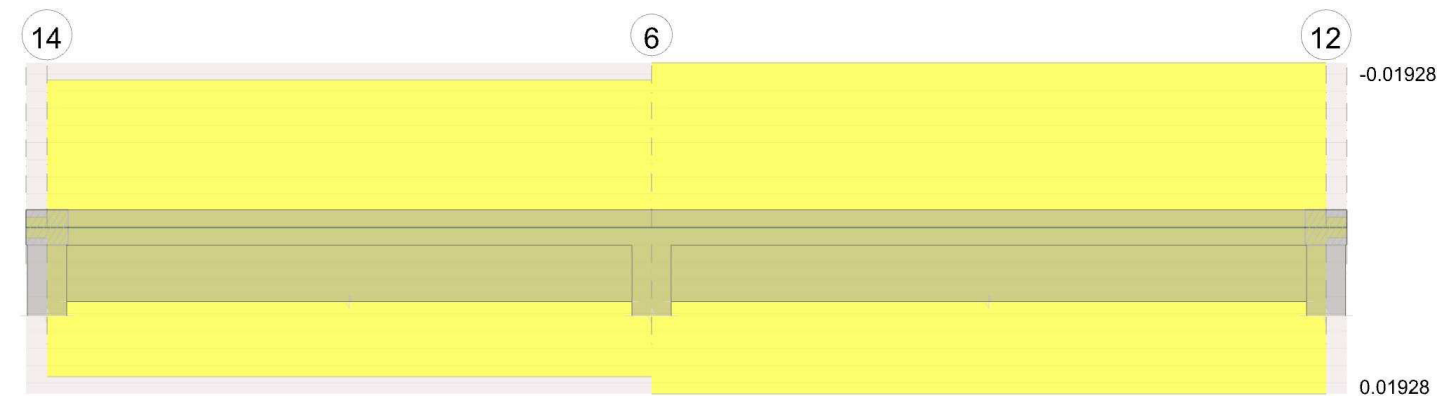


Diagramma verifica stato limite esercizio quasi permanente freccia

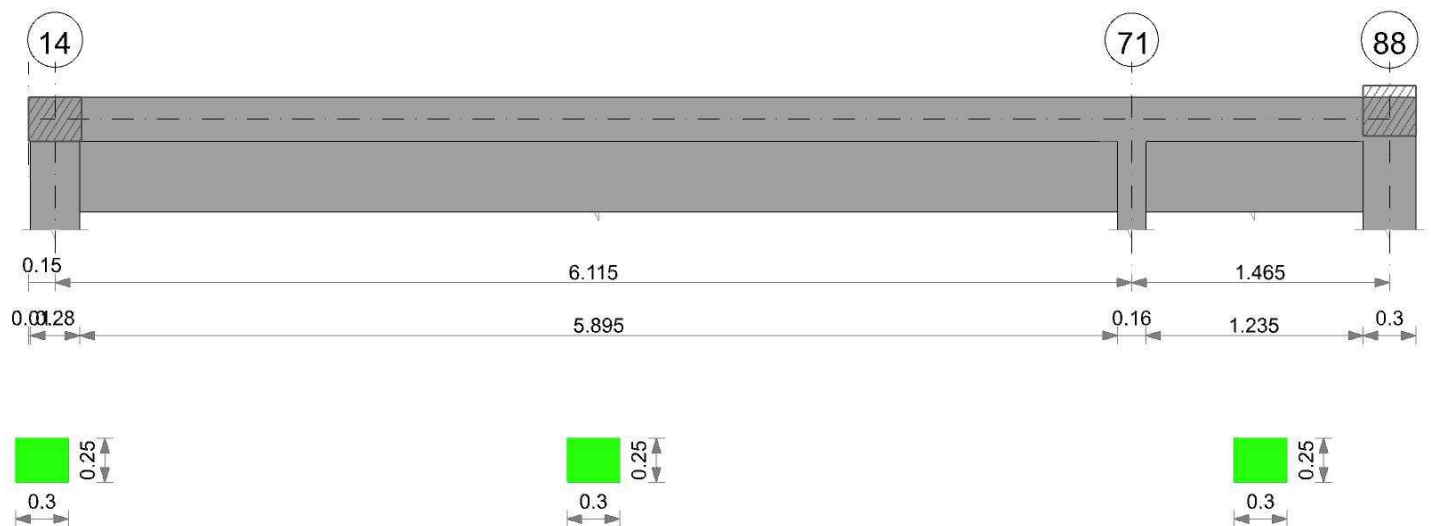




Output campate

## CORDOLO SOTTOTETTO 9

Geometria



### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 30x25	Rettangolare	0.3	0.25	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

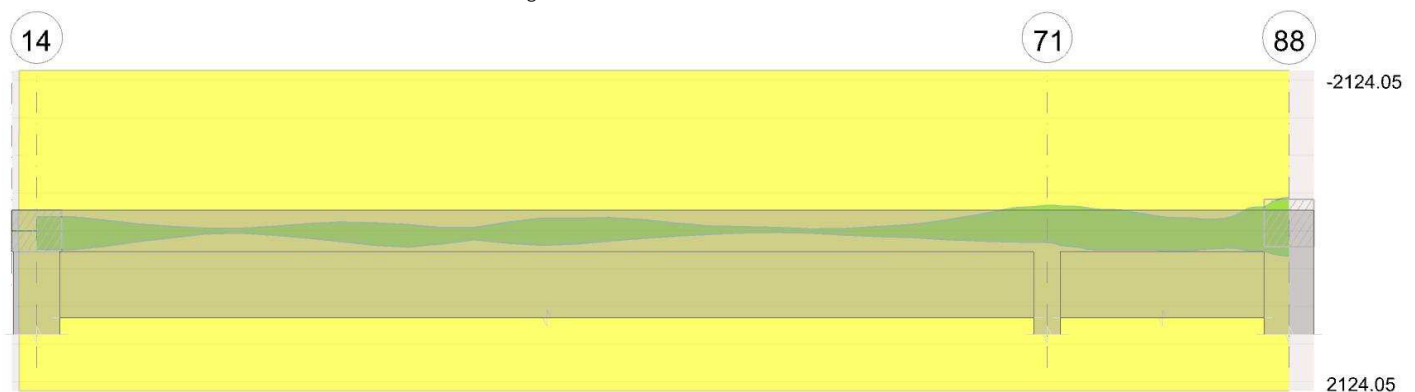


Diagramma verifica stato limite ultimo taglio

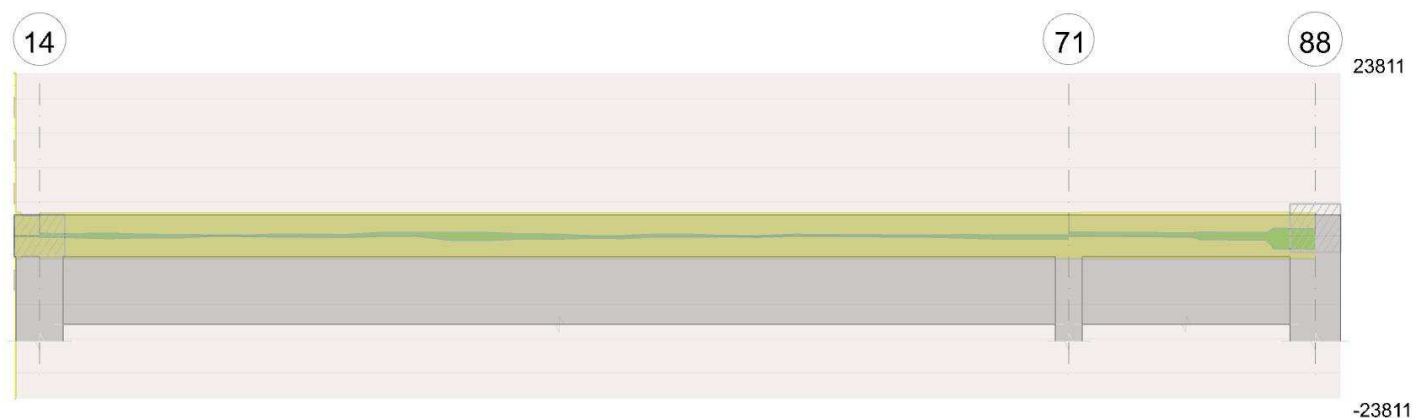
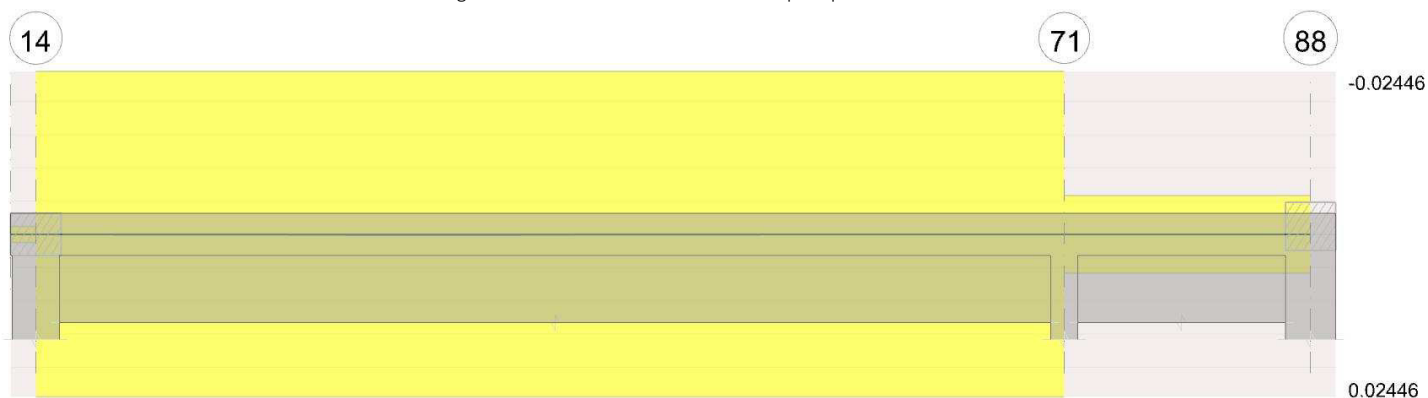


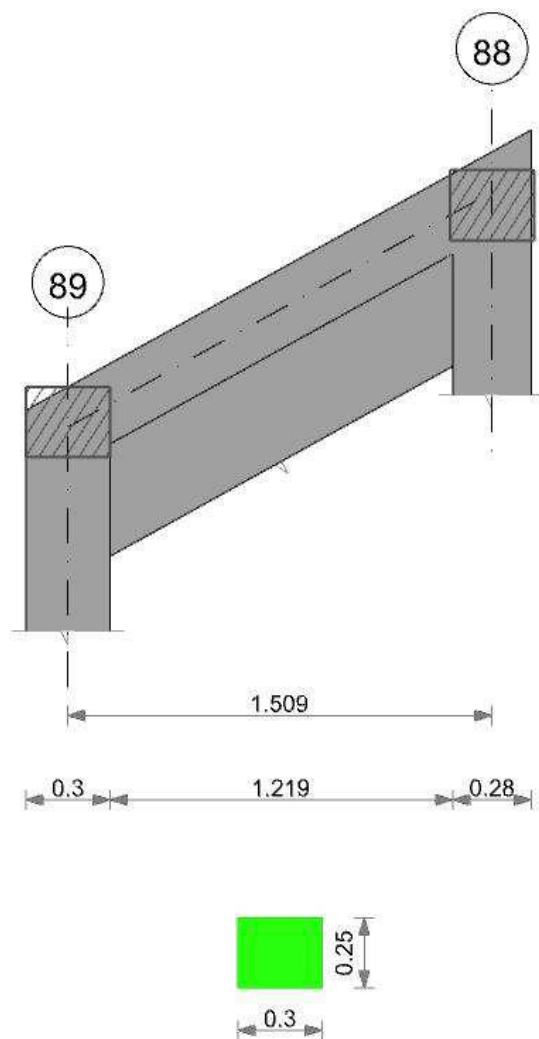
Diagramma verifica stato limite esercizio quasi permanente freccia



Output campate

CORDOLO SOTTOTETTO 10

Geometria



#### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

#### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 30x25	Rettangolare	0.3	0.25	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

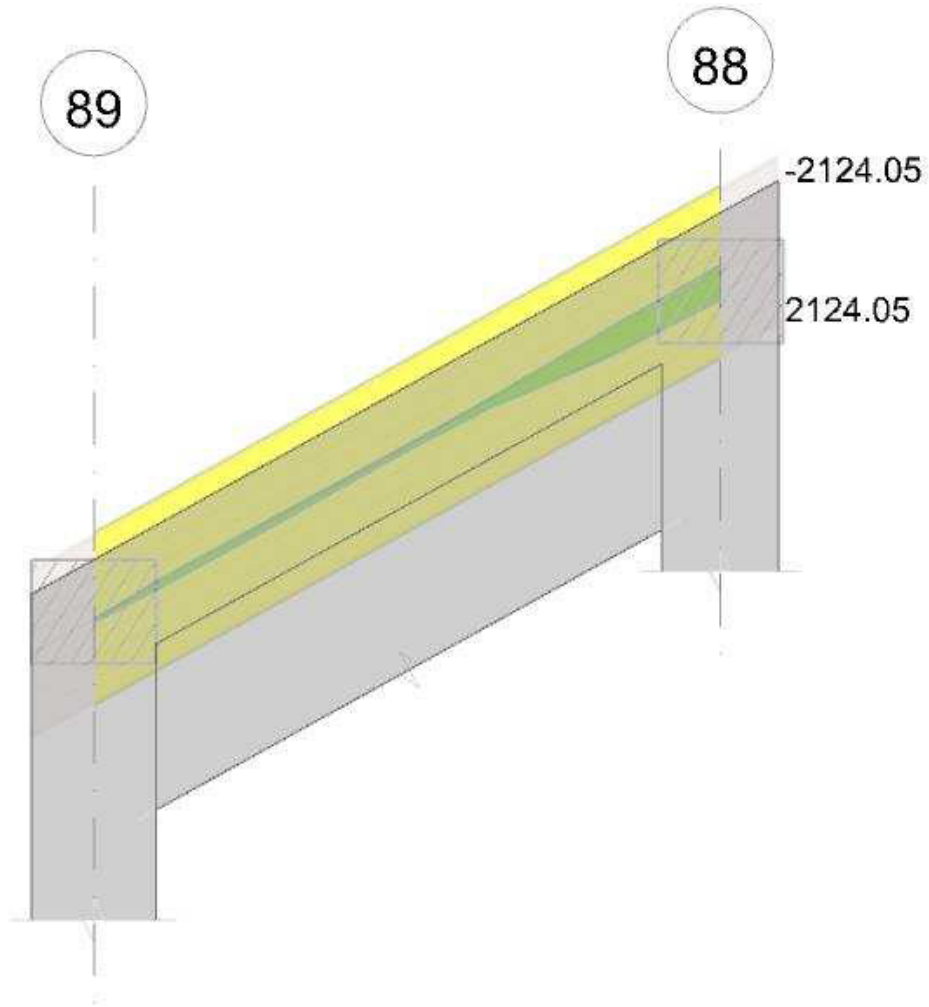


Diagramma verifica stato limite ultimo taglio

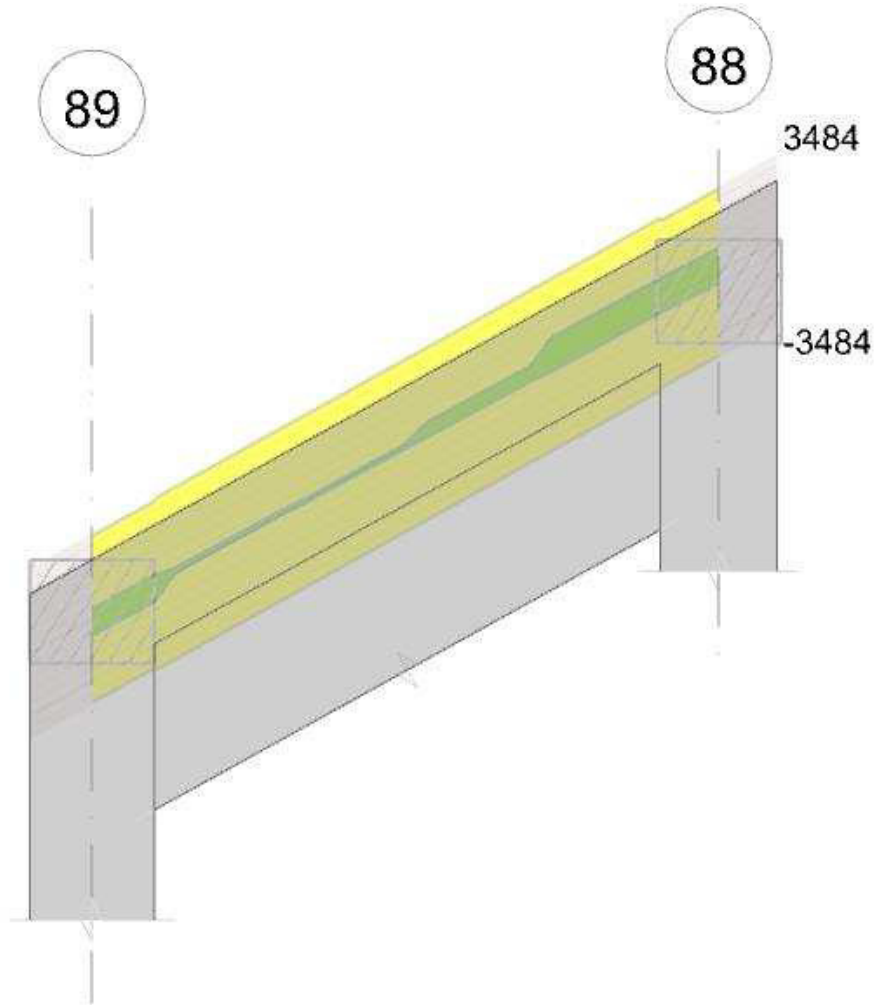
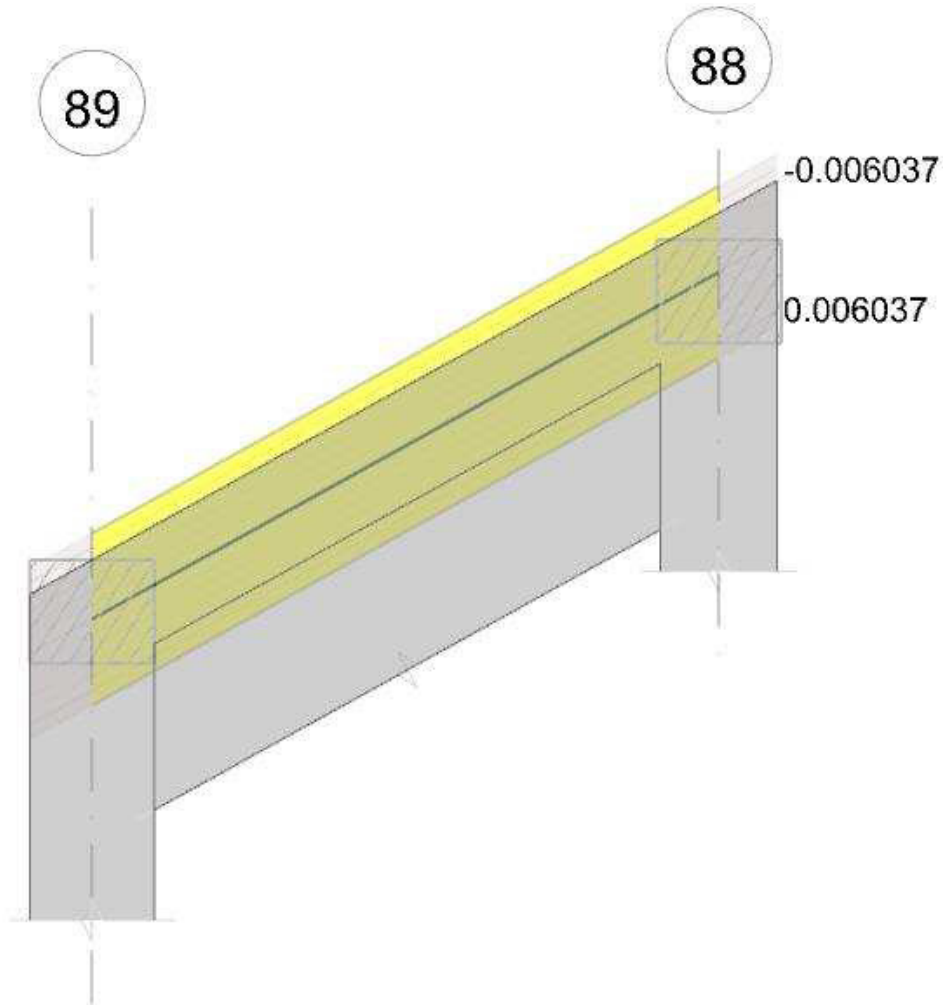


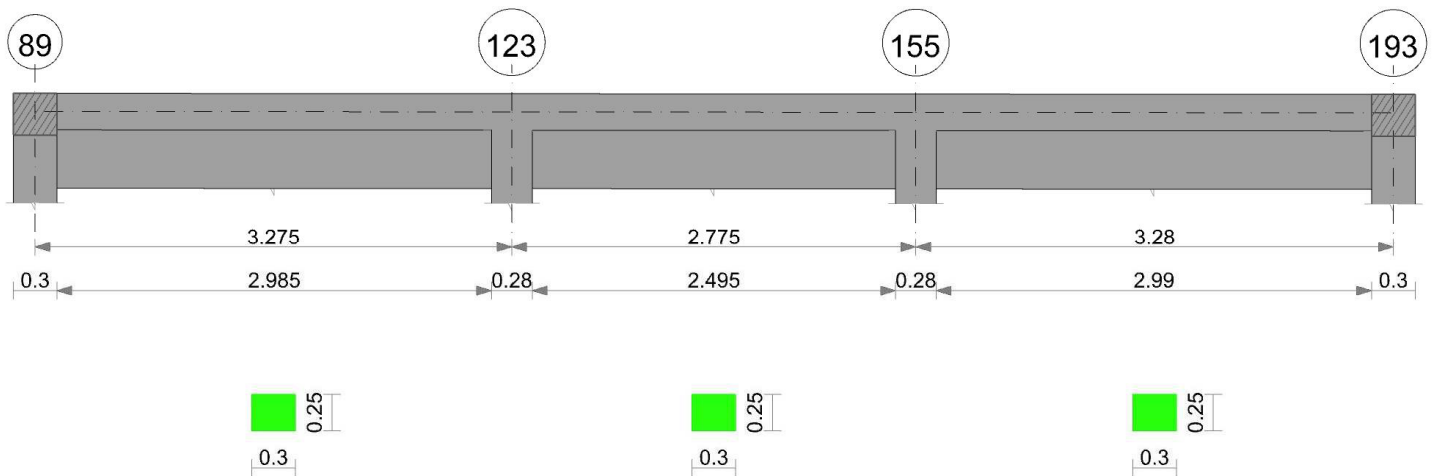
Diagramma verifica stato limite esercizio quasi permanente freccia



Output campate

## CORDOLO SOTTOTETTO 11

Geometria



### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 30x25	Rettangolare	0.3	0.25	0.035	0.035	0.035



Diagramma verifica stato limite ultimo flessione

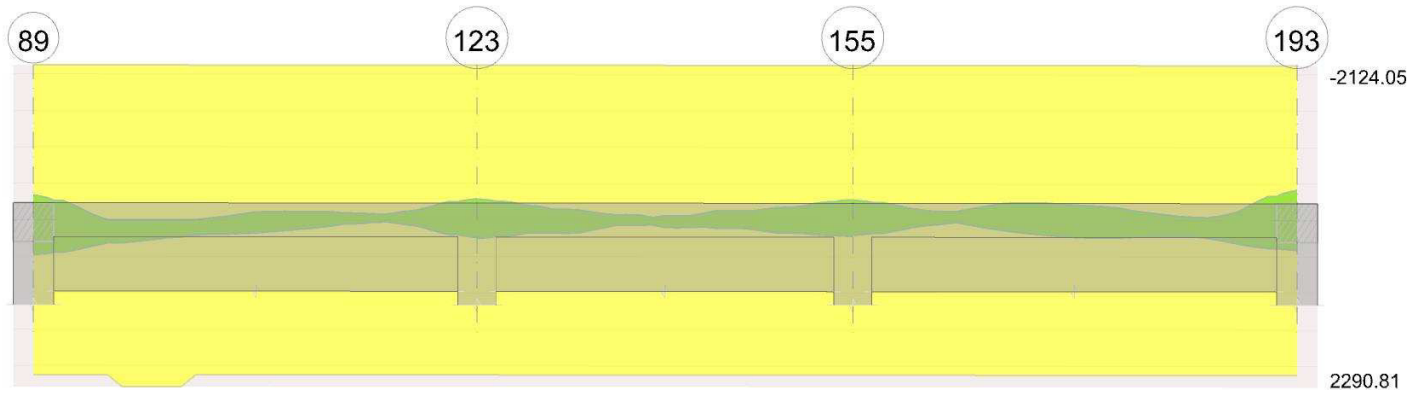


Diagramma verifica stato limite ultimo taglio

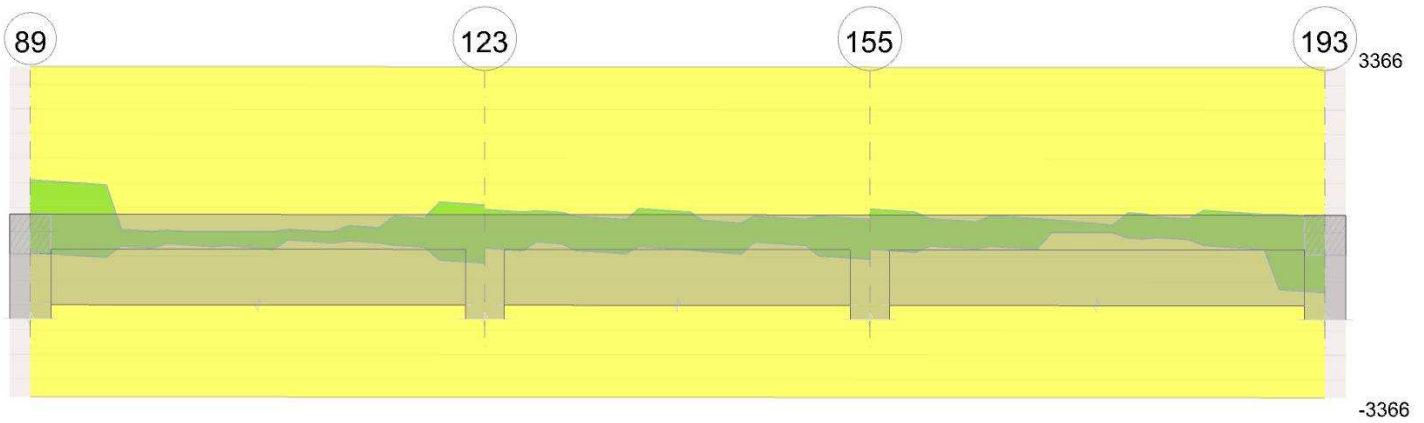
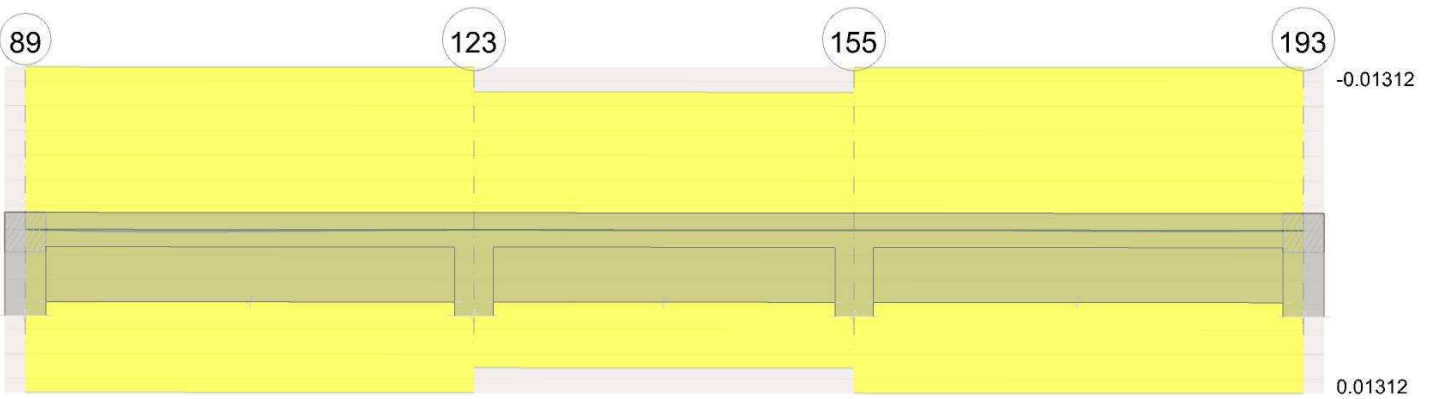


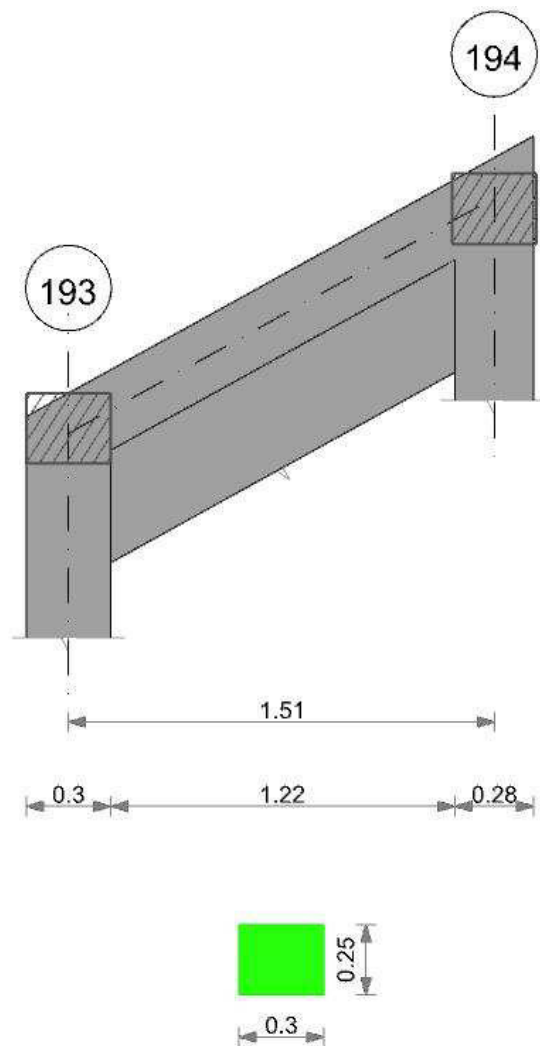
Diagramma verifica stato limite esercizio quasi permanente freccia



Output campate

CORDOLO SOTTOTETTO 12

Geometria



#### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

#### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 30x25	Rettangolare	0.3	0.25	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione



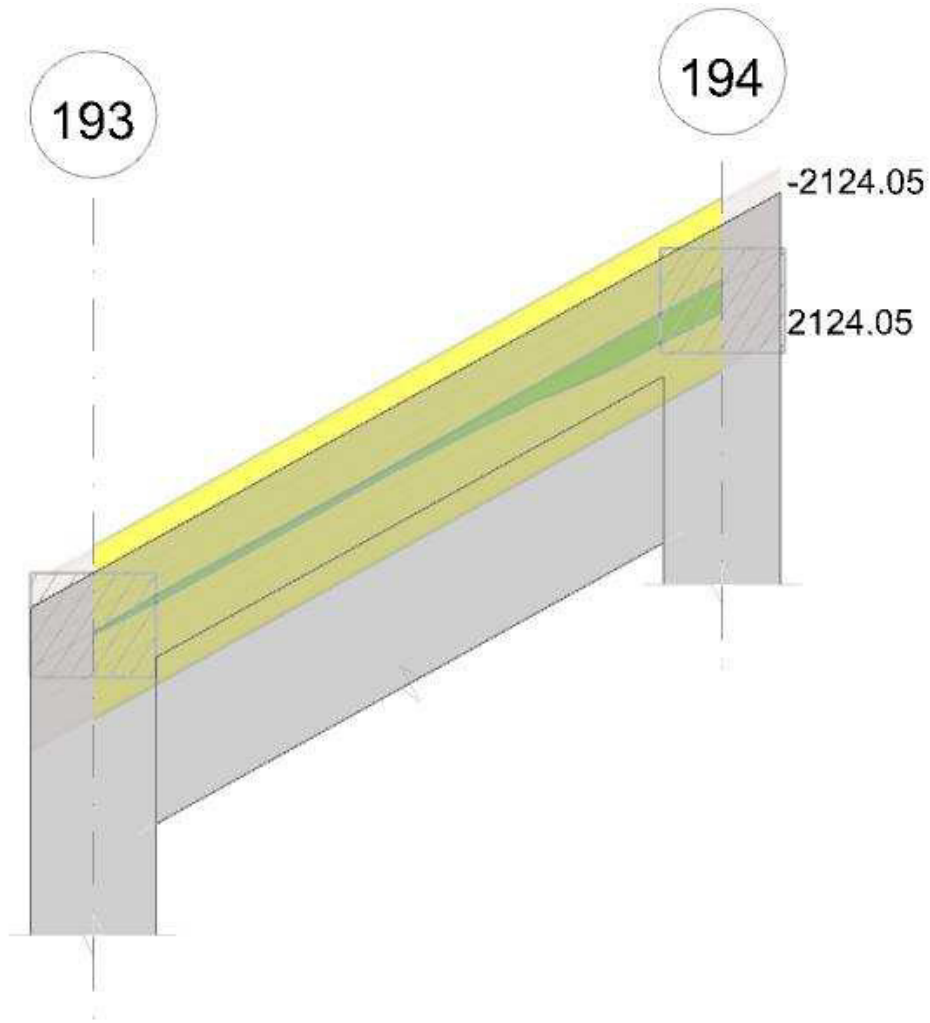
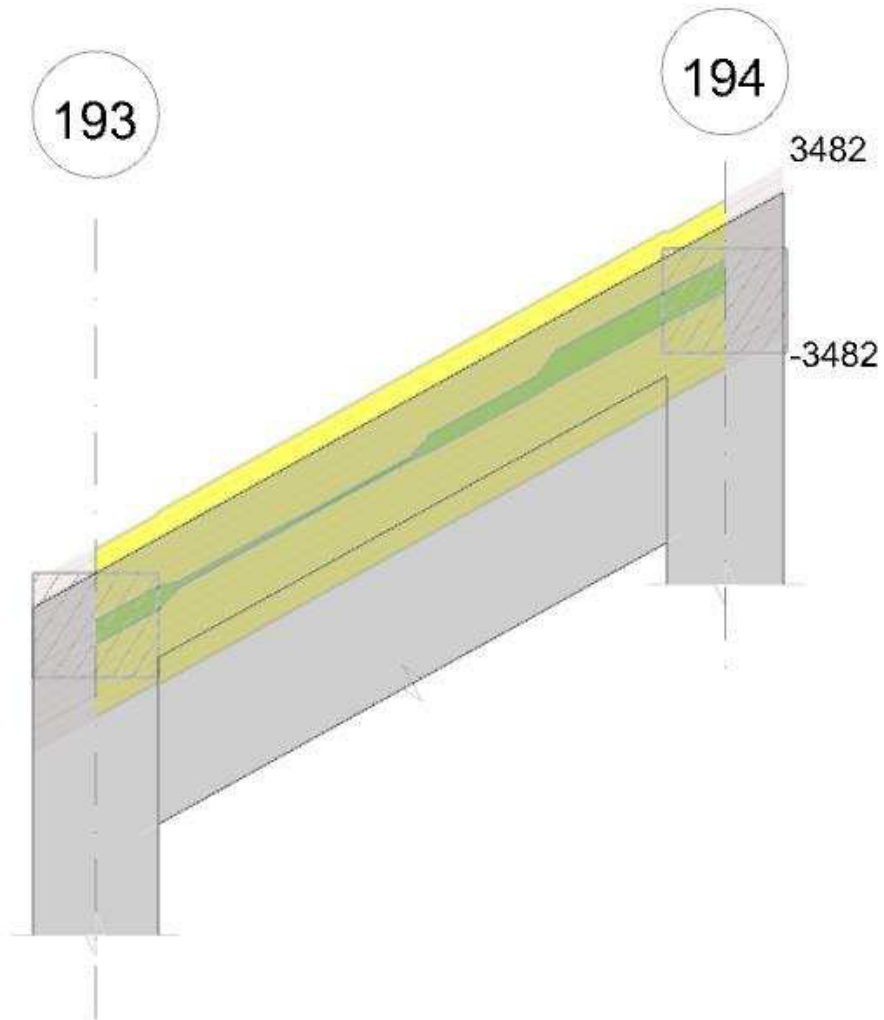
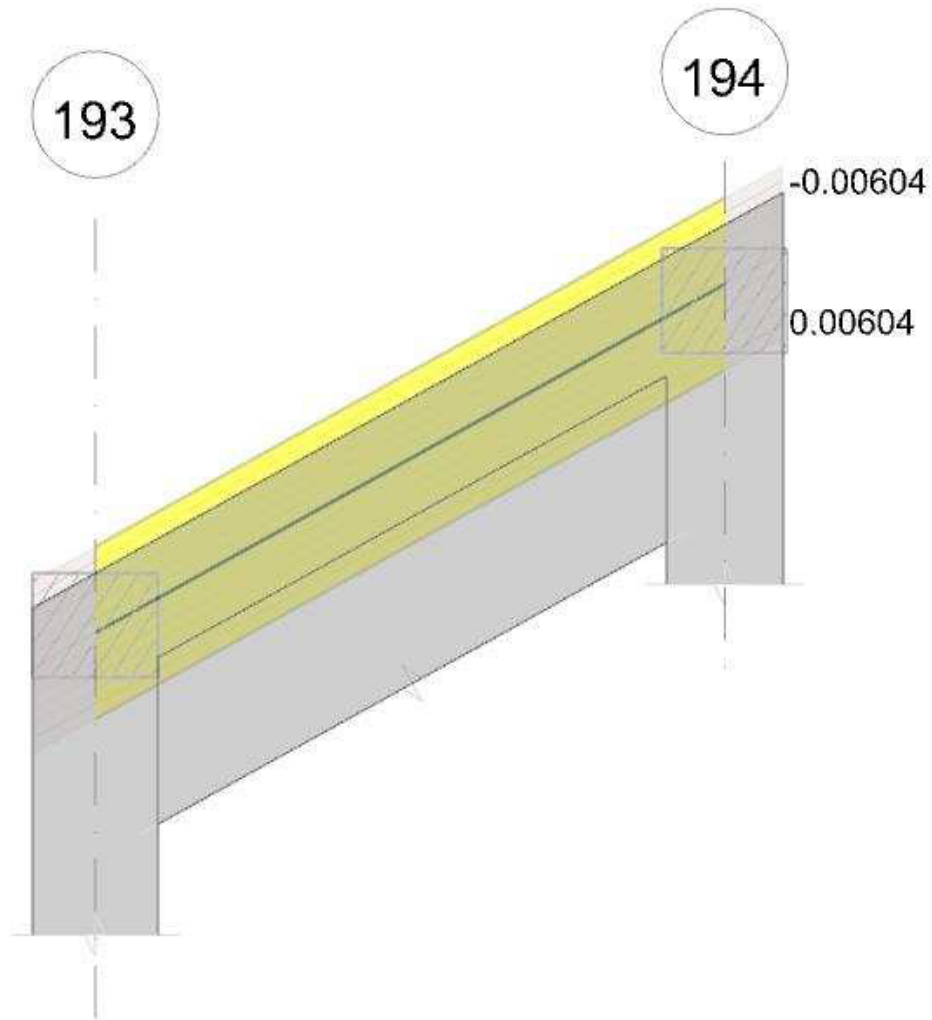


Diagramma verifica stato limite ultimo taglio

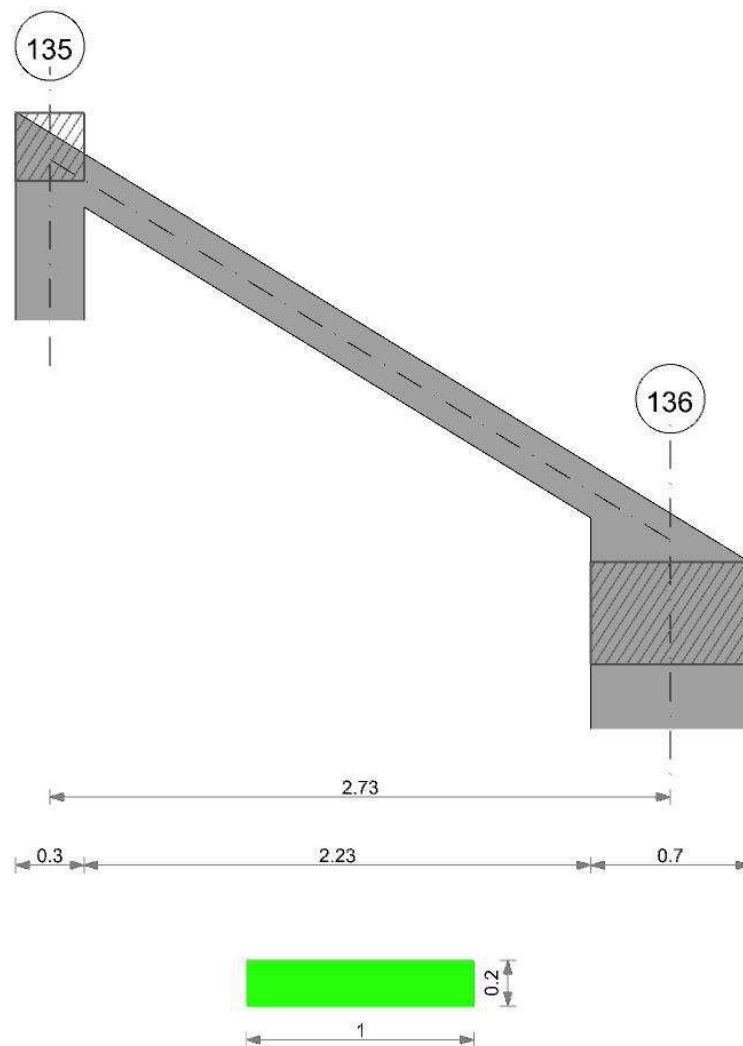




Output campate

RAMPA 1

Geometria



#### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

#### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 100x20	Rettangolare	1	0.2	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

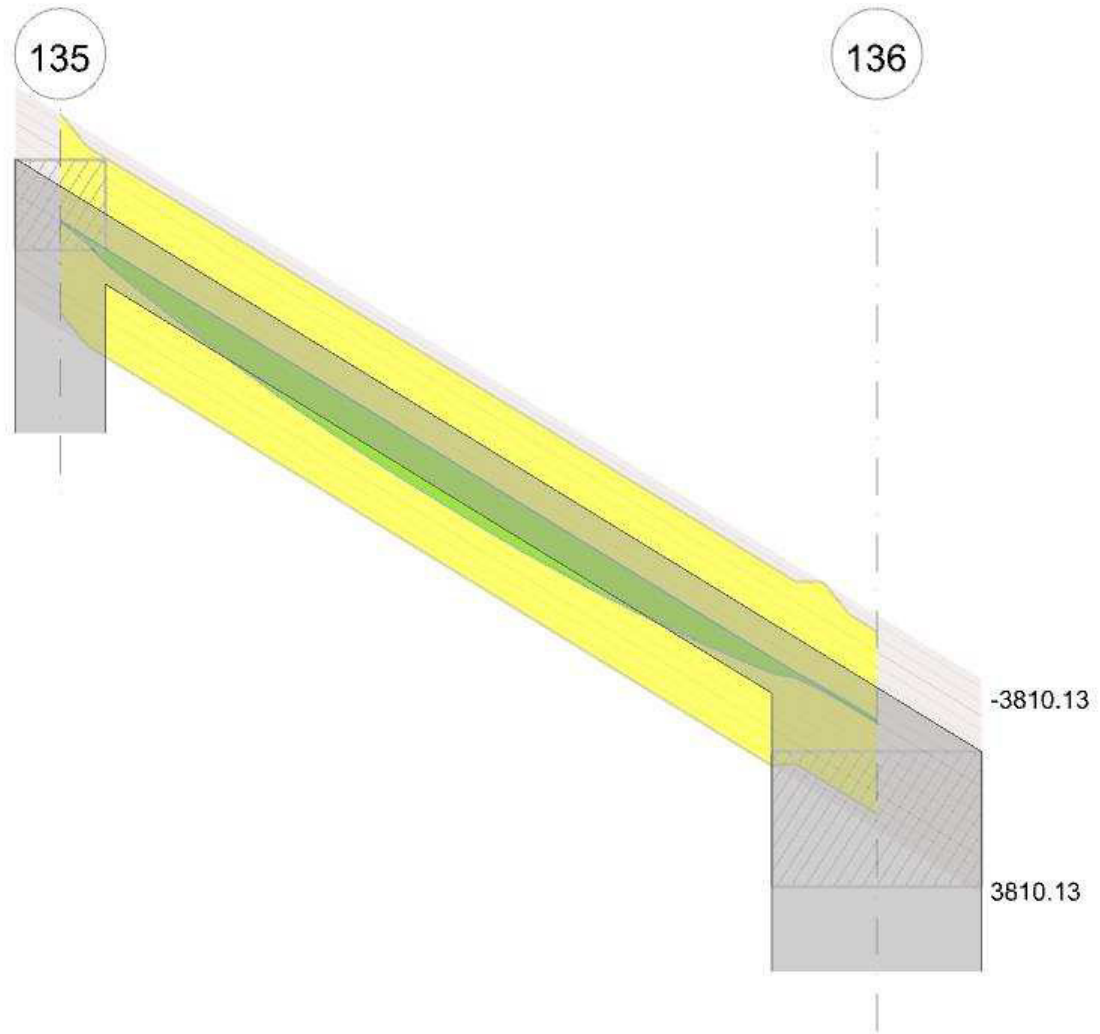


Diagramma verifica stato limite ultimo taglio

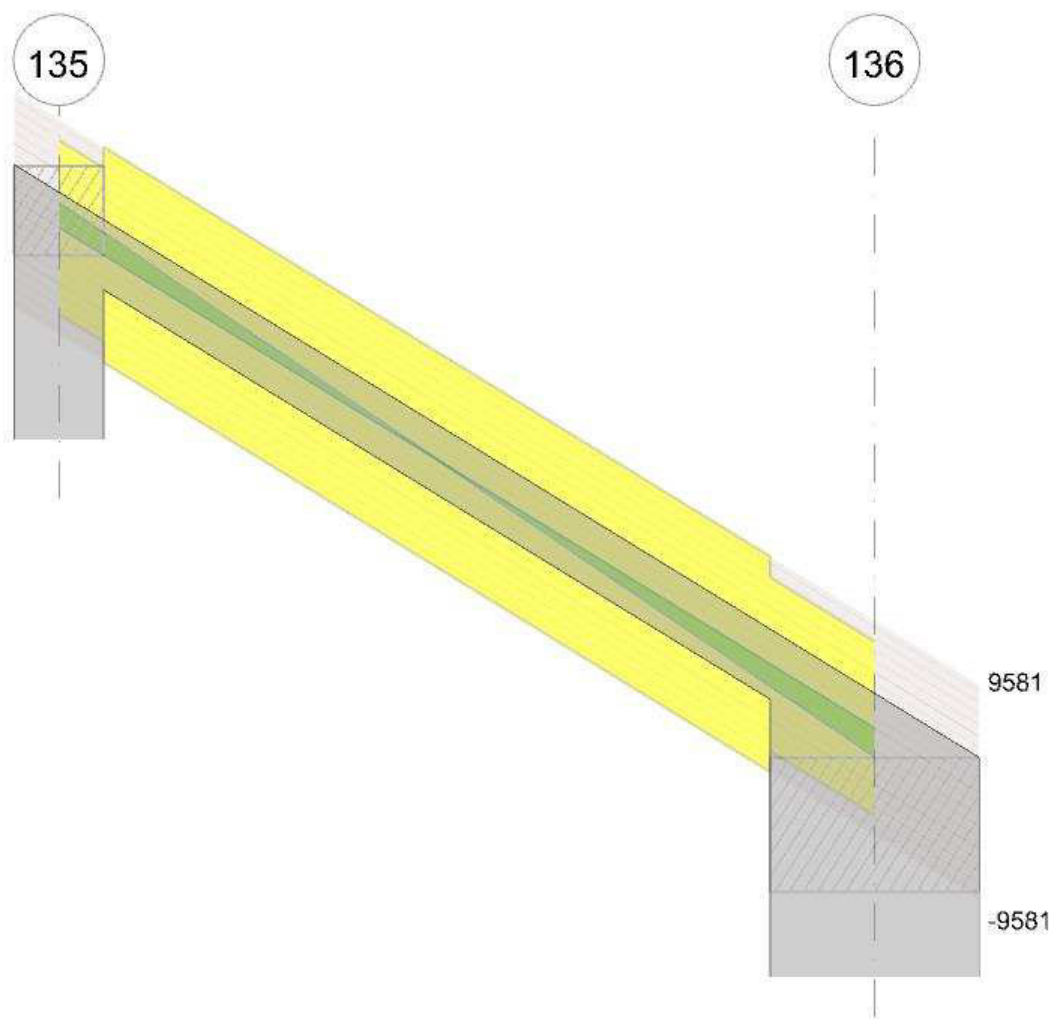
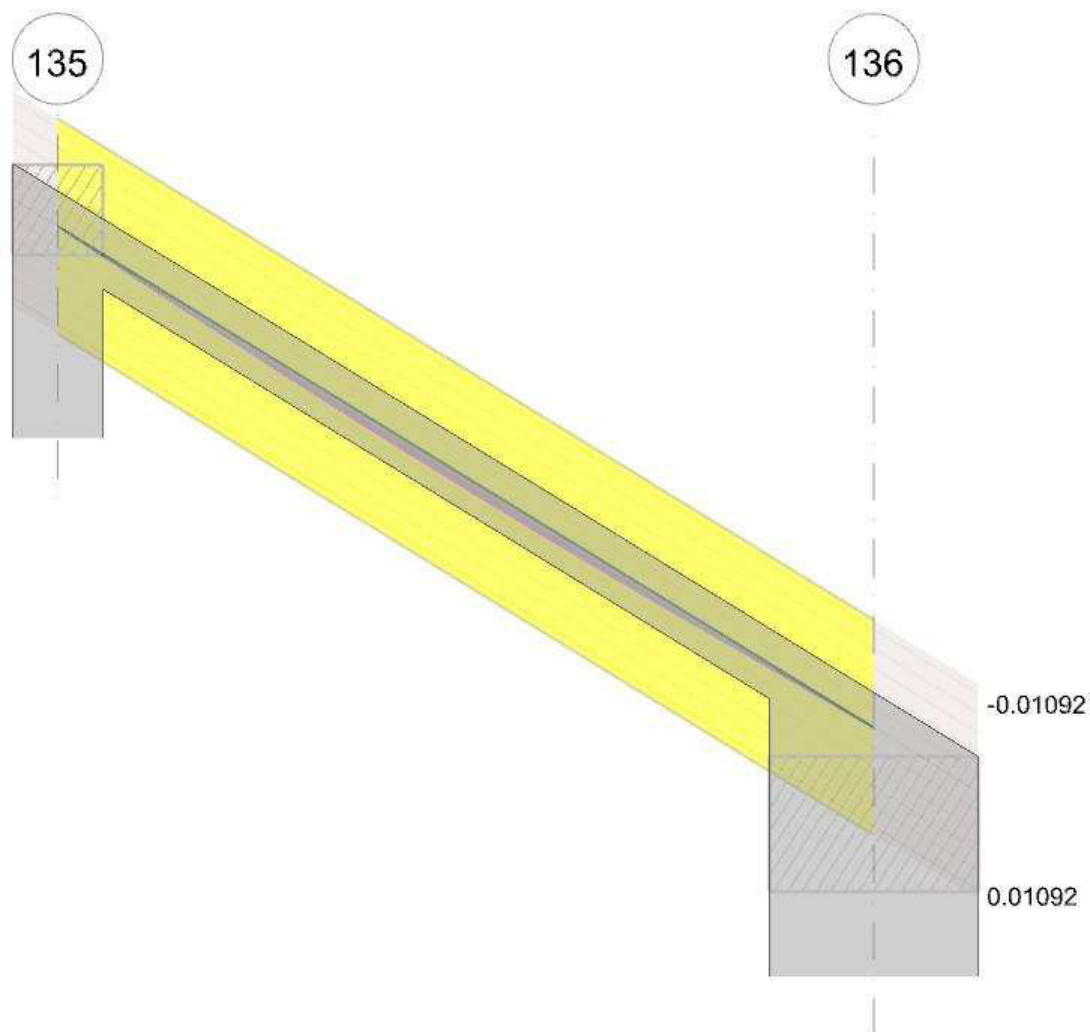


Diagramma verifica stato limite esercizio quasi permanente freccia



#### Output campate

Campata 1 tra i fili 135 - 136, sezione R 100x20, asta 838

#### Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000603	0.051	0.000603	0.051							-49.1	SLU 84	-49.1	-3810.13	0.244	77.6	Si
0.15	0.000603	0.051	0.000603	0.051	331.31	SLU 82	486.65	3810.13	0.244	7.83							Si
1.27	0.000603	0.051	0.000603	0.051	1673.45	SLU 82	1673.45	3810.13	0.244	2.28							Si
1.36	0.000603	0.051	0.000603	0.051	1664.19	SLU 82	1671.01	3810.13	0.244	2.28							Si
2.38	0.000603	0.051	0.000603	0.051	364.27	SLU 82	516.76	3810.13	0.244	7.37							Si
2.73	0.000603	0.051	0.000603	0.051							-592.05	SLU 83	-29.87	-3810.13	0.244	127.57	Si

#### Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000603	0.051	0.000603	0.051							-37.99	SLV 4	-37.99	-3222.61	0.268	84.83	Si
0.15	0.000603	0.051	0.000603	0.051	198.14	SLV 15	288.75	3222.61	0.268	11.16							Si
1.27	0.000603	0.051	0.000603	0.051	1009.22	SLV 12	1009.22	3222.61	0.268	3.19							Si
1.36	0.000603	0.051	0.000603	0.051	1006.78	SLV 12	1008.58	3222.61	0.268	3.2							Si
2.38	0.000603	0.051	0.000603	0.051	283.98	SLV 8	370.46	3222.61	0.268	8.7							Si
2.73	0.000603	0.051	0.000603	0.051							-426.62	SLV 9	-94.16	-3222.61	0.268	34.22	Si

#### Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000603	0.051	0.000603	0.051							-33.24	SLD 4	-33.24	-3222.61	0.268	96.96	Si
0.15	0.000603	0.051	0.000603	0.051	194.43	SLD 15	284.92	3222.61	0.268	11.31							Si
1.27	0.000603	0.051	0.000603	0.051	988.94	SLD 12	988.94	3222.61	0.268	3.26							Si
1.36	0.000603	0.051	0.000603	0.051	984.88	SLD 12	987.87	3222.61	0.268	3.26							Si
2.38	0.000603	0.051	0.000603	0.051	243.79	SLD 8	331.49	3222.61	0.268	9.72							Si
2.73	0.000603	0.051	0.000603	0.051							-380.09	SLD 9	-51.4	-3222.61	0.268	62.69	Si

#### Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcl	Vrsl	Vult	cotgθ	coeff	Verifica
0	0	0.000603	0	2193	SLU 82	2193	7725	47304	0	7725	1	3.52	Si



x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0.15	0.0000183	0.000603	0	1934	SLU 82	1934	7725	47304	9581	9581	1	4.95	Si
1.36	0.0000183	0.000603	0	-161	SLU 83	-161	-7725	-47304	-9581	-9581	1	59.5	Si
2.38	0.0000183	0.000603	0	-1911	SLU 83	-1911	-7725	-47304	-9581	-9581	1	5.01	Si
2.73	0	0.000603	0	-2515	SLU 83	-2515	-7725	-47304	0	-7725	1	3.07	Si

#### Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0	0.000603	0	1302	SLV 8	1302	7725	47304	0	7725	1	5.93	Si
0.15	0.0000183	0.000603	0	1152	SLV 8	1152	7725	47304	9581	9581	1	8.32	Si
1.36	0.0000183	0.000603	0	-119	SLV 9	-119	-7725	-47304	-9581	-9581	1	80.29	Si
2.38	0.0000183	0.000603	0	-1137	SLV 9	-1137	-7725	-47304	-9581	-9581	1	8.42	Si
2.73	0	0.000603	0	-1488	SLV 9	-1488	-7725	-47304	0	-7725	1	5.19	Si

#### Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0	0.000603	0	1287	SLD 8	1287	7725	47304	0	7725	1	6	Si
0.15	0.0000183	0.000603	0	1137	SLD 8	1137	7725	47304	9581	9581	1	8.43	Si
1.36	0.0000183	0.000603	0	-105	SLD 9	-105	-7725	-47304	-9581	-9581	1	91.58	Si
2.38	0.0000183	0.000603	0	-1123	SLD 9	-1123	-7725	-47304	-9581	-9581	1	8.53	Si
2.73	0	0.000603	0	-1474	SLD 9	-1474	-7725	-47304	0	-7725	1	5.24	Si

#### Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	$\sigma_c$	$\sigma_{clim.}$	$\sigma_f$	$\sigma_{flim.}$	Mela	Comb.	Mdes	$\sigma_c$	$\sigma_{clim.}$	$\sigma_{FRP}$	$\sigma_{FRP\ lim.}$	
0	-35.68	21	-35.68	5024	1494000	75360	36000000	-29.66	2	-29.66	4177	1120500			Si
0.15	239.26	19	351.53	49503	1494000	742543	36000000	191.65	2	282.04	39718	1120500			Si
1.36	1202.63	19	1207.55	170050	1494000	2550757	36000000	967.61	2	971.54	136814	1120500			Si
2.38	263.21	19	373.41	52585	1494000	788773	36000000	212.12	2	300.78	42356	1120500			Si
2.73	-427.88	20	-21.54	3033	1494000	45491	36000000	-343.43	2	-17.71	2493	1120500			Si

#### Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

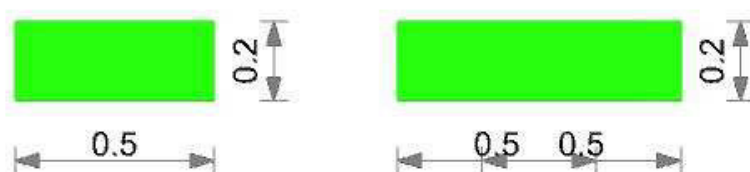
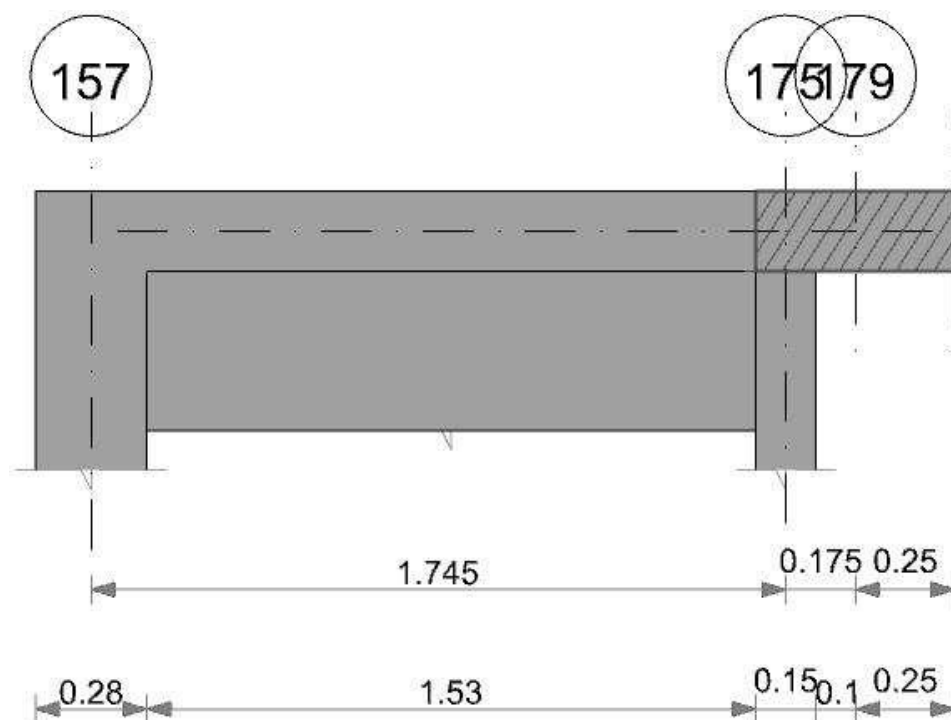
#### Verifica di deformabilità

x	Rara				Frequente				Quasi permanente							Verifica
	Elastica+	Elastica-	Fess.+	Fess.-	Elastica+	Elastica-	Fess.+	Fess.-	Elastica+	Elastica-	Fess. viscosa+	Comb.	Fess. viscosa-	Comb.	l/f	
0.15	0.0001	0.00007	0.00009	0.00006	0.00008	0.00007	0.00008	0.00006	0.00008	0.00007	0.0002	2	0.00018	2	9999	Si
1.36	0.00053	0.00038	0.00049	0.00035	0.00046	0.00038	0.00042	0.00035	0.00043	0.00038	0.00112	2	0.001	2	2446	Si
2.38	0.00019	0.00014	0.00018	0.00013	0.00017	0.00014	0.00015	0.00013	0.00016	0.00014	0.00041	2	0.00036	2	6733	Si

#### Trave a "Primo" 157-179

Geometria





#### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

#### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x20	Rettangolare	0.5	0.2	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

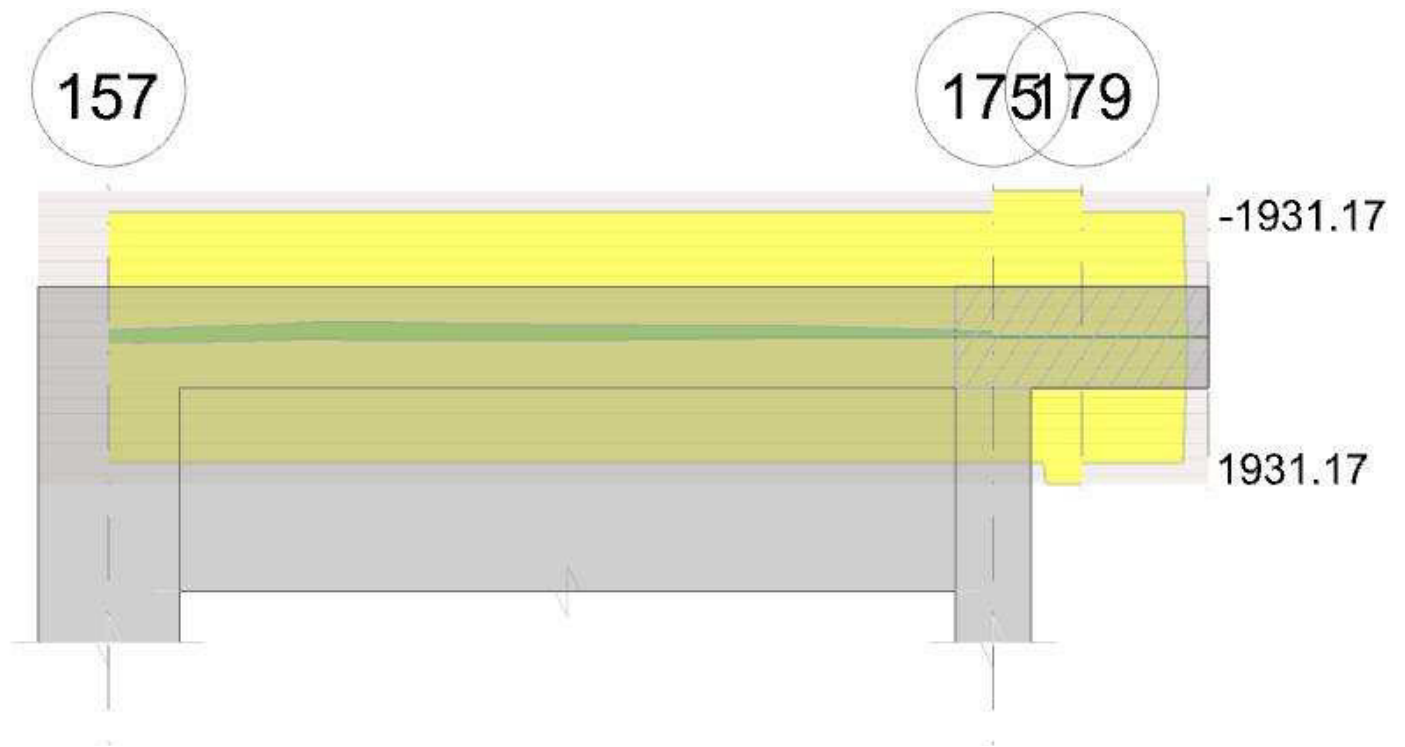


Diagramma verifica stato limite ultimo taglio

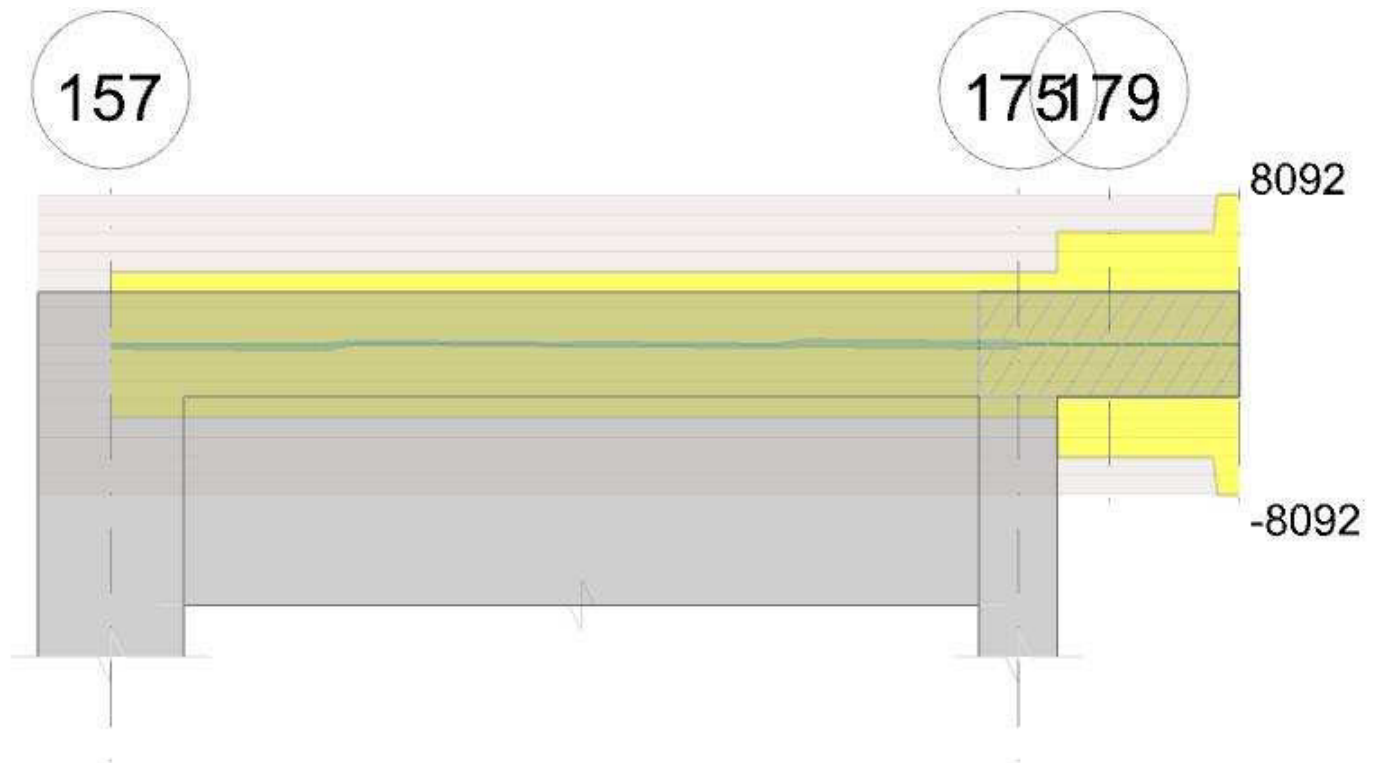
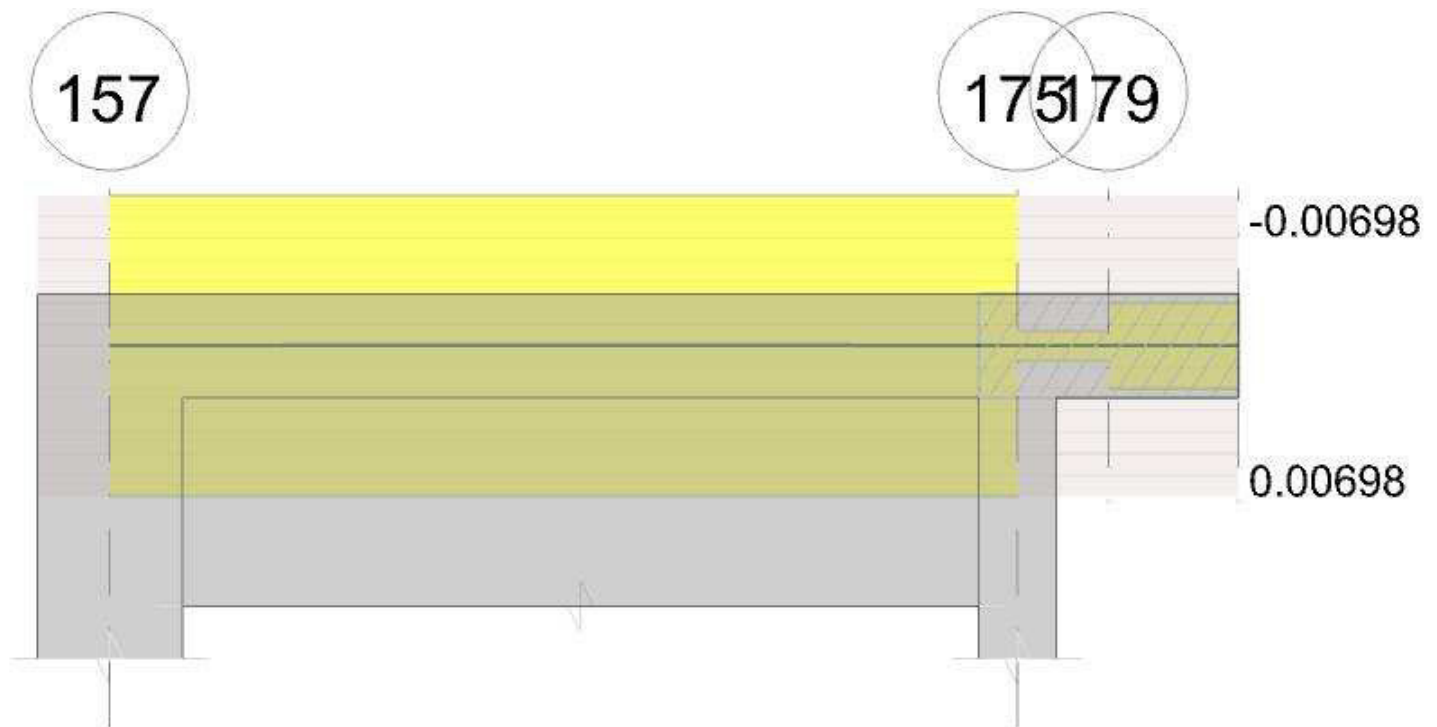


Diagramma verifica stato limite esercizio quasi permanente freccia



#### Output campate

Campata 2 tra i fili 175 - 179, sezione R 50x20, asta 343

#### Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000308	0.05	0.000308	0.05							-4.96	SLU 59	-2.83	-1931.17	0.242	682.23	Si
0.08	0.000308	0.05	0.000308	0.05							-1.61	SLU 49	-1.61	-1931.17	0.242	1198.05	Si
0.09	0.000308	0.05	0.000308	0.05							-1.23	SLU 49	-1.61	-1931.17	0.242	1198.05	Si
0.18	0.000308	0.05	0.000308	0.05	0.01	SLU 82	0.01	1931.17	0.242	+∞	0.01	SLU 6	-0.72	-1931.17	0.242	2688.94	Si

#### Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000308	0.05	0.000308	0.05							-3.82	SLV 14	-2.18	-1648.89	0.269	757.23	Si
0.08	0.000308	0.05	0.000308	0.05							-1.24	SLV 14	-1.24	-1648.89	0.269	1329.73	Si
0.09	0.000308	0.05	0.000308	0.05							-0.95	SLV 14	-1.24	-1648.89	0.269	1329.73	Si
0.18	0.000308	0.05	0.000308	0.05	0.01	SLV 4	0.01	1648.89	0.269	+∞	0.01	SLV 13	-0.55	-1648.89	0.269	2984.49	Si

#### Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000308	0.05	0.000308	0.05							-3.82	SLD 13	-2.18	-1648.89	0.269	757.23	Si
0.08	0.000308	0.05	0.000308	0.05							-1.24	SLD 13	-1.24	-1648.89	0.269	1329.77	Si
0.09	0.000308	0.05	0.000308	0.05							-0.95	SLD 13	-1.24	-1648.89	0.269	1329.77	Si
0.18	0.000308	0.05	0.000308	0.05	0.01	SLD 14	0.01	1648.89	0.269	+∞	0.01	SLD 3	-0.55	-1648.89	0.269	2984.58	Si

#### Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrzd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0	0.000308	0	57	SLU 63	57	3906	23811	0	3906	1	68.68	Si
0.08	0.0000115	0.000308	0	32	SLU 63	32	3906	23811	6069	6069	1	186.75	Si
0.09	0.0000115	0.000308	0	28	SLU 63	28	3906	23811	6069	6069	1	213.43	Si

#### Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrzd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0	0.000308	0	44	SLV 2	44	3906	23811	0	3906	1	89.28	Si
0.08	0.0000115	0.000308	0	25	SLV 2	25	3906	23811	6069	6069	1	242.74	Si
0.09	0.0000115	0.000308	0	22	SLV 2	22	3906	23811	6069	6069	1	277.42	Si
0.18	0.0000115	0.000308	0	0	Ger.	0	3906	23811	6069	6069	1	1996365.55	Si
0.18	0.0000115	0.000308	0	0	Ger.	0	-3906	-23811	-6069	-6069	1	1996364.74	Si

#### Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrzd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0	0.000308	0	44	SLD 14	44	3906	23811	0	3906	1	89.29	Si
0.08	0.0000115	0.000308	0	25	SLD 14	25	3906	23811	6069	6069	1	242.76	Si
0.09	0.0000115	0.000308	0	22	SLD 14	22	3906	23811	6069	6069	1	277.44	Si
0.18	0.0000115	0.000308	0	0	Ger.	0	3906	23811	6069	6069	1	4723788.49	Si
0.18	0.0000115	0.000308	0	0	Ger.	0	-3906	-23811	-6069	-6069	1	4723783.94	Si



#### Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	$\sigma_c$	$\sigma_{c\ lim.}$	$\sigma_f$	$\sigma_{f\ lim.}$	Mela	Comb.	Mdes	$\sigma_c$	$\sigma_{c\ lim.}$	$\sigma_{FRP}$	$\sigma_{FRP\ lim.}$	
0	-3.82	17	-2.18	611	1494000	9164	36000000	-3.82	2	-2.18	611	1120500			Si
0.08	-1.24	7	-1.24	348	1494000	5218	36000000	-1.24	1	-1.24	348	1120500			Si
0.09	-0.95	7	-1.24	348	1494000	5218	36000000	-0.95	1	-1.24	348	1120500			Si
0.18	0.01	19	0.01	3	1494000	44	36000000	0.01	2	0.01	3	1120500			Si

#### Verifica di apertura delle fessure

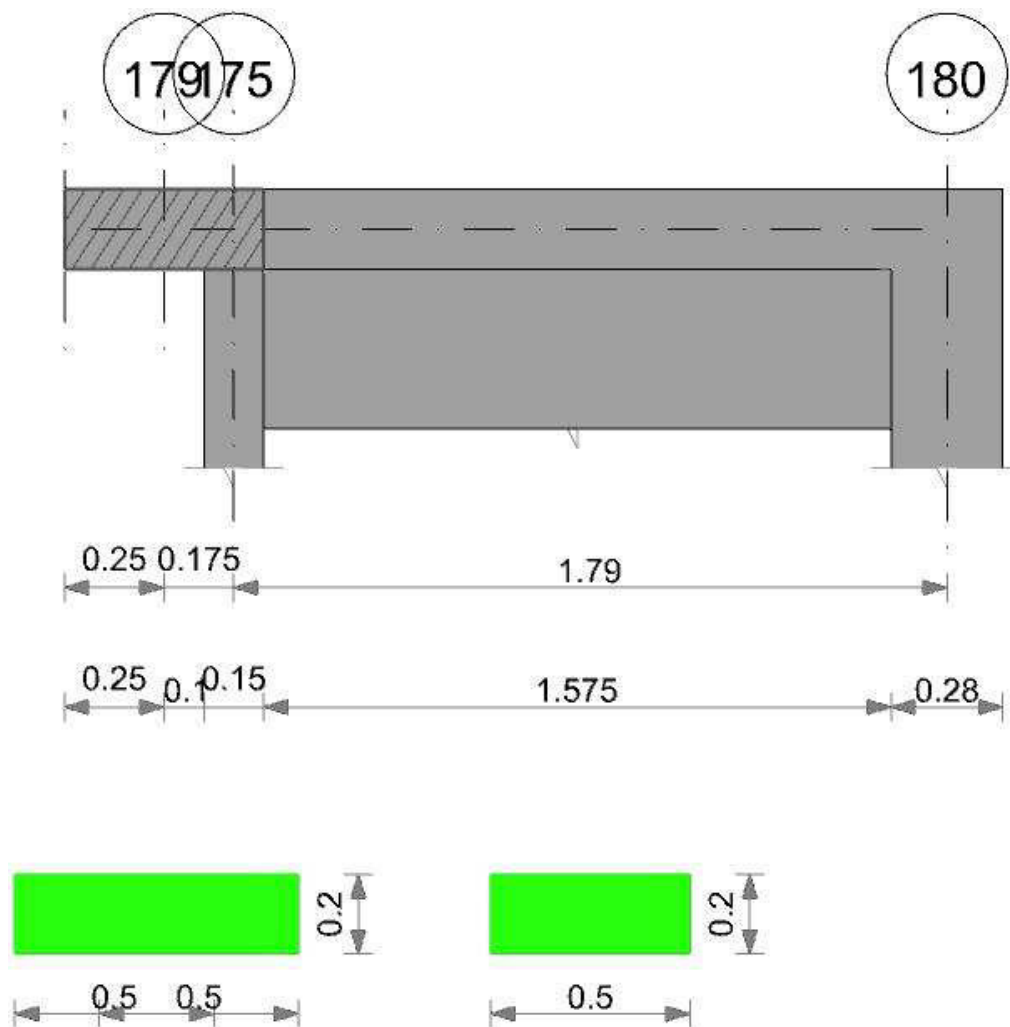
La campata non presenta apertura delle fessure

#### Verifica di deformabilità

x	Rara				Frequente				Quasi permanente							Verifica
	Elastica+	Elastica-	Fess.+	Fess.-	Elastica+	Elastica-	Fess.+	Fess.-	Elastica+	Elastica-	Fess. viscosa+	Comb.	Fess. viscosa-	Comb.	l/f	
0.06	0	0	0	0	0	0	0	0	0	0	0	1	0	1	9999	Si
0.08	0	0	0	0	0	0	0	0	0	0	0	2	0	2	9999	Si
0.09	0	0	0	0	0	0	0	0	0	0	0	1	0	1	9999	Si

#### Trave a "Primo" 179-176

#### Geometria



#### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

#### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x20	Rettangolare	0.5	0.2	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

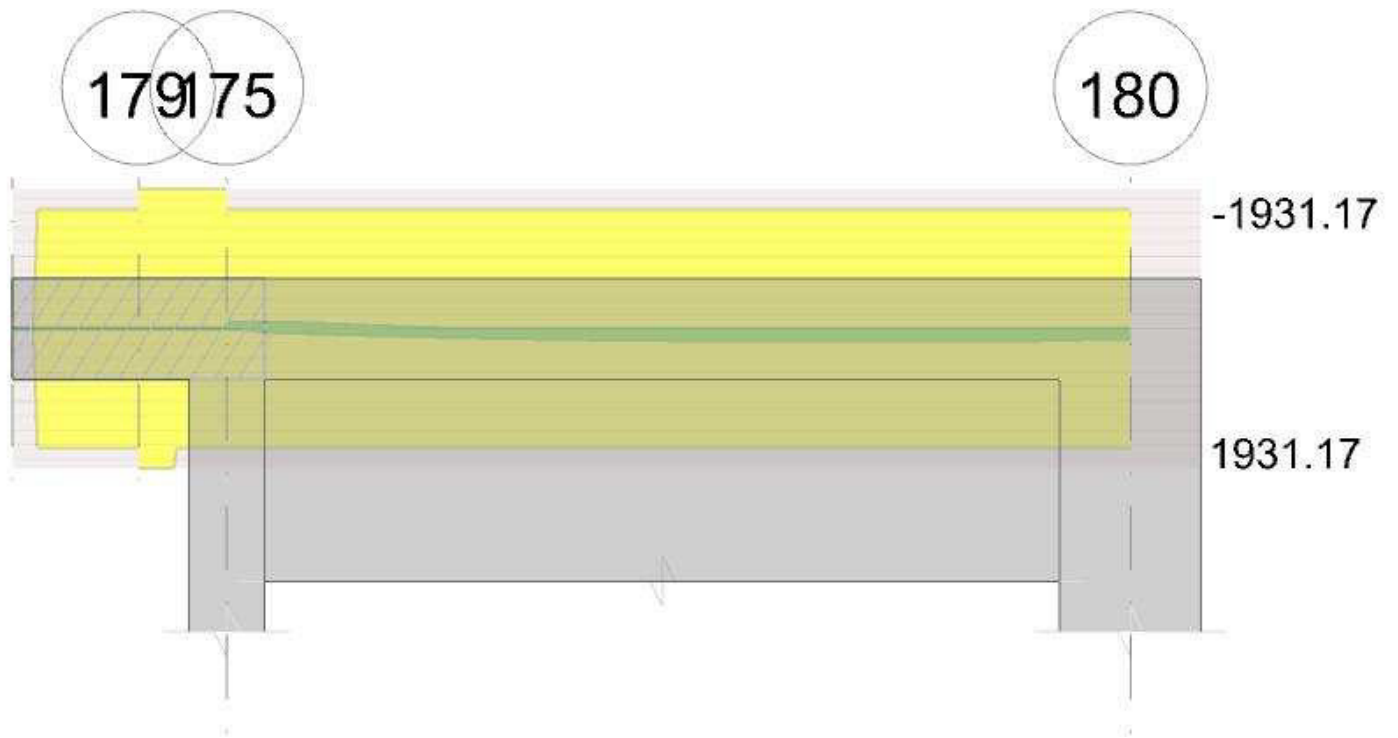


Diagramma verifica stato limite ultimo taglio

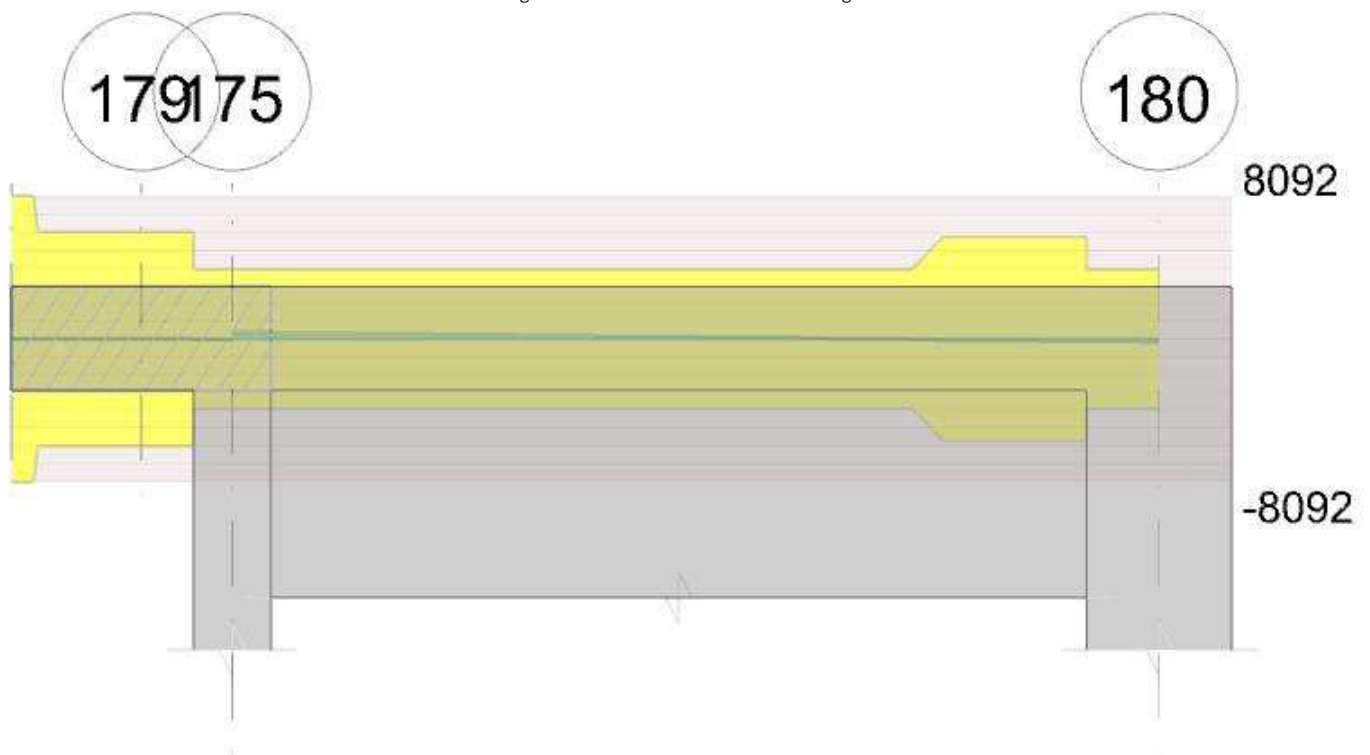
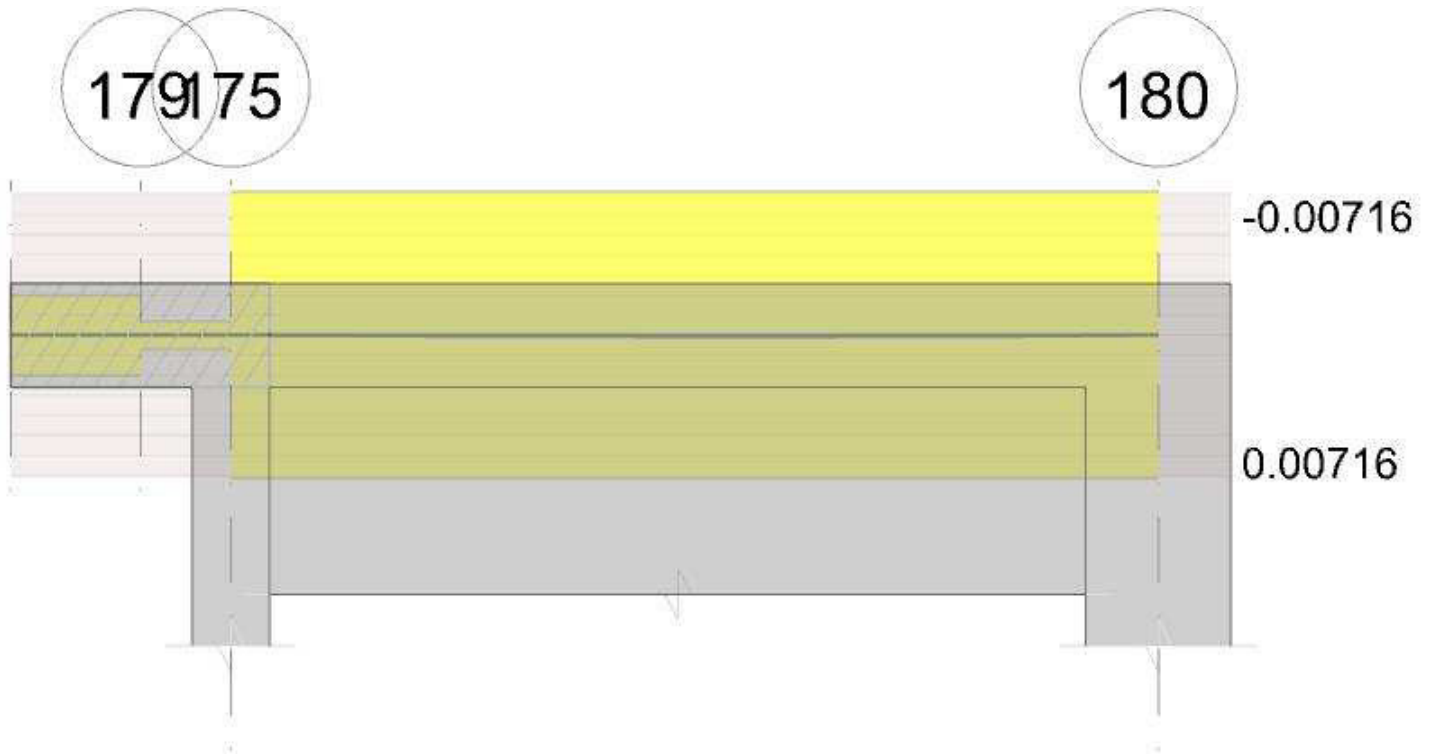


Diagramma verifica stato limite esercizio quasi permanente freccia



#### Output campate

Campata 2 tra i fili 179 - 175, sezione R 50x20, asta 481

#### Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000308	0.05	0.000308	0.05	0.01	SLU 78	0.01	1931.17	0.242	+∞	0.01	SLU 1	-0.72	-1931.17	0.242	2688.94	Si
0.09	0.000308	0.05	0.000308	0.05							-1.23	SLU 51	-1.61	-1931.17	0.242	1198.05	Si
0.1	0.000308	0.05	0.000308	0.05							-1.61	SLU 51	-1.61	-1931.17	0.242	1198.05	Si
0.18	0.000308	0.05	0.000308	0.05							-4.96	SLU 51	-2.83	-1931.17	0.242	682.23	Si

#### Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000308	0.05	0.000308	0.05	0.01	SLV 14	0.01	1648.89	0.269	+∞	0.01	SLV 3	-0.55	-1648.89	0.269	2984.55	Si
0.09	0.000308	0.05	0.000308	0.05							-0.95	SLV 1	-1.24	-1648.89	0.269	1329.72	Si
0.1	0.000308	0.05	0.000308	0.05							-1.24	SLV 1	-1.24	-1648.89	0.269	1329.72	Si
0.18	0.000308	0.05	0.000308	0.05							-3.82	SLV 2	-2.18	-1648.89	0.269	757.23	Si

#### Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000308	0.05	0.000308	0.05	0.01	SLD 13	0.01	1648.89	0.269	+∞	0.01	SLD 4	-0.55	-1648.89	0.269	2984.61	Si
0.09	0.000308	0.05	0.000308	0.05							-0.95	SLD 4	-1.24	-1648.89	0.269	1329.77	Si
0.1	0.000308	0.05	0.000308	0.05							-1.24	SLD 4	-1.24	-1648.89	0.269	1329.77	Si
0.18	0.000308	0.05	0.000308	0.05							-3.82	SLD 4	-2.18	-1648.89	0.269	757.25	Si

#### Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0.09	0.0000115	0.000308	0	-28	SLU 78	-28	-3906	-23811	-6069	-6069	1	213.43	Si
0.1	0.0000115	0.000308	0	-32	SLU 78	-32	-3906	-23811	-6069	-6069	1	186.75	Si
0.18	0	0.000308	0	-57	SLU 78	-57	-3906	-23811	0	-3906	1	68.68	Si

#### Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000115	0.000308	0	0	Ger.	0	3906	23811	6069	6069	1	2048809.8	Si
0	0.0000115	0.000308	0	0	Ger.	0	-3906	-23811	-6069	-6069	1	2048809.18	Si
0.09	0.0000115	0.000308	0	-22	SLV 14	-22	-3906	-23811	-6069	-6069	1	277.42	Si
0.1	0.0000115	0.000308	0	-25	SLV 14	-25	-3906	-23811	-6069	-6069	1	242.74	Si
0.18	0	0.000308	0	-44	SLV 14	-44	-3906	-23811	0	-3906	1	89.28	Si

#### Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000115	0.000308	0	0	Ger.	0	3906	23811	6069	6069	1	4847767.77	Si
0	0.0000115	0.000308	0	0	Ger.	0	-3906	-23811	-6069	-6069	1	4847764.3	Si
0.09	0.0000115	0.000308	0	-22	SLD 13	-22	-3906	-23811	-6069	-6069	1	277.44	Si
0.1	0.0000115	0.000308	0	-25	SLD 13	-25	-3906	-23811	-6069	-6069	1	242.76	Si
0.18	0	0.000308	0	-44	SLD 13	-44	-3906	-23811	0	-3906	1	89.29	Si



#### Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	$\sigma_c$	$\sigma_{c\ lim.}$	$\sigma_f$	$\sigma_{f\ lim.}$	Mela	Comb.	Mdes	$\sigma_c$	$\sigma_{c\ lim.}$	$\sigma_{FRP}$	$\sigma_{FRP\ lim.}$	
0	0.01	15	0.01	3	1494000	44	36000000	0.01	2	0.01	3	1120500			Si
0.09	-0.95	9	-1.24	348	1494000	5218	36000000	-0.95	1	-1.24	348	1120500			Si
0.1	-1.24	9	-1.24	348	1494000	5218	36000000	-1.24	1	-1.24	348	1120500			Si
0.18	-3.82	9	-2.18	611	1494000	9164	36000000	-3.82	1	-2.18	611	1120500			Si

#### Verifica di apertura delle fessure

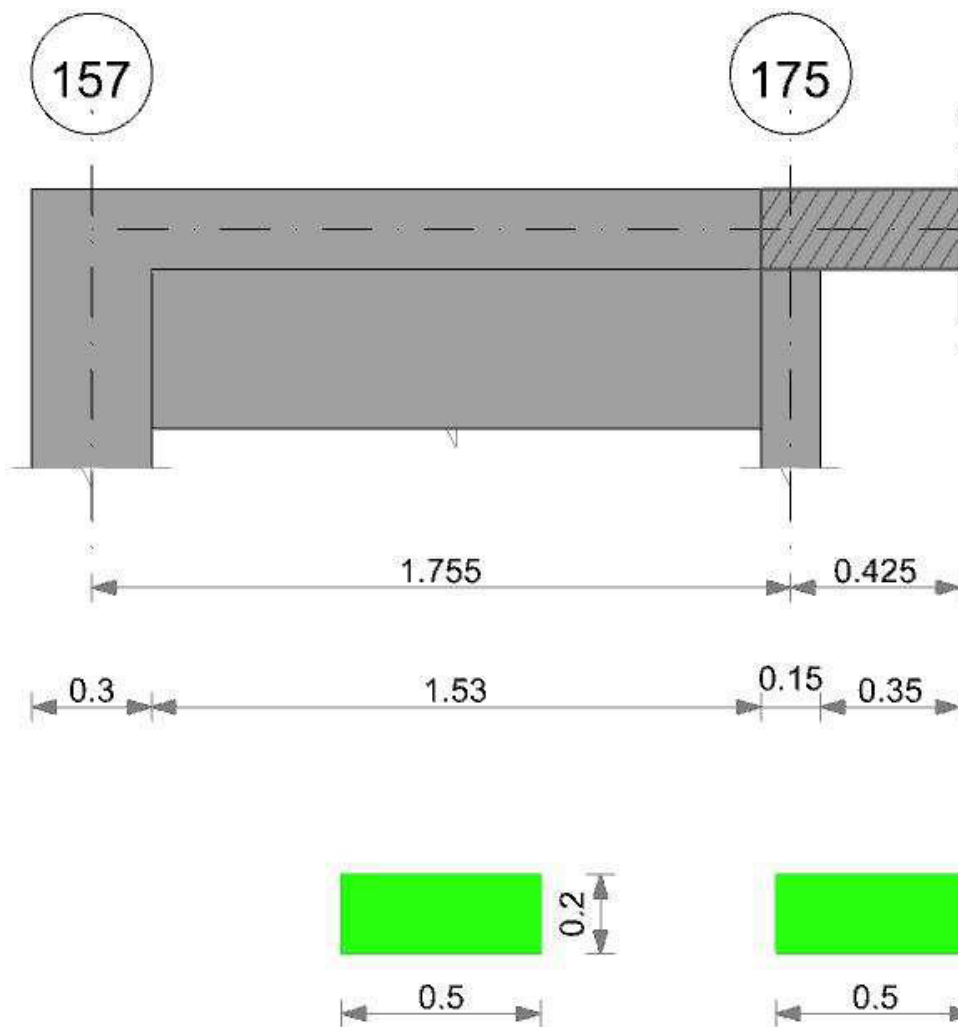
La campata non presenta apertura delle fessure

#### Verifica di deformabilità

x	Rara				Frequente				Quasi permanente						Verifica
	Elastica+	Elastica-	Fess.+	Fess.-	Elastica+	Elastica-	Fess.+	Fess.-	Elastica+	Elastica-	Fess. viscosa+	Comb.	Fess. viscosa-	Comb.	
0.09	0	0	0	0	0	0	0	0	0	0	0	1	0	1	9999 Si
0.1	0	0	0	0	0	0	0	0	0	0	0	2	0	2	9999 Si
0.11	0	0	0	0	0	0	0	0	0	0	0	2	0	2	9999 Si

#### Trave a "Rialzato" 157-179

Geometria



#### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

#### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x20	Rettangolare	0.5	0.2	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

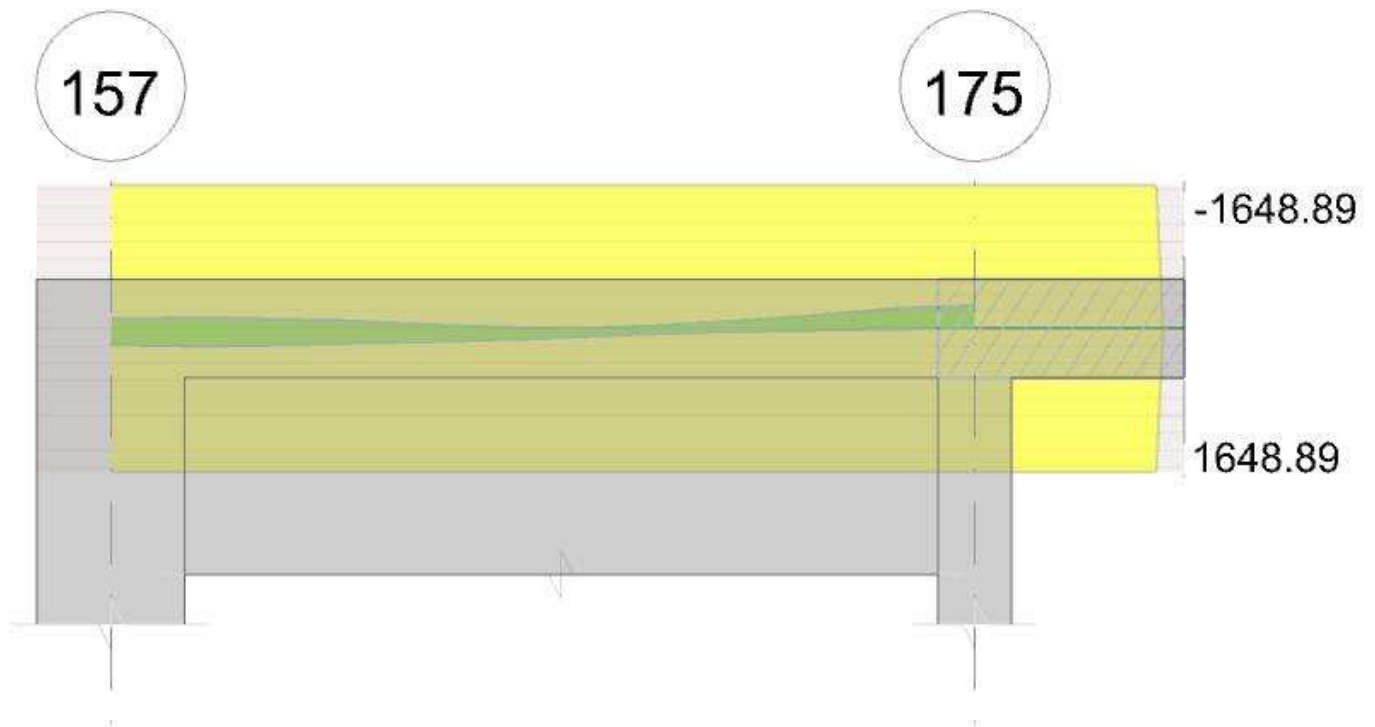


Diagramma verifica stato limite ultimo taglio

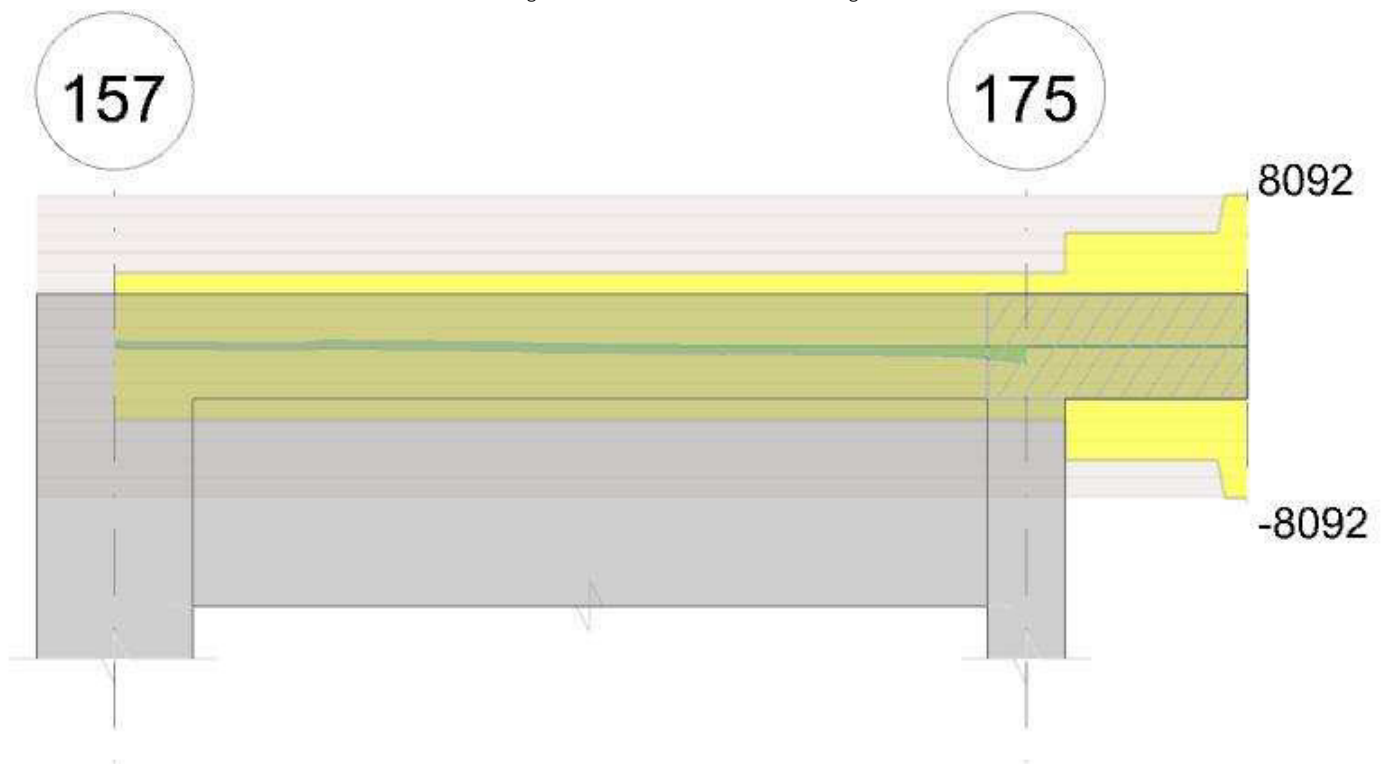
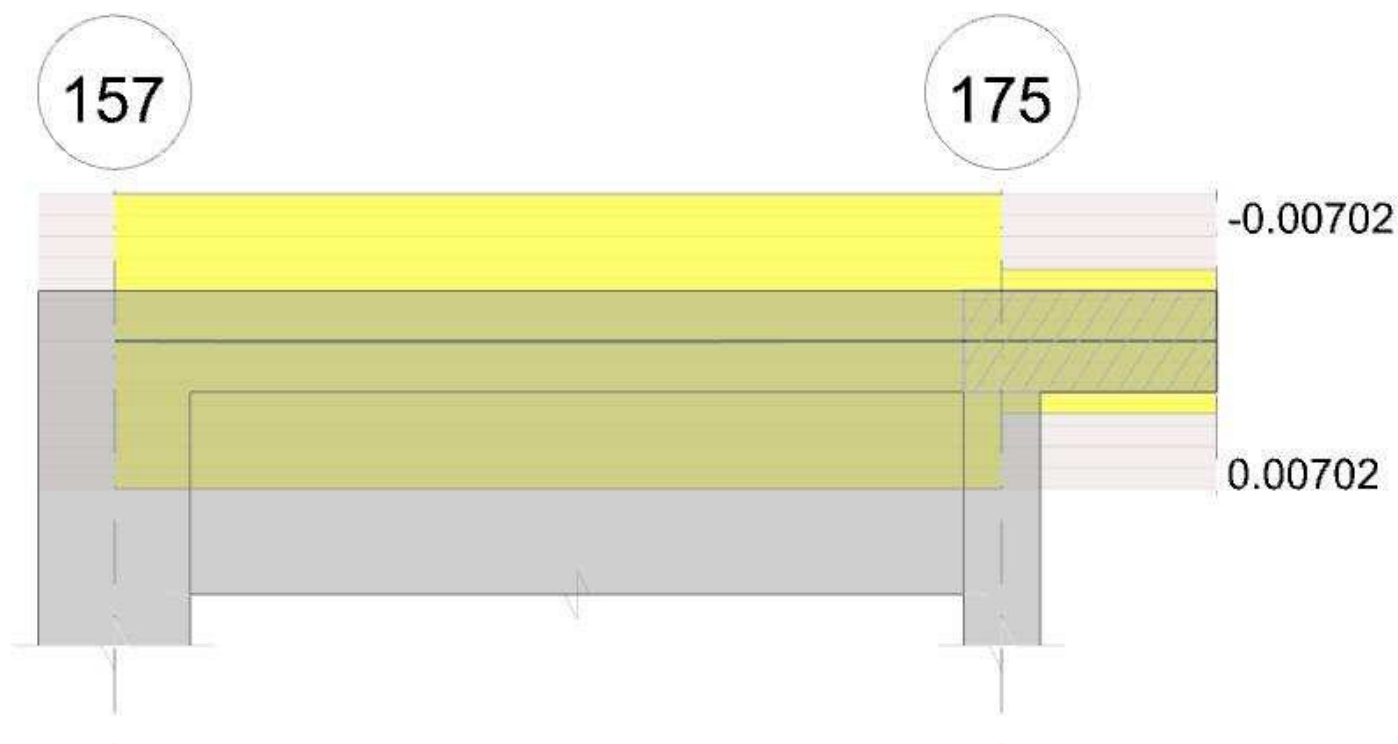


Diagramma verifica stato limite esercizio quasi permanente freccia

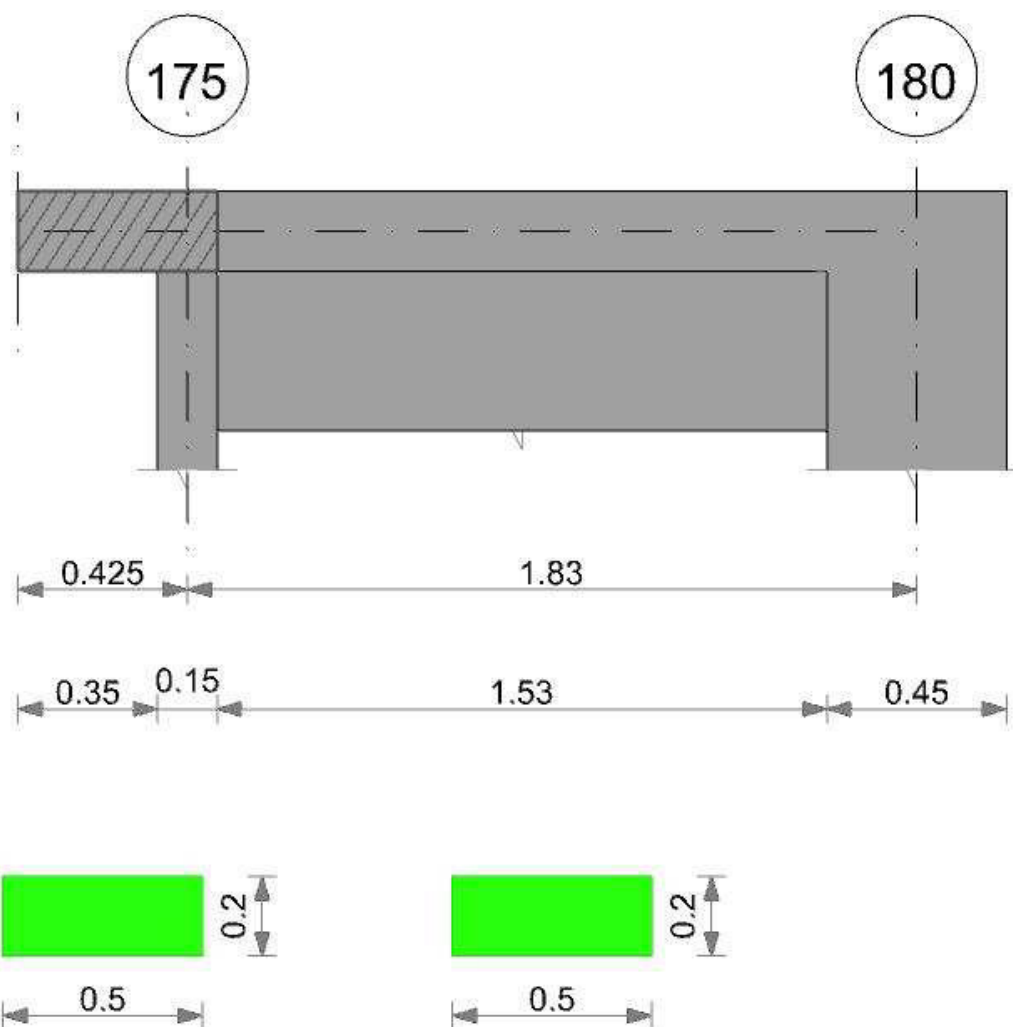




Output campate

Trave a "Rialzato" 179-176

Geometria



#### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

#### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copri ferro sup.	Copri ferro inf.	Copri ferro lat.
1	R 50x20	Rettangolare	0.5	0.2	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

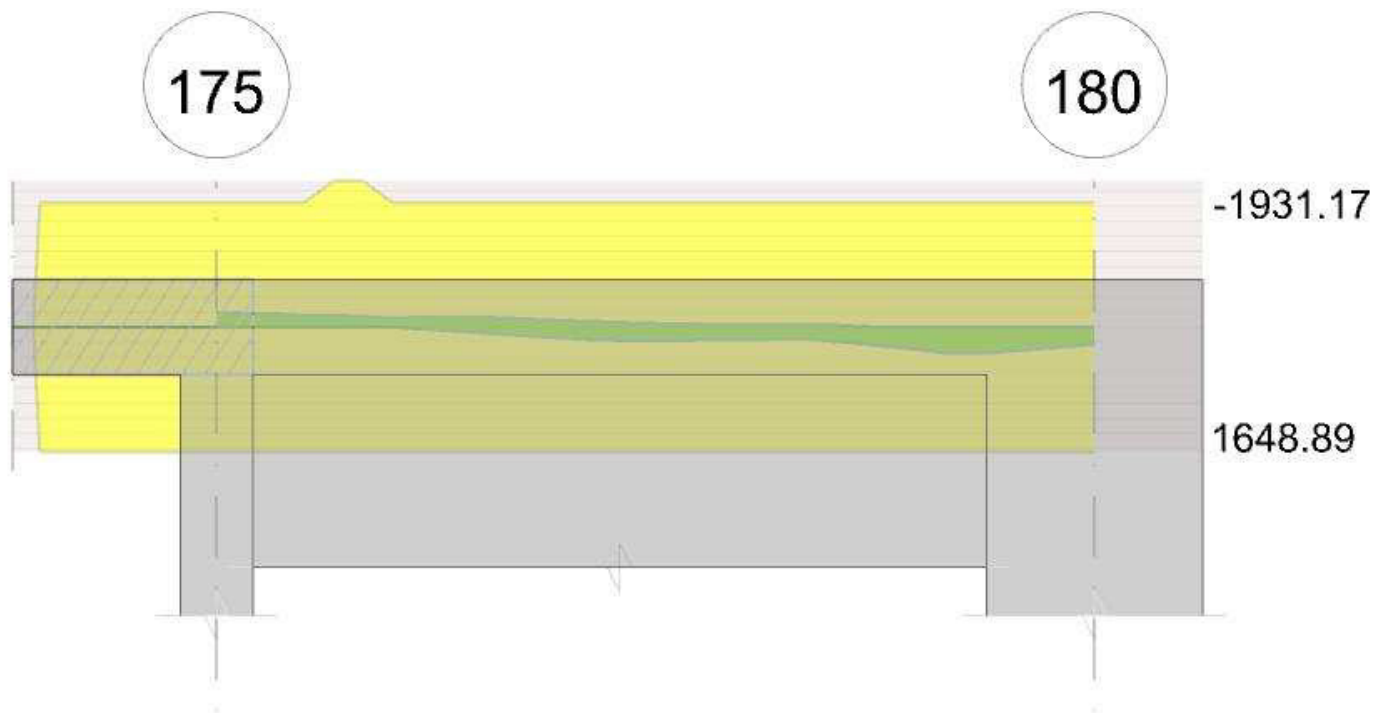


Diagramma verifica stato limite ultimo taglio

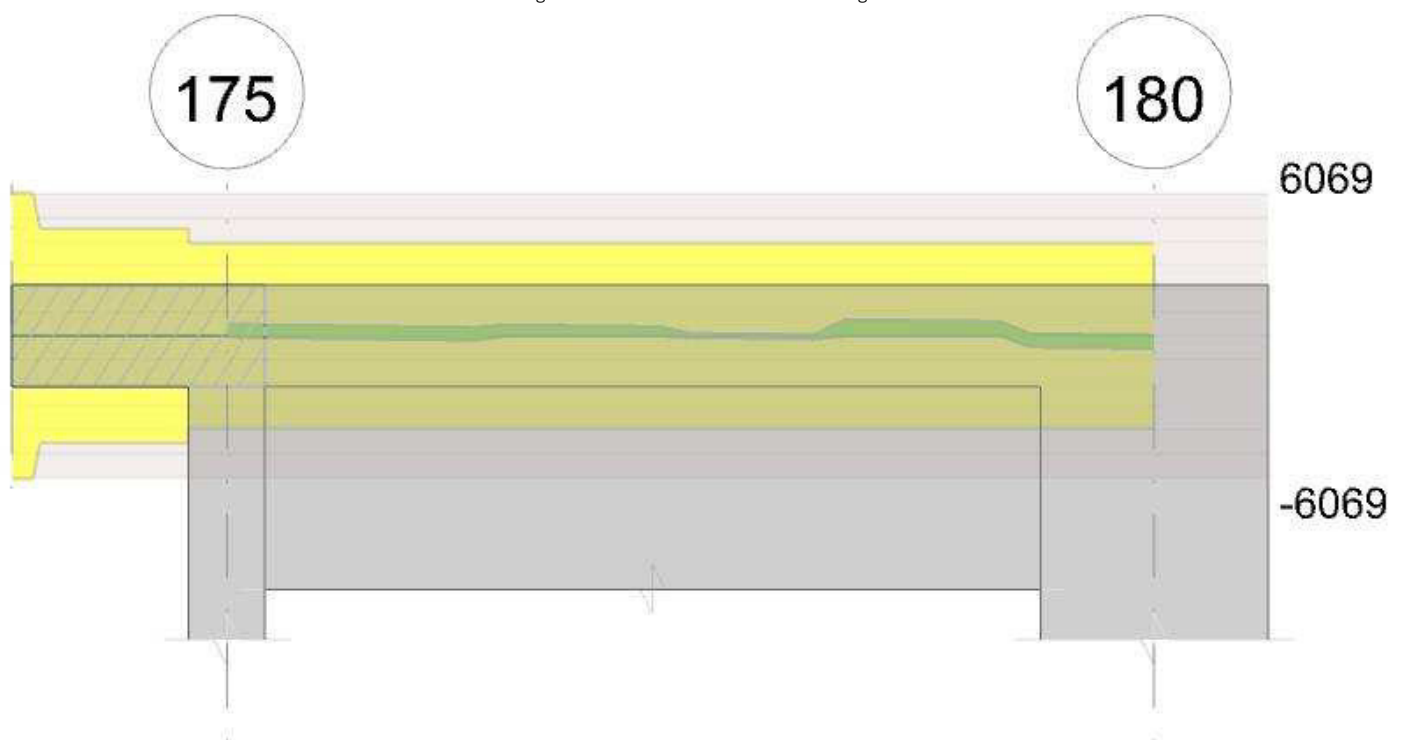
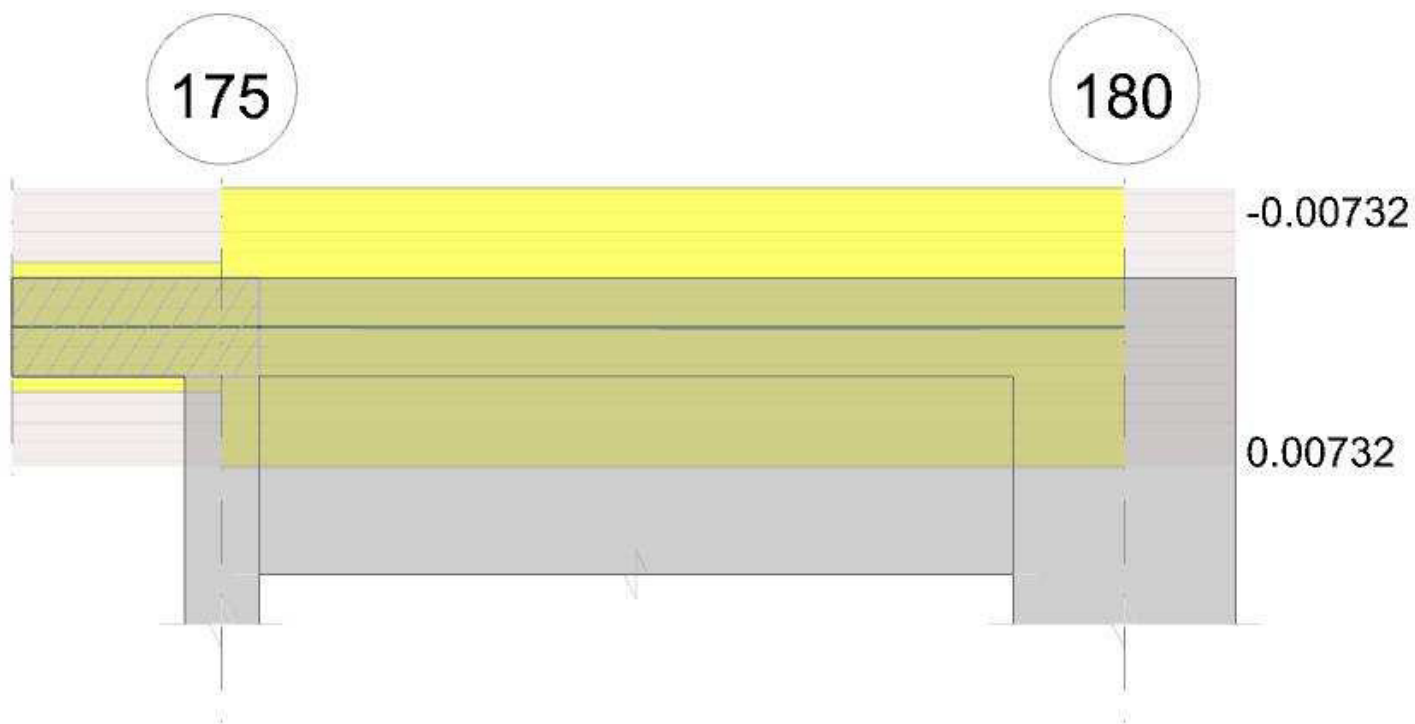


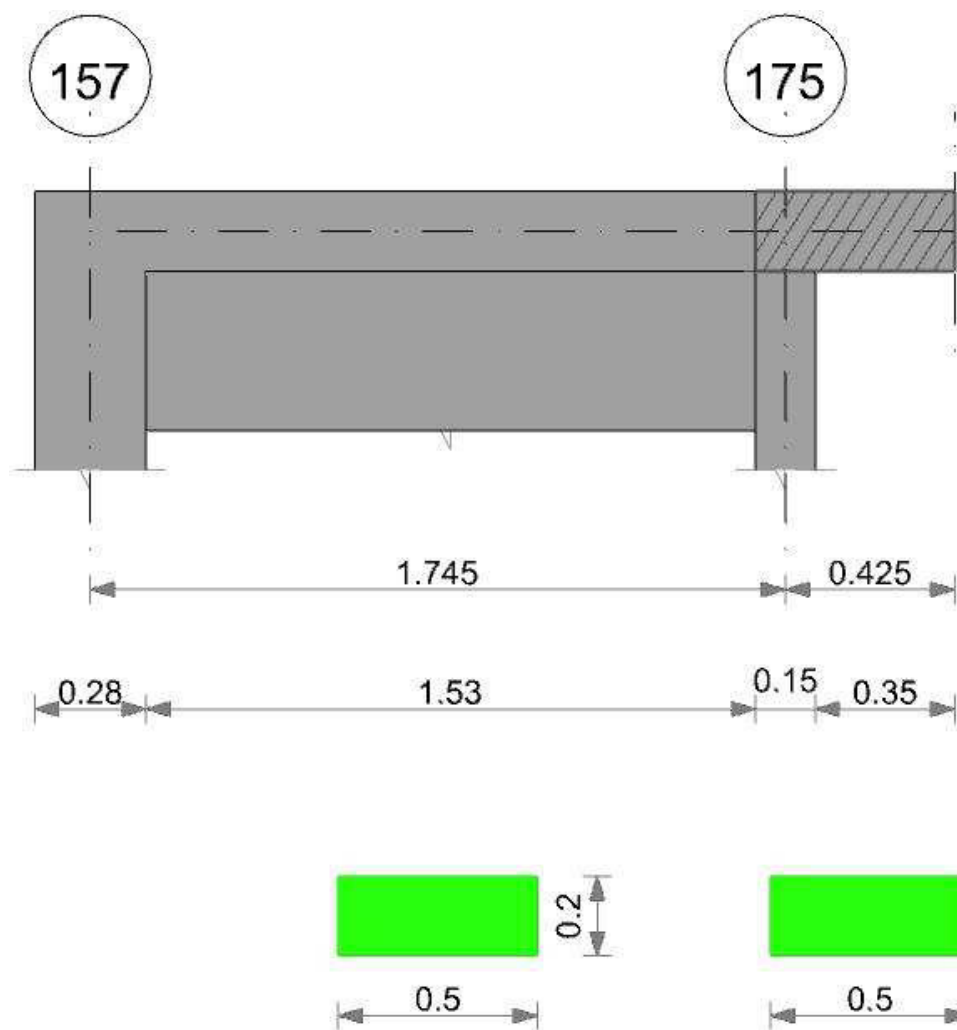
Diagramma verifica stato limite esercizio quasi permanente freccia



Output campate

Trave a "Secondo" 157-179

Geometria



#### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

#### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x20	Rettangolare	0.5	0.2	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

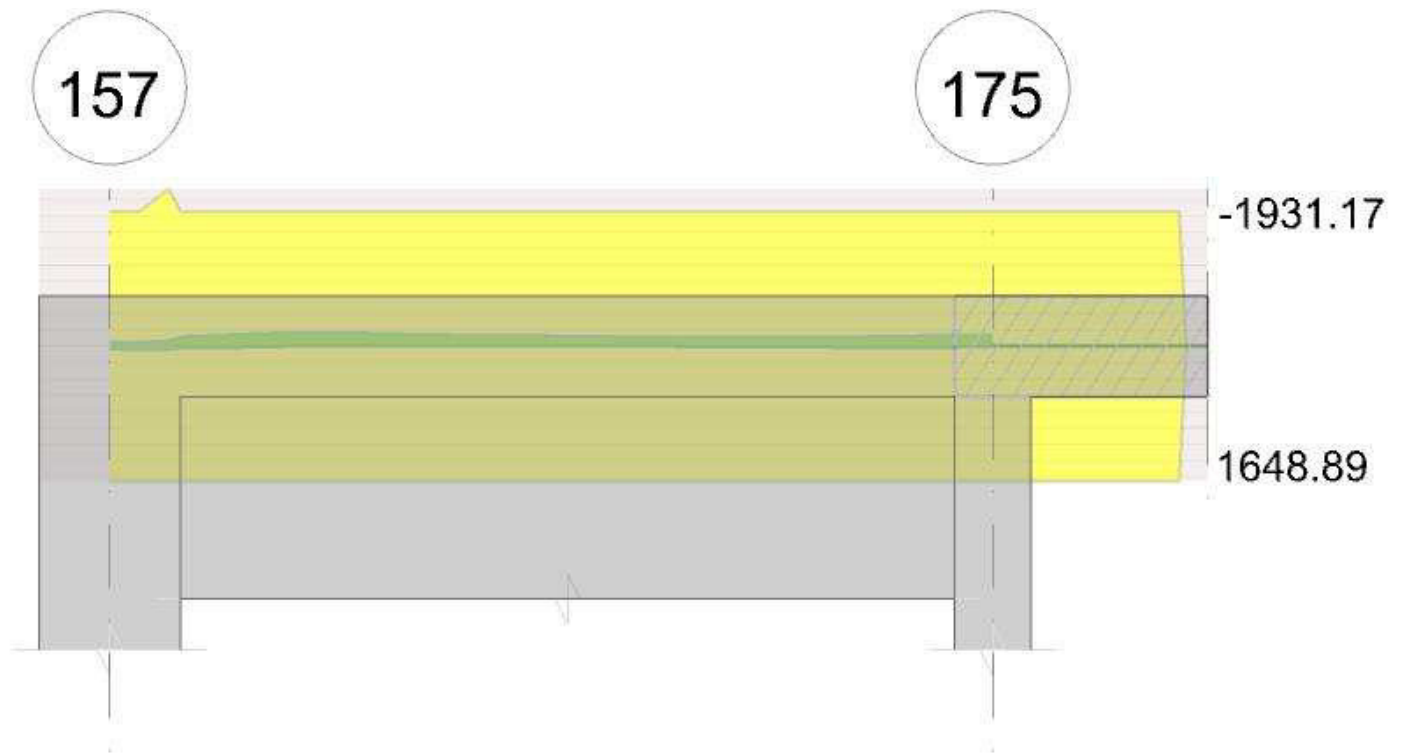


Diagramma verifica stato limite ultimo taglio

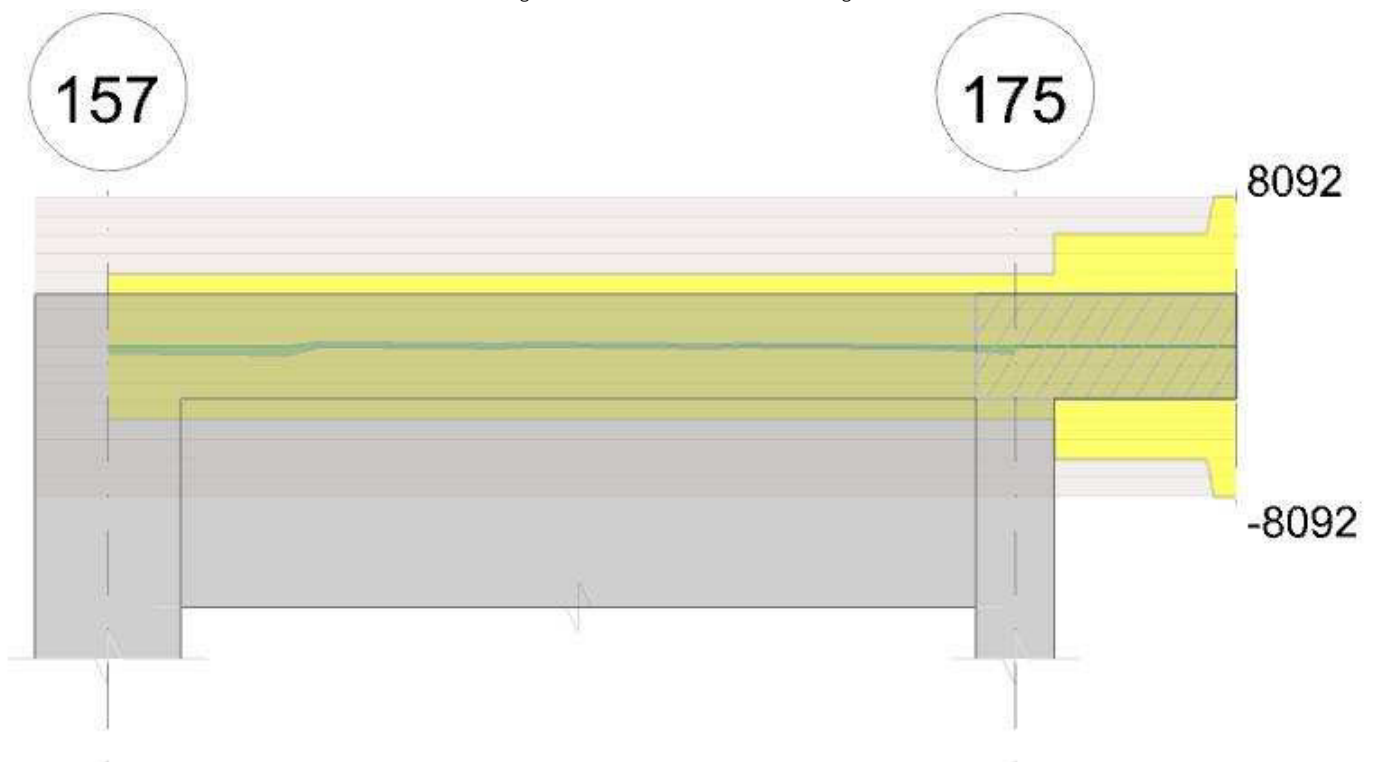
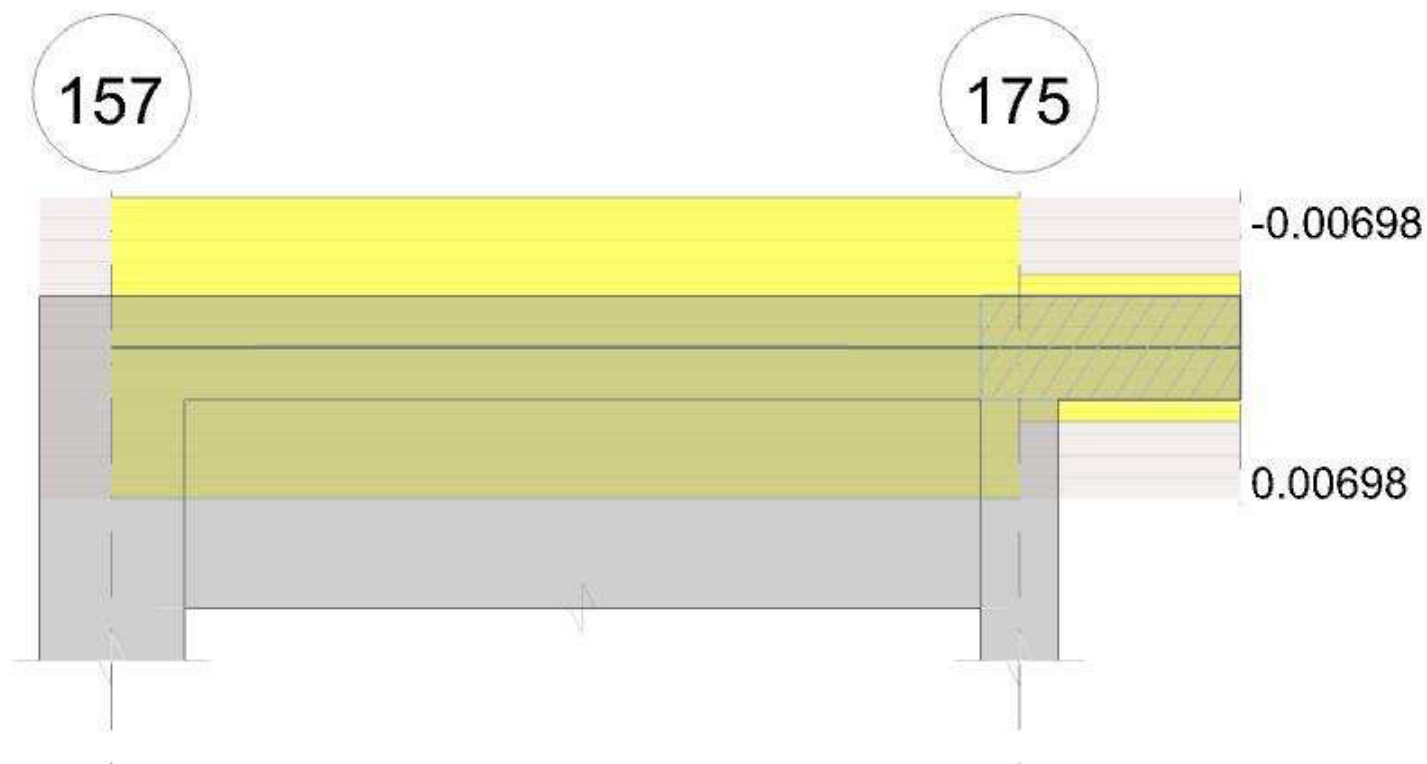


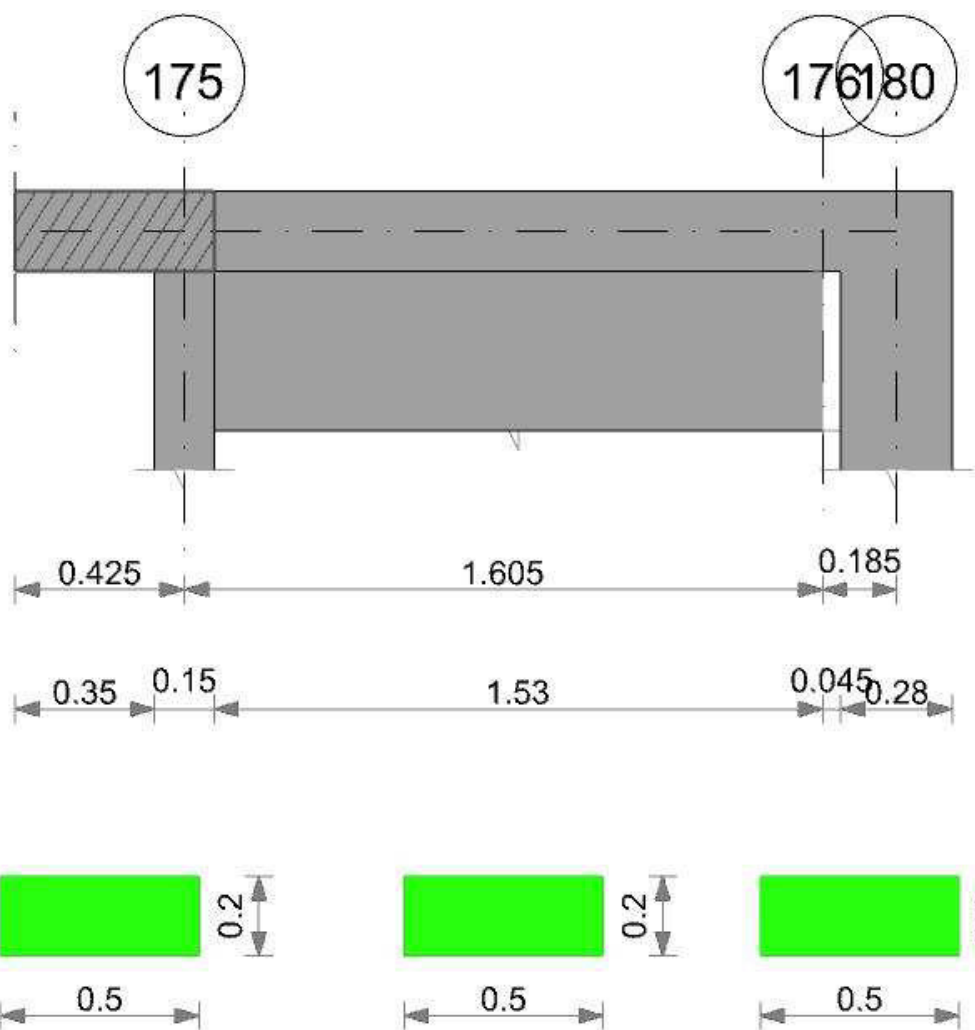
Diagramma verifica stato limite esercizio quasi permanente freccia



Output campate

Trave a "Secondo" 179-176

Geometria



#### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

#### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x20	Rettangolare	0.5	0.2	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione



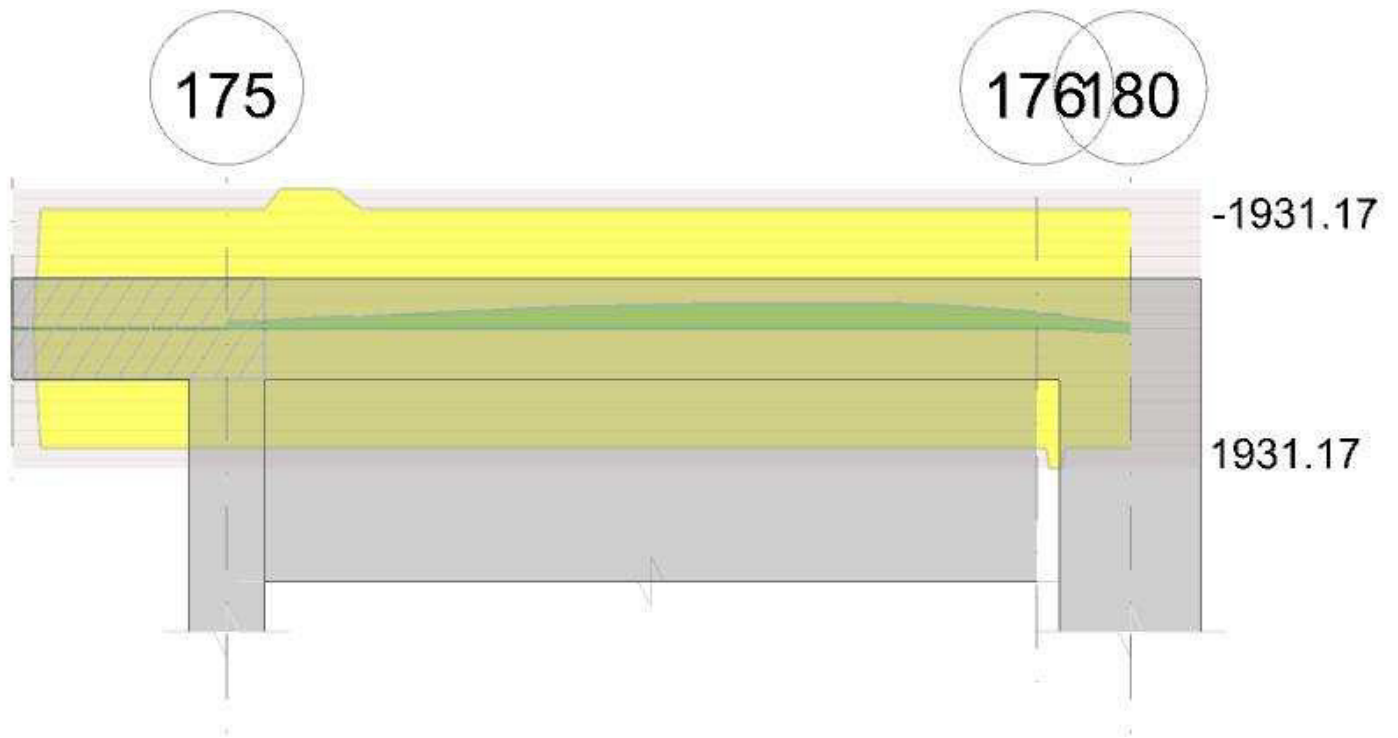
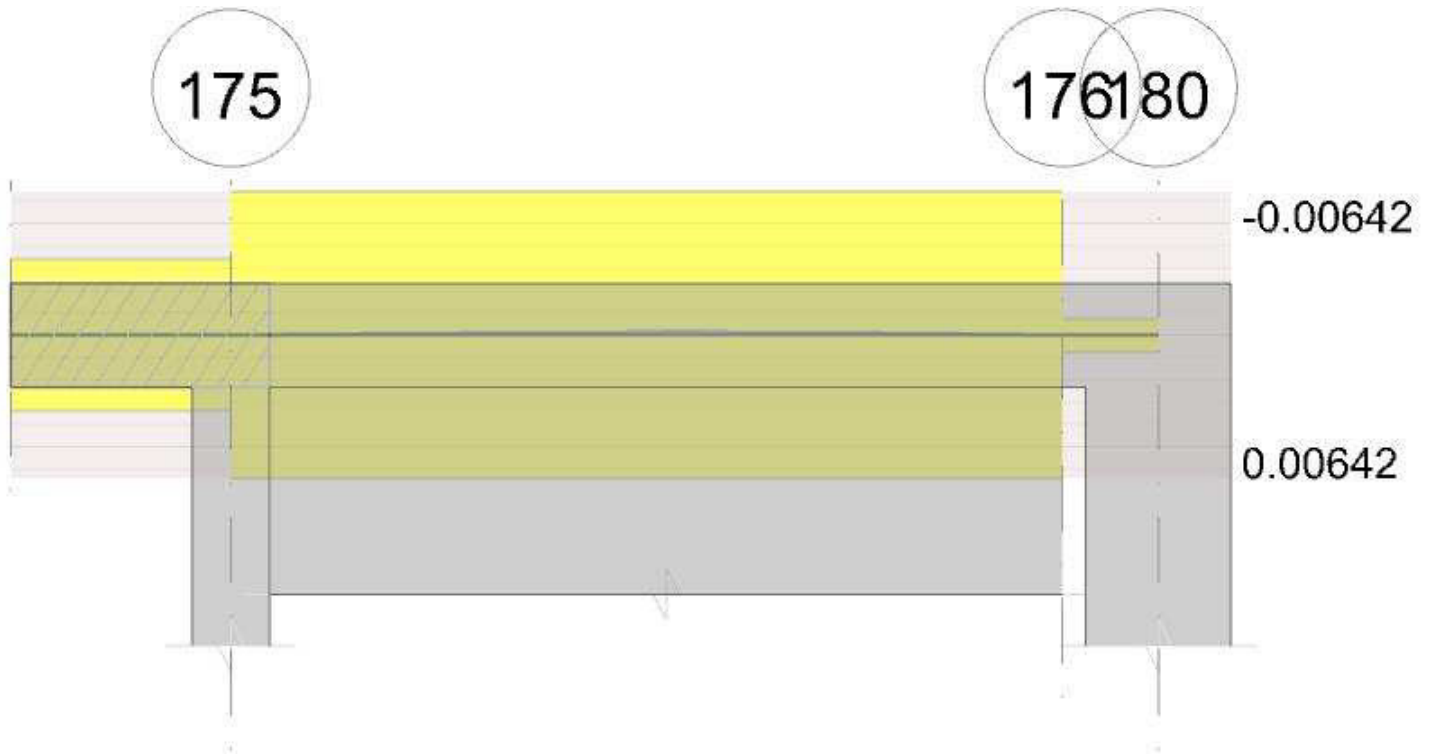


Diagramma verifica stato limite ultimo taglio



Diagramma verifica stato limite esercizio quasi permanente freccia



#### Output campate

Campata 3 tra i fili 176 - 180, sezione R 50x20, asta 482

#### Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000308	0.05	0.000308	0.05							-191.45	SLU 84	-191.45	-1931.17	0.242	10.09	Si
0.02	0.000308	0.05	0.000308	0.05							-170.19	SLU 84	-191.45	-1931.17	0.242	10.09	Si
0.05	0.000308	0.05	0.000308	0.05	-74.3	SLU 1	0.23	1931.17	0.242	8376.15	-139.94	SLU 84	-191.45	-1931.17	0.242	10.09	Si
0.09	0.000308	0.05	0.000308	0.05							-86.28	SLU 84	-86.28	-1931.17	0.242	22.38	Si
0.19	0.000308	0.05	0.000308	0.05	16.1	SLU 84	16.1	1931.17	0.242	119.98							Si

#### Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000308	0.05	0.000308	0.05							-202.24	SLV 3	-202.24	-1648.89	0.269	8.15	Si
0.02	0.000308	0.05	0.000308	0.05							-187.8	SLV 3	-202.24	-1648.89	0.269	8.15	Si
0.05	0.000308	0.05	0.000308	0.05							-167.71	SLV 3	-202.24	-1648.89	0.269	8.15	Si
0.09	0.000308	0.05	0.000308	0.05	28.05	SLV 14	19.25	1648.89	0.269	85.67	-133.5	SLV 3	-132.43	-1648.89	0.269	12.45	Si
0.19	0.000308	0.05	0.000308	0.05	94.08	SLV 6	66.86	1648.89	0.269	24.66	-74.24	SLV 11	-74.24	-1648.89	0.269	22.21	Si

#### Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000308	0.05	0.000308	0.05							-153.63	SLD 3	-153.63	-1648.89	0.269	10.73	Si
0.02	0.000308	0.05	0.000308	0.05							-139.93	SLD 3	-153.63	-1648.89	0.269	10.73	Si
0.05	0.000308	0.05	0.000308	0.05							-120.64	SLD 3	-153.63	-1648.89	0.269	10.73	Si
0.09	0.000308	0.05	0.000308	0.05							-87.08	SLD 3	-87.08	-1648.89	0.269	18.94	Si
0.19	0.000308	0.05	0.000308	0.05	45.69	SLD 6	45.52	1648.89	0.269	36.23	-25.85	SLD 11	-25.85	-1648.89	0.269	63.8	Si

#### Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrzd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000223	0.000308	0	1152	SLU 84	1152	3906	23811	11801	11801	1	10.24	Si
0.05	0.0000223	0.000308	0	1137	SLU 84	1137	3906	23811	11801	11801	1	10.38	Si
0.09	0	0.000308	0	1136	SLU 84	1136	3906	23811	0	3906	1	3.44	Si
0.19	0	0.000308	0	1122	SLU 84	1122	3906	23811	0	3906	1	3.48	Si
0.19	0	0.000308	0	1092	SLU 84	1092	3906	23811	0	3906	1	3.58	Si

#### Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrzd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000223	0.000308	0	970	SLV 1	970	3906	23811	11801	11801	1	12.16	Si
0.05	0.0000223	0.000308	0	959	SLV 1	959	3906	23811	11801	11801	1	12.3	Si
0.09	0	0.000308	0	958	SLV 1	958	3906	23811	0	3906	1	4.08	Si
0.19	0	0.000308	0	947	SLV 1	947	3906	23811	0	3906	1	4.12	Si
0.19	0	0.000308	0	924	SLV 1	924	3906	23811	0	3906	1	4.23	Si

#### Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrzd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000223	0.000308	0	822	SLD 1	822	3906	23811	11801	11801	1	14.35	Si
0.05	0.0000223	0.000308	0	811	SLD 1	811	3906	23811	11801	11801	1	14.55	Si



x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrzd	Vrsd	Vult	cotgθ	coeff	Verifica
0.05	0	0.000308	0	810	SLD 1	810	3906	23811	0	3906	1	4.82	Si
0.09	0	0.000308	0	799	SLD 1	799	3906	23811	0	3906	1	4.89	Si
0.19	0	0.000308	0	776	SLD 1	776	3906	23811	0	3906	1	5.03	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	-137.22	21	-137.22	38499	1494000	577492	36000000	-117.52	2	-117.52	32971	1120500			Si
0.05	-100.24	21	-137.22	38499	1494000	577492	36000000	-85.73	2	-117.52	32971	1120500			Si
0.09	-61.75	21	-61.75	17324	1494000	259865	36000000	-52.73	2	-52.73	14794	1120500			Si
0.19	11.59	21	11.59	3251	1494000	48759	36000000	9.92	2	9.92	2783	1120500			Si

Verifica di apertura delle fessure

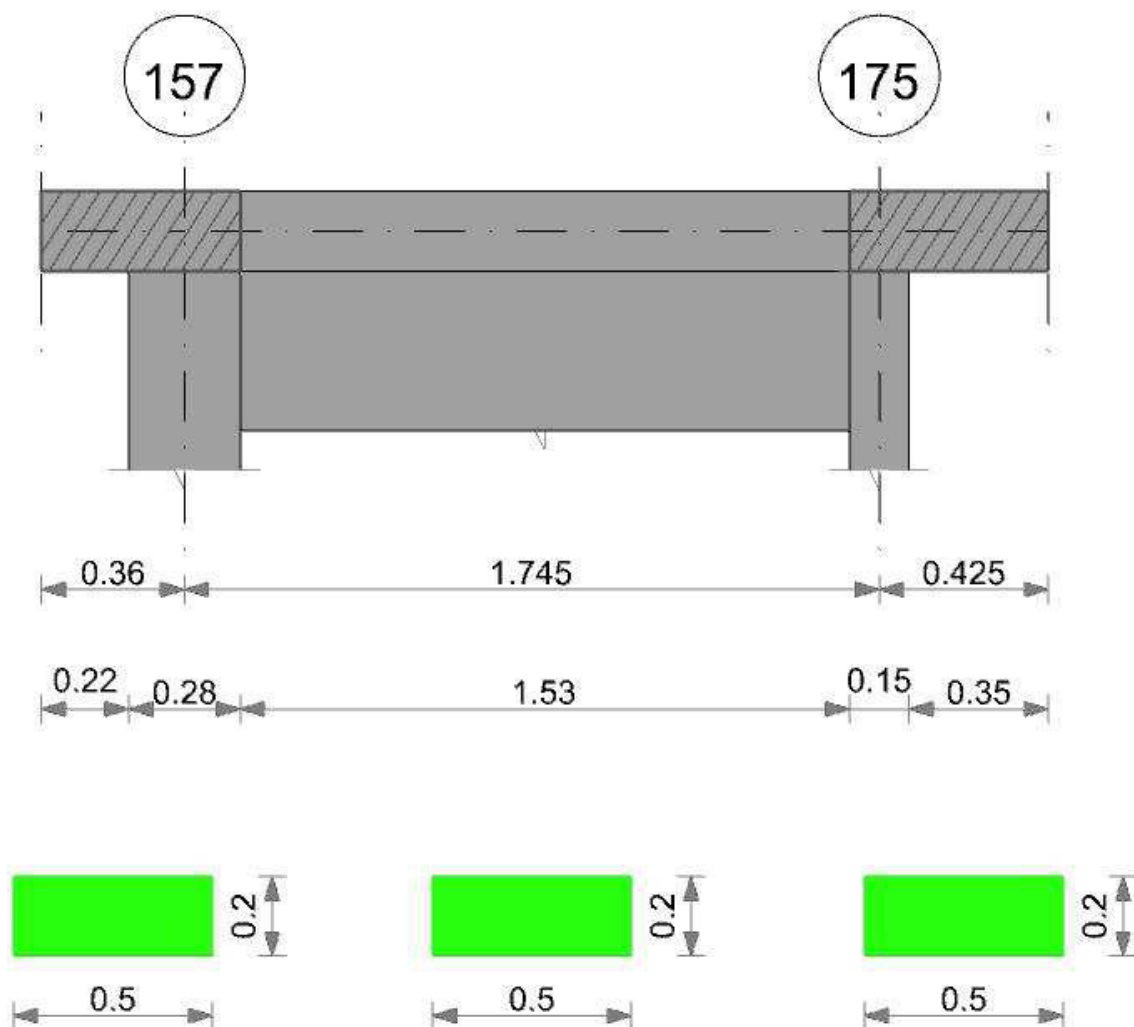
La campata non presenta apertura delle fessure

Verifica di deformabilità

x	Rara				Frequente				Quasi permanente						Verifica
	Elastica+	Elastica-	Fess.+	Fess.-	Elastica+	Elastica-	Fess.+	Fess.-	Elastica+	Elastica-	Fess. viscosa+	Comb.	Fess. viscosa-	Comb.	
0.05	0	0	0	0	0	0	0	0	0	0	0	1	0	1	9999 Si
0.07	0	0	0	0	0	0	0	0	0	0	0	1	0	1	9999 Si
0.09	0	0	0	0	0	0	0	0	0	0	0	1	0	1	9999 Si

Trave a "Sottotetto" 146-179

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x20	Rettangolare	0.5	0.2	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

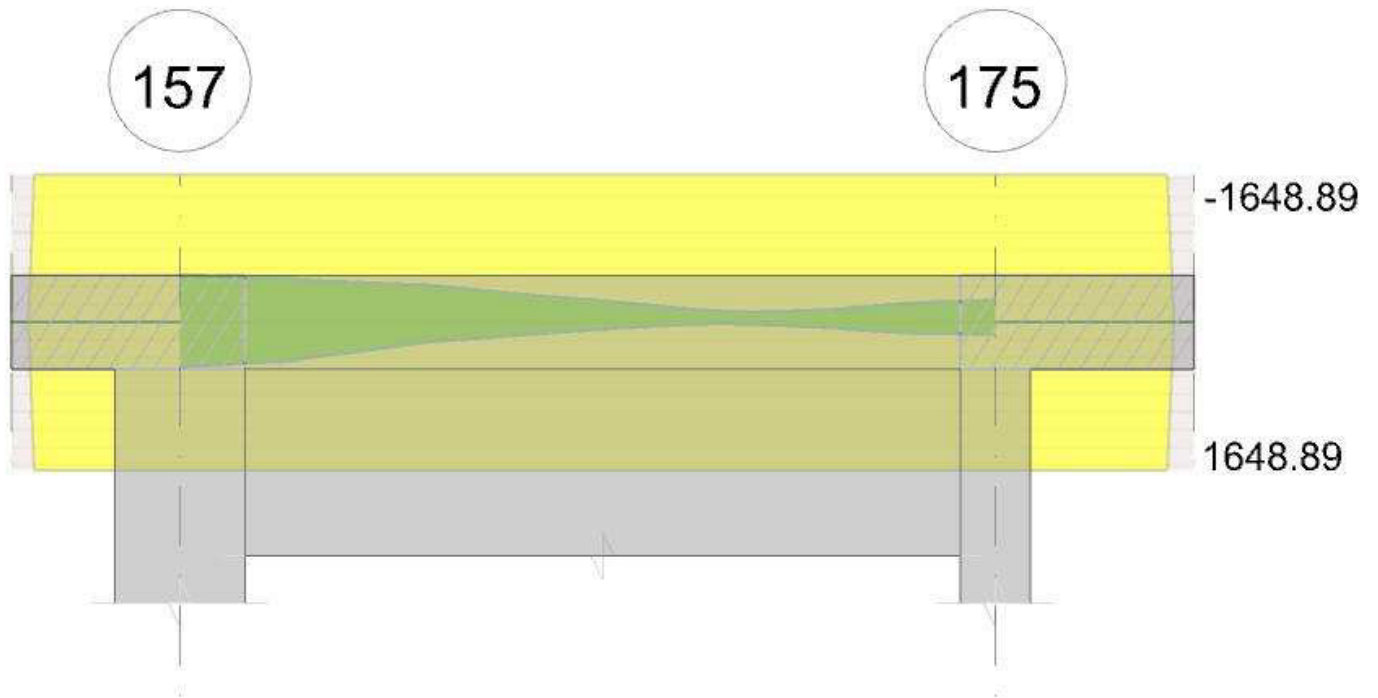


Diagramma verifica stato limite ultimo taglio

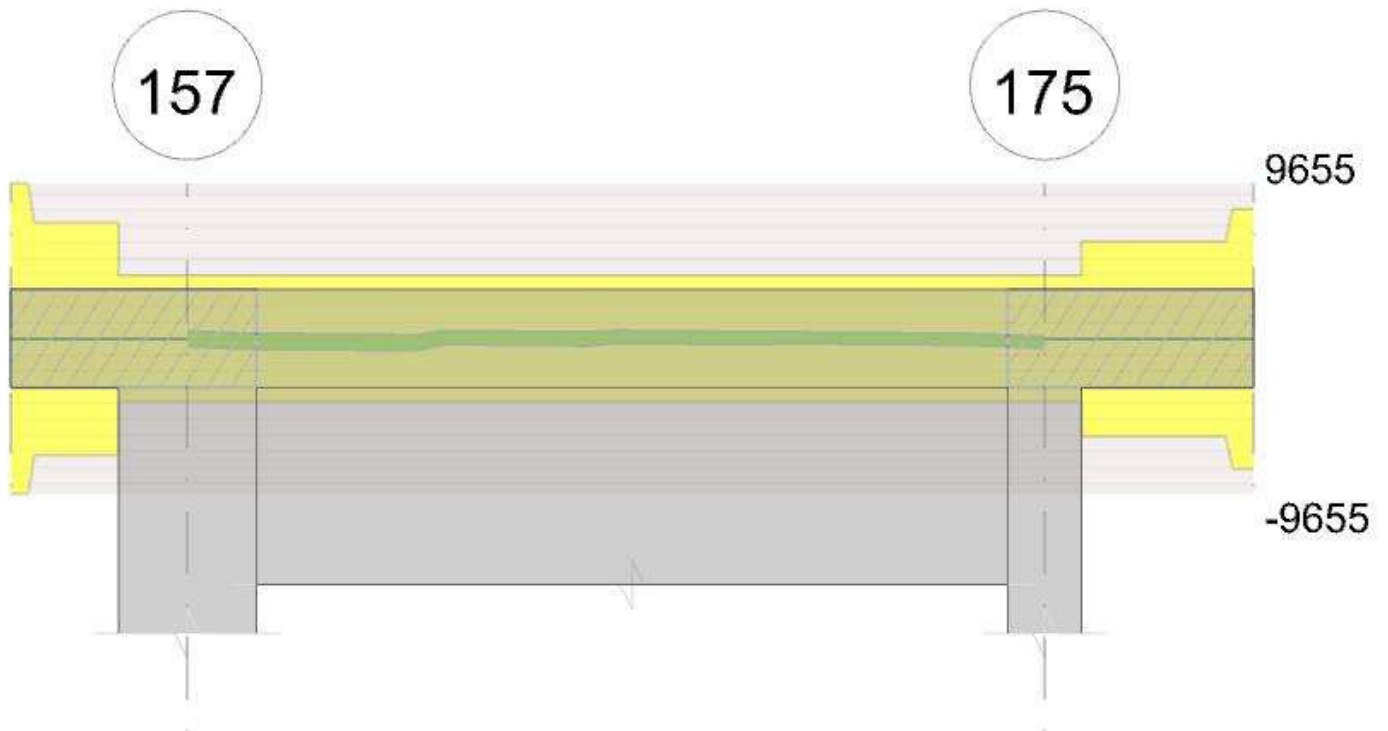
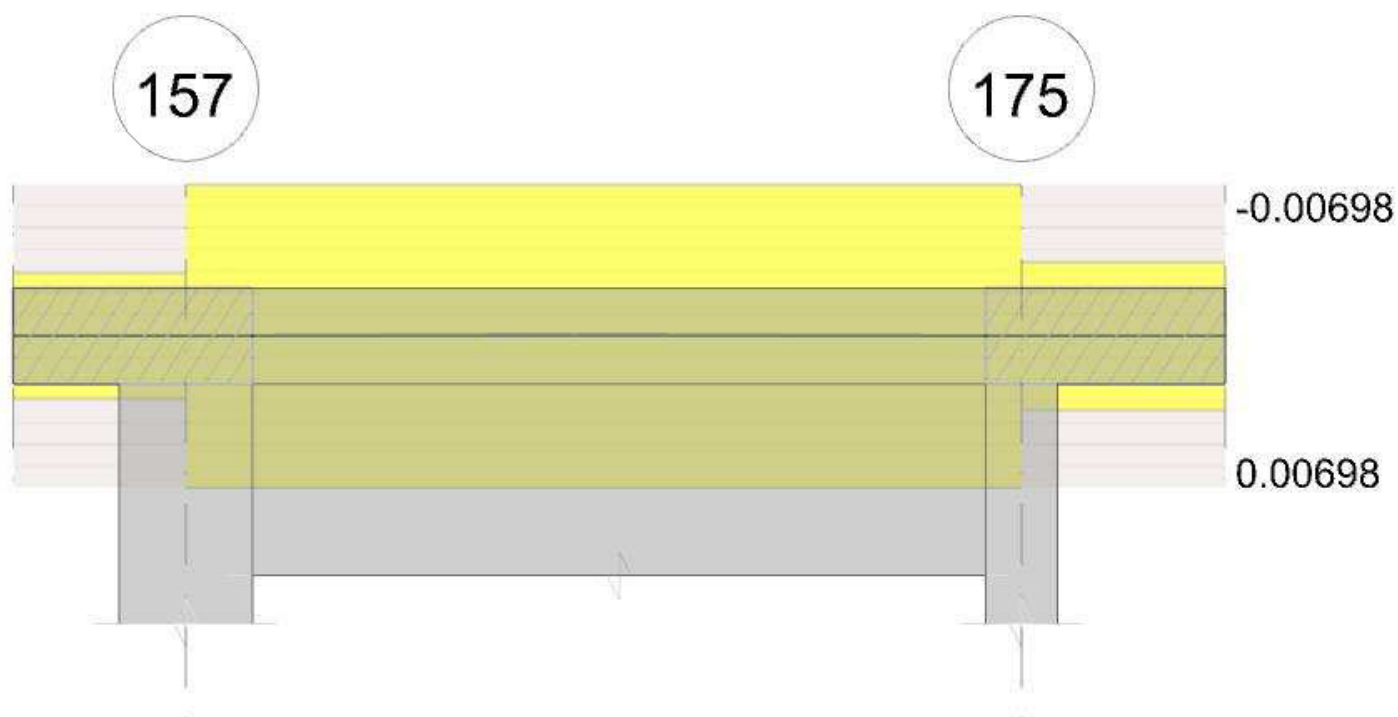


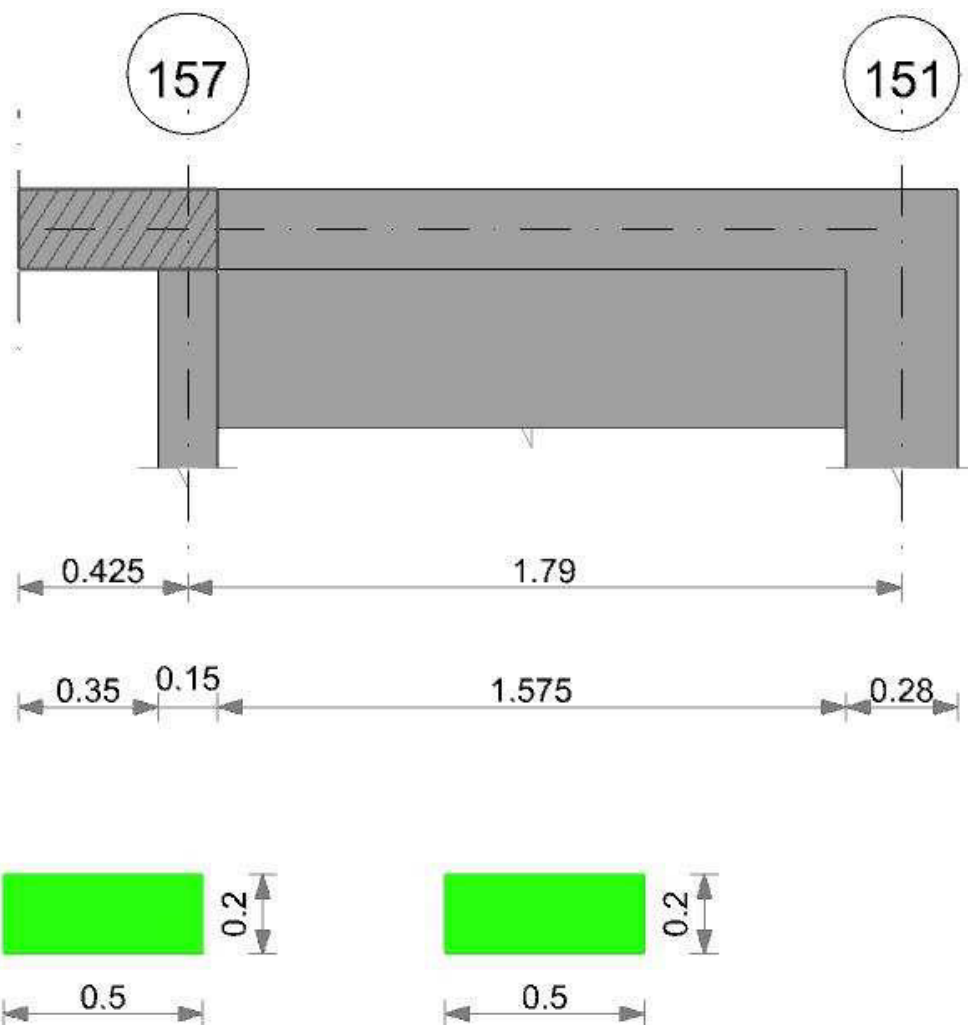
Diagramma verifica stato limite esercizio quasi permanente freccia



Output campate

Trave a "Sottotetto" 154-151

Geometria



#### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

#### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x20	Rettangolare	0.5	0.2	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

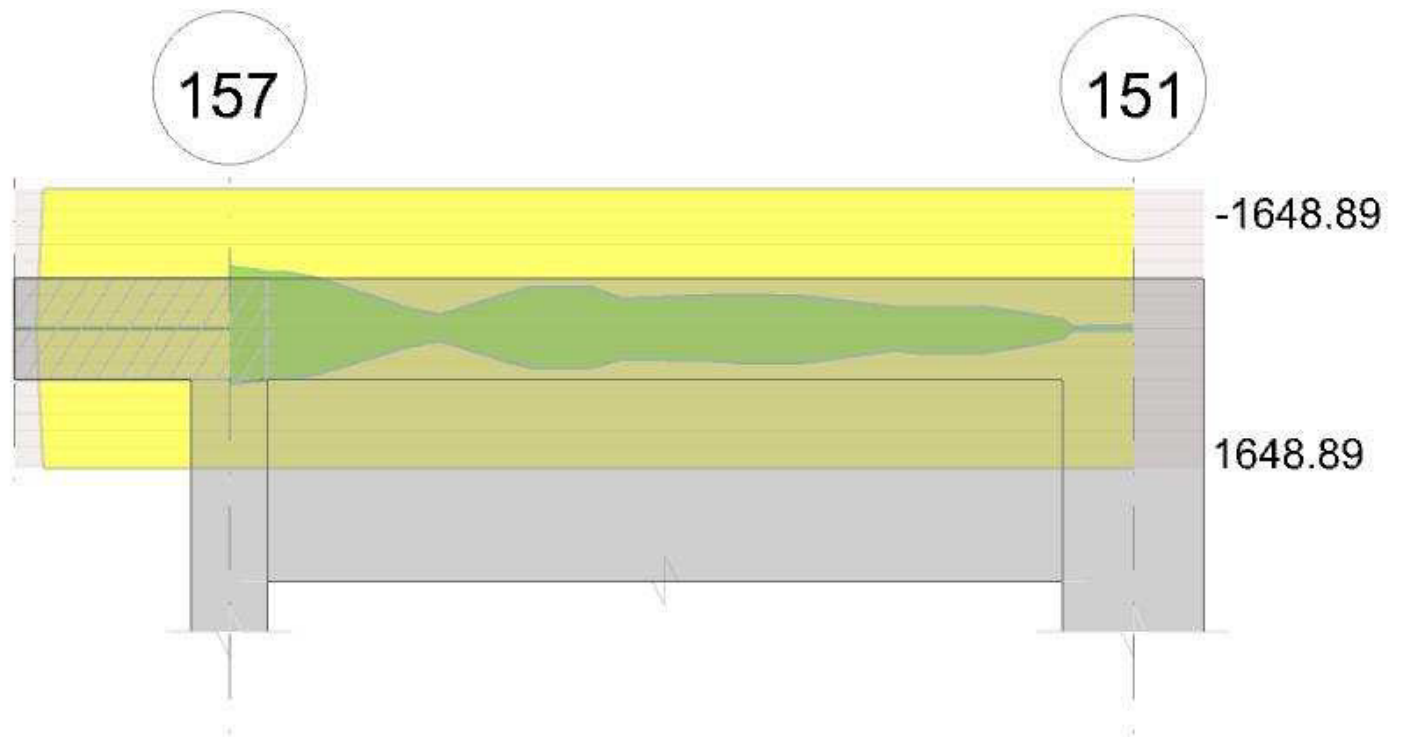


Diagramma verifica stato limite ultimo taglio

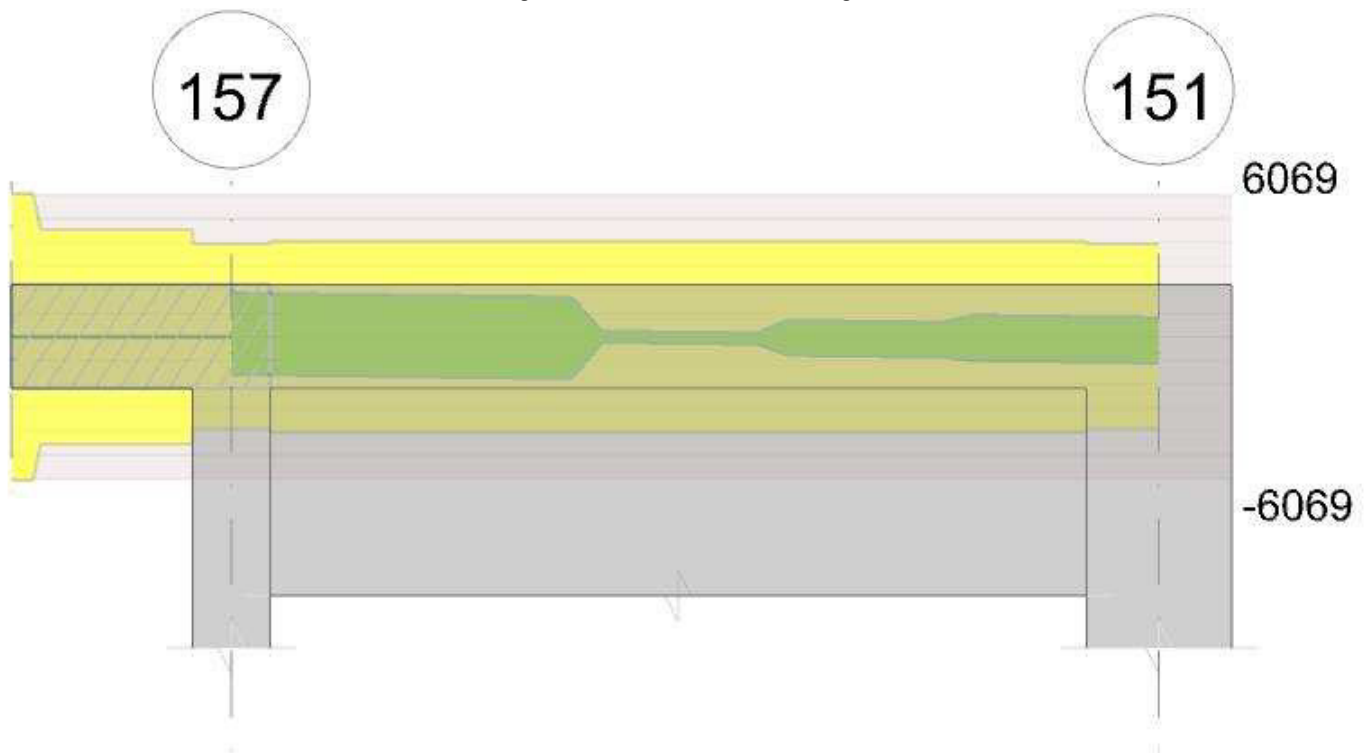
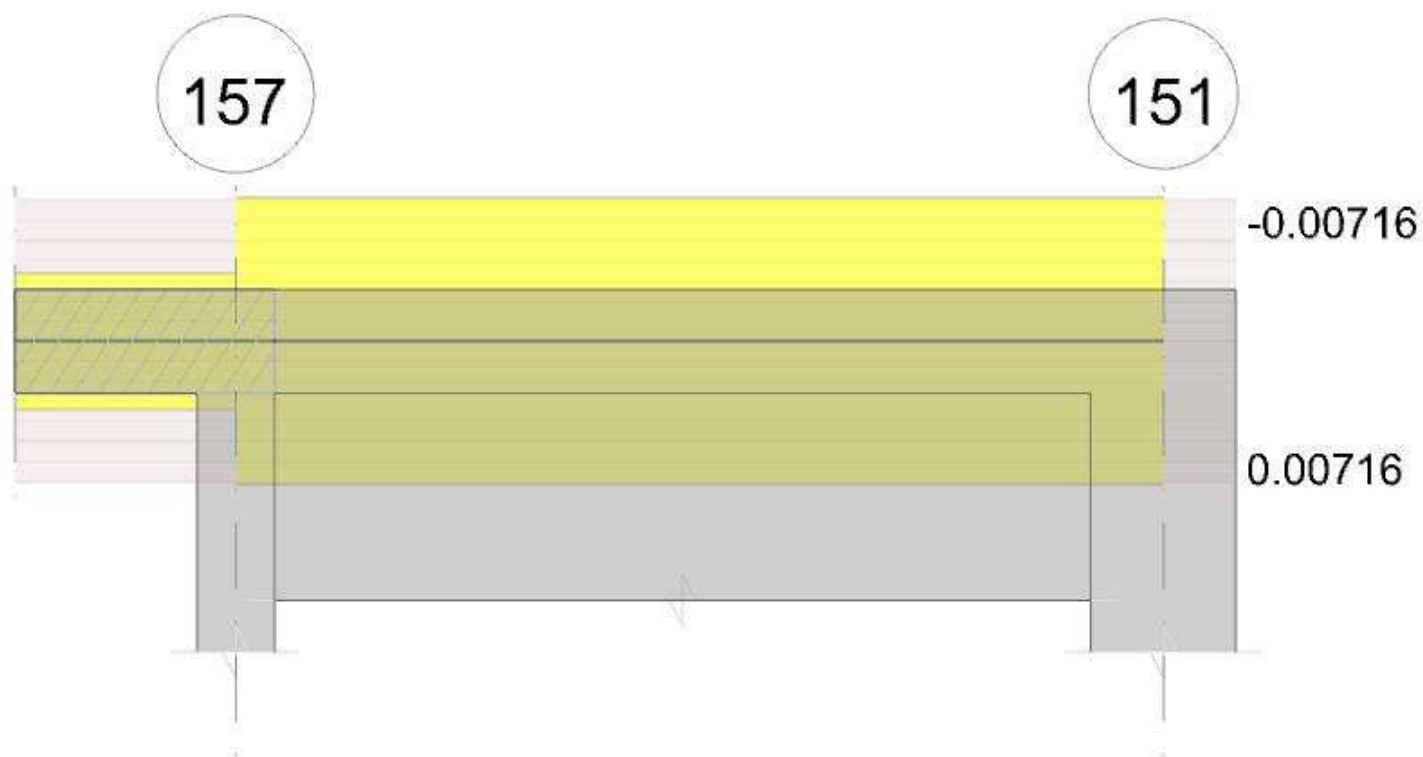


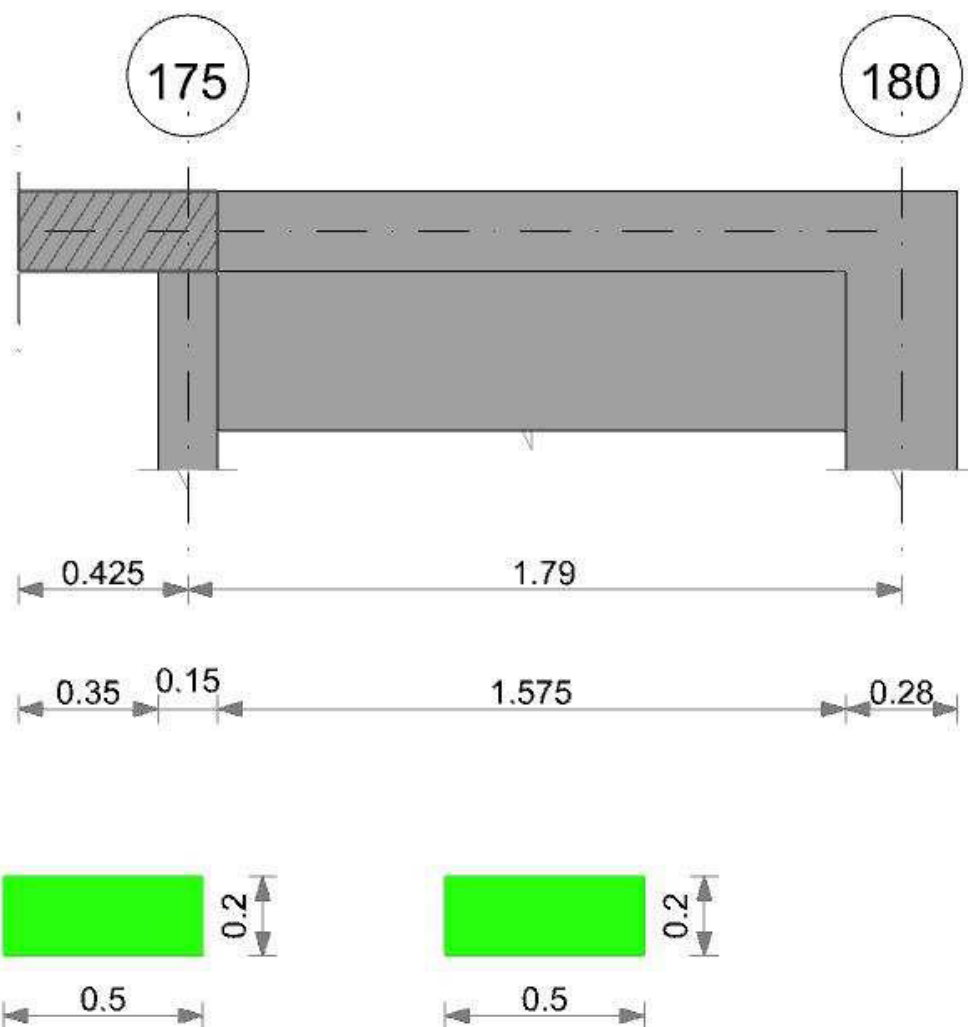
Diagramma verifica stato limite esercizio quasi permanente freccia



Trave a "Sottotetto" 179-176

Geometria





#### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

#### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x20	Rettangolare	0.5	0.2	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

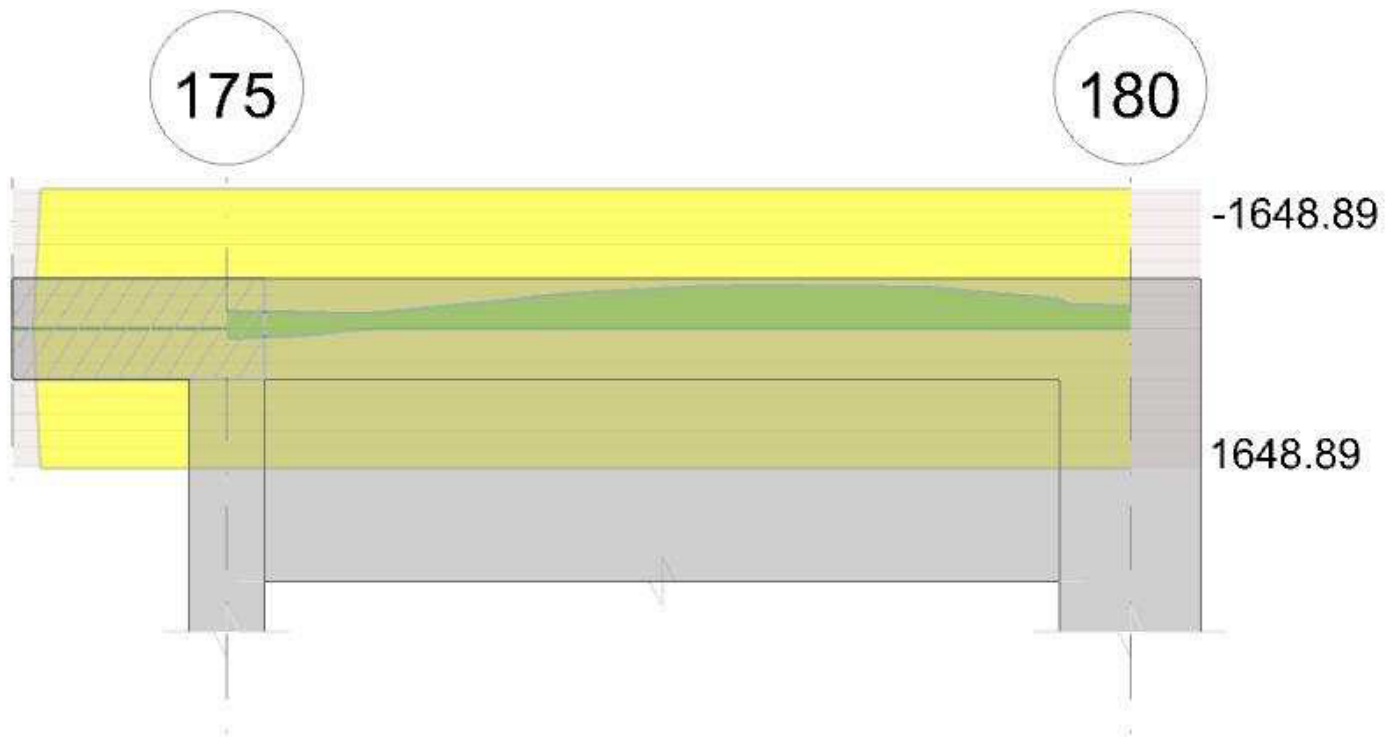


Diagramma verifica stato limite ultimo taglio

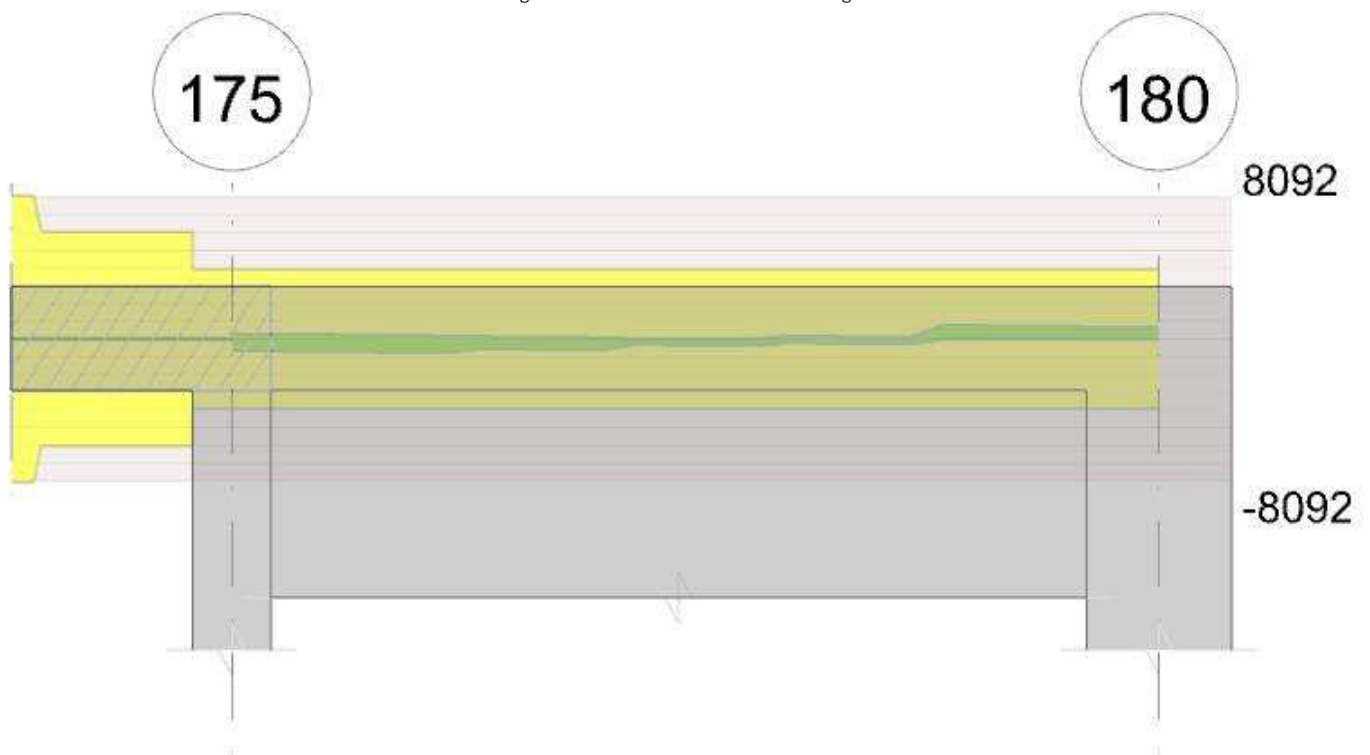
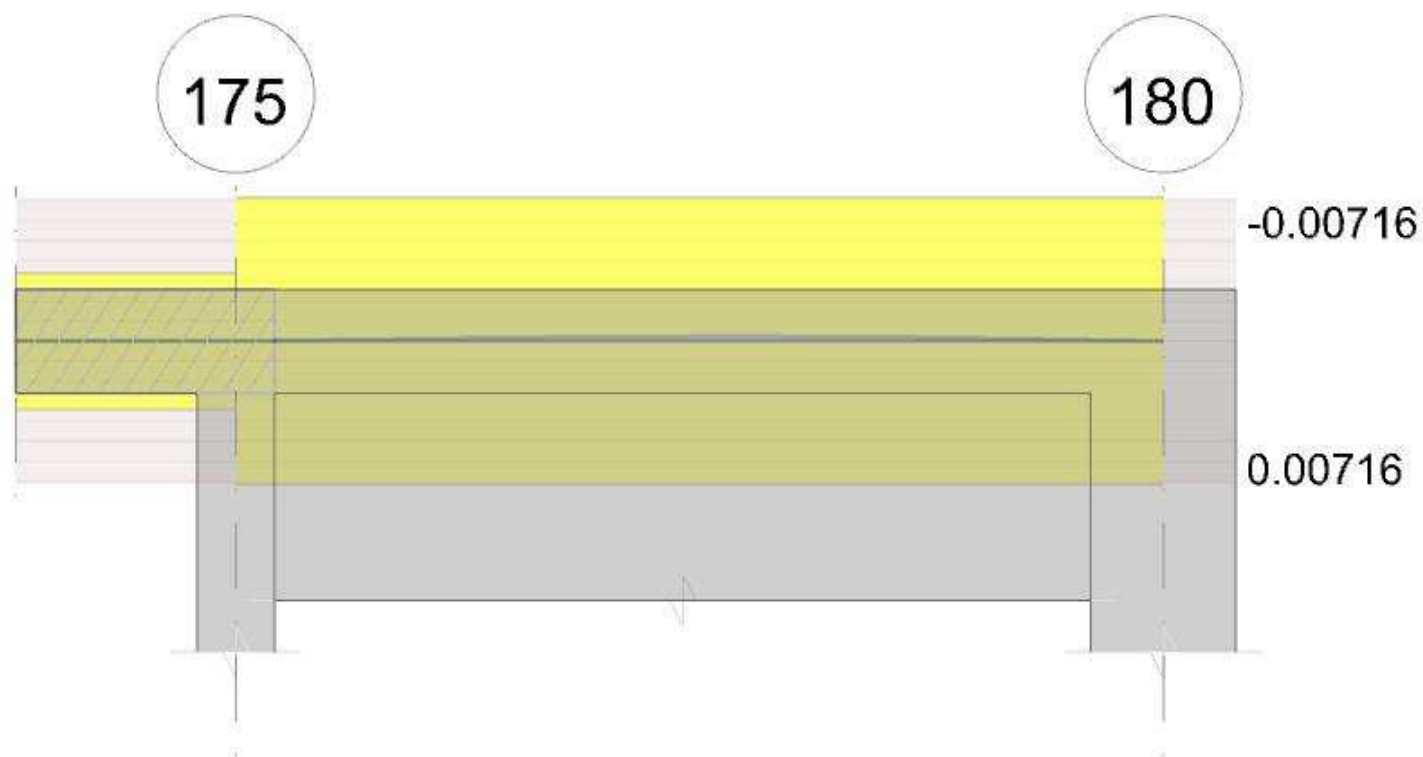


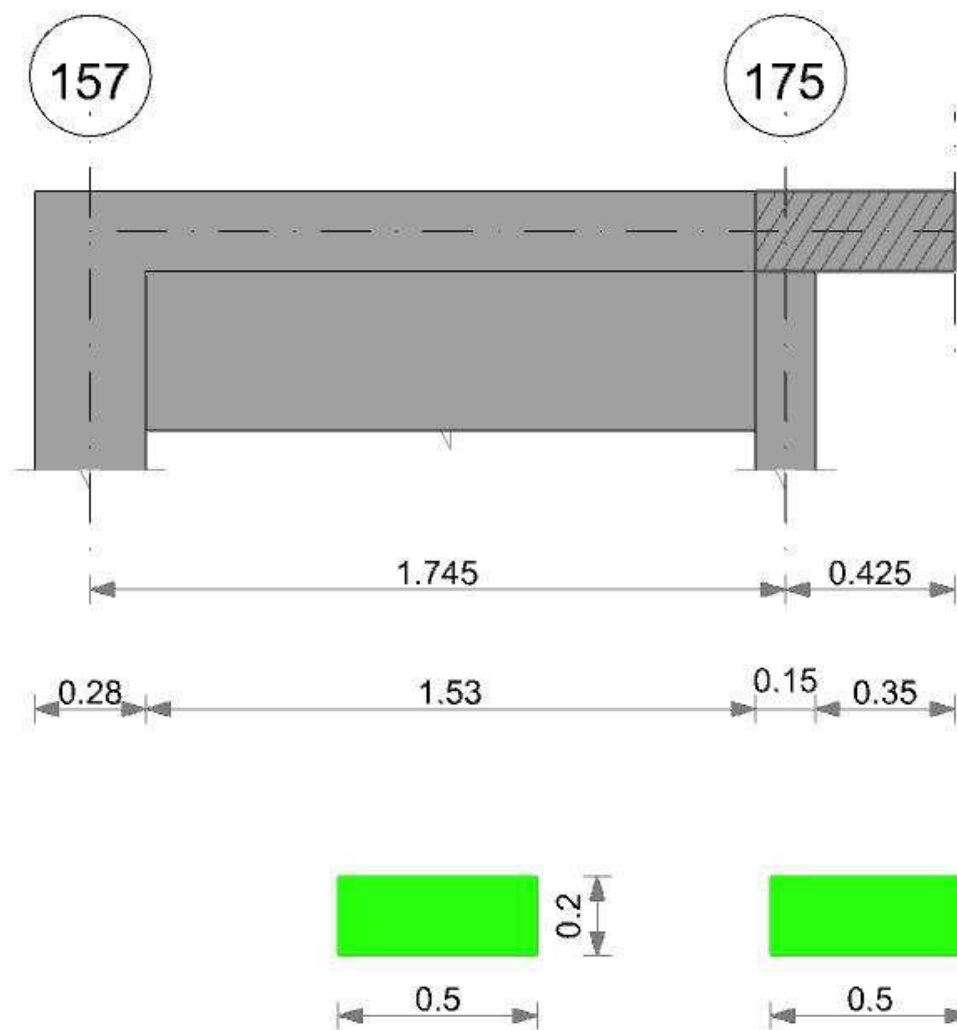
Diagramma verifica stato limite esercizio quasi permanente freccia



Output campate

Trave a "Terzo" 157-179

Geometria



#### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

#### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copri ferro sup.	Copri ferro inf.	Copri ferro lat.
1	R 50x20	Rettangolare	0.5	0.2	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

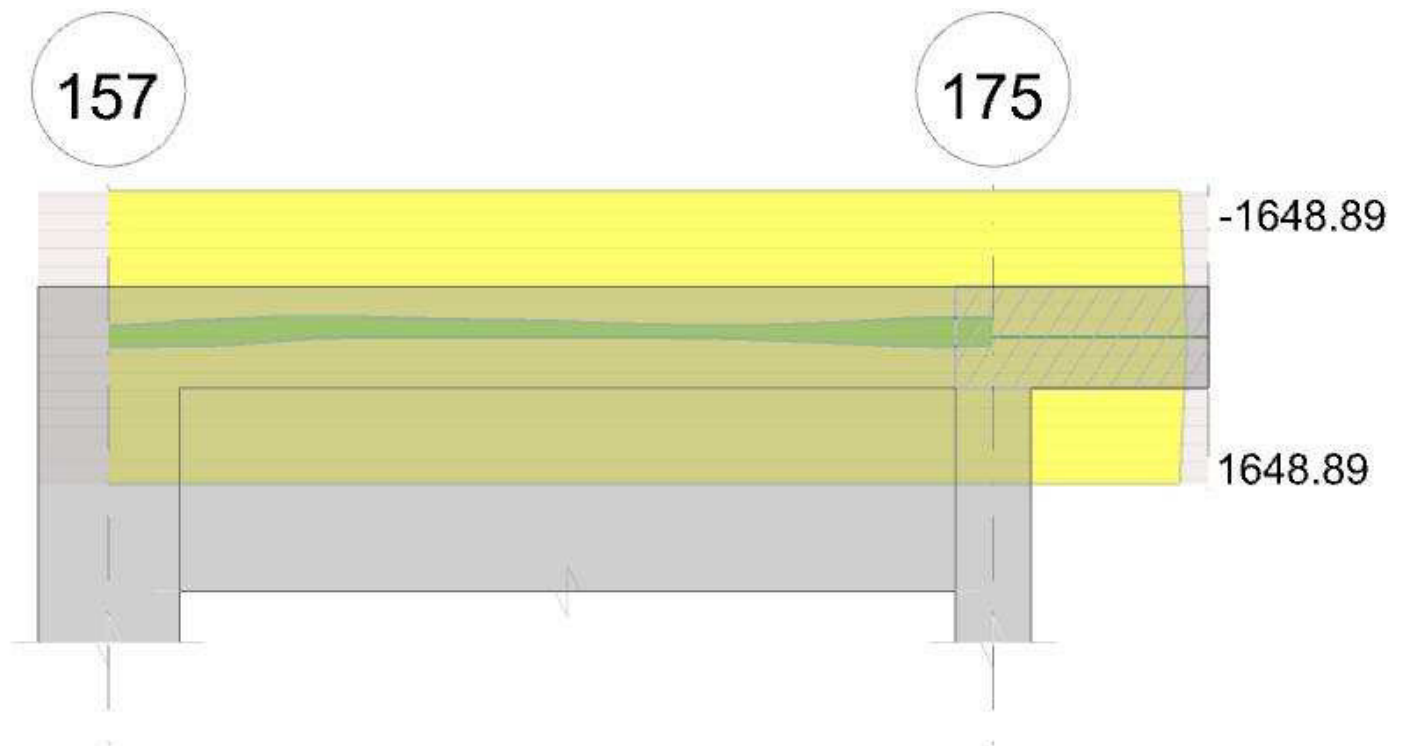


Diagramma verifica stato limite ultimo taglio

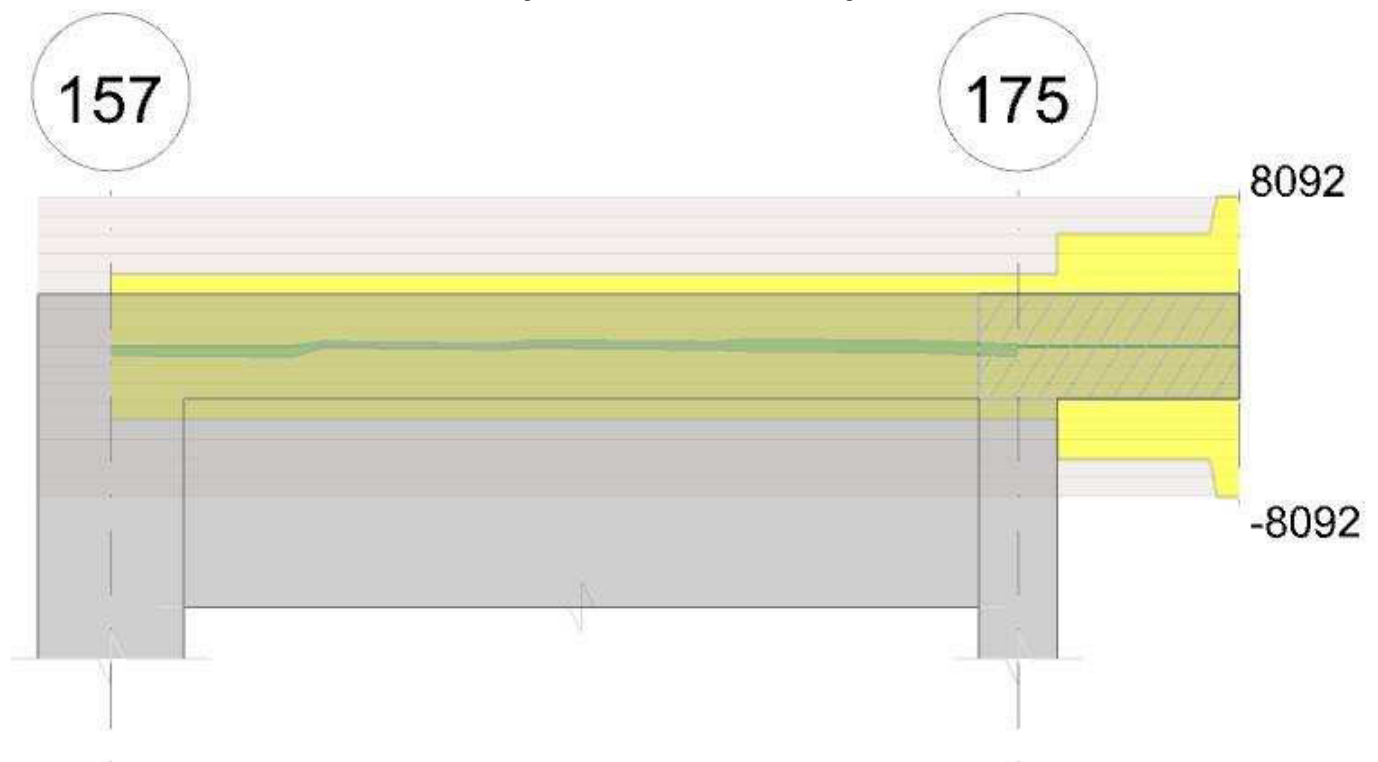
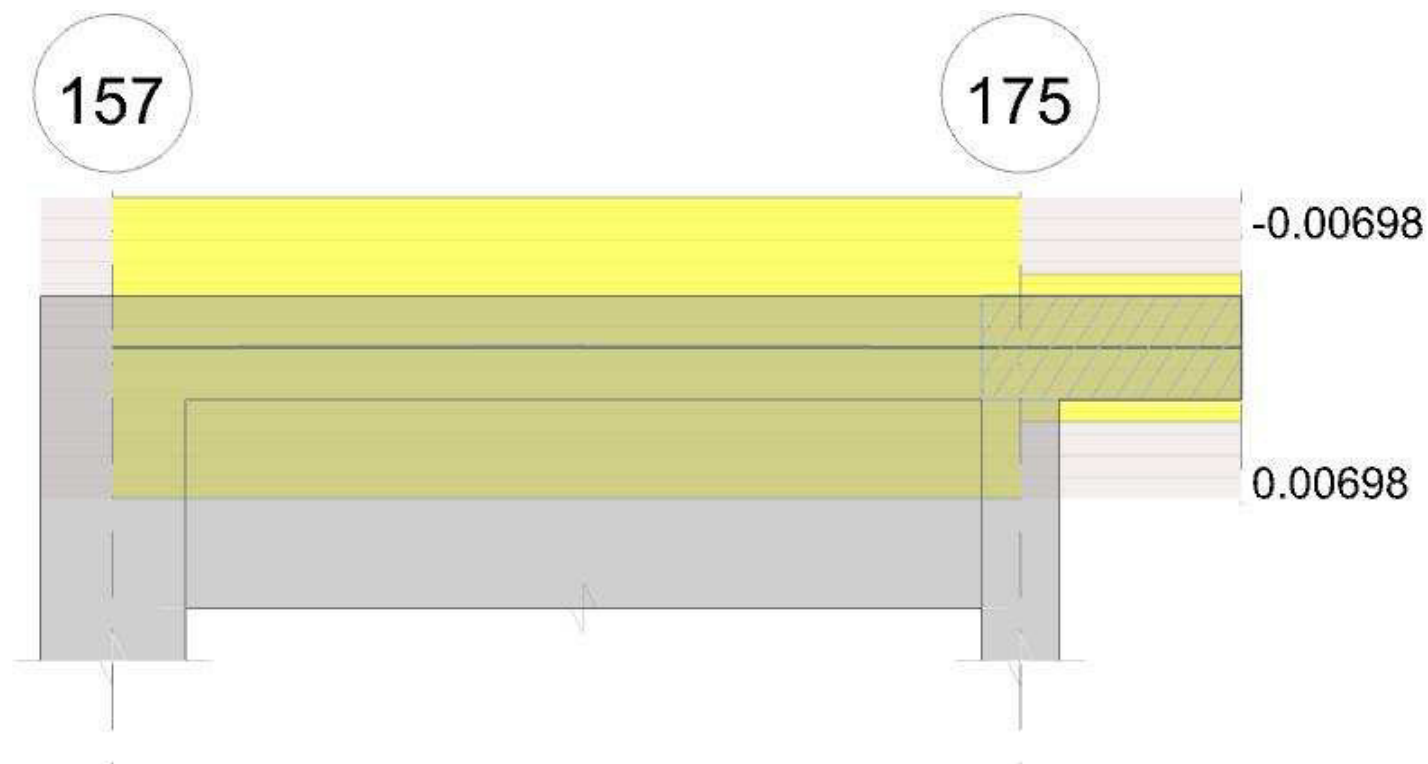


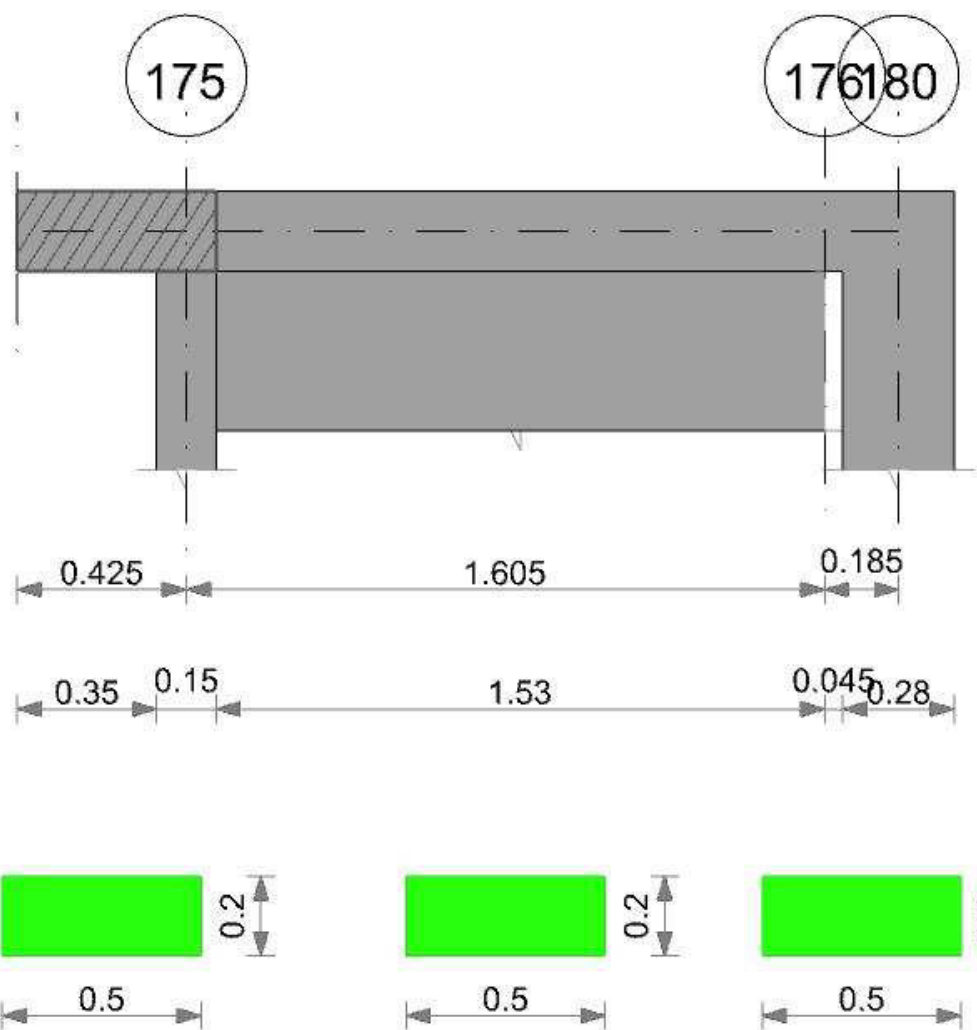
Diagramma verifica stato limite esercizio quasi permanente freccia



Output campate

Trave a "Terzo" 179-176

Geometria



#### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

#### Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x20	Rettangolare	0.5	0.2	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

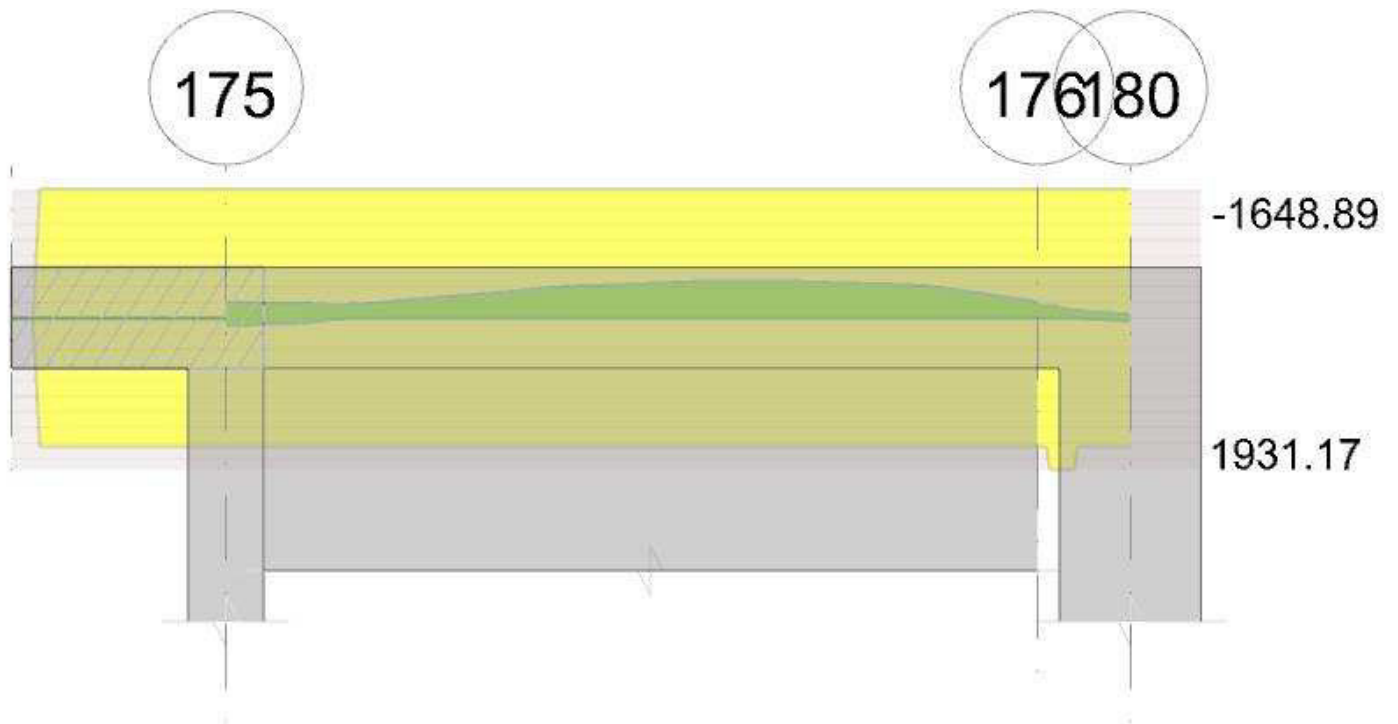


Diagramma verifica stato limite ultimo taglio

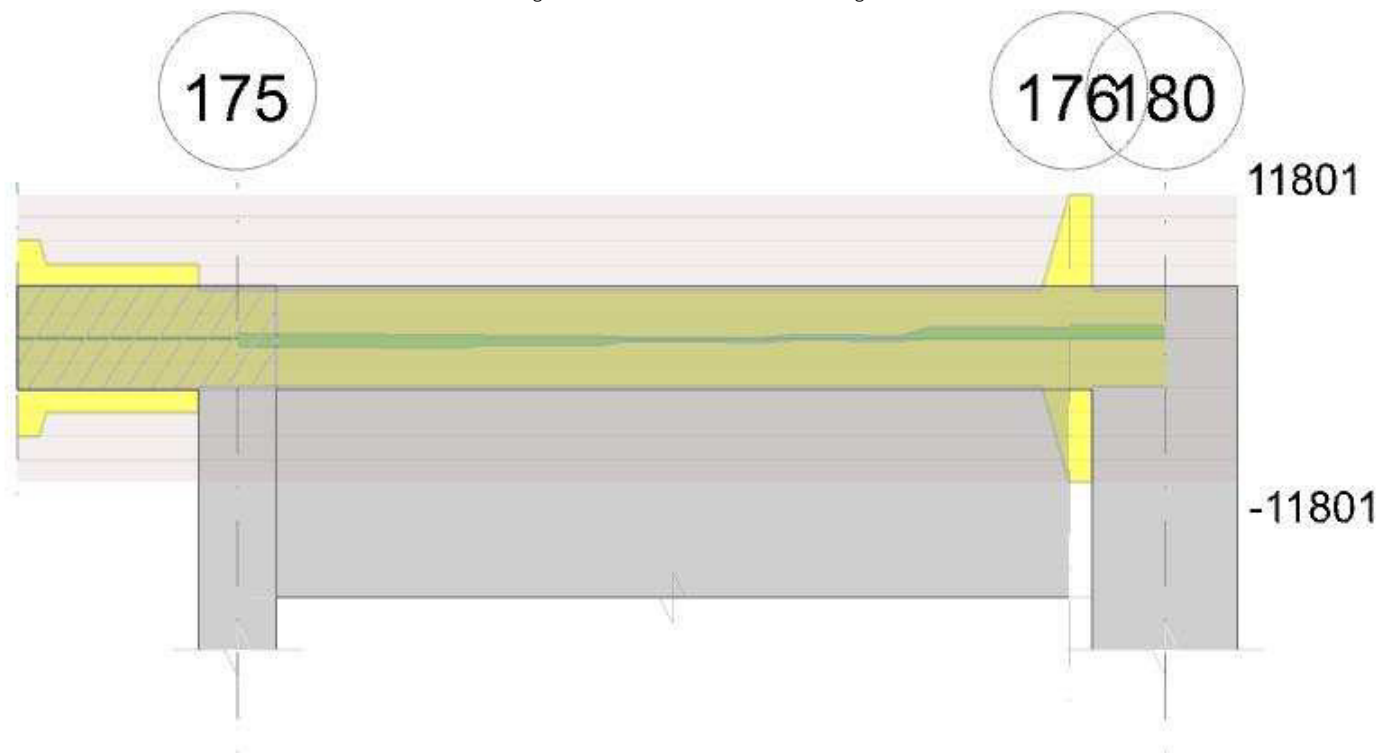
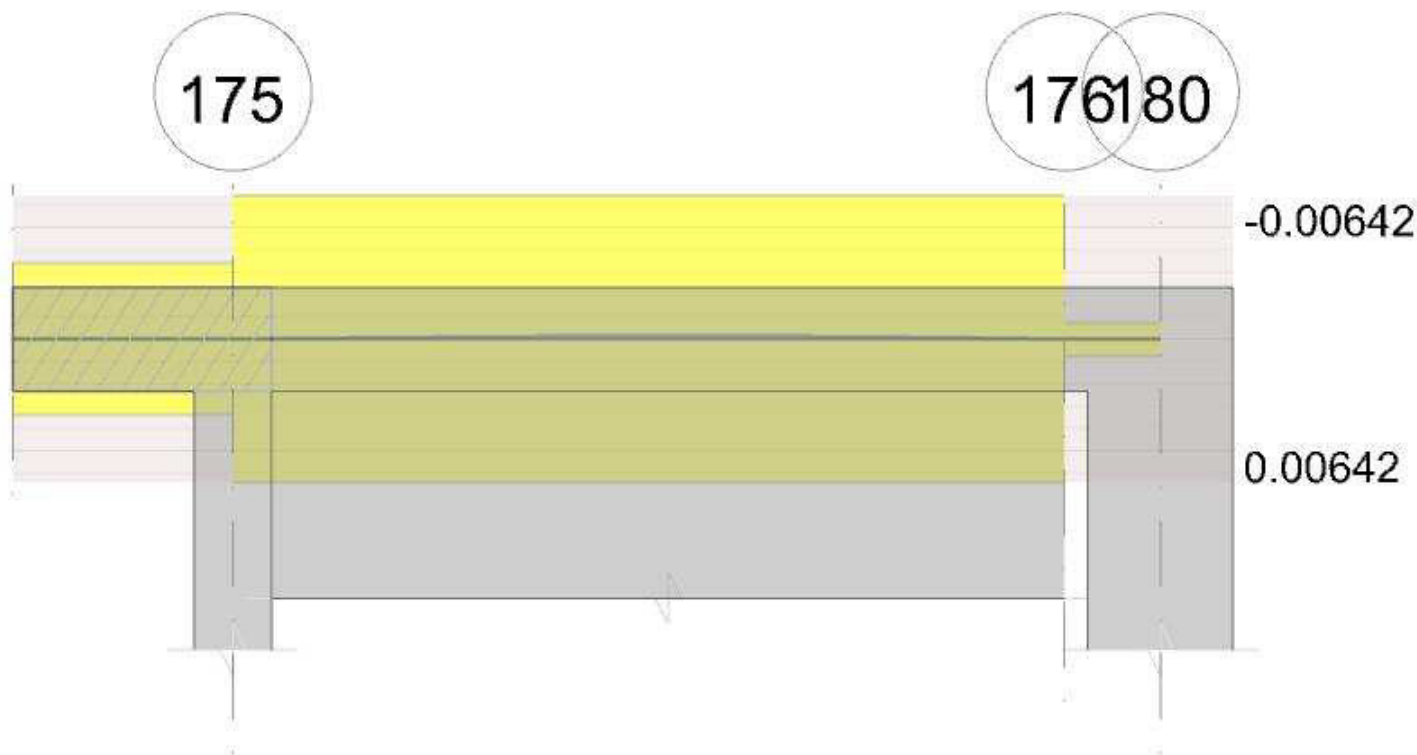


Diagramma verifica stato limite esercizio quasi permanente freccia





## Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica	
0	0.000308	0.05	0.000308	0.05							-151.27	SLU 83	-151.27	-1931.17	0.242	12.77	Si	
0.01	0.000308	0.05	0.000308	0.05							-145.52	SLU 83	-151.27	-1931.17	0.242	12.77	Si	
0.05	0.000308	0.05	0.000308	0.05	-56.86	SLU 2	0.23	1931.17	0.242	8376.15	-109.59	SLU 83	-151.27	-1931.17	0.242	12.77	Si	
0.09	0.000308	0.05	0.000308	0.05							-66.3	SLU 83		-66.3	-1931.17	0.242	29.13	Si
0.19	0.000308	0.05	0.000308	0.05	15.9	SLU 84	15.9	1931.17	0.242	121.46							Si	

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2}= 0.002$ ,  $\epsilon_{yd}= 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000308	0.05	0.000308	0.05							-151.23	SLV 3	-151.23	-1648.89	0.269	10.9	Si
0.01	0.000308	0.05	0.000308	0.05							-146.64	SLV 7	-151.23	-1648.89	0.269	10.9	Si
0.05	0.000308	0.05	0.000308	0.05							-119.03	SLV 7	-151.23	-1648.89	0.269	10.9	Si
0.09	0.000308	0.05	0.000308	0.05	9.13	SLV 10	8.22	1648.89	0.269	200.66	-89.03	SLV 7	-89.03	-1648.89	0.269	18.52	Si
0.19	0.000308	0.05	0.000308	0.05	72.85	SLV 14	39.95	1648.89	0.269	41.28	-53.35	SLV 3	-45.1	-1648.89	0.269	36.56	Si

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000308	0.05	0.000308	0.05							-117.12	SLD 3	-117.12	-1648.89	0.269	14.08	Si
0.01	0.000308	0.05	0.000308	0.05							-113.13	SLD 7	-117.12	-1648.89	0.269	14.08	Si
0.05	0.000308	0.05	0.000308	0.05							-88.75	SLD 7	-117.12	-1648.89	0.269	14.08	Si
0.09	0.000308	0.05	0.000308	0.05							-60.82	SLD 7	-60.82	-1648.89	0.269	27.11	Si
0.19	0.000308	0.05	0.000308	0.05	36.64	SLD 14	26.89	1648.89	0.269	61.32	-17.14	SLD 3	-17.14	-1648.89	0.269	96.21	Si

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrds	Vult	cotgθ	coeff	Verifica
0	0.0000223	0.000308	0	934	SLU 83	934	3906	23811	11801	11801	1	12.64	Si
0.05	0.0000223	0.000308	0	919	SLU 83	919	3906	23811	11801	11801	1	12.84	Si
0.05	0	0.000308	0	918	SLU 83	918	3906	23811	0	3906	1	4.26	Si
0.09	0	0.000308	0	904	SLU 83	904	3906	23811	0	3906	1	4.32	Si
0.19	0	0.000308	0	874	SLU 83	874	3906	23811	0	3906	1	4.47	Si

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000223	0.000308	0	1038	SLV 1	1038	3906	23811	11801	11801	1	11.37	Si
0.05	0.0000223	0.000308	0	1027	SLV 1	1027	3906	23811	11801	11801	1	11.5	Si
0.05	0	0.000308	0	1025	SLV 1	1025	3906	23811	0	3906	1	3.81	Si
0.09	0	0.000308	0	1015	SLV 1	1015	3906	23811	0	3906	1	3.85	Si
0.19	0	0.000308	0	992	SLV 1	992	3906	23811	0	3906	1	3.94	Si

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000223	0.000308	0	771	SLD 1	771	3906	23811	11801	11801	1	15.3	Si
0.05	0.0000223	0.000308	0	760	SLD 1	760	3906	23811	11801	11801	1	15.53	Si



x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrzd	Vrds	Vult	cotgθ	coeff	Verifica
0.05	0	0.000308	0	759	SLD 1	759	3906	23811	0	3906	1	5.15	Si
0.09	0	0.000308	0	748	SLD 1	748	3906	23811	0	3906	1	5.22	Si
0.19	0	0.000308	0	725	SLD 1	725	3906	23811	0	3906	1	5.39	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	$\sigma$ c	$\sigma$ c lim.	$\sigma$ f.	$\sigma$ f lim.	Mela	Comb.	Mdes	$\sigma$ c	$\sigma$ c lim.	$\sigma$ FRP	$\sigma$ FRP lim.	
0	-108	20	-108	30301	1494000	454519	36000000	-91.79	2	-91.79	25752	1120500			Si
0.05	-78.17	20	-108	30301	1494000	454519	36000000	-66.3	2	-91.79	25752	1120500			Si
0.09	-47.22	20	-47.22	13248	1494000	198724	36000000	-39.95	2	-39.95	11208	1120500			Si
0.19	11.43	21	11.43	3206	1494000	48093	36000000	9.75	2	9.75	2735	1120500			Si

Verifica di apertura delle fessure

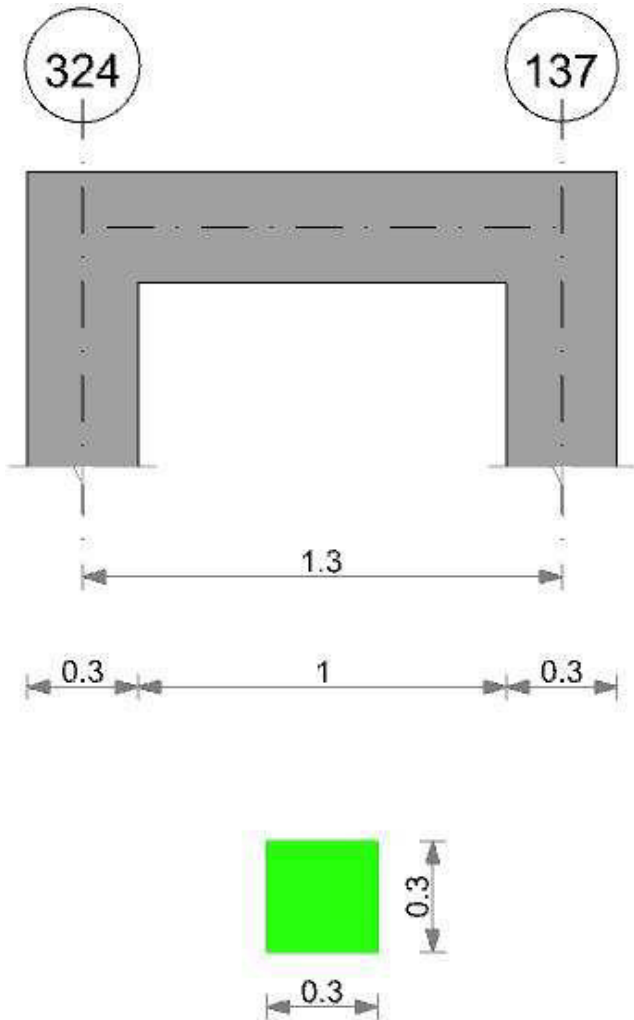
La campata non presenta apertura delle fessure

Verifica di deformabilità

x	Rara				Frequente				Quasi permanente							Verifica
	Elastica+	Elastica-	Fess.+	Fess.-	Elastica+	Elastica-	Fess.+	Fess.-	Elastica+	Elastica-	Fess. viscosa+	Comb.	Fess. viscosa-	Comb.	l/f	
0.05	0	0	0	0	0	0	0	0	0	0	0	1	0	1	9999	Si
0.07	0	0	0	0	0	0	0	0	0	0	0	1	0	1	9999	Si
0.09	0	0	0	0	0	0	0	0	0	0	0	2	0	2	9999	Si

TRAVE PIANO TERRA

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 30x30	Rettangolare	0.3	0.3	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

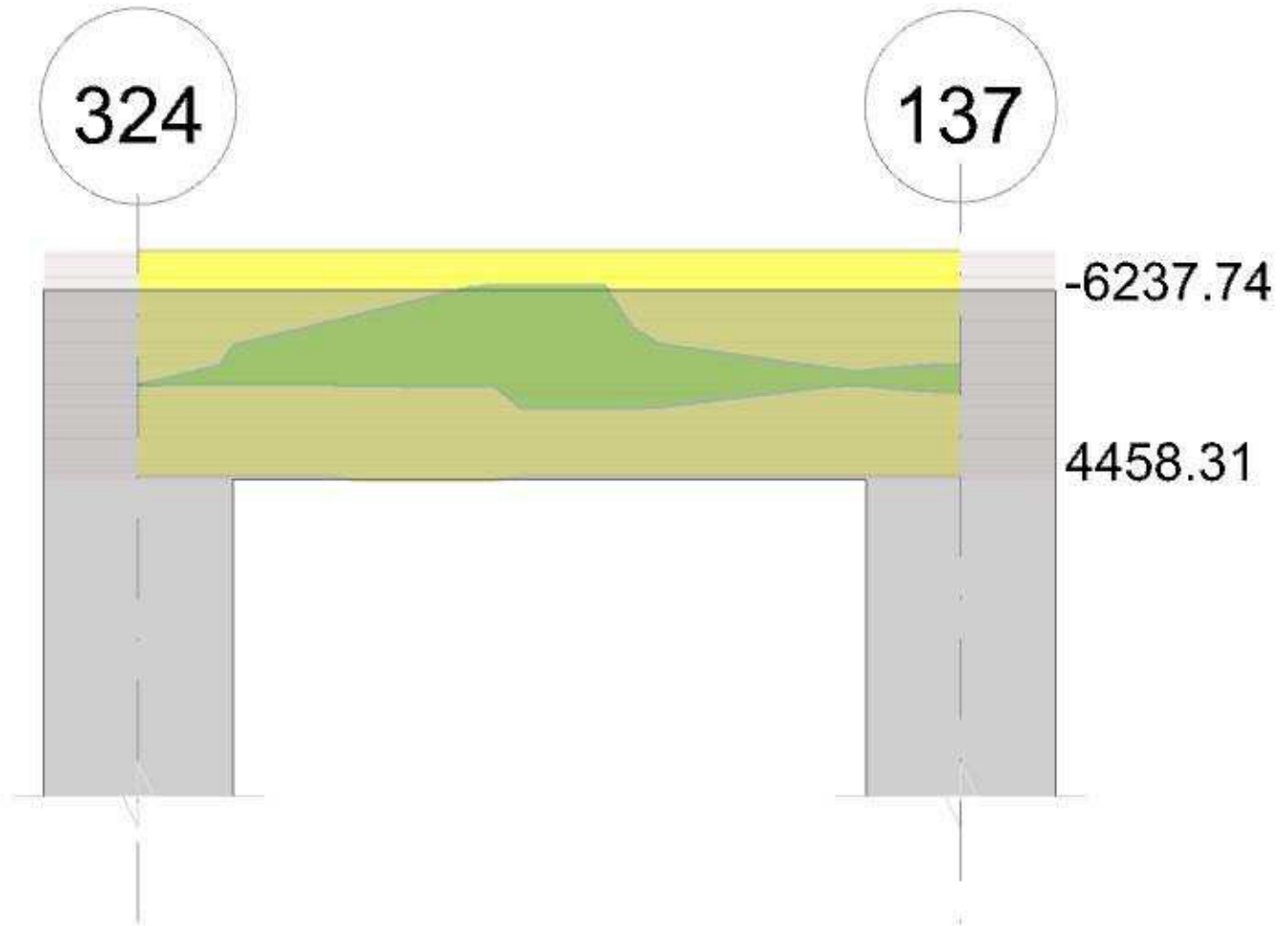


Diagramma verifica stato limite ultimo taglio

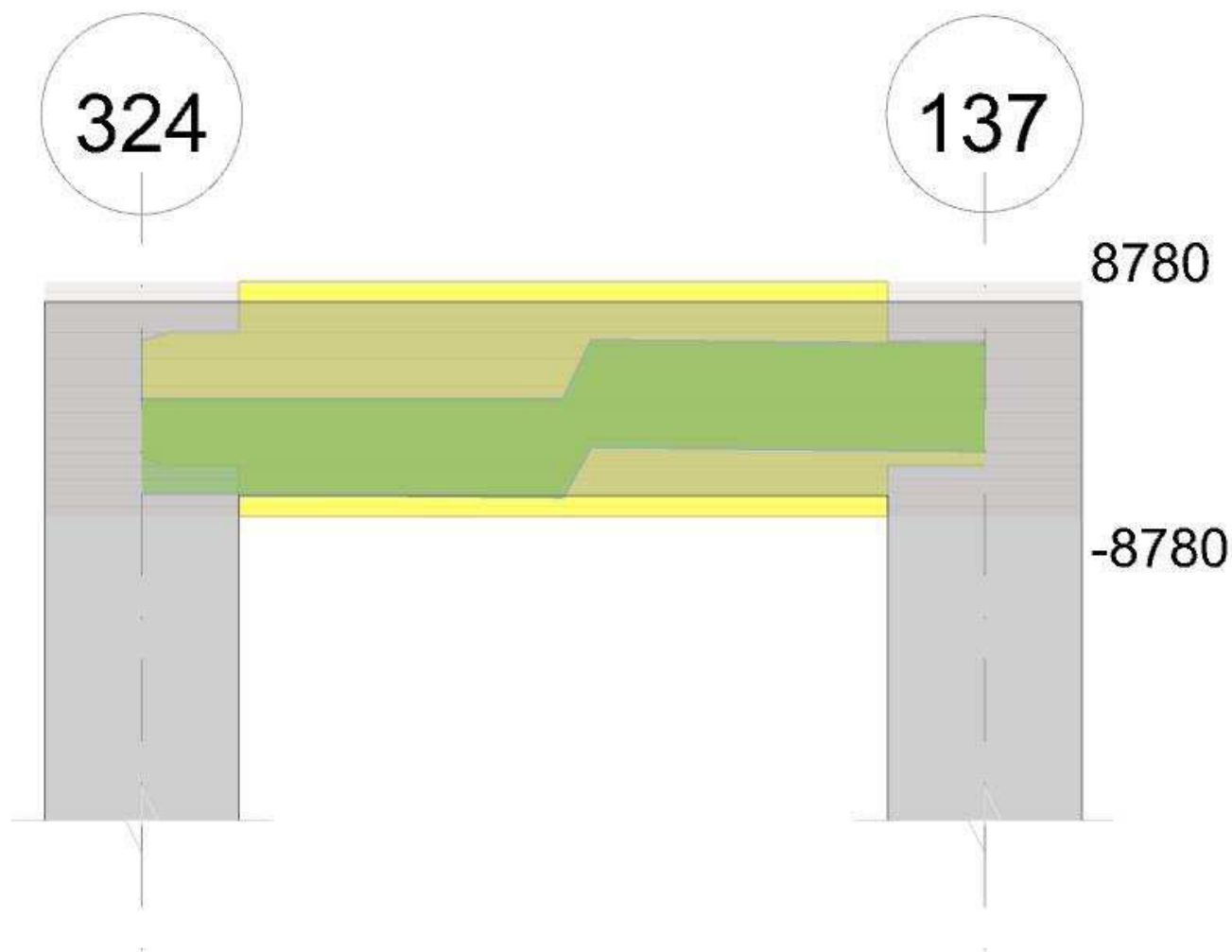
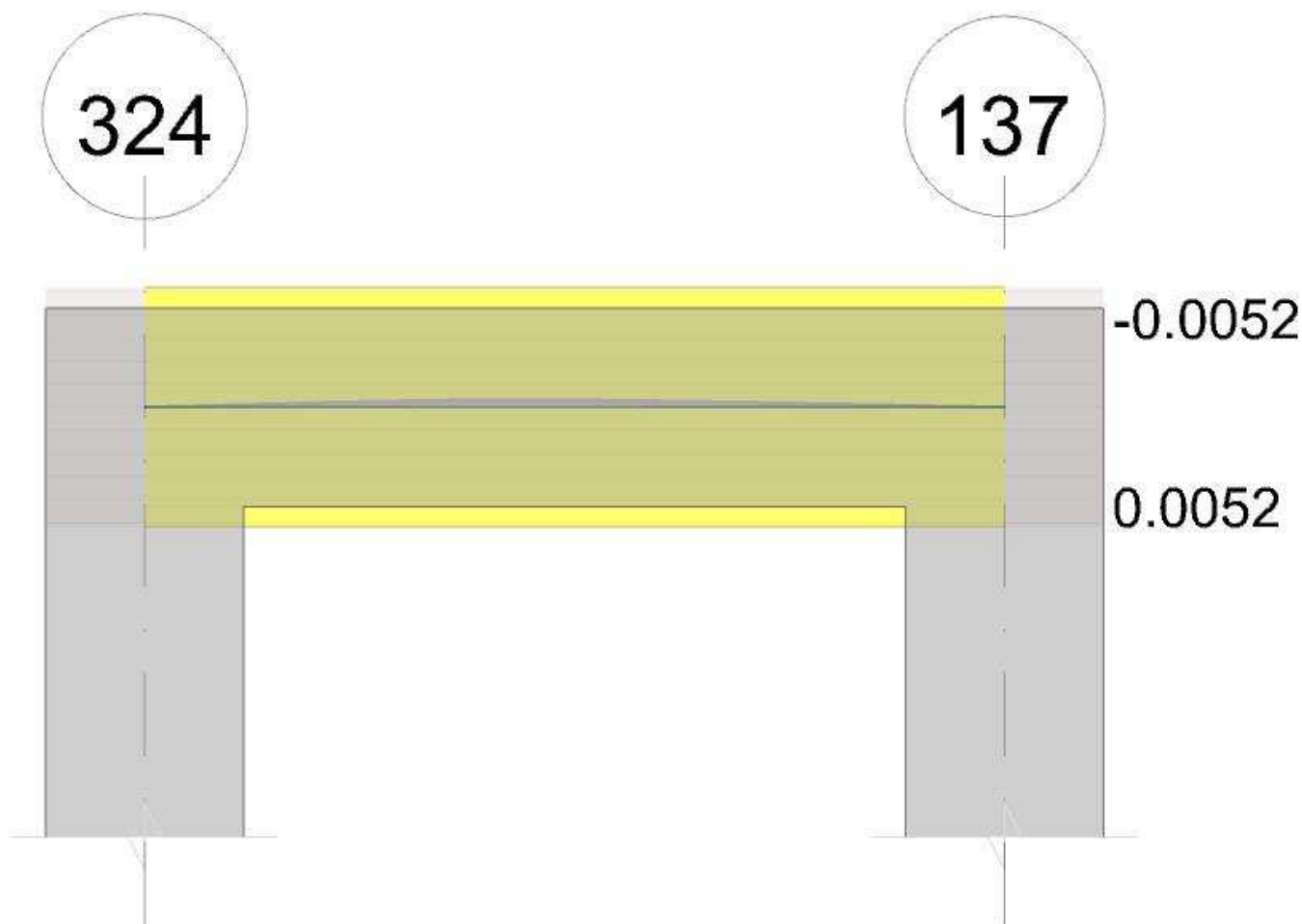


Diagramma verifica stato limite esercizio quasi permanente freccia



#### Output campate

Campata 1 tra i fili 324 - 137, sezione R 30x30, aste 797, 798

#### Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000763	0.052	0.000509	0.052	17.65	SLU 78	17.65	4458.31	0.216	252.59							Si
0.15	0.000763	0.052	0.000509	0.052							-743.79	SLU 78	-1318.73	-6427.17	0.265	4.87	Si
0.56	0.000763	0.052	0.000509	0.052	-1989.52	SLU 1	87.69	4458.31	0.216	50.84	-2932.75	SLU 78	-3412.48	-6427.17	0.265	1.88	Si
0.65	0.000763	0.052	0.000509	0.052	-2307.85	SLU 1	94.14	4458.31	0.216	47.36	-3412.48	SLU 78	-3412.48	-6427.17	0.265	1.88	Si
1.15	0.000763	0.052	0.000509	0.052							-453.75	SLU 84	-468.76	-6427.17	0.265	13.71	Si
1.3	0.000763	0.052	0.000509	0.052							-459.68	SLU 84	-450.31	-6427.17	0.265	14.27	Si

#### Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000763	0.052	0.000509	0.052	23.82	SLV 15	23.82	4265.09	0.298	179.09							Si
0.15	0.000763	0.052	0.000509	0.052							-1038.26	SLV 15	-1831.45	-6237.74	0.369	3.41	Si
0.56	0.000763	0.052	0.000509	0.052							-4008.26	SLV 15	-4642.25	-6237.74	0.369	1.34	Si
0.65	0.000763	0.052	0.000509	0.052	-172.82	SLV 2	1093.95	4265.09	0.298	3.9	-4642.25	SLV 15	-4642.25	-6237.74	0.369	1.34	Si
1.15	0.000763	0.052	0.000509	0.052	15.63	SLV 2	15.63	4265.09	0.298	272.91	-634.46	SLV 15	-634.46	-6237.74	0.369	9.83	Si
1.3	0.000763	0.052	0.000509	0.052	628.41	SLV 2	327.53	4265.09	0.298	13.02	-1208.54	SLV 15	-921.19	-6237.74	0.369	6.77	Si

#### Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti:  $\epsilon_{c2} = 0.002$ ,  $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000763	0.052	0.000509	0.052	17.26	SLD 15	17.26	4265.09	0.298	247.14							Si
0.15	0.000763	0.052	0.000509	0.052							-748.14	SLD 15	-1321.79	-6237.74	0.369	4.72	Si
0.56	0.000763	0.052	0.000509	0.052							-2905.03	SLD 15	-3368.53	-6237.74	0.369	1.85	Si
0.65	0.000763	0.052	0.000509	0.052	-1446.54	SLD 2	215.53	4265.09	0.298	19.79	-3368.53	SLD 15	-3368.53	-6237.74	0.369	1.85	Si
1.15	0.000763	0.052	0.000509	0.052							-448.92	SLD 15	-448.92	-6237.74	0.369	13.89	Si
1.3	0.000763	0.052	0.000509	0.052	103.12	SLD 2	49.31	4265.09	0.298	86.5	-683.25	SLD 15	-564.27	-6237.74	0.369	11.05	Si

#### Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcl	Vrsd	Vult	cotgθ	coeff	Verifica
0	0	0.000509	0	-5054	SLU 78	-5054	-4360	-23620	0	-4360	1	0.86	Si
0.15	0.0000101	0.000763	0	-5099	SLU 78	-5099	-4991	-23620	-8780	-8780	1	1.72	Si



x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0.65	0.0000101	0.000763	0	-5577	SLU 78	-5577	-4991	-23620	-8780	-8780	1	1.57	Si
1.15	0.0000101	0.000763	0	290	SLU 46	290	4991	23620	8780	8780	1	30.27	Si
1.15	0.0000101	0.000763	0	-23	SLU 41	-23	-4991	-23620	-8780	-8780	1	374.1	Si
1.3	0	0.000763	0	219	SLU 46	219	4991	23620	0	4991	1	22.82	Si
1.3	0	0.000763	0	-180	SLU 41	-180	-4991	-23620	0	-4991	1	27.69	Si

#### Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0	0.000509	0	-7045	SLV 15	-7045	-4360	-23620	0	-4360	1	0.62	Si
0.15	0.0000101	0.000763	0	-7079	SLV 15	-7079	-4991	-23620	-8780	-8780	1	1.24	Si
0.65	0.0000101	0.000763	0	-7338	SLV 15	-7338	-4991	-23620	-8780	-8780	1	1.2	Si
1.15	0.0000101	0.000509	0	4159	SLV 2	4159	4360	23620	8780	8780	1	2.11	Si
1.15	0.0000101	0.000763	0	-3823	SLV 15	-3823	-4991	-23620	-8780	-8780	1	2.3	Si
1.3	0	0.000509	0	4081	SLV 2	4081	4360	23620	0	4360	1	1.07	Si
1.3	0	0.000763	0	-3901	SLV 15	-3901	-4991	-23620	0	-4991	1	1.28	Si

#### Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0	0.000509	0	-5078	SLD 15	-5078	-4360	-23620	0	-4360	1	0.86	Si
0.15	0.0000101	0.000763	0	-5112	SLD 15	-5112	-4991	-23620	-8780	-8780	1	1.72	Si
0.65	0.0000101	0.000763	0	-5371	SLD 15	-5371	-4991	-23620	-8780	-8780	1	1.63	Si
1.15	0.0000101	0.000763	0	1874	SLD 2	1874	4991	23620	8780	8780	1	4.69	Si
1.15	0.0000101	0.000763	0	-1538	SLD 15	-1538	-4991	-23620	-8780	-8780	1	5.71	Si
1.3	0	0.000509	0	1796	SLD 2	1796	4360	23620	0	4360	1	2.43	Si
1.3	0	0.000763	0	-1616	SLD 15	-1616	-4991	-23620	0	-4991	1	3.09	Si

#### Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	$\sigma c$	$\sigma c\ lim.$	$\sigma f.$	$\sigma f\ lim.$	Mela	Comb.	Mdes	$\sigma c$	$\sigma c\ lim.$	$\sigma FRP$	$\sigma FRP\ lim.$	
0	13.11	15	13.11	2242	1494000	35199	36000000	12.28	2	12.28	2100	1120500			Si
0.15	-554.83	15	-983.5	176075	1494000	2523065	36000000	-529.25	2	-937.27	167797	1120500			Si
0.65	-2541.37	15	-2541.37	666519	1494000	15705485	36000000	-2407.53	2	-2407.53	631417	1120500			Si
1.15	-335.73	21	-349.37	62548	1494000	896274	36000000	-309.42	2	-331.39	59328	1120500			Si
1.3	-335.63	21	-331.18	59290	1494000	849599	36000000	-290.07	2	-290.07	51930	1120500			Si

#### Verifica di apertura delle fessure

x	Bordo	Rara				Frequente				Quasi permanente				Verifica
		Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	
0.56	superiore	0.228	0.00046	0.000104	15	0.228	0.00052	0.000119	5	0.228	0.00052	0.000117	2	Si
0.65	superiore	0.228	0.00046	0.000104	15	0.228	0.00052	0.000119	5	0.228	0.00052	0.000117	2	Si

#### Verifica di deformabilità

x	Rara				Frequente				Quasi permanente						Verifica
	Elastica+	Elastica-	Fess.+	Fess.-	Elastica+	Elastica-	Fess.+	Fess.-	Elastica+	Elastica-	Fess. viscosa+	Comb.	Fess. viscosa-	Comb.	
0.15	-0.00004	-0.00004	-0.00005	-0.00005	-0.00004	-0.00004	-0.00005	-0.00005	-0.00004	-0.00004	-0.00012	1	-0.00012	1	9999
0.56	-0.00011	-0.00012	-0.00013	-0.00014	-0.00011	-0.00011	-0.00013	-0.00013	-0.00011	-0.00011	-0.00032	1	-0.00033	1	3975
0.65	-0.00011	-0.00011	-0.00012	-0.00014	-0.00011	-0.00011	-0.00012	-0.00013	-0.00011	-0.00011	-0.00031	1	-0.00032	1	4090
1.15	-0.00003	-0.00003	-0.00003	-0.00004	-0.00003	-0.00003	-0.00003	-0.00003	-0.00003	-0.00003	-0.00009	1	-0.00009	1	9999

## 1.3 Verifiche pareti C.A.

Le unità di misura elencate nel capitolo sono in [m, daN] ove non espressamente specificato.

**Descrizione breve:** nome sintetico assegnato al livello.

**Descrizione:** nome assegnato al livello.

**Quota:** quota superiore espressa nel sistema di riferimento assoluto. [m]

**Spessore:** spessore del livello. [m]

**Descrizione:** descrizione della sezione di verifica.

**Dir.:** direzione della sezione di verifica.

**Base:** base della sezione. [m]

**Altezza:** altezza della sezione. [m]

**As,sup:** area di acciaio efficace superiore. [m<sup>2</sup>]

**As,inf:** area di acciaio efficace inferiore. [m<sup>2</sup>]

**c,sup:** copriferro medio superiore. [m]

**c,inf:** copriferro medio inferiore. [m]

**Comb.:** combinazione di verifica.

**MEd:** momento agente. [daN\*m]

**NEd:** sforzo normale agente, positivo se di trazione. [daN]

**MRd:** momento resistente. [daN\*m]

**NRd:** sforzo normale resistente, positivo se di trazione. [daN]

**c.s.:** coefficiente di sicurezza.

**Verifica:** stato di verifica.

**d:** altezza utile. [m]

**bw:** minima larghezza anima. [m]

**Armatura a taglio:** necessità di armatura a taglio.

**Asw/s:** rapporto tra l'area dell'armatura trasversale e l'interasse tra due armature consecutive.

**VEd:** taglio agente. [daN]

**Vrd,c:** resistenza di calcolo a taglio per elementi privi di armature trasversali. [daN]

**Vrcd:** valore resistente di calcolo a taglio compressione del calcestruzzo d'anima. [daN]



**V<sub>rsd</sub>**: valore resistente di calcolo a taglio trazione dell'armatura trasversale. [daN]

**V<sub>Rd</sub>**: resistenza a taglio. [daN]

**cotg(θ)**: cotangente dell'angolo dei puntoni rispetto all'asse.

**A<sub>sl</sub>**: area armatura longitudinale. [m<sup>2</sup>]

**Sezione fessurata**: sezione fessurata.

**σ<sub>c</sub>**: tensione del calcestruzzo. [daN/m<sup>2</sup>]

**σ<sub>c</sub> limite**: tensione limite del calcestruzzo. [daN/m<sup>2</sup>]

**E<sub>s</sub>/E<sub>c</sub>**: coefficiente di omogenizzazione.

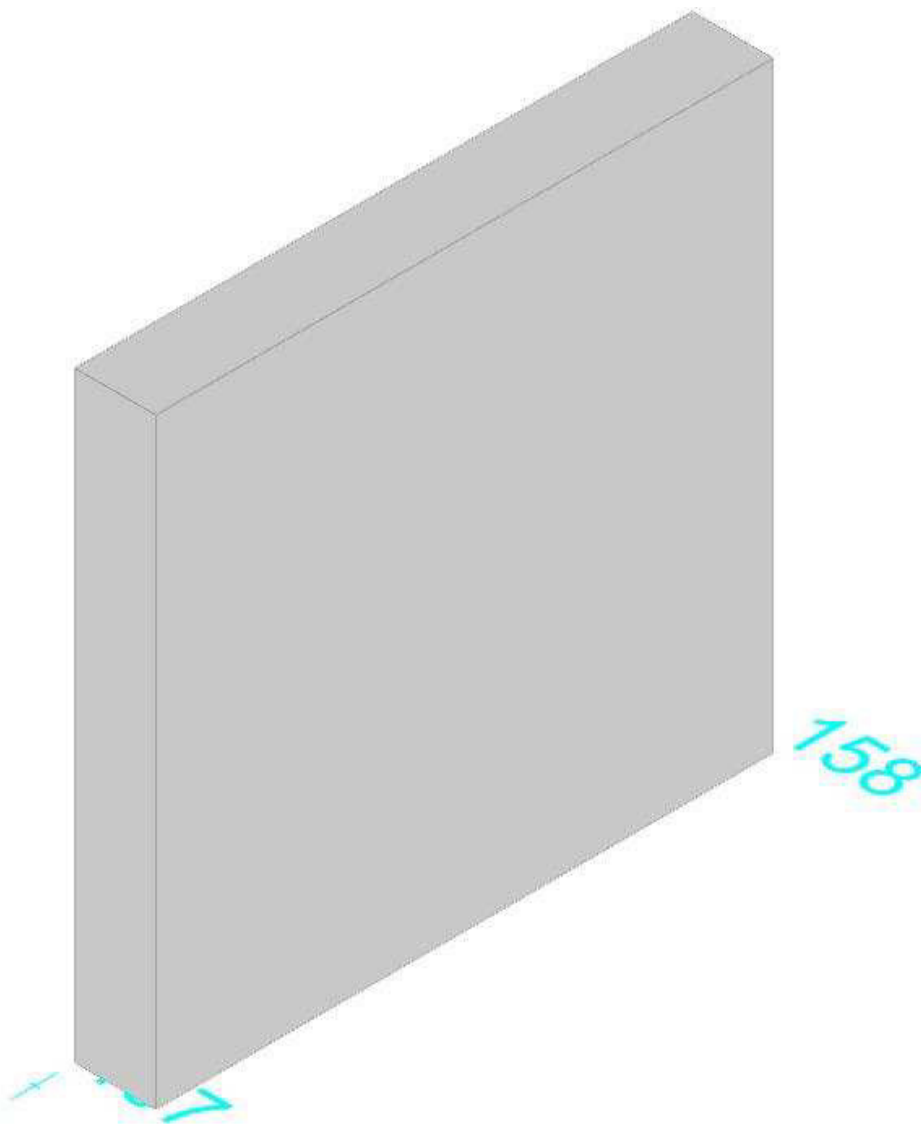
**σ<sub>f</sub>**: tensione dell'armatura. [daN/m<sup>2</sup>]

**σ<sub>f</sub> limite**: tensione limite dell'armatura. [daN/m<sup>2</sup>]

## Parete Fondazione ascensore - Fondazione

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Geometria



### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

### Livelli significativi

Descrizione breve	Descrizione	Quota	Spessore
L1	Fondazione ascensore	-3.08	0
L2	Fondazione	-1.59	0

### Verifiche nei nodi

### Sezioni rettangolari

Descrizione	Dir.	Base	Altezza	A <sub>s,sup</sub>	A <sub>s,inf</sub>	c <sub>sup</sub>	c <sub>inf</sub>
507 Prosp.A	Verticale	0.5	0.2	0.000565	0.000565	0.036	0.036



Descrizione	Dir.	Base	Altezza	As,sup	As,inf	c,sup	c,inf
118 Prosp.A	Orizzontale	0.8325	0.2	0.001018	0.001018	0.0486	0.0486
120 Prosp.A	Orizzontale	1	0.2	0.001131	0.001131	0.048	0.048
523 Prosp.A	Verticale	0.5	0.2	0.000549	0.000549	0.036	0.036
485 Prosp.A	Verticale	0.5	0.2	0.000549	0.000549	0.036	0.036
84 Prosp.A	Orizzontale	0.8325	0.2	0.001527	0.001527	0.0486	0.0486
50 Prosp.A	Orizzontale	0.8325	0.2	0.001018	0.001018	0.0486	0.0486
103 Prosp.A	Verticale	1	0.2	0.001089	0.001089	0.036	0.036
42 Prosp.A	Orizzontale	1	0.2	0.001131	0.001131	0.048	0.048

#### Verifiche a flessione SLU D.M. 17-01-18 §4.1.2.3.4.2

La struttura è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per le combinazioni SLV, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Descrizione	Dir.	Comb.	MEd	NEd	MRd	NRd	c.s.	Verifica
507 Prosp.A	Verticale	SLV 4	-18.2	3965	-189.52	41294	10.4135	Si
507 Prosp.A	Verticale	SLV 2	27.06	3287	322.81	39212	11.9301	Si
118 Prosp.A	Orizzontale	SLV 2	382.63	57	4969.98	741	12.9892	Si
120 Prosp.A	Orizzontale	SLV 2	391.53	50	5628.9	722	14.3768	Si
523 Prosp.A	Verticale	SLV 15	170.61	-7660	2813.95	-126339	16.4933	Si

#### Verifiche a flessione SLD Resistenza D.M. 17-01-18 §4.1.2.3.4.2

La struttura è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Descrizione	Dir.	Comb.	MEd	NEd	MRd	NRd	c.s.	Verifica
507 Prosp.A	Verticale	SLD 2	43.22	2718	563.71	35448	13.0428	Si
118 Prosp.A	Orizzontale	SLD 2	295.64	-756	5945.29	-15209	20.11	Si
523 Prosp.A	Verticale	SLD 15	126.17	-5410	2903.11	-124487	23.0086	Si
485 Prosp.A	Verticale	SLD 15	71.72	-6463	1667.61	-150274	23.2527	Si
120 Prosp.A	Orizzontale	SLD 2	297.09	-930	7036.47	-22017	23.6847	Si

#### Verifiche a taglio SLU D.M. 17-01-18 §4.1.2.3.5

Descrizione	Dir.	d	bw	Armatura a taglio	Asw/s	Comb.	VEd	NEd	MEd	Vrd,c	Vrcd	Vrsd	VRd	cotg(θ)	Asl	c.s.	Verifica
118 Prosp.A	Orizzontale	0.151	0.832	Non necessaria	0	SLV 2	1807	-5010	-136.78	8795	28188	0	8795	2.5	0.0010179	4.8672	Si
120 Prosp.A	Orizzontale	0.152	1	Non necessaria	0	SLV 2	-1823	48	389.9	9653	33280	0	9653	2.5	0.001131	5.2958	Si
485 Prosp.A	Verticale	0.164	0.5	Non necessaria	0	SLV 2	-843	-1295	45.53	5187	18118	0	5187	2.5	0.0005493	6.1541	Si
523 Prosp.A	Verticale	0.164	0.5	Non necessaria	0	SLV 3	632	-2663	62.84	5356	18293	0	5356	2.5	0.0005493	8.476	Si
118 Prosp.A	Verticale	0.164	0.872	Non necessaria	0	SLV 2	-994	-848	23.28	8970	31437	0	8970	2.5	0.0009887	9.0222	Si

#### Verifiche a taglio SLD Resistenza D.M. 17-01-18 §4.1.2.3.5

Descrizione	Dir.	d	bw	Armatura a taglio	Asw/s	Comb.	VEd	NEd	MEd	Vrd,c	Vrcd	Vrsd	VRd	cotg(θ)	Asl	c.s.	Verifica
118 Prosp.A	Orizzontale	0.151	0.832	Non necessaria	0	SLD 2	-1188	-128	283.45	8241	27614	0	8241	2.5	0.0010179	6.9389	Si
120 Prosp.A	Orizzontale	0.152	1	Non necessaria	0	SLD 2	-1281	-917	296.53	9757	33388	0	9757	2.5	0.001131	7.6154	Si
485 Prosp.A	Verticale	0.164	0.5	Non necessaria	0	SLD 2	-587	-2229	14.7	5302	18237	0	5302	2.5	0.0005493	9.0294	Si
523 Prosp.A	Verticale	0.164	0.5	Non necessaria	0	SLD 3	544	-3860	65.21	5503	18445	0	5503	2.5	0.0005493	10.1151	Si
99 Prosp.A	Orizzontale	0.151	0.832	Non necessaria	0	SLD 2	719	-4101	-44.65	8692	28081	0	8692	2.5	0.0010179	12.0901	Si

#### Verifiche SLE tensione calcestruzzo D.M. 17-01-18 §4.1.2.2.5.1

Descrizione	Dir.	Comb.	MEd	NEd	Sezione fessurata	σc	σc limite	Es/Ec	c.s.	Verifica
485 Prosp.A	Verticale	SLE QP 2	98.07	-5286	No	-69848	1120500	15	16.0421	Si
118 Prosp.A	Orizzontale	SLE QP 2	251.36	-5447	No	-67180	1120500	15	16.679	Si
485 Prosp.A	Verticale	SLE RA 21	107.29	-5717	No	-75852	1494000	15	19.6963	Si
523 Prosp.A	Verticale	SLE QP 2	96.49	-3722	No	-56031	1120500	15	19.998	Si
118 Prosp.A	Orizzontale	SLE RA 21	270.87	-5989	No	-72999	1494000	15	20.466	Si

#### Verifiche SLE tensione acciaio D.M. 17-01-18 §4.1.2.2.5.2

Descrizione	Dir.	Comb.	MEd	NEd	Sezione fessurata	σf	σf limite	Es/Ec	c.s.	Verifica
507 Prosp.A	Verticale	SLE RA 21	90.45	1517	No	410040	36000000	15	87.7962	Si
84 Prosp.A	Orizzontale	SLE RA 1	-30.13	-3796	No	-233412	36000000	15	154.2337	Si
50 Prosp.A	Orizzontale	SLE RA 2	-32.22	-3456	No	-223547	36000000	15	161.0398	Si
103 Prosp.A	Verticale	SLE RA 21	133.07	780	No	209859	36000000	15	171.5435	Si
42 Prosp.A	Orizzontale	SLE RA 2	-24.07	-3582	No	-204908	36000000	15	175.6884	Si

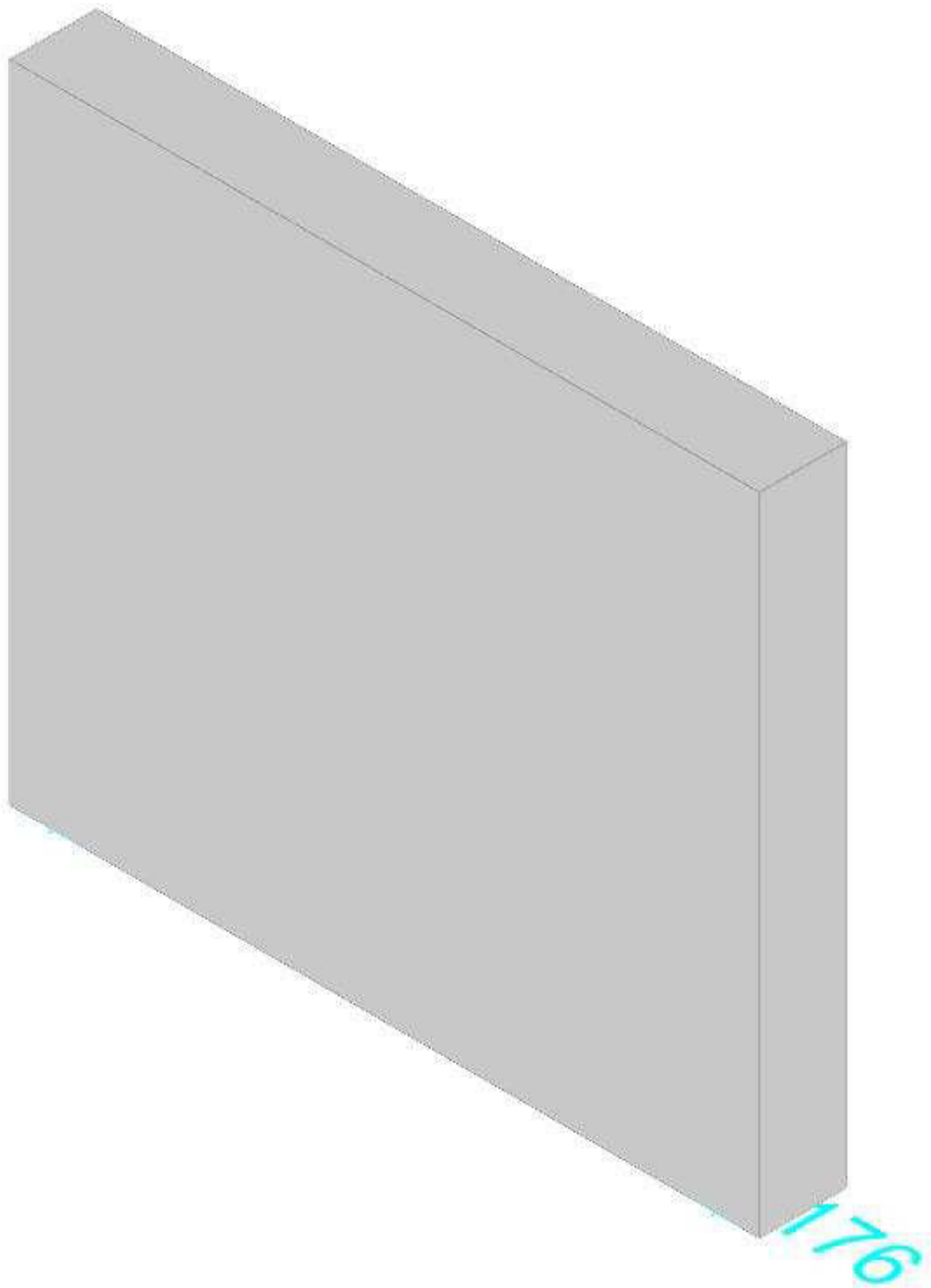
#### Verifiche generali

### Parete Fondazione ascensore - Fondazione

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Geometria





#### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

#### Livelli significativi

Descrizione breve	Descrizione	Quota	Spessore
L1	Fondazione ascensore	-3.08	0
L2	Fondazione	-1.59	0

#### Verifiche nei nodi

#### Sezioni rettangolari

Descrizione	Dir.	Base	Altezza	As,sup	As,inf	c,sup	c,inf
592 Prosp.A	Verticale	0.5	0.2	0.00019	0.0003	0.036	0.036
129 Prosp.A	Verticale	0.8725	0.2	0.000317	0.000501	0.036	0.036
591 Prosp.A	Verticale	0.5	0.2	0.000462	0.000462	0.036	0.036
587 Prosp.A	Verticale	0.5	0.2	0.00019	0.000262	0.036	0.036
124 Prosp.A	Verticale	0.8725	0.2	0.000254	0.000349	0.036	0.036
124 Prosp.A	Orizzontale	0.6	0.2	0.000679	0.000679	0.0489	0.0489
125 Prosp.A	Orizzontale	0.9087	0.2	0.001018	0.001018	0.0486	0.0486
590 Prosp.A	Verticale	0.5	0.2	0.000565	0.000565	0.036	0.036

#### Verifiche a flessione SLU D.M. 17-01-18 §4.1.2.3.4.2

La struttura è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per le combinazioni SLV, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1



Descrizione	Dir.	Comb.	MEd	NEd	MRd	NRd	c.s.	Verifica
592 Prosp.A	Verticale	SLV 16	127.49	8150	187.15	11964	1.468	Si
129 Prosp.A	Verticale	SLV 16	127.49	8150	311.91	19940	2.4466	Si
591 Prosp.A	Verticale	SLV 16	-431.5	5874	-1273.71	17340	2.9518	Si
587 Prosp.A	Verticale	SLV 2	140.25	2889	418.13	8612	2.9813	Si
124 Prosp.A	Verticale	SLV 2	142.53	2854	568.38	11383	3.9878	Si

#### Verifiche a flessione SLD Resistenza D.M. 17-01-18 §4.1.2.3.4.2

La struttura è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Descrizione	Dir.	Comb.	MEd	NEd	MRd	NRd	c.s.	Verifica
592 Prosp.A	Verticale	SLD 14	112.67	6544	201.99	11732	1.7928	Si
129 Prosp.A	Verticale	SLD 14	112.67	6544	336.65	19554	2.988	Si
591 Prosp.A	Verticale	SLD 14	-392.39	3781	-1501.29	14468	3.8261	Si
587 Prosp.A	Verticale	SLD 1	187.09	1127	755.36	4549	4.0374	Si
124 Prosp.A	Verticale	SLD 3	228.92	801	1179.11	4124	5.1508	Si

#### Verifiche a taglio SLU D.M. 17-01-18 §4.1.2.3.5

Descrizione	Dir.	d	bw	Armatura a taglio	Asw/s	Comb.	VEd	NEd	MEd	Vrd,c	Vrcd	Vrsd	VRd	cotg(θ)	Asl	c.s.	Verifica
592 Prosp.A	Verticale	0.164	0.5	Non necessaria	0	SLU 84	3641	8434	109.35	4051	17954	0	4051	2.5	0.0001902	1.1124	Si
591 Prosp.A	Verticale	0.164	0.5	Non necessaria	0	SLU 84	3940	4850	-391.35	4748	17954	0	4748	2.5	0.0004623	1.205	Si
129 Prosp.A	Orizzontale	0.151	0.6	Non necessaria	0	SLV 7	4233	-229	-103.96	5795	19879	0	5795	2.5	0.0006786	1.3691	Si
124 Prosp.A	Orizzontale	0.151	0.6	Non necessaria	0	SLV 7	3502	-1814	390.64	5975	20065	0	5975	2.5	0.0006786	1.7063	Si
129 Prosp.A	Verticale	0.164	0.872	Non necessaria	0	SLV 14	3715	8161	32.96	7068	31329	0	7068	2.5	0.0003171	1.9029	Si

#### Verifiche a taglio SLD Resistenza D.M. 17-01-18 §4.1.2.3.5

Descrizione	Dir.	d	bw	Armatura a taglio	Asw/s	Comb.	VEd	NEd	MEd	Vrd,c	Vrcd	Vrsd	VRd	cotg(θ)	Asl	c.s.	Verifica
592 Prosp.A	Verticale	0.164	0.5	Non necessaria	0	SLD 14	3014	7143	90.38	4051	17954	0	4051	2.5	0.0001902	1.3442	Si
591 Prosp.A	Verticale	0.164	0.5	Non necessaria	0	SLD 16	3257	5009	-330.42	4748	17954	0	4748	2.5	0.0004623	1.4576	Si
129 Prosp.A	Verticale	0.164	0.872	Non necessaria	0	SLD 14	3035	7103	74.64	7068	31329	0	7068	2.5	0.0003171	2.3288	Si
124 Prosp.A	Orizzontale	0.151	0.6	Non necessaria	0	SLD 7	2444	-2904	308.09	6099	20193	0	6099	2.5	0.0006786	2.4948	Si
129 Prosp.A	Orizzontale	0.151	0.6	Non necessaria	0	SLD 7	2180	292	-47.79	5769	19853	0	5769	2.5	0.0006786	2.6461	Si

#### Verifiche SLE tensione calcestruzzo D.M. 17-01-18 §4.1.2.2.5.1

Descrizione	Dir.	Comb.	MEd	NEd	Sezione fessurata	oc	oc limite	Es/Ec	c.s.	Verifica
124 Prosp.A	Orizzontale	SLE QP 2	242.01	-3738	No	-80023	1120500	15	14.0021	Si
125 Prosp.A	Orizzontale	SLE QP 2	343.6	-3901	No	-68421	1120500	15	16.3765	Si
587 Prosp.A	Verticale	SLE QP 2	241.2	-67	No	-66988	1120500	15	16.727	Si
124 Prosp.A	Orizzontale	SLE RA 21	260.41	-4055	No	-86341	1494000	15	17.3035	Si
125 Prosp.A	Orizzontale	SLE RA 21	373.71	-4250	No	-74451	1494000	15	20.0669	Si

#### Verifiche SLE tensione acciaio D.M. 17-01-18 §4.1.2.2.5.2

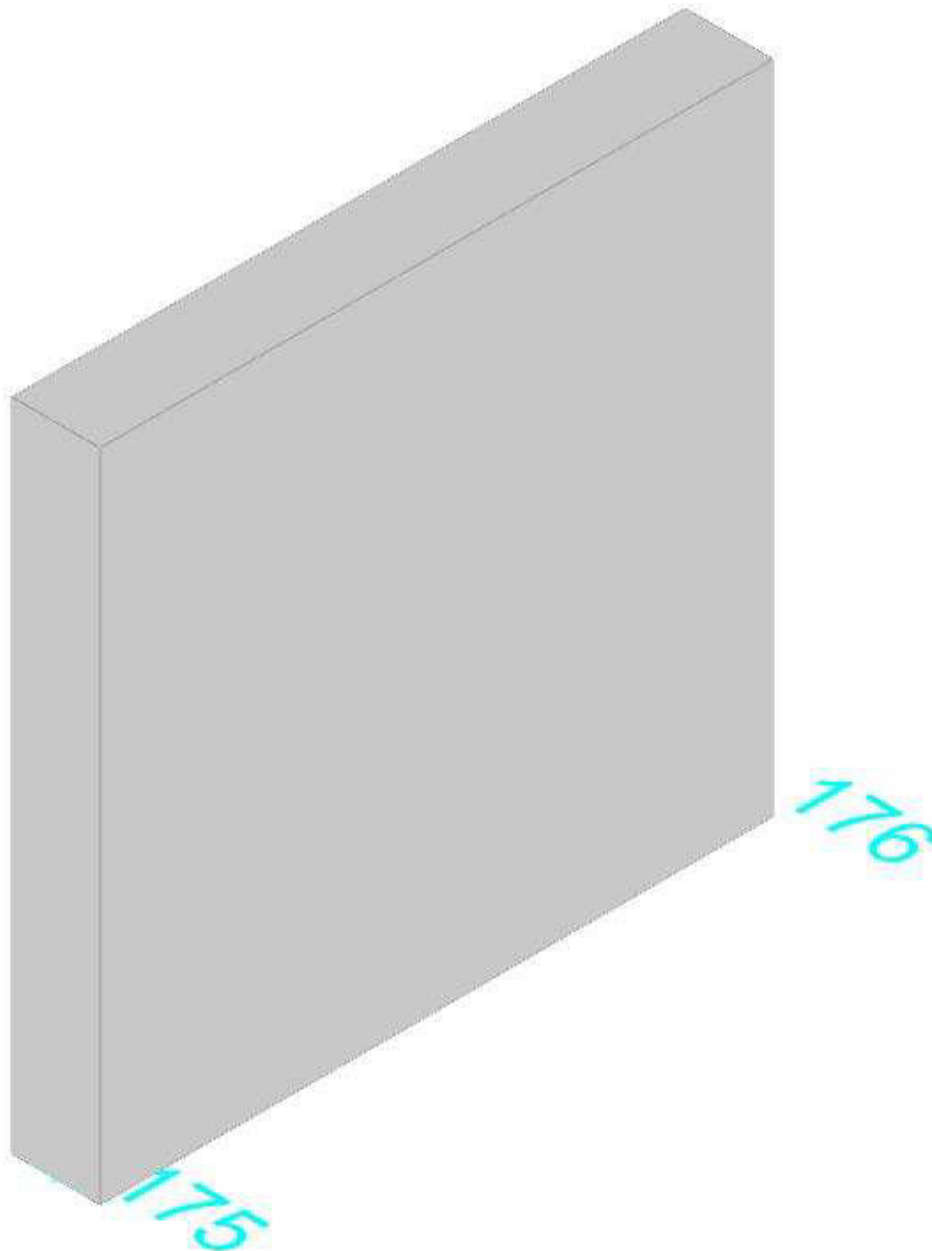
Descrizione	Dir.	Comb.	MEd	NEd	Sezione fessurata	of	of limite	Es/Ec	c.s.	Verifica
591 Prosp.A	Verticale	SLE RA 21	-305.99	3094	No	1160465	36000000	15	31.022	Si
592 Prosp.A	Verticale	SLE RA 21	108.88	5586	No	1087356	36000000	15	33.1078	Si
587 Prosp.A	Verticale	SLE RA 21	251.91	114	No	692713	36000000	15	51.9696	Si
129 Prosp.A	Verticale	SLE RA 21	108.88	5586	No	624692	36000000	15	57.6284	Si
590 Prosp.A	Verticale	SLE RA 21	-60.67	3131	No	546121	36000000	15	65.9194	Si

#### Verifiche generali

### Parete Fondazione ascensore - Fondazione

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Geometria



#### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

#### Livelli significativi

Descrizione breve	Descrizione	Quota	Spessore
L1	Fondazione ascensore	-3.08	0
L2	Fondazione	-1.59	0

#### Verifiche nei nodi

##### Sezioni rettangolari

Descrizione	Dir.	Base	Altezza	As,sup	As,inf	c,sup	c,inf
104 Prosp.A	Verticale	1	0.2	0.000867	0.000867	0.036	0.036
524 Prosp.A	Verticale	0.5	0.2	0.000437	0.000437	0.036	0.036
482 Prosp.A	Verticale	0.5	0.2	0.000437	0.000437	0.036	0.036
85 Prosp.A	Verticale	0.8725	0.2	0.000787	0.000787	0.036	0.036
123 Prosp.A	Orizzontale	0.746	0.2	0.000905	0.000905	0.0487	0.0487
104 Prosp.A	Orizzontale	0.746	0.2	0.000905	0.000905	0.0487	0.0487
55 Prosp.A	Orizzontale	0.746	0.2	0.000905	0.000905	0.0487	0.0487
102 Prosp.A	Orizzontale	1	0.2	0.001131	0.001131	0.048	0.048
46 Prosp.A	Orizzontale	1	0.2	0.001131	0.001131	0.048	0.048

#### Verifiche a flessione SLU D.M. 17-01-18 §4.1.2.3.4.2

La struttura è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per le combinazioni SLV, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1



Descrizione	Dir.	Comb.	MEd	NEd	MRd	NRd	c.s.	Verifica
104 Prosp.A	Verticale	SLV 11	146.73	3180	1827.02	39594	12.4517	Si
524 Prosp.A	Verticale	SLV 14	48.96	1244	834.32	21190	17.0407	Si
482 Prosp.A	Verticale	SLV 11	-109.79	444	-1888.34	7632	17.1997	Si
524 Prosp.A	Verticale	SLV 10	-72.45	694	-1425.16	13655	19.6699	Si
85 Prosp.A	Verticale	SLV 11	121.28	1151	2574.36	24430	21.2259	Si

#### Verifiche a flessione SLD Resistenza D.M. 17-01-18 §4.1.2.3.4.2

La struttura è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Descrizione	Dir.	Comb.	MEd	NEd	MRd	NRd	c.s.	Verifica
482 Prosp.A	Verticale	SLD 11	-80.47	378	-1819.45	8546	22.611	Si
104 Prosp.A	Verticale	SLD 7	73.06	1153	2207.61	34837	30.2157	Si
85 Prosp.A	Verticale	SLD 11	87.69	753	2683.78	23033	30.6065	Si
123 Prosp.A	Orizzontale	SLD 12	152.24	-5558	4720.74	-172339	31.0093	Si
524 Prosp.A	Verticale	SLD 12	-5.7	1009	-177.6	31451	31.1568	Si

#### Verifiche a taglio SLU D.M. 17-01-18 §4.1.2.3.5

Descrizione	Dir.	d	bw	Armatura a taglio	Asw/s	Comb.	VEd	NEd	MEd	Vrd,c	Vrcd	Vrsd	VRd	cotg(θ)	Asl	c.s.	Verifica
524 Prosp.A	Verticale	0.164	0.5	Non necessaria	0	SLV 15	532	168	20.07	4660	17954	0	4660	2.5	0.0004373	8.7609	Si
123 Prosp.A	Verticale	0.164	0.872	Non necessaria	0	SLV 11	750	972	141.59	8217	31329	0	8217	2.5	0.0007872	10.9571	Si
104 Prosp.A	Verticale	0.164	1	Non necessaria	0	SLV 11	742	3180	146.73	9295	35908	0	9295	2.5	0.0008674	12.5315	Si
123 Prosp.A	Orizzontale	0.151	0.746	Non necessaria	0	SLU 84	-604	-8291	167.63	8291	25693	0	8291	2.5	0.0009048	13.7259	Si
121 Prosp.A	Orizzontale	0.152	1	Non necessaria	0	SLV 16	-525	-5333	156.98	10261	33909	0	10261	2.5	0.001131	19.5344	Si

#### Verifiche a taglio SLD Resistenza D.M. 17-01-18 §4.1.2.3.5

Descrizione	Dir.	d	bw	Armatura a taglio	Asw/s	Comb.	VEd	NEd	MEd	Vrd,c	Vrcd	Vrsd	VRd	cotg(θ)	Asl	c.s.	Verifica
524 Prosp.A	Verticale	0.164	0.5	Non necessaria	0	SLD 15	385	42	5.13	4660	17954	0	4660	2.5	0.0004373	12.0988	Si
123 Prosp.A	Verticale	0.164	0.872	Non necessaria	0	SLD 11	570	754	59.83	8217	31329	0	8217	2.5	0.0007872	14.4281	Si
104 Prosp.A	Verticale	0.164	1	Non necessaria	0	SLD 11	583	1913	76.88	9295	35908	0	9295	2.5	0.0008674	15.9527	Si
123 Prosp.A	Orizzontale	0.151	0.746	Non necessaria	0	SLD 16	-474	-5377	151.2	7960	25351	0	7960	2.5	0.0009048	16.7942	Si
121 Prosp.A	Orizzontale	0.152	1	Non necessaria	0	SLD 16	-416	-5602	112.49	10292	33941	0	10292	2.5	0.001131	24.7236	Si

#### Verifiche SLE tensione calcestruzzo D.M. 17-01-18 §4.1.2.2.5.1

Descrizione	Dir.	Comb.	MEd	NEd	Sezione fessurata	oc	oc limite	Es/Ec	c.s.	Verifica
123 Prosp.A	Orizzontale	SLE QP 2	122.52	-5308	No	-51633	1120500	15	21.7014	Si
123 Prosp.A	Orizzontale	SLE RA 21	123.64	-6096	No	-56297	1494000	15	26.5378	Si
104 Prosp.A	Orizzontale	SLE QP 2	74.07	-4491	No	-38485	1120500	15	29.1149	Si
55 Prosp.A	Orizzontale	SLE QP 2	-73.5	-4403	No	-37883	1120500	15	29.5776	Si
102 Prosp.A	Orizzontale	SLE QP 2	90.71	-5993	No	-37579	1120500	15	29.8175	Si

#### Verifiche SLE tensione acciaio D.M. 17-01-18 §4.1.2.2.5.2

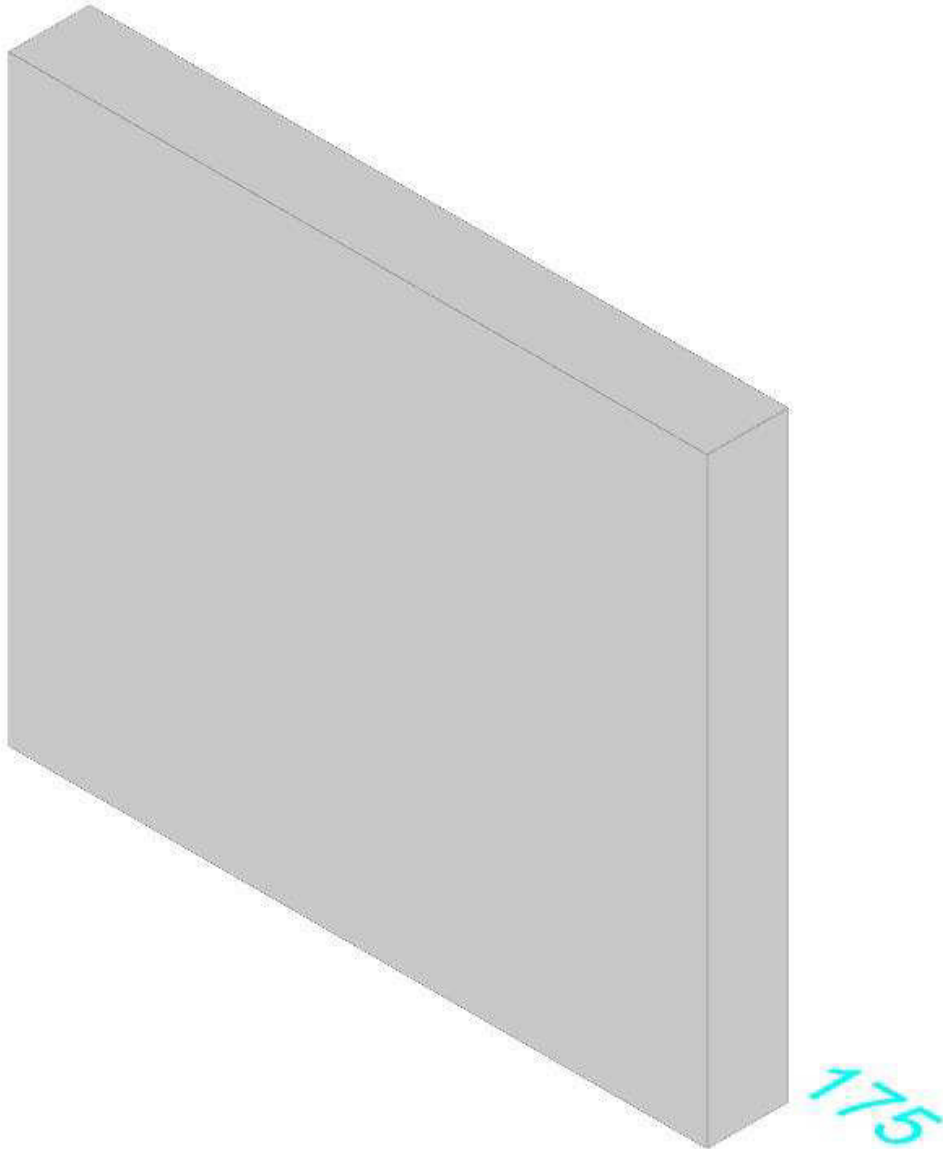
Descrizione	Dir.	Comb.	MEd	NEd	Sezione fessurata	of	of limite	Es/Ec	c.s.	Verifica
102 Prosp.A	Orizzontale	SLE RA 2	89.5	-5773	No	-278127	36000000	15	129.4374	Si
46 Prosp.A	Orizzontale	SLE RA 2	-85.94	-5586	No	-269806	36000000	15	133.4293	Si
123 Prosp.A	Orizzontale	SLE RA 2	120.83	-5100	No	-268190	36000000	15	134.2333	Si
104 Prosp.A	Orizzontale	SLE RA 2	72.95	-4304	No	-266054	36000000	15	135.3108	Si
55 Prosp.A	Orizzontale	SLE RA 2	-72.47	-4230	No	-260437	36000000	15	138.2294	Si

#### Verifiche generali

### Parete Fondazione ascensore - Fondazione

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Geometria



#### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

#### Livelli significativi

Descrizione breve	Descrizione	Quota	Spessore
L1	Fondazione ascensore	-3.08	0
L2	Fondazione	-1.59	0

#### Verifiche nei nodi

#### Sezioni rettangolari

Descrizione	Dir.	Base	Altezza	As,sup	As,inf	c,sup	c,inf
116 Prosp.A	Verticale	0.8725	0.2	0.000254	0.000349	0.036	0.036
465 Prosp.A	Verticale	0.5	0.2	0.00019	0.000262	0.036	0.036
113 Prosp.A	Orizzontale	0.795	0.2	0.000905	0.000905	0.0487	0.0487
113 Prosp.A	Verticale	0.8725	0.2	0.000901	0.000901	0.036	0.036
94 Prosp.A	Verticale	1	0.2	0.000993	0.000993	0.036	0.036
97 Prosp.A	Verticale	1	0.2	0.000317	0.000436	0.036	0.036
462 Prosp.A	Verticale	0.5	0.2	0.000501	0.000501	0.036	0.036
114 Prosp.A	Orizzontale	1	0.2	0.001131	0.001131	0.048	0.048
27 Prosp.A	Orizzontale	0.6	0.2	0.000679	0.000679	0.0489	0.0489
96 Prosp.A	Orizzontale	1	0.2	0.001244	0.001244	0.0485	0.0485
97 Prosp.A	Orizzontale	0.6	0.2	0.000679	0.000679	0.0489	0.0489
25 Prosp.A	Orizzontale	1	0.2	0.001244	0.001244	0.0485	0.0485
23 Prosp.A	Orizzontale	1	0.2	0.001131	0.001131	0.048	0.048

#### Verifiche a flessione SLU D.M. 17-01-18 §4.1.2.3.4.2

La struttura è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per le combinazioni SLV, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Descrizione	Dir.	Comb.	MEd	NEd	MRd	NRd	c.s.	Verifica
116 Prosp.A	Verticale	SLV 15	-272.23	-599	-2462.86	-5423	9.0469	Si



Descrizione	Dir.	Comb.	MEd	NEd	MRd	NRd	c.s.	Verifica
465 Prosp.A	Verticale	SLV 11	-179.63	-310	-1734.89	-2989	9.6583	Si
113 Prosp.A	Orizzontale	SLV 2	-93.06	4481	-1043.4	50249	11.2125	Si
113 Prosp.A	Verticale	SLV 2	-105.26	3953	-1326.5	49813	12.6027	Si
94 Prosp.A	Verticale	SLV 2	-108.93	4302	-1410.13	55690	12.9455	Si

#### Verifiche a flessione SLD Resistenza D.M. 17-01-18 §4.1.2.3.4.2

La struttura è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Descrizione	Dir.	Comb.	MEd	NEd	MRd	NRd	c.s.	Verifica
116 Prosp.A	Verticale	SLD 15	-187.05	-347	-2388.13	-4436	12.7671	Si
465 Prosp.A	Verticale	SLD 11	-126.54	-175	-1686.06	-2326	13.3243	Si
94 Prosp.A	Verticale	SLD 3	102.2	2983	1734.26	50626	16.9698	Si
97 Prosp.A	Verticale	SLD 11	-154.62	-512	-3388.49	-11231	21.9146	Si
462 Prosp.A	Verticale	SLD 13	167.62	-3252	4250.15	-82445	25.3555	Si

#### Verifiche a taglio SLU D.M. 17-01-18 §4.1.2.3.5

Descrizione	Dir.	d	bw	Armatura a taglio	Asw/s	Comb.	VEd	NEd	MEd	Vrd,c	Vrcd	Vrsd	VRd	cotg(θ)	Asl	c.s.	Verifica
462 Prosp.A	Verticale	0.164	0.5	Non necessaria	0	SLV 6	864	-3648	81.84	5324	18418	0	5324	2.5	0.0005007	6.1611	Si
113 Prosp.A	Verticale	0.164	0.873	Non necessaria	0	SLV 6	884	-3285	73.8	9000	31747	0	9000	2.5	0.0009013	10.1828	Si
94 Prosp.A	Verticale	0.164	1	Non necessaria	0	SLU 84	-640	2372	90.23	9724	35908	0	9724	2.5	0.0009931	15.1925	Si
113 Prosp.A	Orizzontale	0.151	0.795	Non necessaria	0	SLU 83	-490	1018	-113.87	7668	26343	0	7668	2.5	0.0009048	15.6413	Si
27 Prosp.A	Orizzontale	0.151	0.6	Non necessaria	0	SLU 84	-354	-5703	137.67	6416	20521	0	6416	2.5	0.0006786	18.1446	Si

#### Verifiche a taglio SLD Resistenza D.M. 17-01-18 §4.1.2.3.5

Descrizione	Dir.	d	bw	Armatura a taglio	Asw/s	Comb.	VEd	NEd	MEd	Vrd,c	Vrcd	Vrsd	VRd	cotg(θ)	Asl	c.s.	Verifica
462 Prosp.A	Verticale	0.164	0.5	Non necessaria	0	SLD 6	641	-3575	140.43	5315	18409	0	5315	2.5	0.0005007	8.2873	Si
113 Prosp.A	Verticale	0.164	0.873	Non necessaria	0	SLD 6	645	-3373	148.45	9011	31758	0	9011	2.5	0.0009013	13.9676	Si
113 Prosp.A	Orizzontale	0.151	0.795	Non necessaria	0	SLD 6	-389	1595	-86.04	7668	26343	0	7668	2.5	0.0009048	19.728	Si
94 Prosp.A	Verticale	0.164	1	Non necessaria	0	SLD 2	-481	2056	-40.43	9724	35908	0	9724	2.5	0.0009931	20.1994	Si
27 Prosp.A	Orizzontale	0.151	0.6	Non necessaria	0	SLD 13	-263	-4065	100.6	6230	20329	0	6230	2.5	0.0006786	23.7152	Si

#### Verifiche SLE tensione calcestruzzo D.M. 17-01-18 §4.1.2.2.5.1

Descrizione	Dir.	Comb.	MEd	NEd	Sezione fessurata	σc	σc limite	Es/Ec	c.s.	Verifica
462 Prosp.A	Verticale	SLE QP 2	149.78	-2847	No	-62686	1120500	15	17.8748	Si
462 Prosp.A	Verticale	SLE RA 20	160	-3221	No	-68523	1494000	15	21.803	Si
114 Prosp.A	Orizzontale	SLE QP 2	-115.61	-8362	No	-50988	1120500	15	21.9757	Si
113 Prosp.A	Orizzontale	SLE QP 2	-163.19	-4205	No	-49714	1120500	15	22.539	Si
27 Prosp.A	Orizzontale	SLE QP 2	95.66	-3897	No	-48867	1120500	15	22.9294	Si

#### Verifiche SLE tensione acciaio D.M. 17-01-18 §4.1.2.2.5.2

Descrizione	Dir.	Comb.	MEd	NEd	Sezione fessurata	σf	σf limite	Es/Ec	c.s.	Verifica
96 Prosp.A	Orizzontale	SLE RA 2	-36.14	-6303	No	-361592	36000000	15	99.5596	Si
97 Prosp.A	Orizzontale	SLE RA 8	-13.76	-3135	No	-311410	36000000	15	115.6034	Si
25 Prosp.A	Orizzontale	SLE RA 2	124.97	-6750	No	-299374	36000000	15	120.2508	Si
94 Prosp.A	Verticale	SLE RA 21	116.57	2274	No	290317	36000000	15	124.0024	Si
23 Prosp.A	Orizzontale	SLE RA 10	54.26	-5080	No	-269951	36000000	15	133.3576	Si

#### Verifiche generali

## 1.4 Verifiche piastre C.A.

Le unità di misura elencate nel capitolo sono in [m, daN, deg] ove non espressamente specificato.

**Nodo:** indice del nodo di verifica.

**Dir.:** direzione della sezione di verifica.

**B:** base della sezione rettangolare di verifica. [m]

**H:** altezza della sezione rettangolare di verifica. [m]

**A. sup.:** area barre armatura superiori. [m<sup>2</sup>]

**C. sup.:** distanza media delle barre superiori dal bordo superiore della sezione. [m]

**A. inf.:** area barre armatura inferiori. [m<sup>2</sup>]

**C. inf.:** distanza media delle barre inferiori dal bordo inferiore della sezione. [m]

**Comb.:** combinazione di verifica.

**M:** momento flettente. [daN\*m]

**N:** sforzo normale. [daN]

**Mu:** momento flettente ultimo. [daN\*m]

**Nu:** sforzo normale ultimo. [daN]

**c.s.:** coefficiente di sicurezza.

**Verifica:** stato di verifica.

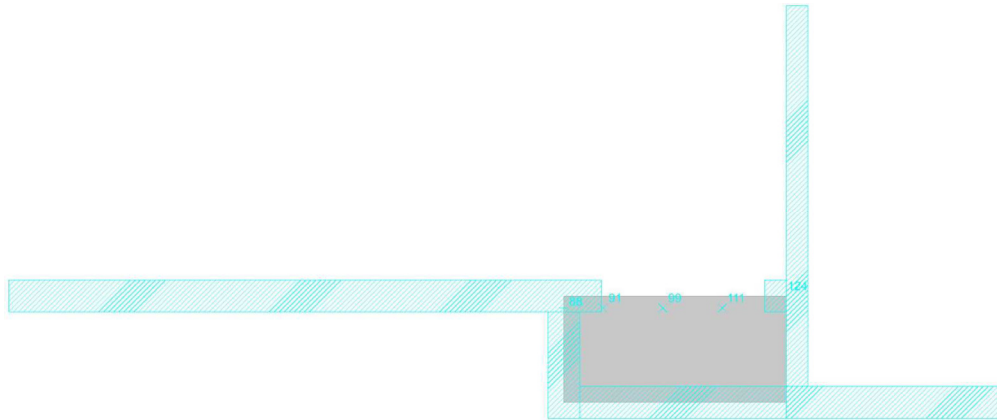
**σc:** tensione nel calcestruzzo. [daN/m<sup>2</sup>]



***olim***: tensione limite. [daN/m<sup>2</sup>]  
***Es/Es***: coefficiente di omogenizzazione.  
***σf***: tensione nell'acciaio d'armatura. [daN/m<sup>2</sup>]  
***Comb.***: combinazione.  
***Fh***: componente orizzontale del carico. [daN]  
***Fv***: componente verticale del carico. [daN]  
***Cnd***: resistenza valutata a breve o lungo termine (BT - LT).  
***Ad***: adesione di progetto. [daN/m<sup>2</sup>]  
***Phi***: angolo di attrito di progetto. [deg]  
***RPl***: resistenza passiva laterale unitaria di progetto. [daN/m<sup>2</sup>]  
***γR***: coefficiente parziale sulla resistenza di progetto.  
***Rd***: resistenza alla traslazione di progetto. [daN]  
***Ed***: azione di progetto. [daN]  
***Rd/Ed***: coefficiente di sicurezza allo scorrimento.  
***ID***: indice della verifica di capacità portante.  
***Fx***: componente lungo x del carico. [daN]  
***Fy***: componente lungo y del carico. [daN]  
***Fz***: componente verticale del carico. [daN]  
***Mx***: componente lungo x del momento. [daN\*m]  
***My***: componente lungo y del momento. [daN\*m]  
***ix***: inclinazione del carico in x. [deg]  
***iy***: inclinazione del carico in y. [deg]  
***ex***: eccentricità del carico in x. [m]  
***ey***: eccentricità del carico in y. [m]  
***B'***: larghezza efficace. [m]  
***L'***: lunghezza efficace. [m]  
***C***: coesione di progetto. [daN/m<sup>2</sup>]  
***Qs***: sovraccarico laterale da piano di posa. [daN/m<sup>2</sup>]  
***Rd***: resistenza alla rottura del complesso di progetto. [daN]  
***Ed***: azione di progetto (sforzo normale al piano di posa). [daN]  
***Rd/Ed***: coefficiente di sicurezza alla capacità portante.  
***N***:  
***Nq***: fattore di capacità portante per il termine di sovraccarico.  
***Nc***: fattore di capacità portante per il termine coesivo.  
***Ng***: fattore di capacità portante per il termine attritivo.  
***S***:  
***Sq***: fattore correttivo di capacità portante per forma (shape), per il termine di sovraccarico.  
***Sc***: fattore correttivo di capacità portante per forma (shape), per il termine coesivo.  
***Sg***: fattore correttivo di capacità portante per forma (shape), per il termine attritivo.  
***D***:  
***Dq***: fattore correttivo di capacità portante per approfondimento (deep), per il termine di sovraccarico.  
***Dc***: fattore correttivo di capacità portante per approfondimento (deep), per il termine coesivo.  
***Dg***: fattore correttivo di capacità portante per approfondimento (deep), per il termine attritivo.  
***I***:  
***Iq***: fattore correttivo di capacità portante per inclinazione del carico, per il termine di sovraccarico.  
***Ic***: fattore correttivo di capacità portante per inclinazione del carico, per il termine coesivo.  
***Ig***: fattore correttivo di capacità portante per inclinazione del carico, per il termine attritivo.  
***B***:  
***Bq***: fattore correttivo di capacità portante per inclinazione della base, per il termine di sovraccarico.  
***Bc***: fattore correttivo di capacità portante per inclinazione della base, per il termine coesivo.  
***Bg***: fattore correttivo di capacità portante per inclinazione della base, per il termine attritivo.  
***G***:  
***Gq***: fattore correttivo di capacità portante per inclinazione del pendio, per il termine di sovraccarico.  
***Gc***: fattore correttivo di capacità portante per inclinazione del pendio, per il termine coesivo.  
***Gg***: fattore correttivo di capacità portante per inclinazione del pendio, per il termine attritivo.  
***P***:  
***Pq***: fattore correttivo di capacità portante per punzonamento, per il termine di sovraccarico.  
***Pc***: fattore correttivo di capacità portante per punzonamento, per il termine coesivo.  
***Pg***: fattore correttivo di capacità portante per punzonamento, per il termine attritivo.  
***E***:  
***Eq***: fattore correttivo di capacità portante per sisma (earthquake), per il termine di sovraccarico.  
***Ec***: fattore correttivo di capacità portante per sisma (earthquake), per il termine coesivo.  
***Eg***: fattore correttivo di capacità portante per sisma (earthquake), per il termine attritivo.  
***esm***: deformazione unitaria media delle barre di armatura.  
***Δmax***: distanza massima tra le fessure. [m]  
***Wd***: valore di calcolo di apertura delle fessure. [m]

## platea 1

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)



### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

### Sistema di riferimento e direzioni di armatura

Le coordinate citate nel seguito sono espresse in un sistema di riferimento cartesiano con origine in (-17.053; -4.784; -1.59), direzione dell'asse X = (0.01; 0; 0), direzione dell'asse Y = (0; 0.01; 0).

Le direzioni X/Y di armatura e le sezioni X/Y di verifica sono individuate dagli assi del sistema di riferimento.

### Verifiche nei nodi

#### Verifiche SLU flessione nei nodi

La struttura è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per le combinazioni SLV, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Nodo	Dir.	B	H	A. sup.	C. sup.	A. inf.	C. inf.	Comb.	M	N	Mu	Nu	c.s.	Verifica
136	X	0.5	0.45	0.000283	0.048	0.000283	0.048	SLU 83	-7146.89	0	-4395.49	0	0.615	No
281	Y	0.5	0.45	0.000283	0.036	0.000866	0.045	SLU 83	-5590.69	0	-4674.89	0	0.8362	No
283	X	0.5	0.45	0.000622	0.048	0.000441	0.048	SLU 83	7442.02	0	6711.74	0	0.9019	No
235	Y	0.875	0.45	0.000495	0.036	0.001429	0.045	SLU 83	-8874.41	0	-8169.14	0	0.9205	No
135	X	0.849	0.45	0.00048	0.048	0.00048	0.048	SLU 83	-8025.81	0	-7485.41	0	0.9327	No

#### Verifiche SLD Resistenza flessione nei nodi

La struttura è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Nodo	Dir.	B	H	A. sup.	C. sup.	A. inf.	C. inf.	Comb.	M	N	Mu	Nu	c.s.	Verifica
136	X	0.5	0.45	0.000283	0.048	0.000283	0.048	SLD 13	-5241.42	0	-3969.23	0	0.7573	No
281	Y	0.5	0.45	0.000283	0.036	0.000866	0.045	SLD 5	-3974.84	0	-4126.95	0	1.0383	Si
235	Y	0.875	0.45	0.000495	0.036	0.001429	0.045	SLD 5	-6495.58	0	-7241.65	0	1.1149	Si
135	X	0.849	0.45	0.00048	0.048	0.00048	0.048	SLD 9	-5824.98	0	-6659.12	0	1.1432	Si
136	Y	0.5	0.45	0.000283	0.036	0.00052	0.047	SLD 13	-3410.63	0	-4120.17	0	1.208	Si

#### Verifiche SLE tensione calcestruzzo nei nodi

Nodo	Dir.	B	H	A. sup.	C. sup.	A. inf.	C. inf.	Comb.	M	N	$\sigma_c$	$\sigma_{lim}$	Es/Ec	Verifica
136	X	0.5	0.45	0.000283	0.048	0.000283	0.048	SLE QP 2	-4835.41	0	-661615	1120500	15	Si
136	X	0.5	0.45	0.000283	0.048	0.000283	0.048	SLE RA 20	-5290.38	0	-723866	1494000	15	Si
283	X	0.5	0.45	0.000622	0.048	0.000441	0.048	SLE QP 2	5025.31	0	-541685	1120500	15	Si
273	X	0.5	0.45	0.000622	0.048	0.000441	0.048	SLE QP 2	4639.56	0	-500104	1120500	15	Si
236	X	0.5	0.45	0.000622	0.048	0.000509	0.048	SLE QP 2	4509.51	0	-457738	1120500	15	Si

#### Verifiche SLE tensione acciaio nei nodi

Nodo	Dir.	B	H	A. sup.	C. sup.	A. inf.	C. inf.	Comb.	M	N	$\sigma_f$	$\sigma_{lim}$	Es/Ec	Verifica
136	X	0.5	0.45	0.000283	0.048	0.000283	0.048	SLE RA 20	-5290.38	0	49731264	36000000	15	No
283	X	0.5	0.45	0.000622	0.048	0.000441	0.048	SLE RA 20	5502.01	0	33642420	36000000	15	Si
273	X	0.5	0.45	0.000622	0.048	0.000441	0.048	SLE RA 21	5051.42	0	30887260	36000000	15	Si
236	X	0.5	0.45	0.000622	0.048	0.000509	0.048	SLE RA 20	4939.39	0	26284346	36000000	15	Si
136	X	0.5	0.45	0.000283	0.048	0.000283	0.048	SLE RA 20	1702.44	0	16003505	36000000	15	Si

#### Verifiche SLE fessurazione nei nodi

Nodo	Dir.	B	H	A. sup.	C. sup.	A. inf.	C. inf.	Comb.	M	N	esm	$\Delta_{max}$	Wd	Es/Ec	Verifica
136	X	0.5	0.45	0.000283	0.048	0.000283	0.048	SLE QP 2	-4835.41	0	0.00132	0.543	0.000718	15	No
136	X	0.5	0.45	0.000283	0.048	0.000283	0.048	SLE FR 6	-4950.32	0	0.00136	0.543	0.000735	15	No
283	X	0.5	0.45	0.000622	0.048	0.000441	0.048	SLE QP 2	5025.31	0	0.00089	0.39	0.000349	15	No
273	X	0.5	0.45	0.000622	0.048	0.000441	0.048	SLE QP 2	4639.56	0	0.00083	0.39	0.000322	15	No
283	X	0.5	0.45	0.000622	0.048	0.000441	0.048	SLE FR 6	5145.19	0	0.00092	0.39	0.000357	15	Si

### Verifiche geotecniche

#### Dati geometrici dell'impronta di calcolo

Forma dell'impronta di calcolo: rettangolare di area equivalente

Centro impronta, nel sistema globale: -15.5; -4; -2

Lato minore B dell'impronta: 1.5

Lato maggiore L dell'impronta: 3.1

Area dell'impronta rettangolare di calcolo: 4.7





## Verifica di scorrimento sul piano di posa

Coefficiente di sicurezza minimo per scorrimento 1.31

Comb.	Fh	Fv	Cnd	Ad	Phi	RPI	yR	Rd	Ed	Rd/Ed	Verifica
SLU 44	804	-49726	LT	0	19	0	1.1	15126	804	18.82	Si
SLV 15	8812	-38096	LT	0	19	0	1.1	11588	8812	1.31	Si

## Verifica di capacità portante sul piano di posa

Profondità massima del bulbo di rottura considerato: 1.5 m

Profondità massima del bulbo di rottura considerato (per condizione non drenata): 0.75 m

Peso specifico efficace del terreno di progetto  $\gamma_s$ : 2060 daN/m<sup>3</sup>

Accelerazione normalizzata massima attesa al suolo  $A_{max}$  per verifiche in SLD: 0.03

Accelerazione normalizzata massima attesa al suolo  $A_{max}$  per verifiche in SLV: 0.073

Coefficiente di sicurezza minimo per portanza 2.93

ID	Comb.	Fx	Fy	Fz	Mx	My	ix	iy	ex	ey	B'	L'	Cnd	C	Phi	Qs	yR	Rd	Ed	Rd/Ed	Verifica
1	SLU 83	471	660	-61229	1455.38	241.85	0	1	0	0.02	1.45	3.13	BT	14430	0	878	2.3	179145	61229	2.93	Si
2	SLV 13	9250	-1579	-40788	1769.78	6054.56	13	-2	0.15	0.04	1.41	2.84	LT	0	37	878	2.3	136377	40788	3.34	Si
3	SLD 5	-272	-1108	-44265	1966.26	-422.62	0	-1	-0.01	0.04	1.41	3.12	BT	14430	0	878	2.3	172805	44265	3.9	Si

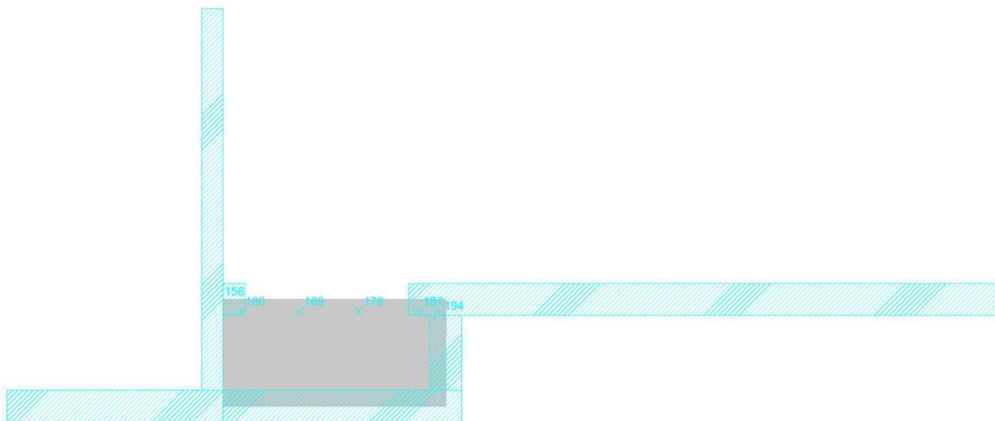
## Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

ID	N			S			D			I			B			G			P			E		
	Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	1	5	0	0	0.09	0	0	0.12	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
2	43	56	66	1.37	1.38	0.8	1.07	1.12	1	0.7	0.7	0.54	1	1	1	1	1	1	1	1	1	0.96	0.98	0.96
3	1	5	0	0	0.09	0	0	0.12	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0

## Platea 2

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Geometria



## Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

## Sistema di riferimento e direzioni di armatura

Le coordinate citate nel seguito sono espresse in un sistema di riferimento cartesiano con origine in (-10.863; -4.784; -1.59), direzione dell'asse X = (0.01; 0; 0), direzione dell'asse Y = (0; 0.01; 0).

Le direzioni X/Y di armatura e le sezioni X/Y di verifica sono individuate dagli assi del sistema di riferimento.

## Verifiche nei nodi

### Verifiche SLU flessione nei nodi

La struttura è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per le combinazioni SLV, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Nodo	Dir.	B	H	A. sup.	C. sup.	A. inf.	C. inf.	Comb.	M	N	Mu	Nu	c.s.	Verifica
218	Y	1	0.45	0.000565	0.036	0.000565	0.036	SLU 83	8551.54	0	9018.93	0	1.0547	Si
156	Y	0.5	0.45	0.000283	0.036	0.000283	0.036	SLV 2	3475.6	0	4108.61	0	1.1821	Si
194	Y	0.875	0.45	0.000495	0.036	0.000495	0.036	SLU 83	6588.76	0	7834.44	0	1.1891	Si
241	Y	0.875	0.45	0.000495	0.036	0.000495	0.036	SLU 83	6193.24	0	7834.44	0	1.265	Si
296	X	0.5	0.45	0.000622	0.048	0.00052	0.048	SLU 84	5745.55	0	7838.32	0	1.3642	Si

### Verifiche SLD Resistenza flessione nei nodi

La struttura è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Nodo	Dir.	B	H	A. sup.	C. sup.	A. inf.	C. inf.	Comb.	M	N	Mu	Nu	c.s.	Verifica
218	Y	1	0.45	0.000565	0.036	0.000565	0.036	SLD 2	6163.19	0	8566.94	0	1.39	Si
194	Y	0.875	0.45	0.000495	0.036	0.000495	0.036	SLD 2	5057.88	0	7209.27	0	1.4254	Si
156	Y	0.5	0.45	0.000283	0.036	0.000283	0.036	SLD 2	2817.91	0	4108.61	0	1.458	Si
241	Y	0.875	0.45	0.000495	0.036	0.000495	0.036	SLD 4	4715.22	0	7209.27	0	1.5289	Si



Nodo	Dir.	B	H	A. sup.	C. sup.	A. inf.	C. inf.	Comb.	M	N	Mu	Nu	c.s.	Verifica
287	Y	0.5	0.45	0.000283	0.036	0.000283	0.036	SLD 4	2422.68	0	4108.61	0	1.6959	Si

**Verifiche SLE tensione calcestruzzo nei nodi**

Nodo	Dir.	B	H	A. sup.	C. sup.	A. inf.	C. inf.	Comb.	M	N	$\sigma_c$	$\sigma_{lim}$	Es/Ec	Verifica
288	Y	0.5	0.45	0.000283	0.036	0.001011	0.048	SLE QP 2	4215.35	0	-222268	1120500	15	Si
296	X	0.5	0.45	0.000622	0.048	0.00052	0.048	SLE QP 2	3914.83	0	-202260	1120500	15	Si
288	Y	0.5	0.45	0.000283	0.036	0.001011	0.048	SLE RA 20	4632.84	0	-244282	1494000	15	Si
295	X	0.765	0.45	0.000885	0.048	0.000749	0.048	SLE QP 2	4944.71	0	-168428	1120500	15	Si
296	X	0.5	0.45	0.000622	0.048	0.00052	0.048	SLE RA 21	4254.97	0	-219833	1494000	15	Si

**Verifiche SLE tensione acciaio nei nodi**

Nodo	Dir.	B	H	A. sup.	C. sup.	A. inf.	C. inf.	Comb.	M	N	$\sigma_f$	$\sigma_{lim}$	Es/Ec	Verifica
288	Y	0.5	0.45	0.000283	0.036	0.001011	0.048	SLE RA 20	4632.84	0	2853762	36000000	15	Si
296	X	0.5	0.45	0.000622	0.048	0.00052	0.048	SLE RA 21	4254.97	0	2623402	36000000	15	Si
218	Y	1	0.45	0.000565	0.036	0.000565	0.036	SLE RA 20	6311.72	0	2182230	36000000	15	Si
295	X	0.765	0.45	0.000885	0.048	0.000749	0.048	SLE RA 21	5372.52	0	2180794	36000000	15	Si
194	Y	0.875	0.45	0.000495	0.036	0.000495	0.036	SLE RA 20	4856.59	0	1918975	36000000	15	Si

**Verifiche SLE fessurazione nei nodi**

La piastra non presenta nodi con apertura delle fessure.

**Verifiche geotecniche**

**Dati geometrici dell'impronta di calcolo**

Forma dell'impronta di calcolo: rettangolare di area equivalente

Centro impronta, nel sistema globale: -9.3; -4; -2

Lato minore B dell'impronta: 1.5

Lato maggiore L dell'impronta: 3.1

Area dell'impronta rettangolare di calcolo: 4.7

**Verifica di scorrimento sul piano di posa**

Coefficiente di sicurezza minimo per scorrimento 1.24

Comb.	Fh	Fv	Cnd	Ad	Phi	RPI	yR	Rd	Ed	Rd/Ed	Verifica
SLU 44	607	-49215	LT	0	19	0	1.1	14970	607	24.65	Si
SLV 4	8818	-35835	LT	0	19	0	1.1	10900	8818	1.24	Si

**Verifica di capacità portante sul piano di posa**

Profondità massima del bulbo di rottura considerato (per condizione non drenata): 0.75 m

Accelerazione normalizzata massima attesa al suolo Amax per verifiche in SLD: 0.03

Accelerazione normalizzata massima attesa al suolo Amax per verifiche in SLV: 0.073

Coefficiente di sicurezza minimo per portanza 2.97

ID	Comb.	Fx	Fy	Fz	Mx	My	ix	iy	ex	ey	B'	L'	Cnd	C	Phi	Qs	yR	Rd	Ed	Rd/Ed	Verifica
1	SLU 83	-76	539	-60617	1121.58	523.37	0	1	0.01	0.02	1.46	3.12	BT	14430	0	878	2.3	180218	60617	2.97	Si
2	SLV 14	7837	5	-47538	1445.14	5693.1	9	0	0.12	0.03	1.44	2.9	BT	14430	0	878	2.3	161240	47538	3.39	Si
3	SLD 14	3310	226	-44081	1054.61	2664.1	4	0	0.06	0.02	1.45	3.02	BT	14430	0	878	2.3	171768	44081	3.9	Si

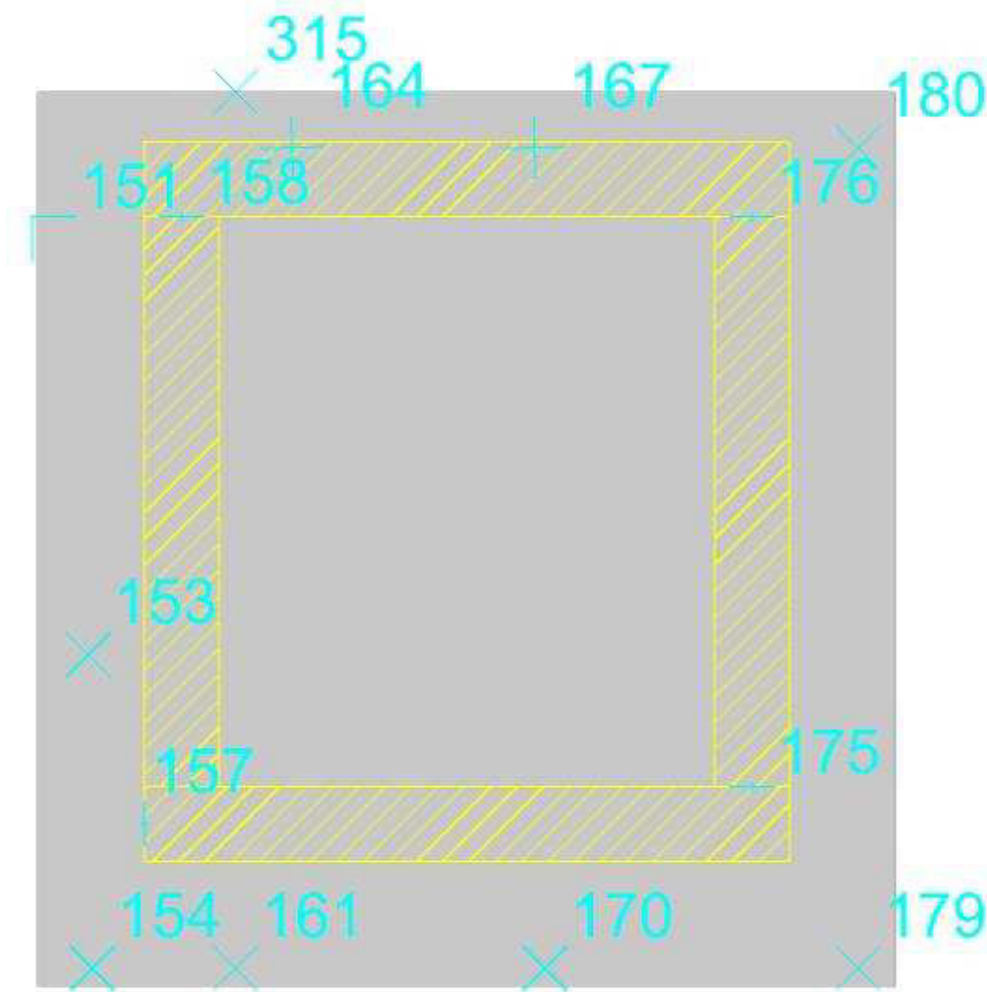
**Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd**

ID	N			S			D			I			B			G			P			E		
	Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	1	5	0	0	0.09	0	0	0.12	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
2	1	5	0	0	0.1	0	0	0.12	0	0	0.03	0	0	0	0	0	0	0	1	1	1	0	0	0
3	1	5	0	0	0.1	0	0	0.12	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0

**Platea a "Fondazione ascensore"**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Geometria



#### Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

#### Sistema di riferimento e direzioni di armatura

Le coordinate citate nel seguito sono espresse in un sistema di riferimento cartesiano con origine in (-11.148; -1.244; -3.08), direzione dell'asse X = (0.01; 0; 0), direzione dell'asse Y = (0; 0.01; 0).

Le direzioni X/Y di armatura e le sezioni X/Y di verifica sono individuate dagli assi del sistema di riferimento.

#### Verifiche nei nodi

##### Verifiche SLU flessione nei nodi

La struttura è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per le combinazioni SLV, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Nodo	Dir.	B	H	A. sup.	C. sup.	A. inf.	C. inf.	Comb.	M	N	Mu	Nu	c.s.	Verifica
26	X	1	0.3	0.000959	0.048	0.001128	0.048	SLU 84	1312.75	0	10399.81	0	7.9222	Si
24	X	1	0.3	0.000959	0.048	0.001128	0.048	SLU 84	1309.13	0	10466.55	0	7.9951	Si
22	X	1	0.3	0.000959	0.048	0.001128	0.048	SLU 84	1261.39	0	10399.8	0	8.2447	Si
42	Y	1	0.3	0.000914	0.045	0.001064	0.047	SLU 84	1131.17	0	10159.62	0	8.9815	Si
46	Y	1	0.3	0.000914	0.045	0.001064	0.047	SLU 84	1121.95	0	10123.8	0	9.0234	Si

##### Verifiche SLD Resistenza flessione nei nodi

La struttura è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Nodo	Dir.	B	H	A. sup.	C. sup.	A. inf.	C. inf.	Comb.	M	N	Mu	Nu	c.s.	Verifica
26	X	1	0.3	0.000959	0.048	0.001128	0.048	SLD 15	954.62	0	9465.6	0	9.9156	Si
24	X	1	0.3	0.000959	0.048	0.001128	0.048	SLD 15	939.52	0	9822.9	0	10.4553	Si
42	Y	1	0.3	0.000914	0.045	0.001064	0.047	SLD 15	845.24	0	8838.16	0	10.4564	Si
22	X	1	0.3	0.000959	0.048	0.001128	0.048	SLD 13	880.68	0	9465.51	0	10.748	Si
46	Y	1	0.3	0.000914	0.045	0.001064	0.047	SLD 11	797.3	0	8752.03	0	10.9771	Si

##### Verifiche SLE tensione calcestruzzo nei nodi

Nodo	Dir.	B	H	A. sup.	C. sup.	A. inf.	C. inf.	Comb.	M	N	σc	σlim	Es/Es	Verifica
26	X	1	0.3	0.000959	0.048	0.001128	0.048	SLE QP 2	897.18	0	-52522	1120500	15	Si
24	X	1	0.3	0.000959	0.048	0.001128	0.048	SLE QP 2	891.04	0	-52163	1120500	15	Si
22	X	1	0.3	0.000959	0.048	0.001128	0.048	SLE QP 2	851.91	0	-49872	1120500	15	Si
27	X	0.885	0.3	0.000894	0.048	0.001063	0.048	SLE QP 2	713.31	0	-46862	1120500	15	Si



Nodo	Dir.	B	H	A. sup.	C. sup.	A. inf.	C. inf.	Comb.	M	N	ac	olm	Es/Ec	Verifica
42	Y	1	0.3	0.000914	0.045	0.001064	0.047	SLE QP 2	765.12	0	-44783	1120500	15	Si

**Verifiche SLE tensione acciaio nei nodi**

Nodo	Dir.	B	H	A. sup.	C. sup.	A. inf.	C. inf.	Comb.	M	N	of	olm	Es/Ec	Verifica
26	X	1	0.3	0.000959	0.048	0.001128	0.048	SLE RA 21	972.98	0	573565	36000000	15	Si
24	X	1	0.3	0.000959	0.048	0.001128	0.048	SLE RA 21	969.35	0	571421	36000000	15	Si
42	Y	1	0.3	0.000914	0.045	0.001064	0.047	SLE RA 21	836.16	0	552676	36000000	15	Si
22	X	1	0.3	0.000959	0.048	0.001128	0.048	SLE RA 21	932.17	0	549506	36000000	15	Si
46	Y	1	0.3	0.000914	0.045	0.001064	0.047	SLE RA 21	829.37	0	548185	36000000	15	Si

**Verifiche SLE fessurazione nei nodi**

La piastra non presenta nodi con apertura delle fessure.

**Verifiche geotecniche**

**Dati geometrici dell'impronta di calcolo**

Forma dell'impronta di calcolo: rettangolare di area equivalente

Centro impronta, nel sistema globale: -10; 0; -3.4

Lato minore B dell'impronta: 2.3

Lato maggiore L dell'impronta: 2.4

Area dell'impronta rettangolare di calcolo: 5.5

**Verifica di scorrimento sul piano di posa**

Coefficiente di sicurezza minimo per scorrimento 1.92

Comb.	Fh	Fv	Cnd	Ad	Phi	RPI	yR	Rd	Ed	Rd/Ed	Verifica
SLU 44	1324	-50686	LT	0	19	0	1.1	15417	1324	11.64	Si
SLV 15	7093	-44667	LT	0	19	0	1.1	13587	7093	1.92	Si

**Verifica di capacità portante sul piano di posa**

Profondità massima del bulbo di rottura considerato: 2.25 m

Profondità massima del bulbo di rottura considerato (per condizione non drenata): 1.15 m

Peso specifico efficace del terreno di progetto  $\gamma_s$ : 2058 daN/m<sup>3</sup>

Accelerazione normalizzata massima attesa al suolo  $A_{max}$  per verifiche in SLD: 0.03

Accelerazione normalizzata massima attesa al suolo  $A_{max}$  per verifiche in SLV: 0.073

Coefficiente di sicurezza minimo per portanza 3.46

ID	Comb.	Fx	Fy	Fz	Mx	My	ix	iy	ex	ey	B'	L'	Cnd	C	Phi	Qs	yR	Rd	Ed	Rd/Ed	Verifica
1	SLU 84	774	1150	-63057	885.88	-490.09	1	1	-0.01	0.01	2.28	2.37	BT	14430	0	585	2.3	218054	63057	3.46	Si
2	SLV 15	6680	2386	-44667	46.89	2257.98	9	3	0.05	0	2.2	2.4	LT	0	37	585	2.3	196647	44667	4.4	Si
3	SLD 13	2906	686	-43532	873.07	796.62	4	1	0.02	0.02	2.26	2.36	BT	14430	0	585	2.3	213742	43532	4.91	Si

**Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd**

ID	N			S			D			I			B			G			P			E		
	Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	1	5	0	0	0.19	0	0	0.05	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0
2	41	53	62	1.68	1.7	0.63	1.03	1.05	1	0.77	0.76	0.65	1	1	1	1	1	1	1	1	1	0.96	0.98	0.96
3	1	5	0	0	0.19	0	0	0.05	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0

## 1.5 Verifiche aste in legno

Le unità di misura elencate nel capitolo sono in [m] ove non espressamente specificato.

**Descrizione:** descrizione della sezione.

**Tipo:** tipo di sezione.

**Base:** base della sezione. [m]

**Altezza:** altezza della sezione. [m]

**Area:** area inerziale nel sistema geometrico centrato nel baricentro. [m<sup>2</sup>]

**Jx:** momento d'inerzia attorno all'asse orizzontale baricentrico di definizione della sezione. [m<sup>4</sup>]

**Jy:** momento d'inerzia attorno all'asse verticale baricentrico di definizione della sezione. [m<sup>4</sup>]

**Wx:** modulo di resistenza elastico minimo relativo all'asse x. [m<sup>3</sup>]

**Wy:** modulo di resistenza elastico minimo relativo all'asse y. [m<sup>3</sup>]

### Asta 21: Trave in legno a falda Falda 1 fili 51-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati generali**

Lunghezza = 0.146

**Caratteristiche della sezione**

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x32	Rettangolare	0.16	0.32	0.0512	0.0004369067	0.0001092267	0.00273067	0.00136533

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1



#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{19741^2 + 28405^2} = 34591 \leq 265517$  Comb: SLV, 3; Durata minima del carico nella combinazione: istantaneo

$T_x = -481.3$ ;  $T_y = 692.5$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(22648/1324138)^2 + 76414/1410046 + 0.7 \cdot 74048/1410046 = 0.09 \leq 1$  [4.4.7a] Comb: SLU, 37; Durata minima del carico nella combinazione: media

$M_x = 208.661$ ;  $M_y = 101.1$ ;  $N = -1159.6$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.1 + 0.01 + 0 \leq 1$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

$T_x = -400.8$ ;  $T_y = 120.8$ ;  $M_t = -48.614$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.146

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$24153 \leq 251034$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

$M_t = -48.614$

### Asta 22: Trave in legno a falda Falda 1 fili 51-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.156

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x32	Rettangolare	0.16	0.32	0.0512	0.0004369067	0.0001092267	0.00273067	0.00136533

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{16015^2 + 21328^2} = 26671 \leq 265517$  Comb: SLV, 3; Durata minima del carico nella combinazione: istantaneo

$T_x = -390.5$ ;  $T_y = 520$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(12303/1324138)^2 + 75432/1410046 + 0.7 \cdot 23276/1410046 = 0.07 \leq 1$  [4.4.7a] Comb: SLU, 72; Durata minima del carico nella combinazione: media

$M_x = 205.98$ ;  $M_y = 31.78$ ;  $N = -629.9$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.09 + 0 + 0 \leq 1$  Comb: SLU, 29; Durata minima del carico nella combinazione: media



Tx = -303.3; Ty = 206.8; Mt = -46.902

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.156

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8

$\tau_{tor,d} \leq Ksh \cdot f_{v,d}$

23302 <= 251034 Comb: SLU, 29; Durata minima del carico nella combinazione: media

Mt = -46.902

### Asta 23: Trave in legno a falda Falda 1 fili 51-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.644

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x32	Rettangolare	0.16	0.32	0.0512	0.0004369067	0.0001092267	0.00273067	0.00136533

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 1.1; Kh = 1.065 (formula 11.7.2)

$St_{0,d}/ft_{0,d} + Sm_{y,d}/fm_{y,d} + Km \cdot (Sm_{z,d}/fm_{z,d}) \leq 1$

$St_{0,d}/ft_{0,d} + Km \cdot (Sm_{y,d}/fm_{y,d}) + Sm_{z,d}/fm_{z,d} \leq 1$

56732/1551051+59344/1938814+0.7\*18754/1938814=0.07 <= 1 [4.4.6a] Comb: SLV, 14; Durata minima del carico nella combinazione: istantaneo

Mx = 162.049; My = 25.606; N = 2904.7

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; kcr = 0.71

$\tau_{d} \leq f_{v,d}$

$\sqrt{(2071^2 + 8705^2)} = 8948 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

Tx = -50.5; Ty = 212.2

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.065 (formula 11.7.2); kcr = 0.71

$\tau_{tor,d}/(ksh \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

0.01+0+0 <= 1 Comb: SLU, 30; Durata minima del carico nella combinazione: media

Tx = -52.6; Ty = 206.8; Mt = -4.736

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.644

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8

$\tau_{tor,d} \leq Ksh \cdot f_{v,d}$

2353 <= 251034 Comb: SLU, 30; Durata minima del carico nella combinazione: media

Mt = -4.736

### Asta 24: Trave in legno a falda Falda 1 fili 51-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.196

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x32	Rettangolare	0.16	0.32	0.0512	0.0004369067	0.0001092267	0.00273067	0.00136533

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300



Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_d \leq f_{v,d}$   
 $\sqrt{2001^2 + 36777^2} = 36831 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = -48.8$ ;  $T_y = 896.7$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.196  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(22965/1324138)^2 + 45761/1410046 + 0.7 \cdot 26096/1410046 = 0.05 \leq 1$  [4.4.7a] Comb: SLU, 37; Durata minima del carico nella combinazione: media  
 $M_x = -124.957$ ;  $M_y = -35.629$ ;  $N = -1175.8$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.02 + 0 + 0.03 \leq 1$  Comb: SLU, 30; Durata minima del carico nella combinazione: media  
 $T_x = -52$ ;  $T_y = 879.9$ ;  $M_t = -8.65$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.196  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $7066 \leq 345172$  Comb: SLV, 5; Durata minima del carico nella combinazione: istantaneo  
 $M_t = 14.223$

### Asta 25: Trave in legno a falda Falda 1 fili 51-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.84

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x32	Rettangolare	0.16	0.32	0.0512	0.0004369067	0.0001092267	0.00273067	0.00136533

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_d \leq f_{v,d}$   
 $\sqrt{1305^2 + 6609^2} = 6737 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $T_x = -31.8$ ;  $T_y = 161.1$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(22148/1324138)^2 + 85536/1410046 + 0.7 \cdot 29854/1410046 = 0.08 \leq 1$  [4.4.7a] Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $M_x = -233.571$ ;  $M_y = -40.76$ ;  $N = -1134$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0



Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.04 + 0 + 0 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = -32.8$ ;  $T_y = 154.9$ ;  $M_t = 18.617$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $9250 \leq 251034$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_t = 18.617$

### Asta 26: Trave in legno a falda Falda 1 fili 51-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.604

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x32	Rettangolare	0.16	0.32	0.0512	0.0004369067	0.0001092267	0.00273067	0.00136533

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.604  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\text{Sqrt}(4460^2 + 25369^2) = 25759 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = 108.7$ ;  $T_y = -618.5$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(22011/1324138)^2 + 85320/1410046 + 0.7 \cdot 36960/1410046 = 0.08 \leq 1$  [4.4.7a] Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $M_x = -232.979$ ;  $M_y = -50.462$ ;  $N = -1126.9$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.604  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.08 + 0 + 0.02 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = 121.1$ ;  $T_y = -595.7$ ;  $M_t = 39.105$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.604  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $19428 \leq 251034$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_t = 39.105$

### Asta 27: Trave in legno a falda Falda 1 fili 51-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.236





#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x32	Rettangolare	0.16	0.32	0.0512	0.0004369067	0.0001092267	0.00273067	0.00136533

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.236  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(3878^2 + 7077^2)} = 8070 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = 94.5$ ;  $T_y = -172.6$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.236  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(24962/1324138)^2 + 62612/1410046 + 0.7 \cdot 32214/1410046 = 0.06 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_x = 170.972$ ;  $M_y = 43.982$ ;  $N = -1278.1$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.236  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.08 + 0 + 0 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = 93.8$ ;  $T_y = -171.7$ ;  $M_t = 40.163$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.236  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $19954 \leq 251034$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_t = 40.163$

### Asta 28: Trave in legno a falda Falda 1 fili 51-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.564

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x32	Rettangolare	0.16	0.32	0.0512	0.0004369067	0.0001092267	0.00273067	0.00136533

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(573^2 + 4600^2)} = 4636 \leq 193103$  Comb: SLU, 78; Durata minima del carico nella combinazione: media  
 $T_x = -14$ ;  $T_y = 112.2$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$



$(S_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$   
 $(19607/1324138)^2 + 61630/1410046 + 0.7 \cdot 12570/1410046 = 0.05 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_x = 168.29$ ;  $M_y = 17.162$ ;  $N = -1003.9$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.06 + 0 + 0 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = -9.6$ ;  $T_y = 112.2$ ;  $M_t = 28.715$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.564  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $14266 \leq 251034$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_t = 28.715$

### Asta 29: Trave in legno a falda Falda 1 fili 51-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.276

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x32	Rettangolare	0.16	0.32	0.0512	0.0004369067	0.0001092267	0.00273067	0.00136533

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{44^2 + 28627^2} = 28627 \leq 193103$  Comb: SLU, 29; Durata minima del carico nella combinazione: media  
 $T_x = -1.1$ ;  $T_y = 698$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2)  
 $(S_{c,0,d}/f_{c,0,d})^2 + S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(S_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$   
 $(21597/1324138)^2 + 41045/1410046 + 0.7 \cdot 9380/1410046 = 0.03 \leq 1$  [4.4.7a] Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $M_x = 112.079$ ;  $M_y = 12.807$ ;  $N = -1105.8$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.07 + 0 + 0.02 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = -2.3$ ;  $T_y = 672.8$ ;  $M_t = 36.437$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.276  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $18481 \leq 251034$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_t = 37.198$



## Asta 30: Trave in legno a falda Falda 1 fili 51-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.84

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x32	Rettangolare	0.16	0.32	0.0512	0.0004369067	0.0001092267	0.00273067	0.00136533

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{(1678^2 + 4906^2)} = 5185 \leq 265517$  Comb: SLV, 1; Durata minima del carico nella combinazione: istantaneo

$T_x = 40.9$ ;  $T_y = -119.6$

### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(21691/1324138)^2 + 35113/1410046 + 0.7 \cdot 11230/1410046 = 0.03 \leq 1$  [4.4.7a] Comb: SLU, 30; Durata minima del carico nella combinazione: media

$M_x = -95.883$ ;  $M_y = -15.333$ ;  $N = -1110.6$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.02 + 0 + 0 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = -36.6$ ;  $T_y = 33.7$ ;  $M_t = 8.602$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$4274 \leq 251034$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_t = 8.602$

## Asta 31: Trave in legno a falda Falda 1 fili 51-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.324

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x32	Rettangolare	0.16	0.32	0.0512	0.0004369067	0.0001092267	0.00273067	0.00136533

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.324

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{(185^2 + 20905^2)} = 20906 \leq 193103$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

$T_x = -4.5$ ;  $T_y = -509.7$



#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.324

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.065$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(15553/1820690)^2 + 50883/1938814 + 0.7 \cdot 32849/1938814 = 0.04 \leq 1$  [4.4.7a] Comb: SLV, 1; Durata minima del carico nella combinazione: istantaneo

$M_x = 138.945$ ;  $M_y = 44.849$ ;  $N = -796.3$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.324

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.04 + 0 + 0.01 \leq 1$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

$T_x = -4.5$ ;  $T_y = -509.7$ ;  $M_t = -19.287$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.324

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$9582 \leq 251034$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

$M_t = -19.287$

### Asta 32: Trave in legno a falda Falda 1 fili 51-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.194

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x32	Rettangolare	0.16	0.32	0.0512	0.0004369067	0.0001092267	0.00273067	0.00136533

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.194

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{(197^2 + 13656^2)} = 13657 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$T_x = -4.8$ ;  $T_y = -332.9$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.194

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.065$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(20245/1820690)^2 + 72368/1938814 + 0.7 \cdot 40015/1938814 = 0.05 \leq 1$  [4.4.7a] Comb: SLV, 1; Durata minima del carico nella combinazione: istantaneo

$M_x = 197.612$ ;  $M_y = 54.633$ ;  $N = -1036.5$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.194

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.03 + 0 + 0 \leq 1$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

$T_x = -3.8$ ;  $T_y = -326$ ;  $M_t = -15.958$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.194

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$7928 \leq 251034$  Comb: SLU, 29; Durata minima del carico nella combinazione: media



Mt = -15.958

### Asta 33: Trave in legno a falda Falda 1 fili 51-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.322

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x32	Rettangolare	0.16	0.32	0.0512	0.0004369067	0.0001092267	0.00273067	0.00136533

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.322

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{1956^2 + 14507^2} = 14638 \leq 265517$  Comb: SLV, 1; Durata minima del carico nella combinazione: istantaneo

$T_x = 47.7$ ;  $T_y = -353.7$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.322

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.065$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(17625/1820690)^2 + 112755/1938814 + 0.7 \cdot 59315/1938814 = 0.08 \leq 1$  [4.4.7a] Comb: SLV, 1; Durata minima del carico nella combinazione: istantaneo

$M_x = 307.896$ ;  $M_y = 80.984$ ;  $N = -902.4$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.322

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$ ;  $K_h = 1.065$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.08 + 0 + 0 \leq 1$  Comb: SLU, 43; Durata minima del carico nella combinazione: permanente

$T_x = -45.5$ ;  $T_y = -88$ ;  $M_t = -31.117$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.322

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$15460 \leq 188276$  Comb: SLU, 43; Durata minima del carico nella combinazione: permanente

$M_t = -31.117$

### Asta 34: Trave in legno a falda Falda 1 fili 51-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.284

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x32	Rettangolare	0.16	0.32	0.0512	0.0004369067	0.0001092267	0.00273067	0.00136533

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.284

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $k_{cr} = 0.71$



$\tau_{d} \leq f_{v,d}$

$\sqrt{25645^2 + 2529^2} = 25770 \leq 265517$  Comb: SLV, 1; Durata minima del carico nella combinazione: istantaneo

$T_x = -625.3$ ;  $T_y = -61.7$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.284

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.065$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(18931/1820690)^2 + 118031/1938814 + 0.7 \cdot 65618/1938814 = 0.08 \leq 1$  [4.4.7a] Comb: SLV, 1; Durata minima del carico nella combinazione: istantaneo

$M_x = 322.303$ ;  $M_y = -89.591$ ;  $N = -969.3$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.284

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.12 + 0 + 0 \leq 1$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

$T_x = -34$ ;  $T_y = -34$ ;  $M_t = -59.389$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.284

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$29506 \leq 251034$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

$M_t = -59.389$

### Asta 35: Trave in legno a falda Falda 1 fili 51-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.268

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x32	Rettangolare	0.16	0.32	0.0512	0.0004369067	0.0001092267	0.00273067	0.00136533

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{28089^2 + 38367^2} = 47551 \leq 265517$  Comb: SLV, 1; Durata minima del carico nella combinazione: istantaneo

$T_x = -684.8$ ;  $T_y = 935.4$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.268

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.065$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(17624/1820690)^2 + 0.7 \cdot 26170/1938814 + 204971/1938814 = 0.12 \leq 1$  [4.4.7b] Comb: SLV, 1; Durata minima del carico nella combinazione: istantaneo

$M_x = 71.461$ ;  $M_y = -279.853$ ;  $N = -902.3$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.11 + 0 + 0 \leq 1$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

$T_x = -33.9$ ;  $T_y = 250.1$ ;  $M_t = -56.815$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.268



Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $28227 \leq 251034$  Comb: SLU, 29; Durata minima del carico nella combinazione: media  
 $M_t = -56.815$

Asta 36: Trave in legno a falda Falda 1 fili 51-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati generali

Lunghezza = 0.287

Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x32	Rettangolare	0.16	0.32	0.0512	0.0004369067	0.0001092267	0.00273067	0.00136533

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

**Verifica flessione D.M. 17-01-18 §4.4.8.1.6**

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.065$  (formula 11.7.2)  
 $S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$   
 $K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$   
 $0.7 \cdot 14566/1938814 + 91101/1938814 = 0.05 \leq 1$  (formula 4.4.5b) Comb: SLV, 1; Durata minima del carico nella combinazione: istantaneo  
 $M_x = -39.776$ ;  $M_y = -124.383$

**Verifica taglio D.M. 17-01-18 §4.4.8.1.9**

Sezione ad ascissa 0.287  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{12231^2 + 26738^2} = 29402 \leq 265517$  Comb: SLV, 16; Durata minima del carico nella combinazione: istantaneo  
 $T_x = -298.2$ ;  $T_y = -651.9$

**Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11**

Sezione ad ascissa 0.287  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$ ;  $K_h = 1.065$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.36 + 0 + 0 \leq 1$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $T_x = 42.3$ ;  $T_y = -68.9$ ;  $M_t = -136.147$

**Verifica torsione D.M. 17-01-18 §4.4.8.1.10**

Sezione ad ascissa 0.287  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $67641 \leq 188276$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $M_t = -136.147$

Asta 37: Trave in legno a falda Falda 1 fili 51-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati generali

Lunghezza = 0.84

Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x32	Rettangolare	0.16	0.32	0.0512	0.0004369067	0.0001092267	0.00273067	0.00136533

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1



#### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.065$  (formula 11.7.2)

$S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$

$K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$

$66665/1938814 + 0.7 \cdot 14706/1938814 = 0.04 \leq 1$  (formula 4.4.5a) Comb: SLV, 3; Durata minima del carico nella combinazione: istantaneo

$M_x = -182.039$ ;  $M_y = -20.078$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{4045^2 + 1110^2} = 4195 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = 98.6$ ;  $T_y = -27.1$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.09 + 0 + 0 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = 98$ ;  $T_y = -28.4$ ;  $M_t = -45.349$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$22531 \leq 251034$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_t = -45.349$

### Asta 38: Trave in legno a falda Falda 1 fili 51-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.84

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x32	Rettangolare	0.16	0.32	0.0512	0.0004369067	0.0001092267	0.00273067	0.00136533

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{784^2 + 3558^2} = 3643 \leq 265517$  Comb: SLV, 3; Durata minima del carico nella combinazione: istantaneo

$T_x = 19.1$ ;  $T_y = -86.7$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2)

$(S_{c,0,d}/f_{c,0,d})^2 + S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$

$(S_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$

$(23886/1324138)^2 + 0.7 \cdot 27428/1410046 + 31322/1410046 = 0.04 \leq 1$  [4.4.7b] Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_x = -74.897$ ;  $M_y = 42.765$ ;  $N = -1223$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.02 + 0 + 0 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media





Tx = 28.3; Ty = 22.4; Mt = -8.993

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

4468 <= 251034 Comb: SLU, 80; Durata minima del carico nella combinazione: media

Mt = -8.993

### Asta 39: Trave in legno a falda Falda 1 fili 51-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.84

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x32	Rettangolare	0.16	0.32	0.0512	0.0004369067	0.0001092267	0.00273067	0.00136533

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 1.1; kcr = 0.71

$\tau_{d} \leq f_{v,d}$

$\sqrt{(1252^2 + 4025^2)} = 4215 <= 265517$  Comb: SLV, 16; Durata minima del carico nella combinazione: istantaneo

Tx = -30.5; Ty = 98.1

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.065 (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(23821/1324138)^2 + 0.7 \cdot 28035/1410046 + 34925/1410046 = 0.04 <= 1$  [4.4.7b] Comb: SLU, 71; Durata minima del carico nella combinazione: media

Mx = -76.554; My = 47.684; N = -1219.6

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.065 (formula 11.7.2); kcr = 0.71

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

0.03+0+0 <= 1 Comb: SLU, 80; Durata minima del carico nella combinazione: media

Tx = -55.4; Ty = -23.5; Mt = 14.884

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

7395 <= 251034 Comb: SLU, 80; Durata minima del carico nella combinazione: media

Mt = 14.884

### Asta 40: Trave in legno a falda Falda 1 fili 51-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.84

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x32	Rettangolare	0.16	0.32	0.0512	0.0004369067	0.0001092267	0.00273067	0.00136533

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300



Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

**Verifica taglio D.M. 17-01-18 §4.4.8.1.9**

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{703^2 + 4696^2} = 4748 \leq 144828$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $T_x = -17.1$ ;  $T_y = 114.5$

**Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8**

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$ ;  $K_h = 1.065$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(9068/993103)^2 + 48520/1057535 + 0.7 \cdot 471/1057535 = 0.05 \leq 1$  [4.4.7a] Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $M_x = -132.491$ ;  $M_y = 0.643$ ;  $N = -464.3$

**Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11**

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.14 + 0 + 0 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = -62.8$ ;  $T_y = 103.2$ ;  $M_t = 70.784$

**Verifica torsione D.M. 17-01-18 §4.4.8.1.10**

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $35167 \leq 251034$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_t = 70.784$

**Asta 41: Trave in legno a falda Falda 1 fili 51-230**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati generali**

Lunghezza = 0.434

**Caratteristiche della sezione**

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x32	Rettangolare	0.16	0.32	0.0512	0.0004369067	0.0001092267	0.00273067	0.00136533

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

**Verifica taglio D.M. 17-01-18 §4.4.8.1.9**

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{1126^2 + 21261^2} = 21291 \leq 265517$  Comb: SLV, 5; Durata minima del carico nella combinazione: istantaneo  
 $T_x = 27.4$ ;  $T_y = 518.4$

**Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8**

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$ ;  $K_h = 1.065$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(8535/993103)^2 + 48726/1057535 + 0.7 \cdot 30614/1057535 = 0.07 \leq 1$  [4.4.7a] Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $M_x = 133.054$ ;  $M_y = -41.798$ ;  $N = -437$

**Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11**

Sezione ad ascissa 0.434



Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.17 + 0 + 0 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = 1$ ;  $T_y = -105.1$ ;  $M_t = 84.502$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.434  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $41983 \leq 251034$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_t = 84.502$

### Asta 42: Trave in legno a falda Falda 1 fili 51-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.366

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x32	Rettangolare	0.16	0.32	0.0512	0.0004369067	0.0001092267	0.00273067	0.00136533

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{4148^2 + 22527^2} = 22905 \leq 265517$  Comb: SLV, 3; Durata minima del carico nella combinazione: istantaneo  
 $T_x = -101.1$ ;  $T_y = 549.2$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(16671/1324138)^2 + 71375/1410046 + 0.7 \cdot 17774/1410046 = 0.06 \leq 1$  [4.4.7a] Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_x = 194.902$ ;  $M_y = -24.268$ ;  $N = -853.5$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.18 + 0 + 0 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = 4.4$ ;  $T_y = 272.5$ ;  $M_t = 89.399$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.366  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $44416 \leq 251034$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_t = 89.399$

### Asta 43: Trave in legno a falda Falda 1 fili 51-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.434



#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x32	Rettangolare	0.16	0.32	0.0512	0.0004369067	0.0001092267	0.00273067	0.00136533

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{1029^2 + 12902^2} = 12943 \leq 265517$  Comb: SLV, 3; Durata minima del carico nella combinazione: istantaneo  
 $T_x = 25.1$ ;  $T_y = 314.6$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(18561/1324138)^2 + 58576/1410046 + 0.7 \cdot 22520/1410046 = 0.05 \leq 1$  [4.4.7a] Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_x = 159.951$ ;  $M_y = -30.748$ ;  $N = -950.3$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.02 + 0 + 0 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = 16.1$ ;  $T_y = 174.8$ ;  $M_t = 7.865$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.434  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $3924 \leq 251034$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $M_t = 7.898$

### Asta 44: Trave in legno a falda Falda 1 fili 51-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.435

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x32	Rettangolare	0.16	0.32	0.0512	0.0004369067	0.0001092267	0.00273067	0.00136533

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{537^2 + 15495^2} = 15504 \leq 193103$  Comb: SLU, 29; Durata minima del carico nella combinazione: media  
 $T_x = 13.1$ ;  $T_y = 377.8$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.065$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$



$(Sc,0,d/fc,0,d)^2 + Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$   
 $(14590/1820690)^2 + 61175/1938814 + 0.7*9950/1938814 = 0.04 \leq 1$  [4.4.7a] Comb: SLV, 14; Durata minima del carico nella combinazione: istantaneo  
 $Mx = 167.05$ ;  $My = 13.585$ ;  $N = -747$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh}*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.04 + 0 + 0.01 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = 16.3$ ;  $T_y = 334.6$ ;  $M_t = 18.286$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.435  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} * f_{v,d}$   
 $9085 \leq 251034$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_t = 18.286$

### Asta 45: Trave in legno a falda Falda 1 fili 51-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.84

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x32	Rettangolare	0.16	0.32	0.0512	0.0004369067	0.0001092267	0.00273067	0.00136533

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(6021^2 + 7620^2)} = 9712 \leq 265517$  Comb: SLV, 3; Durata minima del carico nella combinazione: istantaneo  
 $T_x = 146.8$ ;  $T_y = -185.8$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$ ;  $K_h = 1.065$  (formula 11.7.2)  
 $(Sc,0,d/fc,0,d)^2 + Sm,y,d/fm,y,d + Km*(Sm,z,d/fm,z,d) \leq 1$   
 $(Sc,0,d/fc,0,d)^2 + Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$   
 $(10970/993103)^2 + 0.7*23608/1057535 + 31329/1057535 = 0.05 \leq 1$  [4.4.7b] Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $M_x = 64.466$ ;  $My = 42.775$ ;  $N = -561.7$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh}*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.02 + 0 + 0 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = 103.1$ ;  $T_y = -129.8$ ;  $M_t = -11.141$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} * f_{v,d}$   
 $5541 \leq 251034$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $M_t = -11.152$



## Asta 46: Trave in legno a falda Falda 1 fili 51-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.18

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x32	Rettangolare	0.16	0.32	0.0512	0.0004369067	0.0001092267	0.00273067	0.00136533

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{3308^2 + 21641^2} = 21892 \leq 193103$  Comb: SLU, 61; Durata minima del carico nella combinazione: media

$T_x = -80.7$ ;  $T_y = 527.6$

### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$ ;  $K_h = 1.065$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(11138/993103)^2 + 0.7 \cdot 25424/1057535 + 37577/1057535 = 0.05 \leq 1$  [4.4.7b] Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$M_x = 69.424$ ;  $M_y = 51.305$ ;  $N = -570.3$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.18

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.12 + 0 + 0 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = -94.1$ ;  $T_y = -39.2$ ;  $M_t = -58.766$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.18

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$29197 \leq 251034$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_t = -58.766$

## Asta 47: Trave in legno a falda Falda 1 fili 51-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.33

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x32	Rettangolare	0.16	0.32	0.0512	0.0004369067	0.0001092267	0.00273067	0.00136533

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{2763^2 + 5803^2} = 6428 \leq 144828$  Comb: SLU, 43; Durata minima del carico nella combinazione: permanente

$T_x = -67.4$ ;  $T_y = 141.5$



#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(18379/1324138)^2 + 0.7 \cdot 18030/1410046 + 34657/1410046 = 0.03 \leq 1$  [4.4.7b] Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_x = 49.234$ ;  $M_y = 47.318$ ;  $N = -941$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.33

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.1 + 0 + 0 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = -97.1$ ;  $T_y = -39.3$ ;  $M_t = -51.163$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.33

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$25419 \leq 251034$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_t = -51.163$

### Asta 48: Trave in legno a falda Falda 1 fili 51-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.33

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x32	Rettangolare	0.16	0.32	0.0512	0.0004369067	0.0001092267	0.00273067	0.00136533

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{(3212^2 + 7154^2)} = 7842 \leq 193103$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

$T_x = -78.3$ ;  $T_y = 174.4$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(16075/1324138)^2 + 34309/1410046 + 0.7 \cdot 8164/1410046 = 0.03 \leq 1$  [4.4.7a] Comb: SLU, 29; Durata minima del carico nella combinazione: media

$M_x = 93.687$ ;  $M_y = 11.146$ ;  $N = -823.1$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.08 + 0 + 0 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = -100.2$ ;  $T_y = 126.2$ ;  $M_t = -40.497$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.33

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$20120 \leq 251034$  Comb: SLU, 80; Durata minima del carico nella combinazione: media



Mt = -40.498

## Asta 49: Trave in legno a falda Falda 1 fili 51-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.14

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x32	Rettangolare	0.16	0.32	0.0512	0.0004369067	0.0001092267	0.00273067	0.00136533

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{2186^2 + 2380^2} = 3232 \leq 193103$  Comb: SLU, 30; Durata minima del carico nella combinazione: media

$T_x = -53.3$ ;  $T_y = 58$

### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(19440/1324138)^2 + 13479/1410046 + 0.7 \cdot 9107/1410046 = 0.01 \leq 1$  [4.4.7a] Comb: SLU, 29; Durata minima del carico nella combinazione: media

$M_x = 36.806$ ;  $M_y = 12.434$ ;  $N = -995.3$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.09 + 0 + 0 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = -59$ ;  $T_y = 46.8$ ;  $M_t = -43.769$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.14

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$21745 \leq 251034$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_t = -43.769$

## Asta 50: Trave in legno a falda Falda 1 fili 51-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.7

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x32	Rettangolare	0.16	0.32	0.0512	0.0004369067	0.0001092267	0.00273067	0.00136533

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$





$\tau_{d} \leq f_{v,d}$

$\text{Sqrt}(2848^2 + 11571^2) = 11917 \leq 193103$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

$T_x = -69.4$ ;  $T_y = 282.1$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.7

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(23247/1324138)^2 + 59444/1410046 + 0.7 \cdot 32575/1410046 = 0.06 \leq 1$  [4.4.7a] Comb: SLU, 29; Durata minima del carico nella combinazione: media

$M_x = -162.322$ ;  $M_y = -44.476$ ;  $N = -1190.3$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.08 + 0 + 0 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = -77.3$ ;  $T_y = 244$ ;  $M_t = -42.268$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.7

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$21000 \leq 251034$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_t = -42.268$

### Asta 51: Trave in legno a falda Falda 1 fili 51-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.865

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x32	Rettangolare	0.16	0.32	0.0512	0.0004369067	0.0001092267	0.00273067	0.00136533

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.865

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\text{Sqrt}(1039^2 + 10297^2) = 10350 \leq 193103$  Comb: SLU, 30; Durata minima del carico nella combinazione: media

$T_x = 25.3$ ;  $T_y = -251.1$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(22934/1324138)^2 + 64185/1410046 + 0.7 \cdot 24367/1410046 = 0.06 \leq 1$  [4.4.7a] Comb: SLU, 29; Durata minima del carico nella combinazione: media

$M_x = -175.268$ ;  $M_y = -33.269$ ;  $N = -1174.2$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.865

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.02 + 0 + 0 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = 23.2$ ;  $T_y = -234$ ;  $M_t = -11.427$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.865



Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $4578 \leq 188276 \text{ Comb: SLU, 64; Durata minima del carico nella combinazione: permanente}$   
 $M_t = -9.214$

## Asta 52: Trave in legno a falda Falda 1 fili 51-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.4

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x32	Rettangolare	0.16	0.32	0.0512	0.0004369067	0.0001092267	0.00273067	0.00136533

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.4  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{t,d} \leq f_{v,d}$   
 $\sqrt{5280^2 + 16401^2} = 17229 \leq 193103 \text{ Comb: SLU, 72; Durata minima del carico nella combinazione: media}$   
 $T_x = 128.7$ ;  $T_y = -399.9$

### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.4  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(16626/1324138)^2 + 71103/1410046 + 0.7 \cdot 13858/1410046 = 0.06 \leq 1$  [4.4.7a] Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $M_x = 194.158$ ;  $M_y = 18.92$ ;  $N = -851.3$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.4  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{t,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.04 + 0 + 0.01 \leq 1$  Comb: SLU, 29; Durata minima del carico nella combinazione: media  
 $T_x = 132.6$ ;  $T_y = -387.8$ ;  $M_t = 18.722$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.4  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $9302 \leq 251034 \text{ Comb: SLU, 29; Durata minima del carico nella combinazione: media}$   
 $M_t = 18.722$

## Asta 53: Trave in legno a falda Falda 1 fili 51-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.415

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x32	Rettangolare	0.16	0.32	0.0512	0.0004369067	0.0001092267	0.00273067	0.00136533

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1



#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.415

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{(3808^2 + 8573^2)} = 9381 \leq 265517$  Comb: SLV, 7; Durata minima del carico nella combinazione: istantaneo

$T_x = 92.8$ ;  $T_y = -209$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.415

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(16449/1324138)^2 + 74912/1410046 + 0.7 \cdot 54475/1410046 = 0.08 \leq 1$  [4.4.7a] Comb: SLU, 72; Durata minima del carico nella combinazione: media

$M_x = 204.56$ ;  $M_y = 74.377$ ;  $N = -842.2$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.415

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.065$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.03 + 0 + 0 \leq 1$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

$T_x = 133.2$ ;  $T_y = -35.4$ ;  $M_t = 14.427$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.415

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$7168 \leq 251034$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

$M_t = 14.427$

### Asta 54: Trave in legno a falda Falda 6 fili 167-225

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.339

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$ ;  $K_h = 1.096$  (formula 11.7.2)

$\sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$129789/1088400 + 0.7 \cdot 26210/1088400 = 0.14 \leq 1$  (formula 4.4.5a) Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$M_x = -199.356$ ;  $M_y = 26.839$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.339

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{(1221^2 + 9420^2)} = 9499 \leq 144828$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$T_x = -22.3$ ;  $T_y = -172.3$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1.339

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.02 + 0 + 0 \leq 1$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente



$T_x = -22.3$ ;  $T_y = -172.3$ ;  $M_t = 6.29$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.339

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

4433  $\leq$  177414 Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$M_t = 6.29$

### Asta 55: Trave in legno a falda Falda 6 fili 167-225

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.296

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 1.296

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$ ;  $K_h = 1.096$  (formula 11.7.2)

$Sm_{y,d}/f_{m,y,d} + K_m \cdot (Sm_{z,d}/f_{m,z,d}) \leq 1$

$K_m \cdot (Sm_{y,d}/f_{m,y,d}) + Sm_{z,d}/f_{m,z,d} \leq 1$

266803/1088400+0.7\*63144/1088400=0.29  $\leq$  1 (formula 4.4.5a) Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$M_x = 409.809$ ;  $M_y = -64.66$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.296

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{2560^2 + 18526^2} = 18702 \leq 144828$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$T_x = -46.8$ ;  $T_y = -338.8$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1.296

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

0.02+0+0.02  $\leq$  1 Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$T_x = -46.8$ ;  $T_y = -338.8$ ;  $M_t = 6.266$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.296

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

6590  $\leq$  236552 Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_t = 9.35$

### Asta 56: Trave in legno a falda Falda 6 fili 167-225

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.523

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300



Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

**Verifica taglio D.M. 17-01-18 §4.4.8.1.9**

Sezione ad ascissa 0.523  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(19403^2 + 36743^2)} = 41552 \leq 144828$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $T_x = 354.8$ ;  $T_y = -671.9$

**Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8**

Sezione ad ascissa 0.523  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(11475/993103)^2 + 545052/1088400 + 0.7 \cdot 94050/1088400 = 0.56 \leq 1$  [4.4.7a] Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $M_x = 837.199$ ;  $M_y = 96.307$ ;  $N = -440.6$

**Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11**

Sezione ad ascissa 0.523  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.25 + 0.02 + 0.06 \leq 1$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $T_x = 354.8$ ;  $T_y = -671.9$ ;  $M_t = -62.543$

**Verifica torsione D.M. 17-01-18 §4.4.8.1.10**

Sezione ad ascissa 0.523  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $44077 \leq 177414$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $M_t = -62.543$

**Asta 57: Trave in legno a falda Falda 6 fili 167-225**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati generali**

Lunghezza = 0.773

**Caratteristiche della sezione**

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

**Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7**

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $\sigma_{t,0,d}/f_{t,0,d} + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $23799/870720 + 337134/1088400 + 0.7 \cdot 11645/1088400 = 0.34 \leq 1$  [4.4.6a] Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $M_x = 517.838$ ;  $M_y = -11.924$ ;  $N = 913.9$

**Verifica taglio D.M. 17-01-18 §4.4.8.1.9**

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(3151^2 + 41298^2)} = 41418 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = -57.6$ ;  $T_y = 755.2$

**Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11**

Sezione ad ascissa 0



Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.26 + 0 + 0.04 \leq 1$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $T_x = -81.9$ ;  $T_y = 500.4$ ;  $M_t = 66.379$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.773  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $46780 \leq 177414$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $M_t = 66.379$

### Asta 58: Trave in legno a falda Falda 6 fili 167-225

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.296

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $\sigma_{t,0,d}/f_{t,0,d} + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $18124/870720 + 160517/1088400 + 0.7 \cdot 77589/1088400 = 0.22 \leq 1$  [4.4.6a] Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $M_x = 246.554$ ;  $M_y = -79.451$ ;  $N = 696$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(2682^2 + 19715^2)} = 19897 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = 49$ ;  $T_y = 360.5$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.04 + 0 + 0.01 \leq 1$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $T_x = 54.8$ ;  $T_y = 251.8$ ;  $M_t = -9.158$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.296  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $6454 \leq 177414$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $M_t = -9.158$

### Asta 59: Trave in legno a falda Falda 6 fili 167-225

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.296



#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 1.296

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$ ;  $K_h = 1.096$  (formula 11.7.2)

$St_{0,d}/ft_{0,d} + Sm_{y,d}/fm_{y,d} + Km*(Sm_{z,d}/fm_{z,d}) \leq 1$

$St_{0,d}/ft_{0,d} + Km*(Sm_{y,d}/fm_{y,d}) + Sm_{z,d}/fm_{z,d} \leq 1$

$19392/870720 + 165749/1088400 + 0.7*31864/1088400 = 0.2 \leq 1$  [4.4.6a] Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$M_x = -254.591$ ;  $M_y = 32.629$ ;  $N = 744.7$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{(1154^2 + 11193^2)} = 11252 \leq 144828$  Comb: SLU, 43; Durata minima del carico nella combinazione: permanente

$T_x = 21.1$ ;  $T_y = 204.7$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh}*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.05 + 0 + 0.01 \leq 1$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$T_x = 24.4$ ;  $T_y = 204.3$ ;  $M_t = -12.482$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.296

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$

$\tau_{tor,d} \leq K_{sh} * f_{v,d}$

$8797 \leq 177414$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$M_t = -12.482$

### Asta 60: Trave in legno a falda Falda 6 fili 167-225

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.764

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0.764

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$ ;  $K_h = 1.096$  (formula 11.7.2)

$St_{0,d}/ft_{0,d} + Sm_{y,d}/fm_{y,d} + Km*(Sm_{z,d}/fm_{z,d}) \leq 1$

$St_{0,d}/ft_{0,d} + Km*(Sm_{y,d}/fm_{y,d}) + Sm_{z,d}/fm_{z,d} \leq 1$

$14541/870720 + 183836/1088400 + 0.7*73876/1088400 = 0.23 \leq 1$  [4.4.6a] Comb: SLU, 43; Durata minima del carico nella combinazione: permanente

$M_x = -282.372$ ;  $M_y = 75.649$ ;  $N = 558.4$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.764

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$



$\tau_{d} \leq f_{v,d}$

$\sqrt{4156^2 + 30739^2} = 31019 \leq 193103$  Comb: SLU, 30; Durata minima del carico nella combinazione: media

$T_x = 76$ ;  $T_y = -562.1$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.764

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.22 + 0 + 0.02 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = 101.9$ ;  $T_y = -496.6$ ;  $M_t = -72.649$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.764

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$51200 \leq 236552$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_t = -72.649$

### Asta 61: Trave in legno a falda Falda 4 fili 118-60

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.838

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$ ;  $K_h = 1.096$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$5571/870720 + 161960/1088400 + 0.7 \cdot 31891/1088400 = 0.18 \leq 1$  [4.4.6a] Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$M_x = -248.771$ ;  $M_y = -32.657$ ;  $N = 213.9$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{1972^2 + 13116^2} = 13264 \leq 193103$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

$T_x = -36.1$ ;  $T_y = 239.8$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.838

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.26 + 0 + 0 \leq 1$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$T_x = 4.7$ ;  $T_y = -134$ ;  $M_t = 66.281$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.838

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$46712 \leq 177414$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$M_t = 66.281$





## Asta 62: Trave in legno a falda Falda 4 fili 118-60

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 1.274

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$\sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$250552/1451200 + 0.7 \cdot 68910/1451200 = 0.21 \leq 1$  (formula 4.4.5a) Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_x = -384.847$ ;  $M_y = -70.563$

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.274

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{(4718^2 + 31565^2)} = 31916 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = 86.3$ ;  $T_y = -577.2$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1.274

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.06 + 0 + 0.02 \leq 1$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$T_x = 66.7$ ;  $T_y = -399$ ;  $M_t = 14.708$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.274

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$10365 \leq 177414$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$M_t = 14.708$

## Asta 63: Trave in legno a falda Falda 4 fili 118-60

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 1.274

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 1.274

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$\sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$807338/1451200 + 0.7 \cdot 181016/1451200 = 0.64 \leq 1$  (formula 4.4.5a) Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_x = 1240.071$ ;  $M_y = 185.36$



#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.274

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{7112^2 + 56814^2} = 57258 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = 130$ ;  $T_y = -1038.9$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1.274

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.06 + 0 + 0.09 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = 130.9$ ;  $T_y = -1038.5$ ;  $M_t = -21.281$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.274

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$11298 \leq 177414$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$M_t = -16.031$

### Asta 64: Trave in legno a falda Falda 4 fili 118-60

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.353

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.353

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{27301^2 + 91081^2} = 95085 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = -499.2$ ;  $T_y = -1665.5$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.353

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(23776/1324138)^2 + 1057462/1451200 + 0.7 \cdot 3797/1451200 = 0.73 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_x = 1624.261$ ;  $M_y = 3.888$ ;  $N = -913$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.353

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.54 + 0.02 + 0.22 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = -493.8$ ;  $T_y = -1663.8$ ;  $M_t = -181.596$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.353

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$127981 \leq 236552$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_t = -181.596$



## Asta 65: Trave in legno a falda Falda 4 fili 118-60

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.154

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$ ;  $K_h = 1.096$  (formula 11.7.2)

$St_{0,d}/ft_{0,d} + Sm_{y,d}/fm_{y,d} + Km \cdot (Sm_{z,d}/fm_{z,d}) \leq 1$

$St_{0,d}/ft_{0,d} + Km \cdot (Sm_{y,d}/fm_{y,d}) + Sm_{z,d}/fm_{z,d} \leq 1$

$45467/870720 + 174912/1088400 + 0.7 \cdot 100937/1088400 = 0.28 \leq 1$  [4.4.6a] Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$M_x = 268.665$ ;  $M_y = -103.359$ ;  $N = 1745.9$

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{21628^2 + 40002^2} = 45475 \leq 144828$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$T_x = 395.5$ ;  $T_y = 731.5$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.2 + 0.02 + 0.08 \leq 1$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$T_x = 395.5$ ;  $T_y = 731.5$ ;  $M_t = 50.001$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.154

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$35239 \leq 177414$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$M_t = 50.001$

## Asta 66: Trave in legno a falda Falda 4 fili 118-60

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.768

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$St_{0,d}/ft_{0,d} + Sm_{y,d}/fm_{y,d} + Km \cdot (Sm_{z,d}/fm_{z,d}) \leq 1$



$St,0,d/ft,0,d + Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$   
 $47681/1160960+161744/1451200+0.7*29288/1451200=0.17 \leq 1$  [4.4.6a] Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $Mx = 248.439$ ;  $My = -29.991$ ;  $N = 1831$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{t,d} \leq f_{v,d}$   
 $Sqrt(4890^2+36493^2) = 36819 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = 89.4$ ;  $T_y = 667.3$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh}*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.12+0+0.04 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = 89.4$ ;  $T_y = 667.3$ ;  $M_t = 40.436$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.768  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} * f_{v,d}$   
 $28498 \leq 236552$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_t = 40.436$

### Asta 67: Trave in legno a falda Falda 4 fili 118-60

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.233

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0.233  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $St,0,d/ft,0,d + Sm,y,d/fm,y,d + Km*(Sm,z,d/fm,z,d) \leq 1$   
 $St,0,d/ft,0,d + Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$   
 $34405/1160960+149982/1451200+0.7*19128/1451200=0.14 \leq 1$  [4.4.6a] Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_x = -230.372$ ;  $M_y = -19.587$ ;  $N = 1321.2$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.233  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $k_{cr} = 0.71$   
 $\tau_{t,d} \leq f_{v,d}$   
 $Sqrt(28124^2+9640^2) = 29731 \leq 265517$  Comb: SLV, 2; Durata minima del carico nella combinazione: istantaneo  
 $T_x = -514.3$ ;  $T_y = -176.3$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh}*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.16+0.01+0 \leq 1$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $T_x = -215.2$ ;  $T_y = 58.1$ ;  $M_t = 40.646$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.233  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$



Kmod = 0.6  
 $\tau_{\text{tor,d}} \leq K_{\text{sh}} \cdot f_{\text{v,d}}$   
28646 <= 177414 Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
Mt = 40.646

Asta 68: Trave in legno a falda Falda 4 fili 118-60

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati generali

Lunghezza = 1.041

Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 1.041  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
Kmod = 0.8; Kh = 1.096 (formula 11.7.2)  
 $St_{0,d}/ft_{0,d} + Sm_{y,d}/fm_{y,d} + Km \cdot (Sm_{z,d}/fm_{z,d}) \leq 1$   
 $St_{0,d}/ft_{0,d} + Km \cdot (Sm_{y,d}/fm_{y,d}) + Sm_{z,d}/fm_{z,d} \leq 1$   
 $28922/1160960 + 243786/1451200 + 0.7 \cdot 37923/1451200 = 0.21 \leq 1$  [4.4.6a] Comb: SLU, 80; Durata minima del carico nella combinazione: media  
Mx = -374.456; My = -38.833; N = 1110.6

Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
Kmod = 0.8; kcr = 0.71  
 $\tau_{\text{d}} \leq f_{\text{v,d}}$   
 $\text{Sqrt}(885^2 + 17047^2) = 17070 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
Tx = -16.2; Ty = 311.7

Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
Kmod = 0.6; Kh = 1.096 (formula 11.7.2); kcr = 0.71  
 $\tau_{\text{tor,d}}/(k_{\text{sh}} \cdot f_{\text{v,d}}) + (\tau_{y,d}/f_{\text{v,d}})^2 + (\tau_{z,d}/f_{\text{v,d}})^2 \leq 1$   
0.1+0+0 <= 1 Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
Tx = 0.9; Ty = 182.6; Mt = -24.808

Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.041  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
Kmod = 0.6  
 $\tau_{\text{tor,d}} \leq K_{\text{sh}} \cdot f_{\text{v,d}}$   
17483 <= 177414 Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
Mt = -24.808

Asta 69: Trave in legno a falda Falda 4 fili 118-60

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati generali

Lunghezza = 1.274

Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1



#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_{m^*}(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_{m^*}(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$28049/1160960 + 219035/1451200 + 0.7 \cdot 32801/1451200 = 0.19 \leq 1$  [4.4.6a] Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_x = -336.438$ ;  $M_y = -33.588$ ;  $N = 1077.1$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.274

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{t,d} \leq f_{v,d}$

$\sqrt{83^2 + 17194^2} = 17194 \leq 193103$  Comb: SLU, 30; Durata minima del carico nella combinazione: media

$T_x = 1.5$ ;  $T_y = -314.4$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1.274

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.02 + 0 + 0 \leq 1$  Comb: SLV, 12; Durata minima del carico nella combinazione: istantaneo

$T_x = -31$ ;  $T_y = -68.8$ ;  $M_t = -8.463$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.274

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$5964 \leq 325259$  Comb: SLV, 12; Durata minima del carico nella combinazione: istantaneo

$M_t = -8.463$

### Asta 70: Trave in legno a falda Falda 4 fili 118-60

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.016

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 1.016

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_{m^*}(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_{m^*}(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$21258/1160960 + 212644/1451200 + 0.7 \cdot 67278/1451200 = 0.2 \leq 1$  [4.4.6a] Comb: SLU, 30; Durata minima del carico nella combinazione: media

$M_x = 326.621$ ;  $M_y = 68.893$ ;  $N = 816.3$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.016

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{t,d} \leq f_{v,d}$

$\sqrt{5309^2 + 49244^2} = 49530 \leq 193103$  Comb: SLU, 30; Durata minima del carico nella combinazione: media

$T_x = 97.1$ ;  $T_y = -900.5$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1.016

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.03 + 0 + 0.07 \leq 1$  Comb: SLU, 30; Durata minima del carico nella combinazione: media



Tx = 97.1; Ty = -900.5; Mt = 10.003

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.016

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8

$\tau_{\text{tor,d}} \leq K_{\text{sh}} \cdot f_{v,d}$

7049  $\leq$  236552 Comb: SLU, 30; Durata minima del carico nella combinazione: media

Mt = 10.003

### Asta 71: Trave in legno a falda Falda 2 fili 51-14

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.826

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; kcr = 0.71

$\tau_{d} \leq f_{v,d}$

$\sqrt{(12032^2 + 11217^2)} = 16450 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

Tx = 220; Ty = 205.1

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.096 (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(25495/1324138)^2 + 124773/1451200 + 0.7 \cdot 120424/1451200 = 0.14 \leq 1$  [4.4.7a] Comb: SLU, 71; Durata minima del carico nella combinazione: media

Mx = 191.652; My = -123.315; N = -979

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.096 (formula 11.7.2); kcr = 0.71

$\tau_{\text{tor,d}}/(k_{\text{sh}} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

0.08+0+0  $\leq$  1 Comb: SLU, 72; Durata minima del carico nella combinazione: media

Tx = 217.6; Ty = 205.8; Mt = -27.089

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.826

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8

$\tau_{\text{tor,d}} \leq K_{\text{sh}} \cdot f_{v,d}$

19091  $\leq$  236552 Comb: SLU, 72; Durata minima del carico nella combinazione: media

Mt = -27.089

### Asta 72: Trave in legno a falda Falda 2 fili 51-14

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.469

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300



Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{12632^2 + 2860^2} = 12952 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = -231$ ;  $T_y = 52.3$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(15458/1324138)^2 + 0.7 \cdot 2957/1451200 + 75140/1451200 = 0.05 \leq 1$  [4.4.7b] Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_x = -4.542$ ;  $M_y = 76.943$ ;  $N = -593.6$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.07 + 0 + 0 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = -230.6$ ;  $T_y = 52.5$ ;  $M_t = 23.699$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.469  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $16702 \leq 236552$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_t = 23.699$

### Asta 73: Trave in legno a falda Falda 2 fili 51-14

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.785

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.785  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{10431^2 + 3560^2} = 11022 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = 190.7$ ;  $T_y = -65.1$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.785  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(5126/1324138)^2 + 0.7 \cdot 25054/1451200 + 80420/1451200 = 0.07 \leq 1$  [4.4.7b] Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $M_x = -38.482$ ;  $M_y = 82.35$ ;  $N = -196.8$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.785





Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.04 + 0 + 0 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = 190.7$ ;  $T_y = -65.1$ ;  $M_t = -14.108$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.785  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $9943 \leq 236552$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_t = -14.108$

### Asta 74: Trave in legno a falda Falda 2 fili 51-14

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.503

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $St_{0,d}/ft_{0,d} + Sm_{y,d}/fm_{y,d} + Km \cdot (Sm_{z,d}/fm_{z,d}) \leq 1$   
 $St_{0,d}/ft_{0,d} + Km \cdot (Sm_{y,d}/fm_{y,d}) + Sm_{z,d}/fm_{z,d} \leq 1$   
 $7914/1160960 + 0.7 \cdot 48261/1451200 + 101282/1451200 = 0.1 \leq 1$  [4.4.6b] Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $M_x = -74.129$ ;  $M_y = 103.713$ ;  $N = 303.9$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.503  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(17192^2 + 5793^2)} = 18142 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = -314.4$ ;  $T_y = -105.9$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.503  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.07 + 0.01 + 0 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = -313$ ;  $T_y = -106.2$ ;  $M_t = 24.445$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.503  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $17228 \leq 236552$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_t = 24.445$

### Asta 75: Trave in legno a falda Falda 2 fili 51-14

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.816



#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$St_{0,d}/ft_{0,d} + Sm_{y,d}/fm_{y,d} + Km*(Sm_{z,d}/fm_{z,d}) \leq 1$

$St_{0,d}/ft_{0,d} + Km*(Sm_{y,d}/fm_{y,d}) + Sm_{z,d}/fm_{z,d} \leq 1$

$19959/1160960 + 0.7*42882/1451200 + 56870/1451200 = 0.08 \leq 1$  [4.4.6b] Comb: SLU, 72; Durata minima del carico nella combinazione: media

$M_x = -65.866$ ;  $M_y = -58.235$ ;  $N = 766.4$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{6795^2 + 7706^2} = 10274 \leq 265517$  Comb: SLV, 1; Durata minima del carico nella combinazione: istantaneo

$T_x = 124.3$ ;  $T_y = 140.9$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh}*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.02 + 0 + 0 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = 109.7$ ;  $T_y = 69.2$ ;  $M_t = -6.539$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.816

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} * f_{v,d}$

$4608 \leq 236552$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_t = -6.539$

### Asta 76: Trave in legno a falda Falda 2 fili 51-14

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.473

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.096$  (formula 11.7.2)

$St_{0,d}/ft_{0,d} + Sm_{y,d}/fm_{y,d} + Km*(Sm_{z,d}/fm_{z,d}) \leq 1$

$St_{0,d}/ft_{0,d} + Km*(Sm_{y,d}/fm_{y,d}) + Sm_{z,d}/fm_{z,d} \leq 1$

$52731/1596320 + 0.7*31641/1995400 + 134000/1995400 = 0.11 \leq 1$  [4.4.6b] Comb: SLV, 16; Durata minima del carico nella combinazione: istantaneo

$M_x = -48.601$ ;  $M_y = -137.216$ ;  $N = 2024.9$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.473

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $k_{cr} = 0.71$



$\tau_{d} \leq f_{v,d}$

$\text{Sqrt}(23766^2 + 3307^2) = 23995 \leq 265517$  Comb: SLV, 1; Durata minima del carico nella combinazione: istantaneo

$T_x = -434.6$ ;  $T_y = -60.5$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.1 + 0 + 0 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$T_x = -50.6$ ;  $T_y = 234.6$ ;  $M_t = 34.224$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.473

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$24119 \leq 236552$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_t = 34.224$

### Asta 77: Trave in legno a falda Falda 2 fili 51-14

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.716

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.096$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$59738/1596320 + 0.7 \cdot 62069/1995400 + 72551/1995400 = 0.1 \leq 1$  [4.4.6b] Comb: SLV, 16; Durata minima del carico nella combinazione: istantaneo

$M_x = -95.338$ ;  $M_y = 74.292$ ;  $N = 2294$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\text{Sqrt}(15488^2 + 8792^2) = 17810 \leq 265517$  Comb: SLV, 2; Durata minima del carico nella combinazione: istantaneo

$T_x = 283.2$ ;  $T_y = 160.8$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.03 + 0 + 0 \leq 1$  Comb: SLV, 2; Durata minima del carico nella combinazione: istantaneo

$T_x = 283.2$ ;  $T_y = 160.8$ ;  $M_t = -15.98$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.716

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$11262 \leq 325259$  Comb: SLV, 2; Durata minima del carico nella combinazione: istantaneo

$M_t = -15.98$



## Asta 78: Trave in legno a falda Falda 2 fili 51-14

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.573

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.096$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$74843/1596320 + 0.7 \cdot 9490/1995400 + 85505/1995400 = 0.09 \leq 1$  [4.4.6b] Comb: SLV, 16; Durata minima del carico nella combinazione: istantaneo

$M_x = -14.577$ ;  $M_y = 87.557$ ;  $N = 2874$

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.573

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{v,d} \leq f_{v,d}$

$\sqrt{(11500^2 + 2657^2)} = 11803 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = -210.3$ ;  $T_y = -48.6$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{v,d}/f_{v,d})^2 + (\tau_{t,d}/f_{v,d})^2 \leq 1$

$0.01 + 0 + 0 \leq 1$  Comb: SLV, 2; Durata minima del carico nella combinazione: istantaneo

$T_x = -253.5$ ;  $T_y = 55.4$ ;  $M_t = 5.412$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.573

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$3814 \leq 325259$  Comb: SLV, 2; Durata minima del carico nella combinazione: istantaneo

$M_t = 5.412$

## Asta 79: Trave in legno a falda Falda 2 fili 51-14

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.681

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.096$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$82815/1596320 + 27298/1995400 + 0.7 \cdot 25121/1995400 = 0.07 \leq 1$  [4.4.6a] Comb: SLV, 16; Durata minima del carico nella combinazione: istantaneo

$M_x = 41.93$ ;  $M_y = 25.724$ ;  $N = 3180.1$



#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.681  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(5931^2 + 4290^2)} = 7320 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $T_x = 108.5$ ;  $T_y = -78.4$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.02 + 0 + 0 \leq 1$  Comb: SLV, 13; Durata minima del carico nella combinazione: istantaneo  
 $T_x = -28.1$ ;  $T_y = 102.3$ ;  $M_t = 8.693$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.681  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $6127 \leq 325259$  Comb: SLV, 13; Durata minima del carico nella combinazione: istantaneo  
 $M_t = 8.693$

### Asta 80: Trave in legno a falda Falda 2 fili 51-14

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.86

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0.86  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $\sigma_{t,0,d}/f_{t,0,d} + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $84171/1596320 + 27125/1995400 + 0.7 \cdot 15636/1995400 = 0.07 \leq 1$  [4.4.6a] Comb: SLV, 16; Durata minima del carico nella combinazione: istantaneo  
 $M_x = 41.664$ ;  $M_y = -16.011$ ;  $N = 3232.2$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.86  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(2425^2 + 8735^2)} = 9065 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = -44.3$ ;  $T_y = -159.7$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.86  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0 + 0 + 0 \leq 1$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $T_x = -44.3$ ;  $T_y = -159.7$ ;  $M_t = -0.578$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.86  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $873 \leq 325259$  Comb: SLV, 1; Durata minima del carico nella combinazione: istantaneo  
 $M_t = -1.239$



## Asta 81: Trave in legno a falda Falda 3 fili 52-109

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 1.05

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.096$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$44209/1596320 + 332355/1995400 + 0.7 \cdot 152151/1995400 = 0.25 \leq 1$  [4.4.6a] Comb: SLV, 14; Durata minima del carico nella combinazione: istantaneo

$M_x = -510.498$ ;  $M_y = 155.803$ ;  $N = 1697.6$

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{t,d} \leq f_{v,d}$

$\sqrt{7867^2 + 30176^2} = 31185 \leq 193103$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

$T_x = -143.9$ ;  $T_y = 551.8$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{t,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.18 + 0 + 0.02 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = -166.9$ ;  $T_y = 494.6$ ;  $M_t = 59.923$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.05

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$42231 \leq 236552$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_t = 59.923$

## Asta 82: Trave in legno a falda Falda 3 fili 52-109

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 1.325

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.096$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$



$St_{0,d}/ft_{0,d} + Km \cdot (Sm_{y,d}/fm_{y,d}) + Sm_{z,d}/fm_{z,d} \leq 1$   
 $46691/1596320 + 234878/1995400 + 0.7 \cdot 39301/1995400 = 0.16 \leq 1$  [4.4.6a] Comb: SLV, 14; Durata minima del carico nella combinazione: istantaneo  
 $M_x = -360.773$ ;  $M_y = 40.245$ ;  $N = 1792.9$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.325  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $Sqrt(2324^2 + 11552^2) = 11783 \leq 144828$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $T_x = -42.5$ ;  $T_y = -211.2$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1.325  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.04 + 0 + 0.01 \leq 1$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $T_x = -42.5$ ;  $T_y = -211.2$ ;  $M_t = 9.625$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.325  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $6783 \leq 177414$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $M_t = 9.625$

### Asta 83: Trave in legno a falda Falda 3 fili 52-109

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.28

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 1.28  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $St_{0,d}/ft_{0,d} + Sm_{y,d}/fm_{y,d} + Km \cdot (Sm_{z,d}/fm_{z,d}) \leq 1$   
 $St_{0,d}/ft_{0,d} + Km \cdot (Sm_{y,d}/fm_{y,d}) + Sm_{z,d}/fm_{z,d} \leq 1$   
 $18037/870720 + 242310/1088400 + 0.7 \cdot 95961/1088400 = 0.31 \leq 1$  [4.4.6a] Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $M_x = 372.188$ ;  $M_y = -98.264$ ;  $N = 692.6$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.28  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $Sqrt(4461^2 + 22369^2) = 22809 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = -81.6$ ;  $T_y = -409$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1.28  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.01 + 0 + 0.01 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = -81.6$ ;  $T_y = -409$ ;  $M_t = -3.018$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.28  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$



$K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $2127 \leq 236552$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_t = -3.018$

## Asta 84: Trave in legno a falda Falda 3 fili 52-109

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 1.37

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(2344^2 + 15299^2)} = 15478 \leq 144828$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $T_x = -42.9$ ;  $T_y = 279.8$

### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(8905/993103)^2 + 299491/1088400 + 0.7 \cdot 26652/1088400 = 0.29 \leq 1$  [4.4.7a] Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $M_x = 460.019$ ;  $M_y = 27.292$ ;  $N = -342$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.07 + 0 + 0.01 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = -69.3$ ;  $T_y = 320.6$ ;  $M_t = -23.7$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.37  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $16703 \leq 236552$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_t = -23.7$

## Asta 85: Trave in legno a falda Falda 3 fili 52-109

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 1.325

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1





#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{1243^2 + 7295^2} = 7400 \leq 144828$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$T_x = 22.7$ ;  $T_y = 133.4$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(S_{c,0,d}/f_{c,0,d})^2 + S_{m,y,d}/f_{m,y,d} + K_m(S_{m,z,d}/f_{m,z,d}) \leq 1$

$(S_{c,0,d}/f_{c,0,d})^2 + K_m(S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$

$(7740/1324138)^2 + 112233/1451200 + 0.7 \cdot 33224/1451200 = 0.09 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_x = 172.39$ ;  $M_y = -34.021$ ;  $N = -297.2$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.03 + 0 + 0 \leq 1$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$T_x = 22.7$ ;  $T_y = 133.4$ ;  $M_t = -7.023$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.325

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$4950 \leq 177414$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$M_t = -7.023$

### Asta 86: Trave in legno a falda Falda 3 fili 52-109

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.817

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$S_{m,y,d}/f_{m,y,d} + K_m(S_{m,z,d}/f_{m,z,d}) \leq 1$

$K_m(S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$

$50981/1451200 + 0.7 \cdot 21207/1451200 = 0.05 \leq 1$  (formula 4.4.5a) Comb: SLU, 30; Durata minima del carico nella combinazione: media

$M_x = 78.307$ ;  $M_y = -21.716$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{2605^2 + 4899^2} = 5548 \leq 193103$  Comb: SLU, 30; Durata minima del carico nella combinazione: media

$T_x = 47.6$ ;  $T_y = 89.6$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.02 + 0 + 0 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media



$T_x = 47.5$ ;  $T_y = 88.8$ ;  $M_t = -5.964$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.817

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

4203  $\leq$  236552 Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_t = -5.964$

### Asta 87: Trave in legno a falda Falda 5 fili 230-248

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.167

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica trazione parallela alla fibratura D.M. 17-01-18 §4.4.8.1.1

Sezione ad ascissa 1.878

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$\sigma_{t,0,d} \leq f_{t,0,d}$

11803  $\leq$  1165241 Comb: SLU, 3; Durata minima del carico nella combinazione: media

$N = 297.4$

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

30656/1165241+88660/1456552+0.7\*17778/1456552=0.1  $\leq$  1 [4.4.6a] Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_x = 67.027$ ;  $M_y = 10.454$ ;  $N = 772.5$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.167

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{,d} \leq f_{v,d}$

$\sqrt{479^2 + 19239^2} = 19245 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = -5.7$ ;  $T_y = -230.9$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.167

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

0+0+0.01  $\leq$  1 Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = -5.7$ ;  $T_y = -230.9$ ;  $M_t = 0.278$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.167

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

2916  $\leq$  316724 Comb: SLV, 12; Durata minima del carico nella combinazione: istantaneo

$M_t = -2.29$

### Asta 88: Trave in legno a falda Falda 5 fili 230-248

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)



## Dati generali

Lunghezza = 0.226

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$19752/1165241 + 52273/1456552 + 0.7 \cdot 3500/1456552 = 0.05 \leq 1$  [4.4.6a] Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_x = 39.519$ ;  $M_y = -2.058$ ;  $N = 497.7$

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{t,d} \leq f_{v,d}$

$\sqrt{(558^2 + 4493^2)} = 4528 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = -6.7$ ;  $T_y = 53.9$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.01 + 0 + 0 \leq 1$  Comb: SLV, 10; Durata minima del carico nella combinazione: istantaneo

$T_x = -26.4$ ;  $T_y = 19.7$ ;  $M_t = -2.397$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.226

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$3052 \leq 316724$  Comb: SLV, 10; Durata minima del carico nella combinazione: istantaneo

$M_t = -2.397$

## Asta 89: Trave in legno a falda Falda 5 fili 230-248

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

## Dati generali

Lunghezza = 0.226

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0.226

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$15095/1165241 + 0.7 \cdot 4300/1456552 + 9509/1456552 = 0.02 \leq 1$  [4.4.6b] Comb: SLU, 29; Durata minima del carico nella combinazione: media

$M_x = -3.25$ ;  $M_y = -5.591$ ;  $N = 380.4$

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0



Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{580^2 + 2705^2} = 2767 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $T_x = -7$ ;  $T_y = 32.5$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.06 + 0 + 0 \leq 1$  Comb: SLV, 10; Durata minima del carico nella combinazione: istantaneo  
 $T_x = -27.8$ ;  $T_y = 11.9$ ;  $M_t = -16.135$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.226  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $20541 \leq 316724$  Comb: SLV, 10; Durata minima del carico nella combinazione: istantaneo  
 $M_t = -16.135$

### Asta 90: Trave in legno a falda Falda 2 fili 51-29

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.128

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $\sigma_{t,0,d}/f_{t,0,d} + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $22141/1165241 + 94812/1456552 + 0.7 \cdot 24444/1456552 = 0.1 \leq 1$  [4.4.6a] Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_x = 71.678$ ;  $M_y = -14.373$ ;  $N = 558$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.128  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{649^2 + 18610^2} = 18621 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $T_x = 7.8$ ;  $T_y = -223.3$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.128  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0 + 0 + 0.01 \leq 1$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $T_x = 7.8$ ;  $T_y = -223.3$ ;  $M_t = -0.148$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.128  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $2934 \leq 316724$  Comb: SLV, 7; Durata minima del carico nella combinazione: istantaneo  
 $M_t = 2.304$



## Asta 91: Trave in legno a falda Falda 2 fili 51-29

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.224

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$13939/1165241 + 49640/1456552 + 0.7 \cdot 5150/1456552 = 0.05 \leq 1$  [4.4.6a] Comb: SLU, 72; Durata minima del carico nella combinazione: media

$M_x = 37.528$ ;  $M_y = 3.028$ ;  $N = 351.3$

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{t,d} \leq f_{v,d}$

$\sqrt{558^2 + 4337^2} = 4372 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = 6.7$ ;  $T_y = 52$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.01 + 0 + 0 \leq 1$  Comb: SLV, 12; Durata minima del carico nella combinazione: istantaneo

$T_x = -27$ ;  $T_y = 11.9$ ;  $M_t = -2.209$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.224

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$2812 \leq 316724$  Comb: SLV, 12; Durata minima del carico nella combinazione: istantaneo

$M_t = -2.209$

## Asta 92: Trave in legno a falda Falda 2 fili 51-29

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.224

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0.224

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$24615/1602207 + 0.7 \cdot 6103/2002759 + 10890/2002759 = 0.02 \leq 1$  [4.4.6b] Comb: SLV, 16; Durata minima del carico nella combinazione: istantaneo

$M_x = 4.614$ ;  $M_y = -6.403$ ;  $N = 620.3$



**Verifica taglio D.M. 17-01-18 §4.4.8.1.9**

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(607^2 + 2799^2)} = 2864 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $T_x = 7.3$ ;  $T_y = 33.6$

**Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11**

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.06 + 0 + 0 \leq 1$  Comb: SLV, 5; Durata minima del carico nella combinazione: istantaneo  
 $T_x = 32.6$ ;  $T_y = 10.4$ ;  $M_t = 15.666$

**Verifica torsione D.M. 17-01-18 §4.4.8.1.10**

Sezione ad ascissa 0.224  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $19944 \leq 316724$  Comb: SLV, 5; Durata minima del carico nella combinazione: istantaneo  
 $M_t = 15.666$

**Asta 93: Trave in legno a falda Falda 1 fili 154-245**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati generali**

Lunghezza = 0.386

**Caratteristiche della sezione**

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

**Verifica taglio D.M. 17-01-18 §4.4.8.1.9**

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(7781^2 + 71800^2)} = 72220 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = -142.3$ ;  $T_y = 1312.9$

**Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8**

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(31386/1324138)^2 + 544746/1451200 + 0.7 \cdot 132080/1451200 = 0.44 \leq 1$  [4.4.7a] Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_x = 836.729$ ;  $M_y = 135.25$ ;  $N = -1205.2$

**Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11**

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.01 + 0 + 0.14 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = -142.3$ ;  $T_y = 1312.9$ ;  $M_t = -4.163$

**Verifica torsione D.M. 17-01-18 §4.4.8.1.10**

Sezione ad ascissa 0.386  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $4424 \leq 177414$  Comb: SLU, 43; Durata minima del carico nella combinazione: permanente  
 $M_t = -6.277$



## Asta 94: Trave in legno a falda Falda 1 fili 154-245

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.829

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_d \leq f_{v,d}$

$\sqrt{14249^2 + 40837^2} = 43252 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = -260.5$ ;  $T_y = 746.7$

### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(31901/1324138)^2 + 214764/1451200 + 0.7 \cdot 105202/1451200 = 0.2 \leq 1$  [4.4.7a] Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_x = 329.877$ ;  $M_y = 107.727$ ;  $N = -1225$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.03 + 0.01 + 0.04 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = -260.8$ ;  $T_y = 746.3$ ;  $M_t = -10.008$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.829

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$7053 \leq 236552$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_t = -10.008$

## Asta 95: Trave in legno a falda Falda 1 fili 154-245

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.84

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_d \leq f_{v,d}$



$\sqrt{2554^2 + 17546^2} = 17731 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
Tx = -46.7; Ty = 320.8

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.096 (formula 11.7.2)

$(Sc,0,d/fc,0,d)^2 + Sm,y,d/fm,y,d + Km*(Sm,z,d/fm,z,d) \leq 1$

$(Sc,0,d/fc,0,d)^2 + Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$

$(32193/1324138)^2 + 350143/1451200 + 0.7*131138/1451200 = 0.31 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media

Mx = -537.82; My = -134.285; N = -1236.2

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.096 (formula 11.7.2); kcr = 0.71

$\tau_{tor,d}/(ksh*fv,d) + (\tau_{y,d}/fv,d)^2 + (\tau_{z,d}/fv,d)^2 \leq 1$

$0+0+0.01 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

Tx = -46.7; Ty = 320.8; Mt = -1.262

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8

$\tau_{tor,d} \leq Ksh * fv,d$

$891 \leq 236552$  Comb: SLU, 37; Durata minima del carico nella combinazione: media

Mt = -1.264

### Asta 96: Trave in legno a falda Falda 1 fili 154-245

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.84

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; kcr = 0.71

$\tau_{d} \leq fv,d$

$\sqrt{3023^2 + 3920^2} = 4950 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

Tx = 55.3; Ty = -71.7

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.096 (formula 11.7.2)

$(Sc,0,d/fc,0,d)^2 + Sm,y,d/fm,y,d + Km*(Sm,z,d/fm,z,d) \leq 1$

$(Sc,0,d/fc,0,d)^2 + Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$

$(32279/1324138)^2 + 343512/1451200 + 0.7*142469/1451200 = 0.31 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media

Mx = -527.635; My = -145.889; N = -1239.5

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.096 (formula 11.7.2); kcr = 0.71

$\tau_{tor,d}/(ksh*fv,d) + (\tau_{y,d}/fv,d)^2 + (\tau_{z,d}/fv,d)^2 \leq 1$

$0.01+0+0 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

Tx = 55.3; Ty = -71.7; Mt = 2.152

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$





$K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $1517 \leq 236552 \text{ Comb: SLU, 80; Durata minima del carico nella combinazione: media}$   
 $M_t = 2.152$

Asta 97: Trave in legno a falda Falda 1 fili 154-245

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati generali

Lunghezza = 0.84

Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\text{Sqrt}(5820^2 + 26651^2) = 27279 \leq 193103 \text{ Comb: SLU, 80; Durata minima del carico nella combinazione: media}$   
 $T_x = 106.4$ ;  $T_y = -487.3$

Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(32460/1324138)^2 + 309204/1451200 + 0.7 \cdot 110721/1451200 = 0.27 \leq 1$  [4.4.7a] Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_x = -474.937$ ;  $M_y = -113.379$ ;  $N = -1246.5$

Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.01 + 0 + 0.02 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = 106.5$ ;  $T_y = -487.1$ ;  $M_t = 3.739$

Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $2635 \leq 236552 \text{ Comb: SLU, 79; Durata minima del carico nella combinazione: media}$   
 $M_t = 3.739$

Asta 98: Trave in legno a falda Falda 1 fili 154-245

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati generali

Lunghezza = 1

Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1



#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{15436^2 + 49214^2} = 51578 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = 282.3$ ;  $T_y = -899.9$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 1

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(32842/1324138)^2 + 527793/1451200 + 0.7 \cdot 237167/1451200 = 0.48 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_x = 810.69$ ;  $M_y = 242.859$ ;  $N = -1261.1$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.01 + 0.01 + 0.06 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = 282.3$ ;  $T_y = -899.9$ ;  $M_t = 4.138$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$2687 \leq 177414$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$M_t = 3.813$

### Asta 99: Trave in legno a falda Falda 1 fili 154-245

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.68

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{15566^2 + 56523^2} = 58628 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = -284.6$ ;  $T_y = 1033.6$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(33047/1324138)^2 + 572931/1451200 + 0.7 \cdot 219035/1451200 = 0.5 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_x = 880.022$ ;  $M_y = 224.292$ ;  $N = -1269$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.02 + 0.01 + 0.09 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media



Tx = -284.5; Ty = 1033.1; Mt = 6.346

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.68

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8

$\tau_{\text{tor,d}} \leq K_{\text{sh}} \cdot f_{v,d}$

4944  $\leq$  236552 Comb: SLU, 29; Durata minima del carico nella combinazione: media

Mt = 7.015

### Asta 100: Trave in legno a falda Falda 1 fili 154-245

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.84

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; kcr = 0.71

$\tau_{\text{d}} \leq f_{v,d}$

$\sqrt{(5514^2 + 29914^2)} = 30418 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

Tx = -100.8; Ty = 547

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.096 (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(33292/1324138)^2 + 171254/1451200 + 0.7 \cdot 55220/1451200 = 0.15 \leq 1$  [4.4.7a] Comb: SLU, 72; Durata minima del carico nella combinazione: media

Mx = -263.046; My = -56.545; N = -1278.4

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.096 (formula 11.7.2); kcr = 0.71

$\tau_{\text{tor,d}}/(k_{\text{sh}} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

0+0+0.02  $\leq$  1 Comb: SLU, 80; Durata minima del carico nella combinazione: media

Tx = -101.5; Ty = 546.8; Mt = 0.619

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 1.1

$\tau_{\text{tor,d}} \leq K_{\text{sh}} \cdot f_{v,d}$

1834  $\leq$  325259 Comb: SLV, 10; Durata minima del carico nella combinazione: istantaneo

Mt = 2.602

### Asta 101: Trave in legno a falda Falda 1 fili 154-245

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.84

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300



Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{1646^2 + 3116^2} = 3524 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = -30.1$ ;  $T_y = 57$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(33581/1324138)^2 + 192388/1451200 + 0.7 \cdot 84585/1451200 = 0.17 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_x = -295.508$ ;  $M_y = -86.615$ ;  $N = -1289.5$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.01 + 0 + 0 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = -30.7$ ;  $T_y = 56.4$ ;  $M_t = 4.405$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $3105 \leq 236552$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_t = 4.405$

### Asta 102: Trave in legno a falda Falda 1 fili 154-245

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.84

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{4633^2 + 16206^2} = 16856 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = 84.7$ ;  $T_y = -296.3$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(34044/1324138)^2 + 188971/1451200 + 0.7 \cdot 94012/1451200 = 0.18 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_x = -290.26$ ;  $M_y = -96.268$ ;  $N = -1307.3$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.84



Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.01 + 0 + 0.01 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = 85.4$ ;  $T_y = -295.4$ ;  $M_t = 3.628$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $2557 \leq$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_t = 3.628$

### Asta 103: Trave in legno a falda Falda 1 fili 154-245

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.626

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.626  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{21062^2 + 17239^2} = 27218 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = 385.1$ ;  $T_y = -315.2$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.626  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(32873/1324138)^2 + 0.7 \cdot 103954/1451200 + 172367/1451200 = 0.17 \leq 1$  [4.4.7b] Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $M_x = 159.673$ ;  $M_y = 176.503$ ;  $N = -1262.3$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.626  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.04 + 0.01 + 0.01 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = 385.1$ ;  $T_y = -315.2$ ;  $M_t = -11.932$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.626  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $8409 \leq$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_t = -11.932$

### Asta 104: Trave in legno a falda Falda 1 fili 126-154

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.641



#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{(4537^2 + 61205^2)} = 61373 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = -83$ ;  $T_y = 1119.2$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(30735/1324138)^2 + 500546/1451200 + 0.7 \cdot 107490/1451200 = 0.4 \leq 1$  [4.4.7a] Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_x = 768.839$ ;  $M_y = 110.07$ ;  $N = -1180.2$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.14 + 0 + 0.1 \leq 1$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = -81.5$ ;  $T_y = 1117.9$ ;  $M_t = 45.382$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.641

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$31983 \leq 236552$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$M_t = 45.382$

### Asta 105: Trave in legno a falda Falda 1 fili 126-154

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.84

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{(3500^2 + 16226^2)} = 16599 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$T_x = -64$ ;  $T_y = 296.7$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$



$(Sc,0,d/fc,0,d)^2 + Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$   
 $(29564/1324138)^2 + 120126/1451200 + 0.7*21901/1451200 = 0.09 \leq 1$  [4.4.7a] Comb: SLU, 29; Durata minima del carico nella combinazione: media  
 $Mx = -184.514$ ;  $My = -22.426$ ;  $N = -1135.3$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh}*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.02 + 0 + 0.01 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = -64.4$ ;  $T_y = 296$ ;  $M_t = 6.591$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} * f_{v,d}$   
 $4645 \leq 236552$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_t = 6.591$

### Asta 106: Trave in legno a falda Falda 1 fili 126-154

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.84

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{6481^2 + 26784^2} = 27557 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = 118.5$ ;  $T_y = -489.8$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $(Sc,0,d/fc,0,d)^2 + Sm,y,d/fm,y,d + Km*(Sm,z,d/fm,z,d) \leq 1$   
 $(Sc,0,d/fc,0,d)^2 + Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$   
 $(30662/1324138)^2 + 148585/1451200 + 0.7*83049/1451200 = 0.14 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_x = 228.226$ ;  $M_y = 85.042$ ;  $N = -1177.4$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh}*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.03 + 0 + 0.02 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = 118.6$ ;  $T_y = -488.9$ ;  $M_t = -10.101$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} * f_{v,d}$   
 $7119 \leq 236552$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_t = -10.101$



## Asta 107: Trave in legno a falda Falda 1 fili 126-154

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.454

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.454

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{587^2 + 73744^2} = 73746 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = 10.7$ ;  $T_y = -1348.5$

### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.454

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(31039/1324138)^2 + 532776/1451200 + 0.7 \cdot 124054/1451200 = 0.43 \leq 1$  [4.4.7a] Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_x = 818.343$ ;  $M_y = 127.031$ ;  $N = -1191.9$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.454

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.17 + 0 + 0.15 \leq 1$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = 7.1$ ;  $T_y = -1346.7$ ;  $M_t = -57.076$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.454

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$40224 \leq 236552$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$M_t = -57.076$

## Asta 108: Trave in legno a falda Falda 1 fili 26-126

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.882

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{14395^2 + 22491^2} = 26703 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$T_x = -263.2$ ;  $T_y = 411.3$





**Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8**

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(32152/1324138)^2 + 0.7 \cdot 137128/1451200 + 142670/1451200 = 0.17 \leq 1$  [4.4.7b] Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $M_x = 210.629$ ;  $M_y = 146.094$ ;  $N = -1234.7$

**Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11**

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.02 + 0.01 + 0.01 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = -263$ ;  $T_y = 411.3$ ;  $M_t = 7.425$

**Verifica torsione D.M. 17-01-18 §4.4.8.1.10**

Sezione ad ascissa 0.882  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $5233 \leq 236552$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_t = 7.425$

**Asta 109: Trave in legno a falda Falda 1 fili 26-126**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati generali**

Lunghezza = 0.84

**Caratteristiche della sezione**

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

**Verifica taglio D.M. 17-01-18 §4.4.8.1.9**

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\text{Sqrt}(3146^2 + 13051^2) = 13425 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = -57.5$ ;  $T_y = 238.7$

**Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8**

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(32300/1324138)^2 + 227569/1451200 + 0.7 \cdot 102108/1451200 = 0.21 \leq 1$  [4.4.7a] Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $M_x = -349.546$ ;  $M_y = -104.559$ ;  $N = -1240.3$

**Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11**

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.02 + 0 + 0 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = -57.8$ ;  $T_y = 237$ ;  $M_t = -6.091$

**Verifica torsione D.M. 17-01-18 §4.4.8.1.10**

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $4293 \leq 236552$  Comb: SLU, 80; Durata minima del carico nella combinazione: media



Mt = -6.091

## Asta 110: Trave in legno a falda Falda 1 fili 26-126

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.84

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_d \leq f_{v,d}$

$\sqrt{3192^2 + 10874^2} = 11333 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = 58.4$ ;  $T_y = -198.8$

### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(32004/1324138)^2 + 230597/1451200 + 0.7 \cdot 99002/1451200 = 0.21 \leq 1$  [4.4.7a] Comb: SLU, 72; Durata minima del carico nella combinazione: media

$M_x = -354.196$ ;  $M_y = -101.378$ ;  $N = -1229$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.01 + 0 + 0 \leq 1$  Comb: SLV, 6; Durata minima del carico nella combinazione: istantaneo

$T_x = 41.8$ ;  $T_y = -89.2$ ;  $M_t = -3.28$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$2312 \leq 325259$  Comb: SLV, 6; Durata minima del carico nella combinazione: istantaneo

$M_t = -3.28$

## Asta 111: Trave in legno a falda Falda 1 fili 26-126

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.84

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$



$\tau_{d} \leq f_{v,d}$   
 $\text{Sqrt}(9066^2 + 34850^2) = 36010 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = 165.8$ ;  $T_y = -637.3$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $(S_{c,0,d}/f_{c,0,d})^2 + S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(S_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$   
 $(32088/1324138)^2 + 213281/1451200 + 0.7 \cdot 83787/1451200 = 0.19 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_x = 327.6$ ;  $M_y = 85.798$ ;  $N = -1232.2$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.01 + 0 + 0.03 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = 165.8$ ;  $T_y = -637.3$ ;  $M_t = -2.552$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $3029 \leq 325259$  Comb: SLV, 5; Durata minima del carico nella combinazione: istantaneo  
 $M_t = -4.298$

### Asta 112: Trave in legno a falda Falda 1 fili 26-126

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.499

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.499  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\text{Sqrt}(17193^2 + 61595^2) = 63949 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = 314.4$ ;  $T_y = -1126.3$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.499  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $(S_{c,0,d}/f_{c,0,d})^2 + S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(S_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$   
 $(32014/1324138)^2 + 575232/1451200 + 0.7 \cdot 233697/1451200 = 0.51 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_x = 883.556$ ;  $M_y = 239.305$ ;  $N = -1229.3$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.499  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.02 + 0.01 + 0.1 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = 314.4$ ;  $T_y = -1126.3$ ;  $M_t = -8.061$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.499



Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $6372 \leq 236552$  Comb: SLU, 29; Durata minima del carico nella combinazione: media  
 $M_t = -9.042$

## Asta 113: Trave in legno a falda Falda 1 fili 26-126

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.341

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{19319^2 + 70926^2} = 73510 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = -353.3$ ;  $T_y = 1296.9$

### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(32126/1324138)^2 + 580164/1451200 + 0.7 \cdot 237010/1451200 = 0.51 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_x = 891.133$ ;  $M_y = 242.698$ ;  $N = -1233.6$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.01 + 0.01 + 0.13 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = -352.9$ ;  $T_y = 1296.5$ ;  $M_t = 4.274$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.341

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$6871 \leq 325259$  Comb: SLV, 8; Durata minima del carico nella combinazione: istantaneo

$M_t = -9.749$

## Asta 114: Trave in legno a falda Falda 1 fili 26-126

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.84

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1



#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{14132^2 + 42025^2} = 44337 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = -258.4$ ;  $T_y = 768.4$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(32068/1324138)^2 + 294330/1451200 + 0.7 \cdot 133767/1451200 = 0.27 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_x = 452.09$ ;  $M_y = 136.977$ ;  $N = -1231.4$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.01 + 0.01 + 0.05 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = -258.4$ ;  $T_y = 768.4$ ;  $M_t = -2.837$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$2005 \leq 236552$  Comb: SLU, 78; Durata minima del carico nella combinazione: media

$M_t = -2.846$

### Asta 115: Trave in legno a falda Falda 1 fili 26-126

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.84

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{2447^2 + 20545^2} = 20690 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = -44.8$ ;  $T_y = 375.7$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(31991/1324138)^2 + 317207/1451200 + 0.7 \cdot 104158/1451200 = 0.27 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_x = -487.23$ ;  $M_y = -106.658$ ;  $N = -1228.4$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.02 + 0 + 0.01 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media



$T_x = -44.8$ ;  $T_y = 375.7$ ;  $M_t = -5.646$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$4036 \leq 236552$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_t = -5.726$

### Asta 116: Trave in legno a falda Falda 1 fili 26-126

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.84

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{2139^2 + 1940^2} = 2888 \leq 265517$  Comb: SLV, 16; Durata minima del carico nella combinazione: istantaneo

$T_x = -39.1$ ;  $T_y = -35.5$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(31964/1324138)^2 + 311146/1451200 + 0.7 \cdot 120114/1451200 = 0.27 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_x = -477.921$ ;  $M_y = -122.997$ ;  $N = -1227.4$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.01 + 0 + 0 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = -20.5$ ;  $T_y = -14.8$ ;  $M_t = -1.821$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$1283 \leq 236552$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_t = -1.821$

### Asta 117: Trave in legno a falda Falda 1 fili 26-126

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.84

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300



Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(3895^2 + 20730^2)} = 21093 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = 71.2$ ;  $T_y = -379.1$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(32034/1324138)^2 + 315286/1451200 + 0.7 \cdot 119445/1451200 = 0.28 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_x = -484.28$ ;  $M_y = -122.312$ ;  $N = -1230.1$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0 + 0 + 0.01 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = 71.2$ ;  $T_y = -379.1$ ;  $M_t = 1.181$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $795 \leq 177414$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $M_t = 1.127$

### Asta 118: Trave in legno a falda Falda 1 fili 26-126

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.039

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.039  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(15294^2 + 46243^2)} = 48706 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = 279.7$ ;  $T_y = -845.6$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 1.039  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(32069/1324138)^2 + 448856/1451200 + 0.7 \cdot 206037/1451200 = 0.41 \leq 1$  [4.4.7a] Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_x = 689.444$ ;  $M_y = 210.982$ ;  $N = -1231.4$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1.039



Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.02 + 0.01 + 0.06 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = 279.7$ ;  $T_y = -845.6$ ;  $M_t = 7.274$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.039  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $5127 \leq 236552$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_t = 7.274$

### Asta 119: Trave in legno a falda Falda 4 fili 164-221

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.145

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$   
 $K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$   
 $231222/1088400 + 0.7 \cdot 48319/1088400 = 0.24 \leq 1$  (formula 4.4.5a) Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $M_x = -355.157$ ;  $M_y = 49.479$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.145  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(1166^2 + 10571^2)} = 10635 \leq 144828$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $T_x = -21.3$ ;  $T_y = -193.3$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1.145  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.17 + 0 + 0.01 \leq 1$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $T_x = -21.3$ ;  $T_y = -193.3$ ;  $M_t = -42.34$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.145  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $29839 \leq 177414$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $M_t = -42.34$

### Asta 120: Trave in legno a falda Falda 4 fili 164-221

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.29





#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.29

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{(4494^2 + 34389^2)} = 34681 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = -82.2$ ;  $T_y = -628.8$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(8294/1324138)^2 + 252402/1451200 + 0.7 \cdot 63932/1451200 = 0.2 \leq 1$  [4.4.7a] Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_x = -387.689$ ;  $M_y = 65.466$ ;  $N = -318.5$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1.29

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.04 + 0 + 0.03 \leq 1$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$T_x = -62.1$ ;  $T_y = -425.6$ ;  $M_t = -9.762$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.29

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$6880 \leq 177414$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$M_t = -9.762$

### Asta 121: Trave in legno a falda Falda 4 fili 164-221

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.281

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.281

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{(8539^2 + 55333^2)} = 55988 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = -156.1$ ;  $T_y = -1011.8$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 1.281

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$



$(Sc,0,d/fc,0,d)^2 + Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$   
 $(11720/1324138)^2 + 877361/1451200 + 0.7*211486/1451200 = 0.71 \leq 1$  [4.4.7a] Comb: SLU, 79; Durata minima del carico nella combinazione: media  
Mx = 1347.627; My = -216.562; N = -450

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1.281  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
Kmod = 0.8; Kh = 1.096 (formula 11.7.2); kcr = 0.71  
 $\tau_{tor,d}/(ksh*f_v,d) + (\tau_{y,d}/f_v,d)^2 + (\tau_{z,d}/f_v,d)^2 \leq 1$   
0.09+0+0.08  $\leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
Tx = -156.1; Ty = -1011.8; Mt = 31.216

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.281  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
Kmod = 0.8  
 $\tau_{tor,d} \leq Ksh * f_v,d$   
22000  $\leq$  236552 Comb: SLU, 79; Durata minima del carico nella combinazione: media  
Mt = 31.216

### Asta 122: Trave in legno a falda Falda 4 fili 164-221

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.156

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.156  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
Kmod = 0.8; kcr = 0.71  
 $\tau_{d} \leq f_v,d$   
 $\sqrt{(4290^2 + 88110^2)} = 88214 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
Tx = 78.5; Ty = -1611.2

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.156  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
Kmod = 0.8; Kh = 1.096 (formula 11.7.2)  
 $(Sc,0,d/fc,0,d)^2 + Sm,y,d/fm,y,d + Km*(Sm,z,d/fm,z,d) \leq 1$   
 $(Sc,0,d/fc,0,d)^2 + Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$   
 $(21507/1324138)^2 + 890633/1451200 + 0.7*169150/1451200 = 0.7 \leq 1$  [4.4.7a] Comb: SLU, 79; Durata minima del carico nella combinazione: media  
Mx = 1368.012; My = -173.209; N = -825.9

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.156  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
Kmod = 0.8; Kh = 1.096 (formula 11.7.2); kcr = 0.71  
 $\tau_{tor,d}/(ksh*f_v,d) + (\tau_{y,d}/f_v,d)^2 + (\tau_{z,d}/f_v,d)^2 \leq 1$   
0.69+0+0.21  $\leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
Tx = 65; Ty = -1607.1; Mt = 233.055

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.156  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
Kmod = 0.8  
 $\tau_{tor,d} \leq Ksh * f_v,d$   
164246  $\leq$  236552 Comb: SLU, 80; Durata minima del carico nella combinazione: media  
Mt = 233.055



## Asta 123: Trave in legno a falda Falda 4 fili 164-221

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.194

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$30528/1160960 + 186867/1451200 + 0.7 \cdot 34785/1451200 = 0.17 \leq 1$  [4.4.6a] Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_x = 287.027$ ;  $M_y = 35.62$ ;  $N = 1172.3$

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $k_{cr} = 0.71$

$\tau_{v,d} \leq f_{v,d}$

$\sqrt{23689^2 + 79724^2} = 83169 \leq 265517$  Comb: SLV, 6; Durata minima del carico nella combinazione: istantaneo

$T_x = -433.2$ ;  $T_y = 1457.8$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.194

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{v,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.15 + 0.01 + 0.08 \leq 1$  Comb: SLV, 11; Durata minima del carico nella combinazione: istantaneo

$T_x = 529.9$ ;  $T_y = -1353.5$ ;  $M_t = -70.025$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.194

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$54542 \leq 325259$  Comb: SLV, 7; Durata minima del carico nella combinazione: istantaneo

$M_t = -77.392$

## Asta 124: Trave in legno a falda Falda 4 fili 164-221

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.929

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$38858/1160960 + 153528/1451200 + 0.7 \cdot 40009/1451200 = 0.16 \leq 1$  [4.4.6a] Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_x = 235.818$ ;  $M_y = 40.969$ ;  $N = 1492.1$



#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{2517^2 + 30760^2} = 30863 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = -46$ ;  $T_y = 562.5$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.1 + 0 + 0.03 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = -46$ ;  $T_y = 562.5$ ;  $M_t = -32.138$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.929

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$22649 \leq 236552$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_t = -32.138$

### Asta 125: Trave in legno a falda Falda 4 fili 164-221

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.283

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 1.283

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_{m} \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_{m} \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$21924/1160960 + 218004/1451200 + 0.7 \cdot 35968/1451200 = 0.19 \leq 1$  [4.4.6a] Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_x = -334.854$ ;  $M_y = 36.831$ ;  $N = 841.9$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{1013^2 + 16999^2} = 17029 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = 18.5$ ;  $T_y = 310.8$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.08 + 0 + 0.01 \leq 1$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$T_x = 14.1$ ;  $T_y = 220.2$ ;  $M_t = 20.536$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.283

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$14473 \leq 177414$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$M_t = 20.536$



## Asta 126: Trave in legno a falda Falda 4 fili 164-221

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 1.281

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$21480/1160960 + 196606/1451200 + 0.7 \cdot 33771/1451200 = 0.17 \leq 1$  [4.4.6a] Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_x = -301.987$ ;  $M_y = 34.582$ ;  $N = 824.8$

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.281

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{v,d} \leq f_{v,d}$

$\sqrt{848^2 + 17821^2} = 17841 \leq 193103$  Comb: SLU, 30; Durata minima del carico nella combinazione: media

$T_x = -15.5$ ;  $T_y = -325.9$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{v,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.01 + 0 + 0 \leq 1$  Comb: SLU, 43; Durata minima del carico nella combinazione: permanente

$T_x = 12.7$ ;  $T_y = 87.5$ ;  $M_t = 3.599$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.281

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$4734 \leq 325259$  Comb: SLV, 8; Durata minima del carico nella combinazione: istantaneo

$M_t = 6.717$

## Asta 127: Trave in legno a falda Falda 4 fili 164-221

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.562

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.562

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{v,d} \leq f_{v,d}$



$\sqrt{5051^2 + 19359^2} = 20007 \leq 193103$  Comb: SLU, 30; Durata minima del carico nella combinazione: media  
 $T_x = -92.4$ ;  $T_y = -354$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.562

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(34734/1820690)^2 + 207006/1995400 + 0.7 \cdot 106068/1995400 = 0.14 \leq 1$  [4.4.7a] Comb: SLV, 10; Durata minima del carico nella combinazione: istantaneo

$M_x = -317.961$ ;  $M_y = 108.614$ ;  $N = -1333.8$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.562

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.02 + 0 + 0.01 \leq 1$  Comb: SLU, 30; Durata minima del carico nella combinazione: media

$T_x = -92.4$ ;  $T_y = -354$ ;  $M_t = -6.54$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.562

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$6990 \leq 325259$  Comb: SLV, 11; Durata minima del carico nella combinazione: istantaneo

$M_t = -9.919$

### Asta 128: Trave in legno a falda Falda 5 fili 269-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.614

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0.45

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.096$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$67682/1596320 + 43073/1995400 + 0.7 \cdot 7432/1995400 = 0.07 \leq 1$  [4.4.6a] Comb: SLV, 3; Durata minima del carico nella combinazione: istantaneo

$M_x = 66.16$ ;  $M_y = 7.611$ ;  $N = 2599$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{1783^2 + 9107^2} = 9280 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$T_x = 32.6$ ;  $T_y = 166.5$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0 + 0 + 0 \leq 1$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = 32.4$ ;  $T_y = 166.5$ ;  $M_t = 1.183$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.614

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$



$K_{mod} = 1.1$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
1293  $\leq$  325259 Comb: SLV, 10; Durata minima del carico nella combinazione: istantaneo  
 $M_t = 1.834$

## Asta 129: Trave in legno a falda Falda 5 fili 269-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 1.002

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.096$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$69447/1596320 + 42445/1995400 + 0.7 \cdot 4700/1995400 = 0.07 \leq 1$  [4.4.6a] Comb: SLV, 3; Durata minima del carico nella combinazione: istantaneo

$M_x = 65.195$ ;  $M_y = -4.813$ ;  $N = 2666.8$

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{2845^2 + 6275^2} = 6890 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = -52$ ;  $T_y = 114.7$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.02 + 0 + 0 \leq 1$  Comb: SLV, 2; Durata minima del carico nella combinazione: istantaneo

$T_x = 7.3$ ;  $T_y = 111.6$ ;  $M_t = -6.966$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.002

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

4909  $\leq$  325259 Comb: SLV, 2; Durata minima del carico nella combinazione: istantaneo

$M_t = -6.966$

## Asta 130: Trave in legno a falda Falda 5 fili 269-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.24

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1



#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0.24

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.096$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_{m^*}(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_{m^*}(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$61030/1596320 + 0.7 \cdot 7898/1995400 + 31069/1995400 = 0.06 \leq 1$  [4.4.6b] Comb: SLV, 3; Durata minima del carico nella combinazione: istantaneo

$M_x = 12.131$ ;  $M_y = -31.814$ ;  $N = 2343.6$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{t,d} \leq f_{v,d}$

$\sqrt{21272^2 + 3263^2} = 21520 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = 389$ ;  $T_y = 59.7$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.02 + 0.01 + 0 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$T_x = 388.9$ ;  $T_y = 59.6$ ;  $M_t = -7.278$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.24

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$5134 \leq 236552$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

$M_t = -7.285$

### Asta 131: Trave in legno a falda Falda 5 fili 269-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.144

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 1.144

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.096$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_{m^*}(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_{m^*}(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$51955/1596320 + 60663/1995400 + 0.7 \cdot 24915/1995400 = 0.07 \leq 1$  [4.4.6a] Comb: SLV, 4; Durata minima del carico nella combinazione: istantaneo

$M_x = -93.178$ ;  $M_y = 25.512$ ;  $N = 1995.1$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{t,d} \leq f_{v,d}$

$\sqrt{3502^2 + 4478^2} = 5685 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = -64$ ;  $T_y = 81.9$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.01 + 0 + 0 \leq 1$  Comb: SLV, 2; Durata minima del carico nella combinazione: istantaneo





Tx = 19.8; Ty = 97.3; Mt = -6.285

Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.144  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $4429 \leq 325259$  Comb: SLV, 2; Durata minima del carico nella combinazione: istantaneo  
 $M_t = -6.285$

Asta 132: Trave in legno a falda Falda 5 fili 269-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati generali

Lunghezza = 0.406

Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{57140^2 + 15035^2} = 59085 \leq 265517$  Comb: SLV, 2; Durata minima del carico nella combinazione: istantaneo  
 $T_x = -1044.9$ ;  $T_y = 274.9$

Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.406  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(43114/1324138)^2 + 0.7 \cdot 93626/1451200 + 157265/1451200 = 0.15 \leq 1$  [4.4.7b] Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $M_x = 143.81$ ;  $M_y = -161.04$ ;  $N = -1655.6$

Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.03 + 0.05 + 0 \leq 1$  Comb: SLV, 1; Durata minima del carico nella combinazione: istantaneo  
 $T_x = -1043.5$ ;  $T_y = 276.8$ ;  $M_t = 14.902$

Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.406  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $14151 \leq 325259$  Comb: SLV, 16; Durata minima del carico nella combinazione: istantaneo  
 $M_t = -20.08$

Asta 133: Trave in legno a falda Falda 5 fili 269-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati generali

Lunghezza = 0.868

Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300



Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $St_{0,d}/ft_{0,d} + Sm_{y,d}/fm_{y,d} + Km \cdot (Sm_{z,d}/fm_{z,d}) \leq 1$   
 $St_{0,d}/ft_{0,d} + Km \cdot (Sm_{y,d}/fm_{y,d}) + Sm_{z,d}/fm_{z,d} \leq 1$   
 $20276/1160960 + 69009/1451200 + 0.7 \cdot 41430/1451200 = 0.09 \leq 1$  [4.4.6a] Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $M_x = -105.998$ ;  $M_y = -42.424$ ;  $N = 778.6$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{6367^2 + 3170^2} = 7112 \leq 265517$  Comb: SLV, 2; Durata minima del carico nella combinazione: istantaneo  
 $T_x = 116.4$ ;  $T_y = 58$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.868  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.01 + 0 + 0 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = 39.5$ ;  $T_y = -49.6$ ;  $M_t = -2.635$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.868  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $1857 \leq 236552$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $M_t = -2.635$

### Asta 134: Trave in legno a falda Falda 5 fili 269-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.281

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $St_{0,d}/ft_{0,d} + Sm_{y,d}/fm_{y,d} + Km \cdot (Sm_{z,d}/fm_{z,d}) \leq 1$   
 $St_{0,d}/ft_{0,d} + Km \cdot (Sm_{y,d}/fm_{y,d}) + Sm_{z,d}/fm_{z,d} \leq 1$   
 $14024/1596320 + 0.7 \cdot 23541/1995400 + 62518/1995400 = 0.05 \leq 1$  [4.4.6b] Comb: SLV, 4; Durata minima del carico nella combinazione: istantaneo  
 $M_x = -36.159$ ;  $M_y = 64.019$ ;  $N = 538.5$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{2558^2 + 8800^2} = 9165 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = -46.8$ ;  $T_y = 160.9$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0



Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0+0+0 \leq 1$  Comb: SLV, 16; Durata minima del carico nella combinazione: istantaneo  
 $T_x = 23.5$ ;  $T_y = 75.4$ ;  $M_t = -2.307$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.281  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
1653  $\leq$  325259 Comb: SLV, 1; Durata minima del carico nella combinazione: istantaneo  
 $M_t = 2.346$

### Asta 135: Trave in legno a falda Falda 5 fili 269-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.267

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.267  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(5054^2 + 10330^2)} = 11500 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = -92.4$ ;  $T_y = -188.9$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 1.267  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(26888/1324138)^2 + 123609/1451200 + 0.7 \cdot 70125/1451200 = 0.12 \leq 1$  [4.4.7a] Comb: SLU, 29; Durata minima del carico nella combinazione: media  
 $M_x = 189.863$ ;  $M_y = -71.808$ ;  $N = -1032.5$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1.267  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.04+0+0 \leq 1$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $T_x = -91.2$ ;  $T_y = -189.1$ ;  $M_t = 13.374$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.267  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
9425  $\leq$  236552 Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $M_t = 13.374$

### Asta 136: Trave in legno a falda Falda 5 fili 267-272

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.24



#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0.24

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$42209/1602207 + 0.7 \cdot 14949/2002759 + 16092/2002759 = 0.04 \leq 1$  [4.4.6b] Comb: SLV, 15; Durata minima del carico nella combinazione: istantaneo

$M_x = 11.301$ ;  $M_y = 9.462$ ;  $N = 1063.7$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $k_{cr} = 0.71$

$\tau_{t,d} \leq f_{v,d}$

$\sqrt{(1552^2 + 5361^2)} = 5581 \leq 265517$  Comb: SLV, 3; Durata minima del carico nella combinazione: istantaneo

$T_x = -18.6$ ;  $T_y = 64.3$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.24

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.01 + 0 + 0 \leq 1$  Comb: SLV, 10; Durata minima del carico nella combinazione: istantaneo

$T_x = -26.4$ ;  $T_y = -56.5$ ;  $M_t = 1.715$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.24

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$2183 \leq 316724$  Comb: SLV, 10; Durata minima del carico nella combinazione: istantaneo

$M_t = 1.715$

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 0.12

$K_{def} = 0$

$U_{inst,tot} \text{ in } x = 0$

$U_{inst,tot} \text{ in } y = 0$

$U_{inst,tot} = 0$

$Luce/U_{inst,tot} > \text{limite}$

$0.24/0 = 381639.9 > 300$  Comb: SLE rara, 17

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 0.12

$K_{def} = 0$

$U_{inst,var} \text{ in } x = 0$

$U_{inst,var} \text{ in } y = 0$

$U_{inst,var} = 0$

$Luce/U_{inst,var} > \text{limite}$

$0.24/0 = 776498.7 > 300$  Comb: SLE rara, 17

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 0.12

$K_{def} = 0.6$

$U_{fin} \text{ in } x = 0$

$U_{fin} \text{ in } y = 0$

$U_{fin} = 0$

$Luce/U_{fin} > \text{limite}$

$0.24/0 = 292160 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Variabile A =  $0,700 + 0,180 = 0,880$



Neve = 0,500 + 0,500 = 1,000  
Vento = 0,600 + 0,000 = 0,600

Asta 137: Trave in legno a falda Falda 5 fili 261-273

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati generali

Lunghezza = 1.235

Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 1.235  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$   
 $K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$   
 $357350/2002759 + 0.7 \cdot 17081/2002759 = 0.18 \leq 1$  (formula 4.4.5a) Comb: SLV, 2; Durata minima del carico nella combinazione: istantaneo  
 $M_x = 270.157$ ;  $M_y = 10.044$

Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.235  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{683^2 + 22478^2} = 22488 \leq 265517$  Comb: SLV, 2; Durata minima del carico nella combinazione: istantaneo  
 $T_x = 8.2$ ;  $T_y = -269.7$

Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.01 + 0 + 0.01 \leq 1$  Comb: SLV, 15; Durata minima del carico nella combinazione: istantaneo  
 $T_x = -8.7$ ;  $T_y = 257.2$ ;  $M_t = 2.107$

Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.235  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $2683 \leq 316724$  Comb: SLV, 15; Durata minima del carico nella combinazione: istantaneo  
 $M_t = 2.107$

Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 0.617  
 $K_{def} = 0$   
 $U_{inst,tot} \text{ in } x = 0$   
 $U_{inst,tot} \text{ in } y = 0$   
 $U_{inst,tot} = 0$   
 $Luce/U_{inst,tot} > \text{limite}$   
 $1.235/0 = 28319 > 300$  Comb: SLE rara, 8

Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 0.617  
 $K_{def} = 0$   
 $U_{inst,var} \text{ in } x = 0$   
 $U_{inst,var} \text{ in } y = 0$   
 $U_{inst,var} = 0$   
 $Luce/U_{inst,var} > \text{limite}$   
 $1.235/0 = 49807.1 > 300$  Comb: SLE rara, 8

Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 0.617



Kdef = 0.6  
Ufin in x = 0  
Ufin in y = -0.0001  
Ufin = 0.0001  
Luce/Ufin > limite  
1.235/0.0001=22495.8 > 200  
Coefficienti combinatori impiegati:  
Pesi strutturali = 1,000 + 0,600 = 1,600  
Permanenti portati = 1,000 + 0,600 = 1,600  
Neve = 0,500 + 0,500 = 1,000

## Asta 138: Trave in legno a falda Falda 5 fili 255-274

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 2.337

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 2.337  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$   
 $K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$   
 $542360/2002759 + 0.7 \cdot 20933/2002759 = 0.28 \leq 1$  (formula 4.4.5a) Comb: SLV, 1; Durata minima del carico nella combinazione: istantaneo  
 $M_x = 410.024$ ;  $M_y = 12.308$

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{v,d} \leq f_{v,d}$   
 $\sqrt{416^2 + 20465^2} = 20470 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = 5$ ;  $T_y = 245.6$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0 + 0 + 0.01 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = 5$ ;  $T_y = 245.6$ ;  $M_t = -0.754$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.337  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $2156 \leq 316724$  Comb: SLV, 2; Durata minima del carico nella combinazione: istantaneo  
 $M_t = -1.693$

### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 1.324  
Kdef = 0  
Uinst tot in x = 0  
Uinst tot in y = -0.0003  
Uinst tot = 0.0003  
Luce/Uinst,tot > limite  
2.337/0.0003=7419.2 > 300 Comb: SLE rara, 16

### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 1.324  
Kdef = 0



Uinst var in x = 0  
Uinst var in y = -0.0002  
Uinst var = 0.0002  
Luce/Uinst,var > limite  
 $2.337/0.0002=13015.2 > 300$  Comb: SLE rara, 16

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 1.324  
Kdef = 0.6  
Ufin in x = 0  
Ufin in y = -0.0004  
Ufin = 0.0004  
Luce/Ufin > limite  
 $2.337/0.0004=5897.2 > 200$   
Coefficienti combinatori impiegati:  
Pesi strutturali =  $1,000 + 0,600 = 1,600$   
Permanenti portati =  $1,000 + 0,600 = 1,600$   
Variabile A =  $0,700 + 0,180 = 0,880$   
Neve =  $0,500 + 0,500 = 1,000$

### Asta 139: Trave in legno a falda Falda 5 fili 244-246

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.686

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.686  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
Kmod = 0.8; kcr = 0.71  
 $\tau_{d} \leq f_{v,d}$   
 $\text{Sqrt}(7006^2 + 4846^2) = 8519 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
Tx = 84.1; Ty = -58.2

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.686  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
Kmod = 0.8; Kh = 1.1 (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(36463/1324138)^2 + 132286/1456552 + 0.7 \cdot 65235/1456552 = 0.12 \leq 1$  [4.4.7a] Comb: SLU, 71; Durata minima del carico nella combinazione: media  
Mx = 100.008; My = 38.358; N = -918.9

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.686  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
Kmod = 0.8; Kh = 1.1 (formula 11.7.2); kcr = 0.71  
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.03 + 0 + 0 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
Tx = 84.1; Ty = -58.2; Mt = -5.999

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.686  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
Kmod = 0.8  
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $7641 \leq 230345$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
Mt = -6.002



## Asta 140: Trave in legno a falda Falda 5 fili 238-247

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 1.645

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.645

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{3219^2 + 15966^2} = 16287 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = 38.6$ ;  $T_y = -191.6$

### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 1.645

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(25150/1324138)^2 + 130988/1456552 + 0.7 \cdot 46225/1456552 = 0.11 \leq 1$  [4.4.7a] Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_x = 99.027$ ;  $M_y = 27.18$ ;  $N = -633.8$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1.645

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.01 + 0 + 0.01 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$T_x = 39$ ;  $T_y = -191.4$ ;  $M_t = -2.316$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.645

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$2949 \leq 230345$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_t = -2.316$

## Asta 141: Trave in legno a falda Falda 5 fili 233-249

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 1.679

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.679

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{4221^2 + 14342^2} = 14951 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = -50.6$ ;  $T_y = -172.1$





#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(34373/1324138)^2 + 143468/1456552 + 0.7 \cdot 84674/1456552 = 0.14 \leq 1$  [4.4.7a] Comb: SLU, 29; Durata minima del carico nella combinazione: media

$M_x = 108.462$ ;  $M_y = 49.788$ ;  $N = -866.2$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1.679

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.02 + 0 + 0.01 \leq 1$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

$T_x = -50.7$ ;  $T_y = -168.1$ ;  $M_t = 3.082$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.679

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$3924 \leq 230345$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

$M_t = 3.082$

### Asta 142: Trave in legno a falda Falda 5 fili 239-250

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.828

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{(13268^2 + 6376^2)} = 14721 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$T_x = -159.2$ ;  $T_y = 76.5$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(56989/1324138)^2 + 0.7 \cdot 122153/1456552 + 127908/1456552 = 0.15 \leq 1$  [4.4.7b] Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_x = 92.347$ ;  $M_y = 75.21$ ;  $N = -1436.1$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.03 + 0 + 0 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$T_x = -159.2$ ;  $T_y = 76.5$ ;  $M_t = 4.848$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.828

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$6171 \leq 230345$  Comb: SLU, 71; Durata minima del carico nella combinazione: media



Mt = 4.848

## Asta 143: Trave in legno a falda Falda 5 fili 251-280

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.167

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$S_{m,y,d}/f_{m,y,d} + K_{m,z,d}/f_{m,z,d} \leq 1$

$K_{m,z,d}/f_{m,z,d} + S_{m,y,d}/f_{m,y,d} \leq 1$

$215756/1456552 + 0.7 \cdot 101933/1456552 = 0.2 \leq 1$  (formula 4.4.5a) Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_x = 163.112$ ;  $M_y = -59.937$

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.167

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{v,d} \leq f_{v,d}$

$\sqrt{5037^2 + 2450^2} = 5601 \leq 193103$  Comb: SLU, 37; Durata minima del carico nella combinazione: media

$T_x = 60.4$ ;  $T_y = -29.4$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.167

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{v,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.06 + 0 + 0 \leq 1$  Comb: SLU, 30; Durata minima del carico nella combinazione: media

$T_x = 58.6$ ;  $T_y = -26.7$ ;  $M_t = 11.119$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.167

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$14155 \leq 230345$  Comb: SLU, 30; Durata minima del carico nella combinazione: media

$M_t = 11.119$

### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 0.083

$K_{def} = 0$

$U_{inst,tot} \text{ in } x = 0$

$U_{inst,tot} \text{ in } y = 0$

$U_{inst,tot} = 0$

$Luce/U_{inst,tot} > \text{limite}$

$0.167/0 = 34897.9 > 300$  Comb: SLE rara, 8

### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 0.083

$K_{def} = 0$

$U_{inst,var} \text{ in } x = 0$

$U_{inst,var} \text{ in } y = 0$

$U_{inst,var} = 0$

$Luce/U_{inst,var} > \text{limite}$

$0.167/0 = 56357 > 300$  Comb: SLE rara, 8

### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 0.083

$K_{def} = 0.6$



Ufin in x = 0  
Ufin in y = 0  
Ufin = 0  
Luce/Ufin > limite  
 $0.167/0=28407.8 > 200$   
Coefficienti combinatori impiegati:  
Pesi strutturali = 1,000 + 0,600 = 1,600  
Permanenti portati = 1,000 + 0,600 = 1,600  
Neve = 0,500 + 0,500 = 1,000

**Asta 144: Trave in legno a falda Falda 5 fili 251-280**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati generali**

Lunghezza = 2.443

**Caratteristiche della sezione**

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

**Verifica flessione D.M. 17-01-18 §4.4.8.1.6**

Sezione ad ascissa 2.443  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$   
 $K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$   
 $571048/2002759 + 0.7 \cdot 15849/2002759 = 0.29 \leq 1$  (formula 4.4.5a) Comb: SLV, 1; Durata minima del carico nella combinazione: istantaneo  
 $M_x = 431.712$ ;  $M_y = -9.319$

**Verifica taglio D.M. 17-01-18 §4.4.8.1.9**

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{,d} \leq f_{v,d}$   
 $\sqrt{924^2 + 25698^2} = 25715 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = -11.1$ ;  $T_y = 308.4$

**Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11**

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{,tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{,y,d}/f_{v,d})^2 + (\tau_{,z,d}/f_{v,d})^2 \leq 1$   
 $0 + 0 + 0.02 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = -11.1$ ;  $T_y = 308.4$ ;  $M_t = 0.272$

**Verifica torsione D.M. 17-01-18 §4.4.8.1.10**

Sezione ad ascissa 2.443  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$   
 $\tau_{,tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $1818 \leq 316724$  Comb: SLV, 3; Durata minima del carico nella combinazione: istantaneo  
 $M_t = 1.428$

**Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19**

Sezione ad ascissa 1.466  
 $K_{def} = 0$   
 $U_{inst,tot} \text{ in } x = 0$   
 $U_{inst,tot} \text{ in } y = -0.0003$   
 $U_{inst,tot} = 0.0003$   
 $Luce/U_{inst,tot} > limite$   
 $2.443/0.0003 = 7979.7 > 300$  Comb: SLE rara, 17

**Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7**

Sezione ad ascissa 1.466  
 $K_{def} = 0$   
 $U_{inst,var} \text{ in } x = 0$



Uinst var in y = -0.0002  
Uinst var = 0.0002  
Luce/Uinst,var > limite  
 $2.443/0.0002=14113.2 > 300$  Comb: SLE rara, 17

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 1.466  
Kdef = 0.6  
Ufin in x = 0  
Ufin in y = -0.0004  
Ufin = 0.0004  
Luce/Ufin > limite  
 $2.443/0.0004=6324.8 > 200$   
Coefficienti combinatori impiegati:  
Pesi strutturali = 1,000 + 0,600 = 1,600  
Permanenti portati = 1,000 + 0,600 = 1,600  
Variabile A = 0,700 + 0,180 = 0,880  
Neve = 0,500 + 0,500 = 1,000  
Vento = 0,600 + 0,000 = 0,600

### Asta 145: Trave in legno a falda Falda 5 fili 256-281

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.644

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 1.644  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
Kmod = 1.1; Kh = 1.1 (formula 11.7.2)  
 $Sm,y,d/fm,y,d + Km*(Sm,z,d/fm,z,d) \leq 1$   
 $Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$   
 $475059/2002759+0.7*19247/2002759=0.24 \leq 1$  (formula 4.4.5a) Comb: SLV, 4; Durata minima del carico nella combinazione: istantaneo  
Mx = 359.145; My = -11.317

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.644  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
Kmod = 1.1; kcr = 0.71  
 $\tau,d \leq f_{v,d}$   
 $\sqrt{1217^2+23506^2} = 23537 \leq 265517$  Comb: SLV, 4; Durata minima del carico nella combinazione: istantaneo  
Tx = -14.6; Ty = -282.1

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
Kmod = 1.1; Kh = 1.1 (formula 11.7.2); kcr = 0.71  
 $\tau_{tor,d}/(k_{sh}*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.01+0+0.01 \leq 1$  Comb: SLV, 14; Durata minima del carico nella combinazione: istantaneo  
Tx = 4.9; Ty = 267.7; Mt = -3.372

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.644  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
Kmod = 1.1  
 $\tau_{tor,d} \leq K_{sh} * f_{v,d}$   
 $4292 \leq 316724$  Comb: SLV, 14; Durata minima del carico nella combinazione: istantaneo  
Mt = -3.372

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 0.822  
Kdef = 0



Uinst tot in x = 0  
Uinst tot in y = -0.0002  
Uinst tot = 0.0002  
Luce/Uinst,tot > limite  
 $1.644/0.0002=10225.9 > 300$  Comb: SLE rara, 9

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 0.822  
Kdef = 0  
Uinst var in x = 0  
Uinst var in y = -0.0001  
Uinst var = 0.0001  
Luce/Uinst,var > limite  
 $1.644/0.0001=17811.6 > 300$  Comb: SLE rara, 9

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 0.822  
Kdef = 0.6  
Ufin in x = 0  
Ufin in y = -0.0002  
Ufin = 0.0002  
Luce/Ufin > limite  
 $1.644/0.0002=8144.6 > 200$   
Coefficienti combinatori impiegati:  
Pesi strutturali = 1,000 + 0,600 = 1,600  
Permanenti portati = 1,000 + 0,600 = 1,600  
Neve = 0,500 + 0,500 = 1,000  
Vento = 0,600 + 0,000 = 0,600

### Asta 146: Trave in legno a falda Falda 5 fili 262-282

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.747

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 0.747  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$   
 $K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$   
 $207311/2002759 + 0.7 \cdot 12478/2002759 = 0.11 \leq 1$  (formula 4.4.5a) Comb: SLV, 4; Durata minima del carico nella combinazione: istantaneo  
 $M_x = 156.727$ ;  $M_y = -7.337$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.747  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{910^2 + 18639^2} = 18661 \leq 265517$  Comb: SLV, 3; Durata minima del carico nella combinazione: istantaneo  
 $T_x = -10.9$ ;  $T_y = -223.7$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.01 + 0 + 0 \leq 1$  Comb: SLV, 14; Durata minima del carico nella combinazione: istantaneo  
 $T_x = -0.6$ ;  $T_y = 203.2$ ;  $M_t = -1.94$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.747



Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$1828 \leq 230345 \text{ Comb: SLU, 72; Durata minima del carico nella combinazione: media}$

$M_t = -1.436$

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 0.349

$K_{def} = 0$

$U_{inst \text{ tot in } x} = 0$

$U_{inst \text{ tot in } y} = 0$

$U_{inst \text{ tot}} = 0$

$Luce/U_{inst, \text{tot}} > \text{limite}$

$0.747/0 = 58545.9 > 300 \text{ Comb: SLE rara, 9}$

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 0.373

$K_{def} = 0$

$U_{inst \text{ var in } x} = 0$

$U_{inst \text{ var in } y} = 0$

$U_{inst \text{ var}} = 0$

$Luce/U_{inst, \text{var}} > \text{limite}$

$0.747/0 = 101521.8 > 300 \text{ Comb: SLE rara, 9}$

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 0.349

$K_{def} = 0.6$

$U_{fin \text{ in } x} = 0$

$U_{fin \text{ in } y} = 0$

$U_{fin} = 0$

$Luce/U_{fin} > \text{limite}$

$0.747/0 = 46675.1 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Neve =  $0,500 + 0,500 = 1,000$

Vento =  $0,600 + 0,000 = 0,600$

### Asta 147: Trave in legno a falda Falda 3 fili 32-307

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.882

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{(15568^2 + 29544^2)} = 33395 \leq 193103 \text{ Comb: SLU, 79; Durata minima del carico nella combinazione: media}$

$T_x = 284.7$ ;  $T_y = 540.2$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(42133/1324138)^2 + 275776/1451200 + 0.7 \cdot 189850/1451200 = 0.28 \leq 1$  [4.4.7a] Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_x = 423.592$ ;  $M_y = -194.406$ ;  $N = -1617.9$



#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.04 + 0.01 + 0.02 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = 284.7$ ;  $T_y = 540.2$ ;  $M_t = -11.781$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.882  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $8303 \leq 236552$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_t = -11.781$

### Asta 148: Trave in legno a falda Falda 3 fili 32-307

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.84

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{10383^2 + 24229^2} = 26360 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = 189.9$ ;  $T_y = 443$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(43691/1324138)^2 + 277745/1451200 + 0.7 \cdot 157839/1451200 = 0.27 \leq 1$  [4.4.7a] Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_x = -426.616$ ;  $M_y = 161.627$ ;  $N = -1677.7$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.03 + 0 + 0.02 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = 189.9$ ;  $T_y = 443$ ;  $M_t = 9.776$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $6890 \leq 236552$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_t = 9.776$

### Asta 149: Trave in legno a falda Falda 3 fili 32-307

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.84



#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(1275^2 + 10437^2)} = 10514 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = -23.3$ ;  $T_y = 190.8$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(43787/1324138)^2 + 375396/1451200 + 0.7 \cdot 127569/1451200 = 0.32 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_x = -576.608$ ;  $M_y = 130.63$ ;  $N = -1681.4$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.05 + 0 + 0 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = -30.8$ ;  $T_y = 188.2$ ;  $M_t = 17.189$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $12114 \leq 236552$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_t = 17.189$

### Asta 150: Trave in legno a falda Falda 3 fili 32-307

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.84

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(5901^2 + 1230^2)} = 6028 \leq 193103$  Comb: SLU, 38; Durata minima del carico nella combinazione: media  
 $T_x = -107.9$ ;  $T_y = 22.5$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$





$(Sc,0,d/fc,0,d)^2 + Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$   
 $(42955/1324138)^2 + 369167/1451200 + 0.7*156560/1451200 = 0.33 \leq 1$  [4.4.7a] Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $Mx = -567.041$ ;  $My = 160.318$ ;  $N = -1649.5$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh}*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.02 + 0 + 0 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = -105.4$ ;  $T_y = 15.8$ ;  $M_t = 5.425$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} * f_{v,d}$   
 $3823 \leq 236552$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_t = 5.425$

### Asta 151: Trave in legno a falda Falda 3 fili 32-307

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.84

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(9538^2 + 19642^2)} = 21835 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = -174.4$ ;  $T_y = -359.2$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $(Sc,0,d/fc,0,d)^2 + Sm,y,d/fm,y,d + Km*(Sm,z,d/fm,z,d) \leq 1$   
 $(Sc,0,d/fc,0,d)^2 + Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$   
 $(43912/1324138)^2 + 359403/1451200 + 0.7*124040/1451200 = 0.31 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $Mx = -552.043$ ;  $My = 127.017$ ;  $N = -1686.2$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh}*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.05 + 0 + 0.01 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = -174.4$ ;  $T_y = -359.2$ ;  $M_t = 17.564$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} * f_{v,d}$   
 $12379 \leq 236552$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_t = 17.564$



## Asta 152: Trave in legno a falda Falda 3 fili 32-307

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.833

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.833

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{10864^2 + 36765^2} = 38336 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = -198.7$ ;  $T_y = -672.3$

### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.833

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(45614/1324138)^2 + 197379/1451200 + 0.7 \cdot 151600/1451200 = 0.21 \leq 1$  [4.4.7a] Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_x = 303.174$ ;  $M_y = -155.238$ ;  $N = -1751.6$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.833

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.04 + 0 + 0.04 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = -198.7$ ;  $T_y = -672.3$ ;  $M_t = 12.208$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.833

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$7866 \leq 177414$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$M_t = 11.162$

## Asta 153: Trave in legno a falda Falda 3 fili 32-307

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.513

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.513

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{52032^2 + 124536^2} = 134969 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = 951.5$ ;  $T_y = -2277.2$



#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.513

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(25094/1324138)^2 + 850053/1451200 + 0.7 \cdot 176257/1451200 = 0.67 \leq 1$  [4.4.7a] Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_x = 1305.681$ ;  $M_y = 180.487$ ;  $N = -963.6$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.513

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.31 + 0.07 + 0.42 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = 951.5$ ;  $T_y = -2277.2$ ;  $M_t = -104.389$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.513

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$59145 \leq 177414$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$M_t = -83.923$

### Asta 154: Trave in legno a falda Falda 2 fili 32-26

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.774

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{(15483^2 + 19787^2)} = 25124 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = -283.1$ ;  $T_y = 361.8$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(68981/1324138)^2 + 0.7 \cdot 160098/1451200 + 183499/1451200 = 0.21 \leq 1$  [4.4.7b] Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_x = 245.911$ ;  $M_y = 187.903$ ;  $N = -2648.9$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.07 + 0.01 + 0.01 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$T_x = -282.2$ ;  $T_y = 361.2$ ;  $M_t = 22.719$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.774

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$16011 \leq 236552$  Comb: SLU, 71; Durata minima del carico nella combinazione: media



Mt = 22.719

## Asta 155: Trave in legno a falda Falda 2 fili 32-26

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.84

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $k_{cr} = 0.71$

$\tau_d \leq f_{v,d}$

$\sqrt{(3502^2 + 6428^2)} = 7320 \leq 265517$  Comb: SLV, 4; Durata minima del carico nella combinazione: istantaneo

$T_x = 64$ ;  $T_y = 117.5$

### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(69484/1324138)^2 + 57735/1451200 + 0.7 \cdot 38876/1451200 = 0.06 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_x = -88.681$ ;  $M_y = -39.809$ ;  $N = -2668.2$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.02 + 0 + 0 \leq 1$  Comb: SLV, 14; Durata minima del carico nella combinazione: istantaneo

$T_x = -98.5$ ;  $T_y = -73.6$ ;  $M_t = 7.615$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$5367 \leq 325259$  Comb: SLV, 14; Durata minima del carico nella combinazione: istantaneo

$M_t = 7.615$

## Asta 156: Trave in legno a falda Falda 2 fili 32-26

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.841

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.841

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$



$\tau_{d} \leq f_{v,d}$

$\text{Sqrt}(3793^2 + 23907^2) = 24206 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = 69.4$ ;  $T_y = -437.2$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.841

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(70247/1324138)^2 + 169876/1451200 + 0.7 \cdot 44147/1451200 = 0.14 \leq 1$  [4.4.7a] Comb: SLU, 72; Durata minima del carico nella combinazione: media

$M_x = 260.93$ ;  $M_y = 45.207$ ;  $N = -2697.5$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.841

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.01 + 0 + 0.02 \leq 1$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = 69.4$ ;  $T_y = -437.2$ ;  $M_t = -5.009$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.841

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$5812 \leq 325259$  Comb: SLV, 3; Durata minima del carico nella combinazione: istantaneo

$M_t = -8.246$

### Asta 157: Trave in legno a falda Falda 2 fili 32-26

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.839

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\text{Sqrt}(4472^2 + 22027^2) = 22476 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = -81.8$ ;  $T_y = 402.8$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(70288/1324138)^2 + 164600/1451200 + 0.7 \cdot 52689/1451200 = 0.14 \leq 1$  [4.4.7a] Comb: SLU, 72; Durata minima del carico nella combinazione: media

$M_x = 252.826$ ;  $M_y = 53.954$ ;  $N = -2699.1$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.02 + 0 + 0.01 \leq 1$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = -81.8$ ;  $T_y = 402.8$ ;  $M_t = 6.565$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.839



Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $4719 \leq 236552$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_t = 6.696$

## Asta 158: Trave in legno a falda Falda 2 fili 32-26

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.84

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{t,d} \leq f_{v,d}$

$\sqrt{3103^2 + 6088^2} = 6833 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = 56.7$ ;  $T_y = -111.3$

### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(69985/1324138)^2 + 47794/1451200 + 0.7 \cdot 29689/1451200 = 0.05 \leq 1$  [4.4.7a] Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_x = -73.412$ ;  $M_y = -30.402$ ;  $N = -2687.4$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{t,y,d}/f_{v,d})^2 + (\tau_{t,z,d}/f_{v,d})^2 \leq 1$

$0.01 + 0 + 0 \leq 1$  Comb: SLV, 13; Durata minima del carico nella combinazione: istantaneo

$T_x = 94.9$ ;  $T_y = 29.3$ ;  $M_t = -5.471$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$3855 \leq 325259$  Comb: SLV, 13; Durata minima del carico nella combinazione: istantaneo

$M_t = -5.471$

## Asta 159: Trave in legno a falda Falda 2 fili 32-26

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.522

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1



#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.522

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{16560^2 + 25096^2} = 30067 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = 302.8$ ;  $T_y = -458.9$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.522

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(69152/1324138)^2 + 167998/1451200 + 0.7 \cdot 148437/1451200 = 0.19 \leq 1$  [4.4.7a] Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_x = 258.044$ ;  $M_y = 151.999$ ;  $N = -2655.4$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.522

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.07 + 0.01 + 0.02 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$T_x = 301.5$ ;  $T_y = -459.4$ ;  $M_t = -24.177$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.522

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$17039 \leq 236552$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_t = -24.177$

### Asta 160: Trave in legno a falda Falda 6 fili 191-251

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.44

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{1432^2 + 54187^2} = 54206 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = -26.2$ ;  $T_y = 990.8$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(38669/1324138)^2 + 721402/1451200 + 0.7 \cdot 42655/1451200 = 0.52 \leq 1$  [4.4.7a] Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_x = 1108.074$ ;  $M_y = -43.679$ ;  $N = -1484.9$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.08 + 0 + 0.08 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media



Tx = -26.2; Ty = 990.8; Mt = 27.978

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.44

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.6

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

15773 <= 177414 Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

Mt = 22.381

### Asta 161: Trave in legno a falda Falda 6 fili 191-251

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.84

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; kcr = 0.71

$\tau_{d} \leq f_{v,d}$

$\sqrt{12165^2 + 21970^2} = 25113 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

Tx = 222.5; Ty = 401.7

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.096 (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(39780/1324138)^2 + 392415/1451200 + 0.7 \cdot 134627/1451200 = 0.34 \leq 1$  [4.4.7a] Comb: SLU, 79; Durata minima del carico nella combinazione: media

Mx = -602.75; My = 137.858; N = -1527.6

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.096 (formula 11.7.2); kcr = 0.71

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

0.05+0+0.01 <= 1 Comb: SLU, 79; Durata minima del carico nella combinazione: media

Tx = 222.5; Ty = 401.7; Mt = -15.935

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

11230 <= 236552 Comb: SLU, 79; Durata minima del carico nella combinazione: media

Mt = -15.935

### Asta 162: Trave in legno a falda Falda 6 fili 191-251

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.84

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300





Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(6658^2 + 1603^2)} = 6849 \leq 193103$  Comb: SLU, 37; Durata minima del carico nella combinazione: media  
 $T_x = 121.8$ ;  $T_y = -29.3$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(40122/1324138)^2 + 394488/1451200 + 0.7 \cdot 194617/1451200 = 0.37 \leq 1$  [4.4.7a] Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_x = -605.934$ ;  $M_y = 199.287$ ;  $N = -1540.7$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.04 + 0 + 0 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = 119.8$ ;  $T_y = -21$ ;  $M_t = -11.8$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $8316 \leq 236552$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_t = -11.8$

### Asta 163: Trave in legno a falda Falda 6 fili 191-251

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.84

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(6996^2 + 16676^2)} = 18084 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = -127.9$ ;  $T_y = -304.9$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(40673/1324138)^2 + 395159/1451200 + 0.7 \cdot 188328/1451200 = 0.36 \leq 1$  [4.4.7a] Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_x = -606.964$ ;  $M_y = 192.848$ ;  $N = -1561.8$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.84



Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.03 + 0 + 0.01 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = -125.3$ ;  $T_y = -304.7$ ;  $M_t = -10.847$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $7644 \leq 236552$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_t = -10.847$

### Asta 164: Trave in legno a falda Falda 6 fili 191-251

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.84

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{11339^2 + 29639^2} = 31734 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = -207.3$ ;  $T_y = -542$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(40904/1324138)^2 + 226318/1451200 + 0.7 \cdot 121070/1451200 = 0.22 \leq 1$  [4.4.7a] Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_x = -347.624$ ;  $M_y = 123.976$ ;  $N = -1570.7$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0 + 0 + 0.02 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = -207.3$ ;  $T_y = -542$ ;  $M_t = -1.275$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $2106 \leq 325259$  Comb: SLV, 1; Durata minima del carico nella combinazione: istantaneo  
 $M_t = -2.988$

### Asta 165: Trave in legno a falda Falda 6 fili 191-251

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.626



#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.626

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{(25318^2 + 23635^2)} = 34635 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = -463$ ;  $T_y = -432.2$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.626

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(39681/1324138)^2 + 0.7 \cdot 249529/1451200 + 268031/1451200 = 0.31 \leq 1$  [4.4.7b] Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_x = 383.277$ ;  $M_y = -274.464$ ;  $N = -1523.7$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.626

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.05 + 0.02 + 0.01 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = -463$ ;  $T_y = -432.2$ ;  $M_t = 18.188$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.626

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$12818 \leq 236552$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_t = 18.188$

### Asta 166: Trave in legno a falda Falda 5 fili 251-245

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.772

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{(11126^2 + 18971^2)} = 21993 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = 203.4$ ;  $T_y = 346.9$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$



$(Sc,0,d/fc,0,d)^2 + Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$   
 $(63206/1324138)^2 + 109937/1451200 + 0.7*103005/1451200 = 0.13 \leq 1$  [4.4.7a] Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $Mx = 168.863$ ;  $My = -105.477$ ;  $N = -2427.1$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh}*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.07 + 0 + 0.01 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = 202.9$ ;  $T_y = 346.9$ ;  $M_t = -23.729$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.772  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} * f_{v,d}$   
 $16723 \leq 236552$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $M_t = -23.729$

### Asta 167: Trave in legno a falda Falda 5 fili 251-245

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.84

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(3633^2 + 6619^2)} = 7550 \leq 265517$  Comb: SLV, 3; Durata minima del carico nella combinazione: istantaneo  
 $T_x = 66.4$ ;  $T_y = 121$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $(Sc,0,d/fc,0,d)^2 + Sm,y,d/fm,y,d + Km*(Sm,z,d/fm,z,d) \leq 1$   
 $(Sc,0,d/fc,0,d)^2 + Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$   
 $(66712/1324138)^2 + 62297/1451200 + 0.7*43409/1451200 = 0.07 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $Mx = -95.688$ ;  $My = 44.451$ ;  $N = -2561.8$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh}*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.02 + 0 + 0 \leq 1$  Comb: SLV, 1; Durata minima del carico nella combinazione: istantaneo  
 $T_x = 56$ ;  $T_y = 94.5$ ;  $M_t = -6.965$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$   
 $\tau_{tor,d} \leq K_{sh} * f_{v,d}$   
 $4909 \leq 325259$  Comb: SLV, 2; Durata minima del carico nella combinazione: istantaneo  
 $M_t = -6.966$



## Asta 168: Trave in legno a falda Falda 5 fili 251-245

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.841

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.841

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{4003^2 + 29631^2} = 29901 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = -73.2$ ;  $T_y = -541.8$

### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.841

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(68189/1324138)^2 + 218319/1451200 + 0.7 \cdot 54948/1451200 = 0.18 \leq 1$  [4.4.7a] Comb: SLU, 72; Durata minima del carico nella combinazione: media

$M_x = 335.338$ ;  $M_y = -56.267$ ;  $N = -2618.5$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.841

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.03 + 0 + 0.02 \leq 1$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = -73.2$ ;  $T_y = -541.8$ ;  $M_t = 8.818$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.841

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$6318 \leq 236552$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_t = 8.965$

## Asta 169: Trave in legno a falda Falda 5 fili 251-245

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.839

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{4876^2 + 26652^2} = 27094 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = 89.2$ ;  $T_y = 487.3$



#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(68045/1324138)^2 + 210906/1451200 + 0.7 \cdot 62976/1451200 = 0.18 \leq 1$  [4.4.7a] Comb: SLU, 72; Durata minima del carico nella combinazione: media

$M_x = 323.952$ ;  $M_y = -64.488$ ;  $N = -2612.9$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.03 + 0 + 0.02 \leq 1$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = 89.2$ ;  $T_y = 487.3$ ;  $M_t = -9.119$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.839

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$6502 \leq 236552$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_t = -9.226$

### Asta 170: Trave in legno a falda Falda 5 fili 251-245

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.84

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{783^2 + 7408^2} = 7449 \leq 265517$  Comb: SLV, 13; Durata minima del carico nella combinazione: istantaneo

$T_x = 14.3$ ;  $T_y = -135.5$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(27996/1820690)^2 + 79384/1995400 + 0.7 \cdot 40218/1995400 = 0.05 \leq 1$  [4.4.7a] Comb: SLV, 4; Durata minima del carico nella combinazione: istantaneo

$M_x = -121.933$ ;  $M_y = -41.183$ ;  $N = -1075.1$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.01 + 0 + 0 \leq 1$  Comb: SLV, 2; Durata minima del carico nella combinazione: istantaneo

$T_x = -63.9$ ;  $T_y = 89.6$ ;  $M_t = 6.224$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$4387 \leq 325259$  Comb: SLV, 2; Durata minima del carico nella combinazione: istantaneo



Mt = 6.224

## Asta 171: Trave in legno a falda Falda 5 fili 251-245

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.525

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.525

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{6751^2 + 25429^2} = 26310 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$T_x = -123.4$ ;  $T_y = -465$

### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.525

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(64802/1324138)^2 + 138989/1451200 + 0.7 \cdot 66092/1451200 = 0.13 \leq 1$  [4.4.7a] Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_x = 213.487$ ;  $M_y = -67.678$ ;  $N = -2488.4$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.525

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.07 + 0 + 0.02 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$T_x = -123.4$ ;  $T_y = -465$ ;  $M_t = 25.09$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.525

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$17682 \leq 236552$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_t = 25.09$

## Asta 172: Trave in legno a falda Falda 1 fili 230-229

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 2.519

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$



$\tau_{t,d} \leq f_{v,d}$

$\text{Sqrt}(61^2 + 27658^2) = 27659 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = 0.7$ ;  $T_y = 331.9$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(24907/1324138)^2 + 329708/1456552 + 0.7 \cdot 1982/1456552 = 0.23 \leq 1$  [4.4.7a] Comb: SLU, 72; Durata minima del carico nella combinazione: media

$M_x = 249.259$ ;  $M_y = 1.165$ ;  $N = -627.6$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.01 + 0 + 0.02 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = 0.5$ ;  $T_y = 329.2$ ;  $M_t = -1.845$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.519

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$2349 \leq 230345$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_t = -1.845$

### Asta 173: Trave in legno a falda Falda 1 fili 216-215

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.518

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$\sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$330049/1456552 + 0.7 \cdot 995/1456552 = 0.23 \leq 1$  (formula 4.4.5a) Comb: SLU, 29; Durata minima del carico nella combinazione: media

$M_x = 249.517$ ;  $M_y = 0.585$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{t,d} \leq f_{v,d}$

$\text{Sqrt}(128^2 + 29269^2) = 29269 \leq 193103$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

$T_x = 1.5$ ;  $T_y = 351.2$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.02 + 0 + 0.02 \leq 1$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

$T_x = 1.5$ ;  $T_y = 351.2$ ;  $M_t = -2.839$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.518





Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $3633 \leq 230345 \text{ Comb: SLU, 80; Durata minima del carico nella combinazione: media}$   
 $M_t = -2.854$

## Asta 174: Trave in legno a falda Falda 1 fili 206-211

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 1.896

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\text{Sqrt}(1221^2 + 22573^2) = 22606 \leq 193103 \text{ Comb: SLU, 29; Durata minima del carico nella combinazione: media}$   
 $T_x = 14.6$ ;  $T_y = 270.9$

### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(5696/1324138)^2 + 193397/1456552 + 0.7 \cdot 19628/1456552 = 0.14 \leq 1$  [4.4.7a] Comb: SLU, 29; Durata minima del carico nella combinazione: media  
 $M_x = 146.208$ ;  $M_y = -11.541$ ;  $N = -143.5$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.02 + 0 + 0.01 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = 16$ ;  $T_y = 260.3$ ;  $M_t = 3.559$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.896  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $4802 \leq 230345 \text{ Comb: SLU, 80; Durata minima del carico nella combinazione: media}$   
 $M_t = 3.772$

## Asta 175: Trave in legno a falda Falda 1 fili 206-211

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.311

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1



#### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 0.311

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$ ;  $K_h = 1.1$  (formula 11.7.2)

$S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$

$K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$

$40499/1092414 + 0.7 \cdot 508/1092414 = 0.04 \leq 1$  (formula 4.4.5a) Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$M_x = 30.617$ ;  $M_y = -0.299$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.311

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d,d} \leq f_{v,d}$

$\sqrt{1359^2 + 9366^2} = 9464 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = 16.3$ ;  $T_y = -112.4$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.311

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.03 + 0 + 0 \leq 1$  Comb: SLU, 78; Durata minima del carico nella combinazione: media

$T_x = 16$ ;  $T_y = -111.5$ ;  $M_t = -5.116$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.311

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$6513 \leq 230345$  Comb: SLU, 78; Durata minima del carico nella combinazione: media

$M_t = -5.116$

### Asta 176: Trave in legno a falda Falda 1 fili 206-211

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.311

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.311

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $k_{cr} = 0.71$

$\tau_{d,d} \leq f_{v,d}$

$\sqrt{5965^2 + 14948^2} = 16094 \leq 265517$  Comb: SLV, 3; Durata minima del carico nella combinazione: istantaneo

$T_x = -71.6$ ;  $T_y = -179.4$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)

$(S_{c,0,d}/f_{c,0,d})^2 + S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$

$(S_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$

$(9118/1820690)^2 + 39706/2002759 + 0.7 \cdot 15669/2002759 = 0.03 \leq 1$  [4.4.7a] Comb: SLV, 3; Durata minima del carico nella combinazione: istantaneo

$M_x = -30.018$ ;  $M_y = 9.213$ ;  $N = -229.8$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.311

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.03 + 0 + 0 \leq 1$  Comb: SLV, 3; Durata minima del carico nella combinazione: istantaneo



$T_x = -71.6$ ;  $T_y = -179.4$ ;  $M_t = -6.313$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.311

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$8037 \leq 316724$  Comb: SLV, 3; Durata minima del carico nella combinazione: istantaneo

$M_t = -6.313$

### Asta 177: Trave in legno a falda Falda 1 fili 200-199

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.518

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$Sm_{y,d}/f_{m,y,d} + K_m \cdot (Sm_{z,d}/f_{m,z,d}) \leq 1$

$K_m \cdot (Sm_{y,d}/f_{m,y,d}) + Sm_{z,d}/f_{m,z,d} \leq 1$

$223007/1456552 + 0.7 \cdot 7705/1456552 = 0.16 \leq 1$  (formula 4.4.5a) Comb: SLU, 30; Durata minima del carico nella combinazione: media

$M_x = 168.593$ ;  $M_y = -4.53$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{187^2 + 29514^2} = 29515 \leq 193103$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

$T_x = 2.2$ ;  $T_y = 354.2$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.04 + 0 + 0.02 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = 3.3$ ;  $T_y = 344.4$ ;  $M_t = 6.407$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.518

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$8156 \leq 230345$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_t = 6.407$

### Asta 178: Trave in legno a falda Falda 1 fili 189-188

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.518

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300



Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_d \leq f_{v,d}$   
 $\sqrt{13^2 + 29423^2} = 29423 \leq 193103$  Comb: SLU, 30; Durata minima del carico nella combinazione: media  
 $T_x = 0.2$ ;  $T_y = 353.1$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 1.511  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(25104/1324138)^2 + 258062/1456552 + 0.7 \cdot 252/1456552 = 0.18 \leq 1$  [4.4.7a] Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_x = -195.095$ ;  $M_y = -0.148$ ;  $N = -632.6$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.02 + 0 + 0.02 \leq 1$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $T_x = -0.6$ ;  $T_y = 347.3$ ;  $M_t = 3.261$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.519  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $4298 \leq 230345$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_t = 3.376$

### Asta 179: Trave in legno a falda Falda 1 fili 180-179

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.518

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 1.427  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $\sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $281897/1456552 + 0.7 \cdot 1072/1456552 = 0.19 \leq 1$  (formula 4.4.5a) Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_x = -213.114$ ;  $M_y = 0.63$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_d \leq f_{v,d}$   
 $\sqrt{293^2 + 28861^2} = 28863 \leq 193103$  Comb: SLU, 30; Durata minima del carico nella combinazione: media  
 $T_x = -3.5$ ;  $T_y = 346.3$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0



Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.01 + 0 + 0.02 \leq 1$  Comb: SLU, 30; Durata minima del carico nella combinazione: media  
 $T_x = -3.5$ ;  $T_y = 346.3$ ;  $M_t = -1.471$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.519  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $2046 \leq 230345$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_t = -1.607$

### Asta 180: Trave in legno a falda Falda 1 fili 167-170

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.518

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 1.175  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $St_{0,d}/ft_{0,d} + Sm_{y,d}/fm_{y,d} + Km \cdot (Sm_{z,d}/fm_{z,d}) \leq 1$   
 $St_{0,d}/ft_{0,d} + Km \cdot (Sm_{y,d}/fm_{y,d}) + Sm_{z,d}/fm_{z,d} \leq 1$   
 $9592/1165241 + 245921/1456552 + 0.7 \cdot 1694/1456552 = 0.18 \leq 1$  [4.4.6a] Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_x = -185.917$ ;  $M_y = -0.996$ ;  $N = 241.7$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(658^2 + 24904^2)} = 24912 \leq 193103$  Comb: SLU, 30; Durata minima del carico nella combinazione: media  
 $T_x = 7.9$ ;  $T_y = 298.8$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.03 + 0 + 0.02 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = 7.9$ ;  $T_y = 291.6$ ;  $M_t = -5.694$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.518  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $7385 \leq 230345$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_t = -5.801$

### Asta 181: Trave in legno a falda Falda 1 fili 315-161

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.519



#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{(1535^2 + 28420^2)} = 28461 \leq 193103$  Comb: SLU, 30; Durata minima del carico nella combinazione: media

$T_x = 18.4$ ;  $T_y = 341$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(33397/1324138)^2 + 279970/1456552 + 0.7 \cdot 45459/1456552 = 0.21 \leq 1$  [4.4.7a] Comb: SLU, 30; Durata minima del carico nella combinazione: media

$M_x = 211.657$ ;  $M_y = -26.73$ ;  $N = -841.6$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.03 + 0 + 0.02 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = 20.5$ ;  $T_y = 331$ ;  $M_t = -5.946$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.518

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$7570 \leq 230345$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_t = -5.946$

### Asta 182: Trave in legno a falda Falda 1 fili 147-146

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.518

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{(1806^2 + 27561^2)} = 27620 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = 21.7$ ;  $T_y = 330.7$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$



$(Sc,0,d/fc,0,d)^2 + Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$   
 $(44187/1324138)^2 + 458284/1456552 + 0.7*46144/1456552 = 0.34 \leq 1$  [4.4.7a] Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $Mx = 346.463$ ;  $My = -27.133$ ;  $N = -1113.5$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh}*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0+0+0.02 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = 21.6$ ;  $T_y = 329.9$ ;  $M_t = -0.429$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.518  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$   
 $\tau_{tor,d} \leq K_{sh} * f_{v,d}$   
 $717 \leq 172759$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $M_t = -0.564$

### Asta 183: Trave in legno a falda Falda 1 fili 141-140

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.518

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(303^2 + 28643^2)} = 28645 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $T_x = 3.6$ ;  $T_y = 343.7$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $(Sc,0,d/fc,0,d)^2 + Sm,y,d/fm,y,d + Km*(Sm,z,d/fm,z,d) \leq 1$   
 $(Sc,0,d/fc,0,d)^2 + Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$   
 $(38638/1324138)^2 + 532737/1456552 + 0.7*8562/1456552 = 0.37 \leq 1$  [4.4.7a] Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $Mx = 402.749$ ;  $My = -5.035$ ;  $N = -973.7$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh}*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0+0+0.02 \leq 1$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $T_x = 3.6$ ;  $T_y = 343.7$ ;  $M_t = 0.153$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.518  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$   
 $\tau_{tor,d} \leq K_{sh} * f_{v,d}$   
 $657 \leq 316724$  Comb: SLV, 13; Durata minima del carico nella combinazione: istantaneo  
 $M_t = 0.516$



## Asta 184: Trave in legno a falda Falda 1 fili 132-131

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 2.518

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{1109^2 + 28015^2} = 28037 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = -13.3$ ;  $T_y = 336.2$

### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(39870/1324138)^2 + 486612/1456552 + 0.7 \cdot 30056/1456552 = 0.35 \leq 1$  [4.4.7a] Comb: SLU, 72; Durata minima del carico nella combinazione: media

$M_x = 367.878$ ;  $M_y = 17.673$ ;  $N = -1004.7$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0 + 0 + 0.02 \leq 1$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = -13.3$ ;  $T_y = 336.2$ ;  $M_t = -0.215$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.518

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$665 \leq 316724$  Comb: SLV, 1; Durata minima del carico nella combinazione: istantaneo

$M_t = 0.523$

## Asta 185: Trave in legno a falda Falda 1 fili 120-119

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 1.896

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{493^2 + 29986^2} = 29990 \leq 193103$  Comb: SLU, 30; Durata minima del carico nella combinazione: media

$T_x = -5.9$ ;  $T_y = 359.8$





**Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8**

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $(S_{c,0,d}/f_{c,0,d})^2 + S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(S_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$   
 $(41588/1324138)^2 + 366387/1456552 + 0.7 \cdot 23117/1456552 = 0.26 \leq 1$  [4.4.7a] Comb: SLU, 30; Durata minima del carico nella combinazione: media  
 $M_x = 276.989$ ;  $M_y = 13.593$ ;  $N = -1048$

**Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11**

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.02 + 0 + 0.02 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = -7.9$ ;  $T_y = 358.4$ ;  $M_t = 4.121$

**Verifica torsione D.M. 17-01-18 §4.4.8.1.10**

Sezione ad ascissa 1.895  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $5398 \leq 230345$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_t = 4.24$

**Asta 186: Trave in legno a falda Falda 1 fili 120-119**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati generali**

Lunghezza = 0.311

**Caratteristiche della sezione**

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

**Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7**

Sezione ad ascissa 0.311  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $St_{0,d}/f_{t,0,d} + S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$   
 $St_{0,d}/f_{t,0,d} + K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$   
 $15155/1602207 + 28943/2002759 + 0.7 \cdot 17316/2002759 = 0.03 \leq 1$  [4.4.6a] Comb: SLV, 3; Durata minima del carico nella combinazione: istantaneo  
 $M_x = 21.881$ ;  $M_y = -10.182$ ;  $N = 381.9$

**Verifica taglio D.M. 17-01-18 §4.4.8.1.9**

Sezione ad ascissa 0.311  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{5790^2 + 6197^2} = 8481 \leq 265517$  Comb: SLV, 3; Durata minima del carico nella combinazione: istantaneo  
 $T_x = -69.5$ ;  $T_y = -74.4$

**Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11**

Sezione ad ascissa 0.311  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.01 + 0 + 0 \leq 1$  Comb: SLV, 8; Durata minima del carico nella combinazione: istantaneo  
 $T_x = -6.2$ ;  $T_y = -66.3$ ;  $M_t = -3.016$

**Verifica torsione D.M. 17-01-18 §4.4.8.1.10**

Sezione ad ascissa 0.311  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $3840 \leq 316724$  Comb: SLV, 8; Durata minima del carico nella combinazione: istantaneo



Mt = -3.016

## Asta 187: Trave in legno a falda Falda 1 fili 120-119

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.311

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0.311

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_{m,z,d}/f_{m,z,d} \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_{m,z,d}/f_{m,z,d} + \sigma_{m,y,d}/f_{m,y,d} \leq 1$

$10061/1602207+54193/2002759+0.7*23289/2002759=0.04 \leq 1$  [4.4.6a] Comb: SLV, 3; Durata minima del carico nella combinazione: istantaneo

$M_x = 40.97$ ;  $M_y = -13.694$ ;  $N = 253.5$

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.311

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $k_{cr} = 0.71$

$\tau_{v,d} \leq f_{v,d}$

$\sqrt{7118^2+21675^2} = 22814 \leq 265517$  Comb: SLV, 4; Durata minima del carico nella combinazione: istantaneo

$T_x = -85.4$ ;  $T_y = -260.1$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.311

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh}*f_{v,d}) + (\tau_{v,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.03+0+0.01 \leq 1$  Comb: SLV, 4; Durata minima del carico nella combinazione: istantaneo

$T_x = -85.4$ ;  $T_y = -260.1$ ;  $M_t = -6.833$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.311

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} * f_{v,d}$

$8699 \leq 316724$  Comb: SLV, 4; Durata minima del carico nella combinazione: istantaneo

$M_t = -6.833$

## Asta 188: Trave in legno a falda Falda 1 fili 113-112

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 2.518

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 1.343

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)



$S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$   
 $K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$   
 $201064/1456552 + 0.7 \cdot 1078/1456552 = 0.14 \leq 1$  (formula 4.4.5a) Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_x = -152.004$ ;  $M_y = -0.634$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{404^2 + 25584^2} = 25587 \leq 193103$  Comb: SLU, 29; Durata minima del carico nella combinazione: media  
 $T_x = -4.9$ ;  $T_y = 307$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.03 + 0 + 0.02 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = -4.1$ ;  $T_y = 301.8$ ;  $M_t = 6.016$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.518  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $7659 \leq 230345$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_t = 6.016$

### Asta 189: Trave in legno a falda Falda 1 fili 101-100

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.518

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{171^2 + 30346^2} = 30347 \leq 193103$  Comb: SLU, 29; Durata minima del carico nella combinazione: media  
 $T_x = 2.1$ ;  $T_y = 364.2$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 1.595  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $(S_{c,0,d}/f_{c,0,d})^2 + S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(S_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$   
 $(5732/1324138)^2 + 244896/1456552 + 0.7 \cdot 1264/1456552 = 0.17 \leq 1$  [4.4.7a] Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_x = -185.141$ ;  $M_y = 0.743$ ;  $N = -144.4$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.01 + 0 + 0.02 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = 2.5$ ;  $T_y = 362$ ;  $M_t = 2.38$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.518



Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $3073 \leq 230345$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_t = 2.414$

## Asta 190: Trave in legno a falda Falda 1 fili 93-92

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 2.518

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 1.679  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$   
 $K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$   
 $234677/1456552 + 0.7 \cdot 550/1456552 = 0.16 \leq 1$  (formula 4.4.5a) Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_x = -177.416$ ;  $M_y = -0.323$

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{185^2 + 32059^2} = 32059 \leq 193103$  Comb: SLU, 29; Durata minima del carico nella combinazione: media  
 $T_x = -2.2$ ;  $T_y = 384.7$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.01 + 0 + 0.03 \leq 1$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $T_x = -1.8$ ;  $T_y = 383.2$ ;  $M_t = -1.981$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.518  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $2585 \leq 230345$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_t = -2.031$

## Asta 191: Trave in legno a falda Falda 1 fili 85-84

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 2.518

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1



#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_{m,z,d}/f_{m,z,d} \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_{m,z,d}/f_{m,z,d} + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$6779/1165241 + 252350/1456552 + 0.7 \cdot 149/1456552 = 0.18 \leq 1$  [4.4.6a] Comb: SLU, 29; Durata minima del carico nella combinazione: media

$M_x = 190.777$ ;  $M_y = 0.087$ ;  $N = 170.8$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d,d} \leq f_{v,d}$

$\sqrt{55^2 + 30319^2} = 30319 \leq 193103$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

$T_x = 0.7$ ;  $T_y = 363.8$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.03 + 0 + 0.02 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$T_x = 0.4$ ;  $T_y = 361.8$ ;  $M_t = -5.674$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.518

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$7344 \leq 230345$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_t = -5.769$

### Asta 192: Trave in legno a falda Falda 1 fili 77-76

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.518

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$\sigma_{m,y,d}/f_{m,y,d} + K_{m,z,d}/f_{m,z,d} \leq 1$

$K_{m,z,d}/f_{m,z,d} + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$247687/1456552 + 0.7 \cdot 6292/1456552 = 0.17 \leq 1$  (formula 4.4.5a) Comb: SLU, 29; Durata minima del carico nella combinazione: media

$M_x = 187.251$ ;  $M_y = -3.699$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d,d} \leq f_{v,d}$

$\sqrt{305^2 + 26474^2} = 26476 \leq 193103$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

$T_x = 3.7$ ;  $T_y = 317.7$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.02 + 0 + 0.02 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media



$T_x = 3$ ;  $T_y = 315.2$ ;  $M_t = -4.424$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.518

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

5740  $\leq$  230345 Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_t = -4.509$

### Asta 193: Trave in legno a falda Falda 1 fili 66-65

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.518

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$

$K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$

329404/1456552+0.7\*418/1456552=0.23  $\leq$  1 (formula 4.4.5a) Comb: SLU, 29; Durata minima del carico nella combinazione: media

$M_x = 249.029$ ;  $M_y = -0.246$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{97^2 + 28765^2} = 28765 \leq 193103$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

$T_x = -1.2$ ;  $T_y = 345.2$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

0.01+0+0.02  $\leq$  1 Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = -1.5$ ;  $T_y = 344.7$ ;  $M_t = 2.572$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.518

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

3275  $\leq$  230345 Comb: SLU, 72; Durata minima del carico nella combinazione: media

$M_t = 2.572$

### Asta 194: Trave in legno a falda Falda 1 fili 57-56

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.518

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300



Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{297^2 + 32270^2} = 32271 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = 3.6$ ;  $T_y = 387.2$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(17290/1324138)^2 + 421318/1456552 + 0.7 \cdot 14751/1456552 = 0.3 \leq 1$  [4.4.7a] Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $M_x = 318.516$ ;  $M_y = -8.674$ ;  $N = -435.7$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.02 + 0 + 0.03 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = 3.6$ ;  $T_y = 387.2$ ;  $M_t = 2.973$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.517  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $3847 \leq 230345$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_t = 3.022$

### Asta 195: Trave in legno a falda Falda 1 fili 264-263

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.371

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 0.371  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $\sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $68565/2002759 + 0.7 \cdot 58525/2002759 = 0.05 \leq 1$  (formula 4.4.5a) Comb: SLV, 3; Durata minima del carico nella combinazione: istantaneo  
 $M_x = 51.835$ ;  $M_y = -34.413$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.371  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{8767^2 + 10494^2} = 13674 \leq 265517$  Comb: SLV, 3; Durata minima del carico nella combinazione: istantaneo  
 $T_x = -105.2$ ;  $T_y = -125.9$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.371



Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.01 + 0 + 0 \leq 1$  Comb: SLV, 3; Durata minima del carico nella combinazione: istantaneo  
 $T_x = -105.2$ ;  $T_y = -125.9$ ;  $M_t = -1.683$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.371  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $2142 \leq 316724$  Comb: SLV, 3; Durata minima del carico nella combinazione: istantaneo  
 $M_t = -1.683$

#### Verifica della freccia istantanea totale D.M. 17-01-18 §4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 0.198  
 $K_{def} = 0$   
 $U_{inst,tot} \text{ in } x = 0$   
 $U_{inst,tot} \text{ in } y = 0$   
 $U_{inst,tot} = 0$   
 $L_{uce}/U_{inst,tot} > \text{limite}$   
 $0.371/0 = 163574.4 > 300$  Comb: SLE rara, 17

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 0.198  
 $K_{def} = 0$   
 $U_{inst,var} \text{ in } x = 0$   
 $U_{inst,var} \text{ in } y = 0$   
 $U_{inst,var} = 0$   
 $L_{uce}/U_{inst,var} > \text{limite}$   
 $0.371/0 = 313873.5 > 300$  Comb: SLE rara, 17

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 0.198  
 $K_{def} = 0.6$   
 $U_{fin} \text{ in } x = 0$   
 $U_{fin} \text{ in } y = 0$   
 $U_{fin} = 0$   
 $L_{uce}/U_{fin} > \text{limite}$   
 $0.371/0 = 126880.4 > 200$   
Coefficienti combinatori impiegati:  
Pesi strutturali =  $1,000 + 0,600 = 1,600$   
Permanenti portati =  $1,000 + 0,600 = 1,600$   
Variabile A =  $0,700 + 0,180 = 0,880$   
Neve =  $0,500 + 0,500 = 1,000$   
Vento =  $0,600 + 0,000 = 0,600$

### Asta 196: Trave in legno a falda Falda 1 fili 258-257

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.285

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 1.285  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $St_{0,d}/f_{t,0,d} + Sm_{y,d}/f_{m,y,d} + Km \cdot (Sm_{z,d}/f_{m,z,d}) \leq 1$   
 $St_{0,d}/f_{t,0,d} + Km \cdot (Sm_{y,d}/f_{m,y,d}) + Sm_{z,d}/f_{m,z,d} \leq 1$   
 $7338/1602207 + 119237/2002759 + 0.7 \cdot 34197/2002759 = 0.08 \leq 1$  [4.4.6a] Comb: SLV, 2; Durata minima del carico nella combinazione: istantaneo  
 $M_x = -90.143$ ;  $M_y = -20.108$ ;  $N = 184.9$





#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.285

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{1396^2 + 10575^2} = 10666 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = -16.8$ ;  $T_y = -126.9$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1.285

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.01 + 0 + 0 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = -16.8$ ;  $T_y = -126.9$ ;  $M_t = -1.144$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.285

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$1456 \leq 230345$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_t = -1.144$

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 0.643

$K_{def} = 0$

$U_{inst,tot}$  in  $x = 0$

$U_{inst,tot}$  in  $y = -0.0001$

$U_{inst,tot} = 0.0001$

$L_{uce}/U_{inst,tot} > \text{limite}$

$1.285/0.0001 = 14016.8 > 300$  Comb: SLE rara, 8

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 0.685

$K_{def} = 0$

$U_{inst,var}$  in  $x = 0$

$U_{inst,var}$  in  $y = -0.0001$

$U_{inst,var} = 0.0001$

$L_{uce}/U_{inst,var} > \text{limite}$

$1.285/0.0001 = 24266 > 300$  Comb: SLE rara, 8

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 0.643

$K_{def} = 0.6$

$U_{fin}$  in  $x = 0$

$U_{fin}$  in  $y = -0.0001$

$U_{fin} = 0.0001$

$L_{uce}/U_{fin} > \text{limite}$

$1.285/0.0001 = 11180.2 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Neve =  $0,500 + 0,500 = 1,000$

### Asta 197: Trave in legno a falda Falda 1 fili 255-252

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.2

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	J <sub>x</sub>	J <sub>y</sub>	W <sub>x</sub>	W <sub>y</sub>
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1



#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 1.32

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(67745/1324138)^2 + 127822/1456552 + 0.7 \cdot 4755/1456552 = 0.09 \leq 1$  [4.4.7a] Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_x = -96.634$ ;  $M_y = -2.796$ ;  $N = -1707.2$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{647^2 + 19818^2} = 19828 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$T_x = -7.8$ ;  $T_y = 237.8$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0 + 0 + 0.01 \leq 1$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = -8$ ;  $T_y = 237.7$ ;  $M_t = -0.901$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.2

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$2826 \leq 316724$  Comb: SLV, 2; Durata minima del carico nella combinazione: istantaneo

$M_t = -2.22$

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 1.173

$K_{def} = 0$

$U_{inst,tot}$  in  $x = 0$

$U_{inst,tot}$  in  $y = -0.0004$

$U_{inst,tot} = 0.0004$

$L_{uce}/U_{inst,tot} > \limite$

$2.2/0.0004 = 5038.8 > 300$  Comb: SLE rara, 9

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 1.173

$K_{def} = 0$

$U_{inst,var}$  in  $x = 0$

$U_{inst,var}$  in  $y = -0.0003$

$U_{inst,var} = 0.0003$

$L_{uce}/U_{inst,var} > \limite$

$2.2/0.0003 = 8728.3 > 300$  Comb: SLE rara, 9

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 1.173

$K_{def} = 0.6$

$U_{fin}$  in  $x = 0$

$U_{fin}$  in  $y = -0.0005$

$U_{fin} = 0.0005$

$L_{uce}/U_{fin} > \limite$

$2.2/0.0005 = 4019.4 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Neve =  $0,500 + 0,500 = 1,000$

Vento =  $0,600 + 0,000 = 0,600$

### Asta 198: Trave in legno a falda Falda 1 fili 244-241

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.693



#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(5457^2 + 17095^2)} = 17944 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $T_x = -65.5$ ;  $T_y = 205.1$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(36214/1324138)^2 + 115066/1456552 + 0.7 \cdot 52925/1456552 = 0.11 \leq 1$  [4.4.7a] Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_x = 86.99$ ;  $M_y = 31.12$ ;  $N = -912.6$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.02 + 0 + 0.01 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = -65.1$ ;  $T_y = 204.9$ ;  $M_t = 3.328$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.693  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $4236 \leq 230345$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $M_t = 3.328$

### Asta 199: Trave in legno a falda Falda 1 fili 238-235

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.571

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(371^2 + 17305^2)} = 17309 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = 4.5$ ;  $T_y = 207.7$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$



$(Sc,0,d/fc,0,d)^2 + Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$   
 $(20555/1324138)^2 + 103332/1456552 + 0.7*3403/1456552 = 0.07 \leq 1$  [4.4.7a] Comb: SLU, 37; Durata minima del carico nella combinazione: media  
 $Mx = 78.119$ ;  $My = -2.001$ ;  $N = -518$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh}*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0+0+0.01 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = 4.2$ ;  $T_y = 206.9$ ;  $M_t = -0.656$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.571  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} * f_{v,d}$   
 $835 \leq 230345$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_t = -0.656$

### Asta 200: Trave in legno a falda Falda 1 fili 229-228

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.421

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.421  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(825^2 + 24673^2)} = 24687 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $T_x = -9.9$ ;  $T_y = -296.1$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 1.049  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $(Sc,0,d/fc,0,d)^2 + Sm,y,d/fm,y,d + Km*(Sm,z,d/fm,z,d) \leq 1$   
 $(Sc,0,d/fc,0,d)^2 + Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$   
 $(35629/1324138)^2 + 160257/1456552 + 0.7*1984/1456552 = 0.11 \leq 1$  [4.4.7a] Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $Mx = -121.155$ ;  $My = 1.167$ ;  $N = -897.8$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.421  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh}*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.01+0+0.02 \leq 1$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $T_x = -9.9$ ;  $T_y = -296.1$ ;  $M_t = 2.145$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.421  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} * f_{v,d}$   
 $2757 \leq 230345$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_t = 2.166$



## Asta 201: Trave in legno a falda Falda 1 fili 215-214

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 2.421

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{(654^2 + 23983^2)} = 23992 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = -7.8$ ;  $T_y = 287.8$

### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 1.291

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(13211/1324138)^2 + 136984/1456552 + 0.7 \cdot 2865/1456552 = 0.1 \leq 1$  [4.4.7a] Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_x = -103.56$ ;  $M_y = -1.685$ ;  $N = -332.9$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.01 + 0 + 0.02 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = -7.8$ ;  $T_y = 287.8$ ;  $M_t = 2.58$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.421

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$3297 \leq 230345$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$M_t = 2.59$

## Asta 202: Trave in legno a falda Falda 1 fili 211-205

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.292

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$\sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$81467/1456552 + 0.7 \cdot 4517/1456552 = 0.06 \leq 1$  (formula 4.4.5a) Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_x = 61.589$ ;  $M_y = 2.656$



#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{246^2 + 14513^2} = 14515 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = 3$ ;  $T_y = 174.2$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.04 + 0 + 0.01 \leq 1$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = 3$ ;  $T_y = 174.2$ ;  $M_t = 7.47$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.292

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$9510 \leq 230345$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$M_t = 7.47$

### Asta 203: Trave in legno a falda Falda 1 fili 211-205

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.129

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$

$K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$

$122758/1456552 + 0.7 \cdot 9563/1456552 = 0.09 \leq 1$  (formula 4.4.5a) Comb: SLU, 72; Durata minima del carico nella combinazione: media

$M_x = 92.805$ ;  $M_y = 5.623$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{522^2 + 22951^2} = 22957 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = -6.3$ ;  $T_y = 275.4$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.02 + 0 + 0.01 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = -6.3$ ;  $T_y = 275.4$ ;  $M_t = -2.972$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.129

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$3783 \leq 230345$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_t = -2.972$



## Asta 204: Trave in legno a falda Falda 1 fili 199-198

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 2.421

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.421

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{(874^2 + 30011^2)} = 30024 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$T_x = -10.5$ ;  $T_y = -360.1$

### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 2.421

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(21125/1324138)^2 + 285444/1456552 + 0.7 \cdot 20099/1456552 = 0.21 \leq 1$  [4.4.7a] Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_x = 215.796$ ;  $M_y = -11.818$ ;  $N = -532.3$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.421

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.03 + 0 + 0.02 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = -10.1$ ;  $T_y = -359.4$ ;  $M_t = -6.329$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.421

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$8059 \leq 230345$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_t = -6.331$

## Asta 205: Trave in legno a falda Falda 1 fili 84-83

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 2.422

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.422

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$



$\sqrt{301^2 + 26764^2} = 26766 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
Tx = 3.6; Ty = -321.2

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 2.422

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.1 (formula 11.7.2)

$(Sc,0,d/fc,0,d)^2 + Sm,y,d/fm,y,d + Km*(Sm,z,d/fm,z,d) \leq 1$

$(Sc,0,d/fc,0,d)^2 + Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$

$(23513/1324138)^2 + 171161/1456552 + 0.7*6661/1456552 = 0.12 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media

Mx = 129.397; My = 3.917; N = -592.5

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.422

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.1 (formula 11.7.2); kcr = 0.71

$\tau_{tor,d}/(ksh*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.03 + 0 + 0.02 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

Tx = 3.6; Ty = -321.2; Mt = 5.659

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.422

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8

$\tau_{tor,d} \leq Ksh * f_{v,d}$

$7204 \leq 230345$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

Mt = 5.659

### Asta 206: Trave in legno a falda Falda 1 fili 76-75

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.422

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.1 (formula 11.7.2)

$Sm,y,d/fm,y,d + Km*(Sm,z,d/fm,z,d) \leq 1$

$Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$

$132252/1456552 + 0.7*13151/1456552 = 0.1 \leq 1$  (formula 4.4.5a) Comb: SLU, 80; Durata minima del carico nella combinazione: media

Mx = 99.982; My = -7.733

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; kcr = 0.71

$\tau_{d} \leq f_{v,d}$

$\sqrt{435^2 + 23322^2} = 23326 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

Tx = 5.2; Ty = 279.9

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.1 (formula 11.7.2); kcr = 0.71

$\tau_{tor,d}/(ksh*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.02 + 0 + 0.01 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

Tx = 5.2; Ty = 279.8; Mt = 4.291

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.422

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$





$K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
5463  $\leq$  230345 Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_t = 4.291$

## Asta 207: Trave in legno a falda Falda 1 fili 65-64

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 2.422

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\text{Sqrt}(199^2 + 23874^2) = 23875 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = 2.4$ ;  $T_y = 286.5$

### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 1.292  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(13813/1324138)^2 + 135421/1456552 + 0.7 \cdot 2627/1456552 = 0.09 \leq 1$  [4.4.7a] Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $M_x = -102.379$ ;  $M_y = 1.545$ ;  $N = -348.1$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.01 + 0 + 0.02 \leq 1$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $T_x = 2.2$ ;  $T_y = 285.5$ ;  $M_t = -2.209$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.422  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
2813  $\leq$  230345 Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $M_t = -2.209$

## Asta 208: Trave in legno a falda Falda 1 fili 56-55

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 2.422

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1



#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.422

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{236^2 + 24524^2} = 24525 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = 2.8$ ;  $T_y = -294.3$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 1.13

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(30893/1324138)^2 + 171301/1456552 + 0.7 \cdot 1909/1456552 = 0.12 \leq 1$  [4.4.7a] Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_x = -129.504$ ;  $M_y = 1.122$ ;  $N = -778.5$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.422

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.02 + 0 + 0.02 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = 2.8$ ;  $T_y = -294.2$ ;  $M_t = -2.835$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.422

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$3609 \leq 230345$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_t = -2.835$

### Asta 209: Trave in legno a falda Falda 1 fili 46-45

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.422

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.422

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{613^2 + 25823^2} = 25831 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = 7.4$ ;  $T_y = -309.9$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 2.422

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(5435/1820690)^2 + 266992/2002759 + 0.7 \cdot 25276/2002759 = 0.14 \leq 1$  [4.4.7a] Comb: SLV, 12; Durata minima del carico nella combinazione: istantaneo

$M_x = 201.846$ ;  $M_y = 14.862$ ;  $N = -137$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.422

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0 + 0 + 0.02 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media



$T_x = 7.5$ ;  $T_y = -309.8$ ;  $M_t = 0.12$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.422

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$549 \leq 316724$  Comb: SLV, 12; Durata minima del carico nella combinazione: istantaneo

$M_t = -0.431$

### Asta 210: Trave in legno a falda Falda 1 fili 38-37

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.422

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.422

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{1242^2 + 26707^2} = 26735 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = 14.9$ ;  $T_y = -320.5$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.969

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(39961/1324138)^2 + 193606/1456552 + 0.7 \cdot 10579/1456552 = 0.14 \leq 1$  [4.4.7a] Comb: SLU, 72; Durata minima del carico nella combinazione: media

$M_x = -146.366$ ;  $M_y = -6.22$ ;  $N = -1007$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.422

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.02 + 0 + 0.02 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$T_x = 14.9$ ;  $T_y = -320.3$ ;  $M_t = 2.911$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.422

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$3706 \leq 230345$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_t = 2.911$

### Asta 211: Trave in legno a falda Falda 1 fili 241-240

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.421

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300



Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.421  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_d \leq f_{v,d}$   
 $\sqrt{1741^2 + 25163^2} = 25224 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $T_x = -20.9$ ;  $T_y = -302$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 1.049  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(53915/1324138)^2 + 184386/1456552 + 0.7 \cdot 10906/1456552 = 0.13 \leq 1$  [4.4.7a] Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $M_x = -139.396$ ;  $M_y = 6.413$ ;  $N = -1358.7$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.421  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.01 + 0 + 0.02 \leq 1$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $T_x = -20.9$ ;  $T_y = -302$ ;  $M_t = -2.71$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.421  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $3454 \leq 230345$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $M_t = -2.713$

### Asta 212: Trave in legno a falda Falda 1 fili 235-234

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.421

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.421  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_d \leq f_{v,d}$   
 $\sqrt{1109^2 + 26688^2} = 26711 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $T_x = -13.3$ ;  $T_y = -320.3$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.968  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(30133/1324138)^2 + 186473/1456552 + 0.7 \cdot 6077/1456552 = 0.13 \leq 1$  [4.4.7a] Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $M_x = -140.974$ ;  $M_y = 3.574$ ;  $N = -759.4$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.421



Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0+0+0.02 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = -13.3$ ;  $T_y = -320.2$ ;  $M_t = -0.774$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.421  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $999 \leq 230345$  Comb: SLU, 29; Durata minima del carico nella combinazione: media  
 $M_t = -0.785$

### Asta 213: Trave in legno a falda Falda 1 fili 26-33

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.422

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 2.422  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(78630/1820690)^2 + 213112/2002759 + 0.7 \cdot 53187/2002759 = 0.13 \leq 1$  [4.4.7a] Comb: SLV, 16; Durata minima del carico nella combinazione: istantaneo  
 $M_x = 161.113$ ;  $M_y = 31.274$ ;  $N = -1981.5$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.422  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{522^2 + 24297^2} = 24303 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = 6.3$ ;  $T_y = -291.6$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.422  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.01+0+0.02 \leq 1$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $T_x = 6.3$ ;  $T_y = -291.5$ ;  $M_t = 2.233$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.422  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $2843 \leq 230345$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $M_t = 2.233$

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 1.13  
 $K_{def} = 0$   
 $U_{inst,tot} \text{ in } x = 0$   
 $U_{inst,tot} \text{ in } y = -0.0004$   
 $U_{inst,tot} = 0.0004$   
 $Luce/U_{inst,tot} > \text{limite}$   
 $2.422/0.0004 = 5597.9 > 300$  Comb: SLE rara, 9



#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 1.211

Kdef = 0

Uinst var in x = 0

Uinst var in y = -0.0003

Uinst var = 0.0003

Luce/Uinst,var > limite

2.422/0.0003=9558.9 > 300 Comb: SLE rara, 9

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 1.13

Kdef = 0.6

Ufin in x = 0

Ufin in y = -0.0005

Ufin = 0.0005

Luce/Ufin > limite

2.422/0.0005=483.2 > 200

Coefficienti combinatori impiegati:

Pesi strutturali = 1,000 + 0,600 = 1,600

Permanenti portati = 1,000 + 0,600 = 1,600

Neve = 0,500 + 0,500 = 1,000

Vento = 0,600 + 0,000 = 0,600

### Asta 214: Trave in legno a falda Falda 1 fili 47-46

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.913

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; kcr = 0.71

$\tau_{d} \leq f_{v,d}$

$\sqrt{349^2 + 18027^2} = 18031 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

Tx = -4.2; Ty = 216.3

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.1 (formula 11.7.2)

$(Sc_{0,d}/f_{c,0,d})^2 + Sm_{y,d}/f_{m,y,d} + Km \cdot (Sm_{z,d}/f_{m,z,d}) \leq 1$

$(Sc_{0,d}/f_{c,0,d})^2 + Km \cdot (Sm_{y,d}/f_{m,y,d}) + Sm_{z,d}/f_{m,z,d} \leq 1$

$(23629/1324138)^2 + 94293/1456552 + 0.7 \cdot 6931/1456552 = 0.07 \leq 1$  [4.4.7a] Comb: SLU, 71; Durata minima del carico nella combinazione: media

Mx = 71.286; My = 4.075; N = -595.5

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.1 (formula 11.7.2); kcr = 0.71

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.01 + 0 + 0.01 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

Tx = -4.6; Ty = 215.5; Mt = 2.67

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.913

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$3399 \leq 230345$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

Mt = 2.67



## Asta 215: Trave in legno a falda Falda 1 fili 39-38

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.982

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{(1674^2 + 13866^2)} = 13966 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = 20.1$ ;  $T_y = 166.4$

### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.982

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(30995/1324138)^2 + 58723/1456552 + 0.7 \cdot 20149/1456552 = 0.05 \leq 1$  [4.4.7a] Comb: SLU, 72; Durata minima del carico nella combinazione: media

$M_x = -44.394$ ;  $M_y = 11.848$ ;  $N = -781.1$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0 + 0 + 0.01 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$T_x = 19.7$ ;  $T_y = 166.1$ ;  $M_t = -0.701$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.982

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$896 \leq 230345$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

$M_t = -0.704$

## Asta 216: Trave in legno a falda Falda 1 fili 23-22

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 1.541

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 1.541

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$



$(Sc,0,d/fc,0,d)^2 + Km \cdot (Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$   
 $(31738/1820690)^2 + 182019/2002759 + 0.7 \cdot 27064/2002759 = 0.1 \leq 1$  [4.4.7a] Comb: SLV, 4; Durata minima del carico nella combinazione: istantaneo  
 $Mx = 137.606$ ;  $My = -15.914$ ;  $N = -799.8$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.541  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{124^2 + 15922^2} = 15923 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $T_x = -1.5$ ;  $T_y = -191.1$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1.541  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0 + 0 + 0.01 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = -1.5$ ;  $T_y = -191$ ;  $M_t = 0.672$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.541  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $2079 \leq 316724$  Comb: SLV, 14; Durata minima del carico nella combinazione: istantaneo  
 $M_t = 1.633$

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 0.719  
 $K_{def} = 0$   
 $U_{inst,tot} \text{ in } x = 0$   
 $U_{inst,tot} \text{ in } y = -0.0001$   
 $U_{inst,tot} = 0.0001$   
 $Luce/U_{inst,tot} > \text{limite}$   
 $1.541/0.0001 = 14967.2 > 300$  Comb: SLE rara, 9

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 0.719  
 $K_{def} = 0$   
 $U_{inst,var} \text{ in } x = 0$   
 $U_{inst,var} \text{ in } y = -0.0001$   
 $U_{inst,var} = 0.0001$   
 $Luce/U_{inst,var} > \text{limite}$   
 $1.541/0.0001 = 26110.9 > 300$  Comb: SLE rara, 9

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 0.719  
 $K_{def} = 0.6$   
 $U_{fin} \text{ in } x = 0$   
 $U_{fin} \text{ in } y = -0.0001$   
 $U_{fin} = 0.0001$   
 $Luce/U_{fin} > \text{limite}$   
 $1.541/0.0001 = 11915.9 > 200$   
Coefficienti combinatori impiegati:  
Pesi strutturali =  $1,000 + 0,600 = 1,600$   
Permanenti portati =  $1,000 + 0,600 = 1,600$   
Neve =  $0,500 + 0,500 = 1,000$   
Vento =  $0,600 + 0,000 = 0,600$

### Asta 217: Trave in legno a falda Falda 1 fili 17-16

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.61

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300





Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.61  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $(S_{c,0,d}/f_{c,0,d})^2 + S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(S_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$   
 $(7326/1820690)^2 + 100036/2002759 + 0.7 \cdot 44145/2002759 = 0.07 \leq 1$  [4.4.7a] Comb: SLV, 4; Durata minima del carico nella combinazione: istantaneo  
 $M_x = 75.627$ ;  $M_y = -25.957$ ;  $N = -184.6$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.61  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $k_{cr} = 0.71$   
 $\tau_{v,d} \leq f_{v,d}$   
 $\sqrt{4472^2 + 11129^2} = 11994 \leq 265517$  Comb: SLV, 4; Durata minima del carico nella combinazione: istantaneo  
 $T_x = -53.7$ ;  $T_y = -133.5$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.61  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{v,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0 + 0 + 0 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = -6.1$ ;  $T_y = -96.3$ ;  $M_t = 0.603$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.61  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $1125 \leq 316724$  Comb: SLV, 16; Durata minima del carico nella combinazione: istantaneo  
 $M_t = 0.884$

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 0.264  
 $K_{def} = 0$   
 $U_{inst,tot} \text{ in } x = 0$   
 $U_{inst,tot} \text{ in } y = 0$   
 $U_{inst,tot} = 0$   
Luce/ $U_{inst,tot} > \text{limite}$   
 $0.61/0 = 125865.7 > 300$  Comb: SLE rara, 9

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 0.264  
 $K_{def} = 0$   
 $U_{inst,var} \text{ in } x = 0$   
 $U_{inst,var} \text{ in } y = 0$   
 $U_{inst,var} = 0$   
Luce/ $U_{inst,var} > \text{limite}$   
 $0.61/0 = 227488.1 > 300$  Comb: SLE rara, 9

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 0.264  
 $K_{def} = 0.6$   
 $U_{fin} \text{ in } x = 0$   
 $U_{fin} \text{ in } y = 0$   
 $U_{fin} = 0$   
Luce/ $U_{fin} > \text{limite}$   
 $0.61/0 = 99260.8 > 200$   
Coefficienti combinatori impiegati:  
Pesi strutturali =  $1,000 + 0,600 = 1,600$   
Permanenti portati =  $1,000 + 0,600 = 1,600$   
Neve =  $0,500 + 0,500 = 1,000$   
Vento =  $0,600 + 0,000 = 0,600$

### Asta 218: Trave in legno a falda Falda 2 fili 19-11

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)



## Dati generali

Lunghezza = 0.653

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 0.653

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)

$S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$

$K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$

$220154/2002759 + 0.7 \cdot 25676/2002759 = 0.12 \leq 1$  (formula 4.4.5a) Comb: SLV, 15; Durata minima del carico nella combinazione: istantaneo

$M_x = 166.437$ ;  $M_y = 15.098$

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.653

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $k_{cr} = 0.71$

$\tau_{v,d} \leq f_{v,d}$

$\sqrt{3383^2 + 21446^2} = 21711 \leq 265517$  Comb: SLV, 16; Durata minima del carico nella combinazione: istantaneo

$T_x = 40.6$ ;  $T_y = -257.3$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{v,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.01 + 0 + 0.01 \leq 1$  Comb: SLV, 1; Durata minima del carico nella combinazione: istantaneo

$T_x = -21.6$ ;  $T_y = 231.6$ ;  $M_t = 1.549$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.653

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$1972 \leq 316724$  Comb: SLV, 1; Durata minima del carico nella combinazione: istantaneo

$M_t = 1.549$

### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 0.435

$K_{def} = 0$

$U_{inst,tot} \text{ in } x = 0$

$U_{inst,tot} \text{ in } y = 0$

$U_{inst,tot} = 0$

Luce/ $U_{inst,tot} > \text{limite}$

$0.653/0 = 159084.1 > 300$  Comb: SLE rara, 8

### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 0.305

$K_{def} = 0$

$U_{inst,var} \text{ in } x = 0$

$U_{inst,var} \text{ in } y = 0$

$U_{inst,var} = 0$

Luce/ $U_{inst,var} > \text{limite}$

$0.653/0 = 224604.3 > 300$  Comb: SLE rara, 9

### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 0.435

$K_{def} = 0.6$

$U_{fin} \text{ in } x = 0$

$U_{fin} \text{ in } y = 0$

$U_{fin} = 0$

Luce/ $U_{fin} > \text{limite}$

$0.653/0 = 132247 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$



Permanenti portati = 1,000 + 0,600 = 1,600  
Neve = 0,500 + 0,500 = 1,000

## Asta 219: Trave in legno a falda Falda 2 fili 21-10

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 1.593

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 1.593

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)

$S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$

$K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$

$483394/2002759 + 0.7 \cdot 20225/2002759 = 0.25 \leq 1$  (formula 4.4.5a) Comb: SLV, 15; Durata minima del carico nella combinazione: istantaneo

$M_x = 365.446$ ;  $M_y = 11.893$

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.593

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{995^2 + 24945^2} = 24965 \leq 265517$  Comb: SLV, 15; Durata minima del carico nella combinazione: istantaneo

$T_x = 11.9$ ;  $T_y = -299.3$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1.593

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.01 + 0 + 0.01 \leq 1$  Comb: SLV, 16; Durata minima del carico nella combinazione: istantaneo

$T_x = 11.7$ ;  $T_y = -299.2$ ;  $M_t = -2.444$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.593

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$3111 \leq 316724$  Comb: SLV, 16; Durata minima del carico nella combinazione: istantaneo

$M_t = -2.444$

### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 0.796

$K_{def} = 0$

$U_{inst,tot} \text{ in } x = 0$

$U_{inst,tot} \text{ in } y = -0.0001$

$U_{inst,tot} = 0.0001$

$Luce/U_{inst,tot} > \text{limite}$

$1.593/0.0001 = 28646.8 > 300$  Comb: SLE rara, 9

### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 0.796

$K_{def} = 0$

$U_{inst,var} \text{ in } x = 0$

$U_{inst,var} \text{ in } y = 0$

$U_{inst,var} = 0$

$Luce/U_{inst,var} > \text{limite}$

$1.593/0 = 43368 > 300$  Comb: SLE rara, 9

### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 0.796



Kdef = 0.6  
Ufin in x = 0  
Ufin in y = -0.0001  
Ufin = 0.0001  
Luce/Ufin > limite  
1.593/0.0001=23799.5 > 200  
Coefficienti combinatori impiegati:  
Pesi strutturali = 1,000 + 0,600 = 1,600  
Permanenti portati = 1,000 + 0,600 = 1,600  
Neve = 0,500 + 0,500 = 1,000  
Vento = 0,600 + 0,000 = 0,600

## Asta 220: Trave in legno a falda Falda 2 fili 32-9

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 2.506

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 2.506  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $St_{0,d}/ft_{0,d} + Sm_{y,d}/fm_{y,d} + Km \cdot (Sm_{z,d}/fm_{z,d}) \leq 1$   
 $St_{0,d}/ft_{0,d} + Km \cdot (Sm_{y,d}/fm_{y,d}) + Sm_{z,d}/fm_{z,d} \leq 1$   
 $12835/1602207+560806/2002759+0.7 \cdot 5830/2002759=0.29 \leq 1$  [4.4.6a] Comb: SLV, 14; Durata minima del carico nella combinazione: istantaneo  
 $M_x = 423.969$ ;  $M_y = 3.428$ ;  $N = 323.4$

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{612^2+24359^2} = 24367 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $T_x = -7.3$ ;  $T_y = 292.3$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.01+0+0.02 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = -7.1$ ;  $T_y = 292.1$ ;  $M_t = -1.797$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.506  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $2288 \leq 230345$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $M_t = -1.797$

### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 0.418  
 $K_{def} = 0$   
 $U_{inst\ tot\ in\ x} = 0.0001$   
 $U_{inst\ tot\ in\ y} = 0.0001$   
 $U_{inst\ tot} = 0.0001$   
Luce/ $U_{inst,tot}$  > limite  
 $2.506/0.0001=24129.5 > 300$  Comb: SLE rara, 8

### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 1.671



Kdef = 0  
Uinst var in x = 0  
Uinst var in y = -0.0001  
Uinst var = 0.0001  
Luce/Uinst,var > limite  
 $2.506/0.0001=36739.7 > 300$  Comb: SLE rara, 9

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 0.418  
Kdef = 0.6  
Ufin in x = 0.0001  
Ufin in y = 0.0001  
Ufin = 0.0001  
Luce/Ufin > limite  
 $2.506/0.0001=18668.2 > 200$   
Coefficienti combinatori impiegati:  
Pesi strutturali =  $1,000 + 0,600 = 1,600$   
Permanenti portati =  $1,000 + 0,600 = 1,600$   
Neve =  $0,500 + 0,500 = 1,000$

### Asta 221: Trave in legno a falda Falda 2 fili 36-31

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.814

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_d \leq f_{v,d}$   
 $\sqrt{4324^2 + 6165^2} = 7530 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = 51.9$ ;  $T_y = 74$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.814  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(52829/1324138)^2 + 93540/1456552 + 0.7 \cdot 60627/1456552 = 0.09 \leq 1$  [4.4.7a] Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $M_x = 70.716$ ;  $M_y = 35.649$ ;  $N = -1331.3$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.03 + 0 + 0 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = 52.9$ ;  $T_y = 72.7$ ;  $M_t = -6.124$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.814  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $7796 \leq 230345$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $M_t = -6.124$



## Asta 222: Trave in legno a falda Falda 2 fili 44-30

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 1.697

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.697

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{2184^2 + 15099^2} = 15256 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = 26.2$ ;  $T_y = -181.2$

### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(34390/1324138)^2 + 114236/1456552 + 0.7 \cdot 39864/1456552 = 0.1 \leq 1$  [4.4.7a] Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_x = 86.362$ ;  $M_y = -23.44$ ;  $N = -866.6$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1.697

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.02 + 0 + 0.01 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$T_x = 26.5$ ;  $T_y = -180.4$ ;  $M_t = -2.807$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.697

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$3574 \leq 230345$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_t = -2.807$

## Asta 223: Trave in legno a falda Falda 2 fili 31-8

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 2.506

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.506

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{603^2 + 25223^2} = 25230 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = 7.2$ ;  $T_y = -302.7$



#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 2.506

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(14546/1820690)^2 + 484968/2002759 + 0.7 \cdot 11332/2002759 = 0.25 \leq 1$  [4.4.7a] Comb: SLV, 14; Durata minima del carico nella combinazione: istantaneo

$M_x = 366.636$ ;  $M_y = 6.663$ ;  $N = -366.6$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.506

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0 + 0 + 0.02 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$T_x = 7.3$ ;  $T_y = -302.1$ ;  $M_t = -0.398$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.506

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$527 \leq 230345$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

$M_t = -0.414$

### Asta 224: Trave in legno a falda Falda 2 fili 30-7

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.506

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.506

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{(499^2 + 2452^2)} = 24532 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = 6$ ;  $T_y = -294.3$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 2.506

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(5885/1820690)^2 + 237717/2002759 + 0.7 \cdot 22143/2002759 = 0.13 \leq 1$  [4.4.7a] Comb: SLV, 14; Durata minima del carico nella combinazione: istantaneo

$M_x = 179.714$ ;  $M_y = 13.02$ ;  $N = -148.3$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.506

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.01 + 0 + 0.02 \leq 1$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = 5.9$ ;  $T_y = -293.4$ ;  $M_t = -1.044$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.506

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$1333 \leq 230345$  Comb: SLU, 30; Durata minima del carico nella combinazione: media



Mt = -1.047

## Asta 225: Trave in legno a falda Falda 2 fili 43-28

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 1.594

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.594

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_d \leq f_{v,d}$

$\sqrt{2225^2 + 15841^2} = 15996 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = -26.7$ ;  $T_y = -190.1$

### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 1.594

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(29467/1324138)^2 + 112450/1456552 + 0.7 \cdot 32348/1456552 = 0.09 \leq 1$  [4.4.7a] Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_x = 85.012$ ;  $M_y = -19.021$ ;  $N = -742.6$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1.594

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.01 + 0 + 0.01 \leq 1$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = -26.7$ ;  $T_y = -190.1$ ;  $M_t = 1.665$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.594

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$2120 \leq 230345$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$M_t = 1.665$

## Asta 226: Trave in legno a falda Falda 2 fili 35-27

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.617

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.617

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$





$\tau_{d} \leq f_{v,d}$

$\text{Sqrt}(2714^2 + 10243^2) = 10596 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$T_x = -32.6$ ;  $T_y = -122.9$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.617

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_{m,z,d}/f_{m,z,d} \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_{m,y,d}/f_{m,y,d} + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(28118/1324138)^2 + 116290/1456552 + 0.7 \cdot 43260/1456552 = 0.1 \leq 1$  [4.4.7a] Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_x = 87.915$ ;  $M_y = -25.437$ ;  $N = -708.6$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.617

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.02 + 0 + 0 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$T_x = -32.6$ ;  $T_y = -122.9$ ;  $M_t = 3.441$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.617

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$4386 \leq 230345$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_t = 3.445$

### Asta 227: Trave in legno a falda Falda 2 fili 28-5

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.506

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\text{Sqrt}(140^2 + 24467^2) = 24468 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$T_x = 1.7$ ;  $T_y = 293.6$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 2.506

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_{m,z,d}/f_{m,z,d} \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_{m,y,d}/f_{m,y,d} + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(5439/1820690)^2 + 259007/2002759 + 0.7 \cdot 11211/2002759 = 0.13 \leq 1$  [4.4.7a] Comb: SLV, 16; Durata minima del carico nella combinazione: istantaneo

$M_x = 195.809$ ;  $M_y = 6.592$ ;  $N = -137.1$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0 + 0 + 0.02 \leq 1$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = 1.4$ ;  $T_y = 293.6$ ;  $M_t = 0.56$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.506



Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$   
 $\tau_{tor,d} \leq K_{sh} * f_{v,d}$   
 $1293 \leq 316724$  Comb: SLV, 13; Durata minima del carico nella combinazione: istantaneo  
 $M_t = 1.016$

## Asta 228: Trave in legno a falda Falda 2 fili 27-4

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 2.506

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 2.506

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m * (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_m * (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$7736/1602207 + 472750/2002759 + 0.7 * 16111/2002759 = 0.25 \leq 1$  [4.4.6a] Comb: SLV, 16; Durata minima del carico nella combinazione: istantaneo

$M_x = 357.399$ ;  $M_y = 9.474$ ;  $N = 194.9$

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{t,d} \leq f_{v,d}$

$\sqrt{24^2 + 24341^2} = 24341 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$T_x = 0.3$ ;  $T_y = 292.1$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} * f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0 + 0 + 0.02 \leq 1$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = -0.1$ ;  $T_y = 291.7$ ;  $M_t = 0.263$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.506

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} * f_{v,d}$

$668 \leq 316724$  Comb: SLV, 13; Durata minima del carico nella combinazione: istantaneo

$M_t = 0.525$

## Asta 229: Trave in legno a falda Falda 2 fili 25-3

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 2.146

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1



#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 2.146

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_{m*}(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_{m*}(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$21000/1602207 + 501267/2002759 + 0.7*20643/2002759 = 0.27 \leq 1$  [4.4.6a] Comb: SLV, 13; Durata minima del carico nella combinazione: istantaneo

$M_x = 378.958$ ;  $M_y = -12.138$ ;  $N = 529.2$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.146

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{t,d} \leq f_{v,d}$

$\sqrt{250^2 + 18994^2} = 18996 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = -3$ ;  $T_y = -227.9$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh}*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.01 + 0 + 0.01 \leq 1$  Comb: SLV, 4; Durata minima del carico nella combinazione: istantaneo

$T_x = 12.4$ ;  $T_y = 234.6$ ;  $M_t = -2.593$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.146

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} * f_{v,d}$

$3302 \leq 316724$  Comb: SLV, 4; Durata minima del carico nella combinazione: istantaneo

$M_t = -2.593$

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 1.144

$K_{def} = 0$

$U_{inst\ tot\ in\ x} = 0$

$U_{inst\ tot\ in\ y} = -0.0003$

$U_{inst\ tot} = 0.0003$

$L_{uce}/U_{inst,tot} > \limite$

$2.146/0.0003 = 7332.8 > 300$  Comb: SLE rara, 8

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 1.144

$K_{def} = 0$

$U_{inst\ var\ in\ x} = 0$

$U_{inst\ var\ in\ y} = -0.0002$

$U_{inst\ var} = 0.0002$

$L_{uce}/U_{inst,var} > \limite$

$2.146/0.0002 = 12445 > 300$  Comb: SLE rara, 8

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 1.144

$K_{def} = 0.6$

$U_{fin\ in\ x} = 0$

$U_{fin\ in\ y} = -0.0004$

$U_{fin} = 0.0004$

$L_{uce}/U_{fin} > \limite$

$2.146/0.0004 = 5882.8 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Neve =  $0,500 + 0,500 = 1,000$

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### Asta 230: Trave in legno a falda Falda 2 fili 20-2

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.168



#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 1.168

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)

$S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$

$K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$

$345118/2002759 + 0.7 \cdot 25845/2002759 = 0.18 \leq 1$  (formula 4.4.5a) Comb: SLV, 13; Durata minima del carico nella combinazione: istantaneo

$M_x = 260.909$ ;  $M_y = -15.197$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.168

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $k_{cr} = 0.71$

$\tau_{v,d} \leq f_{v,d}$

$\sqrt{1483^2 + 22521^2} = 22570 \leq 265517$  Comb: SLV, 13; Durata minima del carico nella combinazione: istantaneo

$T_x = -17.8$ ;  $T_y = -270.3$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1.168

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.01 + 0 + 0.01 \leq 1$  Comb: SLV, 13; Durata minima del carico nella combinazione: istantaneo

$T_x = -17.8$ ;  $T_y = -270.3$ ;  $M_t = 2.137$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.168

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$2839 \leq 316724$  Comb: SLV, 4; Durata minima del carico nella combinazione: istantaneo

$M_t = -2.23$

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 0.545

$K_{def} = 0$

$U_{inst,tot} \text{ in } x = 0$

$U_{inst,tot} \text{ in } y = 0$

$U_{inst,tot} = 0$

$Luce/U_{inst,tot} > \text{limite}$

$1.168/0 = 48154 > 300$  Comb: SLE rara, 8

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 0.545

$K_{def} = 0$

$U_{inst,var} \text{ in } x = 0$

$U_{inst,var} \text{ in } y = 0$

$U_{inst,var} = 0$

$Luce/U_{inst,var} > \text{limite}$

$1.168/0 = 80325.4 > 300$  Comb: SLE rara, 8

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 0.545

$K_{def} = 0.6$

$U_{fin} \text{ in } x = 0$

$U_{fin} \text{ in } y = 0$

$U_{fin} = 0$

$Luce/U_{fin} > \text{limite}$

$1.168/0 = 38824.2 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Neve =  $0,500 + 0,500 = 1,000$



## Asta 231: Trave in legno a falda Falda 5 fili 248-277

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.452

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0.452

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$12612/1165241+42601/1456552+0.7*6698/1456552=0.04 \leq 1$  [4.4.6a] Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_x = 32.206$ ;  $M_y = 3.938$ ;  $N = 317.8$

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.452

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $k_{cr} = 0.71$

$\tau_{t,d} \leq f_{v,d}$

$\sqrt{7415^2+1078^2} = 7493 \leq 265517$  Comb: SLV, 9; Durata minima del carico nella combinazione: istantaneo

$T_x = -89$ ;  $T_y = -12.9$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.452

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{t,y,d}/f_{v,d})^2 + (\tau_{t,z,d}/f_{v,d})^2 \leq 1$

$0.09+0+0 \leq 1$  Comb: SLV, 10; Durata minima del carico nella combinazione: istantaneo

$T_x = -89$ ;  $T_y = -12.9$ ;  $M_t = 22.049$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.452

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$28070 \leq 316724$  Comb: SLV, 10; Durata minima del carico nella combinazione: istantaneo

$M_t = 22.049$

## Asta 232: Trave in legno a falda Falda 5 fili 248-277

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 2.157

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$



$St,0,d/ft,0,d + Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$   
 $16791/1165241+139678/1456552+0.7*6624/1456552=0.11 \leq 1$  [4.4.6a] Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $Mx = 105.596$ ;  $My = 3.895$ ;  $N = 423.1$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $Kmod = 0.8$ ;  $kcr = 0.71$   
 $\tau,d \leq f_{v,d}$   
 $Sqrt(375^2+23261^2) = 23264 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $Tx = -4.5$ ;  $Ty = 279.1$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.157  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $Kmod = 1.1$ ;  $Kh = 1.1$  (formula 11.7.2);  $kcr = 0.71$   
 $\tau_{tor,d}/(ksh*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.02+0+0 \leq 1$  Comb: SLV, 8; Durata minima del carico nella combinazione: istantaneo  
 $Tx = -17.9$ ;  $Ty = -72.2$ ;  $Mt = 5.012$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.157  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $Kmod = 1.1$   
 $\tau_{tor,d} \leq Ksh * f_{v,d}$   
 $6381 \leq 316724$  Comb: SLV, 8; Durata minima del carico nella combinazione: istantaneo  
 $Mt = 5.012$

### Asta 233: Trave in legno a falda Falda 5 fili 246-275

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.609

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 2.609  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $Kmod = 1.1$ ;  $Kh = 1.1$  (formula 11.7.2)  
 $Sm,y,d/fm,y,d + Km*(Sm,z,d/fm,z,d) \leq 1$   
 $Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$   
 $497979/2002759+0.7*8474/2002759=0.25 \leq 1$  (formula 4.4.5a) Comb: SLV, 3; Durata minima del carico nella combinazione: istantaneo  
 $Mx = 376.472$ ;  $My = -4.983$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $Kmod = 0.8$ ;  $kcr = 0.71$   
 $\tau,d \leq f_{v,d}$   
 $Sqrt(426^2+27013^2) = 27016 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $Tx = -5.1$ ;  $Ty = 324.2$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $Kmod = 0.8$ ;  $Kh = 1.1$  (formula 11.7.2);  $kcr = 0.71$   
 $\tau_{tor,d}/(ksh*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0+0+0.02 \leq 1$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $Tx = -4.9$ ;  $Ty = 324.1$ ;  $Mt = -0.325$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.609  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$



$K_{mod} = 1.1$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $688 \leq 316724$  Comb: SLV, 2; Durata minima del carico nella combinazione: istantaneo  
 $M_t = -0.54$

## Asta 234: Trave in legno a falda Falda 5 fili 247-276

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 2.609

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 2.609  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $S_{m,y,d}/f_{m,y,d} + K_{m,z,d}/f_{m,z,d} \leq 1$   
 $K_{m,y,d}/f_{m,y,d} + S_{m,z,d}/f_{m,z,d} \leq 1$   
 $245378/2002759 + 0.7 \cdot 4344/2002759 = 0.12 \leq 1$  (formula 4.4.5a) Comb: SLV, 3; Durata minima del carico nella combinazione: istantaneo  
 $M_x = 185.506$ ;  $M_y = -2.554$

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{220^2 + 27170^2} = 27171 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $T_x = -2.6$ ;  $T_y = 326$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0 + 0 + 0.02 \leq 1$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $T_x = -2.6$ ;  $T_y = 326$ ;  $M_t = -0.724$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.609  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $1286 \leq 316724$  Comb: SLV, 2; Durata minima del carico nella combinazione: istantaneo  
 $M_t = -1.01$

## Asta 235: Trave in legno a falda Falda 5 fili 249-278

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 2.609

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1



#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{500^2 + 26424^2} = 26429 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = -6$ ;  $T_y = 317.1$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 1.392

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(44236/1324138)^2 + 161625/1456552 + 0.7 \cdot 555/1456552 = 0.11 \leq 1$  [4.4.7a] Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_x = -122.188$ ;  $M_y = -0.326$ ;  $N = -1114.7$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.01 + 0 + 0.02 \leq 1$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = -6$ ;  $T_y = 317.1$ ;  $M_t = 1.448$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.609

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$1843 \leq 230345$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$M_t = 1.448$

### Asta 236: Trave in legno a falda Falda 5 fili 250-279

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.609

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{461^2 + 26369^2} = 26373 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = -5.5$ ;  $T_y = 316.4$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 2.609

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(18136/1820690)^2 + 456813/2002759 + 0.7 \cdot 2895/2002759 = 0.23 \leq 1$  [4.4.7a] Comb: SLV, 1; Durata minima del carico nella combinazione: istantaneo

$M_x = 345.351$ ;  $M_y = -1.702$ ;  $N = -457$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0 + 0 + 0.02 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media





$T_x = -5.7$ ;  $T_y = 316.4$ ;  $M_t = 0.496$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.609

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$638 \leq 230345$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

$M_t = 0.501$

### Asta 237: Trave in legno a falda Falda 2 fili 29-6

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.458

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0.458

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$8700/1165241 + 39070/1456552 + 0.7 \cdot 4890/1456552 = 0.04 \leq 1$  [4.4.6a] Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_x = 29.537$ ;  $M_y = -2.875$ ;  $N = 219.2$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.458

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{7150^2 + 456^2} = 7164 \leq 265517$  Comb: SLV, 10; Durata minima del carico nella combinazione: istantaneo

$T_x = 85.8$ ;  $T_y = -5.5$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.458

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.09 + 0 + 0 \leq 1$  Comb: SLV, 6; Durata minima del carico nella combinazione: istantaneo

$T_x = 65.7$ ;  $T_y = -10.8$ ;  $M_t = -21.365$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.458

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$27199 \leq 316724$  Comb: SLV, 6; Durata minima del carico nella combinazione: istantaneo

$M_t = -21.365$

### Asta 238: Trave in legno a falda Falda 2 fili 29-6

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.049

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300



Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_{m^*}(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $\sigma_{t,0,d}/f_{t,0,d} + K_{m^*}(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $8897/1165241 + 124492/1456552 + 0.7 \cdot 4881/1456552 = 0.1 \leq 1$  [4.4.6a] Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $M_x = 94.116$ ;  $M_y = -2.87$ ;  $N = 224.2$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{t,d} \leq f_{v,d}$   
 $\sqrt{291^2 + 21899^2} = 21901 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = 3.5$ ;  $T_y = 262.8$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.02 + 0 + 0 \leq 1$  Comb: SLV, 10; Durata minima del carico nella combinazione: istantaneo  
 $T_x = -12.9$ ;  $T_y = 90.6$ ;  $M_t = 5.226$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.049  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $6690 \leq 316724$  Comb: SLV, 7; Durata minima del carico nella combinazione: istantaneo  
 $M_t = -5.255$

### Asta 239: Trave in legno a falda Falda 6 fili 230-231

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.74

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{t,d} \leq f_{v,d}$   
 $\sqrt{840^2 + 36389^2} = 36399 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = -10.1$ ;  $T_y = 436.7$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_{m^*}(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_{m^*}(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(12814/1324138)^2 + 500841/1456552 + 0.7 \cdot 19536/1456552 = 0.35 \leq 1$  [4.4.7a] Comb: SLU, 29; Durata minima del carico nella combinazione: media  
 $M_x = 378.636$ ;  $M_y = 11.487$ ;  $N = -322.9$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0



Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0+0+0.03 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = -10.6$ ;  $T_y = 432.6$ ;  $M_t = 0.891$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.74  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $2198 \leq 172759$  Comb: SLU, 43; Durata minima del carico nella combinazione: permanente  
 $M_t = 1.727$

### Asta 240: Trave in legno a falda Falda 6 fili 265-266

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.417

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.417  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(6952/1820690)^2 + 96774/2002759 + 0.7 \cdot 49777/2002759 = 0.07 \leq 1$  [4.4.7a] Comb: SLV, 14; Durata minima del carico nella combinazione: istantaneo  
 $M_x = 73.161$ ;  $M_y = 29.269$ ;  $N = -175.2$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.417  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{1727^2 + 13936^2} = 14043 \leq 265517$  Comb: SLV, 13; Durata minima del carico nella combinazione: istantaneo  
 $T_x = -20.7$ ;  $T_y = -167.2$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.417  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.01+0+0 \leq 1$  Comb: SLV, 14; Durata minima del carico nella combinazione: istantaneo  
 $T_x = -19.6$ ;  $T_y = -167.2$ ;  $M_t = 1.715$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.417  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $1754 \leq 230345$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $M_t = 1.378$

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 0.25  
 $K_{def} = 0$   
 $U_{inst,tot} \text{ in } x = 0$   
 $U_{inst,tot} \text{ in } y = 0$   
 $U_{inst,tot} = 0$   
 $Luce/U_{inst,tot} > \text{limite}$   
 $0.417/0 = 116858.9 > 300$  Comb: SLE rara, 9



#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 0.25

Kdef = 0

Uinst var in x = 0

Uinst var in y = 0

Uinst var = 0

Luce/Uinst,var > limite

0.417/0=203995.2 > 300 Comb: SLE rara, 9

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 0.25

Kdef = 0.6

Ufin in x = 0

Ufin in y = 0

Ufin = 0

Luce/Ufin > limite

0.417/0=93019.1 > 200

Coefficienti combinatori impiegati:

Pesi strutturali = 1,000 + 0,600 = 1,600

Permanenti portati = 1,000 + 0,600 = 1,600

Neve = 0,500 + 0,500 = 1,000

Vento = 0,600 + 0,000 = 0,600

### Asta 241: Trave in legno a falda Falda 6 fili 259-260

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.41

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 1.41

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 1.1; Kh = 1.1 (formula 11.7.2)

$(Sc,0,d/fc,0,d)^2 + Sm,y,d/fm,y,d + Km*(Sm,z,d/fm,z,d) \leq 1$

$(Sc,0,d/fc,0,d)^2 + Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$

$(25406/1820690)^2 + 203554/2002759 + 0.7*27943/2002759 = 0.11 \leq 1$  [4.4.7a] Comb: SLV, 14; Durata minima del carico nella combinazione: istantaneo

Mx = 153.887; My = 16.431; N = -640.2

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.41

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; kcr = 0.71

$\tau,d \leq f_{v,d}$

$\sqrt{520^2 + 16014^2} = 16022 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

Tx = 6.2; Ty = -192.2

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1.41

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 1.1; Kh = 1.1 (formula 11.7.2); kcr = 0.71

$\tau_{tor,d}/(ksh*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

0.01+0+0 <= 1 Comb: SLV, 13; Durata minima del carico nella combinazione: istantaneo

Tx = 14; Ty = -148.2; Mt = -1.992

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.41

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 1.1

$\tau_{tor,d} \leq Ksh * f_{v,d}$

2678 <= 316724 Comb: SLV, 4; Durata minima del carico nella combinazione: istantaneo

Mt = 2.104



#### Verifica della freccia istantanea totale D.M. 17-01-18 §4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 0.658

Kdef = 0

Uinst tot in x = 0

Uinst tot in y = 0

Uinst tot = 0

Luce/Uinst,tot > limite

1.41/0=34165 > 300 Comb: SLE rara, 8

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 0.658

Kdef = 0

Uinst var in x = 0

Uinst var in y = 0

Uinst var = 0

Luce/Uinst,var > limite

1.41/0=54923.1 > 300 Comb: SLE rara, 8

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 0.611

Kdef = 0.6

Ufin in x = 0

Ufin in y = -0.0001

Ufin = 0.0001

Luce/Ufin > limite

1.41/0.0001=27838.6 > 200

Coefficienti combinatori impiegati:

Pesi strutturali = 1,000 + 0,600 = 1,600

Permanenti portati = 1,000 + 0,600 = 1,600

Neve = 0,500 + 0,500 = 1,000

### Asta 242: Trave in legno a falda Falda 6 fili 253-254

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.529

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 2.529

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.1 (formula 11.7.2)

$(Sc,0,d/fc,0,d)^2 + Sm,y,d/fm,y,d + Km*(Sm,z,d/fm,z,d) \leq 1$

$(Sc,0,d/fc,0,d)^2 + Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$

$(78746/1324138)^2 + 188602/1456552 + 0.7*11618/1456552 = 0.14 \leq 1$  [4.4.7a] Comb: SLU, 72; Durata minima del carico nella combinazione: media

Mx = 142.583; My = 6.831; N = -1984.4

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.529

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; kcr = 0.71

$\tau_d \leq f_{v,d}$

$\sqrt{51^2 + 26408^2} = 26408 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

Tx = 0.6; Ty = -316.9

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.529

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.1 (formula 11.7.2); kcr = 0.71

$\tau_{tor,d}/(ksh*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

0.01+0+0.02 <= 1 Comb: SLU, 72; Durata minima del carico nella combinazione: media

Tx = 0.6; Ty = -316.9; Mt = 1.543



#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.529  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
2012  $\leq 230345$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $M_t = 1.58$

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 1.18  
 $K_{def} = 0$   
 $U_{inst,tot} \text{ in } x = 0.0001$   
 $U_{inst,tot} \text{ in } y = -0.0004$   
 $U_{inst,tot} = 0.0004$   
 $Luce/U_{inst,tot} > \text{limite}$   
 $2.529/0.0004 = 6357.3 > 300$  Comb: SLE rara, 8

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 1.18  
 $K_{def} = 0$   
 $U_{inst,var} \text{ in } x = 0$   
 $U_{inst,var} \text{ in } y = -0.0002$   
 $U_{inst,var} = 0.0002$   
 $Luce/U_{inst,var} > \text{limite}$   
 $2.529/0.0002 = 10738.7 > 300$  Comb: SLE rara, 8

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 1.18  
 $K_{def} = 0.6$   
 $U_{fin} \text{ in } x = 0.0001$   
 $U_{fin} \text{ in } y = -0.0005$   
 $U_{fin} = 0.0005$   
 $Luce/U_{fin} > \text{limite}$   
 $2.529/0.0005 = 5107 > 200$   
Coefficienti combinatori impiegati:  
Pesi strutturali =  $1,000 + 0,600 = 1,600$   
Permanenti portati =  $1,000 + 0,600 = 1,600$   
Neve =  $0,500 + 0,500 = 1,000$

### Asta 243: Trave in legno a falda Falda 6 fili 216-217

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.74

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $\sigma_{t,0,d}/f_{t,0,d} + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $8515/1165241 + 371043/1456552 + 0.7 \cdot 50473/1456552 = 0.29 \leq 1$  [4.4.6a] Comb: SLU, 29; Durata minima del carico nella combinazione: media  
 $M_x = 280.509$ ;  $M_y = 29.678$ ;  $N = 214.6$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{1848^2 + 36084^2} = 36131 \leq 193103$  Comb: SLU, 29; Durata minima del carico nella combinazione: media  
 $T_x = -22.2$ ;  $T_y = 433$



#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.04 + 0 + 0.03 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = -21.9$ ;  $T_y = 422$ ;  $M_t = 6.707$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.74

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$8539 \leq 230345$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_t = 6.707$

### Asta 244: Trave in legno a falda Falda 6 fili 206-207

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.722

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$

$K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$

$231436/1456552 + 0.7 \cdot 8368/1456552 = 0.16 \leq 1$  (formula 4.4.5a) Comb: SLU, 29; Durata minima del carico nella combinazione: media

$M_x = 174.966$ ;  $M_y = 4.92$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{(156^2 + 31000^2)} = 31000 \leq 193103$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

$T_x = -1.9$ ;  $T_y = 372$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.06 + 0 + 0.02 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = 0.4$ ;  $T_y = 350.2$ ;  $M_t = 10.173$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.722

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$12952 \leq 230345$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_t = 10.173$

### Asta 245: Trave in legno a falda Falda 6 fili 200-201

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.993



#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 2.993

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$ ;  $K_h = 1.1$  (formula 11.7.2)

$(S_{c,0,d}/f_{c,0,d})^2 + S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$

$(S_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$

$(1.1414/993103)^2 + 166266/1092414 + 0.7 \cdot 47794/1092414 = 0.18 \leq 1$  [4.4.7a] Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$M_x = 125.697$ ;  $M_y = 28.103$ ;  $N = -287.6$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{v,d} \leq f_{v,d}$

$\sqrt{(1370^2 + 28790^2)} = 28823 \leq 193103$  Comb: SLU, 30; Durata minima del carico nella combinazione: media

$T_x = 16.4$ ;  $T_y = 345.5$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.06 + 0 + 0.02 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = 20.3$ ;  $T_y = 328.3$ ;  $M_t = 11.341$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.993

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$14438 \leq 230345$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_t = 11.341$

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 1.397

$K_{def} = 0$

$U_{inst,tot} \text{ in } x = 0.0001$

$U_{inst,tot} \text{ in } y = -0.0008$

$U_{inst,tot} = 0.0008$

$Luce/U_{inst,tot} > \text{limite}$

$2.993/0.0008 = 3863.7 > 300$  Comb: SLE rara, 17

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 1.696

$K_{def} = 0$

$U_{inst,var} \text{ in } x = 0$

$U_{inst,var} \text{ in } y = -0.0005$

$U_{inst,var} = 0.0005$

$Luce/U_{inst,var} > \text{limite}$

$2.993/0.0005 = 6217.9 > 300$  Comb: SLE rara, 9

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 1.397

$K_{def} = 0.6$

$U_{fin} \text{ in } x = 0.0002$

$U_{fin} \text{ in } y = -0.001$

$U_{fin} = 0.001$

$Luce/U_{fin} > \text{limite}$

$2.993/0.001 = 3089.1 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Variabile A =  $0,700 + 0,180 = 0,880$





Neve = 0,500 + 0,500 = 1,000  
Vento = 0,600 + 0,000 = 0,600

Asta 246: Trave in legno a falda Falda 6 fili 189-190

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati generali

Lunghezza = 1.989

Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 1.989  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(28868/993103)^2 + 145790/1092414 + 0.7 \cdot 3436/1092414 = 0.14 \leq 1$  [4.4.7a] Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $M_x = 110.217$ ;  $M_y = 2.02$ ;  $N = -727.5$

Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.989  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{537^2 + 14061^2} = 14071 \leq 144828$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $T_x = 6.4$ ;  $T_y = -168.7$

Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1.989  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.03 + 0 + 0.01 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = 1.5$ ;  $T_y = -221.2$ ;  $M_t = 6.285$

Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.989  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $8001 \leq 230345$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_t = 6.285$

Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 0.597  
 $K_{def} = 0$   
 $U_{inst,tot} \text{ in } x = 0$   
 $U_{inst,tot} \text{ in } y = -0.0002$   
 $U_{inst,tot} = 0.0002$   
 $Luce/U_{inst,tot} > \text{limite}$   
 $1.989/0.0002 = 12853.2 > 300$  Comb: SLE rara, 18

Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 0.398  
 $K_{def} = 0$   
 $U_{inst,var} \text{ in } x = 0$   
 $U_{inst,var} \text{ in } y = 0$   
 $U_{inst,var} = 0$   
 $Luce/U_{inst,var} > \text{limite}$   
 $1.989/0 = 43682.9 > 300$  Comb: SLE rara, 9

Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 0.597



Kdef = 0.6  
Ufin in x = -0.0001  
Ufin in y = -0.0002  
Ufin = 0.0002  
Luce/Ufin > limite  
 $1.989/0.0002=8332.2 > 200$   
Condizione base per ricombinare la freccia: Variabile A  
Comb: SLE quasi permanente, 2 + incrementi viscosi  
Coefficienti combinatori impiegati:  
Pesi strutturali =  $1,000 + 0,600 = 1,600$   
Permanenti portati =  $1,000 + 0,600 = 1,600$   
Variabile A =  $1,000 + 0,180 = 1,180$

## Asta 247: Trave in legno a falda Falda 6 fili 180-181

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 1.002

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$   
 $K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$   
 $128795/1092414 + 0.7 \cdot 954/1092414 = 0.12 \leq 1$  (formula 4.4.5a) Comb: SLU, 43; Durata minima del carico nella combinazione: permanente  
 $M_x = -97.369$ ;  $M_y = -0.561$

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.002  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{101^2 + 9852^2} = 9852 \leq 144828$  Comb: SLU, 43; Durata minima del carico nella combinazione: permanente  
 $T_x = 1.2$ ;  $T_y = -118.2$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.01 + 0 + 0 \leq 1$  Comb: SLU, 30; Durata minima del carico nella combinazione: media  
 $T_x = -16.3$ ;  $T_y = 138.9$ ;  $M_t = 1.81$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.002  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $2304 \leq 230345$  Comb: SLU, 30; Durata minima del carico nella combinazione: media  
 $M_t = 1.81$

### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 0.434  
 $K_{def} = 0$   
Uinst tot in x = 0  
Uinst tot in y = -0.0001  
Uinst tot = 0.0001  
Luce/Uinst,tot > limite  
 $1.002/0.0001=12352.6 > 300$  Comb: SLE rara, 18



#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 0.401

Kdef = 0

Uinst var in x = 0

Uinst var in y = 0

Uinst var = 0

Luce/Uinst,var > limite

$1.002/0=25767.6 > 300$  Comb: SLE rara, 9

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 0.434

Kdef = 0.6

Ufin in x = 0

Ufin in y = -0.0001

Ufin = 0.0001

Luce/Ufin > limite

$1.002/0.0001=8049.3 > 200$

Condizione base per ricombinare la freccia: Variabile A

Comb: SLE quasi permanente, 2 + incrementi viscosi

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Variabile A =  $1,000 + 0,180 = 1,180$

### Asta 248: Trave in legno a falda Falda 6 fili 231-232

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.644

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.644

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; kcr = 0.71

$\tau_{d} \leq f_{v,d}$

$\sqrt{945^2 + 33761^2} = 33775 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

Tx = 11.3; Ty = -405.1

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 2.644

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.1 (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(39371/1324138)^2 + 250980/1456552 + 0.7 \cdot 29987/1456552 = 0.19 \leq 1$  [4.4.7a] Comb: SLU, 72; Durata minima del carico nella combinazione: media

Mx = 189.741; My = 17.633; N = -992.2

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.644

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.1 (formula 11.7.2); kcr = 0.71

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.01 + 0 + 0.03 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

Tx = 10.8; Ty = -403.2; Mt = -1.031

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.644

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.6

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$2230 \leq 172759$  Comb: SLU, 43; Durata minima del carico nella combinazione: permanente

Mt = -1.752



## Asta 249: Trave in legno a falda Falda 6 fili 236-237

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 2.644

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.644

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{1713^2 + 33987^2} = 34030 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = 20.6$ ;  $T_y = -407.8$

### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.793

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(50389/1324138)^2 + 272174/1456552 + 0.7 \cdot 22687/1456552 = 0.2 \leq 1$  [4.4.7a] Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_x = -205.763$ ;  $M_y = -13.34$ ;  $N = -1269.8$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.644

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.02 + 0 + 0.03 \leq 1$  Comb: SLU, 30; Durata minima del carico nella combinazione: media

$T_x = 20.3$ ;  $T_y = -403.9$ ;  $M_t = 3.795$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.644

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$4852 \leq 230345$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

$M_t = 3.811$

## Asta 250: Trave in legno a falda Falda 6 fili 242-243

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 2.644

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.644

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$



$\sqrt{1981^2 + 33054^2} = 33113 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
Tx = 23.8; Ty = -396.6

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 2.644

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.1 (formula 11.7.2)

$(Sc,0,d/fc,0,d)^2 + Sm,y,d/fm,y,d + Km*(Sm,z,d/fm,z,d) \leq 1$

$(Sc,0,d/fc,0,d)^2 + Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$

$(85982/1324138)^2 + 230352/1456552 + 0.7*47010/1456552 = 0.18 \leq 1$  [4.4.7a] Comb: SLU, 72; Durata minima del carico nella combinazione: media

Mx = 174.146; My = 27.642; N = -2166.8

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.644

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.1 (formula 11.7.2); kcr = 0.71

$\tau_{tor,d}/(ksh*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.03 + 0 + 0.03 \leq 1$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

Tx = 23.8; Ty = -396.6; Mt = 4.719

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.644

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8

$\tau_{tor,d} \leq Ksh * f_{v,d}$

$6067 \leq 230345$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

Mt = 4.766

### Asta 251: Trave in legno a falda Falda 6 fili 217-218

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.226

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 0.742

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.1 (formula 11.7.2)

$Sm,y,d/fm,y,d + Km*(Sm,z,d/fm,z,d) \leq 1$

$Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$

$177262/1456552 + 0.7*6242/1456552 = 0.12 \leq 1$  (formula 4.4.5a) Comb: SLU, 29; Durata minima del carico nella combinazione: media

Mx = -134.01; My = 3.67

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.226

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; kcr = 0.71

$\tau_{d} \leq f_{v,d}$

$\sqrt{655^2 + 23557^2} = 23566 \leq 193103$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

Tx = -7.9; Ty = -282.7

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.226

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.1 (formula 11.7.2); kcr = 0.71

$\tau_{tor,d}/(ksh*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.01 + 0 + 0.01 \leq 1$  Comb: SLU, 30; Durata minima del carico nella combinazione: media

Tx = -7.9; Ty = -282; Mt = 1.474

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.226

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$



$K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $1877 \leq 230345$  Comb: SLU, 30; Durata minima del carico nella combinazione: media  
 $M_t = 1.474$

## Asta 252: Trave in legno a falda Falda 6 fili 207-208

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 1.24

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$   
 $K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$   
 $92693/1092414 + 0.7 \cdot 43818/1092414 = 0.11 \leq 1$  (formula 4.4.5a) Comb: SLU, 43; Durata minima del carico nella combinazione: permanente  
 $M_x = 70.076$ ;  $M_y = -25.765$

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.24  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(3158^2 + 11771^2)} = 12187 \leq 193103$  Comb: SLU, 29; Durata minima del carico nella combinazione: media  
 $T_x = 37.9$ ;  $T_y = -141.2$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.03 + 0 + 0 \leq 1$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $T_x = 32.8$ ;  $T_y = 94.2$ ;  $M_t = 3.506$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.24  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $4464 \leq 172759$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $M_t = 3.506$

## Asta 253: Trave in legno a falda Falda 4 fili 219-220

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.424

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1



#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0.424

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_{m^*}(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_{m^*}(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$9979/1602207 + 155684/2002759 + 0.7 \cdot 55000/2002759 = 0.1 \leq 1$  [4.4.6a] Comb: SLV, 5; Durata minima del carico nella combinazione: istantaneo

$M_x = 117.697$ ;  $M_y = 32.34$ ;  $N = 251.5$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.424

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $k_{cr} = 0.71$

$\tau_{t,d} \leq f_{v,d}$

$\sqrt{5695^2 + 21643^2} = 22380 \leq 265517$  Comb: SLV, 5; Durata minima del carico nella combinazione: istantaneo

$T_x = 68.3$ ;  $T_y = -259.7$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.424

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.03 + 0 + 0 \leq 1$  Comb: SLU, 43; Durata minima del carico nella combinazione: permanente

$T_x = 31.4$ ;  $T_y = -11.9$ ;  $M_t = -4.368$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.424

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$5561 \leq 172759$  Comb: SLU, 43; Durata minima del carico nella combinazione: permanente

$M_t = -4.368$

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 0.212

$K_{def} = 0$

$U_{inst,tot} \text{ in } x = 0$

$U_{inst,tot} \text{ in } y = 0$

$U_{inst,tot} = 0$

$L_{uce}/U_{inst,tot} > \text{limite}$

$0.424/0 = 84346 > 300$  Comb: SLE rara, 10

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 0.24

$K_{def} = 0$

$U_{inst,var} \text{ in } x = 0$

$U_{inst,var} \text{ in } y = 0$

$U_{inst,var} = 0$

$L_{uce}/U_{inst,var} > \text{limite}$

$0.424/0 = 170216 > 300$  Comb: SLE rara, 9

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 0.212

$K_{def} = 0.6$

$U_{fin} \text{ in } x = 0$

$U_{fin} \text{ in } y = 0$

$U_{fin} = 0$

$L_{uce}/U_{fin} > \text{limite}$

$0.424/0 = 61515.2 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Variabile A =  $0,700 + 0,180 = 0,880$

Vento =  $0,600 + 0,400 = 1,000$

### Asta 254: Trave in legno a falda Falda 4 fili 209-210

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.391



#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 1.391  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$   
 $K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$   
 $245856/2002759 + 0.7 \cdot 686/2002759 = 0.12 \leq 1$  (formula 4.4.5a) Comb: SLV, 12; Durata minima del carico nella combinazione: istantaneo  
 $M_x = -185.867$ ;  $M_y = 0.404$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.391  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{v,d} \leq f_{v,d}$   
 $\sqrt{947^2 + 14933^2} = 14963 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = 11.4$ ;  $T_y = -179.2$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1.391  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.02 + 0 + 0.01 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = 11.4$ ;  $T_y = -179.2$ ;  $M_t = -4.039$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.391  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $3938 \leq 172759$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $M_t = -3.094$

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 0.696  
 $K_{def} = 0$   
 $U_{inst,tot} \text{ in } x = 0$   
 $U_{inst,tot} \text{ in } y = -0.0002$   
 $U_{inst,tot} = 0.0002$   
 $Luce/U_{inst,tot} > \text{limite}$   
 $1.391/0.0002 = 8066 > 300$  Comb: SLE rara, 17

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 0.696  
 $K_{def} = 0$   
 $U_{inst,var} \text{ in } x = 0$   
 $U_{inst,var} \text{ in } y = -0.0001$   
 $U_{inst,var} = 0.0001$   
 $Luce/U_{inst,var} > \text{limite}$   
 $1.391/0.0001 = 18549.4 > 300$  Comb: SLE rara, 17

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 0.696  
 $K_{def} = 0.6$   
 $U_{fin} \text{ in } x = 0$   
 $U_{fin} \text{ in } y = -0.0002$   
 $U_{fin} = 0.0002$   
 $Luce/U_{fin} > \text{limite}$   
 $1.391/0.0002 = 5993.2 > 200$   
Coefficienti combinatori impiegati:  
Pesi strutturali =  $1,000 + 0,600 = 1,600$   
Permanenti portati =  $1,000 + 0,600 = 1,600$   
Variabile A =  $0,700 + 0,180 = 0,880$





Neve = 0,500 + 0,500 = 1,000  
Vento = 0,600 + 0,000 = 0,600

Asta 255: Trave in legno a falda Falda 4 fili 202-203

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati generali

Lunghezza = 2.36

Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

**Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7**

Sezione ad ascissa 1.101  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_{m} \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $\sigma_{t,0,d}/f_{t,0,d} + K_{m} \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $14850/1165241 + 258326/1456552 + 0.7 \cdot 2407/1456552 = 0.19 \leq 1$  [4.4.6a] Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_x = -195.294$ ;  $M_y = -1.416$ ;  $N = 374.2$

**Verifica taglio D.M. 17-01-18 §4.4.8.1.9**

Sezione ad ascissa 2.36  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{t,d} \leq f_{v,d}$   
 $\sqrt{392^2 + 24264^2} = 24267 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = 4.7$ ;  $T_y = -291.2$

**Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11**

Sezione ad ascissa 2.36  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{t,y,d}/f_{v,d})^2 + (\tau_{t,z,d}/f_{v,d})^2 \leq 1$   
 $0 + 0 + 0.01 \leq 1$  Comb: SLU, 29; Durata minima del carico nella combinazione: media  
 $T_x = 2.7$ ;  $T_y = -283.7$ ;  $M_t = -0.717$

**Verifica torsione D.M. 17-01-18 §4.4.8.1.10**

Sezione ad ascissa 2.36  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $1796 \leq 172759$  Comb: SLU, 43; Durata minima del carico nella combinazione: permanente  
 $M_t = 1.41$

**Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19**

Sezione ad ascissa 1.18  
 $K_{def} = 0$   
 $U_{inst,tot} \text{ in } x = 0$   
 $U_{inst,tot} \text{ in } y = -0.0011$   
 $U_{inst,tot} = 0.0011$   
 $Luce/U_{inst,tot} > \text{limite}$   
 $2.36/0.0011 = 2095.8 > 300$  Comb: SLE rara, 17

**Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7**

Sezione ad ascissa 1.18  
 $K_{def} = 0$   
 $U_{inst,var} \text{ in } x = 0$   
 $U_{inst,var} \text{ in } y = -0.0004$   
 $U_{inst,var} = 0.0004$   
 $Luce/U_{inst,var} > \text{limite}$   
 $2.36/0.0004 = 5400.6 > 300$  Comb: SLE rara, 17

**Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)**

Sezione ad ascissa 1.18



Kdef = 0.6  
Ufin in x = 0  
Ufin in y = -0.0015  
Ufin = 0.0015  
Luce/Ufin > limite  
2.36/0.0015=1524.9 > 200  
Coefficienti combinatori impiegati:  
Pesi strutturali = 1,000 + 0,600 = 1,600  
Permanenti portati = 1,000 + 0,600 = 1,600  
Variabile A = 0,700 + 0,180 = 0,880  
Neve = 0,500 + 0,500 = 1,000  
Vento = 0,600 + 0,000 = 0,600

## Asta 256: Trave in legno a falda Falda 4 fili 191-319

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.964

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.1 (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$20533/1165241 + 406223/1456552 + 0.7 \cdot 55332/1456552 = 0.32 \leq 1$  [4.4.6a] Comb: SLU, 80; Durata minima del carico nella combinazione: media

Mx = 307.105; My = 32.535; N = 517.4

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; kcr = 0.71

$\tau_{v,d} \leq f_{v,d}$

$\sqrt{(3906^2 + 42120^2)} = 42301 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

Tx = -46.9; Ty = 505.4

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.1 (formula 11.7.2); kcr = 0.71

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{v,d}/f_{v,d})^2 + (\tau_{t,d}/f_{v,d})^2 \leq 1$

$0 + 0 + 0.05 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

Tx = -48.3; Ty = 505.1; Mt = -0.778

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.964

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.6

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$1197 \leq 172759$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

Mt = -0.94

## Asta 257: Trave in legno a falda Falda 3 fili 101-102

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.618

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588



Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$   
 $K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$   
 $128596/1456552 + 0.7 \cdot 15052/1456552 = 0.1 \leq 1$  (formula 4.4.5a) Comb: SLU, 30; Durata minima del carico nella combinazione: media  
 $M_x = 97.218$ ;  $M_y = -8.851$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(1534^2 + 16122^2)} = 16195 \leq 193103$  Comb: SLU, 30; Durata minima del carico nella combinazione: media  
 $T_x = 18.4$ ;  $T_y = 193.5$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.02 + 0 + 0.01 \leq 1$  Comb: SLU, 30; Durata minima del carico nella combinazione: media  
 $T_x = 18.4$ ;  $T_y = 193.5$ ;  $M_t = -3.222$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.618  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $4102 \leq 230345$  Comb: SLU, 30; Durata minima del carico nella combinazione: media  
 $M_t = -3.222$

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 0.288  
 $K_{def} = 0$   
 $U_{inst,tot} \text{ in } x = 0$   
 $U_{inst,tot} \text{ in } y = 0$   
 $U_{inst,tot} = 0$   
Luce/ $U_{inst,tot} > \text{limite}$   
 $0.618/0 = 38224.8 > 300$  Comb: SLE rara, 19

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 0.268  
 $K_{def} = 0$   
 $U_{inst,var} \text{ in } x = 0$   
 $U_{inst,var} \text{ in } y = 0$   
 $U_{inst,var} = 0$   
Luce/ $U_{inst,var} > \text{limite}$   
 $0.618/0 = 29275.6 > 300$  Comb: SLE rara, 9

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 0.288  
 $K_{def} = 0.6$   
 $U_{fin} \text{ in } x = 0$   
 $U_{fin} \text{ in } y = 0$   
 $U_{fin} = 0$   
Luce/ $U_{fin} > \text{limite}$   
 $0.618/0 = 25506.3 > 200$   
Coefficienti combinatori impiegati:  
Pesi strutturali =  $1,000 + 0,600 = 1,600$   
Permanenti portati =  $1,000 + 0,600 = 1,600$   
Variabile A =  $0,700 + 0,480 = 1,180$   
Vento =  $0,600 + 0,000 = 0,600$



## Asta 258: Trave in legno a falda Falda 3 fili 93-94

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 1.643

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$\sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$183121/1456552 + 0.7 \cdot 14896/1456552 = 0.13 \leq 1$  (formula 4.4.5a) Comb: SLU, 30; Durata minima del carico nella combinazione: media

$M_x = 138.439$ ;  $M_y = -8.759$

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{v,d} \leq f_{v,d}$

$\sqrt{1008^2 + 22341^2} = 22363 \leq 193103$  Comb: SLU, 30; Durata minima del carico nella combinazione: media

$T_x = 12.1$ ;  $T_y = 268.1$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{v,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.03 + 0 + 0.01 \leq 1$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = 11.5$ ;  $T_y = 259.9$ ;  $M_t = -4.694$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.643

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$6077 \leq 230345$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_t = -4.773$

### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 0.767

$K_{def} = 0$

$U_{inst,tot} \text{ in } x = 0$

$U_{inst,tot} \text{ in } y = -0.0002$

$U_{inst,tot} = 0.0002$

$Luce/U_{inst,tot} > \text{limite}$

$1.643/0.0002 = 10852 > 300$  Comb: SLE rara, 18

### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 0.493

$K_{def} = 0$

$U_{inst,var} \text{ in } x = 0$

$U_{inst,var} \text{ in } y = 0.0001$

$U_{inst,var} = 0.0001$

$Luce/U_{inst,var} > \text{limite}$

$1.643/0.0001 = 22605 > 300$  Comb: SLE rara, 9

### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 0.767

$K_{def} = 0.6$

$U_{fin} \text{ in } x = 0$

$U_{fin} \text{ in } y = -0.0002$

$U_{fin} = 0.0002$

$Luce/U_{fin} > \text{limite}$



$1.643/0.0002=7076.8 > 200$   
Condizione base per ricombinare la freccia: Variabile A  
Comb: SLE quasi permanente, 2 + incrementi viscosi  
Coefficienti combinatori impiegati:  
Pesi strutturali =  $1,000 + 0,600 = 1,600$   
Permanenti portati =  $1,000 + 0,600 = 1,600$   
Variabile A =  $1,000 + 0,180 = 1,180$

## Asta 259: Trave in legno a falda Falda 3 fili 85-82

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 2.735

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$   
 $K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$   
 $235139/1456552 + 0.7 \cdot 36516/1456552 = 0.18 \leq 1$  (formula 4.4.5a) Comb: SLU, 30; Durata minima del carico nella combinazione: media  
 $M_x = 177.765$ ;  $M_y = 21.472$

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{1738^2 + 29665^2} = 29716 \leq 193103$  Comb: SLU, 30; Durata minima del carico nella combinazione: media  
 $T_x = -20.9$ ;  $T_y = 356$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.05 + 0 + 0.02 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = -25.2$ ;  $T_y = 341.5$ ;  $M_t = -9.315$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.735  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $11859 \leq 230345$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_t = -9.315$

### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 1.458  
 $K_{def} = 0$   
 $U_{inst,tot} \text{ in } x = -0.0002$   
 $U_{inst,tot} \text{ in } y = -0.0007$   
 $U_{inst,tot} = 0.0007$   
Luce/ $U_{inst,tot}$  > limite  
 $2.735/0.0007=3786.2 > 300$  Comb: SLE rara, 17

### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 1.641  
 $K_{def} = 0$   
 $U_{inst,var} \text{ in } x = 0$   
 $U_{inst,var} \text{ in } y = -0.0004$   
 $U_{inst,var} = 0.0004$



Luce/Uinst,var > limite

$2.735/0.0004=7105.1 > 300$  Comb: SLE rara, 17

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 1.367

Kdef = 0.6

Ufin in x = -0.0002

Ufin in y = -0.0009

Ufin = 0.0009

Luce/Ufin > limite

$2.735/0.0009=2924.3 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Variabile A =  $0,700 + 0,180 = 0,880$

Neve =  $0,500 + 0,500 = 1,000$

Vento =  $0,600 + 0,000 = 0,600$

### Asta 260: Trave in legno a falda Falda 3 fili 77-78

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.727

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.1 (formula 11.7.2)

$St_{0,d}/ft_{0,d} + Sm_{y,d}/fm_{y,d} + Km*(Sm_{z,d}/fm_{z,d}) \leq 1$

$St_{0,d}/ft_{0,d} + Km*(Sm_{y,d}/fm_{y,d}) + Sm_{z,d}/fm_{z,d} \leq 1$

$7791/1165241+267005/1456552+0.7*7988/1456552=0.19 \leq 1$  [4.4.6a] Comb: SLU, 29; Durata minima del carico nella combinazione: media

Mx = 201.856; My = 4.697; N = 196.3

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; kcr = 0.71

$\tau_{t,d} \leq f_{v,d}$

$\sqrt{283^2+33177^2} = 33178 \leq 193103$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

Tx = -3.4; Ty = 398.1

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.1 (formula 11.7.2); kcr = 0.71

$\tau_{tor,d}/(ksh*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.06+0+0.03 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

Tx = -5.3; Ty = 385.9; Mt = -10.023

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.727

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8

$\tau_{tor,d} \leq Ksh * f_{v,d}$

$12760 \leq 230345$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

Mt = -10.023

### Asta 261: Trave in legno a falda Falda 3 fili 66-67

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)



## Dati generali

Lunghezza = 2.728

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$

$K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$

$360186/1456552 + 0.7 \cdot 39676/1456552 = 0.27 \leq 1$  (formula 4.4.5a) Comb: SLU, 29; Durata minima del carico nella combinazione: media

$M_x = 272.301$ ;  $M_y = -23.329$

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{v,d} \leq f_{v,d}$

$\sqrt{1414^2 + 36887^2} = 36914 \leq 193103$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

$T_x = 17$ ;  $T_y = 442.6$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.04 + 0 + 0.04 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = 16.4$ ;  $T_y = 435.5$ ;  $M_t = -7.052$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.728

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$8977 \leq 230345$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_t = -7.052$

## Asta 262: Trave in legno a falda Falda 3 fili 57-58

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

## Dati generali

Lunghezza = 2.74

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$

$K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$

$495157/1456552 + 0.7 \cdot 45507/1456552 = 0.36 \leq 1$  (formula 4.4.5a) Comb: SLU, 29; Durata minima del carico nella combinazione: media

$M_x = 374.339$ ;  $M_y = -26.758$

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0



Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{1632^2 + 40682^2} = 40715 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = 19.6$ ;  $T_y = 488.2$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.01 + 0 + 0.04 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = 20.1$ ;  $T_y = 485$ ;  $M_t = -1.778$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.74  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $2415 \leq 172759$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $M_t = -1.897$

### Asta 263: Trave in legno a falda Falda 4 fili 95-308

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.134

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $\sigma_{t,0,d}/f_{t,0,d} + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $40265/873931 + 243020/1092414 + 0.7 \cdot 76661/1092414 = 0.32 \leq 1$  [4.4.6a] Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $M_x = 183.723$ ;  $M_y = -45.076$ ;  $N = 1014.7$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{5600^2 + 34140^2} = 34596 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = 67.2$ ;  $T_y = 409.7$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.04 + 0 + 0.03 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = 66.8$ ;  $T_y = 409.4$ ;  $M_t = -7.323$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.134  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $9323 \leq 230345$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_t = -7.323$





## Asta 264: Trave in legno a falda Falda 4 fili 86-87

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 2.537

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 1.268

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$19004/1165241 + 264190/1456552 + 0.7 \cdot 4378/1456552 = 0.2 \leq 1$  [4.4.6a] Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_x = -199.728$ ;  $M_y = 2.574$ ;  $N = 478.9$

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.537

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{t,d} \leq f_{v,d}$

$\sqrt{569^2 + 23953^2} = 23960 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$T_x = -6.8$ ;  $T_y = -287.4$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.537

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.01 + 0 + 0.02 \leq 1$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

$T_x = -5$ ;  $T_y = -285.3$ ;  $M_t = 1.941$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.537

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$2524 \leq 230345$  Comb: SLU, 30; Durata minima del carico nella combinazione: media

$M_t = 1.983$

### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 1.268

$K_{def} = 0$

$U_{inst,tot} \text{ in } x = 0$

$U_{inst,tot} \text{ in } y = -0.0013$

$U_{inst,tot} = 0.0013$

$Luce/U_{inst,tot} > \text{limite}$

$2.537/0.0013 = 1967.5 > 300$  Comb: SLE rara, 17

### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 1.268

$K_{def} = 0$

$U_{inst,var} \text{ in } x = 0$

$U_{inst,var} \text{ in } y = -0.0006$

$U_{inst,var} = 0.0006$

$Luce/U_{inst,var} > \text{limite}$

$2.537/0.0006 = 4537.5 > 300$  Comb: SLE rara, 17

### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 1.268

$K_{def} = 0.6$

$U_{fin} \text{ in } x = 0.0001$

$U_{fin} \text{ in } y = -0.0017$

$U_{fin} = 0.0017$

$Luce/U_{fin} > \text{limite}$



$2.537/0.0017=1463 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Variabile A =  $0,700 + 0,180 = 0,880$

Neve =  $0,500 + 0,500 = 1,000$

Vento =  $0,600 + 0,000 = 0,600$

## Asta 265: Trave in legno a falda Falda 4 fili 80-81

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 1.578

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 1.578

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)

$S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$

$K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$

$287392/2002759 + 0.7 \cdot 14102/2002759 = 0.15 \leq 1$  (formula 4.4.5a) Comb: SLV, 8; Durata minima del carico nella combinazione: istantaneo

$M_x = -217.268$ ;  $M_y = 8.292$

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.578

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{512^2 + 17177^2} = 17184 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$T_x = -6.1$ ;  $T_y = -206.1$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1.578

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.02 + 0 + 0.01 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = -7.7$ ;  $T_y = -206$ ;  $M_t = 3.878$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.578

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$5022 \leq 230345$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_t = 3.944$

### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 0.789

$K_{def} = 0$

$U_{inst,tot} \text{ in } x = 0$

$U_{inst,tot} \text{ in } y = -0.0003$

$U_{inst,tot} = 0.0003$

Luce/ $U_{inst,tot} > \text{limite}$

$1.578/0.0003 = 5920.7 > 300$  Comb: SLE rara, 17

### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 0.789

$K_{def} = 0$

$U_{inst,var} \text{ in } x = 0$

$U_{inst,var} \text{ in } y = -0.0001$

$U_{inst,var} = 0.0001$



Luce/Uinst,var > limite

$1.578/0.0001=12941.7 > 300$  Comb: SLE rara, 17

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 0.789

Kdef = 0.6

Ufin in x = 0

Ufin in y = -0.0004

Ufin = 0.0004

Luce/Ufin > limite

$1.578/0.0004=4450.2 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Variabile A =  $0,700 + 0,180 = 0,880$

Neve =  $0,500 + 0,500 = 1,000$

Vento =  $0,600 + 0,000 = 0,600$

### Asta 266: Trave in legno a falda Falda 4 fili 69-70

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.62

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 0.62

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 1.1; Kh = 1.1 (formula 11.7.2)

$Sm,y,d/fm,y,d + Km*(Sm,z,d/fm,z,d) \leq 1$

$Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$

$286989/2002759+0.7*55635/2002759=0.16 \leq 1$  (formula 4.4.5a) Comb: SLV, 6; Durata minima del carico nella combinazione: istantaneo

Mx = 216.964; My = -32.713

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.62

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 1.1; kcr = 0.71

$\tau,d \leq fv,d$

$\sqrt{(5568^2+28671^2)} = 29207 \leq 265517$  Comb: SLV, 6; Durata minima del carico nella combinazione: istantaneo

Tx = -66.8; Ty = -344.1

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 1.1; Kh = 1.1 (formula 11.7.2); kcr = 0.71

$\tau_{tor,d}/(ksh*fv,d) + (\tau_{y,d}/fv,d)^2 + (\tau_{z,d}/fv,d)^2 \leq 1$

$0.03+0+0 \leq 1$  Comb: SLV, 14; Durata minima del carico nella combinazione: istantaneo

Tx = -82.7; Ty = 46.1; Mt = 7.347

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.62

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 1.1

$\tau_{tor,d} \leq Ksh * fv,d$

$9353 \leq 316724$  Comb: SLV, 14; Durata minima del carico nella combinazione: istantaneo

Mt = 7.347

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 0.31

Kdef = 0

Uinst tot in x = 0

Uinst tot in y = 0



Uinst tot = 0  
Luce/Uinst,tot > limite  
 $0.62/0=56529.9 > 300$  Comb: SLE rara, 13

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 0.351  
Kdef = 0  
Uinst var in x = 0  
Uinst var in y = 0  
Uinst var = 0  
Luce/Uinst,var > limite  
 $0.62/0=114770.8 > 300$  Comb: SLE rara, 10

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 0.31  
Kdef = 0.6  
Ufin in x = 0  
Ufin in y = 0  
Ufin = 0  
Luce/Ufin > limite  
 $0.62/0=42856.9 > 200$   
Coefficienti combinatori impiegati:  
Pesi strutturali = 1,000 + 0,600 = 1,600  
Permanenti portati = 1,000 + 0,600 = 1,600  
Variabile A = 0,700 + 0,180 = 0,880  
Neve = 0,500 + 0,000 = 0,500  
Vento = 0,600 + 0,400 = 1,000

### Asta 267: Trave in legno a falda Falda 3 fili 48-49

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.078

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
Kmod = 0.8; kcr = 0.71  
 $\tau_d \leq f_{v,d}$   
 $\sqrt{180^2 + 26889^2} = 26889 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
Tx = -2.2; Ty = 322.7

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
Kmod = 0.8; Kh = 1.1 (formula 11.7.2)  
 $(Sc_{0,d}/f_{c,0,d})^2 + Sm_{y,d}/f_{m,y,d} + Km*(Sm_{z,d}/f_{m,z,d}) \leq 1$   
 $(Sc_{0,d}/f_{c,0,d})^2 + Km*(Sm_{y,d}/f_{m,y,d}) + Sm_{z,d}/f_{m,z,d} \leq 1$   
 $(30664/1324138)^2 + 197965/1456552 + 0.7*10747/1456552 = 0.14 \leq 1$  [4.4.7a] Comb: SLU, 71; Durata minima del carico nella combinazione: media  
Mx = 149.662; My = 6.319; N = -772.7

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
Kmod = 0.8; Kh = 1.1 (formula 11.7.2); kcr = 0.71  
 $\tau_{tor,d}/(ksh*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.01 + 0 + 0.02 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
Tx = -0.8; Ty = 321.1; Mt = -1.019

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.078  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$



$K_{mod} = 0.6$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $1289 \leq 172759$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $M_t = -1.012$

## Asta 268: Trave in legno a falda Falda 3 fili 40-41

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 1.064

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{4661^2 + 24509^2} = 24949 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $T_x = -55.9$ ;  $T_y = 294.1$

### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 1.064  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(56893/1324138)^2 + 157050/1456552 + 0.7 \cdot 49262/1456552 = 0.13 \leq 1$  [4.4.7a] Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $M_x = -118.73$ ;  $M_y = -28.966$ ;  $N = -1433.7$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.02 + 0 + 0.02 \leq 1$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $T_x = -55.9$ ;  $T_y = 294.1$ ;  $M_t = 4.331$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.064  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $5582 \leq 230345$  Comb: SLU, 29; Durata minima del carico nella combinazione: media  
 $M_t = 4.385$

## Asta 269: Trave in legno a falda Falda 3 fili 32-34

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 2.644

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1



#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 2.644

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(87651/1324138)^2 + 217744/1456552 + 0.7 \cdot 24541/1456552 = 0.17 \leq 1$  [4.4.7a] Comb: SLU, 30; Durata minima del carico nella combinazione: media

$M_x = 164.614$ ;  $M_y = -14.43$ ;  $N = -2208.8$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.644

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{878^2 + 29100^2} = 29114 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = -10.5$ ;  $T_y = -349.2$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.644

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.02 + 0 + 0.02 \leq 1$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = -10.5$ ;  $T_y = -349.2$ ;  $M_t = -3.292$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.644

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$4262 \leq 230345$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_t = -3.348$

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 1.234

$K_{def} = 0$

$U_{inst,tot} \text{ in } x = 0$

$U_{inst,tot} \text{ in } y = -0.0006$

$U_{inst,tot} = 0.0006$

$L_{uce}/U_{inst,tot} > \text{limite}$

$2.644/0.0006 = 4373.3 > 300$  Comb: SLE rara, 8

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 1.234

$K_{def} = 0$

$U_{inst,var} \text{ in } x = 0$

$U_{inst,var} \text{ in } y = -0.0003$

$U_{inst,var} = 0.0003$

$L_{uce}/U_{inst,var} > \text{limite}$

$2.644/0.0003 = 7782.9 > 300$  Comb: SLE rara, 8

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 1.234

$K_{def} = 0.6$

$U_{fin} \text{ in } x = 0$

$U_{fin} \text{ in } y = -0.0008$

$U_{fin} = 0.0008$

$L_{uce}/U_{fin} > \text{limite}$

$2.644/0.0008 = 3463 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Neve =  $0,500 + 0,500 = 1,000$

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### Asta 270: Trave in legno a falda Falda 3 fili 21-24

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.641



#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 1.641  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $(S_{c,0,d}/f_{c,0,d})^2 + S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(S_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$   
 $(30156/1820690)^2 + 234406/2002759 + 0.7 \cdot 40193/2002759 = 0.13 \leq 1$  [4.4.7a] Comb: SLV, 1; Durata minima del carico nella combinazione: istantaneo  
 $M_x = 177.211$ ;  $M_y = -23.633$ ;  $N = -759.9$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.641  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{v,d} \leq f_{v,d}$   
 $\sqrt{(1123^2 + 18680^2)} = 18714 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $T_x = -13.5$ ;  $T_y = -224.2$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1.641  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0 + 0 + 0.01 \leq 1$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $T_x = -13.5$ ;  $T_y = -224.2$ ;  $M_t = -0.84$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.641  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $3820 \leq 316724$  Comb: SLV, 16; Durata minima del carico nella combinazione: istantaneo  
 $M_t = -3.001$

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 0.766  
 $K_{def} = 0$   
 $U_{inst,tot} \text{ in } x = 0$   
 $U_{inst,tot} \text{ in } y = -0.0001$   
 $U_{inst,tot} = 0.0001$   
 $Luce/U_{inst,tot} > \text{limite}$   
 $1.641/0.0001 = 17550.9 > 300$  Comb: SLE rara, 8

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 0.766  
 $K_{def} = 0$   
 $U_{inst,var} \text{ in } x = 0$   
 $U_{inst,var} \text{ in } y = -0.0001$   
 $U_{inst,var} = 0.0001$   
 $Luce/U_{inst,var} > \text{limite}$   
 $1.641/0.0001 = 32236.2 > 300$  Comb: SLE rara, 8

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 0.766  
 $K_{def} = 0.6$   
 $U_{fin} \text{ in } x = 0$   
 $U_{fin} \text{ in } y = -0.0001$   
 $U_{fin} = 0.0001$   
 $Luce/U_{fin} > \text{limite}$   
 $1.641/0.0001 = 13783.4 > 200$   
Coefficienti combinatori impiegati:  
Pesi strutturali =  $1,000 + 0,600 = 1,600$   
Permanenti portati =  $1,000 + 0,600 = 1,600$   
Neve =  $0,500 + 0,500 = 1,000$



## Asta 271: Trave in legno a falda Falda 3 fili 19-18

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.693

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.693

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(12959/1820690)^2 + 142319/2002759 + 0.7 \cdot 47012/2002759 = 0.09 \leq 1$  [4.4.7a] Comb: SLV, 1; Durata minima del carico nella combinazione: istantaneo

$M_x = 107.593$ ;  $M_y = -27.643$ ;  $N = -326.6$

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.693

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $k_{cr} = 0.71$

$\tau_{v,d} \leq f_{v,d}$

$\sqrt{(1990^2 + 14770^2)} = 14904 \leq 265517$  Comb: SLV, 1; Durata minima del carico nella combinazione: istantaneo

$T_x = 23.9$ ;  $T_y = -177.2$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.693

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{v,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.01 + 0 + 0 \leq 1$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = -37$ ;  $T_y = -107.6$ ;  $M_t = -1.191$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.693

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$1583 \leq 230345$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_t = -1.243$

### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 0.439

$K_{def} = 0$

$U_{inst,tot} \text{ in } x = 0$

$U_{inst,tot} \text{ in } y = 0$

$U_{inst,tot} = 0$

Luce/ $U_{inst,tot} >$  limite

$0.693/0 = 125436.9 > 300$  Comb: SLE rara, 9

### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 0.392

$K_{def} = 0$

$U_{inst,var} \text{ in } x = 0$

$U_{inst,var} \text{ in } y = 0$

$U_{inst,var} = 0$

Luce/ $U_{inst,var} >$  limite

$0.693/0 = 204092.5 > 300$  Comb: SLE rara, 10

### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 0.439

$K_{def} = 0.6$

$U_{fin} \text{ in } x = 0$





Ufin in y = 0  
Ufin = 0  
Luce/Ufin > limite  
 $0.693/0=101805.8 > 200$   
Coefficienti combinatori impiegati:  
Pesi strutturali = 1,000 + 0,600 = 1,600  
Permanenti portati = 1,000 + 0,600 = 1,600  
Neve = 0,500 + 0,500 = 1,000  
Vento = 0,600 + 0,000 = 0,600

Asta 272: Trave in legno a falda Falda 3 fili 49-50

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati generali

Lunghezza = 2.644

Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.644  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_d \leq f_{v,d}$   
 $\sqrt{840^2 + 34648^2} = 34658 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $T_x = -10.1$ ;  $T_y = -415.8$

Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.881  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(46701/1324138)^2 + 263307/1456552 + 0.7 \cdot 6392/1456552 = 0.19 \leq 1$  [4.4.7a] Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $M_x = -199.06$ ;  $M_y = 3.759$ ;  $N = -1176.9$

Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.644  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.02 + 0 + 0.03 \leq 1$  Comb: SLU, 30; Durata minima del carico nella combinazione: media  
 $T_x = -10.3$ ;  $T_y = -411$ ;  $M_t = -3.219$

Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.644  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $4098 \leq 230345$  Comb: SLU, 30; Durata minima del carico nella combinazione: media  
 $M_t = -3.219$

Asta 273: Trave in legno a falda Falda 3 fili 78-79

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati generali

Lunghezza = 0.966

Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300



Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $S_{m,y,d}/f_{m,y,d} + K_{m,z,d}/f_{m,z,d} \leq 1$   
 $K_{m,y,d}/f_{m,y,d} + S_{m,z,d}/f_{m,z,d} \leq 1$   
 $75027/1456552 + 0.7 \cdot 55520/1456552 = 0.08 \leq 1$  (formula 4.4.5a) Comb: SLU, 29; Durata minima del carico nella combinazione: media  
 $M_x = -56.72$ ;  $M_y = -32.646$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.966  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{5335^2 + 12410^2} = 13508 \leq 193103$  Comb: SLU, 29; Durata minima del carico nella combinazione: media  
 $T_x = 64$ ;  $T_y = -148.9$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.03 + 0 + 0 \leq 1$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $T_x = 43.1$ ;  $T_y = 50$ ;  $M_t = -3.742$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.966  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $4763 \leq 172759$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $M_t = -3.742$

### Asta 274: Trave in legno a falda Falda 3 fili 67-68

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.991

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.991  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{3090^2 + 22228^2} = 22442 \leq 193103$  Comb: SLU, 29; Durata minima del carico nella combinazione: media  
 $T_x = 37.1$ ;  $T_y = -266.7$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.465  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $(S_{c,0,d}/f_{c,0,d})^2 + S_{m,y,d}/f_{m,y,d} + K_{m,z,d}/f_{m,z,d} \leq 1$   
 $(S_{c,0,d}/f_{c,0,d})^2 + K_{m,y,d}/f_{m,y,d} + S_{m,z,d}/f_{m,z,d} \leq 1$   
 $(8596/1324138)^2 + 168065/1456552 + 0.7 \cdot 27505/1456552 = 0.13 \leq 1$  [4.4.7a] Comb: SLU, 29; Durata minima del carico nella combinazione: media  
 $M_x = -127.057$ ;  $M_y = -16.173$ ;  $N = -216.6$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1.991



Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.01 + 0 + 0.01 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = 40.8$ ;  $T_y = -261.9$ ;  $M_t = -2.291$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.991  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $2917 \leq 230345$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_t = -2.291$

### Asta 275: Trave in legno a falda Falda 3 fili 58-52

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.644

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.644  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{0^2 + 45035^2} = 45035 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = 0$ ;  $T_y = -540.4$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 2.644  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(26404/1324138)^2 + 655846/1456552 + 0.7 \cdot 7362/1456552 = 0.45 \leq 1$  [4.4.7a] Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_x = 495.819$ ;  $M_y = -4.329$ ;  $N = -665.4$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.644  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.01 + 0 + 0.05 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = 0.4$ ;  $T_y = -540.3$ ;  $M_t = 1.888$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.644  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $2425 \leq 172759$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $M_t = 1.905$

### Asta 276: Trave in legno a falda Falda 3 fili 41-42

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.644



#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.644  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(1595^2 + 34035^2)} = 34072 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $T_x = -19.1$ ;  $T_y = -408.4$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.881  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(63574/1324138)^2 + 255134/1456552 + 0.7 \cdot 19974/1456552 = 0.19 \leq 1$  [4.4.7a] Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $M_x = -192.881$ ;  $M_y = 11.744$ ;  $N = -1602.1$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.644  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.03 + 0 + 0.03 \leq 1$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $T_x = -19.1$ ;  $T_y = -408.4$ ;  $M_t = -5.451$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.644  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $6998 \leq 230345$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $M_t = -5.497$

### Asta 277: Trave in legno a falda Falda 1 fili 92-91

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.422

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.422  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(40^2 + 34600^2)} = 34600 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = 0.5$ ;  $T_y = -415.2$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 2.422  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$



$(Sc,0,d/fc,0,d)^2 + Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$   
 $(13608/1324138)^2 + 335724/1456552 + 0.7*1435/1456552 = 0.23 \leq 1$  [4.4.7a] Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $Mx = 253.807$ ;  $My = 0.844$ ;  $N = -342.9$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.422  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh}*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.01 + 0 + 0.03 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = 0$ ;  $T_y = -414.7$ ;  $M_t = 2.126$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.422  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} * f_{v,d}$   
 $2709 \leq 230345$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_t = 2.128$

### Asta 278: Trave in legno a falda Falda 1 fili 100-99

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.422

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.422  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{8^2 + 34711^2} = 34711 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = -0.1$ ;  $T_y = -416.5$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 2.422  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $(Sc,0,d/fc,0,d)^2 + Sm,y,d/fm,y,d + Km*(Sm,z,d/fm,z,d) \leq 1$   
 $(Sc,0,d/fc,0,d)^2 + Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$   
 $(18931/1324138)^2 + 339669/1456552 + 0.7*1847/1456552 = 0.23 \leq 1$  [4.4.7a] Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $Mx = 256.79$ ;  $My = -1.086$ ;  $N = -477.1$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.422  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh}*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.02 + 0 + 0.03 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = -0.1$ ;  $T_y = -416.5$ ;  $M_t = -2.821$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.422  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} * f_{v,d}$   
 $3592 \leq 230345$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_t = -2.821$



## Asta 279: Trave in legno a falda Falda 1 fili 112-111

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 2.422

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.422

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{378^2 + 29369^2} = 29371 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$T_x = -4.5$ ;  $T_y = -352.4$

### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 2.422

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(18506/1324138)^2 + 255909/1456552 + 0.7 \cdot 11250/1456552 = 0.18 \leq 1$  [4.4.7a] Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_x = 193.467$ ;  $M_y = -6.615$ ;  $N = -466.3$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.422

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.04 + 0 + 0.02 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = -5.7$ ;  $T_y = -352.2$ ;  $M_t = -6.382$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.422

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$8125 \leq 230345$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_t = -6.382$

## Asta 280: Trave in legno a falda Falda 1 fili 119-124

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.292

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$20159/1602207 + 69615/2002759 + 0.7 \cdot 45298/2002759 = 0.06 \leq 1$  [4.4.6a] Comb: SLV, 1; Durata minima del carico nella combinazione: istantaneo

$M_x = 52.629$ ;  $M_y = 26.635$ ;  $N = 508$



#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{13091^2 + 24241^2} = 27550 \leq 265517$  Comb: SLV, 1; Durata minima del carico nella combinazione: istantaneo

$T_x = -157.1$ ;  $T_y = 290.9$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.03 + 0 + 0.01 \leq 1$  Comb: SLV, 1; Durata minima del carico nella combinazione: istantaneo

$T_x = -157.1$ ;  $T_y = 290.9$ ;  $M_t = 7.575$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.292

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$9647 \leq 316724$  Comb: SLV, 2; Durata minima del carico nella combinazione: istantaneo

$M_t = 7.577$

### Asta 281: Trave in legno a falda Falda 1 fili 119-124

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.13

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.13

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{703^2 + 22167^2} = 22179 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = 8.4$ ;  $T_y = -266$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 2.13

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(35066/1324138)^2 + 135345/1456552 + 0.7 \cdot 24484/1456552 = 0.11 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_x = 102.321$ ;  $M_y = 14.396$ ;  $N = -883.7$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.13

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.02 + 0 + 0.01 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = 8.4$ ;  $T_y = -266$ ;  $M_t = -3.045$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.13

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$3876 \leq 230345$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_t = -3.045$



## Asta 282: Trave in legno a falda Falda 1 fili 131-130

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 4.147

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{420^2 + 41360^2} = 41363 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = -5$ ;  $T_y = 496.3$

### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_{m,z,d}/f_{m,z,d} \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_{m,y,d}/f_{m,y,d} + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(37465/1324138)^2 + 364360/1456552 + 0.7 \cdot 17341/1456552 = 0.26 \leq 1$  [4.4.7a] Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_x = 275.456$ ;  $M_y = 10.197$ ;  $N = -944.1$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0 + 0 + 0.05 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$T_x = -5.1$ ;  $T_y = 496.1$ ;  $M_t = 0.268$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 4.147

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$396 \leq 230345$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

$M_t = 0.311$

## Asta 283: Trave in legno a falda Falda 1 fili 140-139

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 4.147

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$





$\sqrt{74^2 + 43049^2} = 43050 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
Tx = 0.9; Ty = 516.6

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 2.212

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.1 (formula 11.7.2)

$(Sc,0,d/fc,0,d)^2 + Sm,y,d/fm,y,d + Km*(Sm,z,d/fm,z,d) \leq 1$

$(Sc,0,d/fc,0,d)^2 + Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$

$(54155/1324138)^2 + 415337/1456552 + 0.7*877/1456552 = 0.29 \leq 1$  [4.4.7a] Comb: SLU, 72; Durata minima del carico nella combinazione: media

Mx = -313.994; My = 0.515; N = -1364.7

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.1 (formula 11.7.2); kcr = 0.71

$\tau_{tor,d}/(ksh*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0+0+0.05 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

Tx = 0.9; Ty = 516.4; Mt = -0.095

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 4.147

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 1.1

$\tau_{tor,d} \leq Ksh * f_{v,d}$

$248 \leq 316724$  Comb: SLV, 10; Durata minima del carico nella combinazione: istantaneo

Mt = -0.195

### Asta 284: Trave in legno a falda Falda 1 fili 146-145

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 4.147

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; kcr = 0.71

$\tau_{d} \leq f_{v,d}$

$\sqrt{587^2 + 39937^2} = 39942 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

Tx = 7; Ty = 479.2

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.1 (formula 11.7.2)

$(Sc,0,d/fc,0,d)^2 + Sm,y,d/fm,y,d + Km*(Sm,z,d/fm,z,d) \leq 1$

$(Sc,0,d/fc,0,d)^2 + Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$

$(36306/1324138)^2 + 358423/1456552 + 0.7*25338/1456552 = 0.26 \leq 1$  [4.4.7a] Comb: SLU, 79; Durata minima del carico nella combinazione: media

Mx = 270.968; My = -14.899; N = -914.9

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.1 (formula 11.7.2); kcr = 0.71

$\tau_{tor,d}/(ksh*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0+0+0.04 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

Tx = 7; Ty = 479.2; Mt = 0.118

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 4.147

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$



$K_{mod} = 0.6$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $353 \leq 172759$  Comb: SLU, 43; Durata minima del carico nella combinazione: permanente  
 $M_t = 0.277$

## Asta 285: Trave in legno a falda Falda 1 fili 161-160

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 2.421

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.421  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\text{Sqrt}(15^2 + 24935^2) = 24935 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $T_x = 0.2$ ;  $T_y = -299.2$

### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 2.421  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(41597/1324138)^2 + 163851/1456552 + 0.7 \cdot 3512/1456552 = 0.12 \leq 1$  [4.4.7a] Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $M_x = 123.871$ ;  $M_y = -2.065$ ;  $N = -1048.3$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.421  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.03 + 0 + 0.02 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = 1.3$ ;  $T_y = -298.7$ ;  $M_t = 5.826$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.421  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $7417 \leq 230345$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_t = 5.826$

## Asta 286: Trave in legno a falda Falda 1 fili 170-169

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 2.421

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1



#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.421

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{147^2 + 30668^2} = 30668 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = -1.8$ ;  $T_y = -368$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 2.421

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(8293/1324138)^2 + 278603/1456552 + 0.7 \cdot 8330/1456552 = 0.2 \leq 1$  [4.4.7a] Comb: SLU, 72; Durata minima del carico nella combinazione: media

$M_x = 210.624$ ;  $M_y = -4.898$ ;  $N = -209$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.421

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.03 + 0 + 0.03 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = -1.8$ ;  $T_y = -368$ ;  $M_t = 5.989$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.421

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$7624 \leq 230345$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_t = 5.989$

### Asta 287: Trave in legno a falda Falda 1 fili 188-187

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.421

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.421

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{730^2 + 33215^2} = 33223 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$T_x = -8.8$ ;  $T_y = -398.6$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 2.421

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(33600/1324138)^2 + 319799/1456552 + 0.7 \cdot 16683/1456552 = 0.23 \leq 1$  [4.4.7a] Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_x = 241.768$ ;  $M_y = -9.81$ ;  $N = -846.7$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.421

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.02 + 0 + 0.03 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media



Tx = -8.3; Ty = -398.3; Mt = -3.451

**Verifica torsione D.M. 17-01-18 §4.4.8.1.10**

Sezione ad ascissa 2.421  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $4394 \leq 230345$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_t = -3.451$

**Asta 288: Trave in legno a falda Falda 1 fili 179-178**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati generali**

Lunghezza = 2.421

**Caratteristiche della sezione**

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

**Verifica taglio D.M. 17-01-18 §4.4.8.1.9**

Sezione ad ascissa 2.421  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{643^2 + 35311^2} = 35317 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = -7.7$ ;  $T_y = -423.7$

**Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8**

Sezione ad ascissa 2.421  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(18455/1324138)^2 + 353052/1456552 + 0.7 \cdot 13868/1456552 = 0.25 \leq 1$  [4.4.7a] Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_x = 266.907$ ;  $M_y = -8.155$ ;  $N = -465.1$

**Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11**

Sezione ad ascissa 2.421  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.01 + 0 + 0.03 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = -7.7$ ;  $T_y = -423.7$ ;  $M_t = 1.68$

**Verifica torsione D.M. 17-01-18 §4.4.8.1.10**

Sezione ad ascissa 2.421  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $2138 \leq 230345$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_t = 1.68$

**Asta 332: Trave in legno a falda Falda 6 fili 236-233**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati generali**

Lunghezza = 1.779

**Caratteristiche della sezione**

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300



Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.779  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_d \leq f_{v,d}$   
 $\sqrt{981^2 + 27657^2} = 27674 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = 11.8$ ;  $T_y = -331.9$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 1.779  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(40795/1324138)^2 + 255333/1456552 + 0.7 \cdot 21124/1456552 = 0.19 \leq 1$  [4.4.7a] Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $M_x = 193.032$ ;  $M_y = 12.421$ ;  $N = -1028$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1.779  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.02 + 0 + 0.02 \leq 1$  Comb: SLU, 29; Durata minima del carico nella combinazione: media  
 $T_x = 11.1$ ;  $T_y = -330.1$ ;  $M_t = -3.374$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.779  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $4295 \leq 230345$  Comb: SLU, 29; Durata minima del carico nella combinazione: media  
 $M_t = -3.374$

### Asta 333: Trave in legno a falda Falda 6 fili 242-239

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.832

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.832  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_d \leq f_{v,d}$   
 $\sqrt{4676^2 + 28397^2} = 28779 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = 56.1$ ;  $T_y = -340.8$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.832  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(60656/1324138)^2 + 211174/1456552 + 0.7 \cdot 24680/1456552 = 0.16 \leq 1$  [4.4.7a] Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $M_x = 159.648$ ;  $M_y = 14.512$ ;  $N = -1528.5$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.832



Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.06 + 0 + 0.02 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = 56.1$ ;  $T_y = -340.8$ ;  $M_t = -10.901$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.832  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $13878 \leq 230345$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $M_t = -10.901$

### Asta 334: Trave in legno a falda Falda 4 fili 147-314

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 3.679

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{412^2 + 48364^2} = 48365 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = 4.9$ ;  $T_y = 580.4$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(39835/1324138)^2 + 571062/1456552 + 0.7 \cdot 15227/1456552 = 0.4 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_x = 431.723$ ;  $M_y = -8.954$ ;  $N = -1003.8$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.03 + 0 + 0.06 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = 4.9$ ;  $T_y = 580.4$ ;  $M_t = -5.918$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 3.679  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $7534 \leq 230345$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_t = -5.918$

### Asta 335: Trave in legno a falda Falda 4 fili 315-316

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 3.679



#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{478^2 + 44357^2} = 44360 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = 5.7$ ;  $T_y = 532.3$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(18026/1324138)^2 + 636704/1456552 + 0.7 \cdot 15553/1456552 = 0.44 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_x = 481.348$ ;  $M_y = -9.145$ ;  $N = -454.3$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.05 + 0 + 0.05 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = 6$ ;  $T_y = 532.3$ ;  $M_t = -8.857$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 3.679

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$11276 \leq 230345$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_t = -8.857$

### Asta 336: Trave in legno a falda Falda 4 fili 141-313

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 3.68

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{20^2 + 50294^2} = 50294 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = 0.2$ ;  $T_y = 603.5$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$



$(Sc,0,d/fc,0,d)^2 + Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$   
 $(37563/1324138)^2 + 601480/1456552 + 0.7*836/1456552 = 0.41 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $Mx = 454.719$ ;  $My = -0.491$ ;  $N = -946.6$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh}*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0+0+0.07 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = 0.2$ ;  $T_y = 603.5$ ;  $M_t = -0.453$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 3.68  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} * f_{v,d}$   
 $581 \leq 230345$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $M_t = -0.456$

### Asta 337: Trave in legno a falda Falda 4 fili 132-312

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 3.68

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(476^2 + 48690^2)} = 48693 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = -5.7$ ;  $T_y = 584.3$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $(Sc,0,d/fc,0,d)^2 + Sm,y,d/fm,y,d + Km*(Sm,z,d/fm,z,d) \leq 1$   
 $(Sc,0,d/fc,0,d)^2 + Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$   
 $(38416/1324138)^2 + 570972/1456552 + 0.7*17939/1456552 = 0.4 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $Mx = 431.655$ ;  $My = 10.548$ ;  $N = -968.1$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh}*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.03+0+0.06 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = -5.7$ ;  $T_y = 584.3$ ;  $M_t = 5.18$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 3.68  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} * f_{v,d}$   
 $6595 \leq 230345$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_t = 5.18$





## Asta 338: Trave in legno a falda Falda 4 fili 120-311

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 3.68

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{(526^2 + 43792^2)} = 43795 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = -6.3$ ;  $T_y = 525.5$

### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(31015/1324138)^2 + 549091/1456552 + 0.7 \cdot 17548/1456552 = 0.39 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_x = 415.113$ ;  $M_y = 10.318$ ;  $N = -781.6$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.05 + 0 + 0.05 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = -6.3$ ;  $T_y = 525.5$ ;  $M_t = 8.792$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 3.68

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$11194 \leq 230345$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_t = 8.792$

## Asta 503: Trave in legno a falda Falda 1 fili 91-90

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 1.726

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$9919/1165241 + 323176/1456552 + 0.7 \cdot 7148/1456552 = 0.23 \leq 1$  [4.4.6a] Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_x = 244.321$ ;  $M_y = -4.203$ ;  $N = 250$



#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{349^2 + 25927^2} = 25929 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = 4.2$ ;  $T_y = 311.1$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0 + 0 + 0.02 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = 4.2$ ;  $T_y = 311.1$ ;  $M_t = -0.46$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.726

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$1423 \leq 316724$  Comb: SLV, 8; Durata minima del carico nella combinazione: istantaneo

$M_t = -1.118$

### Asta 504: Trave in legno a falda Falda 1 fili 99-98

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.726

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$S_{m,y,d}/f_{m,y,d} + K_{m,z,d}/f_{m,z,d} \leq 1$

$K_{m,y,d}/f_{m,y,d} + S_{m,z,d}/f_{m,z,d} \leq 1$

$329514/1456552 + 0.7 \cdot 10514/1456552 = 0.23 \leq 1$  (formula 4.4.5a) Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_x = 249.113$ ;  $M_y = -6.182$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{677^2 + 28507^2} = 28515 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = 8.1$ ;  $T_y = 342.1$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0 + 0 + 0.02 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = 8.1$ ;  $T_y = 342.1$ ;  $M_t = 0.121$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.726

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$1140 \leq 316724$  Comb: SLV, 9; Durata minima del carico nella combinazione: istantaneo

$M_t = 0.896$



## Asta 505: Trave in legno a falda Falda 1 fili 111-110

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 1.726

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{400^2 + 26651^2} = 26654 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = 4.8$ ;  $T_y = 319.8$

### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(9106/1324138)^2 + 250330/1456552 + 0.7 \cdot 6102/1456552 = 0.17 \leq 1$  [4.4.7a] Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_x = 189.25$ ;  $M_y = -3.588$ ;  $N = -229.5$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0 + 0 + 0.02 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = 4.8$ ;  $T_y = 319.8$ ;  $M_t = 0.431$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.726

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$1108 \leq 316724$  Comb: SLV, 9; Durata minima del carico nella combinazione: istantaneo

$M_t = 0.87$

## Asta 506: Trave in legno a falda Falda 1 fili 124-123

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.551

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$



$\sqrt{18977^2 + 7214^2} = 20302 \leq 265517$  Comb: SLV, 15; Durata minima del carico nella combinazione: istantaneo  
Tx = 227.7; Ty = 86.6

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 1.1; Kh = 1.1 (formula 11.7.2)

$(Sc,0,d/fc,0,d)^2 + Sm,y,d/fm,y,d + Km*(Sm,z,d/fm,z,d) \leq 1$

$(Sc,0,d/fc,0,d)^2 + Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$

$(41997/1820690)^2 + 0.7*58238/2002759 + 115788/2002759 = 0.08 \leq 1$  [4.4.7b] Comb: SLV, 13; Durata minima del carico nella combinazione: istantaneo

Mx = 44.028; My = -68.084; N = -1058.3

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 1.1; Kh = 1.1 (formula 11.7.2); kcr = 0.71

$\tau_{tor,d}/(ksh*fv,d) + (\tau_{y,d}/fv,d)^2 + (\tau_{z,d}/fv,d)^2 \leq 1$

$0.02 + 0 + 0 \leq 1$  Comb: SLV, 13; Durata minima del carico nella combinazione: istantaneo

Tx = 187.6; Ty = 128.9; Mt = 3.876

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.551

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 1.1

$\tau_{tor,d} \leq Ksh * fv,d$

$5406 \leq 316724$  Comb: SLV, 4; Durata minima del carico nella combinazione: istantaneo

Mt = -4.246

### Asta 507: Trave in legno a falda Falda 1 fili 124-123

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.391

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0.391

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 1.1; Kh = 1.1 (formula 11.7.2)

$St,0,d/ft,0,d + Sm,y,d/fm,y,d + Km*(Sm,z,d/fm,z,d) \leq 1$

$St,0,d/ft,0,d + Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$

$39808/1602207 + 0.7*29935/2002759 + 53827/2002759 = 0.06 \leq 1$  [4.4.6b] Comb: SLV, 2; Durata minima del carico nella combinazione: istantaneo

Mx = 22.631; My = -31.65; N = 1003.2

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 1.1; kcr = 0.71

$\tau_{d} \leq fv,d$

$\sqrt{15899^2 + 2318^2} = 16067 \leq 265517$  Comb: SLV, 15; Durata minima del carico nella combinazione: istantaneo

Tx = 190.8; Ty = 27.8

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 1.1; Kh = 1.1 (formula 11.7.2); kcr = 0.71

$\tau_{tor,d}/(ksh*fv,d) + (\tau_{y,d}/fv,d)^2 + (\tau_{z,d}/fv,d)^2 \leq 1$

$0.01 + 0 + 0 \leq 1$  Comb: SLV, 15; Durata minima del carico nella combinazione: istantaneo

Tx = 190.8; Ty = 27.8; Mt = 1.954

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.391

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$



$K_{mod} = 1.1$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $2817 \leq 316724 \text{ Comb: SLV, 2; Durata minima del carico nella combinazione: istantaneo}$   
 $M_t = -2.213$

**Asta 508: Trave in legno a falda Falda 1 fili 124-123**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati generali**

Lunghezza = 0.391

**Caratteristiche della sezione**

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

**Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7**

Sezione ad ascissa 0.391  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $St_{0,d}/ft_{0,d} + Sm_{y,d}/fm_{y,d} + Km \cdot (Sm_{z,d}/fm_{z,d}) \leq 1$   
 $St_{0,d}/ft_{0,d} + Km \cdot (Sm_{y,d}/fm_{y,d}) + Sm_{z,d}/fm_{z,d} \leq 1$   
 $29745/1602207 + 0.7 \cdot 25017/2002759 + 69569/2002759 = 0.06 \leq 1$  [4.4.6b] Comb: SLV, 2; Durata minima del carico nella combinazione: istantaneo  
 $M_x = 18.913$ ;  $M_y = -40.906$ ;  $N = 749.6$

**Verifica taglio D.M. 17-01-18 §4.4.8.1.9**

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(20211^2 + 3610^2)} = 20531 \leq 265517$  Comb: SLV, 13; Durata minima del carico nella combinazione: istantaneo  
 $T_x = 242.5$ ;  $T_y = 43.3$

**Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11**

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.01 + 0 + 0 \leq 1$  Comb: SLV, 15; Durata minima del carico nella combinazione: istantaneo  
 $T_x = 211.8$ ;  $T_y = 69.2$ ;  $M_t = 2.456$

**Verifica torsione D.M. 17-01-18 §4.4.8.1.10**

Sezione ad ascissa 0.391  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $3424 \leq 316724$  Comb: SLV, 2; Durata minima del carico nella combinazione: istantaneo  
 $M_t = -2.69$

**Asta 509: Trave in legno a falda Falda 1 fili 124-123**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati generali**

Lunghezza = 0.391

**Caratteristiche della sezione**

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1



#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_{m^*}(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_{m^*}(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$7488/1602207 + 0.7 \cdot 54107/2002759 + 99844/2002759 = 0.07 \leq 1$  [4.4.6b] Comb: SLV, 13; Durata minima del carico nella combinazione: istantaneo

$M_x = -40.905$ ;  $M_y = -58.708$ ;  $N = 188.7$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.391

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $k_{cr} = 0.71$

$\tau_{t,d} \leq f_{v,d}$

$\sqrt{26808^2 + 14788^2} = 30617 \leq 265517$  Comb: SLV, 13; Durata minima del carico nella combinazione: istantaneo

$T_x = 321.7$ ;  $T_y = -177.5$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.391

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.02 + 0.01 + 0 \leq 1$  Comb: SLV, 15; Durata minima del carico nella combinazione: istantaneo

$T_x = 267$ ;  $T_y = -116$ ;  $M_t = 4.991$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.391

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$7276 \leq 316724$  Comb: SLV, 2; Durata minima del carico nella combinazione: istantaneo

$M_t = -5.715$

### Asta 510: Trave in legno a falda Falda 1 fili 160-159

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.726

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$\sigma_{m,y,d}/f_{m,y,d} + K_{m^*}(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$K_{m^*}(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$160393/1456552 + 0.7 \cdot 15570/1456552 = 0.12 \leq 1$  (formula 4.4.5a) Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_x = 121.257$ ;  $M_y = -9.155$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{t,d} \leq f_{v,d}$

$\sqrt{1052^2 + 18573^2} = 18603 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = 12.6$ ;  $T_y = 222.9$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0 + 0 + 0.01 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media



Tx = 12.7; Ty = 222.8; Mt = -0.131

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.726

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 1.1

$\tau_{\text{tor,d}} \leq K_{\text{sh}} \cdot f_{v,d}$

981  $\leq$  316724 Comb: SLV, 2; Durata minima del carico nella combinazione: istantaneo

Mt = -0.771

### Asta 511: Trave in legno a falda Falda 1 fili 169-168

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.726

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; kcr = 0.71

$\tau_{d} \leq f_{v,d}$

$\sqrt{136^2 + 26101^2} = 26101 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

Tx = 1.6; Ty = 313.2

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.1 (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(8782/1324138)^2 + 274380/1456552 + 0.7 \cdot 5195/1456552 = 0.19 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media

Mx = 207.431; My = -3.055; N = -221.3

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.1 (formula 11.7.2); kcr = 0.71

$\tau_{\text{tor,d}}/(k_{\text{sh}} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

0+0+0.02  $\leq$  1 Comb: SLU, 72; Durata minima del carico nella combinazione: media

Tx = -0.7; Ty = 312.3; Mt = 0.088

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.726

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 1.1

$\tau_{\text{tor,d}} \leq K_{\text{sh}} \cdot f_{v,d}$

958  $\leq$  316724 Comb: SLV, 2; Durata minima del carico nella combinazione: istantaneo

Mt = -0.752

### Asta 512: Trave in legno a falda Falda 1 fili 187-186

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.726

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300



Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $S_{m,y,d}/f_{m,y,d} + K_{m,z,d}/f_{m,z,d} \leq 1$   
 $K_{m,y,d}/f_{m,y,d} + S_{m,z,d}/f_{m,z,d} \leq 1$   
 $307860/1456552 + 0.7 \cdot 7756/1456552 = 0.22 \leq 1$  (formula 4.4.5a) Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_x = 232.742$ ;  $M_y = -4.56$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{v,d} \leq f_{v,d}$   
 $\sqrt{396^2 + 23878^2} = 23881 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = 4.7$ ;  $T_y = 286.5$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{v,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0 + 0 + 0.02 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = 4.7$ ;  $T_y = 286.5$ ;  $M_t = 0.429$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.726  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $1656 \leq 316724$  Comb: SLV, 11; Durata minima del carico nella combinazione: istantaneo  
 $M_t = 1.301$

### Asta 513: Trave in legno a falda Falda 1 fili 178-177

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.726

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $S_{m,y,d}/f_{m,y,d} + K_{m,z,d}/f_{m,z,d} \leq 1$   
 $K_{m,y,d}/f_{m,y,d} + S_{m,z,d}/f_{m,z,d} \leq 1$   
 $343490/1456552 + 0.7 \cdot 4775/1456552 = 0.24 \leq 1$  (formula 4.4.5a) Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_x = 259.679$ ;  $M_y = -2.807$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{v,d} \leq f_{v,d}$   
 $\sqrt{109^2 + 28950^2} = 28950 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = 1.3$ ;  $T_y = 347.4$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0





Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0+0+0.02 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = 1.3$ ;  $T_y = 347.4$ ;  $M_t = 0.107$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.726  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $1099 \leq 316724$  Comb: SLV, 11; Durata minima del carico nella combinazione: istantaneo  
 $M_t = 0.863$

### Asta 514: Trave in legno a falda Falda 3 fili 12-51

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.922

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $\sigma_{t,0,d}/f_{t,0,d} + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $46996/1160960+38238/1451200+0.7 \cdot 1780/1451200=0.07 \leq 1$  [4.4.6a] Comb: SLU, 29; Durata minima del carico nella combinazione: media  
 $M_x = 58.733$ ;  $M_y = 1.823$ ;  $N = 1804.6$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{39^2+5198^2} = 5198 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = -0.7$ ;  $T_y = 95$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0+0+0 \leq 1$  Comb: SLV, 16; Durata minima del carico nella combinazione: istantaneo  
 $T_x = 15.3$ ;  $T_y = 57.7$ ;  $M_t = -1.787$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.922  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $1259 \leq 325259$  Comb: SLV, 16; Durata minima del carico nella combinazione: istantaneo  
 $M_t = -1.787$

### Asta 515: Trave in legno a falda Falda 3 fili 12-51

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.266



#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 1.266

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.096$  (formula 11.7.2)

$St_{0,d}/ft_{0,d} + Sm_{y,d}/fm_{y,d} + Km \cdot (Sm_{z,d}/fm_{z,d}) \leq 1$

$St_{0,d}/ft_{0,d} + Km \cdot (Sm_{y,d}/fm_{y,d}) + Sm_{z,d}/fm_{z,d} \leq 1$

$47486/1596320 + 24758/1995400 + 0.7 \cdot 11847/1995400 = 0.05 \leq 1$  [4.4.6a] Comb: SLV, 13; Durata minima del carico nella combinazione: istantaneo

$M_x = 38.028$ ;  $M_y = 12.131$ ;  $N = 1823.5$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{48^2 + 5204^2} = 5205 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$T_x = -0.9$ ;  $T_y = 95.2$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1.266

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.02 + 0 + 0 \leq 1$  Comb: SLV, 16; Durata minima del carico nella combinazione: istantaneo

$T_x = 17.5$ ;  $T_y = -25.8$ ;  $M_t = -9.037$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.266

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$6369 \leq 325259$  Comb: SLV, 16; Durata minima del carico nella combinazione: istantaneo

$M_t = -9.037$

### Asta 516: Trave in legno a falda Falda 3 fili 12-51

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.309

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 1.309

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$St_{0,d}/ft_{0,d} + Sm_{y,d}/fm_{y,d} + Km \cdot (Sm_{z,d}/fm_{z,d}) \leq 1$

$St_{0,d}/ft_{0,d} + Km \cdot (Sm_{y,d}/fm_{y,d}) + Sm_{z,d}/fm_{z,d} \leq 1$

$15022/1160960 + 62298/1451200 + 0.7 \cdot 54566/1451200 = 0.08 \leq 1$  [4.4.6a] Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_x = 95.69$ ;  $M_y = -55.876$ ;  $N = 576.8$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.309

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$



$\tau_{d} \leq f_{v,d}$

$\text{Sqrt}(3516^2 + 5869^2) = 6842 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = -64.3$ ;  $T_y = -107.3$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1.309

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.04 + 0 + 0 \leq 1$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = -64.3$ ;  $T_y = -107.3$ ;  $M_t = -13.213$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.309

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$9312 \leq 236552$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$M_t = -13.213$

### Asta 517: Trave in legno a falda Falda 3 fili 12-51

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.096

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$34836/1160960 + 97750/1451200 + 0.7 \cdot 50653/1451200 = 0.12 \leq 1$  [4.4.6a] Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_x = -150.144$ ;  $M_y = 51.869$ ;  $N = 1337.7$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.096

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\text{Sqrt}(6321^2 + 4762^2) = 7915 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = -115.6$ ;  $T_y = -87.1$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1.096

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.01 + 0 + 0 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = -115.6$ ;  $T_y = -87.1$ ;  $M_t = 3.648$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.096

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$2571 \leq 236552$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_t = 3.648$



## Asta 518: Trave in legno a falda Falda 3 fili 12-51

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.26

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0.26

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$13495/1160960 + 0.7 \cdot 64440/1451200 + 144414/1451200 = 0.14 \leq 1$  [4.4.6b] Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_x = -98.98$ ;  $M_y = 147.88$ ;  $N = 518.2$

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{v,d} \leq f_{v,d}$

$\sqrt{41453^2 + 8859^2} = 42389 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = 758$ ;  $T_y = 162$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.17 + 0.05 + 0 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = 758$ ;  $T_y = 162$ ;  $M_t = -55.429$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.26

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$39068 \leq 236552$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_t = -55.435$

## Asta 519: Trave in legno a falda Falda 3 fili 12-51

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.959

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{v,d} \leq f_{v,d}$

$\sqrt{10654^2 + 7195^2} = 12856 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$T_x = -194.8$ ;  $T_y = 131.6$



#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.959

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(11507/1324138)^2 + 0.7 \cdot 65835/1451200 + 88680/1451200 = 0.09 \leq 1$  [4.4.7b] Comb: SLU, 72; Durata minima del carico nella combinazione: media

$M_x = -101.122$ ;  $M_y = -90.808$ ;  $N = -441.9$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.04 + 0 + 0 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = -194.5$ ;  $T_y = 131.1$ ;  $M_t = 15.021$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.959

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$10586 \leq 236552$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_t = 15.021$

### Asta 520: Trave in legno a falda Falda 3 fili 12-51

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.358

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{(24278^2 + 4732^2)} = 24735 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = 443.9$ ;  $T_y = 86.5$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.358

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(27233/1324138)^2 + 0.7 \cdot 44154/1451200 + 109264/1451200 = 0.1 \leq 1$  [4.4.7b] Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_x = -67.821$ ;  $M_y = 111.887$ ;  $N = -1045.8$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.16 + 0.02 + 0 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = 443.9$ ;  $T_y = 86.5$ ;  $M_t = -54.242$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.358

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$38258 \leq 236552$  Comb: SLU, 71; Durata minima del carico nella combinazione: media



Mt = -54.286

## Asta 521: Trave in legno a falda Falda 3 fili 12-51

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.855

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.855

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{6858^2 + 11116^2} = 13061 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = -125.4$ ;  $T_y = -203.3$

### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.855

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(41840/1324138)^2 + 116930/1451200 + 0.7 \cdot 37894/1451200 = 0.1 \leq 1$  [4.4.7a] Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_x = 179.604$ ;  $M_y = -38.804$ ;  $N = -1606.6$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.855

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.12 + 0 + 0 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$T_x = -128.2$ ;  $T_y = -199.3$ ;  $M_t = 40.512$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.855

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$28551 \leq 236552$  Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_t = 40.512$

## Asta 522: Trave in legno a falda Falda 6 fili 271-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.643

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)



$St_{0,d}/ft_{0,d} + Sm_{y,d}/fm_{y,d} + Km*(Sm_{z,d}/fm_{z,d}) \leq 1$   
 $St_{0,d}/ft_{0,d} + Km*(Sm_{y,d}/fm_{y,d}) + Sm_{z,d}/fm_{z,d} \leq 1$   
 $58114/1160960+53912/1451200+0.7*3437/1451200=0.09 \leq 1$  [4.4.6a] Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $Mx = 82.809$ ;  $My = 3.52$ ;  $N = 2231.6$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(1252^2+7186^2)} = 7295 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = -22.9$ ;  $T_y = 131.4$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh}*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0+0+0 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = -22.9$ ;  $T_y = 131.4$ ;  $M_t = -0.951$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.643  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} * f_{v,d}$   
 $670 \leq 236552$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $M_t = -0.951$

### Asta 523: Trave in legno a falda Falda 6 fili 271-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.36

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0.36  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $St_{0,d}/ft_{0,d} + Sm_{y,d}/fm_{y,d} + Km*(Sm_{z,d}/fm_{z,d}) \leq 1$   
 $St_{0,d}/ft_{0,d} + Km*(Sm_{y,d}/fm_{y,d}) + Sm_{z,d}/fm_{z,d} \leq 1$   
 $57696/1160960+0.7*14085/1451200+26743/1451200=0.07 \leq 1$  [4.4.6b] Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $Mx = 21.635$ ;  $My = 27.385$ ;  $N = 2215.5$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(5455^2+10673^2)} = 11987 \leq 265517$  Comb: SLV, 13; Durata minima del carico nella combinazione: istantaneo  
 $T_x = 99.7$ ;  $T_y = 195.2$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.36  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh}*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.01+0+0 \leq 1$  Comb: SLV, 3; Durata minima del carico nella combinazione: istantaneo  
 $T_x = -28.1$ ;  $T_y = -155.3$ ;  $M_t = 4.489$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.36



Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $3163 \leq 325259$  Comb: SLV, 3; Durata minima del carico nella combinazione: istantaneo  
 $M_t = 4.489$

## Asta 524: Trave in legno a falda Falda 6 fili 271-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.941

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0.941

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$54509/1160960 + 0.7 \cdot 4072/1451200 + 48249/1451200 = 0.08 \leq 1$  [4.4.6b] Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_x = -6.254$ ;  $M_y = -49.407$ ;  $N = 2093.1$

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{t,d} \leq f_{v,d}$

$\sqrt{4370^2 + 4552^2} = 6310 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = -79.9$ ;  $T_y = 83.2$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{t,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.02 + 0 + 0 \leq 1$  Comb: SLV, 14; Durata minima del carico nella combinazione: istantaneo

$T_x = -67.8$ ;  $T_y = 31.2$ ;  $M_t = -9.51$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.941

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$6702 \leq 325259$  Comb: SLV, 14; Durata minima del carico nella combinazione: istantaneo

$M_t = -9.51$

## Asta 525: Trave in legno a falda Falda 6 fili 271-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.288

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1





#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0.288

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$St_{0,d}/ft_{0,d} + Sm_{y,d}/fm_{y,d} + Km*(Sm_{z,d}/fm_{z,d}) \leq 1$

$St_{0,d}/ft_{0,d} + Km*(Sm_{y,d}/fm_{y,d}) + Sm_{z,d}/fm_{z,d} \leq 1$

$41774/1160960 + 0.7*3098/1451200 + 52125/1451200 = 0.07 \leq 1$  [4.4.6b] Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_x = -4.759$ ;  $M_y = 53.376$ ;  $N = 1604.1$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{(19675^2 + 2027^2)} = 19779 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = 359.8$ ;  $T_y = 37.1$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh}*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.04 + 0 + 0 \leq 1$  Comb: SLV, 16; Durata minima del carico nella combinazione: istantaneo

$T_x = 341.1$ ;  $T_y = 157.6$ ;  $M_t = -19.163$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.288

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} * f_{v,d}$

$13506 \leq 325259$  Comb: SLV, 16; Durata minima del carico nella combinazione: istantaneo

$M_t = -19.163$

### Asta 526: Trave in legno a falda Falda 6 fili 271-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.109

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 1.109

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$St_{0,d}/ft_{0,d} + Sm_{y,d}/fm_{y,d} + Km*(Sm_{z,d}/fm_{z,d}) \leq 1$

$St_{0,d}/ft_{0,d} + Km*(Sm_{y,d}/fm_{y,d}) + Sm_{z,d}/fm_{z,d} \leq 1$

$32350/1160960 + 45936/1451200 + 0.7*44791/1451200 = 0.08 \leq 1$  [4.4.6a] Comb: SLU, 71; Durata minima del carico nella combinazione: media

$M_x = 70.558$ ;  $M_y = -45.866$ ;  $N = 1242.2$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.109

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{(3755^2 + 5653^2)} = 6786 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = -68.7$ ;  $T_y = -103.4$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1.109

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh}*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.03 + 0 + 0 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media



Tx = -69.7; Ty = -102.4; Mt = 10.321

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.109

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

7273 <= 236552 Comb: SLU, 71; Durata minima del carico nella combinazione: media

Mt = 10.321

### Asta 527: Trave in legno a falda Falda 6 fili 271-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.17

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.17

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; kcr = 0.71

$\tau_{d} \leq f_{v,d}$

$\sqrt{16233^2 + 1935^2} = 16348 \leq 193103$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

Tx = 296.8; Ty = -35.4

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.17

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.096 (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(19170/1324138)^2 + 0.7 \cdot 74296/1451200 + 118539/1451200 = 0.12 \leq 1$  [4.4.7b] Comb: SLU, 71; Durata minima del carico nella combinazione: media

Mx = 114.118; My = 121.384; N = -736.1

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.17

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.096 (formula 11.7.2); kcr = 0.71

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.11 + 0.01 + 0 \leq 1$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

Tx = 296.8; Ty = -35.4; Mt = 35.328

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.17

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

24921 <= 236552 Comb: SLU, 72; Durata minima del carico nella combinazione: media

Mt = 35.361

### Asta 528: Trave in legno a falda Falda 6 fili 271-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.179

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300



Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $\sigma_{t,0,d}/f_{t,0,d} + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $42911/1160960 + 106784/1451200 + 0.7 \cdot 52652/1451200 = 0.14 \leq 1$  [4.4.6a] Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $M_x = -164.021$ ;  $M_y = 53.916$ ;  $N = 1647.8$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.179  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{t,d} \leq f_{v,d}$   
 $\sqrt{4945^2 + 3976^2} = 6345 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = -90.4$ ;  $T_y = -72.7$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{t,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.01 + 0 + 0 \leq 1$  Comb: SLV, 4; Durata minima del carico nella combinazione: istantaneo  
 $T_x = -52.1$ ;  $T_y = 47.2$ ;  $M_t = -2.462$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.179  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $1735 \leq 325259$  Comb: SLV, 4; Durata minima del carico nella combinazione: istantaneo  
 $M_t = -2.462$

### Asta 529: Trave in legno a falda Falda 6 fili 271-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.196

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{t,d} \leq f_{v,d}$   
 $\sqrt{3550^2 + 11871^2} = 12390 \leq 193103$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = -64.9$ ;  $T_y = 217.1$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 1.196  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(8800/1324138)^2 + 101859/1451200 + 0.7 \cdot 36377/1451200 = 0.09 \leq 1$  [4.4.7a] Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $M_x = -156.455$ ;  $M_y = -37.25$ ;  $N = -337.9$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0



Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.02 + 0 + 0 \leq 1$  Comb: SLU, 30; Durata minima del carico nella combinazione: media  
 $T_x = -62.8$ ;  $T_y = 213.4$ ;  $M_t = 5.14$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.196  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $3622 \leq 236552$  Comb: SLU, 30; Durata minima del carico nella combinazione: media  
 $M_t = 5.14$

### Asta 530: Trave in legno a falda Falda 6 fili 271-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.263

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.263  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(1167^2 + 5316^2)} = 5443 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $T_x = 21.3$ ;  $T_y = -97.2$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 1.263  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(45035/1324138)^2 + 74642/1451200 + 0.7 \cdot 9179/1451200 = 0.06 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_x = 114.651$ ;  $M_y = 9.4$ ;  $N = -1729.3$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1.263  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.04 + 0 + 0 \leq 1$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $T_x = 22.8$ ;  $T_y = -94.2$ ;  $M_t = -14.264$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.263  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $10053 \leq 236552$  Comb: SLU, 71; Durata minima del carico nella combinazione: media  
 $M_t = -14.264$

### Asta 799: Trave in legno a falda Falda 4 fili 287-202

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.994



#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.994  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{630^2 + 9693^2} = 9714 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = -11.5$ ;  $T_y = -177.3$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.994  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(7469/1324138)^2 + 171109/1451200 + 0.7 \cdot 30654/1451200 = 0.13 \leq 1$  [4.4.7a] Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $M_x = 262.823$ ;  $M_y = -31.389$ ;  $N = -286.8$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.994  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.02 + 0 + 0 \leq 1$  Comb: SLU, 43; Durata minima del carico nella combinazione: permanente  
 $T_x = -1.4$ ;  $T_y = -79.8$ ;  $M_t = 4.116$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.994  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $2901 \leq 177414$  Comb: SLU, 43; Durata minima del carico nella combinazione: permanente  
 $M_t = 4.116$

### Asta 800: Trave in legno a falda Falda 4 fili 287-202

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.84

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $\sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $283952/1451200 + 0.7 \cdot 118983/1451200 = 0.25 \leq 1$  (formula 4.4.5a) Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $M_x = 436.151$ ;  $M_y = -121.839$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$



$\tau_{d} \leq f_{v,d}$

$\text{Sqrt}(7419^2 + 14205^2) = 16025 \leq 193103$  Comb: SLU, 30; Durata minima del carico nella combinazione: media

$T_x = -135.7$ ;  $T_y = -259.7$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.11 + 0 + 0 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = -144.9$ ;  $T_y = -202.6$ ;  $M_t = 35.499$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$25018 \leq 236552$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_t = 35.499$

### Asta 801: Trave in legno a falda Falda 4 fili 287-202

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.624

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 0.624

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$

$K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$

$649295/1451200 + 0.7 \cdot 158800/1451200 = 0.52 \leq 1$  (formula 4.4.5a) Comb: SLU, 30; Durata minima del carico nella combinazione: media

$M_x = 997.316$ ;  $M_y = -162.611$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.624

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\text{Sqrt}(4396^2 + 49410^2) = 49605 \leq 193103$  Comb: SLU, 30; Durata minima del carico nella combinazione: media

$T_x = -80.4$ ;  $T_y = -903.5$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.624

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.09 + 0 + 0.06 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = -5.3$ ;  $T_y = -867.7$ ;  $M_t = 31.216$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.624

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$17971 \leq 177414$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$M_t = 25.5$



## Asta 802: Trave in legno a falda Falda 4 fili 287-202

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 1.056

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{17206^2 + 65373^2} = 67599 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = 314.6$ ;  $T_y = 1195.4$

### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(6799/1324138)^2 + 616680/1451200 + 0.7 \cdot 247085/1451200 = 0.54 \leq 1$  [4.4.7a] Comb: SLU, 30; Durata minima del carico nella combinazione: media

$M_x = 947.221$ ;  $M_y = -253.015$ ;  $N = -261.1$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.05 + 0.01 + 0.11 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = 315.4$ ;  $T_y = 1190.1$ ;  $M_t = 17.128$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.056

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$12359 \leq 236552$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$M_t = 17.536$

## Asta 803: Trave in legno a falda Falda 4 fili 287-202

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.84

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{9484^2 + 34439^2} = 35721 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = 173.4$ ;  $T_y = 629.7$



#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(9226/1324138)^2 + 546772/1451200 + 0.7 \cdot 189574/1451200 = 0.47 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_x = -839.841$ ;  $M_y = 194.124$ ;  $N = -354.3$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.03 + 0 + 0.03 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = 175.4$ ;  $T_y = 626.7$ ;  $M_t = 10.857$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$7652 \leq 236552$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_t = 10.857$

### Asta 804: Trave in legno a falda Falda 4 fili 287-202

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.84

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{(2840^2 + 9688^2)} = 10096 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = 51.9$ ;  $T_y = 177.1$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(9242/1324138)^2 + 635384/1451200 + 0.7 \cdot 209651/1451200 = 0.54 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_x = -975.95$ ;  $M_y = 214.682$ ;  $N = -354.9$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.01 + 0 + 0 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = 52.1$ ;  $T_y = 176.4$ ;  $M_t = 2.714$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$1912 \leq 236552$  Comb: SLU, 80; Durata minima del carico nella combinazione: media





Mt = 2.714

Asta 805: Trave in legno a falda Falda 4 fili 287-202

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati generali

Lunghezza = 0.84

Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_d \leq f_{v,d}$   
 $\sqrt{4092^2 + 13422^2} = 14032 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $T_x = -74.8$ ;  $T_y = -245.4$

Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(9248/1324138)^2 + 635746/1451200 + 0.7 \cdot 211295/1451200 = 0.54 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_x = -976.506$ ;  $M_y = 216.366$ ;  $N = -355.1$

Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.01 + 0 + 0 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = -74.8$ ;  $T_y = -244.5$ ;  $M_t = -4.221$

Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $2975 \leq 236552$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_t = -4.221$

Asta 806: Trave in legno a falda Falda 4 fili 287-202

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati generali

Lunghezza = 0.84

Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.84  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$



$\tau_{d} \leq f_{v,d}$

$\text{Sqrt}(9325^2 + 39427^2) = 40514 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = -170.5$ ;  $T_y = -720.9$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(9274/1324138)^2 + 511092/1451200 + 0.7 \cdot 173121/1451200 = 0.44 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_x = -785.038$ ;  $M_y = 177.275$ ;  $N = -356.1$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.04 + 0 + 0.04 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = -169.9$ ;  $T_y = -718.3$ ;  $M_t = -14.385$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$10138 \leq 236552$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_t = -14.385$

### Asta 807: Trave in legno a falda Falda 4 fili 287-202

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.909

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.909

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\text{Sqrt}(20097^2 + 68573^2) = 71457 \leq 193103$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = -367.5$ ;  $T_y = -1253.9$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.909

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(6889/1324138)^2 + 627529/1451200 + 0.7 \cdot 259285/1451200 = 0.56 \leq 1$  [4.4.7a] Comb: SLU, 30; Durata minima del carico nella combinazione: media

$M_x = 963.885$ ;  $M_y = -265.508$ ;  $N = -264.5$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.909

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.05 + 0.01 + 0.13 \leq 1$  Comb: SLU, 72; Durata minima del carico nella combinazione: media

$T_x = -367.5$ ;  $T_y = -1253.9$ ;  $M_t = -15.573$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.909



Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $11444 \leq 236552 \text{ Comb: SLU, 79; Durata minima del carico nella combinazione: media}$   
 $M_t = -16.239$

## Asta 808: Trave in legno a falda Falda 4 fili 287-202

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.771

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)  
 $S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$   
 $K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$   
 $592980/1451200 + 0.7 \cdot 185314/1451200 = 0.5 \leq 1$  (formula 4.4.5a) Comb: SLU, 30; Durata minima del carico nella combinazione: media  
 $M_x = 910.818$ ;  $M_y = -189.762$

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{8218^2 + 39961^2} = 40797 \leq 193103$  Comb: SLU, 30; Durata minima del carico nella combinazione: media  
 $T_x = 150.3$ ;  $T_y = 730.7$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.08 + 0 + 0.04 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $T_x = 114.6$ ;  $T_y = 674.7$ ;  $M_t = -28.254$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.771  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $15760 \leq 177414$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $M_t = -22.362$

## Asta 809: Trave in legno a falda Falda 4 fili 287-202

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 0.84

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1



#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{408^2 + 7408^2} = 7419 \leq 144828$  Comb: SLU, 43; Durata minima del carico nella combinazione: permanente

$T_x = 7.5$ ;  $T_y = -135.5$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(5810/1324138)^2 + 233806/1451200 + 0.7 \cdot 78913/1451200 = 0.2 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_x = 359.127$ ;  $M_y = -80.807$ ;  $N = -223.1$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.1 + 0 + 0 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = 52.3$ ;  $T_y = 104.4$ ;  $M_t = -32.588$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.84

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$22966 \leq 236552$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_t = -32.588$

### Asta 810: Trave in legno a falda Falda 4 fili 287-202

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.839

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{2639^2 + 9927^2} = 10272 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = 48.3$ ;  $T_y = 181.5$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$ ;  $K_h = 1.096$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(7806/993103)^2 + 136853/1088400 + 0.7 \cdot 34090/1088400 = 0.15 \leq 1$  [4.4.7a] Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$M_x = 210.206$ ;  $M_y = -34.909$ ;  $N = -299.8$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.096$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.01 + 0 + 0 \leq 1$  Comb: SLU, 30; Durata minima del carico nella combinazione: media



Tx = 40; Ty = 160.4; Mt = 3.949

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.839

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8

$\tau_{\text{tor,d}} \leq K_{\text{sh}} \cdot f_{v,d}$

2783 <= 236552 Comb: SLU, 30; Durata minima del carico nella combinazione: media

Mt = 3.949

### Asta 811: Trave in legno a falda Falda 4 fili 182-318

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.931

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.931

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; kcr = 0.71

$\tau_{\text{d}} \leq f_{v,d}$

$\sqrt{476^2 + 19732^2} = 19738 \leq 193103$  Comb: SLU, 30; Durata minima del carico nella combinazione: media

Tx = 5.7; Ty = -236.8

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 1.931

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.1 (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(8479/1324138)^2 + 133937/1456552 + 0.7 \cdot 4957/1456552 = 0.09 \leq 1$  [4.4.7a] Comb: SLU, 30; Durata minima del carico nella combinazione: media

Mx = 101.256; My = 2.915; N = -213.7

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1.931

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.1 (formula 11.7.2); kcr = 0.71

$\tau_{\text{tor,d}}/(k_{\text{sh}} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

0.06+0+0.01 <= 1 Comb: SLU, 80; Durata minima del carico nella combinazione: media

Tx = 6.4; Ty = -224.3; Mt = 11.496

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.931

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.6

$\tau_{\text{tor,d}} \leq K_{\text{sh}} \cdot f_{v,d}$

11307 <= 172759 Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

Mt = 8.881

### Asta 812: Trave in legno a falda Falda 4 fili 171-317

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.469

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300



Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

**Verifica taglio D.M. 17-01-18 §4.4.8.1.9**

Sezione ad ascissa 2.469  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_d \leq f_{v,d}$   
 $\sqrt{126^2 + 25092^2} = 25092 \leq 193103$  Comb: SLU, 29; Durata minima del carico nella combinazione: media  
 $T_x = 1.5$ ;  $T_y = -301.1$

**Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8**

Sezione ad ascissa 1.234  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $(5006/1324138)^2 + 138761/1456552 + 0.7 \cdot 3365/1456552 = 0.1 \leq 1$  [4.4.7a] Comb: SLU, 72; Durata minima del carico nella combinazione: media  
 $M_x = -104.903$ ;  $M_y = -1.979$ ;  $N = -126.1$

**Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11**

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.03 + 0 + 0 \leq 1$  Comb: SLU, 43; Durata minima del carico nella combinazione: permanente  
 $T_x = 0.7$ ;  $T_y = 91.3$ ;  $M_t = 3.861$

**Verifica torsione D.M. 17-01-18 §4.4.8.1.10**

Sezione ad ascissa 2.469  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $4916 \leq 172759$  Comb: SLU, 43; Durata minima del carico nella combinazione: permanente  
 $M_t = 3.861$

**Asta 813: Trave in legno a falda Falda 4 fili 171-317**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati generali**

Lunghezza = 0.218

**Caratteristiche della sezione**

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

**Verifica flessione D.M. 17-01-18 §4.4.8.1.6**

Sezione ad ascissa 0.218  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $\sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $79339/1456552 + 0.7 \cdot 7804/1456552 = 0.06 \leq 1$  (formula 4.4.5a) Comb: SLU, 29; Durata minima del carico nella combinazione: media  
 $M_x = 59.98$ ;  $M_y = 4.589$

**Verifica taglio D.M. 17-01-18 §4.4.8.1.9**

Sezione ad ascissa 0.218  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$ ;  $k_{cr} = 0.71$   
 $\tau_d \leq f_{v,d}$   
 $\sqrt{1637^2 + 3987^2} = 4310 \leq 144828$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $T_x = -19.6$ ;  $T_y = -47.8$

**Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11**

Sezione ad ascissa 0.218



Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.05 + 0 + 0 \leq 1$  Comb: SLU, 29; Durata minima del carico nella combinazione: media  
 $T_x = -28.1$ ;  $T_y = -48.9$ ;  $M_t = 9.86$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.218  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $12552 \leq 230345$  Comb: SLU, 29; Durata minima del carico nella combinazione: media  
 $M_t = 9.86$

### Asta 814: Trave in legno a falda Falda 4 fili 171-317

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.218

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0.218  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $\sigma_{t,0,d}/f_{t,0,d} + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $9853/1602207 + 34370/2002759 + 0.7 \cdot 23531/2002759 = 0.03 \leq 1$  [4.4.6a] Comb: SLV, 14; Durata minima del carico nella combinazione: istantaneo  
 $M_x = -25.984$ ;  $M_y = -13.836$ ;  $N = 248.3$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(6480^2 + 15614^2)} = 16905 \leq 265517$  Comb: SLV, 14; Durata minima del carico nella combinazione: istantaneo  
 $T_x = -77.8$ ;  $T_y = 187.4$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.05 + 0 + 0 \leq 1$  Comb: SLV, 16; Durata minima del carico nella combinazione: istantaneo  
 $T_x = -69.5$ ;  $T_y = 177.1$ ;  $M_t = -11.261$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.218  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $14336 \leq 316724$  Comb: SLV, 16; Durata minima del carico nella combinazione: istantaneo  
 $M_t = -11.261$

### Asta 815: Trave in legno a falda Falda 4 fili 114-310

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.614



#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.614

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{156^2 + 25153^2} = 25153 \leq 193103$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

$T_x = 1.9$ ;  $T_y = -301.8$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 1.394

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(6897/1324138)^2 + 152836/1456552 + 0.7 \cdot 5214/1456552 = 0.11 \leq 1$  [4.4.7a] Comb: SLU, 72; Durata minima del carico nella combinazione: media

$M_x = -115.544$ ;  $M_y = 3.066$ ;  $N = -173.8$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.03 + 0 + 0 \leq 1$  Comb: SLU, 43; Durata minima del carico nella combinazione: permanente

$T_x = 1.8$ ;  $T_y = 106.1$ ;  $M_t = -3.477$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.614

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$4426 \leq 172759$  Comb: SLU, 43; Durata minima del carico nella combinazione: permanente

$M_t = -3.477$

### Asta 816: Trave in legno a falda Falda 4 fili 114-310

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.218

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.218

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{2453^2 + 21267^2} = 21408 \leq 193103$  Comb: SLU, 29; Durata minima del carico nella combinazione: media

$T_x = 29.4$ ;  $T_y = -255.2$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.218

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$





$(Sc,0,d/fc,0,d)^2 + Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$   
 $(9881/1324138)^2 + 106572/1456552 + 0.7*2631/1456552 = 0.07 \leq 1$  [4.4.7a] Comb: SLU, 29; Durata minima del carico nella combinazione: media  
 $Mx = 80.569$ ;  $My = -1.547$ ;  $N = -249$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.218  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $Kmod = 0.8$ ;  $Kh = 1.1$  (formula 11.7.2);  $kcr = 0.71$   
 $\tau_{tor,d}/(ksh*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.05 + 0 + 0.01 \leq 1$  Comb: SLU, 29; Durata minima del carico nella combinazione: media  
 $Tx = 29.4$ ;  $Ty = -255.2$ ;  $Mt = -8.153$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.218  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $Kmod = 0.8$   
 $\tau_{tor,d} \leq Ksh * f_{v,d}$   
 $10380 \leq 230345$  Comb: SLU, 29; Durata minima del carico nella combinazione: media  
 $Mt = -8.153$

### Asta 817: Trave in legno a falda Falda 4 fili 114-310

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.218

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.218  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $Kmod = 0.8$ ;  $kcr = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{780^2 + 17410^2} = 17427 \leq 193103$  Comb: SLU, 29; Durata minima del carico nella combinazione: media  
 $Tx = 9.4$ ;  $Ty = -208.9$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.218  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $Kmod = 0.8$ ;  $Kh = 1.1$  (formula 11.7.2)  
 $(Sc,0,d/fc,0,d)^2 + Sm,y,d/fm,y,d + Km*(Sm,z,d/fm,z,d) \leq 1$   
 $(Sc,0,d/fc,0,d)^2 + Km*(Sm,y,d/fm,y,d) + Sm,z,d/fm,z,d \leq 1$   
 $(10242/1324138)^2 + 37639/1456552 + 0.7*3416/1456552 = 0.03 \leq 1$  [4.4.7a] Comb: SLU, 30; Durata minima del carico nella combinazione: media  
 $Mx = 28.455$ ;  $My = -2.009$ ;  $N = -258.1$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.218  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $Kmod = 0.8$ ;  $Kh = 1.1$  (formula 11.7.2);  $kcr = 0.71$   
 $\tau_{tor,d}/(ksh*f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.03 + 0 + 0.01 \leq 1$  Comb: SLU, 29; Durata minima del carico nella combinazione: media  
 $Tx = 9.4$ ;  $Ty = -208.9$ ;  $Mt = -5.801$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.218  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $Kmod = 0.8$   
 $\tau_{tor,d} \leq Ksh * f_{v,d}$   
 $7385 \leq 230345$  Comb: SLU, 29; Durata minima del carico nella combinazione: media  
 $Mt = -5.801$



## Asta 818: Trave in legno a falda Falda 4 fili 103-309

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 2.092

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.092

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{176^2 + 21143^2} = 21144 \leq 193103$  Comb: SLU, 30; Durata minima del carico nella combinazione: media

$T_x = -2.1$ ;  $T_y = -253.7$

### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 2.092

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(7011/1324138)^2 + 141299/1456552 + 0.7 \cdot 1398/1456552 = 0.1 \leq 1$  [4.4.7a] Comb: SLU, 30; Durata minima del carico nella combinazione: media

$M_x = 106.822$ ;  $M_y = -0.822$ ;  $N = -176.7$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.092

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.06 + 0 + 0.01 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = -3.2$ ;  $T_y = -241.5$ ;  $M_t = -11.36$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.092

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$11615 \leq 172759$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$M_t = -9.124$

## Asta 819: Trave in legno a falda Falda 4 fili 319-192

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 2.361

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 1.023

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$11734/1165241 + 277321/1456552 + 0.7 \cdot 1416/1456552 = 0.2 \leq 1$  [4.4.6a] Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_x = -209.655$ ;  $M_y = 0.832$ ;  $N = 295.7$



#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.361

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{82^2 + 25976^2} = 25976 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = 1$ ;  $T_y = -311.7$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.361

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.01 + 0 + 0.02 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = 1$ ;  $T_y = -311.7$ ;  $M_t = 1.843$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.361

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$3614 \leq 172759$  Comb: SLU, 43; Durata minima del carico nella combinazione: permanente

$M_t = 2.839$

### Asta 820: Trave in legno a falda Falda 4 fili 308-96

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.361

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 1.102

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$30332/1165241 + 294143/1456552 + 0.7 \cdot 1129/1456552 = 0.23 \leq 1$  [4.4.6a] Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_x = -222.372$ ;  $M_y = -0.664$ ;  $N = 764.4$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.361

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{34^2 + 25197^2} = 25197 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = -0.4$ ;  $T_y = -302.4$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.361

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.02 + 0 + 0.01 \leq 1$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$T_x = -2.1$ ;  $T_y = -140.8$ ;  $M_t = -2.985$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.361

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$3861 \leq 172759$  Comb: SLU, 43; Durata minima del carico nella combinazione: permanente

$M_t = -3.033$



## Asta 821: Trave in legno a falda Falda 4 fili 314-149

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 2.361

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.361

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{493^2 + 33219^2} = 33222 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = 5.9$ ;  $T_y = -398.6$

### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.708

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(54003/1324138)^2 + 249594/1456552 + 0.7 \cdot 9702/1456552 = 0.18 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_x = -188.693$ ;  $M_y = -5.705$ ;  $N = -1360.9$

### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.361

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.05 + 0 + 0.03 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = 5.9$ ;  $T_y = -398.6$ ;  $M_t = 9.519$

### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.361

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$12210 \leq 230345$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_t = 9.591$

## Asta 822: Trave in legno a falda Falda 4 fili 316-163

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Lunghezza = 2.361

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 2.361

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)

$\sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$



$K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$   
 $293669/2002759 + 0.7 \cdot 19772/2002759 = 0.15 \leq 1$  (formula 4.4.5a) Comb: SLV, 6; Durata minima del carico nella combinazione: istantaneo  
 $M_x = 222.014$ ;  $M_y = 11.626$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.361  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(859^2 + 27622^2)} = 27636 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = 10.3$ ;  $T_y = -331.5$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.361  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.08 + 0 + 0.02 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = 10.3$ ;  $T_y = -331.5$ ;  $M_t = 14.457$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.361  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $18537 \leq 230345$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_t = 14.561$

### Asta 823: Trave in legno a falda Falda 4 fili 313-143

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.361

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.361  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(42^2 + 35496^2)} = 35496 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = 0.5$ ;  $T_y = -426$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.551  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $(S_{c,0,d}/f_{c,0,d})^2 + S_{m,y,d}/f_{m,y,d} + K_m \cdot (S_{m,z,d}/f_{m,z,d}) \leq 1$   
 $(S_{c,0,d}/f_{c,0,d})^2 + K_m \cdot (S_{m,y,d}/f_{m,y,d}) + S_{m,z,d}/f_{m,z,d} \leq 1$   
 $(53359/1324138)^2 + 303113/1456552 + 0.7 \cdot 1130/1456552 = 0.21 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_x = -229.153$ ;  $M_y = -0.665$ ;  $N = -1344.6$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.361  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0 + 0 + 0.03 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = 0.5$ ;  $T_y = -426$ ;  $M_t = 0.725$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.361  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$



Kmod = 0.8  
 $\tau_{\text{tor,d}} \leq K_{\text{sh}} \cdot f_{\text{v,d}}$   
939  $\leq$  230345 Comb: SLU, 72; Durata minima del carico nella combinazione: media  
Mt = 0.738

Asta 824: Trave in legno a falda Falda 4 fili 312-134

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati generali

Lunghezza = 2.361

Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.361  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
Kmod = 0.8; kcr = 0.71  
 $\tau_{\text{d}} \leq f_{\text{v,d}}$   
 $\text{Sqrt}(421^2 + 33712^2) = 33714 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
Tx = -5.1; Ty = -404.5

Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 0.63  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
Kmod = 0.8; Kh = 1.1 (formula 11.7.2)  
 $(Sc_{0,d}/f_{c,0,d})^2 + Sm_{y,d}/f_{m,y,d} + Km \cdot (Sm_{z,d}/f_{m,z,d}) \leq 1$   
 $(Sc_{0,d}/f_{c,0,d})^2 + Km \cdot (Sm_{y,d}/f_{m,y,d}) + Sm_{z,d}/f_{m,z,d} \leq 1$   
 $(53661/1324138)^2 + 260423/1456552 + 0.7 \cdot 9672/1456552 = 0.19 \leq 1$  [4.4.7a] Comb: SLU, 80; Durata minima del carico nella combinazione: media  
Mx = -196.88; My = 5.687; N = -1352.3

Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.361  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
Kmod = 0.8; Kh = 1.1 (formula 11.7.2); kcr = 0.71  
 $\tau_{\text{tor,d}}/(k_{\text{sh}} \cdot f_{\text{v,d}}) + (\tau_{y,d}/f_{\text{v,d}})^2 + (\tau_{z,d}/f_{\text{v,d}})^2 \leq 1$   
0.05+0+0.03  $\leq$  1 Comb: SLU, 79; Durata minima del carico nella combinazione: media  
Tx = -5.1; Ty = -404.5; Mt = -8.286

Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.361  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
Kmod = 0.8  
 $\tau_{\text{tor,d}} \leq K_{\text{sh}} \cdot f_{\text{v,d}}$   
10631  $\leq$  230345 Comb: SLU, 80; Durata minima del carico nella combinazione: media  
Mt = -8.35

Asta 825: Trave in legno a falda Falda 4 fili 311-122

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati generali

Lunghezza = 2.361

Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1



#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 2.361

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{(669^2 + 28096^2)} = 28104 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = -8$ ;  $T_y = -337.2$

#### Verifica pressoflessione D.M. 17-01-18 §4.4.8.1.8

Sezione ad ascissa 2.361

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)

$(\sigma_{c,0,d}/f_{c,0,d})^2 + \sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$(\sigma_{c,0,d}/f_{c,0,d})^2 + K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$(13022/1820690)^2 + 306831/2002759 + 0.7 \cdot 15747/2002759 = 0.16 \leq 1$  [4.4.7a] Comb: SLV, 9; Durata minima del carico nella combinazione: istantaneo

$M_x = 231.965$ ;  $M_y = -9.259$ ;  $N = -328.1$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 2.361

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.08 + 0 + 0.02 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = -8$ ;  $T_y = -337.2$ ;  $M_t = -14.114$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.361

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$18100 \leq 230345$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_t = -14.217$

### Asta 826: Trave in legno a falda Falda 4 fili 318-184

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.361

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica flessione D.M. 17-01-18 §4.4.8.1.6

Sezione ad ascissa 2.361

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)

$\sigma_{m,y,d}/f_{m,y,d} + K_m(\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$K_m(\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$233458/2002759 + 0.7 \cdot 17371/2002759 = 0.12 \leq 1$  (formula 4.4.5a) Comb: SLV, 6; Durata minima del carico nella combinazione: istantaneo

$M_x = 176.494$ ;  $M_y = 10.214$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{(107^2 + 25954^2)} = 25954 \leq 193103$  Comb: SLU, 30; Durata minima del carico nella combinazione: media

$T_x = -1.3$ ;  $T_y = 311.4$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.03 + 0 + 0.02 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media



Tx = -0.3; Ty = 308.4; Mt = 4.974

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.361

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.6

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

5817  $\leq$  172759 Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

Mt = 4.569

### Asta 827: Trave in legno a falda Falda 4 fili 317-166

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.218

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.6; Kh = 1.1 (formula 11.7.2)

$St_{0,d}/ft_{0,d} + Sm_{y,d}/fm_{y,d} + Km \cdot (Sm_{z,d}/fm_{z,d}) \leq 1$

$St_{0,d}/ft_{0,d} + Km \cdot (Sm_{y,d}/fm_{y,d}) + Sm_{z,d}/fm_{z,d} \leq 1$

17953/873931+48790/1092414+0.7\*26971/1092414=0.08  $\leq$  1 [4.4.6a] Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

Mx = -36.885; My = -15.859; N = 452.4

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.218

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; kcr = 0.71

$\tau_{d} \leq f_{v,d}$

$\sqrt{4355^2 + 28890^2} = 29216 \leq 193103$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

Tx = -52.3; Ty = -346.7

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.218

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8; Kh = 1.1 (formula 11.7.2); kcr = 0.71

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

0.11+0+0.02  $\leq$  1 Comb: SLU, 79; Durata minima del carico nella combinazione: media

Tx = -52; Ty = -345.9; Mt = 19.897

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.218

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

Kmod = 0.8

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

25331  $\leq$  230345 Comb: SLU, 79; Durata minima del carico nella combinazione: media

Mt = 19.897

### Asta 828: Trave in legno a falda Falda 4 fili 317-166

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.218

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300





Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0.218  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $St_{0,d}/ft_{0,d} + Sm_{y,d}/fm_{y,d} + Km \cdot (Sm_{z,d}/fm_{z,d}) \leq 1$   
 $St_{0,d}/ft_{0,d} + Km \cdot (Sm_{y,d}/fm_{y,d}) + Sm_{z,d}/fm_{z,d} \leq 1$   
 $33396/1165241 + 34332/1456552 + 0.7 \cdot 29614/1456552 = 0.07 \leq 1$  [4.4.6a] Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_x = 25.955$ ;  $M_y = -17.413$ ;  $N = 841.6$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.218  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(10797^2 + 15645^2)} = 19009 \leq 265517$  Comb: SLV, 15; Durata minima del carico nella combinazione: istantaneo  
 $T_x = -129.6$ ;  $T_y = -187.7$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.218  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.06 + 0 + 0 \leq 1$  Comb: SLV, 15; Durata minima del carico nella combinazione: istantaneo  
 $T_x = -129.6$ ;  $T_y = -187.7$ ;  $M_t = 14.687$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.218  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $18698 \leq 316724$  Comb: SLV, 15; Durata minima del carico nella combinazione: istantaneo  
 $M_t = 14.687$

### Asta 829: Trave in legno a falda Falda 4 fili 317-166

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.925

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 1.925  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.6$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $St_{0,d}/ft_{0,d} + Sm_{y,d}/fm_{y,d} + Km \cdot (Sm_{z,d}/fm_{z,d}) \leq 1$   
 $St_{0,d}/ft_{0,d} + Km \cdot (Sm_{y,d}/fm_{y,d}) + Sm_{z,d}/fm_{z,d} \leq 1$   
 $37964/873931 + 225702/1092414 + 0.7 \cdot 13139/1092414 = 0.26 \leq 1$  [4.4.6a] Comb: SLU, 64; Durata minima del carico nella combinazione: permanente  
 $M_x = 170.631$ ;  $M_y = -7.726$ ;  $N = 956.7$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.925  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(1029^2 + 28207^2)} = 28226 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = -12.3$ ;  $T_y = -338.5$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1.925



Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.05 + 0 + 0.02 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media  
 $T_x = -12.3$ ;  $T_y = -338.5$ ;  $M_t = 9.46$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.925  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 0.8$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $12127 \leq 230345$  Comb: SLU, 80; Durata minima del carico nella combinazione: media  
 $M_t = 9.526$

### Asta 830: Trave in legno a falda Falda 4 fili 310-117

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.218

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)  
 $\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_m \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$   
 $\sigma_{t,0,d}/f_{t,0,d} + K_m \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$   
 $41586/1602207 + 65669/2002759 + 0.7 \cdot 28715/2002759 = 0.07 \leq 1$  [4.4.6a] Comb: SLV, 3; Durata minima del carico nella combinazione: istantaneo  
 $M_x = -49.646$ ;  $M_y = -16.885$ ;  $N = 1048$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.218  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $k_{cr} = 0.71$   
 $\tau_{d} \leq f_{v,d}$   
 $\sqrt{(15567^2 + 24455^2)} = 28989 \leq 265517$  Comb: SLV, 1; Durata minima del carico nella combinazione: istantaneo  
 $T_x = 186.8$ ;  $T_y = -293.5$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.218  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$   
 $\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$   
 $0.02 + 0 + 0.01 \leq 1$  Comb: SLV, 1; Durata minima del carico nella combinazione: istantaneo  
 $T_x = 186.8$ ;  $T_y = -293.5$ ;  $M_t = -6.155$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.218  
Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$   
 $K_{mod} = 1.1$   
 $\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$   
 $7836 \leq 316724$  Comb: SLV, 1; Durata minima del carico nella combinazione: istantaneo  
 $M_t = -6.155$

### Asta 831: Trave in legno a falda Falda 4 fili 310-117

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 0.218



#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 0.218

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)

$St_{0,d}/ft_{0,d} + Sm_{y,d}/fm_{y,d} + Km \cdot (Sm_{z,d}/fm_{z,d}) \leq 1$

$St_{0,d}/ft_{0,d} + Km \cdot (Sm_{y,d}/fm_{y,d}) + Sm_{z,d}/fm_{z,d} \leq 1$

$43246/1602207 + 0.7 \cdot 38750/2002759 + 41686/2002759 = 0.06 \leq 1$  [4.4.6b] Comb: SLV, 3; Durata minima del carico nella combinazione: istantaneo

$M_x = 29.295$ ;  $M_y = 24.511$ ;  $N = 1089.8$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0.218

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\sqrt{(12755^2 + 13426^2)} = 18519 \leq 265517$  Comb: SLV, 1; Durata minima del carico nella combinazione: istantaneo

$T_x = 153.1$ ;  $T_y = -161.1$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0.218

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.02 + 0 + 0 \leq 1$  Comb: SLV, 1; Durata minima del carico nella combinazione: istantaneo

$T_x = 153.1$ ;  $T_y = -161.1$ ;  $M_t = -3.763$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 0.218

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$4790 \leq 316724$  Comb: SLV, 1; Durata minima del carico nella combinazione: istantaneo

$M_t = -3.763$

### Asta 832: Trave in legno a falda Falda 4 fili 310-117

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 1.925

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 1.925

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)

$St_{0,d}/ft_{0,d} + Sm_{y,d}/fm_{y,d} + Km \cdot (Sm_{z,d}/fm_{z,d}) \leq 1$

$St_{0,d}/ft_{0,d} + Km \cdot (Sm_{y,d}/fm_{y,d}) + Sm_{z,d}/fm_{z,d} \leq 1$

$33264/1602207 + 158388/2002759 + 0.7 \cdot 48604/2002759 = 0.12 \leq 1$  [4.4.6a] Comb: SLV, 1; Durata minima del carico nella combinazione: istantaneo

$M_x = 119.741$ ;  $M_y = 28.579$ ;  $N = 838.3$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 1.925

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$



$\tau_{d} \leq f_{v,d}$

$\text{Sqrt}(1262^2 + 21570^2) = 21607 \leq 193103$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = 15.1$ ;  $T_y = -258.8$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 1.925

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.07 + 0 + 0.01 \leq 1$  Comb: SLU, 79; Durata minima del carico nella combinazione: media

$T_x = 15.1$ ;  $T_y = -258.8$ ;  $M_t = -12.502$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 1.925

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$16015 \leq 230345$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$M_t = -12.58$

### Asta 833: Trave in legno a falda Falda 4 fili 309-105

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Lunghezza = 2.361

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica tensoflessione D.M. 17-01-18 §4.4.8.1.7

Sezione ad ascissa 2.361

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 1.1$ ;  $K_h = 1.1$  (formula 11.7.2)

$\sigma_{t,0,d}/f_{t,0,d} + \sigma_{m,y,d}/f_{m,y,d} + K_{m} \cdot (\sigma_{m,z,d}/f_{m,z,d}) \leq 1$

$\sigma_{t,0,d}/f_{t,0,d} + K_{m} \cdot (\sigma_{m,y,d}/f_{m,y,d}) + \sigma_{m,z,d}/f_{m,z,d} \leq 1$

$15779/1602207 + 232860/2002759 + 0.7 \cdot 14625/2002759 = 0.13 \leq 1$  [4.4.6a] Comb: SLV, 5; Durata minima del carico nella combinazione: istantaneo

$M_x = 176.042$ ;  $M_y = 8.6$ ;  $N = 397.6$

#### Verifica taglio D.M. 17-01-18 §4.4.8.1.9

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $k_{cr} = 0.71$

$\tau_{d} \leq f_{v,d}$

$\text{Sqrt}(192^2 + 25414^2) = 25414 \leq 193103$  Comb: SLU, 30; Durata minima del carico nella combinazione: media

$T_x = 2.3$ ;  $T_y = 305$

#### Verifica taglio+torsione D.M. 17-01-18 §4.4.8.1.11

Sezione ad ascissa 0

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.8$ ;  $K_h = 1.1$  (formula 11.7.2);  $k_{cr} = 0.71$

$\tau_{tor,d}/(k_{sh} \cdot f_{v,d}) + (\tau_{y,d}/f_{v,d})^2 + (\tau_{z,d}/f_{v,d})^2 \leq 1$

$0.03 + 0 + 0.02 \leq 1$  Comb: SLU, 80; Durata minima del carico nella combinazione: media

$T_x = 1.3$ ;  $T_y = 300.3$ ;  $M_t = -5.324$

#### Verifica torsione D.M. 17-01-18 §4.4.8.1.10

Sezione ad ascissa 2.361

Coefficiente parziale di sicurezza del materiale  $\gamma = 1.45$

$K_{mod} = 0.6$

$\tau_{tor,d} \leq K_{sh} \cdot f_{v,d}$

$5900 \leq 172759$  Comb: SLU, 64; Durata minima del carico nella combinazione: permanente

$M_t = -4.634$



## 1.6 Verifiche superelementi in legno

Le unità di misura elencate nel capitolo sono in [m] ove non espressamente specificato.

**Descrizione:** descrizione della sezione.

**Tipo:** tipo di sezione.

**Base:** base della sezione. [m]

**Altezza:** altezza della sezione. [m]

**Area:** area inerziale nel sistema geometrico centrato nel baricentro. [m<sup>2</sup>]

**Jx:** momento d'inerzia attorno all'asse orizzontale baricentrico di definizione della sezione. [m<sup>4</sup>]

**Jy:** momento d'inerzia attorno all'asse verticale baricentrico di definizione della sezione. [m<sup>4</sup>]

**Wx:** modulo di resistenza elastico minimo relativo all'asse x. [m<sup>3</sup>]

**Wy:** modulo di resistenza elastico minimo relativo all'asse y. [m<sup>3</sup>]

### Superelemento in legno a "Falda 1" 26-245

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Superelemento di lunghezza complessiva L= 19.977 composto da:

asta 108: Trave in legno a falda Falda 1 fili 26-126 (L = 0.882)  
asta 109: Trave in legno a falda Falda 1 fili 26-126 (L = 0.84)  
asta 110: Trave in legno a falda Falda 1 fili 26-126 (L = 0.84)  
asta 111: Trave in legno a falda Falda 1 fili 26-126 (L = 0.84)  
asta 112: Trave in legno a falda Falda 1 fili 26-126 (L = 0.499)  
asta 113: Trave in legno a falda Falda 1 fili 26-126 (L = 0.341)  
asta 114: Trave in legno a falda Falda 1 fili 26-126 (L = 0.84)  
asta 115: Trave in legno a falda Falda 1 fili 26-126 (L = 0.84)  
asta 116: Trave in legno a falda Falda 1 fili 26-126 (L = 0.84)  
asta 117: Trave in legno a falda Falda 1 fili 26-126 (L = 0.84)  
asta 118: Trave in legno a falda Falda 1 fili 26-126 (L = 1.039)  
asta 104: Trave in legno a falda Falda 1 fili 126-154 (L = 0.641)  
asta 105: Trave in legno a falda Falda 1 fili 126-154 (L = 0.84)  
asta 106: Trave in legno a falda Falda 1 fili 126-154 (L = 0.84)  
asta 107: Trave in legno a falda Falda 1 fili 126-154 (L = 0.454)  
asta 93: Trave in legno a falda Falda 1 fili 154-245 (L = 0.386)  
asta 94: Trave in legno a falda Falda 1 fili 154-245 (L = 0.829)  
asta 95: Trave in legno a falda Falda 1 fili 154-245 (L = 0.84)  
asta 96: Trave in legno a falda Falda 1 fili 154-245 (L = 0.84)  
asta 97: Trave in legno a falda Falda 1 fili 154-245 (L = 0.84)  
asta 98: Trave in legno a falda Falda 1 fili 154-245 (L = 1)  
asta 99: Trave in legno a falda Falda 1 fili 154-245 (L = 0.68)  
asta 100: Trave in legno a falda Falda 1 fili 154-245 (L = 0.84)  
asta 101: Trave in legno a falda Falda 1 fili 154-245 (L = 0.84)  
asta 102: Trave in legno a falda Falda 1 fili 154-245 (L = 0.84)  
asta 103: Trave in legno a falda Falda 1 fili 154-245 (L = 0.626)

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 13.723

Kdef = 0

Uinst tot in x = -0.0017

Uinst tot in y = -0.0028

Uinst tot = 0.0028

Luce/Uinst,tot > limite

19.977/0.0028=7195.5 > 300 Comb: SLE rara, 16

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 6.314

Kdef = 0

Uinst var in x = -0.0008

Uinst var in y = -0.0013



Uinst var = 0.0013  
Luce/Uinst,var > limite  
 $19.977/0.0013=14981.6 > 300$  Comb: SLE rara, 16

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 14.172  
Kdef = 0.6  
Ufin in x = -0.0023  
Ufin in y = -0.0037  
Ufin = 0.0037  
Luce/Ufin > limite  
 $19.977/0.0037=5438.8 > 200$   
Coefficienti combinatori impiegati:  
Pesi strutturali =  $1,000 + 0,600 = 1,600$   
Permanenti portati =  $1,000 + 0,600 = 1,600$   
Variabile A =  $0,700 + 0,180 = 0,880$   
Neve =  $0,500 + 0,500 = 1,000$

### Superelemento in legno a "Falda 1" 39-(-2154; -331)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Superelemento di lunghezza complessiva L= 3.403 composto da:  
asta 215: Trave in legno a falda Falda 1 fili 39-38 (L = 0.982)  
asta 210: Trave in legno a falda Falda 1 fili 38-37 (L = 2.422)

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
 $\beta_x = 0$ ;  $\beta_y = 0$   
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 1.87  
Kdef = 0  
Uinst tot in x = -0.0001  
Uinst tot in y = -0.0013  
Uinst tot = 0.0013  
Luce/Uinst,tot > limite  
 $3.403/0.0013=2560.2 > 300$  Comb: SLE rara, 9

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 1.87  
Kdef = 0  
Uinst var in x = -0.0001  
Uinst var in y = -0.0008  
Uinst var = 0.0008  
Luce/Uinst,var > limite  
 $3.403/0.0008=4410.7 > 300$  Comb: SLE rara, 9

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 1.902  
Kdef = 0.6  
Ufin in x = -0.0001  
Ufin in y = -0.0017  
Ufin = 0.0017  
Luce/Ufin > limite  
 $3.403/0.0017=2039.6 > 200$   
Coefficienti combinatori impiegati:  
Pesi strutturali =  $1,000 + 0,600 = 1,600$   
Permanenti portati =  $1,000 + 0,600 = 1,600$   
Neve =  $0,500 + 0,500 = 1,000$   
Vento =  $0,600 + 0,000 = 0,600$



## Superelemento in legno a "Falda 1" 47-(-2070; -331)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Superelemento di lunghezza complessiva  $L = 4.334$  composto da:

asta 214: Trave in legno a falda Falda 1 fili 47-46 ( $L = 1.913$ )

asta 209: Trave in legno a falda Falda 1 fili 46-45 ( $L = 2.422$ )

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 2.559

$K_{def} = 0$

$U_{inst\ tot\ in\ x} = -0.0001$

$U_{inst\ tot\ in\ y} = -0.0017$

$U_{inst\ tot} = 0.0017$

$Luce/U_{inst,tot} > \text{limite}$

$4.334/0.0017 = 2481.6 > 300$  Comb: SLE rara, 9

### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 2.559

$K_{def} = 0$

$U_{inst\ var\ in\ x} = 0$

$U_{inst\ var\ in\ y} = -0.001$

$U_{inst\ var} = 0.001$

$Luce/U_{inst,var} > \text{limite}$

$4.334/0.001 = 4257.4 > 300$  Comb: SLE rara, 9

### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 2.622

$K_{def} = 0.6$

$U_{fin\ in\ x} = -0.0001$

$U_{fin\ in\ y} = -0.0022$

$U_{fin} = 0.0022$

$Luce/U_{fin} > \text{limite}$

$4.334/0.0022 = 1981.7 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Neve =  $0,500 + 0,500 = 1,000$

Vento =  $0,600 + 0,000 = 0,600$

## Superelemento in legno a "Falda 1" 51-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Superelemento di lunghezza complessiva  $L = 15.41$  composto da:

asta 21: Trave in legno a falda Falda 1 fili 51-230 ( $L = 0.146$ )

asta 22: Trave in legno a falda Falda 1 fili 51-230 ( $L = 0.156$ )

asta 23: Trave in legno a falda Falda 1 fili 51-230 ( $L = 0.644$ )

asta 24: Trave in legno a falda Falda 1 fili 51-230 ( $L = 0.196$ )

asta 25: Trave in legno a falda Falda 1 fili 51-230 ( $L = 0.84$ )

asta 26: Trave in legno a falda Falda 1 fili 51-230 ( $L = 0.604$ )

asta 27: Trave in legno a falda Falda 1 fili 51-230 ( $L = 0.236$ )

asta 28: Trave in legno a falda Falda 1 fili 51-230 ( $L = 0.564$ )

asta 29: Trave in legno a falda Falda 1 fili 51-230 ( $L = 0.276$ )

asta 30: Trave in legno a falda Falda 1 fili 51-230 ( $L = 0.84$ )

asta 31: Trave in legno a falda Falda 1 fili 51-230 ( $L = 0.324$ )

asta 32: Trave in legno a falda Falda 1 fili 51-230 ( $L = 0.194$ )

asta 33: Trave in legno a falda Falda 1 fili 51-230 ( $L = 0.322$ )

asta 34: Trave in legno a falda Falda 1 fili 51-230 ( $L = 0.284$ )

asta 35: Trave in legno a falda Falda 1 fili 51-230 ( $L = 0.268$ )



asta 36: Trave in legno a falda Falda 1 fili 51-230 (L = 0.287)  
asta 37: Trave in legno a falda Falda 1 fili 51-230 (L = 0.84)  
asta 38: Trave in legno a falda Falda 1 fili 51-230 (L = 0.84)  
asta 39: Trave in legno a falda Falda 1 fili 51-230 (L = 0.84)  
asta 40: Trave in legno a falda Falda 1 fili 51-230 (L = 0.84)  
asta 41: Trave in legno a falda Falda 1 fili 51-230 (L = 0.434)  
asta 42: Trave in legno a falda Falda 1 fili 51-230 (L = 0.366)  
asta 43: Trave in legno a falda Falda 1 fili 51-230 (L = 0.434)  
asta 44: Trave in legno a falda Falda 1 fili 51-230 (L = 0.435)  
asta 45: Trave in legno a falda Falda 1 fili 51-230 (L = 0.84)  
asta 46: Trave in legno a falda Falda 1 fili 51-230 (L = 0.18)  
asta 47: Trave in legno a falda Falda 1 fili 51-230 (L = 0.33)  
asta 48: Trave in legno a falda Falda 1 fili 51-230 (L = 0.33)  
asta 49: Trave in legno a falda Falda 1 fili 51-230 (L = 0.14)  
asta 50: Trave in legno a falda Falda 1 fili 51-230 (L = 0.7)  
asta 51: Trave in legno a falda Falda 1 fili 51-230 (L = 0.865)  
asta 52: Trave in legno a falda Falda 1 fili 51-230 (L = 0.4)  
asta 53: Trave in legno a falda Falda 1 fili 51-230 (L = 0.415)

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x32	Rettangolare	0.16	0.32	0.0512	0.0004369067	0.0001092267	0.00273067	0.00136533

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 1.785

Kdef = 0

Uinst tot in x = -0.0002

Uinst tot in y = -0.0002

Uinst tot = 0.0002

Luce/Uinst,tot > limite

15.41/0.0002=72676.6 > 300 Comb: SLE rara, 16

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 1.841

Kdef = 0

Uinst var in x = -0.0001

Uinst var in y = -0.0001

Uinst var = 0.0001

Luce/Uinst,var > limite

15.41/0.0001=109036.8 > 300 Comb: SLE rara, 16

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 1.795

Kdef = 0.6

Ufin in x = -0.0003

Ufin in y = -0.0002

Ufin = 0.0003

Luce/Ufin > limite

15.41/0.0003=59089.7 > 200

Coefficienti combinatori impiegati:

Pesi strutturali = 1,000 + 0,600 = 1,600

Permanenti portati = 1,000 + 0,600 = 1,600

Variabile A = 0,700 + 0,180 = 0,880

Neve = 0,500 + 0,500 = 1,000

### Superelemento in legno a "Falda 1" 57-(-1986; -331)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Superelemento di lunghezza complessiva L= 4.94 composto da:

asta 194: Trave in legno a falda Falda 1 fili 57-56 (L = 2.518)

asta 208: Trave in legno a falda Falda 1 fili 56-55 (L = 2.422)

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588





Materiale: GL 24h EN 14080  
 $\beta_x = 0$ ;  $\beta_y = 0$   
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 3.245  
 $K_{def} = 0$   
 $U_{inst\ tot\ in\ x} = -0.0001$   
 $U_{inst\ tot\ in\ y} = -0.0014$   
 $U_{inst\ tot} = 0.0014$   
Luce/ $U_{inst,tot} > \text{limite}$   
 $4.94/0.0014 = 3463.8 > 300$  Comb: SLE rara, 9

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 3.245  
 $K_{def} = 0$   
 $U_{inst\ var\ in\ x} = 0$   
 $U_{inst\ var\ in\ y} = -0.0009$   
 $U_{inst\ var} = 0.0009$   
Luce/ $U_{inst,var} > \text{limite}$   
 $4.94/0.0009 = 5762.4 > 300$  Comb: SLE rara, 9

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 3.328  
 $K_{def} = 0.6$   
 $U_{fin\ in\ x} = -0.0001$   
 $U_{fin\ in\ y} = -0.0018$   
 $U_{fin} = 0.0018$   
Luce/ $U_{fin} > \text{limite}$   
 $4.94/0.0018 = 2792.6 > 200$   
Coefficienti combinatori impiegati:  
Pesi strutturali =  $1,000 + 0,600 = 1,600$   
Permanenti portati =  $1,000 + 0,600 = 1,600$   
Neve =  $0,500 + 0,500 = 1,000$   
Vento =  $0,600 + 0,000 = 0,600$

### Superelemento in legno a "Falda 1" 66-(-1902; -331)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Superelemento di lunghezza complessiva  $L = 4.94$  composto da:  
asta 193: Trave in legno a falda Falda 1 fili 66-65 ( $L = 2.518$ )  
asta 207: Trave in legno a falda Falda 1 fili 65-64 ( $L = 2.422$ )

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
 $\beta_x = 0$ ;  $\beta_y = 0$   
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 3.729  
 $K_{def} = 0$   
 $U_{inst\ tot\ in\ x} = -0.0001$   
 $U_{inst\ tot\ in\ y} = -0.0006$   
 $U_{inst\ tot} = 0.0006$   
Luce/ $U_{inst,tot} > \text{limite}$   
 $4.94/0.0006 = 7775.5 > 300$  Comb: SLE rara, 8

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 3.648  
 $K_{def} = 0$   
 $U_{inst\ var\ in\ x} = 0$



Uinst var in y = -0.0004  
Uinst var = 0.0004  
Luce/Uinst,var > limite  
4.94/0.0004=11902.8 > 300 Comb: SLE rara, 8

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 3.812  
Kdef = 0.6  
Ufin in x = -0.0001  
Ufin in y = -0.0008  
Ufin = 0.0008  
Luce/Ufin > limite  
4.94/0.0008=6382 > 200  
Coefficienti combinatori impiegati:  
Pesi strutturali = 1,000 + 0,600 = 1,600  
Permanenti portati = 1,000 + 0,600 = 1,600  
Neve = 0,500 + 0,500 = 1,000

### Superelemento in legno a "Falda 1" 77-(-1818; -331)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Superelemento di lunghezza complessiva L= 4.94 composto da:  
asta 192: Trave in legno a falda Falda 1 fili 77-76 (L = 2.518)  
asta 206: Trave in legno a falda Falda 1 fili 76-75 (L = 2.422)

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
 $\beta_x = 0$ ;  $\beta_y = 0$   
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 3.648  
Kdef = 0  
Uinst tot in x = 0  
Uinst tot in y = -0.0007  
Uinst tot = 0.0007  
Luce/Uinst,tot > limite  
4.94/0.0007=7393.7 > 300 Comb: SLE rara, 8

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 3.648  
Kdef = 0  
Uinst var in x = 0  
Uinst var in y = -0.0004  
Uinst var = 0.0004  
Luce/Uinst,var > limite  
4.94/0.0004=12302.1 > 300 Comb: SLE rara, 8

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 3.732  
Kdef = 0.6  
Ufin in x = -0.0001  
Ufin in y = -0.0008  
Ufin = 0.0008  
Luce/Ufin > limite  
4.94/0.0008=5919.3 > 200  
Coefficienti combinatori impiegati:  
Pesi strutturali = 1,000 + 0,600 = 1,600  
Permanenti portati = 1,000 + 0,600 = 1,600  
Neve = 0,500 + 0,500 = 1,000

### Superelemento in legno a "Falda 1" 85-(-1734; -331)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)



## Dati generali

Superelemento di lunghezza complessiva  $L = 4.94$  composto da:

asta 191: Trave in legno a falda Falda 1 fili 85-84 ( $L = 2.518$ )

asta 205: Trave in legno a falda Falda 1 fili 84-83 ( $L = 2.422$ )

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 2.182

$K_{def} = 0$

$U_{inst\ tot\ in\ x} = 0$

$U_{inst\ tot\ in\ y} = -0.0021$

$U_{inst\ tot} = 0.0021$

Luce/ $U_{inst,tot} >$  limite

$4.94/0.0021 = 2359 > 300$  Comb: SLE rara, 16

### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 3.003

$K_{def} = 0$

$U_{inst\ var\ in\ x} = 0$

$U_{inst\ var\ in\ y} = -0.001$

$U_{inst\ var} = 0.001$

Luce/ $U_{inst,var} >$  limite

$4.94/0.001 = 4731 > 300$  Comb: SLE rara, 16

### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 2.098

$K_{def} = 0.6$

$U_{fin\ in\ x} = 0$

$U_{fin\ in\ y} = -0.0028$

$U_{fin} = 0.0028$

Luce/ $U_{fin} >$  limite

$4.94/0.0028 = 1783.3 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Variabile A =  $0,700 + 0,180 = 0,880$

Neve =  $0,500 + 0,500 = 1,000$

## Superelemento in legno a "Falda 1" 93-(-1650; -468)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Superelemento di lunghezza complessiva  $L = 6.665$  composto da:

asta 190: Trave in legno a falda Falda 1 fili 93-92 ( $L = 2.518$ )

asta 277: Trave in legno a falda Falda 1 fili 92-91 ( $L = 2.422$ )

asta 503: Trave in legno a falda Falda 1 fili 91-90 ( $L = 1.726$ )

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 2.182

$K_{def} = 0$

$U_{inst\ tot\ in\ x} = 0$

$U_{inst\ tot\ in\ y} = -0.0033$



Uinst tot = 0.0033  
Luce/Uinst,tot > limite  
 $6.665/0.0033=2003.1 > 300$  Comb: SLE rara, 16

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 2.35  
Kdef = 0  
Uinst var in x = 0  
Uinst var in y = -0.0016  
Uinst var = 0.0016  
Luce/Uinst,var > limite  
 $6.665/0.0016=4207.4 > 300$  Comb: SLE rara, 16

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 2.182  
Kdef = 0.6  
Ufin in x = 0  
Ufin in y = -0.0044  
Ufin = 0.0044  
Luce/Ufin > limite  
 $6.665/0.0044=1517.8 > 200$   
Coefficienti combinatori impiegati:  
Pesi strutturali =  $1,000 + 0,600 = 1,600$   
Permanenti portati =  $1,000 + 0,600 = 1,600$   
Variabile A =  $0,700 + 0,180 = 0,880$   
Neve =  $0,500 + 0,500 = 1,000$

### Superelemento in legno a "Falda 1" 101-(-1566; -468)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Superelemento di lunghezza complessiva L= 6.665 composto da:  
asta 189: Trave in legno a falda Falda 1 fili 101-100 (L = 2.518)  
asta 278: Trave in legno a falda Falda 1 fili 100-99 (L = 2.422)  
asta 504: Trave in legno a falda Falda 1 fili 99-98 (L = 1.726)

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
 $\beta_x = 0$ ;  $\beta_y = 0$   
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 2.098  
Kdef = 0  
Uinst tot in x = 0  
Uinst tot in y = -0.0033  
Uinst tot = 0.0033  
Luce/Uinst,tot > limite  
 $6.665/0.0033=2025.2 > 300$  Comb: SLE rara, 16

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 2.266  
Kdef = 0  
Uinst var in x = 0  
Uinst var in y = -0.0016  
Uinst var = 0.0016  
Luce/Uinst,var > limite  
 $6.665/0.0016=4267.6 > 300$  Comb: SLE rara, 16

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 2.098  
Kdef = 0.6  
Ufin in x = -0.0001  
Ufin in y = -0.0043  
Ufin = 0.0043  
Luce/Ufin > limite



$6.665/0.0043=1533.7 > 200$   
Coefficienti combinatori impiegati:  
Pesi strutturali =  $1,000 + 0,600 = 1,600$   
Permanenti portati =  $1,000 + 0,600 = 1,600$   
Variabile A =  $0,700 + 0,180 = 0,880$   
Neve =  $0,500 + 0,500 = 1,000$

**Superelemento in legno a "Falda 1" 113-(-1482; -468)**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati generali**

Superelemento di lunghezza complessiva L= 6.665 composto da:  
asta 188: Trave in legno a falda Falda 1 fili 113-112 (L = 2.518)  
asta 279: Trave in legno a falda Falda 1 fili 112-111 (L = 2.422)  
asta 505: Trave in legno a falda Falda 1 fili 111-110 (L = 1.726)

**Caratteristiche della sezione**

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
 $\beta_x = 0$ ;  $\beta_y = 0$   
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

**Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19**

Sezione ad ascissa 1.847  
 $K_{def} = 0$   
 $U_{inst\ tot\ in\ x} = 0$   
 $U_{inst\ tot\ in\ y} = -0.0021$   
 $U_{inst\ tot} = 0.0021$   
Luce/ $U_{inst,tot} > \text{limite}$   
 $6.665/0.0021=3113.9 > 300$  Comb: SLE rara, 16

**Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7**

Sezione ad ascissa 1.93  
 $K_{def} = 0$   
 $U_{inst\ var\ in\ x} = 0$   
 $U_{inst\ var\ in\ y} = -0.001$   
 $U_{inst\ var} = 0.001$   
Luce/ $U_{inst,var} > \text{limite}$   
 $6.665/0.001=6527.9 > 300$  Comb: SLE rara, 16

**Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)**

Sezione ad ascissa 1.847  
 $K_{def} = 0.6$   
 $U_{fin\ in\ x} = -0.0001$   
 $U_{fin\ in\ y} = -0.0028$   
 $U_{fin} = 0.0028$   
Luce/ $U_{fin} > \text{limite}$   
 $6.665/0.0028=2363.4 > 200$   
Coefficienti combinatori impiegati:  
Pesi strutturali =  $1,000 + 0,600 = 1,600$   
Permanenti portati =  $1,000 + 0,600 = 1,600$   
Variabile A =  $0,700 + 0,180 = 0,880$   
Neve =  $0,500 + 0,500 = 1,000$

**Superelemento in legno a "Falda 1" 119-(-1398; -357)**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati generali**

Superelemento di lunghezza complessiva L= 2.422 composto da:  
asta 280: Trave in legno a falda Falda 1 fili 119-124 (L = 0.292)  
asta 281: Trave in legno a falda Falda 1 fili 119-124 (L = 2.13)

**Caratteristiche della sezione**

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588



Materiale: GL 24h EN 14080  
 $\beta_x = 0$ ;  $\beta_y = 0$   
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 1.215  
 $K_{def} = 0$   
 $U_{inst\ tot\ in\ x} = 0.0001$   
 $U_{inst\ tot\ in\ y} = -0.0002$   
 $U_{inst\ tot} = 0.0002$   
Luce/ $U_{inst,tot} > \text{limite}$   
 $2.422/0.0002 = 9765.5 > 300$  Comb: SLE rara, 17

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 1.215  
 $K_{def} = 0$   
 $U_{inst\ var\ in\ x} = 0$   
 $U_{inst\ var\ in\ y} = -0.0001$   
 $U_{inst\ var} = 0.0001$   
Luce/ $U_{inst,var} > \text{limite}$   
 $2.422/0.0001 = 17017 > 300$  Comb: SLE rara, 17

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 1.225  
 $K_{def} = 0.6$   
 $U_{fin\ in\ x} = 0.0001$   
 $U_{fin\ in\ y} = -0.0003$   
 $U_{fin} = 0.0003$   
Luce/ $U_{fin} > \text{limite}$   
 $2.422/0.0003 = 7753.1 > 200$   
Coefficienti combinatori impiegati:  
Pesi strutturali =  $1,000 + 0,600 = 1,600$   
Permanenti portati =  $1,000 + 0,600 = 1,600$   
Variabile A =  $0,700 + 0,180 = 0,880$   
Neve =  $0,500 + 0,500 = 1,000$   
Vento =  $0,600 + 0,000 = 0,600$

### Superelemento in legno a "Falda 1" 120-119

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Superelemento di lunghezza complessiva  $L = 2.518$  composto da:  
asta 185: Trave in legno a falda Falda 1 fili 120-119 ( $L = 1.896$ )  
asta 186: Trave in legno a falda Falda 1 fili 120-119 ( $L = 0.311$ )  
asta 187: Trave in legno a falda Falda 1 fili 120-119 ( $L = 0.311$ )

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
 $\beta_x = 0$ ;  $\beta_y = 0$   
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 0.569  
 $K_{def} = 0$   
 $U_{inst\ tot\ in\ x} = 0.0001$   
 $U_{inst\ tot\ in\ y} = 0.0002$   
 $U_{inst\ tot} = 0.0002$   
Luce/ $U_{inst,tot} > \text{limite}$   
 $2.518/0.0002 = 12700.7 > 300$  Comb: SLE rara, 8

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 0.569  
 $K_{def} = 0$



Uinst var in x = 0  
Uinst var in y = 0.0002  
Uinst var = 0.0002  
Luce/Uinst,var > limite  
 $2.518/0.0002=16285.5 > 300$  Comb: SLE rara, 8

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 0.569  
Kdef = 0.6  
Ufin in x = 0.0001  
Ufin in y = 0.0002  
Ufin = 0.0002  
Luce/Ufin > limite  
 $2.518/0.0002=11218.9 > 200$   
Coefficienti combinatori impiegati:  
Pesi strutturali =  $1,000 + 0,600 = 1,600$   
Permanenti portati =  $1,000 + 0,600 = 1,600$   
Neve =  $0,500 + 0,500 = 1,000$

### Superelemento in legno a "Falda 1" 132-(-1314; -482)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Superelemento di lunghezza complessiva L= 6.665 composto da:  
asta 184: Trave in legno a falda Falda 1 fili 132-131 (L = 2.518)  
asta 282: Trave in legno a falda Falda 1 fili 131-130 (L = 4.147)

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
 $\beta_x = 0$ ;  $\beta_y = 0$   
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 4.73  
Kdef = 0  
Uinst tot in x = 0  
Uinst tot in y = -0.0039  
Uinst tot = 0.0039  
Luce/Uinst,tot > limite  
 $6.665/0.0039=1708.9 > 300$  Comb: SLE rara, 9

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 4.592  
Kdef = 0  
Uinst var in x = 0  
Uinst var in y = -0.0023  
Uinst var = 0.0023  
Luce/Uinst,var > limite  
 $6.665/0.0023=2839.1 > 300$  Comb: SLE rara, 9

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 4.814  
Kdef = 0.6  
Ufin in x = 0.0001  
Ufin in y = -0.0048  
Ufin = 0.0048  
Luce/Ufin > limite  
 $6.665/0.0048=1377.2 > 200$   
Coefficienti combinatori impiegati:  
Pesi strutturali =  $1,000 + 0,600 = 1,600$   
Permanenti portati =  $1,000 + 0,600 = 1,600$   
Neve =  $0,500 + 0,500 = 1,000$   
Vento =  $0,600 + 0,000 = 0,600$



## Superelemento in legno a "Falda 1" 141-(-1230; -482)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Superelemento di lunghezza complessiva L= 6.665 composto da:

asta 183: Trave in legno a falda Falda 1 fili 141-140 (L = 2.518)

asta 283: Trave in legno a falda Falda 1 fili 140-139 (L = 4.147)

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 4.73

Kdef = 0

Uinst tot in x = 0

Uinst tot in y = -0.0045

Uinst tot = 0.0045

Luce/Uinst,tot > limite

6.665/0.0045=1484.8 > 300 Comb: SLE rara, 9

### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 4.592

Kdef = 0

Uinst var in x = 0

Uinst var in y = -0.0027

Uinst var = 0.0027

Luce/Uinst,var > limite

6.665/0.0027=2453.8 > 300 Comb: SLE rara, 9

### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 4.814

Kdef = 0.6

Ufin in x = 0

Ufin in y = -0.0056

Ufin = 0.0056

Luce/Ufin > limite

6.665/0.0056=1198.6 > 200

Coefficienti combinatori impiegati:

Pesi strutturali = 1,000 + 0,600 = 1,600

Permanenti portati = 1,000 + 0,600 = 1,600

Neve = 0,500 + 0,500 = 1,000

Vento = 0,600 + 0,000 = 0,600

## Superelemento in legno a "Falda 1" 147-(-1146; -482)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Superelemento di lunghezza complessiva L= 6.666 composto da:

asta 182: Trave in legno a falda Falda 1 fili 147-146 (L = 2.518)

asta 284: Trave in legno a falda Falda 1 fili 146-145 (L = 4.147)

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 4.73





Kdef = 0  
Uinst tot in x = 0.0001  
Uinst tot in y = -0.0036  
Uinst tot = 0.0036  
Luce/Uinst,tot > limite  
6.666/0.0036=1871 > 300 Comb: SLE rara, 9

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 4.592  
Kdef = 0  
Uinst var in x = 0  
Uinst var in y = -0.0021  
Uinst var = 0.0021  
Luce/Uinst,var > limite  
6.666/0.0021=3106.4 > 300 Comb: SLE rara, 9

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 4.814  
Kdef = 0.6  
Ufin in x = 0.0001  
Ufin in y = -0.0044  
Ufin = 0.0044  
Luce/Ufin > limite  
6.666/0.0044=1507.4 > 200  
Coefficienti combinatori impiegati:  
Pesi strutturali = 1,000 + 0,600 = 1,600  
Permanenti portati = 1,000 + 0,600 = 1,600  
Neve = 0,500 + 0,500 = 1,000  
Vento = 0,600 + 0,000 = 0,600

### Superelemento in legno a "Falda 1" 167-(-979; -468)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Superelemento di lunghezza complessiva L= 6.666 composto da:  
asta 180: Trave in legno a falda Falda 1 fili 167-170 (L = 2.518)  
asta 286: Trave in legno a falda Falda 1 fili 170-169 (L = 2.421)  
asta 511: Trave in legno a falda Falda 1 fili 169-168 (L = 1.726)

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
 $\beta_x = 0$ ;  $\beta_y = 0$   
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 1.847  
Kdef = 0  
Uinst tot in x = 0.0001  
Uinst tot in y = -0.0027  
Uinst tot = 0.0027  
Luce/Uinst,tot > limite  
6.666/0.0027=2440.5 > 300 Comb: SLE rara, 17

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 2.098  
Kdef = 0  
Uinst var in x = 0  
Uinst var in y = -0.0012  
Uinst var = 0.0012  
Luce/Uinst,var > limite  
6.666/0.0012=5660.2 > 300 Comb: SLE rara, 17

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 1.763  
Kdef = 0.6  
Ufin in x = 0.0001



Ufin in y = -0.0037  
Ufin = 0.0037  
Luce/Ufin > limite  
 $6.666/0.0037=1806.3 > 200$   
Coefficienti combinatori impiegati:  
Pesi strutturali =  $1,000 + 0,600 = 1,600$   
Permanenti portati =  $1,000 + 0,600 = 1,600$   
Variabile A =  $0,700 + 0,180 = 0,880$   
Neve =  $0,500 + 0,500 = 1,000$   
Vento =  $0,600 + 0,000 = 0,600$

## Superelemento in legno a "Falda 1" 180-(-895; -468)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Superelemento di lunghezza complessiva L= 6.666 composto da:  
asta 179: Trave in legno a falda Falda 1 fili 180-179 (L = 2.518)  
asta 288: Trave in legno a falda Falda 1 fili 179-178 (L = 2.421)  
asta 513: Trave in legno a falda Falda 1 fili 178-177 (L = 1.726)

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
 $\beta_x = 0$ ;  $\beta_y = 0$   
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 2.015  
Kdef = 0  
Uinst tot in x = 0.0001  
Uinst tot in y = -0.0037  
Uinst tot = 0.0037  
Luce/Uinst,tot > limite  
 $6.666/0.0037=1786.2 > 300$  Comb: SLE rara, 16

### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 2.267  
Kdef = 0  
Uinst var in x = 0  
Uinst var in y = -0.0016  
Uinst var = 0.0016  
Luce/Uinst,var > limite  
 $6.666/0.0016=4061.2 > 300$  Comb: SLE rara, 16

### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 2.015  
Kdef = 0.6  
Ufin in x = 0.0001  
Ufin in y = -0.005  
Ufin = 0.005  
Luce/Ufin > limite  
 $6.666/0.005=1328.6 > 200$   
Coefficienti combinatori impiegati:  
Pesi strutturali =  $1,000 + 0,600 = 1,600$   
Permanenti portati =  $1,000 + 0,600 = 1,600$   
Variabile A =  $0,700 + 0,180 = 0,880$   
Neve =  $0,500 + 0,500 = 1,000$

## Superelemento in legno a "Falda 1" 189-(-811; -468)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Superelemento di lunghezza complessiva L= 6.666 composto da:  
asta 178: Trave in legno a falda Falda 1 fili 189-188 (L = 2.518)  
asta 287: Trave in legno a falda Falda 1 fili 188-187 (L = 2.421)



asta 512: Trave in legno a falda Falda 1 fili 187-186 (L = 1.726)

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 2.099

Kdef = 0

Uinst tot in x = 0.0001

Uinst tot in y = -0.0035

Uinst tot = 0.0035

Luce/Uinst,tot > limite

$6.666/0.0035=1917.9 > 300$  Comb: SLE rara, 17

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 2.267

Kdef = 0

Uinst var in x = 0

Uinst var in y = -0.0015

Uinst var = 0.0015

Luce/Uinst,var > limite

$6.666/0.0015=4370.2 > 300$  Comb: SLE rara, 17

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 2.015

Kdef = 0.6

Ufin in x = 0.0001

Ufin in y = -0.0047

Ufin = 0.0047

Luce/Ufin > limite

$6.666/0.0047=1425.2 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali = 1,000 + 0,600 = 1,600

Permanenti portati = 1,000 + 0,600 = 1,600

Variabile A = 0,700 + 0,180 = 0,880

Neve = 0,500 + 0,500 = 1,000

Vento = 0,600 + 0,000 = 0,600

### Superelemento in legno a "Falda 1" 200-(-727; -331)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Superelemento di lunghezza complessiva L= 4.939 composto da:

asta 177: Trave in legno a falda Falda 1 fili 200-199 (L = 2.518)

asta 204: Trave in legno a falda Falda 1 fili 199-198 (L = 2.421)

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 1.93

Kdef = 0

Uinst tot in x = 0.0001

Uinst tot in y = -0.0019

Uinst tot = 0.0019

Luce/Uinst,tot > limite

$4.939/0.0019=2633.1 > 300$  Comb: SLE rara, 16



#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 2.266

Kdef = 0

Uinst var in x = 0.0001

Uinst var in y = -0.0008

Uinst var = 0.0008

Luce/Uinst,var > limite

4.939/0.0008=5988.8 > 300 Comb: SLE rara, 16

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 1.93

Kdef = 0.6

Ufin in x = 0.0001

Ufin in y = -0.0025

Ufin = 0.0025

Luce/Ufin > limite

4.939/0.0025=1954.5 > 200

Coefficienti combinatori impiegati:

Pesi strutturali = 1,000 + 0,600 = 1,600

Permanenti portati = 1,000 + 0,600 = 1,600

Variabile A = 0,700 + 0,180 = 0,880

Neve = 0,500 + 0,500 = 1,000

### Superelemento in legno a "Falda 1" 206-205

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Superelemento di lunghezza complessiva L= 4.94 composto da:

asta 174: Trave in legno a falda Falda 1 fili 206-211 (L = 1.896)

asta 175: Trave in legno a falda Falda 1 fili 206-211 (L = 0.311)

asta 176: Trave in legno a falda Falda 1 fili 206-211 (L = 0.311)

asta 202: Trave in legno a falda Falda 1 fili 211-205 (L = 0.292)

asta 203: Trave in legno a falda Falda 1 fili 211-205 (L = 2.129)

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 3.946

Kdef = 0

Uinst tot in x = 0.0001

Uinst tot in y = -0.0003

Uinst tot = 0.0003

Luce/Uinst,tot > limite

4.94/0.0003=15099.9 > 300 Comb: SLE rara, 8

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 3.875

Kdef = 0

Uinst var in x = 0.0001

Uinst var in y = -0.0002

Uinst var = 0.0002

Luce/Uinst,var > limite

4.94/0.0002=25772.4 > 300 Comb: SLE rara, 8

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 4.04

Kdef = 0.6

Ufin in x = 0.0002

Ufin in y = -0.0004

Ufin = 0.0004

Luce/Ufin > limite

4.94/0.0004=11901.1 > 200



Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Neve =  $0,500 + 0,500 = 1,000$

## Superelemento in legno a "Falda 1" 216-(-559; -331)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Superelemento di lunghezza complessiva  $L = 4.939$  composto da:

asta 173: Trave in legno a falda Falda 1 fili 216-215 ( $L = 2.518$ )

asta 201: Trave in legno a falda Falda 1 fili 215-214 ( $L = 2.421$ )

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 3.648

$K_{def} = 0$

$U_{inst\ tot\ in\ x} = 0.0001$

$U_{inst\ tot\ in\ y} = -0.0007$

$U_{inst\ tot} = 0.0007$

$Luce/U_{inst,tot} > limite$

$4.939/0.0007 = 6671.7 > 300$  Comb: SLE rara, 8

### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 3.567

$K_{def} = 0$

$U_{inst\ var\ in\ x} = 0.0001$

$U_{inst\ var\ in\ y} = -0.0005$

$U_{inst\ var} = 0.0005$

$Luce/U_{inst,var} > limite$

$4.939/0.0005 = 10061.6 > 300$  Comb: SLE rara, 8

### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 3.732

$K_{def} = 0.6$

$U_{fin\ in\ x} = 0.0002$

$U_{fin\ in\ y} = -0.0009$

$U_{fin} = 0.0009$

$Luce/U_{fin} > limite$

$4.939/0.0009 = 5512.1 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Neve =  $0,500 + 0,500 = 1,000$

## Superelemento in legno a "Falda 1" 230-(-475; -331)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Superelemento di lunghezza complessiva  $L = 4.94$  composto da:

asta 172: Trave in legno a falda Falda 1 fili 230-229 ( $L = 2.519$ )

asta 200: Trave in legno a falda Falda 1 fili 229-228 ( $L = 2.421$ )

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200



Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 3.245  
Kdef = 0  
Uinst tot in x = 0.0001  
Uinst tot in y = -0.0014  
Uinst tot = 0.0014  
Luce/Uinst,tot > limite  
4.94/0.0014=3487.6 > 300 Comb: SLE rara, 9

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 3.245  
Kdef = 0  
Uinst var in x = 0.0001  
Uinst var in y = -0.0009  
Uinst var = 0.0009  
Luce/Uinst,var > limite  
4.94/0.0009=5732.4 > 300 Comb: SLE rara, 9

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 3.329  
Kdef = 0.6  
Ufin in x = 0.0002  
Ufin in y = -0.0018  
Ufin = 0.0018  
Luce/Ufin > limite  
4.94/0.0018=2820.1 > 200  
Coefficienti combinatori impiegati:  
Pesi strutturali = 1,000 + 0,600 = 1,600  
Permanenti portati = 1,000 + 0,600 = 1,600  
Neve = 0,500 + 0,500 = 1,000  
Vento = 0,600 + 0,000 = 0,600

### Superelemento in legno a "Falda 1" 238-(-391; -331)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Superelemento di lunghezza complessiva L= 3.992 composto da:  
asta 199: Trave in legno a falda Falda 1 fili 238-235 (L = 1.571)  
asta 212: Trave in legno a falda Falda 1 fili 235-234 (L = 2.421)

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 2.297  
Kdef = 0  
Uinst tot in x = 0.0001  
Uinst tot in y = -0.0015  
Uinst tot = 0.0015  
Luce/Uinst,tot > limite  
3.992/0.0015=2594.6 > 300 Comb: SLE rara, 9

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 2.297  
Kdef = 0  
Uinst var in x = 0.0001  
Uinst var in y = -0.0009  
Uinst var = 0.0009  
Luce/Uinst,var > limite  
3.992/0.0009=4404.2 > 300 Comb: SLE rara, 9



### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 2.35

Kdef = 0.6

Ufin in x = 0.0002

Ufin in y = -0.0019

Ufin = 0.0019

Luce/Ufin > limite

$3.992/0.0019=2074.3 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Neve =  $0,500 + 0,500 = 1,000$

Vento =  $0,600 + 0,000 = 0,600$

### Superelemento in legno a "Falda 1" 244-(-307; -331)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Superelemento di lunghezza complessiva L= 3.114 composto da:

asta 198: Trave in legno a falda Falda 1 fili 244-241 (L = 0.693)

asta 211: Trave in legno a falda Falda 1 fili 241-240 (L = 2.421)

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 1.661

Kdef = 0

Uinst tot in x = 0.0001

Uinst tot in y = -0.0011

Uinst tot = 0.0011

Luce/Uinst,tot > limite

$3.114/0.0011=2869.3 > 300$  Comb: SLE rara, 9

### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 1.661

Kdef = 0

Uinst var in x = 0.0001

Uinst var in y = -0.0006

Uinst var = 0.0006

Luce/Uinst,var > limite

$3.114/0.0006=4935 > 300$  Comb: SLE rara, 9

### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 1.685

Kdef = 0.6

Ufin in x = 0.0002

Ufin in y = -0.0014

Ufin = 0.0014

Luce/Ufin > limite

$3.114/0.0014=2286 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Neve =  $0,500 + 0,500 = 1,000$

Vento =  $0,600 + 0,000 = 0,600$

### Superelemento in legno a "Falda 1" 315-(-1062; -468)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)



### Dati generali

Superelemento di lunghezza complessiva  $L = 6.666$  composto da:  
asta 181: Trave in legno a falda Falda 1 fili 315-161 ( $L = 2.519$ )  
asta 285: Trave in legno a falda Falda 1 fili 161-160 ( $L = 2.421$ )  
asta 510: Trave in legno a falda Falda 1 fili 160-159 ( $L = 1.726$ )

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 3.245

$K_{def} = 0$

$U_{inst\ tot\ in\ x} = -0.0001$

$U_{inst\ tot\ in\ y} = -0.0007$

$U_{inst\ tot} = 0.0007$

$Luce/U_{inst,tot} > \text{limite}$

$6.666/0.0007 = 9173.3 > 300$  Comb: SLE rara, 17

### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 3.407

$K_{def} = 0$

$U_{inst\ var\ in\ x} = 0$

$U_{inst\ var\ in\ y} = -0.0004$

$U_{inst\ var} = 0.0004$

$Luce/U_{inst,var} > \text{limite}$

$6.666/0.0004 = 16007.3 > 300$  Comb: SLE rara, 17

### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 1.679

$K_{def} = 0.6$

$U_{fin\ in\ x} = -0.0001$

$U_{fin\ in\ y} = -0.001$

$U_{fin} = 0.001$

$Luce/U_{fin} > \text{limite}$

$6.666/0.001 = 6927.7 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Variabile A =  $0,700 + 0,180 = 0,880$

Neve =  $0,500 + 0,500 = 1,000$

Vento =  $0,600 + 0,000 = 0,600$

## Superelemento in legno a "Falda 1" (-1398; -318)-(-1398; -585)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Superelemento di lunghezza complessiva  $L = 1.726$  composto da:

asta 506: Trave in legno a falda Falda 1 fili 124-123 ( $L = 0.551$ )

asta 507: Trave in legno a falda Falda 1 fili 124-123 ( $L = 0.391$ )

asta 508: Trave in legno a falda Falda 1 fili 124-123 ( $L = 0.391$ )

asta 509: Trave in legno a falda Falda 1 fili 124-123 ( $L = 0.391$ )

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 0.995





Kdef = 0  
Uinst tot in x = 0  
Uinst tot in y = 0  
Uinst tot = 0  
Luce/Uinst,tot > limite  
 $1.726/0=39374.2 > 300$  Comb: SLE rara, 8

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 0.982  
Kdef = 0  
Uinst var in x = 0  
Uinst var in y = 0  
Uinst var = 0  
Luce/Uinst,var > limite  
 $1.726/0=67021.9 > 300$  Comb: SLE rara, 8

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 1.026  
Kdef = 0.6  
Ufin in x = -0.0001  
Ufin in y = 0  
Ufin = 0.0001  
Luce/Ufin > limite  
 $1.726/0.0001=31288.9 > 200$   
Coefficienti combinatori impiegati:  
Pesi strutturali =  $1,000 + 0,600 = 1,600$   
Permanenti portati =  $1,000 + 0,600 = 1,600$   
Neve =  $0,500 + 0,500 = 1,000$

### Superelemento in legno a "Falda 2" 32-26

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Superelemento di lunghezza complessiva L= 4.656 composto da:  
asta 154: Trave in legno a falda Falda 2 fili 32-26 (L = 0.774)  
asta 155: Trave in legno a falda Falda 2 fili 32-26 (L = 0.84)  
asta 156: Trave in legno a falda Falda 2 fili 32-26 (L = 0.841)  
asta 157: Trave in legno a falda Falda 2 fili 32-26 (L = 0.839)  
asta 158: Trave in legno a falda Falda 2 fili 32-26 (L = 0.84)  
asta 159: Trave in legno a falda Falda 2 fili 32-26 (L = 0.522)

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
 $\beta_x = 0$ ;  $\beta_y = 0$   
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 2.454  
Kdef = 0  
Uinst tot in x = 0.0001  
Uinst tot in y = 0.0004  
Uinst tot = 0.0004  
Luce/Uinst,tot > limite  
 $4.656/0.0004=12138.5 > 300$  Comb: SLE rara, 9

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 2.454  
Kdef = 0  
Uinst var in x = 0.0001  
Uinst var in y = 0.0003  
Uinst var = 0.0003  
Luce/Uinst,var > limite  
 $4.656/0.0003=18433.3 > 300$  Comb: SLE rara, 9

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 2.508



Kdef = 0.6  
Ufin in x = 0.0002  
Ufin in y = 0.0005  
Ufin = 0.0005  
Luce/Ufin > limite  
 $4.656/0.0005=10174.1 > 200$   
Coefficienti combinatori impiegati:  
Pesi strutturali =  $1,000 + 0,600 = 1,600$   
Permanenti portati =  $1,000 + 0,600 = 1,600$   
Neve =  $0,500 + 0,500 = 1,000$   
Vento =  $0,600 + 0,000 = 0,600$

## Superelemento in legno a "Falda 2" 35-(-2463; -67)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Superelemento di lunghezza complessiva L= 3.123 composto da:  
asta 226: Trave in legno a falda Falda 2 fili 35-27 (L = 0.617)  
asta 228: Trave in legno a falda Falda 2 fili 27-4 (L = 2.506)

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
 $\beta_x = 0$ ;  $\beta_y = 0$   
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 1.87  
Kdef = 0  
Uinst tot in x = -0.0001  
Uinst tot in y = -0.0005  
Uinst tot = 0.0005  
Luce/Uinst,tot > limite  
 $3.123/0.0005=6801 > 300$  Comb: SLE rara, 16

### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 1.953  
Kdef = 0  
Uinst var in x = 0  
Uinst var in y = -0.0003  
Uinst var = 0.0003  
Luce/Uinst,var > limite  
 $3.123/0.0003=11662.1 > 300$  Comb: SLE rara, 16

### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 1.89  
Kdef = 0.6  
Ufin in x = -0.0001  
Ufin in y = -0.0006  
Ufin = 0.0006  
Luce/Ufin > limite  
 $3.123/0.0006=5402.1 > 200$   
Coefficienti combinatori impiegati:  
Pesi strutturali =  $1,000 + 0,600 = 1,600$   
Permanenti portati =  $1,000 + 0,600 = 1,600$   
Variabile A =  $0,700 + 0,180 = 0,880$   
Neve =  $0,500 + 0,500 = 1,000$

## Superelemento in legno a "Falda 2" 36-(-2463; 269)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Superelemento di lunghezza complessiva L= 3.32 composto da:  
asta 221: Trave in legno a falda Falda 2 fili 36-31 (L = 0.814)  
asta 223: Trave in legno a falda Falda 2 fili 31-8 (L = 2.506)



#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 1.984

Kdef = 0

Uinst tot in x = 0.0001

Uinst tot in y = -0.0004

Uinst tot = 0.0004

Luce/Uinst,tot > limite

$3.32/0.0004=8745.2 > 300$  Comb: SLE rara, 17

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 2.067

Kdef = 0

Uinst var in x = 0

Uinst var in y = -0.0002

Uinst var = 0.0002

Luce/Uinst,var > limite

$3.32/0.0002=14751.3 > 300$  Comb: SLE rara, 17

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 2.011

Kdef = 0.6

Ufin in x = 0.0001

Ufin in y = -0.0005

Ufin = 0.0005

Luce/Ufin > limite

$3.32/0.0005=6903.4 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Variabile A =  $0,700 + 0,180 = 0,880$

Neve =  $0,500 + 0,500 = 1,000$

Vento =  $0,600 + 0,000 = 0,600$

### Superelemento in legno a "Falda 2" 43-(-2463; 17)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Superelemento di lunghezza complessiva L= 4.1 composto da:

asta 225: Trave in legno a falda Falda 2 fili 43-28 (L = 1.594)

asta 227: Trave in legno a falda Falda 2 fili 28-5 (L = 2.506)

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 2.847

Kdef = 0

Uinst tot in x = -0.0001

Uinst tot in y = -0.0006

Uinst tot = 0.0006

Luce/Uinst,tot > limite

$4.1/0.0006=7216.5 > 300$  Comb: SLE rara, 16



#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 2.847

Kdef = 0

Uinst var in x = 0

Uinst var in y = -0.0003

Uinst var = 0.0003

Luce/Uinst,var > limite

4.1/0.0003=12644.1 > 300 Comb: SLE rara, 16

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 2.9

Kdef = 0.6

Ufin in x = -0.0001

Ufin in y = -0.0007

Ufin = 0.0007

Luce/Ufin > limite

4.1/0.0007=5694.1 > 200

Coefficienti combinatori impiegati:

Pesi strutturali = 1,000 + 0,600 = 1,600

Permanenti portati = 1,000 + 0,600 = 1,600

Variabile A = 0,700 + 0,180 = 0,880

Neve = 0,500 + 0,500 = 1,000

### Superelemento in legno a "Falda 2" 44-(-2463; 185)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Superelemento di lunghezza complessiva L= 4.203 composto da:

asta 222: Trave in legno a falda Falda 2 fili 44-30 (L = 1.697)

asta 224: Trave in legno a falda Falda 2 fili 30-7 (L = 2.506)

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 2.867

Kdef = 0

Uinst tot in x = 0

Uinst tot in y = -0.0005

Uinst tot = 0.0005

Luce/Uinst,tot > limite

4.203/0.0005=7945.4 > 300 Comb: SLE rara, 17

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 2.867

Kdef = 0

Uinst var in x = 0

Uinst var in y = -0.0003

Uinst var = 0.0003

Luce/Uinst,var > limite

4.203/0.0003=14033.3 > 300 Comb: SLE rara, 17

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 2.923

Kdef = 0.6

Ufin in x = 0

Ufin in y = -0.0007

Ufin = 0.0007

Luce/Ufin > limite

4.203/0.0007=6214.3 > 200

Coefficienti combinatori impiegati:

Pesi strutturali = 1,000 + 0,600 = 1,600

Permanenti portati = 1,000 + 0,600 = 1,600



Variabile A = 0,700 + 0,180 = 0,880  
Neve = 0,500 + 0,500 = 1,000  
Vento = 0,600 + 0,000 = 0,600

### Superelemento in legno a "Falda 2" 51-(-2504; 101)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Superelemento di lunghezza complessiva L= 5.082 composto da:  
asta 90: Trave in legno a falda Falda 2 fili 51-29 (L = 2.128)  
asta 91: Trave in legno a falda Falda 2 fili 51-29 (L = 0.224)  
asta 92: Trave in legno a falda Falda 2 fili 51-29 (L = 0.224)  
asta 237: Trave in legno a falda Falda 2 fili 29-6 (L = 0.458)  
asta 238: Trave in legno a falda Falda 2 fili 29-6 (L = 2.049)

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
 $\beta_x = 0$ ;  $\beta_y = 0$   
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 1.206  
Kdef = 0  
Uinst tot in x = -0.0001  
Uinst tot in y = -0.0002  
Uinst tot = 0.0002  
Luce/Uinst,tot > limite  
5.082/0.0002=21137.3 > 300 Comb: SLE rara, 17

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 4.126  
Kdef = 0  
Uinst var in x = 0  
Uinst var in y = -0.0001  
Uinst var = 0.0001  
Luce/Uinst,var > limite  
5.082/0.0001=41186.9 > 300 Comb: SLE rara, 16

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 1.206  
Kdef = 0.6  
Ufin in x = -0.0001  
Ufin in y = -0.0003  
Ufin = 0.0003  
Luce/Ufin > limite  
5.082/0.0003=16200.9 > 200  
Coefficienti combinatori impiegati:  
Pesi strutturali = 1,000 + 0,600 = 1,600  
Permanenti portati = 1,000 + 0,600 = 1,600  
Variabile A = 0,700 + 0,180 = 0,880  
Neve = 0,500 + 0,500 = 1,000  
Vento = 0,600 + 0,000 = 0,600

### Superelemento in legno a "Falda 2" 51-(-2854; -716)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Superelemento di lunghezza complessiva L= 6.701 composto da:  
asta 71: Trave in legno a falda Falda 2 fili 51-14 (L = 0.826)  
asta 72: Trave in legno a falda Falda 2 fili 51-14 (L = 0.469)  
asta 73: Trave in legno a falda Falda 2 fili 51-14 (L = 0.785)  
asta 74: Trave in legno a falda Falda 2 fili 51-14 (L = 0.503)  
asta 75: Trave in legno a falda Falda 2 fili 51-14 (L = 0.816)  
asta 76: Trave in legno a falda Falda 2 fili 51-14 (L = 0.473)



asta 77: Trave in legno a falda Falda 2 fili 51-14 (L = 0.716)  
asta 78: Trave in legno a falda Falda 2 fili 51-14 (L = 0.573)  
asta 79: Trave in legno a falda Falda 2 fili 51-14 (L = 0.681)  
asta 80: Trave in legno a falda Falda 2 fili 51-14 (L = 0.86)

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 2.399

Kdef = 0

Uinst tot in x = 0.0001

Uinst tot in y = -0.0004

Uinst tot = 0.0004

Luce/Uinst,tot > limite

$6.701/0.0004 = 16951.8 > 300$  Comb: SLE rara, 9

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 2.416

Kdef = 0

Uinst var in x = 0.0001

Uinst var in y = -0.0002

Uinst var = 0.0002

Luce/Uinst,var > limite

$6.701/0.0002 = 32981.3 > 300$  Comb: SLE rara, 9

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 2.468

Kdef = 0.6

Ufin in x = 0.0001

Ufin in y = -0.0005

Ufin = 0.0005

Luce/Ufin > limite

$6.701/0.0005 = 13092.2 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Neve =  $0,500 + 0,500 = 1,000$

Vento =  $0,600 + 0,000 = 0,600$

### Superelemento in legno a "Falda 3" 32-(-1176; 346)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Superelemento di lunghezza complessiva L= 5.588 composto da:

asta 147: Trave in legno a falda Falda 3 fili 32-307 (L = 0.882)

asta 148: Trave in legno a falda Falda 3 fili 32-307 (L = 0.84)

asta 149: Trave in legno a falda Falda 3 fili 32-307 (L = 0.84)

asta 150: Trave in legno a falda Falda 3 fili 32-307 (L = 0.84)

asta 151: Trave in legno a falda Falda 3 fili 32-307 (L = 0.84)

asta 152: Trave in legno a falda Falda 3 fili 32-307 (L = 0.833)

asta 153: Trave in legno a falda Falda 3 fili 32-307 (L = 0.513)

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1



#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 2.786

Kdef = 0

Uinst tot in x = 0.0024

Uinst tot in y = -0.0053

Uinst tot = 0.0053

Luce/Uinst,tot > limite

5.588/0.0053=1053 > 300 Comb: SLE rara, 16

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 2.842

Kdef = 0

Uinst var in x = 0.0011

Uinst var in y = -0.0023

Uinst var = 0.0023

Luce/Uinst,var > limite

5.588/0.0023=2442.9 > 300 Comb: SLE rara, 16

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 2.871

Kdef = 0.6

Ufin in x = 0.0031

Ufin in y = -0.0073

Ufin = 0.0073

Luce/Ufin > limite

5.588/0.0073=767.7 > 200

Coefficienti combinatori impiegati:

Pesi strutturali = 1,000 + 0,600 = 1,600

Permanenti portati = 1,000 + 0,600 = 1,600

Variabile A = 0,700 + 0,180 = 0,880

Neve = 0,500 + 0,500 = 1,000

### Superelemento in legno a "Falda 3" 40-(-2154; 583)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Superelemento di lunghezza complessiva L= 3.708 composto da:

asta 268: Trave in legno a falda Falda 3 fili 40-41 (L = 1.064)

asta 276: Trave in legno a falda Falda 3 fili 41-42 (L = 2.644)

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 1.857

Kdef = 0

Uinst tot in x = 0.0001

Uinst tot in y = -0.0022

Uinst tot = 0.0022

Luce/Uinst,tot > limite

3.708/0.0022=1722.9 > 300 Comb: SLE rara, 8

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 1.857

Kdef = 0

Uinst var in x = 0.0001

Uinst var in y = -0.0013

Uinst var = 0.0013

Luce/Uinst,var > limite

3.708/0.0013=2928 > 300 Comb: SLE rara, 8

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 1.893

Kdef = 0.6



Ufin in x = 0.0002  
Ufin in y = -0.0027  
Ufin = 0.0027  
Luce/Ufin > limite  
 $3.708/0.0027=1377.8 > 200$   
Coefficienti combinatori impiegati:  
Pesi strutturali =  $1,000 + 0,600 = 1,600$   
Permanenti portati =  $1,000 + 0,600 = 1,600$   
Neve =  $0,500 + 0,500 = 1,000$

## Superelemento in legno a "Falda 3" 48-(-2070; 583)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Superelemento di lunghezza complessiva L= 4.722 composto da:  
asta 267: Trave in legno a falda Falda 3 fili 48-49 (L = 2.078)  
asta 272: Trave in legno a falda Falda 3 fili 49-50 (L = 2.644)

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
 $\beta_x = 0$ ;  $\beta_y = 0$   
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 2.519  
Kdef = 0  
Uinst tot in x = 0.0002  
Uinst tot in y = -0.0034  
Uinst tot = 0.0034  
Luce/Uinst,tot > limite  
 $4.722/0.0034=1383.5 > 300$  Comb: SLE rara, 8

### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 2.519  
Kdef = 0  
Uinst var in x = 0.0001  
Uinst var in y = -0.0021  
Uinst var = 0.0021  
Luce/Uinst,var > limite  
 $4.722/0.0021=2241.3 > 300$  Comb: SLE rara, 8

### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 2.588  
Kdef = 0.6  
Ufin in x = 0.0002  
Ufin in y = -0.0042  
Ufin = 0.0042  
Luce/Ufin > limite  
 $4.722/0.0042=1123.7 > 200$   
Coefficienti combinatori impiegati:  
Pesi strutturali =  $1,000 + 0,600 = 1,600$   
Permanenti portati =  $1,000 + 0,600 = 1,600$   
Neve =  $0,500 + 0,500 = 1,000$

## Superelemento in legno a "Falda 3" 57-(-1986; 583)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Superelemento di lunghezza complessiva L= 5.385 composto da:  
asta 262: Trave in legno a falda Falda 3 fili 57-58 (L = 2.74)  
asta 275: Trave in legno a falda Falda 3 fili 58-52 (L = 2.644)

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588





Materiale: GL 24h EN 14080  
 $\beta_x = 0$ ;  $\beta_y = 0$   
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 2.558  
 $K_{def} = 0$   
 $U_{inst\ tot\ in\ x} = 0.0002$   
 $U_{inst\ tot\ in\ y} = -0.0037$   
 $U_{inst\ tot} = 0.0037$   
Luce/ $U_{inst,tot} > \text{limite}$   
 $5.385/0.0037 = 1443.6 > 300$  Comb: SLE rara, 8

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 2.649  
 $K_{def} = 0$   
 $U_{inst\ var\ in\ x} = 0.0001$   
 $U_{inst\ var\ in\ y} = -0.0026$   
 $U_{inst\ var} = 0.0026$   
Luce/ $U_{inst,var} > \text{limite}$   
 $5.385/0.0026 = 2106.5 > 300$  Comb: SLE rara, 8

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 2.466  
 $K_{def} = 0.6$   
 $U_{fin\ in\ x} = 0.0002$   
 $U_{fin\ in\ y} = -0.0044$   
 $U_{fin} = 0.0044$   
Luce/ $U_{fin} > \text{limite}$   
 $5.385/0.0044 = 1214 > 200$   
Coefficienti combinatori impiegati:  
Pesi strutturali =  $1,000 + 0,600 = 1,600$   
Permanenti portati =  $1,000 + 0,600 = 1,600$   
Neve =  $0,500 + 0,500 = 1,000$

### Superelemento in legno a "Falda 3" 66-68

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Superelemento di lunghezza complessiva  $L = 4.719$  composto da:  
asta 261: Trave in legno a falda Falda 3 fili 66-67 ( $L = 2.728$ )  
asta 274: Trave in legno a falda Falda 3 fili 67-68 ( $L = 1.991$ )

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	$J_x$	$J_y$	$W_x$	$W_y$
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
 $\beta_x = 0$ ;  $\beta_y = 0$   
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 2.273  
 $K_{def} = 0$   
 $U_{inst\ tot\ in\ x} = 0.0001$   
 $U_{inst\ tot\ in\ y} = -0.0027$   
 $U_{inst\ tot} = 0.0027$   
Luce/ $U_{inst,tot} > \text{limite}$   
 $4.719/0.0027 = 1767.3 > 300$  Comb: SLE rara, 8

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 2.455  
 $K_{def} = 0$   
 $U_{inst\ var\ in\ x} = 0.0001$   
 $U_{inst\ var\ in\ y} = -0.0021$



Uinst var = 0.0021

Luce/Uinst,var > limite

4.719/0.0021=2283 > 300 Comb: SLE rara, 8

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 2.182

Kdef = 0.6

Ufin in x = -0.0001

Ufin in y = -0.003

Ufin = 0.003

Luce/Ufin > limite

4.719/0.003=1550.9 > 200

Coefficienti combinatori impiegati:

Pesi strutturali = 1,000 + 0,600 = 1,600

Permanenti portati = 1,000 + 0,600 = 1,600

Neve = 0,500 + 0,500 = 1,000

### Superelemento in legno a "Falda 3" 77-79

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Superelemento di lunghezza complessiva L= 3.694 composto da:

asta 260: Trave in legno a falda Falda 3 fili 77-78 (L = 2.727)

asta 273: Trave in legno a falda Falda 3 fili 78-79 (L = 0.966)

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 1.727

Kdef = 0

Uinst tot in x = -0.0001

Uinst tot in y = -0.0015

Uinst tot = 0.0015

Luce/Uinst,tot > limite

3.694/0.0015=2425 > 300 Comb: SLE rara, 8

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 2

Kdef = 0

Uinst var in x = 0

Uinst var in y = -0.0011

Uinst var = 0.0011

Luce/Uinst,var > limite

3.694/0.0011=3278.3 > 300 Comb: SLE rara, 8

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 1.727

Kdef = 0.6

Ufin in x = -0.0002

Ufin in y = -0.0018

Ufin = 0.0018

Luce/Ufin > limite

3.694/0.0018=2078.4 > 200

Coefficienti combinatori impiegati:

Pesi strutturali = 1,000 + 0,600 = 1,600

Permanenti portati = 1,000 + 0,600 = 1,600

Neve = 0,500 + 0,500 = 1,000

### Superelemento in legno a "Falda 3" (-1961; 589)-109

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)



## Dati generali

Superelemento di lunghezza complessiva  $L = 7.168$  composto da:

- asta 81: Trave in legno a falda Falda 3 fili 52-109 ( $L = 1.05$ )
- asta 82: Trave in legno a falda Falda 3 fili 52-109 ( $L = 1.325$ )
- asta 83: Trave in legno a falda Falda 3 fili 52-109 ( $L = 1.28$ )
- asta 84: Trave in legno a falda Falda 3 fili 52-109 ( $L = 1.37$ )
- asta 85: Trave in legno a falda Falda 3 fili 52-109 ( $L = 1.325$ )
- asta 86: Trave in legno a falda Falda 3 fili 52-109 ( $L = 0.817$ )

## Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

## Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 3.701

$K_{def} = 0$

$U_{inst\ tot\ in\ x} = -0.0013$

$U_{inst\ tot\ in\ y} = 0.0041$

$U_{inst\ tot} = 0.0041$

$Luce/U_{inst,tot} > \text{limite}$

$7.168/0.0041=1759.1 > 300$  Comb: SLE rara, 18

## Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 2.376

$K_{def} = 0$

$U_{inst\ var\ in\ x} = -0.0001$

$U_{inst\ var\ in\ y} = -0.0009$

$U_{inst\ var} = 0.0009$

$Luce/U_{inst,var} > \text{limite}$

$7.168/0.0009=7810.4 > 300$  Comb: SLE rara, 9

## Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 3.869

$K_{def} = 0.6$

$U_{fin\ in\ x} = -0.002$

$U_{fin\ in\ y} = 0.0063$

$U_{fin} = 0.0063$

$Luce/U_{fin} > \text{limite}$

$7.168/0.0063=1136.6 > 200$

Condizione base per ricombinare la freccia: Variabile A

Comb: SLE quasi permanente, 2 + incrementi viscosi

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Variabile A =  $1,000 + 0,180 = 1,180$

## Superelemento in legno a "Falda 3" (-2458; 579)-(-1616; -330)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

## Dati generali

Superelemento di lunghezza complessiva  $L = 7.024$  composto da:

- asta 514: Trave in legno a falda Falda 3 fili 12-51 ( $L = 0.922$ )
- asta 515: Trave in legno a falda Falda 3 fili 12-51 ( $L = 1.266$ )
- asta 516: Trave in legno a falda Falda 3 fili 12-51 ( $L = 1.309$ )
- asta 517: Trave in legno a falda Falda 3 fili 12-51 ( $L = 1.096$ )
- asta 518: Trave in legno a falda Falda 3 fili 12-51 ( $L = 0.26$ )
- asta 519: Trave in legno a falda Falda 3 fili 12-51 ( $L = 0.959$ )
- asta 520: Trave in legno a falda Falda 3 fili 12-51 ( $L = 0.358$ )
- asta 521: Trave in legno a falda Falda 3 fili 12-51 ( $L = 0.855$ )

## Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080



$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 4.264

$K_{def} = 0$

$U_{inst\ tot\ in\ x} = 0.0001$

$U_{inst\ tot\ in\ y} = -0.0008$

$U_{inst\ tot} = 0.0008$

Luce/ $U_{inst,tot}$  > limite

$7.024/0.0008=8970.3 > 300$  Comb: SLE rara, 9

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 4.264

$K_{def} = 0$

$U_{inst\ var\ in\ x} = -0.0001$

$U_{inst\ var\ in\ y} = -0.0005$

$U_{inst\ var} = 0.0005$

Luce/ $U_{inst,var}$  > limite

$7.024/0.0005=14453.3 > 300$  Comb: SLE rara, 9

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 4.38

$K_{def} = 0.6$

$U_{fin\ in\ x} = 0.0001$

$U_{fin\ in\ y} = -0.001$

$U_{fin} = 0.001$

Luce/ $U_{fin}$  > limite

$7.024/0.001=7306.8 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Neve =  $0,500 + 0,500 = 1,000$

Vento =  $0,600 + 0,000 = 0,600$

## Superelemento in legno a "Falda 4" 95-96

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Superelemento di lunghezza complessiva  $L = 3.495$  composto da:

asta 263: Trave in legno a falda Falda 4 fili 95-308 ( $L = 1.134$ )

asta 820: Trave in legno a falda Falda 4 fili 308-96 ( $L = 2.361$ )

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	$J_x$	$J_y$	$W_x$	$W_y$
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 1.999

$K_{def} = 0$

$U_{inst\ tot\ in\ x} = 0$

$U_{inst\ tot\ in\ y} = -0.0022$

$U_{inst\ tot} = 0.0022$

Luce/ $U_{inst,tot}$  > limite

$3.495/0.0022=1569.1 > 300$  Comb: SLE rara, 17

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 2.157

$K_{def} = 0$

$U_{inst\ var\ in\ x} = 0$

$U_{inst\ var\ in\ y} = -0.0007$

$U_{inst\ var} = 0.0007$



Luce/Uinst,var > limite

$3.495/0.0007=5316.7 > 300$  Comb: SLE rara, 17

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 1.958

Kdef = 0.6

Ufin in x = 0.0001

Ufin in y = -0.0031

Ufin = 0.0031

Luce/Ufin > limite

$3.495/0.0031=1128.4 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Variabile A =  $0,700 + 0,180 = 0,880$

Neve =  $0,500 + 0,500 = 1,000$

Vento =  $0,600 + 0,000 = 0,600$

### Superelemento in legno a "Falda 4" 103-105

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Superelemento di lunghezza complessiva L= 4.453 composto da:

asta 818: Trave in legno a falda Falda 4 fili 103-309 (L = 2.092)

asta 833: Trave in legno a falda Falda 4 fili 309-105 (L = 2.361)

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 3.115

Kdef = 0

Uinst tot in x = 0

Uinst tot in y = -0.0009

Uinst tot = 0.0009

Luce/Uinst,tot > limite

$4.453/0.0009=4773.6 > 300$  Comb: SLE rara, 17

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 2.092

Kdef = 0

Uinst var in x = 0

Uinst var in y = 0.0002

Uinst var = 0.0002

Luce/Uinst,var > limite

$4.453/0.0002=19765.4 > 300$  Comb: SLE rara, 8

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 2.791

Kdef = 0.6

Ufin in x = 0

Ufin in y = -0.0013

Ufin = 0.0013

Luce/Ufin > limite

$4.453/0.0013=3353.9 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Variabile A =  $0,700 + 0,480 = 1,180$

Vento =  $0,600 + 0,000 = 0,600$



**Superelemento in legno a "Falda 4" 114-(-1482; 696)**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati generali**

Superelemento di lunghezza complessiva L= 5.411 composto da:  
asta 815: Trave in legno a falda Falda 4 fili 114-310 (L = 2.614)  
asta 816: Trave in legno a falda Falda 4 fili 114-310 (L = 0.218)  
asta 817: Trave in legno a falda Falda 4 fili 114-310 (L = 0.218)  
asta 830: Trave in legno a falda Falda 4 fili 310-117 (L = 0.218)  
asta 831: Trave in legno a falda Falda 4 fili 310-117 (L = 0.218)  
asta 832: Trave in legno a falda Falda 4 fili 310-117 (L = 1.925)

**Caratteristiche della sezione**

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
 $\beta_x = 0$ ;  $\beta_y = 0$   
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

**Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19**

Sezione ad ascissa 1.742  
Kdef = 0  
Uinst tot in x = 0  
Uinst tot in y = -0.0013  
Uinst tot = 0.0013  
Luce/Uinst,tot > limite  
5.411/0.0013=4203.8 > 300 Comb: SLE rara, 9

**Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7**

Sezione ad ascissa 1.394  
Kdef = 0  
Uinst var in x = 0  
Uinst var in y = -0.0005  
Uinst var = 0.0005  
Luce/Uinst,var > limite  
5.411/0.0005=10159.8 > 300 Comb: SLE rara, 9

**Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)**

Sezione ad ascissa 1.83  
Kdef = 0.6  
Ufin in x = -0.0001  
Ufin in y = -0.0018  
Ufin = 0.0018  
Luce/Ufin > limite  
5.411/0.0018=3060.5 > 200  
Coefficienti combinatori impiegati:  
Pesi strutturali = 1,000 + 0,600 = 1,600  
Permanenti portati = 1,000 + 0,600 = 1,600  
Neve = 0,500 + 0,500 = 1,000  
Vento = 0,600 + 0,000 = 0,600

**Superelemento in legno a "Falda 4" 118-(-2445; 1167)**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati generali**

Superelemento di lunghezza complessiva L= 8.226 composto da:  
asta 61: Trave in legno a falda Falda 4 fili 118-60 (L = 0.838)  
asta 62: Trave in legno a falda Falda 4 fili 118-60 (L = 1.274)  
asta 63: Trave in legno a falda Falda 4 fili 118-60 (L = 1.274)  
asta 64: Trave in legno a falda Falda 4 fili 118-60 (L = 0.353)  
asta 65: Trave in legno a falda Falda 4 fili 118-60 (L = 0.154)  
asta 66: Trave in legno a falda Falda 4 fili 118-60 (L = 0.768)  
asta 67: Trave in legno a falda Falda 4 fili 118-60 (L = 0.233)  
asta 68: Trave in legno a falda Falda 4 fili 118-60 (L = 1.041)  
asta 69: Trave in legno a falda Falda 4 fili 118-60 (L = 1.274)  
asta 70: Trave in legno a falda Falda 4 fili 118-60 (L = 1.016)



#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 3.344

Kdef = 0

Uinst tot in x = 0.0016

Uinst tot in y = 0.0059

Uinst tot = 0.0059

Luce/Uinst,tot > limite

$8.226/0.0059=1403.7 > 300$  Comb: SLE rara, 20

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 5.866

Kdef = 0

Uinst var in x = -0.0003

Uinst var in y = -0.0009

Uinst var = 0.0009

Luce/Uinst,var > limite

$8.226/0.0009=9230.4 > 300$  Comb: SLE rara, 9

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 3.415

Kdef = 0.6

Ufin in x = 0.0025

Ufin in y = 0.009

Ufin = 0.009

Luce/Ufin > limite

$8.226/0.009=909.5 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Variabile A =  $0,700 + 0,480 = 1,180$

Neve =  $0,500 + 0,000 = 0,500$

### Superelemento in legno a "Falda 4" 171-(-978; 696)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Superelemento di lunghezza complessiva L= 5.267 composto da:

asta 812: Trave in legno a falda Falda 4 fili 171-317 (L = 2.469)

asta 813: Trave in legno a falda Falda 4 fili 171-317 (L = 0.218)

asta 814: Trave in legno a falda Falda 4 fili 171-317 (L = 0.218)

asta 827: Trave in legno a falda Falda 4 fili 317-166 (L = 0.218)

asta 828: Trave in legno a falda Falda 4 fili 317-166 (L = 0.218)

asta 829: Trave in legno a falda Falda 4 fili 317-166 (L = 1.925)

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 1.481

Kdef = 0

Uinst tot in x = 0

Uinst tot in y = -0.0009

Uinst tot = 0.0009



Luce/Uinst,tot > limite

$5.267/0.0009=5682.2 > 300$  Comb: SLE rara, 17

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 1.152

Kdef = 0

Uinst var in x = 0

Uinst var in y = -0.0003

Uinst var = 0.0003

Luce/Uinst,var > limite

$5.267/0.0003=15813 > 300$  Comb: SLE rara, 17

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 1.564

Kdef = 0.6

Ufin in x = 0.0001

Ufin in y = -0.0013

Ufin = 0.0013

Luce/Ufin > limite

$5.267/0.0013=4029.3 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Variabile A =  $0,700 + 0,180 = 0,880$

Neve =  $0,500 + 0,500 = 1,000$

Vento =  $0,600 + 0,000 = 0,600$

## Superelemento in legno a "Falda 4" 182-184

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Superelemento di lunghezza complessiva L= 4.293 composto da:

asta 811: Trave in legno a falda Falda 4 fili 182-318 (L = 1.931)

asta 826: Trave in legno a falda Falda 4 fili 318-184 (L = 2.361)

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 2.955

Kdef = 0

Uinst tot in x = 0

Uinst tot in y = -0.0009

Uinst tot = 0.0009

Luce/Uinst,tot > limite

$4.293/0.0009=4739.1 > 300$  Comb: SLE rara, 17

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 3.348

Kdef = 0

Uinst var in x = 0

Uinst var in y = -0.0002

Uinst var = 0.0002

Luce/Uinst,var > limite

$4.293/0.0002=18608.1 > 300$  Comb: SLE rara, 17

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 2.94

Kdef = 0.6

Ufin in x = 0

Ufin in y = -0.0012

Ufin = 0.0012

Luce/Ufin > limite

$4.293/0.0012=3450.4 > 200$





Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Variabile A =  $0,700 + 0,180 = 0,880$

Neve =  $0,500 + 0,500 = 1,000$

Vento =  $0,600 + 0,000 = 0,600$

## Superelemento in legno a "Falda 4" 191-192

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Superelemento di lunghezza complessiva  $L = 3.326$  composto da:

asta 256: Trave in legno a falda Falda 4 fili 191-319 ( $L = 0.964$ )

asta 819: Trave in legno a falda Falda 4 fili 319-192 ( $L = 2.361$ )

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 1.83

$K_{def} = 0$

$U_{inst\ tot\ in\ x} = 0$

$U_{inst\ tot\ in\ y} = -0.002$

$U_{inst\ tot} = 0.002$

Luce/ $U_{inst,tot} >$  limite

$3.326/0.002 = 1689.2 > 300$  Comb: SLE rara, 17

### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 1.988

$K_{def} = 0$

$U_{inst\ var\ in\ x} = 0$

$U_{inst\ var\ in\ y} = -0.0006$

$U_{inst\ var} = 0.0006$

Luce/ $U_{inst,var} >$  limite

$3.326/0.0006 = 5170.4 > 300$  Comb: SLE rara, 17

### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 1.862

$K_{def} = 0.6$

$U_{fin\ in\ x} = 0$

$U_{fin\ in\ y} = -0.0027$

$U_{fin} = 0.0027$

Luce/ $U_{fin} >$  limite

$3.326/0.0027 = 1232 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Variabile A =  $0,700 + 0,180 = 0,880$

Neve =  $0,500 + 0,500 = 1,000$

Vento =  $0,600 + 0,000 = 0,600$

## Superelemento in legno a "Falda 4" 287-(214; 439)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Superelemento di lunghezza complessiva  $L = 10.233$  composto da:

asta 799: Trave in legno a falda Falda 4 fili 287-202 ( $L = 0.994$ )

asta 800: Trave in legno a falda Falda 4 fili 287-202 ( $L = 0.84$ )

asta 801: Trave in legno a falda Falda 4 fili 287-202 ( $L = 0.624$ )

asta 802: Trave in legno a falda Falda 4 fili 287-202 ( $L = 1.056$ )

asta 803: Trave in legno a falda Falda 4 fili 287-202 ( $L = 0.84$ )

asta 804: Trave in legno a falda Falda 4 fili 287-202 ( $L = 0.84$ )



asta 805: Trave in legno a falda Falda 4 fili 287-202 (L = 0.84)  
asta 806: Trave in legno a falda Falda 4 fili 287-202 (L = 0.84)  
asta 807: Trave in legno a falda Falda 4 fili 287-202 (L = 0.909)  
asta 808: Trave in legno a falda Falda 4 fili 287-202 (L = 0.771)  
asta 809: Trave in legno a falda Falda 4 fili 287-202 (L = 0.84)  
asta 810: Trave in legno a falda Falda 4 fili 287-202 (L = 0.839)

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
 $\beta_x = 0$ ;  $\beta_y = 0$   
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 5.138  
Kdef = 0  
Uinst tot in x = 0.0047  
Uinst tot in y = -0.0103  
Uinst tot = 0.0103  
Luce/Uinst,tot > limite  
10.233/0.0103=990.7 > 300 Comb: SLE rara, 17

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 5.166  
Kdef = 0  
Uinst var in x = 0.0018  
Uinst var in y = -0.0039  
Uinst var = 0.0039  
Luce/Uinst,var > limite  
10.233/0.0039=2644.6 > 300 Comb: SLE rara, 17

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 5.283  
Kdef = 0.6  
Ufin in x = 0.0065  
Ufin in y = -0.0143  
Ufin = 0.0143  
Luce/Ufin > limite  
10.233/0.0143=716.2 > 200  
Coefficienti combinatori impiegati:  
Pesi strutturali = 1,000 + 0,600 = 1,600  
Permanenti portati = 1,000 + 0,600 = 1,600  
Variabile A = 0,700 + 0,180 = 0,880  
Neve = 0,500 + 0,500 = 1,000  
Vento = 0,600 + 0,000 = 0,600

### Superelemento in legno a "Falda 4" (-1060; 86)-(-32; 1171)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Superelemento di lunghezza complessiva L= 8.121 composto da:  
asta 119: Trave in legno a falda Falda 4 fili 164-221 (L = 1.145)  
asta 120: Trave in legno a falda Falda 4 fili 164-221 (L = 1.29)  
asta 121: Trave in legno a falda Falda 4 fili 164-221 (L = 1.281)  
asta 122: Trave in legno a falda Falda 4 fili 164-221 (L = 0.156)  
asta 123: Trave in legno a falda Falda 4 fili 164-221 (L = 0.194)  
asta 124: Trave in legno a falda Falda 4 fili 164-221 (L = 0.929)  
asta 125: Trave in legno a falda Falda 4 fili 164-221 (L = 1.283)  
asta 126: Trave in legno a falda Falda 4 fili 164-221 (L = 1.281)  
asta 127: Trave in legno a falda Falda 4 fili 164-221 (L = 0.562)

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
 $\beta_x = 0$ ;  $\beta_y = 0$   
Rapporto luce/freccia elastica limite = 300



Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 3.502  
Kdef = 0  
Uinst tot in x = -0.0016  
Uinst tot in y = 0.0056  
Uinst tot = 0.0056  
Luce/Uinst,tot > limite  
 $8.121/0.0056=1456.6 > 300$  Comb: SLE rara, 20

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 3.502  
Kdef = 0  
Uinst var in x = -0.0002  
Uinst var in y = 0.0007  
Uinst var = 0.0007  
Luce/Uinst,var > limite  
 $8.121/0.0007=11429.9 > 300$  Comb: SLE rara, 20

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 3.583  
Kdef = 0.6  
Ufin in x = -0.0025  
Ufin in y = 0.0086  
Ufin = 0.0086  
Luce/Ufin > limite  
 $8.121/0.0086=944.1 > 200$   
Coefficienti combinatori impiegati:  
Pesi strutturali = 1,000 + 0,600 = 1,600  
Permanenti portati = 1,000 + 0,600 = 1,600  
Variabile A = 0,700 + 0,480 = 1,180  
Neve = 0,500 + 0,000 = 0,500

### Superelemento in legno a "Falda 4" (-1062; 88)-163

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Superelemento di lunghezza complessiva L= 6.04 composto da:  
asta 335: Trave in legno a falda Falda 4 fili 315-316 (L = 3.679)  
asta 822: Trave in legno a falda Falda 4 fili 316-163 (L = 2.361)

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
 $\beta_x = 0$ ;  $\beta_y = 0$   
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 2.821  
Kdef = 0  
Uinst tot in x = 0.0001  
Uinst tot in y = -0.0043  
Uinst tot = 0.0043  
Luce/Uinst,tot > limite  
 $6.04/0.0043=1400 > 300$  Comb: SLE rara, 9

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 2.575  
Kdef = 0  
Uinst var in x = 0  
Uinst var in y = -0.0024  
Uinst var = 0.0024  
Luce/Uinst,var > limite  
 $6.04/0.0024=2495.4 > 300$  Comb: SLE rara, 9



### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 2.943

Kdef = 0.6

Ufin in x = -0.0001

Ufin in y = -0.0055

Ufin = 0.0055

Luce/Ufin > limite

6.04/0.0055=1104.4 > 200

Coefficienti combinatori impiegati:

Pesi strutturali = 1,000 + 0,600 = 1,600

Permanenti portati = 1,000 + 0,600 = 1,600

Neve = 0,500 + 0,500 = 1,000

Vento = 0,600 + 0,000 = 0,600

### Superelemento in legno a "Falda 4" (-1146; 88)-149

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Superelemento di lunghezza complessiva L= 6.04 composto da:

asta 334: Trave in legno a falda Falda 4 fili 147-314 (L = 3.679)

asta 821: Trave in legno a falda Falda 4 fili 314-149 (L = 2.361)

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 2.943

Kdef = 0

Uinst tot in x = 0

Uinst tot in y = -0.0078

Uinst tot = 0.0078

Luce/Uinst,tot > limite

6.04/0.0078=777.9 > 300 Comb: SLE rara, 17

### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 2.821

Kdef = 0

Uinst var in x = 0

Uinst var in y = -0.0041

Uinst var = 0.0041

Luce/Uinst,var > limite

6.04/0.0041=1470.3 > 300 Comb: SLE rara, 17

### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 2.943

Kdef = 0.6

Ufin in x = -0.0001

Ufin in y = -0.01

Ufin = 0.01

Luce/Ufin > limite

6.04/0.01=605.9 > 200

Coefficienti combinatori impiegati:

Pesi strutturali = 1,000 + 0,600 = 1,600

Permanenti portati = 1,000 + 0,600 = 1,600

Variabile A = 0,700 + 0,180 = 0,880

Neve = 0,500 + 0,500 = 1,000

Vento = 0,600 + 0,000 = 0,600

### Superelemento in legno a "Falda 4" (-1230; 88)-143

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)



### Dati generali

Superelemento di lunghezza complessiva L= 6.041 composto da:  
asta 336: Trave in legno a falda Falda 4 fili 141-313 (L = 3.68)  
asta 823: Trave in legno a falda Falda 4 fili 313-143 (L = 2.361)

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
 $\beta_x = 0$ ;  $\beta_y = 0$   
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 2.944  
Kdef = 0  
Uinst tot in x = 0  
Uinst tot in y = -0.0091  
Uinst tot = 0.0091  
Luce/Uinst,tot > limite  
6.041/0.0091=662.5 > 300 Comb: SLE rara, 17

### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 2.944  
Kdef = 0  
Uinst var in x = 0  
Uinst var in y = -0.0048  
Uinst var = 0.0048  
Luce/Uinst,var > limite  
6.041/0.0048=1254.5 > 300 Comb: SLE rara, 17

### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 2.944  
Kdef = 0.6  
Ufin in x = 0  
Ufin in y = -0.0117  
Ufin = 0.0117  
Luce/Ufin > limite  
6.041/0.0117=516 > 200  
Coefficienti combinatori impiegati:  
Pesi strutturali = 1,000 + 0,600 = 1,600  
Permanenti portati = 1,000 + 0,600 = 1,600  
Variabile A = 0,700 + 0,180 = 0,880  
Neve = 0,500 + 0,500 = 1,000  
Vento = 0,600 + 0,000 = 0,600

## Superelemento in legno a "Falda 4" (-1314; 88)-134

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Superelemento di lunghezza complessiva L= 6.041 composto da:  
asta 337: Trave in legno a falda Falda 4 fili 132-312 (L = 3.68)  
asta 824: Trave in legno a falda Falda 4 fili 312-134 (L = 2.361)

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
 $\beta_x = 0$ ;  $\beta_y = 0$   
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 2.944  
Kdef = 0  
Uinst tot in x = 0  
Uinst tot in y = -0.0081



Uinst tot = 0.0081  
Luce/Uinst,tot > limite  
 $6.041/0.0081=742.3 > 300$  Comb: SLE rara, 17

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 2.821  
Kdef = 0  
Uinst var in x = 0  
Uinst var in y = -0.0043  
Uinst var = 0.0043  
Luce/Uinst,var > limite  
 $6.041/0.0043=1407.3 > 300$  Comb: SLE rara, 17

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 2.944  
Kdef = 0.6  
Ufin in x = -0.0001  
Ufin in y = -0.0105  
Ufin = 0.0105  
Luce/Ufin > limite  
 $6.041/0.0105=577.9 > 200$   
Coefficienti combinatori impiegati:  
Pesi strutturali =  $1,000 + 0,600 = 1,600$   
Permanenti portati =  $1,000 + 0,600 = 1,600$   
Variabile A =  $0,700 + 0,180 = 0,880$   
Neve =  $0,500 + 0,500 = 1,000$   
Vento =  $0,600 + 0,000 = 0,600$

## Superelemento in legno a "Falda 4" (-1398; 88)-122

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Superelemento di lunghezza complessiva L= 6.042 composto da:  
asta 338: Trave in legno a falda Falda 4 fili 120-311 (L = 3.68)  
asta 825: Trave in legno a falda Falda 4 fili 311-122 (L = 2.361)

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
 $\beta_x = 0$ ;  $\beta_y = 0$   
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 2.699  
Kdef = 0  
Uinst tot in x = -0.0001  
Uinst tot in y = -0.0051  
Uinst tot = 0.0051  
Luce/Uinst,tot > limite  
 $6.042/0.0051=1186.8 > 300$  Comb: SLE rara, 9

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 2.576  
Kdef = 0  
Uinst var in x = 0  
Uinst var in y = -0.0027  
Uinst var = 0.0027  
Luce/Uinst,var > limite  
 $6.042/0.0027=2203.5 > 300$  Comb: SLE rara, 9

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 2.822  
Kdef = 0.6  
Ufin in x = -0.0001  
Ufin in y = -0.0065  
Ufin = 0.0065  
Luce/Ufin > limite



$6.042/0.0065=928.7 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Neve =  $0,500 + 0,500 = 1,000$

Vento =  $0,600 + 0,000 = 0,600$

## Superelemento in legno a "Falda 5" 230-(27; 101)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Superelemento di lunghezza complessiva  $L = 5.228$  composto da:

asta 87: Trave in legno a falda Falda 5 fili 230-248 ( $L = 2.167$ )

asta 88: Trave in legno a falda Falda 5 fili 230-248 ( $L = 0.226$ )

asta 89: Trave in legno a falda Falda 5 fili 230-248 ( $L = 0.226$ )

asta 231: Trave in legno a falda Falda 5 fili 248-277 ( $L = 0.452$ )

asta 232: Trave in legno a falda Falda 5 fili 248-277 ( $L = 2.157$ )

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 4.222

$K_{def} = 0$

$U_{inst\ tot\ in\ x} = 0.0001$

$U_{inst\ tot\ in\ y} = -0.0003$

$U_{inst\ tot} = 0.0003$

$Luce/U_{inst,tot} > \text{limite}$

$5.228/0.0003=18479.7 > 300$  Comb: SLE rara, 16

### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 4.222

$K_{def} = 0$

$U_{inst\ var\ in\ x} = 0$

$U_{inst\ var\ in\ y} = -0.0002$

$U_{inst\ var} = 0.0002$

$Luce/U_{inst,var} > \text{limite}$

$5.228/0.0002=34343.1 > 300$  Comb: SLE rara, 16

### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 4.324

$K_{def} = 0.6$

$U_{fin\ in\ x} = 0.0001$

$U_{fin\ in\ y} = -0.0004$

$U_{fin} = 0.0004$

$Luce/U_{fin} > \text{limite}$

$5.228/0.0004=14303.4 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Variabile A =  $0,700 + 0,180 = 0,880$

Neve =  $0,500 + 0,500 = 1,000$

## Superelemento in legno a "Falda 5" 233-(-13; 185)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Superelemento di lunghezza complessiva  $L = 4.289$  composto da:

asta 141: Trave in legno a falda Falda 5 fili 233-249 ( $L = 1.679$ )

asta 235: Trave in legno a falda Falda 5 fili 249-278 ( $L = 2.609$ )



#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 2.897

Kdef = 0

Uinst tot in x = -0.0001

Uinst tot in y = -0.0009

Uinst tot = 0.0009

Luce/Uinst,tot > limite

$4.289/0.0009=4907.2 > 300$  Comb: SLE rara, 16

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 2.984

Kdef = 0

Uinst var in x = 0

Uinst var in y = -0.0005

Uinst var = 0.0005

Luce/Uinst,var > limite

$4.289/0.0005=8883.5 > 300$  Comb: SLE rara, 16

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 2.953

Kdef = 0.6

Ufin in x = -0.0001

Ufin in y = -0.0011

Ufin = 0.0011

Luce/Ufin > limite

$4.289/0.0011=3828.4 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Variabile A =  $0,700 + 0,180 = 0,880$

Neve =  $0,500 + 0,500 = 1,000$

### Superelemento in legno a "Falda 5" 238-(-13; 17)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Superelemento di lunghezza complessiva L= 4.254 composto da:

asta 140: Trave in legno a falda Falda 5 fili 238-247 (L = 1.645)

asta 234: Trave in legno a falda Falda 5 fili 247-276 (L = 2.609)

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 2.949

Kdef = 0

Uinst tot in x = 0.0001

Uinst tot in y = -0.0008

Uinst tot = 0.0008

Luce/Uinst,tot > limite

$4.254/0.0008=5305.9 > 300$  Comb: SLE rara, 16





#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 2.949

Kdef = 0

Uinst var in x = 0.0001

Uinst var in y = -0.0005

Uinst var = 0.0005

Luce/Uinst,var > limite

4.254/0.0005=9383.7 > 300 Comb: SLE rara, 16

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 3.004

Kdef = 0.6

Ufin in x = 0.0001

Ufin in y = -0.001

Ufin = 0.001

Luce/Ufin > limite

4.254/0.001=4178.3 > 200

Coefficienti combinatori impiegati:

Pesi strutturali = 1,000 + 0,600 = 1,600

Permanenti portati = 1,000 + 0,600 = 1,600

Variabile A = 0,700 + 0,180 = 0,880

Neve = 0,500 + 0,500 = 1,000

### Superelemento in legno a "Falda 5" 239-(-13; 269)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Superelemento di lunghezza complessiva L= 3.437 composto da:

asta 142: Trave in legno a falda Falda 5 fili 239-250 (L = 0.828)

asta 236: Trave in legno a falda Falda 5 fili 250-279 (L = 2.609)

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 2.133

Kdef = 0

Uinst tot in x = -0.0001

Uinst tot in y = -0.0008

Uinst tot = 0.0008

Luce/Uinst,tot > limite

3.437/0.0008=4288.4 > 300 Comb: SLE rara, 17

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 2.133

Kdef = 0

Uinst var in x = 0

Uinst var in y = -0.0004

Uinst var = 0.0004

Luce/Uinst,var > limite

3.437/0.0004=7747.2 > 300 Comb: SLE rara, 17

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 2.16

Kdef = 0.6

Ufin in x = -0.0001

Ufin in y = -0.001

Ufin = 0.001

Luce/Ufin > limite

3.437/0.001=3347.5 > 200

Coefficienti combinatori impiegati:

Pesi strutturali = 1,000 + 0,600 = 1,600

Permanenti portati = 1,000 + 0,600 = 1,600



Variabile A =  $0,700 + 0,180 = 0,880$   
Neve =  $0,500 + 0,500 = 1,000$   
Vento =  $0,600 + 0,000 = 0,600$

## Superelemento in legno a "Falda 5" 251-(-244; -533)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Superelemento di lunghezza complessiva L= 4.657 composto da:

asta 166: Trave in legno a falda Falda 5 fili 251-245 (L = 0.772)  
asta 167: Trave in legno a falda Falda 5 fili 251-245 (L = 0.84)  
asta 168: Trave in legno a falda Falda 5 fili 251-245 (L = 0.841)  
asta 169: Trave in legno a falda Falda 5 fili 251-245 (L = 0.839)  
asta 170: Trave in legno a falda Falda 5 fili 251-245 (L = 0.84)  
asta 171: Trave in legno a falda Falda 5 fili 251-245 (L = 0.525)

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 2.453

Kdef = 0

Uinst tot in x = -0.0002

Uinst tot in y = 0.0005

Uinst tot = 0.0005

Luce/Uinst,tot > limite

$4.657/0.0005=9412.6 > 300$  Comb: SLE rara, 9

### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 2.453

Kdef = 0

Uinst var in x = -0.0001

Uinst var in y = 0.0003

Uinst var = 0.0003

Luce/Uinst,var > limite

$4.657/0.0003=15208.9 > 300$  Comb: SLE rara, 9

### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 2.507

Kdef = 0.6

Ufin in x = -0.0003

Ufin in y = 0.0006

Ufin = 0.0006

Luce/Ufin > limite

$4.657/0.0006=7743 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Neve =  $0,500 + 0,500 = 1,000$

Vento =  $0,600 + 0,000 = 0,600$

## Superelemento in legno a "Falda 5" (-311; -67)-(-13; -67)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Superelemento di lunghezza complessiva L= 3.296 composto da:

asta 139: Trave in legno a falda Falda 5 fili 244-246 (L = 0.686)  
asta 233: Trave in legno a falda Falda 5 fili 246-275 (L = 2.609)

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588



Materiale: GL 24h EN 14080  
 $\beta_x = 0$ ;  $\beta_y = 0$   
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 2.078  
 $K_{def} = 0$   
 $U_{inst\ tot\ in\ x} = 0.0001$   
 $U_{inst\ tot\ in\ y} = -0.0007$   
 $U_{inst\ tot} = 0.0007$   
Luce/ $U_{inst,tot} > \text{limite}$   
 $3.296/0.0007=4560.4 > 300$  Comb: SLE rara, 16

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 2.078  
 $K_{def} = 0$   
 $U_{inst\ var\ in\ x} = 0.0001$   
 $U_{inst\ var\ in\ y} = -0.0004$   
 $U_{inst\ var} = 0.0004$   
Luce/ $U_{inst,var} > \text{limite}$   
 $3.296/0.0004=8028.5 > 300$  Comb: SLE rara, 16

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 2.101  
 $K_{def} = 0.6$   
 $U_{fin\ in\ x} = 0.0001$   
 $U_{fin\ in\ y} = -0.0009$   
 $U_{fin} = 0.0009$   
Luce/ $U_{fin} > \text{limite}$   
 $3.296/0.0009=3599.9 > 200$   
Coefficienti combinatori impiegati:  
Pesi strutturali =  $1,000 + 0,600 = 1,600$   
Permanenti portati =  $1,000 + 0,600 = 1,600$   
Variabile A =  $0,700 + 0,180 = 0,880$   
Neve =  $0,500 + 0,500 = 1,000$

### Superelemento in legno a "Falda 5"- "Falda 1" 267-(-865; 473)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Superelemento di lunghezza complessiva  $L = 6.822$  composto da:  
asta 128: Trave in legno a falda Falda 5 fili 269-230 ( $L = 0.614$ )  
asta 129: Trave in legno a falda Falda 5 fili 269-230 ( $L = 1.002$ )  
asta 130: Trave in legno a falda Falda 5 fili 269-230 ( $L = 0.24$ )  
asta 131: Trave in legno a falda Falda 5 fili 269-230 ( $L = 1.144$ )  
asta 132: Trave in legno a falda Falda 5 fili 269-230 ( $L = 0.406$ )  
asta 133: Trave in legno a falda Falda 5 fili 269-230 ( $L = 0.868$ )  
asta 134: Trave in legno a falda Falda 5 fili 269-230 ( $L = 1.281$ )  
asta 135: Trave in legno a falda Falda 5 fili 269-230 ( $L = 1.267$ )

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080  
 $\beta_x = 0$ ;  $\beta_y = 0$   
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 3.956  
 $K_{def} = 0$   
 $U_{inst\ tot\ in\ x} = -0.0001$   
 $U_{inst\ tot\ in\ y} = -0.0005$   
 $U_{inst\ tot} = 0.0005$   
Luce/ $U_{inst,tot} > \text{limite}$   
 $6.822/0.0005=14840.6 > 300$  Comb: SLE rara, 9



#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 3.956

Kdef = 0

Uinst var in x = -0.0001

Uinst var in y = -0.0003

Uinst var = 0.0003

Luce/Uinst,var > limite

6.822/0.0003=26939.4 > 300 Comb: SLE rara, 9

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 4.069

Kdef = 0.6

Ufin in x = -0.0001

Ufin in y = -0.0006

Ufin = 0.0006

Luce/Ufin > limite

6.822/0.0006=11771.9 > 200

Coefficienti combinatori impiegati:

Pesi strutturali = 1,000 + 0,600 = 1,600

Permanenti portati = 1,000 + 0,600 = 1,600

Neve = 0,500 + 0,500 = 1,000

Vento = 0,600 + 0,000 = 0,600

### Superelemento in legno a "Falda 6" 167-(-86; 1042)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Superelemento di lunghezza complessiva L= 7.287 composto da:

asta 54: Trave in legno a falda Falda 6 fili 167-225 (L = 1.339)

asta 55: Trave in legno a falda Falda 6 fili 167-225 (L = 1.296)

asta 56: Trave in legno a falda Falda 6 fili 167-225 (L = 0.523)

asta 57: Trave in legno a falda Falda 6 fili 167-225 (L = 0.773)

asta 58: Trave in legno a falda Falda 6 fili 167-225 (L = 1.296)

asta 59: Trave in legno a falda Falda 6 fili 167-225 (L = 1.296)

asta 60: Trave in legno a falda Falda 6 fili 167-225 (L = 0.764)

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 3.158

Kdef = 0

Uinst tot in x = -0.0015

Uinst tot in y = 0.0056

Uinst tot = 0.0056

Luce/Uinst,tot > limite

7.287/0.0056=1300.6 > 300 Comb: SLE rara, 18

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 5.141

Kdef = 0

Uinst var in x = -0.0002

Uinst var in y = -0.0007

Uinst var = 0.0007

Luce/Uinst,var > limite

7.287/0.0007=9877 > 300 Comb: SLE rara, 9

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 3.263

Kdef = 0.6

Ufin in x = -0.0023

Ufin in y = 0.0087

Ufin = 0.0087



Luce/Ufin > limite  
 $7.287/0.0087=837.2 > 200$   
Condizione base per ricombinare la freccia: Variabile A  
Comb: SLE quasi permanente, 2 + incrementi viscosi  
Coefficienti combinatori impiegati:  
Pesi strutturali =  $1,000 + 0,600 = 1,600$   
Permanenti portati =  $1,000 + 0,600 = 1,600$   
Variabile A =  $1,000 + 0,180 = 1,180$

## Superelemento in legno a "Falda 6" 206-208

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Superelemento di lunghezza complessiva L= 3.961 composto da:  
asta 244: Trave in legno a falda Falda 6 fili 206-207 (L = 2.722)  
asta 252: Trave in legno a falda Falda 6 fili 207-208 (L = 1.24)

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
 $\beta_x = 0$ ;  $\beta_y = 0$   
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 1.724  
Kdef = 0  
Uinst tot in x = -0.0001  
Uinst tot in y = -0.0013  
Uinst tot = 0.0013  
Luce/Uinst,tot > limite  
 $3.961/0.0013=3028 > 300$  Comb: SLE rara, 8

### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 2.087  
Kdef = 0  
Uinst var in x = -0.0001  
Uinst var in y = -0.0013  
Uinst var = 0.0013  
Luce/Uinst,var > limite  
 $3.961/0.0013=3021.3 > 300$  Comb: SLE rara, 8

### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 1.542  
Kdef = 0.6  
Ufin in x = -0.0001  
Ufin in y = -0.0014  
Ufin = 0.0014  
Luce/Ufin > limite  
 $3.961/0.0014=2918.1 > 200$   
Coefficienti combinatori impiegati:  
Pesi strutturali =  $1,000 + 0,600 = 1,600$   
Permanenti portati =  $1,000 + 0,600 = 1,600$   
Neve =  $0,500 + 0,500 = 1,000$

## Superelemento in legno a "Falda 6" 216-218

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Superelemento di lunghezza complessiva L= 4.967 composto da:  
asta 243: Trave in legno a falda Falda 6 fili 216-217 (L = 2.74)  
asta 251: Trave in legno a falda Falda 6 fili 217-218 (L = 2.226)

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588



Materiale: GL 24h EN 14080  
 $\beta_x = 0$ ;  $\beta_y = 0$   
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 2.375  
 $K_{def} = 0$   
 $U_{inst\ tot\ in\ x} = -0.0002$   
 $U_{inst\ tot\ in\ y} = -0.0025$   
 $U_{inst\ tot} = 0.0025$   
Luce/ $U_{inst,tot} > \text{limite}$   
 $4.967/0.0025 = 1994.6 > 300$  Comb: SLE rara, 8

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 2.558  
 $K_{def} = 0$   
 $U_{inst\ var\ in\ x} = -0.0001$   
 $U_{inst\ var\ in\ y} = -0.0022$   
 $U_{inst\ var} = 0.0022$   
Luce/ $U_{inst,var} > \text{limite}$   
 $4.967/0.0022 = 2228 > 300$  Comb: SLE rara, 8

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 2.284  
 $K_{def} = 0.6$   
 $U_{fin\ in\ x} = -0.0003$   
 $U_{fin\ in\ y} = -0.0027$   
 $U_{fin} = 0.0027$   
Luce/ $U_{fin} > \text{limite}$   
 $4.967/0.0027 = 1864.3 > 200$   
Coefficienti combinatori impiegati:  
Pesi strutturali =  $1,000 + 0,600 = 1,600$   
Permanenti portati =  $1,000 + 0,600 = 1,600$   
Neve =  $0,500 + 0,500 = 1,000$

### Superelemento in legno a "Falda 6" 230-(-475; 583)

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Superelemento di lunghezza complessiva  $L = 5.385$  composto da:  
asta 239: Trave in legno a falda Falda 6 fili 230-231 ( $L = 2.74$ )  
asta 248: Trave in legno a falda Falda 6 fili 231-232 ( $L = 2.644$ )

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080  
 $\beta_x = 0$ ;  $\beta_y = 0$   
Rapporto luce/freccia elastica limite = 300  
Rapporto luce/freccia elastica differita = 200  
Mensola Y: Nessuno; Mensola X: Nessuno  
Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 3.093  
 $K_{def} = 0$   
 $U_{inst\ tot\ in\ x} = -0.0003$   
 $U_{inst\ tot\ in\ y} = -0.0035$   
 $U_{inst\ tot} = 0.0035$   
Luce/ $U_{inst,tot} > \text{limite}$   
 $5.385/0.0035 = 1546.6 > 300$  Comb: SLE rara, 8

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 3.005  
 $K_{def} = 0$   
 $U_{inst\ var\ in\ x} = -0.0002$   
 $U_{inst\ var\ in\ y} = -0.0025$   
 $U_{inst\ var} = 0.0025$



Luce/Uinst,var > limite

$5.385/0.0025=2168.9 > 300$  Comb: SLE rara, 8

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 3.184

Kdef = 0.6

Ufin in x = -0.0003

Ufin in y = -0.0041

Ufin = 0.0041

Luce/Ufin > limite

$5.385/0.0041=1319.7 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Neve =  $0,500 + 0,500 = 1,000$

## Superelemento in legno a "Falda 6" 233-236

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Superelemento di lunghezza complessiva L= 4.424 composto da:

asta 332: Trave in legno a falda Falda 6 fili 236-233 (L = 1.779)

asta 249: Trave in legno a falda Falda 6 fili 236-237 (L = 2.644)

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 2.396

Kdef = 0

Uinst tot in x = -0.0002

Uinst tot in y = -0.003

Uinst tot = 0.003

Luce/Uinst,tot > limite

$4.424/0.003=1474.9 > 300$  Comb: SLE rara, 8

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 2.396

Kdef = 0

Uinst var in x = -0.0001

Uinst var in y = -0.0019

Uinst var = 0.0019

Luce/Uinst,var > limite

$4.424/0.0019=2348.1 > 300$  Comb: SLE rara, 8

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 2.456

Kdef = 0.6

Ufin in x = -0.0008

Ufin in y = -0.0037

Ufin = 0.0037

Luce/Ufin > limite

$4.424/0.0037=1203.9 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Neve =  $0,500 + 0,500 = 1,000$

## Superelemento in legno a "Falda 6" 239-242

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)



## Dati generali

Superelemento di lunghezza complessiva  $L = 3.476$  composto da:

asta 333: Trave in legno a falda Falda 6 fili 242-239 ( $L = 0.832$ )

asta 250: Trave in legno a falda Falda 6 fili 242-243 ( $L = 2.644$ )

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 14x18	Rettangolare	0.14	0.18	0.0252	0.00006804	0.00004116	0.000756	0.000588

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 1.802

$K_{def} = 0$

$U_{inst\ tot\ in\ x} = -0.0002$

$U_{inst\ tot\ in\ y} = -0.0016$

$U_{inst\ tot} = 0.0016$

Luce/ $U_{inst, tot} >$  limite

$3.476/0.0016 = 2166 > 300$  Comb: SLE rara, 8

### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 1.714

$K_{def} = 0$

$U_{inst\ var\ in\ x} = -0.0001$

$U_{inst\ var\ in\ y} = -0.001$

$U_{inst\ var} = 0.001$

Luce/ $U_{inst, var} >$  limite

$3.476/0.001 = 3630.4 > 300$  Comb: SLE rara, 8

### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 1.83

$K_{def} = 0.6$

$U_{fin\ in\ x} = -0.001$

$U_{fin\ in\ y} = -0.002$

$U_{fin} = 0.002$

Luce/ $U_{fin} >$  limite

$3.476/0.002 = 1738.1 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Neve =  $0,500 + 0,500 = 1,000$

## Superelemento in legno a "Falda 6" (-17; 585)-230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati generali

Superelemento di lunghezza complessiva  $L = 7.149$  composto da:

asta 522: Trave in legno a falda Falda 6 fili 271-230 ( $L = 0.643$ )

asta 523: Trave in legno a falda Falda 6 fili 271-230 ( $L = 0.36$ )

asta 524: Trave in legno a falda Falda 6 fili 271-230 ( $L = 0.941$ )

asta 525: Trave in legno a falda Falda 6 fili 271-230 ( $L = 0.288$ )

asta 526: Trave in legno a falda Falda 6 fili 271-230 ( $L = 1.109$ )

asta 527: Trave in legno a falda Falda 6 fili 271-230 ( $L = 0.17$ )

asta 528: Trave in legno a falda Falda 6 fili 271-230 ( $L = 1.179$ )

asta 529: Trave in legno a falda Falda 6 fili 271-230 ( $L = 1.196$ )

asta 530: Trave in legno a falda Falda 6 fili 271-230 ( $L = 1.263$ )

### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1





#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 4.218

Kdef = 0

Uinst tot in x = 0.0001

Uinst tot in y = -0.0009

Uinst tot = 0.0009

Luce/Uinst,tot > limite

$7.149/0.0009=7652.7 > 300$  Comb: SLE rara, 8

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 4.218

Kdef = 0

Uinst var in x = 0.0001

Uinst var in y = -0.0005

Uinst var = 0.0005

Luce/Uinst,var > limite

$7.149/0.0005=13240.6 > 300$  Comb: SLE rara, 8

#### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 4.335

Kdef = 0.6

Ufin in x = 0.0002

Ufin in y = -0.0012

Ufin = 0.0012

Luce/Ufin > limite

$7.149/0.0012=6113.5 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Neve =  $0,500 + 0,500 = 1,000$

### Superelemento in legno a "Falda 6" (-772; 346)-251

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati generali

Superelemento di lunghezza complessiva L= 5.425 composto da:

asta 160: Trave in legno a falda Falda 6 fili 191-251 (L = 1.44)

asta 161: Trave in legno a falda Falda 6 fili 191-251 (L = 0.84)

asta 162: Trave in legno a falda Falda 6 fili 191-251 (L = 0.84)

asta 163: Trave in legno a falda Falda 6 fili 191-251 (L = 0.84)

asta 164: Trave in legno a falda Falda 6 fili 191-251 (L = 0.84)

asta 165: Trave in legno a falda Falda 6 fili 191-251 (L = 0.626)

#### Caratteristiche della sezione

Descrizione	Tipo	Base	Altezza	Area	Jx	Jy	Wx	Wy
R 16x24	Rettangolare	0.16	0.24	0.0384	0.00018432	0.00008192	0.001536	0.001024

Materiale: GL 24h EN 14080

$\beta_x = 0$ ;  $\beta_y = 0$

Rapporto luce/freccia elastica limite = 300

Rapporto luce/freccia elastica differita = 200

Mensola Y: Nessuno; Mensola X: Nessuno

Classe di servizio 1

#### Verifica della freccia istantanea totale D.M. 17-01-18 §C4.4.7 Circolare 7 21-01-19

Sezione ad ascissa 2.784

Kdef = 0

Uinst tot in x = 0.0023

Uinst tot in y = -0.0048

Uinst tot = 0.0048

Luce/Uinst,tot > limite

$5.425/0.0048=1122.2 > 300$  Comb: SLE rara, 16

#### Verifica della freccia istantanea variabile D.M. 17-01-18 §4.4.7

Sezione ad ascissa 2.672

Kdef = 0

Uinst var in x = 0.0011

Uinst var in y = -0.0022

Uinst var = 0.0022

Luce/Uinst,var > limite

$5.425/0.0022=2496.3 > 300$  Comb: SLE rara, 16



### Verifica della freccia finale EC5 §4.4.7 - EC5 2.2.3 (3)

Sezione ad ascissa 2.888

$K_{def} = 0.6$

$U_{fin\ in\ x} = 0.003$

$U_{fin\ in\ y} = -0.0063$

$U_{fin} = 0.0063$

$L_{uce}/U_{fin} > \text{limite}$

$5.425/0.0063 = 856.2 > 200$

Coefficienti combinatori impiegati:

Pesi strutturali =  $1,000 + 0,600 = 1,600$

Permanenti portati =  $1,000 + 0,600 = 1,600$

Variabile A =  $0,700 + 0,180 = 0,880$

Neve =  $0,500 + 0,500 = 1,000$

## 1.7 Verifica sismica globale

Le unità di misura elencate nel capitolo sono in [m] ove non espressamente specificato.

**Desc.:** descrizione.

**Stato limite:** (muratura) V=Taglio; PF=Pressoflessione; PFFP=Pressoflessione fuori piano; R=Ribaltamento.

**Molt.:** moltiplicatore minimo della azione sismica che produce lo stato limite.

**Comb.:** combinazione.

**PGA:** accelerazione al suolo.

**iPGA (ZE):** indicatore di rischio sismico in termini di PGA ovvero rapporto tra l'azione sismica massima sopportabile dall'elemento e l'azione sismica massima che si utilizzerebbe nel progetto nuovo (§C8.3).

**TR:** tempo di ritorno.

**(TR/TRrif)^.41:** indicatore di rischio sismico in termini di periodo di ritorno.

**fa:** fattore di accelerazione.

**Stato limite:** (muratura) V=Taglio; PF=Presso flessione; PFFP=Pressoflessione fuori piano; R=Ribaltamento.

**Coeff.s.:** coefficiente minimo prodotto dallo stato limite.

**Verifica:** stato di verifica.

**Trave:** titolo della trave.

**Pressoflessione:** dati della verifica a pressoflessione.

**Coeff.s.:** coefficiente di sicurezza a flessione.

**itr:** indicatore di rischio sismico in termini di tempo di ritorno.

**campata:** campata di riferimento.

**dist.:** ascissa relativa all'inizio della campata. [m]

**Taglio:** dati della verifica a taglio.

**Coeff.s.:** coefficiente di sicurezza a taglio.

**Maschio:** maschio.

**Stato limite:** (maschio muratura) V=Taglio; PF=Presso flessione; PFFP=Presso flessione fuori piano; R=Ribaltamento.

**Trave:** trave di collegamento in muratura.

**Stato limite:** (trave muratura) V=Taglio; F=Flessione.

**S. L.:** stato limite di riferimento.

**TR,C:** periodo di ritorno di capacità.

**PGA,C:** accelerazione di aggancio di capacità.

**TR,Rif:** periodo di ritorno di riferimento.

**PGA,Rif:** accelerazione di aggancio di riferimento.

**Tipo rottura:** tipo di rottura che fornisce il valore minimo degli elementi considerati.

**PAM:** perdita media annua attesa.

**Classe PAM:** classe di rischio PAM.

**IS-V:** indice di sicurezza.

**Classe IS-V:** classe di rischio IS-V.

**$\lambda_{SLR}$ :** frequenza media annua di superamento in Stato Limite di Ricostruzione.

**$\lambda_{SLC}$ :** frequenza media annua di superamento in Stato Limite di Collasso.

**$\lambda_{SLV}$ :** frequenza media annua di superamento in Stato Limite di salvaguardia della Vita.

**$\lambda_{SLD}$ :** frequenza media annua di superamento in Stato Limite di Danno.

**$\lambda_{SLO}$ :** frequenza media annua di superamento in Stato Limite di Operatività.

**$\lambda_{SLID}$ :** frequenza media annua di superamento in Stato Limite di Inizio Danno.

### Verifica di elementi dotati di indicatori di rischio sismico mediante analisi con fattore q

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.) § C8.7.1

#### Accelerazioni e tempi di ritorno

Accelerazione di aggancio SLO ( $ag/g_{SLO} \cdot S \cdot ST$ )  $PGA_{SLOrif} = 0.081$

Accelerazione di aggancio SLD ( $ag/g_{SLD} \cdot S \cdot ST$ )  $PGA_{SLDrif} = 0.101$

Accelerazione di aggancio SLV ( $ag/g_{SLV} \cdot S \cdot ST$ )  $PGA_{SLVrif} = 0.244$

$Tr_{SLOrif} = 30$  anni



Tr,SLDrif = 50 anni  
Tr,SLVrif = 475 anni

Indicatori minimi riferiti al solo materiale muratura

Desc.	Stato limite	Molt.	Comb.	PGA	iPGA (CE)	TR	(TR/TRrif)^.41	fa
Maschio 183	PF	0.165	SLV 3	0.0383	0.1569	5	0.1546	0.1526
Maschio 15	V	0.641	SLV 4	0.1526	0.6247	143	0.6113	0.6231
Maschio 246	PFFP	0.268	SLV 9	0.059	0.2416	14	0.2358	0.2351
Maschio 71	R	0.552	SLV 11	0.1272	0.5204	94	0.5147	0.5202
Trave di accoppiamento 24	PF	0.215	SLV 7	0.0467	0.1911	8	0.1874	0.1859
Trave di accoppiamento 25	V	0.177	SLV 13	0.0414	0.1693	6	0.1666	0.1647

Coefficienti di sicurezza riferiti al solo materiale muratura

Desc.	Stato limite	Coeff.s.	Comb.	Verifica
Maschio 1	PF SLU	4.728	SLU 83	Si
Maschio 1	V SLU	8.48	SLU 84	Si
Maschio 1	PF	2.575	SLV 13	Si
Maschio 1	V	5.323	SLV 8	Si
Maschio 1	PFFP	14.473	SLV 16	Si
Maschio 1	R	2.065	SLV 1	Si
Maschio 2	PF SLU	3.554	SLU 80	Si
Maschio 2	V SLU	9.59	SLU 83	Si
Maschio 2	PF	1.053	SLV 13	Si
Maschio 2	V	6.66	SLV 5	Si
Maschio 2	PFFP	8.371	SLV 13	Si
Maschio 2	R	2.525	SLV 4	Si
Maschio 3	PF SLU	8.465	SLU 47	Si
Maschio 3	V SLU	5.011	SLU 76	Si
Maschio 3	PF	3.106	SLV 16	Si
Maschio 3	V	3.854	SLV 16	Si
Maschio 3	PFFP	14.665	SLV 13	Si
Maschio 3	R	2.809	SLV 8	Si
Maschio 4	PF SLU	3.228	SLU 47	Si
Maschio 4	V SLU	3.091	SLU 83	Si
Maschio 4	PF	2.069	SLV 16	Si
Maschio 4	V	2.447	SLV 16	Si
Maschio 4	PFFP	23.197	SLV 1	Si
Maschio 4	R	2.269	SLV 12	Si
Maschio 7	PF SLU	7.829	SLU 83	Si
Maschio 7	V SLU	5.572	SLU 83	Si
Maschio 7	PF	2.717	SLV 9	Si
Maschio 7	V	3.45	SLV 5	Si
Maschio 7	PFFP	52.225	SLV 13	Si
Maschio 7	R	1.243	SLV 8	Si
Maschio 9	PF SLU	11.512	SLU 81	Si
Maschio 9	V SLU	5.14	SLU 83	Si
Maschio 9	PF	3.525	SLV 15	Si
Maschio 9	V	4.043	SLV 13	Si
Maschio 9	PFFP	13.75	SLV 14	Si
Maschio 9	R	2.419	SLV 3	Si
Maschio 10	PF SLU	3.119	SLU 77	Si
Maschio 10	V SLU	2.308	SLU 83	Si
Maschio 10	PF	1.955	SLV 13	Si
Maschio 10	V	1.664	SLV 15	Si
Maschio 10	PFFP	22.421	SLV 14	Si
Maschio 10	R	2.202	SLV 7	Si
Maschio 11	PF SLU	2.836	SLU 83	Si
Maschio 11	V SLU	6.104	SLU 84	Si
Maschio 11	PF	2.353	SLV 13	Si
Maschio 11	V	2.855	SLV 4	Si
Maschio 11	PFFP	56.331	SLV 15	Si
Maschio 11	R	1.699	SLV 5	Si
Maschio 12	PF SLU	1.308	SLU 83	Si
Maschio 12	V SLU	1.9	SLU 84	Si
Maschio 12	PF	2.731	SLV 1	Si
Maschio 12	V	1.814	SLV 15	Si
Maschio 12	PFFP	79.581	SLV 8	Si
Maschio 12	R	1.732	SLV 9	Si
Maschio 13	PF SLU	6.683	SLU 83	Si
Maschio 13	V SLU	8.847	SLU 72	Si
Maschio 13	PF	3.632	SLV 9	Si
Maschio 13	V	3.359	SLV 12	Si
Maschio 13	PFFP	35.091	SLV 16	Si
Maschio 13	R	1.896	SLV 5	Si
Maschio 14	PF SLU	7.265	SLU 47	Si
Maschio 14	V SLU	3.189	SLU 83	Si
Maschio 14	PF	0	SLV 14	No
Maschio 14	V	2.418	SLV 14	Si
Maschio 14	PFFP	0	SLV 16	No
Maschio 14	R	1.756	SLV 3	Si
Maschio 15	PF SLU	1.555	SLU 84	Si
Maschio 15	V SLU	1.157	SLU 84	Si
Maschio 15	PF	1.971	SLV 8	Si
Maschio 15	V	0.817	SLV 4	No
Maschio 15	PFFP	20.168	SLV 13	Si
Maschio 15	R	4.706	SLV 8	Si
Maschio 16	PF SLU	3.286	SLU 84	Si
Maschio 16	V SLU	6.342	SLU 84	Si



Desc.	Stato limite	Coeff.s.	Comb.	Verifica
Maschio 16	PF	2.09	SLV 2	Si
Maschio 16	V	1.804	SLV 4	Si
Maschio 16	PFFP	14.526	SLV 12	Si
Maschio 16	R	3.554	SLV 8	Si
Maschio 17	PF SLU	6.805	SLU 83	Si
Maschio 17	V SLU	2.06	SLU 83	Si
Maschio 17	PF	3.49	SLV 12	Si
Maschio 17	V	2.247	SLV 1	Si
Maschio 17	PFFP	36.598	SLV 16	Si
Maschio 17	R	1.417	SLV 7	Si
Maschio 18	PF SLU	2.734	SLU 84	Si
Maschio 18	V SLU	7.157	SLU 70	Si
Maschio 18	PF	2.368	SLV 4	Si
Maschio 18	V	3.229	SLV 4	Si
Maschio 18	PFFP	48.929	SLV 4	Si
Maschio 18	R	2.388	SLV 9	Si
Maschio 19	PF SLU	3.271	SLU 84	Si
Maschio 19	V SLU	1.679	SLU 84	Si
Maschio 19	PF	3.099	SLV 11	Si
Maschio 19	V	1.208	SLV 8	Si
Maschio 19	PFFP	392.765	SLV 1	Si
Maschio 19	R	3.864	SLV 11	Si
Maschio 20	PF SLU	1.379	SLU 84	Si
Maschio 20	V SLU	3.243	SLU 84	Si
Maschio 20	PF	1.511	SLV 8	Si
Maschio 20	V	2.157	SLV 8	Si
Maschio 20	PFFP	27.873	SLV 2	Si
Maschio 20	R	1.769	SLV 9	Si
Maschio 21	PF SLU	18.705	SLU 51	Si
Maschio 21	V SLU	3.808	SLU 84	Si
Maschio 21	PF	2.9	SLV 14	Si
Maschio 21	V	2.724	SLV 16	Si
Maschio 21	PFFP	40.073	SLV 16	Si
Maschio 21	R	1.588	SLV 7	Si
Maschio 22	PF SLU	24.725	SLU 84	Si
Maschio 22	V SLU	29.753	SLU 83	Si
Maschio 22	PF	2.302	SLV 14	Si
Maschio 22	V	3.035	SLV 1	Si
Maschio 22	PFFP	60.949	SLV 9	Si
Maschio 22	R	1.666	SLV 8	Si
Maschio 23	PF SLU	1.266	SLU 84	Si
Maschio 23	V SLU	5.745	SLU 84	Si
Maschio 23	PF	0.904	SLV 3	No
Maschio 23	V	4.975	SLV 3	Si
Maschio 23	PFFP	62.589	SLV 1	Si
Maschio 23	R	1.38	SLV 10	Si
Maschio 24	PF SLU	4.038	SLU 83	Si
Maschio 24	V SLU	27.955	SLU 83	Si
Maschio 24	PF	0.455	SLV 1	No
Maschio 24	V	7.151	SLV 16	Si
Maschio 24	PFFP	22.709	SLV 3	Si
Maschio 24	R	1.09	SLV 10	Si
Maschio 25	PF SLU	40.488	SLU 22	Si
Maschio 25	V SLU	22.177	SLU 63	Si
Maschio 25	PF	1.211	SLV 1	Si
Maschio 25	V	3.194	SLV 16	Si
Maschio 25	PFFP	68.304	SLV 13	Si
Maschio 25	R	1.556	SLV 7	Si
Maschio 26	PF SLU	4.704	SLU 84	Si
Maschio 26	V SLU	6.036	SLU 84	Si
Maschio 26	PF	1.373	SLV 1	Si
Maschio 26	V	2.17	SLV 14	Si
Maschio 26	PFFP	54.537	SLV 1	Si
Maschio 26	R	1.542	SLV 12	Si
Maschio 27	PF SLU	2.212	SLU 84	Si
Maschio 27	V SLU	26.912	SLU 84	Si
Maschio 27	PF	1.108	SLV 3	Si
Maschio 27	V	6.582	SLV 15	Si
Maschio 27	PFFP	55.517	SLV 3	Si
Maschio 27	R	1.018	SLV 6	Si
Maschio 28	PF SLU	9.923	SLU 83	Si
Maschio 28	V SLU	3.184	SLU 83	Si
Maschio 28	PF	2.964	SLV 1	Si
Maschio 28	V	2.638	SLV 1	Si
Maschio 28	PFFP	39.787	SLV 1	Si
Maschio 28	R	1.735	SLV 12	Si
Maschio 29	PF SLU	23.603	SLU 83	Si
Maschio 29	V SLU	7.954	SLU 83	Si
Maschio 29	PF	3.226	SLV 14	Si
Maschio 29	V	1.811	SLV 14	Si
Maschio 29	PFFP	24.219	SLV 14	Si
Maschio 29	R	1.882	SLV 7	Si
Maschio 31	PF SLU	2.285	SLU 83	Si
Maschio 31	V SLU	6.083	SLU 70	Si
Maschio 31	PF	2.732	SLV 6	Si
Maschio 31	V	2.608	SLV 11	Si
Maschio 31	PFFP	60.905	SLV 15	Si
Maschio 31	R	2.28	SLV 6	Si
Maschio 32	PF SLU	19.349	SLU 84	Si



Desc.	Stato limite	Coeff.s.	Comb.	Verifica
Maschio 32	V SLU	2.127	SLU 84	Si
Maschio 32	PF	8.197	SLV 15	Si
Maschio 32	V	1.25	SLV 11	Si
Maschio 32	PFFP	421.346	SLV 13	Si
Maschio 32	R	3.724	SLV 4	Si
Maschio 33	PF SLU	1.203	SLU 84	Si
Maschio 33	V SLU	1.707	SLU 84	Si
Maschio 33	PF	1.503	SLV 11	Si
Maschio 33	V	1.939	SLV 11	Si
Maschio 33	PFFP	44.366	SLV 13	Si
Maschio 33	R	1.766	SLV 12	Si
Maschio 35	PF SLU	3.48	SLU 84	Si
Maschio 35	V SLU	2.393	SLU 84	Si
Maschio 35	PF	2.31	SLV 7	Si
Maschio 35	V	2.424	SLV 11	Si
Maschio 35	PFFP	34.807	SLV 13	Si
Maschio 35	R	1.313	SLV 6	Si
Maschio 37	PF SLU	16.695	SLU 83	Si
Maschio 37	V SLU	8.756	SLU 83	Si
Maschio 37	PF	3.759	SLV 14	Si
Maschio 37	V	1.718	SLV 1	Si
Maschio 37	PFFP	26.792	SLV 6	Si
Maschio 37	R	1.985	SLV 12	Si
Maschio 38	PF SLU	10.001	SLU 83	Si
Maschio 38	V SLU	3.426	SLU 83	Si
Maschio 38	PF	2.945	SLV 3	Si
Maschio 38	V	2.707	SLV 3	Si
Maschio 38	PFFP	12.609	SLV 1	Si
Maschio 38	R	2.613	SLV 12	Si
Maschio 39	PF SLU	5.248	SLU 48	Si
Maschio 39	V SLU	2.141	SLU 83	Si
Maschio 39	PF	3.535	SLV 7	Si
Maschio 39	V	2.576	SLV 10	Si
Maschio 39	PFFP	44.348	SLV 3	Si
Maschio 39	R	1.551	SLV 10	Si
Maschio 41	PF SLU	2.478	SLU 78	Si
Maschio 41	V SLU	9.847	SLU 83	Si
Maschio 41	PF	1.314	SLV 4	Si
Maschio 41	V	1.541	SLV 15	Si
Maschio 41	PFFP	15.223	SLV 3	Si
Maschio 41	R	3.447	SLV 11	Si
Maschio 42	PF SLU	1.835	SLU 84	Si
Maschio 42	V SLU	1.491	SLU 84	Si
Maschio 42	PF	2.222	SLV 15	Si
Maschio 42	V	0.926	SLV 15	No
Maschio 42	PFFP	17.177	SLV 2	Si
Maschio 42	R	4.879	SLV 11	Si
Maschio 43	PF SLU	23.223	SLU 51	Si
Maschio 43	V SLU	5.481	SLU 78	Si
Maschio 43	PF	6.047	SLV 10	Si
Maschio 43	V	3.133	SLV 11	Si
Maschio 43	PFFP	40.823	SLV 1	Si
Maschio 43	R	1.777	SLV 12	Si
Maschio 44	PF SLU	4.208	SLU 84	Si
Maschio 44	V SLU	2.882	SLU 84	Si
Maschio 44	PF	2.684	SLV 4	Si
Maschio 44	V	2.007	SLV 4	Si
Maschio 44	PFFP	82.17	SLV 11	Si
Maschio 44	R	1.606	SLV 6	Si
Maschio 45	PF SLU	4.783	SLU 83	Si
Maschio 45	V SLU	4.139	SLU 83	Si
Maschio 45	PF	3.159	SLV 2	Si
Maschio 45	V	2.367	SLV 15	Si
Maschio 45	PFFP	47.501	SLV 4	Si
Maschio 45	R	1.842	SLV 12	Si
Maschio 46	PF SLU	3.808	SLU 78	Si
Maschio 46	V SLU	2.652	SLU 84	Si
Maschio 46	PF	1.663	SLV 2	Si
Maschio 46	V	1.163	SLV 2	Si
Maschio 46	PFFP	19.236	SLV 1	Si
Maschio 46	R	2.281	SLV 12	Si
Maschio 47	PF SLU	19.485	SLU 40	Si
Maschio 47	V SLU	6.391	SLU 78	Si
Maschio 47	PF	2.861	SLV 4	Si
Maschio 47	V	4.348	SLV 2	Si
Maschio 47	PFFP	14.458	SLV 1	Si
Maschio 47	R	2.511	SLV 10	Si
Maschio 48	PF SLU	3.909	SLU 83	Si
Maschio 48	V SLU	21.966	SLU 83	Si
Maschio 48	PF	1.903	SLV 10	Si
Maschio 48	V	12.072	SLV 10	Si
Maschio 48	PFFP	56.607	SLV 3	Si
Maschio 48	R	1.074	SLV 10	Si
Maschio 49	PF SLU	3.245	SLU 83	Si
Maschio 49	V SLU	3.896	SLU 83	Si
Maschio 49	PF	2.208	SLV 10	Si
Maschio 49	V	3.115	SLV 10	Si
Maschio 49	PFFP	46.686	SLV 2	Si
Maschio 49	R	1.274	SLV 9	Si



Desc.	Stato limite	Coeff.s.	Comb.	Verifica
Maschio 51	PF SLU	7.472	SLU 47	Si
Maschio 51	V SLU	3.812	SLU 83	Si
Maschio 51	PF	3.735	SLV 1	Si
Maschio 51	V	2.847	SLV 1	Si
Maschio 51	PFFP	24.118	SLV 6	Si
Maschio 51	R	2.74	SLV 11	Si
Maschio 52	PF SLU	5.644	SLU 83	Si
Maschio 52	V SLU	3.324	SLU 78	Si
Maschio 52	PF	2.26	SLV 3	Si
Maschio 52	V	3.466	SLV 3	Si
Maschio 52	PFFP	13.627	SLV 2	Si
Maschio 52	R	3.257	SLV 11	Si
Maschio 53	PF SLU	26.633	SLU 50	Si
Maschio 53	V SLU	13.098	SLU 83	Si
Maschio 53	PF	9.14	SLV 6	Si
Maschio 53	V	3.033	SLV 10	Si
Maschio 53	PFFP	9.748	SLV 4	Si
Maschio 53	R	2.211	SLV 15	Si
Maschio 54	PF SLU	60.608	SLU 31	Si
Maschio 54	V SLU	21.645	SLU 83	Si
Maschio 54	PF	3.562	SLV 9	Si
Maschio 54	V	3.795	SLV 9	Si
Maschio 54	PFFP	5.872	SLV 15	Si
Maschio 54	R	0.855	SLV 5	No
Maschio 55	PF SLU	12.212	SLU 31	Si
Maschio 55	V SLU	11.756	SLU 84	Si
Maschio 55	PF	1.743	SLV 16	Si
Maschio 55	V	3.974	SLV 1	Si
Maschio 55	PFFP	4.854	SLV 11	Si
Maschio 55	R	0.63	SLV 5	No
Maschio 56	PF SLU	3.165	SLU 47	Si
Maschio 56	V SLU	4.139	SLU 84	Si
Maschio 56	PF	1.837	SLV 16	Si
Maschio 56	V	4.051	SLV 14	Si
Maschio 56	PFFP	6.529	SLV 7	Si
Maschio 56	R	0.84	SLV 6	No
Maschio 58	PF SLU	9.289	SLU 50	Si
Maschio 58	V SLU	17.983	SLU 71	Si
Maschio 58	PF	3.76	SLV 10	Si
Maschio 58	V	4.567	SLV 9	Si
Maschio 58	PFFP	10.636	SLV 15	Si
Maschio 58	R	0.59	SLV 6	No
Maschio 61	PF SLU	9.443	SLU 81	Si
Maschio 61	V SLU	7.97	SLU 81	Si
Maschio 61	PF	4.131	SLV 16	Si
Maschio 61	V	4.796	SLV 1	Si
Maschio 61	PFFP	6.827	SLV 14	Si
Maschio 61	R	1.08	SLV 7	Si
Maschio 64	PF SLU	7.474	SLU 73	Si
Maschio 64	V SLU	15.863	SLU 73	Si
Maschio 64	PF	0.858	SLV 14	No
Maschio 64	V	4.668	SLV 14	Si
Maschio 64	PFFP	2.997	SLV 14	Si
Maschio 64	R	0.673	SLV 7	No
Maschio 65	PF SLU	13.452	SLU 81	Si
Maschio 65	V SLU	12.541	SLU 82	Si
Maschio 65	PF	2.642	SLV 16	Si
Maschio 65	V	2.896	SLV 14	Si
Maschio 65	PFFP	10.468	SLV 16	Si
Maschio 65	R	0.561	SLV 5	No
Maschio 66	PF SLU	35.738	SLU 77	Si
Maschio 66	V SLU	59.785	SLU 84	Si
Maschio 66	PF	2.947	SLV 14	Si
Maschio 66	V	2.721	SLV 14	Si
Maschio 66	PFFP	12.156	SLV 3	Si
Maschio 66	R	0.585	SLV 10	No
Maschio 67	PF SLU	48.226	SLU 44	Si
Maschio 67	V SLU	10.249	SLU 83	Si
Maschio 67	PF	0.735	SLV 3	No
Maschio 67	V	2.584	SLV 14	Si
Maschio 67	PFFP	3.14	SLV 3	Si
Maschio 67	R	0.655	SLV 10	No
Maschio 68	PF SLU	18.959	SLU 47	Si
Maschio 68	V SLU	8.823	SLU 51	Si
Maschio 68	PF	2.296	SLV 13	Si
Maschio 68	V	4.126	SLV 15	Si
Maschio 68	PFFP	5.463	SLV 13	Si
Maschio 68	R	0.593	SLV 8	No
Maschio 69	PF SLU	7.223	SLU 83	Si
Maschio 69	V SLU	19.017	SLU 84	Si
Maschio 69	PF	2.472	SLV 3	Si
Maschio 69	V	2.274	SLV 3	Si
Maschio 69	PFFP	16.686	SLV 15	Si
Maschio 69	R	0.567	SLV 6	No
Maschio 70	PF SLU	14.924	SLU 66	Si
Maschio 70	V SLU	30.22	SLU 69	Si
Maschio 70	PF	1.437	SLV 16	Si
Maschio 70	V	1.844	SLV 1	Si
Maschio 70	PFFP	15.55	SLV 15	Si



Desc.	Stato limite	Coeff.s.	Comb.	Verifica
Maschio 70	R	0.676	SLV 6	No
Maschio 71	PF SLU	8.548	SLU 69	Si
Maschio 71	V SLU	12.369	SLU 69	Si
Maschio 71	PF	1.101	SLV 3	Si
Maschio 71	V	1.979	SLV 2	Si
Maschio 71	PFFP	16.04	SLV 3	Si
Maschio 71	R	0.535	SLV 11	No
Maschio 72	PF SLU	20.113	SLU 44	Si
Maschio 72	V SLU	11.533	SLU 50	Si
Maschio 72	PF	3.321	SLV 1	Si
Maschio 72	V	4.604	SLV 4	Si
Maschio 72	PFFP	5.742	SLV 2	Si
Maschio 72	R	0.639	SLV 11	No
Maschio 73	PF SLU	12.961	SLU 77	Si
Maschio 73	V SLU	6.373	SLU 59	Si
Maschio 73	PF	7.617	SLV 10	Si
Maschio 73	V	3.157	SLV 7	Si
Maschio 73	PFFP	21.296	SLV 3	Si
Maschio 73	R	1.222	SLV 12	Si
Maschio 74	PF SLU	2.794	SLU 84	Si
Maschio 74	V SLU	3.407	SLU 84	Si
Maschio 74	PF	3.286	SLV 7	Si
Maschio 74	V	2.68	SLV 11	Si
Maschio 74	PFFP	8.636	SLV 3	Si
Maschio 74	R	0.551	SLV 10	No
Maschio 75	PF SLU	11.719	SLU 83	Si
Maschio 75	V SLU	4.883	SLU 81	Si
Maschio 75	PF	5.041	SLV 3	Si
Maschio 75	V	4.586	SLV 10	Si
Maschio 75	PFFP	7.935	SLV 1	Si
Maschio 75	R	0.993	SLV 11	No
Maschio 77	PF SLU	12.217	SLU 84	Si
Maschio 77	V SLU	7.724	SLU 77	Si
Maschio 77	PF	4.587	SLV 1	Si
Maschio 77	V	3.75	SLV 6	Si
Maschio 77	PFFP	10.94	SLV 4	Si
Maschio 77	R	0.765	SLV 9	No
Maschio 80	PF SLU	2.842	SLU 44	Si
Maschio 80	V SLU	2.614	SLU 84	Si
Maschio 80	PF	1.082	SLV 3	Si
Maschio 80	V	2.258	SLV 1	Si
Maschio 80	PFFP	7.05	SLV 12	Si
Maschio 80	R	0.629	SLV 5	No
Maschio 81	PF SLU	19.966	SLU 31	Si
Maschio 81	V SLU	10.332	SLU 84	Si
Maschio 81	PF	0.922	SLV 3	No
Maschio 81	V	3.397	SLV 14	Si
Maschio 81	PFFP	3.81	SLV 7	Si
Maschio 81	R	0.659	SLV 10	No
Maschio 82	PF SLU	99.457	SLU 50	Si
Maschio 82	V SLU	11.541	SLU 83	Si
Maschio 82	PF	3.771	SLV 6	Si
Maschio 82	V	1.953	SLV 6	Si
Maschio 82	PFFP	5.381	SLV 4	Si
Maschio 82	R	0.824	SLV 9	No
Maschio 83	PF SLU	6.923	SLU 84	Si
Maschio 83	V SLU	30.389	SLU 47	Si
Maschio 83	PF	1.547	SLV 9	Si
Maschio 83	V	4.84	SLV 8	Si
Maschio 83	PFFP	4.363	SLV 13	Si
Maschio 83	R	0.794	SLV 8	No
Maschio 84	PF SLU	7.935	SLU 84	Si
Maschio 84	V SLU	12.268	SLU 83	Si
Maschio 84	PF	1.629	SLV 12	Si
Maschio 84	V	5.556	SLV 5	Si
Maschio 84	PFFP	3.442	SLV 11	Si
Maschio 84	R	0.811	SLV 5	No
Maschio 85	PF SLU	8.207	SLU 44	Si
Maschio 85	V SLU	27.933	SLU 41	Si
Maschio 85	PF	0	SLV 8	No
Maschio 85	V	4.252	SLV 16	Si
Maschio 85	PFFP	0	SLV 12	No
Maschio 85	R	0.62	SLV 5	No
Maschio 86	PF SLU	10.241	SLU 44	Si
Maschio 86	V SLU	5.131	SLU 84	Si
Maschio 86	PF	2.01	SLV 16	Si
Maschio 86	V	2.926	SLV 16	Si
Maschio 86	PFFP	2.314	SLV 12	Si
Maschio 86	R	0.64	SLV 5	No
Maschio 88	PF SLU	22.592	SLU 50	Si
Maschio 88	V SLU	13.312	SLU 71	Si
Maschio 88	PF	4.991	SLV 12	Si
Maschio 88	V	5.057	SLV 14	Si
Maschio 88	PFFP	6.659	SLV 11	Si
Maschio 88	R	0.863	SLV 5	No
Maschio 91	PF SLU	4.827	SLU 39	Si
Maschio 91	V SLU	17.833	SLU 81	Si
Maschio 91	PF	2.283	SLV 9	Si
Maschio 91	V	11.807	SLV 5	Si



Desc.	Stato limite	Coeff.s.	Comb.	Verifica
Maschio 91	PFFP	4.489	SLV 9	Si
Maschio 91	R	1.549	SLV 7	Si
Maschio 92	PF SLU	9.89	SLU 60	Si
Maschio 92	V SLU	18.043	SLU 51	Si
Maschio 92	PF	2.047	SLV 12	Si
Maschio 92	V	8.468	SLV 8	Si
Maschio 92	PFFP	7.154	SLV 12	Si
Maschio 92	R	1.44	SLV 5	Si
Maschio 94	PF SLU	4.768	SLU 81	Si
Maschio 94	V SLU	13.492	SLU 81	Si
Maschio 94	PF	1.852	SLV 14	Si
Maschio 94	V	6.732	SLV 14	Si
Maschio 94	PFFP	4.702	SLV 14	Si
Maschio 94	R	0.993	SLV 7	No
Maschio 95	PF SLU	22.484	SLU 52	Si
Maschio 95	V SLU	15.983	SLU 82	Si
Maschio 95	PF	2.492	SLV 16	Si
Maschio 95	V	2.932	SLV 14	Si
Maschio 95	PFFP	7.322	SLV 16	Si
Maschio 95	R	0.78	SLV 5	No
Maschio 96	PF SLU	95.749	SLU 43	Si
Maschio 96	V SLU	62.347	SLU 43	Si
Maschio 96	PF	3.014	SLV 3	Si
Maschio 96	V	2.722	SLV 1	Si
Maschio 96	PFFP	8.986	SLV 7	Si
Maschio 96	R	0.784	SLV 10	No
Maschio 97	PF SLU	6.002	SLU 81	Si
Maschio 97	V SLU	26.892	SLU 43	Si
Maschio 97	PF	1.342	SLV 3	Si
Maschio 97	V	3.408	SLV 3	Si
Maschio 97	PFFP	5.04	SLV 3	Si
Maschio 97	R	0.841	SLV 10	No
Maschio 98	PF SLU	13.589	SLU 50	Si
Maschio 98	V SLU	20.827	SLU 51	Si
Maschio 98	PF	3.103	SLV 13	Si
Maschio 98	V	4.821	SLV 16	Si
Maschio 98	PFFP	6.426	SLV 14	Si
Maschio 98	R	0.817	SLV 7	No
Maschio 99	PF SLU	22.276	SLU 63	Si
Maschio 99	V SLU	28.56	SLU 81	Si
Maschio 99	PF	2.768	SLV 3	Si
Maschio 99	V	2.57	SLV 14	Si
Maschio 99	PFFP	12.254	SLV 15	Si
Maschio 99	R	0.738	SLV 6	No
Maschio 100	PF SLU	17.836	SLU 61	Si
Maschio 100	V SLU	82.508	SLU 49	Si
Maschio 100	PF	0.438	SLV 3	No
Maschio 100	V	3.934	SLV 16	Si
Maschio 100	PFFP	7.836	SLV 7	Si
Maschio 100	R	0.585	SLV 10	No
Maschio 101	PF SLU	9.236	SLU 64	Si
Maschio 101	V SLU	13.258	SLU 77	Si
Maschio 101	PF	1.258	SLV 16	Si
Maschio 101	V	2.859	SLV 1	Si
Maschio 101	PFFP	10.23	SLV 16	Si
Maschio 101	R	0.673	SLV 5	No
Maschio 102	PF SLU	10	SLU 43	Si
Maschio 102	V SLU	16.69	SLU 50	Si
Maschio 102	PF	1.165	SLV 2	Si
Maschio 102	V	2.601	SLV 1	Si
Maschio 102	PFFP	10.713	SLV 2	Si
Maschio 102	R	0.613	SLV 11	No
Maschio 103	PF SLU	9.753	SLU 43	Si
Maschio 103	V SLU	19.438	SLU 51	Si
Maschio 103	PF	2.756	SLV 1	Si
Maschio 103	V	5.173	SLV 3	Si
Maschio 103	PFFP	5.841	SLV 2	Si
Maschio 103	R	0.797	SLV 11	No
Maschio 104	PF SLU	27.818	SLU 45	Si
Maschio 104	V SLU	4.819	SLU 51	Si
Maschio 104	PF	7.824	SLV 10	Si
Maschio 104	V	4.919	SLV 7	Si
Maschio 104	PFFP	71.11	SLV 3	Si
Maschio 104	R	3.342	SLV 14	Si
Maschio 105	PF SLU	3.993	SLU 39	Si
Maschio 105	V SLU	16.011	SLU 81	Si
Maschio 105	PF	2.064	SLV 10	Si
Maschio 105	V	13.38	SLV 10	Si
Maschio 105	PFFP	4.126	SLV 6	Si
Maschio 105	R	1.256	SLV 11	Si
Maschio 106	PF SLU	25.728	SLU 40	Si
Maschio 106	V SLU	11.926	SLU 69	Si
Maschio 106	PF	2.429	SLV 7	Si
Maschio 106	V	6.789	SLV 5	Si
Maschio 106	PFFP	6.076	SLV 3	Si
Maschio 106	R	0.837	SLV 10	No
Maschio 109	PF SLU	7.955	SLU 43	Si
Maschio 109	V SLU	5.944	SLU 83	Si
Maschio 109	PF	2.639	SLV 3	Si





Desc.	Stato limite	Coeff.s.	Comb.	Verifica
Maschio 109	V	3.475	SLV 3	Si
Maschio 109	PFFP	4.643	SLV 12	Si
Maschio 109	R	0.703	SLV 9	No
Maschio 110	PF SLU	6.135	SLU 43	Si
Maschio 110	V SLU	26.288	SLU 42	Si
Maschio 110	PF	0	SLV 7	No
Maschio 110	V	4.247	SLV 3	Si
Maschio 110	PFFP	0	SLV 7	No
Maschio 110	R	0.631	SLV 10	No
Maschio 111	PF SLU	65.171	SLU 40	Si
Maschio 111	V SLU	11.485	SLU 84	Si
Maschio 111	PF	2.23	SLV 6	Si
Maschio 111	V	3.21	SLV 6	Si
Maschio 111	PFFP	4.837	SLV 3	Si
Maschio 111	R	1.132	SLV 10	Si
Maschio 112	PF SLU	23.696	SLU 31	Si
Maschio 112	V SLU	19.504	SLU 40	Si
Maschio 112	PF	1.99	SLV 9	Si
Maschio 112	V	2.181	SLV 7	Si
Maschio 112	PFFP	3.338	SLV 15	Si
Maschio 112	R	1.743	SLV 8	Si
Maschio 113	PF SLU	8.276	SLU 44	Si
Maschio 113	V SLU	26.561	SLU 42	Si
Maschio 113	PF	0	SLV 7	No
Maschio 113	V	7.147	SLV 7	Si
Maschio 113	PFFP	0	SLV 12	No
Maschio 113	R	0.801	SLV 5	No
Maschio 114	PF SLU	8.589	SLU 44	Si
Maschio 114	V SLU	11.363	SLU 84	Si
Maschio 114	PF	0	SLV 11	No
Maschio 114	V	5.461	SLV 16	Si
Maschio 114	PFFP	0	SLV 8	No
Maschio 114	R	0.832	SLV 5	No
Maschio 115	PF SLU	12.405	SLU 79	Si
Maschio 115	V SLU	32.624	SLU 79	Si
Maschio 115	PF	0	SLV 5	No
Maschio 115	V	5.041	SLV 6	Si
Maschio 115	PFFP	0	SLV 10	No
Maschio 115	R	0.797	SLV 8	No
Maschio 116	PF SLU	15.372	SLU 59	Si
Maschio 116	V SLU	13.856	SLU 82	Si
Maschio 116	PF	3.352	SLV 2	Si
Maschio 116	V	4.207	SLV 15	Si
Maschio 116	PFFP	2.55	SLV 9	Si
Maschio 116	R	1.031	SLV 12	Si
Maschio 117	PF SLU	4.995	SLU 66	Si
Maschio 117	V SLU	15.158	SLU 84	Si
Maschio 117	PF	0.718	SLV 13	No
Maschio 117	V	3.778	SLV 13	Si
Maschio 117	PFFP	2.03	SLV 9	Si
Maschio 117	R	1.16	SLV 8	Si
Maschio 119	PF SLU	40.83	SLU 73	Si
Maschio 119	V SLU	55.087	SLU 51	Si
Maschio 119	PF	4.201	SLV 12	Si
Maschio 119	V	6.537	SLV 12	Si
Maschio 119	PFFP	3.222	SLV 12	Si
Maschio 119	R	1.428	SLV 5	Si
Maschio 120	PF SLU	5.217	SLU 25	Si
Maschio 120	V SLU	23.402	SLU 63	Si
Maschio 120	PF	0.445	SLV 13	No
Maschio 120	V	2.545	SLV 15	Si
Maschio 120	PFFP	1.685	SLV 13	Si
Maschio 120	R	1.304	SLV 8	Si
Maschio 121	PF SLU	13.826	SLU 58	Si
Maschio 121	V SLU	21.568	SLU 81	Si
Maschio 121	PF	3.152	SLV 12	Si
Maschio 121	V	20.877	SLV 5	Si
Maschio 121	PFFP	2.495	SLV 12	Si
Maschio 121	R	1.341	SLV 5	Si
Maschio 124	PF SLU	3.414	SLU 39	Si
Maschio 124	V SLU	6.934	SLU 69	Si
Maschio 124	PF	0.851	SLV 13	No
Maschio 124	V	2.506	SLV 13	Si
Maschio 124	PFFP	2.352	SLV 2	Si
Maschio 124	R	1.432	SLV 8	Si
Maschio 127	PF SLU	46.247	SLU 50	Si
Maschio 127	V SLU	246.56	SLU 40	Si
Maschio 127	PF	1.354	SLV 9	Si
Maschio 127	V	32.447	SLV 10	Si
Maschio 127	PFFP	2.57	SLV 10	Si
Maschio 127	R	1.828	SLV 7	Si
Maschio 128	PF SLU	13.158	SLU 82	Si
Maschio 128	V SLU	6.18	SLU 84	Si
Maschio 128	PF	2.13	SLV 13	Si
Maschio 128	V	3.55	SLV 13	Si
Maschio 128	PFFP	1.061	SLV 6	Si
Maschio 128	R	1.066	SLV 8	Si
Maschio 130	PF SLU	16.202	SLU 18	Si
Maschio 130	V SLU	36.006	SLU 84	Si



Desc.	Stato limite	Coeff.s.	Comb.	Verifica
Maschio 130	PF	1.3	SLV 12	Si
Maschio 130	V	6.071	SLV 11	Si
Maschio 130	PFFP	1.705	SLV 12	Si
Maschio 130	R	2.047	SLV 5	Si
Maschio 132	PF SLU	10.008	SLU 43	Si
Maschio 132	V SLU	45.195	SLU 43	Si
Maschio 132	PF	2.763	SLV 3	Si
Maschio 132	V	12.12	SLV 14	Si
Maschio 132	PFFP	4.359	SLV 11	Si
Maschio 132	R	1.262	SLV 10	Si
Maschio 133	PF SLU	19.366	SLU 81	Si
Maschio 133	V SLU	21.914	SLU 81	Si
Maschio 133	PF	2.859	SLV 16	Si
Maschio 133	V	4.355	SLV 14	Si
Maschio 133	PFFP	4.429	SLV 16	Si
Maschio 133	R	1.137	SLV 5	Si
Maschio 134	PF SLU	71.986	SLU 44	Si
Maschio 134	V SLU	154.613	SLU 44	Si
Maschio 134	PF	2.763	SLV 3	Si
Maschio 134	V	4.012	SLV 3	Si
Maschio 134	PFFP	4.742	SLV 8	Si
Maschio 134	R	1.11	SLV 9	Si
Maschio 135	PF SLU	9.592	SLU 44	Si
Maschio 135	V SLU	67.787	SLU 44	Si
Maschio 135	PF	1.595	SLV 16	Si
Maschio 135	V	6.765	SLV 16	Si
Maschio 135	PFFP	3.747	SLV 12	Si
Maschio 135	R	1.064	SLV 5	Si
Maschio 136	PF SLU	11.586	SLU 44	Si
Maschio 136	V SLU	22.298	SLU 40	Si
Maschio 136	PF	2.709	SLV 13	Si
Maschio 136	V	7.411	SLV 3	Si
Maschio 136	PFFP	3.689	SLV 13	Si
Maschio 136	R	1.146	SLV 8	Si
Maschio 137	PF SLU	107.173	SLU 45	Si
Maschio 137	V SLU	55.616	SLU 60	Si
Maschio 137	PF	2.766	SLV 16	Si
Maschio 137	V	3.416	SLV 16	Si
Maschio 137	PFFP	6.512	SLV 15	Si
Maschio 137	R	0.934	SLV 8	No
Maschio 138	PF SLU	14.641	SLU 29	Si
Maschio 138	V SLU	37.009	SLU 42	Si
Maschio 138	PF	0	SLV 7	No
Maschio 138	V	3.761	SLV 3	Si
Maschio 138	PFFP	2.842	SLV 11	Si
Maschio 138	R	0.742	SLV 10	No
Maschio 139	PF SLU	9.402	SLU 23	Si
Maschio 139	V SLU	17.509	SLU 78	Si
Maschio 139	PF	1.101	SLV 3	Si
Maschio 139	V	3.593	SLV 3	Si
Maschio 139	PFFP	6.896	SLV 12	Si
Maschio 139	R	1.022	SLV 6	Si
Maschio 140	PF SLU	9.081	SLU 44	Si
Maschio 140	V SLU	29.824	SLU 44	Si
Maschio 140	PF	1.019	SLV 2	Si
Maschio 140	V	3.897	SLV 3	Si
Maschio 140	PFFP	5.261	SLV 2	Si
Maschio 140	R	0.805	SLV 11	No
Maschio 141	PF SLU	9.975	SLU 43	Si
Maschio 141	V SLU	21.748	SLU 40	Si
Maschio 141	PF	3.106	SLV 2	Si
Maschio 141	V	8.765	SLV 16	Si
Maschio 141	PFFP	3.161	SLV 2	Si
Maschio 141	R	1.102	SLV 11	Si
Maschio 142	PF SLU	15.82	SLU 40	Si
Maschio 142	V SLU	6.347	SLU 84	Si
Maschio 142	PF	0.995	SLV 9	No
Maschio 142	V	3.895	SLV 9	Si
Maschio 142	PFFP	0	SLV 5	No
Maschio 142	R	0.966	SLV 12	No
Maschio 143	PF SLU	29.989	SLU 50	Si
Maschio 143	V SLU	22.928	SLU 40	Si
Maschio 143	PF	3.945	SLV 9	Si
Maschio 143	V	5.162	SLV 6	Si
Maschio 143	PFFP	9.191	SLV 1	Si
Maschio 143	R	2.197	SLV 11	Si
Maschio 144	PF SLU	16.778	SLU 39	Si
Maschio 144	V SLU	13.029	SLU 40	Si
Maschio 144	PF	3.555	SLV 6	Si
Maschio 144	V	1.971	SLV 5	Si
Maschio 144	PFFP	33.304	SLV 3	Si
Maschio 144	R	5.138	SLV 14	Si
Maschio 146	PF SLU	25.089	SLU 43	Si
Maschio 146	V SLU	204.579	SLU 71	Si
Maschio 146	PF	1.552	SLV 6	Si
Maschio 146	V	35.807	SLV 9	Si
Maschio 146	PFFP	2.376	SLV 6	Si
Maschio 146	R	1.415	SLV 11	Si
Maschio 149	PF SLU	3.985	SLU 40	Si



Desc.	Stato limite	Coeff.s.	Comb.	Verifica
Maschio 149	V SLU	6.462	SLU 70	Si
Maschio 149	PF	0.431	SLV 2	No
Maschio 149	V	2.094	SLV 2	Si
Maschio 149	PFFP	2.139	SLV 13	Si
Maschio 149	R	1.239	SLV 12	Si
Maschio 151	PF SLU	13.471	SLU 83	Si
Maschio 151	V SLU	20.153	SLU 81	Si
Maschio 151	PF	3.869	SLV 7	Si
Maschio 151	V	19.319	SLV 10	Si
Maschio 151	PFFP	2.735	SLV 7	Si
Maschio 151	R	1.29	SLV 10	Si
Maschio 153	PF SLU	4.248	SLU 70	Si
Maschio 153	V SLU	30.441	SLU 70	Si
Maschio 153	PF	0.188	SLV 2	No
Maschio 153	V	2.088	SLV 2	Si
Maschio 153	PFFP	0	SLV 2	No
Maschio 153	R	1.053	SLV 8	Si
Maschio 154	PF SLU	15.789	SLU 73	Si
Maschio 154	V SLU	30.789	SLU 81	Si
Maschio 154	PF	2.241	SLV 11	Si
Maschio 154	V	8.624	SLV 10	Si
Maschio 154	PFFP	1.831	SLV 3	Si
Maschio 154	R	1.367	SLV 10	Si
Maschio 157	PF SLU	4	SLU 65	Si
Maschio 157	V SLU	15.481	SLU 82	Si
Maschio 157	PF	0	SLV 2	No
Maschio 157	V	2.624	SLV 2	Si
Maschio 157	PFFP	1.839	SLV 2	Si
Maschio 157	R	1.093	SLV 11	Si
Maschio 158	PF SLU	12.91	SLU 69	Si
Maschio 158	V SLU	8.531	SLU 75	Si
Maschio 158	PF	2.713	SLV 13	Si
Maschio 158	V	3.266	SLV 4	Si
Maschio 158	PFFP	2.595	SLV 6	Si
Maschio 158	R	1.053	SLV 11	Si
Maschio 159	PF SLU	10.777	SLU 44	Si
Maschio 159	V SLU	49.092	SLU 65	Si
Maschio 159	PF	0	SLV 5	No
Maschio 159	V	5.097	SLV 4	Si
Maschio 159	PFFP	0	SLV 10	No
Maschio 159	R	0.809	SLV 11	No
Maschio 160	PF SLU	9.796	SLU 43	Si
Maschio 160	V SLU	22.734	SLU 43	Si
Maschio 160	PF	2.714	SLV 3	Si
Maschio 160	V	8.649	SLV 1	Si
Maschio 160	PFFP	3.065	SLV 7	Si
Maschio 160	R	0.903	SLV 10	No
Maschio 161	PF SLU	6.882	SLU 42	Si
Maschio 161	V SLU	15.973	SLU 42	Si
Maschio 161	PF	0	SLV 7	No
Maschio 161	V	5.745	SLV 12	Si
Maschio 161	PFFP	0	SLV 12	No
Maschio 161	R	0.803	SLV 10	No
Maschio 162	PF SLU	47.405	SLU 40	Si
Maschio 162	V SLU	13.941	SLU 82	Si
Maschio 162	PF	2.069	SLV 10	Si
Maschio 162	V	2.165	SLV 8	Si
Maschio 162	PFFP	3.506	SLV 3	Si
Maschio 162	R	1.695	SLV 9	Si
Maschio 163	PF SLU	39.148	SLU 31	Si
Maschio 163	V SLU	23.05	SLU 31	Si
Maschio 163	PF	1.369	SLV 16	Si
Maschio 163	V	0.745	SLV 8	No
Maschio 163	PFFP	1.797	SLV 15	Si
Maschio 163	R	5.365	SLV 6	Si
Maschio 164	PF SLU	2.63	SLU 37	Si
Maschio 164	V SLU	13.122	SLU 36	Si
Maschio 164	PF	0	SLV 7	No
Maschio 164	V	4.848	SLV 12	Si
Maschio 164	PFFP	0	SLV 12	No
Maschio 164	R	3.334	SLV 5	Si
Maschio 165	PF SLU	2.819	SLU 60	Si
Maschio 165	V SLU	12.223	SLU 75	Si
Maschio 165	PF	0.128	SLV 12	No
Maschio 165	V	9.024	SLV 12	Si
Maschio 165	PFFP	0	SLV 11	No
Maschio 165	R	2.969	SLV 7	Si
Maschio 166	PF SLU	3.446	SLU 37	Si
Maschio 166	V SLU	15.872	SLU 77	Si
Maschio 166	PF	0	SLV 5	No
Maschio 166	V	4.119	SLV 5	Si
Maschio 166	PFFP	0	SLV 10	No
Maschio 166	R	3.495	SLV 8	Si
Maschio 167	PF SLU	17.903	SLU 40	Si
Maschio 167	V SLU	16.507	SLU 78	Si
Maschio 167	PF	7.669	SLV 11	Si
Maschio 167	V	11.936	SLV 15	Si
Maschio 167	PFFP	1.611	SLV 5	Si
Maschio 167	R	2.857	SLV 12	Si



Desc.	Stato limite	Coeff.s.	Comb.	Verifica
Maschio 168	PF SLU	6.502	SLU 23	Si
Maschio 168	V SLU	25.395	SLU 58	Si
Maschio 168	PF	0.71	SLV 15	No
Maschio 168	V	8.377	SLV 15	Si
Maschio 168	PFFP	0	SLV 5	No
Maschio 168	R	2.364	SLV 6	Si
Maschio 169	PF SLU	29.722	SLU 56	Si
Maschio 169	V SLU	19454.11	SLU 62	Si
Maschio 169	PFFP	2.037	SLV 15	Si
Maschio 169	R	4.17	SLV 10	Si
Maschio 170	PF SLU	26.64	SLU 51	Si
Maschio 170	V SLU	4313.61	SLU 73	Si
Maschio 170	PFFP	0	SLV 16	No
Maschio 170	R	2.039	SLV 5	Si
Maschio 171	PF SLU	9.684	SLU 60	Si
Maschio 171	V SLU	22.047	SLU 81	Si
Maschio 171	PF	1.631	SLV 12	Si
Maschio 171	V	3.211	SLV 5	Si
Maschio 171	PFFP	1.024	SLV 16	Si
Maschio 171	R	7.584	SLV 9	Si
Maschio 172	PF SLU	8.696	SLU 37	Si
Maschio 172	V SLU	23.966	SLU 81	Si
Maschio 172	PF	2.732	SLV 9	Si
Maschio 172	V	8.948	SLV 5	Si
Maschio 172	PFFP	1.094	SLV 12	Si
Maschio 172	R	4.486	SLV 6	Si
Maschio 173	PF SLU	64.805	SLU 83	Si
Maschio 173	V SLU	9657.491	SLU 40	Si
Maschio 173	PFFP	28.498	SLV 8	Si
Maschio 173	R	1.506	SLV 8	Si
Maschio 174	PF SLU	158.841	SLU 48	Si
Maschio 174	V SLU	10016.194	SLU 82	Si
Maschio 174	PFFP	28.632	SLV 14	Si
Maschio 174	R	4.334	SLV 7	Si
Maschio 175	PF SLU	3.177	SLU 39	Si
Maschio 175	V SLU	27.786	SLU 82	Si
Maschio 175	PF	1.096	SLV 9	Si
Maschio 175	V	9.966	SLV 8	Si
Maschio 175	PFFP	0.878	SLV 10	No
Maschio 175	R	2.419	SLV 7	Si
Maschio 176	PF SLU	7.944	SLU 29	Si
Maschio 176	V SLU	53.718	SLU 43	Si
Maschio 176	PF	0.45	SLV 12	No
Maschio 176	V	5.072	SLV 12	Si
Maschio 176	PFFP	0	SLV 7	No
Maschio 176	R	5.498	SLV 6	Si
Maschio 177	PF SLU	1.953	SLU 38	Si
Maschio 177	V SLU	40.848	SLU 36	Si
Maschio 177	PF	0	SLV 3	No
Maschio 177	V	30.265	SLV 4	Si
Maschio 177	PFFP	0	SLV 3	No
Maschio 177	R	2.728	SLV 10	Si
Maschio 178	PF SLU	7.802	SLU 39	Si
Maschio 178	V SLU	43.668	SLU 60	Si
Maschio 178	PF	2.25	SLV 4	Si
Maschio 178	V	10.395	SLV 13	Si
Maschio 178	PFFP	1.537	SLV 8	Si
Maschio 178	R	2.721	SLV 9	Si
Maschio 179	PF SLU	7.384	SLU 37	Si
Maschio 179	V SLU	47.214	SLU 79	Si
Maschio 179	PF	2.6	SLV 16	Si
Maschio 179	V	8.726	SLV 13	Si
Maschio 179	PFFP	1.567	SLV 11	Si
Maschio 179	R	2.948	SLV 6	Si
Maschio 180	PF SLU	2.627	SLU 41	Si
Maschio 180	V SLU	31.48	SLU 35	Si
Maschio 180	PF	0	SLV 14	No
Maschio 180	V	7.212	SLV 16	Si
Maschio 180	PFFP	0	SLV 16	No
Maschio 180	R	2.283	SLV 5	Si
Maschio 181	PF SLU	11.565	SLU 36	Si
Maschio 181	V SLU	16.405	SLU 40	Si
Maschio 181	PF	3.453	SLV 13	Si
Maschio 181	V	13.931	SLV 4	Si
Maschio 181	PFFP	2.085	SLV 13	Si
Maschio 181	R	2.98	SLV 8	Si
Maschio 182	PF SLU	18.728	SLU 39	Si
Maschio 182	V SLU	52.856	SLU 60	Si
Maschio 182	PF	2.231	SLV 16	Si
Maschio 182	V	4.862	SLV 1	Si
Maschio 182	PFFP	3.546	SLV 15	Si
Maschio 182	R	2.449	SLV 5	Si
Maschio 183	PF SLU	4.754	SLU 38	Si
Maschio 183	V SLU	32.923	SLU 78	Si
Maschio 183	PF	0	SLD 7	No
Maschio 183	V	3.878	SLV 3	Si
Maschio 183	PFFP	0.899	SLV 11	No
Maschio 183	R	2.75	SLV 7	Si
Maschio 184	PF SLU	3.844	SLU 40	Si



Desc.	Stato limite	Coeff.s.	Comb.	Verifica
Maschio 184	V SLU	16.496	SLU 70	Si
Maschio 184	PF	0.452	SLV 3	No
Maschio 184	V	4.788	SLV 3	Si
Maschio 184	PFFP	3.657	SLV 11	Si
Maschio 184	R	3.278	SLV 10	Si
Maschio 185	PF SLU	7.401	SLU 44	Si
Maschio 185	V SLU	49.789	SLU 35	Si
Maschio 185	PF	0.755	SLV 2	No
Maschio 185	V	5.832	SLV 14	Si
Maschio 185	PFFP	2.792	SLV 2	Si
Maschio 185	R	2.417	SLV 10	Si
Maschio 186	PF SLU	9.167	SLU 36	Si
Maschio 186	V SLU	16.562	SLU 42	Si
Maschio 186	PF	4.371	SLV 15	Si
Maschio 186	V	18.784	SLV 16	Si
Maschio 186	PFFP	1.941	SLV 2	Si
Maschio 186	R	2.938	SLV 11	Si
Maschio 187	PF SLU	1.794	SLU 40	Si
Maschio 187	V SLU	12.607	SLU 36	Si
Maschio 187	PF	0	SLV 3	No
Maschio 187	V	2.085	SLV 6	Si
Maschio 187	PFFP	1.386	SLV 2	Si
Maschio 187	R	5.044	SLV 9	Si
Maschio 189	PF SLU	1.309	SLU 60	Si
Maschio 189	V SLU	20.116	SLU 82	Si
Maschio 189	PF	1.158	SLV 11	Si
Maschio 189	V	10.157	SLV 11	Si
Maschio 189	PFFP	0.981	SLV 6	No
Maschio 189	R	1.951	SLV 11	Si
Maschio 191	PF SLU	8.251	SLU 37	Si
Maschio 191	V SLU	23.441	SLU 81	Si
Maschio 191	PF	2.833	SLV 6	Si
Maschio 191	V	8.814	SLV 10	Si
Maschio 191	PFFP	1.722	SLV 7	Si
Maschio 191	R	4.253	SLV 9	Si
Maschio 192	PF SLU	50.823	SLU 83	Si
Maschio 192	V SLU	8208.105	SLU 82	Si
Maschio 192	PFFP	28.535	SLV 4	Si
Maschio 192	R	2.044	SLV 7	Si
Maschio 193	PF SLU	3.376	SLU 38	Si
Maschio 193	V SLU	17.557	SLU 81	Si
Maschio 193	PF	1.205	SLV 6	Si
Maschio 193	V	3.833	SLV 10	Si
Maschio 193	PFFP	0	SLV 3	No
Maschio 193	R	3.338	SLV 12	Si
Maschio 194	PF SLU	11.055	SLU 83	Si
Maschio 194	V SLU	4405.979	SLU 81	Si
Maschio 194	PFFP	23.503	SLV 10	Si
Maschio 194	R	1.172	SLV 11	Si
Maschio 196	PF SLU	3.174	SLU 44	Si
Maschio 196	V SLU	27.624	SLU 51	Si
Maschio 196	PF	0	SLV 1	No
Maschio 196	V	6.785	SLV 1	Si
Maschio 196	PFFP	0	SLV 4	No
Maschio 196	R	1.894	SLV 10	Si
Maschio 197	PF SLU	1.822	SLU 37	Si
Maschio 197	V SLU	9.076	SLU 78	Si
Maschio 197	PF	0	SLV 7	No
Maschio 197	V	4.346	SLV 11	Si
Maschio 197	PFFP	0	SLV 12	No
Maschio 197	R	3.511	SLV 10	Si
Maschio 198	PF SLU	64.962	SLU 51	Si
Maschio 198	V SLU	17.823	SLU 40	Si
Maschio 198	PF	1.833	SLV 10	Si
Maschio 198	V	0.728	SLV 7	No
Maschio 198	PFFP	1.835	SLV 12	Si
Maschio 198	R	5.776	SLV 12	Si
Maschio 200	PF SLU	3.666	SLU 23	Si
Maschio 200	V SLU	14.112	SLU 78	Si
Maschio 200	PF	0.066	SLV 15	No
Maschio 200	V	6.542	SLV 15	Si
Maschio 200	PFFP	0	SLV 13	No
Maschio 200	R	3.634	SLV 11	Si
Maschio 201	PF SLU	3.157	SLU 66	Si
Maschio 201	V SLU	7.074	SLU 78	Si
Maschio 201	PF	0.619	SLV 13	No
Maschio 201	V	3.458	SLV 13	Si
Maschio 201	PFFP	1.234	SLV 4	Si
Maschio 201	R	3.482	SLV 10	Si
Maschio 203	PF SLU	2.013	SLU 30	Si
Maschio 203	V SLU	9.122	SLU 78	Si
Maschio 203	PF	0	SLV 1	No
Maschio 203	V	4.132	SLV 15	Si
Maschio 203	PFFP	0	SLV 6	No
Maschio 203	R	5.178	SLV 11	Si
Maschio 204	PF SLU	1.35	SLU 29	Si
Maschio 204	V SLU	8.168	SLU 28	Si
Maschio 204	PF	0	SLD 5	No
Maschio 204	V	3.142	SLV 8	Si



Desc.	Stato limite	Coeff.s.	Comb.	Verifica
Maschio 204	PFFP	0	SLV 10	No
Maschio 204	R	4.526	SLV 8	Si
Maschio 206	PF SLU	3.267	SLU 64	Si
Maschio 206	V SLU	7.286	SLU 69	Si
Maschio 206	PF	0	SLV 15	No
Maschio 206	V	2.618	SLV 2	Si
Maschio 206	PFFP	0	SLV 13	No
Maschio 206	R	3.432	SLV 6	Si
Maschio 208	PF SLU	4.714	SLU 44	Si
Maschio 208	V SLU	21.036	SLU 65	Si
Maschio 208	PF	0.062	SLV 2	No
Maschio 208	V	2.937	SLV 4	Si
Maschio 208	PFFP	0	SLV 4	No
Maschio 208	R	3.556	SLV 5	Si
Maschio 209	PF SLU	3.851	SLU 64	Si
Maschio 209	V SLU	24.405	SLU 77	Si
Maschio 209	PF	0	SLV 2	No
Maschio 209	V	4.474	SLV 2	Si
Maschio 209	PFFP	0	SLV 9	No
Maschio 209	R	2.254	SLV 9	Si
Maschio 210	PF SLU	13.34	SLU 40	Si
Maschio 210	V SLU	11.054	SLU 70	Si
Maschio 210	PF	5.303	SLV 2	Si
Maschio 210	V	7.003	SLV 4	Si
Maschio 210	PFFP	1.462	SLV 6	Si
Maschio 210	R	2.739	SLV 8	Si
Maschio 211	PF SLU	3.632	SLU 37	Si
Maschio 211	V SLU	32.372	SLU 77	Si
Maschio 211	PF	0	SLV 5	No
Maschio 211	V	4.491	SLV 10	Si
Maschio 211	PFFP	0	SLV 10	No
Maschio 211	R	3.234	SLV 11	Si
Maschio 216	PF SLU	5.623	SLU 83	Si
Maschio 216	V SLU	3.576	SLU 83	Si
Maschio 216	PF	0.702	SLV 15	No
Maschio 216	V	0.774	SLV 13	No
Maschio 216	PFFP	22.367	SLV 11	Si
Maschio 216	R	4.706	SLV 6	Si
Maschio 229	PF SLU	36.563	SLU 84	Si
Maschio 229	V SLU	20.334	SLU 84	Si
Maschio 229	PF	5.053	SLV 15	Si
Maschio 229	V	3.354	SLV 4	Si
Maschio 229	PFFP	0	SLV 5	No
Maschio 229	R	0.536	SLV 4	No
Maschio 230	PF SLU	15.898	SLU 77	Si
Maschio 230	V SLU	4.077	SLU 83	Si
Maschio 230	PF	9.872	SLV 4	Si
Maschio 230	V	2.363	SLV 15	Si
Maschio 230	PFFP	1.502	SLV 10	Si
Maschio 230	R	0.661	SLV 4	No
Maschio 231	PF SLU	4.978	SLU 77	Si
Maschio 231	V SLU	6.102	SLU 84	Si
Maschio 231	PF	2.069	SLV 13	Si
Maschio 231	V	2.643	SLV 13	Si
Maschio 231	PFFP	1.432	SLV 10	Si
Maschio 231	R	0.621	SLV 4	No
Maschio 232	PF SLU	3.181	SLU 84	Si
Maschio 232	V SLU	4.222	SLU 84	Si
Maschio 232	PF	1.804	SLV 2	Si
Maschio 232	V	1.84	SLV 2	Si
Maschio 232	PFFP	1.359	SLV 2	Si
Maschio 232	R	0.595	SLV 15	No
Maschio 233	PF SLU	5.915	SLU 79	Si
Maschio 233	V SLU	1.452	SLU 84	Si
Maschio 233	PF	3.33	SLV 12	Si
Maschio 233	V	1.332	SLV 8	Si
Maschio 233	PFFP	1.297	SLV 16	Si
Maschio 233	R	2.516	SLV 1	Si
Maschio 236	PF SLU	12.856	SLU 83	Si
Maschio 236	V SLU	8.051	SLU 69	Si
Maschio 236	PF	4.558	SLV 4	Si
Maschio 236	V	3.061	SLV 13	Si
Maschio 236	PFFP	1.855	SLV 9	Si
Maschio 236	R	0.692	SLV 4	No
Maschio 241	PF SLU	30.661	SLU 83	Si
Maschio 241	V SLU	4.771	SLU 83	Si
Maschio 241	PF	11.994	SLV 4	Si
Maschio 241	V	2.485	SLV 13	Si
Maschio 241	PFFP	1.427	SLV 9	Si
Maschio 241	R	0.7	SLV 4	No
Maschio 242	PF SLU	18.482	SLU 84	Si
Maschio 242	V SLU	9.393	SLU 51	Si
Maschio 242	PF	14.202	SLV 8	Si
Maschio 242	V	4.122	SLV 7	Si
Maschio 242	PFFP	6.855	SLV 8	Si
Maschio 242	R	0.567	SLV 9	No
Maschio 245	PF SLU	7.429	SLU 79	Si
Maschio 245	V SLU	8.246	SLU 77	Si
Maschio 245	PF	0	SLV 1	No



Desc.	Stato limite	Coeff.s.	Comb.	Verifica
Maschio 245	V	1.388	SLV 13	Si
Maschio 245	PFFP	0	SLV 1	No
Maschio 245	R	7.341	SLV 8	Si
Maschio 246	PF SLU	7.954	SLU 83	Si
Maschio 246	V SLU	5.859	SLU 83	Si
Maschio 246	PF	0	SLV 1	No
Maschio 246	V	1.486	SLV 13	Si
Maschio 246	PFFP	0	SLV 10	No
Maschio 246	R	7.333	SLV 15	Si
Maschio 248	PF SLU	25.922	SLU 84	Si
Maschio 248	V SLU	6.039	SLU 80	Si
Maschio 248	PF	11.898	SLV 15	Si
Maschio 248	V	3.065	SLV 2	Si
Maschio 248	PFFP	1.467	SLV 6	Si
Maschio 248	R	0.646	SLV 16	No
Maschio 250	PF SLU	24.897	SLU 69	Si
Maschio 250	V SLU	10.364	SLU 51	Si
Maschio 250	PF	16.489	SLV 13	Si
Maschio 250	V	5.337	SLV 7	Si
Maschio 250	PFFP	8.559	SLV 1	Si
Maschio 250	R	0.861	SLV 10	No
Maschio 251	PF SLU	6.998	SLU 40	Si
Maschio 251	V SLU	4.977	SLU 82	Si
Maschio 251	PF	9.316	SLV 11	Si
Maschio 251	V	3.494	SLV 11	Si
Maschio 251	PFFP	25.415	SLV 7	Si
Maschio 251	R	0.791	SLV 10	No
Maschio 252	PF SLU	5.753	SLU 82	Si
Maschio 252	V SLU	4.959	SLU 82	Si
Maschio 252	PF	3.184	SLV 7	Si
Maschio 252	V	2.681	SLV 11	Si
Maschio 252	PFFP	25.558	SLV 3	Si
Maschio 252	R	3.027	SLV 11	Si
Maschio 253	PF SLU	14.408	SLU 75	Si
Maschio 253	V SLU	5.085	SLU 75	Si
Maschio 253	PF	5.874	SLV 11	Si
Maschio 253	V	2.462	SLV 11	Si
Maschio 253	PFFP	0	SLV 1	No
Maschio 253	R	5.085	SLV 2	Si
Maschio 256	PF SLU	3.513	SLU 79	Si
Maschio 256	V SLU	113.98	SLU 84	Si
Maschio 256	PFFP	2.689	SLV 3	Si
Maschio 256	R	1.574	SLV 14	Si
Maschio 259	PF SLU	1.711	SLU 42	Si
Maschio 259	V SLU	61.933	SLU 84	Si
Maschio 259	PFFP	2.343	SLV 16	Si
Maschio 259	R	1.65	SLV 2	Si
Maschio 260	PF SLU	12.924	SLU 84	Si
Maschio 260	V SLU	7.387	SLU 70	Si
Maschio 260	PF	4.368	SLV 2	Si
Maschio 260	V	2.607	SLV 4	Si
Maschio 260	PFFP	1.681	SLV 6	Si
Maschio 260	R	0.631	SLV 15	No
Maschio 262	PF SLU	3.79	SLU 83	Si
Maschio 262	V SLU	1.038	SLU 84	Si
Maschio 262	PF	3.733	SLV 9	Si
Maschio 262	V	1.204	SLV 11	Si
Maschio 262	PFFP	1.489	SLV 3	Si
Maschio 262	R	2.33	SLV 14	Si
Maschio 264	PF SLU	7.188	SLU 78	Si
Maschio 264	V SLU	15.182	SLU 83	Si
Maschio 264	PF	1.582	SLV 2	Si
Maschio 264	V	1.99	SLV 15	Si
Maschio 264	PFFP	1.211	SLV 13	Si
Maschio 264	R	0.559	SLV 4	No
Maschio 265	PF SLU	4.582	SLU 78	Si
Maschio 265	V SLU	5.101	SLU 84	Si
Maschio 265	PF	1.853	SLV 2	Si
Maschio 265	V	2.307	SLV 2	Si
Maschio 265	PFFP	1.425	SLV 2	Si
Maschio 265	R	0.567	SLV 15	No
Maschio 266	PF SLU	15.643	SLU 78	Si
Maschio 266	V SLU	3.85	SLU 84	Si
Maschio 266	PF	8.724	SLV 2	Si
Maschio 266	V	2.12	SLV 2	Si
Maschio 266	PFFP	1.409	SLV 5	Si
Maschio 266	R	0.664	SLV 15	No
Maschio 267	PF SLU	41.107	SLU 83	Si
Maschio 267	V SLU	17.96	SLU 83	Si
Maschio 267	PF	4.235	SLV 2	Si
Maschio 267	V	3.09	SLV 15	Si
Maschio 267	PFFP	0	SLV 1	No
Maschio 267	R	0.54	SLV 15	No

#### Verifica maschi in muratura

Maschio	Stato limite	Molt.	Comb.	PGA	iPGA (ZE)	TR	(TR/TRrif)^.41	Verifica
1	PF	1.45	SLV 13	0.346	1.416	1388	1.552	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.51	SLV 16	0.359	1.471	1573	1.634	Si



Maschio	Stato limite	Molt.	Comb.	PGA	iPGA (ZE)	TR	(TR/TRrif)^.41	Verifica
2	R	1.706	SLV 1	0.362	1.483	1618	1.653	Si
	PF	1.018	SLV 13	0.248	1.017	499	1.02	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.333	SLV 13	0.32	1.308	1070	1.395	Si
3	R	1.92	SLV 4	0.362	1.483	1618	1.653	Si
	PF	2.214	SLV 15	0.362	1.483	1618	1.653	Si
	V	3.891	SLV 16	0.362	1.483	1618	1.653	Si
	PFFP	2.203	SLV 13	0.362	1.483	1618	1.653	Si
4	R	2.382	SLV 4	0.362	1.483	1618	1.653	Si
	PF	2.214	SLV 1	0.362	1.483	1618	1.653	Si
	V	2.226	SLV 16	0.362	1.483	1618	1.653	Si
	PFFP	2.739	SLV 1	0.362	1.483	1618	1.653	Si
7	R	1.951	SLV 12	0.362	1.483	1618	1.653	Si
	PF	2.789	SLV 9	0.362	1.483	1618	1.653	Si
	V	3.604	SLV 5	0.362	1.483	1618	1.653	Si
	PFFP	3.767	SLV 13	0.362	1.483	1618	1.653	Si
9	R	1.222	SLV 8	0.296	1.212	843	1.265	Si
	PF	1.648	SLV 14	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.735	SLV 14	0.362	1.483	1618	1.653	Si
10	R	1.921	SLV 3	0.362	1.483	1618	1.653	Si
	PF	2.294	SLV 13	0.362	1.483	1618	1.653	Si
	V	1.224	SLV 13	0.295	1.207	834	1.26	Si
	PFFP	3.718	SLV 14	0.362	1.483	1618	1.653	Si
11	R	2.001	SLV 7	0.362	1.483	1618	1.653	Si
	PF	4.057	SLV 14	0.362	1.483	1618	1.653	Si
	V	3.381	SLV 4	0.362	1.483	1618	1.653	Si
	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
12	R	1.581	SLV 5	0.362	1.483	1618	1.653	Si
	PF	3.976	SLV 2	0.362	1.483	1618	1.653	Si
	V	2.554	SLV 15	0.362	1.483	1618	1.653	Si
	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
13	R	1.653	SLV 9	0.362	1.483	1618	1.653	Si
	PF	3.271	SLV 13	0.362	1.483	1618	1.653	Si
	V	3.88	SLV 12	0.362	1.483	1618	1.653	Si
	PFFP	3.843	SLV 16	0.362	1.483	1618	1.653	Si
14	R	1.814	SLV 5	0.362	1.483	1618	1.653	Si
	PF	0.691	SLV 14	0.165	0.676	172	0.659	No
	V	3.882	SLV 14	0.362	1.483	1618	1.653	Si
	PFFP	0.761	SLV 14	0.184	0.753	223	0.733	No
15	R	1.46	SLV 3	0.348	1.425	1418	1.566	Si
	PF	3.954	SLV 15	0.362	1.483	1618	1.653	Si
	V	0.641	SLV 4	0.153	0.625	143	0.611	No
	PFFP	3.994	SLV 13	0.362	1.483	1618	1.653	Si
16	R	3.695	SLV 8	0.362	1.483	1618	1.653	Si
	PF	2.019	SLV 15	0.362	1.483	1618	1.653	Si
	V	1.31	SLV 2	0.314	1.287	1013	1.364	Si
	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
17	R	2.76	SLV 8	0.362	1.483	1618	1.653	Si
	PF	2.285	SLV 16	0.362	1.483	1618	1.653	Si
	V	3.822	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	2.866	SLV 16	0.362	1.483	1618	1.653	Si
18	R	1.377	SLV 7	0.333	1.363	1225	1.475	Si
	PF	2.937	SLV 4	0.362	1.483	1618	1.653	Si
	V	2.786	SLV 4	0.362	1.483	1618	1.653	Si
	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
19	R	2.102	SLV 9	0.362	1.483	1618	1.653	Si
	PF	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1.341	SLV 8	0.324	1.328	1124	1.424	Si
	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
20	R	3.556	SLV 15	0.362	1.483	1618	1.653	Si
	PF	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	2.73	SLV 8	0.362	1.483	1618	1.653	Si
	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
21	R	1.711	SLV 9	0.362	1.483	1618	1.653	Si
	PF	1.729	SLV 13	0.362	1.483	1618	1.653	Si
	V	2.531	SLV 16	0.362	1.483	1618	1.653	Si
	PFFP	2.282	SLV 16	0.362	1.483	1618	1.653	Si
22	R	1.507	SLV 7	0.362	1.483	1618	1.653	Si
	PF	2.321	SLV 13	0.362	1.483	1618	1.653	Si
	V	2.512	SLV 16	0.362	1.483	1618	1.653	Si
	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
23	R	1.605	SLV 7	0.362	1.483	1618	1.653	Si
	PF	0.805	SLV 3	0.195	0.798	261	0.782	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	3.653	SLV 1	0.362	1.483	1618	1.653	Si
24	R	1.325	SLV 10	0.321	1.312	1081	1.401	Si
	PF	0.45	SLV 1	0.106	0.433	59	0.425	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	2.319	SLV 3	0.362	1.483	1618	1.653	Si
25	R	1.065	SLV 10	0.259	1.062	568	1.076	Si
	PF	1.212	SLV 1	0.292	1.196	811	1.245	Si
	V	3.396	SLV 16	0.362	1.483	1618	1.653	Si
	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
26	R	1.417	SLV 3	0.339	1.386	1293	1.508	Si
	PF	1.243	SLV 1	0.299	1.225	871	1.282	Si
	V	2.391	SLV 16	0.362	1.483	1618	1.653	Si
	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
	R	1.447	SLV 12	0.35	1.431	1439	1.575	Si





Maschio	Stato limite	Molt.	Comb.	PGA	iPGA (ZE)	TR	(TR/TRrif)^.41	Verifica
27	PF	1.09	SLV 3	0.265	1.084	603	1.103	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
	R	1.014	SLV 6	0.248	1.014	494	1.016	Si
28	PF	1.706	SLV 1	0.362	1.483	1618	1.653	Si
	V	2.689	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	2.398	SLV 1	0.362	1.483	1618	1.653	Si
	R	1.615	SLV 12	0.362	1.483	1618	1.653	Si
29	PF	2.006	SLV 14	0.362	1.483	1618	1.653	Si
	V	1.57	SLV 14	0.362	1.483	1618	1.653	Si
	PFFP	3.346	SLV 14	0.362	1.483	1618	1.653	Si
	R	1.707	SLV 7	0.362	1.483	1618	1.653	Si
31	PF	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	3.168	SLV 11	0.362	1.483	1618	1.653	Si
	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
	R	2.197	SLV 6	0.362	1.483	1618	1.653	Si
32	PF	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1.365	SLV 11	0.33	1.351	1190	1.457	Si
	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
	R	3.306	SLV 4	0.362	1.483	1618	1.653	Si
33	PF	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	3.13	SLV 11	0.362	1.483	1618	1.653	Si
	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
	R	1.703	SLV 12	0.362	1.483	1618	1.653	Si
35	PF	3.071	SLV 10	0.362	1.483	1618	1.653	Si
	V	3.816	SLV 11	0.362	1.483	1618	1.653	Si
	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
	R	1.291	SLV 6	0.313	1.279	993	1.353	Si
37	PF	2.818	SLV 1	0.362	1.483	1618	1.653	Si
	V	1.674	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
	R	1.801	SLV 12	0.362	1.483	1618	1.653	Si
38	PF	1.955	SLV 1	0.362	1.483	1618	1.653	Si
	V	2.637	SLV 3	0.362	1.483	1618	1.653	Si
	PFFP	1.706	SLV 1	0.362	1.483	1618	1.653	Si
	R	2.192	SLV 12	0.362	1.483	1618	1.653	Si
39	PF	3.873	SLV 7	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
	R	1.507	SLV 10	0.362	1.483	1618	1.653	Si
41	PF	1.399	SLV 3	0.334	1.369	1243	1.484	Si
	V	1.513	SLV 15	0.36	1.473	1583	1.638	Si
	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
	R	2.754	SLV 11	0.362	1.483	1618	1.653	Si
42	PF	3.342	SLV 4	0.362	1.483	1618	1.653	Si
	V	0.873	SLV 15	0.212	0.868	326	0.857	No
	PFFP	3.129	SLV 2	0.362	1.483	1618	1.653	Si
	R	3.525	SLV 11	0.362	1.483	1618	1.653	Si
43	PF	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	4.025	SLV 7	0.362	1.483	1618	1.653	Si
	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
	R	1.718	SLV 12	0.362	1.483	1618	1.653	Si
44	PF	3.289	SLV 13	0.362	1.483	1618	1.653	Si
	V	2.5	SLV 4	0.362	1.483	1618	1.653	Si
	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
	R	1.556	SLV 6	0.362	1.483	1618	1.653	Si
45	PF	3.157	SLV 1	0.362	1.483	1618	1.653	Si
	V	2.883	SLV 15	0.362	1.483	1618	1.653	Si
	PFFP	3.497	SLV 4	0.362	1.483	1618	1.653	Si
	R	1.654	SLV 12	0.362	1.483	1618	1.653	Si
46	PF	1.639	SLV 2	0.362	1.483	1618	1.653	Si
	V	1.244	SLV 4	0.299	1.226	873	1.283	Si
	PFFP	3.021	SLV 1	0.362	1.483	1618	1.653	Si
	R	2.028	SLV 12	0.362	1.483	1618	1.653	Si
47	PF	1.706	SLV 3	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.783	SLV 1	0.362	1.483	1618	1.653	Si
	R	2	SLV 14	0.362	1.483	1618	1.653	Si
48	PF	2.259	SLV 7	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
	R	1.06	SLV 10	0.258	1.058	561	1.071	Si
49	PF	3.454	SLV 3	0.362	1.483	1618	1.653	Si
	V	3.579	SLV 10	0.362	1.483	1618	1.653	Si
	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
	R	1.254	SLV 9	0.304	1.243	910	1.305	Si
51	PF	1.835	SLV 2	0.362	1.483	1618	1.653	Si
	V	2.837	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
	R	2.159	SLV 11	0.362	1.483	1618	1.653	Si
52	PF	2.03	SLV 4	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	2.219	SLV 2	0.362	1.483	1618	1.653	Si
	R	2.595	SLV 15	0.362	1.483	1618	1.653	Si
53	PF	1.534	SLV 2	0.362	1.483	1618	1.653	Si
	V	2.54	SLV 3	0.362	1.483	1618	1.653	Si
	PFFP	1.426	SLV 4	0.341	1.394	1318	1.52	Si
	R	1.787	SLV 15	0.362	1.483	1618	1.653	Si
54	PF	1.464	SLV 14	0.349	1.429	1430	1.571	Si



Maschio	Stato limite	Molt.	Comb.	PGA	iPGA (ZE)	TR	(TR/TRrif)^.41	Verifica
	V	3.536	SLV 9	0.362	1.483	1618	1.653	Si
	PFFP	1.525	SLV 15	0.362	1.483	1618	1.653	Si
	R	0.87	SLV 5	0.209	0.856	315	0.845	No
55	PF	1.122	SLV 12	0.273	1.117	660	1.144	Si
	V	3.708	SLV 16	0.362	1.483	1618	1.653	Si
	PFFP	1.668	SLV 11	0.362	1.483	1618	1.653	Si
	R	0.721	SLV 5	0.17	0.696	184	0.678	No
	PF	2.311	SLV 12	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
56	PFFP	2.275	SLV 7	0.362	1.483	1618	1.653	Si
	R	0.876	SLV 6	0.211	0.862	320	0.85	No
	PF	2.589	SLV 13	0.362	1.483	1618	1.653	Si
58	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	3.15	SLV 15	0.362	1.483	1618	1.653	Si
	R	0.631	SLV 6	0.147	0.602	132	0.592	No
61	PF	1.789	SLV 16	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	2.232	SLV 14	0.362	1.483	1618	1.653	Si
	R	1.067	SLV 7	0.26	1.064	571	1.078	Si
	PF	0.943	SLV 14	0.23	0.94	403	0.935	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
64	PFFP	1.184	SLV 14	0.286	1.17	760	1.213	Si
	R	0.724	SLV 7	0.171	0.699	186	0.681	No
	PF	1.996	SLV 14	0.362	1.483	1618	1.653	Si
65	V	2.255	SLV 14	0.362	1.483	1618	1.653	Si
	PFFP	2.837	SLV 16	0.362	1.483	1618	1.653	Si
	R	0.607	SLV 5	0.141	0.578	120	0.569	No
66	PF	2.648	SLV 1	0.362	1.483	1618	1.653	Si
	V	2.04	SLV 3	0.362	1.483	1618	1.653	Si
	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
	R	0.623	SLV 9	0.145	0.593	127	0.582	No
	PF	0.938	SLV 3	0.228	0.935	397	0.929	No
	V	2.44	SLV 3	0.362	1.483	1618	1.653	Si
67	PFFP	1.173	SLV 3	0.283	1.16	740	1.199	Si
	R	0.707	SLV 10	0.167	0.682	175	0.664	No
	PF	1.267	SLV 13	0.305	1.247	919	1.311	Si
68	V	4.053	SLV 15	0.362	1.483	1618	1.653	Si
	PFFP	1.354	SLV 13	0.324	1.328	1123	1.423	Si
	R	0.642	SLV 8	0.15	0.614	138	0.602	No
69	PF	3.24	SLV 3	0.362	1.483	1618	1.653	Si
	V	2.136	SLV 3	0.362	1.483	1618	1.653	Si
	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
	R	0.589	SLV 6	0.137	0.56	111	0.551	No
	PF	1.473	SLV 16	0.351	1.437	1457	1.583	Si
	V	1.804	SLV 1	0.362	1.483	1618	1.653	Si
70	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
	R	0.702	SLV 5	0.165	0.676	172	0.659	No
	PF	1.069	SLV 3	0.26	1.064	572	1.079	Si
71	V	2.05	SLV 2	0.362	1.483	1618	1.653	Si
	PFFP	2.366	SLV 3	0.362	1.483	1618	1.653	Si
	R	0.552	SLV 11	0.127	0.52	94	0.515	No
72	PF	1.474	SLV 1	0.351	1.438	1460	1.585	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.424	SLV 2	0.34	1.392	1313	1.517	Si
	R	0.681	SLV 11	0.16	0.654	159	0.638	No
	PF	1000	SLV 1	0.362	1.483	1618	1.653	Si
73	V	3.571	SLV 7	0.362	1.483	1618	1.653	Si
	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
	R	1.206	SLV 12	0.292	1.196	812	1.246	Si
74	PF	2.861	SLV 7	0.362	1.483	1618	1.653	Si
	V	3.721	SLV 11	0.362	1.483	1618	1.653	Si
	PFFP	1.896	SLV 3	0.362	1.483	1618	1.653	Si
	R	0.597	SLV 10	0.139	0.569	116	0.561	No
	PF	2.554	SLV 3	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
75	PFFP	2.678	SLV 1	0.362	1.483	1618	1.653	Si
	R	0.994	SLV 11	0.243	0.993	466	0.992	No
	PF	2.89	SLV 2	0.362	1.483	1618	1.653	Si
77	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
	R	0.784	SLV 9	0.187	0.765	233	0.747	No
80	PF	1.135	SLV 3	0.275	1.125	676	1.156	Si
	V	2.415	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	2.313	SLV 12	0.362	1.483	1618	1.653	Si
	R	0.689	SLV 5	0.162	0.663	165	0.648	No
	PF	0.982	SLV 3	0.239	0.98	450	0.978	No
	V	2.932	SLV 14	0.362	1.483	1618	1.653	Si
81	PFFP	1.462	SLV 7	0.353	1.446	1488	1.597	Si
	R	0.742	SLV 10	0.176	0.72	199	0.7	No
	PF	1.599	SLV 1	0.362	1.483	1618	1.653	Si
82	V	1.846	SLV 7	0.362	1.483	1618	1.653	Si
	PFFP	1.628	SLV 4	0.362	1.483	1618	1.653	Si
	R	0.841	SLV 9	0.202	0.826	286	0.812	No
83	PF	1.275	SLV 9	0.309	1.263	955	1.332	Si
	V	3.422	SLV 9	0.362	1.483	1618	1.653	Si
	PFFP	1.714	SLV 13	0.362	1.483	1618	1.653	Si
	R	0.84	SLV 8	0.201	0.823	283	0.809	No
	PF	1.249	SLV 12	0.302	1.238	899	1.299	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si



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85	PFFP	1.47	SLV 11	0.355	1.454	1515	1.609	Si
	R	0.859	SLV 5	0.206	0.844	303	0.832	No
	PF	0.754	SLV 12	0.179	0.731	207	0.711	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
86	PFFP	0.787	SLV 12	0.187	0.767	235	0.749	No
	R	0.727	SLV 5	0.172	0.703	188	0.684	No
	PF	1.185	SLV 12	0.287	1.176	772	1.22	Si
	V	3.554	SLV 14	0.362	1.483	1618	1.653	Si
88	PFFP	1.182	SLV 12	0.287	1.174	766	1.216	Si
	R	0.726	SLV 5	0.171	0.701	187	0.682	No
	PF	2.71	SLV 12	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
91	PFFP	3.005	SLV 11	0.362	1.483	1618	1.653	Si
	R	0.883	SLV 5	0.213	0.871	329	0.86	No
	PF	1.789	SLV 9	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
92	PFFP	2.697	SLV 9	0.362	1.483	1618	1.653	Si
	R	1.473	SLV 7	0.356	1.457	1525	1.613	Si
	PF	1.382	SLV 12	0.334	1.368	1239	1.482	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
94	PFFP	1.947	SLV 12	0.362	1.483	1618	1.653	Si
	R	1.308	SLV 5	0.317	1.296	1036	1.377	Si
	PF	1.546	SLV 16	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
95	PFFP	1.792	SLV 14	0.362	1.483	1618	1.653	Si
	R	0.993	SLV 7	0.242	0.992	464	0.99	No
	PF	1.829	SLV 16	0.362	1.483	1618	1.653	Si
	V	2.197	SLV 14	0.362	1.483	1618	1.653	Si
96	PFFP	2.445	SLV 16	0.362	1.483	1618	1.653	Si
	R	0.806	SLV 5	0.193	0.788	252	0.771	No
	PF	2.509	SLV 3	0.362	1.483	1618	1.653	Si
	V	1.914	SLV 1	0.362	1.483	1618	1.653	Si
97	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
	R	0.808	SLV 9	0.193	0.791	254	0.774	No
	PF	1.163	SLV 3	0.281	1.151	723	1.188	Si
	V	3.569	SLV 1	0.362	1.483	1618	1.653	Si
98	PFFP	1.749	SLV 3	0.362	1.483	1618	1.653	Si
	R	0.868	SLV 10	0.209	0.854	312	0.842	No
	PF	1.563	SLV 13	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
99	PFFP	1.78	SLV 14	0.362	1.483	1618	1.653	Si
	R	0.836	SLV 7	0.2	0.82	280	0.805	No
	PF	2.745	SLV 3	0.362	1.483	1618	1.653	Si
	V	2.25	SLV 3	0.362	1.483	1618	1.653	Si
100	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
	R	0.749	SLV 6	0.177	0.727	203	0.706	No
	PF	0.61	SLV 3	0.145	0.593	127	0.582	No
	V	3.986	SLV 16	0.362	1.483	1618	1.653	Si
101	PFFP	1.767	SLV 7	0.362	1.483	1618	1.653	Si
	R	0.678	SLV 10	0.159	0.652	158	0.637	No
	PF	1.158	SLV 16	0.28	1.146	714	1.182	Si
	V	2.701	SLV 16	0.362	1.483	1618	1.653	Si
102	PFFP	2.375	SLV 16	0.362	1.483	1618	1.653	Si
	R	0.711	SLV 5	0.168	0.687	178	0.669	No
	PF	1.123	SLV 2	0.272	1.114	656	1.142	Si
	V	2.668	SLV 1	0.362	1.483	1618	1.653	Si
103	PFFP	2.584	SLV 2	0.362	1.483	1618	1.653	Si
	R	0.664	SLV 11	0.156	0.637	150	0.623	No
	PF	1.751	SLV 2	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
104	PFFP	1.693	SLV 2	0.362	1.483	1618	1.653	Si
	R	0.825	SLV 11	0.197	0.808	269	0.792	No
	PF	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
105	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
	R	2.536	SLV 14	0.362	1.483	1618	1.653	Si
	PF	1.642	SLV 6	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
106	PFFP	2.13	SLV 6	0.362	1.483	1618	1.653	Si
	R	1.205	SLV 11	0.292	1.195	810	1.245	Si
	PF	1.647	SLV 7	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
109	PFFP	2.695	SLV 3	0.362	1.483	1618	1.653	Si
	R	0.871	SLV 10	0.209	0.857	316	0.846	No
	PF	1.596	SLV 7	0.362	1.483	1618	1.653	Si
	V	3.527	SLV 3	0.362	1.483	1618	1.653	Si
110	PFFP	1.665	SLV 12	0.362	1.483	1618	1.653	Si
	R	0.758	SLV 9	0.18	0.736	211	0.717	No
	PF	0.868	SLV 7	0.209	0.854	312	0.842	No
	V	3.972	SLV 16	0.362	1.483	1618	1.653	Si
111	PFFP	0.875	SLV 7	0.21	0.861	319	0.849	No
	R	0.733	SLV 10	0.173	0.71	192	0.69	No
	PF	1.915	SLV 2	0.362	1.483	1618	1.653	Si
	V	2.248	SLV 7	0.362	1.483	1618	1.653	Si
112	PFFP	2.088	SLV 3	0.362	1.483	1618	1.653	Si
	R	1.119	SLV 10	0.272	1.114	655	1.141	Si
	PF	1.919	SLV 9	0.362	1.483	1618	1.653	Si
	V	1.356	SLV 7	0.328	1.343	1165	1.445	Si
	PFFP	2.436	SLV 15	0.362	1.483	1618	1.653	Si



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113	R	1.695	SLV 8	0.362	1.483	1618	1.653	Si
	PF	0.642	SLV 12	0.15	0.614	138	0.602	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	0.61	SLV 12	0.142	0.58	121	0.571	No
	R	0.865	SLV 5	0.208	0.851	309	0.838	No
	PF	0.898	SLV 12	0.217	0.887	345	0.877	No
114	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	0.847	SLV 12	0.203	0.832	291	0.818	No
	R	0.879	SLV 5	0.212	0.867	325	0.856	No
115	PF	0.743	SLV 9	0.176	0.72	199	0.7	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	0.697	SLV 9	0.164	0.671	169	0.655	No
	R	0.86	SLV 8	0.207	0.845	304	0.833	No
	PF	1.821	SLV 6	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.427	SLV 9	0.345	1.412	1375	1.546	Si
	R	1.022	SLV 12	0.25	1.021	506	1.026	Si
117	PF	0.825	SLV 13	0.2	0.819	279	0.804	No
	V	3.483	SLV 13	0.362	1.483	1618	1.653	Si
	PFFP	1.249	SLV 9	0.302	1.238	899	1.299	Si
	R	1.118	SLV 8	0.272	1.113	654	1.14	Si
	PF	2.637	SLV 12	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.837	SLV 12	0.362	1.483	1618	1.653	Si
	R	1.332	SLV 5	0.322	1.319	1099	1.41	Si
120	PF	0.695	SLV 13	0.167	0.682	175	0.664	No
	V	2.416	SLV 2	0.362	1.483	1618	1.653	Si
	PFFP	1.129	SLV 13	0.274	1.12	666	1.149	Si
	R	1.266	SLV 8	0.307	1.255	936	1.321	Si
	PF	1.862	SLV 12	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.354	SLV 12	0.328	1.341	1160	1.442	Si
	R	1.246	SLV 5	0.302	1.235	892	1.295	Si
124	PF	0.914	SLV 13	0.223	0.911	370	0.903	No
	V	2.652	SLV 13	0.362	1.483	1618	1.653	Si
	PFFP	1.377	SLV 2	0.33	1.349	1183	1.454	Si
	R	1.348	SLV 8	0.326	1.335	1143	1.433	Si
	PF	1.254	SLV 9	0.304	1.243	910	1.305	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.609	SLV 10	0.362	1.483	1618	1.653	Si
	R	1.621	SLV 7	0.362	1.483	1618	1.653	Si
128	PF	1.224	SLV 6	0.297	1.214	847	1.268	Si
	V	3.447	SLV 13	0.362	1.483	1618	1.653	Si
	PFFP	1.014	SLV 6	0.248	1.014	494	1.016	Si
	R	1.046	SLV 8	0.255	1.044	540	1.054	Si
	PF	1.093	SLV 12	0.266	1.089	613	1.11	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.13	SLV 12	0.275	1.124	673	1.154	Si
	R	1.619	SLV 5	0.362	1.483	1618	1.653	Si
132	PF	2.632	SLV 3	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	3.772	SLV 11	0.362	1.483	1618	1.653	Si
	R	1.213	SLV 10	0.294	1.203	825	1.254	Si
	PF	2.102	SLV 16	0.362	1.483	1618	1.653	Si
	V	3.43	SLV 14	0.362	1.483	1618	1.653	Si
	PFFP	2.552	SLV 16	0.362	1.483	1618	1.653	Si
	R	1.113	SLV 5	0.271	1.108	645	1.134	Si
134	PF	2.386	SLV 3	0.362	1.483	1618	1.653	Si
	V	2.935	SLV 3	0.362	1.483	1618	1.653	Si
	PFFP	2.935	SLV 8	0.362	1.483	1618	1.653	Si
	R	1.091	SLV 9	0.266	1.087	610	1.108	Si
	PF	1.542	SLV 16	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	2.305	SLV 12	0.362	1.483	1618	1.653	Si
	R	1.047	SLV 5	0.255	1.045	542	1.056	Si
136	PF	1.515	SLV 13	0.361	1.476	1593	1.642	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.62	SLV 13	0.362	1.483	1618	1.653	Si
	R	1.126	SLV 8	0.274	1.12	667	1.149	Si
	PF	1.961	SLV 15	0.362	1.483	1618	1.653	Si
	V	2.854	SLV 14	0.362	1.483	1618	1.653	Si
	PFFP	3.61	SLV 15	0.362	1.483	1618	1.653	Si
	R	0.94	SLV 8	0.228	0.933	394	0.926	No
138	PF	0.35	SLV 3	0.082	0.337	33	0.335	No
	V	3.907	SLV 3	0.362	1.483	1618	1.653	Si
	PFFP	1.236	SLV 11	0.299	1.225	871	1.282	Si
	R	0.82	SLV 10	0.196	0.803	265	0.787	No
	PF	1.07	SLV 3	0.26	1.065	574	1.081	Si
	V	3.339	SLV 14	0.362	1.483	1618	1.653	Si
	PFFP	3.298	SLV 12	0.362	1.483	1618	1.653	Si
	R	1.018	SLV 6	0.249	1.018	500	1.021	Si
140	PF	1.015	SLV 2	0.248	1.014	495	1.017	Si
	V	3.792	SLV 3	0.362	1.483	1618	1.653	Si
	PFFP	1.936	SLV 2	0.362	1.483	1618	1.653	Si
	R	0.844	SLV 11	0.202	0.828	288	0.815	No
	PF	1.605	SLV 2	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
141	PFFP	1.417	SLV 2	0.339	1.386	1293	1.508	Si
	R	1.085	SLV 11	0.264	1.081	600	1.101	Si



Maschio	Stato limite	Molt.	Comb.	PGA	iPGA (ZE)	TR	(TR/TRrif)^.41	Verifica
142	PF	0.998	SLV 9	0.244	0.997	471	0.997	No
	V	3.701	SLV 13	0.362	1.483	1618	1.653	Si
	PFFP	0.844	SLV 6	0.202	0.828	288	0.815	No
	R	0.976	SLV 12	0.238	0.972	441	0.97	No
143	PF	3.65	SLV 5	0.362	1.483	1618	1.653	Si
	V	3.897	SLV 6	0.362	1.483	1618	1.653	Si
	PFFP	3.779	SLV 1	0.362	1.483	1618	1.653	Si
	R	2.037	SLV 11	0.362	1.483	1618	1.653	Si
144	PF	3.108	SLV 6	0.362	1.483	1618	1.653	Si
	V	1.742	SLV 6	0.362	1.483	1618	1.653	Si
	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
	R	3.163	SLV 16	0.362	1.483	1618	1.653	Si
146	PF	1.286	SLV 6	0.311	1.274	981	1.346	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.398	SLV 6	0.338	1.384	1287	1.505	Si
	R	1.305	SLV 11	0.316	1.293	1028	1.372	Si
149	PF	0.686	SLV 2	0.164	0.671	169	0.655	No
	V	2.2	SLV 2	0.362	1.483	1618	1.653	Si
	PFFP	1.277	SLV 13	0.307	1.256	940	1.323	Si
	R	1.175	SLV 11	0.285	1.167	753	1.208	Si
151	PF	2.049	SLV 7	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.44	SLV 7	0.348	1.425	1416	1.565	Si
	R	1.213	SLV 10	0.294	1.203	825	1.254	Si
153	PF	0.523	SLV 2	0.124	0.506	87	0.499	No
	V	2.097	SLV 2	0.362	1.483	1618	1.653	Si
	PFFP	0.975	SLV 2	0.238	0.973	441	0.97	No
	R	1.041	SLV 8	0.254	1.039	533	1.048	Si
154	PF	1.73	SLV 7	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.107	SLV 3	0.269	1.1	631	1.123	Si
	R	1.271	SLV 10	0.308	1.259	946	1.326	Si
157	PF	0.617	SLV 2	0.147	0.6	131	0.59	No
	V	2.586	SLV 15	0.362	1.483	1618	1.653	Si
	PFFP	1.168	SLV 2	0.282	1.156	732	1.194	Si
	R	1.068	SLV 11	0.26	1.065	573	1.08	Si
158	PF	1.819	SLV 9	0.362	1.483	1618	1.653	Si
	V	3.509	SLV 13	0.362	1.483	1618	1.653	Si
	PFFP	1.436	SLV 6	0.347	1.421	1403	1.559	Si
	R	1.04	SLV 7	0.254	1.038	531	1.047	Si
159	PF	0.74	SLV 6	0.175	0.716	197	0.697	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	0.695	SLV 6	0.163	0.669	168	0.653	No
	R	0.869	SLV 11	0.209	0.855	314	0.844	No
160	PF	1.839	SLV 8	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.583	SLV 7	0.362	1.483	1618	1.653	Si
	R	0.927	SLV 10	0.225	0.919	379	0.912	No
161	PF	0.699	SLV 7	0.164	0.673	170	0.656	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	0.669	SLV 7	0.157	0.642	153	0.628	No
	R	0.864	SLV 10	0.208	0.85	308	0.837	No
162	PF	1.93	SLV 6	0.362	1.483	1618	1.653	Si
	V	1.359	SLV 8	0.329	1.345	1173	1.449	Si
	PFFP	2.622	SLV 3	0.362	1.483	1618	1.653	Si
	R	1.646	SLV 9	0.362	1.483	1618	1.653	Si
163	PF	1.087	SLV 16	0.264	1.081	599	1.1	Si
	V	0.942	SLV 12	0.228	0.935	397	0.929	No
	PFFP	1.751	SLV 15	0.362	1.483	1618	1.653	Si
	R	3.37	SLV 2	0.362	1.483	1618	1.653	Si
164	PF	0.583	SLV 12	0.135	0.553	108	0.545	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	0.59	SLV 12	0.137	0.56	111	0.551	No
	R	2.603	SLV 5	0.362	1.483	1618	1.653	Si
165	PF	0.916	SLV 12	0.222	0.907	367	0.9	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	0.861	SLV 12	0.207	0.846	305	0.834	No
	R	2.367	SLV 7	0.362	1.483	1618	1.653	Si
166	PF	0.581	SLV 9	0.135	0.551	107	0.543	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	0.593	SLV 9	0.138	0.565	113	0.555	No
	R	2.774	SLV 8	0.362	1.483	1618	1.653	Si
167	PF	2.112	SLV 6	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.303	SLV 5	0.315	1.291	1023	1.37	Si
	R	2.216	SLV 12	0.362	1.483	1618	1.653	Si
168	PF	0.778	SLV 15	0.188	0.771	238	0.753	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	0.719	SLV 5	0.17	0.694	183	0.676	No
	R	1.919	SLV 6	0.362	1.483	1618	1.653	Si
169	PFFP	1.408	SLV 15	0.337	1.377	1268	1.496	Si
	R	2.678	SLV 10	0.362	1.483	1618	1.653	Si
170	PFFP	0.636	SLV 16	0.151	0.619	140	0.606	No
	R	1.619	SLV 5	0.362	1.483	1618	1.653	Si
171	PF	1.433	SLV 12	0.346	1.418	1394	1.555	Si
	V	3.33	SLV 5	0.362	1.483	1618	1.653	Si
	PFFP	1.018	SLV 16	0.248	1.017	499	1.02	Si
	R	1000	SLV 1	0.362	1.483	1618	1.653	Si
172	PF	1.693	SLV 12	0.362	1.483	1618	1.653	Si



Maschio	Stato limite	Molt.	Comb.	PGA	iPGA (ZE)	TR	(TR/TRrif)^.41	Verifica
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.068	SLV 12	0.26	1.065	573	1.08	Si
	R	3.847	SLV 6	0.362	1.483	1618	1.653	Si
173	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
	R	1.268	SLV 8	0.307	1.256	940	1.323	Si
174	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
	R	3.148	SLV 7	0.362	1.483	1618	1.653	Si
175	PF	1.062	SLV 9	0.259	1.06	564	1.073	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	0.915	SLV 10	0.221	0.906	365	0.898	No
	R	1.801	SLV 7	0.362	1.483	1618	1.653	Si
176	PF	0.765	SLV 12	0.181	0.743	216	0.724	No
	V	4.077	SLV 12	0.362	1.483	1618	1.653	Si
	PFFP	0.78	SLV 11	0.186	0.759	229	0.741	No
	R	3.866	SLV 6	0.362	1.483	1618	1.653	Si
177	PF	0.53	SLV 3	0.125	0.513	90	0.506	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	0.892	SLV 3	0.217	0.888	346	0.878	No
	R	1.962	SLV 10	0.362	1.483	1618	1.653	Si
178	PF	1.55	SLV 8	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.281	SLV 8	0.31	1.269	969	1.34	Si
	R	1.97	SLV 9	0.362	1.483	1618	1.653	Si
179	PF	2.141	SLV 7	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.297	SLV 11	0.314	1.285	1008	1.361	Si
	R	2.085	SLV 6	0.362	1.483	1618	1.653	Si
180	PF	0.339	SLV 16	0.079	0.323	30	0.322	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	0.654	SLV 16	0.156	0.637	150	0.623	No
	R	1.678	SLV 5	0.362	1.483	1618	1.653	Si
181	PF	1.702	SLV 13	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.24	SLV 13	0.299	1.222	865	1.279	Si
	R	2.685	SLV 8	0.362	1.483	1618	1.653	Si
182	PF	1.539	SLV 16	0.362	1.483	1618	1.653	Si
	V	3.906	SLV 15	0.362	1.483	1618	1.653	Si
	PFFP	2.294	SLV 15	0.362	1.483	1618	1.653	Si
	R	2.185	SLV 5	0.362	1.483	1618	1.653	Si
183	PF	0.165	SLV 3	0.038	0.157	5	0.155	No
	V	4.062	SLV 3	0.362	1.483	1618	1.653	Si
	PFFP	0.992	SLV 11	0.242	0.991	464	0.99	No
	R	2.257	SLV 7	0.362	1.483	1618	1.653	Si
184	PF	0.575	SLV 3	0.136	0.558	110	0.549	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	2.573	SLV 11	0.362	1.483	1618	1.653	Si
	R	2.714	SLV 10	0.362	1.483	1618	1.653	Si
185	PF	0.799	SLV 2	0.193	0.792	255	0.775	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.511	SLV 2	0.36	1.472	1576	1.635	Si
	R	2.063	SLV 10	0.362	1.483	1618	1.653	Si
186	PF	2.451	SLV 2	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.175	SLV 2	0.284	1.162	744	1.202	Si
	R	2.62	SLV 11	0.362	1.483	1618	1.653	Si
187	PF	0.327	SLV 7	0.073	0.298	24	0.294	No
	V	2.063	SLV 6	0.362	1.483	1618	1.653	Si
	PFFP	1.252	SLV 2	0.301	1.233	888	1.292	Si
	R	3.433	SLV 9	0.362	1.483	1618	1.653	Si
189	PF	1.324	SLV 6	0.32	1.311	1078	1.399	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	0.987	SLV 6	0.241	0.986	457	0.984	No
	R	1.593	SLV 11	0.362	1.483	1618	1.653	Si
191	PF	1.772	SLV 7	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.144	SLV 7	0.278	1.138	698	1.171	Si
	R	3.818	SLV 9	0.362	1.483	1618	1.653	Si
192	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
	R	1.562	SLV 7	0.362	1.483	1618	1.653	Si
193	PF	1.107	SLV 6	0.269	1.102	635	1.126	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	0.668	SLV 3	0.159	0.652	158	0.637	No
	R	2.148	SLV 12	0.362	1.483	1618	1.653	Si
194	PFFP	2.812	SLV 16	0.362	1.483	1618	1.653	Si
	R	1.091	SLV 11	0.266	1.087	610	1.108	Si
196	PF	0.29	SLV 3	0.069	0.281	21	0.278	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	0.568	SLV 3	0.135	0.551	107	0.543	No
	R	1.501	SLV 10	0.362	1.483	1618	1.653	Si
197	PF	0.634	SLV 11	0.148	0.606	134	0.595	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	0.618	SLV 11	0.144	0.589	125	0.578	No
	R	2.851	SLV 10	0.362	1.483	1618	1.653	Si
198	PF	1.856	SLV 10	0.362	1.483	1618	1.653	Si
	V	0.98	SLV 7	0.239	0.977	447	0.975	No
	PFFP	1.814	SLV 12	0.362	1.483	1618	1.653	Si
	R	1000	SLV 1	0.362	1.483	1618	1.653	Si
200	PF	0.365	SLV 15	0.086	0.351	36	0.347	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si



Maschio	Stato limite	Molt.	Comb.	PGA	IPGA (ZE)	TR	(TR/TRrif)^.41	Verifica
201	PFFP	0.877	SLV 15	0.213	0.872	330	0.861	No
	R	2.871	SLV 11	0.362	1.483	1618	1.653	Si
	PF	0.702	SLV 13	0.168	0.689	180	0.672	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
203	PFFP	1.1	SLV 4	0.267	1.093	619	1.115	Si
	R	2.756	SLV 10	0.362	1.483	1618	1.653	Si
	PF	0.447	SLV 6	0.101	0.414	53	0.407	No
	V	3.747	SLV 15	0.362	1.483	1618	1.653	Si
204	PFFP	0.657	SLV 6	0.154	0.629	145	0.615	No
	R	2.748	SLV 11	0.362	1.483	1618	1.653	Si
	PF	0.225	SLV 9	0.049	0.201	9	0.197	No
	V	3.052	SLV 9	0.362	1.483	1618	1.653	Si
206	PFFP	0.486	SLV 9	0.111	0.454	67	0.448	No
	R	2.425	SLV 8	0.362	1.483	1618	1.653	Si
	PF	0.415	SLV 2	0.098	0.399	49	0.394	No
	V	3.017	SLV 2	0.362	1.483	1618	1.653	Si
208	PFFP	0.845	SLV 13	0.205	0.84	299	0.827	No
	R	2.421	SLV 6	0.362	1.483	1618	1.653	Si
	PF	0.375	SLV 4	0.088	0.359	38	0.355	No
	V	3.113	SLV 4	0.362	1.483	1618	1.653	Si
209	PFFP	0.682	SLV 2	0.163	0.667	167	0.651	No
	R	2.733	SLV 5	0.362	1.483	1618	1.653	Si
	PF	0.545	SLV 2	0.129	0.528	97	0.521	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
210	PFFP	0.851	SLV 10	0.204	0.836	295	0.823	No
	R	1.82	SLV 9	0.362	1.483	1618	1.653	Si
	PF	2.001	SLV 9	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
211	PFFP	1.23	SLV 6	0.298	1.219	859	1.275	Si
	R	2.141	SLV 8	0.362	1.483	1618	1.653	Si
	PF	0.638	SLV 10	0.149	0.61	136	0.599	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
216	PFFP	0.632	SLV 6	0.148	0.604	133	0.593	No
	R	2.484	SLV 11	0.362	1.483	1618	1.653	Si
	PF	0.737	SLV 15	0.178	0.728	205	0.709	No
	V	0.784	SLV 15	0.19	0.776	243	0.76	No
229	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
	R	3.243	SLV 6	0.362	1.483	1618	1.653	Si
	PF	1.11	SLV 13	0.269	1.102	635	1.126	Si
	V	2.944	SLV 13	0.362	1.483	1618	1.653	Si
230	PFFP	0.697	SLV 9	0.164	0.671	169	0.655	No
	R	0.628	SLV 4	0.149	0.61	136	0.599	No
	PF	2.626	SLV 9	0.362	1.483	1618	1.653	Si
	V	2.914	SLV 15	0.362	1.483	1618	1.653	Si
231	PFFP	1.281	SLV 10	0.31	1.269	969	1.34	Si
	R	0.692	SLV 4	0.166	0.678	173	0.661	No
	PF	1.385	SLV 13	0.331	1.356	1204	1.464	Si
	V	2.142	SLV 13	0.362	1.483	1618	1.653	Si
232	PFFP	1.257	SLV 10	0.304	1.246	916	1.309	Si
	R	0.676	SLV 4	0.162	0.661	164	0.647	No
	PF	1.934	SLV 13	0.362	1.483	1618	1.653	Si
	V	2.049	SLV 2	0.362	1.483	1618	1.653	Si
233	PFFP	1.206	SLV 2	0.291	1.191	800	1.238	Si
	R	0.654	SLV 15	0.156	0.637	150	0.623	No
	PF	1.936	SLV 12	0.362	1.483	1618	1.653	Si
	V	1.561	SLV 8	0.362	1.483	1618	1.653	Si
236	PFFP	1.216	SLV 16	0.293	1.2	818	1.25	Si
	R	2.037	SLV 1	0.362	1.483	1618	1.653	Si
	PF	2.087	SLV 2	0.362	1.483	1618	1.653	Si
	V	3.062	SLV 13	0.362	1.483	1618	1.653	Si
241	PFFP	1.653	SLV 9	0.362	1.483	1618	1.653	Si
	R	0.727	SLV 4	0.175	0.716	197	0.697	No
	PF	2.005	SLV 9	0.362	1.483	1618	1.653	Si
	V	2.947	SLV 13	0.362	1.483	1618	1.653	Si
242	PFFP	1.255	SLV 9	0.304	1.244	912	1.307	Si
	R	0.733	SLV 4	0.177	0.723	201	0.703	No
	PF	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
245	PFFP	3.932	SLV 8	0.362	1.483	1618	1.653	Si
	R	0.606	SLV 9	0.141	0.578	120	0.569	No
	PF	0.518	SLV 13	0.122	0.501	85	0.494	No
	V	1.371	SLV 13	0.328	1.343	1167	1.446	Si
246	PFFP	0.293	SLV 5	0.064	0.262	18	0.261	No
	R	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PF	0.667	SLV 15	0.159	0.652	158	0.637	No
	V	1.513	SLV 4	0.36	1.474	1586	1.639	Si
248	PFFP	0.268	SLV 9	0.059	0.242	14	0.236	No
	R	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PF	1.707	SLV 5	0.362	1.483	1618	1.653	Si
	V	3.501	SLV 2	0.362	1.483	1618	1.653	Si
250	PFFP	1.261	SLV 6	0.305	1.25	925	1.314	Si
	R	0.687	SLV 16	0.164	0.673	170	0.656	No
	PF	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
251	PFFP	4.042	SLV 1	0.362	1.483	1618	1.653	Si
	R	0.868	SLV 10	0.209	0.854	312	0.842	No
	PF	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si



Maschio	Stato limite	Molt.	Comb.	PGA	IPGA (ZE)	TR	(TR/TRrif)^.41	Verifica
252	R	0.842	SLV 10	0.202	0.827	287	0.813	No
	PF	3.325	SLV 7	0.362	1.483	1618	1.653	Si
	V	2.896	SLV 11	0.362	1.483	1618	1.653	Si
	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
253	R	2.043	SLV 11	0.362	1.483	1618	1.653	Si
	PF	3.473	SLV 7	0.362	1.483	1618	1.653	Si
	V	2.887	SLV 11	0.362	1.483	1618	1.653	Si
	PFFP	0.462	SLV 7	0.105	0.43	58	0.422	No
260	R	3.624	SLV 2	0.362	1.483	1618	1.653	Si
	PF	2.029	SLV 13	0.362	1.483	1618	1.653	Si
	V	2.705	SLV 13	0.362	1.483	1618	1.653	Si
	PFFP	1.435	SLV 6	0.347	1.42	1401	1.558	Si
262	R	0.685	SLV 15	0.164	0.671	169	0.655	No
	PF	2.195	SLV 7	0.362	1.483	1618	1.653	Si
	V	1.417	SLV 11	0.343	1.402	1344	1.532	Si
	PFFP	1.365	SLV 3	0.327	1.338	1151	1.437	Si
264	R	1.912	SLV 14	0.362	1.483	1618	1.653	Si
	PF	1.301	SLV 2	0.312	1.279	992	1.352	Si
	V	1.835	SLV 2	0.362	1.483	1618	1.653	Si
	PFFP	1.11	SLV 13	0.269	1.102	635	1.126	Si
265	R	0.627	SLV 4	0.149	0.608	135	0.597	No
	PF	1.258	SLV 2	0.303	1.239	901	1.3	Si
	V	1.893	SLV 2	0.362	1.483	1618	1.653	Si
	PFFP	1.239	SLV 2	0.298	1.221	863	1.277	Si
266	R	0.632	SLV 15	0.15	0.614	138	0.602	No
	PF	2.561	SLV 6	0.362	1.483	1618	1.653	Si
	V	2.542	SLV 2	0.362	1.483	1618	1.653	Si
	PFFP	1.233	SLV 5	0.299	1.222	866	1.279	Si
267	R	0.699	SLV 15	0.168	0.687	178	0.669	No
	PF	1.074	SLV 2	0.261	1.069	579	1.085	Si
	V	2.743	SLV 2	0.362	1.483	1618	1.653	Si
	PFFP	0.72	SLV 6	0.17	0.696	184	0.678	No
	R	0.63	SLV 15	0.15	0.612	137	0.601	No

#### Verifica travi di collegamento in muratura

Trave	Stato limite	Molt.	Comb.	PGA	IPGA (ZE)	TR	(TR/TRrif)^.41	Verifica
2	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	0.759	SLV 16	0.184	0.751	222	0.732	No
6	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	0.958	SLV 13	0.234	0.956	422	0.953	No
8	F	3.167	SLV 4	0.362	1.483	1618	1.653	Si
	V	0.346	SLV 4	0.081	0.332	31	0.327	No
10	F	0.255	SLV 2	0.059	0.242	14	0.236	No
	V	0.259	SLV 4	0.061	0.249	16	0.249	No
11	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	0.464	SLV 16	0.11	0.448	65	0.442	No
20	F	3.224	SLV 1	0.362	1.483	1618	1.653	Si
	V	0.604	SLV 3	0.143	0.587	124	0.577	No
22	F	3.431	SLV 1	0.362	1.483	1618	1.653	Si
	V	0.391	SLV 3	0.092	0.376	42	0.37	No
24	F	0.215	SLV 7	0.047	0.191	8	0.187	No
	V	0.867	SLV 7	0.208	0.853	311	0.841	No
25	F	0.423	SLV 13	0.099	0.407	51	0.401	No
	V	0.177	SLV 13	0.041	0.169	6	0.167	No
26	F	2.734	SLV 15	0.362	1.483	1618	1.653	Si
	V	0.29	SLV 15	0.069	0.281	21	0.278	No
28	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	0.933	SLV 2	0.227	0.93	392	0.924	No
30	F	0.984	SLV 7	0.24	0.982	453	0.981	No
	V	0.911	SLV 11	0.22	0.902	360	0.893	No
31	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	0.508	SLV 3	0.12	0.49	81	0.484	No
33	F	2.005	SLV 16	0.362	1.483	1618	1.653	Si
	V	1.574	SLV 16	0.362	1.483	1618	1.653	Si
34	F	2.15	SLV 16	0.362	1.483	1618	1.653	Si
	V	1.488	SLV 1	0.354	1.451	1504	1.604	Si
35	F	1.463	SLV 15	0.349	1.428	1427	1.57	Si
	V	1.246	SLV 15	0.3	1.228	877	1.286	Si
37	F	1.105	SLV 4	0.268	1.097	627	1.121	Si
	V	0.775	SLV 2	0.187	0.767	235	0.749	No
38	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	3.027	SLV 12	0.362	1.483	1618	1.653	Si
40	F	1.19	SLV 13	0.287	1.176	771	1.22	Si
	V	0.468	SLV 2	0.11	0.451	66	0.445	No
42	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
43	F	2.61	SLV 3	0.362	1.483	1618	1.653	Si
	V	1.511	SLV 3	0.36	1.472	1576	1.635	Si
44	F	1.858	SLV 14	0.362	1.483	1618	1.653	Si
	V	1.285	SLV 14	0.309	1.264	956	1.332	Si
45	F	2.851	SLV 14	0.362	1.483	1618	1.653	Si
	V	0.688	SLV 14	0.165	0.674	171	0.658	No
46	F	0.963	SLV 14	0.235	0.962	428	0.958	No
	V	0.815	SLV 16	0.198	0.809	271	0.794	No
47	F	0.999	SLV 14	0.244	0.999	473	0.998	No
	V	0.566	SLV 14	0.134	0.548	106	0.541	No
48	F	1.332	SLV 3	0.319	1.307	1067	1.393	Si
	V	0.978	SLV 3	0.239	0.977	446	0.975	No
49	F	1.199	SLV 14	0.289	1.184	787	1.23	Si





Trave	Stato limite	Molt.	Comb.	PGA	iPGA (ZE)	TR	(TR/TRrif)^.41	Verifica
51	V	0.519	SLV 1	0.122	0.501	85	0.494	No
	F	0.479	SLV 14	0.112	0.46	69	0.453	No
	V	0.252	SLV 14	0.059	0.242	14	0.236	No
52	F	1.225	SLV 15	0.295	1.208	836	1.261	Si
	V	0.357	SLV 16	0.083	0.342	34	0.339	No
55	F	1.034	SLV 2	0.252	1.032	521	1.039	Si
	V	0.485	SLV 15	0.114	0.466	71	0.459	No
57	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
58	F	3.857	SLV 14	0.362	1.483	1618	1.653	Si
	V	0.186	SLV 14	0.041	0.169	6	0.167	No
59	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	0.85	SLV 14	0.206	0.844	303	0.832	No
60	F	0.901	SLV 13	0.219	0.896	355	0.887	No
	V	0.706	SLV 13	0.17	0.694	183	0.676	No
62	F	1.408	SLV 4	0.337	1.377	1268	1.496	Si
	V	1.249	SLV 4	0.301	1.23	883	1.289	Si
	F	1.415	SLV 3	0.338	1.384	1287	1.505	Si
63	V	1.416	SLV 3	0.338	1.385	1290	1.506	Si
	F	1.339	SLV 3	0.321	1.314	1085	1.403	Si
64	V	0.972	SLV 1	0.237	0.97	438	0.967	No
	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1.181	SLV 9	0.286	1.173	764	1.215	Si
66	F	2.36	SLV 16	0.362	1.483	1618	1.653	Si
	V	1.37	SLV 14	0.328	1.342	1164	1.444	Si
67	F	2.189	SLV 14	0.362	1.483	1618	1.653	Si
	V	1.472	SLV 14	0.351	1.436	1454	1.582	Si
68	F	1.939	SLV 13	0.362	1.483	1618	1.653	Si
	V	0.754	SLV 15	0.182	0.746	218	0.727	No
69	F	1.887	SLV 13	0.362	1.483	1618	1.653	Si
	V	0.787	SLV 15	0.19	0.779	245	0.762	No
70	F	2.159	SLV 4	0.362	1.483	1618	1.653	Si
	V	0.808	SLV 4	0.196	0.802	264	0.786	No
71	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
73	F	1.765	SLV 13	0.362	1.483	1618	1.653	Si
	V	0.609	SLV 15	0.144	0.591	126	0.58	No
75	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
76	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
77	F	2.161	SLV 14	0.362	1.483	1618	1.653	Si
	V	1.285	SLV 1	0.309	1.264	956	1.332	Si
78	F	1.936	SLV 14	0.362	1.483	1618	1.653	Si
	V	1.375	SLV 14	0.329	1.347	1177	1.451	Si
79	F	1.195	SLV 14	0.288	1.181	780	1.226	Si
	V	0.738	SLV 1	0.178	0.728	205	0.709	No
80	F	1.048	SLV 14	0.255	1.045	541	1.055	Si
	V	0.667	SLV 1	0.159	0.652	158	0.637	No
81	F	1.512	SLV 1	0.36	1.473	1580	1.637	Si
	V	0.845	SLV 14	0.205	0.84	299	0.827	No
82	F	1.722	SLV 3	0.362	1.483	1618	1.653	Si
	V	0.802	SLV 1	0.194	0.794	258	0.779	No
83	F	1.787	SLV 14	0.362	1.483	1618	1.653	Si
	V	0.32	SLV 14	0.075	0.308	26	0.304	No
84	F	0.528	SLV 16	0.125	0.511	89	0.503	No
	V	0.428	SLV 16	0.101	0.414	53	0.407	No
85	F	0.915	SLV 14	0.223	0.912	371	0.904	No
	V	0.906	SLV 3	0.22	0.902	360	0.893	No
86	F	1.51	SLV 1	0.359	1.471	1573	1.634	Si
	V	0.506	SLV 1	0.119	0.487	80	0.482	No
87	F	1.657	SLV 3	0.362	1.483	1618	1.653	Si
	V	0.386	SLV 3	0.091	0.372	41	0.366	No
89	F	1.457	SLV 2	0.348	1.422	1409	1.562	Si
	V	0.495	SLV 2	0.116	0.477	75	0.469	No
91	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
92	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1.318	SLV 14	0.316	1.294	1033	1.375	Si
93	F	3.682	SLV 16	0.362	1.483	1618	1.653	Si
	V	1.947	SLV 1	0.362	1.483	1618	1.653	Si
94	F	1.861	SLV 15	0.362	1.483	1618	1.653	Si
	V	0.697	SLV 15	0.167	0.683	176	0.666	No
95	F	1.667	SLV 2	0.362	1.483	1618	1.653	Si
	V	0.667	SLV 4	0.159	0.652	158	0.637	No
96	F	1.67	SLV 2	0.362	1.483	1618	1.653	Si
	V	0.653	SLV 4	0.156	0.637	150	0.623	No
97	F	1.917	SLV 3	0.362	1.483	1618	1.653	Si
	V	1.078	SLV 1	0.262	1.073	585	1.089	Si
98	F	2.049	SLV 1	0.362	1.483	1618	1.653	Si
	V	1.312	SLV 1	0.315	1.289	1018	1.367	Si
99	F	3.618	SLV 16	0.362	1.483	1618	1.653	Si
	V	1.907	SLV 14	0.362	1.483	1618	1.653	Si
100	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	2.521	SLV 10	0.362	1.483	1618	1.653	Si
101	F	2.789	SLV 15	0.362	1.483	1618	1.653	Si
	V	1.787	SLV 15	0.362	1.483	1618	1.653	Si
102	F	3.603	SLV 2	0.362	1.483	1618	1.653	Si
	V	1.833	SLV 11	0.362	1.483	1618	1.653	Si



Trave	Stato limite	Molt.	Comb.	PGA	iPGA (ZE)	TR	(TR/TRrif)^.41	Verifica
103	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	0.598	SLV 15	0.142	0.58	121	0.571	No
104	F	3.143	SLV 13	0.362	1.483	1618	1.653	Si
	V	3.443	SLV 4	0.362	1.483	1618	1.653	Si
105	F	1.936	SLV 2	0.362	1.483	1618	1.653	Si
	V	0.992	SLV 4	0.242	0.992	464	0.99	No
106	F	2.618	SLV 2	0.362	1.483	1618	1.653	Si
	V	1.083	SLV 15	0.263	1.077	593	1.095	Si
107	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
109	F	2.244	SLV 15	0.362	1.483	1618	1.653	Si
	V	0.767	SLV 15	0.186	0.759	229	0.741	No
111	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
112	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	3.837	SLV 12	0.362	1.483	1618	1.653	Si
113	F	3.615	SLV 14	0.362	1.483	1618	1.653	Si
	V	2.43	SLV 14	0.362	1.483	1618	1.653	Si
114	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	2.803	SLV 14	0.362	1.483	1618	1.653	Si
115	F	1.76	SLV 3	0.362	1.483	1618	1.653	Si
	V	1.047	SLV 14	0.255	1.044	540	1.054	Si
116	F	1.674	SLV 14	0.362	1.483	1618	1.653	Si
	V	1.234	SLV 3	0.297	1.216	853	1.271	Si
117	F	2.377	SLV 1	0.362	1.483	1618	1.653	Si
	V	1.427	SLV 14	0.341	1.395	1321	1.521	Si
118	F	2.199	SLV 1	0.362	1.483	1618	1.653	Si
	V	1.619	SLV 1	0.362	1.483	1618	1.653	Si
119	F	2.763	SLV 13	0.362	1.483	1618	1.653	Si
	V	0.599	SLV 13	0.142	0.583	122	0.573	No
120	F	0.562	SLV 16	0.133	0.544	104	0.536	No
	V	0.448	SLV 16	0.105	0.43	58	0.422	No
121	F	0.862	SLV 3	0.209	0.856	315	0.845	No
	V	0.791	SLV 3	0.192	0.784	249	0.767	No
122	F	2.031	SLV 3	0.362	1.483	1618	1.653	Si
	V	0.767	SLV 3	0.186	0.759	229	0.741	No
123	F	2.635	SLV 1	0.362	1.483	1618	1.653	Si
	V	0.808	SLV 1	0.196	0.802	264	0.786	No
125	F	1.687	SLV 2	0.362	1.483	1618	1.653	Si
	V	0.545	SLV 2	0.129	0.528	97	0.521	No
127	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
128	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	2.925	SLV 1	0.362	1.483	1618	1.653	Si
129	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	2.419	SLV 1	0.362	1.483	1618	1.653	Si
130	F	1.698	SLV 15	0.362	1.483	1618	1.653	Si
	V	0.869	SLV 15	0.211	0.864	322	0.853	No
131	F	2.395	SLV 15	0.362	1.483	1618	1.653	Si
	V	1.15	SLV 15	0.278	1.139	701	1.173	Si
132	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	0.405	SLV 4	0.096	0.392	46	0.384	No
133	F	2.368	SLV 2	0.362	1.483	1618	1.653	Si
	V	2.382	SLV 2	0.362	1.483	1618	1.653	Si
134	F	2.241	SLV 4	0.362	1.483	1618	1.653	Si
	V	1.444	SLV 4	0.345	1.41	1370	1.544	Si
135	F	2.774	SLV 4	0.362	1.483	1618	1.653	Si
	V	1.366	SLV 4	0.327	1.339	1154	1.439	Si
136	F	3.413	SLV 16	0.362	1.483	1618	1.653	Si
	V	1.853	SLV 1	0.362	1.483	1618	1.653	Si
137	F	3.591	SLV 1	0.362	1.483	1618	1.653	Si
	V	2.397	SLV 14	0.362	1.483	1618	1.653	Si
138	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	3.197	SLV 10	0.362	1.483	1618	1.653	Si
139	F	2.917	SLV 6	0.362	1.483	1618	1.653	Si
	V	3.596	SLV 2	0.362	1.483	1618	1.653	Si
140	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	2.546	SLV 11	0.362	1.483	1618	1.653	Si
141	F	2.252	SLV 11	0.362	1.483	1618	1.653	Si
	V	2.558	SLV 6	0.362	1.483	1618	1.653	Si
142	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1.661	SLV 13	0.362	1.483	1618	1.653	Si
143	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
144	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	2.163	SLV 15	0.362	1.483	1618	1.653	Si
145	F	2.656	SLV 2	0.362	1.483	1618	1.653	Si
	V	2.25	SLV 2	0.362	1.483	1618	1.653	Si
146	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
147	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
148	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
149	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
150	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
151	F	3.264	SLV 14	0.362	1.483	1618	1.653	Si



Trave	Stato limite	Molt.	Comb.	PGA	iPGA (ZE)	TR	(TR/TRrif)^.41	Verifica
	V	2.356	SLV 14	0.362	1.483	1618	1.653	Si
152	F	2.769	SLV 13	0.362	1.483	1618	1.653	Si
	V	3.129	SLV 13	0.362	1.483	1618	1.653	Si
153	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	2.631	SLV 1	0.362	1.483	1618	1.653	Si
154	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	3.481	SLV 3	0.362	1.483	1618	1.653	Si
155	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1.597	SLV 13	0.362	1.483	1618	1.653	Si
156	F	0.546	SLV 16	0.129	0.528	97	0.521	No
	V	0.473	SLV 16	0.111	0.454	67	0.448	No
157	F	0.962	SLV 14	0.235	0.96	426	0.956	No
	V	1.023	SLV 3	0.25	1.021	506	1.026	Si
158	F	3.791	SLV 3	0.362	1.483	1618	1.653	Si
	V	1.666	SLV 3	0.362	1.483	1618	1.653	Si
159	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	2.304	SLV 2	0.362	1.483	1618	1.653	Si
160	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
161	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1.194	SLV 1	0.288	1.18	778	1.224	Si
162	F	1.669	SLV 16	0.362	1.483	1618	1.653	Si
	V	2.805	SLV 1	0.362	1.483	1618	1.653	Si
163	F	3.939	SLV 16	0.362	1.483	1618	1.653	Si
	V	2.748	SLV 5	0.362	1.483	1618	1.653	Si
164	F	3.086	SLV 10	0.362	1.483	1618	1.653	Si
	V	2.905	SLV 8	0.362	1.483	1618	1.653	Si
166	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	2.062	SLV 13	0.362	1.483	1618	1.653	Si
169	F	2.521	SLV 2	0.362	1.483	1618	1.653	Si
	V	1.158	SLV 2	0.28	1.146	714	1.182	Si
171	F	2.642	SLV 4	0.362	1.483	1618	1.653	Si
	V	1.384	SLV 13	0.331	1.355	1202	1.463	Si
172	F	1.831	SLV 13	0.362	1.483	1618	1.653	Si
	V	1.941	SLV 4	0.362	1.483	1618	1.653	Si
173	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	0.935	SLV 2	0.228	0.932	394	0.926	No
174	F	3.363	SLV 4	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
175	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	2.601	SLV 8	0.362	1.483	1618	1.653	Si
176	F	2.96	SLV 8	0.362	1.483	1618	1.653	Si
	V	2.413	SLV 8	0.362	1.483	1618	1.653	Si
177	F	2.695	SLV 13	0.362	1.483	1618	1.653	Si
	V	1.474	SLV 13	0.351	1.438	1460	1.585	Si
179	F	2.046	SLV 15	0.362	1.483	1618	1.653	Si
	V	0.455	SLV 15	0.107	0.439	62	0.434	No
183	F	1.602	SLV 4	0.362	1.483	1618	1.653	Si
	V	0.551	SLV 4	0.13	0.532	99	0.526	No
187	F	0.76	SLV 13	0.184	0.751	222	0.732	No
	V	0.632	SLV 15	0.15	0.614	138	0.602	No
188	F	1.333	SLV 13	0.32	1.308	1070	1.395	Si
	V	0.743	SLV 13	0.18	0.735	210	0.716	No
189	F	1.372	SLV 13	0.328	1.344	1170	1.447	Si
	V	0.683	SLV 13	0.163	0.669	168	0.653	No
192	F	1.473	SLV 15	0.351	1.437	1457	1.583	Si
	V	0.472	SLV 15	0.111	0.454	67	0.448	No
196	F	1.806	SLV 2	0.362	1.483	1618	1.653	Si
	V	0.429	SLV 2	0.101	0.414	53	0.407	No

#### Periodi di ritorno e accelerazioni di aggancio per gli Stati Limite

S. L.	TR,C	PGA,C	TR,Rif	PGA,Rif	Tipo rottura
Stato limite di salvaguardia della vita	5	0.038	475	0.244	pressoflessione maschio muratura

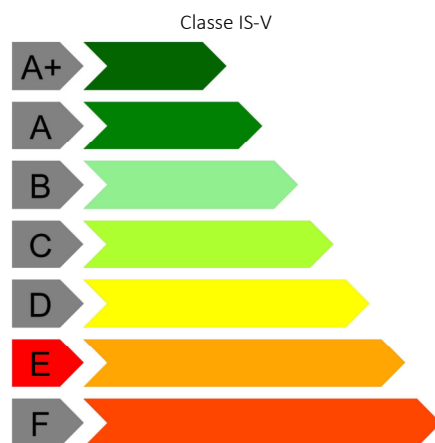
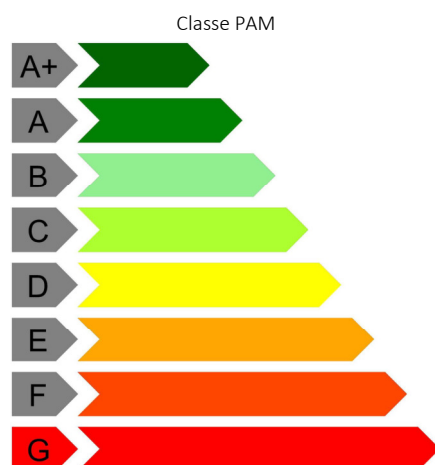
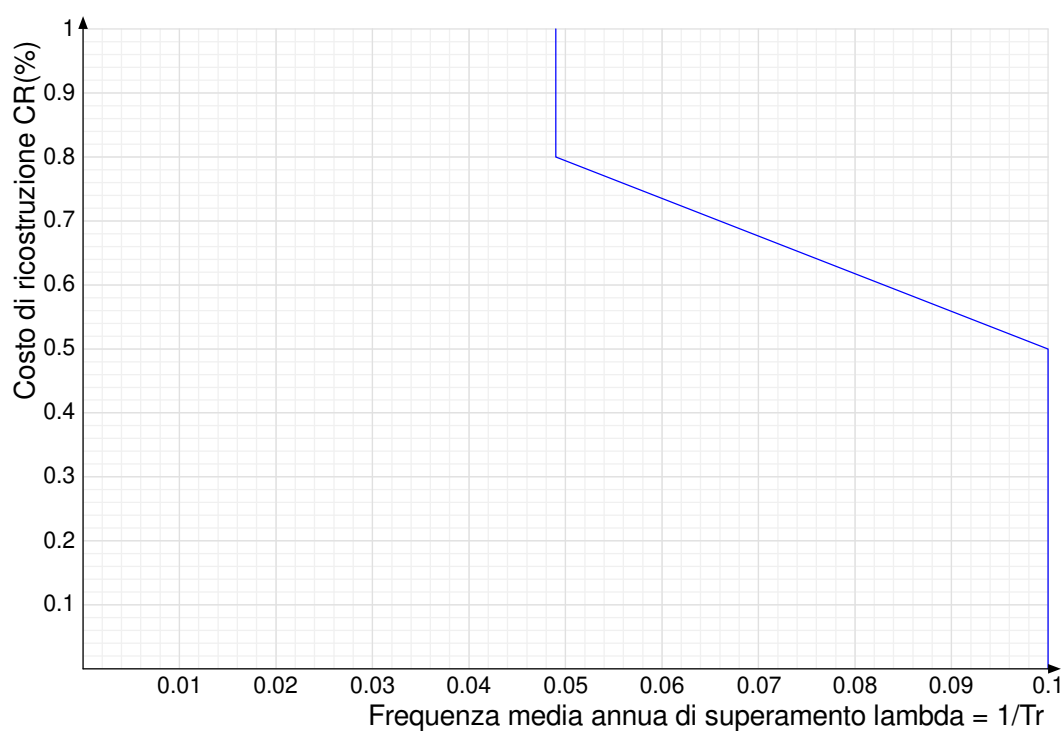
#### Coefficienti relativi alle Linee guida per la classificazione del rischio sismico delle costruzioni secondo il D.M. 24 09/01/2020

TR,C	TR,Rif	PAM	Classe PAM	IS-V	Classe IS-V	Tipo rottura
5	475	8.215	G	15.686	E	pressoflessione maschio muratura

#### Coefficienti $\lambda$ relativi alle Linee guida per la classificazione del rischio sismico delle costruzioni secondo il D.M. 24 09/01/2020

$\lambda_{SLR}$	$\lambda_{SLC}$	$\lambda_{SLV}$	$\lambda_{SLD}$	$\lambda_{SLO}$	$\lambda_{SLID}$
0.049	0.049	0.1	0.1	0.1	0.1

Andamento della curva che individua il PAM (Perdita Annuale Media Attesa)



## 1.8 Verifiche maschi in muratura

Le unità di misura elencate nel capitolo sono in [m, daN, s] ove non espressamente specificato.



**X<sub>ini</sub>**: coordinate del punto iniziale del maschio. [m]  
**Y<sub>ini</sub>**: coordinate del punto iniziale del maschio. [m]  
**X<sub>fin</sub>**: coordinate del punto finale del maschio. [m]  
**Y<sub>fin</sub>**: coordinate del punto finale del maschio. [m]  
**Quota i.**: livello o falda inferiore.  
**Quota s.**: livello o falda superiore.  
**l**: lunghezza del maschio. [m]  
**Sp.**: spessore. [m]  
**h<sub>netta</sub>**: altezza netta (a filo solai). [m]  
**h<sub>ini</sub>**: altezza nel modello al punto iniziale. [m]  
**h<sub>fin</sub>**: altezza nel modello al punto finale. [m]  
**a**: distanza tra irrigidimenti laterali. [m]  
**a.s.,sx**: lunghezza di appoggio del solaio di sinistra. [m]  
**a.s.,dx**: lunghezza di appoggio del solaio di destra. [m]  
**f<sub>b</sub>**: resistenza normalizzata a compressione verticale dei blocchi. [daN/m<sup>2</sup>]  
**f<sub>k</sub>**: resistenza caratteristica a compressione della muratura utilizzata. [daN/m<sup>2</sup>]  
**f<sub>k0</sub>**: resistenza caratteristica a taglio in assenza di carichi verticali. [daN/m<sup>2</sup>]  
**f<sub>medio</sub>**: resistenza media a compressione della muratura utilizzata. [daN/m<sup>2</sup>]  
**τ<sub>0</sub>**: resistenza media a taglio in assenza di azioni normali [C8.7.1.16]. [daN/m<sup>2</sup>]  
**f<sub>v0</sub>**: resistenza media a taglio in assenza di azioni normali [C8.7.1.17]. [daN/m<sup>2</sup>]  
**μ**: coefficiente di attrito [C8.7.1.17].  
**φ**: coefficiente di ammortamento o ingranamento secondo Circolare 7 21-01-19 §C8.7.1.3.1.1.  
**f<sub>v,lim</sub>**: valore massimo della resistenza a taglio che può essere impiegata nel calcolo. [daN/m<sup>2</sup>]  
**E**: modulo di elasticità longitudinale della muratura utilizzato. [daN/m<sup>2</sup>]  
**G**: modulo di elasticità tangenziale della muratura utilizzato. [daN/m<sup>2</sup>]  
**FC**: fattore di confidenza della muratura.  
**Materiale**: descrizione del materiale.  
**Fu Verticale**: carico di rottura a trazione per unità di lunghezza della maglia verticale. [daN/m]  
**Fu Orizzontale**: carico di rottura a trazione per unità di lunghezza della maglia verticale. [daN/m]  
**t<sub>fv</sub>**: spessore di calcolo equivalente verticale di uno strato di rinforzo.  
**t<sub>fo</sub>**: spessore di calcolo equivalente orizzontale di uno strato di rinforzo.  
**E**: modulo di elasticità longitudinale. [daN/m<sup>2</sup>]  
**ε<sub>u</sub>**: dilatazione a rottura.  
**Tipo fibra**: natura della fibra.  
**materiale**: materiale fibra del rinforzo.  
**lato applicazione**: lato di applicazione del rinforzo.  
**esposizione**: condizione di esposizione secondo CNR-DT 215 §3.2.  
**ancoraggio verticale iniziale**: grado di ancoraggio iniziale dei rinforzi verticali.  
**ancoraggio verticale finale**: grado di ancoraggio finale dei rinforzi verticali.  
**ancoraggio orizzontale iniziale**: grado di ancoraggio iniziale dei rinforzi orizzontali.  
**ancoraggio orizzontale finale**: grado di ancoraggio finale dei rinforzi orizzontali.  
**strati**: numero strati del rinforzo.  
**verifica taglio**: tipo di verifica a taglio.  
**elim,conv / ε<sub>CNR DT-200</sub>**: dati relativi ai parametri per il calcolo della deformazione di progetto.  
**α<sub>t</sub>**: coefficiente che tiene conto della ridotta capacità estensionale delle fibre sollecitate a taglio secondo CNR-DT 215 §4.1.1.  
**α**: coefficiente amplificativo tensione di distacco secondo CNR-DT 215 §3.1 ovvero secondo CNR-DT 200 R1/2013 §5.3.3.  
**elim,conv**: deformazione limite convenzionale del rinforzo FRCCM.  
**ε<sub>f,d</sub>**: deformazione di progetto del rinforzo FRCCM ovvero CRM.  
**γ<sub>F,d</sub>**: fattore parziali di sicurezza per stato limite di distacco secondo CNR-DT 200 R1/2013 §3.4.1.  
**connettori**: presenza di connettori per la prevenzione del distacco del rinforzo.  
**tipo di muratura**: tipo di muratura per stato limite di distacco di estremità secondo CNR-DT 200 R1/2013 §5.3.2.  
**CRM / Fibrenet?**: dati relativi ai parametri per il calcolo secondo metodo Fibrenet? ovvero se il materiale è di tipo CRM.  
**CRM**: stabilisce se il rinforzo è di tipo CRM secondo le Linee Guida del C.S.L.P. Ottobre 2019.  
**intonaco**: materiale intonaco FRCCM ovvero CRM.  
**spessore intonaco**: spessore intonaco. [m]  
**tipo blocco fibrenet**: tipo blocco muratura per verifica a taglio tipo Fibrenet.  
**Comb.**: combinazione.  
**Quota**: quota della sezione di verifica. [m]  
**M**: momento flettente nel piano. [daN\*m]  
**N**: sforzo normale. [daN]  
**ε<sub>m</sub>**: deformazione della muratura.  
**ε<sub>m</sub>**: deformazione elastica della muratura.  
**ε<sub>mu</sub>**: deformazione ultima della muratura.  
**df**: distanza tra il lembo compresso e la fibra tesa più lontana. [m]  
**M<sub>0d</sub>**: momento resistente della sezione non rinforzata. [daN\*m]  
**M<sub>1d</sub>**: momento resistente della sezione rinforzata. [daN\*m]  
**M<sub>Rd</sub>**: momento resistente della sezione. [daN\*m]  
**c.s.**: coefficiente di sicurezza.  
**incremento > 50%**: incremento resistenza superiore al 50% della resistenza non rinforzata in condizioni non sismiche.  
**Verifica**: stato di verifica.  
**N<sub>mur</sub>**: aliquota di sforzo normale recepito dalla sola muratura. [daN]



**V:** taglio nel piano. [daN]  
**df:** distanza tra lembo compresso e baricentro dell'armatura tesa. [m]  
**l':** lunghezza della parte compressa della parete. [m]  
 **$\sigma N$ :** tensione media nella zona compressa. [daN/m<sup>2</sup>]  
**fvd:** resistenza a taglio di calcolo. [daN/m<sup>2</sup>]  
**Vt:** resistenza a taglio della muratura non rinforzata. [daN]  
**Vt,f:** resistenza a taglio del rinforzo (CNR DT215 4.1a). [daN]  
**Vt,c:** resistenza a taglio per schiacciamento delle bielle (CNR DT215 4.1b). [daN]  
**Vt,c int.:** contributo di resistenza a taglio delle bielle dell'intonaco se considerato. [daN]  
**Vt,R:** resistenza a taglio della sezione rinforzata. [daN]  
**res. > 50%:** incremento resistenza superiore al 50% della resistenza non rinforzata in condizioni non sismiche.  
**fd:** resistenza a compressione di calcolo. [daN/m<sup>2</sup>]  
**Sa:** accelerazione massima, adimensionalizzata rispetto a g, che l'elemento strutturale subisce durante il sisma.  
 **$\sigma 0$ :** tensione media di compressione. [daN/m<sup>2</sup>]  
**M:** momento flettente fuori piano. [daN\*m]  
**Mc:** momento di collasso per azioni perpendicolari al piano. [daN\*m]  
**Coeff.s.:** coefficiente di sicurezza.  
**N top:** sforzo normale in sommità. [daN]  
**N base:** sforzo normale al piede. [daN]  
**V orto:** taglio fuori piano. [daN]  
 **$\alpha 0$ :** moltiplicatore secondo [C8.7.1.1].  
**M\*:** massa partecipante al cinematisimo. [daN/(m/s<sup>2</sup>)]  
**e\*:** frazione di massa partecipante della muratura [C8.7.1.5].  
 **$\alpha 0^*$ :** accelerazione spettrale di attivazione del meccanismo [C8.7.1.8]. [m/s<sup>2</sup>]  
 **$\alpha Lim$ :** accelerazione limite [C7.2.11]. [m/s<sup>2</sup>]  
**Stato limite:** pF\_SLU=Presso flessione per azioni non sismiche; V\_SLU=Taglio per azioni non sismiche; PF\_SLV=Presso flessione per azioni sismiche; V\_SLV=Taglio per azioni sismiche; PFPF\_SLV=Presso flessione fuori piano per azioni sismiche; R\_SLV=Ribaltamento per azioni sismiche.  
**Sa:** accelerazione massima adimensionalizzata rispetto a quella di gravità.  
**Mu:** momento flettente ultimo. [daN\*m]  
**V par:** taglio nel piano. [daN]  
 **$\sigma N$ :** tensione media di compressione sulla parte reagente. [daN/m<sup>2</sup>]  
**Vt scorr.:** taglio ultimo per verifica a scorrimento. [daN]  
**Vt fess.diag.:** taglio ultimo per verifica a fessurazione diagonale regolare [C8.7.1.17]. [daN]  
**Vt,lim:** taglio limite [C8.7.1.18]. [daN]  
**c.s.:** coefficiente di sicurezza a taglio.

## Maschio 1

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-24.653	1.271	-24.653	-3.284	L2	L4	4.555	0.45	2.7	2.7	2.7			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	$\tau 0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha t$	$\alpha$	elim,conv / e,CNR DT-200				tipo di muratura	CRM / Fibrenet?			
											elim,conv	e,fd	yF,d	connettori		CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche,  $\gamma M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 75	-1.59	-8907.1	-56518	-0.0000501	0.0004492	0.0035	4.555	99672.95	121358.19	121358.19	13.62	No	Si
SLU 75	0.61	-28235.37	-64802	-0.0000766	0.0004492	0.0035	4.555	109399.91	134383.21	134383.21	4.76	No	Si
SLU 82	-1.59	-9057.03	-57465	-0.000051	0.0004492	0.0035	4.555	100847.5	122923.37	122923.37	13.57	No	Si
SLU 82	0.61	-28691.63	-65804	-0.0000779	0.0004492	0.0035	4.555	110492.35	135934.66	135934.66	4.74	No	Si
SLU 74	-1.59	-8851.33	-56526	-0.00005	0.0004492	0.0035	4.555	99682.15	121370.37	121370.37	13.71	No	Si
SLU 74	0.61	-28269.69	-64809	-0.0000766	0.0004492	0.0035	4.555	109407.95	134394.52	134394.52	4.75	No	Si
SLU 77	-1.59	-8936.17	-57140	-0.0000506	0.0004492	0.0035	4.555	100446.31	122386.3	122386.3	13.7	No	Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 77	0.61	-28580.33	-65674	-0.0000776	0.0004492	0.0035	4.555	110352.04	135733.93	135733.93	4.75	No	Si
SLU 78	-1.59	-8991.94	-57133	-0.0000506	0.0004492	0.0035	4.555	100437.18	122374.11	122374.11	13.61	No	Si
SLU 78	0.61	-28546.01	-65667	-0.0000776	0.0004492	0.0035	4.555	110344.12	135722.62	135722.62	4.75	No	Si
SLU 83	-1.59	-9086.09	-58086	-0.0000515	0.0004492	0.0035	4.555	101610.17	123951.47	123951.47	13.64	No	Si
SLU 83	0.61	-29036.6	-66677	-0.0000789	0.0004492	0.0035	4.555	111428.57	137285.39	137285.39	4.73	No	Si
SLU 81	-1.59	-9001.26	-57472	-0.0000509	0.0004492	0.0035	4.555	100856.58	122935.55	122935.55	13.66	No	Si
SLU 81	0.61	-28725.96	-65811	-0.0000779	0.0004492	0.0035	4.555	110500.25	135945.97	135945.97	4.73	No	Si
SLU 84	-1.59	-9141.86	-58079	-0.0000515	0.0004492	0.0035	4.555	101601.17	123939.29	123939.29	13.56	No	Si
SLU 84	0.61	-29002.28	-66669	-0.0000789	0.0004492	0.0035	4.555	111420.78	137274.07	137274.07	4.73	No	Si
SLU 79	-1.59	-8872.31	-56797	-0.0000503	0.0004492	0.0035	4.555	100020.58	121819.18	121819.18	13.73	No	Si
SLU 79	0.61	-28385.57	-65184	-0.000077	0.0004492	0.0035	4.555	109818.49	134974.6	134974.6	4.76	No	Si
SLU 80	-1.59	-8928.08	-56790	-0.0000503	0.0004492	0.0035	4.555	100011.41	121807	121807	13.64	No	Si
SLU 80	0.61	-28351.25	-65176	-0.000077	0.0004492	0.0035	4.555	109810.5	134963.28	134963.28	4.76	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche,  $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 16	-1.59	-6613.54	-13145	-0.0000154	0.0006738	0.0035	4.555		41051.3	41051.3	6.21		Si
SLV 16	0.61	-10897.19	-14177	-0.0000201	0.0006738	0.0035	4.555		43253.59	43253.59	3.97		Si
SLV 5	-1.59	1740.3	-47983	-0.0000359	0.0006738	0.0035	4.555		100945.45	100945.45	58		Si
SLV 5	0.61	-31006.17	-55107	-0.0000698	0.0006738	0.0035	4.555		123713.17	123713.17	3.99		Si
SLV 14	-1.59	-1690.8	-13404	-0.000011	0.0006738	0.0035	4.555		41604.28	41604.28	24.61		Si
SLV 14	0.61	-16402.77	-14789	-0.0000272	0.0006738	0.0035	4.555		44559.53	44559.53	2.72		Si
SLV 15	-1.59	-4661.64	-13392	-0.0000137	0.0006738	0.0035	4.555		41580.13	41580.13	8.92		Si
SLV 15	0.61	-12185.71	-14648	-0.0000217	0.0006738	0.0035	4.555		44258.82	44258.82	3.63		Si
SLV 6	-1.59	479.63	-47823	-0.0000346	0.0006738	0.0035	4.555		100676.44	100676.44	209.91		Si
SLV 6	0.61	-30173.95	-54803	-0.0000688	0.0006738	0.0035	4.555		123157.93	123157.93	4.08		Si
SLV 13	-1.59	261.1	-13652	-0.0000098	0.0006738	0.0035	4.555		32202.37	32202.37	123.33		Si
SLV 13	0.61	-17691.28	-15260	-0.0000294	0.0006738	0.0035	4.555		45553.2	45553.2	2.57		Si
SLV 10	-1.59	2288.11	-32097	-0.0000249	0.0006738	0.0035	4.555		70451.97	70451.97	30.79		Si
SLV 10	0.61	-26887.86	-36703	-0.0000518	0.0006738	0.0035	4.555		89175.82	89175.82	3.32		Si
SLD 13	-1.59	-3401.27	-28529	-0.0000234	0.0006738	0.0035	4.555		72885.56	72885.56	21.43		Si
SLD 13	0.61	-18905.67	-32279	-0.0000408	0.0006738	0.0035	4.555		80455.23	80455.23	4.26		Si
SLD 9	-1.59	-1922.82	-36480	-0.0000277	0.0006738	0.0035	4.555		88747.31	88747.31	46.15		Si
SLD 9	0.61	-23299.09	-41529	-0.000052	0.0006738	0.0035	4.555		98448.11	98448.11	4.23		Si
SLV 9	-1.59	3548.79	-32257	-0.0000262	0.0006738	0.0035	4.555		70771.74	70771.74	19.94		Si
SLV 9	0.61	-27720.08	-37008	-0.0000528	0.0006738	0.0035	4.555		89760.45	89760.45	3.24		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 75	-1.59	-8907.1	-56518	-45215	-6162	4.555	4.555	-22059	10833	22206	88358	73663	23230	96893	No	15.73	Si
SLU 75	0.61	-28235.37	-64802	-51841	-11232	4.555	4.555	-25292	10833	22206	88358	73663	23230	96893	No	8.63	Si
SLU 78	-1.59	-8991.94	-57133	-45706	-6223	4.555	4.555	-22298	10833	22206	88358	73663	23230	96893	No	15.57	Si
SLU 78	0.61	-28546.01	-65667	-52534	-11359	4.555	4.555	-25629	10833	22206	88358	73663	23230	96893	No	8.53	Si
SLU 76	-1.59	-8880.42	-56170	-44936	-6202	4.555	4.555	-21923	10833	22206	88358	73663	23230	96893	No	15.62	Si
SLU 76	0.61	-28017.72	-64306	-51445	-11235	4.555	4.555	-25098	10833	22206	88358	73663	23230	96893	No	8.62	Si
SLU 79	-1.59	-8872.31	-56797	-45438	-6126	4.555	4.555	-22167	10833	22206	88358	73663	23230	96893	No	15.82	Si
SLU 79	0.61	-28385.57	-65184	-52147	-11241	4.555	4.555	-25441	10833	22206	88358	73663	23230	96893	No	8.62	Si
SLU 80	-1.59	-8928.08	-56790	-45432	-6209	4.555	4.555	-22165	10833	22206	88358	73663	23230	96893	No	15.61	Si
SLU 80	0.61	-28351.25	-65176	-52141	-11314	4.555	4.555	-25438	10833	22206	88358	73663	23230	96893	No	8.56	Si
SLU 84	-1.59	-9141.86	-58079	-46463	-6245	4.555	4.555	-22668	10833	22206	88358	73663	23230	96893	No	15.52	Si
SLU 84	0.61	-29002.28	-66669	-53336	-11426	4.555	4.555	-26021	10833	22206	88358	73663	23230	96893	No	8.48	Si
SLU 83	-1.59	-9086.09	-58086	-46469	-6162	4.555	4.555	-22671	10833	22206	88358	73663	23230	96893	No	15.72	Si
SLU 83	0.61	-29036.6	-66677	-53341	-11354	4.555	4.555	-26023	10833	22206	88358	73663	23230	96893	No	8.53	Si
SLU 81	-1.59	-9001.26	-57472	-45978	-6101	4.555	4.555	-22431	10833	22206	88358	73663	23230	96893	No	15.88	Si
SLU 81	0.61	-28725.96	-65811	-52649	-11226	4.555	4.555	-25686	10833	22206	88358	73663	23230	96893	No	8.63	Si
SLU 77	-1.59	-8936.17	-57140	-45712	-6140	4.555	4.555	-22301	10833	22206	88358	73663	23230	96893	No	15.78	Si
SLU 77	0.61	-28580.33	-65674	-52540	-11286	4.555	4.555	-25632	10833	22206	88358	73663	23230	96893	No	8.59	Si
SLU 82	-1.59	-9057.03	-57465	-45972	-6183	4.555	4.555	-22428	10833	22206	88358	73663	23230	96893	No	15.67	Si
SLU 82	0.61	-28691.63	-65804	-52643	-11299	4.555	4.555	-25683	10833	22206	88358	73663	23230	96893	No	8.58	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	oN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 3	-1.59	-10689.93	-65813	-52650	-11206	4.555	4.555	-25686	16250	33308	88358	110494	23230	121667		10.86	Si
SLV 3	0.61	-23139.34	-74978	-59983	-15091	4.555	4.555	-29263	16250	33308	88358	110494	23230	121667		8.06	Si
SLV 12	-1.59	-14121.03	-31233	-24987	-18758	4.555	4.555	-12190	14938	30619	88358	110494	23230	118978		6.34	Si
SLV 12	0.61	-8535.94	-34661	-27729	-20076	4.555	4.555	-13528	15206	31168	88358	110494	23230	119526		5.95	Si
SLD 11	-1.59	-9134.09	-36091	-28873	-9910	4.555	4.555	-14086	15317	31396	88358	110494	23230	119755		12.08	Si
SLD 11	0.61	-15191.75	-40671	-32537	-12589	4.555	4.555	-15874	15675	32129	88358	110494	23230	120488		9.57	Si
SLD 12	-1.59	-9684.9	-36021	-28817	-10764	4.555	4.555	-14059	15312	31385	88358	110494	23230	119744		11.12	Si
SLD 12	0.61	-14828.14	-40538	-32431	-13350	4.555	4.555	-15822	15664	32108	88358	110494	23230	120466		9.02	Si
SLV 7	-1.59	-14668.83	-47119	-37696	-19156	4.555	4.555	-18390	16178	33161	88358	110494	23230	121519		6.34	Si
SLV 7	0.61	-12654.25	-53064	-42451	-21115	4.555	4.555	-20710	16250	33308	88358	110494	23230	121667		5.76	Si
SLV 4	-1.59	-12641.82	-65565	-52452	-14233	4.555	4.555	-25589	16250	33308	88358	110494	23230	121667		8.55	Si
SLV 4	0.61	-21850.82	-74507	-59606	-17786	4.555	4.555	-29079	16250	33308	88358	110494	23230	121667		6.84	Si
SLV 8	-1.59	-15929.51	-46959	-37567	-21112	4.555	4.555	-18328	16166	33135	88358	110494	23230	121494		5.75	Si
SLV 8	0.61	-11822.03	-52760	-42208	-22856	4.555	4.555	-20592	16250	33308	88358	110494	23230	121667		5.32	Si
SLV 11	-1.59	-12860.35	-31393	-25115	-16802	4.555	4.555	-12253	14951	30645	88358	110494	23230	119003		7.08	Si
SLV 11	0.61	-9368.16	-34965	-27972	-18335	4.555	4.555	-13647	15229	31216	88358	110494	23230	119575		6.52	Si
SLD 7	-1.59	-9907.09	-42806	-34245	-10912	4.555	4.555	-16707	15841	32471	88358	110494	23230	120829		11.07	Si
SLD 7	0.61	-16606.63	-48372	-38697	-13777	4.555	4.555	-18879	16250	33308	88358	110494	23230	121667		8.83	Si
SLD 8	-1.59	-10457.9	-42736	-34189	-11766	4.555	4.555	-16679	15836	32460	88358	110494	23230	120818		10.27	Si
SLD 8	0.61	-16243.02	-48239	-38591	-14538	4.555	4.555	-18827	16250	33308	88358	110494	23230	121667		8.37	Si



Verifica a pressoflessione fuori piano muratura rinforzata con FRM D.M. 17-01-18 (N.T.C.)

quota -0.24 Ta 0.03 Wa 0.08 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 16	-15433	0.24	273.8	3329.74	4595.77	3962.76	14.47	Si
SLV 15	-15900	0.24	273.8	3426.05	4706.11	4066.08	14.85	Si
SLV 14	-16346	0.24	273.8	3517.8	4811.53	4164.66	15.21	Si
SLV 13	-16813	0.24	273.8	3613.6	4921.9	4267.75	15.59	Si
SLV 12	-35351	0.24	273.8	7205.57	9251.61	8228.59	30.05	Si
SLV 11	-35653	0.24	273.8	7260.61	9321.32	8290.96	30.28	Si
SLV 10	-38395	0.24	273.8	7755.93	9955.23	8855.58	32.34	Si
SLV 9	-38696	0.24	273.8	7809.87	10024.98	8917.42	32.57	Si
SLV 8	-53266	0.24	273.8	10285.64	13365.48	11825.56	43.19	Si
SLV 7	-53568	0.24	273.8	10334.2	13433.87	11884.04	43.4	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeraia = -0.24 Wa = 0.08 Ta = 0.0271

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 1	-73266	-66072	-233	0.413	8238.4	0.971	6.17587	2.99128	Si
SLV 2	-72903	-65824	-233	0.414	8201.5	0.971	6.19967	2.99128	Si
SLV 3	-73051	-65813	-180	0.414	8216.5	0.971	6.20013	2.99128	Si
SLV 4	-72687	-65565	-179	0.416	8179.5	0.971	6.22412	2.99128	Si
SLV 5	-52795	-47983	-335	0.528	6154.8	0.962	7.96906	3.69946	Si
SLV 6	-52561	-47823	-335	0.529	6130.9	0.962	7.99757	3.69946	Si
SLV 7	-52078	-47119	-158	0.536	6081.8	0.962	8.10388	3.69946	Si
SLV 8	-51843	-46959	-158	0.538	6058	0.962	8.13333	3.69946	Si
SLV 9	-35089	-32257	-370	0.723	4355.3	0.948	11.07913	3.69946	Si
SLV 10	-34854	-32097	-370	0.727	4331.5	0.948	11.1398	3.69946	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	4.728	SLU 83	Si
V_SLU	8.48	SLU 84	Si
PF_SLV	2.575	SLV 13	Si
V_SLV	5.323	SLV 8	Si
PFFP_SLV	14.473	SLV 16	Si
R_SLV	2.065	SLV 1	Si

Maschio 2

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-24.653	5.876	-24.653	2.271	L2	L4	3.605	0.45	2.7	2.7	2.7			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	t0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 78	-1.59	-7206.09	-45494	-0.0000535	0.0004492	0.0035	3.605	63181.92	76832.58	76832.58	10.66	No	Si
SLU 78	0.61	-18055.94	-36002	-0.0000615	0.0004492	0.0035	3.605	53106.97	64178.45	64178.45	3.55	No	Si
SLU 76	-1.59	-7123.3	-44747	-0.0000526	0.0004492	0.0035	3.605	62448.37	75850.43	75850.43	10.65	No	Si
SLU 76	0.61	-17775.98	-35350	-0.0000604	0.0004492	0.0035	3.605	52355.5	63268.13	63268.13	3.56	No	Si
SLU 83	-1.59	-7348.56	-46235	-0.0000544	0.0004492	0.0035	3.605	63899.97	77766.54	77766.54	10.58	No	Si
SLU 83	0.61	-18148.98	-36359	-0.000062	0.0004492	0.0035	3.605	53515.81	64677.68	64677.68	3.56	No	Si
SLU 84	-1.59	-7399.37	-46269	-0.0000545	0.0004492	0.0035	3.605	63931.9	77807.45	77807.45	10.52	No	Si
SLU 84	0.61	-18270.94	-36583	-0.0000624	0.0004492	0.0035	3.605	53770.33	64989.92	64989.92	3.56	No	Si
SLU 77	-1.59	-7155.29	-45461	-0.0000533	0.0004492	0.0035	3.605	63149.53	76788.92	76788.92	10.73	No	Si





Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 77	0.61	-17933.98	-35778	-0.0000611	0.0004492	0.0035	3.605	52850.09	63866.22	63866.22	3.56	No	Si
SLU 59	-1.59	-6427.47	-41526	-0.0000483	0.0004492	0.0035	3.605	59169.59	71616.14	71616.14	11.14	No	Si
SLU 59	0.61	-16574.46	-32352	-0.0000555	0.0004492	0.0035	3.605	48796.89	59077.87	59077.87	3.56	No	Si
SLU 57	-1.59	-6480.31	-41809	-0.0000487	0.0004492	0.0035	3.605	59465.28	71988.23	71988.23	11.11	No	Si
SLU 57	0.61	-16688.41	-32645	-0.000056	0.0004492	0.0035	3.605	49151.31	59486.72	59486.72	3.56	No	Si
SLU 80	-1.59	-7153.25	-45211	-0.0000531	0.0004492	0.0035	3.605	62905.2	76460.48	76460.48	10.69	No	Si
SLU 80	0.61	-17942	-35709	-0.000061	0.0004492	0.0035	3.605	52770.41	63769.6	63769.6	3.55	No	Si
SLU 75	-1.59	-7142.28	-45008	-0.0000529	0.0004492	0.0035	3.605	62705.7	76193.42	76193.42	10.67	No	Si
SLU 75	0.61	-17808.61	-35494	-0.0000606	0.0004492	0.0035	3.605	52521.84	63468.83	63468.83	3.56	No	Si
SLU 79	-1.59	-7102.44	-45178	-0.000053	0.0004492	0.0035	3.605	62872.64	76416.82	76416.82	10.76	No	Si
SLU 79	0.61	-17820.04	-35486	-0.0000606	0.0004492	0.0035	3.605	52512.34	63457.36	63457.36	3.56	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche,  $\gamma M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 16	-1.59	-2905.86	-12739	-0.0000156	0.0006738	0.0035	3.605		29412.95	29412.95	10.12		Si
SLV 16	0.61	-7785.61	-5864	-0.0000263	0.0006738	0.0035	2.884		17764.61	17764.61	2.28		Si
SLV 14	-1.59	-378.67	-12322	-0.0000115	0.0006738	0.0035	3.605		28716.54	28716.54	75.83		Si
SLV 14	0.61	-11952.69	-4589	-0.000247	0.0006738	0.0035	2.884		15567.27	15567.27	1.3		Si
SLV 10	-1.59	141.5	-25173	-0.0000227	0.0006738	0.0035	3.605		43773.54	43773.54	309.35		Si
SLV 10	0.61	-18385.54	-16584	-0.0000521	0.0006738	0.0035	2.884		35794.03	35794.03	1.95		Si
SLV 5	-1.59	-1429.68	-36343	-0.0000349	0.0006738	0.0035	3.605		66753.98	66753.98	46.69		Si
SLV 5	0.61	-20257.77	-27606	-0.0000565	0.0006738	0.0035	3.605		53437.04	53437.04	2.64		Si
SLD 9	-1.59	-2379.86	-28619	-0.0000293	0.0006738	0.0035	3.605		54980.99	54980.99	23.1		Si
SLD 9	0.61	-15345.67	-20634	-0.0000423	0.0006738	0.0035	3.605		42326.14	42326.14	2.76		Si
SLV 13	-1.59	653.8	-11795	-0.0000114	0.0006738	0.0035	3.605		21859.61	21859.61	33.43		Si
SLV 13	0.61	-13016.11	-3506	-0.0003268	0.0006738	0.0035	2.884		13700.01	13700.01	1.05		Si
SLV 9	-1.59	808.35	-24832	-0.0000234	0.0006738	0.0035	3.605		43236.12	43236.12	53.49		Si
SLV 9	0.61	-19072.37	-15884	-0.0000576	0.0006738	0.0035	2.884		34640.3	34640.3	1.82		Si
SLD 13	-1.59	-2484.4	-23051	-0.0000243	0.0006738	0.0035	3.605		46193.65	46193.65	18.59		Si
SLD 13	0.61	-12686.2	-15361	-0.0000339	0.0006738	0.0035	3.605		33776.41	33776.41	2.66		Si
SLV 6	-1.59	-2096.52	-36684	-0.0000363	0.0006738	0.0035	3.605		67255.52	67255.52	32.08		Si
SLV 6	0.61	-19570.93	-28305	-0.0000557	0.0006738	0.0035	3.605		54503.16	54503.16	2.78		Si
SLV 15	-1.59	-1873.39	-12211	-0.0000136	0.0006738	0.0035	3.605		28530.98	28530.98	15.23		Si
SLV 15	0.61	-8849.03	-4781	-0.0001007	0.0006738	0.0035	2.884		15898.19	15898.19	1.8		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 83	-1.59	-7348.56	-46235	-36988	7996	3.605	3.605	-22801	10833	17574	88358	58300	18386	76685	No	9.59	Si
SLU 83	0.61	-18148.98	-36359	-29087	6397	3.605	3.605	-17930	10724	17397	88358	58300	18386	76685	No	11.99	Si
SLU 74	-1.59	-7091.48	-44974	-35980	7751	3.605	3.605	-22179	10833	17574	88358	58300	18386	76685	No	9.89	Si
SLU 74	0.61	-17686.66	-35271	-28217	6168	3.605	3.605	-17393	10652	17281	88358	58300	18386	76685	No	12.43	Si
SLU 75	-1.59	-7142.28	-45008	-36006	7609	3.605	3.605	-22195	10833	17574	88358	58300	18386	76685	No	10.08	Si
SLU 75	0.61	-17808.61	-35494	-28395	6042	3.605	3.605	-17504	10667	17305	88358	58300	18386	76685	No	12.69	Si
SLU 78	-1.59	-7206.09	-45494	-36395	7701	3.605	3.605	-22435	10833	17574	88358	58300	18386	76685	No	9.96	Si
SLU 78	0.61	-18055.94	-36002	-28801	6113	3.605	3.605	-17754	10701	17359	88358	58300	18386	76685	No	12.54	Si
SLU 84	-1.59	-7399.37	-46269	-37015	7854	3.605	3.605	-22817	10833	17574	88358	58300	18386	76685	No	9.76	Si
SLU 84	0.61	-18270.94	-36583	-29266	6271	3.605	3.605	-18040	10739	17421	88358	58300	18386	76685	No	12.23	Si
SLU 79	-1.59	-7102.44	-45178	-36142	7819	3.605	3.605	-22279	10833	17574	88358	58300	18386	76685	No	9.81	Si
SLU 79	0.61	-17820.04	-35486	-28389	6221	3.605	3.605	-17500	10667	17304	88358	58300	18386	76685	No	12.33	Si
SLU 77	-1.59	-7155.29	-45461	-36368	7843	3.605	3.605	-22419	10833	17574	88358	58300	18386	76685	No	9.78	Si
SLU 77	0.61	-17933.98	-35778	-28623	6239	3.605	3.605	-17644	10686	17335	88358	58300	18386	76685	No	12.29	Si
SLU 82	-1.59	-7335.56	-45782	-36626	7762	3.605	3.605	-22577	10833	17574	88358	58300	18386	76685	No	9.88	Si
SLU 82	0.61	-18023.62	-36075	-28860	6200	3.605	3.605	-17790	10705	17367	88358	58300	18386	76685	No	12.37	Si
SLU 80	-1.59	-7153.25	-45211	-36169	7677	3.605	3.605	-22295	10833	17574	88358	58300	18386	76685	No	9.99	Si
SLU 80	0.61	-17942	-35709	-28567	6095	3.605	3.605	-17610	10681	17328	88358	58300	18386	76685	No	12.58	Si
SLU 81	-1.59	-7284.76	-45749	-36599	7904	3.605	3.605	-22561	10833	17574	88358	58300	18386	76685	No	9.7	Si
SLU 81	0.61	-17901.66	-35851	-28681	6326	3.605	3.605	-17680	10691	17343	88358	58300	18386	76685	No	12.12	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 5	-1.59	-1429.68	-36343	-29074	15891	3.605	3.605	-17922	16084	26093	88358	87449	18386	105835		6.66	Si
SLV 5	0.61	-20257.77	-27606	-22084	12565	3.605	3.206	-15411	15582	22480	88358	87449	18386	105835		8.42	Si
SLV 10	-1.59	141.5	-25173	-20138	14035	3.605	3.605	-12414	14983	24306	88358	87449	18386	105835		7.54	Si
SLV 10	0.61	-18385.54	-16584	-13267	11046	2.884	2.0816	0	0	0	88358	69960	14708	84668		7.67	Si
SLV 1	-1.59	-6806.29	-50165	-40132	10231	3.605	3.605	-24739	16250	26362	88358	87449	18386	105835		10.34	Si
SLV 1	0.61	-16967.43	-42576	-34061	8115	3.605	3.605	-20996	16250	26362	88358	87449	18386	105835		13.04	Si
SLD 9	-1.59	-2379.86	-28619	-22895	9805	3.605	3.605	-14113	15323	24857	88358	87449	18386	105835		10.79	Si
SLD 9	0.61	-15345.67	-20634	-16507	7739	3.605	3.1764	-11606	14821	21185	88358	87449	18386	105835		13.68	Si
SLD 10	-1.59	-2671.21	-28767	-23014	9239	3.605	3.605	-14186	15337	24881	88358	87449	18386	105835		11.46	Si
SLD 10	0.61	-15045.58	-20939	-16752	7272	3.605	3.2519	-11493	14799	21656	88358	87449	18386	105835		14.55	Si
SLV 6	-1.59	-2096.52	-36684	-29347	14595	3.605	3.605	-18090	16118	26148	88358	87449	18386	105835		7.25	Si
SLV 6	0.61	-19570.93	-28305	-22644	11496	3.605	3.3332	-15188	15538	23306	88358	87449	18386	105835		9.21	Si
SLV 13	-1.59	653.8	-11795	-9436	8365	3.605	3.605	-5816	13663	22165	88358	87449	18386	105835		12.65	Si
SLV 13	0.61	-13016.11	-3506	-2805	6615	2.884	0	0	0	0	88358	69960	14708	84668		12.8	Si
SLV 9	-1.59	808.35	-24832	-19865	15331	3.605	3.605	-12246	14949	24251	88358	87449	18386	105835		6.9	Si
SLV 9	0.61	-19072.37	-15884	-12708	12115	2.884	1.8054	0	0	0	88358	69960	14708	84668		6.99	Si
SLD 5	-1.59	-3336.46	-33537	-26830	10042	3.605	3.605	-16539	15808	25644	88358	87449	18386	105835		10.54	Si
SLD 5	0.61	-15849.65	-25643	-20514	7931	3.605	3.5532	-12645	15029	24031	88358	87449	18386	105835		13.34	Si
SLD 6	-1.59	-3627.81	-33686	-26949	9476	3.605	3.605	-16612	15822	25668	88358	87449	18386	105835		11.17	Si
SLD 6	0.61	-15549.56	-25948	-20759	7464	3.605	3.605	-12796	15059	24430	88358	87449	18386	105835		14.18	Si

&lt;



Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 13	-6348	0.24	216.7	1397.82	2230.23	1814.02	8.37	Si
SLV 14	-7355	0.24	216.7	1613.89	2470.91	2042.4	9.43	Si
SLV 15	-7647	0.24	216.7	1676.25	2540.57	2108.41	9.73	Si
SLV 16	-8653	0.24	216.7	1890.34	2780.88	2335.61	10.78	Si
SLV 9	-18310	0.24	216.7	3866.12	5059.14	4462.63	20.59	Si
SLV 10	-18961	0.24	216.7	3994.08	5211.4	4602.74	21.24	Si
SLV 11	-22639	0.24	216.7	4705.92	6070.74	5388.33	24.87	Si
SLV 12	-23289	0.24	216.7	4829.62	6221.93	5525.78	25.5	Si
SLV 5	-29710	0.24	216.7	6016.7	7712.69	6864.7	31.68	Si
SLV 6	-30360	0.24	216.7	6133.44	7863.13	6998.29	32.29	Si

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeraia = -0.24 Wa = 0.08 Ta = 0.0271

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 4	-44908	-51110	-174	0.501	5189	0.964	7.5515	2.99128	Si
SLV 2	-44228	-50693	-202	0.506	5119.8	0.964	7.63525	2.99128	Si
SLV 3	-43886	-50582	-166	0.51	5085	0.964	7.69396	2.99128	Si
SLV 1	-43206	-50165	-194	0.516	5015.8	0.963	7.78169	2.99128	Si
SLV 8	-31672	-38073	-164	0.657	3843.1	0.953	10.0113	3.69946	Si
SLV 7	-31012	-37732	-158	0.668	3776	0.952	10.18655	3.69946	Si
SLV 6	-29406	-36684	-255	0.693	3612.9	0.95	10.59253	3.69946	Si
SLV 5	-28746	-36343	-250	0.705	3545.9	0.95	10.7925	3.69946	Si
SLV 12	-19802	-26562	-183	0.942	2639.5	0.935	14.64198	3.69946	Si
SLV 11	-19142	-26221	-178	0.967	2572.8	0.934	15.04935	3.69946	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.554	SLU 80	Si
V_SLU	9.59	SLU 83	Si
PF_SLV	1.053	SLV 13	Si
V_SLV	6.66	SLV 5	Si
PFFP_SLV	8.371	SLV 13	Si
R_SLV	2.525	SLV 4	Si

## Maschio 3

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-22.763	5.876	-24.653	5.876	L2	L4	1.89	0.45	2.7	2.7	2.7			

#### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau 0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

#### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica

									elim,conv / e_CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma F_d$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon m$	$\epsilon m_{-}$	$\epsilon m_{+}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 68	0.41	-76.23	-20385	-0.0000386	0.0003743	0.0035	1.89	14728.69	16742.07	16742.07	219.63	No	Si
SLU 68	0.81	1608.81	-18949	-0.0000452	0.0003743	0.0035	1.89	13988.13	15084.67	15084.67	9.38	No	Si
SLU 51	0.41	-81.94	-18482	-0.0000348	0.0003743	0.0035	1.89	13737.5	15534.85	15534.85	189.59	No	Si
SLU 51	0.81	1501.22	-17074	-0.0000407	0.0003743	0.0035	1.89	12953.39	13724.5	13724.5	9.14	No	Si
SLU 46	0.41	-78.85	-18349	-0.0000346	0.0003743	0.0035	1.89	13665.55	15449.31	15449.31	195.93	No	Si
SLU 46	0.81	1488.11	-16949	-0.0000404	0.0003743	0.0035	1.89	12881.62	13633.42	13633.42	9.16	No	Si
SLU 2	0.41	20.99	-14225	-0.0000262	0.0003743	0.0035	1.89	11234.45	11679.22	11679.22	556.31	No	Si
SLU 2	0.81	1268.33	-13120	-0.0000316	0.0003743	0.0035	1.89	10520.04	10901.33	10901.33	8.6	No	Si
SLU 9	0.41	-53.81	-14913	-0.0000278	0.0003743	0.0035	1.89	11665.86	13125.42	13125.42	243.91	No	Si
SLU 9	0.81	1213.82	-13808	-0.0000326	0.0003743	0.0035	1.89	10967.86	11384.46	11384.46	9.38	No	Si
SLU 7	0.41	-48.99	-15063	-0.000028	0.0003743	0.0035	1.89	11758.47	13232.72	13232.72	270.13	No	Si
SLU 7	0.81	1230.12	-13949	-0.0000329	0.0003743	0.0035	1.89	11058.13	11483.66	11483.66	9.34	No	Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 44	0.41	-7.13	-17794	-0.000033	0.0003743	0.0035	1.89	13359.69	15087.46	15087.46	2114.87	No	Si
SLU 44	0.81	1555.73	-16386	-0.0000397	0.0003743	0.0035	1.89	12554.6	13225.2	13225.2	8.5	No	Si
SLU 47	0.41	-5.4	-18076	-0.0000336	0.0003743	0.0035	1.89	13516	15272.04	15272.04	2830.14	No	Si
SLU 47	0.81	1585.13	-16652	-0.0000404	0.0003743	0.0035	1.89	12709.88	13417.66	13417.66	8.46	No	Si
SLU 5	0.41	22.73	-14508	-0.0000268	0.0003743	0.0035	1.89	11412.76	11879.38	11879.38	522.59	No	Si
SLU 5	0.81	1297.73	-13386	-0.0000323	0.0003743	0.0035	1.89	10694.26	11087.55	11087.55	8.54	No	Si
SLU 49	0.41	-77.11	-18632	-0.0000351	0.0003743	0.0035	1.89	13818.44	15630.59	15630.59	202.69	No	Si
SLU 49	0.81	1517.52	-17215	-0.0000411	0.0003743	0.0035	1.89	13033.64	13827	13827	9.11	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche,  $\gamma M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 10	0.41	385.52	-14594	-0.0000287	0.0005615	0.0035	1.89		12715.83	12715.83	32.98		Si
SLV 10	0.81	2463.71	-12934	-0.0000377	0.0005615	0.0035	1.89		11456.22	11456.22	4.65		Si
SLV 14	0.41	-2824.89	-12305	-0.0000387	0.0005615	0.0035	1.89		11608.46	11608.46	4.11		Si
SLV 14	0.81	414.41	-10223	-0.0000208	0.0005615	0.0035	1.89		9250.34	9250.34	22.32		Si
SLV 15	0.41	-3354.03	-11859	-0.0000409	0.0005615	0.0035	1.89		11255.12	11255.12	3.36		Si
SLV 15	0.81	-607.29	-10199	-0.0000218	0.0005615	0.0035	1.89		9882.77	9882.77	16.27		Si
SLV 16	0.41	-3792.89	-12524	-0.0000448	0.0005615	0.0035	1.89		11781.87	11781.87	3.11		Si
SLV 16	0.81	-681.93	-10627	-0.0000231	0.0005615	0.0035	1.89		10238.07	10238.07	15.01		Si
SLV 6	0.41	2102.71	-16875	-0.0000431	0.0005615	0.0035	1.89		14294.69	14294.69	6.8		Si
SLV 6	0.81	3112.6	-15725	-0.0000469	0.0005615	0.0035	1.89		13498.6	13498.6	4.34		Si
SLV 5	0.41	2386.15	-16446	-0.000044	0.0005615	0.0035	1.89		13996.95	13996.95	5.87		Si
SLV 5	0.81	3160.81	-15449	-0.0000467	0.0005615	0.0035	1.89		13307.86	13307.86	4.21		Si
SLV 12	0.41	-2841.13	-15323	-0.0000445	0.0005615	0.0035	1.89		13989.5	13989.5	4.92		Si
SLV 12	0.81	-1190.74	-14279	-0.0000328	0.0005615	0.0035	1.89		13176.26	13176.26	11.07		Si
SLV 13	0.41	-2386.03	-11640	-0.0000348	0.0005615	0.0035	1.89		11082.07	11082.07	4.64		Si
SLV 13	0.81	489.05	-9795	-0.0000204	0.0005615	0.0035	1.89		8892.97	8892.97	18.18		Si
SLV 1	0.41	3337.91	-19245	-0.0000551	0.0005615	0.0035	1.89		15948.23	15948.23	4.78		Si
SLV 1	0.81	2652	-19101	-0.0000507	0.0005615	0.0035	1.89		15847.41	15847.41	5.98		Si
SLV 9	0.41	668.97	-14164	-0.0000296	0.0005615	0.0035	1.89		12406.52	12406.52	18.55		Si
SLV 9	0.81	2511.92	-12657	-0.0000375	0.0005615	0.0035	1.89		11234.44	11234.44	4.47		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 76	0.41	-190.12	-22804	-20270	-5867	1.89	1.89	-23833	10122	8609	30925	25468	4820	30287	No	5.16	Si
SLU 76	0.81	1585.06	-21387	-19010	-6045	1.89	1.89	-22352	9925	8441	30925	25468	4820	30287	No	5.01	Si
SLU 75	0.41	-263.57	-23077	-20513	-5752	1.89	1.89	-24119	10160	8641	30925	25468	4820	30287	No	5.27	Si
SLU 75	0.81	1488.05	-21684	-19274	-5931	1.89	1.89	-22662	9966	8476	30925	25468	4820	30287	No	5.11	Si
SLU 82	0.41	-318.95	-23682	-21051	-5670	1.89	1.89	-24751	10245	8713	30925	25468	4820	30287	No	5.34	Si
SLU 82	0.81	1432.17	-22322	-19842	-5851	1.89	1.89	-23330	10055	8552	30925	25468	4820	30287	No	5.18	Si
SLU 55	0.41	-119.28	-20495	-18218	-5635	1.89	1.89	-21421	9801	8335	30925	25468	4820	30287	No	5.37	Si
SLU 55	0.81	1561.38	-19090	-16969	-5798	1.89	1.89	-19951	9605	8169	30925	25468	4820	30287	No	5.22	Si
SLU 84	0.41	-317.21	-23964	-21302	-5778	1.89	1.89	-25046	10284	8746	30925	25468	4820	30287	No	5.24	Si
SLU 84	0.81	1461.57	-22588	-20078	-5961	1.89	1.89	-23607	10092	8583	30925	25468	4820	30287	No	5.08	Si
SLU 73	0.41	-191.86	-22522	-20019	-5759	1.89	1.89	-23538	10083	8575	30925	25468	4820	30287	No	5.26	Si
SLU 73	0.81	1555.66	-21121	-18774	-5934	1.89	1.89	-22074	9888	8409	30925	25468	4820	30287	No	5.1	Si
SLU 80	0.41	-266.66	-23210	-20631	-5809	1.89	1.89	-24257	10179	8657	30925	25468	4820	30287	No	5.21	Si
SLU 80	0.81	1501.15	-21809	-19386	-5989	1.89	1.89	-22793	9984	8491	30925	25468	4820	30287	No	5.06	Si
SLU 78	0.41	-261.84	-23360	-20764	-5859	1.89	1.89	-24414	10200	8675	30925	25468	4820	30287	No	5.17	Si
SLU 78	0.81	1517.45	-21949	-19511	-6041	1.89	1.89	-22940	10003	8508	30925	25468	4820	30287	No	5.01	Si
SLU 68	0.41	-76.23	-20385	-18120	-5689	1.89	1.89	-21305	9785	8322	30925	25468	4820	30287	No	5.32	Si
SLU 68	0.81	1608.81	-18949	-16843	-5852	1.89	1.89	-19804	9585	8152	30925	25468	4820	30287	No	5.18	Si
SLU 70	0.41	-147.95	-20940	-18614	-5681	1.89	1.89	-21886	9863	8388	30925	25468	4820	30287	No	5.33	Si
SLU 70	0.81	1541.2	-19512	-17344	-5849	1.89	1.89	-20392	9663	8219	30925	25468	4820	30287	No	5.18	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 16	0.41	-1754.45	-14445	-12840	-6948	1.89	1.89	-15097	13436	11427	30925	38202	4820	42353		6.1	Si
SLD 16	0.81	269.52	-13048	-11599	-6838	1.89	1.89	-13637	13144	11179	30925	38202	4820	42105		6.16	Si
SLV 12	0.41	-2841.13	-15323	-13620	-9306	1.89	1.89	-16014	13620	11583	30925	38202	4820	42509		4.57	Si
SLV 12	0.81	-1190.74	-14279	-12693	-9227	1.89	1.89	-14924	13401	11398	30925	38202	4820	42323		4.59	Si
SLV 13	0.41	-2386.03	-11640	-10347	-7452	1.89	1.89	-12165	12850	10929	30925	38202	4820	41854		5.62	Si
SLV 13	0.81	489.05	-9795	-8707	-7059	1.89	1.89	-10238	12464	10601	30925	38202	4820	41526		5.88	Si
SLV 14	0.41	-2824.89	-12305	-10938	-8921	1.89	1.89	-12860	12989	11047	30925	38202	4820	41972		4.7	Si
SLV 14	0.81	414.41	-10223	-9087	-8531	1.89	1.89	-10685	12554	10677	30925	38202	4820	41602		4.88	Si
SLV 11	0.41	-2557.69	-14893	-13238	-8358	1.89	1.89	-15565	13530	11507	30925	38202	4820	42432		5.08	Si
SLV 11	0.81	-1142.53	-14003	-12447	-8276	1.89	1.89	-14635	13344	11349	30925	38202	4820	42274		5.11	Si
SLV 15	0.41	-3354.03	-11859	-10541	-9430	1.89	1.89	-12394	12895	10968	30925	38202	4820	41893		4.44	Si
SLV 15	0.81	-607.29	-10199	-9066	-9010	1.89	1.89	-10660	12549	10673	30925	38202	4820	41598		4.62	Si
SLD 12	0.41	-1356.38	-15630	-13893	-6291	1.89	1.89	-16336	13684	11638	30925	38202	4820	42564		6.77	Si
SLD 12	0.81	42.49	-14598	-12976	-6326	1.89	1.89	-15257	13468	11455	30925	38202	4820	42380		6.7	Si
SLD 15	0.41	-1566	-14159	-12586	-6317	1.89	1.89	-14798	13376	11377	30925	38202	4820	42302		6.7	Si
SLD 15	0.81	301.57	-12865	-11435	-6206	1.89	1.89	-13445	13106	11146	30925	38202	4820	42072		6.78	Si
SLV 8	0.41	-1123.95	-17604	-15648	-6186	1.89	1.89	-18399	14096	11989	30925	38202	4820	42914		6.94	Si
SLV 8	0.81	-541.86	-17071	-15174	-6424	1.89	1.89	-17842	13985	11894	30925	38202	4820	42820		6.67	Si
SLV 16	0.41	-3792.89	-12524	-11132	-10899	1.89	1.89	-13089	13034	11086	30925	38202	4820	42011		3.85	Si
SLV 16	0.81	-681.93	-10627	-9446	-10482	1.89	1.89	-11107	12638	10749	30925	38202	4820	41674		3.98	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota -0.24 Wa 0.08 denominatore 8  $\gamma M = 2$

Comb.		Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 13	179667	0.24	9637	-8196	117.82	1727.74	14.66	Si
SLV 15	179667	0.24	9970	-8480	117.82	1783.4	15.14	Si



Comb.	fd	Sa	$\alpha_0$	N	M	Mc	Coeff.s.	Verifica
SLV 14	179667	0.24	10284	-8746	117.82	1835.43	15.58	Si
SLV 16	179667	0.24	10618	-9030	117.82	1890.55	16.05	Si
SLV 9	179667	0.24	13828	-11760	117.82	2406.51	20.43	Si
SLV 10	179667	0.24	14246	-12116	117.82	2471.79	20.98	Si
SLV 11	179667	0.24	14940	-12707	117.82	2579.29	21.89	Si
SLV 12	179667	0.24	15358	-13062	117.82	2643.41	22.44	Si
SLV 5	179667	0.24	17655	-15016	117.82	2988	25.36	Si
SLV 6	179667	0.24	18073	-15371	117.82	3049.27	25.88	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeraia = -0.24 Wa = 0.08 Ta = 0.0271

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	a0*	aLim	Verifica
SLV 8	-15145	-15309	-532	0.679	1866.6	0.95	10.39224	3.69946	Si
SLV 7	-14796	-15047	-521	0.692	1831.1	0.949	10.60123	3.69946	Si
SLV 6	-14916	-12982	-431	0.693	1843.4	0.949	10.6131	3.69946	Si
SLV 5	-14567	-12720	-419	0.707	1807.9	0.948	10.82989	3.69946	Si
SLV 4	-17663	-18977	-665	0.596	2122.3	0.955	9.07495	2.99128	Si
SLV 2	-17594	-18279	-634	0.6	2115.3	0.955	9.12712	2.99128	Si
SLV 3	-17121	-18572	-647	0.612	2067.3	0.954	9.31969	2.99128	Si
SLV 1	-17052	-17874	-617	0.615	2060.3	0.954	9.37431	2.99128	Si
SLV 12	-13001	-11529	-391	0.773	1649.1	0.944	11.90431	3.69946	Si
SLV 11	-12652	-11267	-380	0.791	1613.6	0.943	12.18221	3.69946	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	8.465	SLU 47	Si
V_SLU	5.011	SLU 76	Si
PF_SLV	3.106	SLV 16	Si
V_SLV	3.854	SLV 16	Si
PFFP_SLV	14.665	SLV 13	Si
R_SLV	2.809	SLV 8	Si

## Maschio 4

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.sx	a.s.dx
-19.618	5.876	-21.763	5.876	L2	L4	2.145	0.45	2.7	2.7	2.7			

#### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau_0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

#### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	1900000000	0.015	Acciaio

#### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche,  $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 49	0.41	-7119.85	-25602	-0.0000776	0.0003743	0.0035	2.145	20304.69	23359.59	23359.59	3.28	No	Si
SLU 49	0.81	-2005	-23220	-0.0000479	0.0003743	0.0035	2.145	19019.05	21743.9	21743.9	10.84	No	Si
SLU 47	0.41	-7094.96	-24902	-0.0000761	0.0003743	0.0035	2.145	19939.63	22901.15	22901.15	3.23	No	Si
SLU 47	0.81	-2109.91	-22547	-0.0000472	0.0003743	0.0035	2.145	18633.85	21269.75	21269.75	10.08	No	Si
SLU 44	0.41	-6981.45	-24493	-0.0000748	0.0003743	0.0035	2.145	19721.75	22635.63	22635.63	3.24	No	Si
SLU 44	0.81	-2068.07	-22168	-0.0000463	0.0003743	0.0035	2.145	18411.97	21003.78	21003.78	10.16	No	Si
SLU 52	0.41	-7506.7	-27908	-0.0000842	0.0003743	0.0035	2.145	21431.55	24848.01	24848.01	3.31	No	Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 52	0.81	-2121.67	-25425	-0.0000525	0.0003743	0.0035	2.145	20213.3	23243.16	23243.16	10.96	No	Si
SLU 68	0.41	-7635.81	-28121	-0.0000853	0.0003743	0.0035	2.145	21529.5	24977.35	24977.35	3.27	No	Si
SLU 68	0.81	-2188.29	-25588	-0.0000531	0.0003743	0.0035	2.145	20297.82	23350.8	23350.8	10.67	No	Si
SLU 65	0.41	-7522.3	-27713	-0.0000839	0.0003743	0.0035	2.145	21340.33	24727.88	24727.88	3.29	No	Si
SLU 65	0.81	-2146.45	-25209	-0.0000522	0.0003743	0.0035	2.145	20101.14	23101.82	23101.82	10.76	No	Si
SLU 51	0.41	-7067.41	-25396	-0.000077	0.0003743	0.0035	2.145	20198.66	23224.62	23224.62	3.29	No	Si
SLU 51	0.81	-1982.24	-23030	-0.0000474	0.0003743	0.0035	2.145	18911.52	21609.9	21609.9	10.9	No	Si
SLU 76	0.41	-8161.06	-31536	-0.0000949	0.0003743	0.0035	2.145	22968.85	26869.95	26869.95	3.29	No	Si
SLU 76	0.81	-2241.89	-28845	-0.0000593	0.0003743	0.0035	2.145	21855.99	25418.41	25418.41	11.34	No	Si
SLU 46	0.41	-7006.34	-25193	-0.0000763	0.0003743	0.0035	2.145	20093.05	23091.69	23091.69	3.3	No	Si
SLU 46	0.81	-1963.15	-22840	-0.000047	0.0003743	0.0035	2.145	18802.74	21475.66	21475.66	10.94	No	Si
SLU 55	0.41	-7620.21	-28317	-0.0000856	0.0003743	0.0035	2.145	21618.98	25096.25	25096.25	3.29	No	Si
SLU 55	0.81	-2163.51	-25804	-0.0000533	0.0003743	0.0035	2.145	20408.19	23492.83	23492.83	10.86	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche,  $\gamma M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLD 16	0.41	-8587.36	-24060	-0.0000792	0.0005615	0.0035	2.145		23759.49	23759.49	2.77		Si
SLD 16	0.81	-2506.19	-22543	-0.000048	0.0005615	0.0035	2.145		22522.26	22522.26	8.99		Si
SLV 12	0.41	-9109.87	-25921	-0.0000851	0.0005615	0.0035	2.145		25234.35	25234.35	2.77		Si
SLV 12	0.81	-2642.13	-25583	-0.0000538	0.0005615	0.0035	2.145		24973.24	24973.24	9.45		Si
SLV 14	0.41	-11832.59	-25654	-0.0001006	0.0005615	0.0035	2.145		25028.2	25028.2	2.12		Si
SLV 14	0.81	-3810.9	-23783	-0.0000562	0.0005615	0.0035	2.145		23532.88	23532.88	6.18		Si
SLV 16	0.41	-12653.91	-27146	-0.0001079	0.0005615	0.0035	2.145		26180.31	26180.31	2.07		Si
SLV 16	0.81	-4081.45	-26137	-0.0000615	0.0005615	0.0035	2.145		25400.78	25400.78	6.22		Si
SLD 15	0.41	-8126.51	-23344	-0.0000757	0.0005615	0.0035	2.145		23173.83	23173.83	2.85		Si
SLD 15	0.81	-2304.83	-21857	-0.0000459	0.0005615	0.0035	2.145		21966.04	21966.04	9.53		Si
SLD 13	0.41	-7772.25	-22698	-0.0000729	0.0005615	0.0035	2.145		22648.2	22648.2	2.91		Si
SLD 13	0.81	-2183.9	-20838	-0.0000436	0.0005615	0.0035	2.145		21115.23	21115.23	9.67		Si
SLD 14	0.41	-8233.11	-23415	-0.0000764	0.0005615	0.0035	2.145		23231.7	23231.7	2.82		Si
SLD 14	0.81	-2385.26	-21524	-0.0000457	0.0005615	0.0035	2.145		21694.41	21694.41	9.1		Si
SLV 15	0.41	-11580.66	-25477	-0.0000984	0.0005615	0.0035	2.145		24891.4	24891.4	2.15		Si
SLV 15	0.81	-3612.52	-24539	-0.0000566	0.0005615	0.0035	2.145		24152	24152	6.69		Si
SLV 13	0.41	-10759.34	-23986	-0.0000913	0.0005615	0.0035	2.145		23698.59	23698.59	2.2		Si
SLV 13	0.81	-3341.96	-22185	-0.0000512	0.0005615	0.0035	2.145		22231.66	22231.66	6.65		Si
SLV 11	0.41	-8416.68	-24843	-0.0000798	0.0005615	0.0035	2.145		24397.29	24397.29	2.9		Si
SLV 11	0.81	-2339.26	-24551	-0.0000506	0.0005615	0.0035	2.145		24162.1	24162.1	10.33		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 81	0.41	-7920	-32807	-29162	-10916	2.145	2.145	-30212	10833	10457	30925	28904	5470	34374	No	3.15	Si
SLU 81	0.81	-1799.25	-30119	-26773	-11010	2.145	2.145	-27737	10643	10273	30925	28904	5470	34374	No	3.12	Si
SLU 80	0.41	-8133.51	-32031	-28472	-10626	2.145	2.145	-29497	10833	10457	30925	28904	5470	34374	No	3.23	Si
SLU 80	0.81	-2114.23	-29328	-26069	-10721	2.145	2.145	-27008	10545	10179	30925	28904	5470	34374	No	3.21	Si
SLU 79	0.41	-7921.92	-32161	-28587	-10797	2.145	2.145	-29616	10833	10457	30925	28904	5470	34374	No	3.18	Si
SLU 79	0.81	-1859.96	-29483	-26207	-10891	2.145	2.145	-27150	10565	10197	30925	28904	5470	34374	No	3.16	Si
SLU 77	0.41	-7974.36	-32366	-28770	-10831	2.145	2.145	-29806	10833	10457	30925	28904	5470	34374	No	3.17	Si
SLU 77	0.81	-1882.72	-29672	-26375	-10926	2.145	2.145	-27325	10588	10220	30925	28904	5470	34374	No	3.15	Si
SLU 74	0.41	-7860.85	-31958	-28407	-10723	2.145	2.145	-29429	10833	10457	30925	28904	5470	34374	No	3.21	Si
SLU 74	0.81	-1840.87	-29293	-26038	-10816	2.145	2.145	-26975	10541	10175	30925	28904	5470	34374	No	3.18	Si
SLU 82	0.41	-8131.6	-32678	-29047	-10744	2.145	2.145	-30093	10833	10457	30925	28904	5470	34374	No	3.2	Si
SLU 82	0.81	-2053.51	-29965	-26635	-10840	2.145	2.145	-27594	10624	10254	30925	28904	5470	34374	No	3.17	Si
SLU 84	0.41	-8245.11	-33086	-29410	-10853	2.145	2.145	-30469	10833	10457	30925	28904	5470	34374	No	3.17	Si
SLU 84	0.81	-2095.36	-30344	-26973	-10950	2.145	2.145	-27944	10670	10299	30925	28904	5470	34374	No	3.14	Si
SLU 75	0.41	-8072.45	-31828	-28292	-10551	2.145	2.145	-29310	10833	10457	30925	28904	5470	34374	No	3.26	Si
SLU 75	0.81	-2095.14	-29138	-25900	-10646	2.145	2.145	-26833	10522	10156	30925	28904	5470	34374	No	3.23	Si
SLU 83	0.41	-8033.51	-33216	-29525	-11025	2.145	2.145	-30588	10833	10457	30925	28904	5470	34374	No	3.12	Si
SLU 83	0.81	-1841.09	-30499	-27110	-11120	2.145	2.145	-28086	10689	10318	30925	28904	5470	34374	No	3.09	Si
SLU 78	0.41	-8185.96	-32237	-28655	-10660	2.145	2.145	-29686	10833	10457	30925	28904	5470	34374	No	3.22	Si
SLU 78	0.81	-2136.98	-29517	-26238	-10756	2.145	2.145	-27182	10569	10201	30925	28904	5470	34374	No	3.2	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	oN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 14	0.41	-11832.59	-25654	-22803	-17808	2.145	1.8338	-28045	16026	13224	30925	43356	5470	44150		2.48	Si
SLV 14	0.81	-3810.9	-23783	-21141	-17747	2.145	2.145	-21902	14797	14283	30925	43356	5470	45208		2.55	Si
SLD 16	0.41	-8587.36	-24060	-21387	-12069	2.145	2.145	-22157	14848	14332	30925	43356	5470	45257		3.75	Si
SLD 16	0.81	-2506.19	-22543	-20039	-12067	2.145	2.145	-20760	14569	14062	30925	43356	5470	44988		3.73	Si
SLD 14	0.41	-8233.11	-23415	-20813	-11961	2.145	2.145	-21562	14729	14217	30925	43356	5470	45143		3.77	Si
SLD 14	0.81	-2385.26	-21524	-19133	-11972	2.145	2.145	-19822	14381	13881	30925	43356	5470	44807		3.74	Si
SLV 12	0.41	-9109.87	-25921	-23041	-11370	2.145	2.145	-23870	15191	14663	30925	43356	5470	45588		4.01	Si
SLV 12	0.81	-2642.13	-25583	-22740	-11352	2.145	2.145	-23559	15128	14603	30925	43356	5470	45528		4.01	Si
SLV 10	0.41	-6372.13	-20948	-18621	-10487	2.145	2.145	-19291	14275	13779	30925	43356	5470	44704		4.26	Si
SLV 10	0.81	-1740.28	-17739	-15768	-10551	2.145	2.145	-16335	13684	13208	30925	43356	5470	44134		4.18	Si
SLV 16	0.41	-12653.91	-27146	-24129	-18073	2.145	1.8191	-29949	16250	13302	30925	43356	5470	44227		2.45	Si
SLV 16	0.81	-4081.45	-26137	-23233	-17988	2.145	2.145	-24069	15230	14701	30925	43356	5470	45627		2.54	Si
SLD 15	0.41	-8126.51	-23344	-20750	-11498	2.145	2.145	-21497	14716	14205	30925	43356	5470	45130		3.93	Si
SLD 15	0.81	-2304.83	-21857	-19429	-11494	2.145	2.145	-20128	14442	13940	30925	43356	5470	44866		3.9	Si
SLV 15	0.41	-11580.66	-25477	-22647	-16743	2.145	1.8539	-27424	15901	13266	30925	43356	5470	44191		2.64	Si
SLV 15	0.81	-3612.52	-24539	-21812	-16654	2.145	2.145	-22597	14936	14417	30925	43356	5470	45343		2.72	Si
SLD 13	0.41	-7772.25	-22698	-20176	-11390	2.145	2.145	-20903	14597	14090	30925	43356	5470	45015		3.95	Si
SLD 13	0.81	-2183.9	-20838	-18523	-11400	2.145	2.145	-19190	14255	13759	30925	43356	5470	44685		3.92	Si
SLV 13	0.41	-10759.34	-23986	-21321	-16478	2.145	1.8718	-25563	15529	13080	30925	43356	5470	44006		2.67	Si
SLV 13	0.81	-3341.96	-22185	-19720	-16413	2.145	2.145	-20430	14503	13999	30925	43356	5470	44924		2.74	Si



## Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota -0.24 Wa 0.08 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\alpha_0$	N	M	Mc	Coeff.s.	Verifica
SLV 1	179667	0.24	15947	-15393	133.71	3101.69	23.2	Si
SLV 3	179667	0.24	17468	-16861	133.71	3359.79	25.13	Si
SLV 2	179667	0.24	18015	-17389	133.71	3450.91	25.81	Si
SLV 5	179667	0.24	19010	-18349	133.71	3614.62	27.03	Si
SLV 4	179667	0.24	19536	-18857	133.71	3700.07	27.67	Si
SLV 6	179667	0.24	20345	-19638	133.71	3829.93	28.64	Si
SLV 9	179667	0.24	22842	-22049	133.71	4218.9	31.55	Si
SLV 7	179667	0.24	24081	-23244	133.71	4405.19	32.95	Si
SLV 10	179667	0.24	24178	-23338	133.71	4419.65	33.05	Si
SLV 8	179667	0.24	25416	-24533	133.71	4601.24	34.41	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

## Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = -0.24 Wa = 0.08 Ta = 0.0271

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	a0*	aLim	Verifica
SLV 12	-21669	-24996	-959	0.553	2573.7	0.958	8.39473	3.69946	Si
SLV 11	-20773	-23728	-898	0.574	2482.6	0.956	8.72405	3.69946	Si
SLV 8	-19710	-20843	-737	0.605	2374.5	0.955	9.21144	3.69946	Si
SLV 7	-18813	-19576	-676	0.63	2283.4	0.953	9.60813	3.69946	Si
SLV 16	-22192	-29619	-1203	0.533	2626.8	0.959	8.08581	2.99128	Si
SLV 15	-20804	-27657	-1108	0.564	2485.8	0.956	8.57581	2.99128	Si
SLV 14	-20470	-29132	-1175	0.568	2451.7	0.956	8.64322	2.99128	Si
SLV 10	-15929	-23372	-866	0.706	1990.6	0.947	10.83359	3.69946	Si
SLV 13	-19082	-27170	-1080	0.604	2310.8	0.954	9.21129	2.99128	Si
SLV 9	-15033	-22105	-805	0.742	1899.7	0.945	11.40675	3.69946	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

## Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.228	SLV 47	Si
V_SLV	3.091	SLV 83	Si
PF_SLV	2.069	SLV 16	Si
V_SLV	2.447	SLV 16	Si
PFFP_SLV	23.197	SLV 1	Si
R_SLV	2.269	SLV 12	Si

## Maschio 7

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.618	2.271	-19.618	4.851	L2	L4	2.58	0.3	2.7	2.7	2.7			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	$\tau_0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

## Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma_{F,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 77	-1.59	-7384.65	-79578	-0.000217	0.0004492	0.0035	2.58	16276.34	57975.48	57975.48	7.85	No	Si
SLU 77	0.41	7233.85	-76075	-0.0002054	0.0004492	0.0035	2.58	19195.26	56646.85	56646.85	7.83	No	Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 84	-1.59	-7292.5	-81380	-0.000222	0.0004492	0.0035	2.58	14645.31	58249.22	58249.22	7.99	No	Si
SLU 84	0.41	7243.68	-77876	-0.0002109	0.0004492	0.0035	2.58	17736.39	57132.4	57132.4	7.89	No	Si
SLU 76	-1.59	-7024.37	-78355	-0.0002109	0.0004492	0.0035	2.58	17334.05	57789.48	57789.48	8.23	No	Si
SLU 76	0.41	7062.27	-74851	-0.0002007	0.0004492	0.0035	2.58	20135.99	56316.94	56316.94	7.97	No	Si
SLU 78	-1.59	-7238.3	-79654	-0.0002163	0.0004492	0.0035	2.58	16209.78	57986.94	57986.94	8.01	No	Si
SLU 78	0.41	7215.54	-76150	-0.0002055	0.0004492	0.0035	2.58	19135.91	56667.19	56667.19	7.85	No	Si
SLU 83	-1.59	-7438.85	-81304	-0.0002228	0.0004492	0.0035	2.58	14715.42	58237.75	58237.75	7.83	No	Si
SLU 83	0.41	7262	-77801	-0.0002108	0.0004492	0.0035	2.58	17799.28	57112.06	57112.06	7.86	No	Si
SLU 74	-1.59	-7283.33	-78756	-0.0002138	0.0004492	0.0035	2.58	16991.51	57850.51	57850.51	7.94	No	Si
SLU 74	0.41	7123.03	-75253	-0.0002023	0.0004492	0.0035	2.58	19831.84	56425.19	56425.19	7.92	No	Si
SLU 75	-1.59	-7136.98	-78832	-0.0002131	0.0004492	0.0035	2.58	16926.65	57861.97	57861.97	8.11	No	Si
SLU 75	0.41	7104.72	-75328	-0.0002024	0.0004492	0.0035	2.58	19774.19	56445.53	56445.53	7.94	No	Si
SLU 80	-1.59	-7223.25	-79127	-0.0002146	0.0004492	0.0035	2.58	16671.61	57906.81	57906.81	8.02	No	Si
SLU 80	0.41	7185.31	-75623	-0.0002038	0.0004492	0.0035	2.58	19547.34	56525.05	56525.05	7.87	No	Si
SLU 81	-1.59	-7337.53	-80482	-0.0002195	0.0004492	0.0035	2.58	15469.31	58112.78	58112.78	7.92	No	Si
SLU 81	0.41	7151.17	-76978	-0.0002076	0.0004492	0.0035	2.58	18474.58	56890.39	56890.39	7.96	No	Si
SLU 79	-1.59	-7369.6	-79051	-0.0002153	0.0004492	0.0035	2.58	16737.08	57895.34	57895.34	7.86	No	Si
SLU 79	0.41	7203.62	-75548	-0.0002036	0.0004492	0.0035	2.58	19605.6	56504.7	56504.7	7.84	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche,  $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 9	-1.59	-19402.85	-48892	-0.000186	0.0006738	0.0035	2.58		52720.48	52720.48	2.72		Si
SLV 9	0.41	11875.51	-46352	-0.0001434	0.0006738	0.0035	2.58		47702.15	47702.15	4.02		Si
SLD 6	-1.59	-11611.64	-55466	-0.0001624	0.0006738	0.0035	2.58		57305.87	57305.87	4.94		Si
SLD 6	0.41	7632.47	-52886	-0.0001371	0.0006738	0.0035	2.58		52451.05	52451.05	6.87		Si
SLD 9	-1.59	-11499.6	-52087	-0.0001542	0.0006738	0.0035	2.58		55004.89	55004.89	4.78		Si
SLD 9	0.41	8075.37	-49460	-0.0001318	0.0006738	0.0035	2.58		49961.23	49961.23	6.19		Si
SLV 5	-1.59	-20856.84	-56163	-0.0002107	0.0006738	0.0035	2.58		57766.3	57766.3	2.77		Si
SLV 5	0.41	11028.06	-53751	-0.0001556	0.0006738	0.0035	2.58		53079.87	53079.87	4.81		Si
SLV 6	-1.59	-19708.54	-56807	-0.0002064	0.0006738	0.0035	2.58		58192.42	58192.42	2.95		Si
SLV 6	0.41	10852.97	-54396	-0.0001562	0.0006738	0.0035	2.58		53548.22	53548.22	4.93		Si
SLD 5	-1.59	-12113.35	-55185	-0.0001642	0.0006738	0.0035	2.58		57119.69	57119.69	4.72		Si
SLD 5	0.41	7708.97	-52604	-0.0001369	0.0006738	0.0035	2.58		52246.42	52246.42	6.78		Si
SLD 10	-1.59	-10997.89	-52368	-0.0001524	0.0006738	0.0035	2.58		55206.2	55206.2	5.02		Si
SLD 10	0.41	7998.87	-49742	-0.0001321	0.0006738	0.0035	2.58		50165.86	50165.86	6.27		Si
SLV 1	-1.59	-12840.26	-65637	-0.0001921	0.0006738	0.0035	2.58		62867.12	62867.12	4.9		Si
SLV 1	0.41	5690.84	-63222	-0.0001502	0.0006738	0.0035	2.58		59586.52	59586.52	10.47		Si
SLV 13	-1.59	-7993.62	-41400	-0.0001144	0.0006738	0.0035	2.58		46880.4	46880.4	5.86		Si
SLV 13	0.41	8515.65	-38557	-0.0001109	0.0006738	0.0035	2.58		41464.72	41464.72	4.87		Si
SLV 10	-1.59	-18254.55	-49536	-0.0001818	0.0006738	0.0035	2.58		53181.25	53181.25	2.91		Si
SLV 10	0.41	11700.41	-46996	-0.000144	0.0006738	0.0035	2.58		48170.5	48170.5	4.12		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 84	-1.59	-7292.5	-81380	-59185	-7271	2.58	2.58	-76467	10833	8385	88358	27816	13158	40974	No	5.64	Si
SLU 84	0.41	7243.68	-77876	-56637	-7271	2.58	2.58	-73175	10833	8385	88358	27816	13158	40974	No	5.64	Si
SLU 75	-1.59	-7136.98	-78832	-57332	-7124	2.58	2.58	-74072	10833	8385	88358	27816	13158	40974	No	5.75	Si
SLU 75	0.41	7104.72	-75328	-54784	-7124	2.58	2.58	-70780	10833	8385	88358	27816	13158	40974	No	5.75	Si
SLU 78	-1.59	-7238.3	-79654	-57930	-7230	2.58	2.58	-74845	10833	8385	88358	27816	13158	40974	No	5.67	Si
SLU 78	0.41	7215.54	-76150	-55382	-7230	2.58	2.58	-71553	10833	8385	88358	27816	13158	40974	No	5.67	Si
SLU 82	-1.59	-7191.18	-80557	-58587	-7165	2.58	2.58	-75694	10833	8385	88358	27816	13158	40974	No	5.72	Si
SLU 82	0.41	7132.86	-77054	-56039	-7165	2.58	2.58	-72402	10833	8385	88358	27816	13158	40974	No	5.72	Si
SLU 77	-1.59	-7384.65	-79578	-57875	-7312	2.58	2.58	-74774	10833	8385	88358	27816	13158	40974	No	5.6	Si
SLU 77	0.41	7233.85	-76075	-55327	-7312	2.58	2.58	-71482	10833	8385	88358	27816	13158	40974	No	5.6	Si
SLU 81	-1.59	-7337.53	-80482	-58532	-7247	2.58	2.58	-75623	10833	8385	88358	27816	13158	40974	No	5.65	Si
SLU 81	0.41	7151.17	-76978	-55984	-7247	2.58	2.58	-72331	10833	8385	88358	27816	13158	40974	No	5.65	Si
SLU 80	-1.59	-7223.25	-79127	-57547	-7207	2.58	2.58	-74350	10833	8385	88358	27816	13158	40974	No	5.69	Si
SLU 80	0.41	7185.31	-75623	-54999	-7207	2.58	2.58	-71058	10833	8385	88358	27816	13158	40974	No	5.69	Si
SLU 74	-1.59	-7283.33	-78756	-57277	-7206	2.58	2.58	-74001	10833	8385	88358	27816	13158	40974	No	5.69	Si
SLU 74	0.41	7123.03	-75253	-54729	-7206	2.58	2.58	-70709	10833	8385	88358	27816	13158	40974	No	5.69	Si
SLU 79	-1.59	-7369.6	-79051	-57492	-7290	2.58	2.58	-74279	10833	8385	88358	27816	13158	40974	No	5.62	Si
SLU 79	0.41	7203.62	-75548	-54944	-7290	2.58	2.58	-70987	10833	8385	88358	27816	13158	40974	No	5.62	Si
SLU 83	-1.59	-7438.85	-81304	-59130	-7353	2.58	2.58	-76396	10833	8385	88358	27816	13158	40974	No	5.57	Si
SLU 83	0.41	7262	-77801	-56582	-7353	2.58	2.58	-73104	10833	8385	88358	27816	13158	40974	No	5.57	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmu	V	df	I'	oN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 10	-1.59	-10997.89	-52368	-38086	-9485	2.58	2.58	-49207	16250	12577	88358	41723	13158	54881		5.79	Si
SLD 10	0.41	7998.87	-49742	-36176	-9524	2.58	2.58	-46739	16250	12577	88358	41723	13158	54881		5.76	Si
SLV 10	-1.59	-18254.55	-49536	-36026	-14945	2.58	2.58	-46545	16250	12577	88358	41723	13158	54881		3.67	Si
SLV 10	0.41	11700.41	-46996	-34179	-15033	2.58	2.58	-44159	16250	12577	88358	41723	13158	54881		3.65	Si
SLV 13	-1.59	-7993.62	-41400	-30109	-8248	2.58	2.58	-38901	16250	12577	88358	41723	13158	54881		6.65	Si
SLV 13	0.41	8515.65	-38557	-28041	-8464	2.58	2.58	-36229	16250	12577	88358	41723	13158	54881		6.48	Si
SLV 9	-1.59	-19402.85	-48892	-35558	-15606	2.58	2.58	-45940	16250	12577	88358	41723	13158	54881		3.52	Si
SLV 9	0.41	11875.51	-46352	-33710	-15695	2.58	2.58	-43554	16250	12577	88358	41723	13158	54881		3.5	Si
SLD 6	-1.59	-11611.64	-55466	-40339	-9610	2.58	2.58	-52118	16250	12577	88358	41723	13158	54881		5.71	Si
SLD 6	0.41	7632.47	-52886	-38463	-9596	2.58	2.58	-49693	16250	12577	88358	41723	13158	54881		5.72	Si
SLV 5	-1.59	-20856.84	-56163	-40846	-15909	2.58	2.58	-52772	16250	12577	88358	41723	13158	54881		3.45	Si
SLV 5	0.41	11028.06	-53751	-39092	-15873	2.58	2.58	-50506	16250	12577	88358	41723	13158	54881		3.46	Si
SLD 9	-1.59	-11499.6	-52087	-37881	-9774	2.58	2.58	-48942	16250	12577	88358	41723	13158	54881		5.62	Si
SLD 9	0.41	8075.37	-49460	-35971	-9813	2.58	2.58	-46474	16250	12577	88358	41723	13158	54881		5.59	Si
SLV 6	-1.59	-19708.54	-56807	-41314	-15247	2.58	2.58	-53377	16250	12577	88358	41723	13158	54881		3.6	Si
SLV 6	0.41	10852.97	-54396	-39560	-15211	2.58	2.58	-51112	16250	12577	88358	41723	13158	54881		3.61	Si
SLD 5	-1.59	-12113.35	-55185	-40134	-9900	2.58	2.58	-51853	16250	12577	88358	41723	13158	54881		5.54	Si





Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 5	0.41	7708.97	-52604	-38258	-9885	2.58	2.58	-49429	16250	12577	88358	41723	13158	54881		5.55	Si
SLV 1	-1.59	-12840.26	-65637	-47736	-9256	2.58	2.58	-61674	16250	12577	88358	41723	13158	54881		5.93	Si
SLV 1	0.41	5690.84	-63222	-45979	-9055	2.58	2.58	-59405	16250	12577	88358	41723	13158	54881		6.06	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCD M.D. 17-01-18 (N.T.C.)

quota -0.24 Ta 0.04 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 13	-39465	0.24	103.39	4272.87	6526.39	5399.63	52.23	Si
SLV 14	-40462	0.24	103.39	4338.21	6664.23	5501.22	53.21	Si
SLV 15	-40691	0.24	103.39	4352.86	6695.77	5524.32	53.43	Si
SLV 16	-41688	0.24	103.39	4415.61	6833.62	5624.62	54.4	Si
SLV 9	-46758	0.24	103.39	4701.92	7499.77	6100.84	59.01	Si
SLV 10	-47402	0.24	103.39	4734.42	7579.35	6156.88	59.55	Si
SLV 11	-50845	0.24	103.39	4893.17	8001.04	6447.1	62.36	Si
SLV 12	-51489	0.24	103.39	4920.1	8076.32	6498.21	62.85	Si
SLV 5	-54084	0.24	103.39	5019.65	8379.43	6699.54	64.8	Si
SLV 6	-54728	0.24	103.39	5042.17	8450.98	6746.58	65.25	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = -0.24 Wa = 0.05 Ta = 0.0406

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 8	-40734	-60144	45	0.397	4442	0.979	5.8917	4.73917	Si
SLV 7	-40287	-59500	44	0.401	4396.5	0.979	5.94698	4.73917	Si
SLV 6	-38951	-56807	-10	0.413	4260.4	0.979	6.13115	4.73917	Si
SLV 5	-38504	-56163	-11	0.417	4214.8	0.978	6.1909	4.73917	Si
SLV 12	-35532	-52873	153	0.442	3912.1	0.977	6.57131	4.73917	Si
SLV 11	-35085	-52229	152	0.446	3866.6	0.976	6.64292	4.73917	Si
SLV 10	-33749	-49536	98	0.462	3730.5	0.976	6.88921	4.73917	Si
SLV 9	-33302	-48892	97	0.468	3685	0.975	6.96865	4.73917	Si
SLV 4	-46300	-67636	-99	0.356	5009.2	0.982	5.27742	3.38993	Si
SLV 2	-45766	-66634	-116	0.359	4954.7	0.981	5.32337	3.38993	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	7.829	SLU 83	Si
V_SLU	5.572	SLU 83	Si
PF_SLV	2.717	SLV 9	Si
V_SLV	3.45	SLV 5	Si
PFFP_SLV	52.225	SLV 13	Si
R_SLV	1.243	SLV 8	Si

## Maschio 9

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-22.543	-3.284	-24.653	-3.284	L2	L4	2.11	0.45	2.7	2.7	2.7			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCD

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCD in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 84	0.41	-2202.7	-29915	-0.0000625	0.0003743	0.0035	2.11	21793.62	25516.54	25516.54	11.58	No	Si
SLU 84	0.81	457.37	-29123	-0.000052	0.0003743	0.0035	2.11	21468.57	23770.58	23770.58	51.97	No	Si
SLU 39	0.41	-1906.54	-25047	-0.0000518	0.0003743	0.0035	2.11	19578.1	22540.34	22540.34	11.82	No	Si
SLU 39	0.81	298.64	-24454	-0.0000426	0.0003743	0.0035	2.11	19272.55	20796.24	20796.24	69.64	No	Si





Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 74	0.41	-2108.51	-28931	-0.0000601	0.0003743	0.0035	2.11	21387.57	24951.86	24951.86	11.83	No	Si
SLU 74	0.81	497.41	-28118	-0.0000503	0.0003743	0.0035	2.11	21035.92	23121.07	23121.07	46.48	No	Si
SLU 40	0.41	-1899.35	-25039	-0.0000517	0.0003743	0.0035	2.11	19573.75	22534.86	22534.86	11.86	No	Si
SLU 40	0.81	301.58	-24450	-0.0000426	0.0003743	0.0035	2.11	19270.7	20794.03	20794.03	68.95	No	Si
SLU 83	0.41	-2209.89	-29923	-0.0000625	0.0003743	0.0035	2.11	21797.06	25521.15	25521.15	11.55	No	Si
SLU 83	0.81	454.43	-29127	-0.0000519	0.0003743	0.0035	2.11	21470.05	23772.87	23772.87	52.31	No	Si
SLU 73	0.41	-2073.23	-28361	-0.0000588	0.0003743	0.0035	2.11	21142.61	24610.67	24610.67	11.87	No	Si
SLU 73	0.81	460.03	-27563	-0.0000491	0.0003743	0.0035	2.11	20787.66	22764.8	22764.8	49.49	No	Si
SLU 77	0.41	-2118.38	-29288	-0.0000608	0.0003743	0.0035	2.11	21537.24	25166.64	25166.64	11.88	No	Si
SLU 77	0.81	526.02	-28472	-0.0000511	0.0003743	0.0035	2.11	21190.92	23349.38	23349.38	44.39	No	Si
SLU 75	0.41	-2101.32	-28922	-0.00006	0.0003743	0.0035	2.11	21383.94	24946.72	24946.72	11.87	No	Si
SLU 75	0.81	500.35	-28114	-0.0000503	0.0003743	0.0035	2.11	21034.36	23118.8	23118.8	46.21	No	Si
SLU 82	0.41	-2192.82	-29558	-0.0000617	0.0003743	0.0035	2.11	21648.83	25320.82	25320.82	11.55	No	Si
SLU 82	0.81	428.76	-28769	-0.0000511	0.0003743	0.0035	2.11	21318.61	23541.08	23541.08	54.9	No	Si
SLU 81	0.41	-2200.02	-29566	-0.0000618	0.0003743	0.0035	2.11	21652.34	25325.6	25325.6	11.51	No	Si
SLU 81	0.81	425.82	-28772	-0.0000511	0.0003743	0.0035	2.11	21320.12	23543.37	23543.37	55.29	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche,  $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 16	0.41	-2974.02	-10308	-0.0000303	0.0005615	0.0035	2.11		11481.72	11481.72	3.86		Si
SLV 16	0.81	-1595.57	-9079	-0.0000219	0.0005615	0.0035	2.11		10320.52	10320.52	6.47		Si
SLV 5	0.41	-378.11	-20812	-0.0000358	0.0005615	0.0035	2.11		20716.52	20716.52	54.79		Si
SLV 5	0.81	3707.95	-21334	-0.0000527	0.0005615	0.0035	2.11		19708.17	19708.17	5.32		Si
SLV 6	0.41	-100.32	-20451	-0.0000339	0.0005615	0.0035	2.11		20415.78	20415.78	203.5		Si
SLV 6	0.81	3827.7	-21105	-0.0000528	0.0005615	0.0035	2.11		19524.59	19524.59	5.1		Si
SLV 12	0.41	-2458.97	-18921	-0.0000425	0.0005615	0.0035	2.11		19130.99	19130.99	7.78		Si
SLV 12	0.81	-2935.96	-17123	-0.0000417	0.0005615	0.0035	2.11		17613.05	17613.05	6		Si
SLV 9	0.41	-1312.21	-14846	-0.0000302	0.0005615	0.0035	2.11		15612.95	15612.95	11.9		Si
SLV 9	0.81	3009.23	-15152	-0.0000387	0.0005615	0.0035	2.11		14811.88	14811.88	4.92		Si
SLV 10	0.41	-1034.43	-14485	-0.0000283	0.0005615	0.0035	2.11		15296.92	15296.92	14.79		Si
SLV 10	0.81	3128.98	-14923	-0.0000388	0.0005615	0.0035	2.11		14632.86	14632.86	4.68		Si
SLV 14	0.41	-2546.66	-8977	-0.0000261	0.0005615	0.0035	2.11		10223.36	10223.36	4.01		Si
SLV 14	0.81	223.91	-8419	-0.0000145	0.0005615	0.0035	2.11		8695.26	8695.26	38.83		Si
SLV 11	0.41	-2736.76	-19282	-0.0000444	0.0005615	0.0035	2.11		19433.78	19433.78	7.1		Si
SLV 11	0.81	-3055.71	-17352	-0.0000426	0.0005615	0.0035	2.11		17808.2	17808.2	5.83		Si
SLV 13	0.41	-2976.75	-9536	-0.0000299	0.0005615	0.0035	2.11		10760.33	10760.33	3.61		Si
SLV 13	0.81	38.51	-8773	-0.0000143	0.0005615	0.0035	2.11		9035.76	9035.76	234.66		Si
SLV 15	0.41	-3404.11	-10867	-0.0000333	0.0005615	0.0035	2.11		12001.09	12001.09	3.53		Si
SLV 15	0.81	-1780.98	-9433	-0.0000233	0.0005615	0.0035	2.11		10661.28	10661.28	5.99		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 75	0.41	-2101.32	-28922	-25709	-6363	2.11	2.11	-27076	10555	10022	30925	28432	5380	33813	No	5.31	Si
SLU 75	0.81	500.35	-28114	-24990	-6450	2.11	2.11	-26319	10454	9926	30925	28432	5380	33813	No	5.24	Si
SLU 81	0.41	-2200.02	-29566	-26281	-6386	2.11	2.11	-27679	10635	10098	30925	28432	5380	33813	No	5.29	Si
SLU 81	0.81	425.82	-28772	-25575	-6474	2.11	2.11	-26936	10536	10004	30925	28432	5380	33813	No	5.22	Si
SLU 82	0.41	-2192.82	-29558	-26274	-6362	2.11	2.11	-27671	10634	10097	30925	28432	5380	33813	No	5.31	Si
SLU 82	0.81	428.76	-28769	-25572	-6451	2.11	2.11	-26932	10535	10003	30925	28432	5380	33813	No	5.24	Si
SLU 84	0.41	-2202.7	-29915	-26591	-6464	2.11	2.11	-28005	10678	10139	30925	28432	5380	33813	No	5.23	Si
SLU 84	0.81	457.37	-29123	-25887	-6554	2.11	2.11	-27264	10580	10045	30925	28432	5380	33813	No	5.16	Si
SLU 80	0.41	-2097.77	-29080	-25849	-6386	2.11	2.11	-27224	10574	10040	30925	28432	5380	33813	No	5.29	Si
SLU 80	0.81	515.28	-28274	-25132	-6474	2.11	2.11	-26469	10474	9945	30925	28432	5380	33813	No	5.22	Si
SLU 77	0.41	-2118.38	-29288	-26033	-6489	2.11	2.11	-27418	10600	10065	30925	28432	5380	33813	No	5.21	Si
SLU 77	0.81	526.02	-28472	-25308	-6577	2.11	2.11	-26655	10498	9968	30925	28432	5380	33813	No	5.14	Si
SLU 78	0.41	-2111.19	-29279	-26026	-6465	2.11	2.11	-27410	10599	10064	30925	28432	5380	33813	No	5.23	Si
SLU 78	0.81	528.96	-28468	-25305	-6554	2.11	2.11	-26651	10498	9968	30925	28432	5380	33813	No	5.16	Si
SLU 83	0.41	-2209.89	-29923	-26598	-6488	2.11	2.11	-28013	10680	10140	30925	28432	5380	33813	No	5.21	Si
SLU 83	0.81	454.43	-29127	-25890	-6578	2.11	2.11	-27267	10580	10046	30925	28432	5380	33813	No	5.14	Si
SLU 74	0.41	-2108.51	-28931	-25716	-6387	2.11	2.11	-27084	10556	10023	30925	28432	5380	33813	No	5.29	Si
SLU 74	0.81	497.41	-28118	-24993	-6474	2.11	2.11	-26323	10454	9926	30925	28432	5380	33813	No	5.22	Si
SLU 79	0.41	-2104.97	-29088	-25856	-6410	2.11	2.11	-27232	10575	10041	30925	28432	5380	33813	No	5.28	Si
SLU 79	0.81	512.34	-28277	-25135	-6498	2.11	2.11	-26472	10474	9945	30925	28432	5380	33813	No	5.2	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 10	0.41	-1034.43	-14485	-12875	-9499	2.11	2.11	-13560	13129	12466	30925	42648	5380	43391		4.57	Si
SLV 10	0.81	3128.98	-14923	-13265	-9497	2.11	2.11	-13971	13211	12544	30925	42648	5380	43469		4.58	Si
SLV 16	0.41	-2974.02	-10308	-9163	-6874	2.11	2.11	-9650	12347	11723	30925	42648	5380	42649		6.2	Si
SLV 16	0.81	-1595.57	-9079	-8070	-6306	2.11	2.11	-8499	12116	11505	30925	42648	5380	42430		6.73	Si
SLD 13	0.41	-2102.79	-15463	-13745	-7019	2.11	2.11	-14476	13312	12640	30925	42648	5380	43565		6.21	Si
SLD 13	0.81	214.05	-14784	-13142	-6844	2.11	2.11	-13841	13185	12519	30925	42648	5380	43444		6.35	Si
SLV 13	0.41	-2976.75	-9536	-8477	-10515	2.11	2.11	-8928	12202	11586	30925	42648	5380	42511		4.04	Si
SLV 13	0.81	38.51	-8773	-7798	-10015	2.11	2.11	-8213	12059	11450	30925	42648	5380	42376		4.23	Si
SLV 14	0.41	-2546.66	-8977	-7980	-9364	2.11	2.11	-8404	12098	11487	30925	42648	5380	42412		4.53	Si
SLV 14	0.81	223.91	-8419	-7483	-8865	2.11	2.11	-7881	11993	11387	30925	42648	5380	42313		4.77	Si
SLV 5	0.41	-378.11	-20812	-18500	-7694	2.11	2.11	-19484	14313	13591	30925	42648	5380	44516		5.79	Si
SLV 5	0.81	3707.95	-21334	-18963	-8048	2.11	2.11	-19972	14411	13683	30925	42648	5380	44609		5.54	Si
SLD 9	0.41	-1419.15	-17727	-15758	-6886	2.11	2.11	-16596	13736	13042	30925	42648	5380	43968		6.39	Si
SLD 9	0.81	1449.41	-17503	-15558	-6915	2.11	2.11	-16386	13694	13002	30925	42648	5380	43928		6.35	Si
SLV 15	0.41	-3404.11	-10867	-9660	-8025	2.11	2.11	-10174	12451	11823	30925	42648	5380	42748		5.33	Si
SLV 15	0.81	-1780.98	-9433	-8385	-7456	2.11	2.11	-8831	12183	11568	30925	42648	5380	42493		5.7	Si
SLV 9	0.41	-1312.21	-14846	-13196	-10242	2.11	2.11	-13898	13196	12530	30925	42648	5380	43455		4.24	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 6	0.81	3827.7	-21105	-18760	-7305	2.11	2.11	-19758	14368	13643	30925	42648	5380	44568		6.1	Si

**Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)**

quota -0.24 Wa 0.08 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 14	179667	0.24	8653	-8216	126.83	1743.94	13.75	Si
SLV 16	179667	0.24	8956	-8503	126.83	1801.07	14.2	Si
SLV 13	179667	0.24	9237	-8771	126.83	1854.06	14.62	Si
SLV 15	179667	0.24	9540	-9058	126.83	1910.7	15.06	Si
SLV 10	179667	0.24	15340	-14565	126.83	2948.01	23.24	Si
SLV 9	179667	0.24	15717	-14923	126.83	3012.19	23.75	Si
SLV 12	179667	0.24	16348	-15522	126.83	3118.6	24.59	Si
SLV 11	179667	0.24	16725	-15880	126.83	3181.72	25.09	Si
SLV 6	179667	0.24	21285	-20210	126.83	3913.49	30.86	Si
SLV 5	179667	0.24	21662	-20568	126.83	3971.4	31.31	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

**Verifica dei meccanismi locali di collasso con analisi cinematica lineare**

forza di aggancio al piano = 5617 quota mezzera = -0.24 Wa = 0.08 Ta = 0.0271

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 3	-27267	-27912	-297	0.481	3137	0.965	7.23487	2.99128	Si
SLV 1	-27182	-29812	-235	0.484	3128.5	0.965	7.28466	2.99128	Si
SLV 7	-20683	-18061	-279	0.595	2467.3	0.957	9.03896	3.69946	Si
SLV 4	-26855	-27377	-291	0.486	3095.1	0.965	7.3258	2.99128	Si
SLV 2	-26770	-29277	-229	0.49	3086.5	0.965	7.37659	2.99128	Si
SLV 8	-20417	-17716	-275	0.601	2440.3	0.956	9.13673	3.69946	Si
SLV 5	-20402	-24395	-70	0.611	2438.8	0.956	9.27943	3.69946	Si
SLV 6	-20135	-24049	-66	0.617	2411.7	0.956	9.38142	3.69946	Si
SLV 11	-15018	-11599	-201	0.767	1892	0.945	11.789	3.69946	Si
SLV 12	-14751	-11253	-198	0.778	1865	0.945	11.96508	3.69946	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

**Tabella dei coefficienti di sicurezza minimi**

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	11.512	SLU 81	Si
V_SLU	5.14	SLU 83	Si
PF_SLV	3.525	SLV 15	Si
V_SLV	4.043	SLV 13	Si
PFFP_SLV	13.75	SLV 14	Si
R_SLV	2.419	SLV 3	Si

**Maschio 10**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati geometrici**

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s,sx	a.s,dx
-18.313	-3.284	-21.543	-3.284	L2	L4	3.23	0.45	2.7	2.7	2.7			

**Caratteristiche del materiale**

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fV0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

**Materiale per FRCM**

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

**Rinforzo a matrice inorganica**

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215





Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 14	0.81	-14370.18	-27466	-24414	-26567	3.23	3.23	-16797	13776	20024	30925	65286	8236	50949		1.92	Si
SLV 11	0.41	-11388.65	-38473	-34198	-22561	3.23	3.23	-23528	15122	21980	30925	65286	8236	52906		2.34	Si
SLV 15	0.81	-966.07	-34988	-31101	-22253	3.23	3.23	-21397	14696	21361	30925	65286	8236	52286		2.35	Si
SLD 15	0.41	-16969.77	-34486	-30654	-20790	3.23	3.23	-21090	14635	21271	30925	65286	8236	52197		2.51	Si
SLD 15	0.81	-9139.14	-32575	-28956	-20696	3.23	3.23	-19922	14401	20932	30925	65286	8236	51857		2.51	Si

**Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)**

quota -0.24 Wa 0.08 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 14	179667	0.24	14732	-21413	194.16	4353.21	22.42	Si
SLV 16	179667	0.24	14962	-21747	194.16	4413.72	22.73	Si
SLV 13	179667	0.24	15122	-21980	194.16	4455.82	22.95	Si
SLV 15	179667	0.24	15352	-22314	194.16	4515.94	23.26	Si
SLV 10	179667	0.24	17534	-25486	194.16	5075.88	26.14	Si
SLV 9	179667	0.24	17786	-25852	194.16	5139.2	26.47	Si
SLV 12	179667	0.24	18299	-26598	194.16	5267.49	27.13	Si
SLV 11	179667	0.24	18551	-26964	194.16	5329.99	27.45	Si
SLV 6	179667	0.24	20106	-29224	194.16	5709.68	29.41	Si
SLV 5	179667	0.24	20358	-29590	194.16	5770.23	29.72	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

**Verifica dei meccanismi locali di collasso con analisi cinematica lineare**

forza di aggancio al piano = 5617 quota mezzeria = -0.24 Wa = 0.08 Ta = 0.0271

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 7	-35827	-24111	-520	0.539	4200.6	0.961	8.14673	3.69946	Si
SLV 8	-35542	-23761	-519	0.542	4171.6	0.961	8.19946	3.69946	Si
SLV 11	-32145	-19144	-356	0.59	3826.2	0.957	8.95911	3.69946	Si
SLV 12	-31860	-18794	-355	0.594	3797.2	0.957	9.02427	3.69946	Si
SLV 5	-30894	-30421	-593	0.602	3699	0.956	9.1468	3.69946	Si
SLV 6	-30608	-30071	-592	0.606	3670	0.956	9.21604	3.69946	Si
SLV 3	-38475	-32210	-737	0.505	4470	0.963	7.61749	2.99128	Si
SLV 4	-38033	-31668	-736	0.509	4425	0.963	7.68829	2.99128	Si
SLV 1	-36995	-34103	-759	0.52	4319.4	0.962	7.85117	2.99128	Si
SLV 2	-36553	-33561	-758	0.524	4274.4	0.961	7.92732	2.99128	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

**Tabella dei coefficienti di sicurezza minimi**

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.119	SLU 77	Si
V_SLU	2.308	SLU 83	Si
PF_SLV	1.955	SLV 13	Si
V_SLV	1.664	SLV 15	Si
PFFP_SLV	22.421	SLV 14	Si
R_SLV	2.202	SLV 7	Si

**Maschio 11**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati geometrici**

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	I	Sp.	h netta	h ini.	h fin.	a	a.s.sx	a.s.dx
-16.523	-3.284	-17.313	-3.284	L2	L4	0.79	0.45	2.7	2.7	2.7			

**Caratteristiche del materiale**

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

**Materiale per FRCM**

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

**Rinforzo a matrice inorganica**

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	



### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 79	0.41	1247.38	-22291	-0.0001554	0.0003743	0.0035	0.79	3382.13	5717.08	5717.08	4.58	No	Si
SLU 79	0.81	1820.25	-18885	-0.0001583	0.0003743	0.0035	0.79	3567.36	5225.07	5225.07	2.87	No	Si
SLU 77	0.41	1252.67	-22410	-0.0001564	0.0003743	0.0035	0.79	3371.14	5734.19	5734.19	4.58	No	Si
SLU 77	0.81	1832.53	-18992	-0.0001595	0.0003743	0.0035	0.79	3565.4	5240.5	5240.5	2.86	No	Si
SLU 74	0.41	1238.39	-22140	-0.000154	0.0003743	0.0035	0.79	3395.73	5695.24	5695.24	4.6	No	Si
SLU 74	0.81	1808.06	-18753	-0.000157	0.0003743	0.0035	0.79	3569.44	5205.97	5205.97	2.88	No	Si
SLU 80	0.41	1249.26	-22288	-0.0001554	0.0003743	0.0035	0.79	3382.44	5716.59	5716.59	4.58	No	Si
SLU 80	0.81	1817.96	-18880	-0.0001582	0.0003743	0.0035	0.79	3567.44	5224.36	5224.36	2.87	No	Si
SLU 84	0.41	1283.7	-23002	-0.0001616	0.0003743	0.0035	0.79	3311.57	5819.71	5819.71	4.53	No	Si
SLU 84	0.81	1869.38	-19456	-0.0001641	0.0003743	0.0035	0.79	3553.99	5307.49	5307.49	2.84	No	Si
SLU 75	0.41	1240.27	-22137	-0.0001541	0.0003743	0.0035	0.79	3396.03	5694.74	5694.74	4.59	No	Si
SLU 75	0.81	1805.77	-18748	-0.0001568	0.0003743	0.0035	0.79	3569.51	5205.26	5205.26	2.88	No	Si
SLU 82	0.41	1269.42	-22732	-0.0001592	0.0003743	0.0035	0.79	3339.65	5780.76	5780.76	4.55	No	Si
SLU 82	0.81	1844.91	-19217	-0.0001615	0.0003743	0.0035	0.79	3560.46	5272.96	5272.96	2.86	No	Si
SLU 78	0.41	1254.55	-22406	-0.0001564	0.0003743	0.0035	0.79	3371.46	5733.7	5733.7	4.57	No	Si
SLU 78	0.81	1830.25	-18987	-0.0001594	0.0003743	0.0035	0.79	3565.49	5239.79	5239.79	2.86	No	Si
SLU 83	0.41	1281.81	-23005	-0.0001615	0.0003743	0.0035	0.79	3311.21	5820.2	5820.2	4.54	No	Si
SLU 83	0.81	1871.66	-19461	-0.0001643	0.0003743	0.0035	0.79	3553.84	5308.2	5308.2	2.84	No	Si
SLU 81	0.41	1267.54	-22736	-0.0001591	0.0003743	0.0035	0.79	3339.31	5781.25	5781.25	4.56	No	Si
SLU 81	0.81	1847.19	-19222	-0.0001617	0.0003743	0.0035	0.79	3560.33	5273.67	5273.67	2.85	No	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche, $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 9	0.41	227.21	-13687	-0.0000654	0.0005615	0.0035	0.79		4510.32	4510.32	19.85		Si
SLV 9	0.81	1699.34	-12734	-0.0001116	0.0005615	0.0035	0.79		4243.86	4243.86	2.5		Si
SLV 5	0.41	498.36	-15286	-0.000082	0.0005615	0.0035	0.79		4957.1	4957.1	9.95		Si
SLV 5	0.81	1465.15	-13100	-0.0001052	0.0005615	0.0035	0.79		4346.19	4346.19	2.97		Si
SLV 16	0.41	573.6	-12664	-0.0000725	0.0005615	0.0035	0.79		4224.29	4224.29	7.36		Si
SLV 16	0.81	1495.98	-12138	-0.0001016	0.0005615	0.0035	0.79		4077.45	4077.45	2.73		Si
SLV 10	0.41	252.34	-13609	-0.0000659	0.0005615	0.0035	0.79		4488.36	4488.36	17.79		Si
SLV 10	0.81	1655.24	-12592	-0.0001094	0.0005615	0.0035	0.79		4204.31	4204.31	2.54		Si
SLD 14	0.41	616.67	-13926	-0.0000798	0.0005615	0.0035	0.79		4577.06	4577.06	7.42		Si
SLD 14	0.81	1429.82	-12550	-0.0001013	0.0005615	0.0035	0.79		4192.49	4192.49	2.93		Si
SLD 9	0.41	599.14	-14575	-0.0000822	0.0005615	0.0035	0.79		4758.51	4758.51	7.94		Si
SLD 9	0.81	1432.62	-12816	-0.0001027	0.0005615	0.0035	0.79		4266.71	4266.71	2.98		Si
SLV 13	0.41	243.6	-12351	-0.00006	0.0005615	0.0035	0.79		4136.81	4136.81	16.98		Si
SLV 13	0.81	1758.29	-12352	-0.0001121	0.0005615	0.0035	0.79		4137.13	4137.13	2.35		Si
SLD 13	0.41	599.97	-13978	-0.0000795	0.0005615	0.0035	0.79		4591.66	4591.66	7.65		Si
SLD 13	0.81	1459.15	-12644	-0.0001028	0.0005615	0.0035	0.79		4218.78	4218.78	2.89		Si
SLV 14	0.41	282.5	-12229	-0.0000608	0.0005615	0.0035	0.79		4102.82	4102.82	14.52		Si
SLV 14	0.81	1690	-12133	-0.0001085	0.0005615	0.0035	0.79		4075.89	4075.89	2.41		Si
SLV 15	0.41	534.7	-12786	-0.0000718	0.0005615	0.0035	0.79		4258.29	4258.29	7.96		Si
SLV 15	0.81	1564.26	-12358	-0.000105	0.0005615	0.0035	0.79		4138.69	4138.69	2.65		Si

### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 79	0.41	1247.38	-22291	-17833	2273	0.79	0.79	-50164	10833	3851	88358	10645	4029	14674	No	6.46	Si
SLU 79	0.81	1820.25	-18885	-15108	-1696	0.79	0.79	-42499	10833	3851	88358	10645	4029	14674	No	8.65	Si
SLU 76	0.41	1236.24	-22016	-17613	2280	0.79	0.79	-49544	10833	3851	88358	10645	4029	14674	No	6.44	Si
SLU 76	0.81	1791.97	-18638	-14910	-1640	0.79	0.79	-41942	10833	3851	88358	10645	4029	14674	No	8.95	Si
SLU 77	0.41	1252.67	-22410	-17928	2270	0.79	0.79	-50430	10833	3851	88358	10645	4029	14674	No	6.46	Si
SLU 77	0.81	1832.53	-18992	-15194	-1719	0.79	0.79	-42739	10833	3851	88358	10645	4029	14674	No	8.53	Si
SLU 75	0.41	1240.27	-22137	-17709	2269	0.79	0.79	-49816	10833	3851	88358	10645	4029	14674	No	6.47	Si
SLU 75	0.81	1805.77	-18748	-14999	-1671	0.79	0.79	-42190	10833	3851	88358	10645	4029	14674	No	8.78	Si
SLU 84	0.41	1283.7	-23002	-18402	2404	0.79	0.79	-51762	10833	3851	88358	10645	4029	14674	No	6.1	Si
SLU 84	0.81	1869.38	-19456	-15565	-1710	0.79	0.79	-43783	10833	3851	88358	10645	4029	14674	No	8.58	Si
SLU 81	0.41	1267.54	-22736	-18189	2379	0.79	0.79	-51163	10833	3851	88358	10645	4029	14674	No	6.17	Si
SLU 81	0.81	1847.19	-19222	-15377	-1684	0.79	0.79	-43256	10833	3851	88358	10645	4029	14674	No	8.72	Si
SLU 78	0.41	1254.55	-22406	-17925	2282	0.79	0.79	-50422	10833	3851	88358	10645	4029	14674	No	6.43	Si
SLU 78	0.81	1830.25	-18987	-15190	-1708	0.79	0.79	-42728	10833	3851	88358	10645	4029	14674	No	8.59	Si
SLU 82	0.41	1269.42	-22732	-18186	2391	0.79	0.79	-51156	10833	3851	88358	10645	4029	14674	No	6.14	Si
SLU 82	0.81	1844.91	-19217	-15373	-1673	0.79	0.79	-43245	10833	3851	88358	10645	4029	14674	No	8.77	Si
SLU 80	0.41	1249.26	-22288	-17830	2285	0.79	0.79	-50156	10833	3851	88358	10645	4029	14674	No	6.42	Si
SLU 80	0.81	1817.96	-18880	-15104	-1685	0.79	0.79	-42487	10833	3851	88358	10645	4029	14674	No	8.71	Si
SLU 83	0.41	1281.81	-23005	-18404	2392	0.79	0.79	-51770	10833	3851	88358	10645	4029	14674	No	6.13	Si
SLU 83	0.81	1871.66	-19461	-15569	-1721	0.79	0.79	-43794	10833	3851	88358	10645	4029	14674	No	8.53	Si

### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 4	0.41	1477.43	-17993	-14394	7004	0.79	0.79	-40490	16250	5777	88358	15968	4029	19997		2.86	Si
SLV 4	0.81	715.34	-13359	-10687	1140	0.79	0.79	-30062	16250	5777	88358	15968	4029	19997		17.53	Si
SLV 13	0.41	243.6	-12351	-9881	-3908	0.79	0.79	-27794	15975	5679	88358	15968	4029	19997		5.12	Si
SLV 13	0.81	1758.29	-12352	-9882	-3411	0.79	0.758	-27796	15976	5449	88358	15968	4029	19997		5.86	Si
SLV 7	0.41	1468.69	-16735	-13388	4129	0.79	0.79	-37660	16250	5777	88358	15968	4029	19997		4.84	Si
SLV 7	0.81	818.39	-13119	-10495	565	0.79	0.79	-29522	16250	5777	88358	15968	4029	19997		35.42	Si
SLD 4	0.41	1121.06	-16365	-13092	3879	0.79	0.79	-36828	16250	5777	88358	15968	4029	19997		5.16	Si
SLD 4	0.81	1014.48	-13067	-10453	-161	0.79	0.79	-29405	16250	5777	88358	15968	4029	19997		124.4	Si
SLV 3	0.41	1438.53	-18115	-14492	6599	0.79	0.79	-40764	16250	5777	88358	15968	4029	19997		3.03	Si
SLV 3	0.81	783.62	-13578	-10863	865	0.79	0.79	-30556	16250	5777	88358	15968	4029	19997		23.13	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 8	0.41	1493.82	-16656	-13325	4390	0.79	0.79	-37483	16250	5777	88358	15968	4029	19997		4.55	Si
SLV 8	0.81	774.28	-12977	-10382	743	0.79	0.79	-29203	16250	5777	88358	15968	4029	19997		26.93	Si
SLV 1	0.41	1147.43	-17680	-14144	5850	0.79	0.79	-39786	16250	5777	88358	15968	4029	19997		3.42	Si
SLV 1	0.81	977.65	-13573	-10858	108	0.79	0.79	-30543	16250	5777	88358	15968	4029	19997		185.25	Si
SLD 3	0.41	1104.35	-16418	-13134	3705	0.79	0.79	-36945	16250	5777	88358	15968	4029	19997		5.4	Si
SLD 3	0.81	1043.8	-13161	-10529	-279	0.79	0.79	-29617	16250	5777	88358	15968	4029	19997		71.63	Si
SLD 2	0.41	1002.23	-16202	-12962	3561	0.79	0.79	-36460	16250	5777	88358	15968	4029	19997		5.62	Si
SLD 2	0.81	1096.15	-13071	-10457	-487	0.79	0.79	-29415	16250	5777	88358	15968	4029	19997		41.1	Si
SLV 2	0.41	1186.33	-17558	-14047	6255	0.79	0.79	-39512	16250	5777	88358	15968	4029	19997		3.2	Si
SLV 2	0.81	909.37	-13353	-10683	384	0.79	0.79	-30050	16250	5777	88358	15968	4029	19997		52.11	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRMC D.M. 17-01-18 (N.T.C.)

quota -0.24 Ta 0.03 Wa 0.08 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 15	-13000	0.24	47.49	2224.66	3125.37	2675.01	56.33	Si
SLV 16	-13035	0.24	47.49	2228.74	3132.76	2680.75	56.45	Si
SLV 13	-13785	0.24	47.49	2314.07	3285.65	2799.86	58.96	Si
SLV 14	-13820	0.24	47.49	2317.93	3292.63	2805.28	59.07	Si
SLV 11	-14091	0.24	47.49	2347.58	3346.88	2847.23	59.96	Si
SLV 12	-14113	0.24	47.49	2350.02	3351.38	2850.7	60.03	Si
SLV 7	-15805	0.24	47.49	2520.85	3679.09	3099.97	65.28	Si
SLV 8	-15827	0.24	47.49	2522.96	3683.35	3103.16	65.35	Si
SLV 9	-16705	0.24	47.49	2602.15	3845.24	3223.7	67.89	Si
SLV 10	-16728	0.24	47.49	2604.1	3849.28	3226.69	67.95	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = -0.24 Wa = 0.08 Ta = 0.0271

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 5	-10787	-22504	-609	0.418	1233.4	0.967	6.28513	3.69946	Si
SLV 6	-10645	-22439	-605	0.423	1218.9	0.966	6.35469	3.69946	Si
SLV 9	-10365	-23859	-569	0.434	1190.4	0.966	6.53517	3.69946	Si
SLV 10	-10223	-23795	-565	0.439	1176	0.965	6.61074	3.69946	Si
SLV 7	-9597	-21975	-53	0.509	1112.3	0.964	7.6834	3.69946	Si
SLV 8	-9455	-21910	-49	0.516	1097.8	0.963	7.7811	3.69946	Si
SLV 1	-10902	-20755	-462	0.427	1245.1	0.967	6.42203	2.99128	Si
SLV 11	-9175	-23330	-13	0.531	1069.3	0.962	8.0247	3.69946	Si
SLV 2	-10682	-20655	-456	0.434	1222.7	0.967	6.53207	2.99128	Si
SLV 12	-9033	-23265	-9	0.538	1054.8	0.962	8.13174	3.69946	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	2.836	SLU 83	Si
V_SLU	6.104	SLU 84	Si
PF_SLV	2.353	SLV 13	Si
V_SLV	2.855	SLV 4	Si
PFFP_SLV	56.331	SLV 15	Si
R_SLV	1.699	SLV 5	Si

## Maschio 12

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-13.763	-3.284	-14.223	-3.284	L2	L4	0.46	0.45	2.7	2.7	2.7			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.025	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 74	-1.59	969.58	-32360	-0.0016793	0.0003743	0.0035	0.46	0	1472.64	1472.64	1.52	No	Si
SLU 74	0.51	-670.61	-13026	-0.0001826	0.0003743	0.0035	0.46	1144.23	2033.23	2033.23	3.03	No	Si
SLU 81	-1.59	989.14	-33053	-0.0019101	0.0003743	0.0035	0.46	0	1366.95	1366.95	1.38	No	Si
SLU 81	0.51	-680.22	-13349	-0.0001877	0.0003743	0.0035	0.46	1125.51	2060.82	2060.82	3.03	No	Si
SLU 84	-1.59	1000.13	-33416	-0.0020811	0.0003743	0.0035	0.46	0	1311.45	1311.45	1.31	No	Si
SLU 84	0.51	-688.88	-13515	-0.0001908	0.0003743	0.0035	0.46	1115.05	2074.93	2074.93	3.01	No	Si
SLU 77	-1.59	981.55	-32735	-0.0017988	0.0003743	0.0035	0.46	0	1415.42	1415.42	1.44	No	Si
SLU 77	0.51	-679.38	-13192	-0.0001857	0.0003743	0.0035	0.46	1134.89	2047.42	2047.42	3.01	No	Si
SLU 82	-1.59	988.17	-33041	-0.0019045	0.0003743	0.0035	0.46	0	1368.66	1368.66	1.39	No	Si
SLU 82	0.51	-680.11	-13349	-0.0001877	0.0003743	0.0035	0.46	1125.56	2060.75	2060.75	3.03	No	Si
SLU 75	-1.59	968.61	-32349	-0.0016751	0.0003743	0.0035	0.46	0	1474.35	1474.35	1.52	No	Si
SLU 75	0.51	-670.5	-13025	-0.0001826	0.0003743	0.0035	0.46	1144.28	2033.16	2033.16	3.03	No	Si
SLU 80	-1.59	974.69	-32558	-0.0017384	0.0003743	0.0035	0.46	0	1442.46	1442.46	1.48	No	Si
SLU 80	0.51	-676.26	-13129	-0.0001846	0.0003743	0.0035	0.46	1138.5	2042.05	2042.05	3.02	No	Si
SLU 79	-1.59	975.66	-32569	-0.001743	0.0003743	0.0035	0.46	0	1440.75	1440.75	1.48	No	Si
SLU 79	0.51	-676.37	-13130	-0.0001846	0.0003743	0.0035	0.46	1138.45	2042.12	2042.12	3.02	No	Si
SLU 78	-1.59	980.58	-32724	-0.0017939	0.0003743	0.0035	0.46	0	1417.13	1417.13	1.45	No	Si
SLU 78	0.51	-679.27	-13191	-0.0001857	0.0003743	0.0035	0.46	1134.94	2047.34	2047.34	3.01	No	Si
SLU 83	-1.59	1001.1	-33428	-0.0020887	0.0003743	0.0035	0.46	0	1309.73	1309.73	1.31	No	Si
SLU 83	0.51	-688.99	-13516	-0.0001909	0.0003743	0.0035	0.46	1114.99	2075.01	2075.01	3.01	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche,  $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 6	-1.59	945.78	-24700	-0.000332	0.0005615	0.0035	0.46		2997.62	2997.62	3.17		Si
SLV 6	0.51	-354.59	-8193	-0.000093	0.0005615	0.0035	0.46		1637.95	1637.95	4.62		Si
SLV 4	-1.59	991.04	-23840	-0.000327	0.0005615	0.0035	0.46		2984.91	2984.91	3.01		Si
SLV 4	0.51	-241.5	-7485	-0.0000763	0.0005615	0.0035	0.46		1524.09	1524.09	6.31		Si
SLV 14	-1.59	348.81	-21104	-0.0002077	0.0005615	0.0035	0.46		2893.39	2893.39	8.3		Si
SLV 14	0.51	-680.03	-10363	-0.0001444	0.0005615	0.0035	0.46		1948.89	1948.89	2.87		Si
SLV 16	-1.59	250.97	-20118	-0.0001859	0.0005615	0.0035	0.46		2839.2	2839.2	11.31		Si
SLV 16	0.51	-704.21	-10538	-0.0001485	0.0005615	0.0035	0.46		1970.04	1970.04	2.8		Si
SLV 5	-1.59	952.24	-24792	-0.0003343	0.0005615	0.0035	0.46		2998.98	2998.98	3.15		Si
SLV 5	0.51	-367.41	-8259	-0.0000948	0.0005615	0.0035	0.46		1648.16	1648.16	4.49		Si
SLV 3	-1.59	1001.06	-23983	-0.0003305	0.0005615	0.0035	0.46		2987.03	2987.03	2.98		Si
SLV 3	0.51	-261.35	-7588	-0.000079	0.0005615	0.0035	0.46		1540.67	1540.67	5.9		Si
SLV 13	-1.59	358.83	-21247	-0.0002104	0.0005615	0.0035	0.46		2901.25	2901.25	8.09		Si
SLV 13	0.51	-699.88	-10466	-0.0001474	0.0005615	0.0035	0.46		1961.34	1961.34	2.8		Si
SLV 2	-1.59	1088.88	-24826	-0.000356	0.0005615	0.0035	0.46		2999.49	2999.49	2.75		Si
SLV 2	0.51	-217.33	-7310	-0.0000726	0.0005615	0.0035	0.46		1495.91	1495.91	6.88		Si
SLV 15	-1.59	260.99	-20261	-0.0001885	0.0005615	0.0035	0.46		2847.06	2847.06	10.91		Si
SLV 15	0.51	-724.05	-10641	-0.0001516	0.0005615	0.0035	0.46		1982.49	1982.49	2.74		Si
SLV 1	-1.59	1098.9	-24970	-0.0003597	0.0005615	0.0035	0.46		3001.6	3001.6	2.73		Si
SLV 1	0.51	-237.18	-7413	-0.0000753	0.0005615	0.0035	0.46		1512.5	1512.5	6.38		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 84	-1.59	1000.13	-33416	-25460	2709	0.46	0.46	-122996	10833	2243	88358	6199	2933	9131	No	3.37	Si
SLU 84	0.51	-688.88	-13515	-10297	-4806	0.46	0.46	-49745	10833	2243	88358	6199	2933	9131	No	1.9	Si
SLU 82	-1.59	988.17	-33041	-25174	2678	0.46	0.46	-121615	10833	2243	88358	6199	2933	9131	No	3.41	Si
SLU 82	0.51	-680.11	-13349	-10170	-4754	0.46	0.46	-49132	10833	2243	88358	6199	2933	9131	No	1.92	Si
SLU 79	-1.59	975.66	-32569	-24814	2649	0.46	0.46	-119877	10833	2243	88358	6199	2933	9131	No	3.45	Si
SLU 79	0.51	-676.37	-13130	-10004	-4674	0.46	0.46	-48328	10833	2243	88358	6199	2933	9131	No	1.95	Si
SLU 81	-1.59	989.14	-33053	-25183	2680	0.46	0.46	-121657	10833	2243	88358	6199	2933	9131	No	3.41	Si
SLU 81	0.51	-680.22	-13349	-10171	-4753	0.46	0.46	-49135	10833	2243	88358	6199	2933	9131	No	1.92	Si
SLU 83	-1.59	1001.1	-33428	-25469	2711	0.46	0.46	-123037	10833	2243	88358	6199	2933	9131	No	3.37	Si
SLU 83	0.51	-688.99	-13516	-10298	-4806	0.46	0.46	-49748	10833	2243	88358	6199	2933	9131	No	1.9	Si
SLU 75	-1.59	968.61	-32349	-24647	2632	0.46	0.46	-119066	10833	2243	88358	6199	2933	9131	No	3.47	Si
SLU 75	0.51	-670.5	-13025	-9924	-4633	0.46	0.46	-47941	10833	2243	88358	6199	2933	9131	No	1.97	Si
SLU 80	-1.59	974.69	-32558	-24806	2647	0.46	0.46	-119835	10833	2243	88358	6199	2933	9131	No	3.45	Si
SLU 80	0.51	-676.26	-13129	-10003	-4675	0.46	0.46	-48325	10833	2243	88358	6199	2933	9131	No	1.95	Si
SLU 77	-1.59	981.55	-32735	-24941	2665	0.46	0.46	-120488	10833	2243	88358	6199	2933	9131	No	3.43	Si
SLU 77	0.51	-679.38	-13192	-10051	-4685	0.46	0.46	-48557	10833	2243	88358	6199	2933	9131	No	1.95	Si
SLU 78	-1.59	980.58	-32724	-24932	2663	0.46	0.46	-120446	10833	2243	88358	6199	2933	9131	No	3.43	Si
SLU 78	0.51	-679.27	-13191	-10051	-4686	0.46	0.46	-48553	10833	2243	88358	6199	2933	9131	No	1.95	Si
SLU 74	-1.59	969.58	-32360	-24655	2634	0.46	0.46	-119107	10833	2243	88358	6199	2933	9131	No	3.47	Si
SLU 74	0.51	-670.61	-13026	-9924	-4632	0.46	0.46	-47944	10833	2243	88358	6199	2933	9131	No	1.97	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 11	-1.59	404.09	-20388	-15533	1293	0.46	0.46	-75041	16250	3364	88358	9298	2933	12230		9.46	Si
SLV 11	0.51	-586.79	-9758	-7434	-5124	0.46	0.46	-35915	16250	3364	88358	9298	2933	12230		2.39	Si
SLD 15	-1.59	497.82	-21563	-16429	1529	0.46	0.46	-79367	16250	3364	88358	9298	2933	12230		8	Si
SLD 15	0.51	-579.06	-9685	-7379	-4711	0.46	0.46	-35646	16250	3364	88358	9298	2933	12230		2.6	Si
SLV 15	-1.59	260.99	-20261	-15437	1105	0.46	0.46	-74574	16250	3364	88358	9298	2933	12230		11.07	Si
SLV 15	0.51	-724.05	-10641	-8107	-6741	0.46	0.46	-39165	16250	3364	88358	9298	2933	12230		1.81	Si
SLV 16	-1.59	250.97	-20118	-15328	1077	0.46	0.46	-74048	16250	3364	88358	9298	2933	12230		11.36	Si
SLV 16	0.51	-704.21	-10538	-8029	-6572	0.46	0.46	-38786	16250	3364	88358	9298	2933	12230		1.86	Si
SLV 13	-1.59	358.83	-21247	-16188	1326	0.46	0.46	-78205	16250	3364	88358	9298	2933	12230		9.23	Si
SLV 13	0.51	-699.88	-10466	-7974	-6197	0.46	0.46	-38521	16250	3364	88358	9298	2933	12230		1.97	Si
SLD 16	-1.59	493.52	-21502	-16382	1517	0.46	0.46	-79141	16250	3364	88358	9298	2933	12230		8.06	Si
SLD 16	0.51	-570.54	-9640	-7345	-4638	0.46	0.46	-35483	16250	3364	88358	9298	2933	12230		2.64	Si
SLV 14	-1.59	348.81	-21104	-16079	1298	0.46	0.46	-77678	16250	3364	88358	9298	2933	12230		9.43	Si





Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 14	0.51	-680.03	-10363	-7896	-6028	0.46	0.46	-38143	16250	3364	88358	9298	2933	12230		2.03	Si
SLD 14	-1.59	536.05	-21935	-16712	1612	0.46	0.46	-80735	16250	3364	88358	9298	2933	12230		7.59	Si
SLD 14	0.51	-560.16	-9569	-7291	-4419	0.46	0.46	-35220	16250	3364	88358	9298	2933	12230		2.77	Si
SLD 13	-1.59	540.35	-21996	-16759	1624	0.46	0.46	-80961	16250	3364	88358	9298	2933	12230		7.53	Si
SLD 13	0.51	-568.68	-9613	-7324	-4491	0.46	0.46	-35383	16250	3364	88358	9298	2933	12230		2.72	Si
SLV 12	-1.59	397.62	-20295	-15463	1275	0.46	0.46	-74700	16250	3364	88358	9298	2933	12230		9.59	Si
SLV 12	0.51	-573.98	-9691	-7384	-5015	0.46	0.46	-35670	16250	3364	88358	9298	2933	12230		2.44	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRMC D.M. 17-01-18 (N.T.C.)

quota -0.24 Ta 0.03 Wa 0.08 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 8	-12002	0.24	27.65	1675.21	2725.79	2200.5	79.58	Si
SLV 7	-12034	0.24	27.65	1676.89	2731.19	2204.04	79.71	Si
SLV 12	-12227	0.24	27.65	1687.01	2764.48	2225.74	80.49	Si
SLV 11	-12258	0.24	27.65	1688.59	2769.85	2229.22	80.62	Si
SLV 4	-12300	0.24	27.65	1690.72	2777.13	2233.92	80.79	Si
SLV 3	-12349	0.24	27.65	1693.11	2785.45	2239.28	80.98	Si
SLV 2	-12788	0.24	27.65	1713.34	2858.33	2285.84	82.67	Si
SLV 1	-12836	0.24	27.65	1715.4	2866.16	2290.78	82.85	Si
SLV 16	-13049	0.24	27.65	1724.08	2900.6	2312.34	83.63	Si
SLV 15	-13097	0.24	27.65	1725.96	2908.39	2317.17	83.8	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = -0.24 Wa = 0.08 Ta = 0.0271

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 9	-6992	-23676	-46	0.428	790.5	0.97	6.40882	3.69946	Si
SLV 10	-6905	-23583	-46	0.432	781.6	0.969	6.47067	3.69946	Si
SLV 11	-6734	-20388	-30	0.442	764.3	0.969	6.63197	3.69946	Si
SLV 12	-6647	-20295	-30	0.446	755.4	0.968	6.69889	3.69946	Si
SLV 13	-8046	-21247	-29	0.387	897.8	0.973	5.78077	2.99128	Si
SLV 5	-6032	-24792	-55	0.477	692.8	0.966	7.17554	3.69946	Si
SLV 15	-7968	-20261	-25	0.39	890	0.973	5.83189	2.99128	Si
SLV 14	-7911	-21104	-30	0.392	884.1	0.973	5.85453	2.99128	Si
SLV 6	-5944	-24700	-55	0.482	683.9	0.965	7.25751	3.69946	Si
SLV 16	-7833	-20118	-25	0.395	876.2	0.972	5.9072	2.99128	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	1.308	SLU 83	Si
V_SLU	1.9	SLU 84	Si
PF_SLV	2.731	SLV 1	Si
V_SLV	1.814	SLV 15	Si
PFFP_SLV	79.581	SLV 8	Si
R_SLV	1.732	SLV 9	Si

## Maschio 13

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-18.498	1.046	-18.498	-3.284	L2	L4	4.33	0.3	2.7	2.7	2.7			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215







Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 8	1.11	6394	-38891	-28284	-25456	4.33	4.33	-21774	16250	21109	88358	70024	22083	92107		3.62	Si
SLV 7	-1.59	-1961.98	-75577	-54965	-25575	4.33	4.33	-42313	16250	21109	88358	70024	22083	92107		3.6	Si
SLV 7	1.11	6286.65	-39219	-28523	-24088	4.33	4.33	-21958	16250	21109	88358	70024	22083	92107		3.82	Si
SLV 12	-1.59	-4305.37	-64725	-47073	-27422	4.33	4.33	-36238	16250	21109	88358	70024	22083	92107		3.36	Si
SLV 12	1.11	9575.91	-35902	-26111	-26812	4.33	4.33	-20101	16250	21109	88358	70024	22083	92107		3.44	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRM D.M. 17-01-18 (N.T.C.)

quota -0.24 Ta 0.04 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 16	-40672	0.24	173.52	5058.63	7119.34	6088.99	35.09	Si
SLV 14	-40989	0.24	173.52	5089.83	7168.62	6129.22	35.32	Si
SLV 15	-41215	0.24	173.52	5111.99	7203.75	6157.87	35.49	Si
SLV 13	-41531	0.24	173.52	5142.97	7252.64	6197.81	35.72	Si
SLV 12	-49016	0.24	173.52	5838.73	8398.05	7118.39	41.02	Si
SLV 11	-49367	0.24	173.52	5869.55	8451.68	7160.62	41.27	Si
SLV 10	-50071	0.24	173.52	5931.13	8559.63	7245.38	41.76	Si
SLV 9	-50422	0.24	173.52	5961.49	8613.26	7287.38	42	Si
SLV 8	-56403	0.24	173.52	6456.09	9524.37	7990.23	46.05	Si
SLV 7	-56753	0.24	173.52	6483.65	9575.49	8029.57	46.27	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = -0.24 Wa = 0.05 Ta = 0.0406

Comb.	N top	N base	V orto	α0	M*	e*	α0*	aLim	Verifica
SLV 5	-40813	-75564	627	0.598	4649	0.968	8.98703	4.73917	Si
SLV 6	-40485	-75241	626	0.603	4615.6	0.968	9.05065	4.73917	Si
SLV 7	-39219	-75577	567	0.62	4486.7	0.967	9.3252	4.73917	Si
SLV 8	-38891	-75254	566	0.625	4453.4	0.966	9.39401	4.73917	Si
SLV 9	-37824	-65034	527	0.64	4344.8	0.966	9.63917	4.73917	Si
SLV 10	-37496	-64711	526	0.645	4311.4	0.965	9.713	4.73917	Si
SLV 11	-36230	-65048	467	0.666	4182.6	0.964	10.03089	4.73917	Si
SLV 12	-35902	-64725	466	0.671	4149.2	0.964	10.11121	4.73917	Si
SLV 1	-43832	-87941	724	0.562	4956.3	0.97	8.41616	3.38993	Si
SLV 2	-43324	-87441	722	0.567	4904.6	0.969	8.5021	3.38993	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	6.683	SLV 83	Si
V_SLV	8.847	SLV 72	Si
PF_SLV	3.632	SLV 9	Si
V_SLV	3.359	SLV 12	Si
PFFP_SLV	35.091	SLV 16	Si
R_SLV	1.896	SLV 5	Si

## Maschio 14

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.693	6.576	-17.768	6.576	L2	L4	1.925	0.45	2.7	2.7	2.7			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_ Corti

fb	fk	fvk0	fmedio	τ0	fV0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 47	0.41	2183.35	-19634	-0.0000489	0.0003743	0.0035	1.925	14690.8	15862.79	15862.79	7.27	No	Si
SLU 47	0.81	-579.7	-18638	-0.0000374	0.0003743	0.0035	1.925	14148.16	16102.43	16102.43	27.78	No	Si





Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 10	0.81	-448.36	-7581	-6739	9094	1.925	1.925	-7779	11973	10371	30925	38909	4909	41297		4.54	Si
SLV 16	0.41	6920.52	-2091	-1859	12291	1.925	0	0	16250	0	30925	38909	4909	30925		2.52	Si
SLV 16	0.81	2000.57	-833	-740	11925	1.925	0	0	16250	0	30925	38909	4909	30925		2.59	Si

#### Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota -0.24 Wa 0.08 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 13	179667	0.24	0	2454	115.71	0	0	No, Trazione
SLV 15	179667	0.24	0	867	115.71	0	0	No, Trazione
SLV 16	179667	0.24	0	2401	115.71	0	0	No, Trazione
SLV 14	179667	0.24	0	3988	115.71	0	0	No, Trazione
SLV 10	179667	0.24	7154	-6197	115.71	1328.99	11.49	Si
SLV 9	179667	0.24	8297	-7188	115.71	1529.35	13.22	Si
SLV 12	179667	0.24	13262	-11488	115.71	2360.32	20.4	Si
SLV 11	179667	0.24	14405	-12479	115.71	2542.85	21.98	Si
SLV 6	179667	0.24	18795	-16282	115.71	3212.49	27.76	Si
SLV 5	179667	0.24	19939	-17272	115.71	3378.86	29.2	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = -0.24 Wa = 0.08 Ta = 0.0271

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 3	-31438	-31420	2008	0.351	3530	0.971	5.25214	2.99128	Si
SLV 1	-29455	-30310	2313	0.358	3328.1	0.97	5.36816	2.99128	Si
SLV 4	-30150	-29840	1908	0.365	3398.8	0.97	5.46442	2.99128	Si
SLV 2	-28167	-28729	2212	0.373	3196.9	0.969	5.59975	2.99128	Si
SLV 7	-23495	-19787	973	0.475	2721.4	0.964	7.1574	3.69946	Si
SLV 8	-22663	-18766	908	0.49	2636.8	0.963	7.40325	3.69946	Si
SLV 5	-16885	-16085	1989	0.557	2049.4	0.953	8.49727	3.69946	Si
SLV 6	-16053	-15064	1924	0.582	1964.9	0.951	8.89941	3.69946	Si
SLV 11	-14899	-8945	405	0.706	1847.7	0.949	10.81256	3.69946	Si
SLV 12	-14067	-7924	341	0.742	1763.3	0.946	11.39012	3.69946	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	7.265	SLU 47	Si
V_SLU	3.189	SLU 83	Si
PF_SLV	0	SLV 14	No
V_SLV	2.418	SLV 14	Si
PFFP_SLV	0	SLV 16	No
R_SLV	1.756	SLV 3	Si

## Maschio 15

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-17.053	-4.784	-17.053	-3.284	L2	L4	1.5	0.45	2.7	2.7	2.7			

#### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

#### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica

									elim,conv / e_CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε <sub>f</sub> d	γ <sub>F</sub> d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215





Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 7	1.11	-2793.79	-6677	-5935	12017	1.5	0.9947	-13237	13071	5851	11894	30319	3825	17745		1.48	Si
SLV 8	-1.59	8999.07	-10138	-9012	12259	1.5	0	-69859	16250	0	11894	30319	3825	11894		0.97	No
SLV 8	1.11	-2916.93	-6687	-5944	12658	1.5	0.9413	-13966	13220	5600	11894	30319	3825	17494		1.38	Si
SLD 4	-1.59	8360.19	-10670	-9485	10315	1.5	0	-62936	16250	0	11894	30319	3825	11894		1.15	Si
SLD 4	1.11	-2536.35	-6223	-5532	9991	1.5	1.0273	-11958	12814	5924	11894	30319	3825	17818		1.78	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota -0.24 Wa 0.08 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 13	179667	0.24	13097	-8840	90.17	1818.46	20.17	Si
SLV 14	179667	0.24	13233	-8932	90.17	1835.59	20.36	Si
SLV 15	179667	0.24	13358	-9016	90.17	1851.26	20.53	Si
SLV 16	179667	0.24	13494	-9108	90.17	1868.32	20.72	Si
SLV 9	179667	0.24	15175	-10243	90.17	2075.69	23.02	Si
SLV 10	179667	0.24	15263	-10303	90.17	2086.39	23.14	Si
SLV 11	179667	0.24	16046	-10831	90.17	2180.91	24.19	Si
SLV 12	179667	0.24	16134	-10890	90.17	2191.46	24.3	Si
SLV 5	179667	0.24	17197	-11608	90.17	2317.7	25.7	Si
SLV 6	179667	0.24	17285	-11667	90.17	2328.04	25.82	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = -0.24 Wa = 0.08 Ta = 0.0271

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 8	-6687	-10138	12	1.11	941.5	0.927	17.41111	3.69946	Si
SLV 7	-6677	-10109	10	1.112	940.5	0.927	17.4347	3.69946	Si
SLV 12	-6265	-8684	131	1.15	899.1	0.924	18.08477	3.69946	Si
SLV 11	-6255	-8655	130	1.151	898.1	0.924	18.11053	3.69946	Si
SLV 6	-5433	-10666	-163	1.271	815.5	0.918	20.11452	3.69946	Si
SLV 5	-5423	-10637	-165	1.272	814.5	0.918	20.13905	3.69946	Si
SLV 4	-6742	-12027	-189	1.082	947.2	0.927	16.96618	2.99128	Si
SLV 3	-6727	-11982	-191	1.084	945.6	0.927	16.99209	2.99128	Si
SLV 10	-5011	-9212	-43	1.364	773.4	0.915	21.6671	3.69946	Si
SLV 9	-5001	-9183	-45	1.366	772.4	0.915	21.69562	3.69946	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	1.555	SLU 84	Si
V_SLU	1.157	SLU 84	Si
PF_SLV	1.971	SLV 8	Si
V_SLV	0.817	SLV 4	No
PFFP_SLV	20.168	SLV 13	Si
R_SLV	4.706	SLV 8	Si

Maschio 16

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.sx	a.s.dx
-13.763	-4.784	-17.053	-4.784	L2	L4	3.29	0.45	2.7	2.7	2.7			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	







Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 14	-1.59	-8807.47	-11901	-10579	-10402	3.29	2.7149	-8694	12156	14851	30925	66499	8390	45776		4.4	Si
SLV 14	1.11	-1016.55	-13092	-11637	-18471	3.29	3.29	-7860	11989	17749	30925	66499	8390	48675		2.64	Si
SLD 4	-1.59	-907.75	-13475	-11978	11072	3.29	3.29	-8091	12035	17818	30925	66499	8390	48743		4.4	Si
SLD 4	1.11	-10336.06	-17583	-15629	12694	3.29	3.1715	-11008	12618	18008	30925	66499	8390	48934		3.86	Si
SLV 1	-1.59	2186.79	-15843	-14083	18358	3.29	3.29	-9512	12319	18238	30925	66499	8390	49164		2.68	Si
SLV 1	1.11	-13374.87	-17017	-15126	22317	3.29	2.5771	-13123	13041	15124	30925	66499	8390	46049		2.06	Si
SLV 16	-1.59	-8933.3	-10272	-9131	-10152	3.29	2.3261	-8758	12168	12737	30925	66499	8390	43662		4.3	Si
SLV 16	1.11	-1265.49	-15314	-13613	-17058	3.29	3.29	-9195	12256	18144	30925	66499	8390	49070		2.88	Si
SLV 13	-1.59	-9147.37	-12064	-10724	-12193	3.29	2.6603	-8995	12216	14624	30925	66499	8390	45549		3.74	Si
SLV 13	1.11	-306.02	-12868	-11438	-20901	3.29	3.29	-7726	11962	17710	30925	66499	8390	48635		2.33	Si

**Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)**

quota -0.24 Wa 0.08 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 12	179667	0.24	9175	-13584	197.76	2872.7	14.53	Si
SLV 11	179667	0.24	9210	-13636	197.76	2882.97	14.58	Si
SLV 8	179667	0.24	9246	-13689	197.76	2893.55	14.63	Si
SLV 7	179667	0.24	9281	-13741	197.76	2903.81	14.68	Si
SLV 16	179667	0.24	9519	-14093	197.76	2973.32	15.03	Si
SLV 15	179667	0.24	9573	-14174	197.76	2989.14	15.11	Si
SLV 4	179667	0.24	9757	-14445	197.76	3042.39	15.38	Si
SLV 3	179667	0.24	9811	-14525	197.76	3058.16	15.46	Si
SLV 14	179667	0.24	9894	-14648	197.76	3082.2	15.59	Si
SLV 13	179667	0.24	9948	-14728	197.76	3097.93	15.66	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

**Verifica dei meccanismi locali di collasso con analisi cinematica lineare**

forza di aggancio al piano = 5617 quota mezzera = -0.24 Wa = 0.08 Ta = 0.0271

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 8	-20565	-10857	-236	0.851	2661.1	0.94	13.14824	3.69946	Si
SLV 7	-20421	-10962	-233	0.856	2646.5	0.94	13.22535	3.69946	Si
SLV 12	-19320	-9723	-212	0.894	2535.1	0.938	13.84477	3.69946	Si
SLV 11	-19176	-9828	-209	0.899	2520.6	0.938	13.93082	3.69946	Si
SLV 4	-19463	-14051	-403	0.88	2549.6	0.938	13.63497	2.99128	Si
SLV 3	-19240	-14214	-398	0.888	2527	0.938	13.76567	2.99128	Si
SLV 6	-13155	-16287	-630	1.167	1913.2	0.922	18.38555	3.69946	Si
SLV 2	-17240	-15680	-521	0.96	2324.8	0.933	14.94177	2.99128	Si
SLV 5	-13011	-16392	-627	1.176	1898.7	0.922	18.5458	3.69946	Si
SLV 1	-17017	-15843	-516	0.969	2302.3	0.933	15.10179	2.99128	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

**Tabella dei coefficienti di sicurezza minimi**

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.286	SLU 84	Si
V_SLU	6.342	SLU 84	Si
PF_SLV	2.09	SLV 2	Si
V_SLV	1.804	SLV 4	Si
PFFP_SLV	14.526	SLV 12	Si
R_SLV	3.554	SLV 8	Si

**Maschio 17**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati geometrici**

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-15.058	2.271	-15.058	6.576	L2	L4	4.305	0.3	2.7	2.7	2.7			

**Caratteristiche del materiale**

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

**Materiale per FRCM**

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

**Rinforzo a matrice inorganica**





									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 82	-1.59	12900.36	-122726	-0.0001819	0.0004492	0.0035	4.305	58722.44	155836.78	155836.78	12.08	No	Si
SLU 82	1.11	18219.46	-78917	-0.0001257	0.0004492	0.0035	4.305	84918.9	125391.94	125391.94	6.88	No	Si
SLU 84	-1.59	12990.91	-123946	-0.0001841	0.0004492	0.0035	4.305	57244.52	156392.11	156392.11	12.04	No	Si
SLU 84	1.11	18387.05	-79784	-0.0001272	0.0004492	0.0035	4.305	84908.31	126431.8	126431.8	6.88	No	Si
SLU 78	-1.59	12749.5	-121172	-0.000179	0.0004492	0.0035	4.305	60547.39	155128.96	155128.96	12.17	No	Si
SLU 78	1.11	17941.5	-77473	-0.0001231	0.0004492	0.0035	4.305	84891.03	123659.51	123659.51	6.89	No	Si
SLU 60	-1.59	11609.13	-111713	-0.0001613	0.0004492	0.0035	4.305	70234.43	150820.68	150820.68	12.99	No	Si
SLU 60	1.11	16776.38	-70638	-0.0001116	0.0004492	0.0035	4.305	83987.13	115457.3	115457.3	6.88	No	Si
SLU 77	-1.59	12558.86	-121310	-0.0001788	0.0004492	0.0035	4.305	60388.75	155191.52	155191.52	12.36	No	Si
SLU 77	1.11	18165.87	-77726	-0.0001239	0.0004492	0.0035	4.305	84900.03	123963.18	123963.18	6.82	No	Si
SLU 81	-1.59	12709.72	-122864	-0.0001817	0.0004492	0.0035	4.305	58557.97	155899.34	155899.34	12.27	No	Si
SLU 81	1.11	18443.83	-79170	-0.0001265	0.0004492	0.0035	4.305	84917.92	125695.61	125695.61	6.82	No	Si
SLU 79	-1.59	12342.13	-120628	-0.0001772	0.0004492	0.0035	4.305	61171.06	154881.03	154881.03	12.55	No	Si
SLU 79	1.11	17981.79	-77304	-0.000123	0.0004492	0.0035	4.305	84884.04	123456.49	123456.49	6.87	No	Si
SLU 83	-1.59	12800.28	-124083	-0.0001839	0.0004492	0.0035	4.305	57075.48	156454.67	156454.67	12.22	No	Si
SLU 83	1.11	18611.42	-80037	-0.000128	0.0004492	0.0035	4.305	84901.35	126657.97	126657.97	6.81	No	Si
SLU 74	-1.59	12468.3	-120090	-0.0001766	0.0004492	0.0035	4.305	61778.99	154636.19	154636.19	12.4	No	Si
SLU 74	1.11	17998.27	-76860	-0.0001224	0.0004492	0.0035	4.305	84861.97	122923.32	122923.32	6.83	No	Si
SLU 62	-1.59	11699.68	-112933	-0.0001634	0.0004492	0.0035	4.305	69122.81	151376.01	151376.01	12.94	No	Si
SLU 62	1.11	16943.97	-71504	-0.0001131	0.0004492	0.0035	4.305	84172.28	116497.16	116497.16	6.88	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 7	-1.59	28361.4	-87603	-0.0001487	0.0006738	0.0035	4.305	145252.78	145252.78	145252.78	5.12	No	Si
SLV 7	1.11	11437.22	-57162	-0.0000819	0.0006738	0.0035	4.305	104228.41	104228.41	104228.41	9.11	No	Si
SLD 12	-1.59	20713.78	-78559	-0.0001237	0.0006738	0.0035	4.305	134216.38	134216.38	134216.38	6.48	No	Si
SLD 12	1.11	12120.36	-50094	-0.0000746	0.0006738	0.0035	4.305	93121.27	93121.27	93121.27	7.68	No	Si
SLV 13	-1.59	11565.66	-61558	-0.0000873	0.0006738	0.0035	4.305	111135.72	111135.72	111135.72	9.61	No	Si
SLV 13	1.11	13861.02	-37012	-0.0000621	0.0006738	0.0035	4.305	72563.33	72563.33	72563.33	5.24	No	Si
SLV 8	-1.59	29603.63	-86506	-0.0001494	0.0006738	0.0035	4.305	143914.43	143914.43	143914.43	4.86	No	Si
SLV 8	1.11	11261.37	-56562	-0.0000809	0.0006738	0.0035	4.305	103284.07	103284.07	103284.07	9.17	No	Si
SLV 12	-1.59	36315.91	-72447	-0.0001426	0.0006738	0.0035	4.305	126758.22	126758.22	126758.22	3.49	No	Si
SLV 12	1.11	12005.6	-47167	-0.000071	0.0006738	0.0035	4.305	88520.91	88520.91	88520.91	7.37	No	Si
SLD 11	-1.59	20171.03	-79038	-0.0001234	0.0006738	0.0035	4.305	134801.13	134801.13	134801.13	6.68	No	Si
SLD 11	1.11	12197.19	-50357	-0.000075	0.0006738	0.0035	4.305	93533.87	93533.87	93533.87	7.67	No	Si
SLV 16	-1.59	27795.98	-57961	-0.0001097	0.0006738	0.0035	4.305	105482.58	105482.58	105482.58	3.79	No	Si
SLV 16	1.11	13236.55	-36063	-0.00006	0.0006738	0.0035	4.305	71072.2	71072.2	71072.2	5.37	No	Si
SLV 14	-1.59	13488.99	-59860	-0.0000885	0.0006738	0.0035	4.305	108467.33	108467.33	108467.33	8.04	No	Si
SLV 14	1.11	13588.75	-36081	-0.0000606	0.0006738	0.0035	4.305	71101.23	71101.23	71101.23	5.23	No	Si
SLV 15	-1.59	25872.64	-59659	-0.0001087	0.0006738	0.0035	4.305	108150.96	108150.96	108150.96	4.18	No	Si
SLV 15	1.11	13508.83	-36993	-0.0000615	0.0006738	0.0035	4.305	72534.3	72534.3	72534.3	5.37	No	Si
SLV 11	-1.59	35073.68	-73544	-0.0001419	0.0006738	0.0035	4.305	128096.57	128096.57	128096.57	3.65	No	Si
SLV 11	1.11	12181.45	-47768	-0.000072	0.0006738	0.0035	4.305	89465.24	89465.24	89465.24	7.34	No	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 74	-1.59	12468.3	-120090	-87339	-29009	4.305	4.305	-67626	10833	13991	88358	46413	21955	68369	No	2.36	Si
SLU 74	1.11	17998.27	-76860	-55898	-32363	4.305	4.305	-43281	10833	13991	88358	46413	21955	68369	No	2.11	Si
SLU 77	-1.59	12558.86	-121310	-88225	-29307	4.305	4.305	-68312	10833	13991	88358	46413	21955	68369	No	2.33	Si
SLU 77	1.11	18165.87	-77726	-56528	-32701	4.305	4.305	-43769	10833	13991	88358	46413	21955	68369	No	2.09	Si
SLU 78	-1.59	12749.5	-121172	-88125	-29255	4.305	4.305	-68235	10833	13991	88358	46413	21955	68369	No	2.34	Si
SLU 78	1.11	17941.5	-77473	-56344	-32608	4.305	4.305	-43627	10833	13991	88358	46413	21955	68369	No	2.1	Si
SLU 79	-1.59	12342.13	-120628	-87729	-29120	4.305	4.305	-67928	10833	13991	88358	46413	21955	68369	No	2.35	Si
SLU 79	1.11	17981.79	-77304	-56221	-32487	4.305	4.305	-43532	10833	13991	88358	46413	21955	68369	No	2.1	Si
SLU 84	-1.59	12990.91	-123946	-90142	-29679	4.305	4.305	-69797	10833	13991	88358	46413	21955	68369	No	2.3	Si
SLU 84	1.11	18387.05	-79784	-58024	-33101	4.305	4.305	-44928	10833	13991	88358	46413	21955	68369	No	2.07	Si
SLU 82	-1.59	12900.36	-122726	-89256	-29381	4.305	4.305	-69110	10833	13991	88358	46413	21955	68369	No	2.33	Si
SLU 82	1.11	18219.46	-78917	-57394	-32763	4.305	4.305	-44440	10833	13991	88358	46413	21955	68369	No	2.09	Si
SLU 80	-1.59	12532.77	-120491	-87630	-29068	4.305	4.305	-67851	10833	13991	88358	46413	21955	68369	No	2.35	Si
SLU 80	1.11	17757.42	-77051	-56037	-32393	4.305	4.305	-43389	10833	13991	88358	46413	21955	68369	No	2.11	Si
SLU 83	-1.59	12800.28	-124083	-90242	-29732	4.305	4.305	-69874	10833	13991	88358	46413	21955	68369	No	2.3	Si
SLU 83	1.11	18611.42	-80037	-58209	-33195	4.305	4.305	-45070	10833	13991	88358	46413	21955	68369	No	2.06	Si
SLU 81	-1.59	12709.72	-122864	-89355	-29434	4.305	4.305	-69187	10833	13991	88358	46413	21955	68369	No	2.32	Si
SLU 81	1.11	18443.83	-79170	-57578	-32856	4.305	4.305	-44582	10833	13991	88358	46413	21955	68369	No	2.08	Si
SLU 75	-1.59	12658.94	-119953	-87239	-28956	4.305	4.305	-67548	10833	13991	88358	46413	21955	68369	No	2.36	Si
SLU 75	1.11	17773.91	-76607	-55714	-32269	4.305	4.305	-43139	10833	13991	88358	46413	21955	68369	No	2.12	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 5	-1.59	-19328.54	-93935	-68316	-37875	4.305	4.305	-52897	16250	20987	88358	69620	21955	91575	No	2.42	Si
SLV 5	1.11	12611.21	-57224	-41617	-40087	4.305	4.305	-32224	16250	20987	88358	69620	21955	91575	No	2.28	Si
SLD 5	-1.59	-3726.41	-87823	-63871	-28068	4.305	4.305	-49455	16250	20987	88358	69620	21955	91575	No	3.26	Si
SLD 5	1.11	12496.45	-54297	-39488	-30333	4.305	4.305	-30576	16250	20987	88358	69620	21955	91575	No	3.02	Si



Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 10	-1.59	-11374.03	-78779	-57294	-29132	4.305	4.305	-44362	16250	20987	88358	69620	21955	91575		3.14	Si
SLV 10	1.11	13179.59	-47228	-34348	-31087	4.305	4.305	-26595	16250	20987	88358	69620	21955	91575		2.95	Si
SLV 6	-1.59	-18086.31	-92838	-67518	-36965	4.305	4.305	-52279	16250	20987	88358	69620	21955	91575		2.48	Si
SLV 6	1.11	12435.35	-56623	-41180	-39144	4.305	4.305	-31886	16250	20987	88358	69620	21955	91575		2.34	Si
SLV 1	-1.59	-10808.61	-108421	-78852	-38112	4.305	4.305	-61055	16250	20987	88358	69620	21955	91575		2.4	Si
SLV 1	1.11	11380.25	-68328	-49693	-40746	4.305	4.305	-38477	16250	20987	88358	69620	21955	91575		2.25	Si
SLD 1	-1.59	171.3	-93944	-68323	-28013	4.305	4.305	-52902	16250	20987	88358	69620	21955	91575		3.27	Si
SLD 1	1.11	12102.49	-58976	-42892	-30470	4.305	4.305	-33211	16250	20987	88358	69620	21955	91575		3.01	Si
SLV 4	-1.59	5421.71	-104824	-76236	-28858	4.305	4.305	-59029	16250	20987	88358	69620	21955	91575		3.17	Si
SLV 4	1.11	10755.78	-67379	-49003	-31572	4.305	4.305	-37943	16250	20987	88358	69620	21955	91575		2.9	Si
SLV 9	-1.59	-12616.26	-79876	-58091	-30042	4.305	4.305	-44980	16250	20987	88358	69620	21955	91575		3.05	Si
SLV 9	1.11	13355.44	-47829	-34785	-32030	4.305	4.305	-26934	16250	20987	88358	69620	21955	91575		2.86	Si
SLV 3	-1.59	3498.37	-106522	-77471	-30268	4.305	4.305	-59985	16250	20987	88358	69620	21955	91575		3.03	Si
SLV 3	1.11	11028.06	-68309	-49680	-33032	4.305	4.305	-38467	16250	20987	88358	69620	21955	91575		2.77	Si
SLV 2	-1.59	-8885.27	-106723	-77617	-36702	4.305	4.305	-60098	16250	20987	88358	69620	21955	91575		2.5	Si
SLV 2	1.11	11107.98	-67397	-49016	-39285	4.305	4.305	-37953	16250	20987	88358	69620	21955	91575		2.33	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRMC D.M. 17-01-18 (N.T.C.)

quota -0.24 Ta 0.04 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 16	-42496	0.24	172.52	5229.99	7397.76	6313.87	36.6	Si
SLV 14	-43740	0.24	172.52	5348.62	7588.05	6468.34	37.49	Si
SLV 15	-43781	0.24	172.52	5352.48	7594.31	6473.4	37.52	Si
SLV 13	-45025	0.24	172.52	5469.09	7784.66	6626.87	38.41	Si
SLV 12	-55382	0.24	172.52	6363.65	9370.61	7867.13	45.6	Si
SLV 11	-56212	0.24	172.52	6429.46	9491.74	7960.6	46.14	Si
SLV 10	-59529	0.24	172.52	6683.73	9976.03	8329.88	48.28	Si
SLV 9	-60359	0.24	172.52	6745.17	10097.24	8421.21	48.81	Si
SLV 8	-67476	0.24	172.52	7236.21	11111.1	9173.66	53.18	Si
SLV 7	-68306	0.24	172.52	7289.29	11225.3	9257.29	53.66	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = -0.24 Wa = 0.05 Ta = 0.0406

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 7	-57162	-87603	515	0.451	6311.1	0.976	6.71487	4.73917	Si
SLV 5	-57224	-93935	423	0.452	6317.4	0.976	6.73149	4.73917	Si
SLV 8	-56562	-86506	509	0.455	6249.9	0.976	6.77717	4.73917	Si
SLV 6	-56623	-92838	417	0.456	6256.2	0.976	6.7939	4.73917	Si
SLV 11	-47768	-73544	471	0.525	5354.2	0.972	7.84691	4.73917	Si
SLV 9	-47829	-79876	379	0.526	5360.5	0.972	7.86528	4.73917	Si
SLV 12	-47167	-72447	465	0.53	5293	0.972	7.93498	4.73917	Si
SLV 10	-47228	-78779	373	0.532	5299.3	0.972	7.95347	4.73917	Si
SLV 3	-68309	-106522	537	0.389	7446.7	0.979	5.77115	3.38993	Si
SLV 1	-68328	-108421	509	0.389	7448.6	0.979	5.77559	3.38993	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	6.805	SLV 83	Si
V_SLV	2.06	SLV 83	Si
PF_SLV	3.49	SLV 12	Si
V_SLV	2.247	SLV 1	Si
PFFP_SLV	36.598	SLV 16	Si
R_SLV	1.417	SLV 7	Si

## Maschio 18

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-13.763	-4.784	-13.763	-2.909	L2	L3	1.875	0.3	1.98	1.98	1.98			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica



									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 83	-1.59	6732.97	-32945	-0.0001801	0.0003743	0.0035	1.875	13118.12	18427.43	18427.43	2.74	No	Si
SLU 83	0.39	907.7	-28491	-0.0000948	0.0003743	0.0035	1.875	13422.03	17580.17	17580.17	19.37	No	Si
SLU 82	-1.59	6669.46	-32562	-0.0001775	0.0003743	0.0035	1.875	13169.82	18357.39	18357.39	2.75	No	Si
SLU 82	0.39	906.31	-28098	-0.0000934	0.0003743	0.0035	1.875	13417.66	17421.19	17421.19	19.22	No	Si
SLU 79	-1.59	6589.31	-32088	-0.0001743	0.0003743	0.0035	1.875	13227.11	18271.64	18271.64	2.77	No	Si
SLU 79	0.39	780.3	-27683	-0.0000906	0.0003743	0.0035	1.875	13407.55	17252.69	17252.69	22.11	No	Si
SLU 80	-1.59	6594.19	-32070	-0.0001743	0.0003743	0.0035	1.875	13229.09	18268.48	18268.48	2.77	No	Si
SLU 80	0.39	771.34	-27665	-0.0000905	0.0003743	0.0035	1.875	13407.55	17245.5	17245.5	22.36	No	Si
SLU 75	-1.59	6561.1	-31861	-0.0001729	0.0003743	0.0035	1.875	13251.98	18230.83	18230.83	2.78	No	Si
SLU 75	0.39	777.57	-27449	-0.0000898	0.0003743	0.0035	1.875	13399.36	17158.15	17158.15	22.07	No	Si
SLU 78	-1.59	6629.5	-32226	-0.0001754	0.0003743	0.0035	1.875	13211.16	18296.55	18296.55	2.76	No	Si
SLU 78	0.39	770	-27824	-0.000091	0.0003743	0.0035	1.875	13411.62	17309.82	17309.82	22.48	No	Si
SLU 81	-1.59	6664.57	-32580	-0.0001775	0.0003743	0.0035	1.875	13167.56	18360.58	18360.58	2.75	No	Si
SLU 81	0.39	915.27	-28116	-0.0000936	0.0003743	0.0035	1.875	13417.97	17428.43	17428.43	19.04	No	Si
SLU 74	-1.59	6556.22	-31878	-0.0001729	0.0003743	0.0035	1.875	13250.12	18233.98	18233.98	2.78	No	Si
SLU 74	0.39	786.52	-27467	-0.0000899	0.0003743	0.0035	1.875	13400.05	17165.32	17165.32	21.82	No	Si
SLU 84	-1.59	6737.86	-32928	-0.0001801	0.0003743	0.0035	1.875	13120.59	18424.21	18424.21	2.73	No	Si
SLU 84	0.39	898.74	-28474	-0.0000947	0.0003743	0.0035	1.875	13421.94	17574.64	17574.64	19.55	No	Si
SLU 77	-1.59	6624.62	-32244	-0.0001755	0.0003743	0.0035	1.875	13209.09	18299.72	18299.72	2.76	No	Si
SLU 77	0.39	778.95	-27842	-0.0000912	0.0003743	0.0035	1.875	13412.09	17317.03	17317.03	22.23	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 3	-1.59	5249.29	-20579	-0.0001062	0.0005615	0.0035	1.875	15879.82	15879.82	15879.82	3.03	No	Si
SLD 3	0.39	471.29	-17812	-0.0000533	0.0005615	0.0035	1.875	14175.37	14175.37	14175.37	30.08	No	Si
SLV 3	-1.59	6095.95	-18420	-0.0001076	0.0005615	0.0035	1.875	14620.53	14620.53	14620.53	2.4	No	Si
SLV 3	0.39	493.11	-16416	-0.0000494	0.0005615	0.0035	1.875	13162.66	13162.66	13162.66	26.69	No	Si
SLD 4	-1.59	5257.72	-20496	-0.000106	0.0005615	0.0035	1.875	15834.99	15834.99	15834.99	3.01	No	Si
SLD 4	0.39	454.22	-17719	-0.0000529	0.0005615	0.0035	1.875	14107.73	14107.73	14107.73	31.06	No	Si
SLD 7	-1.59	5090.97	-20806	-0.0001054	0.0005615	0.0035	1.875	16003.59	16003.59	16003.59	3.14	No	Si
SLD 7	0.39	-173.49	-17468	-0.0000496	0.0005615	0.0035	1.875	14747.3	14747.3	14747.3	85	No	Si
SLV 8	-1.59	5723.65	-18881	-0.0001052	0.0005615	0.0035	1.875	14947.77	14947.77	14947.77	2.61	No	Si
SLV 8	0.39	-1008.93	-15524	-0.0000515	0.0005615	0.0035	1.875	13439.59	13439.59	13439.59	13.32	No	Si
SLV 7	-1.59	5710.98	-19005	-0.0001055	0.0005615	0.0035	1.875	15020.69	15020.69	15020.69	2.63	No	Si
SLV 7	0.39	-983.24	-15663	-0.0000517	0.0005615	0.0035	1.875	13537.19	13537.19	13537.19	13.77	No	Si
SLV 2	-1.59	5682.58	-19612	-0.0001072	0.0005615	0.0035	1.875	15356	15356	15356	2.7	No	Si
SLV 2	0.39	1419.37	-17855	-0.000062	0.0005615	0.0035	1.875	14206.42	14206.42	14206.42	10.01	No	Si
SLV 4	-1.59	6115.58	-18228	-0.0001072	0.0005615	0.0035	1.875	14479.68	14479.68	14479.68	2.37	No	Si
SLV 4	0.39	453.34	-16200	-0.0000484	0.0005615	0.0035	1.875	13007.15	13007.15	13007.15	28.69	No	Si
SLV 1	-1.59	5662.95	-19804	-0.0001076	0.0005615	0.0035	1.875	15459.68	15459.68	15459.68	2.73	No	Si
SLV 1	0.39	1459.14	-18070	-0.000063	0.0005615	0.0035	1.875	14364.24	14364.24	14364.24	9.84	No	Si
SLD 8	-1.59	5096.51	-20752	-0.0001053	0.0005615	0.0035	1.875	15974.07	15974.07	15974.07	3.13	No	Si
SLD 8	0.39	-184.71	-17407	-0.0000495	0.0005615	0.0035	1.875	14706.93	14706.93	14706.93	79.62	No	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 64	-1.59	5957.69	-28502	-24002	1872	1.875	1.875	-42670	10833	6094	21410	16844	4781	21625	No	11.55	Si
SLU 64	0.39	515.82	-24172	-20355	2927	1.875	1.875	-36187	10833	6094	21410	16844	4781	21625	No	7.39	Si
SLU 67	-1.59	6066.29	-29006	-24426	1936	1.875	1.875	-43425	10833	6094	21410	16844	4781	21625	No	11.17	Si
SLU 67	0.39	497.95	-24688	-20790	3001	1.875	1.875	-36960	10833	6094	21410	16844	4781	21625	No	7.21	Si
SLU 72	-1.59	6099.38	-29216	-24603	1932	1.875	1.875	-43739	10833	6094	21410	16844	4781	21625	No	11.2	Si
SLU 72	0.39	491.73	-24904	-20972	2987	1.875	1.875	-37284	10833	6094	21410	16844	4781	21625	No	7.24	Si
SLU 69	-1.59	6129.8	-29390	-24749	1909	1.875	1.875	-43999	10833	6094	21410	16844	4781	21625	No	11.33	Si
SLU 69	0.39	499.34	-25081	-21121	3003	1.875	1.875	-37548	10833	6094	21410	16844	4781	21625	No	7.2	Si
SLU 78	-1.59	6629.5	-32226	-27138	1578	1.875	1.875	-48245	10833	6094	21410	16844	4781	21625	No	13.71	Si
SLU 78	0.39	770	-27824	-23431	2875	1.875	1.875	-41655	10833	6094	21410	16844	4781	21625	No	7.52	Si
SLU 68	-1.59	6034.23	-28839	-24285	1946	1.875	1.875	-43174	10833	6094	21410	16844	4781	21625	No	11.11	Si
SLU 68	0.39	493.32	-24517	-20646	2978	1.875	1.875	-36704	10833	6094	21410	16844	4781	21625	No	7.26	Si
SLU 70	-1.59	6134.69	-29372	-24734	1947	1.875	1.875	-43972	10833	6094	21410	16844	4781	21625	No	11.11	Si
SLU 70	0.39	490.38	-25063	-21106	3021	1.875	1.875	-37522	10833	6094	21410	16844	4781	21625	No	7.16	Si
SLU 66	-1.59	6061.4	-29024	-24441	1898	1.875	1.875	-43451	10833	6094	21410	16844	4781	21625	No	11.39	Si
SLU 66	0.39	506.91	-24706	-20805	2982	1.875	1.875	-36987	10833	6094	21410	16844	4781	21625	No	7.25	Si
SLU 65	-1.59	5965.83	-28473	-23977	1935	1.875	1.875	-42626	10833	6094	21410	16844	4781	21625	No	11.17	Si
SLU 65	0.39	500.89	-24142	-20330	2957	1.875	1.875	-36143	10833	6094	21410	16844	4781	21625	No	7.31	Si
SLU 71	-1.59	6094.49	-29234	-24618	1893	1.875	1.875	-43765	10833	6094	21410	16844	4781	21625	No	11.42	Si
SLU 71	0.39	500.68	-24922	-20987	2969	1.875	1.875	-37311	10833	6094	21410	16844	4781	21625	No	7.28	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 10	-1.59	3514.38	-25408	-21396	-6142	1.875	1.875	-38037	16250	9141	21410	25266	4781	30047	No	4.89	Si
SLV 10	0.39	1917.8	-22082	-18594	-1653	1.875	1.875	-33058	16250	9141	21410	25266	4781	30047	No	18.18	Si
SLV 7	-1.59	5710.98	-19005	-16004	8776	1.875	1.875	-28452	16107	9060	21410	25266	4781	30047	No	3.42	Si
SLV 7	0.39	-983.24	-15663	-13190	5958	1.875	1.875	-23449	15106	8497	21410	25266	4781	29907	No	5.02	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 8	-1.59	5723.65	-18881	-15900	8940	1.875	1.875	-28267	16070	9039	21410	25266	4781	30047		3.36	Si
SLV 8	0.39	-1008.93	-15524	-13073	6082	1.875	1.875	-23240	15065	8474	21410	25266	4781	29884		4.91	Si
SLV 1	-1.59	5662.95	-19804	-16677	5621	1.875	1.875	-29648	16250	9141	21410	25266	4781	30047		5.35	Si
SLV 1	0.39	1459.14	-18070	-15217	5629	1.875	1.875	-27053	15827	8903	21410	25266	4781	30047		5.34	Si
SLV 2	-1.59	5682.58	-19612	-16515	5874	1.875	1.875	-29360	16250	9141	21410	25266	4781	30047		5.12	Si
SLV 2	0.39	1419.37	-17855	-15035	5820	1.875	1.875	-26730	15763	8866	21410	25266	4781	30047		5.16	Si
SLV 9	-1.59	3501.7	-25532	-21500	-6305	1.875	1.875	-38223	16250	9141	21410	25266	4781	30047		4.77	Si
SLV 9	0.39	1943.49	-22221	-18713	-1776	1.875	1.875	-33267	16250	9141	21410	25266	4781	30047		16.92	Si
SLV 4	-1.59	6115.58	-18228	-15350	9293	1.875	1.806	-27289	15874	8601	21410	25266	4781	30011		3.23	Si
SLV 4	0.39	453.34	-16200	-13642	7359	1.875	1.875	-24252	15267	8588	21410	25266	4781	29998		4.08	Si
SLV 14	-1.59	3129.41	-25993	-21889	-6405	1.875	1.875	-38913	16250	9141	21410	25266	4781	30047		4.69	Si
SLV 14	0.39	441.45	-21329	-17961	-2862	1.875	1.875	-31931	16250	9141	21410	25266	4781	30047		10.5	Si
SLV 13	-1.59	3109.78	-26185	-22050	-6658	1.875	1.875	-39200	16250	9141	21410	25266	4781	30047		4.51	Si
SLV 13	0.39	481.22	-21545	-18143	-3053	1.875	1.875	-32255	16250	9141	21410	25266	4781	30047		9.84	Si
SLV 3	-1.59	6095.95	-18420	-15512	9040	1.875	1.8197	-27576	15932	8697	21410	25266	4781	30047		3.32	Si
SLV 3	0.39	493.11	-16416	-13824	7168	1.875	1.875	-24576	15332	8624	21410	25266	4781	30034		4.19	Si

**Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)**

quota -0.6 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 4	179667	0.24	28902	-16258	40.41	1977.12	48.93	Si
SLV 3	179667	0.24	29363	-16516	40.41	2001.13	49.52	Si
SLV 8	179667	0.24	29431	-16555	40.41	2004.66	49.61	Si
SLV 7	179667	0.24	29728	-16722	40.41	2020.03	49.99	Si
SLV 2	179667	0.24	31730	-17848	40.41	2120.97	52.49	Si
SLV 1	179667	0.24	32190	-18107	40.41	2143.55	53.05	Si
SLV 12	179667	0.24	32641	-18361	40.41	2165.45	53.59	Si
SLV 11	179667	0.24	32938	-18528	40.41	2179.76	53.94	Si
SLV 6	179667	0.24	38856	-21856	40.41	2444.32	60.49	Si
SLV 5	179667	0.24	39153	-22024	40.41	2456.59	60.79	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

**Verifica dei meccanismi locali di collasso con analisi cinematica lineare**

forza di aggancio al piano = 5617 quota mezzeria = -0.6 Wa = 0.05 Ta = 0.0218

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 9	-22221	-25532	-10	0.532	2419.6	0.98	7.89272	3.30477	Si
SLV 10	-22082	-25408	-10	0.535	2405.4	0.98	7.93478	3.30477	Si
SLV 5	-21179	-23617	79	0.55	2313.4	0.979	8.17201	3.30477	Si
SLV 6	-21039	-23493	80	0.553	2299.1	0.979	8.21739	3.30477	Si
SLV 13	-21545	-26185	-155	0.539	2350.7	0.979	8.00522	2.79435	Si
SLV 14	-21329	-25993	-154	0.544	2328.7	0.979	8.07367	2.79435	Si
SLV 11	-16705	-20920	-125	0.668	1857.7	0.974	9.9635	3.30477	Si
SLV 12	-16566	-20795	-125	0.672	1843.5	0.974	10.03588	3.30477	Si
SLV 15	-19890	-24801	-189	0.574	2182.1	0.978	8.539	2.79435	Si
SLV 16	-19674	-24609	-189	0.58	2160.1	0.977	8.61873	2.79435	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

**Tabella dei coefficienti di sicurezza minimi**

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	2.734	SLU 84	Si
V_SLU	7.157	SLU 70	Si
PF_SLV	2.368	SLV 4	Si
V_SLV	3.229	SLV 4	Si
PFFP_SLV	48.929	SLV 4	Si
R_SLV	2.388	SLV 9	Si

**Maschio 19**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati geometrici**

X inl.	Y inl.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h inl.	h fin.	a	a.s.,sx	a.s.,dx
-13.763	-4.784	-13.763	-2.909	L3	L4	1.875	0.3	0.72	0.72	0.72			

**Caratteristiche del materiale**

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

**Materiale per FRCM**

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio



## Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche,  $\gamma_{\text{M}} = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_{\text{m}}$	$\epsilon_{\text{m}_-}$	$\epsilon_{\text{m}_+}$	$\text{d}_f$	$\text{M}_{\text{0d}}$	$\text{M}_{\text{1d}}$	$\text{M}_{\text{Rd}}$	c.s.	Incremento > 50%	Verifica
SLU 83	0.39	5647.58	-33315	-0.0001683	0.0003743	0.0035	1.875	13063.66	18495.63	18495.63	3.27	No	Si
SLU 83	1.11	1603.07	-31758	-0.0001145	0.0003743	0.0035	1.875	13262.62	18212.55	18212.55	11.36	No	Si
SLU 82	0.39	5583.7	-32828	-0.0001653	0.0003743	0.0035	1.875	13134.49	18405.87	18405.87	3.3	No	Si
SLU 82	1.11	1571.34	-31287	-0.0001123	0.0003743	0.0035	1.875	13307.16	18128.98	18128.98	11.54	No	Si
SLU 79	0.39	5588.07	-32573	-0.0001642	0.0003743	0.0035	1.875	13168.46	18359.31	18359.31	3.29	No	Si
SLU 79	1.11	1584.75	-30969	-0.0001113	0.0003743	0.0035	1.875	13333.17	18072.99	18072.99	11.4	No	Si
SLU 78	0.39	5620.93	-32760	-0.0001655	0.0003743	0.0035	1.875	13143.67	18393.55	18393.55	3.27	No	Si
SLU 78	1.11	1576.18	-31165	-0.0001119	0.0003743	0.0035	1.875	13317.51	18107.52	18107.52	11.49	No	Si
SLU 84	0.39	5654.58	-33308	-0.0001684	0.0003743	0.0035	1.875	13064.77	18494.29	18494.29	3.27	No	Si
SLU 84	1.11	1593.97	-31758	-0.0001144	0.0003743	0.0035	1.875	13262.62	18212.55	18212.55	11.43	No	Si
SLU 74	0.39	5543.05	-32287	-0.0001624	0.0003743	0.0035	1.875	13203.91	18307.58	18307.58	3.3	No	Si
SLU 74	1.11	1562.65	-30694	-0.00011	0.0003743	0.0035	1.875	13352.9	18025.15	18025.15	11.53	No	Si
SLU 81	0.39	5576.7	-32835	-0.0001653	0.0003743	0.0035	1.875	13133.5	18407.2	18407.2	3.3	No	Si
SLU 81	1.11	1580.44	-31287	-0.0001124	0.0003743	0.0035	1.875	13307.17	18128.98	18128.98	11.47	No	Si
SLU 80	0.39	5595.07	-32565	-0.0001643	0.0003743	0.0035	1.875	13169.4	18357.99	18357.99	3.28	No	Si
SLU 80	1.11	1575.64	-30969	-0.0001112	0.0003743	0.0035	1.875	13333.17	18073	18073	11.47	No	Si
SLU 75	0.39	5550.05	-32280	-0.0001624	0.0003743	0.0035	1.875	13204.78	18306.27	18306.27	3.3	No	Si
SLU 75	1.11	1553.54	-30694	-0.0001099	0.0003743	0.0035	1.875	13352.9	18025.15	18025.15	11.6	No	Si
SLU 77	0.39	5613.93	-32768	-0.0001654	0.0003743	0.0035	1.875	13142.69	18394.88	18394.88	3.28	No	Si
SLU 77	1.11	1585.28	-31165	-0.000112	0.0003743	0.0035	1.875	13317.51	18107.51	18107.51	11.42	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche,  $\gamma_{\text{M}} = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_{\text{m}}$	$\epsilon_{\text{m}_-}$	$\epsilon_{\text{m}_+}$	$\text{d}_f$	$\text{M}_{\text{0d}}$	$\text{M}_{\text{1d}}$	$\text{M}_{\text{Rd}}$	c.s.	Incremento > 50%	Verifica
SLV 15	0.39	5247.36	-25794	-0.0001233	0.0005615	0.0035	1.875		18774.39	18774.39	3.58		Si
SLV 15	1.11	4187.66	-22086	-0.0001009	0.0005615	0.0035	1.875		16704.76	16704.76	3.99		Si
SLV 14	0.39	4364.31	-25938	-0.0001151	0.0005615	0.0035	1.875		18856.39	18856.39	4.32		Si
SLV 14	1.11	4533.15	-21963	-0.0001038	0.0005615	0.0035	1.875		16637.09	16637.09	3.67		Si
SLV 7	0.39	5022.26	-20759	-0.0001046	0.0005615	0.0035	1.875		15977.69	15977.69	3.18		Si
SLV 7	1.11	-762.31	-20991	-0.0000653	0.0005615	0.0035	1.875		16976.46	16976.46	22.27		Si
SLV 16	0.39	5134.25	-25586	-0.0001215	0.0005615	0.0035	1.875		18656.95	18656.95	3.63		Si
SLV 16	1.11	3943.25	-22072	-0.0000985	0.0005615	0.0035	1.875		16696.99	16696.99	4.23		Si
SLV 11	0.39	5531.49	-22876	-0.0001164	0.0005615	0.0035	1.875		17141.21	17141.21	3.1		Si
SLV 11	1.11	1184.68	-21554	-0.0000709	0.0005615	0.0035	1.875		16412.18	16412.18	13.85		Si
SLV 13	0.39	4477.43	-26146	-0.0001169	0.0005615	0.0035	1.875		18974.17	18974.17	4.24		Si
SLV 13	1.11	4777.57	-21977	-0.0001062	0.0005615	0.0035	1.875		16644.85	16644.85	3.48		Si
SLD 11	0.39	4647.25	-22564	-0.0001068	0.0005615	0.0035	1.875		16968.59	16968.59	3.65		Si
SLD 11	1.11	1132.69	-21299	-0.0000697	0.0005615	0.0035	1.875		16272.46	16272.46	14.37		Si
SLV 8	0.39	4949.2	-20625	-0.0001035	0.0005615	0.0035	1.875		15904.74	15904.74	3.21		Si
SLV 8	1.11	-920.17	-20982	-0.0000668	0.0005615	0.0035	1.875		16971	16971	18.44		Si
SLV 12	0.39	5458.43	-22742	-0.0001152	0.0005615	0.0035	1.875		17067.06	17067.06	3.13		Si
SLV 12	1.11	1026.82	-21545	-0.0000694	0.0005615	0.0035	1.875		16407.18	16407.18	15.98		Si
SLD 12	0.39	4615.33	-22505	-0.0001063	0.0005615	0.0035	1.875		16936.22	16936.22	3.67		Si
SLD 12	1.11	1063.72	-21295	-0.000069	0.0005615	0.0035	1.875		16270.29	16270.29	15.3		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_{\text{M}} = 3$

Comb.	Quota	M	N	Nmur	V	$\text{d}_f$	$\text{I}'$	$\sigma_{\text{N}}$	$\text{f}_{\text{vd}}$	$\text{V}_t$	$\text{V}_{\text{t,f}}$	$\text{V}_{\text{t,c}}$	$\text{V}_{\text{t,c.int.}}$	$\text{V}_{\text{t,R}}$	res. > 50%	c.s.	Verifica
SLU 80	0.39	5595.07	-32565	-27423	7369	1.875	1.875	-48753	10833	6094	7137	16844	4781	13230	No	1.8	Si
SLU 80	1.11	1575.64	-30969	-26079	7783	1.875	1.875	-46362	10833	6094	7137	16844	4781	13230	No	1.7	Si
SLU 78	0.39	5620.93	-32760	-27588	7397	1.875	1.875	-49045	10833	6094	7137	16844	4781	13230	No	1.79	Si
SLU 78	1.11	1576.18	-31165	-26244	7819	1.875	1.875	-46657	10833	6094	7137	16844	4781	13230	No	1.69	Si
SLU 79	0.39	5588.07	-32573	-27430	7325	1.875	1.875	-48764	10833	6094	7137	16844	4781	13230	No	1.81	Si
SLU 79	1.11	1584.75	-30969	-26079	7742	1.875	1.875	-46362	10833	6094	7137	16844	4781	13230	No	1.71	Si
SLU 77	0.39	5613.93	-32768	-27594	7353	1.875	1.875	-49056	10833	6094	7137	16844	4781	13230	No	1.8	Si
SLU 77	1.11	1585.28	-31165	-26244	7778	1.875	1.875	-46657	10833	6094	7137	16844	4781	13230	No	1.7	Si
SLU 81	0.39	5576.7	-32835	-27651	7357	1.875	1.875	-49157	10833	6094	7137	16844	4781	13230	No	1.8	Si
SLU 81	1.11	1580.44	-31287	-26347	7766	1.875	1.875	-46839	10833	6094	7137	16844	4781	13230	No	1.7	Si
SLU 75	0.39	5550.05	-32280	-27183	7332	1.875	1.875	-48326	10833	6094	7137	16844	4781	13230	No	1.8	Si
SLU 75	1.11	1553.54	-30694	-25848	7744	1.875	1.875	-45952	10833	6094	7137	16844	4781	13230	No	1.71	Si
SLU 83	0.39	5647.58	-33315	-28055	7422	1.875	1.875	-49876	10833	6094	7137	16844	4781	13230	No	1.78	Si
SLU 83	1.11	1603.07	-31758	-26744	7840	1.875	1.875	-47544	10833	6094	7137	16844	4781	13230	No	1.69	Si
SLU 82	0.39	5583.7	-32828	-27644	7401	1.875	1.875	-49146	10833	6094	7137	16844	4781	13230	No	1.79	Si
SLU 82	1.11	1571.34	-31287	-26347	7807	1.875	1.875	-46839	10833	6094	7137	16844	4781	13230	No	1.69	Si
SLU 84	0.39	5654.58	-33308	-28049	7466	1.875	1.875	-49865	10833	6094	7137	16844	4781	13230	No	1.77	Si
SLU 84	1.11	1593.97	-31758	-26744	7881	1.875	1.875	-47544	10833	6094	7137	16844	4781	13230	No	1.68	Si
SLU 76	0.39	5528.86	-32080	-27015	7333	1.875	1.875	-48027	10833	6094	7137	16844	4781	13230	No	1.8	Si
SLU 76	1.11	1546.94	-30498	-25682	7735	1.875	1.875	-45657	10833	6094	7137	16844	4781	13230	No	1.71	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_{\text{M}} = 2$

Comb.	Quota	M	N	Nmur	V	$\text{d}_f$	$\text{I}'$	$\sigma_{\text{N}}$	$\text{f}_{\text{vd}}$	$\text{V}_t$	$\text{V}_{\text{t,f}}$	$\text{V}_{\text{t,c}}$	$\text{V}_{\text{t,c.int.}}$	$\text{V}_{\text{t,R}}$	res. > 50%	c.s.	Verifica
SLV 7	0.39	5022.26	-20759	-17481	13410	1.875	1.875	-31077	16250	9141	7137	25266	4781	16277		1.21	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 7	1.11	-762.31	-20991	-17676	13004	1.875	1.875	-31425	16250	9141	7137	25266	4781	16277		1.25	Si
SLV 3	0.39	3549.92	-18736	-15778	11836	1.875	1.875	-28049	16027	9015	7137	25266	4781	16152		1.36	Si
SLV 3	1.11	-2302.28	-20209	-17019	11963	1.875	1.875	-30255	16250	9141	7137	25266	4781	16277		1.36	Si
SLV 11	0.39	5531.49	-22876	-19264	10661	1.875	1.875	-34247	16250	9141	7137	25266	4781	16277		1.53	Si
SLV 11	1.11	1184.68	-21554	-18150	10215	1.875	1.875	-32268	16250	9141	7137	25266	4781	16277		1.59	Si
SLV 4	0.39	3436.81	-18529	-15603	11938	1.875	1.875	-27739	15964	8980	7137	25266	4781	16117		1.35	Si
SLV 4	1.11	-2546.7	-20195	-17007	12077	1.875	1.875	-30234	16250	9141	7137	25266	4781	16277		1.35	Si
SLD 8	0.39	4397.84	-21601	-18190	8870	1.875	1.875	-32338	16250	9141	7137	25266	4781	16277		1.84	Si
SLD 8	1.11	231.2	-21054	-17730	8849	1.875	1.875	-31520	16250	9141	7137	25266	4781	16277		1.84	Si
SLD 7	0.39	4429.76	-21659	-18240	8841	1.875	1.875	-32426	16250	9141	7137	25266	4781	16277		1.84	Si
SLD 7	1.11	300.17	-21058	-17733	8817	1.875	1.875	-31526	16250	9141	7137	25266	4781	16277		1.85	Si
SLV 8	0.39	4949.2	-20625	-17368	13476	1.875	1.875	-30877	16250	9141	7137	25266	4781	16277		1.21	Si
SLV 8	1.11	-920.17	-20982	-17669	13077	1.875	1.875	-31411	16250	9141	7137	25266	4781	16277		1.24	Si
SLD 4	0.39	3739.98	-20709	-17439	8146	1.875	1.875	-31002	16250	9141	7137	25266	4781	16277		2	Si
SLD 4	1.11	-454.62	-20710	-17440	8361	1.875	1.875	-31004	16250	9141	7137	25266	4781	16277		1.95	Si
SLV 12	0.39	5458.43	-22742	-19151	10727	1.875	1.875	-34046	16250	9141	7137	25266	4781	16277		1.52	Si
SLV 12	1.11	1026.82	-21545	-18143	10289	1.875	1.875	-32254	16250	9141	7137	25266	4781	16277		1.58	Si
SLV 2	0.39	2666.87	-18881	-15900	7855	1.875	1.875	-28266	16070	9039	7137	25266	4781	16176		2.06	Si
SLV 2	1.11	-1956.79	-20087	-16915	8413	1.875	1.875	-30071	16250	9141	7137	25266	4781	16277		1.93	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 0.75 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 1	179667	0.26	34071	-19165	5.69	2233.37	392.76	Si
SLV 2	179667	0.26	34090	-19176	5.69	2234.27	392.92	Si
SLV 3	179667	0.26	34165	-19218	5.69	2237.76	393.54	Si
SLV 4	179667	0.26	34184	-19228	5.69	2238.65	393.69	Si
SLV 5	179667	0.26	34582	-19452	5.69	2257.12	396.94	Si
SLV 6	179667	0.26	34594	-19459	5.69	2257.7	397.04	Si
SLV 7	179667	0.26	34895	-19629	5.69	2271.52	399.47	Si
SLV 8	179667	0.26	34908	-19636	5.69	2272.09	399.57	Si
SLV 9	179667	0.26	35111	-19750	5.69	2281.4	401.21	Si
SLV 10	179667	0.26	35124	-19757	5.69	2281.97	401.31	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 0.75 Wa = 0.05 Ta = 0.0029

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 11	-21554	-22876	-69	0.689	2253	0.992	10.09735	2.61336	Si
SLV 12	-21545	-22742	-71	0.689	2252.1	0.992	10.09909	2.61336	Si
SLV 15	-22086	-25794	-15	0.68	2307.3	0.992	9.96413	2.5605	Si
SLV 16	-22072	-25586	-18	0.68	2305.8	0.992	9.96667	2.5605	Si
SLV 9	-21191	-24050	-113	0.695	2216	0.992	10.18785	2.61336	Si
SLV 10	-21182	-23916	-115	0.695	2215.1	0.992	10.18966	2.61336	Si
SLV 13	-21977	-26146	-28	0.682	2296.2	0.992	9.98966	2.5605	Si
SLV 14	-21963	-25938	-31	0.682	2294.7	0.992	9.99223	2.5605	Si
SLV 7	-20991	-20759	-129	0.699	2195.6	0.992	10.24443	2.61336	Si
SLV 8	-20982	-20625	-131	0.699	2194.7	0.992	10.24627	2.61336	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.271	SLV 84	Si
V_SLV	1.679	SLV 84	Si
PF_SLV	3.099	SLV 11	Si
V_SLV	1.208	SLV 8	Si
PFFP_SLV	392.765	SLV 1	Si
R_SLV	3.864	SLV 11	Si

Maschio 20

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-13.763	-2.909	-13.763	1.046	L2	L4	3.955	0.3	2.7	2.7	2.7			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio



## Rinforzo a matrice inorganica

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	elim,conv / e,CNR DT-200							CRM / Fibrenet?			
									qt	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma F_d$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche,  $\gamma M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 83	-1.59	51642.26	-51868	-0.0002294	0.0003743	0.0035	3.955	58528.33	71288.23	71288.23	1.38	No	Si
SLU 83	1.11	-1110.56	-58515	-0.0000852	0.0003743	0.0035	3.955	59661.83	78541.92	78541.92	70.72	No	Si
SLU 74	-1.59	50079.35	-50303	-0.0002194	0.0003743	0.0035	3.955	58051.19	70004.78	70004.78	1.4	No	Si
SLU 74	1.11	-1252.2	-56427	-0.0000822	0.0003743	0.0035	3.955	59461.56	77255.48	77255.48	61.7	No	Si
SLU 81	-1.59	51063.74	-51275	-0.0002257	0.0003743	0.0035	3.955	58357.16	70800.34	70800.34	1.39	No	Si
SLU 81	1.11	-1011.52	-57737	-0.0000837	0.0003743	0.0035	3.955	59603.94	78057.2	78057.2	77.17	No	Si
SLU 75	-1.59	50133.15	-50322	-0.0002198	0.0003743	0.0035	3.955	58057.41	70020.13	70020.13	1.4	No	Si
SLU 75	1.11	-1273.03	-56430	-0.0000822	0.0003743	0.0035	3.955	59462.01	77257.58	77257.58	60.69	No	Si
SLU 78	-1.59	50711.67	-50914	-0.0002234	0.0003743	0.0035	3.955	58247.07	70503.88	70503.88	1.39	No	Si
SLU 78	1.11	-1372.07	-57208	-0.0000837	0.0003743	0.0035	3.955	59553.21	77731.15	77731.15	56.65	No	Si
SLU 77	-1.59	50657.86	-50895	-0.0002231	0.0003743	0.0035	3.955	58241.21	70488.45	70488.45	1.39	No	Si
SLU 77	1.11	-1351.24	-57204	-0.0000837	0.0003743	0.0035	3.955	59552.84	77729.01	77729.01	57.52	No	Si
SLU 80	-1.59	50427.73	-50632	-0.0002216	0.0003743	0.0035	3.955	58158.28	70273.46	70273.46	1.39	No	Si
SLU 80	1.11	-1432.68	-56897	-0.0000833	0.0003743	0.0035	3.955	59519.12	77540.99	77540.99	54.12	No	Si
SLU 82	-1.59	51117.55	-51294	-0.000226	0.0003743	0.0035	3.955	58362.78	70815.82	70815.82	1.39	No	Si
SLU 82	1.11	-1032.35	-57741	-0.0000838	0.0003743	0.0035	3.955	59604.24	78059.36	78059.36	75.61	No	Si
SLU 84	-1.59	51696.06	-51886	-0.0002298	0.0003743	0.0035	3.955	58533.58	71303.79	71303.79	1.38	No	Si
SLU 84	1.11	-1131.39	-58519	-0.0000853	0.0003743	0.0035	3.955	59662.05	78544.1	78544.1	69.42	No	Si
SLU 79	-1.59	50373.92	-50613	-0.0002213	0.0003743	0.0035	3.955	58152.25	70258.07	70258.07	1.39	No	Si
SLU 79	1.11	-1411.85	-56893	-0.0000833	0.0003743	0.0035	3.955	59518.72	77538.86	77538.86	54.92	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche,  $\gamma M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 15	-1.59	41047.45	-40005	-0.0001547	0.0005615	0.0035	3.955		66554.35	66554.35	1.62		Si
SLV 15	1.11	-2822.47	-45516	-0.0000659	0.0005615	0.0035	3.955		77643.04	77643.04	27.51		Si
SLD 7	-1.59	37273.9	-35582	-0.000139	0.0005615	0.0035	3.955		60091.09	60091.09	1.61		Si
SLD 7	1.11	-2689.76	-38114	-0.0000552	0.0005615	0.0035	3.955		67913.29	67913.29	25.25		Si
SLV 12	-1.59	42886.45	-38671	-0.0001653	0.0005615	0.0035	3.955		64863.52	64863.52	1.51		Si
SLV 12	1.11	-4758.98	-40881	-0.0000634	0.0005615	0.0035	3.955		71679.64	71679.64	15.06		Si
SLD 11	-1.59	38363.18	-36661	-0.0001436	0.0005615	0.0035	3.955		61767.76	61767.76	1.61		Si
SLD 11	1.11	-2819.77	-39787	-0.0000578	0.0005615	0.0035	3.955		70194.32	70194.32	24.89		Si
SLD 8	-1.59	37342.06	-35576	-0.0001393	0.0005615	0.0035	3.955		60081.53	60081.53	1.61		Si
SLD 8	1.11	-2649.9	-38056	-0.0000551	0.0005615	0.0035	3.955		67834.53	67834.53	25.6		Si
SLV 8	-1.59	40332.29	-36143	-0.0001543	0.0005615	0.0035	3.955		60961.47	60961.47	1.51		Si
SLV 8	1.11	-4458.74	-36972	-0.0000573	0.0005615	0.0035	3.955		66371.39	66371.39	14.89		Si
SLD 12	-1.59	38431.34	-36655	-0.0001439	0.0005615	0.0035	3.955		61758.16	61758.16	1.61		Si
SLD 12	1.11	-2779.91	-39729	-0.0000577	0.0005615	0.0035	3.955		70114.67	70114.67	25.22		Si
SLV 11	-1.59	42730.45	-38685	-0.0001644	0.0005615	0.0035	3.955		64884.01	64884.01	1.52		Si
SLV 11	1.11	-4850.22	-41014	-0.0000637	0.0005615	0.0035	3.955		71855.24	71855.24	14.81		Si
SLV 16	-1.59	41288.99	-39983	-0.0001558	0.0005615	0.0035	3.955		66529.17	66529.17	1.61		Si
SLV 16	1.11	-2681.2	-45310	-0.0000653	0.0005615	0.0035	3.955		77381.77	77381.77	28.86		Si
SLV 7	-1.59	40176.28	-36157	-0.0001534	0.0005615	0.0035	3.955		60983.41	60983.41	1.52		Si
SLV 7	1.11	-4549.99	-37105	-0.0000576	0.0005615	0.0035	3.955		66550.4	66550.4	14.63		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 80	-1.59	50427.73	-50632	-42638	12361	3.955	2.9446	-35936	10833	9570	30925	35529	10085	40495	No	3.28	Si
SLU 80	1.11	-1432.68	-56897	-47913	11134	3.955	3.955	-40382	10833	12854	30925	35529	10085	43779	No	3.93	Si
SLU 78	-1.59	50711.67	-50914	-42875	12392	3.955	2.9444	-36136	10833	9569	30925	35529	10085	40495	No	3.27	Si
SLU 78	1.11	-1372.07	-57208	-48175	11129	3.955	3.955	-40603	10833	12854	30925	35529	10085	43779	No	3.93	Si
SLU 75	-1.59	50133.15	-50322	-42376	12213	3.955	2.9437	-35715	10833	9567	30925	35529	10085	40493	No	3.32	Si
SLU 75	1.11	-1273.03	-56430	-47520	10971	3.955	3.955	-40051	10833	12854	30925	35529	10085	43779	No	3.99	Si
SLU 79	-1.59	50373.92	-50613	-42622	12301	3.955	2.9467	-35922	10833	9577	30925	35529	10085	40502	No	3.29	Si
SLU 79	1.11	-1411.85	-56893	-47910	11046	3.955	3.955	-40379	10833	12854	30925	35529	10085	43779	No	3.96	Si
SLU 76	-1.59	49885.09	-50053	-42150	12222	3.955	2.9425	-35524	10833	9563	30925	35529	10085	40489	No	3.31	Si
SLU 76	1.11	-1347.52	-56121	-47260	11035	3.955	3.955	-39831	10833	12854	30925	35529	10085	43779	No	3.97	Si
SLU 81	-1.59	51063.74	-51275	-43179	12246	3.955	2.9449	-36392	10833	9571	30925	35529	10085	40496	No	3.31	Si
SLU 81	1.11	-1011.52	-57737	-48621	10952	3.955	3.955	-40978	10833	12854	30925	35529	10085	43779	No	4	Si
SLU 82	-1.59	51117.55	-51294	-43195	12307	3.955	2.9428	-36406	10833	9564	30925	35529	10085	40490	No	3.29	Si
SLU 82	1.11	-1032.35	-57741	-48624	11041	3.955	3.955	-40981	10833	12854	30925	35529	10085	43779	No	3.97	Si
SLU 77	-1.59	50657.86	-50895	-42859	12332	3.955	2.9465	-36122	10833	9576	30925	35529	10085	40502	No	3.28	Si
SLU 77	1.11	-1351.24	-57204	-48172	11040	3.955	3.955	-40600	10833	12854	30925	35529	10085	43779	No	3.97	Si
SLU 83	-1.59	51642.26	-51868	-43678	12426	3.955	2.9455	-36812	10833	9573	30925	35529	10085	40498	No	3.26	Si
SLU 83	1.11	-1110.56	-58515	-49276	11110	3.955	3.955	-41531	10833	12854	30925	35529	10085	43779	No	3.94	Si
SLU 84	-1.59	51696.06	-51886	-43694	12486	3.955	2.9435	-36826	10833	9566	30925	35529	10085	40492	No	3.24	Si
SLU 84	1.11	-1131.39	-58519	-49279	11198	3.955	3.955	-41533	10833	12854	30925	35529	10085	43779	No	3.91	Si





## Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 4	-1.59	32775.1	-31557	-26574	14961	3.955	2.8167	-22397	14896	12587	30925	53294	10085	43513		2.91	Si
SLV 4	1.11	-1680.41	-32280	-27183	18995	3.955	3.955	-22910	14999	17796	30925	53294	10085	48721		2.56	Si
SLV 8	-1.59	40332.29	-36143	-30436	18298	3.955	2.5848	-25652	15547	12056	30925	53294	10085	42981		2.35	Si
SLV 8	1.11	-4458.74	-36972	-31134	22951	3.955	3.955	-26240	15665	18586	30925	53294	10085	49512		2.16	Si
SLV 12	-1.59	42886.45	-38671	-32565	16119	3.955	2.6055	-27446	15906	12433	30925	53294	10085	43358		2.69	Si
SLV 12	1.11	-4758.98	-40881	-34426	18681	3.955	3.955	-29015	16220	19245	30925	53294	10085	50170		2.69	Si
SLV 11	-1.59	42730.45	-38685	-32577	15991	3.955	2.6188	-27456	15908	12498	30925	53294	10085	43423		2.72	Si
SLV 11	1.11	-4850.22	-41014	-34538	18537	3.955	3.955	-29109	16238	19267	30925	53294	10085	50192		2.71	Si
SLD 7	-1.59	37273.9	-35582	-29964	12864	3.955	2.7898	-25254	15467	12945	30925	53294	10085	43871		3.41	Si
SLD 7	1.11	-2689.76	-38114	-32096	14464	3.955	3.955	-27051	15827	18779	30925	53294	10085	49704		3.44	Si
SLD 12	-1.59	38431.34	-36655	-30868	11989	3.955	2.7871	-26016	15620	13060	30925	53294	10085	43986		3.67	Si
SLD 12	1.11	-2779.91	-39729	-33456	12702	3.955	3.955	-28197	16056	19051	30925	53294	10085	49976		3.93	Si
SLD 11	-1.59	38363.18	-36661	-30873	11933	3.955	2.7932	-26020	15621	13090	30925	53294	10085	44015		3.69	Si
SLD 11	1.11	-2819.77	-39787	-33505	12639	3.955	3.955	-28238	16064	19060	30925	53294	10085	49986		3.96	Si
SLV 7	-1.59	40176.28	-36157	-30448	18170	3.955	2.599	-25662	15549	12124	30925	53294	10085	43049		2.37	Si
SLV 7	1.11	-4549.99	-37105	-31246	22806	3.955	3.955	-26335	15684	18609	30925	53294	10085	49534		2.17	Si
SLD 8	-1.59	37342.06	-35576	-29958	12920	3.955	2.7835	-25249	15467	12916	30925	53294	10085	43841		3.39	Si
SLD 8	1.11	-2649.9	-38056	-32047	14527	3.955	3.955	-27010	15819	18769	30925	53294	10085	49694		3.42	Si
SLV 3	-1.59	32533.56	-31579	-26593	14762	3.955	2.8418	-22413	14899	12702	30925	53294	10085	43628		2.96	Si
SLV 3	1.11	-1821.69	-32486	-27357	18771	3.955	3.955	-23057	15028	17831	30925	53294	10085	48756		2.6	Si

## Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota -0.24  $W_a$  0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 2	179667	0.24	31193	-37010	158.49	4417.6	27.87	Si
SLV 1	179667	0.24	31323	-37165	158.49	4431.34	27.96	Si
SLV 4	179667	0.24	31496	-37370	158.49	4449.43	28.07	Si
SLV 3	179667	0.24	31627	-37525	158.49	4463.08	28.16	Si
SLV 6	179667	0.24	32716	-38818	158.49	4575.31	28.87	Si
SLV 5	179667	0.24	32801	-38918	158.49	4583.89	28.92	Si
SLV 8	179667	0.24	33728	-40018	158.49	4676.99	29.51	Si
SLV 7	179667	0.24	33812	-40118	158.49	4685.37	29.56	Si
SLV 10	179667	0.24	34306	-40704	158.49	4734.06	29.87	Si
SLV 9	179667	0.24	34391	-40804	158.49	4742.34	29.92	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

## Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = -0.24  $W_a = 0.05$   $T_a = 0.0406$

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	a0*	aLim	Verifica
SLV 9	-40743	-34020	-389	0.56	4599.1	0.97	8.3827	4.73917	Si
SLV 10	-40610	-34006	-388	0.561	4585.5	0.97	8.40681	4.73917	Si
SLV 11	-41014	-38685	67	0.564	4626.7	0.97	8.44471	4.73917	Si
SLV 12	-40881	-38671	68	0.565	4613.1	0.97	8.46826	4.73917	Si
SLV 5	-36834	-31492	-516	0.606	4201.1	0.967	9.10267	4.73917	Si
SLV 6	-36701	-31478	-515	0.608	4187.6	0.967	9.13172	4.73917	Si
SLV 7	-37105	-36157	-60	0.614	4228.7	0.968	9.2161	4.73917	Si
SLV 8	-36972	-36143	-59	0.615	4215.2	0.968	9.24533	4.73917	Si
SLV 15	-45516	-40005	55	0.517	5085.1	0.973	7.72025	3.38993	Si
SLV 13	-45435	-38606	-82	0.517	5076.8	0.973	7.72372	3.38993	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

## Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	1.379	SLU 84	Si
V_SLU	3.243	SLU 84	Si
PF_SLV	1.511	SLV 8	Si
V_SLV	2.157	SLV 8	Si
PFFP_SLV	27.873	SLV 2	Si
R_SLV	1.769	SLV 9	Si

## Maschio 21

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X inl.	Y inl.	X fin.	Y fin.	Quota l.	Quota s.	I	Sp.	h netta	h inl.	h fin.	a	a.s.sx	a.s.dx
-19.638	1.046	-24.653	1.046	L2	L4	5.015	0.45	2.7	2.7	2.7			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

f <sub>b</sub>	f <sub>k</sub>	f <sub>vk0</sub>	f <sub>medio</sub>	$\tau_0$	f <sub>v0</sub>	$\mu$	$\phi$	f <sub>v,lim</sub>	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM





Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	elim,conv / $\epsilon_c$ CNR DT-200							CRM / Fibrenet?			
									$\alpha_t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma_{F,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche,  $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 45	-1.59	955.37	-131086	-0.0000925	0.0004492	0.0035	5.015	172439.77	233562.29	233562.29	244.47	No	Si
SLU 45	0.51	9763.67	-92865	-0.0000714	0.0004492	0.0035	5.015	154437.66	184254.04	184254.04	18.87	No	Si
SLU 49	-1.59	1016.03	-132694	-0.0000939	0.0004492	0.0035	5.015	172614.74	235110.01	235110.01	231.4	No	Si
SLU 49	0.51	9931.11	-94075	-0.0000724	0.0004492	0.0035	5.015	155414.38	185941.12	185941.12	18.72	No	Si
SLU 43	-1.59	899.57	-128514	-0.0000905	0.0004492	0.0035	5.015	172062.1	231086.47	231086.47	256.89	No	Si
SLU 43	0.51	9552.52	-90903	-0.0000697	0.0004492	0.0035	5.015	152796.42	181516.91	181516.91	19	No	Si
SLU 47	-1.59	965.86	-130130	-0.0000918	0.0004492	0.0035	5.015	172313.41	232641.86	232641.86	240.87	No	Si
SLU 47	0.51	9721.96	-92114	-0.0000708	0.0004492	0.0035	5.015	153817.68	183206.29	183206.29	18.84	No	Si
SLU 44	-1.59	913.63	-128534	-0.0000905	0.0004492	0.0035	5.015	172065.49	231105.65	231105.65	252.95	No	Si
SLU 44	0.51	9557.52	-90907	-0.0000697	0.0004492	0.0035	5.015	152799.94	181522.66	181522.66	18.99	No	Si
SLU 46	-1.59	963.81	-131098	-0.0000926	0.0004492	0.0035	5.015	172441.24	233573.8	233573.8	242.34	No	Si
SLU 46	0.51	9766.67	-92868	-0.0000714	0.0004492	0.0035	5.015	154439.69	184257.49	184257.49	18.87	No	Si
SLU 48	-1.59	1007.6	-132682	-0.0000938	0.0004492	0.0035	5.015	172613.61	235098.5	235098.5	233.33	No	Si
SLU 48	0.51	9928.11	-94072	-0.0000724	0.0004492	0.0035	5.015	155412.42	185937.67	185937.67	18.73	No	Si
SLU 50	-1.59	1004.02	-131706	-0.0000931	0.0004492	0.0035	5.015	172512.78	234158.9	234158.9	233.22	No	Si
SLU 50	0.51	9881.4	-93317	-0.0000718	0.0004492	0.0035	5.015	154805.58	184884.17	184884.17	18.71	No	Si
SLU 51	-1.59	1012.46	-131718	-0.0000931	0.0004492	0.0035	5.015	172514.12	234170.4	234170.4	231.29	No	Si
SLU 51	0.51	9884.4	-93319	-0.0000718	0.0004492	0.0035	5.015	154807.59	184887.62	184887.62	18.7	No	Si
SLU 72	-1.59	760.44	-145458	-0.0001038	0.0004492	0.0035	5.015	172335.6	247395.59	247395.59	325.33	No	Si
SLU 72	0.51	10241.42	-104678	-0.0000807	0.0004492	0.0035	5.015	162838.07	200731.24	200731.24	19.6	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche,  $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 4	-1.59	56597.92	-153843	-0.000156	0.0006738	0.0035	5.015		288988.89	288988.89	5.11		Si
SLV 4	0.51	12618.83	-111834	-0.0000853	0.0006738	0.0035	5.015		229390.72	229390.72	18.18		Si
SLD 14	-1.59	-23699.15	-91907	-0.0000804	0.0006738	0.0035	5.015		208011.69	208011.69	8.78		Si
SLD 14	0.51	5300.36	-65649	-0.0000471	0.0006738	0.0035	5.015		146393.17	146393.17	27.62		Si
SLV 14	-1.59	-56001.13	-67098	-0.0000895	0.0006738	0.0035	5.015		162419.79	162419.79	2.9		Si
SLV 14	0.51	2287.67	-47059	-0.0000322	0.0006738	0.0035	5.015		110602.3	110602.3	48.35		Si
SLV 1	-1.59	55914	-153782	-0.0001553	0.0006738	0.0035	5.015		288901.97	288901.97	5.17		Si
SLV 1	0.51	14209.31	-110548	-0.0000858	0.0006738	0.0035	5.015		227566.54	227566.54	16.02		Si
SLV 3	-1.59	56843.44	-153724	-0.0001561	0.0006738	0.0035	5.015		288820.48	288820.48	5.08		Si
SLV 3	0.51	12842.53	-111997	-0.0000856	0.0006738	0.0035	5.015		229622.25	229622.25	17.88		Si
SLV 16	-1.59	-55071.69	-67040	-0.0000887	0.0006738	0.0035	5.015		162310.34	162310.34	2.95		Si
SLV 16	0.51	920.89	-48508	-0.0000321	0.0006738	0.0035	5.015		113660.97	113660.97	123.42		Si
SLD 13	-1.59	-23593.73	-91856	-0.0000803	0.0006738	0.0035	5.015		207925.35	207925.35	8.81		Si
SLD 13	0.51	5396.41	-65719	-0.0000472	0.0006738	0.0035	5.015		146521.52	146521.52	27.15		Si
SLV 15	-1.59	-54826.17	-66922	-0.0000884	0.0006738	0.0035	5.015		162084.13	162084.13	2.96		Si
SLV 15	0.51	1144.59	-48671	-0.0000324	0.0006738	0.0035	5.015		114005.47	114005.47	99.6		Si
SLV 13	-1.59	-55755.61	-66979	-0.0000892	0.0006738	0.0035	5.015		162193.59	162193.59	2.91		Si
SLV 13	0.51	2511.37	-47222	-0.0000325	0.0006738	0.0035	5.015		110946.8	110946.8	44.18		Si
SLV 2	-1.59	55668.48	-153900	-0.0001552	0.0006738	0.0035	5.015		289070.38	289070.38	5.19		Si
SLV 2	0.51	13985.61	-110385	-0.0000854	0.0006738	0.0035	5.015		227335	227335	16.25		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 75	-1.59	248.57	-158855	-127084	-25260	5.015	5.015	-56313	10833	24448	88358	81102	25576	106678	No	4.22	Si
SLU 75	0.51	10196.65	-115992	-92794	-27571	5.015	5.015	-41118	10833	24448	88358	81102	25576	106678	No	3.87	Si
SLU 81	-1.59	-14.19	-162278	-129822	-25313	5.015	5.015	-57526	10833	24448	88358	81102	25576	106678	No	4.21	Si
SLU 81	0.51	10013.77	-119070	-95256	-27658	5.015	5.015	-42210	10833	24448	88358	81102	25576	106678	No	3.86	Si
SLU 79	-1.59	288.78	-159463	-127570	-25421	5.015	5.015	-56528	10833	24448	88358	81102	25576	106678	No	4.2	Si
SLU 79	0.51	10311.39	-116442	-93153	-27740	5.015	5.015	-41278	10833	24448	88358	81102	25576	106678	No	3.85	Si
SLU 80	-1.59	297.22	-159475	-127580	-25433	5.015	5.015	-56532	10833	24448	88358	81102	25576	106678	No	4.19	Si
SLU 80	0.51	10314.38	-116444	-93155	-27754	5.015	5.015	-41279	10833	24448	88358	81102	25576	106678	No	3.84	Si
SLU 74	-1.59	240.13	-158843	-127074	-25247	5.015	5.015	-56309	10833	24448	88358	81102	25576	106678	No	4.23	Si
SLU 74	0.51	10193.65	-115990	-92792	-27556	5.015	5.015	-41117	10833	24448	88358	81102	25576	106678	No	3.87	Si
SLU 78	-1.59	300.8	-160451	-128361	-25572	5.015	5.015	-56879	10833	24448	88358	81102	25576	106678	No	4.17	Si
SLU 78	0.51	10361.09	-117199	-93759	-27913	5.015	5.015	-41546	10833	24448	88358	81102	25576	106678	No	3.82	Si
SLU 83	-1.59	38.03	-163874	-131099	-25626	5.015	5.015	-58092	10833	24448	88358	81102	25576	106678	No	4.16	Si
SLU 83	0.51	10178.22	-120277	-96222	-28000	5.015	5.015	-42637	10833	24448	88358	81102	25576	106678	No	3.81	Si
SLU 77	-1.59	292.36	-160439	-128351	-25560	5.015	5.015	-56874	10833	24448	88358	81102	25576	106678	No	4.17	Si
SLU 77	0.51	10358.09	-117197	-93757	-27899	5.015	5.015	-41545	10833	24448	88358	81102	25576	106678	No	3.82	Si
SLU 84	-1.59	46.47	-163886	-131109	-25639	5.015	5.015	-58096	10833	24448	88358	81102	25576	106678	No	4.16	Si
SLU 84	0.51	10181.21	-120280	-96224	-28015	5.015	5.015	-42638	10833	24448	88358	81102	25576	106678	No	3.81	Si
SLU 82	-1.59	-5.75	-162290	-129832	-25326	5.015	5.015	-57530	10833	24448	88358	81102	25576	106678	No	4.21	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 82	0.51	10016.77	-119073	-95258	-27672	5.015	5.015	-42210	10833	24448	88358	81102	25576	106678	No	3.86	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 15	-1.59	-23178.46	-91822	-73457	-29826	5.015	5.015	-32550	16250	36672	88358	121653	25576	125031		4.19	Si
SLD 15	0.51	48111.75	-66331	-53065	-28909	5.015	5.015	-23514	16250	36672	88358	121653	25576	125031		4.32	Si
SLV 14	-1.59	-56001.13	-67098	-53678	-43792	5.015	5.015	-23786	16250	36672	88358	121653	25576	125031		2.86	Si
SLV 14	0.51	2287.67	-47059	-37647	-41110	5.015	5.015	-16682	15836	35739	88358	121653	25576	124097		3.02	Si
SLD 16	-1.59	-23283.88	-91873	-73498	-30026	5.015	5.015	-32568	16250	36672	88358	121653	25576	125031		4.16	Si
SLD 16	0.51	4715.69	-66261	-53009	-29111	5.015	5.015	-23489	16250	36672	88358	121653	25576	125031		4.3	Si
SLV 15	-1.59	-54826.17	-66922	-53537	-45431	5.015	5.015	-23723	16250	36672	88358	121653	25576	125031		2.75	Si
SLV 15	0.51	1144.59	-48671	-38937	-41165	5.015	5.015	-17254	15951	35997	88358	121653	25576	124355		3.02	Si
SLD 13	-1.59	-23593.73	-91856	-73485	-28922	5.015	5.015	-32562	16250	36672	88358	121653	25576	125031		4.32	Si
SLD 13	0.51	5396.41	-65719	-52575	-28682	5.015	5.015	-23297	16250	36672	88358	121653	25576	125031		4.36	Si
SLD 14	-1.59	-23699.15	-91907	-73526	-29122	5.015	5.015	-32580	16250	36672	88358	121653	25576	125031		4.29	Si
SLD 14	0.51	5300.36	-65649	-52519	-28883	5.015	5.015	-23272	16250	36672	88358	121653	25576	125031		4.33	Si
SLV 13	-1.59	-55755.61	-66979	-53583	-43327	5.015	5.015	-23744	16250	36672	88358	121653	25576	125031		2.89	Si
SLV 13	0.51	2511.37	-47222	-37778	-40641	5.015	5.015	-16740	15848	35765	88358	121653	25576	124123		3.05	Si
SLV 12	-1.59	-14859.51	-97333	-77867	-29758	5.015	5.015	-34504	16250	36672	88358	121653	25576	125031		4.2	Si
SLV 12	0.51	3460.21	-72391	-57913	-27202	5.015	5.015	-25662	16250	36672	88358	121653	25576	125031		4.6	Si
SLV 16	-1.59	-55071.69	-67040	-53632	-45897	5.015	5.015	-23765	16250	36672	88358	121653	25576	125031		2.72	Si
SLV 16	0.51	920.89	-48508	-38806	-41634	5.015	5.015	-17196	15939	35971	88358	121653	25576	124329		2.99	Si
SLV 11	-1.59	-14700.93	-97257	-77805	-29458	5.015	5.015	-34477	16250	36672	88358	121653	25576	125031		4.24	Si
SLV 11	0.51	3604.69	-72497	-57997	-26899	5.015	5.015	-25700	16250	36672	88358	121653	25576	125031		4.65	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRMC D.M. 17-01-18 (N.T.C.)

quota -0.24 Ta 0.03 Wa 0.08 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 16	-53876	0.24	301.46	10543.19	13617.08	12080.14	40.07	Si
SLV 15	-54017	0.24	301.46	10566.63	13649.32	12107.97	40.17	Si
SLV 14	-54217	0.24	301.46	10599.85	13695.06	12147.45	40.3	Si
SLV 13	-54358	0.24	301.46	10623.23	13727.3	12175.26	40.39	Si
SLV 12	-81814	0.24	301.46	14767	19799.03	17283.01	57.33	Si
SLV 11	-81905	0.24	301.46	14779.37	19818.01	17298.69	57.38	Si
SLV 10	-82950	0.24	301.46	14920.82	20036.05	17478.44	57.98	Si
SLV 9	-83041	0.24	301.46	14933.08	20055.04	17494.06	58.03	Si
SLV 8	-106080	0.24	301.46	17746.61	24622.97	21184.79	70.27	Si
SLV 7	-106171	0.24	301.46	17756.59	24639.99	21198.29	70.32	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = -0.24 Wa = 0.08 Ta = 0.0271

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 7	-85035	-123297	-583	0.393	9515.5	0.972	5.87614	3.69946	Si
SLV 8	-84942	-123374	-581	0.393	9506	0.972	5.88144	3.69946	Si
SLV 3	-100066	-153724	-1139	0.344	11046.4	0.976	5.11893	2.99128	Si
SLV 5	-74338	-123489	-1582	0.422	8426.2	0.969	6.33137	3.69946	Si
SLV 6	-74244	-123565	-1580	0.423	8416.7	0.969	6.33795	3.69946	Si
SLV 4	-99921	-153843	-1135	0.344	11031.7	0.976	5.12489	2.99128	Si
SLV 1	-96857	-153782	-1438	0.349	10719.5	0.975	5.20063	2.99128	Si
SLV 2	-96712	-153900	-1435	0.349	10704.8	0.975	5.2069	2.99128	Si
SLV 11	-68964	-97257	-407	0.462	7879.2	0.967	6.94911	3.69946	Si
SLV 12	-68871	-97333	-405	0.463	7869.7	0.967	6.95698	3.69946	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	18.705	SLU 51	Si
V_SLU	3.808	SLU 84	Si
PF_SLV	2.9	SLV 14	Si
V_SLV	2.724	SLV 16	Si
PFFP_SLV	40.073	SLV 16	Si
R_SLV	1.588	SLV 7	Si

## Maschio 22

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	I	Sp.	h netta	h ini.	h fin.	a	a.s.sx	a.s.dx
-14.963	1.046	-18.838	1.046	L2	L4	3.875	0.45	2.7	2.7	2.7			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio



## Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche,  $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 77	-1.59	-6028.34	-109778	-0.00011	0.0004492	0.0035	3.875	103107.28	150279.41	150279.41	24.93	No	Si
SLU 77	0.51	-3221.09	-106219	-0.0001018	0.0004492	0.0035	3.875	103202.2	147663.55	147663.55	45.84	No	Si
SLU 80	-1.59	-5986.07	-109073	-0.0001092	0.0004492	0.0035	3.875	103144.41	149760.84	149760.84	25.02	No	Si
SLU 80	0.51	-3240.19	-105433	-0.000101	0.0004492	0.0035	3.875	103192.1	147085.48	147085.48	45.39	No	Si
SLU 78	-1.59	-6055	-109839	-0.0001101	0.0004492	0.0035	3.875	103103.67	150324	150324	24.83	No	Si
SLU 78	0.51	-3262.51	-106244	-0.0001019	0.0004492	0.0035	3.875	103202.34	147681.36	147681.36	45.27	No	Si
SLU 81	-1.59	-6085.18	-111201	-0.0001116	0.0004492	0.0035	3.875	103004.85	151325.44	151325.44	24.87	No	Si
SLU 81	0.51	-3312.85	-107800	-0.0001036	0.0004492	0.0035	3.875	103188.48	148825.3	148825.3	44.92	No	Si
SLU 74	-1.59	-5986.33	-108708	-0.0001088	0.0004492	0.0035	3.875	103160.04	149492.85	149492.85	24.97	No	Si
SLU 74	0.51	-3195.96	-105108	-0.0001006	0.0004492	0.0035	3.875	103184.64	146846.33	146846.33	45.95	No	Si
SLU 84	-1.59	-6153.86	-112332	-0.000113	0.0004492	0.0035	3.875	102897.21	152156.6	152156.6	24.73	No	Si
SLU 84	0.51	-3379.4	-108936	-0.0001049	0.0004492	0.0035	3.875	103150.55	149660.32	149660.32	44.29	No	Si
SLU 76	-1.59	-5961.83	-108043	-0.0001081	0.0004492	0.0035	3.875	103182.34	149004.01	149004.01	24.99	No	Si
SLU 76	0.51	-3242.67	-104337	-0.0000999	0.0004492	0.0035	3.875	103159.28	146280.14	146280.14	45.11	No	Si
SLU 83	-1.59	-6127.2	-112271	-0.0001128	0.0004492	0.0035	3.875	102903.57	152112	152112	24.83	No	Si
SLU 83	0.51	-3337.98	-108912	-0.0001048	0.0004492	0.0035	3.875	103151.61	149642.51	149642.51	44.83	No	Si
SLU 75	-1.59	-6012.99	-108769	-0.0001089	0.0004492	0.0035	3.875	103157.61	149537.44	149537.44	24.87	No	Si
SLU 75	0.51	-3237.38	-105132	-0.0001007	0.0004492	0.0035	3.875	103185.26	146864.14	146864.14	45.37	No	Si
SLU 82	-1.59	-6111.84	-111262	-0.0001117	0.0004492	0.0035	3.875	102999.67	151370.04	151370.04	24.77	No	Si
SLU 82	0.51	-3354.27	-107824	-0.0001037	0.0004492	0.0035	3.875	103187.92	148843.11	148843.11	44.37	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche,  $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 1	-1.59	46541.65	-73424	-0.0001287	0.0006738	0.0035	3.875		119502.89	119502.89	2.57		Si
SLV 1	0.51	-18166.82	-74030	-0.0000889	0.0006738	0.0035	3.875		127857.8	127857.8	7.04		Si
SLV 4	-1.59	46047.12	-78139	-0.0001327	0.0006738	0.0035	3.875		126153.01	126153.01	2.74		Si
SLV 4	0.51	-24556.47	-76402	-0.0001002	0.0006738	0.0035	3.875		130983.94	130983.94	5.33		Si
SLV 15	-1.59	-54079.47	-76356	-0.0001433	0.0006738	0.0035	3.875		130922.91	130922.91	2.42		Si
SLV 15	0.51	13685.43	-69649	-0.0000785	0.0006738	0.0035	3.875		114179.39	114179.39	8.34		Si
SLV 2	-1.59	45850.54	-74125	-0.0001285	0.0006738	0.0035	3.875		120492.12	120492.12	2.63		Si
SLV 2	0.51	-18209.44	-74251	-0.0000891	0.0006738	0.0035	3.875		128148.79	128148.79	7.04		Si
SLV 14	-1.59	-54967.16	-73043	-0.0001421	0.0006738	0.0035	3.875		126557.31	126557.31	2.3		Si
SLV 14	0.51	19989.85	-67718	-0.0000855	0.0006738	0.0035	3.875		111456.86	111456.86	5.58		Si
SLV 13	-1.59	-54276.05	-72342	-0.0001403	0.0006738	0.0035	3.875		125632.9	125632.9	2.31		Si
SLV 13	0.51	20032.47	-67497	-0.0000854	0.0006738	0.0035	3.875		111145.47	111145.47	5.55		Si
SLV 16	-1.59	-54770.58	-77057	-0.0001451	0.0006738	0.0035	3.875		131847.32	131847.32	2.41		Si
SLV 16	0.51	13642.81	-69870	-0.0000787	0.0006738	0.0035	3.875		114490.78	114490.78	8.39		Si
SLD 14	-1.59	-25840.45	-74282	-0.0001	0.0006738	0.0035	3.875		128189.14	128189.14	4.96		Si
SLD 14	0.51	7271.87	-70135	-0.00007	0.0006738	0.0035	3.875		114864.52	114864.52	15.8		Si
SLD 13	-1.59	-25543.69	-73980	-0.0000993	0.0006738	0.0035	3.875		127792.2	127792.2	5		Si
SLD 13	0.51	7290.17	-70040	-0.00007	0.0006738	0.0035	3.875		114730.81	114730.81	15.74		Si
SLV 3	-1.59	46738.23	-77438	-0.000133	0.0006738	0.0035	3.875		125163.78	125163.78	2.68		Si
SLV 3	0.51	-24513.85	-76182	-0.0000999	0.0006738	0.0035	3.875		130692.95	130692.95	5.33		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 77	-1.59	-6028.34	-109778	-87823	2510	3.875	3.875	-50364	10833	18891	88358	62666	19762	82429	No	32.84	Si
SLU 77	0.51	-3221.09	-106219	-84975	2609	3.875	3.875	-48731	10833	18891	88358	62666	19762	82429	No	31.6	Si
SLU 62	-1.59	-5361.2	-102789	-82231	2631	3.875	3.875	-47158	10833	18891	88358	62666	19762	82429	No	31.33	Si
SLU 62	0.51	-3453.97	-98825	-79060	2723	3.875	3.875	-45339	10833	18891	88358	62666	19762	82429	No	30.27	Si
SLU 60	-1.59	-5319.18	-101719	-81375	2607	3.875	3.875	-46667	10833	18891	88358	62666	19762	82429	No	31.62	Si
SLU 60	0.51	-3428.84	-97713	-78171	2698	3.875	3.875	-44829	10833	18891	88358	62666	19762	82429	No	30.55	Si
SLU 61	-1.59	-5345.84	-101780	-81424	2586	3.875	3.875	-46695	10833	18891	88358	62666	19762	82429	No	31.87	Si
SLU 61	0.51	-3470.26	-97738	-78190	2678	3.875	3.875	-44840	10833	18891	88358	62666	19762	82429	No	30.79	Si
SLU 81	-1.59	-6085.18	-111201	-88961	2646	3.875	3.875	-51017	10833	18891	88358	62666	19762	82429	No	31.15	Si
SLU 81	0.51	-3312.85	-107800	-86240	2746	3.875	3.875	-49457	10833	18891	88358	62666	19762	82429	No	30.02	Si
SLU 79	-1.59	-5959.41	-109012	-87210	2498	3.875	3.875	-50013	10833	18891	88358	62666	19762	82429	No	32.99	Si
SLU 79	0.51	-3198.76	-105409	-84327	2596	3.875	3.875	-48360	10833	18891	88358	62666	19762	82429	No	31.75	Si
SLU 63	-1.59	-5387.86	-102850	-82280	2610	3.875	3.875	-47186	10833	18891	88358	62666	19762	82429	No	31.58	Si
SLU 63	0.51	-3495.39	-98849	-79080	2702	3.875	3.875	-45350	10833	18891	88358	62666	19762	82429	No	30.5	Si
SLU 84	-1.59	-6153.86	-112332	-89866	2649	3.875	3.875	-51536	10833	18891	88358	62666	19762	82429	No	31.11	Si
SLU 84	0.51	-3379.4	-108936	-87149	2750	3.875	3.875	-49978	10833	18891	88358	62666	19762	82429	No	29.98	Si
SLU 82	-1.59	-6111.84	-111262	-89010	2626	3.875	3.875	-51045	10833	18891	88358	62666	19762	82429	No	31.39	Si
SLU 82	0.51	-3354.27	-107824	-86259	2725	3.875	3.875	-49468	10833	18891	88358	62666	19762	82429	No	30.25	Si
SLU 83	-1.59	-6127.2	-112271	-89817	2670	3.875	3.875	-51508	10833	18891	88358	62666	19762	82429	No	30.87	Si
SLU 83	0.51	-3337.98	-108912	-87129	2770	3.875	3.875	-49967	10833	18891	88358	62666	19762	82429	No	29.75	Si



Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 14	-1.59	-54967.16	-73043	-58435	-33915	3.875	3.5549	-37176	16250	25995	88358	93999	19762	113762		3.35	Si
SLV 14	0.51	19989.85	-67718	-54175	-33665	3.875	3.875	-31068	16250	28336	88358	93999	19762	113762		3.38	Si
SLD 3	-1.59	17611.52	-76199	-60960	16854	3.875	3.875	-34959	16250	28336	88358	93999	19762	113762		6.75	Si
SLD 3	0.51	-11795.88	-73765	-59012	16843	3.875	3.875	-33842	16250	28336	88358	93999	19762	113762		6.75	Si
SLV 1	-1.59	46541.65	-73424	-58739	37487	3.875	3.875	-33685	16250	28336	88358	93999	19762	113762		3.03	Si
SLV 1	0.51	-18166.82	-74030	-59224	37376	3.875	3.875	-33964	16250	28336	88358	93999	19762	113762		3.04	Si
SLV 4	-1.59	46047.12	-78139	-62511	36553	3.875	3.875	-35849	16250	28336	88358	93999	19762	113762		3.11	Si
SLV 4	0.51	-24556.47	-76402	-61122	36438	3.875	3.875	-35052	16250	28336	88358	93999	19762	113762		3.12	Si
SLV 3	-1.59	46738.23	-77438	-61950	37228	3.875	3.875	-35527	16250	28336	88358	93999	19762	113762		3.06	Si
SLV 3	0.51	-24513.85	-76182	-60945	37114	3.875	3.875	-34951	16250	28336	88358	93999	19762	113762		3.07	Si
SLV 15	-1.59	-54079.47	-76356	-61085	-33500	3.875	3.6877	-37469	16250	26967	88358	93999	19762	113762		3.4	Si
SLV 15	0.51	13685.43	-69649	-55719	-33251	3.875	3.875	-31954	16250	28336	88358	93999	19762	113762		3.42	Si
SLV 13	-1.59	-54276.05	-72342	-57874	-33240	3.875	3.5617	-36740	16250	26045	88358	93999	19762	113762		3.42	Si
SLV 13	0.51	20032.47	-67497	-53998	-32989	3.875	3.875	-30967	16250	28336	88358	93999	19762	113762		3.45	Si
SLD 1	-1.59	17523.19	-74451	-59561	16967	3.875	3.875	-34157	16250	28336	88358	93999	19762	113762		6.7	Si
SLD 1	0.51	-9042.64	-72834	-58267	16959	3.875	3.875	-33415	16250	28336	88358	93999	19762	113762		6.71	Si
SLV 16	-1.59	-54770.58	-77057	-61646	-34174	3.875	3.6802	-37899	16250	26911	88358	93999	19762	113762		3.33	Si
SLV 16	0.51	13642.81	-69870	-55896	-33927	3.875	3.875	-32055	16250	28336	88358	93999	19762	113762		3.35	Si
SLV 2	-1.59	45850.54	-74125	-59300	36813	3.875	3.875	-34007	16250	28336	88358	93999	19762	113762		3.09	Si
SLV 2	0.51	-18209.44	-74251	-59401	36700	3.875	3.875	-34065	16250	28336	88358	93999	19762	113762		3.1	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRM D.M. 17-01-18 (N.T.C.)

quota -0.24 Ta 0.03 Wa 0.08 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 9	-68178	0.24	232.93	12067.69	16325.87	14196.78	60.95	Si
SLV 10	-68407	0.24	232.93	12097.14	16373.53	14235.34	61.11	Si
SLV 13	-69164	0.24	232.93	12194.17	16531.37	14362.77	61.66	Si
SLV 14	-69518	0.24	232.93	12239.26	16605.17	14422.21	61.92	Si
SLV 5	-69703	0.24	232.93	12262.71	16641.75	14452.23	62.05	Si
SLV 6	-69932	0.24	232.93	12291.68	16686.93	14489.31	62.2	Si
SLV 15	-71587	0.24	232.93	12499.28	17014.14	14756.71	63.35	Si
SLV 16	-71941	0.24	232.93	12543.16	17084.1	14813.63	63.6	Si
SLV 1	-74246	0.24	232.93	12824.49	17539.5	15181.99	65.18	Si
SLV 2	-74600	0.24	232.93	12867.04	17609.46	15238.25	65.42	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = -0.24 Wa = 0.08 Ta = 0.0271

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 8	-62351	-82320	-238	0.412	7010.8	0.971	6.16514	3.69946	Si
SLV 7	-62320	-81866	-236	0.412	7007.7	0.971	6.16799	3.69946	Si
SLV 12	-59850	-81995	-128	0.426	6756.2	0.97	6.3895	3.69946	Si
SLV 11	-59819	-81542	-125	0.427	6753.1	0.97	6.39258	3.69946	Si
SLV 6	-54566	-68939	-1889	0.427	6218.2	0.968	6.41878	3.69946	Si
SLV 5	-54535	-68486	-1886	0.428	6215.1	0.968	6.42215	3.69946	Si
SLV 10	-52065	-68615	-1778	0.445	5963.7	0.966	6.68653	3.69946	Si
SLV 9	-52034	-68162	-1776	0.445	5960.6	0.966	6.69021	3.69946	Si
SLV 4	-62551	-78139	-945	0.4	7031.3	0.971	5.99141	2.99128	Si
SLV 3	-62503	-77438	-942	0.401	7026.4	0.971	5.99568	2.99128	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	24.725	SLU 84	Si
V_SLU	29.753	SLU 83	Si
PF_SLV	2.302	SLV 14	Si
V_SLV	3.035	SLV 1	Si
PFFP_SLV	60.949	SLV 9	Si
R_SLV	1.666	SLV 8	Si

Maschio 23

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.sx	a.s.dx
-13.583	1.046	-14.163	1.046	L2	L4	0.58	0.45	2.7	2.7	2.7			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	$\tau 0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio



## Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche,  $\gamma_{\text{M}} = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_{\text{m}}$	$\epsilon_{\text{m}_-}$	$\epsilon_{\text{mu}}$	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 83	-1.59	2999.99	-23823	-0.0006274	0.0004492	0.0035	0.58	1747.81	3804.02	3804.02	1.27	No	Si
SLU 83	0.57	-1042.14	-15527	-0.0001702	0.0004492	0.0035	0.58	2310.5	3242.92	3242.92	3.11	No	Si
SLU 81	-1.59	2969.65	-23586	-0.0006008	0.0004492	0.0035	0.58	1781.17	3801.21	3801.21	1.28	No	Si
SLU 81	0.57	-1031.46	-15372	-0.0001682	0.0004492	0.0035	0.58	2309.11	3223	3223	3.12	No	Si
SLU 78	-1.59	2935.69	-23314	-0.0005735	0.0004492	0.0035	0.58	1818.36	3797.97	3797.97	1.29	No	Si
SLU 78	0.57	-1018.67	-15158	-0.0001654	0.0004492	0.0035	0.58	2306.45	3195.29	3195.29	3.14	No	Si
SLU 75	-1.59	2905.35	-23078	-0.0005514	0.0004492	0.0035	0.58	1849.53	3788.3	3788.3	1.3	No	Si
SLU 75	0.57	-1008	-15004	-0.0001634	0.0004492	0.0035	0.58	2304.03	3175.36	3175.36	3.15	No	Si
SLU 82	-1.59	2974.23	-23607	-0.0006043	0.0004492	0.0035	0.58	1778.26	3801.46	3801.46	1.28	No	Si
SLU 82	0.57	-1032.63	-15375	-0.0001683	0.0004492	0.0035	0.58	2309.13	3223.36	3223.36	3.12	No	Si
SLU 74	-1.59	2900.77	-23057	-0.0005485	0.0004492	0.0035	0.58	1852.24	3787	3787	1.31	No	Si
SLU 74	0.57	-1006.84	-15001	-0.0001633	0.0004492	0.0035	0.58	2303.98	3175.01	3175.01	3.15	No	Si
SLU 77	-1.59	2931.11	-23293	-0.0005703	0.0004492	0.0035	0.58	1821.16	3797.72	3797.72	1.3	No	Si
SLU 77	0.57	-1017.51	-15155	-0.0001653	0.0004492	0.0035	0.58	2306.41	3194.93	3194.93	3.14	No	Si
SLU 80	-1.59	2916.37	-23148	-0.0005588	0.0004492	0.0035	0.58	1840.41	3792.67	3792.67	1.3	No	Si
SLU 80	0.57	-1011.23	-15024	-0.0001638	0.0004492	0.0035	0.58	2304.37	3177.93	3177.93	3.14	No	Si
SLU 84	-1.59	3004.57	-23844	-0.0006312	0.0004492	0.0035	0.58	1744.81	3804.26	3804.26	1.27	No	Si
SLU 84	0.57	-1043.3	-15529	-0.0001703	0.0004492	0.0035	0.58	2310.52	3243.28	3243.28	3.11	No	Si
SLU 79	-1.59	2911.79	-23127	-0.0005559	0.0004492	0.0035	0.58	1843.15	3791.36	3791.36	1.3	No	Si
SLU 79	0.57	-1010.06	-15021	-0.0001637	0.0004492	0.0035	0.58	2304.32	3177.58	3177.58	3.15	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche,  $\gamma_{\text{M}} = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_{\text{m}}$	$\epsilon_{\text{m}_-}$	$\epsilon_{\text{mu}}$	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 7	-1.59	3157.25	-17513	-0.0004587	0.0006738	0.0035	0.58		3823.51	3823.51	1.21		Si
SLV 7	0.57	-1072.03	-9576	-0.0001225	0.0006738	0.0035	0.58		2520.16	2520.16	2.35		Si
SLV 4	-1.59	3888.36	-15777	-0.0068902	0.0006738	0.0035	0.58		3536.16	3536.16	0.91		No
SLV 4	0.57	-1485.93	-7765	-0.0001864	0.0006738	0.0035	0.464		2127.95	2127.95	1.43		Si
SLV 2	-1.59	3503.43	-14664	-0.0051845	0.0006738	0.0035	0.58		3351.82	3351.82	0.96		No
SLV 2	0.57	-1395.19	-7692	-0.0001656	0.0006738	0.0035	0.464		2111.22	2111.22	1.51		Si
SLD 4	-1.59	2817.18	-15890	-0.0003827	0.0006738	0.0035	0.58		3554.75	3554.75	1.26		Si
SLD 4	0.57	-1033.84	-9188	-0.0001175	0.0006738	0.0035	0.58		2439.12	2439.12	2.36		Si
SLV 1	-1.59	3499.53	-14505	-0.0054482	0.0006738	0.0035	0.58		3325.57	3325.57	0.95		No
SLV 1	0.57	-1399.06	-7609	-0.0001679	0.0006738	0.0035	0.464		2092.08	2092.08	1.5		Si
SLV 8	-1.59	3159.77	-17616	-0.000457	0.0006738	0.0035	0.58		3840.46	3840.46	1.22		Si
SLV 8	0.57	-1069.53	-9629	-0.0001226	0.0006738	0.0035	0.58		2531.39	2531.39	2.37		Si
SLD 1	-1.59	2645.94	-15326	-0.0003449	0.0006738	0.0035	0.58		3461.53	3461.53	1.31		Si
SLD 1	0.57	-995.56	-9122	-0.0001143	0.0006738	0.0035	0.58		2425.29	2425.29	2.44		Si
SLD 3	-1.59	2815.5	-15822	-0.0003835	0.0006738	0.0035	0.58		3543.48	3543.48	1.26		Si
SLD 3	0.57	-1035.5	-9152	-0.0001175	0.0006738	0.0035	0.58		2431.66	2431.66	2.35		Si
SLV 3	-1.59	3884.47	-15619	-0.007193	0.0006738	0.0035	0.58		3509.91	3509.91	0.9		No
SLV 3	0.57	-1489.8	-7682	-0.0001898	0.0006738	0.0035	0.464		2108.89	2108.89	1.42		Si
SLD 2	-1.59	2647.61	-15395	-0.0003444	0.0006738	0.0035	0.58		3472.8	3472.8	1.31		Si
SLD 2	0.57	-993.89	-9158	-0.0001143	0.0006738	0.0035	0.58		2432.75	2432.75	2.45		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_{\text{M}} = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_{\text{N}}$	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 83	-1.59	2999.99	-23823	-19058	2143	0.58	0.4922	-73020	10833	2400	88358	9380	2958	12338	No	5.76	Si
SLU 83	0.57	-1042.14	-15527	-12421	171	0.58	0.58	-47591	10833	2828	88358	9380	2958	12338	No	71.98	Si
SLU 82	-1.59	2974.23	-23607	-18886	2125	0.58	0.492	-72360	10833	2399	88358	9380	2958	12338	No	5.81	Si
SLU 82	0.57	-1032.63	-15375	-12300	170	0.58	0.58	-47127	10833	2828	88358	9380	2958	12338	No	72.59	Si
SLU 84	-1.59	3004.57	-23844	-19075	2147	0.58	0.492	-73084	10833	2398	88358	9380	2958	12338	No	5.75	Si
SLU 84	0.57	-1043.3	-15529	-12423	172	0.58	0.58	-47599	10833	2828	88358	9380	2958	12338	No	71.81	Si
SLU 74	-1.59	2900.77	-23057	-18445	2071	0.58	0.4926	-70672	10833	2401	88358	9380	2958	12338	No	5.96	Si
SLU 74	0.57	-1006.84	-15001	-12001	169	0.58	0.58	-45980	10833	2828	88358	9380	2958	12338	No	72.84	Si
SLU 77	-1.59	2931.11	-23293	-18634	2094	0.58	0.4925	-71396	10833	2401	88358	9380	2958	12338	No	5.89	Si
SLU 77	0.57	-1017.51	-15155	-12124	171	0.58	0.58	-46453	10833	2828	88358	9380	2958	12338	No	72.06	Si
SLU 79	-1.59	2911.79	-23127	-18501	2081	0.58	0.4923	-70886	10833	2400	88358	9380	2958	12338	No	5.93	Si
SLU 79	0.57	-1010.06	-15021	-12017	169	0.58	0.58	-46041	10833	2828	88358	9380	2958	12338	No	72.95	Si
SLU 78	-1.59	2935.69	-23314	-18651	2098	0.58	0.4922	-71461	10833	2400	88358	9380	2958	12338	No	5.88	Si
SLU 78	0.57	-1018.67	-15158	-12126	172	0.58	0.58	-46461	10833	2828	88358	9380	2958	12338	No	71.89	Si
SLU 81	-1.59	2969.65	-23586	-18869	2121	0.58	0.4923	-72296	10833	2400	88358	9380	2958	12338	No	5.82	Si
SLU 81	0.57	-1031.46	-15372	-12298	170	0.58	0.58	-47118	10833	2828	88358	9380	2958	12338	No	72.77	Si
SLU 80	-1.59	2916.37	-23148	-18518	2086	0.58	0.492	-70950	10833	2399	88358	9380	2958	12338	No	5.92	Si
SLU 80	0.57	-1011.23	-15024	-12019	170	0.58	0.58	-46050	10833	2828	88358	9380	2958	12338	No	72.77	Si
SLU 75	-1.59	2905.35	-23078	-18462	2075	0.58	0.4923	-70736	10833	2400	88358	9380	2958	12338	No	5.95	Si
SLU 75	0.57	-1008	-15004	-12003	170	0.58	0.58	-45989	10833	2828	88358	9380	2958	12338	No	72.67	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_{\text{M}} = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_{\text{N}}$	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 3	-1.59	2815.5	-15822	-12657	2291	0.58	0.3361	-48495	16250	2458	88358	14070	2958	17028		7.43	Si



Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 3	0.57	-1035.5	-9152	-7322	98	0.58	0.5306	-28053	16250	3880	88358	14070	2958	17028		174.53	Si
SLD 4	-1.59	2817.18	-15890	-12712	2290	0.58	0.3381	-48704	16250	2472	88358	14070	2958	17028		7.44	Si
SLD 4	0.57	-1033.84	-9188	-7350	98	0.58	0.5324	-28162	16250	3893	88358	14070	2958	17028		172.99	Si
SLD 1	-1.59	2645.94	-15326	-12261	2161	0.58	0.3521	-46978	16250	2575	88358	14070	2958	17028		7.88	Si
SLD 1	0.57	-995.56	-9122	-7297	182	0.58	0.5426	-27960	16250	3968	88358	14070	2958	17028		93.58	Si
SLV 1	-1.59	3499.53	-14505	-11604	3131	0.58	0.1462	-228623	16250	1069	88358	14070	2958	17028		5.44	Si
SLV 1	0.57	-1399.06	-7609	-6087	264	0.464	0.3184	0	0	0	88358	11256	2366	13622		51.67	Si
SLV 7	-1.59	3157.25	-17513	-14011	2479	0.58	0.3292	-53681	16250	2407	88358	14070	2958	17028		6.87	Si
SLV 7	0.57	-1072.03	-9576	-7661	-197	0.58	0.5341	-29351	16250	3906	88358	14070	2958	17028		86.46	Si
SLD 2	-1.59	2647.61	-15395	-12316	2160	0.58	0.3541	-47186	16250	2589	88358	14070	2958	17028		7.88	Si
SLD 2	0.57	-993.89	-9158	-7326	183	0.58	0.5444	-28069	16250	3981	88358	14070	2958	17028		93.13	Si
SLV 4	-1.59	3888.36	-15777	-12622	3419	0.58	0.1306	-261410	16250	955	88358	14070	2958	17028		4.98	Si
SLV 4	0.57	-1485.93	-7765	-6212	67	0.464	0.2959	0	0	0	88358	11256	2366	13622		202.71	Si
SLV 2	-1.59	3503.43	-14664	-11731	3128	0.58	0.1532	-223432	16250	1121	88358	14070	2958	17028		5.44	Si
SLV 2	0.57	-1395.19	-7692	-6154	266	0.464	0.3259	0	0	0	88358	11256	2366	13622		51.28	Si
SLV 8	-1.59	3159.77	-17616	-14093	2477	0.58	0.3319	-53995	16250	2427	88358	14070	2958	17028		6.88	Si
SLV 8	0.57	-1069.53	-9629	-7704	-196	0.58	0.5368	-29516	16250	3925	88358	14070	2958	17028		87.04	Si
SLV 3	-1.59	3884.47	-15619	-12495	3423	0.58	0.1239	-268720	16250	906	88358	14070	2958	17028		4.98	Si
SLV 3	0.57	-1489.8	-7682	-6146	65	0.464	0.2882	0	0	0	88358	11256	2366	13622		209	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRMC D.M. 17-01-18 (N.T.C.)

quota -0.24 Ta 0.03 Wa 0.08 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 1	-10603	0.24	34.86	1856.92	2507.31	2182.11	62.59	Si
SLV 2	-10743	0.24	34.86	1874.37	2535.06	2204.72	63.24	Si
SLV 3	-10897	0.24	34.86	1893.27	2565.46	2229.37	63.94	Si
SLV 4	-11037	0.24	34.86	1910.34	2593.22	2251.78	64.59	Si
SLV 5	-12782	0.24	34.86	2107.45	2928.16	2517.81	72.22	Si
SLV 6	-12872	0.24	34.86	2116.89	2945.16	2531.02	72.6	Si
SLV 7	-13760	0.24	34.86	2205.43	3104.25	2654.84	76.15	Si
SLV 8	-13850	0.24	34.86	2214.04	3120.32	2667.18	76.5	Si
SLV 9	-14921	0.24	34.86	2310.05	3303.99	2807.02	80.51	Si
SLV 10	-15011	0.24	34.86	2317.67	3319.15	2818.41	80.84	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = -0.24 Wa = 0.08 Ta = 0.0271

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 10	-11811	-14390	78	0.343	1301.8	0.976	5.10672	3.69946	Si
SLV 9	-11771	-14287	79	0.344	1297.7	0.976	5.11906	3.69946	Si
SLV 6	-10716	-13903	84	0.368	1190.2	0.974	5.48406	3.69946	Si
SLV 5	-10676	-13801	84	0.369	1186.2	0.974	5.49897	3.69946	Si
SLV 14	-12168	-16284	40	0.339	1338.1	0.977	5.04052	2.99128	Si
SLV 13	-12106	-16126	40	0.34	1331.8	0.977	5.05878	2.99128	Si
SLV 12	-9150	-18102	-13	0.42	1030.8	0.971	6.29464	3.69946	Si
SLV 11	-9110	-18000	-13	0.422	1026.7	0.97	6.31659	3.69946	Si
SLV 16	-11369	-17398	12	0.358	1256.8	0.976	5.3348	2.99128	Si
SLV 15	-11308	-17239	13	0.359	1250.5	0.975	5.35586	2.99128	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	1.266	SLU 84	Si
V_SLU	5.745	SLU 84	Si
PF_SLV	0.904	SLV 3	No
V_SLV	4.975	SLV 3	Si
PFFP_SLV	62.589	SLV 1	Si
R_SLV	1.38	SLV 10	Si

## Maschio 24

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-12.238	1.046	-12.613	1.046	L2	L4	0.375	0.45	2.7	2.7	2.7			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica



									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 75	-1.59	79.45	-3663	-0.0000436	0.0004492	0.0035	0.375	564.85	605.76	605.76	7.62	No	Si
SLU 75	0.57	357.99	-12374	-0.0001863	0.0004492	0.0035	0.375	927.77	1474.95	1474.95	4.12	No	Si
SLU 84	-1.59	81.65	-3788	-0.0000451	0.0004492	0.0035	0.375	579.79	623.86	623.86	7.64	No	Si
SLU 84	0.57	369.89	-12781	-0.0001942	0.0004492	0.0035	0.375	910.96	1493.9	1493.9	4.04	No	Si
SLU 78	-1.59	80.18	-3695	-0.000044	0.0004492	0.0035	0.375	568.68	610.36	610.36	7.61	No	Si
SLU 78	0.57	362.33	-12521	-0.0001891	0.0004492	0.0035	0.375	922.03	1481.81	1481.81	4.09	No	Si
SLU 83	-1.59	81.61	-3784	-0.0000451	0.0004492	0.0035	0.375	579.29	623.25	623.25	7.64	No	Si
SLU 83	0.57	370.05	-12788	-0.0001943	0.0004492	0.0035	0.375	910.68	1494.18	1494.18	4.04	No	Si
SLU 74	-1.59	79.41	-3659	-0.0000436	0.0004492	0.0035	0.375	564.35	605.15	605.15	7.62	No	Si
SLU 74	0.57	358.15	-12380	-0.0001864	0.0004492	0.0035	0.375	927.54	1475.24	1475.24	4.12	No	Si
SLU 81	-1.59	80.88	-3752	-0.0000447	0.0004492	0.0035	0.375	575.52	618.65	618.65	7.65	No	Si
SLU 81	0.57	365.71	-12640	-0.0001914	0.0004492	0.0035	0.375	917.13	1487.33	1487.33	4.07	No	Si
SLU 80	-1.59	79.96	-3671	-0.0000438	0.0004492	0.0035	0.375	565.8	606.89	606.89	7.59	No	Si
SLU 80	0.57	358.83	-12409	-0.0001869	0.0004492	0.0035	0.375	926.46	1476.56	1476.56	4.11	No	Si
SLU 77	-1.59	80.14	-3691	-0.000044	0.0004492	0.0035	0.375	568.18	609.76	609.76	7.61	No	Si
SLU 77	0.57	362.49	-12528	-0.0001892	0.0004492	0.0035	0.375	921.78	1482.1	1482.1	4.09	No	Si
SLU 79	-1.59	79.92	-3667	-0.0000437	0.0004492	0.0035	0.375	565.3	606.29	606.29	7.59	No	Si
SLU 79	0.57	358.99	-12415	-0.000187	0.0004492	0.0035	0.375	926.22	1476.85	1476.85	4.11	No	Si
SLU 82	-1.59	80.92	-3756	-0.0000447	0.0004492	0.0035	0.375	576.02	619.25	619.25	7.65	No	Si
SLU 82	0.57	365.55	-12634	-0.0001913	0.0004492	0.0035	0.375	917.39	1487.04	1487.04	4.07	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 2	-1.59	904.81	-2265	-0.0415823	0.0006738	0.0035	0.3		416.4	416.4	0.46	No	Si
SLV 2	0.57	-239.33	-4960	-0.0000781	0.0006738	0.0035	0.375		874.05	874.05	3.65	No	Si
SLV 1	-1.59	911.82	-2258	-0.0421608	0.0006738	0.0035	0.3		415.24	415.24	0.46	No	Si
SLV 1	0.57	-245.47	-4881	-0.0000782	0.0006738	0.0035	0.375		862.44	862.44	3.51	No	Si
SLV 4	-1.59	927.62	-2593	-0.0398044	0.0006738	0.0035	0.3		470.98	470.98	0.51	No	Si
SLV 4	0.57	-280.92	-3640	-0.0000729	0.0006738	0.0035	0.375		674.23	674.23	2.4	No	Si
SLV 16	-1.59	-799.26	-2830	-0.0061051	0.0006738	0.0035	0.3		544.54	544.54	0.68	No	Si
SLV 16	0.57	733.13	-12041	-0.0002325	0.0006738	0.0035	0.375		1660.05	1660.05	2.26	No	Si
SLV 14	-1.59	-822.08	-2502	-0.006898	0.0006738	0.0035	0.3		490.47	490.47	0.6	No	Si
SLV 14	0.57	774.72	-13362	-0.0002562	0.0006738	0.0035	0.375		1768.75	1768.75	2.28	No	Si
SLD 2	-1.59	418.67	-2424	-0.0004671	0.0006738	0.0035	0.3		442.93	442.93	1.06	No	Si
SLD 2	0.57	37.73	-6972	-0.0000672	0.0006738	0.0035	0.375		1110.89	1110.89	29.45	No	Si
SLV 3	-1.59	934.64	-2586	-0.0403862	0.0006738	0.0035	0.3		469.84	469.84	0.5	No	Si
SLV 3	0.57	-287.07	-3561	-0.0000736	0.0006738	0.0035	0.375		661.64	661.64	2.3	No	Si
SLV 13	-1.59	-815.06	-2495	-0.0068078	0.0006738	0.0035	0.3		489.34	489.34	0.6	No	Si
SLV 13	0.57	768.57	-13282	-0.0002541	0.0006738	0.0035	0.375		1762.22	1762.22	2.29	No	Si
SLD 1	-1.59	421.68	-2421	-0.000545	0.0006738	0.0035	0.3		442.43	442.43	1.05	No	Si
SLD 1	0.57	35.09	-6938	-0.0000665	0.0006738	0.0035	0.375		1106.97	1106.97	31.55	No	Si
SLV 15	-1.59	-792.25	-2823	-0.0060088	0.0006738	0.0035	0.3		543.4	543.4	0.69	No	Si
SLV 15	0.57	726.98	-11962	-0.0002304	0.0006738	0.0035	0.375		1653.52	1653.52	2.27	No	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 83	-1.59	81.61	-3784	-3027	-102	0.375	0.375	-17939	10725	1810	88358	6064	1912	7977	No	78.11	Si
SLU 83	0.57	370.05	-12788	-10230	285	0.375	0.375	-60623	10833	1828	88358	6064	1912	7977	No	27.95	Si
SLU 77	-1.59	80.14	-3691	-2953	-96	0.375	0.375	-17498	10666	1800	88358	6064	1912	7977	No	83.11	Si
SLU 77	0.57	362.49	-12528	-10022	278	0.375	0.375	-59390	10833	1828	88358	6064	1912	7977	No	28.74	Si
SLU 78	-1.59	80.18	-3695	-2956	-97	0.375	0.375	-17518	10669	1800	88358	6064	1912	7977	No	82.45	Si
SLU 78	0.57	362.33	-12521	-10017	277	0.375	0.375	-59361	10833	1828	88358	6064	1912	7977	No	28.81	Si
SLU 75	-1.59	79.45	-3663	-2931	-97	0.375	0.375	-17367	10649	1797	88358	6064	1912	7977	No	82.58	Si
SLU 75	0.57	357.99	-12374	-9899	274	0.375	0.375	-58662	10833	1828	88358	6064	1912	7977	No	29.13	Si
SLU 81	-1.59	80.88	-3752	-3002	-102	0.375	0.375	-17789	10705	1806	88358	6064	1912	7977	No	78.23	Si
SLU 81	0.57	365.71	-12640	-10112	282	0.375	0.375	-59924	10833	1828	88358	6064	1912	7977	No	28.26	Si
SLU 79	-1.59	79.92	-3667	-2934	-95	0.375	0.375	-17385	10651	1797	88358	6064	1912	7977	No	83.56	Si
SLU 79	0.57	358.99	-12415	-9932	275	0.375	0.375	-58855	10833	1828	88358	6064	1912	7977	No	29.05	Si
SLU 74	-1.59	79.41	-3659	-2927	-96	0.375	0.375	-17348	10646	1797	88358	6064	1912	7977	No	83.25	Si
SLU 74	0.57	358.15	-12380	-9904	274	0.375	0.375	-58691	10833	1828	88358	6064	1912	7977	No	29.06	Si
SLU 82	-1.59	80.92	-3756	-3005	-103	0.375	0.375	-17808	10708	1807	88358	6064	1912	7977	No	77.64	Si
SLU 82	0.57	365.55	-12634	-10107	282	0.375	0.375	-59894	10833	1828	88358	6064	1912	7977	No	28.33	Si
SLU 84	-1.59	81.65	-3788	-3031	-103	0.375	0.375	-17959	10728	1810	88358	6064	1912	7977	No	77.52	Si
SLU 84	0.57	369.89	-12781	-10225	285	0.375	0.375	-60594	10833	1828	88358	6064	1912	7977	No	28.02	Si
SLU 80	-1.59	79.96	-3671	-2937	-96	0.375	0.375	-17405	10654	1798	88358	6064	1912	7977	No	82.89	Si
SLU 80	0.57	358.83	-12409	-9927	274	0.375	0.375	-58826	10833	1828	88358	6064	1912	7977	No	29.12	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 1	-1.59	911.82	-2258	-1807	1101	0.3	0	0	0	0	88358	7277	1530	8807		8	Si
SLV 1	0.57	-245.47	-4881	-3905	96	0.375	0.375	-23139	16250	2742	88358	9097	1912	11009		115.2	Si
SLV 2	-1.59	904.81	-2265	-1812	1092	0.3	0	0	0	0	88358	7277	1530	8807		8.07	Si
SLV 2	0.57	-239.33	-4960	-3968	90	0.375	0.375	-23515	16250	2742	88358	9097	1912	11009		122.87	Si





Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 13	-1.59	-815.06	-2495	-1996	-1168	0.3	0	0	0	0	88358	7277	1530	8807		7.54	Si
SLV 13	0.57	768.57	-13282	-10626	293	0.375	0.375	-62968	16250	2742	88358	9097	1912	11009		37.6	Si
SLV 3	-1.59	934.64	-2586	-2069	1047	0.3	0	0	0	0	88358	7277	1530	8807		8.41	Si
SLV 3	0.57	-287.07	-3561	-2848	82	0.375	0.3206	-16879	15876	2291	88358	9097	1912	11009		134.59	Si
SLV 15	-1.59	-792.25	-2823	-2259	-1222	0.3	0	0	0	0	88358	7277	1530	8807		7.21	Si
SLV 15	0.57	726.98	-11962	-9570	279	0.375	0.375	-56708	16250	2742	88358	9097	1912	11009		39.45	Si
SLV 4	-1.59	927.62	-2593	-2075	1038	0.3	0	0	0	0	88358	7277	1530	8807		8.49	Si
SLV 4	0.57	-280.92	-3640	-2912	76	0.375	0.331	-17255	15951	2376	88358	9097	1912	11009		145.19	Si
SLD 16	-1.59	-309.12	-2668	-2134	-564	0.3	0.2149	0	0	0	88358	7277	1530	8807		15.62	Si
SLD 16	0.57	452.57	-9984	-7987	222	0.375	0.375	-47331	16250	2742	88358	9097	1912	11009		49.63	Si
SLV 16	-1.59	-799.26	-2830	-2264	-1232	0.3	0	0	0	0	88358	7277	1530	8807		7.15	Si
SLV 16	0.57	733.13	-12041	-9633	273	0.375	0.375	-57084	16250	2742	88358	9097	1912	11009		40.32	Si
SLD 15	-1.59	-306.11	-2665	-2132	-560	0.3	0.2179	0	0	0	88358	7277	1530	8807		15.74	Si
SLD 15	0.57	449.93	-9950	-7960	224	0.375	0.375	-47169	16250	2742	88358	9097	1912	11009		49.07	Si
SLV 14	-1.59	-822.08	-2502	-2002	-1178	0.3	0	0	0	0	88358	7277	1530	8807		7.48	Si
SLV 14	0.57	774.72	-13362	-10689	287	0.375	0.375	-63344	16250	2742	88358	9097	1912	11009		38.38	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRMC D.M. 17-01-18 (N.T.C.)

quota -0.24 Ta 0.03 Wa 0.08 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 3	-2196	0.24	22.54	459.01	564.77	511.89	22.71	Si
SLV 4	-2230	0.24	22.54	465.49	572.66	519.08	23.03	Si
SLV 7	-2486	0.24	22.54	514.36	632.49	573.43	25.44	Si
SLV 8	-2508	0.24	22.54	518.46	637.55	578	25.64	Si
SLV 1	-2688	0.24	22.54	552.23	679.63	615.93	27.32	Si
SLV 2	-2722	0.24	22.54	558.47	687.47	622.97	27.64	Si
SLV 11	-3221	0.24	22.54	649.29	803.73	726.51	32.23	Si
SLV 12	-3243	0.24	22.54	653.16	808.77	730.96	32.43	Si
SLV 5	-4126	0.24	22.54	804.49	1012.9	908.69	40.31	Si
SLV 6	-4148	0.24	22.54	808.06	1017.9	912.98	40.5	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = -0.24 Wa = 0.08 Ta = 0.0271

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 10	-9069	-2036	-355	0.272	987.6	0.98	4.0307	3.69946	Si
SLV 9	-9025	-2031	-353	0.273	983.2	0.98	4.04638	3.69946	Si
SLV 14	-11483	-2502	-451	0.225	1233.6	0.984	3.33001	2.99128	Si
SLV 13	-11416	-2495	-449	0.226	1226.8	0.984	3.34528	2.99128	Si
SLV 16	-10246	-2830	-394	0.247	1107.6	0.982	3.65995	2.99128	Si
SLV 15	-10179	-2823	-391	0.249	1100.7	0.982	3.67914	2.99128	Si
SLV 6	-5772	-1965	-215	0.395	651.8	0.97	5.91468	3.69946	Si
SLV 5	-5729	-1960	-214	0.397	647.4	0.97	5.95262	3.69946	Si
SLV 12	-4945	-3128	-163	0.453	567.6	0.966	6.80922	3.69946	Si
SLV 11	-4902	-3124	-162	0.456	563.2	0.966	6.86074	3.69946	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	4.038	SLV 83	Si
V_SLV	27.955	SLV 83	Si
PF_SLV	0.455	SLV 1	No
V_SLV	7.151	SLV 16	Si
PFFP_SLV	22.709	SLV 3	Si
R_SLV	1.09	SLV 10	Si

## Maschio 25

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.sx	a.s.dx
-10.478	1.046	-11.238	1.046	L2	L4	0.76	0.45	2.7	2.7	2.7			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica





									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 32	-1.59	124.75	-29665	-0.000152	0.0004492	0.0035	0.7597	3265.97	6443.78	6443.78	51.65	No	Si
SLU 32	0.57	-114.45	-15656	-0.000075	0.0004492	0.0035	0.7597	3718.1	4792.84	4792.84	41.88	No	Si
SLU 22	-1.59	150.21	-25754	-0.00013	0.0004492	0.0035	0.7597	3751.32	6145.48	6145.48	40.91	No	Si
SLU 22	0.57	-106.86	-13487	-0.0000641	0.0004492	0.0035	0.7597	3468.99	4326.68	4326.68	40.49	No	Si
SLU 27	-1.59	145.39	-26726	-0.0001354	0.0004492	0.0035	0.7597	3656.69	6219.6	6219.6	42.78	No	Si
SLU 27	0.57	-107.66	-14018	-0.0000667	0.0004492	0.0035	0.7597	3537.93	4444.12	4444.12	41.28	No	Si
SLU 24	-1.59	147.26	-26366	-0.0001334	0.0004492	0.0035	0.7597	3693.78	6192.12	6192.12	42.05	No	Si
SLU 24	0.57	-107.56	-13820	-0.0000657	0.0004492	0.0035	0.7597	3512.75	4400.2	4400.2	40.91	No	Si
SLU 28	-1.59	140.49	-26753	-0.0001354	0.0004492	0.0035	0.7597	3653.77	6221.69	6221.69	44.29	No	Si
SLU 28	0.57	-106.03	-14019	-0.0000666	0.0004492	0.0035	0.7597	3538.02	4444.28	4444.28	41.91	No	Si
SLU 29	-1.59	146.48	-26475	-0.000134	0.0004492	0.0035	0.7597	3682.79	6200.45	6200.45	42.33	No	Si
SLU 29	0.57	-107.07	-13884	-0.000066	0.0004492	0.0035	0.7597	3521.03	4414.51	4414.51	41.23	No	Si
SLU 30	-1.59	141.58	-26502	-0.000134	0.0004492	0.0035	0.7597	3680	6202.54	6202.54	43.81	No	Si
SLU 30	0.57	-105.44	-13885	-0.000066	0.0004492	0.0035	0.7597	3521.12	4414.67	4414.67	41.87	No	Si
SLU 23	-1.59	142.05	-25800	-0.0001299	0.0004492	0.0035	0.7597	3747.26	6148.96	6148.96	43.29	No	Si
SLU 23	0.57	-104.15	-13488	-0.000064	0.0004492	0.0035	0.7597	3469.16	4326.95	4326.95	41.55	No	Si
SLU 39	-1.59	118.06	-30468	-0.0001566	0.0004492	0.0035	0.7597	3131.97	6505	6505	55.1	No	Si
SLU 39	0.57	-116.71	-16110	-0.0000773	0.0004492	0.0035	0.7597	3759.44	4885.97	4885.97	41.86	No	Si
SLU 25	-1.59	142.36	-26393	-0.0001334	0.0004492	0.0035	0.7597	3691.04	6194.21	6194.21	43.51	No	Si
SLU 25	0.57	-105.93	-13820	-0.0000657	0.0004492	0.0035	0.7597	3512.84	4400.36	4400.36	41.54	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 15	-1.59	-5394.08	-24990	-0.0004273	0.0006738	0.0035	0.6078		7071.41	7071.41	1.31		Si
SLV 15	0.57	1762.76	-8802	-0.0001108	0.0006738	0.0035	0.7597		3078.29	3078.29	1.75		Si
SLD 1	-1.59	2462.89	-24448	-0.0002098	0.0006738	0.0035	0.7597		6862.97	6862.97	2.79		Si
SLD 1	0.57	-879.24	-14477	-0.0000953	0.0006738	0.0035	0.7597		4861.05	4861.05	5.53		Si
SLV 13	-1.59	-5159.01	-22619	-0.0004135	0.0006738	0.0035	0.6078		6677.55	6677.55	1.29		Si
SLV 13	0.57	1643.32	-9152	-0.0001028	0.0006738	0.0035	0.7597		3174.66	3174.66	1.93		Si
SLV 1	-1.59	5632.75	-24260	-0.0004799	0.0006738	0.0035	0.7597		6823.52	6823.52	1.21		Si
SLV 1	0.57	-1944.58	-16754	-0.0001468	0.0006738	0.0035	0.7597		5428.54	5428.54	2.79		Si
SLV 4	-1.59	5349.79	-26603	-0.0004132	0.0006738	0.0035	0.7597		7209.24	7209.24	1.35		Si
SLV 4	0.57	-1810.2	-16405	-0.0001398	0.0006738	0.0035	0.7597		5345.37	5345.37	2.95		Si
SLV 16	-1.59	-5441.97	-24962	-0.0004351	0.0006738	0.0035	0.6078		7066.84	7066.84	1.3		Si
SLV 16	0.57	1777.7	-8803	-0.0001119	0.0006738	0.0035	0.7597		3078.61	3078.61	1.73		Si
SLD 2	-1.59	2442.33	-24436	-0.0002088	0.0006738	0.0035	0.7597		6860.49	6860.49	2.81		Si
SLD 2	0.57	-872.83	-14478	-0.0000951	0.0006738	0.0035	0.7597		4861.17	4861.17	5.57		Si
SLV 3	-1.59	5397.68	-26631	-0.0004192	0.0006738	0.0035	0.7597		7213.27	7213.27	1.34		Si
SLV 3	0.57	-1825.14	-16404	-0.0001404	0.0006738	0.0035	0.7597		5345.12	5345.12	2.93		Si
SLV 2	-1.59	5584.86	-24232	-0.0004704	0.0006738	0.0035	0.7597		6817.74	6817.74	1.22		Si
SLV 2	0.57	-1929.65	-16755	-0.0001462	0.0006738	0.0035	0.7597		5428.79	5428.79	2.81		Si
SLV 14	-1.59	-5206.9	-22591	-0.0004224	0.0006738	0.0035	0.6078		6672.98	6672.98	1.28		Si
SLV 14	0.57	1658.26	-9153	-0.0001037	0.0006738	0.0035	0.7597		3174.95	3174.95	1.91		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 63	-1.59	45.06	-33784	-27027	-729	0.7597	0.7597	-79057	10833	3704	88358	12286	3875	16160	No	22.18	Si
SLU 63	0.57	-88.84	-17520	-14016	-72	0.7597	0.7597	-40998	10833	3704	88358	12286	3875	16160	No	225.49	Si
SLU 57	-1.59	51.75	-32982	-26385	-710	0.7597	0.7597	-77179	10833	3704	88358	12286	3875	16160	No	22.76	Si
SLU 57	0.57	-86.59	-17066	-13653	-76	0.7597	0.7597	-39935	10833	3704	88358	12286	3875	16160	No	212.65	Si
SLU 60	-1.59	51.82	-33396	-26717	-711	0.7597	0.7597	-78150	10833	3704	88358	12286	3875	16160	No	22.72	Si
SLU 60	0.57	-90.37	-17321	-13857	-67	0.7597	0.7597	-40532	10833	3704	88358	12286	3875	16160	No	242.58	Si
SLU 56	-1.59	56.65	-32954	-26363	-703	0.7597	0.7597	-77115	10833	3704	88358	12286	3875	16160	No	22.98	Si
SLU 56	0.57	-88.21	-17065	-13652	-72	0.7597	0.7597	-39933	10833	3704	88358	12286	3875	16160	No	223.59	Si
SLU 62	-1.59	49.96	-33757	-27005	-722	0.7597	0.7597	-78993	10833	3704	88358	12286	3875	16160	No	22.38	Si
SLU 62	0.57	-90.47	-17519	-14015	-68	0.7597	0.7597	-40997	10833	3704	88358	12286	3875	16160	No	237.82	Si
SLU 59	-1.59	52.84	-32730	-26184	-703	0.7597	0.7597	-76592	10833	3704	88358	12286	3875	16160	No	22.98	Si
SLU 59	0.57	-85.99	-16932	-13545	-77	0.7597	0.7597	-39621	10833	3704	88358	12286	3875	16160	No	210.4	Si
SLU 84	-1.59	112.8	-36704	-29364	-715	0.7597	0.7597	-85891	10833	3704	88358	12286	3875	16160	No	22.6	Si
SLU 84	0.57	-124.39	-19246	-15397	-29	0.7597	0.7597	-45038	10833	3704	88358	12286	3875	16160	No	563.99	Si
SLU 82	-1.59	114.67	-36344	-29075	-705	0.7597	0.7597	-85048	10833	3704	88358	12286	3875	16160	No	22.94	Si
SLU 82	0.57	-124.29	-19048	-15238	-27	0.7597	0.7597	-44573	10833	3704	88358	12286	3875	16160	No	591.51	Si
SLU 83	-1.59	117.7	-36677	-29342	-709	0.7597	0.7597	-85827	10833	3704	88358	12286	3875	16160	No	22.81	Si
SLU 83	0.57	-126.02	-19246	-15396	-25	0.7597	0.7597	-45036	10833	3704	88358	12286	3875	16160	No	648.06	Si
SLU 61	-1.59	46.92	-33424	-26739	-718	0.7597	0.7597	-78214	10833	3704	88358	12286	3875	16160	No	22.51	Si
SLU 61	0.57	-88.74	-17321	-13857	-70	0.7597	0.7597	-40533	10833	3704	88358	12286	3875	16160	No	229.76	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 3	-1.59	5397.68	-26631	-21305	4223	0.7597	0.5315	-62318	16250	3887	88358	18429	3875	22303		5.28	Si
SLV 3	0.57	-1825.14	-16404	-13123	-1841	0.7597	0.7597	-38386	16250	5555	88358	18429	3875	22303		12.11	Si
SLV 14	-1.59	-5206.9	-22591	-18073	-5166	0.6078	0.4481	0	0	0	88358	14743	3100	17843		3.45	Si
SLV 14	0.57	1658.26	-9153	-7323	1771	0.7597	0.5961	-21420	16250	4359	88358	18429	3875	22303		12.59	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 16	-1.59	-5441.97	-24962	-19970	-5586	0.6078	0.4855	0	0	0	88358	14743	3100	17843		3.19	Si
SLV 16	0.57	1777.7	-8803	-7042	973	0.7597	0.5337	-20599	16250	3903	88358	18429	3875	22303		22.91	Si
SLV 13	-1.59	-5159.01	-22619	-18095	-5130	0.6078	0.4553	0	0	0	88358	14743	3100	17843		3.48	Si
SLV 13	0.57	1643.32	-9152	-7322	1748	0.7597	0.6009	-21417	16250	4394	88358	18429	3875	22303		12.76	Si
SLV 2	-1.59	5584.86	-24232	-19386	4606	0.7597	0.4482	-56706	16250	3277	88358	18429	3875	22303		4.84	Si
SLV 2	0.57	-1929.65	-16755	-13404	-1019	0.7597	0.7597	-39209	16250	5555	88358	18429	3875	22303		21.88	Si
SLV 1	-1.59	5632.75	-24260	-19408	4643	0.7597	0.443	-56770	16250	3240	88358	18429	3875	22303		4.8	Si
SLV 1	0.57	-1944.58	-16754	-13404	-1043	0.7597	0.7597	-39207	16250	5555	88358	18429	3875	22303		21.38	Si
SLV 12	-1.59	-1930.62	-28307	-22646	-2649	0.7597	0.7597	-66241	16250	5555	88358	18429	3875	22303		8.42	Si
SLV 12	0.57	658.64	-11054	-8844	-939	0.7597	0.7597	-25868	16250	5555	88358	18429	3875	22303		23.76	Si
SLD 16	-1.59	-2272.11	-24774	-19819	-2659	0.7597	0.7597	-57974	16250	5555	88358	18429	3875	22303		8.39	Si
SLD 16	0.57	712.36	-11080	-8864	392	0.7597	0.7597	-25928	16250	5555	88358	18429	3875	22303		56.93	Si
SLV 4	-1.59	5349.79	-26603	-21283	4187	0.7597	0.5363	-62254	16250	3922	88358	18429	3875	22303		5.33	Si
SLV 4	0.57	-1810.2	-16405	-13124	-1817	0.7597	0.7597	-38389	16250	5555	88358	18429	3875	22303		12.27	Si
SLV 15	-1.59	-5394.08	-24990	-19992	-5549	0.6078	0.492	0	0	0	88358	14743	3100	17843		3.22	Si
SLV 15	0.57	1762.76	-8802	-7041	950	0.7597	0.5387	-20597	16250	3940	88358	18429	3875	22303		23.49	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRMC D.M. 17-01-18 (N.T.C.)

quota -0.24 Ta 0.03 Wa 0.08 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 13	-15494	0.24	45.67	2624.15	3614.29	3119.22	68.3	Si
SLV 14	-15496	0.24	45.67	2624.33	3614.6	3119.47	68.31	Si
SLV 15	-16072	0.24	45.67	2688.68	3723.22	3205.95	70.2	Si
SLV 16	-16074	0.24	45.67	2688.86	3723.52	3206.19	70.21	Si
SLV 9	-16498	0.24	45.67	2734.62	3802.92	3268.77	71.58	Si
SLV 10	-16499	0.24	45.67	2734.73	3803.12	3268.93	71.58	Si
SLV 5	-17935	0.24	45.67	2880.33	4063.61	3471.97	76.03	Si
SLV 6	-17936	0.24	45.67	2880.43	4063.8	3472.11	76.03	Si
SLV 11	-18424	0.24	45.67	2926.51	4150.29	3538.4	77.48	Si
SLV 12	-18425	0.24	45.67	2926.61	4150.47	3538.54	77.49	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = -0.24 Wa = 0.08 Ta = 0.0271

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 7	-12725	-28817	-247	0.385	1425.5	0.972	5.75638	3.69946	Si
SLV 8	-12721	-28800	-247	0.385	1425.1	0.972	5.75796	3.69946	Si
SLV 5	-12870	-20915	-172	0.387	1440.3	0.972	5.78912	3.69946	Si
SLV 6	-12867	-20897	-171	0.387	1439.9	0.972	5.79068	3.69946	Si
SLV 3	-16445	-26631	-329	0.315	1804.5	0.978	4.68751	2.99128	Si
SLV 4	-16440	-26603	-328	0.315	1803.9	0.978	4.68906	2.99128	Si
SLV 1	-16489	-24260	-306	0.316	1808.9	0.978	4.69798	2.99128	Si
SLV 2	-16484	-24232	-306	0.316	1808.3	0.978	4.69953	2.99128	Si
SLV 11	-9580	-28325	-155	0.485	1105.3	0.965	7.30757	3.69946	Si
SLV 12	-9576	-28307	-155	0.485	1105	0.965	7.31018	3.69946	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	40.488	SLU 22	Si
V_SLU	22.177	SLU 63	Si
PF_SLV	1.211	SLV 1	Si
V_SLV	3.194	SLV 16	Si
PFFP_SLV	68.304	SLV 13	Si
R_SLV	1.556	SLV 7	Si

## Maschio 26

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-7.428	1.046	-9.398	1.046	L2	L4	1.97	0.45	2.7	2.7	2.7			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica



									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 82	-1.59	-5400.87	-61267	-0.0001466	0.0004492	0.0035	1.9703	26223.14	40515.88	40515.88	7.5	No	Si
SLU 82	0.51	7970.4	-55936	-0.0001512	0.0004492	0.0035	1.9703	26653.06	37730.11	37730.11	4.73	No	Si
SLU 75	-1.59	-5220.04	-59722	-0.0001419	0.0004492	0.0035	1.9703	26400.96	40123.62	40123.62	7.69	No	Si
SLU 75	0.51	7757.82	-54425	-0.0001463	0.0004492	0.0035	1.9703	26680.89	37163.02	37163.02	4.79	No	Si
SLU 84	-1.59	-5416.8	-61887	-0.0001482	0.0004492	0.0035	1.9703	26139.68	40673.09	40673.09	7.51	No	Si
SLU 84	0.51	8069.81	-56544	-0.0001533	0.0004492	0.0035	1.9703	26630.12	37958.43	37958.43	4.7	No	Si
SLU 79	-1.59	-5193.64	-59958	-0.0001423	0.0004492	0.0035	1.9703	26376.58	40183.59	40183.59	7.74	No	Si
SLU 79	0.51	7797.58	-54657	-0.0001471	0.0004492	0.0035	1.9703	26679.31	37250.28	37250.28	4.78	No	Si
SLU 74	-1.59	-5219.39	-59705	-0.0001419	0.0004492	0.0035	1.9703	26402.63	40119.4	40119.4	7.69	No	Si
SLU 74	0.51	7754.63	-54408	-0.0001463	0.0004492	0.0035	1.9703	26680.96	37156.85	37156.85	4.79	No	Si
SLU 80	-1.59	-5194.28	-59975	-0.0001423	0.0004492	0.0035	1.9703	26374.83	40187.81	40187.81	7.74	No	Si
SLU 80	0.51	7800.78	-54674	-0.0001472	0.0004492	0.0035	1.9703	26679.16	37256.44	37256.44	4.78	No	Si
SLU 77	-1.59	-5235.33	-60325	-0.0001434	0.0004492	0.0035	1.9703	26336.77	40276.61	40276.61	7.69	No	Si
SLU 77	0.51	7854.04	-55017	-0.0001483	0.0004492	0.0035	1.9703	26674.93	37385.17	37385.17	4.76	No	Si
SLU 78	-1.59	-5235.97	-60341	-0.0001434	0.0004492	0.0035	1.9703	26334.9	40280.83	40280.83	7.69	No	Si
SLU 78	0.51	7857.23	-55033	-0.0001484	0.0004492	0.0035	1.9703	26674.68	37391.33	37391.33	4.76	No	Si
SLU 83	-1.59	-5416.16	-61870	-0.0001481	0.0004492	0.0035	1.9703	26142.01	40668.87	40668.87	7.51	No	Si
SLU 83	0.51	8066.61	-56528	-0.0001532	0.0004492	0.0035	1.9703	26630.83	37952.27	37952.27	4.7	No	Si
SLU 81	-1.59	-5400.23	-61251	-0.0001466	0.0004492	0.0035	1.9703	26225.28	40511.65	40511.65	7.5	No	Si
SLU 81	0.51	7967.2	-55919	-0.0001511	0.0004492	0.0035	1.9703	26653.58	37723.95	37723.95	4.73	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 14	-1.59	-13298.5	-44082	-0.0001493	0.0006738	0.0035	1.9703		37180.19	37180.19	2.8		Si
SLD 14	0.51	10414.08	-39561	-0.000124	0.0006738	0.0035	1.9703		32490.78	32490.78	3.12		Si
SLV 16	-1.59	-26865.33	-50620	-0.0002813	0.0006738	0.0035	1.9703		41053.97	41053.97	1.53		Si
SLV 16	0.51	17379.31	-46204	-0.0001791	0.0006738	0.0035	1.9703		36699.03	36699.03	2.11		Si
SLV 14	-1.59	-26220.22	-48033	-0.0002749	0.0006738	0.0035	1.5762		39550.36	39550.36	1.51		Si
SLV 14	0.51	17275.83	-42792	-0.000173	0.0006738	0.0035	1.9703		34802.84	34802.84	2.01		Si
SLV 3	-1.59	18902.13	-34245	-0.0001876	0.0006738	0.0035	1.9703		28686.4	28686.4	1.52		Si
SLV 3	0.51	-6680.81	-31521	-0.0000884	0.0006738	0.0035	1.9703		28768.95	28768.95	4.31		Si
SLV 13	-1.59	-25887.62	-47955	-0.0002698	0.0006738	0.0035	1.9703		39504.25	39504.25	1.53		Si
SLV 13	0.51	17046.74	-42737	-0.0001712	0.0006738	0.0035	1.9703		34762.91	34762.91	2.04		Si
SLD 16	-1.59	-13576.3	-45193	-0.0001531	0.0006738	0.0035	1.9703		37870.99	37870.99	2.79		Si
SLD 16	0.51	10461.17	-41028	-0.0001272	0.0006738	0.0035	1.9703		33540.3	33540.3	3.21		Si
SLV 2	-1.59	19214.64	-31735	-0.0002	0.0006738	0.0035	1.9703		26890.89	26890.89	1.4		Si
SLV 2	0.51	-6555.2	-28165	-0.0000816	0.0006738	0.0035	1.9703		26311.15	26311.15	4.01		Si
SLV 4	-1.59	18569.53	-34323	-0.0001829	0.0006738	0.0035	1.9703		28742.2	28742.2	1.55		Si
SLV 4	0.51	-6451.72	-31576	-0.0000873	0.0006738	0.0035	1.9703		28808.75	28808.75	4.47		Si
SLV 1	-1.59	19547.24	-31657	-0.0002069	0.0006738	0.0035	1.9703		26835.08	26835.08	1.37		Si
SLV 1	0.51	-6784.29	-28109	-0.0000827	0.0006738	0.0035	1.9703		26269.08	26269.08	3.87		Si
SLV 15	-1.59	-26532.73	-50542	-0.0002765	0.0006738	0.0035	1.9703		41011.03	41011.03	1.55		Si
SLV 15	0.51	17150.22	-46148	-0.0001773	0.0006738	0.0035	1.9703		36668.11	36668.11	2.14		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 83	-1.59	-5416.16	-61870	-49496	-6678	1.9703	1.9703	-55825	10833	9605	88358	31863	10048	41912	No	6.28	Si
SLU 83	0.51	8066.61	-56528	-45222	-6942	1.9703	1.9703	-51005	10833	9605	88358	31863	10048	41912	No	6.04	Si
SLU 78	-1.59	-5235.97	-60341	-48273	-6482	1.9703	1.9703	-54445	10833	9605	88358	31863	10048	41912	No	6.47	Si
SLU 78	0.51	7857.23	-55033	-44026	-6742	1.9703	1.9703	-49656	10833	9605	88358	31863	10048	41912	No	6.22	Si
SLU 81	-1.59	-5400.23	-61251	-49000	-6621	1.9703	1.9703	-55266	10833	9605	88358	31863	10048	41912	No	6.33	Si
SLU 81	0.51	7967.2	-55919	-44736	-6882	1.9703	1.9703	-50456	10833	9605	88358	31863	10048	41912	No	6.09	Si
SLU 74	-1.59	-5219.39	-59705	-47764	-6424	1.9703	1.9703	-53872	10833	9605	88358	31863	10048	41912	No	6.52	Si
SLU 74	0.51	7754.63	-54408	-43527	-6679	1.9703	1.9703	-49092	10833	9605	88358	31863	10048	41912	No	6.27	Si
SLU 82	-1.59	-5400.87	-61267	-49014	-6623	1.9703	1.9703	-55281	10833	9605	88358	31863	10048	41912	No	6.33	Si
SLU 82	0.51	7970.4	-55936	-44749	-6883	1.9703	1.9703	-50471	10833	9605	88358	31863	10048	41912	No	6.09	Si
SLU 75	-1.59	-5220.04	-59722	-47778	-6425	1.9703	1.9703	-53887	10833	9605	88358	31863	10048	41912	No	6.52	Si
SLU 75	0.51	7757.82	-54425	-43540	-6681	1.9703	1.9703	-49107	10833	9605	88358	31863	10048	41912	No	6.27	Si
SLU 79	-1.59	-5193.64	-59958	-47966	-6432	1.9703	1.9703	-54100	10833	9605	88358	31863	10048	41912	No	6.52	Si
SLU 79	0.51	7797.58	-54657	-43726	-6689	1.9703	1.9703	-49317	10833	9605	88358	31863	10048	41912	No	6.27	Si
SLU 77	-1.59	-5235.33	-60325	-48260	-6481	1.9703	1.9703	-54430	10833	9605	88358	31863	10048	41912	No	6.47	Si
SLU 77	0.51	7854.04	-55017	-44013	-6740	1.9703	1.9703	-49641	10833	9605	88358	31863	10048	41912	No	6.22	Si
SLU 80	-1.59	-5194.28	-59975	-47980	-6434	1.9703	1.9703	-54115	10833	9605	88358	31863	10048	41912	No	6.51	Si
SLU 80	0.51	7800.78	-54674	-43739	-6691	1.9703	1.9703	-49332	10833	9605	88358	31863	10048	41912	No	6.26	Si
SLU 84	-1.59	-5416.16	-61887	-49509	-6680	1.9703	1.9703	-55840	10833	9605	88358	31863	10048	41912	No	6.27	Si
SLU 84	0.51	8069.81	-56544	-45235	-6944	1.9703	1.9703	-51020	10833	9605	88358	31863	10048	41912	No	6.04	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 2	-1.59	19214.64	-31735	-25388	12788	1.9703	1.139	-28634	16250	8329	88358	47795	10048	57843		4.52	Si
SLV 2	0.51	-6555.2	-28165	-22532	12641	1.9703	1.9703	-25413	16250	14408	88358	47795	10048	57843		4.58	Si
SLD 15	-1.59	-13433.48	-45159	-36127	-11790	1.9703	1.9703	-40747	16250	14408	88358	47795	10048	57843		4.91	Si
SLD 15	0.51	10362.8	-41004	-32803	-11981	1.9703	1.9703	-36998	16250	14408	88358	47795	10048	57843		4.83	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 14	-1.59	-26220.22	-48033	-38426	-21325	1.5762	1.3178	0	0	0	88358	38236	8039	46275		2.17	Si
SLV 14	0.51	17275.83	-42792	-34234	-20971	1.9703	1.7443	-38611	16250	12755	88358	47795	10048	57843		2.76	Si
SLV 16	-1.59	-26865.33	-50620	-40496	-21927	1.9703	1.3633	-68460	16250	9969	88358	47795	10048	57843		2.64	Si
SLV 16	0.51	17379.31	-46204	-36963	-22134	1.9703	1.827	-41689	16250	13360	88358	47795	10048	57843		2.61	Si
SLV 1	-1.59	19547.24	-31657	-25326	13064	1.9703	1.103	-28564	16250	8066	88358	47795	10048	57843		4.43	Si
SLV 1	0.51	-6784.29	-28109	-22488	12917	1.9703	1.9703	-25363	16250	14408	88358	47795	10048	57843		4.48	Si
SLV 4	-1.59	18569.53	-34323	-27458	12185	1.9703	1.3323	-30969	16250	9743	88358	47795	10048	57843		4.75	Si
SLV 4	0.51	-6451.72	-31576	-25261	11478	1.9703	1.9703	-28491	16250	14408	88358	47795	10048	57843		5.04	Si
SLD 16	-1.59	-13576.3	-45193	-36154	-11909	1.9703	1.9703	-40777	16250	14408	88358	47795	10048	57843		4.86	Si
SLD 16	0.51	10461.17	-41028	-32822	-12099	1.9703	1.9703	-37019	16250	14408	88358	47795	10048	57843		4.78	Si
SLV 3	-1.59	18902.13	-34245	-27396	12462	1.9703	1.2995	-30899	16250	9503	88358	47795	10048	57843		4.64	Si
SLV 3	0.51	-6680.81	-31521	-25216	11754	1.9703	1.9703	-28441	16250	14408	88358	47795	10048	57843		4.92	Si
SLV 13	-1.59	-25887.62	-47955	-38364	-21048	1.9703	1.3359	-66062	16250	9769	88358	47795	10048	57843		2.75	Si
SLV 13	0.51	17046.74	-42737	-34189	-20695	1.9703	1.7588	-38561	16250	12861	88358	47795	10048	57843		2.8	Si
SLV 15	-1.59	-26532.73	-50542	-40434	-21651	1.9703	1.3806	-67455	16250	10095	88358	47795	10048	57843		2.67	Si
SLV 15	0.51	17150.22	-46148	-36918	-21858	1.9703	1.8405	-41639	16250	13459	88358	47795	10048	57843		2.65	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCC D.M. 17-01-18 (N.T.C.)

quota -0.24 Ta 0.03 Wa 0.08 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 1	-30241	0.24	118.44	5538.06	7380.1	6459.08	54.54	Si
SLV 2	-30300	0.24	118.44	5546.38	7393.15	6469.76	54.63	Si
SLV 5	-31757	0.24	118.44	5748.98	7703.73	6726.35	56.79	Si
SLV 6	-31795	0.24	118.44	5754.2	7711.68	6732.94	56.85	Si
SLV 3	-33025	0.24	118.44	5920.58	7968.53	6944.55	58.64	Si
SLV 4	-33084	0.24	118.44	5928.45	7980.84	6954.64	58.72	Si
SLV 9	-35831	0.24	118.44	6284.41	8549.05	7416.73	62.62	Si
SLV 10	-35870	0.24	118.44	6289.2	8556.58	7422.89	62.67	Si
SLV 7	-41037	0.24	118.44	6901.64	9564.02	8232.83	69.51	Si
SLV 8	-41075	0.24	118.44	6905.88	9571.13	8238.51	69.56	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = -0.24 Wa = 0.08 Ta = 0.0271

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 12	-34211	-47921	-387	0.382	3820.2	0.973	5.70582	3.69946	Si
SLV 11	-34150	-47870	-385	0.383	3813.9	0.973	5.71452	3.69946	Si
SLV 16	-37689	-50620	-633	0.35	4174.3	0.975	5.21268	2.99128	Si
SLV 15	-37594	-50542	-629	0.35	4164.7	0.975	5.22375	2.99128	Si
SLV 8	-28593	-43031	-290	0.44	3248.1	0.968	6.59834	3.69946	Si
SLV 7	-28532	-42981	-287	0.44	3241.9	0.968	6.61049	3.69946	Si
SLV 14	-35037	-48033	-746	0.366	3904.2	0.973	5.45969	2.99128	Si
SLV 13	-34942	-47955	-742	0.367	3894.6	0.973	5.47221	2.99128	Si
SLV 10	-25371	-39296	-763	0.464	2920.2	0.965	6.98971	3.69946	Si
SLV 9	-25310	-39246	-761	0.465	2914	0.965	7.00422	3.69946	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	4.704	SLU 84	Si
V_SLU	6.036	SLU 84	Si
PF_SLV	1.373	SLV 1	Si
V_SLV	2.17	SLV 14	Si
PFFP_SLV	54.537	SLV 1	Si
R_SLV	1.542	SLV 12	Si

## Maschio 27

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-5.988	1.046	-6.528	1.046	L2	L4	0.54	0.45	2.7	2.7	2.7			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica



									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche,  $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 84	-1.59	-1139.05	-11911	-0.000169	0.0004492	0.0035	0.54	1925.83	2519.42	2519.42	2.21	No	Si
SLU 84	0.51	-262.33	-17445	-0.0001395	0.0004492	0.0035	0.54	1942.73	3075.12	3075.12	11.72	No	Si
SLU 79	-1.59	-1110.28	-11610	-0.0001639	0.0004492	0.0035	0.54	1908.94	2484.42	2484.42	2.24	No	Si
SLU 79	0.51	-257.87	-16880	-0.0001344	0.0004492	0.0035	0.54	1966.56	3029.38	3029.38	11.75	No	Si
SLU 78	-1.59	-1117.17	-11685	-0.0001652	0.0004492	0.0035	0.54	1913.32	2493.18	2493.18	2.23	No	Si
SLU 78	0.51	-258.85	-16984	-0.0001354	0.0004492	0.0035	0.54	1962.59	3037.84	3037.84	11.74	No	Si
SLU 82	-1.59	-1127.61	-11792	-0.000167	0.0004492	0.0035	0.54	1919.36	2505.61	2505.61	2.22	No	Si
SLU 82	0.51	-257.8	-17273	-0.0001376	0.0004492	0.0035	0.54	1950.62	3061.17	3061.17	11.87	No	Si
SLU 80	-1.59	-1110.97	-11615	-0.000164	0.0004492	0.0035	0.54	1909.24	2485.02	2485.02	2.24	No	Si
SLU 80	0.51	-256.61	-16870	-0.0001343	0.0004492	0.0035	0.54	1966.94	3028.57	3028.57	11.8	No	Si
SLU 83	-1.59	-1138.35	-11905	-0.0001689	0.0004492	0.0035	0.54	1925.56	2518.83	2518.83	2.21	No	Si
SLU 83	0.51	-263.6	-17455	-0.0001397	0.0004492	0.0035	0.54	1942.26	3075.94	3075.94	11.67	No	Si
SLU 74	-1.59	-1105.04	-11561	-0.0001631	0.0004492	0.0035	0.54	1906.06	2478.77	2478.77	2.24	No	Si
SLU 74	0.51	-255.59	-16822	-0.0001338	0.0004492	0.0035	0.54	1968.67	3024.71	3024.71	11.83	No	Si
SLU 77	-1.59	-1116.48	-11680	-0.0001651	0.0004492	0.0035	0.54	1913.03	2492.59	2492.59	2.23	No	Si
SLU 77	0.51	-260.11	-16994	-0.0001356	0.0004492	0.0035	0.54	1962.2	3038.66	3038.66	11.68	No	Si
SLU 81	-1.59	-1126.92	-11787	-0.0001669	0.0004492	0.0035	0.54	1919.08	2505.01	2505.01	2.22	No	Si
SLU 81	0.51	-259.07	-17283	-0.0001378	0.0004492	0.0035	0.54	1950.17	3061.99	3061.99	11.82	No	Si
SLU 75	-1.59	-1105.74	-11566	-0.0001632	0.0004492	0.0035	0.54	1906.36	2479.37	2479.37	2.24	No	Si
SLU 75	0.51	-254.32	-16812	-0.0001336	0.0004492	0.0035	0.54	1969.03	3023.9	3023.9	11.89	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche,  $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 15	-1.59	-2248.27	-11673	-0.0004184	0.0006738	0.0035	0.432		2703.31	2703.31	1.2		Si
SLV 15	0.51	1739.87	-12750	-0.0002335	0.0006738	0.0035	0.54		2763.64	2763.64	1.59		Si
SLV 3	-1.59	558.59	-5416	-0.0000716	0.0006738	0.0035	0.54		1365.2	1365.2	2.44		Si
SLV 3	0.51	-1948.92	-8732	-0.0005591	0.0006738	0.0035	0.432		2160.09	2160.09	1.11		Si
SLV 2	-1.59	699.97	-4474	-0.0000878	0.0006738	0.0035	0.54		1152.55	1152.55	1.65		Si
SLV 2	0.51	-2079.75	-10264	-0.0004222	0.0006738	0.0035	0.432		2451.34	2451.34	1.18		Si
SLV 1	-1.59	689.5	-4589	-0.0000853	0.0006738	0.0035	0.54		1179.02	1179.02	1.71		Si
SLV 1	0.51	-2074.26	-10063	-0.0004421	0.0006738	0.0035	0.432		2414.86	2414.86	1.16		Si
SLV 14	-1.59	-2106.89	-10731	-0.0003975	0.0006738	0.0035	0.432		2536.47	2536.47	1.2		Si
SLV 14	0.51	1609.05	-14282	-0.0002201	0.0006738	0.0035	0.54		3002.01	3002.01	1.87		Si
SLD 16	-1.59	-1400.35	-9568	-0.0001831	0.0006738	0.0035	0.432		2320.74	2320.74	1.66		Si
SLD 16	0.51	644.83	-12116	-0.0001228	0.0006738	0.0035	0.54		2664.87	2664.87	4.13		Si
SLV 16	-1.59	-2237.8	-11558	-0.0004202	0.0006738	0.0035	0.432		2683.58	2683.58	1.2		Si
SLV 16	0.51	1734.38	-12951	-0.0002327	0.0006738	0.0035	0.54		2794.82	2794.82	1.61		Si
SLV 13	-1.59	-2117.36	-10846	-0.0003952	0.0006738	0.0035	0.432		2557.36	2557.36	1.21		Si
SLV 13	0.51	1614.54	-14081	-0.0002197	0.0006738	0.0035	0.54		2970.83	2970.83	1.84		Si
SLD 15	-1.59	-1404.85	-9617	-0.0001837	0.0006738	0.0035	0.432		2330.21	2330.21	1.66		Si
SLD 15	0.51	647.19	-12030	-0.0001224	0.0006738	0.0035	0.54		2651.48	2651.48	4.1		Si
SLV 4	-1.59	569.06	-5302	-0.0000719	0.0006738	0.0035	0.54		1341.77	1341.77	2.36		Si
SLV 4	0.51	-1954.41	-8933	-0.000507	0.0006738	0.0035	0.432		2198.61	2198.61	1.12		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 78	-1.59	-1117.17	-11685	-9348	-418	0.54	0.5232	-38469	10833	2550	88358	8733	2754	11487	No	27.46	Si
SLU 78	0.51	-258.85	-16984	-13587	-381	0.54	0.54	-55915	10833	2633	88358	8733	2754	11487	No	30.15	Si
SLU 82	-1.59	-1127.61	-11792	-9433	-423	0.54	0.5231	-38820	10833	2550	88358	8733	2754	11487	No	27.13	Si
SLU 82	0.51	-257.8	-17273	-13818	-386	0.54	0.54	-56865	10833	2633	88358	8733	2754	11487	No	29.75	Si
SLU 75	-1.59	-1105.74	-11566	-9253	-415	0.54	0.5232	-38077	10833	2551	88358	8733	2754	11487	No	27.69	Si
SLU 75	0.51	-254.32	-16812	-13449	-378	0.54	0.54	-55348	10833	2633	88358	8733	2754	11487	No	30.39	Si
SLU 84	-1.59	-1139.05	-11911	-9528	-427	0.54	0.5231	-39212	10833	2550	88358	8733	2754	11487	No	26.91	Si
SLU 84	0.51	-262.33	-17445	-13956	-389	0.54	0.54	-57433	10833	2633	88358	8733	2754	11487	No	29.52	Si
SLU 79	-1.59	-1110.28	-11610	-9288	-415	0.54	0.5231	-38221	10833	2550	88358	8733	2754	11487	No	27.65	Si
SLU 79	0.51	-257.87	-16880	-13504	-378	0.54	0.54	-55571	10833	2633	88358	8733	2754	11487	No	30.36	Si
SLU 83	-1.59	-1138.35	-11905	-9524	-426	0.54	0.5232	-39195	10833	2550	88358	8733	2754	11487	No	26.97	Si
SLU 83	0.51	-263.6	-17455	-13964	-388	0.54	0.54	-57466	10833	2633	88358	8733	2754	11487	No	29.59	Si
SLU 74	-1.59	-1105.04	-11561	-9249	-414	0.54	0.5232	-38061	10833	2551	88358	8733	2754	11487	No	27.75	Si
SLU 74	0.51	-255.59	-16822	-13458	-377	0.54	0.54	-55381	10833	2633	88358	8733	2754	11487	No	30.47	Si
SLU 80	-1.59	-1110.97	-11615	-9292	-416	0.54	0.523	-38237	10833	2550	88358	8733	2754	11487	No	27.58	Si
SLU 80	0.51	-256.61	-16870	-13496	-379	0.54	0.54	-55538	10833	2633	88358	8733	2754	11487	No	30.29	Si
SLU 81	-1.59	-1126.92	-11787	-9429	-422	0.54	0.5232	-38804	10833	2550	88358	8733	2754	11487	No	27.2	Si
SLU 81	0.51	-259.07	-17283	-13826	-385	0.54	0.54	-56898	10833	2633	88358	8733	2754	11487	No	29.82	Si
SLU 77	-1.59	-1116.48	-11680	-9344	-417	0.54	0.5232	-38452	10833	2551	88358	8733	2754	11487	No	27.52	Si
SLU 77	0.51	-260.11	-16994	-13595	-380	0.54	0.54	-55949	10833	2633	88358	8733	2754	11487	No	30.23	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 3	-1.59	558.59	-5416	-4333	1186	0.54	0.5006	-17831	16066	3619	88358	13099	2754	15853		13.36	Si
SLV 3	0.51	-1948.92	-8732	-6986	1172	0.432	0.1405	0	0	0	88358	10479	2203	12683		10.82	Si
SLV 15	-1.59	-2248.27	-11673	-9338	-1927	0.432	0.2322	0	0	0	88358	10479	2203	12683		6.58	Si
SLV 15	0.51	1739.87	-12750	-10200	-1822	0.54	0.4006	-41977	16250	2930	88358	13099	2754	15853		8.7	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 15	-1.59	-1404.85	-9617	-7694	-993	0.432	0.3718	0	0	0	88358	10479	2203	12683		12.77	Si
SLD 15	0.51	647.19	-12030	-9624	-934	0.54	0.54	-39605	16250	3949	88358	13099	2754	15853		16.98	Si
SLD 16	-1.59	-1400.35	-9568	-7654	-989	0.432	0.3709	0	0	0	88358	10479	2203	12683		12.82	Si
SLD 16	0.51	644.83	-12116	-9693	-930	0.54	0.54	-39888	16250	3949	88358	13099	2754	15853		17.04	Si
SLV 16	-1.59	-2237.8	-11558	-9247	-1918	0.432	0.2292	0	0	0	88358	10479	2203	12683		6.61	Si
SLV 16	0.51	1734.38	-12951	-10361	-1814	0.54	0.4082	-42636	16250	2985	88358	13099	2754	15853		8.74	Si
SLV 14	-1.59	-2106.89	-10731	-8585	-1776	0.432	0.221	0	0	0	88358	10479	2203	12683		7.14	Si
SLV 14	0.51	1609.05	-14282	-11425	-1710	0.54	0.472	-47018	16250	3452	88358	13099	2754	15853		9.27	Si
SLV 13	-1.59	-2117.36	-10846	-8677	-1784	0.432	0.2243	0	0	0	88358	10479	2203	12683		7.11	Si
SLV 13	0.51	1614.54	-14081	-11265	-1718	0.54	0.466	-46359	16250	3408	88358	13099	2754	15853		9.23	Si
SLV 1	-1.59	689.5	-4589	-3671	1329	0.54	0.3593	-15108	15522	2509	88358	13099	2754	15853		11.93	Si
SLV 1	0.51	-2074.26	-10063	-8051	1276	0.432	0.1916	0	0	0	88358	10479	2203	12683		9.94	Si
SLV 4	-1.59	569.06	-5302	-4241	1195	0.54	0.488	-17454	15991	3511	88358	13099	2754	15853		13.27	Si
SLV 4	0.51	-1954.41	-8933	-7146	1181	0.432	0.1536	0	0	0	88358	10479	2203	12683		10.74	Si
SLV 2	-1.59	699.97	-4474	-3580	1337	0.54	0.3407	-14731	15446	2368	88358	13099	2754	15853		11.85	Si
SLV 2	0.51	-2079.75	-10264	-8211	1284	0.432	0.2021	0	0	0	88358	10479	2203	12683		9.87	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRMC D.M. 17-01-18 (N.T.C.)

quota -0.24 Ta 0.03 Wa 0.08 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 3	-8508	0.24	32.46	1548.54	2055.64	1802.09	55.52	Si
SLV 4	-8613	0.24	32.46	1563.12	2077.66	1820.39	56.08	Si
SLV 7	-8825	0.24	32.46	1592.18	2122.07	1857.12	57.21	Si
SLV 8	-8893	0.24	32.46	1601.39	2136.29	1868.84	57.57	Si
SLV 1	-9386	0.24	32.46	1666.79	2239.46	1953.12	60.17	Si
SLV 2	-9491	0.24	32.46	1680.43	2261.49	1970.96	60.72	Si
SLV 11	-9960	0.24	32.46	1739.79	2357.02	2048.41	63.11	Si
SLV 12	-10028	0.24	32.46	1748.22	2370.48	2059.35	63.44	Si
SLV 5	-11753	0.24	32.46	1946.61	2703.66	2325.13	71.63	Si
SLV 6	-11821	0.24	32.46	1953.8	2716.41	2335.11	71.94	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = -0.24 Wa = 0.08 Ta = 0.0271

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 6	-13058	-5720	-754	0.254	1422.1	0.98	3.76697	3.69946	Si
SLV 5	-12957	-5794	-755	0.255	1411.8	0.98	3.78491	3.69946	Si
SLV 10	-11422	-7597	-592	0.291	1255.4	0.977	4.32287	3.69946	Si
SLV 9	-11322	-7671	-593	0.292	1245.1	0.977	4.34811	3.69946	Si
SLV 2	-13058	-4474	-866	0.246	1422.1	0.98	3.64506	2.99128	Si
SLV 1	-12902	-4589	-868	0.247	1406.2	0.98	3.67151	2.99128	Si
SLV 4	-11399	-5302	-800	0.274	1253	0.977	4.07033	2.99128	Si
SLV 3	-11243	-5416	-802	0.276	1237.1	0.977	4.10628	2.99128	Si
SLV 8	-7527	-8477	-535	0.397	858.8	0.967	5.96563	3.69946	Si
SLV 7	-7427	-8551	-537	0.401	848.5	0.967	6.0247	3.69946	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	2.212	SLU 84	Si
V_SLU	26.912	SLU 84	Si
PF_SLV	1.108	SLV 3	Si
V_SLV	6.582	SLV 15	Si
PFFP_SLV	55.517	SLV 3	Si
R_SLV	1.018	SLV 6	Si

## Maschio 28

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-0.123	1.046	-5.088	1.046	L2	L4	4.965	0.45	2.7	2.7	2.7			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica



									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 83	-1.59	-11098.71	-167553	-0.0001343	0.0004492	0.0035	4.965	160659.65	266203.32	266203.32	23.99	No	Si
SLU 83	0.51	21566.32	-116115	-0.0001012	0.0004492	0.0035	4.965	165650.55	214008.32	214008.32	9.92	No	Si
SLU 78	-1.59	-11223.82	-164130	-0.0001314	0.0004492	0.0035	4.965	162486.33	264128.18	264128.18	23.53	No	Si
SLU 78	0.51	20826.76	-113038	-0.000098	0.0004492	0.0035	4.965	164423.9	209753.82	209753.82	10.07	No	Si
SLU 84	-1.59	-11113.61	-167572	-0.0001343	0.0004492	0.0035	4.965	160648.59	266215.19	266215.19	23.95	No	Si
SLU 84	0.51	21564.42	-116129	-0.0001012	0.0004492	0.0035	4.965	165655.82	214028.01	214028.01	9.93	No	Si
SLU 79	-1.59	-11125.21	-163133	-0.0001304	0.0004492	0.0035	4.965	162978.03	263524.11	263524.11	23.69	No	Si
SLU 79	0.51	20679.34	-112313	-0.0000973	0.0004492	0.0035	4.965	164110.01	208751.98	208751.98	10.09	No	Si
SLU 81	-1.59	-10919.24	-165935	-0.0001326	0.0004492	0.0035	4.965	161549.51	265222.59	265222.59	24.29	No	Si
SLU 81	0.51	21376.11	-114985	-0.0001001	0.0004492	0.0035	4.965	165220.22	212446.43	212446.43	9.94	No	Si
SLU 75	-1.59	-11044.35	-162512	-0.0001298	0.0004492	0.0035	4.965	163275.48	263147.45	263147.45	23.83	No	Si
SLU 75	0.51	20636.55	-111908	-0.000097	0.0004492	0.0035	4.965	163930.38	208191.92	208191.92	10.09	No	Si
SLU 77	-1.59	-11208.91	-164110	-0.0001313	0.0004492	0.0035	4.965	162496.16	264116.31	264116.31	23.56	No	Si
SLU 77	0.51	20828.66	-113024	-0.000098	0.0004492	0.0035	4.965	164417.82	209734.14	209734.14	10.07	No	Si
SLU 74	-1.59	-11029.45	-162493	-0.0001297	0.0004492	0.0035	4.965	163284.74	263135.59	263135.59	23.86	No	Si
SLU 74	0.51	20638.44	-111894	-0.0000969	0.0004492	0.0035	4.965	163924.01	208172.24	208172.24	10.09	No	Si
SLU 82	-1.59	-10934.15	-165955	-0.0001327	0.0004492	0.0035	4.965	161539.03	265234.46	265234.46	24.26	No	Si
SLU 82	0.51	21374.21	-114999	-0.0001001	0.0004492	0.0035	4.965	165225.79	212466.11	212466.11	9.94	No	Si
SLU 80	-1.59	-11140.12	-163153	-0.0001304	0.0004492	0.0035	4.965	162968.55	263535.97	263535.97	23.66	No	Si
SLU 80	0.51	20677.44	-112328	-0.0000973	0.0004492	0.0035	4.965	164116.27	208771.66	208771.66	10.1	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 14	-1.59	-65062	-155883	-0.0001679	0.0006738	0.0035	4.965		298592.23	298592.23	4.59		Si
SLV 14	0.51	26689.06	-109834	-0.0000971	0.0006738	0.0035	4.965		223548.69	223548.69	8.38		Si
SLV 1	-1.59	51494.91	-70054	-0.0000892	0.0006738	0.0035	4.965		152625.03	152625.03	2.96		Si
SLV 1	0.51	2959.11	-41443	-0.0000294	0.0006738	0.0035	4.965		97531.9	97531.9	32.96		Si
SLV 16	-1.59	-67512.1	-156239	-0.0001706	0.0006738	0.0035	4.965		298936.46	298936.46	4.43		Si
SLV 16	0.51	24850.79	-111891	-0.000097	0.0006738	0.0035	4.965		226441.53	226441.53	9.11		Si
SLV 13	-1.59	-64983.73	-155703	-0.0001677	0.0006738	0.0035	4.965		298419.12	298419.12	4.59		Si
SLV 13	0.51	26373.59	-109647	-0.0000967	0.0006738	0.0035	4.965		223286.31	223286.31	8.47		Si
SLD 15	-1.59	-33413	-131483	-0.0001194	0.0006738	0.0035	4.965		266990.02	266990.02	7.99		Si
SLD 15	0.51	18432.14	-91648	-0.0000768	0.0006738	0.0035	4.965		191826.08	191826.08	10.41		Si
SLV 2	-1.59	51416.64	-70233	-0.0000893	0.0006738	0.0035	4.965		152950.52	152950.52	2.97		Si
SLV 2	0.51	3274.58	-41629	-0.0000297	0.0006738	0.0035	4.965		97928.87	97928.87	29.91		Si
SLD 16	-1.59	-33446.61	-131560	-0.0001195	0.0006738	0.0035	4.965		267094.47	267094.47	7.99		Si
SLD 16	0.51	18567.6	-91728	-0.000077	0.0006738	0.0035	4.965		191971.51	191971.51	10.34		Si
SLV 4	-1.59	48966.54	-70589	-0.0000875	0.0006738	0.0035	4.965		153597.73	153597.73	3.14		Si
SLV 4	0.51	1436.32	-43686	-0.0000296	0.0006738	0.0035	4.965		102305.69	102305.69	71.23		Si
SLV 15	-1.59	-67433.83	-156060	-0.0001703	0.0006738	0.0035	4.965		298763.35	298763.35	4.43		Si
SLV 15	0.51	24535.32	-111704	-0.0000966	0.0006738	0.0035	4.965		226179.15	226179.15	9.22		Si
SLV 3	-1.59	49044.81	-70410	-0.0000874	0.0006738	0.0035	4.965		153272.24	153272.24	3.13		Si
SLV 3	0.51	1120.85	-43500	-0.0000293	0.0006738	0.0035	4.965		101908.72	101908.72	90.92		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 80	-1.59	-11140.12	-163153	-130522	32215	4.965	4.965	-58419	10833	24204	88358	80293	25322	105615	No	3.28	Si
SLU 80	0.51	20677.44	-112328	-89862	32838	4.965	4.965	-40220	10833	24204	88358	80293	25322	105615	No	3.22	Si
SLU 83	-1.59	-11098.71	-167553	-134042	32529	4.965	4.965	-59994	10833	24204	88358	80293	25322	105615	No	3.25	Si
SLU 83	0.51	21566.32	-116115	-92892	33165	4.965	4.965	-41576	10833	24204	88358	80293	25322	105615	No	3.18	Si
SLU 82	-1.59	-10934.15	-165955	-132764	32132	4.965	4.965	-59422	10833	24204	88358	80293	25322	105615	No	3.29	Si
SLU 82	0.51	21374.21	-114999	-91999	32761	4.965	4.965	-41177	10833	24204	88358	80293	25322	105615	No	3.22	Si
SLU 74	-1.59	-11029.45	-162493	-129994	32020	4.965	4.965	-58182	10833	24204	88358	80293	25322	105615	No	3.3	Si
SLU 74	0.51	20638.44	-111894	-89515	32640	4.965	4.965	-40065	10833	24204	88358	80293	25322	105615	No	3.24	Si
SLU 78	-1.59	-11223.82	-164130	-131304	32417	4.965	4.965	-58769	10833	24204	88358	80293	25322	105615	No	3.26	Si
SLU 78	0.51	20826.76	-113038	-90430	33044	4.965	4.965	-40475	10833	24204	88358	80293	25322	105615	No	3.2	Si
SLU 77	-1.59	-11208.91	-164110	-131288	32417	4.965	4.965	-58762	10833	24204	88358	80293	25322	105615	No	3.26	Si
SLU 77	0.51	20828.66	-113024	-90419	33044	4.965	4.965	-40469	10833	24204	88358	80293	25322	105615	No	3.2	Si
SLU 75	-1.59	-11044.35	-162512	-130010	32020	4.965	4.965	-58189	10833	24204	88358	80293	25322	105615	No	3.3	Si
SLU 75	0.51	20636.55	-111908	-89527	32640	4.965	4.965	-40070	10833	24204	88358	80293	25322	105615	No	3.24	Si
SLU 81	-1.59	-10919.24	-165935	-132748	32132	4.965	4.965	-59415	10833	24204	88358	80293	25322	105615	No	3.29	Si
SLU 81	0.51	21376.11	-114985	-91988	32761	4.965	4.965	-41172	10833	24204	88358	80293	25322	105615	No	3.22	Si
SLU 79	-1.59	-11125.21	-163133	-130507	32215	4.965	4.965	-58412	10833	24204	88358	80293	25322	105615	No	3.28	Si
SLU 79	0.51	20679.34	-112313	-89851	32838	4.965	4.965	-40215	10833	24204	88358	80293	25322	105615	No	3.22	Si
SLU 84	-1.59	-11113.61	-167572	-134058	32529	4.965	4.965	-60001	10833	24204	88358	80293	25322	105615	No	3.25	Si
SLU 84	0.51	21564.42	-116129	-92903	33165	4.965	4.965	-41581	10833	24204	88358	80293	25322	105615	No	3.18	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 3	-1.59	16352.83	-94874	-75900	32693	4.965	4.965	-33971	16250	36307	88358	120440	25322	124665		3.81	Si
SLD 3	0.51	8449.21	-62483	-49987	32196	4.965	4.965	-22373	16250	36307	88358	120440	25322	124665		3.87	Si
SLD 2	-1.59	17395.81	-94810	-75848	33250	4.965	4.965	-33948	16250	36307	88358	120440	25322	124665		3.75	Si
SLD 2	0.51	9377.77	-61685	-49348	32993	4.965	4.965	-22087	16250	36307	88358	120440	25322	124665		3.78	Si





Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 1	-1.59	51494.91	-70054	-56043	47257	4.965	4.965	-25084	16250	36307	88358	120440	25322	124665		2.64	Si
SLV 1	0.51	2959.11	-41443	-33154	46098	4.965	4.965	-14839	15468	34559	88358	120440	25322	122917		2.67	Si
SLD 1	-1.59	17429.42	-94733	-75786	33335	4.965	4.965	-33920	16250	36307	88358	120440	25322	124665		3.74	Si
SLD 1	0.51	9242.3	-61605	-49284	33077	4.965	4.965	-22058	16250	36307	88358	120440	25322	124665		3.77	Si
SLV 3	-1.59	49044.81	-70410	-56328	45765	4.965	4.965	-25211	16250	36307	88358	120440	25322	124665		2.72	Si
SLV 3	0.51	1120.85	-43500	-34800	44046	4.965	4.965	-15576	15615	34888	88358	120440	25322	123246		2.8	Si
SLV 2	-1.59	51416.64	-70233	-56186	47060	4.965	4.965	-25148	16250	36307	88358	120440	25322	124665		2.65	Si
SLV 2	0.51	3274.58	-41629	-33303	45902	4.965	4.965	-14906	15481	34589	88358	120440	25322	122947		2.68	Si
SLD 4	-1.59	16319.22	-94951	-75961	32609	4.965	4.965	-33998	16250	36307	88358	120440	25322	124665		3.82	Si
SLD 4	0.51	8584.67	-62563	-50051	32112	4.965	4.965	-22402	16250	36307	88358	120440	25322	124665		3.88	Si
SLV 5	-1.59	13571.97	-99647	-79717	32526	4.965	4.965	-35680	16250	36307	88358	120440	25322	124665		3.83	Si
SLV 5	0.51	13354.68	-62948	-50358	33333	4.965	4.965	-22539	16250	36307	88358	120440	25322	124665		3.74	Si
SLV 4	-1.59	48966.54	-70589	-56472	45569	4.965	4.965	-25275	16250	36307	88358	120440	25322	124665		2.74	Si
SLV 4	0.51	1436.32	-43686	-34949	43850	4.965	4.965	-15642	15628	34918	88358	120440	25322	123276		2.81	Si
SLV 6	-1.59	13521.42	-99763	-79810	32399	4.965	4.965	-35721	16250	36307	88358	120440	25322	124665		3.85	Si
SLV 6	0.51	13558.44	-63068	-50454	33206	4.965	4.965	-22582	16250	36307	88358	120440	25322	124665		3.75	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRMC D.M. 17-01-18 (N.T.C.)

quota -0.24 Ta 0.03 Wa 0.08 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 1	-52885	0.24	298.45	10362.4	13386.47	11874.44	39.79	Si
SLV 2	-53065	0.24	298.45	10392.42	13427.62	11910.02	39.91	Si
SLV 3	-53308	0.24	298.45	10432.89	13483.19	11958.04	40.07	Si
SLV 4	-53488	0.24	298.45	10462.82	13524.35	11993.59	40.19	Si
SLV 5	-77728	0.24	298.45	14169.21	18927.35	16548.28	55.45	Si
SLV 6	-77844	0.24	298.45	14185.43	18951.59	16568.51	55.52	Si
SLV 7	-79138	0.24	298.45	14364.91	19221.37	16793.14	56.27	Si
SLV 8	-79254	0.24	298.45	14380.95	19245.62	16813.28	56.34	Si
SLV 9	-99418	0.24	298.45	16938.25	23332.83	20135.54	67.47	Si
SLV 10	-99534	0.24	298.45	16951.7	23355.71	20153.7	67.53	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = -0.24 Wa = 0.08 Ta = 0.0271

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 12	-75106	-126646	-567	0.428	8495.9	0.97	6.41871	3.69946	Si
SLV 11	-75052	-126530	-567	0.428	8490.4	0.97	6.42233	3.69946	Si
SLV 16	-86934	-156239	-1114	0.378	9700.3	0.973	5.64729	2.99128	Si
SLV 15	-86851	-156060	-1114	0.378	9691.8	0.973	5.65145	2.99128	Si
SLV 14	-83299	-155883	-1395	0.387	9330.1	0.972	5.7863	2.99128	Si
SLV 13	-83215	-155703	-1395	0.387	9321.6	0.972	5.79077	2.99128	Si
SLV 10	-62988	-125458	-1505	0.476	7262.4	0.965	7.16415	3.69946	Si
SLV 9	-62934	-125342	-1505	0.476	7256.9	0.965	7.16903	3.69946	Si
SLV 8	-61345	-100951	-380	0.502	7095.2	0.964	7.56922	3.69946	Si
SLV 7	-61291	-100835	-380	0.502	7089.7	0.964	7.57456	3.69946	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	9.923	SLU 83	Si
V_SLU	3.184	SLU 83	Si
PF_SLV	2.964	SLV 1	Si
V_SLV	2.638	SLV 1	Si
PFFP_SLV	39.787	SLV 1	Si
R_SLV	1.735	SLV 12	Si

## Maschio 29

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-16.768	6.576	-12.888	6.576	L2	L4	3.88	0.45	2.7	2.7	2.7			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica





									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche,  $\gamma_m = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 62	0.41	-815.13	-58854	-0.0000562	0.0003743	0.0035	3.88	76375.05	89356.91	89356.91	109.62	No	Si
SLU 62	0.81	-3686.56	-60334	-0.0000622	0.0003743	0.0035	3.88	77321.05	90605.09	90605.09	24.58	No	Si
SLU 79	0.41	-964.73	-63358	-0.0000611	0.0003743	0.0035	3.88	79105.42	93202.36	93202.36	96.61	No	Si
SLU 79	0.81	-3962.09	-64963	-0.0000675	0.0003743	0.0035	3.88	79971.41	94607.73	94607.73	23.88	No	Si
SLU 74	0.41	-931.29	-63105	-0.0000608	0.0003743	0.0035	3.88	78963.71	92982.46	92982.46	99.84	No	Si
SLU 74	0.81	-3948.74	-64706	-0.0000672	0.0003743	0.0035	3.88	79836.57	94381.49	94381.49	23.9	No	Si
SLU 83	0.41	-1001.24	-65176	-0.0000631	0.0003743	0.0035	3.88	80082.21	94795.85	94795.85	94.68	No	Si
SLU 83	0.81	-4078.04	-66815	-0.0000696	0.0003743	0.0035	3.88	80900.89	96253.36	96253.36	23.6	No	Si
SLU 60	0.41	-783.4	-58103	-0.0000554	0.0003743	0.0035	3.88	75876.42	88729.4	88729.4	113.26	No	Si
SLU 60	0.81	-3645.6	-59554	-0.0000613	0.0003743	0.0035	3.88	76828.42	89945.2	89945.2	24.67	No	Si
SLU 82	0.41	-822.47	-64584	-0.0000622	0.0003743	0.0035	3.88	79771.73	94273.71	94273.71	114.62	No	Si
SLU 82	0.81	-3871.71	-66222	-0.0000687	0.0003743	0.0035	3.88	80611.36	95723.54	95723.54	24.72	No	Si
SLU 84	0.41	-854.2	-65335	-0.000063	0.0003743	0.0035	3.88	80164.07	94936.15	94936.15	111.14	No	Si
SLU 84	0.81	-3912.66	-67002	-0.0000696	0.0003743	0.0035	3.88	80990.47	96420.72	96420.72	24.64	No	Si
SLU 77	0.41	-963.02	-63856	-0.0000616	0.0003743	0.0035	3.88	79380.3	93636.63	93636.63	97.23	No	Si
SLU 77	0.81	-3989.7	-65486	-0.0000681	0.0003743	0.0035	3.88	80241.49	95069.88	95069.88	23.83	No	Si
SLU 69	0.41	-803.79	-57861	-0.0000552	0.0003743	0.0035	3.88	75713.1	88528.08	88528.08	110.14	No	Si
SLU 69	0.81	-3623.58	-59345	-0.0000611	0.0003743	0.0035	3.88	76693.72	89768.57	89768.57	24.77	No	Si
SLU 81	0.41	-969.52	-64425	-0.0000622	0.0003743	0.0035	3.88	79687.27	94134.31	94134.31	97.09	No	Si
SLU 81	0.81	-4037.09	-66035	-0.0000687	0.0003743	0.0035	3.88	80518.6	95557.25	95557.25	23.67	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche,  $\gamma_m = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 16	0.41	7053.3	-39300	-0.0000449	0.0005615	0.0035	3.88	66883.32	66883.32	66883.32	9.48		Si
SLD 16	0.81	567.58	-39905	-0.0000363	0.0005615	0.0035	3.88	67753.37	67753.37	67753.37	119.37		Si
SLV 2	0.41	-17303.81	-51927	-0.0000718	0.0005615	0.0035	3.88	89585.73	89585.73	89585.73	5.18		Si
SLV 2	0.81	-9823.94	-54023	-0.000063	0.0005615	0.0035	3.88	92361.46	92361.46	92361.46	9.4		Si
SLV 4	0.41	-17082.02	-54889	-0.0000744	0.0005615	0.0035	3.88	93504.29	93504.29	93504.29	5.47		Si
SLV 4	0.81	-9523.91	-56863	-0.0000653	0.0005615	0.0035	3.88	96119.18	96119.18	96119.18	10.09		Si
SLD 14	0.41	6960.03	-38022	-0.0000436	0.0005615	0.0035	3.88	65048.17	65048.17	65048.17	9.35		Si
SLD 14	0.81	438.53	-38682	-0.000035	0.0005615	0.0035	3.88	65994.89	65994.89	65994.89	150.49		Si
SLV 14	0.41	17064.19	-30988	-0.0000512	0.0005615	0.0035	3.88	55042.88	55042.88	55042.88	3.23		Si
SLV 14	0.81	4669.58	-31078	-0.000034	0.0005615	0.0035	3.88	55170.23	55170.23	55170.23	11.81		Si
SLV 3	0.41	-18214.98	-55598	-0.0000768	0.0005615	0.0035	3.88	94440.92	94440.92	94440.92	5.18		Si
SLV 3	0.81	-10112.96	-57678	-0.000067	0.0005615	0.0035	3.88	97204.1	97204.1	97204.1	9.61		Si
SLV 13	0.41	15931.23	-31696	-0.0000503	0.0005615	0.0035	3.88	56043.19	56043.19	56043.19	3.52		Si
SLV 13	0.81	4080.53	-31893	-0.0000339	0.0005615	0.0035	3.88	56321.91	56321.91	56321.91	13.8		Si
SLV 16	0.41	17285.98	-33950	-0.0000544	0.0005615	0.0035	3.88	59237.32	59237.32	59237.32	3.43		Si
SLV 16	0.81	4969.61	-33917	-0.000037	0.0005615	0.0035	3.88	59190.78	59190.78	59190.78	11.91		Si
SLV 15	0.41	16153.02	-34658	-0.0000534	0.0005615	0.0035	3.88	60244.02	60244.02	60244.02	3.73		Si
SLV 15	0.81	4380.56	-34732	-0.0000369	0.0005615	0.0035	3.88	60349.48	60349.48	60349.48	13.78		Si
SLV 1	0.41	-18436.77	-52635	-0.0000742	0.0005615	0.0035	3.88	90530.94	90530.94	90530.94	4.91		Si
SLV 1	0.81	-10412.99	-54838	-0.0000646	0.0005615	0.0035	3.88	93436.67	93436.67	93436.67	8.97		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_m = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 78	0.41	-815.97	-64015	-56902	5894	3.88	3.88	-32590	10833	18915	30925	52283	9894	49840	No	8.46	Si
SLU 78	0.81	-3824.31	-65673	-58376	6081	3.88	3.88	-33434	10833	18915	30925	52283	9894	49840	No	8.2	Si
SLU 79	0.41	-964.73	-63358	-56318	5897	3.88	3.88	-32256	10833	18915	30925	52283	9894	49840	No	8.45	Si
SLU 79	0.81	-3962.09	-64963	-57745	6084	3.88	3.88	-33073	10833	18915	30925	52283	9894	49840	No	8.19	Si
SLU 84	0.41	-854.2	-65335	-58076	6014	3.88	3.88	-33262	10833	18915	30925	52283	9894	49840	No	8.29	Si
SLU 84	0.81	-3912.66	-67002	-59557	6203	3.88	3.88	-34111	10833	18915	30925	52283	9894	49840	No	8.03	Si
SLU 77	0.41	-963.02	-63856	-56761	5956	3.88	3.88	-32509	10833	18915	30925	52283	9894	49840	No	8.37	Si
SLU 77	0.81	-3989.7	-65486	-58210	6145	3.88	3.88	-33339	10833	18915	30925	52283	9894	49840	No	8.11	Si
SLU 81	0.41	-969.52	-64425	-57267	6069	3.88	3.88	-32799	10833	18915	30925	52283	9894	49840	No	8.21	Si
SLU 81	0.81	-4037.09	-66035	-58698	6258	3.88	3.88	-33619	10833	18915	30925	52283	9894	49840	No	7.96	Si
SLU 80	0.41	-817.68	-63517	-56459	5835	3.88	3.88	-32336	10833	18915	30925	52283	9894	49840	No	8.54	Si
SLU 80	0.81	-3796.7	-65150	-57911	6021	3.88	3.88	-33168	10833	18915	30925	52283	9894	49840	No	8.28	Si
SLU 74	0.41	-931.29	-63105	-56093	5950	3.88	3.88	-32127	10833	18915	30925	52283	9894	49840	No	8.38	Si
SLU 74	0.81	-3948.74	-64706	-57517	6136	3.88	3.88	-32942	10833	18915	30925	52283	9894	49840	No	8.12	Si
SLU 82	0.41	-822.47	-64584	-57408	6007	3.88	3.88	-32880	10833	18915	30925	52283	9894	49840	No	8.3	Si
SLU 82	0.81	-3871.71	-66222	-58864	6195	3.88	3.88	-33714	10833	18915	30925	52283	9894	49840	No	8.05	Si
SLU 75	0.41	-784.24	-63264	-56234	5888	3.88	3.88	-32208	10833	18915	30925	52283	9894	49840	No	8.46	Si
SLU 75	0.81	-3783.36	-64893	-57683	6073	3.88	3.88	-33037	10833	18915	30925	52283	9894	49840	No	8.21	Si
SLU 83	0.41	-1001.24	-65176	-57935	6075	3.88	3.88	-33181	10833	18915	30925	52283	9894	49840	No	8.2	Si
SLU 83	0.81	-4078.04	-66815	-59391	6266	3.88	3.88	-34016	10833	18915	30925	52283	9894	49840	No	7.95	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_m = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 3	0.41	-18214.98	-55598	-49420	-21708	3.88	3.88	-28305	16078	28072	30925	78424	9894	58997		2.72	Si
SLV 3	0.81	-10112.96	-57678	-51269	-21382	3.88	3.88	-29364	16250	28372	30925	78424	9894	59298		2.77	Si
SLD 14	0.41	6960.03	-38022	-33797	15310	3.88	3.88	-19357	14288	24947	30925	78424	9894	55872		3.65	Si
SLD 14	0.81	438.53	-38682	-34384	15354	3.88	3.88	-19693	14355	25064	30925	78424	9894	55990		3.65	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 14	0.41	17064.19	-30988	-27544	30161	3.88	3.88	-15776	13572	23696	30925	78424	9894	54622		1.81	Si
SLV 14	0.81	4669.58	-31078	-27625	30094	3.88	3.88	-15822	13581	23712	30925	78424	9894	54638		1.82	Si
SLV 13	0.41	15931.23	-31696	-28174	28739	3.88	3.88	-16136	13644	23822	30925	78424	9894	54748		1.9	Si
SLV 13	0.81	4080.53	-31893	-28349	28675	3.88	3.88	-16237	13664	23857	30925	78424	9894	54783		1.91	Si
SLV 16	0.41	17285.98	-33950	-30178	30204	3.88	3.88	-17284	13873	24223	30925	78424	9894	55148		1.83	Si
SLV 16	0.81	4969.61	-33917	-30149	30043	3.88	3.88	-17267	13870	24217	30925	78424	9894	55143		1.84	Si
SLD 16	0.41	7053.3	-39300	-34933	15326	3.88	3.88	-20008	14418	25174	30925	78424	9894	56100		3.66	Si
SLD 16	0.81	567.58	-39905	-35471	15331	3.88	3.88	-20316	14480	25282	30925	78424	9894	56207		3.67	Si
SLV 15	0.41	16153.02	-34658	-30807	28782	3.88	3.88	-17644	13946	24349	30925	78424	9894	55274		1.92	Si
SLV 15	0.81	4380.56	-34732	-30873	28624	3.88	3.88	-17682	13953	24362	30925	78424	9894	55288		1.93	Si
SLV 2	0.41	-17303.81	-51927	-46157	-20329	3.88	3.88	-26436	15704	27419	30925	78424	9894	58344		2.87	Si
SLV 2	0.81	-9823.94	-54023	-48021	-19912	3.88	3.88	-27503	15917	27792	30925	78424	9894	58717		2.95	Si
SLV 1	0.41	-18436.77	-52635	-46787	-21751	3.88	3.88	-26797	15776	27545	30925	78424	9894	58470		2.69	Si
SLV 1	0.81	-10412.99	-54838	-48745	-21331	3.88	3.88	-27918	16000	27937	30925	78424	9894	58862		2.76	Si
SLV 4	0.41	-17082.02	-54889	-48791	-20286	3.88	3.88	-27944	16006	27946	30925	78424	9894	58871		2.9	Si
SLV 4	0.81	-9523.91	-56863	-50545	-19963	3.88	3.88	-28949	16206	28296	30925	78424	9894	59222		2.97	Si

#### Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota -0.24 Wa 0.08 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 14	179667	0.24	16070	-28058	233.23	5648.68	24.22	Si
SLV 13	179667	0.24	16344	-28536	233.23	5733.47	24.58	Si
SLV 10	179667	0.24	17351	-30294	233.23	6041.83	25.91	Si
SLV 9	179667	0.24	17528	-30603	233.23	6095.47	26.14	Si
SLV 16	179667	0.24	17958	-31354	233.23	6225.19	26.69	Si
SLV 15	179667	0.24	18232	-31833	233.23	6307.32	27.04	Si
SLV 6	179667	0.24	20296	-35436	233.23	6913.5	29.64	Si
SLV 5	179667	0.24	20472	-35745	233.23	6964.46	29.86	Si
SLV 12	179667	0.24	23645	-41284	233.23	7850.71	33.66	Si
SLV 11	179667	0.24	23822	-41593	233.23	7898.62	33.87	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = -0.24 Wa = 0.08 Ta = 0.0271

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 7	-48208	-34887	2285	0.462	5572	0.964	6.96419	3.69946	Si
SLV 8	-47725	-34703	2263	0.466	5522.9	0.964	7.02599	3.69946	Si
SLV 11	-42396	-30835	2017	0.515	4980.8	0.96	7.79363	3.69946	Si
SLV 12	-41913	-30651	1994	0.52	4931.7	0.96	7.87239	3.69946	Si
SLV 3	-51684	-37282	2459	0.435	5925.8	0.966	6.54924	2.99128	Si
SLV 4	-50936	-36997	2424	0.441	5849.7	0.966	6.63342	2.99128	Si
SLV 5	-38388	-28075	1868	0.559	4573.2	0.957	8.48893	3.69946	Si
SLV 1	-48738	-35238	2334	0.457	5625.9	0.964	6.89115	2.99128	Si
SLV 6	-37905	-27891	1845	0.565	4524.1	0.957	8.58366	3.69946	Si
SLV 2	-47990	-34953	2298	0.463	5549.9	0.964	6.98525	2.99128	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	23.603	SLU 83	Si
V_SLU	7.954	SLU 83	Si
PF_SLV	3.226	SLV 14	Si
V_SLV	1.811	SLV 14	Si
PFFP_SLV	24.219	SLV 14	Si
R_SLV	1.882	SLV 7	Si

## Maschio 31

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati geometrici

X inl.	Y inl.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h inl.	h fin.	a	a.s.,sx	a.s.,dx
-11.013	-4.56	-11.013	-1.476	L2	L3	3.085	0.3	1.98	1.98	1.98			

#### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

#### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio



## Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche,  $\gamma_{\text{M}} = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_{\text{m}}$	$\epsilon_{\text{m}_-}$	$\epsilon_{\text{mu}}$	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 74	-1.59	-21961.97	-56326	-0.0002044	0.0003743	0.0035	3.0849	34942.25	51454.2	51454.2	2.34	No	Si
SLU 74	0.39	-2705	-54169	-0.0001122	0.0003743	0.0035	3.0849	35516.84	50924.33	50924.33	18.83	No	Si
SLU 75	-1.59	-21943.5	-56315	-0.0002043	0.0003743	0.0035	3.0849	34945.65	51451.34	51451.34	2.34	No	Si
SLU 75	0.39	-2714.66	-54171	-0.0001123	0.0003743	0.0035	3.0849	35516.55	50924.63	50924.63	18.76	No	Si
SLU 81	-1.59	-22496.51	-57546	-0.000211	0.0003743	0.0035	3.0849	34549.97	51769.45	51769.45	2.3	No	Si
SLU 81	0.39	-2612.76	-55384	-0.0001147	0.0003743	0.0035	3.0849	35212.14	51218.24	51218.24	19.6	No	Si
SLU 82	-1.59	-22478.05	-57534	-0.0002109	0.0003743	0.0035	3.0849	34553.82	51766.49	51766.49	2.3	No	Si
SLU 82	0.39	-2622.42	-55385	-0.0001147	0.0003743	0.0035	3.0849	35211.8	51218.55	51218.55	19.53	No	Si
SLU 79	-1.59	-22068.29	-56648	-0.000206	0.0003743	0.0035	3.0849	34843.46	51536.3	51536.3	2.34	No	Si
SLU 79	0.39	-2727.44	-54523	-0.0001131	0.0003743	0.0035	3.0849	35433.02	51008.83	51008.83	18.7	No	Si
SLU 77	-1.59	-22195.97	-56960	-0.0002076	0.0003743	0.0035	3.0849	34744.54	51616.56	51616.56	2.33	No	Si
SLU 77	0.39	-2754.26	-54879	-0.0001141	0.0003743	0.0035	3.0849	35344.52	51094.84	51094.84	18.55	No	Si
SLU 78	-1.59	-22177.51	-56949	-0.0002075	0.0003743	0.0035	3.0849	34748.17	51613.65	51613.65	2.33	No	Si
SLU 78	0.39	-2763.92	-54881	-0.0001141	0.0003743	0.0035	3.0849	35344.2	51095.14	51095.14	18.49	No	Si
SLU 83	-1.59	-22730.52	-58179	-0.0002142	0.0003743	0.0035	3.0849	34326.97	51937.68	51937.68	2.28	No	Si
SLU 83	0.39	-2662.01	-56093	-0.0001166	0.0003743	0.0035	3.0849	35011.6	51395.31	51395.31	19.31	No	Si
SLU 84	-1.59	-22712.05	-58168	-0.0002141	0.0003743	0.0035	3.0849	34331.06	51934.66	51934.66	2.29	No	Si
SLU 84	0.39	-2671.68	-56095	-0.0001166	0.0003743	0.0035	3.0849	35011.23	51395.62	51395.62	19.24	No	Si
SLU 80	-1.59	-22049.83	-56637	-0.0002058	0.0003743	0.0035	3.0849	34846.97	51533.41	51533.41	2.34	No	Si
SLU 80	0.39	-2737.1	-54525	-0.0001132	0.0003743	0.0035	3.0849	35432.72	51009.13	51009.13	18.64	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche,  $\gamma_{\text{M}} = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_{\text{m}}$	$\epsilon_{\text{m}_-}$	$\epsilon_{\text{mu}}$	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 5	-1.59	-19634.19	-42837	-0.000144	0.0005615	0.0035	3.0849		53799.99	53799.99	2.74		Si
SLV 5	0.39	-73.54	-38321	-0.0000654	0.0005615	0.0035	3.0849		49760.83	49760.83	676.62		Si
SLV 1	-1.59	-18355.84	-41685	-0.0001369	0.0005615	0.0035	3.0849		52798.74	52798.74	2.88		Si
SLV 1	0.39	-1284.84	-39618	-0.000072	0.0005615	0.0035	3.0849		50959.87	50959.87	39.66		Si
SLD 5	-1.59	-17162.48	-40794	-0.0001307	0.0005615	0.0035	3.0849		52003.26	52003.26	3.03		Si
SLD 5	0.39	-1146.31	-37709	-0.000068	0.0005615	0.0035	3.0849		49172.71	49172.71	42.9		Si
SLD 2	-1.59	-16662.94	-40421	-0.0001281	0.0005615	0.0035	3.0849		51672.37	51672.37	3.1		Si
SLD 2	0.39	-1677.4	-38481	-0.0000712	0.0005615	0.0035	3.0849		49914.5	49914.5	29.76		Si
SLV 9	-1.59	-18390.77	-41823	-0.0001373	0.0005615	0.0035	3.0849		52922.95	52922.95	2.88		Si
SLV 9	0.39	-161.61	-36839	-0.000063	0.0005615	0.0035	3.0849		48341.17	48341.17	299.12		Si
SLV 2	-1.59	-18551.11	-42033	-0.0001383	0.0005615	0.0035	3.0849		53111.4	53111.4	2.86		Si
SLV 2	0.39	-1274.81	-40122	-0.0000729	0.0005615	0.0035	3.0849		51407.31	51407.31	40.33		Si
SLV 10	-1.59	-18516.89	-42048	-0.0001382	0.0005615	0.0035	3.0849		53125.01	53125.01	2.87		Si
SLV 10	0.39	-155.13	-37165	-0.0000636	0.0005615	0.0035	3.0849		48651.37	48651.37	313.61		Si
SLD 6	-1.59	-17217.58	-40892	-0.0001311	0.0005615	0.0035	3.0849		52090.75	52090.75	3.03		Si
SLD 6	0.39	-1143.48	-37851	-0.0000682	0.0005615	0.0035	3.0849		49309.06	49309.06	43.12		Si
SLD 10	-1.59	-16686.45	-40459	-0.0001283	0.0005615	0.0035	3.0849		51706.35	51706.35	3.1		Si
SLD 10	0.39	-1180.55	-37218	-0.0000672	0.0005615	0.0035	3.0849		48701.96	48701.96	41.25		Si
SLV 6	-1.59	-19760.3	-43062	-0.000145	0.0005615	0.0035	3.0849		53985.99	53985.99	2.73		Si
SLV 6	0.39	-67.07	-38646	-0.000066	0.0005615	0.0035	3.0849		50068.3	50068.3	746.55		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_{\text{M}} = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_{\text{N}}$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 69	-1.59	-20104.76	-51909	-43713	-1074	3.0849	3.0849	-47234	10833	10026	21410	27712	7866	31436	No	29.28	Si
SLU 69	0.39	-2791.99	-49559	-41734	5114	3.0849	3.0849	-45096	10833	10026	21410	27712	7866	31436	No	6.15	Si
SLU 71	-1.59	-19977.08	-51597	-43450	-1038	3.0849	3.0849	-46950	10833	10026	21410	27712	7866	31436	No	30.3	Si
SLU 71	0.39	-2765.16	-49203	-41434	5107	3.0849	3.0849	-44772	10833	10026	21410	27712	7866	31436	No	6.16	Si
SLU 72	-1.59	-19958.62	-51586	-43441	-984	3.0849	3.0849	-46940	10833	10026	21410	27712	7866	31436	No	31.96	Si
SLU 72	0.39	-2774.83	-49204	-41435	5161	3.0849	3.0849	-44773	10833	10026	21410	27712	7866	31436	No	6.09	Si
SLU 49	-1.59	-18365.98	-47517	-40014	-720	3.0849	3.0849	-43237	10833	10026	21410	27712	7866	31436	No	43.68	Si
SLU 49	0.39	-2567.36	-44906	-37815	4900	3.0849	3.0849	-40861	10833	10026	21410	27712	7866	31436	No	6.42	Si
SLU 70	-1.59	-20086.3	-51898	-43703	-1020	3.0849	3.0849	-47224	10833	10026	21410	27712	7866	31436	No	30.83	Si
SLU 70	0.39	-2801.65	-49560	-41735	5168	3.0849	3.0849	-45097	10833	10026	21410	27712	7866	31436	No	6.08	Si
SLU 51	-1.59	-18238.3	-47205	-39751	-684	3.0849	3.0849	-42953	10833	10026	21410	27712	7866	31436	No	45.98	Si
SLU 51	0.39	-2540.54	-44550	-37515	4893	3.0849	3.0849	-40537	10833	10026	21410	27712	7866	31436	No	6.43	Si
SLU 65	-1.59	-19478.3	-50312	-42368	-1001	3.0849	3.0849	-45780	10833	10026	21410	27712	7866	31436	No	31.4	Si
SLU 65	0.39	-2682.75	-47785	-40240	4970	3.0849	3.0849	-43481	10833	10026	21410	27712	7866	31436	No	6.32	Si
SLU 68	-1.59	-19712.3	-50945	-42901	-974	3.0849	3.0849	-46357	10833	10026	21410	27712	7866	31436	No	32.26	Si
SLU 68	0.39	-2732.01	-48495	-40838	5083	3.0849	3.0849	-44127	10833	10026	21410	27712	7866	31436	No	6.18	Si
SLU 67	-1.59	-19852.29	-51264	-43170	-1046	3.0849	3.0849	-46647	10833	10026	21410	27712	7866	31436	No	30.04	Si
SLU 67	0.39	-2752.39	-48850	-41137	5055	3.0849	3.0849	-44451	10833	10026	21410	27712	7866	31436	No	6.22	Si
SLU 66	-1.59	-19870.76	-51275	-43179	-1100	3.0849	3.0849	-46657	10833	10026	21410	27712	7866	31436	No	28.57	Si
SLU 66	0.39	-2742.73	-48849	-41136	5001	3.0849	3.0849	-44450	10833	10026	21410	27712	7866	31436	No	6.29	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_{\text{M}} = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_{\text{N}}$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 5	-1.59	-19634.19	-42837	-36073	-11281	3.0849	3.0849	-38979	16250	15039	21410	41568	7866	36449		3.23	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 5	0.39	-73.54	-38321	-32270	-6563	3.0849	3.0849	-34870	16250	15039	21410	41568	7866	36449		5.55	Si
SLV 12	-1.59	-10818.55	-35555	-29941	9278	3.0849	3.0849	-32353	16250	15039	21410	41568	7866	36449		3.93	Si
SLV 12	0.39	-3904.46	-36185	-30472	13790	3.0849	3.0849	-32926	16250	15039	21410	41568	7866	36449		2.64	Si
SLV 9	-1.59	-18390.77	-41823	-35220	-9971	3.0849	3.0849	-38057	16250	15039	21410	41568	7866	36449		3.66	Si
SLV 9	0.39	-161.61	-36839	-31023	-5012	3.0849	3.0849	-33521	16250	15039	21410	41568	7866	36449		7.27	Si
SLV 8	-1.59	-12061.97	-36568	-30794	7968	3.0849	3.0849	-33275	16250	15039	21410	41568	7866	36449		4.57	Si
SLV 8	0.39	-3816.39	-37667	-31720	12239	3.0849	3.0849	-34275	16250	15039	21410	41568	7866	36449		2.98	Si
SLV 7	-1.59	-11935.85	-36343	-30605	8132	3.0849	3.0849	-33070	16250	15039	21410	41568	7866	36449		4.48	Si
SLV 7	0.39	-3822.87	-37342	-31446	12428	3.0849	3.0849	-33979	16250	15039	21410	41568	7866	36449		2.93	Si
SLV 6	-1.59	-19760.3	-43062	-36263	-11444	3.0849	3.0849	-39184	16250	15039	21410	41568	7866	36449		3.18	Si
SLV 6	0.39	-67.07	-38646	-32544	-6751	3.0849	3.0849	-35166	16250	15039	21410	41568	7866	36449		5.4	Si
SLV 16	-1.59	-12096.9	-36707	-30911	3968	3.0849	3.0849	-33401	16250	15039	21410	41568	7866	36449		9.19	Si
SLV 16	0.39	-2693.16	-34889	-29380	8900	3.0849	3.0849	-31746	16250	15039	21410	41568	7866	36449		4.1	Si
SLV 15	-1.59	-11901.63	-36358	-30618	4221	3.0849	3.0849	-33084	16250	15039	21410	41568	7866	36449		8.64	Si
SLV 15	0.39	-2703.19	-34385	-28956	9192	3.0849	3.0849	-31288	16250	15039	21410	41568	7866	36449		3.97	Si
SLV 10	-1.59	-18516.89	-42048	-35409	-10134	3.0849	3.0849	-38261	16250	15039	21410	41568	7866	36449		3.6	Si
SLV 10	0.39	-155.13	-37165	-31297	-5201	3.0849	3.0849	-33817	16250	15039	21410	41568	7866	36449		7.01	Si
SLV 11	-1.59	-10692.44	-35330	-29751	9442	3.0849	3.0849	-32148	16250	15039	21410	41568	7866	36449		3.86	Si
SLV 11	0.39	-3910.93	-35860	-30198	13978	3.0849	3.0849	-32631	16250	15039	21410	41568	7866	36449		2.61	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota -0.6 Wa 0.05 denominatori 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 15	179667	0.24	39261	-36335	66.48	4049.02	60.9	Si
SLV 16	179667	0.24	39793	-36827	66.48	4084.64	61.44	Si
SLV 11	179667	0.24	39898	-36924	66.48	4091.59	61.55	Si
SLV 12	179667	0.24	40242	-37242	66.48	4114.26	61.89	Si
SLV 13	179667	0.24	40622	-37594	66.48	4139.12	62.26	Si
SLV 14	179667	0.24	41154	-38086	66.48	4173.42	62.78	Si
SLV 7	179667	0.24	41724	-38613	66.48	4209.58	63.32	Si
SLV 8	179667	0.24	42067	-38931	66.48	4231.11	63.64	Si
SLV 9	179667	0.24	44434	-41122	66.48	4373.57	65.79	Si
SLV 10	179667	0.24	44778	-41440	66.48	4393.4	66.08	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = -0.6 Wa = 0.05 Ta = 0.0218

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 6	-38646	-43062	12	0.509	4193.4	0.981	7.53638	3.30477	Si
SLV 5	-38321	-42837	13	0.512	4160.3	0.981	7.58937	3.30477	Si
SLV 8	-37667	-36568	-49	0.518	4093.6	0.98	7.68557	3.30477	Si
SLV 7	-37342	-36343	-48	0.522	4060.5	0.98	7.74187	3.30477	Si
SLV 10	-37165	-42048	5	0.525	4042.4	0.98	7.78918	3.30477	Si
SLV 9	-36839	-41823	6	0.529	4009.3	0.98	7.84642	3.30477	Si
SLV 12	-36185	-35555	-56	0.536	3942.7	0.98	7.9459	3.30477	Si
SLV 11	-35860	-35330	-55	0.54	3909.5	0.979	8.00676	3.30477	Si
SLV 2	-40122	-42033	-2	0.494	4343.7	0.981	7.30852	2.79435	Si
SLV 4	-39828	-40085	-21	0.496	4313.8	0.981	7.34673	2.79435	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.285	SLV 83	Si
V_SLV	6.083	SLV 70	Si
PF_SLV	2.732	SLV 6	Si
V_SLV	2.608	SLV 11	Si
PFFP_SLV	60.905	SLV 15	Si
R_SLV	2.28	SLV 6	Si

Maschio 32

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.013	-4.56	-11.013	-1.476	L3	L4	3.085	0.3	0.72	0.72	0.72			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio



## Rinforzo a matrice inorganica

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	elim,conv / e,CNR DT-200							CRM / Fibrenet?			
									qt	$\alpha$	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche,  $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 79	0.39	-462.13	-53952	-0.0001025	0.0003743	0.0035	3.0849	35566.34	50872.85	50872.85	110.08	No	Si
SLU 79	1.11	-2521.14	-53101	-0.000109	0.0003743	0.0035	3.0849	35745.18	50674.84	50674.84	20.1	No	Si
SLU 81	0.39	-548.19	-54664	-0.0001045	0.0003743	0.0035	3.0849	35398.58	51042.67	51042.67	93.11	No	Si
SLU 81	1.11	-2581.38	-53793	-0.0001108	0.0003743	0.0035	3.0849	35601.42	50835.58	50835.58	19.69	No	Si
SLU 82	0.39	-536.69	-54667	-0.0001044	0.0003743	0.0035	3.0849	35397.69	51043.53	51043.53	95.11	No	Si
SLU 82	1.11	-2589.69	-53798	-0.0001109	0.0003743	0.0035	3.0849	35600.39	50836.69	50836.69	19.63	No	Si
SLU 84	0.39	-549.86	-55388	-0.0001061	0.0003743	0.0035	3.0849	35211.04	51219.24	51219.24	93.15	No	Si
SLU 84	1.11	-2636.43	-54539	-0.0001128	0.0003743	0.0035	3.0849	35429.21	51012.6	51012.6	19.35	No	Si
SLU 80	0.39	-450.63	-53956	-0.0001025	0.0003743	0.0035	3.0849	35565.54	50873.7	50873.7	112.9	No	Si
SLU 80	1.11	-2529.45	-53105	-0.000109	0.0003743	0.0035	3.0849	35744.25	50675.92	50675.92	20.03	No	Si
SLU 78	0.39	-478.73	-54317	-0.0001034	0.0003743	0.0035	3.0849	35482.33	50959.51	50959.51	106.45	No	Si
SLU 78	1.11	-2547.26	-53476	-0.00011	0.0003743	0.0035	3.0849	35669.14	50761.6	50761.6	19.93	No	Si
SLU 83	0.39	-561.37	-55384	-0.0001062	0.0003743	0.0035	3.0849	35212	51218.36	51218.36	91.24	No	Si
SLU 83	1.11	-2628.12	-54534	-0.0001128	0.0003743	0.0035	3.0849	35430.36	51011.47	51011.47	19.41	No	Si
SLU 75	0.39	-465.56	-53597	-0.0001017	0.0003743	0.0035	3.0849	35643.75	50789.67	50789.67	109.09	No	Si
SLU 75	1.11	-2500.52	-52736	-0.0001081	0.0003743	0.0035	3.0849	35814.55	50591.68	50591.68	20.23	No	Si
SLU 76	0.39	-429.79	-53238	-0.0001008	0.0003743	0.0035	3.0849	35717.96	50706.38	50706.38	117.98	No	Si
SLU 76	1.11	-2488.25	-52368	-0.0001072	0.0003743	0.0035	3.0849	35880.12	50508.8	50508.8	20.3	No	Si
SLU 77	0.39	-490.23	-54314	-0.0001035	0.0003743	0.0035	3.0849	35483.17	50958.66	50958.66	103.95	No	Si
SLU 77	1.11	-2538.95	-53472	-0.0001099	0.0003743	0.0035	3.0849	35670.12	50760.5	50760.5	19.99	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche,  $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 15	0.39	694.96	-34506	-0.0000606	0.0005615	0.0035	3.0849		43548.41	43548.41	62.66		Si
SLV 15	1.11	-5640.27	-34649	-0.0000778	0.0005615	0.0035	3.0849		46235.67	46235.67	8.2		Si
SLD 12	0.39	641	-36749	-0.0000645	0.0005615	0.0035	3.0849		45578.83	45578.83	71.11		Si
SLD 12	1.11	-2951.24	-36295	-0.0000716	0.0005615	0.0035	3.0849		47823.99	47823.99	16.2		Si
SLV 13	0.39	-366.66	-34494	-0.0000595	0.0005615	0.0035	3.0849		46076.68	46076.68	125.67		Si
SLV 13	1.11	-4404.8	-34372	-0.0000731	0.0005615	0.0035	3.0849		45951.63	45951.63	10.43		Si
SLD 16	0.39	183.85	-36102	-0.0000618	0.0005615	0.0035	3.0849		44990.59	44990.59	244.72		Si
SLD 16	1.11	-3277.31	-35706	-0.0000716	0.0005615	0.0035	3.0849		47265.03	47265.03	14.42		Si
SLV 11	0.39	1708.01	-36160	-0.0000671	0.0005615	0.0035	3.0849		45042.97	45042.97	26.37		Si
SLV 11	1.11	-4755.1	-36115	-0.0000775	0.0005615	0.0035	3.0849		47653.24	47653.24	10.02		Si
SLD 11	0.39	656.17	-36622	-0.0000643	0.0005615	0.0035	3.0849		45463.27	45463.27	69.29		Si
SLD 11	1.11	-3007.72	-36198	-0.0000716	0.0005615	0.0035	3.0849		47731.47	47731.47	15.87		Si
SLD 15	0.39	206.92	-35909	-0.0000615	0.0005615	0.0035	3.0849		44815.28	44815.28	216.58		Si
SLD 15	1.11	-3363.25	-35557	-0.0000717	0.0005615	0.0035	3.0849		47123.09	47123.09	14.01		Si
SLV 14	0.39	-420.4	-34944	-0.0000605	0.0005615	0.0035	3.0849		46530.71	46530.71	110.68		Si
SLV 14	1.11	-4204.66	-34718	-0.000073	0.0005615	0.0035	3.0849		46306.45	46306.45	11.01		Si
SLV 12	0.39	1673.29	-36450	-0.0000675	0.0005615	0.0035	3.0849		45307.05	45307.05	27.08		Si
SLV 12	1.11	-4625.84	-36338	-0.0000775	0.0005615	0.0035	3.0849		47864.92	47864.92	10.35		Si
SLV 16	0.39	641.22	-34956	-0.0000612	0.0005615	0.0035	3.0849		43954.01	43954.01	68.55		Si
SLV 16	1.11	-5440.14	-34995	-0.0000778	0.0005615	0.0035	3.0849		46579.9	46579.9	8.56		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 76	0.39	-429.79	-53238	-44832	7771	3.0849	3.0849	-48443	10833	10026	7137	27712	7866	17162	No	2.21	Si
SLU 76	1.11	-2488.25	-52368	-44099	7926	3.0849	3.0849	-47651	10833	10026	7137	27712	7866	17162	No	2.17	Si
SLU 79	0.39	-462.13	-53952	-45433	7776	3.0849	3.0849	-49093	10833	10026	7137	27712	7866	17162	No	2.21	Si
SLU 79	1.11	-2521.14	-53101	-44716	7931	3.0849	3.0849	-48318	10833	10026	7137	27712	7866	17162	No	2.16	Si
SLU 80	0.39	-450.63	-53956	-45436	7834	3.0849	3.0849	-49096	10833	10026	7137	27712	7866	17162	No	2.19	Si
SLU 80	1.11	-2529.45	-53105	-44720	7989	3.0849	3.0849	-48322	10833	10026	7137	27712	7866	17162	No	2.15	Si
SLU 75	0.39	-465.56	-53597	-45134	7718	3.0849	3.0849	-48770	10833	10026	7137	27712	7866	17162	No	2.22	Si
SLU 75	1.11	-2500.52	-52736	-44409	7875	3.0849	3.0849	-47986	10833	10026	7137	27712	7866	17162	No	2.18	Si
SLU 84	0.39	-549.86	-55388	-46642	7904	3.0849	3.0849	-50399	10833	10026	7137	27712	7866	17162	No	2.17	Si
SLU 84	1.11	-2636.43	-54539	-45928	8070	3.0849	3.0849	-49627	10833	10026	7137	27712	7866	17162	No	2.13	Si
SLU 83	0.39	-561.37	-55384	-46639	7845	3.0849	3.0849	-50396	10833	10026	7137	27712	7866	17162	No	2.19	Si
SLU 83	1.11	-2628.12	-54534	-45924	8011	3.0849	3.0849	-49623	10833	10026	7137	27712	7866	17162	No	2.14	Si
SLU 78	0.39	-478.73	-54317	-45741	7820	3.0849	3.0849	-49425	10833	10026	7137	27712	7866	17162	No	2.19	Si
SLU 78	1.11	-2547.26	-53476	-45033	7978	3.0849	3.0849	-48660	10833	10026	7137	27712	7866	17162	No	2.15	Si
SLU 77	0.39	-490.23	-54314	-45738	7762	3.0849	3.0849	-49422	10833	10026	7137	27712	7866	17162	No	2.21	Si
SLU 77	1.11	-2538.95	-53472	-45029	7919	3.0849	3.0849	-48656	10833	10026	7137	27712	7866	17162	No	2.17	Si
SLU 81	0.39	-548.19	-54664	-46033	7743	3.0849	3.0849	-49741	10833	10026	7137	27712	7866	17162	No	2.22	Si
SLU 81	1.11	-2581.38	-53793	-45300	7908	3.0849	3.0849	-48949	10833	10026	7137	27712	7866	17162	No	2.17	Si
SLU 82	0.39	-536.69	-54667	-46036	7801	3.0849	3.0849	-49744	10833	10026	7137	27712	7866	17162	No	2.2	Si
SLU 82	1.11	-2589.69	-53798	-45304	7967	3.0849	3.0849	-48953	10833	10026	7137	27712	7866	17162	No	2.15	Si



## Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 15	0.39	694.96	-34506	-29058	14592	3.0849	3.0849	-31398	16250	15039	7137	41568	7866	22175		1.52	Si
SLV 15	1.11	-5640.27	-34649	-29178	13923	3.0849	3.0849	-31528	16250	15039	7137	41568	7866	22175		1.59	Si
SLV 7	0.39	1522.87	-37496	-31576	14294	3.0849	3.0849	-34119	16250	15039	7137	41568	7866	22175		1.55	Si
SLV 7	1.11	-2791.29	-37043	-31194	14589	3.0849	3.0849	-33706	16250	15039	7137	41568	7866	22175		1.52	Si
SLV 12	0.39	1673.29	-36450	-30695	17494	3.0849	3.0849	-33167	16250	15039	7137	41568	7866	22175		1.27	Si
SLV 12	1.11	-4625.84	-36338	-30601	17348	3.0849	3.0849	-33066	16250	15039	7137	41568	7866	22175		1.28	Si
SLV 8	0.39	1488.16	-37787	-31821	14053	3.0849	3.0849	-34384	16250	15039	7137	41568	7866	22175		1.58	Si
SLV 8	1.11	-2662.03	-37266	-31382	14358	3.0849	3.0849	-33910	16250	15039	7137	41568	7866	22175		1.54	Si
SLD 12	0.39	641	-36749	-30947	10813	3.0849	3.0849	-33439	16250	15039	7137	41568	7866	22175		2.05	Si
SLD 12	1.11	-2951.24	-36295	-30564	10808	3.0849	3.0849	-33026	16250	15039	7137	41568	7866	22175		2.05	Si
SLD 8	0.39	561.42	-37321	-31428	9345	3.0849	3.0849	-33960	16250	15039	7137	41568	7866	22175		2.37	Si
SLD 8	1.11	-2112.68	-36693	-30899	9534	3.0849	3.0849	-33388	16250	15039	7137	41568	7866	22175		2.33	Si
SLV 16	0.39	641.22	-34956	-29437	14218	3.0849	3.0849	-31808	16250	15039	7137	41568	7866	22175		1.56	Si
SLV 16	1.11	-5440.14	-34995	-29469	13566	3.0849	3.0849	-31843	16250	15039	7137	41568	7866	22175		1.63	Si
SLD 11	0.39	656.17	-36622	-30840	10919	3.0849	3.0849	-33324	16250	15039	7137	41568	7866	22175		2.03	Si
SLD 11	1.11	-3007.72	-36198	-30482	10909	3.0849	3.0849	-32938	16250	15039	7137	41568	7866	22175		2.03	Si
SLD 7	0.39	576.59	-37194	-31321	9451	3.0849	3.0849	-33844	16250	15039	7137	41568	7866	22175		2.35	Si
SLD 7	1.11	-2169.15	-36595	-30817	9634	3.0849	3.0849	-33299	16250	15039	7137	41568	7866	22175		2.3	Si
SLV 11	0.39	1708.01	-36160	-30450	17736	3.0849	3.0849	-32903	16250	15039	7137	41568	7866	22175		1.25	Si
SLV 11	1.11	-4755.1	-36115	-30413	17578	3.0849	3.0849	-32862	16250	15039	7137	41568	7866	22175		1.26	Si

## Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 0.75 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 13	179667	0.26	37705	-34894	9.36	3941.85	421.35	Si
SLV 15	179667	0.26	37886	-35062	9.36	3954.54	422.7	Si
SLV 14	179667	0.26	38079	-35240	9.36	3968	424.14	Si
SLV 16	179667	0.26	38260	-35408	9.36	3980.57	425.48	Si
SLV 9	179667	0.26	38602	-35724	9.36	4004.15	428	Si
SLV 10	179667	0.26	38843	-35948	9.36	4020.67	429.77	Si
SLV 11	179667	0.26	39205	-36283	9.36	4045.24	432.4	Si
SLV 12	179667	0.26	39447	-36506	9.36	4061.5	434.13	Si
SLV 5	179667	0.26	39495	-36551	9.36	4064.73	434.48	Si
SLV 6	179667	0.26	39736	-36774	9.36	4080.86	436.2	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

## Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 0.75 Wa = 0.05 Ta = 0.0029

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	a0*	aLim	Verifica
SLV 4	-38086	-39412	-325	0.651	3974.3	0.992	9.53444	2.5605	Si
SLV 8	-37266	-37787	-58	0.668	3890.7	0.992	9.77957	2.61336	Si
SLV 3	-37740	-38962	-325	0.655	3939.1	0.992	9.59354	2.5605	Si
SLV 2	-37809	-39400	-257	0.656	3946.1	0.992	9.60758	2.5605	Si
SLV 7	-37043	-37496	-58	0.67	3868	0.992	9.81992	2.61336	Si
SLV 1	-37464	-38950	-257	0.66	3910.9	0.992	9.66779	2.5605	Si
SLV 12	-36338	-36450	238	0.674	3796.2	0.992	9.87905	2.61336	Si
SLV 6	-36343	-37746	168	0.676	3796.6	0.992	9.90598	2.61336	Si
SLV 11	-36115	-36160	238	0.677	3773.4	0.992	9.92106	2.61336	Si
SLV 5	-36120	-37456	168	0.679	3773.9	0.992	9.94814	2.61336	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

## Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	19.349	SLU 84	Si
V_SLU	2.127	SLU 84	Si
PF_SLV	8.197	SLV 15	Si
V_SLV	1.25	SLV 11	Si
PFFP_SLV	421.346	SLV 13	Si
R_SLV	3.724	SLV 4	Si

## Maschio 33

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X inl.	Y inl.	X fin.	Y fin.	Quota l.	Quota s	I	Sp.	h netta	h inl.	h fin.	a	a.s.,sx	a.s.,dx
-11.013	-1.476	-11.013	-0.354	L2	Z medio 75 cm	1.122	0.3	2.34	1.98	2.7			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau_0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2



## Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

## Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche, γ<sub>M</sub> = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 82	-1.59	5683.54	-23969	-0.0004687	0.0003743	0.0035	1.1218	4039	6926.56	6926.56	1.22	No	Si
SLU 82	0.39	96.92	-21707	-0.000117	0.0003743	0.0035	1.1218	4461.48	6830.32	6830.32	70.47	No	Si
SLU 75	-1.59	5573.61	-23438	-0.0004323	0.0003743	0.0035	1.1218	4153.18	6936.77	6936.77	1.24	No	Si
SLU 75	0.39	95.89	-21129	-0.0001132	0.0003743	0.0035	1.1218	4542.69	6763.11	6763.11	70.53	No	Si
SLU 83	-1.59	5749.08	-24288	-0.0004953	0.0003743	0.0035	1.1218	3965.84	6920.59	6920.59	1.2	No	Si
SLU 83	0.39	97.97	-21980	-0.0001188	0.0003743	0.0035	1.1218	4419.48	6862.17	6862.17	70.04	No	Si
SLU 84	-1.59	5754.65	-24293	-0.0004971	0.0003743	0.0035	1.1218	3964.69	6920.5	6920.5	1.2	No	Si
SLU 84	0.39	95.34	-21985	-0.0001188	0.0003743	0.0035	1.1218	4418.62	6862.81	6862.81	71.99	No	Si
SLU 74	-1.59	5568.05	-23433	-0.0004311	0.0003743	0.0035	1.1218	4154.2	6936.87	6936.87	1.25	No	Si
SLU 74	0.39	98.53	-21123	-0.0001132	0.0003743	0.0035	1.1218	4543.4	6762.46	6762.46	68.64	No	Si
SLU 80	-1.59	5614	-23646	-0.000445	0.0003743	0.0035	1.1218	4109.59	6932.73	6932.73	1.23	No	Si
SLU 80	0.39	92.68	-21276	-0.000114	0.0003743	0.0035	1.1218	4523.08	6780.5	6780.5	73.16	No	Si
SLU 77	-1.59	5639.15	-23757	-0.000453	0.0003743	0.0035	1.1218	4085.58	6930.58	6930.58	1.23	No	Si
SLU 77	0.39	96.94	-21401	-0.000115	0.0003743	0.0035	1.1218	4505.85	6794.86	6794.86	70.09	No	Si
SLU 81	-1.59	5677.98	-23964	-0.0004672	0.0003743	0.0035	1.1218	4040.1	6926.65	6926.65	1.22	No	Si
SLU 81	0.39	99.56	-21702	-0.000117	0.0003743	0.0035	1.1218	4462.3	6829.69	6829.69	68.6	No	Si
SLU 79	-1.59	5608.44	-23641	-0.0004436	0.0003743	0.0035	1.1218	4110.64	6932.82	6932.82	1.24	No	Si
SLU 79	0.39	95.32	-21270	-0.0001141	0.0003743	0.0035	1.1218	4523.82	6779.88	6779.88	71.13	No	Si
SLU 78	-1.59	5644.72	-23762	-0.0004545	0.0003743	0.0035	1.1218	4084.51	6930.49	6930.49	1.23	No	Si
SLU 78	0.39	94.31	-21406	-0.0001149	0.0003743	0.0035	1.1218	4505.09	6795.49	6795.49	72.06	No	Si

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche, γ<sub>M</sub> = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 11	-1.59	4728.89	-16535	-0.0002373	0.0005615	0.0035	1.1218		7106.54	7106.54	1.5		Si
SLV 11	0.39	-484.9	-15341	-0.0000851	0.0005615	0.0035	1.1218		7036.63	7036.63	14.51		Si
SLV 8	-1.59	4724.84	-17183	-0.0002371	0.0005615	0.0035	1.1218		7327.88	7327.88	1.55		Si
SLV 8	0.39	-332.11	-14840	-0.0000785	0.0005615	0.0035	1.1218		6876.63	6876.63	20.71		Si
SLD 11	-1.59	4247.59	-16330	-0.0002091	0.0005615	0.0035	1.1218		7035.07	7035.07	1.66		Si
SLD 11	0.39	-173.14	-14826	-0.0000742	0.0005615	0.0035	1.1218		6872.2	6872.2	39.69		Si
SLV 16	-1.59	4137.53	-15362	-0.0002016	0.0005615	0.0035	1.1218		6700.46	6700.46	1.62		Si
SLV 16	0.39	-318.03	-15509	-0.0000815	0.0005615	0.0035	1.1218		7087.68	7087.68	22.29		Si
SLD 12	-1.59	4248.6	-16343	-0.0002091	0.0005615	0.0035	1.1218		7039.76	7039.76	1.66		Si
SLD 12	0.39	-171.43	-14836	-0.0000742	0.0005615	0.0035	1.1218		6875.36	6875.36	40.11		Si
SLD 8	-1.59	4245.94	-16607	-0.0002096	0.0005615	0.0035	1.1218		7131.55	7131.55	1.68		Si
SLD 8	0.39	-107.91	-14613	-0.0000714	0.0005615	0.0035	1.1218		6802.55	6802.55	63.04		Si
SLV 15	-1.59	4133.94	-15314	-0.0002014	0.0005615	0.0035	1.1218		6684	6684	1.62		Si
SLV 15	0.39	-324.09	-15475	-0.0000815	0.0005615	0.0035	1.1218		7077.4	7077.4	21.84		Si
SLV 12	-1.59	4731.21	-16566	-0.0002375	0.0005615	0.0035	1.1218		7117.31	7117.31	1.5		Si
SLV 12	0.39	-480.99	-15363	-0.0000851	0.0005615	0.0035	1.1218		7043.41	7043.41	14.64		Si
SLV 7	-1.59	4722.52	-17152	-0.0002369	0.0005615	0.0035	1.1218		7318.62	7318.62	1.55		Si
SLV 7	0.39	-336.03	-14818	-0.0000784	0.0005615	0.0035	1.1218		6869.4	6869.4	20.44		Si
SLD 7	-1.59	4244.92	-16593	-0.0002095	0.0005615	0.0035	1.1218		7126.84	7126.84	1.68		Si
SLD 7	0.39	-109.62	-14603	-0.0000714	0.0005615	0.0035	1.1218		6799.41	6799.41	62.02		Si

## Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γ<sub>M</sub> = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 84	-1.59	5754.65	-24293	-20457	7579	1.1218	0.972	-60789	10833	3159	26168	10077	2860	12938	No	1.71	Si
SLU 84	0.39	95.34	-21985	-18514	2684	1.1218	1.1218	-55014	10833	3646	26168	10077	2860	12938	No	4.82	Si
SLU 82	-1.59	5683.54	-23969	-20184	7472	1.1218	0.9713	-59977	10833	3157	26168	10077	2860	12938	No	1.73	Si
SLU 82	0.39	96.92	-21707	-18280	2638	1.1218	1.1218	-54319	10833	3646	26168	10077	2860	12938	No	4.9	Si
SLU 81	-1.59	5677.98	-23964	-20180	7448	1.1218	0.9718	-59965	10833	3158	26168	10077	2860	12938	No	1.74	Si
SLU 81	0.39	99.56	-21702	-18275	2613	1.1218	1.1218	-54305	10833	3646	26168	10077	2860	12938	No	4.95	Si
SLU 77	-1.59	5639.15	-23757	-20006	7483	1.1218	0.9705	-59448	10833	3154	26168	10077	2860	12938	No	1.73	Si
SLU 77	0.39	96.94	-21401	-18022	2678	1.1218	1.1218	-53552	10833	3646	26168	10077	2860	12938	No	4.83	Si
SLU 78	-1.59	5644.72	-23762	-20010	7507	1.1218	0.97	-59461	10833	3152	26168	10077	2860	12938	No	1.72	Si
SLU 78	0.39	94.31	-21406	-18026	2703	1.1218	1.1218	-53566	10833	3646	26168	10077	2860	12938	No	4.79	Si
SLU 75	-1.59	5573.61	-23438	-19737	7400	1.1218	0.9692	-58649	10833	3150	26168	10077	2860	12938	No	1.75	Si
SLU 75	0.39	95.89	-21129	-17793	2657	1.1218	1.1218	-52871	10833	3646	26168	10077	2860	12938	No	4.87	Si
SLU 79	-1.59	5608.44	-23641	-19908	7439	1.1218	0.9709	-59157	10833	3156	26168	10077	2860	12938	No	1.74	Si
SLU 79	0.39	95.32	-21270	-17912	2659	1.1218	1.1218	-53226	10833	3646	26168	10077	2860	12938	No	4.87	Si
SLU 83	-1.59	5749.08	-24288	-20453	7554	1.1218	0.9725	-60776	10833	3161	26168	10077	2860	12938	No	1.71	Si
SLU 83	0.39	97.97	-21980	-18509	2658	1.1218	1.1218	-55000	10833	3646	26168	10077	2860	12938	No	4.87	Si
SLU 74	-1.59	5568.05	-23433	-19733	7376	1.1218	0.9698	-58637	10833	3152	26168	10077	2860	12938	No	1.75	Si
SLU 74	0.39	98.53	-21123	-17788	2632	1.1218	1.1218	-52857	10833	3646	26168	10077	2860	12938	No	4.92	Si





Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 80	-1.59	5614	-23646	-19912	7463	1.1218	0.9704	-59169	10833	3154	26168	10077	2860	12938	No	1.73	Si
SLU 80	0.39	92.68	-21276	-17917	2685	1.1218	1.1218	-53239	10833	3646	26168	10077	2860	12938	No	4.82	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 11	-1.59	4247.59	-16330	-13751	6988	1.1218	0.9023	-40862	16250	4399	26168	15116	2860	17976		2.57	Si
SLD 11	0.39	-173.14	-14826	-12485	3825	1.1218	1.1218	-37101	16250	5469	26168	15116	2860	17976		4.7	Si
SLV 8	-1.59	4724.84	-17183	-14470	9028	1.1218	0.8577	-42997	16250	4181	26168	15116	2860	17976		1.99	Si
SLV 8	0.39	-332.11	-14840	-12497	6128	1.1218	1.1218	-37135	16250	5469	26168	15116	2860	17976		2.93	Si
SLV 7	-1.59	4722.52	-17152	-14444	9036	1.1218	0.8567	-42920	16250	4176	26168	15116	2860	17976		1.99	Si
SLV 7	0.39	-336.03	-14818	-12478	6181	1.1218	1.1218	-37079	16250	5469	26168	15116	2860	17976		2.91	Si
SLV 12	-1.59	4731.21	-16566	-13950	9264	1.1218	0.8258	-41453	16250	4026	26168	15116	2860	17976		1.94	Si
SLV 12	0.39	-480.99	-15363	-12937	6222	1.1218	1.1218	-38443	16250	5469	26168	15116	2860	17976		2.89	Si
SLD 8	-1.59	4245.94	-16607	-13985	6884	1.1218	0.9156	-41555	16250	4464	26168	15116	2860	17976		2.61	Si
SLD 8	0.39	-107.91	-14613	-12305	3762	1.1218	1.1218	-36565	16250	5469	26168	15116	2860	17976		4.78	Si
SLD 12	-1.59	4248.6	-16343	-13763	6984	1.1218	0.9028	-40896	16250	4401	26168	15116	2860	17976		2.57	Si
SLD 12	0.39	-171.43	-14836	-12494	3802	1.1218	1.1218	-37125	16250	5469	26168	15116	2860	17976		4.73	Si
SLV 16	-1.59	4137.53	-15362	-12936	6763	1.1218	0.8746	-38440	16250	4264	26168	15116	2860	17976		2.66	Si
SLV 16	0.39	-318.03	-15509	-13060	3299	1.1218	1.1218	-38809	16250	5469	26168	15116	2860	17976		5.45	Si
SLD 7	-1.59	4244.92	-16593	-13973	6888	1.1218	0.9152	-41522	16250	4461	26168	15116	2860	17976		2.61	Si
SLD 7	0.39	-109.62	-14603	-12297	3785	1.1218	1.1218	-36541	16250	5469	26168	15116	2860	17976		4.75	Si
SLV 11	-1.59	4728.89	-16535	-13924	9272	1.1218	0.8247	-41376	16250	4020	26168	15116	2860	17976		1.94	Si
SLV 11	0.39	-484.9	-15341	-12919	6275	1.1218	1.1218	-38388	16250	5469	26168	15116	2860	17976		2.86	Si
SLV 15	-1.59	4133.94	-15314	-12896	6775	1.1218	0.8728	-38321	16250	4255	26168	15116	2860	17976		2.65	Si
SLV 15	0.39	-324.09	-15475	-13032	3381	1.1218	1.1218	-38723	16250	5469	26168	15116	2860	17976		5.32	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota -0.6 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 13	179667	0.24	40322	-13569	33.77	1498.01	44.37	Si
SLV 14	179667	0.24	40386	-13591	33.77	1499.53	44.41	Si
SLV 9	179667	0.24	40626	-13672	33.77	1505.22	44.58	Si
SLV 10	179667	0.24	40667	-13686	33.77	1506.19	44.61	Si
SLV 15	179667	0.24	41258	-13885	33.77	1520.02	45.02	Si
SLV 16	179667	0.24	41322	-13906	33.77	1521.51	45.06	Si
SLV 5	179667	0.24	41813	-14071	33.77	1532.79	45.4	Si
SLV 6	179667	0.24	41854	-14085	33.77	1533.73	45.42	Si
SLV 11	179667	0.24	43746	-14722	33.77	1575.71	46.67	Si
SLV 12	179667	0.24	43788	-14736	33.77	1576.6	46.69	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = -0.6 Wa = 0.05 Ta = 0.0305

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 12	-15363	-16566	-8	0.458	1675.2	0.979	6.80344	3.85178	Si
SLV 11	-15341	-16535	-8	0.459	1673	0.979	6.81162	3.85178	Si
SLV 8	-14840	-17183	-6	0.472	1622	0.979	7.00726	3.85178	Si
SLV 7	-14818	-17152	-6	0.472	1619.7	0.979	7.01602	3.85178	Si
SLV 10	-14021	-15159	-4	0.495	1538.5	0.978	7.35438	3.85178	Si
SLV 9	-13998	-15128	-4	0.495	1536.2	0.978	7.36416	3.85178	Si
SLV 6	-13498	-15776	-1	0.511	1485.2	0.977	7.59854	3.85178	Si
SLV 5	-13476	-15745	-1	0.511	1483	0.977	7.60908	3.85178	Si
SLV 16	-15509	-15362	-10	0.455	1690.1	0.98	6.74824	3.02186	Si
SLV 15	-15475	-15314	-10	0.456	1686.6	0.979	6.76067	3.02186	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	1.203	SLU 84	Si
V_SLU	1.707	SLU 84	Si
PF_SLV	1.503	SLV 11	Si
V_SLV	1.939	SLV 11	Si
PFFP_SLV	44.366	SLV 13	Si
R_SLV	1.766	SLV 12	Si

## Maschio 35

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.013	-0.354	-11.013	1.046	L2	L4	1.4	0.3	2.7	2.7	2.7			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti





fb	fk	fvk0	fmedio	$\tau_0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	$e_{fd}$	$\gamma_{F,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche,  $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 78	-1.59	2815.55	-21400	-0.000141	0.0003743	0.0035	1.4	7483.16	9825.33	9825.33	3.49	No	Si
SLU 78	1.11	148.03	-28904	-0.0001267	0.0003743	0.0035	1.4	6556.52	10841.04	10841.04	73.23	No	Si
SLU 77	-1.59	2802.81	-21385	-0.0001407	0.0003743	0.0035	1.4	7483.17	9821.03	9821.03	3.5	No	Si
SLU 77	1.11	151.32	-28904	-0.0001267	0.0003743	0.0035	1.4	6556.5	10841.04	10841.04	71.64	No	Si
SLU 84	-1.59	2851.29	-21857	-0.0001443	0.0003743	0.0035	1.4	7479.45	9923.65	9923.65	3.48	No	Si
SLU 84	1.11	89.21	-29659	-0.0001296	0.0003743	0.0035	1.4	6361.35	10822.52	10822.52	121.31	No	Si
SLU 80	-1.59	2788.57	-21264	-0.0001397	0.0003743	0.0035	1.4	7482.95	9786.58	9786.58	3.51	No	Si
SLU 80	1.11	145.03	-28704	-0.0001255	0.0003743	0.0035	1.4	6605.2	10836.96	10836.96	74.72	No	Si
SLU 74	-1.59	2769.24	-21154	-0.0001387	0.0003743	0.0035	1.4	7482.33	9753.48	9753.48	3.52	No	Si
SLU 74	1.11	149.6	-28554	-0.0001248	0.0003743	0.0035	1.4	6640.82	10823.7	10823.7	72.35	No	Si
SLU 75	-1.59	2781.98	-21169	-0.0001391	0.0003743	0.0035	1.4	7482.44	9758.11	9758.11	3.51	No	Si
SLU 75	1.11	146.31	-28554	-0.0001247	0.0003743	0.0035	1.4	6640.83	10823.69	10823.69	73.98	No	Si
SLU 82	-1.59	2817.73	-21626	-0.0001423	0.0003743	0.0035	1.4	7482.18	9886.61	9886.61	3.51	No	Si
SLU 82	1.11	87.49	-29308	-0.0001276	0.0003743	0.0035	1.4	6454.32	10832.7	10832.7	123.81	No	Si
SLU 83	-1.59	2838.55	-21842	-0.000144	0.0003743	0.0035	1.4	7479.68	9921.74	9921.74	3.5	No	Si
SLU 83	1.11	92.5	-29659	-0.0001296	0.0003743	0.0035	1.4	6361.33	10822.52	10822.52	117	No	Si
SLU 81	-1.59	2804.98	-21611	-0.000142	0.0003743	0.0035	1.4	7482.3	9882.56	9882.56	3.52	No	Si
SLU 81	1.11	90.78	-29308	-0.0001277	0.0003743	0.0035	1.4	6454.3	10832.7	10832.7	119.33	No	Si
SLU 76	-1.59	2763.5	-21043	-0.000138	0.0003743	0.0035	1.4	7481.3	9720.22	9720.22	3.52	No	Si
SLU 76	1.11	141.11	-28353	-0.0001235	0.0003743	0.0035	1.4	6687.23	10794.84	10794.84	76.5	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche,  $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 7	-1.59	4162.92	-17210	-0.0001361	0.0005615	0.0035	1.4		9617.94	9617.94	2.31		Si
SLV 7	1.11	-207.98	-19026	-0.0000753	0.0005615	0.0035	1.4		10881.5	10881.5	52.32		Si
SLD 12	-1.59	2682.37	-15392	-0.0001021	0.0005615	0.0035	1.4		8883.69	8883.69	3.31		Si
SLD 12	1.11	-215.46	-18974	-0.0000752	0.0005615	0.0035	1.4		10861.85	10861.85	50.41		Si
SLV 8	-1.59	4123.74	-17193	-0.0001353	0.0005615	0.0035	1.4		9610.93	9610.93	2.33		Si
SLV 8	1.11	-203.97	-19059	-0.0000754	0.0005615	0.0035	1.4		10893.96	10893.96	53.41		Si
SLD 8	-1.59	2896.6	-15788	-0.0001075	0.0005615	0.0035	1.4		9042.51	9042.51	3.12		Si
SLD 8	1.11	-0.98	-19305	-0.0000729	0.0005615	0.0035	1.4		10983.5	10983.5	11179.4		Si
SLV 3	-1.59	3384.95	-16859	-0.0001206	0.0005615	0.0035	1.4		9474.84	9474.84	2.8		Si
SLV 3	1.11	810.59	-20518	-0.0000918	0.0005615	0.0035	1.4		10989.37	10989.37	13.56		Si
SLV 11	-1.59	3661.58	-16283	-0.0001229	0.0005615	0.0035	1.4		9242.1	9242.1	2.52		Si
SLV 11	1.11	-709.63	-18248	-0.0000806	0.0005615	0.0035	1.4		10571.55	10571.55	14.9		Si
SLV 4	-1.59	3324.28	-16832	-0.0001194	0.0005615	0.0035	1.4		9464.02	9464.02	2.85		Si
SLV 4	1.11	816.81	-20569	-0.0000921	0.0005615	0.0035	1.4		11011.07	11011.07	13.48		Si
SLV 12	-1.59	3622.4	-16266	-0.0001221	0.0005615	0.0035	1.4		9235.16	9235.16	2.55		Si
SLV 12	1.11	-705.61	-18282	-0.0000807	0.0005615	0.0035	1.4		10585.29	10585.29	15		Si
SLD 7	-1.59	2913.72	-15795	-0.0001078	0.0005615	0.0035	1.4		9045.54	9045.54	3.1		Si
SLD 7	1.11	-2.74	-19291	-0.0000729	0.0005615	0.0035	1.4		10978.98	10978.98	4011.05		Si
SLD 11	-1.59	2699.49	-15399	-0.0001024	0.0005615	0.0035	1.4		8886.7	8886.7	3.29		Si
SLD 11	1.11	-217.21	-18959	-0.0000752	0.0005615	0.0035	1.4		10856.35	10856.35	49.98		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	l'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 77	-1.59	2802.81	-21385	-18008	6631	1.4	1.4	-42877	10833	4550	30925	12577	3570	16147	No	2.44	Si
SLU 77	1.11	151.32	-28904	-24340	2340	1.4	1.4	-57953	10833	4550	30925	12577	3570	16147	No	6.9	Si
SLU 79	-1.59	2775.83	-21249	-17894	6573	1.4	1.4	-42604	10833	4550	30925	12577	3570	16147	No	2.46	Si
SLU 79	1.11	148.31	-28704	-24172	2325	1.4	1.4	-57551	10833	4550	30925	12577	3570	16147	No	6.94	Si
SLU 80	-1.59	2788.57	-21264	-17907	6600	1.4	1.4	-42635	10833	4550	30925	12577	3570	16147	No	2.45	Si
SLU 80	1.11	145.03	-28704	-24172	2351	1.4	1.4	-57551	10833	4550	30925	12577	3570	16147	No	6.87	Si
SLU 84	-1.59	2851.29	-21857	-18406	6748	1.4	1.4	-43824	10833	4550	30925	12577	3570	16147	No	2.39	Si
SLU 84	1.11	89.21	-29659	-24976	2442	1.4	1.4	-59466	10833	4550	30925	12577	3570	16147	No	6.61	Si
SLU 83	-1.59	2838.55	-21842	-18393	6720	1.4	1.4	-43793	10833	4550	30925	12577	3570	16147	No	2.4	Si
SLU 83	1.11	92.5	-29659	-24976	2416	1.4	1.4	-59466	10833	4550	30925	12577	3570	16147	No	6.68	Si
SLU 82	-1.59	2817.73	-21626	-18211	6667	1.4	1.4	-43360	10833	4550	30925	12577	3570	16147	No	2.42	Si
SLU 82	1.11	87.49	-29308	-24681	2417	1.4	1.4	-58763	10833	4550	30925	12577	3570	16147	No	6.68	Si
SLU 81	-1.59	2804.98	-21611	-18198	6640	1.4	1.4	-43329	10833	4550	30925	12577	3570	16147	No	2.43	Si
SLU 81	1.11	90.78	-29308	-24681	2392	1.4	1.4	-58763	10833	4550	30925	12577	3570	16147	No	6.75	Si
SLU 74	-1.59	2769.24	-21154	-17814	6550	1.4	1.4	-42413	10833	4550	30925	12577	3570	16147	No	2.47	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 74	1.11	149.6	-28554	-24045	2315	1.4	1.4	-57250	10833	4550	30925	12577	3570	16147	No	6.97	Si
SLU 78	-1.59	2815.55	-21400	-18021	6658	1.4	1.4	-42907	10833	4550	30925	12577	3570	16147	No	2.43	Si
SLU 78	1.11	148.03	-28904	-24340	2366	1.4	1.4	-57953	10833	4550	30925	12577	3570	16147	No	6.83	Si
SLU 75	-1.59	2781.98	-21169	-17827	6578	1.4	1.4	-42444	10833	4550	30925	12577	3570	16147	No	2.45	Si
SLU 75	1.11	146.31	-28554	-24045	2341	1.4	1.4	-57250	10833	4550	30925	12577	3570	16147	No	6.9	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 16	-1.59	1653.15	-13742	-11572	6546	1.4	1.4	-27552	15927	6689	30925	18865	3570	22435		3.43	Si
SLV 16	1.11	-855.33	-17978	-15139	3913	1.4	1.4	-36045	16250	6825	30925	18865	3570	22435		5.73	Si
SLV 11	-1.59	3661.58	-16283	-13712	9255	1.4	1.4	-32648	16250	6825	30925	18865	3570	22435		2.42	Si
SLV 11	1.11	-709.63	-18248	-15367	6162	1.4	1.4	-36588	16250	6825	30925	18865	3570	22435		3.64	Si
SLD 8	-1.59	2896.6	-15788	-13295	6424	1.4	1.4	-31655	16250	6825	30925	18865	3570	22435		3.49	Si
SLD 8	1.11	-0.98	-19305	-16257	3329	1.4	1.4	-38708	16250	6825	30925	18865	3570	22435		6.74	Si
SLD 7	-1.59	2913.72	-15795	-13301	6460	1.4	1.4	-31670	16250	6825	30925	18865	3570	22435		3.47	Si
SLD 7	1.11	-2.74	-19291	-16245	3346	1.4	1.4	-38678	16250	6825	30925	18865	3570	22435		6.7	Si
SLV 7	-1.59	4162.92	-17210	-14493	8832	1.4	1.3744	-34507	16250	6700	30925	18865	3570	22435		2.54	Si
SLV 7	1.11	-207.98	-19026	-16022	5523	1.4	1.4	-38147	16250	6825	30925	18865	3570	22435		4.06	Si
SLV 8	-1.59	4123.74	-17193	-14478	8749	1.4	1.3805	-34472	16250	6730	30925	18865	3570	22435		2.56	Si
SLV 8	1.11	-203.97	-19059	-16050	5484	1.4	1.4	-38213	16250	6825	30925	18865	3570	22435		4.09	Si
SLD 11	-1.59	2699.49	-15399	-12968	6641	1.4	1.4	-30876	16250	6825	30925	18865	3570	22435		3.38	Si
SLD 11	1.11	-217.21	-18959	-15966	3620	1.4	1.4	-38013	16250	6825	30925	18865	3570	22435		6.2	Si
SLD 12	-1.59	2682.37	-15392	-12962	6605	1.4	1.4	-30861	16250	6825	30925	18865	3570	22435		3.4	Si
SLD 12	1.11	-215.46	-18974	-15978	3603	1.4	1.4	-38042	16250	6825	30925	18865	3570	22435		6.23	Si
SLV 12	-1.59	3622.4	-16266	-13698	9173	1.4	1.4	-32614	16250	6825	30925	18865	3570	22435		2.45	Si
SLV 12	1.11	-705.61	-18282	-15395	6123	1.4	1.4	-36655	16250	6825	30925	18865	3570	22435		3.66	Si
SLV 15	-1.59	1713.82	-13768	-11594	6674	1.4	1.4	-27605	15938	6694	30925	18865	3570	22435		3.36	Si
SLV 15	1.11	-861.55	-17926	-15096	3973	1.4	1.4	-35942	16250	6825	30925	18865	3570	22435		5.65	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota -0.24 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 13	179667	0.24	43239	-18160	56.1	1952.8	34.81	Si
SLV 14	179667	0.24	43277	-18176	56.1	1953.83	34.83	Si
SLV 9	179667	0.24	43619	-18320	56.1	1963.12	34.99	Si
SLV 10	179667	0.24	43643	-18330	56.1	1963.78	35	Si
SLV 15	179667	0.24	44328	-18618	56.1	1982.07	35.33	Si
SLV 16	179667	0.24	44366	-18634	56.1	1983.07	35.35	Si
SLV 5	179667	0.24	45028	-18912	56.1	2000.37	35.65	Si
SLV 6	179667	0.24	45053	-18922	56.1	2001	35.67	Si
SLV 11	179667	0.24	47250	-19845	56.1	2055.76	36.64	Si
SLV 12	179667	0.24	47274	-19855	56.1	2056.34	36.65	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = -0.24 Wa = 0.05 Ta = 0.0406

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 6	-20756	-13084	-7	0.419	2273.1	0.978	6.22474	4.73917	Si
SLV 5	-20723	-13101	-7	0.419	2269.8	0.978	6.23302	4.73917	Si
SLV 10	-19979	-12157	-100	0.428	2193.9	0.977	6.36338	4.73917	Si
SLV 9	-19946	-12174	-101	0.429	2190.6	0.977	6.3722	4.73917	Si
SLV 8	-19059	-17193	241	0.438	2100.2	0.976	6.51908	4.73917	Si
SLV 7	-19026	-17210	241	0.439	2096.8	0.976	6.52895	4.73917	Si
SLV 12	-18282	-16266	148	0.458	2021	0.976	6.82655	4.73917	Si
SLV 11	-18248	-16283	148	0.459	2017.6	0.976	6.83736	4.73917	Si
SLV 2	-21078	-15599	189	0.405	2306	0.978	6.02169	3.38993	Si
SLV 1	-21027	-15626	189	0.406	2300.7	0.978	6.03437	3.38993	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.48	SLU 84	Si
V_SLU	2.393	SLU 84	Si
PF_SLV	2.31	SLV 7	Si
V_SLV	2.424	SLV 11	Si
PFFP_SLV	34.807	SLV 13	Si
R_SLV	1.313	SLV 6	Si

## Maschio 37

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.888	6.576	-8.008	6.576	L2	L4	3.88	0.45	2.7	2.7	2.7			



## Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	t0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

## Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

## Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 81	0.41	2665.05	-62454	-0.0000628	0.0003743	0.0035	3.88	78592.9	90223.44	90223.44	33.85	No	Si
SLU 81	0.81	5417.68	-63650	-0.0000684	0.0003743	0.0035	3.88	79267.18	91126.88	91126.88	16.82	No	Si
SLU 71	0.41	2379.72	-55620	-0.0000553	0.0003743	0.0035	3.88	74141.26	82649.35	82649.35	34.73	No	Si
SLU 71	0.81	4894.63	-56731	-0.0000603	0.0003743	0.0035	3.88	74934.54	83945.75	83945.75	17.15	No	Si
SLU 83	0.41	2717.08	-63236	-0.0000637	0.0003743	0.0035	3.88	79037.19	90813.44	90813.44	33.42	No	Si
SLU 83	0.81	5494.75	-64455	-0.0000694	0.0003743	0.0035	3.88	79703.13	91737.23	91737.23	16.7	No	Si
SLU 69	0.41	2396.86	-56106	-0.0000558	0.0003743	0.0035	3.88	74491.19	83216.13	83216.13	34.72	No	Si
SLU 69	0.81	4932.89	-57240	-0.0000609	0.0003743	0.0035	3.88	75288.37	84539.43	84539.43	17.14	No	Si
SLU 79	0.41	2652.29	-61499	-0.0000618	0.0003743	0.0035	3.88	78031.69	89392.64	89392.64	33.7	No	Si
SLU 79	0.81	5368.67	-62701	-0.0000673	0.0003743	0.0035	3.88	78734.48	90409.32	90409.32	16.84	No	Si
SLU 77	0.41	2669.42	-61984	-0.0000623	0.0003743	0.0035	3.88	78319.32	89846.74	89846.74	33.66	No	Si
SLU 77	0.81	5406.93	-63209	-0.0000679	0.0003743	0.0035	3.88	79022.1	90793.07	90793.07	16.79	No	Si
SLU 56	0.41	2345.58	-55829	-0.0000555	0.0003743	0.0035	3.88	74292.19	82892.64	82892.64	35.34	No	Si
SLU 56	0.81	4900.46	-56937	-0.0000605	0.0003743	0.0035	3.88	75078.44	84185.89	84185.89	17.18	No	Si
SLU 62	0.41	2393.24	-57081	-0.0000568	0.0003743	0.0035	3.88	75178.25	84353.5	84353.5	35.25	No	Si
SLU 62	0.81	4988.29	-58183	-0.000062	0.0003743	0.0035	3.88	75929.98	85644.54	85644.54	17.17	No	Si
SLU 84	0.41	2612.63	-63421	-0.0000637	0.0003743	0.0035	3.88	79140.27	90953.22	90953.22	34.81	No	Si
SLU 84	0.81	5361.16	-64673	-0.0000694	0.0003743	0.0035	3.88	79818.93	91903.14	91903.14	17.14	No	Si
SLU 74	0.41	2617.4	-61202	-0.0000614	0.0003743	0.0035	3.88	77853.68	89107.29	89107.29	34.04	No	Si
SLU 74	0.81	5329.85	-62405	-0.0000669	0.0003743	0.0035	3.88	78564.28	90186.1	90186.1	16.92	No	Si

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 16	0.41	19537.08	-48032	-0.0000712	0.0005615	0.0035	3.88		79558.47	79558.47	4.07		Si
SLV 16	0.81	11003.52	-49923	-0.0000607	0.0005615	0.0035	3.88		82335.35	82335.35	7.48		Si
SLV 15	0.41	18323.17	-48040	-0.0000695	0.0005615	0.0035	3.88		79569.49	79569.49	4.34		Si
SLV 15	0.81	10446.4	-49897	-0.0000599	0.0005615	0.0035	3.88		82297.5	82297.5	7.88		Si
SLD 16	0.41	9354.52	-44525	-0.0000532	0.0005615	0.0035	3.88		74438.63	74438.63	7.96		Si
SLD 16	0.81	6805.43	-45802	-0.0000507	0.0005615	0.0035	3.88		76298.73	76298.73	11.21		Si
SLD 14	0.41	9488.93	-43075	-0.000052	0.0005615	0.0035	3.88		72333.2	72333.2	7.62		Si
SLD 14	0.81	6830.68	-44215	-0.0000493	0.0005615	0.0035	3.88		73987.55	73987.55	10.83		Si
SLV 14	0.41	19860.95	-44673	-0.0000684	0.0005615	0.0035	3.88		74653.4	74653.4	3.76		Si
SLV 14	0.81	11075.67	-46245	-0.0000573	0.0005615	0.0035	3.88		76945	76945	6.95		Si
SLV 2	0.41	-14808.74	-35778	-0.0000526	0.0005615	0.0035	3.88		66092.61	66092.61	4.46		Si
SLV 2	0.81	-3105.1	-35561	-0.0000359	0.0005615	0.0035	3.88		65755.82	65755.82	21.18		Si
SLV 4	0.41	-15132.61	-39137	-0.0000563	0.0005615	0.0035	3.88		71240.17	71240.17	4.71		Si
SLV 4	0.81	-3177.25	-39239	-0.0000394	0.0005615	0.0035	3.88		71389.28	71389.28	22.47		Si
SLV 13	0.41	18647.04	-44680	-0.0000667	0.0005615	0.0035	3.88		74664.34	74664.34	4		Si
SLV 13	0.81	10518.55	-46219	-0.0000564	0.0005615	0.0035	3.88		76907.45	76907.45	7.31		Si
SLV 1	0.41	-16022.65	-35785	-0.0000543	0.0005615	0.0035	3.88		66104.28	66104.28	4.13		Si
SLV 1	0.81	-3662.22	-35535	-0.0000367	0.0005615	0.0035	3.88		65715.91	65715.91	17.94		Si
SLV 3	0.41	-16346.52	-39145	-0.000058	0.0005615	0.0035	3.88		71251.17	71251.17	4.36		Si
SLV 3	0.81	-3734.37	-39213	-0.0000402	0.0005615	0.0035	3.88		71351.64	71351.64	19.11		Si

## Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 77	0.41	2669.42	-61984	-55097	-5588	3.88	3.88	-31556	10833	18915	30925	52283	9894	49840	No	8.92	Si
SLU 77	0.81	5406.93	-63209	-56186	-5427	3.88	3.88	-32180	10833	18915	30925	52283	9894	49840	No	9.18	Si
SLU 84	0.41	2612.63	-63421	-56374	-5601	3.88	3.88	-32288	10833	18915	30925	52283	9894	49840	No	8.9	Si
SLU 84	0.81	5361.16	-64673	-57487	-5439	3.88	3.88	-32925	10833	18915	30925	52283	9894	49840	No	9.16	Si
SLU 80	0.41	2547.84	-61683	-54830	-5456	3.88	3.88	-31403	10833	18915	30925	52283	9894	49840	No	9.14	Si
SLU 80	0.81	5235.08	-62919	-55928	-5297	3.88	3.88	-32032	10833	18915	30925	52283	9894	49840	No	9.41	Si
SLU 81	0.41	2665.05	-62454	-55515	-5641	3.88	3.88	-31795	10833	18915	30925	52283	9894	49840	No	8.83	Si
SLU 81	0.81	5417.68	-63650	-56578	-5481	3.88	3.88	-32404	10833	18915	30925	52283	9894	49840	No	9.09	Si
SLU 75	0.41	2512.95	-61387	-54566	-5446	3.88	3.88	-31252	10833	18915	30925	52283	9894	49840	No	9.15	Si
SLU 75	0.81	5196.26	-62623	-55665	-5288	3.88	3.88	-31881	10833	18915	30925	52283	9894	49840	No	9.42	Si
SLU 82	0.41	2560.6	-62639	-55679	-5550	3.88	3.88	-31890	10833	18915	30925	52283	9894	49840	No	8.98	Si



Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 82	0.81	5284.08	-63868	-56772	-5391	3.88	3.88	-32515	10833	18915	30925	52283	9894	49840	No	9.25	Si
SLU 74	0.41	2617.4	-61202	-54402	-5537	3.88	3.88	-31158	10833	18915	30925	52283	9894	49840	No	9	Si
SLU 74	0.81	5329.85	-62405	-55471	-5379	3.88	3.88	-31770	10833	18915	30925	52283	9894	49840	No	9.27	Si
SLU 78	0.41	2564.97	-62169	-55261	-5496	3.88	3.88	-31650	10833	18915	30925	52283	9894	49840	No	9.07	Si
SLU 78	0.81	5273.34	-63425	-56380	-5337	3.88	3.88	-32291	10833	18915	30925	52283	9894	49840	No	9.34	Si
SLU 83	0.41	2717.08	-63236	-56210	-5692	3.88	3.88	-32193	10833	18915	30925	52283	9894	49840	No	8.76	Si
SLU 83	0.81	5494.75	-64455	-57293	-5529	3.88	3.88	-32814	10833	18915	30925	52283	9894	49840	No	9.01	Si
SLU 79	0.41	2652.29	-61499	-54665	-5547	3.88	3.88	-31309	10833	18915	30925	52283	9894	49840	No	8.98	Si
SLU 79	0.81	5368.67	-62701	-55734	-5388	3.88	3.88	-31921	10833	18915	30925	52283	9894	49840	No	9.25	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 14	0.41	19860.95	-44673	-39709	23884	3.88	3.88	-22743	14965	26129	30925	78425	9894	57055		2.39	Si
SLV 14	0.81	11075.67	-46245	-41107	24051	3.88	3.88	-23543	15125	26409	30925	78425	9894	57334		2.38	Si
SLV 16	0.41	19537.08	-48032	-42695	24520	3.88	3.88	-24453	15307	26727	30925	78425	9894	57652		2.35	Si
SLV 16	0.81	11003.52	-49923	-44376	24172	3.88	3.88	-25416	15500	27063	30925	78425	9894	57988		2.4	Si
SLV 15	0.41	18323.17	-48040	-42702	22861	3.88	3.88	-24457	15308	26728	30925	78425	9894	57653		2.52	Si
SLV 15	0.81	10446.4	-49897	-44353	22511	3.88	3.88	-25403	15497	27058	30925	78425	9894	57984		2.58	Si
SLV 13	0.41	18647.04	-44680	-39716	22224	3.88	3.88	-22747	14966	26131	30925	78425	9894	57056		2.57	Si
SLV 13	0.81	10518.55	-46219	-41084	22391	3.88	3.88	-23530	15123	26404	30925	78425	9894	57330		2.56	Si
SLV 2	0.41	-14808.74	-35778	-31802	-30624	3.88	3.88	-18214	14060	24548	30925	78425	9894	55473		1.81	Si
SLV 2	0.81	-3105.1	-35561	-31610	-30055	3.88	3.88	-18104	14037	24509	30925	78425	9894	55435		1.84	Si
SLV 4	0.41	-15132.61	-39137	-34788	-29988	3.88	3.88	-19925	14402	25145	30925	78425	9894	56071		1.87	Si
SLV 4	0.81	-3177.25	-39239	-34879	-29934	3.88	3.88	-19977	14412	25163	30925	78425	9894	56089		1.87	Si
SLV 1	0.41	-16022.65	-35785	-31809	-32284	3.88	3.88	-18218	14060	24549	30925	78425	9894	55475		1.72	Si
SLV 1	0.81	-3662.22	-35535	-31587	-31715	3.88	3.88	-18091	14035	24505	30925	78425	9894	55430		1.75	Si
SLD 1	0.41	-5840.08	-39292	-34926	-16024	3.88	3.88	-20004	14417	25173	30925	78425	9894	56098		3.5	Si
SLD 1	0.81	-535.87	-39656	-35250	-15715	3.88	3.88	-20189	14454	25237	30925	78425	9894	56163		3.57	Si
SLD 3	0.41	-5974.49	-40742	-36215	-15744	3.88	3.88	-20742	14565	25431	30925	78425	9894	56356		3.58	Si
SLD 3	0.81	-510.62	-41243	-36661	-15660	3.88	3.88	-20997	14616	25520	30925	78425	9894	56445		3.6	Si
SLV 3	0.41	-16346.52	-39145	-34795	-31648	3.88	3.88	-19928	14402	25147	30925	78425	9894	56072		1.77	Si
SLV 3	0.81	-3734.37	-39213	-34856	-31595	3.88	3.88	-19963	14409	25159	30925	78425	9894	56084		1.78	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota -0.24 Wa 0.08 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 6	179667	0.24	18036	-31491	233.23	6248.72	26.79	Si
SLV 5	179667	0.24	18082	-31571	233.23	6262.36	26.85	Si
SLV 2	179667	0.24	18722	-32689	233.23	6453.35	27.67	Si
SLV 1	179667	0.24	18793	-32812	233.23	6474.22	27.76	Si
SLV 10	179667	0.24	19162	-33458	233.23	6583.38	28.23	Si
SLV 9	179667	0.24	19208	-33537	233.23	6596.77	28.28	Si
SLV 4	179667	0.24	20447	-35701	233.23	6957.18	29.83	Si
SLV 3	179667	0.24	20518	-35824	233.23	6977.43	29.92	Si
SLV 14	179667	0.24	22476	-39244	233.23	7530.28	32.29	Si
SLV 13	179667	0.24	22547	-39367	233.23	7549.79	32.37	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = -0.24 Wa = 0.08 Ta = 0.0271

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	$\alpha_0^*$	aLim	Verifica
SLV 12	-45824	-32684	1964	0.486	5329.5	0.963	7.34401	3.69946	Si
SLV 11	-45808	-32803	1963	0.487	5327.9	0.963	7.34644	3.69946	Si
SLV 8	-43290	-30762	1903	0.509	5071.7	0.961	7.70165	3.69946	Si
SLV 7	-43274	-30882	1902	0.509	5070.1	0.961	7.70433	3.69946	Si
SLV 16	-44630	-32867	1979	0.496	5208	0.962	7.49444	2.99128	Si
SLV 15	-44606	-33052	1977	0.496	5205.5	0.962	7.49837	2.99128	Si
SLV 10	-33953	-26894	1801	0.616	4122.5	0.953	9.39484	3.69946	Si
SLV 9	-33937	-27014	1800	0.616	4120.9	0.953	9.39893	3.69946	Si
SLV 14	-41069	-31130	1930	0.53	4845.8	0.959	8.02236	2.99128	Si
SLV 13	-41044	-31315	1928	0.53	4843.3	0.959	8.0269	2.99128	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	16.695	SLU 83	Si
V_SLU	8.756	SLU 83	Si
PF_SLV	3.759	SLV 14	Si
V_SLV	1.718	SLV 1	Si
PFFP_SLV	26.792	SLV 6	Si
R_SLV	1.985	SLV 12	Si

## Maschio 38

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)



## Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-7.008	6.576	-4.858	6.576	L2	L4	2.15	0.45	2.7	2.7	2.7			

## Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

## Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

## Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 83	0.41	-256.44	-28620	-0.000049	0.0003743	0.0035	2.15	21827.21	25354.5	25354.5	98.87	No	Si
SLU 83	0.81	2224.38	-25933	-0.0000537	0.0003743	0.0035	2.15	20538.48	22246.77	22246.77	10	No	Si
SLU 62	0.41	-311.28	-25812	-0.0000442	0.0003743	0.0035	2.15	20476.47	23564.23	23564.23	75.7	No	Si
SLU 62	0.81	1992.69	-23307	-0.0000478	0.0003743	0.0035	2.15	19126.87	20579.88	20579.88	10.33	No	Si
SLU 79	0.41	-280	-27747	-0.0000475	0.0003743	0.0035	2.15	21426.03	24821.33	24821.33	88.65	No	Si
SLU 79	0.81	2138.34	-25120	-0.0000518	0.0003743	0.0035	2.15	20117.35	21727.73	21727.73	10.16	No	Si
SLU 39	0.41	-152.03	-24075	-0.0000404	0.0003743	0.0035	2.15	19555.25	22414.59	22414.59	147.44	No	Si
SLU 39	0.81	1891.82	-21872	-0.0000448	0.0003743	0.0035	2.15	18291.87	19683.08	19683.08	10.4	No	Si
SLU 81	0.41	-259.1	-28310	-0.0000484	0.0003743	0.0035	2.15	21686.44	25165.03	25165.03	97.13	No	Si
SLU 81	0.81	2204.62	-25642	-0.0000531	0.0003743	0.0035	2.15	20389.48	22060.86	22060.86	10.01	No	Si
SLU 41	0.41	-149.37	-24386	-0.0000409	0.0003743	0.0035	2.15	19724.71	22629.97	22629.97	151.51	No	Si
SLU 41	0.81	1911.59	-22163	-0.0000454	0.0003743	0.0035	2.15	18464.8	19864.06	19864.06	10.39	No	Si
SLU 60	0.41	-313.94	-25501	-0.0000437	0.0003743	0.0035	2.15	20316.67	23359.5	23359.5	74.41	No	Si
SLU 60	0.81	1972.92	-23016	-0.0000472	0.0003743	0.0035	2.15	18961.2	20397.2	20397.2	10.34	No	Si
SLU 56	0.41	-337.16	-25179	-0.0000432	0.0003743	0.0035	2.15	20148.73	23148.03	23148.03	68.66	No	Si
SLU 56	0.81	1922.97	-22719	-0.0000465	0.0003743	0.0035	2.15	18790.13	20211.12	20211.12	10.51	No	Si
SLU 77	0.41	-282.32	-27988	-0.000048	0.0003743	0.0035	2.15	21538.22	24968.97	24968.97	88.44	No	Si
SLU 77	0.81	2154.67	-25345	-0.0000523	0.0003743	0.0035	2.15	20235.44	21871.48	21871.48	10.15	No	Si
SLU 74	0.41	-284.98	-27678	-0.0000474	0.0003743	0.0035	2.15	21393.16	24778.19	24778.19	86.95	No	Si
SLU 74	0.81	2134.9	-25054	-0.0000517	0.0003743	0.0035	2.15	20082.71	21685.85	21685.85	10.16	No	Si

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 10	0.41	2937.66	-18797	-0.0000434	0.0005615	0.0035	2.15		18085.41	18085.41	6.16		Si
SLV 10	0.81	3210.97	-16512	-0.0000408	0.0005615	0.0035	2.15		16253.87	16253.87	5.06		Si
SLV 5	0.41	353.39	-15011	-0.0000254	0.0005615	0.0035	2.15		15046.68	15046.68	42.58		Si
SLV 5	0.81	2977.32	-12306	-0.0000328	0.0005615	0.0035	2.15		12599.17	12599.17	4.23		Si
SLV 9	0.41	2721.95	-18630	-0.0000422	0.0005615	0.0035	2.15		17951.23	17951.23	6.59		Si
SLV 9	0.81	3209.14	-16329	-0.0000405	0.0005615	0.0035	2.15		16107.63	16107.63	5.02		Si
SLV 3	0.41	-4947.67	-13357	-0.0000435	0.0005615	0.0035	2.15		14569.82	14569.82	2.94		Si
SLV 3	0.81	561.41	-11000	-0.0000199	0.0005615	0.0035	2.15		11367.28	11367.28	20.25		Si
SLV 6	0.41	569.1	-15177	-0.0000267	0.0005615	0.0035	2.15		15184.84	15184.84	26.68		Si
SLV 6	0.81	2979.15	-12489	-0.0000331	0.0005615	0.0035	2.15		12770.39	12770.39	4.29		Si
SLV 1	0.41	-3803.69	-12150	-0.0000363	0.0005615	0.0035	2.15		13438.2	13438.2	3.53		Si
SLV 1	0.81	1551.39	-9413	-0.0000217	0.0005615	0.0035	2.15		9845.94	9845.94	6.35		Si
SLV 13	0.41	4091.49	-24215	-0.0000581	0.0005615	0.0035	2.15		22497.49	22497.49	5.5		Si
SLV 13	0.81	2324.11	-22822	-0.0000474	0.0005615	0.0035	2.15		21353.84	21353.84	9.19		Si
SLV 14	0.41	4425.47	-24474	-0.0000601	0.0005615	0.0035	2.15		22709.98	22709.98	5.13		Si
SLV 14	0.81	2326.94	-23105	-0.0000479	0.0005615	0.0035	2.15		21586.12	21586.12	9.28		Si
SLV 4	0.41	-4613.68	-13615	-0.0000424	0.0005615	0.0035	2.15		14810.6	14810.6	3.21		Si
SLV 4	0.81	564.24	-11283	-0.0000203	0.0005615	0.0035	2.15		11635.13	11635.13	20.62		Si
SLV 2	0.41	-3469.71	-12408	-0.0000352	0.0005615	0.0035	2.15		13680.1	13680.1	3.94		Si
SLV 2	0.81	1554.22	-9697	-0.0000222	0.0005615	0.0035	2.15		10118.8	10118.8	6.51		Si

## Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 74	0.41	-284.98	-27678	-24602	-9769	2.15	2.15	-25429	10335	9999	30925	28971	5483	34454	No	3.53	Si
SLU 74	0.81	2134.9	-25054	-22270	-9628	2.15	2.15	-23018	10014	9688	30925	28971	5483	34454	No	3.58	Si
SLU 80	0.41	-492.5	-27824	-24733	-9593	2.15	2.15	-25564	10353	10016	30925	28971	5483	34454	No	3.59	Si
SLU 80	0.81	1876.76	-25225	-22422	-9450	2.15	2.15	-23175	10034	9708	30925	28971	5483	34454	No	3.65	Si
SLU 82	0.41	-471.6	-28387	-25233	-9791	2.15	2.15	-26080	10422	10083	30925	28971	5483	34454	No	3.52	Si
SLU 82	0.81	1943.03	-25747	-22886	-9646	2.15	2.15	-23655	10098	9770	30925	28971	5483	34454	No	3.57	Si
SLU 78	0.41	-494.82	-28065	-24947	-9671	2.15	2.15	-25785	10382	10045	30925	28971	5483	34454	No	3.56	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 78	0.81	1893.08	-25450	-22622	-9527	2.15	2.15	-23382	10062	9735	30925	28971	5483	34454	No	3.62	Si
SLU 75	0.41	-497.48	-27755	-24671	-9588	2.15	2.15	-25499	10344	10008	30925	28971	5483	34454	No	3.59	Si
SLU 77	0.81	1873.32	-25159	-22364	-9445	2.15	2.15	-23115	10026	9701	30925	28971	5483	34454	No	3.65	Si
SLU 77	0.41	-282.32	-27988	-24878	-9853	2.15	2.15	-25714	10373	10036	30925	28971	5483	34454	No	3.5	Si
SLU 77	0.81	2154.67	-25345	-22529	-9711	2.15	2.15	-23286	10049	9723	30925	28971	5483	34454	No	3.55	Si
SLU 83	0.41	-256.44	-28620	-25440	-10056	2.15	2.15	-26295	10450	10111	30925	28971	5483	34454	No	3.43	Si
SLU 83	0.81	2224.38	-25933	-23052	-9911	2.15	2.15	-23826	10121	9792	30925	28971	5483	34454	No	3.48	Si
SLU 79	0.41	-280	-27747	-24664	-9774	2.15	2.15	-25493	10344	10007	30925	28971	5483	34454	No	3.53	Si
SLU 79	0.81	2138.34	-25120	-22329	-9633	2.15	2.15	-23079	10022	9696	30925	28971	5483	34454	No	3.58	Si
SLU 81	0.41	-259.1	-28310	-25164	-9972	2.15	2.15	-26009	10412	10074	30925	28971	5483	34454	No	3.46	Si
SLU 81	0.81	2204.62	-25642	-22793	-9829	2.15	2.15	-23559	10086	9758	30925	28971	5483	34454	No	3.51	Si
SLU 84	0.41	-468.94	-28697	-25508	-9874	2.15	2.15	-26365	10460	10120	30925	28971	5483	34454	No	3.49	Si
SLU 84	0.81	1962.8	-26038	-23145	-9728	2.15	2.15	-23922	10134	9805	30925	28971	5483	34454	No	3.54	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 1	0.41	-3803.69	-12150	-10800	-15226	2.15	2.15	-11163	12649	12238	30925	43457	5483	43164		2.83	Si
SLV 1	0.81	1551.39	-9413	-8367	-15401	2.15	2.15	-8649	12146	11752	30925	43457	5483	42677		2.77	Si
SLV 7	0.41	-3459.85	-19034	-16919	-10784	2.15	2.15	-17487	13914	13462	30925	43457	5483	44387		4.12	Si
SLV 7	0.81	-322.61	-17593	-15638	-10168	2.15	2.15	-16164	13649	13206	30925	43457	5483	44131		4.34	Si
SLD 1	0.41	-1773.54	-16026	-14245	-10397	2.15	2.15	-14724	13361	12927	30925	43457	5483	43853		4.22	Si
SLD 1	0.81	1490.95	-13786	-12254	-10416	2.15	2.15	-12666	12950	12529	30925	43457	5483	43454		4.17	Si
SLV 8	0.41	-3244.14	-19200	-17067	-10216	2.15	2.15	-17640	13945	13492	30925	43457	5483	44417		4.35	Si
SLV 8	0.81	-320.78	-17776	-15801	-9591	2.15	2.15	-16332	13683	13238	30925	43457	5483	44164		4.6	Si
SLD 3	0.41	-2265.83	-16546	-14708	-10709	2.15	2.15	-15202	13457	13020	30925	43457	5483	43945		4.1	Si
SLD 3	0.81	1065.73	-14471	-12863	-10587	2.15	2.15	-13295	13076	12651	30925	43457	5483	43576		4.12	Si
SLD 2	0.41	-1630.12	-16137	-14344	-10019	2.15	2.15	-14826	13382	12947	30925	43457	5483	43872		4.38	Si
SLD 2	0.81	1492.17	-13908	-12363	-10032	2.15	2.15	-12778	12972	12551	30925	43457	5483	43476		4.33	Si
SLV 4	0.41	-4613.68	-13615	-12102	-15066	2.15	2.15	-12509	12918	12499	30925	43457	5483	43424		2.88	Si
SLV 4	0.81	564.24	-11283	-10030	-14896	2.15	2.15	-10367	12490	12084	30925	43457	5483	43009		2.89	Si
SLV 3	0.41	-4947.67	-13357	-11873	-15946	2.15	2.1137	-12272	12871	12243	30925	43457	5483	43168		2.71	Si
SLV 3	0.81	561.41	-11000	-9777	-15789	2.15	2.15	-10106	12438	12034	30925	43457	5483	42959		2.72	Si
SLD 4	0.41	-2122.42	-16657	-14806	-10332	2.15	2.15	-15303	13477	13039	30925	43457	5483	43965		4.26	Si
SLD 4	0.81	1066.95	-14592	-12971	-10203	2.15	2.15	-13407	13098	12672	30925	43457	5483	43598		4.27	Si
SLV 2	0.41	-3469.71	-12408	-11029	-14346	2.15	2.15	-11400	12697	12284	30925	43457	5483	43209		3.01	Si
SLV 2	0.81	1554.22	-9697	-8620	-14507	2.15	2.15	-8909	12199	11802	30925	43457	5483	42728		2.95	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota -0.24 Wa 0.08 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 1	179667	0.24	7894	-7637	129.24	1629.51	12.61	Si
SLV 3	179667	0.24	8212	-7945	129.24	1691.52	13.09	Si
SLV 2	179667	0.24	8463	-8188	129.24	1740.2	13.47	Si
SLV 4	179667	0.24	8781	-8496	129.24	1801.69	13.94	Si
SLV 5	179667	0.24	14125	-13665	129.24	2790.36	21.59	Si
SLV 6	179667	0.24	14492	-14021	129.24	2855.42	22.09	Si
SLV 7	179667	0.24	15186	-14692	129.24	2977.07	23.04	Si
SLV 8	179667	0.24	15554	-15048	129.24	3041.02	23.53	Si
SLV 9	179667	0.24	19697	-19057	129.24	3734.82	28.9	Si
SLV 10	179667	0.24	20065	-19413	129.24	3794.04	29.36	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = -0.24 Wa = 0.08 Ta = 0.0271

Comb.	N top	N base	V orto	σ0	M*	e*	a0*	aLim	Verifica
SLV 12	-19839	-22827	-28	0.635	2388.5	0.955	9.66804	3.69946	Si
SLV 11	-19734	-22068	-25	0.638	2377.9	0.955	9.71148	3.69946	Si
SLV 16	-21960	-34073	-81	0.585	2604.1	0.958	8.87072	2.99128	Si
SLV 15	-21797	-32897	-77	0.588	2587.6	0.958	8.92653	2.99128	Si
SLV 8	-16738	-13318	61	0.723	2073.5	0.949	11.07587	3.69946	Si
SLV 7	-16633	-12558	63	0.726	2062.9	0.949	11.1306	3.69946	Si
SLV 14	-20651	-34024	-37	0.615	2471.1	0.956	9.35172	2.99128	Si
SLV 13	-20489	-32848	-34	0.619	2454.6	0.956	9.41436	2.99128	Si
SLV 10	-15478	-22664	117	0.765	1945.7	0.946	11.75615	3.69946	Si
SLV 9	-15373	-21905	120	0.769	1935.1	0.946	11.81908	3.69946	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	10.001	SLU 83	Si
V_SLU	3.426	SLU 83	Si
PF_SLV	2.945	SLV 3	Si
V_SLV	2.707	SLV 3	Si
PFFP_SLV	12.609	SLV 1	Si
R_SLV	2.613	SLV 12	Si



## Maschio 39

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-9.728	2.201	-9.728	6.576	L2	L4	4.375	0.3	2.7	2.7	2.7			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γ<sub>M</sub> = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	ε <sub>m</sub>	ε <sub>m</sub> _	ε <sub>mu</sub>	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 48	-1.59	16636.3	-96667	-0.0001451	0.0004492	0.0035	4.375	83997.81	143720.86	143720.86	8.64	No	Si
SLU 48	0.61	20214.6	-60978	-0.0001023	0.0004492	0.0035	4.375	82670.41	106085.77	106085.77	5.25	No	Si
SLU 69	-1.59	17754.71	-107937	-0.0001643	0.0004492	0.0035	4.375	77198.21	153188.8	153188.8	8.63	No	Si
SLU 69	0.61	21911.7	-69559	-0.0001166	0.0004492	0.0035	4.375	86162.55	116526.73	116526.73	5.32	No	Si
SLU 46	-1.59	16540.62	-95396	-0.0001431	0.0004492	0.0035	4.375	84547.12	142653.32	142653.32	8.62	No	Si
SLU 46	0.61	19657.73	-59908	-0.0000999	0.0004492	0.0035	4.375	82094.37	104784.43	104784.43	5.33	No	Si
SLU 51	-1.59	16522.72	-95903	-0.0001438	0.0004492	0.0035	4.375	84333.47	143078.79	143078.79	8.66	No	Si
SLU 51	0.61	19803.42	-60333	-0.0001007	0.0004492	0.0035	4.375	82327.05	105301.64	105301.64	5.32	No	Si
SLU 66	-1.59	17543.2	-106754	-0.0001621	0.0004492	0.0035	4.375	78074.36	152195.37	152195.37	8.68	No	Si
SLU 66	0.61	21530.35	-68699	-0.0001148	0.0004492	0.0035	4.375	85903.22	115480.65	115480.65	5.36	No	Si
SLU 45	-1.59	16424.78	-95484	-0.000143	0.0004492	0.0035	4.375	84510.41	142727.43	142727.43	8.69	No	Si
SLU 45	0.61	19833.25	-60118	-0.0001005	0.0004492	0.0035	4.375	82209.82	105039.69	105039.69	5.3	No	Si
SLU 50	-1.59	16406.88	-95991	-0.0001437	0.0004492	0.0035	4.375	84295.54	143152.91	143152.91	8.73	No	Si
SLU 50	0.61	19978.94	-60543	-0.0001013	0.0004492	0.0035	4.375	82440.07	105556.9	105556.9	5.28	No	Si
SLU 49	-1.59	16752.14	-96579	-0.0001452	0.0004492	0.0035	4.375	84037.37	143646.75	143646.75	8.57	No	Si
SLU 49	0.61	20039.08	-60768	-0.0001017	0.0004492	0.0035	4.375	82559.88	105830.51	105830.51	5.28	No	Si
SLU 71	-1.59	17525.3	-107261	-0.0001628	0.0004492	0.0035	4.375	77703.79	152620.84	152620.84	8.71	No	Si
SLU 71	0.61	21676.04	-69124	-0.0001156	0.0004492	0.0035	4.375	86033.96	115997.86	115997.86	5.35	No	Si
SLU 70	-1.59	17870.55	-107849	-0.0001644	0.0004492	0.0035	4.375	77264.88	153114.69	153114.69	8.57	No	Si
SLU 70	0.61	21736.18	-69349	-0.000116	0.0004492	0.0035	4.375	86101.13	116271.47	116271.47	5.35	No	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γ<sub>M</sub> = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	ε <sub>m</sub>	ε <sub>m</sub> _	ε <sub>mu</sub>	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 8	-1.59	36849.69	-75635	-0.0001441	0.0006738	0.0035	4.375		133440.53	133440.53	3.62		Si
SLV 8	0.61	18260.97	-49326	-0.0000817	0.0006738	0.0035	4.375		93674.12	93674.12	5.13		Si
SLD 7	-1.59	24014.44	-78884	-0.0001269	0.0006738	0.0035	4.375		137461.39	137461.39	5.72		Si
SLD 7	0.61	17069.48	-51078	-0.0000819	0.0006738	0.0035	4.375		96466.32	96466.32	5.65		Si
SLV 12	-1.59	35412.73	-81917	-0.0001498	0.0006738	0.0035	4.375		141214.55	141214.55	3.99		Si
SLV 12	0.61	18381.25	-53393	-0.0000867	0.0006738	0.0035	4.375		100156.73	100156.73	5.45		Si
SLV 4	-1.59	21945.16	-70264	-0.0001127	0.0006738	0.0035	4.375		126794.56	126794.56	5.78		Si
SLV 4	0.61	16518.84	-45408	-0.0000745	0.0006738	0.0035	4.375		87428.6	87428.6	5.29		Si
SLD 8	-1.59	23640.08	-78941	-0.0001263	0.0006738	0.0035	4.375		137532.03	137532.03	5.82		Si
SLD 8	0.61	17048.18	-51122	-0.0000819	0.0006738	0.0035	4.375		96535.65	96535.65	5.66		Si
SLD 3	-1.59	17603.5	-76615	-0.0001135	0.0006738	0.0035	4.375		134653.75	134653.75	7.65		Si
SLD 3	0.61	16273.4	-49429	-0.0000787	0.0006738	0.0035	4.375		93837.28	93837.28	5.77		Si
SLD 4	-1.59	17033.85	-76702	-0.0001126	0.0006738	0.0035	4.375		134761.24	134761.24	7.91		Si
SLD 4	0.61	16240.99	-49495	-0.0000788	0.0006738	0.0035	4.375		93942.78	93942.78	5.78		Si
SLV 3	-1.59	23271.77	-70062	-0.0001146	0.0006738	0.0035	4.375		126544.24	126544.24	5.44		Si
SLV 3	0.61	16594.3	-45254	-0.0000744	0.0006738	0.0035	4.375		87182.91	87182.91	5.25		Si
SLV 11	-1.59	36269.55	-81786	-0.0001511	0.0006738	0.0035	4.375		141052.88	141052.88	3.89		Si
SLV 11	0.61	18429.99	-53294	-0.0000867	0.0006738	0.0035	4.375		99998.05	99998.05	5.43		Si
SLV 7	-1.59	37706.51	-75504	-0.0001454	0.0006738	0.0035	4.375		133278.85	133278.85	3.53		Si
SLV 7	0.61	18309.71	-49227	-0.0000817	0.0006738	0.0035	4.375		93515.44	93515.44	5.11		Si

### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γ<sub>M</sub> = 3

Comb.	Quota	M	N	N <sub>mur</sub>	V	df	l'	σ <sub>N</sub>	f <sub>vd</sub>	V <sub>t</sub>	V <sub>t,f</sub>	V <sub>t,c</sub>	V <sub>t,c</sub> int.	V <sub>t,R</sub>	res. > 50%	c.s.	Verifica
SLU 77	-1.59	18798.71	-119295	-86760	-26936	4.375	4.375	-66103	10833	14219	88358	47168	22312	69480	No	2.58	Si
SLU 77	0.61	23178.92	-78267	-56922	-32284	4.375	4.375	-43369	10833	14219	88358	47168	22312	69480	No	2.15	Si
SLU 79	-1.59	18569.29	-118619	-86268	-26737	4.375	4.375	-65728	10833	14219	88358	47168	22312	69480	No	2.6	Si





Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 79	0.61	22943.27	-77833	-56606	-32039	4.375	4.375	-43128	10833	14219	88358	47168	22312	69480	No	2.17	Si
SLU 81	-1.59	18593.69	-121122	-88088	-26649	4.375	4.375	-67115	10833	14219	88358	47168	22312	69480	No	2.61	Si
SLU 81	0.61	22723.67	-79846	-58070	-32055	4.375	4.375	-44243	10833	14219	88358	47168	22312	69480	No	2.17	Si
SLU 83	-1.59	18805.2	-122304	-88948	-27002	4.375	4.375	-67770	10833	14219	88358	47168	22312	69480	No	2.57	Si
SLU 83	0.61	23105.02	-80705	-58695	-32459	4.375	4.375	-44720	10833	14219	88358	47168	22312	69480	No	2.14	Si
SLU 84	-1.59	18921.04	-122216	-88884	-26969	4.375	4.375	-67721	10833	14219	88358	47168	22312	69480	No	2.58	Si
SLU 84	0.61	22929.5	-80496	-58542	-32432	4.375	4.375	-44604	10833	14219	88358	47168	22312	69480	No	2.14	Si
SLU 82	-1.59	18709.52	-121033	-88024	-26616	4.375	4.375	-67066	10833	14219	88358	47168	22312	69480	No	2.61	Si
SLU 82	0.61	22548.15	-79636	-57917	-32028	4.375	4.375	-44127	10833	14219	88358	47168	22312	69480	No	2.17	Si
SLU 74	-1.59	18587.19	-118112	-85900	-26583	4.375	4.375	-65448	10833	14219	88358	47168	22312	69480	No	2.61	Si
SLU 74	0.61	22797.58	-77408	-56297	-31880	4.375	4.375	-42893	10833	14219	88358	47168	22312	69480	No	2.18	Si
SLU 78	-1.59	18914.55	-119207	-86696	-26902	4.375	4.375	-66054	10833	14219	88358	47168	22312	69480	No	2.58	Si
SLU 78	0.61	23003.4	-78058	-56769	-32257	4.375	4.375	-43253	10833	14219	88358	47168	22312	69480	No	2.15	Si
SLU 75	-1.59	18703.03	-118024	-85836	-26549	4.375	4.375	-65399	10833	14219	88358	47168	22312	69480	No	2.62	Si
SLU 75	0.61	22622.06	-77198	-56144	-31853	4.375	4.375	-42776	10833	14219	88358	47168	22312	69480	No	2.18	Si
SLU 80	-1.59	18685.13	-118531	-86204	-26704	4.375	4.375	-65679	10833	14219	88358	47168	22312	69480	No	2.6	Si
SLU 80	0.61	22767.75	-77623	-56453	-32012	4.375	4.375	-43012	10833	14219	88358	47168	22312	69480	No	2.17	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 6	-1.59	-9853.42	-81128	-59002	-31625	4.375	4.375	-44954	16250	21328	88358	70752	22312	93064		2.94	Si
SLV 6	0.61	13722.54	-51610	-37535	-32087	4.375	4.375	-28598	16250	21328	88358	70752	22312	93064		2.9	Si
SLV 10	-1.59	-11290.38	-87410	-63571	-35755	4.375	4.375	-48435	16250	21328	88358	70752	22312	93064		2.6	Si
SLV 10	0.61	13842.82	-55677	-40492	-36130	4.375	4.375	-30851	16250	21328	88358	70752	22312	93064		2.58	Si
SLD 6	-1.59	3011.49	-81370	-59178	-24567	4.375	4.375	-45088	16250	21328	88358	70752	22312	93064		3.79	Si
SLD 6	0.61	15007.99	-52122	-37907	-26829	4.375	4.375	-28881	16250	21328	88358	70752	22312	93064		3.47	Si
SLD 10	-1.59	2401.7	-84031	-61113	-26301	4.375	4.375	-46562	16250	21328	88358	70752	22312	93064		3.54	Si
SLD 10	0.61	15083.05	-53826	-39146	-28515	4.375	4.375	-29826	16250	21328	88358	70752	22312	93064		3.26	Si
SLV 9	-1.59	-10433.56	-87280	-63476	-35233	4.375	4.375	-48363	16250	21328	88358	70752	22312	93064		2.64	Si
SLV 9	0.61	13891.56	-55578	-40420	-35722	4.375	4.375	-30796	16250	21328	88358	70752	22312	93064		2.61	Si
SLD 14	-1.59	8812.64	-86299	-62763	-23897	4.375	4.375	-47820	16250	21328	88358	70752	22312	93064		3.89	Si
SLD 14	0.61	15879.13	-55475	-40346	-27032	4.375	4.375	-30740	16250	21328	88358	70752	22312	93064		3.44	Si
SLV 5	-1.59	-8996.6	-80998	-58907	-31103	4.375	4.375	-44882	16250	21328	88358	70752	22312	93064		2.99	Si
SLV 5	0.61	13771.28	-51510	-37462	-31679	4.375	4.375	-28543	16250	21328	88358	70752	22312	93064		2.94	Si
SLD 9	-1.59	2776.06	-83973	-61072	-26073	4.375	4.375	-46531	16250	21328	88358	70752	22312	93064		3.57	Si
SLD 9	0.61	15104.35	-53782	-39114	-28337	4.375	4.375	-29801	16250	21328	88358	70752	22312	93064		3.28	Si
SLV 13	-1.59	4470.97	-92650	-67382	-29746	4.375	4.375	-51339	16250	21328	88358	70752	22312	93064		3.13	Si
SLV 13	0.61	15633.69	-59496	-43270	-32406	4.375	4.375	-32967	16250	21328	88358	70752	22312	93064		2.87	Si
SLV 14	-1.59	3144.37	-92852	-67529	-30554	4.375	4.375	-51451	16250	21328	88358	70752	22312	93064		3.05	Si
SLV 14	0.61	15558.23	-59650	-43382	-33037	4.375	4.375	-33053	16250	21328	88358	70752	22312	93064		2.82	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCC D.M. 17-01-18 (N.T.C.)

quota -0.24 Ta 0.04 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 3	-54436	0.24	175.32	6317.67	9232.72	7775.2	44.35	Si
SLV 4	-54563	0.24	175.32	6328.08	9252.16	7790.12	44.43	Si
SLV 1	-55247	0.24	175.32	6383.85	9357.01	7870.43	44.89	Si
SLV 2	-55374	0.24	175.32	6394.13	9376.45	7885.29	44.98	Si
SLV 7	-59852	0.24	175.32	6744.04	10036.64	8390.34	47.86	Si
SLV 8	-59934	0.24	175.32	6750.21	10048.61	8399.41	47.91	Si
SLV 5	-62555	0.24	175.32	6943.19	10431.57	8687.38	49.55	Si
SLV 6	-62637	0.24	175.32	6949.09	10443.54	8696.32	49.6	Si
SLV 11	-65285	0.24	175.32	7135.08	10830.6	8982.84	51.24	Si
SLV 12	-65367	0.24	175.32	7140.69	10842.58	8991.63	51.29	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = -0.24 Wa = 0.05 Ta = 0.0406

Comb.	N top	N base	V orto	α0	M*	e*	α0*	aLim	Verifica
SLV 10	-52446	-87410	447	0.492	5838.6	0.974	7.34973	4.73917	Si
SLV 9	-52357	-87280	446	0.493	5829.6	0.974	7.36071	4.73917	Si
SLV 12	-49739	-81917	451	0.515	5563	0.972	7.69174	4.73917	Si
SLV 11	-49651	-81786	450	0.515	5554	0.972	7.70388	4.73917	Si
SLV 6	-48751	-81128	231	0.528	5462.4	0.972	7.88947	4.73917	Si
SLV 5	-48662	-80998	230	0.528	5453.3	0.972	7.90219	4.73917	Si
SLV 8	-46045	-75635	235	0.554	5186.8	0.971	8.28819	4.73917	Si
SLV 7	-45956	-75504	234	0.554	5177.7	0.971	8.30238	4.73917	Si
SLV 14	-55833	-92852	701	0.463	6183.7	0.975	6.90145	3.38993	Si
SLV 13	-55696	-92650	699	0.464	6169.7	0.975	6.91639	3.38993	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	5.248	SLU 48	Si
V_SLU	2.141	SLU 83	Si
PF_SLV	3.535	SLV 7	Si
V_SLV	2.576	SLV 10	Si
PFFP_SLV	44.348	SLV 3	Si
R_SLV	1.551	SLV 10	Si

## Maschio 41

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)





## Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-7.723	-4.784	-11.013	-4.784	L2	L4	3.29	0.45	2.7	2.7	2.7			

## Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau_0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

## Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

## Rinforzo a matrice inorganica

									elim,conv / ε_CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε <sub>f,d</sub>	γF <sub>d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 75	-1.59	13728.25	-23697	-0.0000524	0.0003743	0.0035	3.29	32853.25	34064.23	34064.23	2.48	No	Si
SLU 75	1.11	12304.3	-25306	-0.0000513	0.0003743	0.0035	3.29	34639.95	36035.89	36035.89	2.93	No	Si
SLU 70	-1.59	12850.85	-21923	-0.0000486	0.0003743	0.0035	3.29	30818.1	31911.84	31911.84	2.48	No	Si
SLU 70	1.11	11087.62	-23227	-0.0000464	0.0003743	0.0035	3.29	32320.18	33491.36	33491.36	3.02	No	Si
SLU 79	-1.59	13809.08	-23850	-0.0000527	0.0003743	0.0035	3.29	33025.68	34251	34251	2.48	No	Si
SLU 79	1.11	12451.17	-25490	-0.0000518	0.0003743	0.0035	3.29	34840.22	36262.07	36262.07	2.91	No	Si
SLU 78	-1.59	13875.06	-23958	-0.000053	0.0003743	0.0035	3.29	33147.1	34382.97	34382.97	2.48	No	Si
SLU 78	1.11	12570.35	-25635	-0.0000522	0.0003743	0.0035	3.29	34998.29	36441.36	36441.36	2.9	No	Si
SLU 80	-1.59	13812.37	-23838	-0.0000527	0.0003743	0.0035	3.29	33012.12	34236.28	34236.28	2.48	No	Si
SLU 80	1.11	12455.02	-25511	-0.0000518	0.0003743	0.0035	3.29	34862.47	36287.27	36287.27	2.91	No	Si
SLU 76	-1.59	13667.76	-23569	-0.0000521	0.0003743	0.0035	3.29	32708.49	33907.98	33907.98	2.48	No	Si
SLU 76	1.11	12191.54	-25195	-0.0000509	0.0003743	0.0035	3.29	34518.15	35898.87	35898.87	2.94	No	Si
SLU 74	-1.59	13724.96	-23709	-0.0000524	0.0003743	0.0035	3.29	32866.85	34078.94	34078.94	2.48	No	Si
SLU 74	1.11	12300.45	-25286	-0.0000513	0.0003743	0.0035	3.29	34617.61	36010.73	36010.73	2.93	No	Si
SLU 84	-1.59	14104.51	-24449	-0.000054	0.0003743	0.0035	3.29	33695.3	34983.32	34983.32	2.48	No	Si
SLU 84	1.11	12824.43	-26214	-0.0000534	0.0003743	0.0035	3.29	35622.45	37156.02	37156.02	2.9	No	Si
SLU 83	-1.59	14101.22	-24461	-0.000054	0.0003743	0.0035	3.29	33708.7	34998.09	34998.09	2.48	No	Si
SLU 83	1.11	12820.57	-26193	-0.0000534	0.0003743	0.0035	3.29	35600.51	37130.72	37130.72	2.9	No	Si
SLU 77	-1.59	13871.76	-23970	-0.000053	0.0003743	0.0035	3.29	33160.64	34397.7	34397.7	2.48	No	Si
SLU 77	1.11	12566.5	-25615	-0.0000522	0.0003743	0.0035	3.29	34976.1	36416.15	36416.15	2.9	No	Si

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 3	-1.59	11904.96	-14678	-0.0000403	0.0005615	0.0035	3.29		23420.01	23420.01	1.97		Si
SLD 3	1.11	5239.4	-16518	-0.000027	0.0005615	0.0035	3.29		26119.87	26119.87	4.99		Si
SLV 2	-1.59	15245.55	-14393	-0.0000569	0.0005615	0.0035	3.29		23000.11	23000.11	1.51		Si
SLV 2	1.11	-1167.38	-13309	-0.0000159	0.0005615	0.0035	3.29		23667.98	23667.98	20.27		Si
SLV 3	-1.59	14899.26	-12155	-0.0000677	0.0005615	0.0035	3.29		19658.8	19658.8	1.32		Si
SLV 3	1.11	1315.68	-15207	-0.0000182	0.0005615	0.0035	3.29		24199.77	24199.77	18.39		Si
SLV 4	-1.59	15241.49	-12404	-0.0000697	0.0005615	0.0035	3.29		20031.67	20031.67	1.31		Si
SLV 4	1.11	648.94	-14999	-0.0000167	0.0005615	0.0035	3.29		23894.14	23894.14	36.82		Si
SLV 15	-1.59	4107.02	-18753	-0.0000272	0.0005615	0.0035	3.29		29354.7	29354.7	7.15		Si
SLV 15	1.11	17509.61	-21595	-0.0000601	0.0005615	0.0035	3.29		33384.15	33384.15	1.91		Si
SLV 1	-1.59	14903.32	-14143	-0.0000553	0.0005615	0.0035	3.29		22629.06	22629.06	1.52		Si
SLV 1	1.11	-500.64	-13517	-0.0000149	0.0005615	0.0035	3.29		23978.26	23978.26	47.9		Si
SLV 7	-1.59	11177.83	-12188	-0.0000382	0.0005615	0.0035	3.29		19709.1	19709.1	1.76		Si
SLV 7	1.11	8984.55	-19378	-0.0000373	0.0005615	0.0035	3.29		30245.79	30245.79	3.37		Si
SLD 4	-1.59	12051.91	-14785	-0.0000408	0.0005615	0.0035	3.29		23577.84	23577.84	1.96		Si
SLD 4	1.11	4953.1	-16429	-0.0000264	0.0005615	0.0035	3.29		25990.09	25990.09	5.25		Si
SLV 8	-1.59	11398.87	-12349	-0.0000391	0.0005615	0.0035	3.29		19949.92	19949.92	1.75		Si
SLV 8	1.11	8553.91	-19244	-0.0000363	0.0005615	0.0035	3.29		30054.65	30054.65	3.51		Si
SLV 16	-1.59	4449.25	-19003	-0.0000281	0.0005615	0.0035	3.29		29710.57	29710.57	6.68		Si
SLV 16	1.11	16842.86	-21388	-0.0000578	0.0005615	0.0035	3.29		33093.24	33093.24	1.96		Si

## Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 83	-1.59	14101.22	-24461	-21743	-1677	3.29	3.2056	-14687	8903	12842	30925	44333	8389	43768	No	26.1	Si
SLU 83	1.11	12820.57	-26193	-23283	-4500	3.29	3.29	-15726	9041	13386	30925	44333	8389	44311	No	9.85	Si
SLU 81	-1.59	13954.41	-24200	-21511	-1616	3.29	3.2051	-14530	8882	12810	30925	44333	8389	43736	No	27.06	Si
SLU 81	1.11	12554.52	-25864	-22991	-4369	3.29	3.29	-15529	9015	13347	30925	44333	8389	44272	No	10.13	Si
SLU 79	-1.59	13809.08	-23850	-21200	-1379	3.29	3.198	-14320	8854	12741	30925	44333	8389	43667	No	31.66	Si
SLU 79	1.11	12451.17	-25490	-22658	-4156	3.29	3.29	-15304	8985	13302	30925	44333	8389	44228	No	10.64	Si
SLU 82	-1.59	13957.71	-24188	-21500	-1596	3.29	3.2038	-14522	8881	12804	30925	44333	8389	43729	No	27.4	Si



Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 82	1.11	12558.37	-25885	-23009	-4327	3.29	3.29	-15541	9017	13349	30925	44333	8389	44275	No	10.23	Si
SLU 84	-1.59	14104.51	-24449	-21733	-1657	3.29	3.2043	-14679	8902	12836	30925	44333	8389	43761	No	26.41	Si
SLU 84	1.11	12824.43	-26214	-23301	-4458	3.29	3.29	-15739	9043	13388	30925	44333	8389	44314	No	9.94	Si
SLU 80	-1.59	13812.37	-23838	-21189	-1359	3.29	3.1967	-14312	8853	12735	30925	44333	8389	43660	No	32.12	Si
SLU 80	1.11	12455.02	-25511	-22676	-4114	3.29	3.29	-15316	8987	13305	30925	44333	8389	44230	No	10.75	Si
SLU 77	-1.59	13871.76	-23970	-21307	-1419	3.29	3.1989	-14392	8863	12759	30925	44333	8389	43684	No	30.79	Si
SLU 77	1.11	12566.5	-25615	-22769	-4200	3.29	3.29	-15379	8995	13317	30925	44333	8389	44243	No	10.53	Si
SLU 62	-1.59	13077.44	-22699	-20177	-1449	3.29	3.2066	-13628	8762	12643	30925	44333	8389	43568	No	30.08	Si
SLU 62	1.11	11544.4	-23989	-21324	-4108	3.29	3.29	-14403	8865	13124	30925	44333	8389	44050	No	10.72	Si
SLU 41	-1.59	11724.88	-20419	-18150	-1693	3.29	3.2124	-12260	8579	12402	30925	44333	8389	43327	No	25.6	Si
SLU 41	1.11	11043.27	-22109	-19652	-4051	3.29	3.29	-13274	8714	12902	30925	44333	8389	43827	No	10.82	Si
SLU 78	-1.59	13875.06	-23958	-21296	-1398	3.29	3.1976	-14385	8862	12752	30925	44333	8389	43678	No	31.23	Si
SLU 78	1.11	12570.35	-25635	-22787	-4158	3.29	3.29	-15391	8997	13320	30925	44333	8389	44245	No	10.64	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 4	-1.59	15241.49	-12404	-11026	15727	3.29	1.2487	-7447	11906	6690	30925	66499	8389	37616		2.39	Si
SLV 4	1.11	648.94	-14999	-13333	24805	3.29	3.29	-9006	12218	18088	30925	66499	8389	49014		1.98	Si
SLV 16	-1.59	4449.25	-19003	-16891	-15400	3.29	3.29	-11409	12699	18800	30925	66499	8389	49726		3.23	Si
SLV 16	1.11	16842.86	-21388	-19011	-27116	3.29	2.5725	-12841	12985	15032	30925	66499	8389	45957		1.69	Si
SLV 2	-1.59	15245.55	-14393	-12793	15892	3.29	1.7572	-8641	12145	9604	30925	66499	8389	40529		2.55	Si
SLV 2	1.11	-1167.38	-13309	-11831	24835	3.29	3.29	-7991	12015	17788	30925	66499	8389	48713		1.96	Si
SLV 14	-1.59	4453.31	-20991	-18659	-15235	3.29	3.29	-12603	12937	19154	30925	66499	8389	50079		3.29	Si
SLV 14	1.11	15026.54	-19698	-17509	-27086	3.29	2.6465	-11827	12782	15222	30925	66499	8389	46148		1.7	Si
SLV 13	-1.59	4111.08	-20742	-18437	-16753	3.29	3.29	-12453	12907	19109	30925	66499	8389	50035		2.99	Si
SLV 13	1.11	15693.28	-19905	-17693	-29552	3.29	2.5698	-11951	12807	14810	30925	66499	8389	45735		1.55	Si
SLV 3	-1.59	14899.26	-12155	-10804	14208	3.29	1.2576	-7298	11876	6721	30925	66499	8389	37646		2.65	Si
SLV 3	1.11	1315.68	-15207	-13517	22340	3.29	3.29	-9130	12243	18125	30925	66499	8389	49051		2.2	Si
SLV 1	-1.59	14903.32	-14143	-12572	14373	3.29	1.7738	-8492	12115	9670	30925	66499	8389	40596		2.82	Si
SLV 1	1.11	-500.64	-13517	-12015	22370	3.29	3.29	-8115	12040	17825	30925	66499	8389	48750		2.18	Si
SLD 15	-1.59	7294.4	-17496	-15552	-7528	3.29	3.29	-10505	12518	18532	30925	66499	8389	49458		6.57	Si
SLD 15	1.11	12155.95	-19249	-17110	-13993	3.29	3.0405	-11557	12728	17415	30925	66499	8389	48340		3.45	Si
SLD 13	-1.59	7300.66	-18361	-16321	-7449	3.29	3.29	-11024	12621	18686	30925	66499	8389	49612		6.66	Si
SLD 13	1.11	11389.13	-18476	-16423	-13995	3.29	3.0857	-11093	12635	17545	30925	66499	8389	48470		3.46	Si
SLV 15	-1.59	4107.02	-18753	-16670	-16919	3.29	3.29	-11259	12669	18756	30925	66499	8389	49681		2.94	Si
SLV 15	1.11	17509.61	-21595	-19196	-29582	3.29	2.5026	-12966	13010	14651	30925	66499	8389	45576		1.54	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota -0.24 Wa 0.08 denominatore 8  $\gamma M = 2$

Comb.	fd	Sa	$\alpha 0$	N	M	Mc	Coeff.s.	Verifica
SLV 3	179667	0.24	9647	-14282	197.76	3010.53	15.22	Si
SLV 4	179667	0.24	9698	-14358	197.76	3025.47	15.3	Si
SLV 1	179667	0.24	9859	-14596	197.76	3072.16	15.53	Si
SLV 2	179667	0.24	9910	-14672	197.76	3087.05	15.61	Si
SLV 7	179667	0.24	10533	-15594	197.76	3266.75	16.52	Si
SLV 8	179667	0.24	10566	-15644	197.76	3276.27	16.57	Si
SLV 5	179667	0.24	11240	-16641	197.76	3468.7	17.54	Si
SLV 6	179667	0.24	11273	-16690	197.76	3478.12	17.59	Si
SLV 11	179667	0.24	11497	-17022	197.76	3541.54	17.91	Si
SLV 12	179667	0.24	11530	-17071	197.76	3550.92	17.96	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = -0.24 Wa = 0.08 Ta = 0.0271

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	$\alpha 0^*$	aLim	Verifica
SLV 11	-21294	-14168	-284	0.826	2735	0.942	12.75236	3.69946	Si
SLV 12	-21160	-14329	-278	0.831	2721.5	0.942	12.82167	3.69946	Si
SLV 7	-19378	-12188	-221	0.891	2541	0.938	13.80562	3.69946	Si
SLV 8	-19244	-12349	-215	0.896	2527.4	0.938	13.88738	3.69946	Si
SLV 15	-21595	-18753	-617	0.804	2765.5	0.942	12.40458	2.99128	Si
SLV 16	-21388	-19003	-607	0.811	2744.5	0.942	12.50788	2.99128	Si
SLV 9	-15661	-20797	-1019	1.006	2165.4	0.929	15.72389	3.69946	Si
SLV 10	-15527	-20958	-1013	1.012	2151.9	0.929	15.83605	3.69946	Si
SLV 13	-19905	-20742	-837	0.847	2594.4	0.939	13.1039	2.99128	Si
SLV 14	-19698	-20991	-827	0.854	2573.4	0.939	13.22141	2.99128	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	2.478	SLU 78	Si
V_SLU	9.847	SLU 83	Si
PF_SLV	1.314	SLV 4	Si
V_SLV	1.541	SLV 15	Si
PFFP_SLV	15.223	SLV 3	Si
R_SLV	3.447	SLV 11	Si



## Maschio 42

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-7.723	-3.284	-7.723	-4.784	L2	L4	1.5	0.45	2.7	2.7	2.7			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau_0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	elim,conv / e,CNR DT-200							CRM / Fibrenet?			
									$\alpha$	$\alpha$	elim,conv	$\epsilon_f$	$\gamma_{f,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_m$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 78	-1.59	-9164.02	-13209	-0.0003454	0.0003743	0.0035	1.5001	8002.78	17054.49	17054.49	1.86	No	Si
SLU 78	1.11	2809.28	-7288	-0.0000466	0.0003743	0.0035	1.5001	4886.33	14707.43	14707.43	5.24	No	Si
SLU 84	-1.59	-9349.16	-13498	-0.0003553	0.0003743	0.0035	1.5001	8135.53	17156.01	17156.01	1.84	No	Si
SLU 84	1.11	2827.68	-7397	-0.0000469	0.0003743	0.0035	1.5001	4950.93	14757.3	14757.3	5.22	No	Si
SLU 81	-1.59	-9256.33	-13365	-0.0003496	0.0003743	0.0035	1.5001	8074.68	17109.41	17109.41	1.85	No	Si
SLU 81	1.11	2807.35	-7318	-0.0000465	0.0003743	0.0035	1.5001	4904.04	14721.11	14721.11	5.24	No	Si
SLU 77	-1.59	-9162.86	-13211	-0.000345	0.0003743	0.0035	1.5001	8004.11	17055.5	17055.5	1.86	No	Si
SLU 77	1.11	2808.69	-7285	-0.0000465	0.0003743	0.0035	1.5001	4884.81	14706.26	14706.26	5.24	No	Si
SLU 74	-1.59	-9071.19	-13075	-0.0003399	0.0003743	0.0035	1.5001	7941.09	17007.47	17007.47	1.87	No	Si
SLU 74	1.11	2788.95	-7208	-0.0000462	0.0003743	0.0035	1.5001	4839.25	14671.07	14671.07	5.26	No	Si
SLU 75	-1.59	-9072.36	-13073	-0.0003402	0.0003743	0.0035	1.5001	7939.75	17006.46	17006.46	1.87	No	Si
SLU 75	1.11	2789.54	-7211	-0.0000462	0.0003743	0.0035	1.5001	4840.76	14672.25	14672.25	5.26	No	Si
SLU 79	-1.59	-9124.1	-13148	-0.0003432	0.0003743	0.0035	1.5001	7974.6	17033	17033	1.87	No	Si
SLU 79	1.11	2804.76	-7254	-0.0000465	0.0003743	0.0035	1.5001	4866.72	14692.29	14692.29	5.24	No	Si
SLU 80	-1.59	-9125.27	-13145	-0.0003435	0.0003743	0.0035	1.5001	7973.26	17031.98	17031.98	1.87	No	Si
SLU 80	1.11	2805.35	-7257	-0.0000465	0.0003743	0.0035	1.5001	4868.23	14693.46	14693.46	5.24	No	Si
SLU 83	-1.59	-9347.99	-13501	-0.0003549	0.0003743	0.0035	1.5001	8136.84	17157.01	17157.01	1.84	No	Si
SLU 83	1.11	2827.09	-7395	-0.0000469	0.0003743	0.0035	1.5001	4949.42	14756.14	14756.14	5.22	No	Si
SLU 82	-1.59	-9257.5	-13362	-0.0003499	0.0003743	0.0035	1.5001	8073.36	17108.4	17108.4	1.85	No	Si
SLU 82	1.11	2807.94	-7320	-0.0000465	0.0003743	0.0035	1.5001	4905.55	14722.27	14722.27	5.24	No	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_m$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 8	-1.59	-6790.59	-8121	-0.0002889	0.0005615	0.0035	1.5001		16758.35	16758.35	2.47		Si
SLV 8	1.11	2357.66	-5950	-0.0000382	0.0005615	0.0035	1.5001		15527.53	15527.53	6.59		Si
SLD 15	-1.59	-7225.6	-10307	-0.0002309	0.0005615	0.0035	1.5001		17832.51	17832.51	2.47		Si
SLD 15	1.11	2661.19	-5535	-0.0000463	0.0005615	0.0035	1.5001		15266.23	15266.23	5.74		Si
SLV 16	-1.59	-8110.26	-11842	-0.0002532	0.0005615	0.0035	1.5001		18526.58	18526.58	2.28		Si
SLV 16	1.11	3278.48	-6120	-0.0000635	0.0005615	0.0035	1.5001		15633.01	15633.01	4.77		Si
SLV 13	-1.59	-7774.37	-11980	-0.0002182	0.0005615	0.0035	1.5001		18587.35	18587.35	2.39		Si
SLV 13	1.11	3054.06	-5499	-0.0000616	0.0005615	0.0035	1.5001		15243.51	15243.51	4.99		Si
SLV 11	-1.59	-7875.61	-9808	-0.0003231	0.0005615	0.0035	1.5001		17598.3	17598.3	2.23		Si
SLV 11	1.11	3135.06	-6375	-0.0000558	0.0005615	0.0035	1.5001		15789.43	15789.43	5.04		Si
SLV 12	-1.59	-7725.08	-9785	-0.0003071	0.0005615	0.0035	1.5001		17587.76	17587.76	2.28		Si
SLV 12	1.11	3016.93	-6369	-0.0000522	0.0005615	0.0035	1.5001		15785.43	15785.43	5.23		Si
SLV 14	-1.59	-7541.31	-11946	-0.0002004	0.0005615	0.0035	1.5001		18572.22	18572.22	2.46		Si
SLV 14	1.11	2871.15	-5489	-0.0000539	0.0005615	0.0035	1.5001		15237.01	15237.01	5.31		Si
SLV 15	-1.59	-8343.33	-11877	-0.0002744	0.0005615	0.0035	1.5001		18541.76	18541.76	2.22		Si
SLV 15	1.11	3461.38	-6130	-0.0000718	0.0005615	0.0035	1.5001		15639.27	15639.27	4.52		Si
SLV 7	-1.59	-6941.12	-8143	-0.000305	0.0005615	0.0035	1.5001		16769.87	16769.87	2.42		Si
SLV 7	1.11	2475.79	-5956	-0.0000404	0.0005615	0.0035	1.5001		15531.61	15531.61	6.27		Si
SLD 11	-1.59	-7035.25	-9422	-0.0002505	0.0005615	0.0035	1.5001		17413.07	17413.07	2.48		Si
SLD 11	1.11	2508.41	-5617	-0.0000418	0.0005615	0.0035	1.5001		15318.35	15318.35	6.11		Si

### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	l'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 84	-1.59	-9349.16	-13498	-11998	-8543	1.5001	0.1722	-64003	10833	839	11895	20213	3825	12734	No	1.49	Si
SLU 84	1.11	2827.68	-7397	-6575	-7486	1.5001	1.1033	-13325	8724	4331	11895	20213	3825	16226	No	2.17	Si
SLU 75	-1.59	-9072.36	-13073	-11620	-8303	1.5001	0.1681	-62286	10833	819	11895	20213	3825	12714	No	1.53	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 75	1.11	2789.54	-7211	-6409	-7280	1.5001	1.0895	-13146	8700	4265	11895	20213	3825	16160	No	2.22	Si
SLU 74	-1.59	-9071.19	-13075	-11623	-8305	1.5001	0.1688	-62265	10833	823	11895	20213	3825	12718	No	1.53	Si
SLU 74	1.11	2788.95	-7208	-6407	-7282	1.5001	1.0893	-13144	8700	4265	11895	20213	3825	16159	No	2.22	Si
SLU 82	-1.59	-9257.5	-13362	-11877	-8479	1.5001	0.1716	-63421	10833	837	11895	20213	3825	12731	No	1.5	Si
SLU 82	1.11	2807.94	-7320	-6507	-7436	1.5001	1.0993	-13232	8711	4309	11895	20213	3825	16204	No	2.18	Si
SLU 80	-1.59	-9125.27	-13145	-11684	-8349	1.5001	0.1674	-62641	10833	816	11895	20213	3825	12711	No	1.52	Si
SLU 80	1.11	2805.35	-7257	-6451	-7318	1.5001	1.0904	-13221	8710	4274	11895	20213	3825	16169	No	2.21	Si
SLU 77	-1.59	-9162.86	-13211	-11744	-8369	1.5001	0.1694	-62848	10833	826	11895	20213	3825	12721	No	1.52	Si
SLU 77	1.11	2808.69	-7285	-6476	-7332	1.5001	1.0935	-13236	8712	4287	11895	20213	3825	16182	No	2.21	Si
SLU 79	-1.59	-9124.1	-13148	-11687	-8350	1.5001	0.1682	-62620	10833	820	11895	20213	3825	12715	No	1.52	Si
SLU 79	1.11	2804.76	-7254	-6448	-7320	1.5001	1.0902	-13219	8710	4273	11895	20213	3825	16168	No	2.21	Si
SLU 78	-1.59	-9164.02	-13209	-11741	-8368	1.5001	0.1687	-62869	10833	822	11895	20213	3825	12717	No	1.52	Si
SLU 78	1.11	2809.28	-7288	-6478	-7331	1.5001	1.0936	-13239	8712	4288	11895	20213	3825	16183	No	2.21	Si
SLU 83	-1.59	-9347.99	-13501	-12001	-8545	1.5001	0.1729	-63983	10833	843	11895	20213	3825	12738	No	1.49	Si
SLU 83	1.11	2827.09	-7395	-6573	-7488	1.5001	1.1031	-13322	8723	4330	11895	20213	3825	16225	No	2.17	Si
SLU 81	-1.59	-9256.33	-13365	-11880	-8480	1.5001	0.1723	-63401	10833	840	11895	20213	3825	12735	No	1.5	Si
SLU 81	1.11	2807.35	-7318	-6505	-7438	1.5001	1.0992	-13229	8711	4309	11895	20213	3825	16204	No	2.18	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 12	-1.59	-7725.08	-9785	-8698	-10427	1.5001	0	-58521	16250	0	11895	30320	3825	11895		1.14	Si
SLV 12	1.11	3016.93	-6369	-5661	-8151	1.5001	0.829	-14942	13425	5008	11895	30320	3825	16903		2.07	Si
SLV 14	-1.59	-7541.31	-11946	-10618	-11373	1.5001	0.3562	-48312	16250	2605	11895	30320	3825	14500		1.27	Si
SLV 14	1.11	2871.15	-5489	-4879	-11044	1.5001	0.6809	-15193	13495	4135	11895	30320	3825	16029		1.45	Si
SLV 15	-1.59	-8343.33	-11877	-10557	-13964	1.5001	0.1426	-58778	16250	1043	11895	30320	3825	12937		0.93	No
SLV 15	1.11	3461.38	-6130	-5449	-12709	1.5001	0.5561	-19677	14439	3613	11895	30320	3825	15508		1.22	Si
SLD 16	-1.59	-7125.52	-10292	-9149	-8986	1.5001	0.1732	-49770	16250	1266	11895	30320	3825	13161		1.46	Si
SLD 16	1.11	2582.65	-5530	-4916	-8035	1.5001	0.8491	-12687	12969	4955	11895	30320	3825	16850		2.1	Si
SLV 13	-1.59	-7774.37	-11980	-10649	-12310	1.5001	0.3033	-51173	16250	2218	11895	30320	3825	14113		1.15	Si
SLV 13	1.11	3054.06	-5499	-4888	-11980	1.5001	0.584	-17066	13897	3652	11895	30320	3825	15547		1.3	Si
SLD 12	-1.59	-6969.48	-9412	-8366	-7895	1.5001	0.0287	-51183	16250	210	11895	30320	3825	12104		1.53	Si
SLD 12	1.11	2456.8	-5614	-4990	-6499	1.5001	0.9372	-11762	12778	5389	11895	30320	3825	17284		2.66	Si
SLV 11	-1.59	-7875.61	-9808	-8718	-11033	1.5001	0	-60034	16250	0	11895	30320	3825	11895		1.08	Si
SLV 11	1.11	3135.06	-6375	-5667	-8755	1.5001	0.7748	-15870	13618	4748	11895	30320	3825	16643		1.9	Si
SLV 16	-1.59	-8110.26	-11842	-10526	-13027	1.5001	0.1955	-56020	16250	1429	11895	30320	3825	13324		1.02	Si
SLV 16	1.11	3278.48	-6120	-5440	-11772	1.5001	0.643	-17720	14015	4055	11895	30320	3825	15950		1.35	Si
SLD 15	-1.59	-7225.6	-10307	-9162	-9389	1.5001	0.147	-50973	16250	1075	11895	30320	3825	12970		1.38	Si
SLD 15	1.11	2661.19	-5535	-4920	-8437	1.5001	0.8076	-13277	13091	4758	11895	30320	3825	16653		1.97	Si
SLD 11	-1.59	-7035.25	-9422	-8375	-8159	1.5001	0.01	-51925	16250	73	11895	30320	3825	11968		1.47	Si
SLD 11	1.11	2508.41	-5617	-4993	-6763	1.5001	0.9103	-12092	12845	5262	11895	30320	3825	17157		2.54	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota -0.24 Wa 0.08 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 2	179667	0.24	10989	-7418	90.17	1548.86	17.18	Si
SLV 1	179667	0.24	11127	-7511	90.17	1566.83	17.38	Si
SLV 4	179667	0.24	11371	-7676	90.17	1598.43	17.73	Si
SLV 3	179667	0.24	11509	-7769	90.17	1616.29	17.93	Si
SLV 6	179667	0.24	13379	-9031	90.17	1853.94	20.56	Si
SLV 5	179667	0.24	13468	-9091	90.17	1865.12	20.68	Si
SLV 8	179667	0.24	14653	-9891	90.17	2011.99	22.31	Si
SLV 7	179667	0.24	14742	-9952	90.17	2022.95	22.43	Si
SLV 10	179667	0.24	15788	-10658	90.17	2150.06	23.84	Si
SLV 9	179667	0.24	15878	-10718	90.17	2160.81	23.96	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = -0.24 Wa = 0.08 Ta = 0.0271

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 11	-6375	-9808	-25	1.148	910.2	0.925	18.04958	3.69946	Si
SLV 12	-6369	-9785	-25	1.149	909.6	0.925	18.06284	3.69946	Si
SLV 7	-5956	-8143	97	1.198	868.1	0.922	18.88087	3.69946	Si
SLV 8	-5950	-8121	96	1.199	867.4	0.922	18.89834	3.69946	Si
SLV 15	-6130	-11877	-224	1.157	885.6	0.923	18.20745	2.99128	Si
SLV 16	-6120	-11842	-225	1.158	884.5	0.923	18.22885	2.99128	Si
SLV 9	-4272	-10154	-188	1.5	699.8	0.909	23.97976	3.69946	Si
SLV 10	-4266	-10131	-189	1.501	699.1	0.909	24.00465	3.69946	Si
SLV 13	-5499	-11980	-273	1.244	822.2	0.919	19.68662	2.99128	Si
SLV 14	-5489	-11946	-274	1.246	821.2	0.919	19.71215	2.99128	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	1.835	SLU 84	Si
V_SLU	1.491	SLU 84	Si
PF_SLV	2.222	SLV 15	Si
V_SLV	0.926	SLV 15	No
PFFP_SLV	17.177	SLV 2	Si
R_SLV	4.879	SLV 11	Si



## Maschio 43

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-6.268	1.046	-6.268	-3.284	L2	L4	4.33	0.3	2.7	2.7	2.7			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 48	-1.59	1875.61	-91728	-0.000112	0.0004492	0.0035	4.3299	83819.15	137492.95	137492.95	73.31	No	Si
SLU 48	1.11	3980.21	-52123	-0.0000649	0.0004492	0.0035	4.3299	75786.55	93410.13	93410.13	23.47	No	Si
SLU 45	-1.59	1875.04	-90534	-0.0001104	0.0004492	0.0035	4.3299	84202.62	136498.31	136498.31	72.8	No	Si
SLU 45	1.11	3855.67	-51277	-0.0000637	0.0004492	0.0035	4.3299	75148.33	92087.95	92087.95	23.88	No	Si
SLU 50	-1.59	1846.09	-91125	-0.0001111	0.0004492	0.0035	4.3299	84017.58	136990.88	136990.88	74.21	No	Si
SLU 50	1.11	3966.39	-51730	-0.0000644	0.0004492	0.0035	4.3299	75492.82	92796.59	92796.59	23.4	No	Si
SLU 46	-1.59	1821.57	-90554	-0.0001103	0.0004492	0.0035	4.3299	84196.41	136515.26	136515.26	74.94	No	Si
SLU 46	1.11	3886.3	-51294	-0.0000638	0.0004492	0.0035	4.3299	75161.37	92114.58	92114.58	23.7	No	Si
SLU 49	-1.59	1822.14	-91748	-0.0001119	0.0004492	0.0035	4.3299	83812.27	137509.9	137509.9	75.47	No	Si
SLU 49	1.11	4010.84	-52140	-0.000065	0.0004492	0.0035	4.3299	75799.21	93436.76	93436.76	23.3	No	Si
SLU 9	-1.59	1461.58	-72884	-0.0000864	0.0004492	0.0035	4.3299	85333.77	119012.65	119012.65	81.43	No	Si
SLU 9	1.11	3156.5	-41541	-0.000051	0.0004492	0.0035	4.3299	66396.73	76868.82	76868.82	24.35	No	Si
SLU 47	-1.59	1756.41	-89965	-0.0001094	0.0004492	0.0035	4.3299	84371.62	136024.5	136024.5	77.44	No	Si
SLU 47	1.11	3892.9	-50913	-0.0000633	0.0004492	0.0035	4.3299	74867.58	91518.8	91518.8	23.51	No	Si
SLU 51	-1.59	1792.62	-91146	-0.000111	0.0004492	0.0035	4.3299	84011.04	137007.83	137007.83	76.43	No	Si
SLU 51	1.11	3997.02	-51747	-0.0000645	0.0004492	0.0035	4.3299	75505.66	92823.22	92823.22	23.22	No	Si
SLU 44	-1.59	1755.85	-88771	-0.0001078	0.0004492	0.0035	4.3299	84697.66	135029.86	135029.86	76.9	No	Si
SLU 44	1.11	3768.36	-50067	-0.0000621	0.0004492	0.0035	4.3299	74201.44	90196.61	90196.61	23.94	No	Si
SLU 43	-1.59	1844.97	-88737	-0.0001079	0.0004492	0.0035	4.3299	84706.35	135001.6	135001.6	73.17	No	Si
SLU 43	1.11	3717.31	-50038	-0.000062	0.0004492	0.0035	4.3299	74178.74	90152.23	90152.23	24.25	No	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 5	-1.59	14949.37	-69571	-0.0001019	0.0006738	0.0035	4.3299		124203.22	124203.22	8.31		Si
SLV 5	1.11	-3077.55	-40388	-0.0000486	0.0006738	0.0035	4.3299		88128.12	88128.12	28.64		Si
SLV 10	-1.59	22097.67	-77249	-0.0001234	0.0006738	0.0035	4.3299		133619.57	133619.57	6.05		Si
SLV 10	1.11	-2293.02	-43667	-0.0000511	0.0006738	0.0035	4.3299		93512.96	93512.96	40.78		Si
SLV 13	-1.59	15280.07	-86952	-0.0001241	0.0006738	0.0035	4.3299		145519.48	145519.48	9.52		Si
SLV 13	1.11	2516.29	-47172	-0.0000555	0.0006738	0.0035	4.3299		89136.59	89136.59	35.42		Si
SLV 9	-1.59	20677.81	-77008	-0.0001207	0.0006738	0.0035	4.3299		133323.37	133323.37	6.45		Si
SLV 9	1.11	-2289.48	-43349	-0.0000508	0.0006738	0.0035	4.3299		92992.07	92992.07	40.62		Si
SLV 3	-1.59	-13836.17	-63309	-0.0000925	0.0006738	0.0035	4.3299		123862.24	123862.24	8.95		Si
SLV 3	1.11	3219.72	-37690	-0.0000458	0.0006738	0.0035	4.3299		74161.61	74161.61	23.03		Si
SLV 11	-1.59	-12726.98	-80822	-0.0001121	0.0006738	0.0035	4.3299		147388.47	147388.47	11.58		Si
SLV 11	1.11	8811.62	-44648	-0.0000625	0.0006738	0.0035	4.3299		85151.1	85151.1	9.66		Si
SLV 6	-1.59	16369.23	-69813	-0.0001046	0.0006738	0.0035	4.3299		124499.42	124499.42	7.61		Si
SLV 6	1.11	-3081.09	-40705	-0.000049	0.0006738	0.0035	4.3299		88655.65	88655.65	28.77		Si
SLV 8	-1.59	-17035.56	-73627	-0.0001104	0.0006738	0.0035	4.3299		138171.98	138171.98	8.11		Si
SLV 8	1.11	8020.01	-42004	-0.0000582	0.0006738	0.0035	4.3299		80975.52	80975.52	10.1		Si
SLV 7	-1.59	-18455.42	-73385	-0.0001125	0.0006738	0.0035	4.3299		137842.55	137842.55	7.47		Si
SLV 7	1.11	8023.55	-41687	-0.0000578	0.0006738	0.0035	4.3299		80473.94	80473.94	10.03		Si
SLV 14	-1.59	17478.42	-87326	-0.0001283	0.0006738	0.0035	4.3299		145978.09	145978.09	8.35		Si
SLV 14	1.11	2510.81	-47663	-0.000056	0.0006738	0.0035	4.3299		89913.17	89913.17	35.81		Si



#### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 76	-1.59	2831.63	-106911	-77754	-12387	4.3299	4.3299	-59857	10833	14072	88358	46682	22083	68765	No	5.55	Si
SLU 76	1.11	3852.56	-60868	-44268	-11183	4.3299	4.3299	-34079	10833	14072	88358	46682	22083	68765	No	6.15	Si
SLU 79	-1.59	2921.31	-108072	-78598	-12435	4.3299	4.3299	-60507	10833	14072	88358	46682	22083	68765	No	5.53	Si
SLU 79	1.11	3926.05	-61685	-44862	-11213	4.3299	4.3299	-34536	10833	14072	88358	46682	22083	68765	No	6.13	Si
SLU 82	-1.59	3173.61	-109365	-79538	-12289	4.3299	4.3299	-61231	10833	14072	88358	46682	22083	68765	No	5.6	Si
SLU 82	1.11	3662.17	-62098	-45162	-11060	4.3299	4.3299	-34767	10833	14072	88358	46682	22083	68765	No	6.22	Si
SLU 75	-1.59	2896.79	-107501	-78182	-12367	4.3299	4.3299	-60187	10833	14072	88358	46682	22083	68765	No	5.56	Si
SLU 75	1.11	3845.96	-61249	-44545	-11153	4.3299	4.3299	-34292	10833	14072	88358	46682	22083	68765	No	6.17	Si
SLU 74	-1.59	2950.26	-107480	-78167	-12288	4.3299	4.3299	-60176	10833	14072	88358	46682	22083	68765	No	5.6	Si
SLU 74	1.11	3815.33	-61232	-44532	-11074	4.3299	4.3299	-34283	10833	14072	88358	46682	22083	68765	No	6.21	Si
SLU 83	-1.59	3227.64	-110539	-80392	-12390	4.3299	4.3299	-61888	10833	14072	88358	46682	22083	68765	No	5.55	Si
SLU 83	1.11	3756.08	-62927	-45765	-11143	4.3299	4.3299	-35231	10833	14072	88358	46682	22083	68765	No	6.17	Si
SLU 77	-1.59	2950.82	-108674	-79036	-12468	4.3299	4.3299	-60844	10833	14072	88358	46682	22083	68765	No	5.52	Si
SLU 77	1.11	3939.87	-62078	-45148	-11235	4.3299	4.3299	-34756	10833	14072	88358	46682	22083	68765	No	6.12	Si
SLU 84	-1.59	3174.17	-110559	-80407	-12469	4.3299	4.3299	-61900	10833	14072	88358	46682	22083	68765	No	5.52	Si
SLU 84	1.11	3786.71	-62944	-45777	-11221	4.3299	4.3299	-35241	10833	14072	88358	46682	22083	68765	No	6.13	Si
SLU 80	-1.59	2867.84	-108092	-78612	-12514	4.3299	4.3299	-60518	10833	14072	88358	46682	22083	68765	No	5.5	Si
SLU 80	1.11	3956.68	-61702	-44875	-11292	4.3299	4.3299	-34546	10833	14072	88358	46682	22083	68765	No	6.09	Si
SLU 78	-1.59	2897.35	-108695	-79051	-12546	4.3299	4.3299	-60856	10833	14072	88358	46682	22083	68765	No	5.48	Si
SLU 78	1.11	3970.5	-62095	-45160	-11314	4.3299	4.3299	-34766	10833	14072	88358	46682	22083	68765	No	6.08	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 15	-1.59	5258.63	-88096	-64070	-18601	4.3299	4.3299	-49323	16250	21108	88358	70023	22083	92106		4.95	Si
SLV 15	1.11	5846.62	-47561	-34590	-18368	4.3299	4.3299	-26629	16250	21108	88358	70023	22083	92106		5.01	Si
SLV 7	-1.59	-18455.42	-73385	-53371	-27627	4.3299	4.3299	-41087	16250	21108	88358	70023	22083	92106		3.33	Si
SLV 7	1.11	8023.55	-41687	-30318	-26385	4.3299	4.3299	-23340	16250	21108	88358	70023	22083	92106		3.49	Si
SLD 7	-1.59	-7089.27	-74531	-54205	-17263	4.3299	4.3299	-41728	16250	21108	88358	70023	22083	92106		5.34	Si
SLD 7	1.11	5153.12	-42286	-30753	-16252	4.3299	4.3299	-23675	16250	21108	88358	70023	22083	92106		5.67	Si
SLV 12	-1.59	-11307.12	-81063	-58955	-28184	4.3299	4.3299	-45386	16250	21108	88358	70023	22083	92106		3.27	Si
SLV 12	1.11	8808.08	-44966	-32702	-27335	4.3299	4.3299	-25175	16250	21108	88358	70023	22083	92106		3.37	Si
SLV 16	-1.59	7456.99	-88470	-64342	-16720	4.3299	4.3299	-49533	16250	21108	88358	70023	22083	92106		5.51	Si
SLV 16	1.11	5841.14	-48053	-34948	-16479	4.3299	4.3299	-26904	16250	21108	88358	70023	22083	92106		5.59	Si
SLD 8	-1.59	-6468.91	-74637	-54281	-16733	4.3299	4.3299	-41788	16250	21108	88358	70023	22083	92106		5.5	Si
SLD 8	1.11	5151.57	-42425	-30854	-15719	4.3299	4.3299	-23753	16250	21108	88358	70023	22083	92106		5.86	Si
SLD 11	-1.59	-4642.1	-77708	-56515	-18021	4.3299	4.3299	-43507	16250	21108	88358	70023	22083	92106		5.11	Si
SLD 11	1.11	5488.99	-43552	-31674	-17179	4.3299	4.3299	-24384	16250	21108	88358	70023	22083	92106		5.36	Si
SLD 12	-1.59	-4021.73	-77814	-56592	-17490	4.3299	4.3299	-43566	16250	21108	88358	70023	22083	92106		5.27	Si
SLD 12	1.11	5487.44	-43690	-31775	-16646	4.3299	4.3299	-24461	16250	21108	88358	70023	22083	92106		5.53	Si
SLV 11	-1.59	-12726.98	-80822	-58779	-29399	4.3299	4.3299	-45250	16250	21108	88358	70023	22083	92106		3.13	Si
SLV 11	1.11	8811.62	-44648	-32471	-28555	4.3299	4.3299	-24998	16250	21108	88358	70023	22083	92106		3.23	Si
SLV 8	-1.59	-17035.56	-73627	-53547	-26412	4.3299	4.3299	-41222	16250	21108	88358	70023	22083	92106		3.49	Si
SLV 8	1.11	8020.01	-42004	-30549	-25165	4.3299	4.3299	-23517	16250	21108	88358	70023	22083	92106		3.66	Si

#### Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota -0.24 Ta 0.04 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 1	-48728	0.24	173.52	5813.22	8353.9	7083.56	40.82	Si
SLV 2	-49223	0.24	173.52	5856.89	8429.63	7143.26	41.17	Si
SLV 3	-49276	0.24	173.52	5861.61	8437.87	7149.74	41.2	Si
SLV 4	-49771	0.24	173.52	5904.94	8513.6	7209.27	41.55	Si
SLV 5	-54445	0.24	173.52	6299.18	9229.7	7764.44	44.75	Si
SLV 6	-54765	0.24	173.52	6325.11	9278.66	7801.89	44.96	Si
SLV 7	-56273	0.24	173.52	6445.84	9505.48	7975.66	45.96	Si
SLV 8	-56593	0.24	173.52	6471.04	9552.11	8011.57	46.17	Si
SLV 9	-59819	0.24	173.52	6718.38	10023.24	8370.81	48.24	Si
SLV 10	-60139	0.24	173.52	6742.16	10069.89	8406.03	48.44	Si

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = -0.24 Wa = 0.05 Ta = 0.0406

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 12	-44966	-81063	-109	0.562	5071.8	0.97	8.42322	4.73917	Si
SLV 11	-44648	-80822	-109	0.566	5039.4	0.97	8.47517	4.73917	Si
SLV 10	-43667	-77249	-25	0.578	4939.5	0.97	8.66719	4.73917	Si
SLV 9	-43349	-77008	-25	0.582	4907.2	0.969	8.72234	4.73917	Si
SLV 8	-42004	-73627	-5	0.598	4770.3	0.969	8.97157	4.73917	Si
SLV 7	-41687	-73385	-5	0.602	4737.9	0.968	9.03102	4.73917	Si
SLV 6	-40705	-69813	79	0.612	4638	0.968	9.19529	4.73917	Si
SLV 5	-40388	-69571	79	0.616	4605.7	0.967	9.25832	4.73917	Si
SLV 16	-48053	-88470	-201	0.53	5386.1	0.972	7.92542	3.38993	Si
SLV 14	-47663	-87326	-176	0.534	5346.4	0.972	7.98882	3.38993	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	23.223	SLU 51	Si
V_SLU	5.481	SLU 78	Si
PF_SLV	6.047	SLV 10	Si
V_SLV	3.133	SLV 11	Si
PFFP_SLV	40.823	SLV 1	Si
R_SLV	1.777	SLV 12	Si



## Maschio 44

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.013	-3.284	-10.553	-3.284	L2	L4	0.46	0.45	2.7	2.7	2.7			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato \_Corti

fb	fk	fvk0	fmedio	$\tau_0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_m$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 75	-1.59	-330.66	-28110	-0.0005856	0.0003743	0.0035	0.46	0	1580.49	1580.49	4.78	No	Si
SLU 75	0.46	-464	-13783	-0.0001699	0.0003743	0.0035	0.46	1096.82	1997.24	1997.24	4.3	No	Si
SLU 82	-1.59	-336.12	-28741	-0.0006786	0.0003743	0.0035	0.46	0	1501.48	1501.48	4.47	No	Si
SLU 82	0.46	-476.07	-14115	-0.0001754	0.0003743	0.0035	0.46	1072.16	2014.07	2014.07	4.23	No	Si
SLU 81	-1.59	-335.62	-28748	-0.0006791	0.0003743	0.0035	0.46	0	1500.57	1500.57	4.47	No	Si
SLU 81	0.46	-475.75	-14111	-0.0001753	0.0003743	0.0035	0.46	1072.41	2013.91	2013.91	4.23	No	Si
SLU 84	-1.59	-339.43	-29059	-0.0007293	0.0003743	0.0035	0.46	0	1461.66	1461.66	4.31	No	Si
SLU 84	0.46	-480.6	-14282	-0.000178	0.0003743	0.0035	0.46	1058.77	2022.58	2022.58	4.21	No	Si
SLU 74	-1.59	-330.16	-28117	-0.0005861	0.0003743	0.0035	0.46	0	1579.58	1579.58	4.78	No	Si
SLU 74	0.46	-463.68	-13780	-0.0001698	0.0003743	0.0035	0.46	1097.05	1997.08	1997.08	4.31	No	Si
SLU 79	-1.59	-333.07	-28272	-0.0006096	0.0003743	0.0035	0.46	0	1560.18	1560.18	4.68	No	Si
SLU 79	0.46	-464.73	-13866	-0.0001709	0.0003743	0.0035	0.46	1090.88	2001.45	2001.45	4.31	No	Si
SLU 78	-1.59	-333.97	-28428	-0.0006319	0.0003743	0.0035	0.46	0	1540.67	1540.67	4.61	No	Si
SLU 78	0.46	-468.53	-13951	-0.0001724	0.0003743	0.0035	0.46	1084.64	2005.75	2005.75	4.28	No	Si
SLU 80	-1.59	-333.57	-28265	-0.0006091	0.0003743	0.0035	0.46	0	1561.1	1561.1	4.68	No	Si
SLU 80	0.46	-465.05	-13869	-0.000171	0.0003743	0.0035	0.46	1090.65	2001.61	2001.61	4.3	No	Si
SLU 77	-1.59	-333.46	-28435	-0.0006324	0.0003743	0.0035	0.46	0	1539.76	1539.76	4.62	No	Si
SLU 77	0.46	-468.21	-13948	-0.0001724	0.0003743	0.0035	0.46	1084.88	2005.59	2005.59	4.28	No	Si
SLU 83	-1.59	-338.92	-29066	-0.0007299	0.0003743	0.0035	0.46	0	1460.74	1460.74	4.31	No	Si
SLU 83	0.46	-480.28	-14279	-0.0001779	0.0003743	0.0035	0.46	1059.03	2022.42	2022.42	4.21	No	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_m$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 3	-1.59	-417.76	-18178	-0.0001926	0.0005615	0.0035	0.46		2644.61	2644.61	6.33		Si
SLD 3	0.46	-482.3	-10004	-0.0001238	0.0005615	0.0035	0.46		1866.5	1866.5	3.87		Si
SLV 6	-1.59	-240.01	-20255	-0.0001914	0.0005615	0.0035	0.46		2757.22	2757.22	11.49		Si
SLV 6	0.46	-427.03	-9532	-0.0001139	0.0005615	0.0035	0.46		1809.53	1809.53	4.24		Si
SLV 3	-1.59	-662.29	-16392	-0.0002043	0.0005615	0.0035	0.46		2530.57	2530.57	3.82		Si
SLV 3	0.46	-703.73	-10701	-0.0001539	0.0005615	0.0035	0.46		1950.64	1950.64	2.77		Si
SLV 8	-1.59	-459.85	-17299	-0.0001889	0.0005615	0.0035	0.46		2596.9	2596.9	5.65		Si
SLV 8	0.46	-462.63	-10223	-0.0001236	0.0005615	0.0035	0.46		1892.91	1892.91	4.09		Si
SLV 4	-1.59	-654.96	-16525	-0.0002048	0.0005615	0.0035	0.46		2542.27	2542.27	3.88		Si
SLV 4	0.46	-732.04	-10816	-0.0001581	0.0005615	0.0035	0.46		1964.64	1964.64	2.68		Si
SLD 2	-1.59	-386.06	-18624	-0.0001932	0.0005615	0.0035	0.46		2668.77	2668.77	6.91		Si
SLD 2	0.46	-489.75	-9971	-0.0001243	0.0005615	0.0035	0.46		1862.53	1862.53	3.8		Si
SLD 1	-1.59	-389.21	-18567	-0.000193	0.0005615	0.0035	0.46		2665.68	2665.68	6.85		Si
SLD 1	0.46	-477.59	-9921	-0.0001226	0.0005615	0.0035	0.46		1856.52	1856.52	3.89		Si
SLV 2	-1.59	-589.01	-17412	-0.0002058	0.0005615	0.0035	0.46		2603.05	2603.05	4.42		Si
SLV 2	0.46	-721.36	-10609	-0.000155	0.0005615	0.0035	0.46		1939.62	1939.62	2.69		Si
SLD 4	-1.59	-414.62	-18235	-0.0001928	0.0005615	0.0035	0.46		2647.7	2647.7	6.39		Si
SLD 4	0.46	-494.46	-10054	-0.0001255	0.0005615	0.0035	0.46		1872.51	1872.51	3.79		Si
SLV 1	-1.59	-596.33	-17279	-0.0002054	0.0005615	0.0035	0.46		2595.85	2595.85	4.35		Si
SLV 1	0.46	-693.05	-10493	-0.0001509	0.0005615	0.0035	0.46		1925.62	1925.62	2.78		Si

### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	l'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 82	-1.59	-336.12	-28741	-22993	774	0.46	0.46	-111076	10833	2242	88358	6198	2346	8544	No	11.04	Si
SLU 82	0.46	-476.07	-14115	-11292	-2945	0.46	0.46	-54549	10833	2242	88358	6198	2346	8544	No	2.9	Si
SLU 81	-1.59	-335.62	-28748	-22998	775	0.46	0.46	-111104	10833	2242	88358	6198	2346	8544	No	11.02	Si





Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 81	0.46	-475.75	-14111	-11289	-2942	0.46	0.46	-54537	10833	2242	88358	6198	2346	8544	No	2.9	Si
SLU 77	-1.59	-333.46	-28435	-22748	766	0.46	0.46	-109894	10833	2242	88358	6198	2346	8544	No	11.16	Si
SLU 77	0.46	-468.21	-13948	-11158	-2852	0.46	0.46	-53905	10833	2242	88358	6198	2346	8544	No	3	Si
SLU 75	-1.59	-330.66	-28110	-22488	756	0.46	0.46	-108637	10833	2242	88358	6198	2346	8544	No	11.31	Si
SLU 75	0.46	-464	-13783	-11027	-2835	0.46	0.46	-53269	10833	2242	88358	6198	2346	8544	No	3.01	Si
SLU 79	-1.59	-333.07	-28272	-22618	759	0.46	0.46	-109264	10833	2242	88358	6198	2346	8544	No	11.26	Si
SLU 79	0.46	-464.73	-13866	-11093	-2834	0.46	0.46	-53589	10833	2242	88358	6198	2346	8544	No	3.01	Si
SLU 80	-1.59	-333.57	-28265	-22612	757	0.46	0.46	-109236	10833	2242	88358	6198	2346	8544	No	11.28	Si
SLU 80	0.46	-465.05	-13869	-11095	-2837	0.46	0.46	-53601	10833	2242	88358	6198	2346	8544	No	3.01	Si
SLU 84	-1.59	-339.43	-29059	-23247	782	0.46	0.46	-112305	10833	2242	88358	6198	2346	8544	No	10.93	Si
SLU 84	0.46	-480.6	-14282	-11426	-2965	0.46	0.46	-55197	10833	2242	88358	6198	2346	8544	No	2.88	Si
SLU 83	-1.59	-338.92	-29066	-23253	784	0.46	0.46	-112333	10833	2242	88358	6198	2346	8544	No	10.91	Si
SLU 83	0.46	-480.28	-14279	-11423	-2962	0.46	0.46	-55184	10833	2242	88358	6198	2346	8544	No	2.88	Si
SLU 78	-1.59	-333.97	-28428	-22742	764	0.46	0.46	-109866	10833	2242	88358	6198	2346	8544	No	11.18	Si
SLU 78	0.46	-468.53	-13951	-11161	-2855	0.46	0.46	-53917	10833	2242	88358	6198	2346	8544	No	2.99	Si
SLU 74	-1.59	-330.16	-28117	-22494	757	0.46	0.46	-108665	10833	2242	88358	6198	2346	8544	No	11.28	Si
SLU 74	0.46	-463.68	-13780	-11024	-2832	0.46	0.46	-53257	10833	2242	88358	6198	2346	8544	No	3.02	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γ<sub>M</sub> = 2

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 2	-1.59	-589.01	-17412	-13930	-27	0.46	0.46	-67293	16250	3364	88358	9298	2346	11644		433.55	Si
SLV 2	0.46	-721.36	-10609	-8487	-5041	0.46	0.46	-41002	16250	3364	88358	9298	2346	11644		2.31	Si
SLD 4	-1.59	-414.62	-18235	-14588	197	0.46	0.46	-70474	16250	3364	88358	9298	2346	11644		59.21	Si
SLD 4	0.46	-494.46	-10054	-8043	-3564	0.46	0.46	-38855	16250	3364	88358	9298	2346	11644		3.27	Si
SLV 3	-1.59	-662.29	-16392	-13114	-263	0.46	0.46	-63352	16250	3364	88358	9298	2346	11644		44.2	Si
SLV 3	0.46	-703.73	-10701	-8560	-5623	0.46	0.46	-41355	16250	3364	88358	9298	2346	11644		2.07	Si
SLD 3	-1.59	-417.76	-18178	-14543	187	0.46	0.46	-70254	16250	3364	88358	9298	2346	11644		62.31	Si
SLD 3	0.46	-482.3	-10004	-8003	-3488	0.46	0.46	-38662	16250	3364	88358	9298	2346	11644		3.34	Si
SLV 8	-1.59	-459.85	-17299	-13839	-27	0.46	0.46	-66854	16250	3364	88358	9298	2346	11644		438.97	Si
SLV 8	0.46	-462.63	-10223	-8178	-4262	0.46	0.46	-39508	16250	3364	88358	9298	2346	11644		2.73	Si
SLV 4	-1.59	-654.96	-16525	-13220	-241	0.46	0.46	-63865	16250	3364	88358	9298	2346	11644		48.39	Si
SLV 4	0.46	-732.04	-10816	-8653	-5802	0.46	0.46	-41803	16250	3364	88358	9298	2346	11644		2.01	Si
SLV 1	-1.59	-596.33	-17279	-13823	-50	0.46	0.46	-66780	16250	3364	88358	9298	2346	11644		234.62	Si
SLV 1	0.46	-693.05	-10493	-8395	-4862	0.46	0.46	-40554	16250	3364	88358	9298	2346	11644		2.39	Si
SLD 2	-1.59	-386.06	-18624	-14899	288	0.46	0.46	-71976	16250	3364	88358	9298	2346	11644		40.38	Si
SLD 2	0.46	-489.75	-9971	-7977	-3253	0.46	0.46	-38535	16250	3364	88358	9298	2346	11644		3.58	Si
SLV 7	-1.59	-464.58	-17213	-13770	-41	0.46	0.46	-66523	16250	3364	88358	9298	2346	11644		282.39	Si
SLV 7	0.46	-444.35	-10148	-8118	-4147	0.46	0.46	-39218	16250	3364	88358	9298	2346	11644		2.81	Si
SLD 1	-1.59	-389.21	-18567	-14853	279	0.46	0.46	-71756	16250	3364	88358	9298	2346	11644		41.79	Si
SLD 1	0.46	-477.59	-9921	-7937	-3176	0.46	0.46	-38343	16250	3364	88358	9298	2346	11644		3.67	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCC D.M. 17-01-18 (N.T.C.)

quota -0.24 Ta 0.03 Wa 0.08 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 11	-13447	0.24	27.65	1738.59	2805.59	2272.09	82.17	Si
SLV 12	-13490	0.24	27.65	1740.02	2811.47	2275.74	82.3	Si
SLV 7	-13493	0.24	27.65	1740.11	2811.84	2275.97	82.31	Si
SLV 8	-13536	0.24	27.65	1741.51	2817.72	2279.62	82.44	Si
SLV 15	-13796	0.24	27.65	1749.44	2852.79	2301.12	83.22	Si
SLV 16	-13863	0.24	27.65	1751.32	2861.76	2306.54	83.42	Si
SLV 3	-13949	0.24	27.65	1753.64	2873.12	2313.38	83.66	Si
SLV 4	-14015	0.24	27.65	1755.36	2881.44	2318.4	83.85	Si
SLV 13	-14151	0.24	27.65	1758.7	2898.44	2328.57	84.21	Si
SLV 14	-14218	0.24	27.65	1760.24	2906.76	2333.5	84.39	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = -0.24 Wa = 0.08 Ta = 0.0271

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 6	-7228	-20255	203	0.397	814.6	0.97	5.94082	3.69946	Si
SLV 5	-7133	-20169	202	0.401	804.9	0.97	6.00326	3.69946	Si
SLV 8	-7128	-17299	165	0.406	804.4	0.97	6.07856	3.69946	Si
SLV 7	-7033	-17213	164	0.41	794.7	0.97	6.14363	3.69946	Si
SLV 10	-6432	-21825	212	0.431	733.6	0.967	6.48019	3.69946	Si
SLV 9	-6337	-21739	211	0.436	723.9	0.967	6.55779	3.69946	Si
SLV 12	-6333	-18869	174	0.442	723.4	0.967	6.64251	3.69946	Si
SLV 11	-6237	-18783	173	0.447	713.7	0.967	6.72364	3.69946	Si
SLV 2	-8147	-17412	180	0.366	908.1	0.973	5.46624	2.99128	Si
SLV 4	-8117	-16525	169	0.368	905.1	0.973	5.50103	2.99128	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	4.208	SLU 84	Si
V_SLU	2.882	SLU 84	Si
PF_SLV	2.684	SLV 4	Si
V_SLV	2.007	SLV 4	Si
PFFP_SLV	82.17	SLV 11	Si
R_SLV	1.606	SLV 6	Si

## Maschio 45

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)





## Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-8.253	-3.284	-7.463	-3.284	L2	L4	0.79	0.45	2.7	2.7	2.7			

## Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

## Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

## Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 78	0.41	1105.89	-20168	-0.0001362	0.0003743	0.0035	0.79	3527.32	5410.39	5410.39	4.89	No	Si
SLU 78	0.81	1028.43	-17199	-0.0001159	0.0003743	0.0035	0.79	3565.34	4960.95	4960.95	4.82	No	Si
SLU 84	0.41	1134.85	-20702	-0.0001406	0.0003743	0.0035	0.79	3500.08	5487.48	5487.48	4.84	No	Si
SLU 84	0.81	1054.26	-17631	-0.0001193	0.0003743	0.0035	0.79	3571.77	5043.88	5043.88	4.78	No	Si
SLU 82	0.41	1123.71	-20457	-0.0001387	0.0003743	0.0035	0.79	3513.33	5452.17	5452.17	4.85	No	Si
SLU 82	0.81	1040.97	-17414	-0.0001176	0.0003743	0.0035	0.79	3569.05	5006.51	5006.51	4.81	No	Si
SLU 77	0.41	1105.4	-20166	-0.0001361	0.0003743	0.0035	0.79	3527.4	5410.13	5410.13	4.89	No	Si
SLU 77	0.81	1028.62	-17196	-0.0001159	0.0003743	0.0035	0.79	3565.28	4960.28	4960.28	4.82	No	Si
SLU 75	0.41	1094.75	-19924	-0.0001342	0.0003743	0.0035	0.79	3537.72	5375.08	5375.08	4.91	No	Si
SLU 75	0.81	1015.14	-16982	-0.0001141	0.0003743	0.0035	0.79	3560.57	4914.93	4914.93	4.84	No	Si
SLU 74	0.41	1094.27	-19922	-0.0001342	0.0003743	0.0035	0.79	3537.79	5374.82	5374.82	4.91	No	Si
SLU 74	0.81	1015.32	-16979	-0.0001141	0.0003743	0.0035	0.79	3560.49	4914.25	4914.25	4.84	No	Si
SLU 80	0.41	1101.11	-20050	-0.0001353	0.0003743	0.0035	0.79	3532.51	5393.31	5393.31	4.9	No	Si
SLU 80	0.81	1021.83	-17095	-0.000115	0.0003743	0.0035	0.79	3563.18	4938.84	4938.84	4.83	No	Si
SLU 81	0.41	1123.23	-20456	-0.0001386	0.0003743	0.0035	0.79	3513.42	5451.91	5451.91	4.85	No	Si
SLU 81	0.81	1041.15	-17411	-0.0001176	0.0003743	0.0035	0.79	3569	5005.84	5005.84	4.81	No	Si
SLU 79	0.41	1100.62	-20048	-0.0001352	0.0003743	0.0035	0.79	3532.59	5393.05	5393.05	4.9	No	Si
SLU 79	0.81	1022.01	-17091	-0.000115	0.0003743	0.0035	0.79	3563.11	4938.17	4938.17	4.83	No	Si
SLU 83	0.41	1134.36	-20700	-0.0001406	0.0003743	0.0035	0.79	3500.18	5487.23	5487.23	4.84	No	Si
SLU 83	0.81	1054.44	-17628	-0.0001193	0.0003743	0.0035	0.79	3571.74	5043.42	5043.42	4.78	No	Si

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 4	0.41	398.87	-10397	-0.0000565	0.0005615	0.0035	0.79		3590.9	3590.9	9		Si
SLV 4	0.81	1058.38	-10761	-0.0000802	0.0005615	0.0035	0.79		3692.56	3692.56	3.49		Si
SLV 3	0.41	438.47	-10283	-0.0000573	0.0005615	0.0035	0.79		3559	3559	8.12		Si
SLV 3	0.81	1010.17	-10548	-0.0000776	0.0005615	0.0035	0.79		3633.06	3633.06	3.6		Si
SLV 11	0.41	1466.66	-14805	-0.0001136	0.0005615	0.0035	0.79		4822.58	4822.58	3.29		Si
SLV 11	0.81	413.81	-12322	-0.0000656	0.0005615	0.0035	0.79		4128.87	4128.87	9.98		Si
SLV 1	0.41	112.26	-10153	-0.000046	0.0005615	0.0035	0.79		3522.46	3522.46	31.38		Si
SLV 1	0.81	1096.21	-10272	-0.0000792	0.0005615	0.0035	0.79		3555.71	3555.71	3.24		Si
SLV 16	0.41	1406.01	-17088	-0.0001228	0.0005615	0.0035	0.79		5365.13	5365.13	3.82		Si
SLV 16	0.81	282.22	-12936	-0.0000639	0.0005615	0.0035	0.79		4300.31	4300.31	15.24		Si
SLV 15	0.41	1445.6	-16974	-0.0001236	0.0005615	0.0035	0.79		5340.54	5340.54	3.69		Si
SLV 15	0.81	234	-12723	-0.0000613	0.0005615	0.0035	0.79		4240.81	4240.81	18.12		Si
SLV 12	0.41	1441.09	-14878	-0.000113	0.0005615	0.0035	0.79		4843.19	4843.19	3.36		Si
SLV 12	0.81	444.95	-12460	-0.0000673	0.0005615	0.0035	0.79		4167.3	4167.3	9.37		Si
SLV 2	0.41	72.67	-10267	-0.0000451	0.0005615	0.0035	0.79		3554.36	3554.36	48.91		Si
SLV 2	0.81	1144.43	-10484	-0.0000818	0.0005615	0.0035	0.79		3615.21	3615.21	3.16		Si
SLV 7	0.41	1164.52	-12798	-0.0000933	0.0005615	0.0035	0.79		4261.67	4261.67	3.66		Si
SLV 7	0.81	646.66	-11670	-0.0000705	0.0005615	0.0035	0.79		3946.55	3946.55	6.1		Si
SLV 8	0.41	1138.95	-12871	-0.0000928	0.0005615	0.0035	0.79		4282.28	4282.28	3.76		Si
SLV 8	0.81	677.8	-11808	-0.0000721	0.0005615	0.0035	0.79		3984.97	3984.97	5.88		Si

## Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 83	0.41	1134.36	-20700	-16560	3545	0.79	0.79	-46583	10833	3851	88358	10645	4029	14674	No	4.14	Si
SLU 83	0.81	1054.44	-17628	-14102	1044	0.79	0.79	-39669	10833	3851	88358	10645	4029	14674	No	14.05	Si
SLU 81	0.41	1123.23	-20456	-16365	3517	0.79	0.79	-46033	10833	3851	88358	10645	4029	14674	No	4.17	Si
SLU 81	0.81	1041.15	-17411	-13929	1046	0.79	0.79	-39180	10833	3851	88358	10645	4029	14674	No	14.03	Si
SLU 74	0.41	1094.27	-19922	-15938	3382	0.79	0.79	-44832	10833	3851	88358	10645	4029	14674	No	4.34	Si
SLU 74	0.81	1015.32	-16979	-13583	997	0.79	0.79	-38208	10833	3851	88358	10645	4029	14674	No	14.72	Si
SLU 80	0.41	1101.11	-20050	-16040	3395	0.79	0.79	-45120	10833	3851	88358	10645	4029	14674	No	4.32	Si



Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 80	0.81	1021.83	-17095	-13676	1001	0.79	0.79	-38469	10833	3851	88358	10645	4029	14674	No	14.65	Si
SLU 84	0.41	1134.85	-20702	-16562	3544	0.79	0.79	-46587	10833	3851	88358	10645	4029	14674	No	4.14	Si
SLU 84	0.81	1054.26	-17631	-14105	1046	0.79	0.79	-39676	10833	3851	88358	10645	4029	14674	No	14.03	Si
SLU 77	0.41	1105.4	-20166	-16133	3410	0.79	0.79	-45382	10833	3851	88358	10645	4029	14674	No	4.3	Si
SLU 77	0.81	1028.62	-17196	-13757	995	0.79	0.79	-38696	10833	3851	88358	10645	4029	14674	No	14.75	Si
SLU 75	0.41	1094.75	-19924	-15939	3381	0.79	0.79	-44836	10833	3851	88358	10645	4029	14674	No	4.34	Si
SLU 75	0.81	1015.14	-16982	-13585	999	0.79	0.79	-38215	10833	3851	88358	10645	4029	14674	No	14.69	Si
SLU 78	0.41	1105.89	-20168	-16135	3408	0.79	0.79	-45386	10833	3851	88358	10645	4029	14674	No	4.31	Si
SLU 78	0.81	1028.43	-17199	-13759	997	0.79	0.79	-38704	10833	3851	88358	10645	4029	14674	No	14.72	Si
SLU 79	0.41	1100.62	-20048	-16039	3396	0.79	0.79	-45116	10833	3851	88358	10645	4029	14674	No	4.32	Si
SLU 79	0.81	1022.01	-17091	-13673	999	0.79	0.79	-38462	10833	3851	88358	10645	4029	14674	No	14.68	Si
SLU 82	0.41	1123.71	-20457	-16366	3516	0.79	0.79	-46037	10833	3851	88358	10645	4029	14674	No	4.17	Si
SLU 82	0.81	1040.97	-17414	-13931	1048	0.79	0.79	-39187	10833	3851	88358	10645	4029	14674	No	14	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 14	0.41	899.45	-15051	-12041	4515	0.79	0.79	-33870	16250	5777	88358	15968	4029	19997		4.43	Si
SLD 14	0.81	552.47	-12061	-9649	1577	0.79	0.79	-27141	15845	5633	88358	15968	4029	19997		12.68	Si
SLD 13	0.41	916.45	-15002	-12002	4673	0.79	0.79	-33760	16250	5777	88358	15968	4029	19997		4.28	Si
SLD 13	0.81	531.77	-11969	-9575	1684	0.79	0.79	-26935	15804	5618	88358	15968	4029	19997		11.87	Si
SLV 12	0.41	1441.09	-14878	-11903	4916	0.79	0.79	-33482	16250	5777	88358	15968	4029	19997		4.07	Si
SLV 12	0.81	444.95	-12460	-9968	1738	0.79	0.79	-28039	16025	5697	88358	15968	4029	19997		11.5	Si
SLD 15	0.41	1048.62	-15049	-12039	4938	0.79	0.79	-33865	16250	5777	88358	15968	4029	19997		4.05	Si
SLD 15	0.81	495.26	-12074	-9660	1798	0.79	0.79	-27172	15851	5635	88358	15968	4029	19997		11.12	Si
SLD 16	0.41	1031.62	-15098	-12078	4780	0.79	0.79	-33975	16250	5777	88358	15968	4029	19997		4.18	Si
SLD 16	0.81	515.97	-12166	-9733	1691	0.79	0.79	-27377	15892	5650	88358	15968	4029	19997		11.83	Si
SLV 14	0.41	1079.81	-16957	-13566	7464	0.79	0.79	-38159	16250	5777	88358	15968	4029	19997		2.68	Si
SLV 14	0.81	368.27	-12659	-10127	2736	0.79	0.79	-28487	16114	5729	88358	15968	4029	19997		7.31	Si
SLV 15	0.41	1445.6	-16974	-13579	8447	0.79	0.79	-38196	16250	5777	88358	15968	4029	19997		2.37	Si
SLV 15	0.81	234	-12723	-10178	3240	0.79	0.79	-28631	16143	5739	88358	15968	4029	19997		6.17	Si
SLV 16	0.41	1406.01	-17088	-13670	8080	0.79	0.79	-38453	16250	5777	88358	15968	4029	19997		2.47	Si
SLV 16	0.81	282.22	-12936	-10349	2989	0.79	0.79	-29110	16239	5773	88358	15968	4029	19997		6.69	Si
SLV 13	0.41	1119.4	-16843	-13474	7832	0.79	0.79	-37902	16250	5777	88358	15968	4029	19997		2.55	Si
SLV 13	0.81	320.05	-12446	-9957	2987	0.79	0.79	-28008	16018	5695	88358	15968	4029	19997		6.69	Si
SLV 11	0.41	1466.66	-14805	-11844	5153	0.79	0.79	-33316	16250	5777	88358	15968	4029	19997		3.88	Si
SLV 11	0.81	413.81	-12322	-9858	1900	0.79	0.79	-27730	15963	5675	88358	15968	4029	19997		10.52	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRDM D.M. 17-01-18 (N.T.C.)

quota -0.24 Ta 0.03 Wa 0.08 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 4	-10569	0.24	47.49	1915.08	2596.35	2255.71	47.5	Si
SLV 3	-10609	0.24	47.49	1920.54	2605.3	2262.92	47.65	Si
SLV 2	-10848	0.24	47.49	1953.13	2659.22	2306.17	48.56	Si
SLV 1	-10888	0.24	47.49	1958.49	2668.18	2313.33	48.71	Si
SLV 8	-12894	0.24	47.49	2212.08	3102.72	2657.4	55.96	Si
SLV 7	-12919	0.24	47.49	2215.11	3108.16	2661.63	56.05	Si
SLV 6	-13824	0.24	47.49	2318.44	3293.56	2806	59.09	Si
SLV 5	-13850	0.24	47.49	2321.27	3298.7	2809.98	59.17	Si
SLV 12	-15159	0.24	47.49	2458.45	3556.7	3007.58	63.33	Si
SLV 11	-15185	0.24	47.49	2461	3561.59	3011.29	63.41	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = -0.24 Wa = 0.08 Ta = 0.0271

Comb.	N top	N base	V orto	α0	M*	e*	α0*	aLim	Verifica
SLV 12	-11167	-18685	52	0.454	1272	0.968	6.81528	3.69946	Si
SLV 11	-11038	-18642	51	0.458	1258.9	0.967	6.87899	3.69946	Si
SLV 8	-10423	-19803	-36	0.48	1196.3	0.966	7.21696	3.69946	Si
SLV 7	-10294	-19759	-37	0.484	1183.2	0.966	7.28764	3.69946	Si
SLV 16	-10766	-17574	351	0.441	1231.2	0.967	6.62733	2.99128	Si
SLV 15	-10566	-17507	350	0.447	1210.9	0.966	6.72674	2.99128	Si
SLV 10	-7441	-19203	611	0.553	893	0.955	8.4077	3.69946	Si
SLV 9	-7311	-19160	610	0.56	879.8	0.955	8.52747	3.69946	Si
SLV 14	-9648	-17730	519	0.463	1117.5	0.964	6.9815	2.99128	Si
SLV 13	-9448	-17662	518	0.47	1097.1	0.963	7.09906	2.99128	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	4.783	SLU 83	Si
V_SLU	4.139	SLU 83	Si
PF_SLV	3.159	SLV 2	Si
V_SLV	2.367	SLV 15	Si
PFFP_SLV	47.501	SLV 4	Si
R_SLV	1.842	SLV 12	Si

## Maschio 46

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-6.463	-3.284	-3.233	-3.284	L2	L4	3.23	0.45	2.7	2.7	2.7			



## Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	t0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

## Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

## Rinforzo a matrice inorganica

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	elim,conv / e,CNR DT-200							CRM / Fibrenet?			
									αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 79	0.41	-16070.53	-48342	-0.0000905	0.0003743	0.0035	3.23	52568.3	61479.09	61479.09	3.83	No	Si
SLU 79	0.81	-9194.96	-47044	-0.0000731	0.0003743	0.0035	3.23	51823.17	60587.22	60587.22	6.59	No	Si
SLU 83	0.41	-16312.62	-49648	-0.0000928	0.0003743	0.0035	3.23	53280.44	62388.56	62388.56	3.82	No	Si
SLU 83	0.81	-9280.68	-48349	-0.0000749	0.0003743	0.0035	3.23	52572.3	61484.02	61484.02	6.62	No	Si
SLU 78	0.41	-16202.36	-48654	-0.0000912	0.0003743	0.0035	3.23	52741.51	61694.82	61694.82	3.81	No	Si
SLU 78	0.81	-9266.84	-47355	-0.0000736	0.0003743	0.0035	3.23	52005.2	60799.93	60799.93	6.56	No	Si
SLU 75	0.41	-15976.19	-48020	-0.0000898	0.0003743	0.0035	3.23	52386.65	61256.38	61256.38	3.83	No	Si
SLU 75	0.81	-9113.79	-46722	-0.0000725	0.0003743	0.0035	3.23	51632.38	60367.64	60367.64	6.62	No	Si
SLU 76	0.41	-15871.24	-47731	-0.0000892	0.0003743	0.0035	3.23	52221.88	61057.39	61057.39	3.85	No	Si
SLU 76	0.81	-9047.21	-46433	-0.0000719	0.0003743	0.0035	3.23	51459.42	60171.46	60171.46	6.65	No	Si
SLU 74	0.41	-15960.05	-48007	-0.0000898	0.0003743	0.0035	3.23	52379.08	61247.18	61247.18	3.84	No	Si
SLU 74	0.81	-9110.61	-46708	-0.0000724	0.0003743	0.0035	3.23	51624.44	60358.57	60358.57	6.63	No	Si
SLU 82	0.41	-16102.57	-49027	-0.0000915	0.0003743	0.0035	3.23	52946.6	61954.7	61954.7	3.85	No	Si
SLU 82	0.81	-9130.81	-47729	-0.0000738	0.0003743	0.0035	3.23	52220.87	61056.19	61056.19	6.69	No	Si
SLU 80	0.41	-16086.66	-48356	-0.0000905	0.0003743	0.0035	3.23	52575.77	61488.32	61488.32	3.82	No	Si
SLU 80	0.81	-9198.14	-47057	-0.0000731	0.0003743	0.0035	3.23	51831.01	60596.32	60596.32	6.59	No	Si
SLU 84	0.41	-16328.75	-49661	-0.0000929	0.0003743	0.0035	3.23	53287.53	62397.92	62397.92	3.82	No	Si
SLU 84	0.81	-9283.86	-48363	-0.000075	0.0003743	0.0035	3.23	52579.76	61493.26	61493.26	6.62	No	Si
SLU 77	0.41	-16186.23	-48640	-0.0000911	0.0003743	0.0035	3.23	52734.13	61685.56	61685.56	3.81	No	Si
SLU 77	0.81	-9263.66	-47342	-0.0000736	0.0003743	0.0035	3.23	51997.44	60790.8	60790.8	6.56	No	Si

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 2	0.41	-16273.17	-29320	-0.0000644	0.0005615	0.0035	3.23		45207.05	45207.05	2.78		Si
SLD 2	0.81	-9169.54	-28622	-0.000049	0.0005615	0.0035	3.23		44306.9	44306.9	4.83		Si
SLD 1	0.41	-15883.37	-29059	-0.0000633	0.0005615	0.0035	3.23		44869.57	44869.57	2.82		Si
SLD 1	0.81	-9006.32	-28360	-0.0000484	0.0005615	0.0035	3.23		43970.63	43970.63	4.88		Si
SLV 2	0.41	-23188.73	-24256	-0.0000872	0.0005615	0.0035	2.584		38561.81	38561.81	1.66		Si
SLV 2	0.81	-12992.23	-23956	-0.0000515	0.0005615	0.0035	3.23		38156.14	38156.14	2.94		Si
SLV 1	0.41	-22280.95	-23647	-0.000083	0.0005615	0.0035	2.584		37737.98	37737.98	1.69		Si
SLV 1	0.81	-12612.1	-23347	-0.0000501	0.0005615	0.0035	3.23		37333.26	37333.26	2.96		Si
SLD 4	0.41	-15058	-30243	-0.000063	0.0005615	0.0035	3.23		46400.9	46400.9	3.08		Si
SLD 4	0.81	-7208.75	-29379	-0.0000459	0.0005615	0.0035	3.23		45283.38	45283.38	6.28		Si
SLD 3	0.41	-14668.2	-29982	-0.0000619	0.0005615	0.0035	3.23		46062.03	46062.03	3.14		Si
SLD 3	0.81	-7045.52	-29118	-0.0000453	0.0005615	0.0035	3.23		44945.7	44945.7	6.38		Si
SLV 4	0.41	-20185.88	-26526	-0.0000728	0.0005615	0.0035	3.23		41604.3	41604.3	2.06		Si
SLV 4	0.81	-8203.18	-25855	-0.000044	0.0005615	0.0035	3.23		40721.28	40721.28	4.96		Si
SLV 6	0.41	-19503.07	-27060	-0.0000709	0.0005615	0.0035	3.23		42302.58	42302.58	2.17		Si
SLV 6	0.81	-15717.4	-26835	-0.0000606	0.0005615	0.0035	3.23		42008.2	42008.2	2.67		Si
SLV 5	0.41	-18916.76	-26667	-0.0000688	0.0005615	0.0035	3.23		41789.08	41789.08	2.21		Si
SLV 5	0.81	-15471.89	-26441	-0.0000596	0.0005615	0.0035	3.23		41493.27	41493.27	2.68		Si
SLV 3	0.41	-19278.11	-25916	-0.0000696	0.0005615	0.0035	3.23		40802.93	40802.93	2.12		Si
SLV 3	0.81	-7823.05	-25245	-0.0000425	0.0005615	0.0035	3.23		39903.58	39903.58	5.1		Si

## Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 74	0.41	-15960.05	-48007	-42672	-17110	3.23	3.23	-29358	10833	15746	30925	43524	8236	46672	No	2.73	Si
SLU 74	0.81	-9110.61	-46708	-41519	-17110	3.23	3.23	-28565	10753	15630	30925	43524	8236	46555	No	2.72	Si
SLU 83	0.41	-16312.62	-49648	-44131	-17566	3.23	3.23	-30362	10833	15746	30925	43524	8236	46672	No	2.66	Si
SLU 83	0.81	-9280.68	-48349	-42977	-17566	3.23	3.23	-29568	10833	15746	30925	43524	8236	46672	No	2.66	Si
SLU 79	0.41	-16070.53	-48342	-42971	-17175	3.23	3.23	-29564	10833	15746	30925	43524	8236	46672	No	2.72	Si
SLU 79	0.81	-9194.96	-47044	-41817	-17175	3.23	3.23	-28770	10780	15669	30925	43524	8236	46595	No	2.71	Si
SLU 80	0.41	-16086.66	-48356	-42983	-17207	3.23	3.23	-29572	10833	15746	30925	43524	8236	46672	No	2.71	Si
SLU 80	0.81	-9198.14	-47057	-41829	-17207	3.23	3.23	-28778	10782	15671	30925	43524	8236	46596	No	2.71	Si
SLU 82	0.41	-16102.57	-49027	-43580	-17415	3.23	3.23	-29983	10833	15746	30925	43524	8236	46672	No	2.68	Si
SLU 82	0.81	-9130.81	-47729	-42426	-17415	3.23	3.23	-29189	10833	15746	30925	43524	8236	46672	No	2.68	Si
SLU 75	0.41	-15976.19	-48020	-42684	-17142	3.23	3.23	-29367	10833	15746	30925	43524	8236	46672	No	2.72	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 75	0.81	-9113.79	-46722	-41530	-17142	3.23	3.23	-28573	10754	15631	30925	43524	8236	46557	No	2.72	Si
SLU 84	0.41	-16328.75	-49661	-44143	-17598	3.23	3.23	-30370	10833	15746	30925	43524	8236	46672	No	2.65	Si
SLU 84	0.81	-9283.86	-48363	-42989	-17598	3.23	3.23	-29576	10833	15746	30925	43524	8236	46672	No	2.65	Si
SLU 77	0.41	-16186.23	-48640	-43236	-17292	3.23	3.23	-29746	10833	15746	30925	43524	8236	46672	No	2.7	Si
SLU 77	0.81	-9263.66	-47342	-42082	-17292	3.23	3.23	-28952	10805	15705	30925	43524	8236	46630	No	2.7	Si
SLU 81	0.41	-16086.44	-49014	-43568	-17383	3.23	3.23	-29974	10833	15746	30925	43524	8236	46672	No	2.68	Si
SLU 81	0.81	-9127.63	-47716	-42414	-17383	3.23	3.23	-29181	10833	15746	30925	43524	8236	46672	No	2.68	Si
SLU 78	0.41	-16202.36	-48654	-43248	-17325	3.23	3.23	-29754	10833	15746	30925	43524	8236	46672	No	2.69	Si
SLU 78	0.81	-9266.84	-47355	-42094	-17325	3.23	3.23	-28960	10806	15706	30925	43524	8236	46632	No	2.69	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 7	0.41	-8907.28	-34233	-30429	-20358	3.23	3.23	-20935	14604	21226	30925	65286	8236	52152		2.56	Si
SLV 7	0.81	491.6	-32769	-29128	-20110	3.23	3.23	-20040	14425	20966	30925	65286	8236	51892		2.58	Si
SLD 2	0.41	-16273.17	-29320	-26063	-18219	3.23	3.18	-17931	14003	20038	30925	65286	8236	50963		2.8	Si
SLD 2	0.81	-9169.54	-28622	-25441	-18164	3.23	3.23	-17504	13917	20229	30925	65286	8236	51154		2.82	Si
SLV 1	0.41	-22280.95	-23647	-21019	-25283	2.584	2.0183	0	0	0	30925	52229	6589	30925		1.22	Si
SLV 1	0.81	-12612.1	-23347	-20753	-25154	3.23	3.2244	-14278	13272	19258	30925	65286	8236	50183		2	Si
SLV 2	0.41	-23188.73	-24256	-21561	-26602	2.584	1.977	0	0	0	30925	52229	6589	30925		1.16	Si
SLV 2	0.81	-12992.23	-23956	-21294	-26473	3.23	3.218	-14650	13347	19327	30925	65286	8236	50253		1.9	Si
SLV 3	0.41	-19278.11	-25916	-23037	-27841	3.23	2.6134	-19782	14373	16903	30925	65286	8236	47829		1.72	Si
SLV 3	0.81	-7823.05	-25245	-22440	-27597	3.23	3.23	-15439	13504	19629	30925	65286	8236	50554		1.83	Si
SLD 1	0.41	-15883.37	-29059	-25830	-17652	3.23	3.2052	-17771	13971	20151	30925	65286	8236	51076		2.89	Si
SLD 1	0.81	-9006.32	-28360	-25209	-17597	3.23	3.23	-17344	13885	20182	30925	65286	8236	51108		2.9	Si
SLD 4	0.41	-15058	-30243	-26883	-19266	3.23	3.23	-18495	14116	20517	30925	65286	8236	51443		2.67	Si
SLD 4	0.81	-7208.75	-29379	-26115	-19162	3.23	3.23	-17967	14010	20364	30925	65286	8236	51289		2.68	Si
SLV 8	0.41	-9493.59	-34626	-30779	-21210	3.23	3.23	-21176	14652	21296	30925	65286	8236	52222		2.46	Si
SLV 8	0.81	246.09	-33163	-29478	-20962	3.23	3.23	-20281	14473	21036	30925	65286	8236	51962		2.48	Si
SLD 3	0.41	-14668.2	-29982	-26650	-18700	3.23	3.23	-18335	14084	20471	30925	65286	8236	51396		2.75	Si
SLD 3	0.81	-7045.52	-29118	-25882	-18596	3.23	3.23	-17807	13978	20317	30925	65286	8236	51243		2.76	Si
SLV 4	0.41	-20185.88	-26526	-23578	-29160	3.23	2.562	-20661	14549	16774	30925	65286	8236	47699		1.64	Si
SLV 4	0.81	-8203.18	-25855	-22982	-28916	3.23	3.23	-15811	13579	19737	30925	65286	8236	50662		1.75	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota -0.24 Wa 0.08 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 1	179667	0.24	12432	-18070	194.16	3734.75	19.24	Si
SLV 3	179667	0.24	12833	-18653	194.16	3844.2	19.8	Si
SLV 2	179667	0.24	12834	-18654	194.16	3844.36	19.8	Si
SLV 4	179667	0.24	13235	-19236	194.16	3953.12	20.36	Si
SLV 5	179667	0.24	15431	-22429	194.16	4536.54	23.37	Si
SLV 6	179667	0.24	15690	-22806	194.16	4604.08	23.71	Si
SLV 7	179667	0.24	16767	-24371	194.16	4881.51	25.14	Si
SLV 8	179667	0.24	17027	-24748	194.16	4947.57	25.48	Si
SLV 9	179667	0.24	18341	-26659	194.16	5277.88	27.18	Si
SLV 10	179667	0.24	18601	-27036	194.16	5342.19	27.51	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = -0.24 Wa = 0.08 Ta = 0.0271

Comb.	N top	N base	V orto	α0	M*	e*	α0*	aLim	Verifica
SLV 12	-34105	-23353	609	0.557	4025.5	0.959	8.43956	3.69946	Si
SLV 11	-33804	-22984	609	0.561	3994.8	0.959	8.50003	3.69946	Si
SLV 8	-30349	-17931	463	0.614	3643.6	0.955	9.33786	3.69946	Si
SLV 7	-30047	-17563	463	0.619	3613	0.955	9.41366	3.69946	Si
SLV 16	-36623	-31531	692	0.525	4281.6	0.961	7.93983	2.99128	Si
SLV 10	-28541	-28360	359	0.647	3459.9	0.953	9.86351	3.69946	Si
SLV 15	-36156	-30960	692	0.53	4234.1	0.961	8.02167	2.99128	Si
SLV 9	-28239	-27991	360	0.652	3429.3	0.953	9.94892	3.69946	Si
SLV 14	-34954	-33033	617	0.546	4111.8	0.96	8.2714	2.99128	Si
SLV 13	-34487	-32462	617	0.552	4064.3	0.96	8.36115	2.99128	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.808	SLU 78	Si
V_SLU	2.652	SLU 84	Si
PF_SLV	1.663	SLV 2	Si
V_SLV	1.163	SLV 2	Si
PFFP_SLV	19.236	SLV 1	Si
R_SLV	2.281	SLV 12	Si

## Maschio 47

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)



## Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-2.233	-3.284	-0.123	-3.284	L2	L4	2.11	0.45	2.7	2.7	2.7			

## Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

## Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

## Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 40	0.41	-1161.59	-25192	-0.0000483	0.0003743	0.0035	2.11	19651.69	22633.48	22633.48	19.48	No	Si
SLU 40	0.81	470.14	-24465	-0.0000435	0.0003743	0.0035	2.11	19278.71	20803.66	20803.66	44.25	No	Si
SLU 41	0.41	-1153.76	-25544	-0.0000489	0.0003743	0.0035	2.11	19827.84	22859.56	22859.56	19.81	No	Si
SLU 41	0.81	503.8	-24814	-0.0000443	0.0003743	0.0035	2.11	19459.11	21022.66	21022.66	41.73	No	Si
SLU 73	0.41	-1228.01	-28613	-0.000055	0.0003743	0.0035	2.11	21251.82	24761.26	24761.26	20.16	No	Si
SLU 73	0.81	661.41	-27655	-0.0000503	0.0003743	0.0035	2.11	20829.35	22823.84	22823.84	34.51	No	Si
SLU 31	0.41	-1085.11	-24019	-0.0000458	0.0003743	0.0035	2.11	19043.84	21884.31	21884.31	20.17	No	Si
SLU 31	0.81	489.89	-23284	-0.0000415	0.0003743	0.0035	2.11	18647.75	20066.27	20066.27	40.96	No	Si
SLU 83	0.41	-1296.66	-30138	-0.0000582	0.0003743	0.0035	2.11	21882.9	25635.52	25635.52	19.77	No	Si
SLU 83	0.81	675.31	-29185	-0.0000532	0.0003743	0.0035	2.11	21494.67	23811.03	23811.03	35.26	No	Si
SLU 82	0.41	-1304.49	-29787	-0.0000576	0.0003743	0.0035	2.11	21741.99	25447.12	25447.12	19.51	No	Si
SLU 82	0.81	641.65	-28837	-0.0000524	0.0003743	0.0035	2.11	21347.56	23585.01	23585.01	36.76	No	Si
SLU 39	0.41	-1154.69	-25181	-0.0000482	0.0003743	0.0035	2.11	19645.82	22626.02	22626.02	19.59	No	Si
SLU 39	0.81	473.16	-24456	-0.0000435	0.0003743	0.0035	2.11	19273.71	20797.64	20797.64	43.95	No	Si
SLU 42	0.41	-1160.65	-25555	-0.0000489	0.0003743	0.0035	2.11	19833.62	22867.06	22867.06	19.7	No	Si
SLU 42	0.81	500.77	-24824	-0.0000443	0.0003743	0.0035	2.11	19464.04	21028.7	21028.7	41.99	No	Si
SLU 84	0.41	-1303.55	-30150	-0.0000582	0.0003743	0.0035	2.11	21887.51	25641.63	25641.63	19.67	No	Si
SLU 84	0.81	672.28	-29195	-0.0000532	0.0003743	0.0035	2.11	21498.69	23817.26	23817.26	35.43	No	Si
SLU 81	0.41	-1297.59	-29775	-0.0000575	0.0003743	0.0035	2.11	21737.28	25440.77	25440.77	19.61	No	Si
SLU 81	0.81	644.67	-28827	-0.0000524	0.0003743	0.0035	2.11	21343.47	23578.79	23578.79	36.57	No	Si

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 1	0.41	-3004.99	-11015	-0.0000316	0.0005615	0.0035	2.11		12137.76	12137.76	4.04		Si
SLV 1	0.81	1067.41	-8690	-0.0000188	0.0005615	0.0035	2.11		8955.87	8955.87	8.39		Si
SLV 3	0.41	-4165.48	-11332	-0.0000376	0.0005615	0.0035	2.11		12429.91	12429.91	2.98		Si
SLV 3	0.81	-1087.18	-8745	-0.000019	0.0005615	0.0035	2.11		10000.02	10000.02	9.2		Si
SLV 10	0.41	1897.37	-22309	-0.0000457	0.0005615	0.0035	2.11		20492.43	20492.43	10.8		Si
SLV 10	0.81	4267.88	-22486	-0.0000574	0.0005615	0.0035	2.11		20634.75	20634.75	4.83		Si
SLV 8	0.41	-3760.53	-18245	-0.0000475	0.0005615	0.0035	2.11		18564.84	18564.84	4.94		Si
SLV 8	0.81	-3292.36	-16460	-0.0000422	0.0005615	0.0035	2.11		17034.43	17034.43	5.17		Si
SLV 5	0.41	366	-16742	-0.0000289	0.0005615	0.0035	2.11		16059.57	16059.57	43.88		Si
SLV 5	0.81	3993.84	-15957	-0.0000447	0.0005615	0.0035	2.11		15442.21	15442.21	3.87		Si
SLV 4	0.41	-4565.32	-12023	-0.0000407	0.0005615	0.0035	2.11		13062.39	13062.39	2.86		Si
SLV 4	0.81	-1248.58	-9242	-0.0000206	0.0005615	0.0035	2.11		10477.69	10477.69	8.39		Si
SLV 9	0.41	2155.62	-21863	-0.0000461	0.0005615	0.0035	2.11		20133.46	20133.46	9.34		Si
SLV 9	0.81	4372.12	-22164	-0.0000573	0.0005615	0.0035	2.11		20375.85	20375.85	4.66		Si
SLV 2	0.41	-3404.83	-11705	-0.0000347	0.0005615	0.0035	2.11		12771.55	12771.55	3.75		Si
SLV 2	0.81	906.01	-9187	-0.0000189	0.0005615	0.0035	2.11		9430.73	9430.73	10.41		Si
SLV 7	0.41	-3502.28	-17799	-0.0000455	0.0005615	0.0035	2.11		18187.87	18187.87	5.19		Si
SLV 7	0.81	-3188.11	-16139	-0.0000412	0.0005615	0.0035	2.11		16750.46	16750.46	5.25		Si
SLV 6	0.41	107.75	-17188	-0.0000285	0.0005615	0.0035	2.11		16410.84	16410.84	152.3		Si
SLV 6	0.81	3889.6	-16278	-0.0000447	0.0005615	0.0035	2.11		15694.63	15694.63	4.04		Si

## Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 77	0.41	-1222.28	-29516	-26236	-5191	2.11	2.11	-27631	10629	10092	30925	28432	5381	33813	No	6.51	Si
SLU 77	0.81	741.5	-28545	-25374	-5276	2.11	2.11	-26723	10508	9977	30925	28432	5381	33813	No	6.41	Si
SLU 72	0.41	-1304.49	-29787	-26477	-5093	2.11	2.11	-27885	10662	10124	30925	28432	5381	33813	No	6.64	Si
SLU 82	0.81	641.65	-28837	-25633	-5178	2.11	2.11	-26996	10544	10011	30925	28432	5381	33813	No	6.53	Si
SLU 81	0.41	-1297.59	-29775	-26467	-5078	2.11	2.11	-27874	10661	10123	30925	28432	5381	33813	No	6.66	Si
SLU 81	0.81	644.67	-28827	-25624	-5163	2.11	2.11	-26987	10543	10010	30925	28432	5381	33813	No	6.55	Si
SLU 80	0.41	-1221.54	-29331	-26072	-5136	2.11	2.11	-27459	10606	10070	30925	28432	5381	33813	No	6.58	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 80	0.81	724.69	-28365	-25214	-5220	2.11	2.11	-26555	10485	9956	30925	28432	5381	33813	No	6.48	Si
SLU 83	0.41	-1296.66	-30138	-26789	-5164	2.11	2.11	-28214	10706	10166	30925	28432	5381	33813	No	6.55	Si
SLU 83	0.81	675.31	-29185	-25943	-5250	2.11	2.11	-27322	10587	10053	30925	28432	5381	33813	No	6.44	Si
SLU 79	0.41	-1214.65	-29320	-26062	-5121	2.11	2.11	-27448	10604	10069	30925	28432	5381	33813	No	6.6	Si
SLU 79	0.81	727.72	-28356	-25205	-5205	2.11	2.11	-26546	10484	9954	30925	28432	5381	33813	No	6.5	Si
SLU 84	0.41	-1303.55	-30150	-26800	-5179	2.11	2.11	-28225	10708	10167	30925	28432	5381	33813	No	6.53	Si
SLU 84	0.81	672.28	-29195	-25951	-5265	2.11	2.11	-27331	10589	10054	30925	28432	5381	33813	No	6.42	Si
SLU 74	0.41	-1223.22	-29153	-25913	-5105	2.11	2.11	-27292	10583	10049	30925	28432	5381	33813	No	6.62	Si
SLU 74	0.81	710.87	-28187	-25055	-5189	2.11	2.11	-26388	10463	9934	30925	28432	5381	33813	No	6.52	Si
SLU 78	0.41	-1229.18	-29527	-26246	-5206	2.11	2.11	-27642	10630	10093	30925	28432	5381	33813	No	6.5	Si
SLU 78	0.81	738.47	-28555	-25382	-5291	2.11	2.11	-26732	10509	9978	30925	28432	5381	33813	No	6.39	Si
SLU 75	0.41	-1230.12	-29164	-25924	-5120	2.11	2.11	-27303	10585	10050	30925	28432	5381	33813	No	6.6	Si
SLU 75	0.81	707.84	-28197	-25064	-5204	2.11	2.11	-26397	10464	9936	30925	28432	5381	33813	No	6.5	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 1	0.41	-1754.32	-16200	-14400	-5763	2.11	2.11	-15166	13450	12771	30925	42648	5381	43696		7.58	Si
SLD 1	0.81	741.45	-14795	-13151	-5613	2.11	2.11	-13851	13187	12521	30925	42648	5381	43446		7.74	Si
SLV 5	0.41	366	-16742	-14882	-8310	2.11	2.11	-15673	13551	12867	30925	42648	5381	43792		5.27	Si
SLV 5	0.81	3993.84	-15957	-14184	-8246	2.11	2.11	-14938	13404	12727	30925	42648	5381	43653		5.29	Si
SLD 2	0.41	-1926.02	-16496	-14663	-6237	2.11	2.11	-15443	13505	12823	30925	42648	5381	43749		7.01	Si
SLD 2	0.81	672.14	-15009	-13341	-6086	2.11	2.11	-14051	13227	12559	30925	42648	5381	43484		7.15	Si
SLV 6	0.41	107.75	-17188	-15278	-9024	2.11	2.11	-16091	13635	12946	30925	42648	5381	43872		4.86	Si
SLV 6	0.81	3889.6	-16278	-14469	-8958	2.11	2.11	-15239	13464	12784	30925	42648	5381	43710		4.88	Si
SLD 6	0.41	-448.67	-18845	-16751	-5851	2.11	2.11	-17642	13945	13241	30925	42648	5381	44166		7.55	Si
SLD 6	0.81	1911.71	-18041	-16037	-5853	2.11	2.11	-16889	13795	13098	30925	42648	5381	44023		7.52	Si
SLV 10	0.41	1897.37	-22309	-19830	-6242	2.11	2.11	-20885	14594	13857	30925	42648	5381	44782		7.17	Si
SLV 10	0.81	4267.88	-22486	-19987	-6477	2.11	2.11	-21050	14627	13888	30925	42648	5381	44814		6.92	Si
SLV 2	0.41	-3404.83	-11705	-10405	-9865	2.11	2.11	-10958	12608	11972	30925	42648	5381	42897		4.35	Si
SLV 2	0.81	906.01	-9187	-8167	-9429	2.11	2.11	-8601	12137	11524	30925	42648	5381	42449		4.5	Si
SLV 4	0.41	-4565.32	-12023	-10687	-7638	2.11	2.0258	-11788	12774	11645	30925	42648	5381	42571		5.57	Si
SLV 4	0.81	-1248.58	-9242	-8215	-7185	2.11	2.11	-8652	12147	11534	30925	42648	5381	42459		5.91	Si
SLV 1	0.41	-3004.99	-11015	-9791	-8761	2.11	2.11	-10312	12479	11849	30925	42648	5381	42774		4.88	Si
SLV 1	0.81	1067.41	-8690	-7724	-8327	2.11	2.11	-8135	12044	11435	30925	42648	5381	42361		5.09	Si
SLV 3	0.41	-4165.48	-11332	-10073	-6533	2.11	2.0623	-10911	12599	11692	30925	42648	5381	42617		6.52	Si
SLV 3	0.81	-1087.18	-8745	-7773	-6083	2.11	2.11	-8186	12054	11445	30925	42648	5381	42371		6.97	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota -0.24 Wa 0.08 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 1	179667	0.24	9129	-8668	126.83	1833.74	14.46	Si
SLV 3	179667	0.24	9283	-8814	126.83	1862.68	14.69	Si
SLV 2	179667	0.24	9815	-9319	126.83	1962.02	15.47	Si
SLV 4	179667	0.24	9969	-9465	126.83	1990.66	15.7	Si
SLV 5	179667	0.24	15981	-15174	126.83	3056.9	24.1	Si
SLV 6	179667	0.24	16424	-15594	126.83	3131.41	24.69	Si
SLV 7	179667	0.24	16495	-15662	126.83	3143.26	24.78	Si
SLV 8	179667	0.24	16937	-16082	126.83	3217.14	25.37	Si
SLV 9	179667	0.24	21904	-20798	126.83	4008.39	31.6	Si
SLV 10	179667	0.24	22347	-21219	126.83	4075.57	32.13	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = -0.24 Wa = 0.08 Ta = 0.0271

Comb.	N top	N base	V orto	σ0	M*	e*	a0*	aLim	Verifica
SLV 10	-20078	-25130	236	0.611	2405.9	0.956	9.28764	3.69946	Si
SLV 14	-25416	-30575	463	0.501	2948.8	0.963	7.56016	2.99128	Si
SLV 16	-25243	-28608	503	0.502	2931.1	0.963	7.57957	2.99128	Si
SLV 12	-19499	-18573	369	0.619	2347.1	0.955	9.41728	3.69946	Si
SLV 9	-19716	-24737	227	0.62	2369.1	0.955	9.43165	3.69946	Si
SLV 13	-24855	-29968	449	0.51	2891.7	0.963	7.70311	2.99128	Si
SLV 15	-24682	-28000	489	0.511	2874	0.962	7.72388	2.99128	Si
SLV 11	-19137	-18180	361	0.628	2310.3	0.954	9.56756	3.69946	Si
SLV 6	-15414	-18587	84	0.758	1932.2	0.946	11.64382	3.69946	Si
SLV 5	-15052	-18195	75	0.773	1895.5	0.946	11.87908	3.69946	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	19.485	SLU 40	Si
V_SLU	6.391	SLU 78	Si
PF_SLV	2.861	SLV 4	Si
V_SLV	4.348	SLV 2	Si
PFFP_SLV	14.458	SLV 1	Si
R_SLV	2.511	SLV 10	Si



## Maschio 48

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-5.158	1.046	-5.158	1.471	L2	L4	0.425	0.3	2.7	2.7	2.7			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 79	-1.59	-239.41	-13573	-0.0002357	0.0004492	0.0035	0.425	371.35	1568.99	1568.99	6.55	No	Si
SLU 79	0.51	388.23	-12947	-0.0002608	0.0004492	0.0035	0.425	464.85	1554.28	1554.28	4	No	Si
SLU 77	-1.59	-241.07	-13661	-0.0002379	0.0004492	0.0035	0.425	357.43	1570.26	1570.26	6.51	No	Si
SLU 77	0.51	391.05	-13034	-0.0002634	0.0004492	0.0035	0.425	452.43	1555.39	1555.39	3.98	No	Si
SLU 74	-1.59	-237.98	-13527	-0.0002344	0.0004492	0.0035	0.425	378.67	1568.31	1568.31	6.59	No	Si
SLU 74	0.51	386.25	-12900	-0.0002593	0.0004492	0.0035	0.425	471.37	1553.69	1553.69	4.02	No	Si
SLU 78	-1.59	-239.1	-13658	-0.0002373	0.0004492	0.0035	0.425	357.83	1570.23	1570.23	6.57	No	Si
SLU 78	0.51	389.32	-13032	-0.0002629	0.0004492	0.0035	0.425	452.78	1555.36	1555.36	4	No	Si
SLU 80	-1.59	-237.44	-13571	-0.0002351	0.0004492	0.0035	0.425	371.73	1568.95	1568.95	6.61	No	Si
SLU 80	0.51	386.49	-12944	-0.0002603	0.0004492	0.0035	0.425	465.19	1554.25	1554.25	4.02	No	Si
SLU 81	-1.59	-243.26	-13857	-0.0002424	0.0004492	0.0035	0.425	325.51	1573.12	1573.12	6.47	No	Si
SLU 81	0.51	394.12	-13230	-0.0002685	0.0004492	0.0035	0.425	423.86	1557.87	1557.87	3.95	No	Si
SLU 83	-1.59	-246.36	-13991	-0.000246	0.0004492	0.0035	0.425	303.07	1575.08	1575.08	6.39	No	Si
SLU 83	0.51	398.92	-13364	-0.0002728	0.0004492	0.0035	0.425	403.71	1559.56	1559.56	3.91	No	Si
SLU 84	-1.59	-244.38	-13988	-0.0002454	0.0004492	0.0035	0.425	303.49	1575.04	1575.04	6.44	No	Si
SLU 84	0.51	397.19	-13362	-0.0002722	0.0004492	0.0035	0.425	404.09	1559.53	1559.53	3.93	No	Si
SLU 75	-1.59	-236.01	-13524	-0.0002339	0.0004492	0.0035	0.425	379.05	1568.27	1568.27	6.65	No	Si
SLU 75	0.51	384.51	-12898	-0.0002588	0.0004492	0.0035	0.425	471.71	1553.66	1553.66	4.04	No	Si
SLU 82	-1.59	-241.29	-13854	-0.0002418	0.0004492	0.0035	0.425	325.92	1573.09	1573.09	6.52	No	Si
SLU 82	0.51	392.38	-13228	-0.000268	0.0004492	0.0035	0.425	424.23	1557.84	1557.84	3.97	No	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 10	-1.59	-423.06	-9839	-0.0001923	0.0006738	0.0035	0.425		1581.59	1581.59	3.74		Si
SLD 10	0.51	511.2	-9357	-0.0002019	0.0006738	0.0035	0.425		1508.78	1508.78	2.95		Si
SLD 9	-1.59	-408.88	-9830	-0.0001895	0.0006738	0.0035	0.425		1580.68	1580.68	3.87		Si
SLD 9	0.51	498.71	-9349	-0.0001994	0.0006738	0.0035	0.425		1507.74	1507.74	3.02		Si
SLV 7	-1.59	428.8	-8184	-0.00017	0.0006738	0.0035	0.425		1359.54	1359.54	3.17		Si
SLV 7	0.51	-293.9	-7701	-0.0001392	0.0006738	0.0035	0.425		1347.43	1347.43	4.58		Si
SLV 13	-1.59	-514.39	-10766	-0.0002235	0.0006738	0.0035	0.425		1670.05	1670.05	3.25		Si
SLV 13	0.51	692.4	-10350	-0.000252	0.0006738	0.0035	0.425		1603.1	1603.1	2.32		Si
SLV 14	-1.59	-564.63	-10795	-0.0002337	0.0006738	0.0035	0.425		1672.4	1672.4	2.96		Si
SLV 14	0.51	736.67	-10379	-0.0002616	0.0006738	0.0035	0.425		1605.75	1605.75	2.18		Si
SLD 14	-1.59	-336.29	-9963	-0.0001778	0.0006738	0.0035	0.425		1595.22	1595.22	4.74		Si
SLD 14	0.51	468.54	-9508	-0.000196	0.0006738	0.0035	0.425		1526.77	1526.77	3.26		Si
SLV 5	-1.59	-588.65	-9744	-0.0002224	0.0006738	0.0035	0.425		1571.28	1571.28	2.67		Si
SLV 5	0.51	609.62	-9221	-0.0002185	0.0006738	0.0035	0.425		1491.46	1491.46	2.45		Si
SLV 9	-1.59	-722.84	-10470	-0.0002601	0.0006738	0.0035	0.425		1646.27	1646.27	2.28		Si
SLV 9	0.51	797.4	-9990	-0.0002701	0.0006738	0.0035	0.425		1570.47	1570.47	1.97		Si
SLV 10	-1.59	-755.28	-10489	-0.0002674	0.0006738	0.0035	0.425		1647.79	1647.79	2.18		Si
SLV 10	0.51	825.99	-10009	-0.0002776	0.0006738	0.0035	0.425		1572.18	1572.18	1.9		Si
SLV 6	-1.59	-621.09	-9763	-0.0002289	0.0006738	0.0035	0.425		1573.35	1573.35	2.53		Si
SLV 6	0.51	638.22	-9240	-0.0002243	0.0006738	0.0035	0.425		1493.86	1493.86	2.34		Si

### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 78	-1.59	-239.1	-13658	-9933	-299	0.425	0.425	-77908	10833	1381	88358	4582	2168	6750	No	22.56	Si
SLU 78	0.51	389.32	-13032	-9478	-299	0.425	0.425	-74334	10833	1381	88358	4582	2168	6750	No	22.56	Si
SLU 74	-1.59	-237.98	-13527	-9838	-297	0.425	0.425	-77157	10833	1381	88358	4582	2168	6750	No	22.71	Si





Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 74	0.51	386.25	-12900	-9382	-297	0.425	0.425	-73583	10833	1381	88358	4582	2168	6750	No	22.71	Si
SLU 82	-1.59	-241.29	-13854	-10076	-302	0.425	0.425	-79026	10833	1381	88358	4582	2168	6750	No	22.37	Si
SLU 82	0.51	392.38	-13228	-9620	-302	0.425	0.425	-75452	10833	1381	88358	4582	2168	6750	No	22.37	Si
SLU 80	-1.59	-237.44	-13571	-9870	-297	0.425	0.425	-77409	10833	1381	88358	4582	2168	6750	No	22.72	Si
SLU 80	0.51	386.49	-12944	-9414	-297	0.425	0.425	-73835	10833	1381	88358	4582	2168	6750	No	22.72	Si
SLU 81	-1.59	-243.26	-13857	-10078	-304	0.425	0.425	-79040	10833	1381	88358	4582	2168	6750	No	22.24	Si
SLU 81	0.51	394.12	-13230	-9622	-304	0.425	0.425	-75466	10833	1381	88358	4582	2168	6750	No	22.24	Si
SLU 79	-1.59	-239.41	-13573	-9871	-299	0.425	0.425	-77423	10833	1381	88358	4582	2168	6750	No	22.58	Si
SLU 79	0.51	388.23	-12947	-9416	-299	0.425	0.425	-73849	10833	1381	88358	4582	2168	6750	No	22.58	Si
SLU 84	-1.59	-244.38	-13988	-10173	-306	0.425	0.425	-79791	10833	1381	88358	4582	2168	6750	No	22.09	Si
SLU 84	0.51	397.19	-13362	-9718	-306	0.425	0.425	-76217	10833	1381	88358	4582	2168	6750	No	22.09	Si
SLU 83	-1.59	-246.36	-13991	-10175	-307	0.425	0.425	-79805	10833	1381	88358	4582	2168	6750	No	21.97	Si
SLU 83	0.51	398.92	-13364	-9719	-307	0.425	0.425	-76231	10833	1381	88358	4582	2168	6750	No	21.97	Si
SLU 77	-1.59	-241.07	-13661	-9935	-301	0.425	0.425	-77922	10833	1381	88358	4582	2168	6750	No	22.42	Si
SLU 77	0.51	391.05	-13034	-9479	-301	0.425	0.425	-74348	10833	1381	88358	4582	2168	6750	No	22.42	Si
SLU 75	-1.59	-236.01	-13524	-9836	-295	0.425	0.425	-77143	10833	1381	88358	4582	2168	6750	No	22.84	Si
SLU 75	0.51	384.51	-12898	-9380	-295	0.425	0.425	-73569	10833	1381	88358	4582	2168	6750	No	22.84	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 10	-1.59	-755.28	-10489	-7628	-742	0.425	0.4215	-59831	16250	2055	88358	6873	2168	9041		12.19	Si
SLV 10	0.51	825.99	-10009	-7279	-749	0.425	0.3899	-57090	16250	1901	88358	6873	2168	9041		12.07	Si
SLV 6	-1.59	-621.09	-9763	-7101	-613	0.425	0.425	-55691	16250	2072	88358	6873	2168	9041		14.75	Si
SLV 6	0.51	638.22	-9240	-6720	-618	0.425	0.425	-52704	16250	2072	88358	6873	2168	9041		14.63	Si
SLV 5	-1.59	-588.65	-9744	-7087	-584	0.425	0.425	-55583	16250	2072	88358	6873	2168	9041		15.48	Si
SLV 5	0.51	609.62	-9221	-6706	-589	0.425	0.425	-52597	16250	2072	88358	6873	2168	9041		15.35	Si
SLD 6	-1.59	-366.06	-9528	-6930	-385	0.425	0.425	-54350	16250	2072	88358	6873	2168	9041		23.46	Si
SLD 6	0.51	431.21	-9029	-6567	-387	0.425	0.425	-51502	16250	2072	88358	6873	2168	9041		23.35	Si
SLV 14	-1.59	-564.63	-10795	-7851	-579	0.425	0.425	-61575	16250	2072	88358	6873	2168	9041		15.61	Si
SLV 14	0.51	736.67	-10379	-7548	-584	0.425	0.4246	-59202	16250	2070	88358	6873	2168	9041		15.47	Si
SLD 9	-1.59	-408.88	-9830	-7149	-428	0.425	0.425	-56073	16250	2072	88358	6873	2168	9041		21.13	Si
SLD 9	0.51	498.71	-9349	-6799	-431	0.425	0.425	-53326	16250	2072	88358	6873	2168	9041		20.98	Si
SLV 13	-1.59	-514.39	-10766	-7830	-534	0.425	0.425	-61408	16250	2072	88358	6873	2168	9041		16.93	Si
SLV 13	0.51	692.4	-10350	-7527	-539	0.425	0.425	-59035	16250	2072	88358	6873	2168	9041		16.76	Si
SLD 10	-1.59	-423.06	-9839	-7155	-441	0.425	0.425	-56120	16250	2072	88358	6873	2168	9041		20.52	Si
SLD 10	0.51	511.2	-9357	-6805	-444	0.425	0.425	-53373	16250	2072	88358	6873	2168	9041		20.38	Si
SLV 9	-1.59	-722.84	-10470	-7615	-713	0.425	0.425	-59723	16250	2072	88358	6873	2168	9041		12.68	Si
SLV 9	0.51	797.4	-9990	-7265	-720	0.425	0.398	-56983	16250	1940	88358	6873	2168	9041		12.56	Si
SLD 5	-1.59	-351.89	-9520	-6924	-373	0.425	0.425	-54303	16250	2072	88358	6873	2168	9041		24.26	Si
SLD 5	0.51	418.71	-9021	-6561	-374	0.425	0.425	-51455	16250	2072	88358	6873	2168	9041		24.14	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCC D.M. 17-01-18 (N.T.C.)

quota -0.24 Ta 0.04 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 3	-7361	0.24	17.03	756.32	1171.85	964.09	56.61	Si
SLV 4	-7390	0.24	17.03	757.94	1175.69	966.81	56.77	Si
SLV 7	-7760	0.24	17.03	777.48	1224.15	1000.82	58.76	Si
SLV 8	-7779	0.24	17.03	778.43	1226.5	1002.46	58.86	Si
SLV 1	-7872	0.24	17.03	783.05	1238.08	1010.56	59.34	Si
SLV 2	-7902	0.24	17.03	784.47	1241.71	1013.09	59.48	Si
SLV 11	-8610	0.24	17.03	815.66	1328.13	1071.89	62.94	Si
SLV 12	-8629	0.24	17.03	816.4	1330.34	1073.37	63.02	Si
SLV 5	-9466	0.24	17.03	844.73	1425.38	1135.05	66.64	Si
SLV 6	-9485	0.24	17.03	845.27	1427.46	1136.36	66.72	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = -0.24 Wa = 0.05 Ta = 0.0406

Comb.	N top	N base	V orto	α0	M*	e*	α0*	aLim	Verifica
SLV 10	-7371	-10489	-193	0.344	799.1	0.981	5.08892	4.73917	Si
SLV 9	-7343	-10470	-191	0.345	796.2	0.981	5.10748	4.73917	Si
SLV 14	-9265	-10795	-273	0.278	992.1	0.985	4.10609	3.38993	Si
SLV 13	-9222	-10766	-271	0.279	987.7	0.985	4.12456	3.38993	Si
SLV 16	-8906	-10327	-259	0.288	955.5	0.984	4.25827	3.38993	Si
SLV 15	-8863	-10298	-257	0.29	951.1	0.984	4.2782	3.38993	Si
SLV 12	-6173	-8929	-148	0.404	677	0.978	5.99968	4.73917	Si
SLV 11	-6145	-8910	-146	0.405	674.2	0.978	6.02577	4.73917	Si
SLV 6	-5395	-9763	-111	0.458	597.7	0.975	6.82149	4.73917	Si
SLV 5	-5367	-9744	-109	0.46	594.9	0.975	6.85536	4.73917	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.909	SLU 83	Si
V_SLV	21.966	SLU 83	Si
PF_SLV	1.903	SLV 10	Si
V_SLV	12.072	SLV 10	Si
PFFP_SLV	56.607	SLV 3	Si
R_SLV	1.074	SLV 10	Si

## Maschio 49

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)





## Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-5.158	2.271	-5.158	6.101	L2	L4	3.83	0.3	2.7	2.7	2.7			

## Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	$\tau 0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

## Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

## Rinforzo a matrice inorganica

									elim,conv / $\epsilon_{CNR}$ DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma F_d$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 79	-1.59	-36062.17	-92708	-0.0002215	0.0004492	0.0035	3.83	60300.79	118770.61	118770.61	3.29	No	Si
SLU 79	0.51	-3845.56	-87384	-0.0001276	0.0004492	0.0035	3.83	63184.07	116269.43	116269.43	30.23	No	Si
SLU 78	-1.59	-36144.94	-93375	-0.0002231	0.0004492	0.0035	3.83	59885.09	119083.93	119083.93	3.29	No	Si
SLU 78	0.51	-3896.68	-88051	-0.0001288	0.0004492	0.0035	3.83	62865.26	116582.75	116582.75	29.92	No	Si
SLU 74	-1.59	-35903.31	-92375	-0.0002204	0.0004492	0.0035	3.83	60503.75	118614.22	118614.22	3.3	No	Si
SLU 74	0.51	-3853.81	-87051	-0.0001271	0.0004492	0.0035	3.83	63338.67	116107.41	116107.41	30.13	No	Si
SLU 75	-1.59	-35768.64	-92446	-0.0002201	0.0004492	0.0035	3.83	60460.73	118647.56	118647.56	3.32	No	Si
SLU 75	0.51	-3868.19	-87122	-0.0001272	0.0004492	0.0035	3.83	63305.96	116146.38	116146.38	30.03	No	Si
SLU 83	-1.59	-36972.4	-95297	-0.0002295	0.0004492	0.0035	3.83	58619.45	119986.72	119986.72	3.25	No	Si
SLU 83	0.51	-4078.79	-89973	-0.0001323	0.0004492	0.0035	3.83	61878.79	117485.54	117485.54	28.8	No	Si
SLU 84	-1.59	-36837.73	-95368	-0.0002292	0.0004492	0.0035	3.83	58570.77	120020.07	120020.07	3.26	No	Si
SLU 84	0.51	-4093.17	-90044	-0.0001325	0.0004492	0.0035	3.83	61840.42	117518.89	117518.89	28.71	No	Si
SLU 81	-1.59	-36596.1	-94368	-0.0002264	0.0004492	0.0035	3.83	59243.79	119550.35	119550.35	3.27	No	Si
SLU 81	0.51	-4050.3	-89044	-0.0001308	0.0004492	0.0035	3.83	62368.19	117049.17	117049.17	28.9	No	Si
SLU 82	-1.59	-36461.43	-94439	-0.0002262	0.0004492	0.0035	3.83	59196.91	119583.7	119583.7	3.28	No	Si
SLU 82	0.51	-4064.68	-89115	-0.0001309	0.0004492	0.0035	3.83	62331.62	117082.51	117082.51	28.8	No	Si
SLU 80	-1.59	-35927.49	-92779	-0.0002213	0.0004492	0.0035	3.83	60257.13	118803.96	118803.96	3.31	No	Si
SLU 80	0.51	-3859.94	-87455	-0.0001277	0.0004492	0.0035	3.83	63150.72	116302.78	116302.78	30.13	No	Si
SLU 77	-1.59	-36279.61	-93304	-0.0002233	0.0004492	0.0035	3.83	59929.91	119050.59	119050.59	3.28	No	Si
SLU 77	0.51	-3882.3	-87980	-0.0001286	0.0004492	0.0035	3.83	62899.77	116549.41	116549.41	30.02	No	Si

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, $\gamma M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 5	-1.59	-35715.42	-59839	-0.0001509	0.0006738	0.0035	3.83		101425.39	101425.39	2.84		Si
SLV 5	0.51	6765.19	-55548	-0.0000834	0.0006738	0.0035	3.83		89031	89031	13.16		Si
SLD 10	-1.59	-35357.03	-64301	-0.0001568	0.0006738	0.0035	3.83		106857.53	106857.53	3.02		Si
SLD 10	0.51	1275.39	-60257	-0.0000783	0.0006738	0.0035	3.83		95584.33	95584.33	74.95		Si
SLV 13	-1.59	-47127.93	-73808	-0.000198	0.0006738	0.0035	3.83		117576.13	117576.13	2.49		Si
SLV 13	0.51	-1976.52	-70254	-0.0000933	0.0006738	0.0035	3.83		113665.64	113665.64	57.51		Si
SLV 16	-1.59	-39740.73	-73531	-0.0001807	0.0006738	0.0035	3.83		117282.98	117282.98	2.95		Si
SLV 16	0.51	-6738.87	-69994	-0.0001031	0.0006738	0.0035	3.83		113370.72	113370.72	16.82		Si
SLV 6	-1.59	-37566.97	-58939	-0.0001537	0.0006738	0.0035	3.83		100329	100329	2.67		Si
SLV 6	0.51	7129.29	-54648	-0.000083	0.0006738	0.0035	3.83		87777.63	87777.63	12.31		Si
SLV 9	-1.59	-46738.35	-65571	-0.0001853	0.0006738	0.0035	3.83		108340.46	108340.46	2.32		Si
SLV 9	0.51	5644.51	-61610	-0.0000893	0.0006738	0.0035	3.83		97328.67	97328.67	17.24		Si
SLD 14	-1.59	-35772.42	-67634	-0.0001627	0.0006738	0.0035	3.83		110685.98	110685.98	3.09		Si
SLD 14	0.51	-1962.97	-63750	-0.0000844	0.0006738	0.0035	3.83		106187.12	106187.12	54.1		Si
SLD 9	-1.59	-34548.06	-64694	-0.0001556	0.0006738	0.0035	3.83		107336.56	107336.56	3.11		Si
SLD 9	0.51	1116.31	-60650	-0.0000785	0.0006738	0.0035	3.83		96131.95	96131.95	86.12		Si
SLV 14	-1.59	-49994.66	-72414	-0.0002031	0.0006738	0.0035	3.83		116102.26	116102.26	2.32		Si
SLV 14	0.51	-1412.79	-68859	-0.0000902	0.0006738	0.0035	3.83		112079.94	112079.94	79.33		Si
SLV 10	-1.59	-48589.89	-64671	-0.0001893	0.0006738	0.0035	3.83		107307.59	107307.59	2.21		Si
SLV 10	0.51	6008.61	-60710	-0.0000888	0.0006738	0.0035	3.83		96214.6	96214.6	16.01		Si

## Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma N$	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 75	-1.59	-35768.64	-92446	-67234	-15138	3.83	3.83	-58515	10833	12447	88358	41292	19533	60825	No	4.02	Si
SLU 75	0.51	-3868.19	-87122	-63361	-15138	3.83	3.83	-55145	10833	12447	88358	41292	19533	60825	No	4.02	Si
SLU 79	-1.59	-36062.17	-92708	-67424	-15289	3.83	3.83	-58681	10833	12447	88358	41292	19533	60825	No	3.98	Si
SLU 79	0.51	-3845.56	-87384	-63552	-15289	3.83	3.83	-55311	10833	12447	88358	41292	19533	60825	No	3.98	Si
SLU 74	-1.59	-35903.31	-92375	-67182	-15209	3.83	3.83	-58470	10833	12447	88358	41292	19533	60825	No	4	Si
SLU 74	0.51	-3853.81	-87051	-63310	-15209	3.83	3.83	-55100	10833	12447	88358	41292	19533	60825	No	4	Si
SLU 84	-1.59	-36837.73	-95368	-69359	-15540	3.83	3.83	-60364	10833	12447	88358	41292	19533	60825	No	3.91	Si



Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 84	0.51	-4093.17	-90044	-65486	-15540	3.83	3.83	-56994	10833	12447	88358	41292	19533	60825	No	3.91	Si
SLU 83	-1.59	-36972.4	-95297	-69307	-15611	3.83	3.83	-60320	10833	12447	88358	41292	19533	60825	No	3.9	Si
SLU 83	0.51	-4078.79	-89973	-65435	-15611	3.83	3.83	-56949	10833	12447	88358	41292	19533	60825	No	3.9	Si
SLU 82	-1.59	-36461.43	-94439	-68683	-15375	3.83	3.83	-59776	10833	12447	88358	41292	19533	60825	No	3.96	Si
SLU 82	0.51	-4064.68	-89115	-64811	-15375	3.83	3.83	-56406	10833	12447	88358	41292	19533	60825	No	3.96	Si
SLU 78	-1.59	-36144.94	-93375	-67909	-15304	3.83	3.83	-59103	10833	12447	88358	41292	19533	60825	No	3.97	Si
SLU 78	0.51	-3896.68	-88051	-64037	-15304	3.83	3.83	-55733	10833	12447	88358	41292	19533	60825	No	3.97	Si
SLU 80	-1.59	-35927.49	-92779	-67476	-15218	3.83	3.83	-58726	10833	12447	88358	41292	19533	60825	No	4	Si
SLU 80	0.51	-3859.94	-87455	-63604	-15218	3.83	3.83	-55356	10833	12447	88358	41292	19533	60825	No	4	Si
SLU 81	-1.59	-36596.1	-94368	-68632	-15446	3.83	3.83	-59732	10833	12447	88358	41292	19533	60825	No	3.94	Si
SLU 81	0.51	-4050.3	-89044	-64759	-15446	3.83	3.83	-56361	10833	12447	88358	41292	19533	60825	No	3.94	Si
SLU 77	-1.59	-36279.61	-93304	-67858	-15375	3.83	3.83	-59058	10833	12447	88358	41292	19533	60825	No	3.96	Si
SLU 77	0.51	-3882.3	-87980	-63985	-15375	3.83	3.83	-55688	10833	12447	88358	41292	19533	60825	No	3.96	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 5	-1.59	-35715.42	-59839	-43519	-20160	3.83	3.83	-37876	16250	18671	88358	61938	19533	81471		4.04	Si
SLV 5	0.51	6765.19	-55548	-40399	-19904	3.83	3.83	-35160	16250	18671	88358	61938	19533	81471		4.09	Si
SLV 10	-1.59	-48589.89	-64671	-47033	-25925	3.83	3.491	-45963	16250	17018	88358	61938	19533	81471		3.14	Si
SLV 10	0.51	6008.61	-60710	-44153	-26153	3.83	3.83	-38427	16250	18671	88358	61938	19533	81471		3.12	Si
SLV 13	-1.59	-47127.93	-73808	-53679	-21442	3.83	3.8295	-46718	16250	18669	88358	61938	19533	81471		3.8	Si
SLV 13	0.51	-1976.52	-70254	-51093	-22244	3.83	3.83	-44468	16250	18671	88358	61938	19533	81471		3.66	Si
SLV 9	-1.59	-46738.35	-65571	-47688	-24870	3.83	3.6066	-45086	16250	17582	88358	61938	19533	81471		3.28	Si
SLV 9	0.51	5644.51	-61610	-44807	-25098	3.83	3.83	-38997	16250	18671	88358	61938	19533	81471		3.25	Si
SLD 14	-1.59	-35772.42	-67634	-49188	-16048	3.83	3.83	-42809	16250	18671	88358	61938	19533	81471		5.08	Si
SLD 14	0.51	-1962.97	-63750	-46364	-16378	3.83	3.83	-40352	16250	18671	88358	61938	19533	81471		4.97	Si
SLV 14	-1.59	-49994.66	-72414	-52665	-23075	3.83	3.6738	-48997	16250	17910	88358	61938	19533	81471		3.53	Si
SLV 14	0.51	-1412.79	-68859	-50079	-23878	3.83	3.83	-43585	16250	18671	88358	61938	19533	81471		3.41	Si
SLD 9	-1.59	-34548.06	-64694	-47051	-16928	3.83	3.83	-40949	16250	18671	88358	61938	19533	81471		4.81	Si
SLD 9	0.51	1116.31	-60650	-44109	-17023	3.83	3.83	-38389	16250	18671	88358	61938	19533	81471		4.79	Si
SLV 16	-1.59	-39740.73	-73531	-53477	-15675	3.83	3.83	-46542	16250	18671	88358	61938	19533	81471		5.2	Si
SLV 16	0.51	-6738.87	-69994	-50905	-16486	3.83	3.83	-44304	16250	18671	88358	61938	19533	81471		4.94	Si
SLV 6	-1.59	-37566.97	-58939	-42864	-21215	3.83	3.83	-37306	16250	18671	88358	61938	19533	81471		3.84	Si
SLV 6	0.51	7129.29	-54648	-39744	-20959	3.83	3.83	-34590	16250	18671	88358	61938	19533	81471		3.89	Si
SLD 10	-1.59	-35357.03	-64301	-46764	-17389	3.83	3.83	-40700	16250	18671	88358	61938	19533	81471		4.69	Si
SLD 10	0.51	1275.39	-60257	-43823	-17484	3.83	3.83	-38140	16250	18671	88358	61938	19533	81471		4.66	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRDM D.M. 17-01-18 (N.T.C.)

quota -0.24 Ta 0.04 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 2	-50793	0.24	153.48	5781.31	8549.57	7165.44	46.69	Si
SLV 4	-51805	0.24	153.48	5859.15	8698.27	7278.71	47.42	Si
SLV 1	-52187	0.24	153.48	5888.18	8754.3	7321.24	47.7	Si
SLV 3	-53199	0.24	153.48	5964.01	8902.11	7433.06	48.43	Si
SLV 6	-56601	0.24	153.48	6208.24	9399.15	7803.7	50.84	Si
SLV 5	-57502	0.24	153.48	6270.13	9529.76	7899.95	51.47	Si
SLV 8	-59975	0.24	153.48	6434.14	9869.9	8152.02	53.11	Si
SLV 7	-60875	0.24	153.48	6491.7	9993.79	8242.75	53.7	Si
SLV 10	-62380	0.24	153.48	6585.33	10200.88	8393.1	54.68	Si
SLV 9	-63281	0.24	153.48	6639.8	10324.8	8482.3	55.27	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = -0.24 Wa = 0.05 Ta = 0.0406

Comb.	N top	N base	V orto	α0	M*	e*	α0*	aLim	Verifica
SLV 9	-58432	-65571	169	0.407	6386.6	0.979	6.03952	4.73917	Si
SLV 10	-57722	-64671	171	0.411	6314.3	0.978	6.10167	4.73917	Si
SLV 11	-57288	-69294	-78	0.415	6270.1	0.978	6.16368	4.73917	Si
SLV 12	-56578	-68394	-76	0.419	6197.7	0.978	6.22961	4.73917	Si
SLV 5	-52904	-59839	-39	0.444	5823.5	0.977	6.60485	4.73917	Si
SLV 7	-51761	-63562	-286	0.448	5707	0.976	6.66179	4.73917	Si
SLV 6	-52194	-58939	-37	0.449	5751.1	0.976	6.68196	4.73917	Si
SLV 8	-51050	-62662	-284	0.453	5634.6	0.976	6.74134	4.73917	Si
SLV 13	-64676	-73808	325	0.372	7022.8	0.981	5.51226	3.38993	Si
SLV 15	-64333	-74925	251	0.375	6987.8	0.98	5.5531	3.38993	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.245	SLU 83	Si
V_SLU	3.896	SLU 83	Si
PF_SLV	2.208	SLV 10	Si
V_SLV	3.115	SLV 10	Si
PFFP_SLV	46.686	SLV 2	Si
R_SLV	1.274	SLV 9	Si

## Maschio 51

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-5.093	5.876	-3.013	5.876	L2	L4	2.08	0.45	2.7	2.7	2.7			



## Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	t0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

## Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 68	0.41	-2376.01	-20759	-0.0000472	0.0003743	0.0035	2.08	16886.37	19132.33	19132.33	8.05	No	Si
SLU 68	0.81	660.46	-19918	-0.0000369	0.0003743	0.0035	2.08	16384.98	17496.15	17496.15	26.49	No	Si
SLU 44	0.41	-2266.53	-17831	-0.0000413	0.0003743	0.0035	2.08	15073.97	17005.12	17005.12	7.5	No	Si
SLU 44	0.81	537.35	-16990	-0.0000311	0.0003743	0.0035	2.08	14518.81	15182.62	15182.62	28.25	No	Si
SLU 65	0.41	-2341.03	-20499	-0.0000465	0.0003743	0.0035	2.08	16732.6	18952.36	18952.36	8.1	No	Si
SLU 65	0.81	668.11	-19657	-0.0000365	0.0003743	0.0035	2.08	16226.43	17287.67	17287.67	25.88	No	Si
SLU 47	0.41	-2301.51	-18091	-0.0000419	0.0003743	0.0035	2.08	15242.92	17195.84	17195.84	7.47	No	Si
SLU 47	0.81	529.7	-17250	-0.0000315	0.0003743	0.0035	2.08	14692.55	15386.19	15386.19	29.05	No	Si
SLU 2	0.41	-1847.42	-14350	-0.0000329	0.0003743	0.0035	2.08	12676.37	14294.07	14294.07	7.74	No	Si
SLU 2	0.81	330.93	-13703	-0.0000244	0.0003743	0.0035	2.08	12201.53	12658.96	12658.96	38.25	No	Si
SLU 55	0.41	-2313.51	-20850	-0.000047	0.0003743	0.0035	2.08	16939.36	19194.89	19194.89	8.3	No	Si
SLU 55	0.81	740.14	-20009	-0.0000375	0.0003743	0.0035	2.08	16439.63	17568.58	17568.58	23.74	No	Si
SLU 5	0.41	-1882.39	-14611	-0.0000336	0.0003743	0.0035	2.08	12865.13	14503.51	14503.51	7.7	No	Si
SLU 5	0.81	323.28	-13963	-0.0000248	0.0003743	0.0035	2.08	12393.98	12856.41	12856.41	39.77	No	Si
SLU 46	0.41	-2179.85	-18381	-0.0000418	0.0003743	0.0035	2.08	15428.84	17408.42	17408.42	7.99	No	Si
SLU 46	0.81	718.27	-17540	-0.000033	0.0003743	0.0035	2.08	14883.78	15612.87	15612.87	21.74	No	Si
SLU 49	0.41	-2214.83	-18642	-0.0000425	0.0003743	0.0035	2.08	15594.66	17600.5	17600.5	7.95	No	Si
SLU 49	0.81	710.62	-17801	-0.0000334	0.0003743	0.0035	2.08	15054.39	15817.49	15817.49	22.26	No	Si
SLU 51	0.41	-2190.4	-18473	-0.000042	0.0003743	0.0035	2.08	15487.55	17476.16	17476.16	7.98	No	Si
SLU 51	0.81	724.69	-17632	-0.0000332	0.0003743	0.0035	2.08	14944.18	15685.05	15685.05	21.64	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 4	0.41	-2586.54	-12245	-0.0000324	0.0005615	0.0035	2.08		12923.68	12923.68	5		Si
SLV 4	0.81	1832.61	-10239	-0.0000254	0.0005615	0.0035	2.08		10264.59	10264.59	5.6		Si
SLD 2	0.41	-1985.53	-13556	-0.0000318	0.0005615	0.0035	2.08		14097.64	14097.64	7.1		Si
SLD 2	0.81	1303.85	-12444	-0.0000266	0.0005615	0.0035	2.08		12274.19	12274.19	9.41		Si
SLV 3	0.41	-2933.05	-12497	-0.0000345	0.0005615	0.0035	2.08		13153.28	13153.28	4.48		Si
SLV 3	0.81	1932.75	-10491	-0.0000263	0.0005615	0.0035	2.08		10497.99	10497.99	5.43		Si
SLD 4	0.41	-1967.7	-14517	-0.0000333	0.0005615	0.0035	2.08		14935.48	14935.48	7.59		Si
SLD 4	0.81	1316.79	-13287	-0.0000281	0.0005615	0.0035	2.08		13028	13028	9.89		Si
SLD 3	0.41	-2116.5	-14625	-0.0000342	0.0005615	0.0035	2.08		15030.14	15030.14	7.1		Si
SLD 3	0.81	1359.79	-13395	-0.0000285	0.0005615	0.0035	2.08		13124.53	13124.53	9.65		Si
SLV 2	0.41	-2633.72	-10029	-0.0000289	0.0005615	0.0035	2.08		10898.88	10898.88	4.14		Si
SLV 2	0.81	1791.16	-8288	-0.0000219	0.0005615	0.0035	2.08		8439.19	8439.19	4.71		Si
SLV 6	0.41	-1856.59	-10945	-0.0000267	0.0005615	0.0035	2.08		11737.64	11737.64	6.32		Si
SLV 6	0.81	1111.68	-10373	-0.0000222	0.0005615	0.0035	2.08		10389.54	10389.54	9.35		Si
SLD 1	0.41	-2134.32	-13664	-0.0000327	0.0005615	0.0035	2.08		14191.77	14191.77	6.65		Si
SLD 1	0.81	1346.85	-12552	-0.000027	0.0005615	0.0035	2.08		12371.59	12371.59	9.19		Si
SLV 1	0.41	-2980.23	-10281	-0.000031	0.0005615	0.0035	2.08		11130.88	11130.88	3.73		Si
SLV 1	0.81	1891.31	-8540	-0.0000228	0.0005615	0.0035	2.08		8678.45	8678.45	4.59		Si
SLV 5	0.41	-2080.39	-11108	-0.0000281	0.0005615	0.0035	2.08		11885.66	11885.66	5.71		Si
SLV 5	0.81	1176.36	-10536	-0.0000228	0.0005615	0.0035	2.08		10539.27	10539.27	8.96		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int	Vt,R	res. > 50%	c.s.	Verifica
SLU 81	0.41	-1992.95	-24742	-21992	-8675	2.08	2.08	-23497	10077	9432	30925	28028	5304	33332	No	3.84	Si
SLU 81	0.81	1475.33	-23900	-21245	-8675	2.08	2.08	-22698	9971	9333	30925	28028	5304	33332	No	3.84	Si
SLU 80	0.41	-2276.89	-23899	-21244	-8362	2.08	2.08	-22697	9971	9332	30925	28028	5304	33332	No	3.99	Si
SLU 80	0.81	1065.89	-23058	-20496	-8362	2.08	2.08	-21898	9864	9233	30925	28028	5304	33332	No	3.99	Si
SLU 78	0.41	-2301.32	-24068	-21394	-8388	2.08	2.08	-22857	9992	9352	30925	28028	5304	33332	No	3.97	Si
SLU 78	0.81	1051.83	-23227	-20646	-8388	2.08	2.08	-22058	9886	9253	30925	28028	5304	33332	No	3.97	Si
SLU 82	0.41	-2212.08	-24560	-21831	-8463	2.08	2.08	-23324	10054	9411	30925	28028	5304	33332	No	3.94	Si
SLU 82	0.81	1171.38	-23719	-21084	-8463	2.08	2.08	-22525	9948	9311	30925	28028	5304	33332	No	3.94	Si
SLU 83	0.41	-2027.93	-25002	-22224	-8744	2.08	2.08	-23744	10110	9463	30925	28028	5304	33332	No	3.81	Si
SLU 83	0.81	1467.68	-24161	-21477	-8744	2.08	2.08	-22945	10004	9363	30925	28028	5304	33332	No	3.81	Si
SLU 74	0.41	-2047.21	-23989	-21323	-8531	2.08	2.08	-22782	9982	9343	30925	28028	5304	33332	No	3.91	Si



Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 74	0.81	1363.43	-23148	-20576	-8531	2.08	2.08	-21983	9875	9243	30925	28028	5304	33332	No	3.91	Si
SLU 79	0.41	-2057.76	-24081	-21405	-8574	2.08	2.08	-22869	9994	9354	30925	28028	5304	33332	No	3.89	Si
SLU 79	0.81	1369.84	-23240	-20658	-8574	2.08	2.08	-22070	9887	9254	30925	28028	5304	33332	No	3.89	Si
SLU 84	0.41	-2247.06	-24821	-22063	-8532	2.08	2.08	-23572	10087	9442	30925	28028	5304	33332	No	3.91	Si
SLU 84	0.81	1163.73	-23980	-21315	-8532	2.08	2.08	-22773	9981	9342	30925	28028	5304	33332	No	3.91	Si
SLU 75	0.41	-2266.34	-23807	-21162	-8319	2.08	2.08	-22609	9959	9322	30925	28028	5304	33332	No	4.01	Si
SLU 75	0.81	1059.48	-22966	-20414	-8319	2.08	2.08	-21811	9853	9222	30925	28028	5304	33332	No	4.01	Si
SLU 77	0.41	-2082.19	-24250	-21555	-8600	2.08	2.08	-23029	10015	9374	30925	28028	5304	33332	No	3.88	Si
SLU 77	0.81	1355.78	-23408	-20807	-8600	2.08	2.08	-22230	9909	9274	30925	28028	5304	33332	No	3.88	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 3	0.41	-2116.5	-14625	-13000	-9826	2.08	2.08	-13889	13195	12350	30925	42042	5304	43275		4.4	Si
SLD 3	0.81	1359.79	-13395	-11907	-9753	2.08	2.08	-12721	12961	12131	30925	42042	5304	43057		4.41	Si
SLD 1	0.41	-2134.32	-13664	-12146	-9847	2.08	2.08	-12977	13012	12179	30925	42042	5304	43105		4.38	Si
SLD 1	0.81	1346.85	-12552	-11157	-9832	2.08	2.08	-11920	12801	11981	30925	42042	5304	42907		4.36	Si
SLV 4	0.41	-2586.54	-12245	-10885	-13701	2.08	2.08	-11629	12742	11927	30925	42042	5304	42852		3.13	Si
SLV 4	0.81	1832.61	-10239	-9101	-13535	2.08	2.08	-9724	12361	11570	30925	42042	5304	42496		3.14	Si
SLV 1	0.41	-2980.23	-10281	-9138	-14854	2.08	2.08	-9763	12369	11578	30925	42042	5304	42503		2.86	Si
SLV 1	0.81	1891.31	-8540	-7591	-14818	2.08	2.08	-8110	12039	11268	30925	42042	5304	42194		2.85	Si
SLD 2	0.41	-1985.53	-13556	-12050	-9367	2.08	2.08	-12874	12991	12160	30925	42042	5304	43085		4.6	Si
SLD 2	0.81	1303.85	-12444	-11061	-9353	2.08	2.08	-11817	12780	11962	30925	42042	5304	42888		4.59	Si
SLV 2	0.41	-2633.72	-10029	-8914	-13738	2.08	2.08	-9524	12321	11533	30925	42042	5304	42458		3.09	Si
SLV 2	0.81	1791.16	-8288	-7367	-13702	2.08	2.08	-7871	11991	11223	30925	42042	5304	42149		3.08	Si
SLV 5	0.41	-2080.39	-11108	-9874	-8980	2.08	2.08	-10549	12526	11725	30925	42042	5304	42650		4.75	Si
SLV 5	0.81	1176.36	-10536	-9365	-9167	2.08	2.08	-10006	12418	11623	30925	42042	5304	42548		4.64	Si
SLD 4	0.41	-1967.7	-14517	-12904	-9346	2.08	2.08	-13787	13174	12331	30925	42042	5304	43256		4.63	Si
SLD 4	0.81	1316.79	-13287	-11811	-9274	2.08	2.08	-12618	12940	12112	30925	42042	5304	43037		4.64	Si
SLV 7	0.41	-1923.12	-18496	-16441	-8860	2.08	2.08	-17566	13930	13038	30925	42042	5304	43964		4.96	Si
SLV 7	0.81	1314.5	-17038	-15145	-8612	2.08	2.08	-16181	13653	12779	30925	42042	5304	43704		5.08	Si
SLV 3	0.41	-2933.05	-12497	-11109	-14818	2.08	2.08	-11868	12790	11972	30925	42042	5304	42897		2.89	Si
SLV 3	0.81	1932.75	-10491	-9325	-14651	2.08	2.08	-9963	12409	11615	30925	42042	5304	42540		2.9	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota -0.24 Wa 0.08 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 6	179667	0.24	15993	-14970	125.03	3015.42	24.12	Si
SLV 2	179667	0.24	16007	-14982	125.03	3017.69	24.14	Si
SLV 5	179667	0.24	16441	-15389	125.03	3089.76	24.71	Si
SLV 1	179667	0.24	16701	-15632	125.03	3132.53	25.05	Si
SLV 10	179667	0.24	17253	-16149	125.03	3222.95	25.78	Si
SLV 4	179667	0.24	17383	-16271	125.03	3244.21	25.95	Si
SLV 9	179667	0.24	17701	-16568	125.03	3295.73	26.36	Si
SLV 3	179667	0.24	18077	-16920	125.03	3356.41	26.85	Si
SLV 14	179667	0.24	20206	-18912	125.03	3692.25	29.53	Si
SLV 8	179667	0.24	20582	-19264	125.03	3750.34	30	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = -0.24 Wa = 0.08 Ta = 0.0271

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	$\alpha_0^*$	aLim	Verifica
SLV 11	-18129	-22437	-15	0.664	2202.6	0.953	10.13554	3.69946	Si
SLV 12	-18083	-21582	-14	0.666	2197.9	0.953	10.15718	3.69946	Si
SLV 7	-15092	-23502	-16	0.766	1894.3	0.946	11.76707	3.69946	Si
SLV 8	-15045	-22648	-16	0.768	1889.6	0.946	11.79718	3.69946	Si
SLV 15	-19176	-20848	58	0.634	2309	0.955	9.65294	2.99128	Si
SLV 16	-19104	-19525	59	0.636	2301.7	0.955	9.68178	2.99128	Si
SLV 13	-17024	-20351	120	0.692	2090.4	0.951	10.58513	2.99128	Si
SLV 14	-16952	-19028	121	0.695	2083.1	0.95	10.62093	2.99128	Si
SLV 9	-10958	-20780	190	0.966	1475.7	0.934	15.04118	3.69946	Si
SLV 10	-10912	-19926	191	0.969	1471	0.933	15.09169	3.69946	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	7.472	SLU 47	Si
V_SLU	3.812	SLU 83	Si
PF_SLV	3.735	SLV 1	Si
V_SLV	2.847	SLV 1	Si
PFFP_SLV	24.118	SLV 6	Si
R_SLV	2.74	SLV 11	Si

## Maschio 52

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)



## Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-2.013	5.876	-0.123	5.876	L2	L4	1.89	0.45	2.7	2.7	2.7			

## Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau_0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

## Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

## Rinforzo a matrice inorganica

									elim,conv / ε_CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε <sub>fd</sub>	γF <sub>d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 58	0.41	-2679.83	-18547	-0.000051	0.0003743	0.0035	1.89	13772.92	15577.02	15577.02	5.81	No	Si
SLU 58	0.81	-989.14	-16071	-0.0000356	0.0003743	0.0035	1.89	12368.39	13931.08	13931.08	14.08	No	Si
SLU 83	0.41	-3072.36	-21382	-0.0000593	0.0003743	0.0035	1.89	15216.24	17340.19	17340.19	5.64	No	Si
SLU 83	0.81	-1286.26	-18781	-0.0000428	0.0003743	0.0035	1.89	13898.45	15724.67	15724.67	12.23	No	Si
SLU 60	0.41	-2760.93	-19040	-0.0000525	0.0003743	0.0035	1.89	14036.55	15888.88	15888.88	5.75	No	Si
SLU 60	0.81	-1089.52	-16584	-0.0000373	0.0003743	0.0035	1.89	12670.56	14275.03	14275.03	13.1	No	Si
SLU 79	0.41	-2965.62	-20663	-0.0000572	0.0003743	0.0035	1.89	14867.15	16915.39	16915.39	5.7	No	Si
SLU 79	0.81	-1184.98	-18071	-0.0000408	0.0003743	0.0035	1.89	13513.22	15268.74	15268.74	12.89	No	Si
SLU 53	0.41	-2666.86	-18455	-0.0000507	0.0003743	0.0035	1.89	13723.21	15517.84	15517.84	5.82	No	Si
SLU 53	0.81	-988.66	-15991	-0.0000355	0.0003743	0.0035	1.89	12320.79	13877.7	13877.7	14.04	No	Si
SLU 56	0.41	-2692.5	-18681	-0.0000513	0.0003743	0.0035	1.89	13844.71	15661.4	15661.4	5.82	No	Si
SLU 56	0.81	-989.56	-16187	-0.0000359	0.0003743	0.0035	1.89	12437.38	14008.82	14008.82	14.16	No	Si
SLU 74	0.41	-2952.65	-20572	-0.0000569	0.0003743	0.0035	1.89	14821.68	16858.81	16858.81	5.71	No	Si
SLU 74	0.81	-1184.49	-17991	-0.0000406	0.0003743	0.0035	1.89	13469.11	15216.59	15216.59	12.85	No	Si
SLU 81	0.41	-3046.72	-21156	-0.0000587	0.0003743	0.0035	1.89	15108.01	17206.55	17206.55	5.65	No	Si
SLU 81	0.81	-1285.36	-18584	-0.0000424	0.0003743	0.0035	1.89	13792.97	15600.81	15600.81	12.14	No	Si
SLU 62	0.41	-2786.57	-19265	-0.0000531	0.0003743	0.0035	1.89	14155.18	16031.84	16031.84	5.75	No	Si
SLU 62	0.81	-1090.42	-16781	-0.0000376	0.0003743	0.0035	1.89	12784.61	14407.24	14407.24	13.21	No	Si
SLU 77	0.41	-2978.29	-20797	-0.0000575	0.0003743	0.0035	1.89	14932.78	16993.9	16993.9	5.71	No	Si
SLU 77	0.81	-1185.39	-18187	-0.000041	0.0003743	0.0035	1.89	13577.13	15344.42	15344.42	12.94	No	Si

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, $\gamma M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 1	0.41	-3807.14	-10291	-0.0000409	0.0005615	0.0035	1.89		9959	9959	2.62		Si
SLV 1	0.81	-567.46	-7452	-0.0000166	0.0005615	0.0035	1.89		7567.9	7567.9	13.34		Si
SLD 1	0.41	-2787.52	-12425	-0.0000387	0.0005615	0.0035	1.89		11703.9	11703.9	4.2		Si
SLD 1	0.81	-670.64	-10134	-0.0000221	0.0005615	0.0035	1.89		9828.79	9828.79	14.66		Si
SLD 4	0.41	-2930.12	-12325	-0.0000393	0.0005615	0.0035	1.89		11624.29	11624.29	3.97		Si
SLD 4	0.81	-1009.08	-10232	-0.0000242	0.0005615	0.0035	1.89		9910.12	9910.12	9.82		Si
SLV 3	0.41	-4569.91	-10733	-0.0000475	0.0005615	0.0035	1.89		10325.8	10325.8	2.26		Si
SLV 3	0.81	-1436.04	-8105	-0.0000227	0.0005615	0.0035	1.89		8128.04	8128.04	5.66		Si
SLD 3	0.41	-3117.52	-12614	-0.000041	0.0005615	0.0035	1.89		11853.35	11853.35	3.8		Si
SLD 3	0.81	-1046.99	-10413	-0.0000248	0.0005615	0.0035	1.89		10060.19	10060.19	9.61		Si
SLV 7	0.41	-4024.06	-13819	-0.0000486	0.0005615	0.0035	1.89		12814.47	12814.47	3.18		Si
SLV 7	0.81	-2289.7	-11990	-0.0000349	0.0005615	0.0035	1.89		11358.89	11358.89	4.96		Si
SLD 2	0.41	-2600.11	-12137	-0.000037	0.0005615	0.0035	1.89		11475.12	11475.12	4.41		Si
SLD 2	0.81	-632.72	-9953	-0.0000215	0.0005615	0.0035	1.89		9679	9679	15.3		Si
SLV 4	0.41	-4133.46	-10060	-0.0000432	0.0005615	0.0035	1.89		9767.6	9767.6	2.36		Si
SLV 4	0.81	-1347.74	-7684	-0.0000215	0.0005615	0.0035	1.89		7768.1	7768.1	5.76		Si
SLV 2	0.41	-3370.69	-9619	-0.0000369	0.0005615	0.0035	1.89		9402.41	9402.41	2.79		Si
SLV 2	0.81	-479.16	-7031	-0.0000153	0.0005615	0.0035	1.89		7204.51	7204.51	15.04		Si
SLV 8	0.41	-3742.17	-13385	-0.0000461	0.0005615	0.0035	1.89		12467.4	12467.4	3.33		Si
SLV 8	0.81	-2232.67	-11718	-0.0000341	0.0005615	0.0035	1.89		11143.94	11143.94	4.99		Si

## Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 73	0.41	-2692.94	-19830	-17627	-8847	1.89	1.89	-20725	9708	8257	30925	25468	4820	30287	No	3.42	Si
SLU 73	0.81	-882.51	-17229	-15315	-8922	1.89	1.89	-18007	9345	7948	30925	25468	4820	30287	No	3.39	Si
SLU 82	0.41	-2913.88	-20927	-18601	-8868	1.89	1.89	-21871	9861	8386	30925	25468	4820	30287	No	3.42	Si
SLU 82	0.81	-1104.95	-18315	-16280	-8946	1.89	1.89	-19142	9497	8077	30925	25468	4820	30287	No	3.39	Si
SLU 77	0.41	-2978.29	-20797	-18486	-8821	1.89	1.89	-21735	9842	8371	30925	25468	4820	30287	No	3.43	Si
SLU 77	0.81	-1185.39	-18187	-16167	-8900	1.89	1.89	-19008	9479	8062	30925	25468	4820	30287	No	3.4	Si
SLU 78	0.41	-2845.45	-20567	-18282	-9034	1.89	1.89	-21495	9810	8344	30925	25468	4820	30287	No	3.35	Si



Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 78	0.81	-1004.99	-17918	-15927	-9113	1.89	1.89	-18727	9441	8030	30925	25468	4820	30287	No	3.32	Si
SLU 76	0.41	-2718.58	-20055	-17827	-8976	1.89	1.89	-20961	9739	8283	30925	25468	4820	30287	No	3.37	Si
SLU 76	0.81	-883.41	-17425	-15489	-9052	1.89	1.89	-18212	9373	7971	30925	25468	4820	30287	No	3.35	Si
SLU 79	0.41	-2965.62	-20663	-18368	-8750	1.89	1.89	-21596	9824	8355	30925	25468	4820	30287	No	3.46	Si
SLU 79	0.81	-1184.98	-18071	-16063	-8829	1.89	1.89	-18887	9463	8048	30925	25468	4820	30287	No	3.43	Si
SLU 83	0.41	-3072.36	-21382	-19006	-8784	1.89	1.89	-22347	9924	8440	30925	25468	4820	30287	No	3.45	Si
SLU 83	0.81	-1286.26	-18781	-16694	-8864	1.89	1.89	-19628	9562	8132	30925	25468	4820	30287	No	3.42	Si
SLU 84	0.41	-2939.52	-21152	-18802	-8997	1.89	1.89	-22106	9892	8413	30925	25468	4820	30287	No	3.37	Si
SLU 84	0.81	-1105.85	-18511	-16454	-9076	1.89	1.89	-19347	9524	8100	30925	25468	4820	30287	No	3.34	Si
SLU 80	0.41	-2832.78	-20434	-18163	-8964	1.89	1.89	-21356	9792	8328	30925	25468	4820	30287	No	3.38	Si
SLU 80	0.81	-1004.58	-17802	-15824	-9041	1.89	1.89	-18605	9425	8016	30925	25468	4820	30287	No	3.35	Si
SLU 75	0.41	-2819.81	-20342	-18082	-8905	1.89	1.89	-21260	9779	8317	30925	25468	4820	30287	No	3.4	Si
SLU 75	0.81	-1004.09	-17722	-15752	-8982	1.89	1.89	-18521	9414	8007	30925	25468	4820	30287	No	3.37	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 4	0.41	-4133.46	-10060	-8942	-10121	1.89	1.6024	-12477	12912	9311	30925	38202	4820	40236		3.98	Si
SLV 4	0.81	-1347.74	-7684	-6830	-9720	1.89	1.89	-8030	12023	10225	30925	38202	4820	41151		4.23	Si
SLV 1	0.41	-3807.14	-10291	-9148	-9670	1.89	1.7252	-11842	12785	9925	30925	38202	4820	40851		4.22	Si
SLV 1	0.81	-567.46	-7452	-6624	-9238	1.89	1.89	-7788	11974	10184	30925	38202	4820	41110		4.45	Si
SLV 11	0.41	-2859.66	-16125	-14334	-8802	1.89	1.89	-16853	13787	11726	30925	38202	4820	42652		4.85	Si
SLV 11	0.81	-2166.23	-14731	-13095	-9046	1.89	1.89	-15396	13496	11478	30925	38202	4820	42404		4.69	Si
SLD 3	0.41	-3117.52	-12614	-11212	-8537	1.89	1.89	-13183	13053	11102	30925	38202	4820	42027		4.92	Si
SLD 3	0.81	-1046.99	-10413	-9256	-8393	1.89	1.89	-10883	12593	10711	30925	38202	4820	41636		4.96	Si
SLV 7	0.41	-4024.06	-13819	-12284	-10997	1.89	1.89	-14443	13305	11316	30925	38202	4820	42242		3.84	Si
SLV 7	0.81	-2289.7	-11990	-10658	-10958	1.89	1.89	-12531	12923	10991	30925	38202	4820	41916		3.83	Si
SLD 7	0.41	-2889.97	-13935	-12387	-8316	1.89	1.89	-14564	13329	11337	30925	38202	4820	42262		5.08	Si
SLD 7	0.81	-1417.95	-12075	-10733	-8329	1.89	1.89	-12620	12941	11006	30925	38202	4820	41931		5.03	Si
SLV 8	0.41	-3742.17	-13385	-11898	-10052	1.89	1.89	-13989	13214	11239	30925	38202	4820	42164		4.19	Si
SLV 8	0.81	-2232.67	-11718	-10416	-10014	1.89	1.89	-12247	12866	10943	30925	38202	4820	41868		4.18	Si
SLV 2	0.41	-3370.69	-9619	-8550	-8208	1.89	1.7837	-10053	12427	9975	30925	38202	4820	40900		4.98	Si
SLV 2	0.81	-479.16	-7031	-6250	-7777	1.89	1.89	-7348	11886	10109	30925	38202	4820	41035		5.28	Si
SLV 12	0.41	-2577.78	-15691	-13948	-7858	1.89	1.89	-16399	13697	11649	30925	38202	4820	42574		5.42	Si
SLV 12	0.81	-2109.2	-14459	-12853	-8102	1.89	1.89	-15112	13439	11430	30925	38202	4820	42355		5.23	Si
SLV 3	0.41	-4569.91	-10733	-9540	-11583	1.89	1.5576	-13701	13157	9222	30925	38202	4820	40147		3.47	Si
SLV 3	0.81	-1436.04	-8105	-7204	-11181	1.89	1.89	-8470	12111	10300	30925	38202	4820	41226		3.69	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota -0.24 Wa 0.08 denominatore 8 γM = 2

Comb.	fd	Sa	α0	N	M	Mc	Coeff.s.	Verifica
SLV 2	179667	0.24	8571	-7290	113.61	1548.19	13.63	Si
SLV 4	179667	0.24	9021	-7672	113.61	1624.24	14.3	Si
SLV 1	179667	0.24	9258	-7874	113.61	1664.16	14.65	Si
SLV 3	179667	0.24	9707	-8256	113.61	1739.43	15.31	Si
SLV 6	179667	0.24	11927	-10144	113.61	2104.09	18.52	Si
SLV 5	179667	0.24	12370	-10521	113.61	2175.4	19.15	Si
SLV 8	179667	0.24	13424	-11417	113.61	2343.04	20.62	Si
SLV 7	179667	0.24	13867	-11794	113.61	2412.69	21.24	Si
SLV 10	179667	0.24	15148	-12883	113.61	2611.21	22.98	Si
SLV 9	179667	0.24	15591	-13260	113.61	2678.94	23.58	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = -0.24 Wa = 0.08 Ta = 0.0271

Comb.	N top	N base	V orto	α0	M*	e*	α0*	aLim	Verifica
SLV 11	-12739	-14649	443	0.782	1622.5	0.943	12.04875	3.69946	Si
SLV 12	-12391	-14388	427	0.8	1587.2	0.942	12.33919	3.69946	Si
SLV 9	-12057	-11955	348	0.823	1553.4	0.941	12.70116	3.69946	Si
SLV 15	-15132	-17762	471	0.683	1865.2	0.95	10.45415	2.99128	Si
SLV 10	-11709	-11694	332	0.842	1518.1	0.94	13.02367	3.69946	Si
SLV 13	-14927	-16954	443	0.692	1844.5	0.949	10.59588	2.99128	Si
SLV 16	-14593	-17358	447	0.704	1810.5	0.948	10.78911	2.99128	Si
SLV 14	-14388	-16549	418	0.714	1789.7	0.948	10.93997	2.99128	Si
SLV 7	-10566	-11234	393	0.906	1402.4	0.936	14.07137	3.69946	Si
SLV 8	-10217	-10973	377	0.931	1367.2	0.935	14.47488	3.69946	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	5.644	SLU 83	Si
V_SLU	3.324	SLU 78	Si
PF_SLV	2.26	SLV 3	Si
V_SLV	3.466	SLV 3	Si
PFFP_SLV	13.627	SLV 2	Si
R_SLV	3.257	SLV 11	Si



## Maschio 53

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-0.123	6.101	-0.123	-3.284	L2	L4	9.385	0.45	2.7	2.7	2.7			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau_0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	at	α	elim,conv	s,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_m$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 51	-1.59	12420.81	-83088	-0.000034	0.0003743	0.0035	9.3849	314545.42	332357	332357	26.76	No	Si
SLU 51	1.11	7055.36	-101627	-0.00004	0.0003743	0.0035	9.3849	364168.04	392471.13	392471.13	55.63	No	Si
SLU 47	-1.59	12161.95	-82053	-0.0000335	0.0003743	0.0035	9.3849	311555.09	328586.36	328586.36	27.02	No	Si
SLU 47	1.11	6280.44	-100083	-0.0000392	0.0003743	0.0035	9.3849	360319.6	388306.4	388306.4	61.83	No	Si
SLU 50	-1.59	12475.98	-83064	-0.000034	0.0003743	0.0035	9.3849	314475.39	332268.27	332268.27	26.63	No	Si
SLU 50	1.11	7981.72	-101347	-0.0000401	0.0003743	0.0035	9.3849	363473.32	391714.22	391714.22	49.08	No	Si
SLU 43	-1.59	12031.82	-80962	-0.0000331	0.0003743	0.0035	9.3849	308375.43	324617.51	324617.51	26.98	No	Si
SLU 43	1.11	7667.03	-97883	-0.0000387	0.0003743	0.0035	9.3849	354751.26	382372.55	382372.55	49.87	No	Si
SLU 46	-1.59	12240.88	-82648	-0.0000338	0.0003743	0.0035	9.3849	313277.63	330753.81	330753.81	27.02	No	Si
SLU 46	1.11	6893.86	-100899	-0.0000397	0.0003743	0.0035	9.3849	362360.24	390506.22	390506.22	56.65	No	Si
SLU 49	-1.59	12462.96	-83699	-0.0000342	0.0003743	0.0035	9.3849	316300.98	334587.07	334587.07	26.85	No	Si
SLU 49	1.11	7051.21	-102631	-0.0000404	0.0003743	0.0035	9.3849	366640.01	395182.98	395182.98	56.04	No	Si
SLU 45	-1.59	12296.05	-82624	-0.0000338	0.0003743	0.0035	9.3849	313207.37	330665.17	330665.17	26.89	No	Si
SLU 45	1.11	7820.22	-100619	-0.0000398	0.0003743	0.0035	9.3849	361661.07	389750.36	389750.36	49.84	No	Si
SLU 44	-1.59	11939.87	-81002	-0.000033	0.0003743	0.0035	9.3849	308493.98	324764.75	324764.75	27.2	No	Si
SLU 44	1.11	6123.09	-98351	-0.0000385	0.0003743	0.0035	9.3849	355943.5	383631.66	383631.66	62.65	No	Si
SLU 48	-1.59	12518.12	-83675	-0.0000342	0.0003743	0.0035	9.3849	316231.28	334498.3	334498.3	26.72	No	Si
SLU 48	1.11	7977.57	-102350	-0.0000405	0.0003743	0.0035	9.3849	365951.44	394424.64	394424.64	49.44	No	Si
SLU 58	-1.59	13236.26	-90924	-0.0000373	0.0003743	0.0035	9.3849	336435.73	361148.15	361148.15	27.28	No	Si
SLU 58	1.11	8212.06	-112004	-0.0000445	0.0003743	0.0035	9.3849	388667.3	420760.48	420760.48	51.24	No	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_m$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 6	-1.59	26826.72	-55086	-0.0000263	0.0005615	0.0035	9.3849		245185.15	245185.15	9.14		Si
SLV 6	1.11	-13287.23	-68975	-0.0000283	0.0005615	0.0035	9.3849		321283.35	321283.35	24.18		Si
SLV 14	-1.59	29954.77	-113584	-0.0000494	0.0005615	0.0035	9.3849		456473.66	456473.66	15.24		Si
SLV 14	1.11	7805.26	-139148	-0.000054	0.0005615	0.0035	9.3849		547117.86	547117.86	70.1		Si
SLV 10	-1.59	33935.38	-81963	-0.0000381	0.0005615	0.0035	9.3849		344850.89	344850.89	10.16		Si
SLV 10	1.11	-9177.59	-101665	-0.0000397	0.0005615	0.0035	9.3849		443316.79	443316.79	48.3		Si
SLV 9	-1.59	30546.72	-81928	-0.0000373	0.0005615	0.0035	9.3849		344728.06	344728.06	11.29		Si
SLV 9	1.11	-9265.96	-101788	-0.0000398	0.0005615	0.0035	9.3849		443752.78	443752.78	47.89		Si
SLV 5	-1.59	23438.06	-55051	-0.0000255	0.0005615	0.0035	9.3849		245041.8	245041.8	10.45		Si
SLV 5	1.11	-13375.6	-69099	-0.0000284	0.0005615	0.0035	9.3849		321764.15	321764.15	24.06		Si
SLV 3	-1.59	-10304.26	-24155	-0.000011	0.0005615	0.0035	9.3849		135613.29	135613.29	13.16		Si
SLV 3	1.11	4395.95	-29842	-0.0000117	0.0005615	0.0035	9.3849		138854.85	138854.85	31.59		Si
SLV 12	-1.59	-3787.55	-82688	-0.0000312	0.0005615	0.0035	9.3849		373998.52	373998.52	98.74		Si
SLV 12	1.11	25576.81	-99891	-0.000043	0.0005615	0.0035	9.3849		407744.55	407744.55	15.94		Si
SLV 8	-1.59	-10896.2	-55810	-0.0000228	0.0005615	0.0035	9.3849		268881.17	268881.17	24.68		Si
SLV 8	1.11	21467.18	-67202	-0.0000296	0.0005615	0.0035	9.3849		293678.32	293678.32	13.68		Si
SLD 10	-1.59	20374.66	-74448	-0.000032	0.0005615	0.0035	9.3849		318791.79	318791.79	15.65		Si
SLD 10	1.11	-750.27	-91783	-0.0000339	0.0005615	0.0035	9.3849		407844.85	407844.85	543.6		Si
SLV 7	-1.59	-14284.87	-55775	-0.0000236	0.0005615	0.0035	9.3849		268736.98	268736.98	18.81		Si
SLV 7	1.11	21378.8	-67325	-0.0000296	0.0005615	0.0035	9.3849		294153.02	294153.02	13.76		Si

### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	l'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 78	-1.59	13865.31	-99468	-88416	3622	9.3849	9.3849	-20936	9736	41117	30925	126462	23932	72042	No	19.89	Si
SLU 78	1.11	7531.04	-124490	-110658	5467	9.3849	9.3849	-26202	10438	44082	30925	126462	23932	75008	No	13.72	Si
SLU 75	-1.59	13643.23	-98417	-87482	3618	9.3849	9.3849	-20714	9706	40992	30925	126462	23932	71918	No	19.88	Si





Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 75	1.11	7373.69	-122759	-109119	5439	9.3849	9.3849	-25838	10389	43877	30925	126462	23932	74803	No	13.75	Si
SLU 84	-1.59	13926.92	-101175	-89933	3831	9.3849	9.3849	-21295	9784	41319	30925	126462	23932	72244	No	18.86	Si
SLU 84	1.11	7476.55	-126322	-112287	5697	9.3849	9.3849	-26588	10489	44299	30925	126462	23932	75225	No	13.2	Si
SLU 82	-1.59	13704.84	-100124	-88999	3827	9.3849	9.3849	-21074	9754	41194	30925	126462	23932	72120	No	18.84	Si
SLU 82	1.11	7319.21	-124591	-110747	5669	9.3849	9.3849	-26223	10441	44094	30925	126462	23932	75020	No	13.23	Si
SLU 74	-1.59	13698.4	-98393	-87460	3674	9.3849	9.3849	-20709	9706	40989	30925	126462	23932	71915	No	19.57	Si
SLU 74	1.11	8300.05	-122478	-108870	5482	9.3849	9.3849	-25779	10382	43844	30925	126462	23932	74769	No	13.64	Si
SLU 77	-1.59	13920.48	-99444	-88394	3678	9.3849	9.3849	-20931	9735	41114	30925	126462	23932	72039	No	19.59	Si
SLU 77	1.11	8457.4	-124210	-110409	5510	9.3849	9.3849	-26143	10430	44049	30925	126462	23932	74975	No	13.61	Si
SLU 81	-1.59	13760.01	-100099	-88977	3883	9.3849	9.3849	-21069	9754	41192	30925	126462	23932	72117	No	18.57	Si
SLU 81	1.11	8245.57	-124310	-110498	5712	9.3849	9.3849	-26164	10433	44061	30925	126462	23932	74986	No	13.13	Si
SLU 83	-1.59	13982.09	-101150	-89911	3887	9.3849	9.3849	-21290	9783	41316	30925	126462	23932	72242	No	18.58	Si
SLU 83	1.11	8402.91	-126042	-112037	5741	9.3849	9.3849	-26529	10482	44266	30925	126462	23932	75192	No	13.1	Si
SLU 80	-1.59	13823.16	-98857	-87873	3585	9.3849	9.3849	-20807	9719	41044	30925	126462	23932	71970	No	20.08	Si
SLU 80	1.11	7355.19	-123487	-109766	5415	9.3849	9.3849	-25991	10410	43963	30925	126462	23932	74889	No	13.83	Si
SLU 79	-1.59	13878.33	-98832	-87851	3641	9.3849	9.3849	-20802	9718	41041	30925	126462	23932	71967	No	19.77	Si
SLU 79	1.11	8461.55	-123206	-109517	5458	9.3849	9.3849	-25932	10402	43930	30925	126462	23932	74856	No	13.71	Si

**Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$**

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 10	-1.59	33935.38	-81963	-72856	29503	9.3849	9.3849	-17251	13867	58563	30925	189693	23932	89489		3.03	Si
SLV 10	1.11	-9177.59	-101665	-90369	30232	9.3849	9.3849	-21398	14696	62066	30925	189693	23932	92991		3.08	Si
SLV 14	-1.59	29954.77	-113584	-100963	15401	9.3849	9.3849	-23907	15198	64185	30925	189693	23932	95110		6.18	Si
SLV 14	1.11	7805.26	-139148	-123687	17287	9.3849	9.3849	-29287	16250	68627	30925	189693	23932	99553		5.76	Si
SLV 8	-1.59	-10896.2	-55810	-49609	-21010	9.3849	9.3849	-11747	12766	53914	30925	189693	23932	84839		4.04	Si
SLV 8	1.11	21467.18	-67202	-59735	-19234	9.3849	9.3849	-14144	13246	55939	30925	189693	23932	86864		4.52	Si
SLV 12	-1.59	-3787.55	-82688	-73500	-19317	9.3849	9.3849	-17404	13897	58692	30925	189693	23932	89617		4.64	Si
SLV 12	1.11	25576.81	-98991	-88792	-17016	9.3849	9.3849	-21025	14622	61750	30925	189693	23932	92676		5.45	Si
SLD 10	-1.59	20374.66	-74448	-66176	14328	9.3849	9.3849	-15670	13551	57227	30925	189693	23932	88153		6.15	Si
SLD 10	1.11	-750.27	-91783	-81585	15355	9.3849	9.3849	-19318	14280	60309	30925	189693	23932	91234		5.94	Si
SLV 7	-1.59	-14284.87	-55775	-49578	-24690	9.3849	9.3849	-11739	12765	53908	30925	189693	23932	84833		3.44	Si
SLV 7	1.11	21378.8	-67325	-59845	-22898	9.3849	9.3849	-14170	13251	55961	30925	189693	23932	86886		3.79	Si
SLV 5	-1.59	23438.06	-55051	-48934	24129	9.3849	9.3849	-11587	12734	53779	30925	189693	23932	84704		3.51	Si
SLV 5	1.11	-13375.6	-69099	-61421	24350	9.3849	9.3849	-14544	13325	56276	30925	189693	23932	87202		3.58	Si
SLV 6	-1.59	26826.72	-55086	-48965	27809	9.3849	9.3849	-11594	12736	53785	30925	189693	23932	84710		3.05	Si
SLV 6	1.11	-13287.23	-68975	-61311	28014	9.3849	9.3849	-14518	13320	56254	30925	189693	23932	87180		3.11	Si
SLV 9	-1.59	30546.72	-81928	-72825	25823	9.3849	9.3849	-17244	13865	58557	30925	189693	23932	89482		3.47	Si
SLV 9	1.11	-9265.96	-101788	-90479	26568	9.3849	9.3849	-21424	14701	62088	30925	189693	23932	93013		3.5	Si
SLV 11	-1.59	-7176.21	-82653	-73469	-22997	9.3849	9.3849	-17396	13896	58686	30925	189693	23932	89611		3.9	Si
SLV 11	1.11	25488.44	-100015	-88902	-20681	9.3849	9.3849	-21051	14627	61772	30925	189693	23932	92698		4.48	Si

**Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)**

quota -0.24 Wa 0.08 denominatore  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 4	179667	0.24	6025	-25444	564.14	5499.07	9.75	Si
SLV 3	179667	0.24	6033	-25477	564.14	5505.89	9.76	Si
SLV 2	179667	0.24	6169	-26051	564.14	5624.82	9.97	Si
SLV 1	179667	0.24	6176	-26084	564.14	5631.63	9.98	Si
SLV 8	179667	0.24	14307	-60420	564.14	12321.03	21.84	Si
SLV 7	179667	0.24	14312	-60442	564.14	12324.92	21.85	Si
SLV 6	179667	0.24	14786	-62445	564.14	12689.79	22.49	Si
SLV 5	179667	0.24	14791	-62466	564.14	12693.65	22.5	Si
SLV 12	179667	0.24	21548	-91002	564.14	17586.49	31.17	Si
SLV 11	179667	0.24	21553	-91024	564.14	17589.92	31.18	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

**Verifica dei meccanismi locali di collasso con analisi cinematica lineare**

forza di aggancio al piano = 5617 quota mezzera = -0.24 Wa = 0.08 Ta = 0.0271

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	$\alpha_0^*$	aLim	Verifica
SLV 15	-138807	-113746	-249	0.441	15737.4	0.969	6.61508	2.99128	Si
SLV 13	-139339	-113529	-46	0.441	15791.6	0.969	6.61563	2.99128	Si
SLV 16	-138616	-113801	-251	0.441	15717.9	0.969	6.62199	2.99128	Si
SLV 14	-139148	-113584	-48	0.442	15772.1	0.969	6.62251	2.99128	Si
SLV 9	-101788	-81928	561	0.556	11970.3	0.96	8.42294	3.69946	Si
SLV 10	-101665	-81963	560	0.557	11957.7	0.96	8.43138	3.69946	Si
SLV 11	-100015	-82653	-114	0.568	11789.9	0.96	8.60452	3.69946	Si
SLV 12	-99891	-82688	-115	0.569	11777.3	0.959	8.6129	3.69946	Si
SLV 5	-69099	-55051	880	0.747	8649	0.947	11.47166	3.69946	Si
SLV 6	-68975	-55086	878	0.748	8636.5	0.947	11.48866	3.69946	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

**Tabella dei coefficienti di sicurezza minimi**

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	26.633	SLU 50	Si
V_SLU	13.098	SLU 83	Si
PF_SLV	9.14	SLV 6	Si
V_SLV	3.033	SLV 10	Si
PFFP_SLV	9.748	SLV 4	Si
R_SLV	2.211	SLV 15	Si





## Maschio 54

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	I	Sp.	h netta	h ini.	h fin.	a	a.s.sx	a.s.dx
-24.633	-3.284	-24.633	5.876	L4	L5	9.16	0.28	3.72	3.72	3.72			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fν0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 76	1.11	-2859.81	-112191	-0.0000645	0.0004492	0.0035	9.16	329884.42	458845.99	458845.99	160.45	No	Si
SLU 76	4.83	-6015.62	-89335	-0.000052	0.0004492	0.0035	9.16	292518.77	390773.15	390773.15	64.96	No	Si
SLU 31	1.11	-2020.99	-92364	-0.0000523	0.0004492	0.0035	9.16	298348.44	400148.86	400148.86	198	No	Si
SLU 31	4.83	-5600.81	-73566	-0.0000427	0.0004492	0.0035	9.16	257838.34	339456.8	339456.8	60.61	No	Si
SLU 84	1.11	-3557.56	-116089	-0.0000671	0.0004492	0.0035	9.16	334732.36	469683.02	469683.02	132.02	No	Si
SLU 84	4.83	-6099.36	-92673	-0.000054	0.0004492	0.0035	9.16	298928.19	401105.51	401105.51	65.76	No	Si
SLU 34	1.11	-1986.17	-93983	-0.0000532	0.0004492	0.0035	9.16	301354.95	405161.09	405161.09	203.99	No	Si
SLU 34	4.83	-5365.03	-75201	-0.0000435	0.0004492	0.0035	9.16	261771.71	344868.63	344868.63	64.28	No	Si
SLU 73	1.11	-2894.63	-110572	-0.0000635	0.0004492	0.0035	9.16	327739.73	454181.83	454181.83	156.91	No	Si
SLU 73	4.83	-6251.4	-87700	-0.0000512	0.0004492	0.0035	9.16	289260.82	385712.71	385712.71	61.7	No	Si
SLU 23	1.11	-1949.94	-82836	-0.0000467	0.0004492	0.0035	9.16	279105.78	370141.29	370141.29	189.82	No	Si
SLU 23	4.83	-4792.77	-65700	-0.0000378	0.0004492	0.0035	9.16	237822.9	312342.33	312342.33	65.17	No	Si
SLU 42	1.11	-2683.92	-97881	-0.0000558	0.0004492	0.0035	9.16	308277.27	417225.36	417225.36	155.45	No	Si
SLU 42	4.83	-5448.77	-78539	-0.0000455	0.0004492	0.0035	9.16	269560.21	355918.46	355918.46	65.32	No	Si
SLU 33	1.11	-2650.23	-94720	-0.0000539	0.0004492	0.0035	9.16	302698.08	407442.57	407442.57	153.74	No	Si
SLU 33	4.83	-5273.72	-76087	-0.000044	0.0004492	0.0035	9.16	263870.94	347801.83	347801.83	65.95	No	Si
SLU 82	1.11	-3592.38	-114470	-0.0000662	0.0004492	0.0035	9.16	332772.16	465366.93	465366.93	129.54	No	Si
SLU 82	4.83	-6335.14	-91038	-0.0000532	0.0004492	0.0035	9.16	295829.77	396045.07	396045.07	62.52	No	Si
SLU 40	1.11	-2718.74	-96261	-0.0000549	0.0004492	0.0035	9.16	305455.24	412213.13	412213.13	151.62	No	Si
SLU 40	4.83	-5684.55	-76904	-0.0000446	0.0004492	0.0035	9.16	265786.36	350506.62	350506.62	61.66	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 12	1.11	-3888.57	-62576	-0.0000353	0.0006738	0.0035	9.16		309295.23	309295.23	79.54		Si
SLV 12	4.83	-69495.59	-50803	-0.0000525	0.0006738	0.0035	9.16		263918.92	263918.92	3.8		Si
SLV 6	1.11	-674.71	-93627	-0.0000516	0.0006738	0.0035	9.16		420947.6	420947.6	623.9		Si
SLV 6	4.83	59502.38	-72583	-0.0000613	0.0006738	0.0035	9.16		304833.45	304833.45	5.12		Si
SLV 5	1.11	-2917.69	-93159	-0.0000521	0.0006738	0.0035	9.16		419328.2	419328.2	143.72		Si
SLV 5	4.83	62072.96	-72592	-0.0000623	0.0006738	0.0035	9.16		304860.51	304860.51	4.91		Si
SLV 14	1.11	5360.19	-24838	-0.0000151	0.0006738	0.0035	9.16		116976.59	116976.59	21.82		Si
SLV 14	4.83	21867.62	-31795	-0.0000248	0.0006738	0.0035	9.16		146233.85	146233.85	6.69		Si
SLV 10	1.11	2927.96	-61673	-0.0000344	0.0006738	0.0035	9.16		265638.39	265638.39	90.72		Si
SLV 10	4.83	64026.73	-54329	-0.0000525	0.0006738	0.0035	9.16		237181.3	237181.3	3.7		Si
SLV 7	1.11	-9734.22	-94062	-0.0000552	0.0006738	0.0035	9.16		422454.92	422454.92	43.4		Si
SLV 7	4.83	-71449.36	-69066	-0.0000637	0.0006738	0.0035	9.16		333427.61	333427.61	4.67		Si
SLV 8	1.11	-7491.24	-94530	-0.0000546	0.0006738	0.0035	9.16		424074.33	424074.33	56.61		Si
SLV 8	4.83	-74019.95	-69058	-0.0000647	0.0006738	0.0035	9.16		333398.01	333398.01	4.5		Si
SLV 9	1.11	684.98	-61205	-0.0000334	0.0006738	0.0035	9.16		263832.46	263832.46	385.17		Si
SLV 9	4.83	66597.32	-54337	-0.0000535	0.0006738	0.0035	9.16		237213.07	237213.07	3.56		Si
SLV 11	1.11	-6131.56	-62108	-0.0000358	0.0006738	0.0035	9.16		307492.44	307492.44	50.15		Si
SLV 11	4.83	-66925	-50811	-0.0000516	0.0006738	0.0035	9.16		263950.1	263950.1	3.94		Si
SLV 13	1.11	1887.4	-24114	-0.0000135	0.0006738	0.0035	9.16		113893.38	113893.38	60.34		Si
SLV 13	4.83	25847.64	-31807	-0.0000262	0.0006738	0.0035	9.16		146286.35	146286.35	5.66		Si



#### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 84	1.11	-3557.56	-116089	-82815	-6143	9.16	9.16	-32289	10833	27785	122342	92172	46716	138888	No	22.61	Si
SLU 84	4.83	-6099.36	-92673	-66111	-4936	9.16	9.16	-25776	10833	27785	122342	92172	46716	138888	No	28.14	Si
SLU 80	1.11	-3492.28	-113625	-81057	-6014	9.16	9.16	-31604	10833	27785	122342	92172	46716	138888	No	23.09	Si
SLU 80	4.83	-5517.28	-90937	-64872	-4826	9.16	9.16	-25293	10833	27785	122342	92172	46716	138888	No	28.78	Si
SLU 74	1.11	-4524.81	-112650	-80361	-6159	9.16	9.16	-31332	10833	27785	122342	92172	46716	138888	No	22.55	Si
SLU 74	4.83	-5530.46	-90172	-64326	-5048	9.16	9.16	-25080	10833	27785	122342	92172	46716	138888	No	27.51	Si
SLU 78	1.11	-3489.04	-114548	-81716	-6040	9.16	9.16	-31860	10833	27785	122342	92172	46716	138888	No	22.99	Si
SLU 78	4.83	-5688.53	-91856	-65528	-4843	9.16	9.16	-25549	10833	27785	122342	92172	46716	138888	No	28.68	Si
SLU 82	1.11	-3592.38	-114470	-81660	-5989	9.16	9.16	-31839	10833	27785	122342	92172	46716	138888	No	23.19	Si
SLU 82	4.83	-6335.14	-91038	-64944	-4798	9.16	9.16	-25321	10833	27785	122342	92172	46716	138888	No	28.95	Si
SLU 83	1.11	-4558.5	-115810	-82616	-6417	9.16	9.16	-32212	10833	27785	122342	92172	46716	138888	No	21.65	Si
SLU 83	4.83	-5705.51	-92624	-66075	-5280	9.16	9.16	-25762	10833	27785	122342	92172	46716	138888	No	26.3	Si
SLU 75	1.11	-3523.86	-112928	-80560	-5886	9.16	9.16	-31410	10833	27785	122342	92172	46716	138888	No	23.6	Si
SLU 75	4.83	-5924.31	-90221	-64361	-4705	9.16	9.16	-25094	10833	27785	122342	92172	46716	138888	No	29.52	Si
SLU 81	1.11	-4593.33	-114191	-81461	-6262	9.16	9.16	-31761	10833	27785	122342	92172	46716	138888	No	22.18	Si
SLU 81	4.83	-5941.29	-90989	-64909	-5142	9.16	9.16	-25308	10833	27785	122342	92172	46716	138888	No	27.01	Si
SLU 79	1.11	-4493.23	-113346	-80858	-6287	9.16	9.16	-31526	10833	27785	122342	92172	46716	138888	No	22.09	Si
SLU 79	4.83	-5123.42	-90888	-64837	-5170	9.16	9.16	-25280	10833	27785	122342	92172	46716	138888	No	26.87	Si
SLU 77	1.11	-4489.99	-114269	-81517	-6314	9.16	9.16	-31783	10833	27785	122342	92172	46716	138888	No	22	Si
SLU 77	4.83	-5294.68	-91807	-65493	-5186	9.16	9.16	-25535	10833	27785	122342	92172	46716	138888	No	26.78	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 10	1.11	2927.96	-61673	-43996	-38417	9.16	9.16	-17154	15931	40859	122342	138259	46716	163202		4.25	Si
SLV 10	4.83	64026.73	-54329	-38757	-32401	9.16	9.16	-15111	15522	39811	122342	138259	46716	162154		5	Si
SLV 6	1.11	-674.71	-93627	-66791	-38288	9.16	9.16	-26041	16250	41678	122342	138259	46716	164020		4.28	Si
SLV 6	4.83	59502.38	-72583	-51779	-31802	9.16	9.16	-20188	16250	41678	122342	138259	46716	164020		5.16	Si
SLV 7	1.11	-9734.22	-94062	-67102	30262	9.16	9.16	-26163	16250	41678	122342	138259	46716	164020		5.42	Si
SLV 7	4.83	-71449.36	-69066	-49270	25796	9.16	9.16	-19210	16250	41678	122342	138259	46716	164020		6.36	Si
SLD 5	1.11	-3024.62	-84352	-60175	-21197	9.16	9.16	-23462	16250	41678	122342	138259	46716	164020		7.74	Si
SLD 5	4.83	25387.16	-66375	-47350	-17890	9.16	9.16	-18462	16192	41530	122342	138259	46716	163872		9.16	Si
SLV 12	1.11	-3888.57	-62576	-44640	34708	9.16	9.16	-17405	15981	40988	122342	138259	46716	163330		4.71	Si
SLV 12	4.83	-69495.59	-50803	-36242	29762	9.16	9.16	-14130	15326	39308	122342	138259	46716	161651		5.43	Si
SLV 9	1.11	684.98	-61205	-43662	-42992	9.16	9.16	-17024	15905	40792	122342	138259	46716	163135		3.79	Si
SLV 9	4.83	66597.32	-54337	-38762	-36967	9.16	9.16	-15113	15523	39812	122342	138259	46716	162155		4.39	Si
SLV 8	1.11	-7491.24	-94530	-67435	34837	9.16	9.16	-26293	16250	41678	122342	138259	46716	164020		4.71	Si
SLV 8	4.83	-74019.95	-69058	-49264	30362	9.16	9.16	-19208	16250	41678	122342	138259	46716	164020		5.4	Si
SLD 9	1.11	-1584.01	-70734	-50460	-21246	9.16	9.16	-19674	16250	41678	122342	138259	46716	164020		7.72	Si
SLD 9	4.83	27298.87	-58574	-41785	-18140	9.16	9.16	-16292	15758	40417	122342	138259	46716	162759		8.97	Si
SLV 5	1.11	-2917.69	-93159	-66457	-42863	9.16	9.16	-25911	16250	41678	122342	138259	46716	164020		3.83	Si
SLV 5	4.83	62072.96	-72592	-51785	-36368	9.16	9.16	-20191	16250	41678	122342	138259	46716	164020		4.51	Si
SLV 11	1.11	-6131.56	-62108	-44307	30133	9.16	9.16	-17275	15955	40921	122342	138259	46716	163264		5.42	Si
SLV 11	4.83	-66925	-50811	-36247	25197	9.16	9.16	-14133	15327	39309	122342	138259	46716	161652		6.42	Si

#### Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 2.97 Ta 0.08 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 15	-30374	0.31	835.15	3977.62	5830.18	4903.9	5.87	Si
SLV 16	-30650	0.31	835.15	4011.24	5872.23	4941.74	5.92	Si
SLV 13	-31403	0.31	835.15	4102.77	5987.04	5044.91	6.04	Si
SLV 14	-31679	0.31	835.15	4136.22	6029.12	5082.67	6.09	Si
SLV 11	-57082	0.31	835.15	7021.08	9824.61	8422.85	10.09	Si
SLV 12	-57260	0.31	835.15	7039.97	9850.87	8445.42	10.11	Si
SLV 9	-60513	0.31	835.15	7381.21	10330.21	8855.71	10.6	Si
SLV 10	-60691	0.31	835.15	7399.73	10356.5	8878.11	10.63	Si
SLV 7	-80962	0.31	835.15	9382.49	13333.24	11357.86	13.6	Si
SLV 8	-81140	0.31	835.15	9398.84	13359.33	11379.08	13.63	Si

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 2.97 Wa = 0.05 Ta = 0.0825

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 5	-72592	-93159	-452	0.67	8737.2	0.955	10.19567	11.92842	No
SLV 6	-72583	-93627	-452	0.67	8736.4	0.955	10.19659	11.92842	No
SLV 7	-69066	-94062	-325	0.7	8379	0.953	10.67663	11.92842	No
SLV 8	-69058	-94530	-325	0.7	8378.1	0.953	10.67765	11.92842	No
SLV 9	-54337	-61205	322	0.855	6883.9	0.944	13.16331	11.92842	Si
SLV 10	-54329	-61673	322	0.855	6883.1	0.944	13.1651	11.92842	Si
SLV 11	-50811	-62108	449	0.902	6526.6	0.942	13.91547	11.92842	Si
SLV 12	-50803	-62576	449	0.902	6525.8	0.942	13.91748	11.92842	Si
SLV 1	-92657	-130626	-1311	0.536	10777.6	0.963	8.09329	6.09761	Si
SLV 2	-92645	-131350	-1311	0.536	10776.3	0.963	8.09417	6.09761	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	60.608	SLU 31	Si
V_SLU	21.645	SLU 83	Si
PF_SLV	3.562	SLV 9	Si
V_SLV	3.795	SLV 9	Si
PFFP_SLV	5.872	SLV 15	Si
R_SLV	0.855	SLV 5	No



## Maschio 55

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-22.763	5.826	-24.633	5.826	L4	L5	1.87	0.28	3.72	3.72	3.72			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau_0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	at	α	elim,conv	s,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_m$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 40	2.01	892.42	-15666	-0.0000562	0.0003743	0.0035	1.87	10343.05	11549.05	11549.05	12.94	No	Si
SLU 40	3.91	-454.75	-15705	-0.0000519	0.0003743	0.0035	1.87	10357.87	12487.22	12487.22	27.46	No	Si
SLU 13	2.01	770.77	-13601	-0.0000482	0.0003743	0.0035	1.87	9472.22	10409.99	10409.99	13.51	No	Si
SLU 13	3.91	-194.8	-13214	-0.0000413	0.0003743	0.0035	1.87	9292.23	11041.1	11041.1	56.68	No	Si
SLU 36	2.01	854.81	-15826	-0.0000564	0.0003743	0.0035	1.87	10404.15	11638.8	11638.8	13.62	No	Si
SLU 36	3.91	-407.62	-15772	-0.0000517	0.0003743	0.0035	1.87	10383.79	12521.96	12521.96	30.72	No	Si
SLU 73	2.01	976.51	-17961	-0.0000649	0.0003743	0.0035	1.87	11135.13	12867.64	12867.64	13.18	No	Si
SLU 73	3.91	-307.6	-17480	-0.0000563	0.0003743	0.0035	1.87	10984.47	13263.69	13263.69	43.12	No	Si
SLU 76	2.01	986.65	-18286	-0.0000661	0.0003743	0.0035	1.87	11232.52	13059.69	13059.69	13.24	No	Si
SLU 76	3.91	-320.49	-17842	-0.0000577	0.0003743	0.0035	1.87	11098.64	13416.28	13416.28	41.86	No	Si
SLU 10	2.01	760.62	-13275	-0.0000471	0.0003743	0.0035	1.87	9321.32	10234.54	10234.54	13.46	No	Si
SLU 10	3.91	-181.91	-12852	-0.00004	0.0003743	0.0035	1.87	9119.31	10824.12	10824.12	59.5	No	Si
SLU 42	2.01	902.57	-15992	-0.0000574	0.0003743	0.0035	1.87	10466.65	11732.31	11732.31	13	No	Si
SLU 42	3.91	-467.64	-16067	-0.0000533	0.0003743	0.0035	1.87	10494.57	12667.29	12667.29	27.09	No	Si
SLU 33	2.01	844.66	-15500	-0.0000552	0.0003743	0.0035	1.87	10278.66	11455.74	11455.74	13.56	No	Si
SLU 33	3.91	-394.73	-15411	-0.0000504	0.0003743	0.0035	1.87	10243.35	12326.51	12326.51	31.23	No	Si
SLU 34	2.01	920.04	-15210	-0.000055	0.0003743	0.0035	1.87	10163.42	11292.92	11292.92	12.27	No	Si
SLU 34	3.91	-367.33	-15168	-0.0000493	0.0003743	0.0035	1.87	10146.73	12188.71	12188.71	33.18	No	Si
SLU 31	2.01	909.89	-14884	-0.0000538	0.0003743	0.0035	1.87	10030.89	11111.81	11111.81	12.21	No	Si
SLU 31	3.91	-354.44	-14806	-0.000048	0.0003743	0.0035	1.87	9998.63	11984.76	11984.76	33.81	No	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_m$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 15	2.01	-3420.68	-10348	-0.0000624	0.0005615	0.0035	1.87		9585.31	9585.31	2.8		Si
SLV 15	3.91	1376.88	-3718	-0.0000233	0.0005615	0.0035	1.87		3535.61	3535.61	2.57		Si
SLV 11	2.01	-2008.71	-11687	-0.000053	0.0005615	0.0035	1.87		10583.15	10583.15	5.27		Si
SLV 11	3.91	616.31	-2410	-0.0000124	0.0005615	0.0035	1.87		2387.76	2387.76	3.87		Si
SLV 2	2.01	4380.73	-15624	-0.0000887	0.0005615	0.0035	1.87		12485.41	12485.41	2.85		Si
SLV 2	3.91	-1665.58	-20782	-0.0000786	0.0005615	0.0035	1.87		16580.31	16580.31	9.95		Si
SLV 4	2.01	3453.31	-15373	-0.0000787	0.0005615	0.0035	1.87		12304.19	12304.19	3.56		Si
SLV 4	3.91	-1414	-15936	-0.0000605	0.0005615	0.0035	1.87		13553.25	13553.25	9.59		Si
SLV 16	2.01	-3929.96	-11086	-0.00007	0.0005615	0.0035	1.87		10146.68	10146.68	2.58		Si
SLV 16	3.91	1823.75	-3307	-0.0000307	0.0005615	0.0035	1.87		3178.88	3178.88	1.74		Si
SLV 1	2.01	4890.02	-14887	-0.0000916	0.0005615	0.0035	1.87		11954.43	11954.43	2.44		Si
SLV 1	3.91	-2112.44	-21193	-0.0000845	0.0005615	0.0035	1.87		16824.31	16824.31	7.96		Si
SLV 5	2.01	3297.7	-13810	-0.0000721	0.0005615	0.0035	1.87		11186.52	11186.52	3.39		Si
SLV 5	3.91	-1193.62	-22355	-0.0000791	0.0005615	0.0035	1.87		17477.93	17477.93	14.64		Si
SLV 14	2.01	-3002.53	-11337	-0.0000614	0.0005615	0.0035	1.87		10330.19	10330.19	3.44		Si
SLV 14	3.91	1572.17	-8154	-0.000038	0.0005615	0.0035	1.87		7223.28	7223.28	4.59		Si
SLV 3	2.01	3962.59	-14636	-0.0000813	0.0005615	0.0035	1.87		11774.61	11774.61	2.97		Si
SLV 3	3.91	-1860.86	-16346	-0.0000662	0.0005615	0.0035	1.87		13824.31	13824.31	7.43		Si
SLV 12	2.01	-2337.64	-12163	-0.0000576	0.0005615	0.0035	1.87		10929.78	10929.78	4.68		Si
SLV 12	3.91	904.92	-2145	-0.0000147	0.0005615	0.0035	1.87		2152.87	2152.87	2.38		Si

### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	l'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 40	2.01	892.42	-15666	-13046	1559	1.87	1.87	-24915	10266	5375	42820	15679	4768	20447	No	13.12	Si
SLU 40	3.91	-454.75	-15705	-13078	1637	1.87	1.87	-24977	10275	5380	42820	15679	4768	20447	No	12.49	Si
SLU 80	2.01	912.24	-18745	-15609	1517	1.87	1.87	-29812	10833	5672	42820	15679	4768	20447	No	13.48	Si



Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 80	3.91	-352.65	-18285	-15226	1608	1.87	1.87	-29080	10822	5666	42820	15679	4768	20447	No	12.72	Si
SLU 82	2.01	959.04	-18743	-15608	1617	1.87	1.87	-29808	10833	5672	42820	15679	4768	20447	No	12.64	Si
SLU 82	3.91	-407.91	-18379	-15304	1709	1.87	1.87	-29229	10833	5672	42820	15679	4768	20447	No	11.97	Si
SLU 81	2.01	832.2	-18943	-15774	1532	1.87	1.87	-30126	10833	5672	42820	15679	4768	20447	No	13.35	Si
SLU 81	3.91	-436.82	-18500	-15405	1615	1.87	1.87	-29422	10833	5672	42820	15679	4768	20447	No	12.66	Si
SLU 84	2.01	969.19	-19068	-15879	1647	1.87	1.87	-30326	10833	5672	42820	15679	4768	20447	No	12.42	Si
SLU 84	3.91	-420.8	-18740	-15605	1739	1.87	1.87	-29804	10833	5672	42820	15679	4768	20447	No	11.76	Si
SLU 76	2.01	986.65	-18286	-15227	1545	1.87	1.87	-29082	10822	5666	42820	15679	4768	20447	No	13.23	Si
SLU 76	3.91	-320.49	-17842	-14857	1640	1.87	1.87	-28376	10728	5617	42820	15679	4768	20447	No	12.47	Si
SLU 78	2.01	921.42	-18903	-15740	1527	1.87	1.87	-30062	10833	5672	42820	15679	4768	20447	No	13.39	Si
SLU 78	3.91	-360.78	-18446	-15360	1619	1.87	1.87	-29337	10833	5672	42820	15679	4768	20447	No	12.63	Si
SLU 83	2.01	842.34	-19268	-16045	1561	1.87	1.87	-30644	10833	5672	42820	15679	4768	20447	No	13.1	Si
SLU 83	3.91	-449.71	-18862	-15707	1645	1.87	1.87	-29998	10833	5672	42820	15679	4768	20447	No	12.43	Si
SLU 42	2.01	902.57	-15992	-13317	1588	1.87	1.87	-25433	10336	5412	42820	15679	4768	20447	No	12.88	Si
SLU 42	3.91	-467.64	-16067	-13379	1667	1.87	1.87	-25552	10351	5420	42820	15679	4768	20447	No	12.26	Si
SLU 73	2.01	976.51	-17961	-14956	1516	1.87	1.87	-28565	10753	5630	42820	15679	4768	20447	No	13.49	Si
SLU 73	3.91	-307.6	-17480	-14556	1610	1.87	1.87	-27800	10651	5577	42820	15679	4768	20447	No	12.7	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 14	2.01	-3002.53	-11337	-9441	-3915	1.87	1.87	-18030	14023	7342	42820	23518	4768	28287		7.23	Si
SLV 14	3.91	1572.17	-8154	-6790	-3311	1.87	1.87	-12968	13010	6812	42820	23518	4768	28287		8.54	Si
SLV 15	2.01	-3420.68	-10348	-8617	-4449	1.87	1.8133	-16458	13708	6960	42820	23518	4768	28287		6.36	Si
SLV 15	3.91	1376.88	-3718	-3096	-3886	1.87	1.6938	-5912	11599	5501	42820	23518	4768	28287		7.28	Si
SLV 6	2.01	2968.77	-14286	-11896	4622	1.87	1.87	-22721	14961	7833	42820	23518	4768	28287		6.12	Si
SLV 6	3.91	-905	-22090	-18394	4587	1.87	1.87	-35131	16250	8508	42820	23518	4768	28287		6.17	Si
SLV 5	2.01	3297.7	-13810	-11500	5312	1.87	1.87	-21963	14809	7754	42820	23518	4768	28287		5.32	Si
SLV 5	3.91	-1193.62	-22355	-18615	5277	1.87	1.87	-35552	16250	8508	42820	23518	4768	28287		5.36	Si
SLV 1	2.01	4890.02	-14887	-12396	7118	1.87	1.8195	-23675	15152	7719	42820	23518	4768	28287		3.97	Si
SLV 1	3.91	-2112.44	-21193	-17647	6667	1.87	1.87	-33704	16250	8508	42820	23518	4768	28287		4.24	Si
SLV 3	2.01	3962.59	-14636	-12187	5515	1.87	1.87	-23276	15072	7892	42820	23518	4768	28287		5.13	Si
SLV 3	3.91	-1860.86	-16346	-13611	5024	1.87	1.87	-25996	15616	8176	42820	23518	4768	28287		5.63	Si
SLV 12	2.01	-2337.64	-12163	-10128	-3712	1.87	1.87	-19344	14285	7480	42820	23518	4768	28287		7.62	Si
SLV 12	3.91	904.92	-2145	-1787	-3563	1.87	1.5396	-3412	11099	4785	42820	23518	4768	28287		7.94	Si
SLV 4	2.01	3453.31	-15373	-12802	4446	1.87	1.87	-24449	15307	8014	42820	23518	4768	28287		6.36	Si
SLV 4	3.91	-1414	-15936	-13270	3957	1.87	1.87	-25344	15485	8108	42820	23518	4768	28287		7.15	Si
SLV 2	2.01	4380.73	-15624	-13011	6050	1.87	1.87	-24849	15386	8056	42820	23518	4768	28287		4.68	Si
SLV 2	3.91	-1665.58	-20782	-17306	5600	1.87	1.87	-33052	16250	8508	42820	23518	4768	28287		5.05	Si
SLV 16	2.01	-3929.96	-11086	-9232	-5518	1.87	1.7415	-19100	14237	6942	42820	23518	4768	28287		5.13	Si
SLV 16	3.91	1823.75	-3307	-2754	-4954	1.87	1.1507	-5260	11469	3695	42820	23518	4768	28287		5.71	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 2.97 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 11	179667	0.31	12276	-6428	170.49	827.52	4.85	Si
SLV 12	179667	0.31	12334	-6458	170.49	831.07	4.87	Si
SLV 15	179667	0.31	13573	-7107	170.49	906.5	5.32	Si
SLV 16	179667	0.31	13662	-7153	170.49	911.88	5.35	Si
SLV 7	179667	0.31	17114	-8961	170.49	1113.92	6.53	Si
SLV 8	179667	0.31	17172	-8991	170.49	1117.21	6.55	Si
SLV 13	179667	0.31	19536	-10229	170.49	1248.86	7.32	Si
SLV 14	179667	0.31	19625	-10276	170.49	1253.73	7.35	Si
SLV 3	179667	0.31	29700	-15551	170.49	1753.71	10.29	Si
SLV 4	179667	0.31	29789	-15598	170.49	1757.71	10.31	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 2.97 Wa = 0.05 Ta = 0.0825

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	$\alpha_0^*$	aLim	Verifica
SLV 5	-19940	-12129	-568	0.499	2304.4	0.964	7.5167	11.92842	No
SLV 6	-19814	-12459	-568	0.501	2291.6	0.964	7.55864	11.92842	No
SLV 9	-17726	-10027	-307	0.564	2079.2	0.961	8.53984	11.92842	No
SLV 10	-17600	-10357	-307	0.568	2066.4	0.96	8.5936	11.92842	No
SLV 1	-16987	-14284	-565	0.571	2004	0.959	8.65791	6.09761	Si
SLV 2	-16792	-14794	-565	0.577	1984.2	0.959	8.74616	6.09761	Si
SLV 3	-12211	-14106	-302	0.773	1518.8	0.948	11.84983	6.09761	Si
SLV 4	-12016	-14617	-302	0.783	1499	0.947	12.01681	6.09761	Si
SLV 13	-9605	-7278	304	0.941	1254.6	0.939	14.57507	6.09761	Si
SLV 14	-9410	-7789	304	0.957	1234.9	0.938	14.83247	6.09761	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	12.212	SLU 31	Si
V_SLU	11.756	SLU 84	Si
PF_SLV	1.743	SLV 16	Si
V_SLV	3.974	SLV 1	Si
PFFP_SLV	4.854	SLV 11	Si
R_SLV	0.63	SLV 5	No



## Maschio 56

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.683	5.826	-21.763	5.826	L4	L5	2.08	0.28	3.72	3.72	3.72			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fV0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	1900000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 76	2.01	-5694.71	-22951	-0.000114	0.0003743	0.0035	2.08	14630.43	18149.31	18149.31	3.19	No	Si
SLU 76	3.91	3943.62	-20914	-0.0000913	0.0003743	0.0035	2.08	14078.95	16503.67	16503.67	4.18	No	Si
SLU 51	2.01	-5028.92	-19247	-0.0000952	0.0003743	0.0035	2.08	13519.62	16338.38	16338.38	3.25	No	Si
SLU 51	3.91	3465.48	-17144	-0.000075	0.0003743	0.0035	2.08	12674.92	14117.41	14117.41	4.07	No	Si
SLU 47	2.01	-5085.98	-18711	-0.0000939	0.0003743	0.0035	2.08	13318.85	16094.84	16094.84	3.16	No	Si
SLU 47	3.91	3401.51	-16604	-0.0000728	0.0003743	0.0035	2.08	12432.98	13788.11	13788.11	4.05	No	Si
SLU 52	2.01	-5311.9	-20364	-0.0001015	0.0003743	0.0035	2.08	13905.11	16860.5	16860.5	3.17	No	Si
SLU 52	3.91	3613.03	-18296	-0.0000799	0.0003743	0.0035	2.08	13156.8	14831.26	14831.26	4.1	No	Si
SLU 73	2.01	-5628.01	-22525	-0.0001119	0.0003743	0.0035	2.08	14527.21	17929.68	17929.68	3.19	No	Si
SLU 73	3.91	3893.27	-20477	-0.0000894	0.0003743	0.0035	2.08	13941.9	16219.26	16219.26	4.17	No	Si
SLU 44	2.01	-5019.28	-18285	-0.0000919	0.0003743	0.0035	2.08	13152.28	15904.87	15904.87	3.17	No	Si
SLU 44	3.91	3351.17	-16168	-0.000071	0.0003743	0.0035	2.08	12229.96	13524.47	13524.47	4.04	No	Si
SLU 49	2.01	-5057.48	-19453	-0.0000962	0.0003743	0.0035	2.08	13594.11	16433.26	16433.26	3.25	No	Si
SLU 49	3.91	3479.36	-17354	-0.0000758	0.0003743	0.0035	2.08	12766.15	14246.27	14246.27	4.09	No	Si
SLU 55	2.01	-5378.6	-20789	-0.0001036	0.0003743	0.0035	2.08	14040.62	17065.07	17065.07	3.17	No	Si
SLU 55	3.91	3663.37	-18732	-0.0000818	0.0003743	0.0035	2.08	13327.24	15104.67	15104.67	4.12	No	Si
SLU 68	2.01	-5402.09	-20872	-0.0001041	0.0003743	0.0035	2.08	14066.31	17105.31	17105.31	3.17	No	Si
SLU 68	3.91	3681.76	-18786	-0.0000821	0.0003743	0.0035	2.08	13347.51	15138.04	15138.04	4.11	No	Si
SLU 65	2.01	-5335.39	-20447	-0.000102	0.0003743	0.0035	2.08	13932.03	16900.16	16900.16	3.17	No	Si
SLU 65	3.91	3631.41	-18349	-0.0000803	0.0003743	0.0035	2.08	13177.89	14864.54	14864.54	4.09	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLD 15	2.01	-5360.17	-15388	-0.0000824	0.0005615	0.0035	2.08		15006.72	15006.72	2.8		Si
SLD 15	3.91	3615.87	-13827	-0.0000641	0.0005615	0.0035	2.08		12653.19	12653.19	3.5		Si
SLD 14	2.01	-5493.32	-16689	-0.0000873	0.0005615	0.0035	2.08		16013.12	16013.12	2.92		Si
SLD 14	3.91	4256.63	-15285	-0.0000733	0.0005615	0.0035	2.08		13780.03	13780.03	3.24		Si
SLV 12	2.01	-5969.95	-12522	-0.0000823	0.0005615	0.0035	2.08		12720.71	12720.71	2.13		Si
SLV 12	3.91	2219.64	-10573	-0.0000442	0.0005615	0.0035	2.08		10193.9	10193.9	4.59		Si
SLV 15	2.01	-7337.78	-14522	-0.0001021	0.0005615	0.0035	2.08		14336.08	14336.08	1.95		Si
SLV 15	3.91	4680.69	-13051	-0.0000703	0.0005615	0.0035	2.08		12059.62	12059.62	2.58		Si
SLV 13	2.01	-6884.25	-16776	-0.0001001	0.0005615	0.0035	2.08		16080.58	16080.58	2.34		Si
SLV 13	3.91	5616.68	-15576	-0.0000851	0.0005615	0.0035	2.08		14006.62	14006.62	2.49		Si
SLD 16	2.01	-5691.17	-15699	-0.0000861	0.0005615	0.0035	2.08		15246.51	15246.51	2.68		Si
SLD 16	3.91	3844.7	-14170	-0.0000669	0.0005615	0.0035	2.08		12916.38	12916.38	3.36		Si
SLV 11	2.01	-5472.07	-12053	-0.0000758	0.0005615	0.0035	2.08		12328.17	12328.17	2.25		Si
SLV 11	3.91	1875.45	-10058	-0.0000402	0.0005615	0.0035	2.08		9797.15	9797.15	5.22		Si
SLV 16	2.01	-8108.64	-15247	-0.0001139	0.0005615	0.0035	2.08		14898.96	14898.96	1.84		Si
SLV 16	3.91	5213.6	-13848	-0.000077	0.0005615	0.0035	2.08		12669.25	12669.25	2.43		Si
SLV 14	2.01	-7655.11	-17502	-0.0001096	0.0005615	0.0035	2.08		16615.56	16615.56	2.17		Si
SLV 14	3.91	6149.59	-16373	-0.000092	0.0005615	0.0035	2.08		14631.05	14631.05	2.38		Si
SLD 12	2.01	-4782.72	-14507	-0.0000752	0.0005615	0.0035	2.08		14324.04	14324.04	2.99		Si
SLD 12	3.91	2552.5	-12730	-0.0000527	0.0005615	0.0035	2.08		11815.24	11815.24	4.63		Si



#### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 78	2.01	-5666.22	-23694	-19730	-5451	2.08	2.08	-33877	10833	6309	42820	17440	5304	22744	No	4.17	Si
SLU 78	3.91	4021.47	-21663	-18039	-5415	2.08	2.08	-30974	10833	6309	42820	17440	5304	22744	No	4.2	Si
SLU 73	2.01	-5628.01	-22525	-18757	-5376	2.08	2.08	-32206	10833	6309	42820	17440	5304	22744	No	4.23	Si
SLU 73	3.91	3893.27	-20477	-17052	-5298	2.08	2.08	-29278	10833	6309	42820	17440	5304	22744	No	4.29	Si
SLU 76	2.01	-5694.71	-22951	-19112	-5443	2.08	2.08	-32815	10833	6309	42820	17440	5304	22744	No	4.18	Si
SLU 76	3.91	3943.62	-20914	-17415	-5365	2.08	2.08	-29902	10833	6309	42820	17440	5304	22744	No	4.24	Si
SLU 81	2.01	-5444.01	-23693	-19729	-5303	2.08	2.08	-33876	10833	6309	42820	17440	5304	22744	No	4.29	Si
SLU 81	3.91	4039.58	-21648	-18027	-5330	2.08	2.08	-30952	10833	6309	42820	17440	5304	22744	No	4.27	Si
SLU 80	2.01	-5637.65	-23488	-19559	-5427	2.08	2.08	-33582	10833	6309	42820	17440	5304	22744	No	4.19	Si
SLU 80	3.91	4007.59	-21454	-17865	-5391	2.08	2.08	-30674	10833	6309	42820	17440	5304	22744	No	4.22	Si
SLU 77	2.01	-5480.57	-23860	-19868	-5326	2.08	2.08	-34114	10833	6309	42820	17440	5304	22744	No	4.27	Si
SLU 77	3.91	4041.92	-21819	-18169	-5352	2.08	2.08	-31196	10833	6309	42820	17440	5304	22744	No	4.25	Si
SLU 84	2.01	-5696.36	-23953	-19946	-5495	2.08	2.08	-34247	10833	6309	42820	17440	5304	22744	No	4.14	Si
SLU 84	3.91	4069.47	-21929	-18261	-5461	2.08	2.08	-31354	10833	6309	42820	17440	5304	22744	No	4.17	Si
SLU 82	2.01	-5629.66	-23527	-19591	-5428	2.08	2.08	-33638	10833	6309	42820	17440	5304	22744	No	4.19	Si
SLU 82	3.91	4019.13	-21493	-17897	-5393	2.08	2.08	-30730	10833	6309	42820	17440	5304	22744	No	4.22	Si
SLU 75	2.01	-5599.52	-23268	-19376	-5384	2.08	2.08	-33268	10833	6309	42820	17440	5304	22744	No	4.22	Si
SLU 75	3.91	3971.13	-21227	-17676	-5348	2.08	2.08	-30350	10833	6309	42820	17440	5304	22744	No	4.25	Si
SLU 83	2.01	-5510.71	-24119	-20084	-5370	2.08	2.08	-34484	10833	6309	42820	17440	5304	22744	No	4.24	Si
SLU 83	3.91	4089.92	-22084	-18390	-5398	2.08	2.08	-31576	10833	6309	42820	17440	5304	22744	No	4.21	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 13	2.01	-6884.25	-16776	-13970	-7038	2.08	1.889	-26785	15774	8343	42820	26160	5304	31464		4.47	Si
SLV 13	3.91	5616.68	-15576	-12970	-6648	2.08	2.0382	-22270	14871	8487	42820	26160	5304	31464		4.73	Si
SLV 14	2.01	-7655.11	-17502	-14574	-7767	2.08	1.8079	-29116	16240	8221	42820	26160	5304	31464		4.05	Si
SLV 14	3.91	6149.59	-16373	-13634	-7371	2.08	1.9932	-23410	15099	8427	42820	26160	5304	31464		4.27	Si
SLV 15	2.01	-7337.78	-14522	-12092	-6835	2.08	1.6041	-27290	15875	7130	42820	26160	5304	31464		4.6	Si
SLV 15	3.91	4680.69	-13051	-10868	-6580	2.08	2.0441	-18660	14149	8098	42820	26160	5304	31464		4.78	Si
SLD 16	2.01	-5691.17	-15699	-13073	-5378	2.08	2.0325	-22447	14906	8483	42820	26160	5304	31464		5.85	Si
SLD 16	3.91	3844.7	-14170	-11799	-5277	2.08	2.08	-20259	14469	8427	42820	26160	5304	31464		5.96	Si
SLV 9	2.01	-3960.3	-19569	-16295	-4915	2.08	2.08	-27979	16012	9326	42820	26160	5304	31464		6.4	Si
SLV 9	3.91	4995.41	-18474	-15383	-4607	2.08	2.08	-26413	15699	9143	42820	26160	5304	31464		6.83	Si
SLV 10	2.01	-4458.18	-20037	-16685	-5386	2.08	2.08	-28649	16147	9404	42820	26160	5304	31464		5.84	Si
SLV 10	3.91	5339.6	-18988	-15812	-5074	2.08	2.08	-27149	15847	9229	42820	26160	5304	31464		6.2	Si
SLD 15	2.01	-5360.17	-15388	-12814	-5065	2.08	2.075	-22001	14817	8609	42820	26160	5304	31464		6.21	Si
SLD 15	3.91	3615.87	-13827	-11514	-4967	2.08	2.08	-19770	14371	8370	42820	26160	5304	31464		6.33	Si
SLD 13	2.01	-5162.32	-16377	-13638	-5153	2.08	2.08	-23416	15100	8794	42820	26160	5304	31464		6.11	Si
SLD 13	3.91	4027.8	-14943	-12443	-4996	2.08	2.08	-21365	14690	8555	42820	26160	5304	31464		6.3	Si
SLV 16	2.01	-8108.64	-15247	-12697	-7564	2.08	1.5246	-30219	16250	6937	42820	26160	5304	31464		4.16	Si
SLV 16	3.91	5213.6	-13848	-11532	-7303	2.08	1.9906	-19800	14377	8013	42820	26160	5304	31464		4.31	Si
SLD 14	2.01	-5493.32	-16689	-13897	-5466	2.08	2.08	-23861	15189	8846	42820	26160	5304	31464		5.76	Si
SLD 14	3.91	4256.63	-15285	-12728	-5306	2.08	2.08	-21854	14788	8612	42820	26160	5304	31464		5.93	Si

#### Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 2.97 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 7	179667	0.31	17100	-9959	189.64	1238.17	6.53	Si
SLV 11	179667	0.31	17261	-10053	189.64	1248.33	6.58	Si
SLV 8	179667	0.31	17951	-10455	189.64	1291.64	6.81	Si
SLV 12	179667	0.31	18112	-10549	189.64	1301.66	6.86	Si
SLV 3	179667	0.31	22696	-13218	189.64	1575.54	8.31	Si
SLV 15	179667	0.31	23232	-13531	189.64	1606.11	8.47	Si
SLV 4	179667	0.31	24014	-13986	189.64	1650.13	8.7	Si
SLV 16	179667	0.31	24550	-14298	189.64	1679.95	8.86	Si
SLV 1	179667	0.31	27854	-16222	189.64	1856.87	9.79	Si
SLV 13	179667	0.31	28390	-16534	189.64	1884.49	9.94	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 2.97 Wa = 0.05 Ta = 0.0825

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	$\alpha_0^*$	aLim	Verifica
SLV 6	-15597	-15415	-895	0.657	1894	0.953	10.01412	11.92842	No
SLV 5	-15460	-14612	-896	0.661	1880	0.953	10.09147	11.92842	No
SLV 10	-14185	-17358	-710	0.722	1750.6	0.95	11.05502	11.92842	No
SLV 9	-14048	-16554	-710	0.728	1736.6	0.949	11.14869	11.92842	No
SLV 8	-7543	-15935	638	1.209	1078.4	0.925	19.00376	11.92842	Si
SLV 7	-7406	-15132	637	1.226	1064.7	0.924	19.28956	11.92842	Si
SLV 2	-14463	-13552	-575	0.719	1778.8	0.95	10.9945	6.09761	Si
SLV 1	-14251	-12307	-576	0.728	1757.2	0.95	11.13683	6.09761	Si
SLV 12	-6131	-17878	823	1.391	936.8	0.916	22.06051	11.92842	Si
SLV 11	-5994	-17074	823	1.414	923.1	0.915	22.4532	11.92842	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.165	SLU 47	Si



Stato limite	Coeff.s.	Comb.	Verifica
V_SLV	4.139	SLV 84	Si
PF_SLV	1.837	SLV 16	Si
V_SLV	4.051	SLV 14	Si
PFFP_SLV	6.529	SLV 7	Si
R_SLV	0.84	SLV 6	No

## Maschio 58

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.613	1.006	-19.613	5.826	L4	L5	4.82	0.16	3.72	3.72	3.72			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv / ε,CNR DT-200					CRM / Fibrenet?			
											elim,conv	ε,fd	yF,d	connettori	tipo di muratura	CRM	Intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 45	1.11	-6107.77	-57985	-0.0001178	0.0004492	0.0035	4.82	53752.27	115312.85	115312.85	18.88	No	Si
SLU 45	4.83	9471.37	-46665	-0.0001032	0.0004492	0.0035	4.82	56768.98	90165.34	90165.34	9.52	No	Si
SLU 43	1.11	-5923.86	-56448	-0.0001142	0.0004492	0.0035	4.82	54546.86	113481.62	113481.62	19.16	No	Si
SLU 43	4.83	9271.48	-45221	-0.0000999	0.0004492	0.0035	4.82	56682.37	88222.25	88222.25	9.52	No	Si
SLU 50	1.11	-6124.61	-58297	-0.0001185	0.0004492	0.0035	4.82	53576.78	115683.39	115683.39	18.89	No	Si
SLU 50	4.83	9759.77	-47031	-0.0001046	0.0004492	0.0035	4.82	56773.99	90658.15	90658.15	9.29	No	Si
SLU 46	1.11	-6065.37	-58071	-0.0001179	0.0004492	0.0035	4.82	53704.49	115414.78	115414.78	19.03	No	Si
SLU 46	4.83	9463.48	-46692	-0.0001032	0.0004492	0.0035	4.82	56769.6	90202.38	90202.38	9.53	No	Si
SLU 48	1.11	-6208.14	-58910	-0.0001199	0.0004492	0.0035	4.82	53216.37	116413.74	116413.74	18.75	No	Si
SLU 48	4.83	9715.52	-47570	-0.0001056	0.0004492	0.0035	4.82	56768.9	91383.29	91383.29	9.41	No	Si
SLU 44	1.11	-5853.2	-56590	-0.0001143	0.0004492	0.0035	4.82	54478.24	113651.49	113651.49	19.42	No	Si
SLU 44	4.83	9258.32	-45267	-0.0000999	0.0004492	0.0035	4.82	56686.77	88283.99	88283.99	9.54	No	Si
SLU 49	1.11	-6165.75	-58996	-0.00012	0.0004492	0.0035	4.82	53164.54	116515.67	116515.67	18.9	No	Si
SLU 49	4.83	9707.62	-47597	-0.0001056	0.0004492	0.0035	4.82	56768.24	91420.34	91420.34	9.42	No	Si
SLU 71	1.11	-6615.5	-64092	-0.0001318	0.0004492	0.0035	4.82	49403.05	121169.68	121169.68	18.32	No	Si
SLU 71	4.83	10202.52	-52084	-0.0001158	0.0004492	0.0035	4.82	56142.89	97457.67	97457.67	9.55	No	Si
SLU 47	1.11	-5953.57	-57515	-0.0001164	0.0004492	0.0035	4.82	54008.32	114752.38	114752.38	19.27	No	Si
SLU 47	4.83	9502.46	-46172	-0.0001023	0.0004492	0.0035	4.82	56751.4	89501.94	89501.94	9.42	No	Si
SLU 51	1.11	-6082.21	-58382	-0.0001185	0.0004492	0.0035	4.82	53527.64	115785.31	115785.31	19.04	No	Si
SLU 51	4.83	9751.87	-47059	-0.0001046	0.0004492	0.0035	4.82	56774.09	90695.2	90695.2	9.3	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 6	1.11	-8593.6	-51497	-0.0001067	0.0006738	0.0035	4.82		112842.55	112842.55	13.13		Si
SLV 6	4.83	19174.38	-47775	-0.0001237	0.0006738	0.0035	4.82		96332.02	96332.02	5.02		Si
SLV 14	1.11	2397.14	-32474	-0.000059	0.0006738	0.0035	4.82		69505.05	69505.05	28.99		Si
SLV 14	4.83	19801.51	-35325	-0.0001018	0.0006738	0.0035	4.82		74503.79	74503.79	3.76		Si
SLD 10	1.11	-4509.91	-45539	-0.0000866	0.0006738	0.0035	4.82		103546.23	103546.23	22.96		Si
SLD 10	4.83	14706.37	-41274	-0.0001015	0.0006738	0.0035	4.82		84934.1	84934.1	5.78		Si
SLD 9	1.11	-4518.77	-45256	-0.0000861	0.0006738	0.0035	4.82		103086.74	103086.74	22.81		Si
SLD 9	4.83	14607.16	-41111	-0.000101	0.0006738	0.0035	4.82		84649.28	84649.28	5.8		Si
SLV 15	1.11	3201	-32475	-0.0000607	0.0006738	0.0035	4.82		69508.09	69508.09	21.71		Si
SLV 15	4.83	11052.63	-30611	-0.0000743	0.0006738	0.0035	4.82		66238.95	66238.95	5.99		Si
SLV 9	1.11	-3993.54	-41447	-0.0000782	0.0006738	0.0035	4.82		96898.03	96898.03	24.26		Si
SLV 9	4.83	23729.69	-43838	-0.0001265	0.0006738	0.0035	4.82		89429.9	89429.9	3.77		Si
SLV 13	1.11	2365.75	-31471	-0.0000572	0.0006738	0.0035	4.82		67747.19	67747.19	28.64		Si
SLV 13	4.83	19449.96	-34749	-0.0001	0.0006738	0.0035	4.82		73494.47	73494.47	3.78		Si
SLV 16	1.11	3232.39	-33478	-0.0000625	0.0006738	0.0035	4.82		71265.96	71265.96	22.05		Si
SLV 16	4.83	11404.17	-31186	-0.0000761	0.0006738	0.0035	4.82		67248.26	67248.26	5.9		Si
SLV 10	1.11	-3973.27	-42094	-0.0000793	0.0006738	0.0035	4.82		97952.42	97952.42	24.65		Si
SLV 10	4.83	23956.74	-44210	-0.0001277	0.0006738	0.0035	4.82		90081.79	90081.79	3.76		Si





Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 5	1.11	-8613.87	-50850	-0.0001055	0.0006738	0.0035	4.82		111856.77	111856.77	12.99		Si
SLV 5	4.83	18947.33	-47403	-0.0001224	0.0006738	0.0035	4.82		95680.13	95680.13	5.05		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	oN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 79	1.11	-6877.83	-69483	-40798	-2758	4.82	4.82	-52901	10833	8355	122342	27715	24582	52297	No	18.96	Si
SLU 79	4.83	10487.07	-56801	-33351	-940	4.82	4.82	-43246	10833	8355	122342	27715	24582	52297	No	55.66	Si
SLU 71	1.11	-6615.5	-64092	-37632	-2908	4.82	4.82	-48797	10833	8355	122342	27715	24582	52297	No	17.98	Si
SLU 71	4.83	10202.52	-52084	-30581	-1248	4.82	4.82	-39654	10833	8355	122342	27715	24582	52297	No	41.9	Si
SLU 70	1.11	-6656.64	-64791	-38043	-2834	4.82	4.82	-49329	10833	8355	122342	27715	24582	52297	No	18.46	Si
SLU 70	4.83	10150.38	-52650	-30914	-1157	4.82	4.82	-40085	10833	8355	122342	27715	24582	52297	No	45.19	Si
SLU 72	1.11	-6573.11	-64178	-37682	-2856	4.82	4.82	-48862	10833	8355	122342	27715	24582	52297	No	18.31	Si
SLU 72	4.83	10194.62	-52111	-30597	-1197	4.82	4.82	-39675	10833	8355	122342	27715	24582	52297	No	43.69	Si
SLU 69	1.11	-6699.04	-64706	-37992	-2885	4.82	4.82	-49264	10833	8355	122342	27715	24582	52297	No	18.12	Si
SLU 69	4.83	10158.27	-52623	-30898	-1208	4.82	4.82	-40064	10833	8355	122342	27715	24582	52297	No	43.28	Si
SLU 48	1.11	-6208.14	-58910	-34589	-2798	4.82	4.82	-44851	10833	8355	122342	27715	24582	52297	No	18.69	Si
SLU 48	4.83	9715.52	-47570	-27931	-1286	4.82	4.82	-36217	10833	8355	122342	27715	24582	52297	No	40.67	Si
SLU 51	1.11	-6082.21	-58382	-34279	-2769	4.82	4.82	-44450	10833	8355	122342	27715	24582	52297	No	18.89	Si
SLU 51	4.83	9751.87	-47059	-27631	-1275	4.82	4.82	-35828	10833	8355	122342	27715	24582	52297	No	41.03	Si
SLU 49	1.11	-6165.75	-58996	-34640	-2746	4.82	4.82	-44917	10833	8355	122342	27715	24582	52297	No	19.05	Si
SLU 49	4.83	9707.62	-47597	-27947	-1235	4.82	4.82	-36238	10833	8355	122342	27715	24582	52297	No	42.35	Si
SLU 50	1.11	-6124.61	-58297	-34229	-2820	4.82	4.82	-44384	10833	8355	122342	27715	24582	52297	No	18.54	Si
SLU 50	4.83	9759.77	-47031	-27615	-1326	4.82	4.82	-35807	10833	8355	122342	27715	24582	52297	No	39.45	Si
SLU 66	1.11	-6598.67	-63781	-37449	-2785	4.82	4.82	-48560	10833	8355	122342	27715	24582	52297	No	18.78	Si
SLU 66	4.83	9914.13	-51718	-30366	-1131	4.82	4.82	-39375	10833	8355	122342	27715	24582	52297	No	46.22	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	oN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 4	1.11	-12168.73	-64821	-38060	7007	4.82	4.82	-49352	16250	12532	122342	41573	24582	66155		9.44	Si
SLV 4	4.83	-4537.01	-43070	-25289	7897	4.82	4.82	-32791	16250	12532	122342	41573	24582	66155		8.38	Si
SLV 5	1.11	-8613.87	-50850	-29857	-11051	4.82	4.82	-38715	16250	12532	122342	41573	24582	66155		5.99	Si
SLV 5	4.83	18947.33	-47403	-27833	-7409	4.82	4.82	-36091	16250	12532	122342	41573	24582	66155		8.93	Si
SLV 3	1.11	-12200.12	-63818	-37471	6811	4.82	4.82	-48588	16250	12532	122342	41573	24582	66155		9.71	Si
SLV 3	4.83	-4888.56	-42494	-24951	7708	4.82	4.82	-32353	16250	12532	122342	41573	24582	66155		8.58	Si
SLV 7	1.11	-5829.71	-54197	-31822	10319	4.82	4.82	-41263	16250	12532	122342	41573	24582	66155		6.41	Si
SLV 7	4.83	-9043.79	-33609	-19734	9378	4.82	4.82	-25588	16250	12532	122342	41573	24582	66155		7.05	Si
SLV 9	1.11	-3993.54	-41447	-24336	-14485	4.82	4.82	-31556	16250	12532	122342	41573	24582	66155		4.57	Si
SLV 9	4.83	23729.69	-43838	-25740	-11042	4.82	4.82	-33376	16250	12532	122342	41573	24582	66155		5.99	Si
SLV 10	1.11	-3973.27	-42094	-24716	-14359	4.82	4.82	-32049	16250	12532	122342	41573	24582	66155		4.61	Si
SLV 10	4.83	23956.74	-44210	-25958	-10919	4.82	4.82	-33659	16250	12532	122342	41573	24582	66155		6.06	Si
SLV 6	1.11	-8593.6	-51497	-30237	-10925	4.82	4.82	-39208	16250	12532	122342	41573	24582	66155		6.06	Si
SLV 6	4.83	19174.38	-47775	-28051	-7286	4.82	4.82	-36374	16250	12532	122342	41573	24582	66155		9.08	Si
SLV 13	1.11	2365.75	-31471	-18478	-11047	4.82	4.82	-23961	16250	12532	122342	41573	24582	66155		5.99	Si
SLV 13	4.83	19449.96	-34749	-20403	-9438	4.82	4.82	-26456	16250	12532	122342	41573	24582	66155		7.01	Si
SLV 14	1.11	2397.14	-32474	-19067	-10851	4.82	4.82	-24724	16250	12532	122342	41573	24582	66155		6.1	Si
SLV 14	4.83	19801.51	-35325	-20741	-9249	4.82	4.82	-26895	16250	12532	122342	41573	24582	66155		7.15	Si
SLV 8	1.11	-5809.44	-54845	-32203	10445	4.82	4.82	-41756	16250	12532	122342	41573	24582	66155		6.33	Si
SLV 8	4.83	-8816.73	-33980	-19952	9501	4.82	4.82	-25871	16250	12532	122342	41573	24582	66155		6.96	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCC D.M. 17-01-18 (N.T.C.)

quota 2.97 Ta 0.14 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 15	-34631	0.31	265.72	2091.68	3560.73	2826.2	10.64	Si
SLV 16	-35399	0.31	265.72	2122.7	3628.99	2875.84	10.82	Si
SLV 13	-36619	0.31	265.72	2170.55	3736.66	2953.6	11.12	Si
SLV 14	-37387	0.31	265.72	2199.84	3804.55	3002.19	11.3	Si
SLV 11	-39352	0.31	265.72	2271.69	3973.24	3122.46	11.75	Si
SLV 12	-39848	0.31	265.72	2289.15	4015.32	3152.23	11.86	Si
SLV 7	-45270	0.31	265.72	2461.7	4475.7	3468.7	13.05	Si
SLV 8	-45767	0.31	265.72	2475.83	4517.9	3496.87	13.16	Si
SLV 9	-45979	0.31	265.72	2481.78	4535.94	3508.86	13.21	Si
SLV 10	-46475	0.31	265.72	2495.52	4578.15	3536.83	13.31	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 2.97 Wa = 0.03 Ta = 0.1444

Comb.	N top	N base	V orto	a0	M*	e*	a0*	aLim	Verifica
SLV 6	-47775	-51497	-246	0.555	5268.3	0.976	8.26749	14.01518	No
SLV 5	-47403	-50850	-247	0.559	5230.4	0.976	8.32796	14.01518	No
SLV 10	-44210	-42094	226	0.596	4905.2	0.975	8.89452	14.01518	No
SLV 9	-43838	-41447	226	0.601	4867.3	0.974	8.96495	14.01518	No
SLV 2	-47208	-63816	-784	0.551	5210.5	0.976	8.19923	11.26471	No
SLV 1	-46632	-62814	-785	0.557	5151.9	0.976	8.29354	11.26471	No
SLV 4	-43070	-64821	-773	0.599	4789	0.974	8.93544	11.26471	No
SLV 3	-42494	-63818	-773	0.606	4730.4	0.974	9.04821	11.26471	No
SLV 8	-33980	-54845	-208	0.758	3863.5	0.968	11.37497	14.01518	No
SLV 7	-33609	-54197	-208	0.765	3825.6	0.968	11.49193	14.01518	No

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	9.289	SLU 50	Si
V_SLU	17.983	SLU 71	Si
PF_SLV	3.76	SLV 10	Si





Stato limite	Coeff.s.	Comb.	Verifica
V_SLV	4.567	SLV 9	Si
PFFP_SLV	10.636	SLV 15	Si
R_SLV	0.59	SLV 6	No

## Maschio 61

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-15.033	2.166	-15.033	6.526	L4	L5	4.36	0.16	3.72	3.72	3.72			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma_{F,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 41	1.11	7898.1	-43907	-0.0001074	0.0004492	0.0035	4.36	46412.26	75866.26	75866.26	9.61	No	Si
SLU 41	3.21	115.45	-32834	-0.000062	0.0004492	0.0035	4.36	44006.04	60420.46	60420.46	523.33	No	Si
SLU 42	1.11	7750.62	-43701	-0.0001065	0.0004492	0.0035	4.36	46424.78	75615.83	75615.83	9.76	No	Si
SLU 42	3.21	26.73	-32795	-0.0000616	0.0004492	0.0035	4.36	43986.45	60359.34	60359.34	2258.05	No	Si
SLU 74	1.11	8678.88	-51377	-0.0001266	0.0004492	0.0035	4.36	44492.91	84920.16	84920.16	9.78	No	Si
SLU 74	3.21	-525.1	-38442	-0.0000745	0.0004492	0.0035	4.36	46008.51	77607.64	77607.64	147.8	No	Si
SLU 40	1.11	7677.32	-42910	-0.0001045	0.0004492	0.0035	4.36	46452.54	74658.03	74658.03	9.72	No	Si
SLU 40	3.21	123.15	-32015	-0.0000604	0.0004492	0.0035	4.36	43579.05	59139.19	59139.19	480.24	No	Si
SLU 83	1.11	9109.72	-52503	-0.0001305	0.0004492	0.0035	4.36	43956.17	86284.64	86284.64	9.47	No	Si
SLU 83	3.21	-280.59	-39255	-0.0000755	0.0004492	0.0035	4.36	46165.24	78725.83	78725.83	280.57	No	Si
SLU 39	1.11	7824.81	-43117	-0.0001054	0.0004492	0.0035	4.36	46448.36	74908.46	74908.46	9.57	No	Si
SLU 39	3.21	211.87	-32054	-0.0000607	0.0004492	0.0035	4.36	43600.2	59200.31	59200.31	279.42	No	Si
SLU 77	1.11	8752.17	-52167	-0.0001286	0.0004492	0.0035	4.36	44122.92	85877.96	85877.96	9.81	No	Si
SLU 77	3.21	-621.52	-39222	-0.0000764	0.0004492	0.0035	4.36	46159.57	78680.72	78680.72	126.59	No	Si
SLU 81	1.11	9036.42	-51713	-0.0001284	0.0004492	0.0035	4.36	44339.71	85326.84	85326.84	9.44	No	Si
SLU 81	3.21	-184.18	-38475	-0.0000736	0.0004492	0.0035	4.36	46015.49	77652.75	77652.75	421.62	No	Si
SLU 84	1.11	8962.23	-52296	-0.0001296	0.0004492	0.0035	4.36	44059.54	86034.21	86034.21	9.6	No	Si
SLU 84	3.21	-369.31	-39216	-0.0000756	0.0004492	0.0035	4.36	46158.47	78672.07	78672.07	213.02	No	Si
SLU 82	1.11	8888.93	-51506	-0.0001275	0.0004492	0.0035	4.36	44434.73	85076.41	85076.41	9.57	No	Si
SLU 82	3.21	-272.9	-38436	-0.0000738	0.0004492	0.0035	4.36	46007.17	77599	77599	284.35	No	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 12	1.11	7707.99	-30882	-0.000077	0.0006738	0.0035	4.36		59276.31	59276.31	7.69		Si
SLV 12	3.21	-6067.37	-27123	-0.0000654	0.0006738	0.0035	4.36		62785.83	62785.83	10.35		Si
SLV 9	1.11	5870.95	-30886	-0.0000722	0.0006738	0.0035	4.36		59283.52	59283.52	10.1		Si
SLV 9	3.21	5627.58	-21740	-0.000054	0.0006738	0.0035	4.36		44661.55	44661.55	7.94		Si
SLV 13	1.11	8915.39	-19296	-0.0000578	0.0006738	0.0035	4.36		40224.58	40224.58	4.51		Si
SLV 13	3.21	2762.47	-18051	-0.0000397	0.0006738	0.0035	4.36		37931.97	37931.97	13.73		Si
SLD 15	1.11	7189.13	-29165	-0.0000723	0.0006738	0.0035	4.36		56562.06	56562.06	7.87		Si
SLD 15	3.21	-808.1	-23940	-0.0000457	0.0006738	0.0035	4.36		57318.31	57318.31	70.93		Si
SLV 15	1.11	9468.08	-19445	-0.0000595	0.0006738	0.0035	4.36		40496.87	40496.87	4.28		Si
SLV 15	3.21	-740.9	-19752	-0.0000377	0.0006738	0.0035	4.36		49945.28	49945.28	67.41		Si
SLD 16	1.11	7185.63	-28833	-0.0000717	0.0006738	0.0035	4.36		56036.5	56036.5	7.8		Si
SLD 16	3.21	-819.44	-23750	-0.0000453	0.0006738	0.0035	4.36		56987.43	56987.43	69.54		Si
SLV 16	1.11	9459.93	-18670	-0.000058	0.0006738	0.0035	4.36		39078.66	39078.66	4.13		Si
SLV 16	3.21	-767.3	-19310	-0.0000369	0.0006738	0.0035	4.36		49133.87	49133.87	64.03		Si
SLV 14	1.11	8907.24	-18522	-0.0000563	0.0006738	0.0035	4.36		38806.36	38806.36	4.36		Si
SLV 14	3.21	2736.07	-17609	-0.0000388	0.0006738	0.0035	4.36		37108.07	37108.07	13.56		Si
SLV 11	1.11	7713.26	-31382	-0.000078	0.0006738	0.0035	4.36		60066.83	60066.83	7.79		Si
SLV 11	3.21	-6050.32	-27408	-0.0000659	0.0006738	0.0035	4.36		63257.11	63257.11	10.46		Si
SLV 10	1.11	5865.69	-30386	-0.0000712	0.0006738	0.0035	4.36		58493	58493	9.97		Si
SLV 10	3.21	5610.53	-21454	-0.0000534	0.0006738	0.0035	4.36		44147.51	44147.51	7.87		Si



#### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 75	1.11	8531.39	-51171	-30045	-5427	4.36	4.36	-43069	10833	7557	122342	25070	22236	47306	No	8.72	Si
SLU 75	3.21	-613.83	-38403	-22549	-4725	4.36	4.36	-32323	10833	7557	122342	25070	22236	47306	No	10.01	Si
SLU 79	1.11	8668.02	-51807	-30419	-5427	4.36	4.36	-43605	10833	7557	122342	25070	22236	47306	No	8.72	Si
SLU 79	3.21	-661.71	-39001	-22900	-4604	4.36	4.36	-32826	10833	7557	122342	25070	22236	47306	No	10.28	Si
SLU 74	1.11	8678.88	-51377	-30166	-5618	4.36	4.36	-43243	10833	7557	122342	25070	22236	47306	No	8.42	Si
SLU 74	3.21	-525.1	-38442	-22572	-4798	4.36	4.36	-32356	10833	7557	122342	25070	22236	47306	No	9.86	Si
SLU 81	1.11	9036.42	-51713	-30363	-5936	4.36	4.36	-43526	10833	7557	122342	25070	22236	47306	No	7.97	Si
SLU 81	3.21	-184.18	-38475	-22591	-5099	4.36	4.36	-32384	10833	7557	122342	25070	22236	47306	No	9.28	Si
SLU 78	1.11	8604.68	-51961	-30509	-5364	4.36	4.36	-43734	10833	7557	122342	25070	22236	47306	No	8.82	Si
SLU 78	3.21	-710.24	-39183	-23006	-4652	4.36	4.36	-32979	10833	7557	122342	25070	22236	47306	No	10.17	Si
SLU 84	1.11	8962.23	-52296	-30706	-5682	4.36	4.36	-44017	10833	7557	122342	25070	22236	47306	No	8.33	Si
SLU 84	3.21	-369.31	-39216	-23026	-4953	4.36	4.36	-33007	10833	7557	122342	25070	22236	47306	No	9.55	Si
SLU 82	1.11	8888.93	-51506	-30242	-5745	4.36	4.36	-43352	10833	7557	122342	25070	22236	47306	No	8.23	Si
SLU 82	3.21	-272.9	-38436	-22568	-5026	4.36	4.36	-32351	10833	7557	122342	25070	22236	47306	No	9.41	Si
SLU 83	1.11	9109.72	-52503	-30827	-5873	4.36	4.36	-44191	10833	7557	122342	25070	22236	47306	No	8.06	Si
SLU 83	3.21	-280.59	-39255	-23049	-5026	4.36	4.36	-33040	10833	7557	122342	25070	22236	47306	No	9.41	Si
SLU 77	1.11	8752.17	-52167	-30630	-5555	4.36	4.36	-43908	10833	7557	122342	25070	22236	47306	No	8.52	Si
SLU 77	3.21	-621.52	-39222	-23029	-4725	4.36	4.36	-33012	10833	7557	122342	25070	22236	47306	No	10.01	Si
SLU 80	1.11	8520.53	-51601	-30298	-5236	4.36	4.36	-43431	10833	7557	122342	25070	22236	47306	No	9.03	Si
SLU 80	3.21	-750.43	-38962	-22877	-4531	4.36	4.36	-32794	10833	7557	122342	25070	22236	47306	No	10.44	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 1	1.11	4337.73	-43136	-25328	-7376	4.36	4.36	-36307	16250	11336	122342	37605	22236	59841		8.11	Si
SLD 1	3.21	-663.91	-30042	-17639	-6229	4.36	4.36	-25286	16250	11336	122342	37605	22236	59841		9.61	Si
SLD 2	1.11	4334.23	-42804	-25132	-7221	4.36	4.36	-36027	16250	11336	122342	37605	22236	59841		8.29	Si
SLD 2	3.21	-675.25	-29852	-17528	-6079	4.36	4.36	-25126	16250	11336	122342	37605	22236	59841		9.84	Si
SLV 4	1.11	2607.96	-52672	-30927	-8815	4.36	4.36	-44333	16250	11336	122342	37605	22236	59841		6.79	Si
SLV 4	3.21	-4245.83	-35740	-20985	-7357	4.36	4.36	-30082	16250	11336	122342	37605	22236	59841		8.13	Si
SLD 5	1.11	4957.17	-38069	-22353	-7020	4.36	4.36	-32042	16250	11336	122342	37605	22236	59841		8.52	Si
SLD 5	3.21	1631.68	-26727	-15693	-5931	4.36	4.36	-22496	16250	11336	122342	37605	22236	59841		10.09	Si
SLV 3	1.11	2616.11	-53447	-31381	-9177	4.36	4.36	-44985	16250	11336	122342	37605	22236	59841		6.52	Si
SLV 3	3.21	-4219.43	-36182	-21245	-7706	4.36	4.36	-30454	16250	11336	122342	37605	22236	59841		7.77	Si
SLV 5	1.11	3815.36	-41087	-24124	-11391	4.36	4.36	-34582	16250	11336	122342	37605	22236	59841		5.25	Si
SLV 5	3.21	4584.02	-26669	-15659	-9602	4.36	4.36	-22447	16250	11336	122342	37605	22236	59841		6.23	Si
SLV 2	1.11	2055.27	-52524	-30840	-12116	4.36	4.36	-44208	16250	11336	122342	37605	22236	59841		4.94	Si
SLV 2	3.21	-742.46	-34040	-19987	-10133	4.36	4.36	-28651	16250	11336	122342	37605	22236	59841		5.91	Si
SLV 9	1.11	5870.95	-30886	-18135	-7213	4.36	4.36	-25996	16250	11336	122342	37605	22236	59841		8.3	Si
SLV 9	3.21	5627.58	-21740	-12765	-6124	4.36	4.36	-18298	16160	11273	122342	37605	22236	59841		9.77	Si
SLV 1	1.11	2063.42	-53298	-31294	-12478	4.36	4.36	-44860	16250	11336	122342	37605	22236	59841		4.8	Si
SLV 1	3.21	-716.06	-34482	-20246	-10483	4.36	4.36	-29023	16250	11336	122342	37605	22236	59841		5.71	Si
SLV 6	1.11	3810.1	-40587	-23831	-11157	4.36	4.36	-34161	16250	11336	122342	37605	22236	59841		5.36	Si
SLV 6	3.21	4566.97	-26384	-15491	-9376	4.36	4.36	-22206	16250	11336	122342	37605	22236	59841		6.38	Si

#### Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 2.97 Ta 0.14 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 14	-18113	0.31	240.36	1243.76	2038.18	1640.97	6.83	Si
SLV 13	-18555	0.31	240.36	1268.98	2078.78	1673.88	6.96	Si
SLV 16	-19791	0.31	240.36	1338.2	2191.6	1764.9	7.34	Si
SLV 15	-20233	0.31	240.36	1362.49	2231.83	1797.16	7.48	Si
SLV 10	-21967	0.31	240.36	1455.41	2389.81	1922.61	8	Si
SLV 9	-22252	0.31	240.36	1470.36	2415.85	1943.1	8.08	Si
SLV 6	-26881	0.31	240.36	1698.34	2829.02	2263.68	9.42	Si
SLV 5	-27166	0.31	240.36	1711.53	2854.46	2283	9.5	Si
SLV 12	-27560	0.31	240.36	1729.54	2889.54	2309.54	9.61	Si
SLV 11	-27845	0.31	240.36	1742.48	2914.99	2328.74	9.69	Si

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 2.97 Wa = 0.03 Ta = 0.1444

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 7	-22549	-41582	-217	0.999	2661.6	0.959	15.1354	14.01518	Si
SLV 8	-22465	-41082	-217	1.002	2653	0.959	15.18753	14.01518	Si
SLV 11	-20874	-31382	292	1.066	2491.2	0.957	16.19764	14.01518	Si
SLV 12	-20789	-30882	292	1.07	2482.7	0.957	16.25767	14.01518	Si
SLV 3	-22295	-53447	-830	0.984	2635.7	0.959	14.91694	11.26471	Si
SLV 4	-22164	-52672	-830	0.989	2622.5	0.959	14.99747	11.26471	Si
SLV 1	-20381	-53298	-846	1.065	2441.1	0.956	16.18486	11.26471	Si
SLV 2	-20251	-52524	-846	1.071	2427.9	0.956	16.28	11.26471	Si
SLV 5	-16170	-41087	-272	1.333	2013.4	0.948	20.44046	14.01518	Si
SLV 6	-16086	-40587	-272	1.339	2004.9	0.948	20.53653	14.01518	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	9.443	SLU 81	Si
V_SLU	7.97	SLU 81	Si
PF_SLV	4.131	SLV 16	Si
V_SLV	4.796	SLV 1	Si
PFFP_SLV	6.827	SLV 14	Si
R_SLV	1.08	SLV 7	Si



## Maschio 64

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.693	6.526	-17.768	6.526	L4	L5	1.925	0.28	3.72	3.72	3.72			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau_0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_m$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 84	2.01	2263.91	-27683	-0.0001108	0.0003743	0.0035	1.925	13203.53	17478.54	17478.54	7.72	No	Si
SLU 84	3.91	28.24	-25048	-0.0000772	0.0003743	0.0035	1.925	13104.4	16426.38	16426.38	581.76	No	Si
SLU 65	2.01	2057.03	-23126	-0.0000914	0.0003743	0.0035	1.925	12878.49	15658.03	15658.03	7.61	No	Si
SLU 65	3.91	-82.25	-20488	-0.0000621	0.0003743	0.0035	1.925	12357.3	15271.04	15271.04	185.67	No	Si
SLU 55	2.01	2085.38	-23307	-0.0000923	0.0003743	0.0035	1.925	12905.22	15728.88	15728.88	7.54	No	Si
SLU 55	3.91	-68.6	-20697	-0.0000627	0.0003743	0.0035	1.925	12407.6	15363.64	15363.64	223.95	No	Si
SLU 47	2.01	1884.02	-20282	-0.0000794	0.0003743	0.0035	1.925	12306.36	14568.21	14568.21	7.73	No	Si
SLU 47	3.91	-140.07	-17675	-0.0000535	0.0003743	0.0035	1.925	11532.78	14097.79	14097.79	100.65	No	Si
SLU 44	2.01	1878.01	-20037	-0.0000785	0.0003743	0.0035	1.925	12243.86	14476.63	14476.63	7.71	No	Si
SLU 44	3.91	-163.47	-17429	-0.0000529	0.0003743	0.0035	1.925	11447.47	14001.39	14001.39	85.65	No	Si
SLU 68	2.01	2063.04	-23371	-0.0000923	0.0003743	0.0035	1.925	12914.46	15754.18	15754.18	7.64	No	Si
SLU 68	3.91	-58.85	-20734	-0.0000627	0.0003743	0.0035	1.925	12416.21	15379.88	15379.88	261.35	No	Si
SLU 52	2.01	2079.37	-23062	-0.0000914	0.0003743	0.0035	1.925	12868.69	15632.86	15632.86	7.52	No	Si
SLU 52	3.91	-92.01	-20451	-0.0000621	0.0003743	0.0035	1.925	12348.36	15254.96	15254.96	165.81	No	Si
SLU 73	2.01	2258.39	-26151	-0.0001048	0.0003743	0.0035	1.925	13175.53	16878.55	16878.55	7.47	No	Si
SLU 73	3.91	-10.78	-23510	-0.0000716	0.0003743	0.0035	1.925	12933.93	16555.79	16555.79	1535.52	No	Si
SLU 76	2.01	2264.4	-26396	-0.0001058	0.0003743	0.0035	1.925	13185.53	16978.61	16978.61	7.5	No	Si
SLU 76	3.91	12.62	-23756	-0.0000725	0.0003743	0.0035	1.925	12966.77	15906.36	15906.36	1260.44	No	Si
SLU 82	2.01	2257.9	-27438	-0.0001097	0.0003743	0.0035	1.925	13204.58	17394.86	17394.86	7.7	No	Si
SLU 82	3.91	4.83	-24802	-0.0000761	0.0003743	0.0035	1.925	13082.72	16326.32	16326.32	3377.26	No	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_m$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 9	2.01	3526.65	-13628	-0.0000706	0.0005615	0.0035	1.925		11418.37	11418.37	3.24		Si
SLV 9	3.91	-1398.77	-11010	-0.0000434	0.0005615	0.0035	1.925		10533.62	10533.62	7.53		Si
SLV 13	2.01	5683.28	-6560	-0.0003013	0.0005615	0.0035	1.925		6109.52	6109.52	1.07		Si
SLV 13	3.91	-2779	-3690	-0.0000633	0.0005615	0.0035	1.54		4451.17	4451.17	1.6		Si
SLD 14	2.01	3438.4	-12655	-0.0000668	0.0005615	0.0035	1.925		10717.25	10717.25	3.12		Si
SLD 14	3.91	-1369.1	-10250	-0.0000409	0.0005615	0.0035	1.925		9946.24	9946.24	7.26		Si
SLD 13	2.01	3251.65	-13085	-0.0000664	0.0005615	0.0035	1.925		11026.22	11026.22	3.39		Si
SLD 13	3.91	-1237.76	-10705	-0.000041	0.0005615	0.0035	1.925		10297.28	10297.28	8.32		Si
SLD 16	2.01	3182.97	-12958	-0.0000654	0.0005615	0.0035	1.925		10934.53	10934.53	3.44		Si
SLD 16	3.91	-1213.37	-10655	-0.0000407	0.0005615	0.0035	1.925		10258.38	10258.38	8.45		Si
SLV 14	2.01	6118.2	-5558	-0.0090265	0.0005615	0.0035	1.925		5251.9	5251.9	0.86		No
SLV 14	3.91	-3084.86	-2630	-0.0004114	0.0005615	0.0035	1.54		3498.27	3498.27	1.13		Si
SLD 15	2.01	2996.21	-13388	-0.000065	0.0005615	0.0035	1.925		11244.47	11244.47	3.75		Si
SLD 15	3.91	-1082.03	-11110	-0.0000408	0.0005615	0.0035	1.925		10611.4	10611.4	9.81		Si
SLV 10	2.01	3807.56	-12981	-0.0000712	0.0005615	0.0035	1.925		10951.54	10951.54	2.88		Si
SLV 10	3.91	-1596.32	-10325	-0.0000431	0.0005615	0.0035	1.925		10004.21	10004.21	6.27		Si
SLV 16	2.01	5529.18	-6272	-0.0003564	0.0005615	0.0035	1.925		5864.61	5864.61	1.06		Si
SLV 16	3.91	-2718.75	-3581	-0.0000632	0.0005615	0.0035	1.54		4353.99	4353.99	1.6		Si
SLV 15	2.01	5094.25	-7274	-0.0001046	0.0005615	0.0035	1.925		6711.5	6711.5	1.32		Si
SLV 15	3.91	-2412.89	-4641	-0.0000375	0.0005615	0.0035	1.925		5281.95	5281.95	2.19		Si

### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	l'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 52	2.01	2079.37	-23062	-19204	1193	1.925	1.925	-35629	10833	5839	42820	16140	4909	21049	No	17.64	Si
SLU 52	3.91	-92.01	-20451	-17030	1277	1.925	1.925	-31596	10833	5839	42820	16140	4909	21049	No	16.49	Si
SLU 75	2.01	2202.72	-26677	-22214	1235	1.925	1.925	-41214	10833	5839	42820	16140	4909	21049	No	17.04	Si



Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 75	3.91	-6.34	-24042	-20020	1272	1.925	1.925	-37143	10833	5839	42820	16140	4909	21049	No	16.55	Si
SLU 84	2.01	2263.91	-27683	-23052	1250	1.925	1.925	-42768	10833	5839	42820	16140	4909	21049	No	16.83	Si
SLU 84	3.91	28.24	-25048	-20858	1285	1.925	1.925	-38698	10833	5839	42820	16140	4909	21049	No	16.38	Si
SLU 76	2.01	2264.4	-26396	-21980	1239	1.925	1.925	-40780	10833	5839	42820	16140	4909	21049	No	16.99	Si
SLU 76	3.91	12.62	-23756	-19782	1317	1.925	1.925	-36701	10833	5839	42820	16140	4909	21049	No	15.98	Si
SLU 68	2.01	2063.04	-23371	-19461	1166	1.925	1.925	-36106	10833	5839	42820	16140	4909	21049	No	18.05	Si
SLU 68	3.91	-58.85	-20734	-17265	1249	1.925	1.925	-32032	10833	5839	42820	16140	4909	21049	No	16.85	Si
SLU 82	2.01	2257.9	-27438	-22848	1260	1.925	1.925	-42390	10833	5839	42820	16140	4909	21049	No	16.7	Si
SLU 82	3.91	4.83	-24802	-20653	1295	1.925	1.925	-38317	10833	5839	42820	16140	4909	21049	No	16.26	Si
SLU 65	2.01	2057.03	-23126	-19258	1176	1.925	1.925	-35728	10833	5839	42820	16140	4909	21049	No	17.9	Si
SLU 65	3.91	-82.25	-20488	-17060	1259	1.925	1.925	-31652	10833	5839	42820	16140	4909	21049	No	16.72	Si
SLU 55	2.01	2085.38	-23307	-19408	1184	1.925	1.925	-36007	10833	5839	42820	16140	4909	21049	No	17.78	Si
SLU 55	3.91	-68.6	-20697	-17235	1267	1.925	1.925	-31976	10833	5839	42820	16140	4909	21049	No	16.62	Si
SLU 78	2.01	2208.73	-26922	-22418	1226	1.925	1.925	-41592	10833	5839	42820	16140	4909	21049	No	17.18	Si
SLU 78	3.91	17.06	-24288	-20225	1262	1.925	1.925	-37524	10833	5839	42820	16140	4909	21049	No	16.68	Si
SLU 73	2.01	2258.39	-26151	-21776	1248	1.925	1.925	-40401	10833	5839	42820	16140	4909	21049	No	16.86	Si
SLU 73	3.91	-10.78	-23510	-19577	1327	1.925	1.925	-36321	10833	5839	42820	16140	4909	21049	No	15.86	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 2	2.01	-2227.01	-28640	-23849	-2953	1.925	1.925	-44247	16250	8759	42820	24210	4909	29119		9.86	Si
SLV 2	3.91	2233.75	-27250	-22691	-2525	1.925	1.925	-42099	16250	8759	42820	24210	4909	29119		11.53	Si
SLV 15	2.01	5094.25	-7274	-6057	4705	1.925	0.7864	-11237	12664	2788	42820	24210	4909	29119		6.19	Si
SLV 15	3.91	-2412.89	-4641	-3865	4243	1.925	1.3277	-10441	12505	4649	42820	24210	4909	29119		6.86	Si
SLV 1	2.01	-2661.94	-29641	-24683	-3368	1.925	1.925	-45794	16250	8759	42820	24210	4909	29119		8.64	Si
SLV 1	3.91	2539.61	-28310	-23574	-2947	1.925	1.925	-43737	16250	8759	42820	24210	4909	29119		9.88	Si
SLD 14	2.01	3438.4	-12655	-10538	2797	1.925	1.925	-19551	14327	7722	42820	24210	4909	29119		10.41	Si
SLD 14	3.91	-1369.1	-10250	-8535	2626	1.925	1.925	-15835	13584	7322	42820	24210	4909	29119		11.09	Si
SLD 16	2.01	3182.97	-12958	-10790	2691	1.925	1.925	-20019	14420	7773	42820	24210	4909	29119		10.82	Si
SLD 16	3.91	-1213.37	-10655	-8873	2485	1.925	1.925	-16461	13709	7389	42820	24210	4909	29119		11.72	Si
SLV 14	2.01	6118.2	-5558	-4628	5367	1.925	0	-190886	16250	0	42820	24210	4909	29119		5.43	Si
SLV 14	3.91	-3084.86	-2630	-2190	4990	1.54	0	0	0	0	42820	19368	3927	23295		4.67	Si
SLV 13	2.01	5683.28	-6560	-5462	4951	1.925	0.2883	-70341	16250	1312	42820	24210	4909	29119		5.88	Si
SLV 13	3.91	-2779	-3690	-3073	4568	1.54	0.6282	0	0	0	42820	19368	3927	23295		5.1	Si
SLV 16	2.01	5529.18	-6272	-5223	5121	1.925	0.2428	-79898	16250	1105	42820	24210	4909	29119		5.69	Si
SLV 16	3.91	-2718.75	-3581	-2982	4665	1.54	0.6096	0	0	0	42820	19368	3927	23295		4.99	Si
SLV 4	2.01	-2816.04	-29354	-24443	-3198	1.925	1.925	-45349	16250	8759	42820	24210	4909	29119		9.1	Si
SLV 4	3.91	2599.86	-28201	-23483	-2850	1.925	1.925	-43568	16250	8759	42820	24210	4909	29119		10.22	Si
SLV 3	2.01	-3250.96	-30355	-25277	-3614	1.925	1.925	-46897	16250	8759	42820	24210	4909	29119		8.06	Si
SLV 3	3.91	2905.72	-29261	-24366	-3272	1.925	1.925	-45206	16250	8759	42820	24210	4909	29119		8.9	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 2.97 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\alpha 0$	N	M	Mc	Coeff.s.	Verifica
SLV 14	179667	0.31	7322	-3947	175.51	526.02	3	Si
SLV 13	179667	0.31	9254	-4988	175.51	656	3.74	Si
SLV 16	179667	0.31	9425	-5080	175.51	667.29	3.8	Si
SLV 15	179667	0.31	11357	-6121	175.51	793.25	4.52	Si
SLV 10	179667	0.31	20888	-11258	175.51	1360.61	7.75	Si
SLV 9	179667	0.31	22136	-11931	175.51	1428.25	8.14	Si
SLV 12	179667	0.31	27897	-15036	175.51	1720.55	9.8	Si
SLV 11	179667	0.31	29145	-15709	175.51	1779.55	10.14	Si
SLV 6	179667	0.31	34325	-18501	175.51	2007.99	11.44	Si
SLV 5	179667	0.31	35573	-19174	175.51	2059.06	11.73	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 2.97 Wa = 0.05 Ta = 0.0825

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	$\alpha 0^*$	aLim	Verifica
SLV 7	-18352	-23438	-936	0.531	2151	0.961	8.0314	11.92842	No
SLV 8	-17917	-22672	-936	0.542	2106.7	0.96	8.20266	11.92842	No
SLV 5	-16714	-17225	927	0.575	1984.4	0.958	8.72633	11.92842	No
SLV 6	-16279	-16459	927	0.588	1940.2	0.957	8.9306	11.92842	No
SLV 11	-13128	-15382	-918	0.705	1620.1	0.95	10.78738	11.92842	No
SLV 12	-12693	-14617	-918	0.725	1575.9	0.948	11.10868	11.92842	No
SLV 9	-11490	-9169	945	0.785	1453.9	0.945	12.07698	11.92842	Si
SLV 10	-11055	-8403	946	0.81	1409.8	0.943	12.48567	11.92842	Si
SLV 3	-23993	-30872	-306	0.448	2725	0.968	6.71584	6.09761	Si
SLV 1	-23501	-29008	253	0.458	2675	0.968	6.87079	6.09761	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	7.474	SLV 73	Si
V_SLV	15.863	SLV 73	Si
PF_SLV	0.858	SLV 14	No
V_SLV	4.668	SLV 14	Si
PFFP_SLV	2.997	SLV 14	Si
R_SLV	0.673	SLV 7	No



## Maschio 65

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-16.768	6.526	-12.888	6.526	L4	L5	3.88	0.28	3.72	3.72	3.72			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 78	2.01	1815.28	-69595	-0.0001176	0.0003743	0.0035	3.88	50062.32	76251.67	76251.67	42.01	No	Si
SLU 78	3.91	-5581.37	-70406	-0.0001302	0.0003743	0.0035	3.88	49644.49	77940.61	77940.61	13.96	No	Si
SLU 79	2.01	1668.1	-68886	-0.0001158	0.0003743	0.0035	3.88	50409	75972.54	75972.54	45.54	No	Si
SLU 79	3.91	-5557.24	-69667	-0.0001286	0.0003743	0.0035	3.88	50026.02	77692.76	77692.76	13.98	No	Si
SLU 84	2.01	1874.97	-71037	-0.0001207	0.0003743	0.0035	3.88	49303.17	76826.89	76826.89	40.97	No	Si
SLU 84	3.91	-5765.29	-72180	-0.0001345	0.0003743	0.0035	3.88	48649.5	78555.42	78555.42	13.63	No	Si
SLU 81	2.01	1792.73	-70062	-0.0001185	0.0003743	0.0035	3.88	49824.31	76436.93	76436.93	42.64	No	Si
SLU 81	3.91	-5818.18	-71362	-0.0001329	0.0003743	0.0035	3.88	49121.81	78268.68	78268.68	13.45	No	Si
SLU 73	2.01	1940.41	-67290	-0.0001133	0.0003743	0.0035	3.88	51124.85	75353.38	75353.38	38.83	No	Si
SLU 73	3.91	-5512.41	-68019	-0.000125	0.0003743	0.0035	3.88	50808.93	77156.3	77156.3	14	No	Si
SLU 83	2.01	1755.85	-70941	-0.0001202	0.0003743	0.0035	3.88	49356.08	76788.19	76788.19	43.73	No	Si
SLU 83	3.91	-5806.37	-72183	-0.0001346	0.0003743	0.0035	3.88	48647.38	78556.69	78556.69	13.53	No	Si
SLU 77	2.01	1696.16	-69499	-0.0001171	0.0003743	0.0035	3.88	50110.38	76213.67	76213.67	44.93	No	Si
SLU 77	3.91	-5622.45	-70409	-0.0001303	0.0003743	0.0035	3.88	49642.6	77941.82	77941.82	13.86	No	Si
SLU 74	2.01	1733.04	-68621	-0.0001154	0.0003743	0.0035	3.88	50534.19	75868.74	75868.74	43.78	No	Si
SLU 74	3.91	-5634.26	-69588	-0.0001286	0.0003743	0.0035	3.88	50065.92	77666.38	77666.38	13.78	No	Si
SLU 75	2.01	1852.16	-68717	-0.0001159	0.0003743	0.0035	3.88	50489.1	75906.32	75906.32	40.98	No	Si
SLU 75	3.91	-5593.19	-69584	-0.0001285	0.0003743	0.0035	3.88	50067.71	77665.19	77665.19	13.89	No	Si
SLU 82	2.01	1911.86	-70159	-0.000119	0.0003743	0.0035	3.88	49774.36	76475.2	76475.2	40	No	Si
SLU 82	3.91	-5777.1	-71358	-0.0001328	0.0003743	0.0035	3.88	49123.83	78267.44	78267.44	13.55	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 2	2.01	-18537.64	-55648	-0.0001268	0.0005615	0.0035	3.88		84769.89	84769.89	4.57		Si
SLV 2	3.91	5609	-61969	-0.0001057	0.0005615	0.0035	3.88		87680.55	87680.55	15.63		Si
SLV 4	2.01	-17750.01	-56771	-0.0001268	0.0005615	0.0035	3.88		85735.15	85735.15	4.83		Si
SLV 4	3.91	5436.32	-59120	-0.0001005	0.0005615	0.0035	3.88		85435.14	85435.14	15.72		Si
SLV 13	2.01	20290.62	-36711	-0.000099	0.0005615	0.0035	3.88		60176.1	60176.1	2.97		Si
SLV 13	3.91	-13243.85	-34528	-0.0000791	0.0005615	0.0035	3.88		60691.9	60691.9	4.58		Si
SLD 14	2.01	10179.98	-42092	-0.000084	0.0005615	0.0035	3.88		66286.14	66286.14	6.51		Si
SLD 14	3.91	-8401.84	-41096	-0.0000783	0.0005615	0.0035	3.88		69258.97	69258.97	8.24		Si
SLV 16	2.01	22939.45	-37029	-0.0001058	0.0005615	0.0035	3.88		60615.5	60615.5	2.64		Si
SLV 16	3.91	-14587.51	-30573	-0.000076	0.0005615	0.0035	3.88		55211.93	55211.93	3.78		Si
SLV 1	2.01	-20398.84	-56452	-0.0001328	0.0005615	0.0035	3.88		85460.43	85460.43	4.19		Si
SLV 1	3.91	6779.98	-63075	-0.0001105	0.0005615	0.0035	3.88		88559.72	88559.72	13.06		Si
SLV 3	2.01	-19611.2	-57576	-0.0001329	0.0005615	0.0035	3.88		86431.49	86431.49	4.41		Si
SLV 3	3.91	6607.31	-60226	-0.0001052	0.0005615	0.0035	3.88		86303.32	86303.32	13.06		Si
SLV 15	2.01	21078.26	-37834	-0.0001027	0.0005615	0.0035	3.88		61508.05	61508.05	2.92		Si
SLV 15	3.91	-13416.53	-31679	-0.0000751	0.0005615	0.0035	3.88		56793.05	56793.05	4.23		Si
SLD 16	2.01	10529.43	-42577	-0.0000856	0.0005615	0.0035	3.88		66835.83	66835.83	6.35		Si
SLD 16	3.91	-8471.3	-39858	-0.0000765	0.0005615	0.0035	3.88		67670.18	67670.18	7.99		Si
SLV 14	2.01	22151.81	-35906	-0.0001021	0.0005615	0.0035	3.88		58949.79	58949.79	2.66		Si
SLV 14	3.91	-14414.84	-33423	-0.0000801	0.0005615	0.0035	3.88		59209.18	59209.18	4.11		Si



#### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 73	2.01	1940.41	-67290	-56033	3312	3.88	3.88	-51577	10833	11769	42820	32532	9894	42426	No	12.81	Si
SLU 73	3.91	-5512.41	-68019	-56640	3255	3.88	3.88	-52136	10833	11769	42820	32532	9894	42426	No	13.03	Si
SLU 83	2.01	1755.85	-70941	-59073	3311	3.88	3.88	-54375	10833	11769	42820	32532	9894	42426	No	12.81	Si
SLU 83	3.91	-5806.37	-72183	-60108	3254	3.88	3.88	-55328	10833	11769	42820	32532	9894	42426	No	13.04	Si
SLU 82	2.01	1911.86	-70159	-58422	3383	3.88	3.88	-53776	10833	11769	42820	32532	9894	42426	No	12.54	Si
SLU 82	3.91	-5777.1	-71358	-59421	3326	3.88	3.88	-54696	10833	11769	42820	32532	9894	42426	No	12.76	Si
SLU 78	2.01	1815.28	-69595	-57953	3274	3.88	3.88	-53344	10833	11769	42820	32532	9894	42426	No	12.96	Si
SLU 78	3.91	-5581.37	-70406	-58628	3215	3.88	3.88	-53965	10833	11769	42820	32532	9894	42426	No	13.2	Si
SLU 81	2.01	1792.73	-70062	-58342	3330	3.88	3.88	-53702	10833	11769	42820	32532	9894	42426	No	12.74	Si
SLU 81	3.91	-5818.18	-71362	-59424	3273	3.88	3.88	-54698	10833	11769	42820	32532	9894	42426	No	12.96	Si
SLU 80	2.01	1787.23	-68982	-57443	3240	3.88	3.88	-52874	10833	11769	42820	32532	9894	42426	No	13.09	Si
SLU 80	3.91	-5516.16	-69664	-58010	3181	3.88	3.88	-53397	10833	11769	42820	32532	9894	42426	No	13.34	Si
SLU 76	2.01	1903.52	-68168	-56765	3294	3.88	3.88	-52250	10833	11769	42820	32532	9894	42426	No	12.88	Si
SLU 76	3.91	-5500.59	-68840	-57324	3235	3.88	3.88	-52765	10833	11769	42820	32532	9894	42426	No	13.11	Si
SLU 74	2.01	1733.04	-68621	-57141	3239	3.88	3.88	-52597	10833	11769	42820	32532	9894	42426	No	13.1	Si
SLU 74	3.91	-5634.26	-69588	-57947	3183	3.88	3.88	-53338	10833	11769	42820	32532	9894	42426	No	13.33	Si
SLU 84	2.01	1874.97	-71037	-59153	3365	3.88	3.88	-54449	10833	11769	42820	32532	9894	42426	No	12.61	Si
SLU 84	3.91	-5765.29	-72180	-60105	3306	3.88	3.88	-55325	10833	11769	42820	32532	9894	42426	No	12.83	Si
SLU 75	2.01	1852.16	-68717	-57222	3293	3.88	3.88	-52671	10833	11769	42820	32532	9894	42426	No	12.88	Si
SLU 75	3.91	-5593.19	-69584	-57944	3235	3.88	3.88	-53336	10833	11769	42820	32532	9894	42426	No	13.11	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 15	2.01	21078.26	-37834	-31505	18445	3.88	3.88	-29000	16217	17618	42820	48797	9894	58691		3.18	Si
SLV 15	3.91	-13416.53	-31679	-26380	18115	3.88	3.88	-24282	15273	16593	42820	48797	9894	58691		3.24	Si
SLD 16	2.01	10529.43	-42577	-35454	9901	3.88	3.88	-32635	16250	17654	42820	48797	9894	58691		5.93	Si
SLD 16	3.91	-8471.3	-39858	-33190	9733	3.88	3.88	-30551	16250	17654	42820	48797	9894	58691		6.03	Si
SLV 3	2.01	-19611.2	-57576	-47944	-15651	3.88	3.88	-44131	16250	17654	42820	48797	9894	58691		3.75	Si
SLV 3	3.91	6607.31	-60226	-50151	-14827	3.88	3.88	-46162	16250	17654	42820	48797	9894	58691		3.96	Si
SLV 2	2.01	-18537.64	-55648	-46338	-13831	3.88	3.88	-42653	16250	17654	42820	48797	9894	58691		4.24	Si
SLV 2	3.91	5609	-61969	-51602	-13580	3.88	3.88	-47499	16250	17654	42820	48797	9894	58691		4.32	Si
SLV 16	2.01	22939.45	-37029	-30835	20075	3.88	3.88	-28383	16093	17484	42820	48797	9894	58691		2.92	Si
SLV 16	3.91	-14587.51	-30573	-25459	19745	3.88	3.88	-23434	15103	16408	42820	48797	9894	58691		2.97	Si
SLD 14	2.01	10179.98	-42092	-35051	9982	3.88	3.88	-32263	16250	17654	42820	48797	9894	58691		5.88	Si
SLD 14	3.91	-8401.84	-41096	-34221	9569	3.88	3.88	-31500	16250	17654	42820	48797	9894	58691		6.13	Si
SLV 1	2.01	-20398.84	-56452	-47009	-15461	3.88	3.88	-43270	16250	17654	42820	48797	9894	58691		3.8	Si
SLV 1	3.91	6779.98	-63075	-52523	-15210	3.88	3.88	-48346	16250	17654	42820	48797	9894	58691		3.86	Si
SLV 14	2.01	22151.81	-35906	-29899	20265	3.88	3.88	-27522	15921	17297	42820	48797	9894	58691		2.9	Si
SLV 14	3.91	-14414.84	-33423	-27831	19361	3.88	3.88	-25618	15540	16883	42820	48797	9894	58691		3.03	Si
SLV 4	2.01	-17750.01	-56771	-47274	-14021	3.88	3.88	-43514	16250	17654	42820	48797	9894	58691		4.19	Si
SLV 4	3.91	5436.32	-59120	-49230	-13197	3.88	3.88	-45315	16250	17654	42820	48797	9894	58691		4.45	Si
SLV 13	2.01	20290.62	-36711	-30570	18635	3.88	3.88	-28138	16044	17431	42820	48797	9894	58691		3.15	Si
SLV 13	3.91	-13243.85	-34528	-28752	17731	3.88	3.88	-26466	15710	17067	42820	48797	9894	58691		3.31	Si

#### Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 2.97 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\alpha 0$	N	M	Mc	Coeff.s.	Verifica
SLV 16	179667	0.31	30396	-33022	353.76	3702.94	10.47	Si
SLV 15	179667	0.31	31292	-33995	353.76	3784.17	10.7	Si
SLV 14	179667	0.31	32176	-34956	353.76	3862.76	10.92	Si
SLV 13	179667	0.31	33072	-35929	353.76	3940.81	11.14	Si
SLV 12	179667	0.31	36486	-39639	353.76	4223.57	11.94	Si
SLV 11	179667	0.31	37065	-40267	353.76	4269.19	12.07	Si
SLV 10	179667	0.31	42420	-46085	353.76	4659.77	13.17	Si
SLV 9	179667	0.31	42999	-46714	353.76	4698.56	13.28	Si
SLV 8	179667	0.31	43351	-47096	353.76	4721.81	13.35	Si
SLV 7	179667	0.31	43929	-47725	353.76	4759.53	13.45	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 2.97 Wa = 0.05 Ta = 0.0825

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 5	-46693	-45760	1384	0.446	5322.8	0.968	6.69728	11.92842	No
SLV 6	-46140	-45253	1385	0.45	5266.6	0.967	6.76744	11.92842	No
SLV 7	-39927	-47219	-1505	0.507	4634.3	0.963	7.64291	11.92842	No
SLV 9	-39871	-39631	1459	0.508	4628.6	0.963	7.6681	11.92842	No
SLV 8	-39374	-46713	-1504	0.513	4578	0.963	7.73733	11.92842	No
SLV 10	-39319	-39125	1460	0.514	4572.4	0.963	7.7626	11.92842	No
SLV 11	-33106	-41091	-1430	0.596	3940.5	0.957	9.04207	11.92842	No
SLV 12	-32553	-40585	-1429	0.604	3884.3	0.957	9.17697	11.92842	No
SLV 1	-52435	-53559	285	0.424	5907.4	0.971	6.34401	6.09761	Si
SLV 2	-51579	-52776	286	0.43	5820.3	0.97	6.43609	6.09761	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	13.452	SLU 81	Si



Stato limite	Coeff.s.	Comb.	Verifica
V_SLV	12.541	SLV 82	Si
PF_SLV	2.642	SLV 16	Si
V_SLV	2.896	SLV 14	Si
PFFP_SLV	10.468	SLV 16	Si
R_SLV	0.561	SLV 5	No

## Maschio 66

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.888	6.526	-8.008	6.526	L4	L5	3.88	0.28	3.72	3.72	3.72			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_ Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv / ε,CNR DT-200					CRM / Fibrenet?			
											elim,conv	ε,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 58	2.01	1341.05	-59437	-0.0000965	0.0003743	0.0035	3.88	53344.99	72492.73	72492.73	54.06	No	Si
SLU 58	3.91	2010.25	-61421	-0.0001021	0.0003743	0.0035	3.88	52988.41	73186.24	73186.24	36.41	No	Si
SLU 60	2.01	1290.88	-60446	-0.0000983	0.0003743	0.0035	3.88	53180.82	72843.11	72843.11	56.43	No	Si
SLU 60	3.91	2026.91	-62908	-0.000105	0.0003743	0.0035	3.88	52630.47	73719.16	73719.16	36.37	No	Si
SLU 79	2.01	1574.04	-66428	-0.0001106	0.0003743	0.0035	3.88	51474.37	75024.21	75024.21	47.66	No	Si
SLU 79	3.91	2115.14	-69117	-0.0001175	0.0003743	0.0035	3.88	50298.22	76063.02	76063.02	35.96	No	Si
SLU 74	2.01	1515.48	-66103	-0.0001098	0.0003743	0.0035	3.88	51599.36	74901.08	74901.08	49.42	No	Si
SLU 74	3.91	2116.05	-68966	-0.0001172	0.0003743	0.0035	3.88	50371.07	76003.66	76003.66	35.92	No	Si
SLU 81	2.01	1523.88	-67437	-0.0001124	0.0003743	0.0035	3.88	51062.76	75409.78	75409.78	49.49	No	Si
SLU 81	3.91	2131.8	-70604	-0.0001206	0.0003743	0.0035	3.88	49538.77	76653.08	76653.08	35.96	No	Si
SLU 53	2.01	1282.49	-59112	-0.0000957	0.0003743	0.0035	3.88	53390.28	72380.94	72380.94	56.44	No	Si
SLU 53	3.91	2011.17	-61270	-0.0001018	0.0003743	0.0035	3.88	53020.44	73132.69	73132.69	36.36	No	Si
SLU 62	2.01	1351.04	-61367	-0.0001002	0.0003743	0.0035	3.88	52999.92	73167.13	73167.13	54.16	No	Si
SLU 62	3.91	2047.18	-63781	-0.0001067	0.0003743	0.0035	3.88	52384.17	74037.17	74037.17	36.17	No	Si
SLU 83	2.01	1584.03	-68357	-0.0001145	0.0003743	0.0035	3.88	50656.18	75765.9	75765.9	47.83	No	Si
SLU 83	3.91	2152.06	-71477	-0.0001224	0.0003743	0.0035	3.88	49056.74	77004.67	77004.67	35.78	No	Si
SLU 56	2.01	1342.65	-60033	-0.0000976	0.0003743	0.0035	3.88	53252.45	72698.83	72698.83	54.15	No	Si
SLU 56	3.91	2031.43	-62143	-0.0001035	0.0003743	0.0035	3.88	52824.33	73443.58	73443.58	36.15	No	Si
SLU 77	2.01	1575.64	-67023	-0.0001118	0.0003743	0.0035	3.88	51235.85	75251.07	75251.07	47.76	No	Si
SLU 77	3.91	2136.31	-69839	-0.000119	0.0003743	0.0035	3.88	49939.22	76348.09	76348.09	35.74	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 13	2.01	22678.19	-48002	-0.0001237	0.0005615	0.0035	3.88		73058.53	73058.53	3.22		Si
SLV 13	3.91	-12284.98	-52470	-0.000106	0.0005615	0.0035	3.88		82091.71	82091.71	6.68		Si
SLD 16	2.01	10878.41	-46644	-0.000093	0.0005615	0.0035	3.88		71486.61	71486.61	6.57		Si
SLD 16	3.91	-4928.62	-48071	-0.0000813	0.0005615	0.0035	3.88		77505.93	77505.93	15.73		Si
SLV 2	2.01	-20043.09	-40933	-0.0001054	0.0005615	0.0035	3.88		69049.3	69049.3	3.45		Si
SLV 2	3.91	15038.07	-42833	-0.0000966	0.0005615	0.0035	3.88		67127.67	67127.67	4.46		Si
SLV 4	2.01	-20702.4	-41859	-0.0001085	0.0005615	0.0035	3.88		70215.26	70215.26	3.39		Si
SLV 4	3.91	15301.57	-40497	-0.0000935	0.0005615	0.0035	3.88		64485.47	64485.47	4.21		Si
SLD 14	2.01	11155.42	-46245	-0.000093	0.0005615	0.0035	3.88		71026.78	71026.78	6.37		Si
SLD 14	3.91	-5041.25	-49091	-0.0000832	0.0005615	0.0035	3.88		78643.36	78643.36	15.6		Si
SLV 1	2.01	-22167.08	-40898	-0.0001104	0.0005615	0.0035	3.88		69003.26	69003.26	3.11		Si
SLV 1	3.91	16570.37	-42723	-0.0001001	0.0005615	0.0035	3.88		67002.43	67002.43	4.04		Si
SLV 15	2.01	22018.88	-48928	-0.0001237	0.0005615	0.0035	3.88		74135.03	74135.03	3.37		Si
SLV 15	3.91	-12021.48	-50134	-0.0001015	0.0005615	0.0035	3.88		79802.1	79802.1	6.64		Si
SLV 14	2.01	24802.18	-48038	-0.000129	0.0005615	0.0035	3.88		73100.05	73100.05	2.95		Si
SLV 14	3.91	-13817.28	-52580	-0.0001099	0.0005615	0.0035	3.88		82183.27	82183.27	5.95		Si
SLV 3	2.01	-22826.39	-41823	-0.0001135	0.0005615	0.0035	3.88		70172.18	70172.18	3.07		Si
SLV 3	3.91	16833.86	-40387	-0.0000969	0.0005615	0.0035	3.88		64361.58	64361.58	3.82		Si





Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 16	2.01	24142.87	-48964	-0.000129	0.0005615	0.0035	3.88		74176.73	74176.73	3.07		Si
SLV 16	3.91	-13553.78	-50244	-0.0001054	0.0005615	0.0035	3.88		79920.83	79920.83	5.9		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 41	2.01	1401.55	-58444	-48667	669	3.88	3.88	-44796	10833	11769	42820	32532	9894	42426	No	63.38	Si
SLU 41	3.91	1755.96	-61477	-51193	632	3.88	3.88	-47122	10833	11769	42820	32532	9894	42426	No	67.09	Si
SLU 78	2.01	1527.3	-67146	-55913	677	3.88	3.88	-51467	10833	11769	42820	32532	9894	42426	No	62.7	Si
SLU 78	3.91	2060.51	-69861	-58175	631	3.88	3.88	-53548	10833	11769	42820	32532	9894	42426	No	67.21	Si
SLU 80	2.01	1525.7	-66551	-55418	671	3.88	3.88	-51010	10833	11769	42820	32532	9894	42426	No	63.19	Si
SLU 80	3.91	2039.33	-69139	-57573	626	3.88	3.88	-52995	10833	11769	42820	32532	9894	42426	No	67.75	Si
SLU 42	2.01	1353.21	-58567	-48769	673	3.88	3.88	-44891	10833	11769	42820	32532	9894	42426	No	63.08	Si
SLU 42	3.91	1680.15	-61500	-51212	634	3.88	3.88	-47139	10833	11769	42820	32532	9894	42426	No	66.89	Si
SLU 84	2.01	1535.7	-68480	-57024	710	3.88	3.88	-52489	10833	11769	42820	32532	9894	42426	No	59.79	Si
SLU 84	3.91	2076.25	-71500	-59539	664	3.88	3.88	-54804	10833	11769	42820	32532	9894	42426	No	63.85	Si
SLU 81	2.01	1523.88	-67437	-56155	691	3.88	3.88	-51689	10833	11769	42820	32532	9894	42426	No	61.44	Si
SLU 81	3.91	2131.8	-70604	-58793	648	3.88	3.88	-54117	10833	11769	42820	32532	9894	42426	No	65.48	Si
SLU 79	2.01	1574.04	-66428	-55315	668	3.88	3.88	-50916	10833	11769	42820	32532	9894	42426	No	63.49	Si
SLU 79	3.91	2115.14	-69117	-57554	624	3.88	3.88	-52977	10833	11769	42820	32532	9894	42426	No	67.96	Si
SLU 83	2.01	1584.03	-68357	-56922	706	3.88	3.88	-52395	10833	11769	42820	32532	9894	42426	No	60.05	Si
SLU 83	3.91	2152.06	-71477	-59520	663	3.88	3.88	-54786	10833	11769	42820	32532	9894	42426	No	64.03	Si
SLU 77	2.01	1575.64	-67023	-55811	673	3.88	3.88	-51372	10833	11769	42820	32532	9894	42426	No	63	Si
SLU 77	3.91	2136.31	-69839	-58156	629	3.88	3.88	-53531	10833	11769	42820	32532	9894	42426	No	67.41	Si
SLU 82	2.01	1475.54	-67560	-56258	694	3.88	3.88	-51784	10833	11769	42820	32532	9894	42426	No	61.16	Si
SLU 82	3.91	2055.99	-70627	-58812	650	3.88	3.88	-54135	10833	11769	42820	32532	9894	42426	No	65.29	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 15	2.01	22018.88	-48928	-40743	18475	3.88	3.88	-37503	16250	17654	42820	48797	9894	58691		3.18	Si
SLV 15	3.91	-12021.48	-50134	-41747	18180	3.88	3.88	-38427	16250	17654	42820	48797	9894	58691		3.23	Si
SLV 3	2.01	-22826.39	-41823	-34827	-20787	3.88	3.88	-32057	16250	17654	42820	48797	9894	58691		2.82	Si
SLV 3	3.91	16833.86	-40387	-33631	-19984	3.88	3.88	-30956	16250	17654	42820	48797	9894	58691		2.94	Si
SLD 14	2.01	11155.42	-46245	-38509	9442	3.88	3.88	-35446	16250	17654	42820	48797	9894	58691		6.22	Si
SLD 14	3.91	-5041.25	-49091	-40879	9055	3.88	3.88	-37628	16250	17654	42820	48797	9894	58691		6.48	Si
SLV 14	2.01	24802.18	-48038	-40002	21573	3.88	3.88	-36821	16250	17654	42820	48797	9894	58691		2.72	Si
SLV 14	3.91	-13817.28	-52580	-43784	20709	3.88	3.88	-40302	16250	17654	42820	48797	9894	58691		2.83	Si
SLV 4	2.01	-20702.4	-41859	-34857	-18854	3.88	3.88	-32085	16250	17654	42820	48797	9894	58691		3.11	Si
SLV 4	3.91	15301.57	-40497	-33723	-18050	3.88	3.88	-31041	16250	17654	42820	48797	9894	58691		3.25	Si
SLV 1	2.01	-22167.08	-40898	-34056	-19624	3.88	3.88	-31348	16250	17654	42820	48797	9894	58691		2.99	Si
SLV 1	3.91	16570.37	-42723	-35576	-19388	3.88	3.88	-32747	16250	17654	42820	48797	9894	58691		3.03	Si
SLV 16	2.01	24142.87	-48964	-40773	20409	3.88	3.88	-37530	16250	17654	42820	48797	9894	58691		2.88	Si
SLV 16	3.91	-13553.78	-50244	-41839	20114	3.88	3.88	-38511	16250	17654	42820	48797	9894	58691		2.92	Si
SLD 16	2.01	10878.41	-46644	-38841	8942	3.88	3.88	-35752	16250	17654	42820	48797	9894	58691		6.56	Si
SLD 16	3.91	-4928.62	-48071	-40029	8797	3.88	3.88	-36846	16250	17654	42820	48797	9894	58691		6.67	Si
SLV 13	2.01	22678.19	-48002	-39972	19639	3.88	3.88	-36793	16250	17654	42820	48797	9894	58691		2.99	Si
SLV 13	3.91	-12284.98	-52470	-43692	18776	3.88	3.88	-40218	16250	17654	42820	48797	9894	58691		3.13	Si
SLV 2	2.01	-20043.09	-40933	-34086	-17690	3.88	3.88	-31375	16250	17654	42820	48797	9894	58691		3.32	Si
SLV 2	3.91	15038.07	-42833	-35668	-17454	3.88	3.88	-32831	16250	17654	42820	48797	9894	58691		3.36	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 2.97 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 3	179667	0.31	37465	-40702	353.76	4300.35	12.16	Si
SLV 4	179667	0.31	37539	-40782	353.76	4306.05	12.17	Si
SLV 7	179667	0.31	38606	-41941	353.76	4387.43	12.4	Si
SLV 8	179667	0.31	38653	-41993	353.76	4391.01	12.41	Si
SLV 1	179667	0.31	38852	-42209	353.76	4405.91	12.45	Si
SLV 2	179667	0.31	38926	-42289	353.76	4411.41	12.47	Si
SLV 11	179667	0.31	40960	-44499	353.76	4558.92	12.89	Si
SLV 12	179667	0.31	41007	-44550	353.76	4562.28	12.9	Si
SLV 5	179667	0.31	43230	-46965	353.76	4713.88	13.33	Si
SLV 6	179667	0.31	43278	-47017	353.76	4717.02	13.33	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 2.97 Wa = 0.05 Ta = 0.0825

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	$\alpha_0^*$	aLim	Verifica
SLV 10	-44511	-42048	1387	0.464	5100.7	0.966	6.98383	11.92842	No
SLV 9	-44431	-42002	1387	0.465	5092.6	0.966	6.99477	11.92842	No
SLV 6	-42072	-39186	1455	0.486	4852.6	0.965	7.31579	11.92842	No
SLV 5	-41993	-39140	1455	0.486	4844.4	0.965	7.32793	11.92842	No
SLV 12	-36922	-43139	-1499	0.541	4328.6	0.961	8.18913	11.92842	No
SLV 11	-36843	-43093	-1499	0.542	4320.5	0.961	8.20474	11.92842	No
SLV 8	-34484	-40277	-1431	0.575	4080.7	0.959	8.72304	11.92842	No
SLV 7	-34405	-40231	-1431	0.577	4072.6	0.959	8.74084	11.92842	No
SLV 14	-44721	-45781	297	0.485	5122.1	0.966	7.29375	6.09761	Si
SLV 13	-44598	-45711	297	0.486	5109.6	0.966	7.31146	6.09761	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.





Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	35.738	SLU 77	Si
V_SLU	59.785	SLU 84	Si
PF_SLV	2.947	SLV 14	Si
V_SLV	2.721	SLV 14	Si
PFFP_SLV	12.156	SLV 3	Si
R_SLV	0.585	SLV 10	No

## Maschio 67

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

## Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-7.008	6.526	-5.093	6.526	L4	L5	1.915	0.28	3.72	3.72	3.72			

## Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	t0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

## Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

## Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 5	2.01	-257.09	-16745	-0.0000519	0.0003743	0.0035	1.915	11115.76	13571.82	13571.82	52.79	No	Si
SLU 5	3.91	77.25	-17112	-0.0000514	0.0003743	0.0035	1.915	11249.07	12727.83	12727.83	164.75	No	Si
SLU 44	2.01	-312.94	-20317	-0.0000642	0.0003743	0.0035	1.915	12213.95	15091.81	15091.81	48.23	No	Si
SLU 44	3.91	162	-20578	-0.0000636	0.0003743	0.0035	1.915	12276.7	14566.82	14566.82	89.92	No	Si
SLU 55	2.01	-263.84	-23473	-0.0000745	0.0003743	0.0035	1.915	12811.77	16417.52	16417.52	62.22	No	Si
SLU 55	3.91	21.24	-24222	-0.0000747	0.0003743	0.0035	1.915	12902.44	15976.18	15976.18	752.25	No	Si
SLU 47	2.01	-294.57	-20635	-0.0000651	0.0003743	0.0035	1.915	12289.97	15230.9	15230.9	51.71	No	Si
SLU 47	3.91	145.9	-20948	-0.0000647	0.0003743	0.0035	1.915	12361.48	14706.77	14706.77	100.8	No	Si
SLU 65	2.01	-263.04	-23206	-0.0000736	0.0003743	0.0035	1.915	12774.82	16344.61	16344.61	62.14	No	Si
SLU 65	3.91	34.46	-23902	-0.0000737	0.0003743	0.0035	1.915	12866.11	15848.47	15848.47	459.88	No	Si
SLU 2	2.01	-275.47	-16428	-0.0000511	0.0003743	0.0035	1.915	10996.39	13391.45	13391.45	48.61	No	Si
SLU 2	3.91	93.36	-16742	-0.0000503	0.0003743	0.0035	1.915	11114.49	12511.82	12511.82	134.02	No	Si
SLU 52	2.01	-282.21	-23155	-0.0000736	0.0003743	0.0035	1.915	12767.38	16330.62	16330.62	57.87	No	Si
SLU 52	3.91	37.34	-23852	-0.0000735	0.0003743	0.0035	1.915	12860.15	15828.74	15828.74	423.9	No	Si
SLU 10	2.01	-244.74	-19265	-0.0000601	0.0003743	0.0035	1.915	11937	14643.23	14643.23	59.83	No	Si
SLU 10	3.91	-31.31	-20016	-0.0000604	0.0003743	0.0035	1.915	12138.52	14961.33	14961.33	477.9	No	Si
SLU 23	2.01	-225.57	-19317	-0.00006	0.0003743	0.0035	1.915	11951.46	14664.75	14664.75	65.01	No	Si
SLU 23	3.91	-34.18	-20065	-0.0000606	0.0003743	0.0035	1.915	12151.17	14982.72	14982.72	438.29	No	Si
SLU 13	2.01	-226.37	-19583	-0.0000609	0.0003743	0.0035	1.915	12024.75	14776.78	14776.78	65.28	No	Si
SLU 13	3.91	-47.41	-20386	-0.0000618	0.0003743	0.0035	1.915	12230.61	15121.61	15121.61	318.96	No	Si

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 16	2.01	5144.09	-23237	-0.0001183	0.0005615	0.0035	1.915		17537.99	17537.99	3.41		Si
SLV 16	3.91	-3992.81	-31742	-0.0001367	0.0005615	0.0035	1.915		22531.59	22531.59	5.64		Si
SLV 8	2.01	-3081.61	-15970	-0.0000744	0.0005615	0.0035	1.915		14086.87	14086.87	4.57		Si
SLV 8	3.91	1279.38	-11269	-0.0000434	0.0005615	0.0035	1.915		9668.78	9668.78	7.56		Si
SLV 2	2.01	-4665.27	-12851	-0.0000799	0.0005615	0.0035	1.915		11858.67	11858.67	2.54		Si
SLV 2	3.91	3560.84	-6428	-0.0000579	0.0005615	0.0035	1.915		5963.38	5963.38	1.67		Si
SLV 4	2.01	-5628	-12594	-0.000092	0.0005615	0.0035	1.915		11670.27	11670.27	2.07		Si
SLV 4	3.91	3716.03	-4336	-0.0001706	0.0005615	0.0035	1.915		4158.71	4158.71	1.12		Si
SLV 14	2.01	6106.82	-23494	-0.0001289	0.0005615	0.0035	1.915		17684.77	17684.77	2.9		Si
SLV 14	3.91	-4148	-33835	-0.0001461	0.0005615	0.0035	1.915		23435.54	23435.54	5.65		Si
SLV 1	2.01	-5233.79	-12570	-0.0000863	0.0005615	0.0035	1.915		11652.6	11652.6	2.23		Si
SLV 1	3.91	4014.81	-5201	-0.0001057	0.0005615	0.0035	1.915		4912.75	4912.75	1.22		Si
SLV 13	2.01	5538.29	-23213	-0.0001222	0.0005615	0.0035	1.915		17524.21	17524.21	3.16		Si
SLV 13	3.91	-3694.03	-32607	-0.0001368	0.0005615	0.0035	1.915		22923.46	22923.46	6.21		Si
SLV 3	2.01	-6196.52	-12313	-0.0001019	0.0005615	0.0035	1.915		11464.94	11464.94	1.85		Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 3	3.91	4170	-3108	-0.0104147	0.0005615	0.0035	1.915		3065.32	3065.32	0.74		No
SLV 15	2.01	4575.57	-22956	-0.0001117	0.0005615	0.0035	1.915		17377.81	17377.81	3.8		Si
SLV 15	3.91	-3538.84	-30514	-0.0001276	0.0005615	0.0035	1.915		21985.38	21985.38	6.21		Si
SLV 7	2.01	-3448.8	-15788	-0.0000772	0.0005615	0.0035	1.915		13958.39	13958.39	4.05		Si
SLV 7	3.91	1572.58	-10476	-0.0000436	0.0005615	0.0035	1.915		9112.79	9112.79	5.79		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 80	2.01	-112.54	-26615	-22163	1858	1.915	1.915	-41333	10833	5809	42820	16056	4883	20940	No	11.27	Si
SLU 80	3.91	-126.52	-27853	-23194	1872	1.915	1.915	-43255	10833	5809	42820	16056	4883	20940	No	11.19	Si
SLU 79	2.01	12.01	-26519	-22083	1902	1.915	1.915	-41183	10833	5809	42820	16056	4883	20940	No	11.01	Si
SLU 79	3.91	-132.7	-27760	-23116	1957	1.915	1.915	-43111	10833	5809	42820	16056	4883	20940	No	10.7	Si
SLU 83	2.01	6.81	-27417	-22831	1985	1.915	1.915	-42578	10833	5809	42820	16056	4883	20940	No	10.55	Si
SLU 83	3.91	-170.03	-28793	-23976	2043	1.915	1.915	-44715	10833	5809	42820	16056	4883	20940	No	10.25	Si
SLU 78	2.01	-115.06	-26891	-22392	1875	1.915	1.915	-41761	10833	5809	42820	16056	4883	20940	No	11.17	Si
SLU 78	3.91	-122.49	-28172	-23459	1890	1.915	1.915	-43750	10833	5809	42820	16056	4883	20940	No	11.08	Si
SLU 77	2.01	9.49	-26795	-22312	1920	1.915	1.915	-41611	10833	5809	42820	16056	4883	20940	No	10.91	Si
SLU 77	3.91	-128.67	-28079	-23381	1976	1.915	1.915	-43605	10833	5809	42820	16056	4883	20940	No	10.6	Si
SLU 82	2.01	-136.12	-27196	-22646	1897	1.915	1.915	-42234	10833	5809	42820	16056	4883	20940	No	11.04	Si
SLU 82	3.91	-147.75	-28516	-23746	1913	1.915	1.915	-44285	10833	5809	42820	16056	4883	20940	No	10.95	Si
SLU 84	2.01	-117.74	-27514	-22911	1941	1.915	1.915	-42728	10833	5809	42820	16056	4883	20940	No	10.79	Si
SLU 84	3.91	-163.85	-28886	-24054	1957	1.915	1.915	-44860	10833	5809	42820	16056	4883	20940	No	10.7	Si
SLU 41	2.01	44.28	-23528	-19592	1794	1.915	1.915	-36538	10833	5809	42820	16056	4883	20940	No	11.67	Si
SLU 41	3.91	-238.67	-24957	-20782	1846	1.915	1.915	-38757	10833	5809	42820	16056	4883	20940	No	11.35	Si
SLU 81	2.01	-11.57	-27100	-22566	1941	1.915	1.915	-42085	10833	5809	42820	16056	4883	20940	No	10.79	Si
SLU 81	3.91	-153.92	-28423	-23668	1998	1.915	1.915	-44140	10833	5809	42820	16056	4883	20940	No	10.48	Si
SLU 74	2.01	-8.89	-26477	-22048	1876	1.915	1.915	-41118	10833	5809	42820	16056	4883	20940	No	11.16	Si
SLU 74	3.91	-112.57	-27709	-23073	1931	1.915	1.915	-43031	10833	5809	42820	16056	4883	20940	No	10.84	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 4	2.01	-5628	-12594	-10487	-7728	1.915	1.5319	-24755	15368	6592	42820	24085	4883	28968		3.75	Si
SLV 4	3.91	3716.03	-4336	-3610	-7747	1.915	0.3012	-43629	16250	1371	42820	24085	4883	28968		3.74	Si
SLV 16	2.01	5144.09	-23237	-19350	10234	1.915	1.915	-36086	16250	8713	42820	24085	4883	28968		2.83	Si
SLV 16	3.91	-3992.81	-31742	-26432	10216	1.915	1.915	-49294	16250	8713	42820	24085	4883	28968		2.84	Si
SLV 15	2.01	4575.57	-22956	-19116	9243	1.915	1.915	-35650	16250	8713	42820	24085	4883	28968		3.13	Si
SLV 15	3.91	-3538.84	-30514	-25410	9186	1.915	1.915	-47388	16250	8713	42820	24085	4883	28968		3.15	Si
SLV 3	2.01	-6196.52	-12313	-10253	-8719	1.915	1.3628	-27247	15867	6055	42820	24085	4883	28968		3.32	Si
SLV 3	3.91	4170	-3108	-2588	-8776	1.915	0	-152727	16250	0	42820	24085	4883	28968		3.3	Si
SLV 10	2.01	3359.1	-20019	-16670	5608	1.915	1.915	-31088	16250	8713	42820	24085	4883	28968		5.17	Si
SLV 10	3.91	-1550.58	-26467	-22039	5901	1.915	1.915	-41102	16250	8713	42820	24085	4883	28968		4.91	Si
SLV 13	2.01	5538.29	-23213	-19330	10090	1.915	1.915	-36049	16250	8713	42820	24085	4883	28968		2.87	Si
SLV 13	3.91	-3694.03	-32607	-27153	10181	1.915	1.915	-50638	16250	8713	42820	24085	4883	28968		2.85	Si
SLV 2	2.01	-4665.27	-12851	-10701	-6880	1.915	1.7834	-21648	14746	7364	42820	24085	4883	28968		4.21	Si
SLV 2	3.91	3560.84	-6428	-5353	-6752	1.915	1.2108	-9983	12413	4208	42820	24085	4883	28968		4.29	Si
SLV 14	2.01	6106.82	-23494	-19564	11081	1.915	1.915	-36485	16250	8713	42820	24085	4883	28968		2.61	Si
SLV 14	3.91	-4148	-33835	-28175	11210	1.915	1.915	-52544	16250	8713	42820	24085	4883	28968		2.58	Si
SLV 1	2.01	-5233.79	-12570	-10467	-7871	1.915	1.6234	-23301	15077	6853	42820	24085	4883	28968		3.68	Si
SLV 1	3.91	4014.81	-5201	-4331	-7782	1.915	0.5567	-28197	16056	2503	42820	24085	4883	28968		3.72	Si
SLD 14	2.01	2584.32	-20292	-16897	5411	1.915	1.915	-31512	16250	8713	42820	24085	4883	28968		5.35	Si
SLD 14	3.91	-1764.74	-25043	-20854	5485	1.915	1.915	-38891	16250	8713	42820	24085	4883	28968		5.28	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 2.97 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 3	179667	0.31	7690	-4124	174.6	548.22	3.14	Si
SLV 4	179667	0.31	9979	-5351	174.6	700.18	4.01	Si
SLV 1	179667	0.31	11762	-6307	174.6	814.98	4.67	Si
SLV 2	179667	0.31	14051	-7535	174.6	957.78	5.49	Si
SLV 7	179667	0.31	20909	-11211	174.6	1354.7	7.76	Si
SLV 8	179667	0.31	22387	-12004	174.6	1434.22	8.21	Si
SLV 5	179667	0.31	34483	-18490	174.6	2004.11	11.48	Si
SLV 6	179667	0.31	35961	-19283	174.6	2063.9	11.82	Si
SLV 11	179667	0.31	35964	-19284	174.6	2063.99	11.82	Si
SLV 12	179667	0.31	37442	-20077	174.6	2121.63	12.15	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 2.97 Wa = 0.05 Ta = 0.0825

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	$\alpha_0^*$	aLim	Verifica
SLV 10	-19474	-14826	611	0.518	2263.6	0.963	7.81681	11.92842	No
SLV 9	-19030	-14628	611	0.528	2218.4	0.962	7.97716	11.92842	No
SLV 12	-16072	-15267	-548	0.613	1917.7	0.957	9.3085	11.92842	No
SLV 11	-15628	-15069	-548	0.627	1872.5	0.956	9.54059	11.92842	No
SLV 6	-14420	-12152	559	0.671	1749.8	0.953	10.22672	11.92842	No
SLV 5	-13976	-11954	559	0.688	1704.7	0.952	10.51071	11.92842	No
SLV 8	-11019	-12594	-599	0.836	1404.6	0.943	12.87603	11.92842	Si
SLV 14	-24301	-18154	265	0.442	2754.9	0.969	6.63344	6.09761	Si
SLV 13	-23613	-17847	265	0.453	2684.9	0.968	6.803	6.09761	Si
SLV 7	-10574	-12396	-599	0.864	1359.6	0.942	13.34026	11.92842	Si



Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	48.226	SLU 44	Si
V_SLU	10.249	SLU 83	Si
PF_SLV	0.735	SLV 3	No
V_SLV	2.584	SLV 14	Si
PFFP_SLV	3.14	SLV 3	Si
R_SLV	0.655	SLV 10	No

## Maschio 68

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-20.613	1.006	-24.633	1.006	L4	L5	4.02	0.28	3.72	3.72	3.72			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	at	α	elim,conv	s,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 50	1.11	1667.76	-56097	-0.0000764	0.0004492	0.0035	4.02	66764.99	88495.78	88495.78	53.06	No	Si
SLU 50	3.21	3948.75	-44892	-0.0000654	0.0004492	0.0035	4.02	60780.59	75141.77	75141.77	19.03	No	Si
SLU 47	1.11	1604.32	-55253	-0.0000751	0.0004492	0.0035	4.02	66441.85	87541.07	87541.07	54.57	No	Si
SLU 47	3.21	3905.78	-44146	-0.0000643	0.0004492	0.0035	4.02	60251.62	74051.48	74051.48	18.96	No	Si
SLU 49	1.11	1689.29	-56641	-0.0000773	0.0004492	0.0035	4.02	66961.89	89110.04	89110.04	52.75	No	Si
SLU 49	3.21	3928.45	-45444	-0.0000662	0.0004492	0.0035	4.02	61161.3	75948.04	75948.04	19.33	No	Si
SLU 44	1.11	1562.89	-54395	-0.0000738	0.0004492	0.0035	4.02	66092.24	86571.25	86571.25	55.39	No	Si
SLU 44	3.21	3841.03	-43376	-0.0000631	0.0004492	0.0035	4.02	59688.69	72926.41	72926.41	18.99	No	Si
SLU 46	1.11	1647.86	-55783	-0.000076	0.0004492	0.0035	4.02	66647.08	88140.22	88140.22	53.49	No	Si
SLU 46	3.21	3863.7	-44674	-0.000065	0.0004492	0.0035	4.02	60627.6	74822.96	74822.96	19.37	No	Si
SLU 48	1.11	1702.5	-56633	-0.0000773	0.0004492	0.0035	4.02	66959.05	89100.97	89100.97	52.34	No	Si
SLU 48	3.21	3915.38	-45430	-0.0000661	0.0004492	0.0035	4.02	61151.56	75927.16	75927.16	19.39	No	Si
SLU 45	1.11	1661.07	-55775	-0.000076	0.0004492	0.0035	4.02	66644.03	88131.15	88131.15	53.06	No	Si
SLU 45	3.21	3850.64	-44660	-0.0000649	0.0004492	0.0035	4.02	60617.54	74802.09	74802.09	19.43	No	Si
SLU 43	1.11	1584.91	-54382	-0.0000738	0.0004492	0.0035	4.02	66086.62	86556.13	86556.13	54.61	No	Si
SLU 43	3.21	3819.26	-43352	-0.000063	0.0004492	0.0035	4.02	59671.01	72891.62	72891.62	19.09	No	Si
SLU 51	1.11	1654.55	-56105	-0.0000764	0.0004492	0.0035	4.02	66767.97	88504.85	88504.85	53.49	No	Si
SLU 51	3.21	3961.82	-44907	-0.0000655	0.0004492	0.0035	4.02	60790.56	75162.64	75162.64	18.97	No	Si
SLU 9	1.11	1369.12	-44997	-0.0000603	0.0004492	0.0035	4.02	60853.14	75293.97	75293.97	54.99	No	Si
SLU 9	3.21	3052.9	-36351	-0.000052	0.0004492	0.0035	4.02	53754.2	62664.94	62664.94	20.53	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 1	1.11	14640.45	-63371	-0.0001106	0.0006738	0.0035	4.02		103962.41	103962.41	7.1		Si
SLV 1	3.21	-6972.6	-58556	-0.0000883	0.0006738	0.0035	4.02		105227.05	105227.05	15.09		Si
SLV 15	1.11	-11370.33	-29262	-0.0000578	0.0006738	0.0035	4.02		62093.15	62093.15	5.46		Si
SLV 15	3.21	12486.14	-17102	-0.0000443	0.0006738	0.0035	4.02		33979.63	33979.63	2.72		Si
SLV 16	1.11	-11662.29	-29170	-0.0000582	0.0006738	0.0035	4.02		61944.26	61944.26	5.31		Si
SLV 16	3.21	12563.83	-17223	-0.0000446	0.0006738	0.0035	4.02		34195.39	34195.39	2.72		Si
SLV 5	1.11	14484.7	-44442	-0.000084	0.0006738	0.0035	4.02		77219.2	77219.2	5.33		Si
SLV 5	3.21	-1693.89	-37672	-0.0000501	0.0006738	0.0035	4.02		75455.06	75455.06	44.55		Si
SLV 14	1.11	-5728.41	-24571	-0.000041	0.0006738	0.0035	4.02		54248.55	54248.55	9.47		Si
SLV 14	3.21	11544.74	-13005	-0.0000383	0.0006738	0.0035	4.02		26552.6	26552.6	2.3		Si
SLV 9	1.11	8461.63	-32829	-0.0000569	0.0006738	0.0035	4.02		60078.27	60078.27	7.1		Si
SLV 9	3.21	3838	-23971	-0.0000367	0.0006738	0.0035	4.02		46018.3	46018.3	11.99		Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 10	1.11	8273.06	-32770	-0.0000564	0.0006738	0.0035	4.02		59990.29	59990.29	7.25		Si
SLV 10	3.21	3888.18	-24049	-0.0000369	0.0006738	0.0035	4.02		46151.1	46151.1	11.87		Si
SLV 2	1.11	14348.49	-63279	-0.0001098	0.0006738	0.0035	4.02		103856.33	103856.33	7.24		Si
SLV 2	3.21	-6894.91	-58676	-0.0000883	0.0006738	0.0035	4.02		105380.94	105380.94	15.28		Si
SLV 13	1.11	-5436.45	-24663	-0.0000406	0.0006738	0.0035	4.02		54405.22	54405.22	10.01		Si
SLV 13	3.21	11467.05	-12885	-0.000038	0.0006738	0.0035	4.02		26330.06	26330.06	2.3		Si
SLV 6	1.11	14296.13	-44382	-0.0000836	0.0006738	0.0035	4.02		77131.22	77131.22	5.4		Si
SLV 6	3.21	-1643.72	-37750	-0.0000502	0.0006738	0.0035	4.02		75574.19	75574.19	45.98		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 44	1.11	1562.89	-54395	-38804	-6700	4.02	4.02	-34474	10833	12194	122342	40451	20502	60953	No	9.1	Si
SLU 44	3.21	3841.03	-43376	-30943	-5744	4.02	4.02	-27490	10833	12194	122342	40451	20502	60953	No	10.61	Si
SLU 43	1.11	1584.91	-54382	-38795	-6689	4.02	4.02	-34466	10833	12194	122342	40451	20502	60953	No	9.11	Si
SLU 43	3.21	3819.26	-43352	-30926	-5733	4.02	4.02	-27475	10833	12194	122342	40451	20502	60953	No	10.63	Si
SLU 50	1.11	1667.76	-56097	-40019	-6902	4.02	4.02	-35553	10833	12194	122342	40451	20502	60953	No	8.83	Si
SLU 50	3.21	3948.75	-44892	-32025	-5914	4.02	4.02	-28452	10833	12194	122342	40451	20502	60953	No	10.31	Si
SLU 72	1.11	1959.08	-61568	-43921	-6645	4.02	4.02	-39020	10833	12194	122342	40451	20502	60953	No	9.17	Si
SLU 72	3.21	3857.36	-50401	-35955	-5549	4.02	4.02	-31943	10833	12194	122342	40451	20502	60953	No	10.99	Si
SLU 47	1.11	1604.32	-55253	-39416	-6806	4.02	4.02	-35018	10833	12194	122342	40451	20502	60953	No	8.96	Si
SLU 47	3.21	3905.78	-44146	-31493	-5834	4.02	4.02	-27979	10833	12194	122342	40451	20502	60953	No	10.45	Si
SLU 45	1.11	1661.07	-55775	-39788	-6768	4.02	4.02	-35349	10833	12194	122342	40451	20502	60953	No	9.01	Si
SLU 45	3.21	3850.64	-44660	-31859	-5786	4.02	4.02	-28304	10833	12194	122342	40451	20502	60953	No	10.53	Si
SLU 49	1.11	1689.29	-56641	-40406	-6881	4.02	4.02	-35897	10833	12194	122342	40451	20502	60953	No	8.86	Si
SLU 49	3.21	3928.45	-45444	-32419	-5883	4.02	4.02	-28801	10833	12194	122342	40451	20502	60953	No	10.36	Si
SLU 51	1.11	1654.55	-56105	-40024	-6908	4.02	4.02	-35558	10833	12194	122342	40451	20502	60953	No	8.82	Si
SLU 51	3.21	3961.82	-44907	-32035	-5920	4.02	4.02	-28461	10833	12194	122342	40451	20502	60953	No	10.3	Si
SLU 48	1.11	1702.5	-56633	-40400	-6874	4.02	4.02	-35892	10833	12194	122342	40451	20502	60953	No	8.87	Si
SLU 48	3.21	3915.38	-45430	-32409	-5877	4.02	4.02	-28792	10833	12194	122342	40451	20502	60953	No	10.37	Si
SLU 46	1.11	1647.86	-55783	-39794	-6774	4.02	4.02	-35354	10833	12194	122342	40451	20502	60953	No	9	Si
SLU 46	3.21	3863.7	-44674	-31869	-5793	4.02	4.02	-28313	10833	12194	122342	40451	20502	60953	No	10.52	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 1	1.11	14640.45	-63371	-45207	9941	4.02	4.02	-40163	16250	18291	122342	60677	20502	81179		8.17	Si
SLV 1	3.21	-6972.6	-58556	-41772	10748	4.02	4.02	-37111	16250	18291	122342	60677	20502	81179		7.55	Si
SLV 15	1.11	-11370.33	-29262	-20875	-19677	4.02	4.02	-18546	16209	18245	122342	60677	20502	81179		4.13	Si
SLV 15	3.21	12486.14	-17102	-12200	-18826	4.02	3.8397	-10839	14668	15770	122342	60677	20502	81179		4.31	Si
SLV 12	1.11	-11506.55	-48099	-34313	-11785	4.02	4.02	-30484	16250	18291	122342	60677	20502	81179		6.89	Si
SLV 12	3.21	7285.12	-38107	-27184	-11122	4.02	4.02	-24151	16250	18291	122342	60677	20502	81179		7.3	Si
SLV 16	1.11	-11662.29	-29170	-20809	-19643	4.02	4.02	-18487	16197	18232	122342	60677	20502	81179		4.13	Si
SLV 16	3.21	12563.83	-17223	-12286	-18800	4.02	3.8416	-10915	14683	15794	122342	60677	20502	81179		4.32	Si
SLV 2	1.11	14348.49	-63279	-45142	9975	4.02	4.02	-40104	16250	18291	122342	60677	20502	81179		8.14	Si
SLV 2	3.21	-6894.91	-58676	-41858	10774	4.02	4.02	-37188	16250	18291	122342	60677	20502	81179		7.53	Si
SLD 15	1.11	-4011.37	-39002	-27823	-11184	4.02	4.02	-24719	16250	18291	122342	60677	20502	81179		7.26	Si
SLD 15	3.21	6945.87	-29007	-20693	-10348	4.02	4.02	-18384	16177	18209	122342	60677	20502	81179		7.84	Si
SLV 13	1.11	-5436.45	-24663	-17594	-18027	4.02	4.02	-15631	15626	17589	122342	60677	20502	81179		4.5	Si
SLV 13	3.21	11467.05	-12885	-9192	-17067	4.02	3.3601	-8166	14133	13297	122342	60677	20502	81179		4.76	Si
SLD 16	1.11	-4136.74	-38963	-27795	-11169	4.02	4.02	-24694	16250	18291	122342	60677	20502	81179		7.27	Si
SLD 16	3.21	6979.23	-29058	-20730	-10337	4.02	4.02	-18417	16183	18216	122342	60677	20502	81179		7.85	Si
SLV 11	1.11	-11317.98	-48159	-34355	-11808	4.02	4.02	-30522	16250	18291	122342	60677	20502	81179		6.88	Si
SLV 11	3.21	7234.94	-38029	-27129	-11140	4.02	4.02	-24102	16250	18291	122342	60677	20502	81179		7.29	Si
SLV 14	1.11	-5728.41	-24571	-17528	-17992	4.02	4.02	-15573	15615	17536	122342	60677	20502	81179		4.51	Si
SLV 14	3.21	11544.74	-13005	-9278	-17040	4.02	3.367	-8243	14149	13338	122342	60677	20502	81179		4.76	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRM D.M. 17-01-18 (N.T.C.)

quota 2.97 Ta 0.08 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 13	-12568	0.31	375.04	1652.33	2445.27	2048.8	5.46	Si
SLV 14	-12689	0.31	375.04	1667.15	2463.71	2065.43	5.51	Si
SLV 15	-18716	0.31	375.04	2382.53	3379.61	2881.07	7.68	Si
SLV 16	-18837	0.31	375.04	2396.34	3397.87	2897.11	7.72	Si
SLV 9	-21474	0.31	375.04	2693.4	3794.27	3243.84	8.65	Si
SLV 10	-21552	0.31	375.04	2702.04	3805.97	3254	8.68	Si
SLV 5	-35237	0.31	375.04	4090.58	5825.49	4958.03	13.22	Si
SLV 6	-35315	0.31	375.04	4097.76	5836.88	4967.32	13.24	Si
SLV 11	-41967	0.31	375.04	4680.19	6795.33	5737.76	15.3	Si
SLV 12	-42045	0.31	375.04	4686.66	6806.54	5746.6	15.32	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 2.97 Wa = 0.05 Ta = 0.0825

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	$\alpha 0^*$	aLim	Verifica
SLV 8	-47105	-59712	706	0.47	5385.3	0.967	7.07103	11.92842	No
SLV 7	-46855	-59771	707	0.473	5359.9	0.967	7.10384	11.92842	No
SLV 12	-39596	-48099	1186	0.534	4621.3	0.962	8.0727	11.92842	No
SLV 11	-39347	-48159	1187	0.537	4595.9	0.962	8.11736	11.92842	No
SLV 6	-34843	-44382	-1292	0.593	4137.9	0.958	8.99263	11.92842	No
SLV 5	-34594	-44442	-1291	0.596	4112.6	0.958	9.04988	11.92842	No
SLV 10	-27335	-32770	-811	0.742	3375.1	0.949	11.35897	11.92842	No
SLV 9	-27086	-32829	-811	0.748	3349.8	0.949	11.45051	11.92842	No
SLV 4	-51641	-67878	-554	0.438	5847.1	0.969	6.56314	6.09761	Si
SLV 3	-51255	-67970	-552	0.441	5807.8	0.969	6.60689	6.09761	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.



Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	18.959	SLU 47	Si
V_SLU	8.823	SLU 51	Si
PF_SLV	2.296	SLV 13	Si
V_SLV	4.126	SLV 15	Si
PFFP_SLV	5.463	SLV 13	Si
R_SLV	0.593	SLV 8	No

Maschio 69

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-12.263	1.006	-19.813	1.006	L4	L5	7.55	0.28	3.72	3.72	3.72			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	t0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 77	1.11	53042.19	-142792	-0.0001365	0.0004492	0.0035	7.55	241055.75	385293.75	385293.75	7.26	No	Si
SLU 77	3.61	28483.54	-138157	-0.0001165	0.0004492	0.0035	7.55	242589.47	378488.89	378488.89	13.29	No	Si
SLU 74	1.11	52337.52	-141116	-0.0001346	0.0004492	0.0035	7.55	241682.78	382833.22	382833.22	7.31	No	Si
SLU 74	3.61	28054.1	-136422	-0.0001148	0.0004492	0.0035	7.55	243002.3	375940.28	375940.28	13.4	No	Si
SLU 84	1.11	53861.92	-145434	-0.0001394	0.0004492	0.0035	7.55	239900.43	389173.16	389173.16	7.23	No	Si
SLU 84	3.61	28284.86	-141078	-0.0001189	0.0004492	0.0035	7.55	241696.15	382777	382777	13.53	No	Si
SLU 81	1.11	53179.11	-143778	-0.0001375	0.0004492	0.0035	7.55	240648.3	386742.07	386742.07	7.27	No	Si
SLU 81	3.61	27791.82	-139340	-0.0001171	0.0004492	0.0035	7.55	242257.76	380225.33	380225.33	13.68	No	Si
SLU 80	1.11	52619.88	-141441	-0.0001351	0.0004492	0.0035	7.55	241567.51	383310.74	383310.74	7.28	No	Si
SLU 80	3.61	28314.97	-136703	-0.0001152	0.0004492	0.0035	7.55	242941.41	376353.08	376353.08	13.29	No	Si
SLU 79	1.11	52641.73	-141461	-0.0001351	0.0004492	0.0035	7.55	241560.3	383340.17	383340.17	7.28	No	Si
SLU 79	3.61	28251.37	-136701	-0.0001152	0.0004492	0.0035	7.55	242941.87	376350.02	376350.02	13.32	No	Si
SLU 75	1.11	52315.66	-141096	-0.0001346	0.0004492	0.0035	7.55	241689.78	382803.78	382803.78	7.32	No	Si
SLU 75	3.61	28117.7	-136424	-0.0001149	0.0004492	0.0035	7.55	243001.86	375943.34	375943.34	13.37	No	Si
SLU 82	1.11	53157.25	-143758	-0.0001375	0.0004492	0.0035	7.55	240656.86	386712.63	386712.63	7.27	No	Si
SLU 82	3.61	27855.42	-139342	-0.0001171	0.0004492	0.0035	7.55	242257.14	380228.39	380228.39	13.65	No	Si
SLU 78	1.11	53020.33	-142772	-0.0001365	0.0004492	0.0035	7.55	241063.74	385264.31	385264.31	7.27	No	Si
SLU 78	3.61	28547.14	-138159	-0.0001166	0.0004492	0.0035	7.55	242588.92	378491.95	378491.95	13.26	No	Si
SLU 83	1.11	53883.78	-145454	-0.0001394	0.0004492	0.0035	7.55	239890.88	389202.6	389202.6	7.22	No	Si
SLU 83	3.61	28221.26	-141076	-0.0001188	0.0004492	0.0035	7.55	241696.87	382773.94	382773.94	13.56	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 2	1.11	72411.59	-98967	-0.0001075	0.0006738	0.0035	7.55		315208.22	315208.22	4.35		Si
SLD 2	3.61	5244.78	-98443	-0.0000691	0.0006738	0.0035	7.55		313756.99	313756.99	59.82		Si
SLV 8	1.11	73175.56	-94798	-0.0001048	0.0006738	0.0035	7.55		303656.07	303656.07	4.15		Si
SLV 8	3.61	15131.63	-94853	-0.0000721	0.0006738	0.0035	7.55		303807.56	303807.56	20.08		Si
SLD 1	1.11	72896.05	-98938	-0.0001078	0.0006738	0.0035	7.55		315128.75	315128.75	4.32		Si
SLD 1	3.61	5198.76	-98324	-0.000069	0.0006738	0.0035	7.55		313428.77	313428.77	60.29		Si
SLV 3	1.11	128325.63	-99675	-0.0001405	0.0006738	0.0035	7.55		317171.76	317171.76	2.47		Si
SLV 3	3.61	-11769.88	-105069	-0.0000775	0.0006738	0.0035	7.55		360195.98	360195.98	30.6		Si
SLV 1	1.11	121897.11	-101635	-0.0001382	0.0006738	0.0035	7.55		322603.35	322603.35	2.65		Si
SLV 1	3.61	-14751.76	-106095	-0.0000799	0.0006738	0.0035	7.55		362793.85	362793.85	24.59		Si
SLV 4	1.11	127197.39	-99742	-0.0001399	0.0006738	0.0035	7.55		317356.83	317356.83	2.49		Si
SLV 4	3.61	-11662.71	-105345	-0.0000776	0.0006738	0.0035	7.55		360894.34	360894.34	30.94		Si
SLD 4	1.11	75199.43	-98105	-0.0001084	0.0006738	0.0035	7.55		312819.71	312819.71	4.16		Si
SLD 4	3.61	6579.54	-97981	-0.0000695	0.0006738	0.0035	7.55		312477.09	312477.09	47.49		Si
SLV 7	1.11	73904.26	-94755	-0.0001052	0.0006738	0.0035	7.55		303536.54	303536.54	4.11		Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 7	3.61	15062.41	-94674	-0.0000719	0.0006738	0.0035	7.55		303313.89	303313.89	20.14		Si
SLV 2	1.11	120768.87	-101702	-0.0001376	0.0006738	0.0035	7.55		322788.42	322788.42	2.67		Si
SLV 2	3.61	-14644.6	-106371	-0.00008	0.0006738	0.0035	7.55		363492.22	363492.22	24.82		Si
SLD 3	1.11	75683.9	-98076	-0.0001087	0.0006738	0.0035	7.55		312740.24	312740.24	4.13		Si
SLD 3	3.61	6533.53	-97863	-0.0000694	0.0006738	0.0035	7.55		312148.87	312148.87	47.78		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 82	1.11	53157.25	-143758	-102553	1286	7.55	7.55	-48512	10833	22902	122342	75972	38505	114477	No	89.01	Si
SLU 82	3.61	27855.42	-139342	-99403	5997	7.55	7.55	-47021	10833	22902	122342	75972	38505	114477	No	19.09	Si
SLU 62	1.11	50063.5	-132104	-94240	1517	7.55	7.55	-44579	10833	22902	122342	75972	38505	114477	No	75.47	Si
SLU 62	3.61	25978.41	-127065	-90645	5886	7.55	7.55	-42879	10833	22902	122342	75972	38505	114477	No	19.45	Si
SLU 78	1.11	53020.33	-142772	-101850	863	7.55	7.55	-48179	10833	22902	122342	75972	38505	114477	No	132.59	Si
SLU 78	3.61	28547.14	-138159	-98560	5569	7.55	7.55	-46622	10833	22902	122342	75972	38505	114477	No	20.56	Si
SLU 83	1.11	53883.78	-145454	-103763	1241	7.55	7.55	-49084	10833	22902	122342	75972	38505	114477	No	92.22	Si
SLU 83	3.61	28221.26	-141076	-100640	6006	7.55	7.55	-47606	10833	22902	122342	75972	38505	114477	No	19.06	Si
SLU 81	1.11	53179.11	-143778	-102568	1275	7.55	7.55	-48518	10833	22902	122342	75972	38505	114477	No	89.76	Si
SLU 81	3.61	27791.82	-139340	-99402	5983	7.55	7.55	-47021	10833	22902	122342	75972	38505	114477	No	19.13	Si
SLU 61	1.11	49336.98	-130408	-93030	1562	7.55	7.55	-44007	10833	22902	122342	75972	38505	114477	No	73.31	Si
SLU 61	3.61	25612.58	-125332	-89409	5877	7.55	7.55	-42294	10833	22902	122342	75972	38505	114477	No	19.48	Si
SLU 60	1.11	49358.84	-130428	-93044	1551	7.55	7.55	-44013	10833	22902	122342	75972	38505	114477	No	73.82	Si
SLU 60	3.61	25548.98	-125329	-89407	5864	7.55	7.55	-42293	10833	22902	122342	75972	38505	114477	No	19.52	Si
SLU 77	1.11	53042.19	-142792	-101864	853	7.55	7.55	-48186	10833	22902	122342	75972	38505	114477	No	134.26	Si
SLU 77	3.61	28483.54	-138157	-98558	5555	7.55	7.55	-46622	10833	22902	122342	75972	38505	114477	No	20.61	Si
SLU 63	1.11	50041.65	-132084	-94225	1527	7.55	7.55	-44572	10833	22902	122342	75972	38505	114477	No	74.94	Si
SLU 63	3.61	26042.01	-127067	-90647	5900	7.55	7.55	-42879	10833	22902	122342	75972	38505	114477	No	19.4	Si
SLU 84	1.11	53861.92	-145434	-103749	1252	7.55	7.55	-49077	10833	22902	122342	75972	38505	114477	No	91.43	Si
SLU 84	3.61	28284.86	-141078	-100641	6020	7.55	7.55	-47607	10833	22902	122342	75972	38505	114477	No	19.02	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 16	1.11	-49149.86	-92183	-65761	-59591	7.55	7.55	-31108	16250	34352	122342	113958	38505	152463		2.56	Si
SLV 16	3.61	55007.14	-78926	-56304	-52358	7.55	7.55	-26634	16250	34352	122342	113958	38505	152463		2.91	Si
SLV 2	1.11	120768.87	-101702	-72552	60034	7.55	7.55	-34320	16250	34352	122342	113958	38505	152463		2.54	Si
SLV 2	3.61	-14644.6	-106371	-75883	59320	7.55	7.55	-35895	16250	34352	122342	113958	38505	152463		2.57	Si
SLV 14	1.11	-55578.38	-94143	-67160	-66406	7.55	7.55	-31769	16250	34352	122342	113958	38505	152463		2.3	Si
SLV 14	3.61	52025.25	-79952	-57036	-58876	7.55	7.55	-26980	16250	34352	122342	113958	38505	152463		2.59	Si
SLV 1	1.11	121897.11	-101635	-72504	60242	7.55	7.55	-34297	16250	34352	122342	113958	38505	152463		2.53	Si
SLV 1	3.61	-14751.76	-106095	-75686	59504	7.55	7.55	-35802	16250	34352	122342	113958	38505	152463		2.56	Si
SLV 7	1.11	73904.26	-94755	-67596	30717	7.55	7.55	-31975	16250	34352	122342	113958	38505	152463		4.96	Si
SLV 7	3.61	15062.41	-94674	-67538	32226	7.55	7.55	-31948	16250	34352	122342	113958	38505	152463		4.73	Si
SLV 8	1.11	73175.56	-94798	-67627	30583	7.55	7.55	-31990	16250	34352	122342	113958	38505	152463		4.99	Si
SLV 8	3.61	15131.63	-94853	-67666	32107	7.55	7.55	-32008	16250	34352	122342	113958	38505	152463		4.75	Si
SLV 4	1.11	121797.39	-99742	-71153	66849	7.55	7.4992	-33658	16250	34121	122342	113958	38505	152463		2.28	Si
SLV 4	3.61	-11662.71	-105345	-75151	65839	7.55	7.55	-35549	16250	34352	122342	113958	38505	152463		2.32	Si
SLV 13	1.11	-54450.14	-94077	-67112	-66198	7.55	7.55	-31746	16250	34352	122342	113958	38505	152463		2.3	Si
SLV 13	3.61	51918.09	-79676	-56839	-58692	7.55	7.55	-26887	16250	34352	122342	113958	38505	152463		2.6	Si
SLV 3	1.11	128325.63	-99675	-71106	67057	7.55	7.4627	-33636	16250	33955	122342	113958	38505	152463		2.27	Si
SLV 3	3.61	-11769.88	-105069	-74954	66023	7.55	7.55	-35456	16250	34352	122342	113958	38505	152463		2.31	Si
SLV 15	1.11	-48021.63	-92117	-65714	-59383	7.55	7.55	-31085	16250	34352	122342	113958	38505	152463		2.57	Si
SLV 15	3.61	54899.97	-78650	-56107	-52174	7.55	7.55	-26541	16250	34352	122342	113958	38505	152463		2.92	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCC D.M. 17-01-18 (N.T.C.)

quota 2.97 Ta 0.08 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 15	-87676	0.31	704.37	9497.07	14009.86	11753.46	16.69	Si
SLV 16	-87928	0.31	704.37	9516.38	14045.9	11781.14	16.73	Si
SLV 13	-90350	0.31	704.37	9699.4	14391.98	12045.69	17.1	Si
SLV 14	-90602	0.31	704.37	9718.22	14428.04	12073.13	17.14	Si
SLV 11	-91658	0.31	704.37	9796.53	14579.05	12187.79	17.3	Si
SLV 12	-91821	0.31	704.37	9808.53	14602.34	12205.44	17.33	Si
SLV 7	-97707	0.31	704.37	10229.47	15421.44	12825.45	18.21	Si
SLV 8	-97870	0.31	704.37	10240.76	15443.87	12842.31	18.23	Si
SLV 9	-100570	0.31	704.37	10425.21	15815.74	13120.47	18.63	Si
SLV 10	-100733	0.31	704.37	10436.17	15838.17	13137.17	18.65	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 2.97 Wa = 0.05 Ta = 0.0825

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	$\alpha_0^*$	$\alpha_{lim}$	Verifica
SLV 6	-92233	-101331	-1661	0.451	10497.5	0.968	6.76576	11.92842	No
SLV 5	-91936	-101288	-1660	0.452	10467.3	0.968	6.7851	11.92842	No
SLV 10	-91037	-99064	-1586	0.456	10375.8	0.968	6.85518	11.92842	No
SLV 9	-90740	-99021	-1585	0.458	10345.5	0.968	6.87503	11.92842	No
SLV 8	-82499	-94798	1581	0.496	9506.7	0.965	7.47674	11.92842	No
SLV 7	-82202	-94755	1582	0.498	9476.5	0.965	7.50037	11.92842	No
SLV 12	-81303	-92530	1655	0.502	9385	0.964	7.56084	11.92842	No
SLV 11	-81006	-92487	1656	0.503	9354.8	0.964	7.58509	11.92842	No
SLV 2	-90303	-101702	-613	0.47	10301	0.967	7.05434	6.09761	Si
SLV 1	-89843	-101635	-612	0.472	10254.2	0.967	7.08635	6.09761	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.



Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	7.223	SLU 83	Si
V_SLU	19.017	SLU 84	Si
PF_SLV	2.472	SLV 3	Si
V_SLV	2.274	SLV 3	Si
PFFP_SLV	16.686	SLV 15	Si
R_SLV	0.567	SLV 6	No

## Maschio 70

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

## Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-7.463	1.006	-11.143	1.006	L4	L5	3.68	0.28	3.72	3.72	3.72			

## Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	t0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

## Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

## Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche, γ<sub>M</sub> = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 72	1.11	5354.15	-57241	-0.0000959	0.0004492	0.0035	3.68	57438.55	80234.99	80234.99	14.99	No	Si
SLU 72	3.61	3485.9	-52699	-0.0000838	0.0004492	0.0035	3.68	56378.94	75576.16	75576.16	21.68	No	Si
SLU 65	1.11	5243.44	-55699	-0.0000931	0.0004492	0.0035	3.68	57146.37	78653.04	78653.04	15	No	Si
SLU 65	3.61	3398.64	-51125	-0.0000811	0.0004492	0.0035	3.68	55871.07	73961.8	73961.8	21.76	No	Si
SLU 71	1.11	5367.39	-57231	-0.0000959	0.0004492	0.0035	3.68	57436.87	80224.63	80224.63	14.95	No	Si
SLU 71	3.61	3477.41	-52714	-0.0000838	0.0004492	0.0035	3.68	56383.51	75591.81	75591.81	21.74	No	Si
SLU 68	1.11	5294.39	-56474	-0.0000945	0.0004492	0.0035	3.68	57301.79	79447.46	79447.46	15.01	No	Si
SLU 68	3.61	3445.1	-51907	-0.0000825	0.0004492	0.0035	3.68	56132.42	74763.77	74763.77	21.7	No	Si
SLU 66	1.11	5356.61	-56957	-0.0000955	0.0004492	0.0035	3.68	57389.93	79943.42	79943.42	14.92	No	Si
SLU 66	3.61	3472	-52476	-0.0000834	0.0004492	0.0035	3.68	56311.53	75347.9	75347.9	21.7	No	Si
SLU 67	1.11	5343.38	-56967	-0.0000955	0.0004492	0.0035	3.68	57391.69	79953.77	79953.77	14.96	No	Si
SLU 67	3.61	3480.49	-52461	-0.0000834	0.0004492	0.0035	3.68	56306.85	75332.25	75332.25	21.64	No	Si
SLU 69	1.11	5407.55	-57732	-0.0000969	0.0004492	0.0035	3.68	57516.86	80737.84	80737.84	14.93	No	Si
SLU 69	3.61	3518.46	-53258	-0.0000848	0.0004492	0.0035	3.68	56541.99	76149.87	76149.87	21.64	No	Si
SLU 74	1.11	5647.52	-63043	-0.0001063	0.0004492	0.0035	3.68	57914.87	86185.35	86185.35	15.26	No	Si
SLU 74	3.61	4260.14	-58983	-0.0000959	0.0004492	0.0035	3.68	57684.88	82021.29	82021.29	19.25	No	Si
SLU 64	1.11	5265.5	-55682	-0.0000932	0.0004492	0.0035	3.68	57142.8	78635.79	78635.79	14.93	No	Si
SLU 64	3.61	3384.5	-51150	-0.0000811	0.0004492	0.0035	3.68	55879.85	73987.87	73987.87	21.86	No	Si
SLU 70	1.11	5394.32	-57742	-0.0000968	0.0004492	0.0035	3.68	57518.4	80748.19	80748.19	14.97	No	Si
SLU 70	3.61	3526.94	-53243	-0.0000848	0.0004492	0.0035	3.68	56537.66	76134.22	76134.22	21.59	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche, γ<sub>M</sub> = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 5	1.11	18761.77	-34048	-0.0000897	0.0006738	0.0035	3.68		55833.66	55833.66	2.98		Si
SLV 5	3.61	-9401.24	-42954	-0.0000809	0.0006738	0.0035	3.68		74591.87	74591.87	7.93		Si
SLV 16	1.11	-21403.73	-50529	-0.0001213	0.0006738	0.0035	3.68		84254.44	84254.44	3.94		Si
SLV 16	3.61	44682.47	-40286	-0.0002006	0.0006738	0.0035	3.68		64201.88	64201.88	1.44		Si
SLV 14	1.11	-16702.54	-45876	-0.0001027	0.0006738	0.0035	3.68		78429.8	78429.8	4.7		Si
SLV 14	3.61	44942.4	-42475	-0.0001973	0.0006738	0.0035	3.68		67138.7	67138.7	1.49		Si
SLV 15	1.11	-21271.16	-50417	-0.0001208	0.0006738	0.0035	3.68		84113.19	84113.19	3.95		Si
SLV 15	3.61	44425	-40143	-0.0001991	0.0006738	0.0035	3.68		64010.51	64010.51	1.44		Si
SLV 2	1.11	29252.04	-36175	-0.0001216	0.0006738	0.0035	3.68		58687.17	58687.17	2.01		Si
SLV 2	3.61	-38803.79	-39464	-0.0001638	0.0006738	0.0035	3.68		69956.15	69956.15	1.8		Si
SLV 1	1.11	29384.62	-36062	-0.000122	0.0006738	0.0035	3.68		58535.77	58535.77	1.99		Si
SLV 1	3.61	-39061.26	-39321	-0.0001653	0.0006738	0.0035	3.68		69766.7	69766.7	1.79		Si
SLV 4	1.11	24550.85	-40829	-0.0001137	0.0006738	0.0035	3.68		64930.27	64930.27	2.64		Si
SLV 4	3.61	-39063.73	-37275	-0.0001677	0.0006738	0.0035	2.944		66945.22	66945.22	1.71		Si
SLV 13	1.11	-16569.96	-45763	-0.0001022	0.0006738	0.0035	3.68		78288.55	78288.55	4.72		Si





Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 13	3.61	44684.93	-42333	-0.0001959	0.0006738	0.0035	3.68		66947.33	66947.33	1.5		Si
SLV 6	1.11	18676.14	-34121	-0.0000896	0.0006738	0.0035	3.68		55931.45	55931.45	2.99		Si
SLV 6	3.61	-9234.95	-43047	-0.0000807	0.0006738	0.0035	3.68		74714.23	74714.23	8.09		Si
SLV 3	1.11	24683.42	-40716	-0.0001139	0.0006738	0.0035	3.68		64778.87	64778.87	2.62		Si
SLV 3	3.61	-39321.2	-37132	-0.0001696	0.0006738	0.0035	2.944		66744.87	66744.87	1.7		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 71	1.11	5367.39	-57231	-40827	1816	3.68	3.68	-39623	10833	11163	122342	37030	18768	55798	No	30.73	Si
SLU 71	3.61	3477.41	-52714	-37605	376	3.68	3.68	-36496	10833	11163	122342	37030	18768	55798	No	148.4	Si
SLU 77	1.11	5698.46	-63818	-45526	1787	3.68	3.68	-44183	10833	11163	122342	37030	18768	55798	No	31.23	Si
SLU 77	3.61	4306.6	-59765	-42635	311	3.68	3.68	-41377	10833	11163	122342	37030	18768	55798	No	179.29	Si
SLU 70	1.11	5394.32	-57742	-41192	1815	3.68	3.68	-39976	10833	11163	122342	37030	18768	55798	No	30.74	Si
SLU 70	3.61	3526.94	-53243	-37982	365	3.68	3.68	-36862	10833	11163	122342	37030	18768	55798	No	153.01	Si
SLU 66	1.11	5356.61	-56957	-40632	1845	3.68	3.68	-39433	10833	11163	122342	37030	18768	55798	No	30.24	Si
SLU 66	3.61	3472	-52476	-37435	412	3.68	3.68	-36331	10833	11163	122342	37030	18768	55798	No	135.5	Si
SLU 69	1.11	5407.55	-57732	-41184	1846	3.68	3.68	-39969	10833	11163	122342	37030	18768	55798	No	30.22	Si
SLU 69	3.61	3518.46	-53258	-37993	394	3.68	3.68	-36872	10833	11163	122342	37030	18768	55798	No	141.51	Si
SLU 67	1.11	5343.38	-56967	-40639	1814	3.68	3.68	-39440	10833	11163	122342	37030	18768	55798	No	30.76	Si
SLU 67	3.61	3480.49	-52461	-37425	382	3.68	3.68	-36320	10833	11163	122342	37030	18768	55798	No	146.01	Si
SLU 27	1.11	4514.31	-47751	-34065	1805	3.68	3.68	-33060	10833	11163	122342	37030	18768	55798	No	30.92	Si
SLU 27	3.61	2778.01	-44609	-31823	604	3.68	3.68	-30884	10833	11163	122342	37030	18768	55798	No	92.44	Si
SLU 64	1.11	5265.5	-55682	-39722	1813	3.68	3.68	-38550	10833	11163	122342	37030	18768	55798	No	30.78	Si
SLU 64	3.61	3384.5	-51150	-36489	411	3.68	3.68	-35413	10833	11163	122342	37030	18768	55798	No	135.76	Si
SLU 74	1.11	5647.52	-63043	-44973	1785	3.68	3.68	-43646	10833	11163	122342	37030	18768	55798	No	31.25	Si
SLU 74	3.61	4260.14	-58983	-42077	329	3.68	3.68	-40836	10833	11163	122342	37030	18768	55798	No	169.74	Si
SLU 24	1.11	4463.37	-46977	-33512	1803	3.68	3.68	-32523	10833	11163	122342	37030	18768	55798	No	30.95	Si
SLU 24	3.61	2731.56	-43827	-31265	621	3.68	3.68	-30342	10833	11163	122342	37030	18768	55798	No	89.83	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 13	1.11	-16569.96	-45763	-32646	-33554	3.68	3.68	-31683	16250	16744	122342	55545	18768	74313		2.21	Si
SLV 13	3.61	44684.93	-42333	-30199	-29405	3.68	2.3533	-29308	16250	10708	122342	55545	18768	74313		2.53	Si
SLV 4	1.11	24550.85	-40829	-29126	35975	3.68	3.68	-28267	16250	16744	122342	55545	18768	74313		2.07	Si
SLV 4	3.61	-39063.73	-37275	-26591	29719	2.944	2.376	0	0	0	122342	44436	15014	59450		2	Si
SLV 2	1.11	29252.04	-36175	-25807	40140	3.68	3.0941	-25045	16250	14078	122342	55545	18768	74313		1.85	Si
SLV 2	3.61	-38803.79	-39464	-28152	32873	3.68	2.5702	-39872	16250	11694	122342	55545	18768	74313		2.26	Si
SLV 1	1.11	29384.62	-36062	-25726	40302	3.68	3.0755	-24967	16250	13994	122342	55545	18768	74313		1.84	Si
SLV 1	3.61	-39061.26	-39321	-28051	33021	3.68	2.5398	-40207	16250	11556	122342	55545	18768	74313		2.25	Si
SLV 14	1.11	-16702.54	-45876	-32727	-33716	3.68	3.68	-31761	16250	16744	122342	55545	18768	74313		2.2	Si
SLV 14	3.61	44942.4	-42475	-30301	-29553	3.68	2.3458	-29407	16250	10673	122342	55545	18768	74313		2.51	Si
SLV 15	1.11	-21271.16	-50417	-35966	-37720	3.68	3.68	-34905	16250	16744	122342	55545	18768	74313		1.97	Si
SLV 15	3.61	44425	-40143	-28637	-32559	3.68	2.2	-27792	16250	10010	122342	55545	18768	74313		2.28	Si
SLV 6	1.11	18676.14	-34121	-24341	19179	3.68	3.68	-23623	16250	16744	122342	55545	18768	74313		3.87	Si
SLV 6	3.61	-9234.95	-43047	-37078	14729	3.68	3.68	-29802	16250	16744	122342	55545	18768	74313		5.05	Si
SLV 3	1.11	24683.42	-40716	-29046	36136	3.68	3.68	-28189	16250	16744	122342	55545	18768	74313		2.06	Si
SLV 3	3.61	-39321.2	-37132	-26489	29868	2.944	2.3431	0	0	0	122342	44436	15014	59450		1.99	Si
SLV 16	1.11	-21403.73	-50529	-36047	-37881	3.68	3.68	-34983	16250	16744	122342	55545	18768	74313		1.96	Si
SLV 16	3.61	44682.47	-40286	-28739	-32707	3.68	2.1926	-27891	16250	9976	122342	55545	18768	74313		2.27	Si
SLV 5	1.11	18761.77	-34048	-24289	19283	3.68	3.68	-23573	16250	16744	122342	55545	18768	74313		3.85	Si
SLV 5	3.61	-9401.24	-42954	-30643	14825	3.68	3.68	-29739	16250	16744	122342	55545	18768	74313		5.01	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCC D.M. 17-01-18 (N.T.C.)

quota 2.97 Ta 0.08 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 15	-39205	0.31	343.32	4349.25	6328.14	5338.69	15.55	Si
SLV 16	-39332	0.31	343.32	4359.63	6346.39	5353.01	15.59	Si
SLV 11	-39532	0.31	343.32	4375.94	6375.16	5375.55	15.66	Si
SLV 12	-39614	0.31	343.32	4382.61	6386.95	5384.78	15.68	Si
SLV 13	-40674	0.31	343.32	4467.91	6539.38	5503.64	16.03	Si
SLV 14	-40801	0.31	343.32	4478.01	6557.64	5517.83	16.07	Si
SLV 7	-41262	0.31	343.32	4514.52	6623.96	5569.24	16.22	Si
SLV 8	-41344	0.31	343.32	4520.97	6635.76	5578.37	16.25	Si
SLV 9	-44428	0.31	343.32	4756.67	7079.56	5918.11	17.24	Si
SLV 10	-44510	0.31	343.32	4762.74	7091.36	5927.05	17.26	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 2.97 Wa = 0.05 Ta = 0.0825

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	$\alpha_0^*$	$\alpha_{lim}$	Verifica
SLV 6	-36652	-34121	-913	0.534	4271.6	0.962	8.05941	11.92842	No
SLV 5	-36616	-34048	-913	0.534	4267.9	0.962	8.06641	11.92842	No
SLV 10	-35543	-37031	-900	0.548	4158.8	0.961	8.28528	11.92842	No
SLV 9	-35507	-36958	-900	0.548	4155.1	0.961	8.2927	11.92842	No
SLV 8	-30527	-49634	873	0.624	3648.7	0.956	9.48448	11.92842	No
SLV 7	-30491	-49561	873	0.625	3645.1	0.956	9.4944	11.92842	No
SLV 12	-29418	-52544	885	0.644	3536	0.955	9.7921	11.92842	No
SLV 11	-29382	-52471	885	0.644	3532.4	0.955	9.80273	11.92842	No
SLV 2	-35812	-36175	-302	0.56	4186.1	0.961	8.46074	6.09761	Si
SLV 1	-35756	-36062	-302	0.56	4180.4	0.961	8.47242	6.09761	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.





Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	14.924	SLU 66	Si
V_SLU	30.22	SLU 69	Si
PF_SLV	1.437	SLV 16	Si
V_SLV	1.844	SLV 1	Si
PFFP_SLV	15.55	SLV 15	Si
R_SLV	0.676	SLV 6	No

## Maschio 71

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-4.913	1.006	-6.463	1.006	L4	L5	1.55	0.28	3.72	3.72	3.72			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	t0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 68	1.11	497.92	-36456	-0.0001393	0.0004492	0.0035	1.55	8829.96	18364.23	18364.23	36.88	No	Si
SLU 68	3.21	-2159.76	-36029	-0.0001652	0.0004492	0.0035	1.55	8951.48	18639.75	18639.75	8.63	No	Si
SLU 67	1.11	497.63	-36809	-0.0001409	0.0004492	0.0035	1.55	8725.8	18424.93	18424.93	37.03	No	Si
SLU 67	3.21	-2172.29	-36387	-0.0001671	0.0004492	0.0035	1.55	8850.06	18710.12	18710.12	8.61	No	Si
SLU 51	1.11	380.24	-33163	-0.0001235	0.0004492	0.0035	1.55	9628.52	17406.84	17406.84	45.78	No	Si
SLU 51	3.21	-2067.2	-32561	-0.000148	0.0004492	0.0035	1.55	9740.19	17885.43	17885.43	8.65	No	Si
SLU 69	1.11	501.42	-37324	-0.0001432	0.0004492	0.0035	1.55	8566.81	18513.78	18513.78	36.92	No	Si
SLU 69	3.21	-2200.3	-36891	-0.0001699	0.0004492	0.0035	1.55	8700.91	18809.18	18809.18	8.55	No	Si
SLU 72	1.11	499.06	-36966	-0.0001416	0.0004492	0.0035	1.55	8678.06	18452.08	18452.08	36.97	No	Si
SLU 72	3.21	-2187.47	-36536	-0.000168	0.0004492	0.0035	1.55	8806.8	18739.36	18739.36	8.57	No	Si
SLU 48	1.11	382.6	-33521	-0.000125	0.0004492	0.0035	1.55	9557.08	17517.16	17517.16	45.78	No	Si
SLU 48	3.21	-2080.03	-32916	-0.0001497	0.0004492	0.0035	1.55	9675.56	17988.71	17988.71	8.65	No	Si
SLU 66	1.11	505.58	-36826	-0.0001411	0.0004492	0.0035	1.55	8720.54	18427.95	18427.95	36.45	No	Si
SLU 66	3.21	-2173.18	-36379	-0.000167	0.0004492	0.0035	1.55	8852.42	18708.5	18708.5	8.61	No	Si
SLU 50	1.11	388.18	-33180	-0.0001237	0.0004492	0.0035	1.55	9625.12	17412.23	17412.23	44.86	No	Si
SLU 50	3.21	-2068.1	-32553	-0.0001479	0.0004492	0.0035	1.55	9741.64	17883.04	17883.04	8.65	No	Si
SLU 70	1.11	493.47	-37307	-0.000143	0.0004492	0.0035	1.55	8572.33	18510.77	18510.77	37.51	No	Si
SLU 70	3.21	-2199.41	-36899	-0.0001699	0.0004492	0.0035	1.55	8698.42	18810.79	18810.79	8.55	No	Si
SLU 71	1.11	507	-36984	-0.0001418	0.0004492	0.0035	1.55	8672.72	18455.09	18455.09	36.4	No	Si
SLU 71	3.21	-2188.36	-36528	-0.000168	0.0004492	0.0035	1.55	8809.21	18737.74	18737.74	8.56	No	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 13	1.11	-10420.87	-36902	-0.0002886	0.0006738	0.0035	1.55		21410.74	21410.74	2.05		Si
SLV 13	3.21	6107.92	-38240	-0.0002236	0.0006738	0.0035	1.55		21091.11	21091.11	3.45		Si
SLV 14	1.11	-10348.59	-37360	-0.0002891	0.0006738	0.0035	1.55		21551.14	21551.14	2.08		Si
SLV 14	3.21	6128.37	-38417	-0.0002247	0.0006738	0.0035	1.55		21147.37	21147.37	3.45		Si
SLV 5	1.11	4783.83	-32649	-0.0001797	0.0006738	0.0035	1.55		19121.59	19121.59	4		Si
SLV 5	3.21	-5652.54	-24715	-0.0001604	0.0006738	0.0035	1.55		16640.9	16640.9	2.94		Si
SLV 3	1.11	11100.35	-18422	-0.0004662	0.0006738	0.0035	1.55		12226.7	12226.7	1.1		Si
SLV 3	3.21	-9318.07	-16732	-0.000294	0.0006738	0.0035	1.24		12445.75	12445.75	1.34		Si
SLV 6	1.11	4830.51	-32944	-0.0001816	0.0006738	0.0035	1.55		19254.46	19254.46	3.99		Si
SLV 6	3.21	-5639.32	-24829	-0.0001606	0.0006738	0.0035	1.55		16694.19	16694.19	2.96		Si
SLV 1	1.11	11762.61	-22648	-0.0003577	0.0006738	0.0035	1.55		14624.42	14624.42	1.24		Si
SLV 1	3.21	-10274.31	-16965	-0.0004074	0.0006738	0.0035	1.24		12576.91	12576.91	1.22		Si
SLV 16	1.11	-11010.85	-33133	-0.0002883	0.0006738	0.0035	1.55		20254.13	20254.13	1.84		Si
SLV 16	3.21	7084.62	-38183	-0.0002387	0.0006738	0.0035	1.55		21073.14	21073.14	2.97		Si
SLV 2	1.11	11834.89	-23105	-0.0003541	0.0006738	0.0035	1.55		14830.15	14830.15	1.25		Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 2	3.21	-10253.86	-17142	-0.0003916	0.0006738	0.0035	1.24		12676.33	12676.33	1.24		Si
SLV 15	1.11	-11083.13	-32676	-0.0002889	0.0006738	0.0035	1.55		20096.91	20096.91	1.81		Si
SLV 15	3.21	7064.17	-38006	-0.0002376	0.0006738	0.0035	1.55		21016.88	21016.88	2.98		Si
SLV 4	1.11	11172.63	-18879	-0.0004416	0.0006738	0.0035	1.55		12489.82	12489.82	1.12		Si
SLV 4	3.21	-9297.61	-16908	-0.0002868	0.0006738	0.0035	1.24		12545.16	12545.16	1.35		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 79	1.11	526.58	-40637	-28989	1887	1.55	1.55	-66796	10833	4702	122342	15597	7905	23502	No	12.45	Si
SLU 79	3.21	-2117.11	-40509	-28898	1822	1.55	1.55	-66586	10833	4702	122342	15597	7905	23502	No	12.9	Si
SLU 72	1.11	499.06	-36966	-26371	1882	1.55	1.55	-60762	10833	4702	122342	15597	7905	23502	No	12.49	Si
SLU 72	3.21	-2187.47	-36536	-26064	1822	1.55	1.55	-60055	10833	4702	122342	15597	7905	23502	No	12.9	Si
SLU 80	1.11	518.63	-40620	-28977	1876	1.55	1.55	-66767	10833	4702	122342	15597	7905	23502	No	12.53	Si
SLU 80	3.21	-2116.22	-40517	-28904	1810	1.55	1.55	-66599	10833	4702	122342	15597	7905	23502	No	12.98	Si
SLU 78	1.11	513.05	-40960	-29220	1882	1.55	1.55	-67327	10833	4702	122342	15597	7905	23502	No	12.49	Si
SLU 78	3.21	-2128.16	-40881	-29163	1816	1.55	1.55	-67196	10833	4702	122342	15597	7905	23502	No	12.94	Si
SLU 66	1.11	505.58	-36826	-26271	1879	1.55	1.55	-60532	10833	4702	122342	15597	7905	23502	No	12.51	Si
SLU 66	3.21	-2173.18	-36379	-25952	1819	1.55	1.55	-59797	10833	4702	122342	15597	7905	23502	No	12.92	Si
SLU 69	1.11	501.42	-37324	-26626	1900	1.55	1.55	-61351	10833	4702	122342	15597	7905	23502	No	12.37	Si
SLU 69	3.21	-2200.3	-36891	-26317	1840	1.55	1.55	-60639	10833	4702	122342	15597	7905	23502	No	12.78	Si
SLU 74	1.11	525.15	-40480	-28877	1873	1.55	1.55	-66537	10833	4702	122342	15597	7905	23502	No	12.55	Si
SLU 74	3.21	-2101.93	-40360	-28792	1808	1.55	1.55	-66341	10833	4702	122342	15597	7905	23502	No	13	Si
SLU 71	1.11	507	-36984	-26383	1894	1.55	1.55	-60791	10833	4702	122342	15597	7905	23502	No	12.41	Si
SLU 71	3.21	-2188.36	-36528	-26058	1834	1.55	1.55	-60041	10833	4702	122342	15597	7905	23502	No	12.82	Si
SLU 77	1.11	520.99	-40978	-29232	1894	1.55	1.55	-67356	10833	4702	122342	15597	7905	23502	No	12.41	Si
SLU 77	3.21	-2129.05	-40872	-29157	1828	1.55	1.55	-67183	10833	4702	122342	15597	7905	23502	No	12.86	Si
SLU 70	1.11	493.47	-37307	-26614	1888	1.55	1.55	-61322	10833	4702	122342	15597	7905	23502	No	12.45	Si
SLU 70	3.21	-2199.41	-36899	-26323	1828	1.55	1.55	-60652	10833	4702	122342	15597	7905	23502	No	12.86	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 13	1.11	-10420.87	-36902	-26325	-8689	1.55	1.4778	-65999	16250	6724	122342	23395	7905	31300		3.6	Si
SLV 13	3.21	6107.92	-38240	-27279	-8560	1.55	1.55	-62855	16250	7052	122342	23395	7905	31300		3.66	Si
SLV 1	1.11	11762.61	-22648	-16157	12809	1.55	0.7669	-37227	16250	3489	122342	23395	7905	31300		2.44	Si
SLV 1	3.21	-10274.31	-16965	-12102	12539	1.24	0.5081	0	0	0	122342	18716	6324	25040		2	Si
SLV 14	1.11	-10348.59	-37360	-26651	-8576	1.55	1.494	-66099	16250	6798	122342	23395	7905	31300		3.65	Si
SLV 14	3.21	6128.37	-38417	-27405	-8445	1.55	1.55	-63146	16250	7052	122342	23395	7905	31300		3.71	Si
SLV 16	1.11	-11010.85	-33133	-23636	-10039	1.55	1.328	-65920	16250	6043	122342	23395	7905	31300		3.12	Si
SLV 16	3.21	7084.62	-38183	-27239	-9859	1.55	1.55	-62762	16250	7052	122342	23395	7905	31300		3.17	Si
SLV 2	1.11	11834.89	-23105	-16483	12922	1.55	0.7884	-37979	16250	3587	122342	23395	7905	31300		2.42	Si
SLV 2	3.21	-10253.86	-17142	-12229	12653	1.24	0.5305	0	0	0	122342	18716	6324	25040		1.98	Si
SLV 3	1.11	11100.35	-18422	-13142	11346	1.55	0.5173	-30280	16250	2354	122342	23395	7905	31300		2.76	Si
SLV 3	3.21	-9318.07	-16732	-11936	11125	1.24	0.6543	0	0	0	122342	18716	6324	25040		2.25	Si
SLV 6	1.11	4830.51	-32944	-23502	7084	1.55	1.55	-54151	16250	7052	122342	23395	7905	31300		4.42	Si
SLV 6	3.21	-5639.32	-24829	-17713	6898	1.55	1.55	-40812	16250	7052	122342	23395	7905	31300		4.54	Si
SLV 15	1.11	-11083.13	-32676	-23310	-10152	1.55	1.3074	-66033	16250	5949	122342	23395	7905	31300		3.08	Si
SLV 15	3.21	7064.17	-38006	-27113	-9974	1.55	1.55	-62472	16250	7052	122342	23395	7905	31300		3.14	Si
SLV 5	1.11	4783.83	-32649	-23291	7011	1.55	1.55	-53665	16250	7052	122342	23395	7905	31300		4.46	Si
SLV 5	3.21	-5652.54	-24715	-17631	6824	1.55	1.55	-40624	16250	7052	122342	23395	7905	31300		4.59	Si
SLV 4	1.11	11172.63	-18879	-13468	11459	1.55	0.5496	-31032	16250	2501	122342	23395	7905	31300		2.73	Si
SLV 4	3.21	-9297.61	-16908	-12062	11239	1.24	0.6754	0	0	0	122342	18716	6324	25040		2.23	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCC D.M. 17-01-18 (N.T.C.)

quota 2.97 Ta 0.08 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 3	-17116	0.31	144.61	1880.59	2758.27	2319.43	16.04	Si
SLV 4	-17293	0.31	144.61	1894.65	2783.75	2339.2	16.18	Si
SLV 1	-17478	0.31	144.61	1909.23	2810.39	2359.81	16.32	Si
SLV 2	-17655	0.31	144.61	1923.07	2835.87	2379.47	16.45	Si
SLV 7	-24052	0.31	144.61	2349.11	3715.94	3032.53	20.97	Si
SLV 8	-24166	0.31	144.61	2355.41	3730.8	3043.1	21.04	Si
SLV 5	-25259	0.31	144.61	2413.33	3870.31	3141.82	21.73	Si
SLV 6	-25373	0.31	144.61	2419.34	3884.38	3151.76	21.8	Si
SLV 11	-30333	0.31	144.61	2627.23	4467.47	3547.35	24.53	Si
SLV 12	-30447	0.31	144.61	2631	4480.12	3555.56	24.59	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 2.97 Wa = 0.05 Ta = 0.0825

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	$\alpha_0^*$	$\alpha_{lim}$	Verifica
SLV 11	-20569	-22837	208	0.426	2321.5	0.97	6.38222	11.92842	No
SLV 12	-20541	-23133	209	0.426	2318.6	0.97	6.38939	11.92842	No
SLV 9	-19739	-36925	-196	0.442	2236.9	0.969	6.62589	11.92842	No
SLV 10	-19711	-37220	-195	0.442	2234	0.969	6.63492	11.92842	No
SLV 7	-19121	-18561	195	0.454	2174.1	0.968	6.81434	11.92842	No
SLV 8	-19093	-18856	196	0.455	2171.2	0.968	6.82264	11.92842	No
SLV 5	-18291	-32649	-209	0.471	2089.5	0.967	7.07529	11.92842	No
SLV 6	-18263	-32944	-208	0.471	2086.6	0.967	7.08566	11.92842	No
SLV 15	-21976	-32676	81	0.408	2464.7	0.972	6.10358	6.09761	Si
SLV 16	-21932	-33133	83	0.409	2460.2	0.972	6.11346	6.09761	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.



Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	8.548	SLU 69	Si
V_SLU	12.369	SLU 69	Si
PF_SLV	1.101	SLV 3	Si
V_SLV	1.979	SLV 2	Si
PFFP_SLV	16.04	SLV 3	Si
R_SLV	0.535	SLV 11	No

## Maschio 72

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-0.133	1.006	-4.113	1.006	L4	L5	3.98	0.28	3.72	3.72	3.72			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	t0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 47	1.11	3883.57	-48049	-0.0000705	0.0004492	0.0035	3.98	61876.91	78339.87	78339.87	20.17	No	Si
SLU 47	3.21	-3218.85	-40689	-0.0000589	0.0004492	0.0035	3.98	56775.57	76011.02	76011.02	23.61	No	Si
SLU 48	1.11	3928.94	-49240	-0.0000723	0.0004492	0.0035	3.98	62553.66	79675.01	79675.01	20.28	No	Si
SLU 48	3.21	-3277.41	-41865	-0.0000606	0.0004492	0.0035	3.98	57696.87	77603.24	77603.24	23.68	No	Si
SLU 46	1.11	3900.02	-48511	-0.0000712	0.0004492	0.0035	3.98	62144.25	78857.6	78857.6	20.22	No	Si
SLU 46	3.21	-3219.87	-41163	-0.0000595	0.0004492	0.0035	3.98	57151.61	76652.5	76652.5	23.81	No	Si
SLU 45	1.11	3899	-48498	-0.0000712	0.0004492	0.0035	3.98	62137.11	78843.6	78843.6	20.22	No	Si
SLU 45	3.21	-3218.63	-41146	-0.0000595	0.0004492	0.0035	3.98	57138.5	76629.94	76629.94	23.81	No	Si
SLU 65	1.11	3990.37	-52109	-0.0000766	0.0004492	0.0035	3.98	64013.42	82890.73	82890.73	20.77	No	Si
SLU 65	3.21	-2987.13	-45129	-0.0000646	0.0004492	0.0035	3.98	60042.6	81805.53	81805.53	27.39	No	Si
SLU 43	1.11	3851.92	-47286	-0.0000694	0.0004492	0.0035	3.98	61421.89	77485.13	77485.13	20.12	No	Si
SLU 43	3.21	-3158.01	-39942	-0.0000577	0.0004492	0.0035	3.98	56169.67	75000.13	75000.13	23.75	No	Si
SLU 50	1.11	3911.8	-48770	-0.0000716	0.0004492	0.0035	3.98	62291.46	79147.95	79147.95	20.23	No	Si
SLU 50	3.21	-3275.57	-41380	-0.0000599	0.0004492	0.0035	3.98	57321.89	76946.72	76946.72	23.49	No	Si
SLU 49	1.11	3929.96	-49252	-0.0000724	0.0004492	0.0035	3.98	62560.53	79689.01	79689.01	20.28	No	Si
SLU 49	3.21	-3278.65	-41882	-0.0000606	0.0004492	0.0035	3.98	57709.63	77625.79	77625.79	23.68	No	Si
SLU 44	1.11	3853.63	-47307	-0.0000694	0.0004492	0.0035	3.98	61434.53	77508.46	77508.46	20.11	No	Si
SLU 44	3.21	-3160.07	-39970	-0.0000578	0.0004492	0.0035	3.98	56192.5	75037.72	75037.72	23.75	No	Si
SLU 51	1.11	3912.83	-48782	-0.0000716	0.0004492	0.0035	3.98	62298.51	79161.95	79161.95	20.23	No	Si
SLU 51	3.21	-3276.81	-41397	-0.00006	0.0004492	0.0035	3.98	57334.89	76969.28	76969.28	23.49	No	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 4	1.11	7439.73	-34099	-0.0000573	0.0006738	0.0035	3.98		61192.42	61192.42	8.23		Si
SLD 4	3.21	-5681.17	-26994	-0.0000446	0.0006738	0.0035	3.98		57762.8	57762.8	10.17		Si
SLD 3	1.11	7434.82	-34097	-0.0000573	0.0006738	0.0035	3.98		61189.64	61189.64	8.23		Si
SLD 3	3.21	-5713.55	-27007	-0.0000447	0.0006738	0.0035	3.98		57784.54	57784.54	10.11		Si
SLV 8	1.11	13657.46	-43154	-0.0000818	0.0006738	0.0035	3.98		74443.22	74443.22	5.45		Si
SLV 8	3.21	-5169.13	-34745	-0.0000537	0.0006738	0.0035	3.98		70187.32	70187.32	13.58		Si
SLD 8	1.11	7586.08	-41506	-0.0000674	0.0006738	0.0035	3.98		72031.17	72031.17	9.5		Si
SLD 8	3.21	-3489.25	-34875	-0.0000506	0.0006738	0.0035	3.98		70394.7	70394.7	20.17		Si
SLV 1	1.11	8342.46	-21062	-0.000042	0.0006738	0.0035	3.98		40525.17	40525.17	4.86		Si
SLV 1	3.21	-10011.82	-12780	-0.0000349	0.0006738	0.0035	3.98		33250.49	33250.49	3.32		Si
SLV 3	1.11	13305.84	-25822	-0.0000578	0.0006738	0.0035	3.98		48620.6	48620.6	3.65		Si
SLV 3	3.21	-10363.44	-16326	-0.0000398	0.0006738	0.0035	3.98		39513.31	39513.31	3.81		Si
SLV 2	1.11	8353.89	-21066	-0.0000421	0.0006738	0.0035	3.98		40532.78	40532.78	4.85		Si
SLV 2	3.21	-9936.41	-12750	-0.0000347	0.0006738	0.0035	3.98		33195.68	33195.68	3.34		Si
SLV 7	1.11	13650.07	-43151	-0.0000818	0.0006738	0.0035	3.98		74439.03	74439.03	5.45		Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 7	3.21	-5217.84	-34765	-0.0000538	0.0006738	0.0035	3.98		70218.38	70218.38	13.46		Si
SLV 4	1.11	13317.28	-25827	-0.0000579	0.0006738	0.0035	3.98		48627.96	48627.96	3.65		Si
SLV 4	3.21	-10288.02	-16296	-0.0000396	0.0006738	0.0035	3.98		39460.16	39460.16	3.84		Si
SLD 7	1.11	7582.85	-41504	-0.0000674	0.0006738	0.0035	3.98		72029.34	72029.34	9.5		Si
SLD 7	3.21	-3510.53	-34884	-0.0000506	0.0006738	0.0035	3.98		70408.27	70408.27	20.06		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 50	1.11	3911.8	-48770	-34791	5233	3.98	3.98	-31219	10833	12073	122342	40049	20298	60347	No	11.53	Si
SLU 50	3.21	-3275.57	-41380	-29520	4779	3.98	3.98	-26489	10833	12073	122342	40049	20298	60347	No	12.63	Si
SLU 49	1.11	3929.96	-49252	-35135	5228	3.98	3.98	-31528	10833	12073	122342	40049	20298	60347	No	11.54	Si
SLU 49	3.21	-3278.65	-41882	-29877	4770	3.98	3.98	-26810	10833	12073	122342	40049	20298	60347	No	12.65	Si
SLU 43	1.11	3851.92	-47286	-33733	5094	3.98	3.98	-30270	10833	12073	122342	40049	20298	60347	No	11.85	Si
SLU 43	3.21	-3158.01	-39942	-28494	4656	3.98	3.98	-25569	10833	12073	122342	40049	20298	60347	No	12.96	Si
SLU 46	1.11	3900.02	-48511	-34606	5159	3.98	3.98	-31054	10833	12073	122342	40049	20298	60347	No	11.7	Si
SLU 46	3.21	-3219.87	-41163	-29365	4708	3.98	3.98	-26350	10833	12073	122342	40049	20298	60347	No	12.82	Si
SLU 71	1.11	4048.55	-53571	-38216	4798	3.98	3.98	-34293	10833	12073	122342	40049	20298	60347	No	12.58	Si
SLU 71	3.21	-3102.64	-46539	-33200	4293	3.98	3.98	-29791	10833	12073	122342	40049	20298	60347	No	14.06	Si
SLU 47	1.11	3883.57	-48049	-34277	5159	3.98	3.98	-30758	10833	12073	122342	40049	20298	60347	No	11.7	Si
SLU 47	3.21	-3218.85	-40689	-29027	4713	3.98	3.98	-26047	10833	12073	122342	40049	20298	60347	No	12.8	Si
SLU 44	1.11	3853.63	-47307	-33748	5090	3.98	3.98	-30283	10833	12073	122342	40049	20298	60347	No	11.86	Si
SLU 44	3.21	-3160.07	-39970	-28514	4651	3.98	3.98	-25587	10833	12073	122342	40049	20298	60347	No	12.97	Si
SLU 45	1.11	3899	-48498	-34597	5162	3.98	3.98	-31046	10833	12073	122342	40049	20298	60347	No	11.69	Si
SLU 45	3.21	-3218.63	-41146	-29353	4711	3.98	3.98	-26339	10833	12073	122342	40049	20298	60347	No	12.81	Si
SLU 48	1.11	3928.94	-49240	-35126	5231	3.98	3.98	-31520	10833	12073	122342	40049	20298	60347	No	11.54	Si
SLU 48	3.21	-3277.41	-41865	-29865	4773	3.98	3.98	-26799	10833	12073	122342	40049	20298	60347	No	12.64	Si
SLU 51	1.11	3912.83	-48782	-34800	5230	3.98	3.98	-31227	10833	12073	122342	40049	20298	60347	No	11.54	Si
SLU 51	3.21	-3276.81	-41397	-29531	4776	3.98	3.98	-26500	10833	12073	122342	40049	20298	60347	No	12.63	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 3	1.11	13305.84	-25822	-18421	17454	3.98	3.98	-16530	15806	17614	122342	60073	20298	80371		4.6	Si
SLV 3	3.21	-10363.44	-16326	-11647	16796	3.98	3.98	-10451	14590	16259	122342	60073	20298	80371		4.79	Si
SLV 8	1.11	13657.46	-43154	-30785	11022	3.98	3.98	-27625	16250	18109	122342	60073	20298	80371		7.29	Si
SLV 8	3.21	-5169.13	-34745	-24786	11287	3.98	3.98	-22242	16250	18109	122342	60073	20298	80371		7.12	Si
SLV 4	1.11	13317.28	-25827	-18424	17456	3.98	3.98	-16533	15807	17615	122342	60073	20298	80371		4.6	Si
SLV 4	3.21	-10288.02	-16296	-11625	16799	3.98	3.98	-10432	14586	16255	122342	60073	20298	80371		4.78	Si
SLV 1	1.11	8342.46	-21062	-15025	15250	3.98	3.98	-13483	15197	16935	122342	60073	20298	80371		5.27	Si
SLV 1	3.21	-10011.82	-12780	-9117	14113	3.98	3.98	-9025	14305	14499	122342	60073	20298	80371		5.7	Si
SLV 7	1.11	13650.07	-43151	-30783	11021	3.98	3.98	-27623	16250	18109	122342	60073	20298	80371		7.29	Si
SLV 7	3.21	-5217.84	-34765	-24800	11286	3.98	3.98	-22254	16250	18109	122342	60073	20298	80371		7.12	Si
SLV 14	1.11	-7213	-54707	-39027	-10475	3.98	3.98	-35020	16250	18109	122342	60073	20298	80371		7.67	Si
SLV 14	3.21	5899.19	-53628	-38257	-10578	3.98	3.98	-34329	16250	18109	122342	60073	20298	80371		7.6	Si
SLV 13	1.11	-7224.43	-54703	-39024	-10477	3.98	3.98	-35018	16250	18109	122342	60073	20298	80371		7.67	Si
SLV 13	3.21	5823.78	-53658	-38278	-10580	3.98	3.98	-34349	16250	18109	122342	60073	20298	80371		7.6	Si
SLV 2	1.11	8353.89	-21066	-15028	15252	3.98	3.98	-13485	15197	16936	122342	60073	20298	80371		5.27	Si
SLV 2	3.21	-9936.41	-12750	-9096	14115	3.98	3.6321	-8974	14295	14538	122342	60073	20298	80371		5.69	Si
SLD 4	1.11	7439.73	-34099	-24325	9458	3.98	3.98	-21828	16250	18109	122342	60073	20298	80371		8.5	Si
SLD 4	3.21	-5681.17	-26994	-19257	8959	3.98	3.98	-17280	15956	17781	122342	60073	20298	80371		8.97	Si
SLD 3	1.11	7434.82	-34097	-24324	9457	3.98	3.98	-21827	16250	18109	122342	60073	20298	80371		8.5	Si
SLD 3	3.21	-5713.55	-27007	-19266	8958	3.98	3.98	-17288	15958	17783	122342	60073	20298	80371		8.97	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCC D.M. 17-01-18 (N.T.C.)

quota 2.97 Ta 0.08 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 2	-13179	0.31	371.31	1725.96	2538.03	2131.99	5.74	Si
SLV 1	-13209	0.31	371.31	1729.64	2542.64	2136.14	5.75	Si
SLV 4	-17070	0.31	371.31	2190.09	3129.34	2659.72	7.16	Si
SLV 3	-17100	0.31	371.31	2193.61	3133.91	2663.76	7.17	Si
SLV 6	-23051	0.31	371.31	2862.94	4029.49	3446.22	9.28	Si
SLV 5	-23071	0.31	371.31	2865.05	4032.41	3448.73	9.29	Si
SLV 10	-35400	0.31	371.31	4097.05	5846.84	4971.95	13.39	Si
SLV 9	-35420	0.31	371.31	4098.83	5849.69	4974.26	13.4	Si
SLV 8	-36023	0.31	371.31	4153.75	5937.59	5045.67	13.59	Si
SLV 7	-36042	0.31	371.31	4155.51	5940.39	5047.95	13.59	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 2.97 Wa = 0.05 Ta = 0.0825

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	$\alpha_0^*$	aLim	Verifica
SLV 11	-42686	-53243	765	0.506	4929.7	0.964	7.62272	11.92842	No
SLV 12	-42588	-53246	766	0.507	4919.8	0.964	7.63795	11.92842	No
SLV 7	-35671	-43151	1116	0.58	4216.1	0.959	8.79444	11.92842	No
SLV 8	-35573	-43154	1116	0.582	4206.2	0.959	8.81548	11.92842	No
SLV 9	-34127	-37375	-1223	0.6	4059.2	0.957	9.10063	11.92842	No
SLV 10	-34030	-37378	-1222	0.601	4049.2	0.957	9.12374	11.92842	No
SLV 5	-27112	-27283	-872	0.739	3346.5	0.95	11.30696	11.92842	No
SLV 6	-27015	-27286	-872	0.741	3336.6	0.949	11.34279	11.92842	No
SLV 15	-47901	-59463	-340	0.467	5460.5	0.968	7.01091	6.09761	Si
SLV 16	-47750	-59468	-339	0.468	5445.1	0.967	7.03063	6.09761	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.



Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	20.113	SLU 44	Si
V_SLU	11.533	SLU 50	Si
PF_SLV	3.321	SLV 1	Si
V_SLV	4.604	SLV 4	Si
PFFP_SLV	5.742	SLV 2	Si
R_SLV	0.639	SLV 11	No

## Maschio 73

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

## Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.003	-3.314	-11.003	-0.354	L4	Z medio 398 cm	2.96	0.28	2.87	2.02	3.72			

## Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	t0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

## Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

## Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 74	1.11	195.54	-49653	-0.0001045	0.0003743	0.0035	2.96	30244.2	43434.39	43434.39	222.13	No	Si
SLU 74	3.13	3240.38	-45906	-0.0001094	0.0003743	0.0035	2.96	30978.74	42330.36	42330.36	13.06	No	Si
SLU 70	1.11	406.67	-45748	-0.0000958	0.0003743	0.0035	2.96	30998.88	42285.37	42285.37	103.98	No	Si
SLU 70	3.13	3149.47	-41881	-0.0000989	0.0003743	0.0035	2.96	31219.21	40966.33	40966.33	13.01	No	Si
SLU 67	1.11	402.55	-45060	-0.0000941	0.0003743	0.0035	2.96	31076.5	42090.6	42090.6	104.56	No	Si
SLU 67	3.13	3108.44	-41188	-0.000097	0.0003743	0.0035	2.96	31203.25	40555.96	40555.96	13.05	No	Si
SLU 69	1.11	399.93	-45744	-0.0000957	0.0003743	0.0035	2.96	30999.46	42284.05	42284.05	105.73	No	Si
SLU 69	3.13	3160	-41873	-0.0000989	0.0003743	0.0035	2.96	31219.12	40961.71	40961.71	12.96	No	Si
SLU 75	1.11	202.29	-49657	-0.0001046	0.0003743	0.0035	2.96	30242.98	43435.8	43435.8	214.72	No	Si
SLU 75	3.13	3229.84	-45914	-0.0001093	0.0003743	0.0035	2.96	30977.69	42332.64	42332.64	13.11	No	Si
SLU 77	1.11	199.67	-50341	-0.0001063	0.0003743	0.0035	2.96	30055.62	43644.92	43644.92	218.59	No	Si
SLU 77	3.13	3281.4	-46600	-0.0001113	0.0003743	0.0035	2.96	30879.89	42529.47	42529.47	12.96	No	Si
SLU 66	1.11	395.8	-45055	-0.000094	0.0003743	0.0035	2.96	31076.97	42089.29	42089.29	106.34	No	Si
SLU 66	3.13	3118.98	-41180	-0.000097	0.0003743	0.0035	2.96	31202.97	40551.11	40551.11	13	No	Si
SLU 79	1.11	208.16	-49993	-0.0001054	0.0003743	0.0035	2.96	30153.03	43538.19	43538.19	209.16	No	Si
SLU 79	3.13	3241.55	-46248	-0.0001103	0.0003743	0.0035	2.96	30932.18	42428.08	42428.08	13.09	No	Si
SLU 78	1.11	206.41	-50346	-0.0001063	0.0003743	0.0035	2.96	30054.29	43646.35	43646.35	211.45	No	Si
SLU 78	3.13	3270.87	-46608	-0.0001113	0.0003743	0.0035	2.96	30878.65	42531.78	42531.78	13	No	Si
SLU 71	1.11	408.42	-45395	-0.0000949	0.0003743	0.0035	2.96	31040.72	42185.3	42185.3	103.29	No	Si
SLU 71	3.13	3120.15	-41521	-0.0000979	0.0003743	0.0035	2.96	31213.03	40755.7	40755.7	13.06	No	Si

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 9	1.11	-1242.8	-33804	-0.0000688	0.0005615	0.0035	2.96		42622.52	42622.52	34.3		Si
SLV 9	3.13	4990.82	-31686	-0.0000794	0.0005615	0.0035	2.96		38160.89	38160.89	7.65		Si
SLV 5	1.11	-918.45	-34547	-0.000069	0.0005615	0.0035	2.96		43298.05	43298.05	47.14		Si
SLV 5	3.13	4246.26	-29460	-0.0000718	0.0005615	0.0035	2.96		36228.67	36228.67	8.53		Si
SLV 10	1.11	-1345.77	-34021	-0.0000697	0.0005615	0.0035	2.96		42819.15	42819.15	31.82		Si
SLV 10	3.13	5021.41	-31788	-0.0000797	0.0005615	0.0035	2.96		38249.77	38249.77	7.62		Si
SLV 13	1.11	-619.87	-32833	-0.0000643	0.0005615	0.0035	2.96		41746.69	41746.69	67.35		Si
SLV 13	3.13	4218.88	-34752	-0.0000827	0.0005615	0.0035	2.96		40859.29	40859.29	9.68		Si
SLD 6	1.11	-306.94	-34446	-0.0000664	0.0005615	0.0035	2.96		43205.87	43205.87	140.76		Si
SLD 6	3.13	3181.47	-30561	-0.0000699	0.0005615	0.0035	2.96		37181.99	37181.99	11.69		Si
SLD 5	1.11	-261.95	-34352	-0.000066	0.0005615	0.0035	2.96		43119.58	43119.58	164.61		Si
SLD 5	3.13	3168.11	-30517	-0.0000697	0.0005615	0.0035	2.96		37143.34	37143.34	11.72		Si
SLD 9	1.11	-400.64	-34034	-0.0000659	0.0005615	0.0035	2.96		42830.48	42830.48	106.91		Si
SLD 9	3.13	3486.46	-31468	-0.0000729	0.0005615	0.0035	2.96		37970.83	37970.83	10.89		Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 6	1.11	-1021.41	-34764	-0.0000699	0.0005615	0.0035	2.96		43496.02	43496.02	42.58		Si
SLV 6	3.13	4276.85	-29562	-0.0000722	0.0005615	0.0035	2.96		36316.6	36316.6	8.49		Si
SLV 14	1.11	-779.29	-33169	-0.0000657	0.0005615	0.0035	2.96		42048.58	42048.58	53.96		Si
SLV 14	3.13	4266.24	-34910	-0.0000832	0.0005615	0.0035	2.96		40999.45	40999.45	9.61		Si
SLD 10	1.11	-445.63	-34128	-0.0000663	0.0005615	0.0035	2.96		42916.53	42916.53	96.31		Si
SLD 10	3.13	3499.83	-31512	-0.0000731	0.0005615	0.0035	2.96		38009.6	38009.6	10.86		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 62	1.11	152.16	-46937	-39085	2876	2.96	2.96	-47159	10833	8979	30925	24818	7548	32366	No	11.25	Si
SLU 62	3.13	2935.98	-43536	-36253	4991	2.96	2.96	-43741	10833	8979	30925	24818	7548	32366	No	6.49	Si
SLU 56	1.11	233.62	-46004	-38308	3028	2.96	2.96	-46221	10833	8979	30925	24818	7548	32366	No	10.69	Si
SLU 56	3.13	2964.82	-42556	-35437	4977	2.96	2.96	-42757	10833	8979	30925	24818	7548	32366	No	6.5	Si
SLU 55	1.11	249.23	-44975	-37451	3120	2.96	2.96	-45187	10833	8979	30925	24818	7548	32366	No	10.37	Si
SLU 55	3.13	2866.39	-41523	-34577	5039	2.96	2.96	-41720	10833	8979	30925	24818	7548	32366	No	6.42	Si
SLU 59	1.11	248.86	-45660	-38022	3146	2.96	2.96	-45876	10833	8979	30925	24818	7548	32366	No	10.29	Si
SLU 59	3.13	2914.43	-42212	-35150	5079	2.96	2.96	-42411	10833	8979	30925	24818	7548	32366	No	6.37	Si
SLU 58	1.11	242.11	-45655	-38018	3088	2.96	2.96	-45871	10833	8979	30925	24818	7548	32366	No	10.48	Si
SLU 58	3.13	2924.97	-42204	-35144	5022	2.96	2.96	-42403	10833	8979	30925	24818	7548	32366	No	6.45	Si
SLU 80	1.11	214.9	-49998	-41634	2824	2.96	2.96	-50234	10833	8979	30925	24818	7548	32366	No	11.46	Si
SLU 80	3.13	3231.01	-46256	-38518	4992	2.96	2.96	-46474	10833	8979	30925	24818	7548	32366	No	6.48	Si
SLU 57	1.11	240.37	-46008	-38312	3087	2.96	2.96	-46226	10833	8979	30925	24818	7548	32366	No	10.49	Si
SLU 57	3.13	2954.29	-42564	-35443	5034	2.96	2.96	-42765	10833	8979	30925	24818	7548	32366	No	6.43	Si
SLU 61	1.11	154.78	-46253	-38516	2869	2.96	2.96	-46472	10833	8979	30925	24818	7548	32366	No	11.28	Si
SLU 61	3.13	2884.42	-42850	-35682	4970	2.96	2.96	-43053	10833	8979	30925	24818	7548	32366	No	6.51	Si
SLU 51	1.11	449.12	-41062	-34193	3488	2.96	2.96	-41256	10833	8979	30925	24818	7548	32366	No	9.28	Si
SLU 51	3.13	2793.03	-37485	-31214	4969	2.96	2.96	-37662	10833	8979	30925	24818	7548	32366	No	6.51	Si
SLU 63	1.11	158.9	-46942	-39089	2934	2.96	2.96	-47164	10833	8979	30925	24818	7548	32366	No	11.03	Si
SLU 63	3.13	2925.44	-43544	-36259	5048	2.96	2.96	-43749	10833	8979	30925	24818	7548	32366	No	6.41	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 11	1.11	1537.54	-33677	-28043	12340	2.96	2.96	-33836	16250	13468	30925	37227	7548	44393		3.6	Si
SLV 11	3.13	327.37	-33106	-27568	12697	2.96	2.96	-33263	16250	13468	30925	37227	7548	44393		3.5	Si
SLD 7	1.11	961.76	-34313	-28573	7461	2.96	2.96	-34475	16250	13468	30925	37227	7548	44393		5.95	Si
SLD 7	3.13	1104.4	-31155	-25944	7937	2.96	2.96	-31303	16250	13468	30925	37227	7548	44393		5.59	Si
SLV 9	1.11	-1242.8	-33804	-28149	-9487	2.96	2.96	-33964	16250	13468	30925	37227	7548	44393		4.68	Si
SLV 9	3.13	4990.82	-31686	-26385	-6043	2.96	2.96	-31836	16250	13468	30925	37227	7548	44393		7.35	Si
SLV 8	1.11	1758.93	-34637	-28842	14012	2.96	2.96	-34800	16250	13468	30925	37227	7548	44393		3.17	Si
SLV 8	3.13	-386.6	-30982	-25799	13328	2.96	2.96	-31128	16250	13468	30925	37227	7548	44393		3.33	Si
SLV 4	1.11	1136	-35608	-29651	8365	2.96	2.96	-35776	16250	13468	30925	37227	7548	44393		5.31	Si
SLV 4	3.13	385.34	-27915	-23245	7550	2.96	2.96	-28047	16026	13282	30925	37227	7548	44208		5.86	Si
SLD 8	1.11	916.77	-34407	-28651	7441	2.96	2.96	-34570	16250	13468	30925	37227	7548	44393		5.97	Si
SLD 8	3.13	1117.76	-31200	-25981	7915	2.96	2.96	-31347	16250	13468	30925	37227	7548	44393		5.61	Si
SLV 12	1.11	1434.58	-33893	-28224	12293	2.96	2.96	-34054	16250	13468	30925	37227	7548	44393		3.61	Si
SLV 12	3.13	357.96	-33208	-27653	12648	2.96	2.96	-33365	16250	13468	30925	37227	7548	44393		3.51	Si
SLV 3	1.11	1295.42	-35272	-29372	8439	2.96	2.96	-35439	16250	13468	30925	37227	7548	44393		5.26	Si
SLV 3	3.13	337.98	-27758	-23114	7625	2.96	2.96	-27889	15994	13256	30925	37227	7548	44182		5.79	Si
SLV 10	1.11	-1345.77	-34021	-28330	-9534	2.96	2.96	-34182	16250	13468	30925	37227	7548	44393		4.66	Si
SLV 10	3.13	5021.41	-31788	-26470	-6092	2.96	2.96	-31938	16250	13468	30925	37227	7548	44393		7.29	Si
SLV 7	1.11	1861.9	-34420	-28662	14060	2.96	2.96	-34582	16250	13468	30925	37227	7548	44393		3.16	Si
SLV 7	3.13	-417.19	-30880	-25714	13377	2.96	2.96	-31026	16250	13468	30925	37227	7548	44393		3.32	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 2.12 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 3	179667	0.29	37749	-31286	154.83	3297.39	21.3	Si
SLV 1	179667	0.29	37969	-31469	154.83	3310.27	21.38	Si
SLV 4	179667	0.29	38054	-31539	154.83	3315.21	21.41	Si
SLV 2	179667	0.29	38274	-31721	154.83	3327.99	21.49	Si
SLV 7	179667	0.29	38677	-32056	154.83	3351.22	21.64	Si
SLV 8	179667	0.29	38874	-32219	154.83	3362.47	21.72	Si
SLV 5	179667	0.29	39411	-32664	154.83	3392.83	21.91	Si
SLV 6	179667	0.29	39608	-32827	154.83	3403.86	21.98	Si
SLV 11	179667	0.29	39647	-32860	154.83	3406.03	22	Si
SLV 12	179667	0.29	39844	-33023	154.83	3416.99	22.07	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 2.12 Wa = 0.05 Ta = 0.0491

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	a0*	aLim	Verifica
SLV 12	-33208	-33893	149	0.518	3715.9	0.972	7.74052	6.33533	Si
SLV 11	-33106	-33677	148	0.519	3705.5	0.972	7.76153	6.33533	Si
SLV 10	-31788	-34021	59	0.54	3571.2	0.971	8.08236	6.33533	Si
SLV 9	-31686	-33804	59	0.542	3560.9	0.971	8.10534	6.33533	Si
SLV 8	-30982	-34637	-136	0.55	3489.2	0.971	8.23159	6.33533	Si
SLV 7	-30880	-34420	-137	0.551	3478.8	0.971	8.25525	6.33533	Si
SLV 6	-29562	-34764	-226	0.569	3344.6	0.969	8.53556	6.33533	Si
SLV 5	-29460	-34547	-227	0.571	3334.2	0.969	8.56132	6.33533	Si
SLV 16	-35336	-33131	450	0.483	3932.6	0.974	7.21146	4.1803	Si



Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 15	-35179	-32795	450	0.485	3916.5	0.974	7.23987	4.1803	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	12.961	SLU 77	Si
V_SLU	6.373	SLU 59	Si
PF_SLV	7.617	SLV 10	Si
V_SLV	3.157	SLV 7	Si
PFFP_SLV	21.296	SLV 3	Si
R_SLV	1.222	SLV 12	Si

Maschio 74

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.003	-0.354	-11.003	1.006	L4	L5	1.36	0.28	3.72	3.72	3.72			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau 0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma F,d$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche,  $\gamma M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon m$	$\epsilon m_{-}$	$\epsilon m_u$	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 78	1.11	3325.62	-29207	-0.000234	0.0003743	0.0035	1.36	4898.74	9548.88	9548.88	2.87	No	Si
SLU 78	4.83	-534.11	-21048	-0.0001058	0.0003743	0.0035	1.36	6542.39	9174.4	9174.4	17.18	No	Si
SLU 79	1.11	3301.51	-28997	-0.0002314	0.0003743	0.0035	1.36	4970.39	9556.01	9556.01	2.89	No	Si
SLU 79	4.83	-525.26	-20879	-0.0001047	0.0003743	0.0035	1.36	6551.76	9153.08	9153.08	17.43	No	Si
SLU 84	1.11	3410.61	-29823	-0.0002423	0.0003743	0.0035	1.36	4679.76	9528.4	9528.4	2.79	No	Si
SLU 84	4.83	-626.41	-21535	-0.0001106	0.0003743	0.0035	1.36	6509.84	9225.9	9225.9	14.73	No	Si
SLU 81	1.11	3367.97	-29463	-0.0002376	0.0003743	0.0035	1.36	4809.56	9540.31	9540.31	2.83	No	Si
SLU 81	4.83	-620.65	-21223	-0.0001087	0.0003743	0.0035	1.36	6531.67	9192.64	9192.64	14.81	No	Si
SLU 77	1.11	3321.68	-29207	-0.0002339	0.0003743	0.0035	1.36	4898.68	9548.87	9548.87	2.87	No	Si
SLU 77	4.83	-527.31	-21066	-0.0001057	0.0003743	0.0035	1.36	6541.36	9176.23	9176.23	17.4	No	Si
SLU 82	1.11	3371.91	-29463	-0.0002377	0.0003743	0.0035	1.36	4809.61	9540.31	9540.31	2.83	No	Si
SLU 82	4.83	-627.44	-21205	-0.0001087	0.0003743	0.0035	1.36	6532.8	9190.78	9190.78	14.65	No	Si
SLU 83	1.11	3406.67	-29824	-0.0002422	0.0003743	0.0035	1.36	4679.7	9528.39	9528.39	2.8	No	Si
SLU 83	4.83	-619.61	-21552	-0.0001105	0.0003743	0.0035	1.36	6508.51	9227.8	9227.8	14.89	No	Si
SLU 74	1.11	3282.98	-28847	-0.0002295	0.0003743	0.0035	1.36	5020.73	9561.17	9561.17	2.91	No	Si
SLU 74	4.83	-528.34	-20736	-0.000104	0.0003743	0.0035	1.36	6558.89	9131.24	9131.24	17.28	No	Si
SLU 75	1.11	3286.92	-28846	-0.0002296	0.0003743	0.0035	1.36	5020.79	9561.18	9561.18	2.91	No	Si
SLU 75	4.83	-535.14	-20718	-0.000104	0.0003743	0.0035	1.36	6559.72	9128.45	9128.45	17.06	No	Si
SLU 80	1.11	3305.45	-28997	-0.0002315	0.0003743	0.0035	1.36	4970.45	9556.02	9556.02	2.89	No	Si
SLU 80	4.83	-532.06	-20861	-0.0001047	0.0003743	0.0035	1.36	6552.67	9150.46	9150.46	17.2	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche,  $\gamma M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon m$	$\epsilon m_{-}$	$\epsilon m_u$	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 8	1.11	3051.58	-19443	-0.0001422	0.0005615	0.0035	1.36		10051.6	10051.6	3.29		Si
SLV 8	4.83	-1064.79	-10278	-0.0000607	0.0005615	0.0035	1.36		6536.49	6536.49	6.14		Si
SLD 12	1.11	2533.03	-19316	-0.000131	0.0005615	0.0035	1.36		9998.72	9998.72	3.95		Si
SLD 12	4.83	-786.4	-13159	-0.0000681	0.0005615	0.0035	1.36		7922.45	7922.45	10.07		Si
SLV 7	1.11	3054.8	-19410	-0.0001421	0.0005615	0.0035	1.36		10037.75	10037.75	3.29		Si
SLV 7	4.83	-1075.18	-10215	-0.0000606	0.0005615	0.0035	1.36		6504.83	6504.83	6.05		Si
SLD 7	1.11	2608.8	-19645	-0.0001342	0.0005615	0.0035	1.36		10135.49	10135.49	3.89		Si
SLD 7	4.83	-642.38	-12345	-0.0000619	0.0005615	0.0035	1.36		7546.49	7546.49	11.75		Si
SLV 11	1.11	2880.09	-18606	-0.0001345	0.0005615	0.0035	1.36		9704.73	9704.73	3.37		Si
SLV 11	4.83	-1422.45	-12056	-0.0000751	0.0005615	0.0035	1.36		7407.57	7407.57	5.21		Si





Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 3	1.11	2767.95	-20909	-0.0001439	0.0005615	0.0035	1.36		10556.76	10556.76	3.81		Si
SLV 3	4.83	-12.23	-10043	-0.0000405	0.0005615	0.0035	1.36		6418.87	6418.87	524.84		Si
SLD 11	1.11	2534.43	-19302	-0.000131	0.0005615	0.0035	1.36		9992.68	9992.68	3.94		Si
SLD 11	4.83	-790.94	-13131	-0.0000681	0.0005615	0.0035	1.36		7910.04	7910.04	10		Si
SLV 4	1.11	2762.98	-20960	-0.0001441	0.0005615	0.0035	1.36		10570.82	10570.82	3.83		Si
SLV 4	4.83	3.86	-10141	-0.0000408	0.0005615	0.0035	1.36		5966.67	5966.67	1547.69		Si
SLV 12	1.11	2876.87	-18640	-0.0001346	0.0005615	0.0035	1.36		9718.49	9718.49	3.38		Si
SLV 12	4.83	-1412.06	-12119	-0.0000752	0.0005615	0.0035	1.36		7437.86	7437.86	5.27		Si
SLD 8	1.11	2607.4	-19659	-0.0001343	0.0005615	0.0035	1.36		10141.56	10141.56	3.89		Si
SLD 8	4.83	-637.84	-12372	-0.0000619	0.0005615	0.0035	1.36		7559.8	7559.8	11.85		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 63	1.11	3164.21	-27222	-22668	4290	1.36	1.36	-59527	10833	4125	42820	11403	3468	14871	No	3.47	Si
SLU 63	4.83	-624.01	-19679	-16387	1726	1.36	1.36	-43034	10833	4125	42820	11403	3468	14871	No	8.62	Si
SLU 62	1.11	3160.28	-27222	-22668	4268	1.36	1.36	-59528	10833	4125	42820	11403	3468	14871	No	3.48	Si
SLU 62	4.83	-617.22	-19697	-16402	1698	1.36	1.36	-43072	10833	4125	42820	11403	3468	14871	No	8.76	Si
SLU 84	1.11	3410.61	-29823	-24834	4365	1.36	1.36	-65216	10833	4125	42820	11403	3468	14871	No	3.41	Si
SLU 84	4.83	-626.41	-21535	-17932	1477	1.36	1.36	-47091	10833	4125	42820	11403	3468	14871	No	10.07	Si
SLU 78	1.11	3325.62	-29207	-24321	4254	1.36	1.36	-63869	10833	4125	42820	11403	3468	14871	No	3.5	Si
SLU 78	4.83	-534.11	-21048	-17527	1421	1.36	1.36	-46027	10833	4125	42820	11403	3468	14871	No	10.46	Si
SLU 80	1.11	3305.45	-28997	-24146	4246	1.36	1.36	-63409	10833	4125	42820	11403	3468	14871	No	3.5	Si
SLU 80	4.83	-532.06	-20861	-17371	1431	1.36	1.36	-45618	10833	4125	42820	11403	3468	14871	No	10.39	Si
SLU 81	1.11	3367.97	-29463	-24534	4283	1.36	1.36	-64427	10833	4125	42820	11403	3468	14871	No	3.47	Si
SLU 81	4.83	-620.65	-21223	-17672	1435	1.36	1.36	-46408	10833	4125	42820	11403	3468	14871	No	10.36	Si
SLU 83	1.11	3406.67	-29824	-24835	4343	1.36	1.36	-65216	10833	4125	42820	11403	3468	14871	No	3.42	Si
SLU 83	4.83	-619.61	-21552	-17947	1449	1.36	1.36	-47129	10833	4125	42820	11403	3468	14871	No	10.26	Si
SLU 77	1.11	3321.68	-29207	-24321	4232	1.36	1.36	-63869	10833	4125	42820	11403	3468	14871	No	3.51	Si
SLU 77	4.83	-527.31	-21066	-17542	1393	1.36	1.36	-46065	10833	4125	42820	11403	3468	14871	No	10.67	Si
SLU 61	1.11	3125.51	-26861	-22368	4229	1.36	1.36	-58738	10833	4125	42820	11403	3468	14871	No	3.52	Si
SLU 61	4.83	-625.05	-19350	-16113	1712	1.36	1.36	-42313	10833	4125	42820	11403	3468	14871	No	8.69	Si
SLU 82	1.11	3371.91	-29463	-24534	4305	1.36	1.36	-64427	10833	4125	42820	11403	3468	14871	No	3.45	Si
SLU 82	4.83	-627.44	-21205	-17658	1463	1.36	1.36	-46370	10833	4125	42820	11403	3468	14871	No	10.17	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 12	1.11	2533.03	-19316	-16085	5010	1.36	1.36	-42239	16250	6188	42820	17104	3468	20572		4.11	Si
SLD 12	4.83	-786.4	-13159	-10957	2766	1.36	1.36	-28774	16172	6158	42820	17104	3468	20572		7.44	Si
SLV 8	1.11	3051.58	-19443	-16191	5929	1.36	1.36	-42518	16250	6188	42820	17104	3468	20572		3.47	Si
SLV 8	4.83	-1064.79	-10278	-8559	4489	1.36	1.36	-22476	14912	5678	42820	17104	3468	20572		4.58	Si
SLD 11	1.11	2534.43	-19302	-16073	5016	1.36	1.36	-42207	16250	6188	42820	17104	3468	20572		4.1	Si
SLD 11	4.83	-790.94	-13131	-10934	2791	1.36	1.36	-28714	16159	6154	42820	17104	3468	20572		7.37	Si
SLV 15	1.11	2185.58	-18229	-15180	6998	1.36	1.36	-39862	16250	6188	42820	17104	3468	20572		2.94	Si
SLV 15	4.83	-1169.79	-16178	-13472	2984	1.36	1.36	-35378	16250	6188	42820	17104	3468	20572		6.89	Si
SLV 12	1.11	2876.87	-18640	-15521	7664	1.36	1.36	-40760	16250	6188	42820	17104	3468	20572		2.68	Si
SLV 12	4.83	-1412.06	-12119	-10092	4959	1.36	1.36	-26501	15717	5985	42820	17104	3468	20572		4.15	Si
SLD 16	1.11	2230.78	-19170	-15963	4681	1.36	1.36	-41920	16250	6188	42820	17104	3468	20572		4.39	Si
SLD 16	4.83	-668.33	-14966	-12463	1850	1.36	1.36	-32728	16250	6188	42820	17104	3468	20572		11.12	Si
SLV 16	1.11	2180.6	-18281	-15223	6979	1.36	1.36	-39975	16250	6188	42820	17104	3468	20572		2.95	Si
SLV 16	4.83	-1153.7	-16276	-13554	2895	1.36	1.36	-35592	16250	6188	42820	17104	3468	20572		7.11	Si
SLD 15	1.11	2232.92	-19148	-15945	4689	1.36	1.36	-41871	16250	6188	42820	17104	3468	20572		4.39	Si
SLD 15	4.83	-675.24	-14924	-12428	1888	1.36	1.36	-32636	16250	6188	42820	17104	3468	20572		10.89	Si
SLV 7	1.11	3054.8	-19410	-16163	5941	1.36	1.36	-42445	16250	6188	42820	17104	3468	20572		3.46	Si
SLV 7	4.83	-1075.18	-10215	-8506	4547	1.36	1.36	-22338	14884	5668	42820	17104	3468	20572		4.52	Si
SLV 11	1.11	2880.09	-18606	-15494	7676	1.36	1.36	-40687	16250	6188	42820	17104	3468	20572		2.68	Si
SLV 11	4.83	-1422.45	-12056	-10039	5017	1.36	1.36	-26363	15689	5974	42820	17104	3468	20572		4.1	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 2.97 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 3	179667	0.31	24477	-9321	126.88	1095.77	8.64	Si
SLV 4	179667	0.31	24774	-9434	126.88	1106.49	8.72	Si
SLV 1	179667	0.31	26618	-10136	126.88	1171.73	9.23	Si
SLV 2	179667	0.31	26915	-10249	126.88	1182	9.32	Si
SLV 7	179667	0.31	36666	-13962	126.88	1485.42	11.71	Si
SLV 8	179667	0.31	36857	-14035	126.88	1490.72	11.75	Si
SLV 5	179667	0.31	43803	-16680	126.88	1665.43	13.13	Si
SLV 6	179667	0.31	43995	-16753	126.88	1669.78	13.16	Si
SLV 11	179667	0.31	49210	-18739	126.88	1778.12	14.01	Si
SLV 12	179667	0.31	49401	-18812	126.88	1781.74	14.04	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 2.97 Wa = 0.05 Ta = 0.0825

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	$\alpha_0^*$	aLim	Verifica
SLV 10	-17812	-20268	40	0.438	2012.9	0.97	6.56797	11.92842	No
SLV 9	-17749	-20234	40	0.44	2006.5	0.97	6.58857	11.92842	No
SLV 6	-15972	-21071	-192	0.472	1825.6	0.967	7.09773	11.92842	No
SLV 5	-15909	-21038	-192	0.474	1819.1	0.967	7.12252	11.92842	No
SLV 12	-12119	-18640	122	0.602	1433.5	0.959	9.13272	11.92842	No





Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 11	-12056	-18606	122	0.605	1427.1	0.959	9.17496	11.92842	No
SLV 8	-10278	-19443	-110	0.693	1246.5	0.953	10.57316	11.92842	No
SLV 7	-10215	-19410	-110	0.697	1240	0.953	10.63051	11.92842	No
SLV 14	-17984	-18769	340	0.419	2030.4	0.97	6.27966	6.09761	Si
SLV 13	-17887	-18717	340	0.421	2020.5	0.97	6.3098	6.09761	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	2.794	SLU 84	Si
V_SLU	3.407	SLU 84	Si
PF_SLV	3.286	SLV 7	Si
V_SLV	2.68	SLV 11	Si
PFFP_SLV	8.636	SLV 3	Si
R_SLV	0.551	SLV 10	No

## Maschio 75

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-9.708	3.176	-9.708	6.526	L4	L5	3.35	0.16	3.72	3.72	3.72			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	$\tau 0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	elim,conv / e,CNR DT-200							CRM / Fibrenet?			
									αt	α	elim,conv	e,f,d	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche,  $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 83	1.11	4811.39	-47076	-0.0001484	0.0004492	0.0035	3.35	22172.99	56383.98	56383.98	11.72	No	Si
SLU 83	4.83	-1759.2	-23104	-0.0000643	0.0004492	0.0035	3.35	25047.31	38710.35	38710.35	22	No	Si
SLU 82	1.11	4681.03	-46109	-0.0001446	0.0004492	0.0035	3.35	22858.13	55749.25	55749.25	11.91	No	Si
SLU 82	4.83	-1752.45	-22300	-0.0000621	0.0004492	0.0035	3.35	24634	37795.28	37795.28	21.57	No	Si
SLU 41	1.11	4231.84	-39429	-0.0001218	0.0004492	0.0035	3.35	26282.84	50121.49	50121.49	11.84	No	Si
SLU 41	4.83	-1482.08	-19345	-0.0000533	0.0004492	0.0035	3.35	22831.55	34204.52	34204.52	23.08	No	Si
SLU 39	1.11	4185.54	-38666	-0.0001193	0.0004492	0.0035	3.35	26528.82	49400.18	49400.18	11.8	No	Si
SLU 39	4.83	-1461.47	-18532	-0.0000511	0.0004492	0.0035	3.35	22257.36	33216.73	33216.73	22.73	No	Si
SLU 81	1.11	4765.09	-46313	-0.0001457	0.0004492	0.0035	3.35	22717.5	55883.23	55883.23	11.73	No	Si
SLU 81	4.83	-1738.6	-22291	-0.0000621	0.0004492	0.0035	3.35	24629.46	37784.96	37784.96	21.73	No	Si
SLU 84	1.11	4727.33	-46872	-0.0001473	0.0004492	0.0035	3.35	22321.6	56249.99	56249.99	11.9	No	Si
SLU 84	4.83	-1773.05	-23113	-0.0000644	0.0004492	0.0035	3.35	25051.5	38720.01	38720.01	21.84	No	Si
SLU 74	1.11	4547.69	-46051	-0.0001437	0.0004492	0.0035	3.35	22897.7	55711.18	55711.18	12.25	No	Si
SLU 74	4.83	-1729.07	-22674	-0.000063	0.0004492	0.0035	3.35	24830.24	38220.64	38220.64	22.1	No	Si
SLU 40	1.11	4101.48	-38462	-0.0001183	0.0004492	0.0035	3.35	26589.58	49207.19	49207.19	12	No	Si
SLU 40	4.83	-1475.33	-18540	-0.0000512	0.0004492	0.0035	3.35	22263.54	33227.06	33227.06	22.52	No	Si
SLU 42	1.11	4147.79	-39225	-0.0001208	0.0004492	0.0035	3.35	26351.58	49928.49	49928.49	12.04	No	Si
SLU 42	4.83	-1495.93	-19353	-0.0000534	0.0004492	0.0035	3.35	22837.37	34214.84	34214.84	22.87	No	Si
SLU 77	1.11	4594	-46814	-0.0001464	0.0004492	0.0035	3.35	22363.43	56211.93	56211.93	12.24	No	Si
SLU 77	4.83	-1749.67	-23487	-0.0000652	0.0004492	0.0035	3.35	25232.19	39145.37	39145.37	22.37	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche,  $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 4	1.11	6537.79	-22382	-0.0000825	0.0006738	0.0035	3.35		33310.58	33310.58	5.1		Si
SLV 4	4.83	-888.42	-14736	-0.0000385	0.0006738	0.0035	3.35		28807.6	28807.6	32.43		Si
SLV 11	1.11	4254.57	-33411	-0.0001008	0.0006738	0.0035	3.35		46853.81	46853.81	11.01		Si
SLV 11	4.83	-5220.89	-18926	-0.0000678	0.0006738	0.0035	3.35		34494.94	34494.94	6.61		Si
SLV 3	1.11	6580.21	-22270	-0.0000824	0.0006738	0.0035	3.35		33173.52	33173.52	5.04		Si
SLV 3	4.83	-953.49	-14773	-0.0000389	0.0006738	0.0035	3.35		28859.49	28859.49	30.27		Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 1	1.11	5281.73	-23166	-0.0000789	0.0006738	0.0035	3.35		34273.49	34273.49	6.49		Si
SLV 1	4.83	1202.75	-13192	-0.0000362	0.0006738	0.0035	3.35		21486.11	21486.11	17.86		Si
SLV 2	1.11	5239.32	-23277	-0.000079	0.0006738	0.0035	3.35		34410.55	34410.55	6.57		Si
SLV 2	4.83	1267.82	-13155	-0.0000364	0.0006738	0.0035	3.35		21432.98	21432.98	16.91		Si
SLV 7	1.11	6023.66	-27796	-0.0000942	0.0006738	0.0035	3.35		39958.74	39958.74	6.63		Si
SLV 7	4.83	-4407.06	-17857	-0.0000616	0.0006738	0.0035	3.35		33062.07	33062.07	7.5		Si
SLV 12	1.11	4227.17	-33483	-0.0001009	0.0006738	0.0035	3.35		46942.33	46942.33	11.1		Si
SLV 12	4.83	-5178.86	-18902	-0.0000676	0.0006738	0.0035	3.35		34463.11	34463.11	6.65		Si
SLV 8	1.11	5996.26	-27868	-0.0000943	0.0006738	0.0035	3.35		40047.26	40047.26	6.68		Si
SLV 8	4.83	-4365.02	-17833	-0.0000613	0.0006738	0.0035	3.35		33030.24	33030.24	7.57		Si
SLV 5	1.11	1695.4	-30782	-0.0000822	0.0006738	0.0035	3.35		43625.31	43625.31	25.73		Si
SLV 5	4.83	2780.41	-12588	-0.0000415	0.0006738	0.0035	3.35		20613.74	20613.74	7.41		Si
SLV 6	1.11	1668	-30854	-0.0000822	0.0006738	0.0035	3.35		43713.83	43713.83	26.21		Si
SLV 6	4.83	2822.44	-12565	-0.0000416	0.0006738	0.0035	3.35		20579.42	20579.42	7.29		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	oN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 82	1.11	4681.03	-46109	-27073	-7275	3.35	3.35	-50510	10833	5807	122342	19262	17085	36347	No	5	Si
SLU 82	4.83	-1752.45	-22300	-13093	-6577	3.35	3.35	-24428	10833	5807	122342	19262	17085	36347	No	5.53	Si
SLU 81	1.11	4765.09	-46313	-27193	-7444	3.35	3.35	-50733	10833	5807	122342	19262	17085	36347	No	4.88	Si
SLU 81	4.83	-1738.6	-22291	-13088	-6610	3.35	3.35	-24419	10833	5807	122342	19262	17085	36347	No	5.5	Si
SLU 79	1.11	4553.61	-46463	-27281	-7059	3.35	3.35	-50897	10833	5807	122342	19262	17085	36347	No	5.15	Si
SLU 79	4.83	-1726.44	-23411	-13746	-6235	3.35	3.35	-25646	10833	5807	122342	19262	17085	36347	No	5.83	Si
SLU 80	1.11	4469.55	-46259	-27161	-6890	3.35	3.35	-50674	10833	5807	122342	19262	17085	36347	No	5.28	Si
SLU 80	4.83	-1740.29	-23420	-13751	-6203	3.35	3.35	-25655	10833	5807	122342	19262	17085	36347	No	5.86	Si
SLU 83	1.11	4811.39	-47076	-27641	-7413	3.35	3.35	-51569	10833	5807	122342	19262	17085	36347	No	4.9	Si
SLU 83	4.83	-1759.2	-23104	-13566	-6567	3.35	3.35	-25309	10833	5807	122342	19262	17085	36347	No	5.54	Si
SLU 77	1.11	4594	-46814	-27487	-7171	3.35	3.35	-51282	10833	5807	122342	19262	17085	36347	No	5.07	Si
SLU 77	4.83	-1749.67	-23487	-13790	-6341	3.35	3.35	-25728	10833	5807	122342	19262	17085	36347	No	5.73	Si
SLU 74	1.11	4547.69	-46051	-27039	-7203	3.35	3.35	-50446	10833	5807	122342	19262	17085	36347	No	5.05	Si
SLU 74	4.83	-1729.07	-22674	-13313	-6384	3.35	3.35	-24838	10833	5807	122342	19262	17085	36347	No	5.69	Si
SLU 78	1.11	4509.94	-46610	-27367	-7002	3.35	3.35	-51058	10833	5807	122342	19262	17085	36347	No	5.19	Si
SLU 78	4.83	-1763.52	-23495	-13795	-6308	3.35	3.35	-25738	10833	5807	122342	19262	17085	36347	No	5.76	Si
SLU 75	1.11	4463.64	-45847	-26919	-7034	3.35	3.35	-50222	10833	5807	122342	19262	17085	36347	No	5.17	Si
SLU 75	4.83	-1742.92	-22682	-13318	-6351	3.35	3.35	-24847	10833	5807	122342	19262	17085	36347	No	5.72	Si
SLU 84	1.11	4727.33	-46872	-27521	-7244	3.35	3.35	-51346	10833	5807	122342	19262	17085	36347	No	5.02	Si
SLU 84	4.83	-1773.05	-23113	-13571	-6534	3.35	3.35	-25319	10833	5807	122342	19262	17085	36347	No	5.56	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	oN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 5	1.11	1695.4	-30782	-18074	-7725	3.35	3.35	-33720	16250	8710	122342	28894	17085	45979		5.95	Si
SLV 5	4.83	2780.41	-12588	-7391	-5830	3.35	3.35	-13790	15258	8178	122342	28894	17085	45979		7.89	Si
SLD 9	1.11	1657.76	-33903	-19906	-7128	3.35	3.35	-37138	16250	8710	122342	28894	17085	45979		6.45	Si
SLD 9	4.83	218.53	-14807	-8694	-5812	3.35	3.35	-16221	15744	8439	122342	28894	17085	45979		7.91	Si
SLV 16	1.11	640.84	-41100	-24132	-7573	3.35	3.35	-45022	16250	8710	122342	28894	17085	45979		6.07	Si
SLV 16	4.83	-3601.19	-18298	-10744	-6848	3.35	3.35	-20045	16250	8710	122342	28894	17085	45979		6.71	Si
SLV 6	1.11	1668	-30854	-18116	-7787	3.35	3.35	-33799	16250	8710	122342	28894	17085	45979		5.9	Si
SLV 6	4.83	2822.44	-12565	-7377	-5892	3.35	3.35	-13764	15253	8175	122342	28894	17085	45979		7.8	Si
SLV 15	1.11	683.25	-40988	-24066	-7476	3.35	3.35	-44900	16250	8710	122342	28894	17085	45979		6.15	Si
SLV 15	4.83	-3666.27	-18335	-10765	-6753	3.35	3.35	-20085	16250	8710	122342	28894	17085	45979		6.81	Si
SLD 10	1.11	1645.78	-33934	-19925	-7156	3.35	3.35	-37173	16250	8710	122342	28894	17085	45979		6.43	Si
SLD 10	4.83	236.89	-14797	-8688	-5839	3.35	3.35	-16209	15742	8438	122342	28894	17085	45979		7.87	Si
SLV 14	1.11	-657.64	-41996	-24658	-9919	3.35	3.35	-46004	16250	8710	122342	28894	17085	45979		4.64	Si
SLV 14	4.83	-1444.95	-16718	-9816	-8281	3.35	3.35	-18313	16163	8663	122342	28894	17085	45979		5.55	Si
SLV 9	1.11	-73.69	-36397	-21371	-9964	3.35	3.35	-39871	16250	8710	122342	28894	17085	45979		4.61	Si
SLV 9	4.83	1966.58	-13657	-8019	-7697	3.35	3.35	-14961	15492	8304	122342	28894	17085	45979		5.97	Si
SLV 13	1.11	-615.22	-41884	-24592	-9822	3.35	3.35	-45881	16250	8710	122342	28894	17085	45979		4.68	Si
SLV 13	4.83	-1510.03	-16754	-9837	-8186	3.35	3.35	-18354	16171	8667	122342	28894	17085	45979		5.62	Si
SLV 10	1.11	-101.09	-36470	-21413	-10026	3.35	3.35	-39950	16250	8710	122342	28894	17085	45979		4.59	Si
SLV 10	4.83	2008.61	-13633	-8005	-7759	3.35	3.35	-14935	15487	8301	122342	28894	17085	45979		5.93	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRM D.M. 17-01-18 (N.T.C.)

quota 2.97 Ta 0.14 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 1	-16687	0.31	184.68	1108.22	1822.5	1465.36	7.93	Si
SLV 2	-16719	0.31	184.68	1109.89	1825.39	1467.64	7.95	Si
SLV 3	-17401	0.31	184.68	1145.5	1887.56	1516.53	8.21	Si
SLV 4	-17433	0.31	184.68	1147.14	1890.45	1518.79	8.22	Si
SLV 5	-19977	0.31	184.68	1273.18	2116.98	1695.08	9.18	Si
SLV 6	-19998	0.31	184.68	1274.15	2118.8	1696.48	9.19	Si
SLV 7	-22356	0.31	184.68	1381.48	2328.89	1855.18	10.05	Si
SLV 8	-22376	0.31	184.68	1382.37	2330.72	1856.54	10.05	Si
SLV 9	-23506	0.31	184.68	1430.53	2431.44	1930.98	10.46	Si
SLV 10	-23526	0.31	184.68	1431.38	2433.27	1932.32	10.46	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 2.97 Wa = 0.03 Ta = 0.1444

Comb.	N top	N base	V orto	a0	M*	e*	a0*	aLim	Verifica
SLV 11	-18926	-33411	208	0.921	2207.7	0.962	13.92207	14.01518	No
SLV 12	-18902	-33483	208	0.923	2205.3	0.962	13.93825	14.01518	No
SLV 7	-17857	-27796	-160	0.973	2099	0.96	14.7254	14.01518	Si
SLV 8	-17833	-27868	-160	0.974	2096.6	0.96	14.74343	14.01518	Si
SLV 15	-18335	-40988	627	0.927	2147.7	0.961	14.02027	11.26471	Si
SLV 16	-18298	-41100	627	0.929	2143.9	0.961	14.04628	11.26471	Si
SLV 9	-13657	-36397	179	1.23	1672.2	0.951	18.79634	14.01518	Si



Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 10	-13633	-36470	179	1.232	1669.8	0.951	18.82603	14.01518	Si
SLV 13	-16754	-41884	619	1.005	1986.9	0.958	15.23928	11.26471	Si
SLV 14	-16718	-41996	619	1.007	1983.2	0.958	15.27008	11.26471	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	11.719	SLU 83	Si
V_SLU	4.883	SLU 81	Si
PF_SLV	5.041	SLV 3	Si
V_SLV	4.586	SLV 10	Si
PFFP_SLV	7.935	SLV 1	Si
R_SLV	0.993	SLV 11	No

Maschio 77

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-5.163	1.006	-5.163	5.686	L4	L5	4.68	0.16	3.72	3.72	3.72			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	t0	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim.conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha t$	$\alpha$	elim.conv	$e_{fd}$	$\gamma F_d$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche,  $\gamma M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_m$ _	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 73	1.11	9324.04	-71419	-0.0001613	0.0004492	0.0035	4.68	36669.08	115229.3	115229.3	12.36	No	Si
SLU 73	4.83	-2125.7	-44035	-0.0000836	0.0004492	0.0035	4.68	53449.07	92989.55	92989.55	43.75	No	Si
SLU 84	1.11	9681.42	-74774	-0.0001703	0.0004492	0.0035	4.68	31975.2	118279.08	118279.08	12.22	No	Si
SLU 84	4.83	-2314.69	-46444	-0.0000888	0.0004492	0.0035	4.68	53511.55	96314	96314	41.61	No	Si
SLU 75	1.11	9398.93	-72875	-0.0001649	0.0004492	0.0035	4.68	34702.61	116552.94	116552.94	12.4	No	Si
SLU 75	4.83	-2127.46	-45214	-0.0000859	0.0004492	0.0035	4.68	53516.73	94616.5	94616.5	44.47	No	Si
SLU 83	1.11	9603	-74697	-0.0001699	0.0004492	0.0035	4.68	32088.87	118209.4	118209.4	12.31	No	Si
SLU 83	4.83	-2265.83	-46473	-0.0000887	0.0004492	0.0035	4.68	53510.51	96353.32	96353.32	42.52	No	Si
SLU 79	1.11	9373.7	-73119	-0.0001654	0.0004492	0.0035	4.68	34361.8	116775.18	116775.18	12.46	No	Si
SLU 79	4.83	-2014.18	-45474	-0.0000861	0.0004492	0.0035	4.68	53522.08	94974.49	94974.49	47.15	No	Si
SLU 82	1.11	9591.24	-73860	-0.0001678	0.0004492	0.0035	4.68	33311.27	117448.08	117448.08	12.25	No	Si
SLU 82	4.83	-2329.73	-45749	-0.0000875	0.0004492	0.0035	4.68	53523.99	95354.3	95354.3	40.93	No	Si
SLU 80	1.11	9452.12	-73196	-0.0001658	0.0004492	0.0035	4.68	34254.32	116844.86	116844.86	12.36	No	Si
SLU 80	4.83	-2063.04	-45445	-0.0000862	0.0004492	0.0035	4.68	53521.66	94935.17	94935.17	46.02	No	Si
SLU 76	1.11	9414.22	-72333	-0.0001637	0.0004492	0.0035	4.68	35447.16	116060.31	116060.31	12.33	No	Si
SLU 76	4.83	-2110.66	-44731	-0.0000849	0.0004492	0.0035	4.68	53497.58	93949.26	93949.26	44.51	No	Si
SLU 78	1.11	9489.11	-73789	-0.0001674	0.0004492	0.0035	4.68	33412.6	117383.95	117383.95	12.37	No	Si
SLU 78	4.83	-2112.42	-45910	-0.0000872	0.0004492	0.0035	4.68	53523.31	95576.2	95576.2	45.24	No	Si
SLU 81	1.11	9512.82	-73783	-0.0001674	0.0004492	0.0035	4.68	33421.35	117378.4	117378.4	12.34	No	Si
SLU 81	4.83	-2280.87	-45778	-0.0000874	0.0004492	0.0035	4.68	53523.97	95393.62	95393.62	41.82	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche,  $\gamma M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_m$ _	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 5	1.11	11008.99	-46076	-0.0001061	0.0006738	0.0035	4.68		90346.96	90346.96	8.21		Si
SLV 5	4.83	6033.97	-31321	-0.0000672	0.0006738	0.0035	4.68		65167.63	65167.63	10.8		Si
SLD 1	1.11	11177.48	-46065	-0.0001065	0.0006738	0.0035	4.68		90327.89	90327.89	8.08		Si
SLD 1	4.83	1360.29	-28695	-0.0000519	0.0006738	0.0035	4.68		60687.21	60687.21	44.61		Si
SLV 3	1.11	16662.98	-40832	-0.0001096	0.0006738	0.0035	4.68		81397.39	81397.39	4.88		Si
SLV 3	4.83	1150.52	-24242	-0.0000436	0.0006738	0.0035	4.68		53087.15	53087.15	46.14		Si
SLV 6	1.11	10429.91	-45152	-0.000103	0.0006738	0.0035	4.68		88769.01	88769.01	8.51		Si
SLV 6	4.83	5992.15	-31018	-0.0000666	0.0006738	0.0035	4.68		64651.24	64651.24	10.79		Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLD 4	1.11	10480.5	-45919	-0.0001046	0.0006738	0.0035	4.68		90077.77	90077.77	8.59		Si
SLD 4	4.83	-255.92	-27957	-0.0000481	0.0006738	0.0035	4.68		69920.62	69920.62	273.21		Si
SLV 1	1.11	17361.77	-39797	-0.0001092	0.0006738	0.0035	4.68		79631.46	79631.46	4.59		Si
SLV 1	4.83	4741.65	-25465	-0.0000538	0.0006738	0.0035	4.68		55175.2	55175.2	11.64		Si
SLD 2	1.11	10792.48	-45450	-0.0001044	0.0006738	0.0035	4.68		89278.81	89278.81	8.27		Si
SLD 2	4.83	1332.49	-28494	-0.0000515	0.0006738	0.0035	4.68		60343.9	60343.9	45.29		Si
SLV 4	1.11	15766.4	-39400	-0.0001047	0.0006738	0.0035	4.68		78954.26	78954.26	5.01		Si
SLV 4	4.83	1085.77	-23773	-0.0000427	0.0006738	0.0035	4.68		52287.63	52287.63	48.16		Si
SLV 2	1.11	16465.19	-38365	-0.0001044	0.0006738	0.0035	4.68		77188.32	77188.32	4.69		Si
SLV 2	4.83	4676.9	-24997	-0.0000528	0.0006738	0.0035	4.68		54375.68	54375.68	11.63		Si
SLD 3	1.11	10865.5	-46533	-0.0001067	0.0006738	0.0035	4.68		91126.85	91126.85	8.39		Si
SLD 3	4.83	-228.12	-28158	-0.0000484	0.0006738	0.0035	4.68		70278.45	70278.45	308.08		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 74	1.11	9320.52	-72798	-42744	-6465	4.68	4.68	-57083	10833	8112	122342	26910	23868	50778	No	7.85	Si
SLU 74	4.83	-2078.6	-45243	-26565	-4866	4.68	4.68	-35476	10833	8112	122342	26910	23868	50778	No	10.43	Si
SLU 77	1.11	9410.7	-73712	-43281	-6574	4.68	4.68	-57800	10833	8112	122342	26910	23868	50778	No	7.72	Si
SLU 77	4.83	-2063.56	-45938	-26973	-4958	4.68	4.68	-36022	10833	8112	122342	26910	23868	50778	No	10.24	Si
SLU 69	1.11	8665.24	-67897	-39866	-6380	4.68	4.68	-53240	10833	8112	122342	26910	23868	50778	No	7.96	Si
SLU 69	4.83	-1511.47	-41984	-24651	-4902	4.68	4.68	-32921	10833	8112	122342	26910	23868	50778	No	10.36	Si
SLU 84	1.11	9681.42	-74774	-43904	-6444	4.68	4.68	-58632	10833	8112	122342	26910	23868	50778	No	7.88	Si
SLU 84	4.83	-2314.69	-46444	-27270	-4934	4.68	4.68	-36418	10833	8112	122342	26910	23868	50778	No	10.29	Si
SLU 78	1.11	9489.11	-73789	-43326	-6494	4.68	4.68	-57860	10833	8112	122342	26910	23868	50778	No	7.82	Si
SLU 78	4.83	-2112.42	-45910	-26956	-5017	4.68	4.68	-35999	10833	8112	122342	26910	23868	50778	No	10.12	Si
SLU 81	1.11	9512.82	-73783	-43322	-6415	4.68	4.68	-57855	10833	8112	122342	26910	23868	50778	No	7.92	Si
SLU 81	4.83	-2280.87	-45778	-26879	-4784	4.68	4.68	-35895	10833	8112	122342	26910	23868	50778	No	10.61	Si
SLU 80	1.11	9452.12	-73196	-42977	-6471	4.68	4.68	-57395	10833	8112	122342	26910	23868	50778	No	7.85	Si
SLU 80	4.83	-2063.04	-45445	-26683	-5002	4.68	4.68	-35635	10833	8112	122342	26910	23868	50778	No	10.15	Si
SLU 83	1.11	9603	-74697	-43859	-6525	4.68	4.68	-58572	10833	8112	122342	26910	23868	50778	No	7.78	Si
SLU 83	4.83	-2265.83	-46473	-27287	-4875	4.68	4.68	-36441	10833	8112	122342	26910	23868	50778	No	10.41	Si
SLU 79	1.11	9373.7	-73119	-42932	-6551	4.68	4.68	-57335	10833	8112	122342	26910	23868	50778	No	7.75	Si
SLU 79	4.83	-2014.18	-45474	-26700	-4943	4.68	4.68	-35657	10833	8112	122342	26910	23868	50778	No	10.27	Si
SLU 75	1.11	9398.93	-72875	-42789	-6384	4.68	4.68	-57143	10833	8112	122342	26910	23868	50778	No	7.95	Si
SLU 75	4.83	-2127.46	-45214	-26548	-4925	4.68	4.68	-35454	10833	8112	122342	26910	23868	50778	No	10.31	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 10	1.11	4421.96	-51786	-30407	-14503	4.68	4.68	-40607	16250	12168	122342	40365	23868	64233		4.43	Si
SLV 10	4.83	3518.55	-34885	-20483	-13500	4.68	4.68	-27354	16250	12168	122342	40365	23868	64233		4.76	Si
SLD 10	1.11	5660.85	-51073	-29988	-9047	4.68	4.68	-40048	16250	12168	122342	40365	23868	64233		7.1	Si
SLD 10	4.83	900.91	-32714	-19208	-7947	4.68	4.68	-25652	16250	12168	122342	40365	23868	64233		8.08	Si
SLV 5	1.11	11008.99	-46076	-27054	-17079	4.68	4.68	-36130	16250	12168	122342	40365	23868	64233		3.76	Si
SLV 5	4.83	6033.97	-31321	-18390	-12970	4.68	4.68	-24560	16250	12168	122342	40365	23868	64233		4.95	Si
SLV 6	1.11	10429.91	-45152	-26511	-17128	4.68	4.68	-35405	16250	12168	122342	40365	23868	64233		3.75	Si
SLV 6	4.83	5992.15	-31018	-18213	-13401	4.68	4.68	-24322	16250	12168	122342	40365	23868	64233		4.79	Si
SLD 5	1.11	8480.75	-48678	-28582	-10142	4.68	4.68	-38170	16250	12168	122342	40365	23868	64233		6.33	Si
SLD 5	4.83	1975.87	-31204	-18322	-7716	4.68	4.68	-24468	16250	12168	122342	40365	23868	64233		8.32	Si
SLV 9	1.11	5001.04	-52711	-30949	-14454	4.68	4.68	-41332	16250	12168	122342	40365	23868	64233		4.44	Si
SLV 9	4.83	3560.37	-35187	-20661	-13070	4.68	4.68	-27592	16250	12168	122342	40365	23868	64233		4.91	Si
SLD 9	1.11	5913.86	-51477	-30225	-9026	4.68	4.68	-40365	16250	12168	122342	40365	23868	64233		7.12	Si
SLD 9	4.83	919.19	-32846	-19286	-7759	4.68	4.68	-25756	16250	12168	122342	40365	23868	64233		8.28	Si
SLV 1	1.11	17361.77	-39797	-23367	-12358	4.68	4.68	-31206	16250	12168	122342	40365	23868	64233		5.2	Si
SLV 1	4.83	4741.65	-25465	-14952	-5974	4.68	4.68	-19968	16250	12168	122342	40365	23868	64233		10.75	Si
SLV 2	1.11	16465.19	-38365	-22526	-12434	4.68	4.68	-30083	16250	12168	122342	40365	23868	64233		5.17	Si
SLV 2	4.83	4676.9	-24997	-14677	-6640	4.68	4.68	-19601	16250	12168	122342	40365	23868	64233		9.67	Si
SLD 6	1.11	8227.74	-48274	-28345	-10164	4.68	4.68	-37853	16250	12168	122342	40365	23868	64233		6.32	Si
SLD 6	4.83	1957.6	-31072	-18244	-7904	4.68	4.68	-24364	16250	12168	122342	40365	23868	64233		8.13	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 2.97 Ta 0.14 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 4	-34861	0.31	258	2080.48	3564.35	2822.41	10.94	Si
SLV 2	-35349	0.31	258	2099.54	3607.46	2853.5	11.06	Si
SLV 3	-35803	0.31	258	2117.01	3647.53	2882.27	11.17	Si
SLV 1	-36290	0.31	258	2135.54	3690.67	2913.1	11.29	Si
SLV 8	-38825	0.31	258	2227.34	3907.92	3067.63	11.89	Si
SLV 7	-39433	0.31	258	2248.24	3959.52	3103.88	12.03	Si
SLV 6	-40452	0.31	258	2282.29	4045.98	3164.14	12.26	Si
SLV 5	-41060	0.31	258	2302.04	4097.62	3199.83	12.4	Si
SLV 12	-42568	0.31	258	2349.19	4225.81	3287.5	12.74	Si
SLV 11	-43176	0.31	258	2367.44	4277.49	3322.46	12.88	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 2.97 Wa = 0.03 Ta = 0.1444

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	$\alpha 0^*$	aLim	Verifica
SLV 9	-35187	-52711	188	0.715	3974.6	0.97	10.71885	14.01518	No
SLV 10	-34885	-51786	188	0.721	3943.8	0.97	10.80539	14.01518	No
SLV 5	-31321	-46076	-172	0.795	3581	0.967	11.95194	14.01518	No
SLV 11	-31109	-56160	164	0.8	3559.4	0.967	12.03121	14.01518	No
SLV 6	-31018	-45152	-172	0.802	3550.2	0.967	12.06027	14.01518	No
SLV 13	-38354	-61912	600	0.651	4297.1	0.972	9.74071	11.26471	No
SLV 12	-30806	-55236	164	0.807	3528.6	0.966	12.1409	14.01518	No
SLV 14	-37885	-60480	601	0.659	4249.3	0.972	9.85289	11.26471	No
SLV 15	-37130	-62947	593	0.671	4172.5	0.971	10.04225	11.26471	No



Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 16	-36662	-61515	593	0.679	4124.7	0.971	10.16173	11.26471	No

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	12.217	SLU 84	Si
V_SLU	7.724	SLU 77	Si
PF_SLV	4.587	SLV 1	Si
V_SLV	3.75	SLV 6	Si
PFFP_SLV	10.94	SLV 4	Si
R_SLV	0.765	SLV 9	No

Maschio 80

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-3.013	5.826	-5.093	5.826	L4	L5	2.08	0.28	3.72	3.72	3.72			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau 0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche,  $\gamma M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon m$	$\epsilon m_{-}$	$\epsilon m_u$	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 44	2.01	4981.55	-17210	-0.0000881	0.0003743	0.0035	2.08	12703.44	14157.56	14157.56	2.84	No	Si
SLU 44	3.91	-2535.84	-20359	-0.0000773	0.0003743	0.0035	2.08	13903.08	16857.7	16857.7	6.65	No	Si
SLU 47	2.01	5039.25	-17560	-0.0000897	0.0003743	0.0035	2.08	12853.74	14372.75	14372.75	2.85	No	Si
SLU 47	3.91	-2572.39	-20790	-0.000079	0.0003743	0.0035	2.08	14040.47	17065.06	17065.06	6.63	No	Si
SLU 68	2.01	5294.31	-19636	-0.0000989	0.0003743	0.0035	2.08	13658.44	15676.95	15676.95	2.96	No	Si
SLU 68	3.91	-2799.5	-23341	-0.0000894	0.0003743	0.0035	2.08	14718.76	18350.18	18350.18	6.55	No	Si
SLU 51	2.01	4999.5	-18069	-0.0000911	0.0003743	0.0035	2.08	13065.08	14688.89	14688.89	2.94	No	Si
SLU 51	3.91	-2645.38	-21348	-0.0000815	0.0003743	0.0035	2.08	14208.2	17337.31	17337.31	6.55	No	Si
SLU 54	2.01	5203.51	-19850	-0.0000988	0.0003743	0.0035	2.08	13732.96	15814.33	15814.33	3.04	No	Si
SLU 54	3.91	-2845.65	-23555	-0.0000905	0.0003743	0.0035	2.08	14765.38	18455.94	18455.94	6.49	No	Si
SLU 65	2.01	5236.61	-19286	-0.0000972	0.0003743	0.0035	2.08	13533.59	15454.33	15454.33	2.95	No	Si
SLU 65	3.91	-2762.95	-22909	-0.0000876	0.0003743	0.0035	2.08	14619.99	18126.88	18126.88	6.56	No	Si
SLU 55	2.01	5274.67	-19494	-0.0000982	0.0003743	0.0035	2.08	13608.1	15586.1	15586.1	2.95	No	Si
SLU 55	3.91	-2792.32	-23198	-0.0000888	0.0003743	0.0035	2.08	14686.86	18277.5	18277.5	6.55	No	Si
SLU 49	2.01	5025.79	-18266	-0.0000919	0.0003743	0.0035	2.08	13144.45	14812.09	14812.09	2.95	No	Si
SLU 49	3.91	-2662.27	-21579	-0.0000824	0.0003743	0.0035	2.08	14274.6	17451.76	17451.76	6.56	No	Si
SLU 46	2.01	4968.09	-17917	-0.0000903	0.0003743	0.0035	2.08	13002.81	14593.99	14593.99	2.94	No	Si
SLU 46	3.91	-2625.73	-21147	-0.0000807	0.0003743	0.0035	2.08	14149.15	17238.83	17238.83	6.57	No	Si
SLU 52	2.01	5216.97	-19144	-0.0000965	0.0003743	0.0035	2.08	13481.51	15364.06	15364.06	2.95	No	Si
SLU 52	3.91	-2755.77	-22766	-0.0000871	0.0003743	0.0035	2.08	14585.93	18053.11	18053.11	6.55	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche,  $\gamma M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon m$	$\epsilon m_{-}$	$\epsilon m_u$	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 7	2.01	9181.2	-14116	-0.0001406	0.0005615	0.0035	2.08		12875.21	12875.21	1.4		Si
SLV 7	3.91	-3004.39	-13967	-0.0000597	0.0005615	0.0035	2.08		13886.8	13886.8	4.62		Si
SLV 1	2.01	13085.6	-18806	-0.0002281	0.0005615	0.0035	2.08		16565.87	16565.87	1.27		Si
SLV 1	3.91	-4951.88	-23911	-0.0001048	0.0005615	0.0035	2.08		21040.16	21040.16	4.25		Si
SLV 2	2.01	11578.88	-17860	-0.0001833	0.0005615	0.0035	2.08		15808.13	15808.13	1.37		Si
SLV 2	3.91	-4352.8	-22694	-0.0000961	0.0005615	0.0035	2.08		20244.14	20244.14	4.65		Si
SLV 8	2.01	8208.04	-13505	-0.0001191	0.0005615	0.0035	2.08		12406.08	12406.08	1.51		Si
SLV 8	3.91	-2617.46	-13182	-0.0000545	0.0005615	0.0035	2.08		13250.85	13250.85	5.06		Si
SLD 3	2.01	8342.95	-16195	-0.0001175	0.0005615	0.0035	2.08		14491.34	14491.34	1.74		Si
SLD 3	3.91	-3350.13	-19082	-0.0000772	0.0005615	0.0035	2.08		17777.77	17777.77	5.31		Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLD 4	2.01	7695.96	-15789	-0.000108	0.0005615	0.0035	2.08		14172.95	14172.95	1.84		Si
SLD 4	3.91	-3092.88	-18560	-0.0000736	0.0005615	0.0035	2.08		17390.88	17390.88	5.62		Si
SLV 4	2.01	12844.14	-16563	-0.0002715	0.0005615	0.0035	2.08		14780.23	14780.23	1.15		Si
SLV 4	3.91	-4280.9	-19386	-0.0000856	0.0005615	0.0035	2.08		17993.87	17993.87	4.2		Si
SLV 14	2.01	-6646.9	-12969	-0.0000917	0.0005615	0.0035	2.08		13080.02	13080.02	1.97		Si
SLV 14	3.91	463.28	-15381	-0.0000439	0.0005615	0.0035	2.08		13854.06	13854.06	29.9		Si
SLD 1	2.01	7791.25	-16771	-0.0001104	0.0005615	0.0035	2.08		14944.71	14944.71	1.92		Si
SLD 1	3.91	-3381.15	-20546	-0.0000817	0.0005615	0.0035	2.08		18794.82	18794.82	5.56		Si
SLV 3	2.01	14350.87	-17509	-0.0003813	0.0005615	0.0035	2.08		15528.92	15528.92	1.08		Si
SLV 3	3.91	-4879.98	-20602	-0.0000941	0.0005615	0.0035	2.08		18834.34	18834.34	3.86		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 80	2.01	5489.99	-22079	-18385	8577	2.08	2.08	-31569	10833	6309	42820	17439	5304	22743	No	2.65	Si
SLU 80	3.91	-3092.41	-26306	-21905	8562	2.08	2.08	-37612	10833	6309	42820	17439	5304	22743	No	2.66	Si
SLU 77	2.01	5370.11	-22516	-18749	8518	2.08	2.08	-32193	10833	6309	42820	17439	5304	22743	No	2.67	Si
SLU 77	3.91	-3163.97	-26726	-22255	8546	2.08	2.08	-38213	10833	6309	42820	17439	5304	22743	No	2.66	Si
SLU 82	2.01	5475.48	-22209	-18494	8603	2.08	2.08	-31754	10833	6309	42820	17439	5304	22743	No	2.64	Si
SLU 82	3.91	-3113.57	-26474	-22046	8589	2.08	2.08	-37853	10833	6309	42820	17439	5304	22743	No	2.65	Si
SLU 81	2.01	5329.33	-22448	-18693	8501	2.08	2.08	-32097	10833	6309	42820	17439	5304	22743	No	2.68	Si
SLU 81	3.91	-3168.23	-26663	-22203	8530	2.08	2.08	-38123	10833	6309	42820	17439	5304	22743	No	2.67	Si
SLU 75	2.01	5458.57	-21926	-18258	8522	2.08	2.08	-31351	10833	6309	42820	17439	5304	22743	No	2.67	Si
SLU 75	3.91	-3072.76	-26105	-21738	8507	2.08	2.08	-37326	10833	6309	42820	17439	5304	22743	No	2.67	Si
SLU 83	2.01	5387.02	-22798	-18984	8599	2.08	2.08	-32597	10833	6309	42820	17439	5304	22743	No	2.65	Si
SLU 83	3.91	-3204.78	-27095	-22562	8628	2.08	2.08	-38740	10833	6309	42820	17439	5304	22743	No	2.64	Si
SLU 78	2.01	5516.27	-22276	-18549	8620	2.08	2.08	-31850	10833	6309	42820	17439	5304	22743	No	2.64	Si
SLU 78	3.91	-3109.31	-26537	-22098	8605	2.08	2.08	-37943	10833	6309	42820	17439	5304	22743	No	2.64	Si
SLU 79	2.01	5343.83	-22318	-18585	8475	2.08	2.08	-31911	10833	6309	42820	17439	5304	22743	No	2.68	Si
SLU 79	3.91	-3147.07	-26494	-22062	8503	2.08	2.08	-37882	10833	6309	42820	17439	5304	22743	No	2.67	Si
SLU 84	2.01	5533.18	-22558	-18784	8701	2.08	2.08	-32254	10833	6309	42820	17439	5304	22743	No	2.61	Si
SLU 84	3.91	-3150.12	-26906	-22405	8687	2.08	2.08	-38471	10833	6309	42820	17439	5304	22743	No	2.62	Si
SLU 76	2.01	5529.73	-21570	-17961	8548	2.08	2.08	-30841	10833	6309	42820	17439	5304	22743	No	2.66	Si
SLU 76	3.91	-3019.42	-25748	-21441	8503	2.08	2.08	-36815	10833	6309	42820	17439	5304	22743	No	2.67	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 4	2.01	12844.14	-16563	-13792	12102	2.08	0.7935	-23682	15153	3367	42820	26159	5304	31463		2.6	Si
SLV 4	3.91	-4280.9	-19386	-16143	11687	2.08	2.08	-27718	15960	9295	42820	26159	5304	31463		2.69	Si
SLV 1	2.01	13085.6	-18806	-15660	13937	2.08	1.0325	-26889	15795	4566	42820	26159	5304	31463		2.26	Si
SLV 1	3.91	-4951.88	-23911	-19911	13238	2.08	2.08	-34188	16250	9464	42820	26159	5304	31463		2.38	Si
SLV 5	2.01	4963.66	-18440	-15355	9443	2.08	2.08	-26366	15690	9138	42820	26159	5304	31463		3.33	Si
SLV 5	3.91	-3244.06	-24995	-20814	8862	2.08	2.08	-35739	16250	9464	42820	26159	5304	31463		3.55	Si
SLD 4	2.01	7695.96	-15789	-13148	8602	2.08	1.6577	-22575	14932	6931	42820	26159	5304	31463		3.66	Si
SLD 4	3.91	-3092.88	-18560	-15455	8436	2.08	2.08	-26537	15724	9158	42820	26159	5304	31463		3.73	Si
SLV 3	2.01	14350.87	-17509	-14580	13382	2.08	0.6611	-83841	16250	3008	42820	26159	5304	31463		2.35	Si
SLV 3	3.91	-4879.98	-20602	-17156	12932	2.08	2.08	-29457	16250	9464	42820	26159	5304	31463		2.43	Si
SLD 1	2.01	7791.25	-16771	-13966	9392	2.08	1.7263	-23980	15213	7353	42820	26159	5304	31463		3.35	Si
SLD 1	3.91	-3381.15	-20546	-17109	9105	2.08	2.08	-29376	16250	9464	42820	26159	5304	31463		3.46	Si
SLV 6	2.01	3990.5	-17829	-14846	8616	2.08	2.08	-25492	15515	9036	42820	26159	5304	31463		3.65	Si
SLV 6	3.91	-2857.13	-24210	-20160	8057	2.08	2.08	-34615	16250	9464	42820	26159	5304	31463		3.9	Si
SLV 2	2.01	11578.88	-17860	-14872	12656	2.08	1.175	-25536	15524	5107	42820	26159	5304	31463		2.49	Si
SLV 2	3.91	-4352.8	-22694	-18898	11993	2.08	2.08	-32449	16250	9464	42820	26159	5304	31463		2.62	Si
SLD 2	2.01	7144.26	-16365	-13627	8842	2.08	1.8103	-23399	15096	7652	42820	26159	5304	31463		3.56	Si
SLD 2	3.91	-3123.9	-20023	-16674	8570	2.08	2.08	-28629	16143	9401	42820	26159	5304	31463		3.67	Si
SLD 3	2.01	8342.95	-16195	-13486	9152	2.08	1.5745	-23156	15048	6634	42820	26159	5304	31463		3.44	Si
SLD 3	3.91	-3350.13	-19082	-15890	8971	2.08	2.08	-27284	15873	9245	42820	26159	5304	31463		3.51	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 2.97 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 12	179667	0.31	18682	-10881	189.64	1336.93	7.05	Si
SLV 16	179667	0.31	19378	-11286	189.64	1379.5	7.27	Si
SLV 11	179667	0.31	19936	-11611	189.64	1413.29	7.45	Si
SLV 15	179667	0.31	21319	-12416	189.64	1495.57	7.89	Si
SLV 8	179667	0.31	22310	-12993	189.64	1553.31	8.19	Si
SLV 7	179667	0.31	23563	-13723	189.64	1624.81	8.57	Si
SLV 14	179667	0.31	23896	-13917	189.64	1643.5	8.67	Si
SLV 13	179667	0.31	25837	-15047	189.64	1750.21	9.23	Si
SLV 4	179667	0.31	31470	-18328	189.64	2037.14	10.74	Si
SLV 3	179667	0.31	33410	-19458	189.64	2128.16	11.22	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 2.97 Wa = 0.05 Ta = 0.0825

Comb.	N top	N base	V orto	$\sigma_0$	M*	e*	$\sigma_0^*$	$\sigma_{Lim}$	Verifica
SLV 5	-22735	-14019	-384	0.498	2619.8	0.965	7.50641	11.92842	No
SLV 6	-22351	-14061	-384	0.506	2580.7	0.964	7.61976	11.92842	No
SLV 9	-22003	-18039	-336	0.514	2545.3	0.964	7.75604	11.92842	No
SLV 10	-21619	-18081	-336	0.522	2506.2	0.963	7.8772	11.92842	No
SLV 7	-11097	-11107	357	0.911	1437.3	0.94	14.08737	11.92842	Si



Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 8	-10713	-11149	357	0.938	1398.5	0.939	14.51856	11.92842	Si
SLV 11	-10365	-15128	405	0.959	1363.3	0.938	14.87264	11.92842	Si
SLV 12	-9981	-15170	405	0.989	1324.4	0.936	15.3575	11.92842	Si
SLV 1	-19620	-8297	-180	0.574	2302.9	0.961	8.69006	6.09761	Si
SLV 2	-19026	-8363	-180	0.59	2242.4	0.96	8.92889	6.09761	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	2.842	SLU 44	Si
V_SLU	2.614	SLU 84	Si
PF_SLV	1.082	SLV 3	Si
V_SLV	2.258	SLV 1	Si
PFFP_SLV	7.05	SLV 12	Si
R_SLV	0.629	SLV 5	No

Maschio 81

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s,sx	a.s,dx
-0.133	5.826	-2.013	5.826	L4	L5	1.88	0.28	3.72	3.72	3.72			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau 0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma F_d$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche,  $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 13	2.01	-450.63	-12240	-0.0000404	0.0003743	0.0035	1.88	8877.9	10499.15	10499.15	23.3	No	Si
SLU 13	3.91	222.16	-12533	-0.0000391	0.0003743	0.0035	1.88	9026.26	9910.61	9910.61	44.61	No	Si
SLU 73	2.01	-534.15	-16243	-0.0000542	0.0003743	0.0035	1.88	10640.93	12837.9	12837.9	24.03	No	Si
SLU 73	3.91	349.12	-16648	-0.0000536	0.0003743	0.0035	1.88	10788.28	12184.57	12184.57	34.9	No	Si
SLU 41	2.01	-352.74	-14699	-0.0000473	0.0003743	0.0035	1.88	10027.67	12002.05	12002.05	34.02	No	Si
SLU 41	3.91	531.07	-15433	-0.0000515	0.0003743	0.0035	1.88	10329.82	11494.84	11494.84	21.64	No	Si
SLU 10	2.01	-444.43	-11966	-0.0000395	0.0003743	0.0035	1.88	8736.53	10321.34	10321.34	23.22	No	Si
SLU 10	3.91	212.03	-12220	-0.000038	0.0003743	0.0035	1.88	8867.59	9739.38	9739.38	45.93	No	Si
SLU 42	2.01	-517.44	-14474	-0.0000482	0.0003743	0.0035	1.88	9931.1	11872.53	11872.53	22.94	No	Si
SLU 42	3.91	516.15	-15326	-0.000051	0.0003743	0.0035	1.88	10286.91	11434.64	11434.64	22.15	No	Si
SLU 76	2.01	-540.35	-16517	-0.0000551	0.0003743	0.0035	1.88	10741.14	12960.22	12960.22	23.98	No	Si
SLU 76	3.91	359.25	-16962	-0.0000548	0.0003743	0.0035	1.88	10898.21	12365.3	12365.3	34.42	No	Si
SLU 34	2.01	-570.27	-13738	-0.0000464	0.0003743	0.0035	1.88	9603.56	11429.75	11429.75	20.04	No	Si
SLU 34	3.91	417.32	-14460	-0.0000472	0.0003743	0.0035	1.88	9925.06	10952.67	10952.67	26.25	No	Si
SLU 31	2.01	-564.08	-13464	-0.0000454	0.0003743	0.0035	1.88	9476.61	11262.59	11262.59	19.97	No	Si
SLU 31	3.91	407.19	-14146	-0.0000461	0.0003743	0.0035	1.88	9787.59	10780.39	10780.39	26.48	No	Si
SLU 39	2.01	-346.55	-14425	-0.0000464	0.0003743	0.0035	1.88	9909.97	11844.28	11844.28	34.18	No	Si
SLU 39	3.91	520.95	-15120	-0.0000504	0.0003743	0.0035	1.88	10203.06	11318.97	11318.97	21.73	No	Si
SLU 40	2.01	-511.25	-14199	-0.0000473	0.0003743	0.0035	1.88	9811.23	11712.7	11712.7	22.91	No	Si
SLU 40	3.91	506.03	-15013	-0.0000499	0.0003743	0.0035	1.88	10158.97	11259.16	11259.16	22.25	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche,  $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 13	2.01	-4162.29	-14580	-0.0000824	0.0005615	0.0035	1.88		12716.47	12716.47	3.06		Si
SLV 13	3.91	2487.54	-20848	-0.0000865	0.0005615	0.0035	1.88		15810	15810	6.36		Si
SLV 16	2.01	-3892.87	-13124	-0.0000751	0.0005615	0.0035	1.88		11696.49	11696.49	3		Si
SLV 16	3.91	2667.66	-16866	-0.0000752	0.0005615	0.0035	1.88		13464.53	13464.53	5.05		Si
SLV 14	2.01	-4740.03	-13843	-0.000086	0.0005615	0.0035	1.88		12200.11	12200.11	2.57		Si
SLV 14	3.91	3030.25	-21463	-0.000094	0.0005615	0.0035	1.88		16150.81	16150.81	5.33		Si





Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 1	2.01	3674.55	-10464	-0.0000649	0.0005615	0.0035	1.88		8914.35	8914.35	2.43		Si
SLV 1	3.91	-2378.65	-6381	-0.0000403	0.0005615	0.0035	1.88		6489.21	6489.21	2.73		Si
SLV 2	2.01	3096.81	-9727	-0.0000568	0.0005615	0.0035	1.88		8410.2	8410.2	2.72		Si
SLV 2	3.91	-1835.95	-6996	-0.0000367	0.0005615	0.0035	1.88		7001.18	7001.18	3.81		Si
SLV 4	2.01	3943.97	-9008	-0.0000656	0.0005615	0.0035	1.88		7921.74	7921.74	2.01		Si
SLV 4	3.91	-2198.54	-2399	-0.0001443	0.0005615	0.0035	1.504		3078.07	3078.07	1.4		Si
SLV 7	2.01	2664.88	-10215	-0.0000542	0.0005615	0.0035	1.88		8743.86	8743.86	3.28		Si
SLV 7	3.91	-1365	-1593	-0.0000586	0.0005615	0.0035	1.504		2356.43	2356.43	1.73		Si
SLV 8	2.01	2291.73	-9740	-0.0000493	0.0005615	0.0035	1.88		8418.61	8418.61	3.67		Si
SLV 8	3.91	-1014.48	-1990	-0.0000163	0.0005615	0.0035	1.88		2712.95	2712.95	2.67		Si
SLV 3	2.01	4521.72	-9744	-0.0000754	0.0005615	0.0035	1.88		8422	8422	1.86		Si
SLV 3	3.91	-2741.24	-1784	-0.0006697	0.0005615	0.0035	1.504		2528.37	2528.37	0.92		No
SLV 15	2.01	-3315.13	-13860	-0.0000719	0.0005615	0.0035	1.88		12212.17	12212.17	3.68		Si
SLV 15	3.91	2124.96	-16251	-0.000068	0.0005615	0.0035	1.88		13014.37	13014.37	6.12		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 40	2.01	-511.25	-14199	-11824	-1819	1.88	1.88	-22462	9939	5232	42820	15763	4794	20557	No	11.3	Si
SLU 40	3.91	506.03	-15013	-12501	-1875	1.88	1.88	-23748	10111	5322	42820	15763	4794	20557	No	10.96	Si
SLU 80	2.01	-436.74	-16941	-14107	-1772	1.88	1.88	-26799	10518	5537	42820	15763	4794	20557	No	11.6	Si
SLU 80	3.91	379.33	-17347	-14445	-1837	1.88	1.88	-27441	10603	5582	42820	15763	4794	20557	No	11.19	Si
SLU 82	2.01	-481.32	-16978	-14138	-1896	1.88	1.88	-26858	10525	5541	42820	15763	4794	20557	No	10.84	Si
SLU 82	3.91	447.96	-17515	-14585	-1961	1.88	1.88	-27707	10639	5600	42820	15763	4794	20557	No	10.48	Si
SLU 84	2.01	-487.52	-17253	-14366	-1924	1.88	1.88	-27292	10583	5571	42820	15763	4794	20557	No	10.68	Si
SLU 84	3.91	458.09	-17829	-14846	-1990	1.88	1.88	-28203	10705	5635	42820	15763	4794	20557	No	10.33	Si
SLU 83	2.01	-322.82	-17478	-14554	-1793	1.88	1.88	-27648	10631	5596	42820	15763	4794	20557	No	11.47	Si
SLU 83	3.91	473.01	-17936	-14935	-1846	1.88	1.88	-28372	10727	5647	42820	15763	4794	20557	No	11.13	Si
SLU 76	2.01	-540.35	-16517	-13754	-1832	1.88	1.88	-26128	10428	5489	42820	15763	4794	20557	No	11.22	Si
SLU 76	3.91	359.25	-16962	-14125	-1904	1.88	1.88	-26832	10522	5539	42820	15763	4794	20557	No	10.8	Si
SLU 75	2.01	-436.57	-16821	-14007	-1758	1.88	1.88	-26609	10492	5523	42820	15763	4794	20557	No	11.69	Si
SLU 75	3.91	376.59	-17201	-14323	-1823	1.88	1.88	-27209	10572	5565	42820	15763	4794	20557	No	11.28	Si
SLU 73	2.01	-534.15	-16243	-13525	-1805	1.88	1.88	-25694	10370	5459	42820	15763	4794	20557	No	11.39	Si
SLU 73	3.91	349.12	-16648	-13863	-1876	1.88	1.88	-26336	10456	5504	42820	15763	4794	20557	No	10.96	Si
SLU 78	2.01	-442.77	-17095	-14235	-1786	1.88	1.88	-27043	10550	5554	42820	15763	4794	20557	No	11.51	Si
SLU 78	3.91	386.71	-17514	-14584	-1851	1.88	1.88	-27706	10639	5600	42820	15763	4794	20557	No	11.11	Si
SLU 42	2.01	-517.44	-14474	-12052	-1846	1.88	1.88	-22896	9997	5263	42820	15763	4794	20557	No	11.13	Si
SLU 42	3.91	516.15	-15326	-12762	-1904	1.88	1.88	-24244	10177	5357	42820	15763	4794	20557	No	10.8	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 4	2.01	3943.97	-9008	-7501	5248	1.88	1.5065	-14249	13267	5596	42820	23644	4794	28438		5.42	Si
SLV 4	3.91	-2198.54	-2399	-1998	4691	1.504	0.0706	0	0	0	42820	18916	3835	22751		4.85	Si
SLV 16	2.01	-3892.87	-13124	-10928	-6448	1.88	1.88	-20760	14569	7669	42820	23644	4794	28438		4.41	Si
SLV 16	3.91	2667.66	-16866	-14044	-5979	1.88	1.88	-26680	15753	8292	42820	23644	4794	28438		4.76	Si
SLV 15	2.01	-3315.13	-13860	-11542	-5190	1.88	1.88	-21925	14802	7792	42820	23644	4794	28438		5.48	Si
SLV 15	3.91	2124.96	-16251	-13532	-4721	1.88	1.88	-25707	15558	8190	42820	23644	4794	28438		6.02	Si
SLV 10	2.01	-2883.2	-13372	-11135	-6299	1.88	1.88	-21153	14647	7710	42820	23644	4794	28438		4.51	Si
SLV 10	3.91	1654.01	-21654	-18031	-6154	1.88	1.88	-34253	16250	8554	42820	23644	4794	28438		4.62	Si
SLV 14	2.01	-4740.03	-13843	-11527	-8371	1.88	1.7928	-21898	14796	7427	42820	23644	4794	28438		3.4	Si
SLV 14	3.91	3030.25	-21463	-17872	-7886	1.88	1.88	-33952	16250	8554	42820	23644	4794	28438		3.61	Si
SLV 1	2.01	3674.55	-10464	-8713	4583	1.88	1.7665	-16553	13727	6790	42820	23644	4794	28438		6.21	Si
SLV 1	3.91	-2378.65	-6381	-5314	4041	1.88	1.7017	-11200	12657	6031	42820	23644	4794	28438		7.04	Si
SLV 13	2.01	-4162.29	-14580	-12141	-7113	1.88	1.88	-23063	15029	7912	42820	23644	4794	28438		4	Si
SLV 13	3.91	2487.54	-20848	-17360	-6628	1.88	1.88	-32979	16250	8554	42820	23644	4794	28438		4.29	Si
SLV 7	2.01	2664.88	-10215	-8506	4434	1.88	1.88	-16159	13649	7185	42820	23644	4794	28438		6.41	Si
SLV 7	3.91	-1365	-1593	-1327	4217	1.504	0.2499	0	0	0	42820	18916	3835	22751		5.4	Si
SLV 3	2.01	4521.72	-9744	-8114	6506	1.88	1.4279	-15415	13500	5397	42820	23644	4794	28438		4.37	Si
SLV 3	3.91	-2741.24	-1784	-1486	5948	1.504	0	0	0	0	42820	18916	3835	22751		3.82	Si
SLV 9	2.01	-2510.05	-13848	-11531	-5487	1.88	1.88	-21906	14798	7790	42820	23644	4794	28438		5.18	Si
SLV 9	3.91	1303.49	-21257	-17701	-5342	1.88	1.88	-33625	16250	8554	42820	23644	4794	28438		5.32	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 2.97 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\alpha 0$	N	M	Mc	Coeff.s.	Verifica
SLV 7	179667	0.31	9446	-4972	171.41	653.07	3.81	Si
SLV 8	179667	0.31	9545	-5025	171.41	659.49	3.85	Si
SLV 3	179667	0.31	9988	-5257	171.41	687.91	4.01	Si
SLV 4	179667	0.31	10142	-5339	171.41	697.77	4.07	Si
SLV 11	179667	0.31	15002	-7897	171.41	996.99	5.82	Si
SLV 12	179667	0.31	15101	-7949	171.41	1002.88	5.85	Si
SLV 1	179667	0.31	16031	-8439	171.41	1057.43	6.17	Si
SLV 2	179667	0.31	16185	-8520	171.41	1066.4	6.22	Si
SLV 15	179667	0.31	28508	-15007	171.41	1708.75	9.97	Si
SLV 16	179667	0.31	28662	-15088	171.41	1715.86	10.01	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 2.97 Wa = 0.05 Ta = 0.0825

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	$\alpha 0^*$	aLim	Verifica
SLV 10	-19443	-10597	-369	0.521	2255.3	0.963	7.86564	11.92842	No





Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 9	-19245	-10941	-370	0.526	2235.2	0.963	7.93642	11.92842	No
SLV 6	-17040	-8325	-243	0.59	2010.9	0.959	8.93753	11.92842	No
SLV 5	-16842	-8668	-243	0.596	1990.7	0.959	9.02951	11.92842	No
SLV 14	-16974	-13260	-300	0.589	2004.2	0.959	8.92139	6.09761	Si
SLV 13	-16668	-13792	-301	0.598	1973.1	0.959	9.0649	6.09761	Si
SLV 16	-12409	-13351	-114	0.779	1540.4	0.948	11.94469	6.09761	Si
SLV 15	-12103	-13883	-115	0.796	1509.3	0.947	12.20664	6.09761	Si
SLV 12	-4225	-10900	251	1.771	715.7	0.906	28.40535	11.92842	Si
SLV 11	-4027	-11244	250	1.83	696.1	0.904	29.41014	11.92842	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	19.966	SLU 31	Si
V_SLU	10.332	SLU 84	Si
PF_SLV	0.922	SLV 3	No
V_SLV	3.397	SLV 14	Si
PFFP_SLV	3.81	SLV 7	Si
R_SLV	0.659	SLV 10	No

## Maschio 82

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-0.133	-3.284	-0.133	5.826	L4	L5	9.11	0.28	3.72	3.72	3.72			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau 0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma_{fd}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 50	1.11	-3569.62	-103262	-0.0000674	0.0003743	0.0035	9.1099	283331.69	355022.27	355022.27	99.46	No	Si
SLU 50	4.83	-1710.83	-77897	-0.000049	0.0003743	0.0035	9.1099	248389.98	303656.27	303656.27	177.49	No	Si
SLU 48	1.11	-3531.94	-104287	-0.0000681	0.0003743	0.0035	9.1099	284268.53	356892.66	356892.66	101.05	No	Si
SLU 48	4.83	-1754.09	-78880	-0.0000497	0.0003743	0.0035	9.1099	250164.99	306351.83	306351.83	174.65	No	Si
SLU 71	1.11	-3538.84	-114346	-0.0000754	0.0003743	0.0035	9.1099	291513.69	374963.22	374963.22	105.96	No	Si
SLU 71	4.83	-2148.03	-86900	-0.0000553	0.0003743	0.0035	9.1099	263375.64	324129.64	324129.64	150.9	No	Si
SLU 56	1.11	-3496.12	-114734	-0.0000757	0.0003743	0.0035	9.1099	291722.37	375650.5	375650.5	107.45	No	Si
SLU 56	4.83	-2063.99	-87114	-0.0000554	0.0003743	0.0035	9.1099	263696.81	324564.12	324564.12	157.25	No	Si
SLU 58	1.11	-3533.8	-113710	-0.0000749	0.0003743	0.0035	9.1099	291160.9	373837.24	373837.24	105.79	No	Si
SLU 58	4.83	-2020.74	-86130	-0.0000547	0.0003743	0.0035	9.1099	262205.79	322552.34	322552.34	159.62	No	Si
SLU 69	1.11	-3501.15	-115370	-0.0000761	0.0003743	0.0035	9.1099	292052.32	376773.03	376773.03	107.61	No	Si
SLU 69	4.83	-2191.29	-87883	-0.000056	0.0003743	0.0035	9.1099	264840.11	326115.95	326115.95	148.82	No	Si
SLU 45	1.11	-3456.96	-102519	-0.0000668	0.0003743	0.0035	9.1099	282628.69	353661.23	353661.23	102.3	No	Si
SLU 45	4.83	-1821.88	-77191	-0.0000486	0.0003743	0.0035	9.1099	247094.78	301720.71	301720.71	165.61	No	Si
SLU 43	1.11	-3419.66	-99727	-0.0000648	0.0003743	0.0035	9.1099	279815.4	348523.11	348523.11	101.92	No	Si
SLU 43	4.83	-1846.41	-74519	-0.0000468	0.0003743	0.0035	9.1099	242032.93	294389.86	294389.86	159.44	No	Si
SLU 53	1.11	-3421.14	-112967	-0.0000743	0.0003743	0.0035	9.1099	290730.35	372517.7	372517.7	108.89	No	Si
SLU 53	4.83	-2131.78	-85424	-0.0000543	0.0003743	0.0035	9.1099	261114.47	321088.13	321088.13	150.62	No	Si
SLU 64	1.11	-3388.88	-110810	-0.0000727	0.0003743	0.0035	9.1099	289371.85	368673.73	368673.73	108.79	No	Si
SLU 64	4.83	-2283.6	-83522	-0.000053	0.0003743	0.0035	9.1099	258085.54	317058.84	317058.84	138.84	No	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 7	1.11	-9814.09	-69081	-0.0000454	0.0005615	0.0035	9.1099		297337.63	297337.63	30.3		Si
SLV 7	4.83	-61378.28	-53870	-0.0000565	0.0005615	0.0035	9.1099		243900.39	243900.39	3.97		Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 12	1.11	-13407.35	-100899	-0.0000674	0.0005615	0.0035	9.1099		396171.51	396171.51	29.55		Si
SLV 12	4.83	-61734.15	-72699	-0.0000689	0.0005615	0.0035	9.1099		309179.43	309179.43	5.01		Si
SLV 10	1.11	4607.36	-102495	-0.0000648	0.0005615	0.0035	9.1099		374891.96	374891.96	81.37		Si
SLV 10	4.83	57880.13	-75373	-0.0000691	0.0005615	0.0035	9.1099		293507.46	293507.46	5.07		Si
SLV 1	1.11	4887.91	-32906	-0.0000212	0.0005615	0.0035	9.1099		143993.23	143993.23	29.46		Si
SLV 1	4.83	18809.74	-33616	-0.000027	0.0005615	0.0035	9.1099		146837.24	146837.24	7.81		Si
SLV 2	1.11	2806.74	-32746	-0.0000203	0.0005615	0.0035	9.1099		143355.12	143355.12	51.08		Si
SLV 2	4.83	22320.09	-33575	-0.0000284	0.0005615	0.0035	9.1099		146672.06	146672.06	6.57		Si
SLV 8	1.11	-11158.26	-68978	-0.0000459	0.0005615	0.0035	9.1099		297002.23	297002.23	26.62		Si
SLV 8	4.83	-59111.04	-53843	-0.0000556	0.0005615	0.0035	9.1099		243803.01	243803.01	4.12		Si
SLV 9	1.11	5951.54	-102598	-0.0000654	0.0005615	0.0035	9.1099		375170.65	375170.65	63.04		Si
SLV 9	4.83	55612.89	-75399	-0.0000682	0.0005615	0.0035	9.1099		293601.62	293601.62	5.28		Si
SLV 5	1.11	8200.63	-70677	-0.0000458	0.0005615	0.0035	9.1099		276988.91	276988.91	33.78		Si
SLV 5	4.83	58236	-56543	-0.000057	0.0005615	0.0035	9.1099		228238.82	228238.82	3.92		Si
SLV 11	1.11	-12063.17	-101002	-0.0000669	0.0005615	0.0035	9.1099		396470.62	396470.62	32.87		Si
SLV 11	4.83	-64001.39	-72726	-0.0000699	0.0005615	0.0035	9.1099		309267.06	309267.06	4.83		Si
SLV 6	1.11	6856.45	-70574	-0.0000451	0.0005615	0.0035	9.1099		276628.25	276628.25	40.35		Si
SLV 6	4.83	60503.24	-56517	-0.0000579	0.0005615	0.0035	9.1099		228148.32	228148.32	3.77		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 75	1.11	-2456.34	-124325	-103527	-5807	9.1099	9.1099	-40586	10833	27633	42820	76382	23230	70453	No	12.13	Si
SLU 75	4.83	-2787.55	-94490	-78683	-4746	9.1099	9.1099	-30847	10833	27633	42820	76382	23230	70453	No	14.85	Si
SLU 84	1.11	-2478.68	-127778	-106403	-6080	9.1099	9.1099	-41714	10833	27633	42820	76382	23230	70453	No	11.59	Si
SLU 84	4.83	-2877.11	-97036	-80803	-4995	9.1099	9.1099	-31678	10833	27633	42820	76382	23230	70453	No	14.1	Si
SLU 74	1.11	-3390.36	-124050	-103298	-5832	9.1099	9.1099	-40497	10833	27633	42820	76382	23230	70453	No	12.08	Si
SLU 74	4.83	-2568.98	-94427	-78631	-4847	9.1099	9.1099	-30826	10833	27633	42820	76382	23230	70453	No	14.54	Si
SLU 83	1.11	-3412.69	-127503	-106173	-6105	9.1099	9.1099	-41624	10833	27633	42820	76382	23230	70453	No	11.54	Si
SLU 83	4.83	-2658.53	-96973	-80751	-5096	9.1099	9.1099	-31657	10833	27633	42820	76382	23230	70453	No	13.82	Si
SLU 80	1.11	-2569.01	-125068	-104146	-5868	9.1099	9.1099	-40829	10833	27633	42820	76382	23230	70453	No	12.01	Si
SLU 80	4.83	-2676.51	-95196	-79271	-4801	9.1099	9.1099	-31077	10833	27633	42820	76382	23230	70453	No	14.68	Si
SLU 78	1.11	-2531.32	-126093	-104999	-5904	9.1099	9.1099	-41163	10833	27633	42820	76382	23230	70453	No	11.93	Si
SLU 78	4.83	-2719.76	-96179	-80090	-4828	9.1099	9.1099	-31398	10833	27633	42820	76382	23230	70453	No	14.59	Si
SLU 77	1.11	-3465.34	-125817	-104770	-5929	9.1099	9.1099	-41074	10833	27633	42820	76382	23230	70453	No	11.88	Si
SLU 77	4.83	-2501.19	-96117	-80038	-4929	9.1099	9.1099	-31378	10833	27633	42820	76382	23230	70453	No	14.29	Si
SLU 81	1.11	-3337.71	-125735	-104702	-6008	9.1099	9.1099	-41047	10833	27633	42820	76382	23230	70453	No	11.73	Si
SLU 81	4.83	-2726.32	-95284	-79344	-5014	9.1099	9.1099	-31106	10833	27633	42820	76382	23230	70453	No	14.05	Si
SLU 79	1.11	-3503.02	-124793	-103917	-5894	9.1099	9.1099	-40739	10833	27633	42820	76382	23230	70453	No	11.95	Si
SLU 79	4.83	-2457.93	-95133	-79219	-4902	9.1099	9.1099	-31057	10833	27633	42820	76382	23230	70453	No	14.37	Si
SLU 82	1.11	-2403.7	-126011	-104931	-5983	9.1099	9.1099	-41137	10833	27633	42820	76382	23230	70453	No	11.78	Si
SLU 82	4.83	-2944.89	-95346	-79396	-4913	9.1099	9.1099	-31126	10833	27633	42820	76382	23230	70453	No	14.34	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 6	1.11	6856.45	-70574	-58768	-41546	9.1099	9.1099	-23039	15024	38324	42820	114573	23230	81144		1.95	Si
SLV 6	4.83	60503.24	-56517	-47062	-36212	9.1099	9.1099	-18450	14107	35983	42820	114573	23230	78803		2.18	Si
SLV 12	1.11	-13407.35	-100899	-84020	29279	9.1099	9.1099	-32939	16250	41450	42820	114573	23230	84270		2.88	Si
SLV 12	4.83	-61734.15	-72699	-60537	25331	9.1099	9.1099	-23733	15163	38678	42820	114573	23230	81498		3.22	Si
SLV 2	1.11	2806.74	-32746	-27268	-18627	9.1099	9.1099	-10690	12555	32024	42820	114573	23230	74844		4.02	Si
SLV 2	4.83	22320.09	-33575	-27958	-17568	9.1099	9.1099	-10961	12609	32162	42820	114573	23230	74982		4.27	Si
SLV 11	1.11	-12063.17	-101002	-84106	33850	9.1099	9.1099	-32972	16250	41450	42820	114573	23230	84270		2.49	Si
SLV 11	4.83	-64001.39	-72726	-60560	29889	9.1099	9.1099	-23742	15165	38683	42820	114573	23230	81502		2.73	Si
SLV 7	1.11	-9814.09	-69081	-57525	33443	9.1099	9.1099	-22552	14927	38076	42820	114573	23230	80895		2.42	Si
SLV 7	4.83	-61378.28	-53870	-44858	28803	9.1099	9.1099	-17586	13934	35542	42820	114573	23230	78362		2.72	Si
SLV 10	1.11	4607.36	-102495	-85349	-41140	9.1099	9.1099	-33460	16250	41450	42820	114573	23230	84270		2.05	Si
SLV 10	4.83	57880.13	-75373	-62764	-35127	9.1099	9.1099	-24606	15338	39123	42820	114573	23230	81943		2.33	Si
SLD 6	1.11	1608.46	-79259	-66000	-20494	9.1099	9.1099	-25874	15592	39771	42820	114573	23230	82590		4.03	Si
SLD 6	4.83	25749.96	-61155	-50925	-17734	9.1099	9.1099	-19964	14410	36756	42820	114573	23230	79575		4.49	Si
SLV 5	1.11	8200.63	-70677	-58854	-36976	9.1099	9.1099	-23073	15031	38341	42820	114573	23230	81161		2.19	Si
SLV 5	4.83	58236	-56543	-47084	-31655	9.1099	9.1099	-18459	14108	35988	42820	114573	23230	78807		2.49	Si
SLV 8	1.11	-11158.26	-68978	-57439	28873	9.1099	9.1099	-22518	14920	38058	42820	114573	23230	80878		2.8	Si
SLV 8	4.83	-59111.04	-53843	-44836	24246	9.1099	9.1099	-17577	13932	35538	42820	114573	23230	78358		3.23	Si
SLV 9	1.11	5951.54	-102598	-85435	-36570	9.1099	9.1099	-33494	16250	41450	42820	114573	23230	84270		2.3	Si
SLV 9	4.83	55612.89	-75399	-62786	-30569	9.1099	9.1099	-24614	15340	39128	42820	114573	23230	81948		2.68	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 2.97 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 4	179667	0.31	13753	-35081	830.59	4469.06	5.38	Si
SLV 3	179667	0.31	13776	-35140	830.59	4475.83	5.39	Si
SLV 2	179667	0.31	14036	-35804	830.59	4551.81	5.48	Si
SLV 1	179667	0.31	14059	-35863	830.59	4558.55	5.49	Si
SLV 8	179667	0.31	24294	-61969	830.59	7295.56	8.78	Si
SLV 7	179667	0.31	24309	-62007	830.59	7299.2	8.79	Si
SLV 6	179667	0.31	25238	-64378	830.59	7523.38	9.06	Si
SLV 5	179667	0.31	25253	-64416	830.59	7526.96	9.06	Si
SLV 12	179667	0.31	33609	-85730	830.59	9360.79	11.27	Si
SLV 11	179667	0.31	33624	-85768	830.59	9363.78	11.27	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.



Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 2.97 Wa = 0.05 Ta = 0.0825

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 9	-75399	-102598	360	0.647	9015.1	0.956	9.82958	11.92842	No
SLV 10	-75373	-102495	360	0.647	9012.4	0.956	9.83262	11.92842	No
SLV 11	-72726	-101002	267	0.668	8743.4	0.955	10.16433	11.92842	No
SLV 12	-72699	-100899	267	0.668	8740.7	0.955	10.16759	11.92842	No
SLV 5	-56543	-70677	-270	0.825	7100.2	0.946	12.66808	11.92842	Si
SLV 6	-56517	-70574	-270	0.825	7097.5	0.946	12.6733	11.92842	Si
SLV 7	-53870	-69081	-363	0.857	6829.1	0.944	13.18889	11.92842	Si
SLV 8	-53843	-68978	-363	0.857	6826.4	0.944	13.19456	11.92842	Si
SLV 13	-96470	-139309	1062	0.518	11158.1	0.964	7.80759	6.09761	Si
SLV 14	-96428	-139149	1062	0.518	11153.9	0.964	7.81051	6.09761	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	99.457	SLU 50	Si
V_SLU	11.541	SLU 83	Si
PF_SLV	3.771	SLV 6	Si
V_SLV	1.953	SLV 6	Si
PFFP_SLV	5.381	SLV 4	Si
R_SLV	0.824	SLV 9	No

Maschio 83

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s,sx	a.s,dx
-24.633	-3.314	-24.633	1.266	L5	L6	4.581	0.28	3.52	3.52	3.52			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fν0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 74	4.83	11910.77	-49948	-0.0000842	0.0003743	0.0035	4.5807	70642.1	83832.49	83832.49	7.04	No	Si
SLU 74	6.93	8551.05	-42387	-0.0000673	0.0003743	0.0035	4.5807	65569.5	74961.12	74961.12	8.77	No	Si
SLU 81	4.83	12103.9	-50461	-0.0000853	0.0003743	0.0035	4.5807	70913.65	84309.04	84309.04	6.97	No	Si
SLU 81	6.93	8497.96	-42600	-0.0000675	0.0003743	0.0035	4.5807	65740.19	75267.73	75267.73	8.86	No	Si
SLU 79	4.83	11975.61	-50258	-0.0000847	0.0003743	0.0035	4.5807	70807.02	84119.71	84119.71	7.02	No	Si
SLU 79	6.93	8635.95	-42733	-0.0000679	0.0003743	0.0035	4.5807	65845.13	75457.93	75457.93	8.74	No	Si
SLU 83	4.83	12278.23	-51302	-0.0000869	0.0003743	0.0035	4.5807	71338.62	85094.56	85094.56	6.93	No	Si
SLU 83	6.93	8672	-43449	-0.000069	0.0003743	0.0035	4.5807	66403.05	76491.83	76491.83	8.82	No	Si
SLU 78	4.83	12112.82	-50889	-0.0000859	0.0003743	0.0035	4.5807	71132.74	84707.55	84707.55	6.99	No	Si
SLU 78	6.93	8582.68	-43316	-0.0000686	0.0003743	0.0035	4.5807	66300.51	76298.84	76298.84	8.89	No	Si
SLU 75	4.83	11938.49	-50048	-0.0000844	0.0003743	0.0035	4.5807	70695.58	83924.91	83924.91	7.03	No	Si
SLU 75	6.93	8408.64	-42467	-0.0000671	0.0003743	0.0035	4.5807	65633.67	75076	75076	8.93	No	Si
SLU 82	4.83	12131.62	-50561	-0.0000855	0.0003743	0.0035	4.5807	70965.34	84401.88	84401.88	6.96	No	Si
SLU 82	6.93	8355.55	-42680	-0.0000674	0.0003743	0.0035	4.5807	65803.77	75382.8	75382.8	9.02	No	Si
SLU 84	4.83	12305.95	-51402	-0.0000871	0.0003743	0.0035	4.5807	71387.36	85188.09	85188.09	6.92	No	Si
SLU 84	6.93	8529.59	-43529	-0.0000689	0.0003743	0.0035	4.5807	66464.25	76607.66	76607.66	8.98	No	Si
SLU 77	4.83	12085.1	-50789	-0.0000857	0.0003743	0.0035	4.5807	71082.2	84614.44	84614.44	7	No	Si
SLU 77	6.93	8725.09	-43236	-0.0000688	0.0003743	0.0035	4.5807	66238.71	76183.2	76183.2	8.73	No	Si
SLU 80	4.83	12003.34	-50358	-0.0000849	0.0003743	0.0035	4.5807	70859.42	84212.39	84212.39	7.02	No	Si
SLU 80	6.93	8493.54	-42813	-0.0000678	0.0003743	0.0035	4.5807	65908.34	75573.12	75573.12	8.9	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 13	4.83	4589.29	-13147	-0.0000223	0.0005615	0.0035	4.5807		29576.65	29576.65	6.44		Si
SLV 13	6.93	12163.86	-14985	-0.0000362	0.0005615	0.0035	4.5807		33329.46	33329.46	2.74		Si
SLV 9	4.83	10477.39	-18105	-0.0000374	0.0005615	0.0035	4.5807		39577.6	39577.6	3.78		Si
SLV 9	6.93	22029.84	-15360	-0.0000656	0.0005615	0.0035	4.5807		34087.66	34087.66	1.55		Si
SLD 10	4.83	9473.19	-27412	-0.0000473	0.0005615	0.0035	4.5807		55937.83	55937.83	5.9		Si
SLD 10	6.93	12491.51	-23019	-0.0000466	0.0005615	0.0035	4.5807		48483.57	48483.57	3.88		Si
SLV 5	4.83	13032.12	-28554	-0.0000544	0.0005615	0.0035	4.5807		57897.53	57897.53	4.44		Si
SLV 5	6.93	21681.39	-21791	-0.0000613	0.0005615	0.0035	4.5807		46425.26	46425.26	2.14		Si
SLV 14	4.83	5584.25	-14054	-0.0000249	0.0005615	0.0035	4.5807		31428.49	31428.49	5.63		Si
SLV 14	6.93	10107.37	-15217	-0.0000333	0.0005615	0.0035	4.5807		33799.17	33799.17	3.34		Si
SLV 10	4.83	11120.01	-18690	-0.0000391	0.0005615	0.0035	4.5807		40737.28	40737.28	3.66		Si
SLV 10	6.93	20701.6	-15511	-0.000059	0.0005615	0.0035	4.5807		34390.09	34390.09	1.66		Si
SLV 6	4.83	13674.74	-29139	-0.0000562	0.0005615	0.0035	4.5807		58907.28	58907.28	4.31		Si
SLV 6	6.93	20353.15	-21941	-0.0000585	0.0005615	0.0035	4.5807		46676.52	46676.52	2.29		Si
SLD 9	4.83	9192.42	-27156	-0.0000466	0.0005615	0.0035	4.5807		55499.68	55499.68	6.04		Si
SLD 9	6.93	13071.84	-22953	-0.0000474	0.0005615	0.0035	4.5807		48373.24	48373.24	3.7		Si
SLD 6	4.83	10567.43	-31876	-0.0000547	0.0005615	0.0035	4.5807		63656.78	63656.78	6.02		Si
SLD 6	6.93	12342.38	-25771	-0.0000498	0.0005615	0.0035	4.5807		53136.84	53136.84	4.31		Si
SLD 5	4.83	10286.66	-31620	-0.0000539	0.0005615	0.0035	4.5807		63210.17	63210.17	6.14		Si
SLD 5	6.93	12922.71	-25705	-0.0000507	0.0005615	0.0035	4.5807		53025.18	53025.18	4.1		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 47	4.83	9680.51	-40380	-33625	1615	4.5807	4.5807	-26216	10440	13390	40441	38407	11681	50088	No	31.01	Si
SLU 47	6.93	7088.53	-34223	-28498	1648	4.5807	4.5807	-22219	9907	12707	40441	38407	11681	50088	No	30.39	Si
SLU 50	4.83	9808.63	-41054	-34186	1410	4.5807	4.5807	-26654	10498	13465	40441	38407	11681	50088	No	35.52	Si
SLU 50	6.93	7499.92	-34938	-29093	1443	4.5807	4.5807	-22683	9969	12786	40441	38407	11681	50088	No	34.71	Si
SLU 44	4.83	9506.18	-39539	-32925	1583	4.5807	4.5807	-25670	10367	13297	40441	38407	11681	50088	No	31.64	Si
SLU 44	6.93	6914.48	-33374	-27791	1615	4.5807	4.5807	-21668	9833	12612	40441	38407	11681	50088	No	31.02	Si
SLU 43	4.83	9459.98	-39373	-32786	1345	4.5807	4.5807	-25562	10353	13279	40441	38407	11681	50088	No	37.24	Si
SLU 43	6.93	7151.83	-33241	-27680	1376	4.5807	4.5807	-21581	9822	12598	40441	38407	11681	50088	No	36.4	Si
SLU 49	4.83	9945.83	-41685	-34712	1491	4.5807	4.5807	-27063	10553	13535	40441	38407	11681	50088	No	33.59	Si
SLU 49	6.93	7446.65	-35521	-29579	1525	4.5807	4.5807	-23061	10019	12851	40441	38407	11681	50088	No	32.85	Si
SLU 46	4.83	9771.51	-40844	-34012	1458	4.5807	4.5807	-26518	10480	13442	40441	38407	11681	50088	No	34.34	Si
SLU 46	6.93	7272.6	-34672	-28872	1491	4.5807	4.5807	-22511	9946	12757	40441	38407	11681	50088	No	33.59	Si
SLU 55	4.83	10793.36	-44778	-37287	1242	4.5807	4.5807	-29071	10821	13879	40441	38407	11681	50088	No	40.34	Si
SLU 55	6.93	7578.74	-37874	-31539	1278	4.5807	4.5807	-24589	10223	13112	40441	38407	11681	50088	No	39.2	Si
SLU 45	4.83	9743.79	-40745	-33929	1316	4.5807	4.5807	-26453	10472	13431	40441	38407	11681	50088	No	38.07	Si
SLU 45	6.93	7415.02	-34592	-28806	1348	4.5807	4.5807	-22459	9939	12748	40441	38407	11681	50088	No	37.15	Si
SLU 48	4.83	9918.11	-41585	-34629	1348	4.5807	4.5807	-26999	10544	13524	40441	38407	11681	50088	No	37.15	Si
SLU 48	6.93	7589.06	-35441	-29512	1382	4.5807	4.5807	-23010	10012	12842	40441	38407	11681	50088	No	36.25	Si
SLU 51	4.83	9836.35	-41154	-34270	1553	4.5807	4.5807	-26719	10507	13476	40441	38407	11681	50088	No	32.26	Si
SLU 51	6.93	7357.51	-35018	-29160	1586	4.5807	4.5807	-22735	9976	12795	40441	38407	11681	50088	No	31.58	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 13	4.83	4589.29	-13147	-10948	-6701	4.5807	4.5807	-8535	12124	15550	40441	57610	11681	55991		8.36	Si
SLV 13	6.93	12163.86	-14985	-12478	-5922	4.5807	4.4358	-9728	12362	15354	40441	57610	11681	55795		9.42	Si
SLV 8	4.83	5870.73	-50263	-41855	12661	4.5807	4.5807	-32632	16250	20842	40441	57610	11681	61283		4.84	Si
SLV 8	6.93	-10037.2	-42419	-35323	9549	4.5807	4.5807	-27540	15925	20425	40441	57610	11681	60866		6.37	Si
SLV 12	4.83	3315.99	-39814	-33154	11025	4.5807	4.5807	-25849	15586	19991	40441	57610	11681	60432		5.48	Si
SLV 12	6.93	-9688.75	-35988	-29968	7791	4.5807	4.5807	-23365	15090	19354	40441	57610	11681	59795		7.68	Si
SLV 9	4.83	10477.39	-18105	-15076	-11352	4.5807	4.5807	-11754	12767	16376	40441	57610	11681	56817		5	Si
SLV 9	6.93	22029.84	-15360	-12791	-8187	4.5807	2.5685	-9973	12411	8926	40441	57610	11681	49367		6.03	Si
SLV 6	4.83	13674.74	-29139	-24265	-7678	4.5807	4.5807	-18918	14200	18213	40441	57610	11681	58654		7.64	Si
SLV 6	6.93	20353.15	-21941	-18270	-4385	4.5807	4.0882	-14245	13266	15185	40441	57610	11681	55626		12.69	Si
SLV 7	4.83	5228.11	-49677	-41367	10624	4.5807	4.5807	-32252	16250	20842	40441	57610	11681	61283		5.77	Si
SLV 7	6.93	-8708.97	-42268	-35197	7506	4.5807	4.5807	-27442	15905	20400	40441	57610	11681	60841		8.11	Si
SLV 4	4.83	11758.83	-55221	-45983	8010	4.5807	4.5807	-35851	16250	20842	40441	57610	11681	61283		7.65	Si
SLV 4	6.93	-171.23	-42794	-35636	7284	4.5807	4.5807	-27784	15973	20488	40441	57610	11681	60929		8.36	Si
SLV 10	4.83	11120.01	-18690	-15564	-9315	4.5807	4.5807	-12135	12844	16473	40441	57610	11681	56914		6.11	Si
SLV 10	6.93	20701.6	-15511	-12916	-6144	4.5807	2.8671	-10070	12431	9979	40441	57610	11681	50420		8.21	Si
SLV 11	4.83	2673.37	-39228	-32666	8987	4.5807	4.5807	-25468	15510	19894	40441	57610	11681	60335		6.71	Si
SLV 11	6.93	-8360.52	-35838	-29843	5747	4.5807	4.5807	-23267	15070	19329	40441	57610	11681	59770		10.4	Si
SLV 5	4.83	13032.12	-28554	-23777	-9716	4.5807	4.5807	-18538	14124	18116	40441	57610	11681	58557		6.03	Si
SLV 5	6.93	21681.39	-21791	-18145	-6428	4.5807	3.8861	-14147	13246	14413	40441	57610	11681	54854		8.53	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 6.59 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 13	179667	0.38	12326	-15810	466.35	2034.71	4.36	Si
SLV 14	179667	0.38	12508	-16042	466.35	2061.98	4.42	Si
SLV 9	179667	0.38	12670	-16250	466.35	2086.27	4.47	Si
SLV 10	179667	0.38	12787	-16400	466.35	2103.8	4.51	Si
SLV 15	179667	0.38	17078	-21904	466.35	2723.68	5.84	Si
SLV 16	179667	0.38	17259	-22137	466.35	2748.93	5.89	Si
SLV 5	179667	0.38	17688	-22687	466.35	2808.3	6.02	Si
SLV 6	179667	0.38	17805	-22837	466.35	2824.45	6.06	Si
SLV 11	179667	0.38	28509	-36566	466.35	4163.57	8.93	Si
SLV 12	179667	0.38	28626	-36716	466.35	4176.73	8.96	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.



- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 6.59  $W_a = 0.05$   $T_a = 0.0739$

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	a0*	aLim	Verifica
SLV 8	-38059	-50263	-450	0.644	4511.4	0.958	9.76364	12.29974	No
SLV 7	-37764	-49677	-451	0.648	4481.4	0.958	9.83086	12.29974	No
SLV 12	-33653	-39814	111	0.723	4063.6	0.954	11.01732	12.29974	No
SLV 11	-33357	-39228	111	0.729	4033.5	0.954	11.10332	12.29974	No
SLV 4	-35145	-55221	-991	0.675	4215.1	0.956	10.26349	6.56558	Si
SLV 3	-34687	-54314	-992	0.682	4168.6	0.955	10.38221	6.56558	Si
SLV 6	-14812	-29139	-125	1.405	2156.2	0.922	22.1422	12.29974	Si
SLV 5	-14516	-28554	-125	1.427	2126.5	0.921	22.50453	12.29974	Si
SLV 2	-28170	-48884	-894	0.815	3506.8	0.948	12.50167	6.56558	Si
SLV 1	-27712	-47977	-894	0.826	3460.4	0.947	12.68091	6.56558	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	6.923	SLU 84	Si
V_SLU	30.389	SLU 47	Si
PF_SLV	1.547	SLV 9	Si
V_SLV	4.84	SLV 8	Si
PFFP_SLV	4.363	SLV 13	Si
R_SLV	0.794	SLV 8	No

## Maschio 84

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati geometrici

X inl.	Y inl.	X fin.	Y fin.	Quota l.	Quota s.	l	Sp.	h netta	h inl.	h fin.	a	a.s.,sx	a.s.,dx
-24.633	2.066	-24.633	5.826	L5	L6	3.76	0.28	3.52	3.52	3.52			

#### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato Corti

fb	fk	fvk0	fmedio	$\tau_0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

#### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma_{F,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche, $\gamma_m = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 81	4.83	-7260.95	-39409	-0.0000793	0.0003743	0.0035	3.7599	46847.75	57866.27	57866.27	7.97	No	Si
SLU 81	6.93	-3770.6	-32291	-0.000058	0.0003743	0.0035	3.7599	42417.66	51742.49	51742.49	13.72	No	Si
SLU 80	4.83	-7253.16	-39580	-0.0000796	0.0003743	0.0035	3.7599	46932.32	58008.88	58008.88	8	No	Si
SLU 80	6.93	-3664.02	-32587	-0.0000582	0.0003743	0.0035	3.7599	42637.02	52067.84	52067.84	14.21	No	Si
SLU 84	4.83	-7369.38	-40137	-0.0000809	0.0003743	0.0035	3.7599	47200.67	58476.75	58476.75	7.94	No	Si
SLU 84	6.93	-3879.65	-32996	-0.0000594	0.0003743	0.0035	3.7599	42935.72	52520.83	52520.83	13.54	No	Si
SLU 82	4.83	-7275.6	-39347	-0.0000792	0.0003743	0.0035	3.7599	46817.03	57815	57815	7.95	No	Si
SLU 82	6.93	-3870.74	-32238	-0.0000581	0.0003743	0.0035	3.7599	42377.7	51683.88	51683.88	13.35	No	Si
SLU 78	4.83	-7325	-39961	-0.0000804	0.0003743	0.0035	3.7599	47117.01	58328.29	58328.29	7.96	No	Si
SLU 78	6.93	-3730.94	-32957	-0.000059	0.0003743	0.0035	3.7599	42907.59	52477.67	52477.67	14.07	No	Si
SLU 74	4.83	-7216.57	-39233	-0.0000788	0.0003743	0.0035	3.7599	46759.6	57719.92	57719.92	8	No	Si
SLU 74	6.93	-3621.9	-32252	-0.0000575	0.0003743	0.0035	3.7599	42388.57	51699.79	51699.79	14.27	No	Si
SLU 76	4.83	-7169.17	-38749	-0.0000779	0.0003743	0.0035	3.7599	46511.9	57320.6	57320.6	8	No	Si
SLU 76	6.93	-3721.87	-31793	-0.000057	0.0003743	0.0035	3.7599	42040.91	51197.37	51197.37	13.76	No	Si
SLU 83	4.83	-7354.72	-40198	-0.0000809	0.0003743	0.0035	3.7599	47229.68	58528.82	58528.82	7.96	No	Si
SLU 83	6.93	-3779.51	-33049	-0.0000593	0.0003743	0.0035	3.7599	42974.25	52580.13	52580.13	13.91	No	Si
SLU 75	4.83	-7231.23	-39171	-0.0000788	0.0003743	0.0035	3.7599	46728.5	57668.83	57668.83	7.97	No	Si
SLU 75	6.93	-3722.03	-32199	-0.0000577	0.0003743	0.0035	3.7599	42348.54	51641.22	51641.22	13.87	No	Si
SLU 77	4.83	-7310.34	-40022	-0.0000805	0.0003743	0.0035	3.7599	47146.4	58380.18	58380.18	7.99	No	Si
SLU 77	6.93	-3630.81	-33010	-0.0000588	0.0003743	0.0035	3.7599	42946.2	52536.93	52536.93	14.47	No	Si



## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche, $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 11	4.83	-6856.48	-12224	-0.000033	0.0005615	0.0035	3.7599		25609.48	25609.48	3.74		Si
SLV 11	6.93	-11588.24	-9256	-0.0000532	0.0005615	0.0035	3.008		20590.25	20590.25	1.78		Si
SLD 7	4.83	-6203.47	-23311	-0.0000482	0.0005615	0.0035	3.7599		43028.7	43028.7	6.94		Si
SLD 7	6.93	-7178.13	-18479	-0.0000431	0.0005615	0.0035	3.7599		35675.77	35675.77	4.97		Si
SLV 8	4.83	-6874.22	-18205	-0.000042	0.0005615	0.0035	3.7599		35239.11	35239.11	5.13		Si
SLV 8	6.93	-14386.02	-14241	-0.0000595	0.0005615	0.0035	3.7599		28919.99	28919.99	2.01		Si
SLV 9	4.83	-3216.69	-35764	-0.0000603	0.0005615	0.0035	3.7599		60145.1	60145.1	18.7		Si
SLV 9	6.93	9637.71	-29666	-0.0000662	0.0005615	0.0035	3.7599		47899.61	47899.61	4.97		Si
SLV 12	4.83	-6046.55	-11638	-0.0000303	0.0005615	0.0035	3.7599		24658.12	24658.12	4.08		Si
SLV 12	6.93	-12698.95	-9315	-0.0000655	0.0005615	0.0035	3.008		20691.29	20691.29	1.63		Si
SLD 12	4.83	-5495.79	-20245	-0.0000418	0.0005615	0.0035	3.7599		38400.21	38400.21	6.99		Si
SLD 12	6.93	-6942.42	-16397	-0.0000394	0.0005615	0.0035	3.7599		32389.97	32389.97	4.67		Si
SLD 8	4.83	-5849.6	-23055	-0.0000469	0.0005615	0.0035	3.7599		42644.69	42644.69	7.29		Si
SLD 8	6.93	-7663.43	-18505	-0.0000443	0.0005615	0.0035	3.7599		35716.95	35716.95	4.66		Si
SLD 11	4.83	-5849.66	-20501	-0.0000431	0.0005615	0.0035	3.7599		38783.64	38783.64	6.63		Si
SLD 11	6.93	-6457.12	-16371	-0.0000382	0.0005615	0.0035	3.7599		32349.47	32349.47	5.01		Si
SLV 7	4.83	-7684.16	-18790	-0.0000447	0.0005615	0.0035	3.7599		36171.37	36171.37	4.71		Si
SLV 7	6.93	-13275.3	-14182	-0.0000544	0.0005615	0.0035	3.7599		28822.05	28822.05	2.17		Si
SLV 4	4.83	-6343.87	-33944	-0.0000651	0.0005615	0.0035	3.7599		57772.07	57772.07	9.11		Si
SLV 4	6.93	-9229.68	-27149	-0.0000613	0.0005615	0.0035	3.7599		48573.27	48573.27	5.26		Si

## Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 78	4.83	-7325	-39961	-33276	-3243	3.7599	3.7599	-31607	10833	11405	40441	31525	9588	41113	No	12.68	Si
SLU 78	6.93	-3730.94	-32957	-27444	-3202	3.7599	3.7599	-26068	10420	10970	40441	31525	9588	41113	No	12.84	Si
SLU 84	4.83	-7369.38	-40137	-33422	-3316	3.7599	3.7599	-31747	10833	11405	40441	31525	9588	41113	No	12.4	Si
SLU 84	6.93	-3879.65	-32996	-27476	-3275	3.7599	3.7599	-26099	10424	10975	40441	31525	9588	41113	No	12.55	Si
SLU 74	4.83	-7216.57	-39233	-32670	-3209	3.7599	3.7599	-31032	10833	11405	40441	31525	9588	41113	No	12.81	Si
SLU 74	6.93	-3621.9	-32252	-26857	-3210	3.7599	3.7599	-25510	10346	10892	40441	31525	9588	41113	No	12.81	Si
SLU 82	4.83	-7275.6	-39347	-32765	-3248	3.7599	3.7599	-31122	10833	11405	40441	31525	9588	41113	No	12.66	Si
SLU 82	6.93	-3870.74	-32238	-26845	-3207	3.7599	3.7599	-25499	10344	10890	40441	31525	9588	41113	No	12.82	Si
SLU 81	4.83	-7260.95	-39409	-32816	-3282	3.7599	3.7599	-31171	10833	11405	40441	31525	9588	41113	No	12.53	Si
SLU 81	6.93	-3770.6	-32291	-26889	-3283	3.7599	3.7599	-25541	10350	10896	40441	31525	9588	41113	No	12.52	Si
SLU 77	4.83	-7310.34	-40022	-33327	-3277	3.7599	3.7599	-31656	10833	11405	40441	31525	9588	41113	No	12.54	Si
SLU 77	6.93	-3630.81	-33010	-27488	-3278	3.7599	3.7599	-26110	10426	10976	40441	31525	9588	41113	No	12.54	Si
SLU 79	4.83	-7238.51	-39641	-33010	-3266	3.7599	3.7599	-31355	10833	11405	40441	31525	9588	41113	No	12.59	Si
SLU 79	6.93	-3563.89	-32640	-27180	-3266	3.7599	3.7599	-25817	10387	10935	40441	31525	9588	41113	No	12.59	Si
SLU 80	4.83	-7253.16	-39580	-32959	-3232	3.7599	3.7599	-31306	10833	11405	40441	31525	9588	41113	No	12.72	Si
SLU 80	6.93	-3664.02	-32587	-27135	-3190	3.7599	3.7599	-25775	10381	10929	40441	31525	9588	41113	No	12.89	Si
SLU 83	4.83	-7354.72	-40198	-33474	-3350	3.7599	3.7599	-31795	10833	11405	40441	31525	9588	41113	No	12.27	Si
SLU 83	6.93	-3779.51	-33049	-27521	-3351	3.7599	3.7599	-26141	10430	10980	40441	31525	9588	41113	No	12.27	Si
SLU 75	4.83	-7231.23	-39171	-32618	-3175	3.7599	3.7599	-30983	10833	11405	40441	31525	9588	41113	No	12.95	Si
SLU 75	6.93	-3722.03	-32199	-26812	-3134	3.7599	3.7599	-25468	10340	10886	40441	31525	9588	41113	No	13.12	Si

## Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 6	4.83	-3234.42	-41745	-34762	-8744	3.7599	3.7599	-33019	16250	17108	40441	47288	9588	56876		6.5	Si
SLV 6	6.93	6839.93	-34652	-28855	-6433	3.7599	3.7599	-27408	15898	16738	40441	47288	9588	56876		8.84	Si
SLD 9	4.83	-4241.31	-30914	-25743	-5287	3.7599	3.7599	-24452	15307	16115	40441	47288	9588	56556		10.7	Si
SLD 9	6.93	2915.12	-25402	-21153	-4269	3.7599	3.7599	-20092	14435	15197	40441	47288	9588	55638		13.03	Si
SLV 10	4.83	-2406.75	-35179	-29294	-7783	3.7599	3.7599	-27825	15982	16825	40441	47288	9588	56876		7.31	Si
SLV 10	6.93	8527	-29725	-24753	-5483	3.7599	3.7599	-23512	15119	15917	40441	47288	9588	56358		10.28	Si
SLV 12	4.83	-6046.55	-11638	-9691	5973	3.7599	3.7599	-9205	12258	12905	40441	47288	9588	53346		8.93	Si
SLV 12	6.93	-12698.95	-9315	-7757	3662	3.008	1.55	0	0	0	40441	37830	7670	40441		11.04	Si
SLD 5	4.83	-4595.12	-33724	-28082	-5698	3.7599	3.7599	-26674	15751	16583	40441	47288	9588	56876		9.98	Si
SLD 5	6.93	2194.11	-27510	-22908	-4675	3.7599	3.7599	-21760	14769	15548	40441	47288	9588	55989		11.98	Si
SLV 8	4.83	-6874.22	-18205	-15159	5013	3.7599	3.7599	-14399	13296	13998	40441	47288	9588	54439		10.86	Si
SLV 8	6.93	-14386.02	-14241	-11859	2712	3.7599	2.6094	-16355	13688	10001	40441	47288	9588	50442		18.6	Si
SLV 5	4.83	-4044.36	-42331	-35250	-10236	3.7599	3.7599	-33482	16250	17108	40441	47288	9588	56876		5.56	Si
SLV 5	6.93	7950.65	-34592	-28806	-7925	3.7599	3.7599	-27361	15889	16728	40441	47288	9588	56876		7.18	Si
SLD 6	4.83	-4241.24	-33468	-27869	-5046	3.7599	3.7599	-26472	15711	16540	40441	47288	9588	56876		11.27	Si
SLD 6	6.93	1708.82	-27536	-22930	-4023	3.7599	3.7599	-21780	14773	15552	40441	47288	9588	55993		13.92	Si
SLV 1	4.83	-6505.95	-41913	-34902	-6951	3.7599	3.7599	-33152	16250	17108	40441	47288	9588	56876		8.18	Si
SLV 1	6.93	-1142.18	-33180	-27630	-6242	3.7599	3.7599	-26244	15666	16492	40441	47288	9588	56876		9.11	Si
SLV 9	4.83	-3216.69	-35764	-29782	-9275	3.7599	3.7599	-28288	16074	16923	40441	47288	9588	56876		6.13	Si
SLV 9	6.93	9637.71	-29666	-24703	-6975	3.7599	3.7599	-23465	15110	15907	40441	47288	9588	56348		8.08	Si

## Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 6.59 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 11	179667	0.38	9536	-10039	382.78	1317.73	3.44	Si
SLV 12	179667	0.38	9592	-10098	382.78	1324.98	3.46	Si
SLV 15	179667	0.38	10758	-11325	382.78	1473.88	3.85	Si
SLV 16	179667	0.38	10845	-11417	382.78	1484.9	3.88	Si
SLV 7	179667	0.38	14223	-14973	382.78	1901.06	4.97	Si
SLV 8	179667	0.38	14279	-15033	382.78	1907.8	4.98	Si
SLV 13	179667	0.38	16505	-17376	382.78	2169.76	5.67	Si
SLV 14	179667	0.38	16592	-17468	382.78	2179.82	5.69	Si
SLV 3	179667	0.38	26381	-27773	382.78	3216.57	8.4	Si
SLV 4	179667	0.38	26468	-27865	382.78	3224.97	8.43	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:



- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.59  $W_a = 0.05$   $T_a = 0.0739$

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 5	-30121	-42331	-606	0.657	3589.3	0.957	9.9751	12.29974	No
SLV 6	-29975	-41745	-606	0.66	3574.5	0.957	10.01788	12.29974	No
SLV 9	-27400	-35764	254	0.723	3312.8	0.954	11.01531	12.29974	No
SLV 10	-27253	-35179	254	0.726	3297.9	0.954	11.06732	12.29974	No
SLV 1	-25405	-41913	-1490	0.727	3110.2	0.951	11.11356	6.56558	Si
SLV 2	-25178	-41006	-1490	0.733	3087.1	0.951	11.20068	6.56558	Si
SLV 3	-18607	-34851	-1387	0.945	2420.7	0.939	14.62077	6.56558	Si
SLV 4	-18380	-33944	-1388	0.955	2397.8	0.939	14.77436	6.56558	Si
SLV 13	-16334	-20025	1378	1.05	2190.7	0.934	16.33735	6.56558	Si
SLV 14	-16107	-19118	1378	1.062	2167.8	0.934	16.53076	6.56558	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	7.935	SLV 84	Si
V_SLV	12.268	SLV 83	Si
PF_SLV	1.629	SLV 12	Si
V_SLV	5.556	SLV 5	Si
PFFP_SLV	3.442	SLV 11	Si
R_SLV	0.811	SLV 5	No

## Maschio 85

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.sx	a.s.dx
-22.713	5.826	-24.633	5.826	L5	L6	1.92	0.28	3.52	3.52	3.52			

#### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau 0$	f <sub>v0</sub>	$\mu$	$\phi$	f <sub>v,lim</sub>	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

#### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε <sub>fd</sub>	γ <sub>F</sub> ,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 51	5.73	-1429.86	-13729	-0.0000533	0.0003743	0.0035	1.92	9873.95	11846.52	11846.52	8.29	No	Si
SLU 51	7.53	-167.39	-12167	-0.0000366	0.0003743	0.0035	1.92	9083.57	10843.76	10843.76	64.78	No	Si
SLU 68	5.73	-1384.99	-14442	-0.0000552	0.0003743	0.0035	1.92	10205.85	12276.39	12276.39	8.86	No	Si
SLU 68	7.53	-338.49	-13241	-0.0000415	0.0003743	0.0035	1.92	9635.91	11534.44	11534.44	34.08	No	Si
SLU 44	5.73	-1374.36	-12847	-0.00005	0.0003743	0.0035	1.92	9438.33	11279.67	11279.67	8.21	No	Si
SLU 44	7.53	-98.97	-11215	-0.0000331	0.0003743	0.0035	1.92	8560.25	10196.99	10196.99	103.03	No	Si
SLU 48	5.73	-1440.31	-13993	-0.0000543	0.0003743	0.0035	1.92	9999.02	12007.66	12007.66	8.34	No	Si
SLU 48	7.53	-195.35	-12456	-0.0000377	0.0003743	0.0035	1.92	9236.48	11029.01	11029.01	56.46	No	Si
SLU 46	5.73	-1412.67	-13486	-0.0000524	0.0003743	0.0035	1.92	9756.58	11692.33	11692.33	8.28	No	Si
SLU 46	7.53	-152.47	-11905	-0.0000357	0.0003743	0.0035	1.92	8942.93	10668.95	10668.95	69.97	No	Si
SLU 43	5.73	-1374.08	-13013	-0.0000505	0.0003743	0.0035	1.92	9522.06	11386.52	11386.52	8.29	No	Si
SLU 43	7.53	-120.66	-11403	-0.0000338	0.0003743	0.0035	1.92	8666.17	10325.84	10325.84	85.58	No	Si
SLU 50	5.73	-1429.7	-13829	-0.0000536	0.0003743	0.0035	1.92	9921.23	11908.81	11908.81	8.33	No	Si
SLU 50	7.53	-180.4	-12280	-0.0000371	0.0003743	0.0035	1.92	9143.5	10916.7	10916.7	60.51	No	Si
SLU 49	5.73	-1440.47	-13894	-0.000054	0.0003743	0.0035	1.92	9952.31	11948.7	11948.7	8.29	No	Si
SLU 49	7.53	-182.34	-12343	-0.0000373	0.0003743	0.0035	1.92	9177.24	10957.23	10957.23	60.09	No	Si
SLU 45	5.73	-1412.5	-13585	-0.0000527	0.0003743	0.0035	1.92	9804.71	11755.48	11755.48	8.32	No	Si
SLU 45	7.53	-165.48	-12018	-0.0000361	0.0003743	0.0035	1.92	9003.9	10744.71	10744.71	64.93	No	Si
SLU 47	5.73	-1402.17	-13255	-0.0000515	0.0003743	0.0035	1.92	9643.2	11543.97	11543.97	8.23	No	Si





Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 47	7.53	-128.84	-11653	-0.0000347	0.0003743	0.0035	1.92	8805.17	10497.89	10497.89	81.48	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche,  $\gamma M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 3	5.73	1499.85	-9001	-0.0000385	0.0005615	0.0035	1.92		8099.95	8099.95	5.4		Si
SLV 3	7.53	-3249.17	-10914	-0.0000599	0.0005615	0.0035	1.92		10429.63	10429.63	3.21		Si
SLV 4	5.73	1061.85	-9032	-0.0000347	0.0005615	0.0035	1.92		8123.64	8123.64	7.65		Si
SLV 4	7.53	-2812.96	-9911	-0.000053	0.0005615	0.0035	1.92		9659.34	9659.34	3.43		Si
SLV 11	5.73	-1681.23	-416	-0.000553	0.0005615	0.0035	1.536		1452.85	1452.85	0.86		No
SLV 11	7.53	314.49	2361	0	0.0005615	0.0035	1.536		0	0	0		No
SLV 16	5.73	-3624.94	-6779	-0.0000579	0.0005615	0.0035	1.536		7100.24	7100.24	1.96		Si
SLV 16	7.53	2657.72	-2232	-0.0041323	0.0005615	0.0035	1.92		2277.9	2277.9	0.86		No
SLV 14	5.73	-3575.98	-12887	-0.000069	0.0005615	0.0035	1.92		11918.91	11918.91	3.33		Si
SLV 14	7.53	2717.3	-9180	-0.0000499	0.0005615	0.0035	1.92		8234.78	8234.78	3.03		Si
SLV 13	5.73	-3137.98	-12856	-0.0000649	0.0005615	0.0035	1.92		11895.92	11895.92	3.79		Si
SLV 13	7.53	2281.09	-10183	-0.000049	0.0005615	0.0035	1.92		8937.31	8937.31	3.92		Si
SLV 12	5.73	-1964.12	-436	-0.0006935	0.0005615	0.0035	1.536		1471.7	1471.7	0.75		No
SLV 12	7.53	596.23	3009	0	0.0005615	0.0035	1.536		0	0	0		No
SLV 15	5.73	-3186.93	-6748	-0.0000499	0.0005615	0.0035	1.92		7074.06	7074.06	2.22		Si
SLV 15	7.53	2221.51	-3234	-0.0000425	0.0005615	0.0035	1.92		3188.43	3188.43	1.44		Si
SLV 7	5.73	-275.19	-1092	-0.0000053	0.0005615	0.0035	1.92		2081.58	2081.58	7.56		Si
SLV 7	7.53	-1326.71	58	-0.0006581	0.0005615	0.0035	1.536		1000.94	1000.94	0.75		No
SLV 8	5.73	-558.09	-1112	-0.0000085	0.0005615	0.0035	1.92		2100.22	2100.22	3.76		Si
SLV 8	7.53	-1044.98	705	0.0588928	0.0005615	0.0035	1.536		0	0	0		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	oN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 38	5.73	-1057.87	-13214	-11003	595	1.92	1.92	-20467	9673	5200	40441	16098	4896	20994	No	35.3	Si
SLU 38	7.53	-607.22	-12952	-10785	603	1.92	1.92	-20062	9619	5171	40441	16098	4896	20994	No	34.82	Si
SLU 35	5.73	-1068.32	-13478	-11223	625	1.92	1.92	-20876	9728	5230	40441	16098	4896	20994	No	33.61	Si
SLU 35	7.53	-635.19	-13242	-11026	620	1.92	1.92	-20511	9679	5203	40441	16098	4896	20994	No	33.88	Si
SLU 42	5.73	-1015.84	-13229	-11016	730	1.92	1.92	-20491	9677	5202	40441	16098	4896	20994	No	28.74	Si
SLU 42	7.53	-664.23	-13118	-10924	738	1.92	1.92	-20320	9654	5190	40441	16098	4896	20994	No	28.43	Si
SLU 39	5.73	-987.87	-12920	-10759	734	1.92	1.92	-20013	9613	5168	40441	16098	4896	20994	No	28.59	Si
SLU 39	7.53	-647.38	-12793	-10653	729	1.92	1.92	-19816	9587	5154	40441	16098	4896	20994	No	28.79	Si
SLU 37	5.73	-1057.71	-13313	-11086	616	1.92	1.92	-20621	9694	5211	40441	16098	4896	20994	No	34.09	Si
SLU 37	7.53	-620.23	-13065	-10879	611	1.92	1.92	-20237	9643	5184	40441	16098	4896	20994	No	34.36	Si
SLU 36	5.73	-1068.49	-13378	-11140	604	1.92	1.92	-20723	9707	5219	40441	16098	4896	20994	No	34.78	Si
SLU 36	7.53	-622.17	-13129	-10932	612	1.92	1.92	-20336	9656	5191	40441	16098	4896	20994	No	34.32	Si
SLU 41	5.73	-1015.68	-13328	-11099	752	1.92	1.92	-20645	9697	5213	40441	16098	4896	20994	No	27.93	Si
SLU 41	7.53	-677.25	-13231	-11018	746	1.92	1.92	-20495	9677	5202	40441	16098	4896	20994	No	28.12	Si
SLU 32	5.73	-1040.51	-13070	-10883	607	1.92	1.92	-20244	9644	5184	40441	16098	4896	20994	No	34.56	Si
SLU 32	7.53	-605.32	-12803	-10662	602	1.92	1.92	-19832	9589	5155	40441	16098	4896	20994	No	34.85	Si
SLU 33	5.73	-1040.68	-12970	-10801	586	1.92	1.92	-20091	9623	5173	40441	16098	4896	20994	No	35.81	Si
SLU 33	7.53	-592.3	-12690	-10568	594	1.92	1.92	-19657	9565	5142	40441	16098	4896	20994	No	35.32	Si
SLU 40	5.73	-988.04	-12821	-10676	713	1.92	1.92	-19859	9592	5157	40441	16098	4896	20994	No	29.44	Si
SLU 40	7.53	-634.37	-12680	-10559	721	1.92	1.92	-19641	9563	5141	40441	16098	4896	20994	No	29.11	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	oN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 4	5.73	1061.85	-9032	-7521	4033	1.92	1.92	-13990	13215	7104	40441	24147	4896	29043		7.2	Si
SLV 4	7.53	-2812.96	-9911	-8253	3319	1.92	1.92	-15352	13487	7251	40441	24147	4896	29043		8.75	Si
SLV 12	5.73	-1964.12	-436	-363	-2590	1.536	0	0	0	0	40441	19318	3917	23234		8.97	Si
SLV 12	7.53	596.23	3009	2506	-2551	1.536	1.92	0	0	0	40441	19318	3917	23234		9.11	Si
SLV 1	5.73	1548.8	-15109	-12581	5612	1.92	1.92	-23403	15097	8116	40441	24147	4896	29043		5.18	Si
SLV 1	7.53	-3189.59	-17862	-14874	4992	1.92	1.92	-27668	15950	8575	40441	24147	4896	29043		5.82	Si
SLV 13	5.73	-3137.98	-12856	-10705	-3885	1.92	1.92	-19913	14399	7741	40441	24147	4896	29043		7.47	Si
SLV 13	7.53	2281.09	-10183	-8479	-3180	1.92	1.92	-15772	13571	7296	40441	24147	4896	29043		9.13	Si
SLV 15	5.73	-3186.93	-6748	-5619	-4428	1.92	1.4631	-13797	13176	5398	40441	24147	4896	29043		6.56	Si
SLV 15	7.53	2221.51	-3234	-2693	-3816	1.92	0.8195	-5010	11419	2620	40441	24147	4896	29043		7.61	Si
SLV 5	5.73	-112.01	-21451	-17863	2738	1.92	1.92	-33227	16250	8736	40441	24147	4896	29043		10.61	Si
SLV 5	7.53	-1128.1	-23103	-19238	2690	1.92	1.92	-35785	16250	8736	40441	24147	4896	29043		10.8	Si
SLV 14	5.73	-3575.98	-12887	-10731	-4922	1.92	1.92	-19961	14409	7746	40441	24147	4896	29043		5.9	Si
SLV 14	7.53	2717.3	-9180	-7644	-4216	1.92	1.92	-14219	13261	7129	40441	24147	4896	29043		6.89	Si
SLV 16	5.73	-3624.94	-6779	-5645	-5465	1.536	1.2758	0	0	0	40441	19318	3917	23234		4.25	Si
SLV 16	7.53	2657.72	-2232	-1858	-4853	1.92	0	-121302	16250	0	40441	24147	4896	29043		5.99	Si
SLV 3	5.73	1499.85	-9001	-7495	5069	1.92	1.92	-13942	13205	7099	40441	24147	4896	29043		5.73	Si
SLV 3	7.53	-3249.17	-10914	-9088	4355	1.92	1.92	-16905	13798	7418	40441	24147	4896	29043		6.67	Si
SLV 2	5.73	1110.8	-15140	-12607	4575	1.92	1.92	-23451	15107	8121	40441	24147	4896	29043		6.35	Si
SLV 2	7.53	-2753.38	-16859	-14039	3955	1.92	1.92	-26114	15640	8408	40441	24147	4896	29043		7.34	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 6.59 Wa 0.05 denominatore 8  $\gamma M = 2$

Comb.	fd	Sa	o0	N	M	Mc	Coeff.s.	Verifica
SLV 12	179667	0.38	0	1470	195.46	0	0	No, Trazione
SLV 8	179667	0.38	0	-213	195.46	0	0	No, e>t/2
SLV 11	179667	0.38	0	1081	195.46	0	0	No, Trazione
SLV 7	179667	0.38	0	-601	195.46	0	0	No, e>t/2
SLV 16	179667	0.38	7874	-4233	195.46	562.05	2.88	Si
SLV 15	179667	0.38	8993	-4835	195.46	637	3.26	Si
SLV 4	179667	0.38	18305	-9841	195.46	1212.58	6.2	Si
SLV 3	179667	0.38	19425	-10443	195.46	1276.02	6.53	Si
SLV 14	179667	0.38	20265	-10895	195.46	1322.84	6.77	Si





Comb.	fd	Sa	$\alpha 0$	N	M	Mc	Coeff.s.	Verifica
SLV 13	179667	0.38	21385	-11496	195.46	1384.11	7.08	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 6.59  $W_a = 0.05$   $T_a = 0.0739$

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	$\alpha 0^*$	aLim	Verifica
SLV 5	-20453	-19167	-506	0.507	2348.8	0.966	7.62641	12.29974	No
SLV 6	-19943	-19056	-506	0.518	2296.9	0.965	7.79734	12.29974	No
SLV 9	-19211	-17329	-303	0.544	2222.5	0.964	8.20468	12.29974	No
SLV 10	-18702	-17218	-303	0.557	2170.6	0.963	8.40119	12.29974	No
SLV 1	-14561	-15384	-456	0.679	1749.5	0.955	10.33024	6.56558	Si
SLV 2	-13772	-15212	-457	0.712	1669.3	0.953	10.84718	6.56558	Si
SLV 13	-10424	-9258	220	0.916	1329.6	0.943	14.12339	6.56558	Si
SLV 14	-9635	-9087	220	0.978	1249.6	0.94	15.1139	6.56558	Si
SLV 3	-8150	-10277	-211	1.12	1099.4	0.933	17.43643	6.56558	Si
SLV 4	-7361	-10106	-212	1.214	1019.8	0.929	18.98419	6.56558	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	8.207	SLU 44	Si
V_SLU	27.933	SLU 41	Si
PF_SLV	0	SLV 8	No
V_SLV	4.252	SLV 16	Si
PFFP_SLV	0	SLV 12	No
R_SLV	0.62	SLV 5	No

## Maschio 86

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.sx	a.s.dx
-19.683	5.826	-21.813	5.826	L5	L6	2.13	0.28	3.52	3.52	3.52			

#### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau 0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

#### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	at	α	elim,conv	ε,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_m$ _	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 50	5.73	-523.36	-15582	-0.0000448	0.0003743	0.0035	2.13	12336.19	14822.1	14822.1	28.32	No	Si
SLU 50	7.53	1398.78	-17526	-0.0000572	0.0003743	0.0035	2.13	13277.98	14773.42	14773.42	10.56	No	Si
SLU 51	5.73	-529.91	-15455	-0.0000445	0.0003743	0.0035	2.13	12270.29	14738.48	14738.48	27.81	No	Si
SLU 51	7.53	1391.79	-17413	-0.0000568	0.0003743	0.0035	2.13	13226.87	14699.44	14699.44	10.56	No	Si
SLU 43	5.73	-559.96	-14533	-0.0000421	0.0003743	0.0035	2.13	11773.12	14089.8	14089.8	25.16	No	Si
SLU 43	7.53	1365.58	-16310	-0.0000534	0.0003743	0.0035	2.13	12704.77	13985.61	13985.61	10.24	No	Si
SLU 52	5.73	-554.66	-15683	-0.0000453	0.0003743	0.0035	2.13	12388.39	14889.05	14889.05	26.84	No	Si
SLU 52	7.53	1424.5	-17849	-0.0000584	0.0003743	0.0035	2.13	13421.64	14985.78	14985.78	10.52	No	Si
SLU 60	5.73	-536.79	-16477	-0.0000475	0.0003743	0.0035	2.13	12786.24	15421.79	15421.79	28.73	No	Si
SLU 60	7.53	1466.38	-18778	-0.0000614	0.0003743	0.0035	2.13	13814.05	15601.5	15601.5	10.64	No	Si
SLU 61	5.73	-543.34	-16350	-0.0000472	0.0003743	0.0035	2.13	12724.31	15336.12	15336.12	28.23	No	Si
SLU 61	7.53	1459.39	-18665	-0.000061	0.0003743	0.0035	2.13	13767.9	15526.21	15526.21	10.64	No	Si
SLU 44	5.73	-570.88	-14322	-0.0000416	0.0003743	0.0035	2.13	11655.21	13938.08	13938.08	24.42	No	Si
SLU 44	7.53	1353.93	-16122	-0.0000527	0.0003743	0.0035	2.13	12611.31	13865.09	13865.09	10.24	No	Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 46	5.73	-538.87	-15162	-0.0000437	0.0003743	0.0035	2.13	12115.79	14543.75	14543.75	26.99	No	Si
SLU 46	7.53	1375.25	-17042	-0.0000556	0.0003743	0.0035	2.13	13055.94	14457.63	14457.63	10.51	No	Si
SLU 47	5.73	-552.58	-14846	-0.000043	0.0003743	0.0035	2.13	11945.45	14316.85	14316.85	25.91	No	Si
SLU 47	7.53	1370.53	-16730	-0.0000546	0.0003743	0.0035	2.13	12908.41	14255.48	14255.48	10.4	No	Si
SLU 45	5.73	-532.31	-15289	-0.0000441	0.0003743	0.0035	2.13	12182.99	14629.2	14629.2	27.48	No	Si
SLU 45	7.53	1382.24	-17155	-0.000056	0.0003743	0.0035	2.13	13108.52	14531.11	14531.11	10.51	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche,  $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 13	5.73	-2650.61	-10470	-0.0000456	0.0005615	0.0035	2.13		11426.59	11426.59	4.31		Si
SLV 13	7.53	3918.76	-16021	-0.0000702	0.0005615	0.0035	2.13		14756.9	14756.9	3.77		Si
SLD 14	5.73	-1563.36	-11481	-0.0000404	0.0005615	0.0035	2.13		12306.81	12306.81	7.87		Si
SLD 14	7.53	2524.44	-14967	-0.0000569	0.0005615	0.0035	2.13		13888.58	13888.58	5.5		Si
SLV 11	5.73	-1299.45	-3155	-0.000017	0.0005615	0.0035	2.13		4539.13	4539.13	3.49		Si
SLV 11	7.53	1644.24	-3756	-0.0000212	0.0005615	0.0035	2.13		4106.39	4106.39	2.5		Si
SLV 16	5.73	-3285.03	-5264	-0.0000428	0.0005615	0.0035	1.704		6601.31	6601.31	2.01		Si
SLV 16	7.53	4302.01	-9956	-0.0000571	0.0005615	0.0035	2.13		9871.48	9871.48	2.29		Si
SLD 15	5.73	-1436.47	-9509	-0.0000343	0.0005615	0.0035	2.13		10563.76	10563.76	7.35		Si
SLD 15	7.53	2255.38	-12318	-0.0000477	0.0005615	0.0035	2.13		11742	11742	5.21		Si
SLV 3	5.73	2311.46	-14819	-0.0000549	0.0005615	0.0035	2.13		13767.36	13767.36	5.96		Si
SLV 3	7.53	-2212.78	-12276	-0.0000473	0.0005615	0.0035	2.13		12986.55	12986.55	5.87		Si
SLV 12	5.73	-1601.57	-2910	-0.00002	0.0005615	0.0035	2.13		4294.12	4294.12	2.68		Si
SLV 12	7.53	1969.12	-3731	-0.0000246	0.0005615	0.0035	2.13		4081.84	4081.84	2.07		Si
SLV 14	5.73	-3118.39	-10091	-0.000048	0.0005615	0.0035	2.13		11085.18	11085.18	3.55		Si
SLV 14	7.53	4421.76	-15982	-0.0000739	0.0005615	0.0035	2.13		14725.31	14725.31	3.33		Si
SLD 16	5.73	-1637.33	-9346	-0.0000353	0.0005615	0.0035	2.13		10418.84	10418.84	6.36		Si
SLD 16	7.53	2471.37	-12302	-0.0000492	0.0005615	0.0035	2.13		11728.88	11728.88	4.75		Si
SLV 15	5.73	-2817.25	-5643	-0.0000356	0.0005615	0.0035	2.13		6968.53	6968.53	2.47		Si
SLV 15	7.53	3799.01	-9994	-0.0000528	0.0005615	0.0035	2.13		9901.36	9901.36	2.61		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 81	5.73	-495.58	-18092	-15065	-4472	2.13	2.13	-25260	10312	6150	40441	17859	5432	23291	No	5.21	Si
SLU 81	7.53	1528.06	-20760	-17288	-4480	2.13	2.13	-28986	10809	6447	40441	17859	5432	23291	No	5.2	Si
SLU 80	5.73	-472.49	-18431	-15348	-4473	2.13	2.13	-25734	10376	6188	40441	17859	5432	23291	No	5.21	Si
SLU 80	7.53	1524.03	-21123	-17589	-4479	2.13	2.13	-29492	10833	6461	40441	17859	5432	23291	No	5.2	Si
SLU 82	5.73	-502.13	-17965	-14960	-4481	2.13	2.13	-25084	10289	6136	40441	17859	5432	23291	No	5.2	Si
SLU 82	7.53	1521.07	-20647	-17193	-4488	2.13	2.13	-28828	10788	6434	40441	17859	5432	23291	No	5.19	Si
SLU 76	5.73	-495.16	-17822	-14841	-4428	2.13	2.13	-24884	10262	6120	40441	17859	5432	23291	No	5.26	Si
SLU 76	7.53	1502.78	-20440	-17020	-4433	2.13	2.13	-28538	10750	6411	40441	17859	5432	23291	No	5.25	Si
SLU 83	5.73	-477.29	-18616	-15502	-4523	2.13	2.13	-25993	10410	6209	40441	17859	5432	23291	No	5.15	Si
SLU 83	7.53	1544.66	-21368	-17794	-4531	2.13	2.13	-29835	10833	6461	40441	17859	5432	23291	No	5.14	Si
SLU 78	5.73	-463.15	-18663	-15541	-4471	2.13	2.13	-26058	10419	6214	40441	17859	5432	23291	No	5.21	Si
SLU 78	7.53	1524.09	-21360	-17786	-4477	2.13	2.13	-29823	10833	6461	40441	17859	5432	23291	No	5.2	Si
SLU 75	5.73	-481.44	-18138	-15104	-4419	2.13	2.13	-25325	10321	6156	40441	17859	5432	23291	No	5.27	Si
SLU 75	7.53	1507.49	-20752	-17280	-4426	2.13	2.13	-28974	10808	6446	40441	17859	5432	23291	No	5.26	Si
SLU 79	5.73	-465.94	-18558	-15453	-4463	2.13	2.13	-25911	10399	6202	40441	17859	5432	23291	No	5.22	Si
SLU 79	7.53	1531.02	-21236	-17683	-4471	2.13	2.13	-29650	10833	6461	40441	17859	5432	23291	No	5.21	Si
SLU 77	5.73	-456.6	-18789	-15646	-4461	2.13	2.13	-26234	10442	6228	40441	17859	5432	23291	No	5.22	Si
SLU 77	7.53	1531.08	-21473	-17881	-4469	2.13	2.13	-29981	10833	6461	40441	17859	5432	23291	No	5.21	Si
SLU 84	5.73	-483.84	-18490	-15397	-4533	2.13	2.13	-25816	10387	6195	40441	17859	5432	23291	No	5.14	Si
SLU 84	7.53	1537.67	-21255	-17700	-4539	2.13	2.13	-29677	10833	6461	40441	17859	5432	23291	No	5.13	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 16	5.73	-1637.33	-9346	-7783	-5576	2.13	2.13	-13050	13027	7769	40441	26789	5432	32220		5.78	Si
SLD 16	7.53	2471.37	-12302	-10244	-5273	2.13	2.13	-17176	13852	8261	40441	26789	5432	32220		6.11	Si
SLD 13	5.73	-1362.5	-11644	-9696	-5572	2.13	2.13	-16258	13668	8152	40441	26789	5432	32220		5.78	Si
SLD 13	7.53	2308.45	-14983	-12477	-5291	2.13	2.13	-20920	14601	8708	40441	26789	5432	32220		6.09	Si
SLV 10	5.73	-1046.09	-19002	-15824	-6302	2.13	2.13	-26532	15723	9377	40441	26789	5432	32220		5.11	Si
SLV 10	7.53	2368.28	-23818	-19834	-6191	2.13	2.13	-33256	16250	9692	40441	26789	5432	32220		5.2	Si
SLD 15	5.73	-1436.47	-9509	-7918	-5252	2.13	2.13	-13277	13072	7796	40441	26789	5432	32220		6.13	Si
SLD 15	7.53	2255.38	-12318	-10258	-4950	2.13	2.13	-17199	13857	8264	40441	26789	5432	32220		6.51	Si
SLV 14	5.73	-3118.39	-10091	-8403	-9530	2.13	2.13	-14090	13235	7893	40441	26789	5432	32220		3.38	Si
SLV 14	7.53	4421.76	-15982	-13309	-8865	2.13	2.13	-22315	14880	8874	40441	26789	5432	32220		3.63	Si
SLV 13	5.73	-2650.61	-10470	-8719	-8777	2.13	2.13	-14619	13340	7956	40441	26789	5432	32220		3.67	Si
SLV 13	7.53	3918.76	-16021	-13341	-8112	2.13	2.13	-22368	14890	8881	40441	26789	5432	32220		3.97	Si
SLV 15	5.73	-2817.25	-5643	-4699	-8056	2.13	1.6972	-9930	12403	5894	40441	26789	5432	32220		4	Si
SLV 15	7.53	3799.01	-9994	-8322	-7336	2.13	2.0547	-13954	13208	7598	40441	26789	5432	32220		4.39	Si
SLV 9	5.73	-743.97	-19247	-16027	-5816	2.13	2.13	-26873	15791	9418	40441	26789	5432	32220		5.54	Si
SLV 9	7.53	2043.4	-23843	-19854	-5704	2.13	2.13	-33290	16250	9692	40441	26789	5432	32220		5.65	Si
SLD 14	5.73	-1563.36	-11481	-9561	-5895	2.13	2.13	-16031	13623	8125	40441	26789	5432	32220		5.47	Si
SLD 14	7.53	2524.44	-14967	-12463	-5615	2.13	2.13	-20897	14596	8705	40441	26789	5432	32220		5.74	Si
SLV 16	5.73	-3285.03	-5264	-4383	-8809	1.704	1.3228	0	0	0	40441	21431	4345	25776		2.93	Si
SLV 16	7.53	4302.01	-9956	-8291	-8089	2.13	1.8988	-13901	13197	7016	40441	26789	5432	32220		3.98	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 6.59 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 12	179667	0.38	6266	-3737	216.85	501.7	2.31	Si
SLV 11	179667	0.38	6449	-3846	216.85	515.7	2.38	Si
SLV 8	179667	0.38	8596	-5127	216.85	677.37	3.12	Si
SLV 7	179667	0.38	8779	-5236	216.85	690.9	3.19	Si



Comb.	fd	Sa	$\alpha 0$	N	M	Mc	Coeff.s.	Verifica
SLV 16	179667	0.38	14583	-8697	216.85	1101.36	5.08	Si
SLV 15	179667	0.38	14866	-8866	216.85	1120.44	5.17	Si
SLV 4	179667	0.38	22352	-13331	216.85	1593.16	7.35	Si
SLV 3	179667	0.38	22635	-13500	216.85	1609.84	7.42	Si
SLV 14	179667	0.38	24086	-14365	216.85	1693.91	7.81	Si
SLV 13	179667	0.38	24369	-14534	216.85	1710.05	7.89	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 6.59  $W_a = 0.05$   $T_a = 0.0739$

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 5	-22081	-16533	-471	0.522	2543.7	0.965	7.86752	12.29974	No
SLV 6	-21854	-16583	-471	0.527	2520.6	0.965	7.93954	12.29974	No
SLV 9	-20576	-14704	-584	0.55	2390.6	0.963	8.29623	12.29974	No
SLV 10	-20349	-14755	-584	0.555	2367.4	0.963	8.37779	12.29974	No
SLV 1	-17498	-15092	36	0.659	2077.5	0.958	9.99706	6.56558	Si
SLV 2	-17146	-15170	36	0.67	2041.7	0.957	10.17773	6.56558	Si
SLV 13	-12481	-8996	-341	0.854	1568	0.946	13.11759	6.56558	Si
SLV 14	-12129	-9075	-341	0.874	1532.3	0.945	13.44696	6.56558	Si
SLV 3	-12011	-12040	358	0.88	1520.3	0.945	13.54197	6.56558	Si
SLV 4	-11659	-12118	358	0.902	1484.6	0.943	13.89451	6.56558	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	10.241	SLV 44	Si
V_SLV	5.131	SLV 84	Si
PF_SLV	2.01	SLV 16	Si
V_SLV	2.926	SLV 16	Si
PFFP_SLV	2.314	SLV 12	Si
R_SLV	0.64	SLV 5	No

## Maschio 88

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.613	1.006	-19.613	5.826	L5	L6	4.82	0.16	3.52	3.52	3.52			

#### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	$\tau 0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

#### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	at	α	elim,conv	ε <sub>fd</sub>	γF <sub>d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma_m = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	$\epsilon m_{-}$	$\epsilon m_u$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 45	4.83	3619.63	-43155	-0.0000826	0.0004492	0.0035	4.82	56373.05	85442.42	85442.42	23.61	No	Si
SLU 45	8.35	551.86	-25606	-0.0000439	0.0004492	0.0035	4.82	44941.36	55318.94	55318.94	100.24	No	Si
SLU 44	4.83	3511.64	-41799	-0.0000798	0.0004492	0.0035	4.82	56051.27	83415.16	83415.16	23.75	No	Si
SLU 44	8.35	287.27	-24352	-0.0000411	0.0004492	0.0035	4.82	43521.91	53143.85	53143.85	185	No	Si
SLU 49	4.83	3720.07	-44026	-0.0000845	0.0004492	0.0035	4.82	56530.12	86614.76	86614.76	23.28	No	Si
SLU 49	8.35	618.12	-26304	-0.0000452	0.0004492	0.0035	4.82	45696.75	56529.84	56529.84	91.45	No	Si
SLU 48	4.83	3744.48	-44013	-0.0000845	0.0004492	0.0035	4.82	56528.04	86597.13	86597.13	23.13	No	Si
SLU 48	8.35	727.41	-26344	-0.0000456	0.0004492	0.0035	4.82	45739.39	56599.42	56599.42	77.81	No	Si
SLU 46	4.83	3595.21	-43168	-0.0000826	0.0004492	0.0035	4.82	56375.7	85460.05	85460.05	23.77	No	Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 46	8.35	442.57	-25566	-0.0000436	0.0004492	0.0035	4.82	44897.19	55249.37	55249.37	124.84	No	Si
SLU 51	4.83	3777.63	-43506	-0.0000836	0.0004492	0.0035	4.82	56441.03	85914.97	85914.97	22.74	No	Si
SLU 51	8.35	711.22	-25855	-0.0000447	0.0004492	0.0035	4.82	45213.86	55751.19	55751.19	78.39	No	Si
SLU 47	4.83	3636.5	-42657	-0.0000817	0.0004492	0.0035	4.82	56265.79	84772.02	84772.02	23.31	No	Si
SLU 47	8.35	462.82	-25090	-0.0000428	0.0004492	0.0035	4.82	44367.27	54424.33	54424.33	117.59	No	Si
SLU 50	4.83	3802.05	-43493	-0.0000837	0.0004492	0.0035	4.82	56438.61	85897.34	85897.34	22.59	No	Si
SLU 50	8.35	820.51	-25895	-0.000045	0.0004492	0.0035	4.82	45257.43	55820.77	55820.77	68.03	No	Si
SLU 8	4.83	2978.94	-35069	-0.0000661	0.0004492	0.0035	4.82	53062.7	71738.11	71738.11	24.08	No	Si
SLU 8	8.35	654.48	-21029	-0.0000362	0.0004492	0.0035	4.82	39369.96	47377.71	47377.71	72.39	No	Si
SLU 43	4.83	3552.33	-41777	-0.0000799	0.0004492	0.0035	4.82	56045.32	83377.27	83377.27	23.47	No	Si
SLU 43	8.35	469.4	-24419	-0.0000416	0.0004492	0.0035	4.82	43599.61	53259.81	53259.81	113.46	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche,  $\gamma M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 7	4.83	-7532.59	-31599	-0.0000685	0.0006738	0.0035	4.82	79538.52	79538.52	79538.52	10.56		Si
SLV 7	8.35	-9624.02	-18189	-0.0000497	0.0006738	0.0035	4.82	53492.01	53492.01	53492.01	5.56		Si
SLV 14	4.83	9921.57	-31835	-0.000074	0.0006738	0.0035	4.82	68385.46	68385.46	68385.46	6.89		Si
SLV 14	8.35	3554.26	-17722	-0.0000363	0.0006738	0.0035	4.82	41789.52	41789.52	41789.52	11.76		Si
SLV 11	4.83	-4864.31	-27948	-0.0000564	0.0006738	0.0035	4.82	72769.58	72769.58	72769.58	14.96		Si
SLV 11	8.35	-9132.64	-15411	-0.000044	0.0006738	0.0035	4.82	47755	47755	47755	5.23		Si
SLV 5	4.83	10157.79	-43537	-0.0000955	0.0006738	0.0035	4.82	88902.42	88902.42	88902.42	8.75		Si
SLV 5	8.35	9794.84	-26896	-0.0000651	0.0006738	0.0035	4.82	59725.34	59725.34	59725.34	6.1		Si
SLV 6	4.83	10294.47	-43840	-0.0000964	0.0006738	0.0035	4.82	89433.85	89433.85	89433.85	8.69		Si
SLV 6	8.35	9395.64	-26812	-0.0000641	0.0006738	0.0035	4.82	59578.94	59578.94	59578.94	6.34		Si
SLV 12	4.83	-4727.63	-28251	-0.0000567	0.0006738	0.0035	4.82	73354.36	73354.36	73354.36	15.52		Si
SLV 12	8.35	-9531.84	-15328	-0.0000446	0.0006738	0.0035	4.82	47576.92	47576.92	47576.92	4.99		Si
SLV 8	4.83	-7395.91	-31902	-0.0000687	0.0006738	0.0035	4.82	80092.46	80092.46	80092.46	10.83		Si
SLV 8	8.35	-10023.22	-18106	-0.0000504	0.0006738	0.0035	4.82	53322.43	53322.43	53322.43	5.32		Si
SLV 9	4.83	12826.07	-39886	-0.0000948	0.0006738	0.0035	4.82	82501.61	82501.61	82501.61	6.43		Si
SLV 9	8.35	10286.22	-24117	-0.0000613	0.0006738	0.0035	4.82	54794.37	54794.37	54794.37	5.33		Si
SLV 10	4.83	12962.75	-40190	-0.0000957	0.0006738	0.0035	4.82	83033.05	83033.05	83033.05	6.41		Si
SLV 10	8.35	9887.02	-24034	-0.0000603	0.0006738	0.0035	4.82	54627.62	54627.62	54627.62	5.53		Si
SLV 13	4.83	9709.96	-31366	-0.0000728	0.0006738	0.0035	4.82	67562.64	67562.64	67562.64	6.96		Si
SLV 13	8.35	4172.33	-17851	-0.0000378	0.0006738	0.0035	4.82	42059.28	42059.28	42059.28	10.08		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 49	4.83	3720.07	-44026	-25850	-3795	4.82	4.82	-33520	10833	8355	115546	27715	24582	52297	No	13.78	Si
SLU 49	8.35	618.12	-26304	-15444	-3789	4.82	4.82	-20026	10833	8355	115546	27715	24582	52297	No	13.8	Si
SLU 50	4.83	3802.05	-43493	-25537	-3830	4.82	4.82	-33114	10833	8355	115546	27715	24582	52297	No	13.65	Si
SLU 50	8.35	820.51	-25895	-15204	-3888	4.82	4.82	-19715	10833	8355	115546	27715	24582	52297	No	13.45	Si
SLU 48	4.83	3744.48	-44013	-25843	-3787	4.82	4.82	-33510	10833	8355	115546	27715	24582	52297	No	13.81	Si
SLU 48	8.35	727.41	-26344	-15468	-3845	4.82	4.82	-20057	10833	8355	115546	27715	24582	52297	No	13.6	Si
SLU 72	4.83	3764.96	-48119	-28254	-3873	4.82	4.82	-36636	10833	8355	115546	27715	24582	52297	No	13.5	Si
SLU 72	8.35	492.44	-28771	-16893	-3873	4.82	4.82	-21905	10833	8355	115546	27715	24582	52297	No	13.5	Si
SLU 70	4.83	3707.4	-48639	-28559	-3829	4.82	4.82	-37032	10833	8355	115546	27715	24582	52297	No	13.66	Si
SLU 70	8.35	399.34	-29220	-17157	-3830	4.82	4.82	-22247	10833	8355	115546	27715	24582	52297	No	13.65	Si
SLU 71	4.83	3789.38	-48106	-28246	-3865	4.82	4.82	-36626	10833	8355	115546	27715	24582	52297	No	13.53	Si
SLU 71	8.35	601.72	-28811	-16917	-3928	4.82	4.82	-21936	10833	8355	115546	27715	24582	52297	No	13.31	Si
SLU 68	4.83	3623.83	-47270	-27755	-3726	4.82	4.82	-35989	10833	8355	115546	27715	24582	52297	No	14.04	Si
SLU 68	8.35	244.04	-28006	-16444	-3682	4.82	4.82	-21323	10833	8355	115546	27715	24582	52297	No	14.2	Si
SLU 66	4.83	3606.96	-47768	-28047	-3669	4.82	4.82	-36368	10833	8355	115546	27715	24582	52297	No	14.25	Si
SLU 66	8.35	333.08	-28522	-16747	-3732	4.82	4.82	-21715	10833	8355	115546	27715	24582	52297	No	14.01	Si
SLU 51	4.83	3777.63	-43506	-25545	-3838	4.82	4.82	-33124	10833	8355	115546	27715	24582	52297	No	13.63	Si
SLU 51	8.35	711.22	-25855	-15181	-3832	4.82	4.82	-19685	10833	8355	115546	27715	24582	52297	No	13.65	Si
SLU 69	4.83	3731.81	-48626	-28551	-3822	4.82	4.82	-37022	10833	8355	115546	27715	24582	52297	No	13.68	Si
SLU 69	8.35	508.63	-29260	-17180	-3886	4.82	4.82	-22277	10833	8355	115546	27715	24582	52297	No	13.46	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	oN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 9	4.83	12826.07	-39886	-23420	-12015	4.82	4.82	-30368	16250	12532	115546	41573	24582	66155		5.51	Si
SLV 9	8.35	10286.22	-24117	-14161	-8041	4.82	4.82	-18362	16172	12472	115546	41573	24582	66155		8.23	Si
SLV 13	4.83	9709.96	-31366	-18417	-12980	4.82	4.82	-23880	16250	12532	115546	41573	24582	66155		5.1	Si
SLV 13	8.35	4172.33	-17851	-10482	-11826	4.82	4.82	-13591	15218	11736	115546	41573	24582	66155		5.59	Si
SLV 14	4.83	9921.57	-31835	-18692	-13081	4.82	4.82	-24238	16250	12532	115546	41573	24582	66155		5.06	Si
SLV 14	8.35	3554.26	-17722	-10406	-11928	4.82	4.82	-13493	15199	11721	115546	41573	24582	66155		5.55	Si
SLV 3	4.83	-4491.42	-39954	-23459	7794	4.82	4.82	-30419	16250	12532	115546	41573	24582	66155		8.49	Si
SLV 3	8.35	-3291.26	-24501	-14386	6546	4.82	4.82	-18654	16231	12517	115546	41573	24582	66155		10.11	Si
SLV 16	4.83	4614.46	-28254	-16589	-8935	4.82	4.82	-21511	16250	12532	115546	41573	24582	66155		7.4	Si
SLV 16	8.35	-2271.4	-15110	-8872	-10195	4.82	4.82	-11504	14801	11414	115546	41573	24582	66155		6.49	Si
SLD 14	4.83	5835.72	-34191	-20075	-7132	4.82	4.82	-26031	16250	12532	115546	41573	24582	66155		9.28	Si
SLD 14	8.35	1634.73	-19684	-11558	-6645	4.82	4.82	-14987	15497	11952	115546	41573	24582	66155		9.96	Si
SLV 4	4.83	-4279.8	-40423	-23735	7692	4.82	4.82	-30776	16250	12532	115546	41573	24582	66155		8.6	Si
SLV 4	8.35	-3909.33	-24372	-14310	6444	4.82	4.82	-18556	16211	12502	115546	41573	24582	66155		10.27	Si
SLV 10	4.83	12962.75	-40190	-23598	-12080	4.82	4.82	-30598	16250	12532	115546	41573	24582	66155		5.48	Si
SLV 10	8.35	9887.02	-24034	-14111	-8107	4.82	4.82	-18298	16160	12462	115546	41573	24582	66155		8.16	Si
SLV 15	4.83	4402.84	-27784	-16314	-8834	4.82	4.82	-21154	16250	12532	115546	41573	24582	66155		7.49	Si
SLV 15	8.35	-1653.32	-15240	-8948	-10093	4.82	4.82	-11603	14821	11430	115546	41573	24582	66155		6.55	Si
SLV 6	4.83	10294.47	-43840	-25741	-7092	4.82	4.82	-33378	16250	12532	115546	41573	24582	66155		9.33	Si
SLV 6	8.35	9395.64	-26812	-15743	-3116	4.82	4.82	-20413	16250	12532	115546	41573	24582	66155		21.23	Si



Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 11	-22254	0.38	296.7	1500	2451.41	1975.7	6.66	Si
SLV 12	-22341	0.38	296.7	1504.79	2459.36	1982.08	6.68	Si
SLV 15	-22409	0.38	296.7	1508.5	2465.54	1987.02	6.7	Si
SLV 16	-22544	0.38	296.7	1515.88	2477.87	1996.87	6.73	Si
SLV 7	-24672	0.38	296.7	1629.22	2671.85	2150.53	7.25	Si
SLV 8	-24759	0.38	296.7	1633.76	2679.83	2156.8	7.27	Si
SLV 13	-24980	0.38	296.7	1645.24	2700.04	2172.64	7.32	Si
SLV 14	-25116	0.38	296.7	1652.23	2712.39	2182.31	7.36	Si
SLV 3	-30469	0.38	296.7	1912.06	3189.33	2550.7	8.6	Si
SLV 4	-30604	0.38	296.7	1918.21	3201.39	2559.8	8.63	Si

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.59 Wa = 0.03 Ta = 0.1293

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 5	-26896	-43537	-121	0.943	3120.6	0.963	14.23233	16.49127	No
SLV 6	-26812	-43840	-122	0.946	3112.1	0.963	14.27329	16.49127	No
SLV 9	-24117	-39886	255	1.035	2838	0.96	15.66354	16.49127	No
SLV 10	-24034	-40190	255	1.038	2829.5	0.96	15.7137	16.49127	No
SLV 1	-27113	-43535	-607	0.92	3142.7	0.963	13.87872	11.57515	Si
SLV 2	-26984	-44004	-608	0.924	3129.6	0.963	13.94015	11.57515	Si
SLV 7	-18189	-31599	-255	1.325	2235.6	0.95	20.26524	16.49127	Si
SLV 8	-18106	-31902	-256	1.331	2227.1	0.95	20.34965	16.49127	Si
SLV 3	-24501	-39954	-648	1.006	2877	0.96	15.21672	11.57515	Si
SLV 4	-24372	-40423	-648	1.01	2863.9	0.96	15.29097	11.57515	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	22.592	SLU 50	Si
V_SLU	13.312	SLU 71	Si
PF_SLV	4.991	SLV 12	Si
V_SLV	5.057	SLV 14	Si
PFFP_SLV	6.659	SLV 11	Si
R_SLV	0.863	SLV 5	No

## Maschio 91

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-15.033	2.166	-15.033	6.526	L5	L6	4.36	0.16	3.52	3.52	3.52			

#### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	$\tau 0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

#### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	s,fd	yF,d	connettori	tipo di muratura	CRM	Intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_m$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 32	4.83	-8908.37	-18894	-0.0000579	0.0004492	0.0035	4.36	32059.22	47588.81	47588.81	5.34	No	Si
SLU 32	6.93	-4206.96	-16080	-0.0000401	0.0004492	0.0035	4.36	28441.98	42575.88	42575.88	10.12	No	Si
SLU 39	4.83	-9614.28	-18232	-0.0000585	0.0004492	0.0035	4.36	31244.31	46408.97	46408.97	4.83	No	Si
SLU 39	6.93	-4541.42	-15418	-0.0000397	0.0004492	0.0035	4.36	27531.75	41396.04	41396.04	9.12	No	Si
SLU 81	4.83	-10694.52	-22488	-0.0000699	0.0004492	0.0035	4.36	36090.32	53632.09	53632.09	5.01	No	Si
SLU 81	6.93	-5058.41	-18923	-0.0000478	0.0004492	0.0035	4.36	32093.68	47639.44	47639.44	9.42	No	Si
SLU 41	4.83	-9461.8	-19116	-0.0000598	0.0004492	0.0035	4.36	32327.32	47966.53	47966.53	5.07	No	Si
SLU 41	6.93	-4465.53	-16302	-0.0000412	0.0004492	0.0035	4.36	28742.03	42971.31	42971.31	9.62	No	Si
SLU 82	4.83	-10601.36	-22559	-0.0000698	0.0004492	0.0035	4.36	36162.77	53750.51	53750.51	5.07	No	Si
SLU 82	6.93	-5087.86	-18993	-0.000048	0.0004492	0.0035	4.36	32178.99	47759.77	47759.77	9.39	No	Si
SLU 31	4.83	-8637.63	-18163	-0.0000558	0.0004492	0.0035	4.36	31158.47	46286.54	46286.54	5.36	No	Si
SLU 31	6.93	-4206.43	-15349	-0.0000387	0.0004492	0.0035	4.36	27436.01	41273.61	41273.61	9.81	No	Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 40	4.83	-9521.12	-18302	-0.0000584	0.0004492	0.0035	4.36	31332.11	46534.54	46534.54	4.89	No	Si
SLU 40	6.93	-4570.87	-15489	-0.0000399	0.0004492	0.0035	4.36	27629.69	41521.61	41521.61	9.08	No	Si
SLU 42	4.83	-9368.65	-19187	-0.0000597	0.0004492	0.0035	4.36	32411.93	48084.95	48084.95	5.13	No	Si
SLU 42	6.93	-4494.98	-16373	-0.0000414	0.0004492	0.0035	4.36	28836.78	43096.87	43096.87	9.59	No	Si
SLU 84	4.83	-10448.89	-23443	-0.0000712	0.0004492	0.0035	4.36	37050.09	55236.16	55236.16	5.29	No	Si
SLU 84	6.93	-5011.97	-19877	-0.0000496	0.0004492	0.0035	4.36	33227.57	49245.42	49245.42	9.83	No	Si
SLU 83	4.83	-10542.04	-23372	-0.0000713	0.0004492	0.0035	4.36	36980.82	55117.74	55117.74	5.23	No	Si
SLU 83	6.93	-4982.52	-19807	-0.0000494	0.0004492	0.0035	4.36	33145.45	49126.99	49126.99	9.86	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche,  $\gamma M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 4	4.83	-15602.84	-18699	-0.0000744	0.0006738	0.0035	4.36		48011.66	48011.66	3.08		Si
SLV 4	6.93	-10898.14	-15389	-0.0000554	0.0006738	0.0035	4.36		41936.61	41936.61	3.85		Si
SLV 7	4.83	-13594.23	-20921	-0.000073	0.0006738	0.0035	4.36		52056.62	52056.62	3.83		Si
SLV 7	6.93	-17342.67	-15967	-0.0000783	0.0006738	0.0035	4.36		42997.24	42997.24	2.48		Si
SLV 10	4.83	930.12	-12267	-0.0000244	0.0006738	0.0035	4.36		26945.3	26945.3	28.97		Si
SLV 10	6.93	11333.49	-11799	-0.0000512	0.0006738	0.0035	4.36		26029.46	26029.46	2.3		Si
SLV 8	4.83	-13310.91	-20936	-0.0000723	0.0006738	0.0035	4.36		52081.54	52081.54	3.91		Si
SLV 8	6.93	-17398.36	-15981	-0.0000786	0.0006738	0.0035	4.36		43023.48	43023.48	2.47		Si
SLV 12	4.83	-8462.14	-20413	-0.0000587	0.0006738	0.0035	4.36		51158.01	51158.01	6.05		Si
SLV 12	6.93	-15063.86	-15409	-0.0000684	0.0006738	0.0035	4.36		41973.7	41973.7	2.79		Si
SLV 3	4.83	-16041.51	-18676	-0.0000757	0.0006738	0.0035	4.36		47971.03	47971.03	2.99		Si
SLV 3	6.93	-10811.92	-15367	-0.0000552	0.0006738	0.0035	4.36		41895.98	41895.98	3.87		Si
SLV 6	4.83	-3918.65	-12790	-0.0000328	0.0006738	0.0035	4.36		36977.47	36977.47	9.44		Si
SLV 6	6.93	8998.99	-12371	-0.0000449	0.0006738	0.0035	4.36		27149.75	27149.75	3.02		Si
SLV 11	4.83	-8745.46	-20398	-0.0000594	0.0006738	0.0035	4.36		51131.77	51131.77	5.85		Si
SLV 11	6.93	-15008.17	-15395	-0.0000682	0.0006738	0.0035	4.36		41947.46	41947.46	2.79		Si
SLV 5	4.83	-4201.97	-12776	-0.0000335	0.0006738	0.0035	4.36		36949.9	36949.9	8.79		Si
SLV 5	6.93	9054.67	-12357	-0.000045	0.0006738	0.0035	4.36		27121.75	27121.75	3		Si
SLV 9	4.83	646.8	-12253	-0.0000236	0.0006738	0.0035	4.36		26917.3	26917.3	41.62		Si
SLV 9	6.93	11389.17	-11785	-0.0000514	0.0006738	0.0035	4.36		26001.45	26001.45	2.28		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 77	4.83	-9836.14	-24035	-14112	-2439	4.36	4.36	-20230	10833	7557	115546	25070	22236	47306	No	19.39	Si
SLU 77	6.93	-4648.06	-20469	-12019	-2439	4.36	4.36	-17228	10630	7416	115546	25070	22236	47306	No	19.39	Si
SLU 74	4.83	-9988.61	-23151	-13593	-2476	4.36	4.36	-19485	10833	7557	115546	25070	22236	47306	No	19.11	Si
SLU 74	6.93	-4723.95	-19585	-11499	-2476	4.36	4.36	-16484	10531	7347	115546	25070	22236	47306	No	19.11	Si
SLU 84	4.83	-10448.89	-23443	-13765	-2558	4.36	4.36	-19731	10833	7557	115546	25070	22236	47306	No	18.49	Si
SLU 84	6.93	-5011.97	-19877	-11671	-2558	4.36	4.36	-16730	10564	7369	115546	25070	22236	47306	No	18.49	Si
SLU 83	4.83	-10542.04	-23372	-13723	-2616	4.36	4.36	-19672	10833	7557	115546	25070	22236	47306	No	18.08	Si
SLU 83	6.93	-4982.52	-19807	-11630	-2616	4.36	4.36	-16671	10556	7364	115546	25070	22236	47306	No	18.08	Si
SLU 81	4.83	-10694.52	-22488	-13204	-2653	4.36	4.36	-18928	10833	7557	115546	25070	22236	47306	No	17.83	Si
SLU 81	6.93	-5058.41	-18923	-11111	-2653	4.36	4.36	-15927	10457	7295	115546	25070	22236	47306	No	17.83	Si
SLU 75	4.83	-9895.46	-23221	-13634	-2417	4.36	4.36	-19545	10833	7557	115546	25070	22236	47306	No	19.57	Si
SLU 75	6.93	-4753.4	-19655	-11541	-2417	4.36	4.36	-16544	10539	7352	115546	25070	22236	47306	No	19.57	Si
SLU 39	4.83	-9614.28	-18232	-10705	-2392	4.36	4.36	-15345	10379	7241	115546	25070	22236	47306	No	19.78	Si
SLU 39	6.93	-4541.42	-15418	-9053	-2392	4.36	4.36	-12977	10064	7020	115546	25070	22236	47306	No	19.78	Si
SLU 78	4.83	-9742.99	-24105	-14154	-2381	4.36	4.36	-20289	10833	7557	115546	25070	22236	47306	No	19.87	Si
SLU 78	6.93	-4677.51	-20540	-12060	-2381	4.36	4.36	-17288	10638	7421	115546	25070	22236	47306	No	19.87	Si
SLU 79	4.83	-9568.17	-24071	-14133	-2371	4.36	4.36	-20260	10833	7557	115546	25070	22236	47306	No	19.95	Si
SLU 79	6.93	-4522.54	-20505	-12040	-2371	4.36	4.36	-17259	10634	7419	115546	25070	22236	47306	No	19.95	Si
SLU 82	4.83	-10601.36	-22559	-13245	-2594	4.36	4.36	-18987	10833	7557	115546	25070	22236	47306	No	18.23	Si
SLU 82	6.93	-5087.86	-18993	-11152	-2594	4.36	4.36	-15986	10465	7300	115546	25070	22236	47306	No	18.23	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 6	4.83	-3918.65	-12790	-7510	-4907	4.36	4.36	-10765	14653	10222	115546	37605	22236	59841		12.2	Si
SLV 6	6.93	8998.99	-12371	-7264	-3657	4.36	4.3578	-10413	14583	10168	115546	37605	22236	59841		16.36	Si
SLV 4	4.83	-15602.84	-18699	-10979	-2982	4.36	4.0367	-17126	15925	10286	115546	37605	22236	59841		20.07	Si
SLV 4	6.93	-10898.14	-15389	-9036	-3311	4.36	4.36	-12952	15090	10527	115546	37605	22236	59841		18.07	Si
SLD 5	4.83	-5322.33	-14897	-8747	-3090	4.36	4.36	-12539	15008	10469	115546	37605	22236	59841		19.37	Si
SLD 5	6.93	2361.12	-13204	-7753	-2533	4.36	4.36	-11113	14723	10271	115546	37605	22236	59841		23.63	Si
SLV 9	4.83	646.8	-12253	-7194	-3651	4.36	4.36	-10313	14563	10159	115546	37605	22236	59841		16.39	Si
SLV 9	6.93	11389.17	-11785	-6920	-2427	4.36	3.6408	-9919	14484	8437	115546	37605	22236	59841		24.66	Si
SLV 5	4.83	-4201.97	-12776	-7501	-5068	4.36	4.36	-10753	14651	10220	115546	37605	22236	59841		11.81	Si
SLV 5	6.93	9054.67	-12357	-7256	-3819	4.36	4.3418	-10401	14580	10129	115546	37605	22236	59841		15.67	Si
SLV 2	4.83	-12785.17	-16255	-9544	-4613	4.36	4.1804	-14363	15373	10282	115546	37605	22236	59841		12.97	Si
SLV 2	6.93	-2978.93	-14306	-8400	-4200	4.36	4.36	-12041	14908	10400	115546	37605	22236	59841		14.25	Si
SLV 3	4.83	-16041.51	-18676	-10966	-3232	4.36	3.9632	-17418	15984	10136	115546	37605	22236	59841		18.52	Si
SLV 3	6.93	-10811.92	-15367	-9023	-3561	4.36	4.36	-12934	15087	10525	115546	37605	22236	59841		16.8	Si
SLV 10	4.83	930.12	-12267	-7203	-3489	4.36	4.36	-10325	14565	10161	115546	37605	22236	59841		17.15	Si
SLV 10	6.93	11333.49	-11799	-6928	-2265	4.36	3.6585	-9931	14486	8480	115546	37605	22236	59841		26.42	Si
SLD 6	4.83	-5198.54	-14904	-8751	-3019	4.36	4.36	-12544	15009	10470	115546	37605	22236	59841		19.82	Si
SLD 6	6.93	2336.79	-13210	-7756	-2462	4.36	4.36	-11118	14724	10271	115546	37605	22236	59841		24.3	Si
SLV 1	4.83	-13223.83	-16233	-9531	-4863	4.36	4.0961	-14638	15428	10111	115546	37605	22236	59841		12.31	Si
SLV 1	6.93	-2892.71	-14284	-8387	-4450	4.36	4.36	-12022	14904	10397	115546	37605	22236	59841		13.45	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRM D.M. 17-01-18 (N.T.C.)

quota 6.59 Ta 0.13 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 9	-12429	0.38	268.39	897.64	1512.03	1204.84	4.49	Si



Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 10	-12443	0.38	268.39	898.56	1513.38	1205.97	4.49	Si
SLV 5	-12967	0.38	268.39	932.16	1562.56	1247.36	4.65	Si
SLV 6	-12981	0.38	268.39	933.07	1563.9	1248.49	4.65	Si
SLV 13	-12995	0.38	268.39	933.92	1565.15	1249.54	4.66	Si
SLV 14	-13017	0.38	268.39	935.33	1567.23	1251.28	4.66	Si
SLV 15	-14022	0.38	268.39	998.72	1661.46	1330.09	4.96	Si
SLV 16	-14044	0.38	268.39	1000.1	1663.53	1331.82	4.96	Si
SLV 1	-14789	0.38	268.39	1046.3	1733.43	1389.87	5.18	Si
SLV 2	-14812	0.38	268.39	1047.66	1735.47	1391.57	5.18	Si

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.59  $W_a = 0.03$   $T_a = 0.1293$

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 7	-12707	-20921	-221	1.653	1642.2	0.941	25.54084	16.49127	Si
SLV 8	-12683	-20936	-220	1.656	1639.8	0.941	25.58353	16.49127	Si
SLV 11	-12029	-20398	249	1.729	1573.6	0.938	26.7711	16.49127	Si
SLV 12	-12005	-20413	249	1.732	1571.2	0.938	26.81791	16.49127	Si
SLV 5	-10540	-12776	-258	1.927	1423	0.933	30.01633	16.49127	Si
SLV 6	-10516	-12790	-258	1.931	1420.6	0.933	30.07535	16.49127	Si
SLV 9	-9862	-12253	211	2.038	1354.5	0.93	31.83562	16.49127	Si
SLV 10	-9838	-12267	211	2.042	1352.1	0.93	31.90168	16.49127	Si
SLV 3	-12746	-18676	-781	1.611	1646.2	0.941	24.89277	11.57515	Si
SLV 4	-12709	-18699	-781	1.615	1642.4	0.941	24.95705	11.57515	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	4.827	SLV 39	Si
V_SLV	17.833	SLV 81	Si
PF_SLV	2.283	SLV 9	Si
V_SLV	11.807	SLV 5	Si
PFFP_SLV	4.489	SLV 9	Si
R_SLV	1.549	SLV 7	Si

## Maschio 92

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-13.778	-3.386	-13.778	-0.354	Z medio 570 cm	L6	3.032	0.28	2.654	1.787	3.52			

#### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau 0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

#### Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha t$	$\alpha$	elim,conv	$\epsilon_{fd}$	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 62	6.56	3409.41	-29275	-0.0000686	0.0003743	0.0035	3.0318	29345.72	33976.74	33976.74	9.97	No	Si
SLU 62	8.35	585.99	-22775	-0.0000442	0.0003743	0.0035	3.0318	25426.61	27978.11	27978.11	47.75	No	Si
SLU 60	6.56	3361.83	-28512	-0.0000667	0.0003743	0.0035	3.0318	28962.26	33248.61	33248.61	9.89	No	Si
SLU 60	8.35	574.11	-22051	-0.0000427	0.0003743	0.0035	3.0318	24898.47	27338.98	27338.98	47.62	No	Si
SLU 61	6.56	3324.43	-28464	-0.0000665	0.0003743	0.0035	3.0318	28937.6	33203.29	33203.29	9.99	No	Si
SLU 61	8.35	521.78	-21997	-0.0000424	0.0003743	0.0035	3.0318	24858.27	27291.47	27291.47	52.3	No	Si
SLU 81	6.56	3480.49	-30965	-0.0000725	0.0003743	0.0035	3.0318	30121.71	35474.73	35474.73	10.19	No	Si
SLU 81	8.35	446.38	-24051	-0.0000462	0.0003743	0.0035	3.0318	26312.68	29119.49	29119.49	65.24	No	Si
SLU 82	6.56	3443.11	-30917	-0.0000722	0.0003743	0.0035	3.0318	30101.15	35441.72	35441.72	10.29	No	Si
SLU 82	8.35	394.05	-23997	-0.0000459	0.0003743	0.0035	3.0318	26276.28	29070.71	29070.71	73.77	No	Si
SLU 20	6.56	2868.93	-24130	-0.0000556	0.0003743	0.0035	3.0318	26365.98	29191.2	29191.2	10.17	No	Si
SLU 20	8.35	570.23	-18899	-0.0000366	0.0003743	0.0035	3.0318	22384.22	24428.3	24428.3	42.84	No	Si
SLU 19	6.56	2783.95	-23319	-0.0000537	0.0003743	0.0035	3.0318	25811.48	28462.54	28462.54	10.22	No	Si





Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 19	8.35	506.02	-18121	-0.0000348	0.0003743	0.0035	3.0318	21710.11	23492.12	23492.12	46.43	No	Si
SLU 18	6.56	2821.34	-23367	-0.0000539	0.0003743	0.0035	3.0318	25844.76	28505.23	28505.23	10.1	No	Si
SLU 18	8.35	558.35	-18175	-0.0000351	0.0003743	0.0035	3.0318	21757.66	23557.41	23557.41	42.19	No	Si
SLU 83	6.56	3528.07	-31728	-0.0000743	0.0003743	0.0035	3.0318	30439.48	35972.99	35972.99	10.2	No	Si
SLU 83	8.35	458.26	-24775	-0.0000477	0.0003743	0.0035	3.0318	26790.05	29775.59	29775.59	64.98	No	Si
SLU 63	6.56	3372.02	-29227	-0.0000683	0.0003743	0.0035	3.0318	29322.33	33930.99	33930.99	10.06	No	Si
SLU 63	8.35	533.66	-22721	-0.0000439	0.0003743	0.0035	3.0318	25387.79	27930.15	27930.15	52.34	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche,  $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 5	6.56	8147.16	-29715	-0.0000849	0.0005615	0.0035	3.0318		37628.05	37628.05	4.62		Si
SLV 5	8.35	6776.07	-24849	-0.00007	0.0005615	0.0035	3.0318		32248.61	32248.61	4.76		Si
SLV 6	6.56	8059.13	-29667	-0.0000845	0.0005615	0.0035	3.0318		37585.18	37585.18	4.66		Si
SLV 6	8.35	6730.11	-24755	-0.0000696	0.0005615	0.0035	3.0318		32138.62	32138.62	4.78		Si
SLV 8	6.56	-4465.79	-13287	-0.0000394	0.0005615	0.0035	3.0318		21027	21027	4.71		Si
SLV 8	8.35	-6014.74	-8457	-0.0000376	0.0005615	0.0035	3.0318		14650.95	14650.95	2.44		Si
SLV 12	6.56	-3851.28	-12957	-0.0000366	0.0005615	0.0035	3.0318		20608.83	20608.83	5.35		Si
SLV 12	8.35	-6775.26	-7892	-0.0000431	0.0005615	0.0035	2.4254		13867.24	13867.24	2.05		Si
SLV 7	6.56	-4377.75	-13335	-0.0000391	0.0005615	0.0035	3.0318		21089	21089	4.82		Si
SLV 7	8.35	-5968.77	-8550	-0.0000374	0.0005615	0.0035	3.0318		14781.5	14781.5	2.48		Si
SLV 14	6.56	4982.72	-23206	-0.0000601	0.0005615	0.0035	3.0318		30330.35	30330.35	6.09		Si
SLV 14	8.35	609.01	-17802	-0.000034	0.0005615	0.0035	3.0318		24162.15	24162.15	39.67		Si
SLV 13	6.56	5119.03	-23281	-0.0000607	0.0005615	0.0035	3.0318		30418.18	30418.18	5.94		Si
SLV 13	8.35	680.18	-17947	-0.0000345	0.0005615	0.0035	3.0318		24325.08	24325.08	35.76		Si
SLV 11	6.56	-3763.24	-13006	-0.0000363	0.0005615	0.0035	3.0318		20670.64	20670.64	5.49		Si
SLV 11	8.35	-6729.29	-7986	-0.0000426	0.0005615	0.0035	2.4254		13997.19	13997.19	2.08		Si
SLV 10	6.56	8673.64	-29337	-0.0000861	0.0005615	0.0035	3.0318		37295.88	37295.88	4.3		Si
SLV 10	8.35	5969.58	-24191	-0.0000657	0.0005615	0.0035	3.0318		31477.97	31477.97	5.27		Si
SLV 9	6.56	8761.68	-29386	-0.0000866	0.0005615	0.0035	3.0318		37338.66	37338.66	4.26		Si
SLV 9	8.35	6015.55	-24284	-0.000066	0.0005615	0.0035	3.0318		31587.55	31587.55	5.25		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 50	6.56	2572.87	-26624	-22170	1803	3.0318	3.0318	-26116	10427	8851	28547	25420	7731	33151	No	18.38	Si
SLU 50	8.35	-53.95	-20529	-17095	573	3.0318	3.0318	-20137	9629	8174	28547	25420	7731	33151	No	57.88	Si
SLU 72	6.56	2654.14	-29029	-24173	1823	3.0318	3.0318	-28476	10741	9118	28547	25420	7731	33151	No	18.19	Si
SLU 72	8.35	-234.01	-22474	-18715	630	3.0318	3.0318	-22046	9884	8390	28547	25420	7731	33151	No	52.59	Si
SLU 71	6.56	2691.53	-29077	-24213	1789	3.0318	3.0318	-28522	10747	9123	28547	25420	7731	33151	No	18.53	Si
SLU 71	8.35	-181.68	-22528	-18760	597	3.0318	3.0318	-22099	9891	8396	28547	25420	7731	33151	No	55.57	Si
SLU 51	6.56	2535.48	-26576	-22130	1837	3.0318	3.0318	-26069	10420	8846	28547	25420	7731	33151	No	18.04	Si
SLU 51	8.35	-106.28	-20475	-17050	607	3.0318	3.0318	-20084	9622	8168	28547	25420	7731	33151	No	54.66	Si
SLU 68	6.56	2581.63	-28234	-23511	1810	3.0318	3.0318	-27696	10637	9030	28547	25420	7731	33151	No	18.31	Si
SLU 68	8.35	-280.77	-21714	-18082	671	3.0318	3.0318	-21300	9784	8306	28547	25420	7731	33151	No	49.42	Si
SLU 59	6.56	3154.37	-28966	-24121	1787	3.0318	3.0318	-28414	10733	9111	28547	25420	7731	33151	No	18.55	Si
SLU 59	8.35	349.99	-22554	-18781	137	3.0318	3.0318	-22124	9894	8399	28547	25420	7731	33151	No	241.22	Si
SLU 70	6.56	2651.91	-29175	-24295	1787	3.0318	3.0318	-28619	10760	9134	28547	25420	7731	33151	No	18.56	Si
SLU 70	8.35	-269.98	-22586	-18808	638	3.0318	3.0318	-22156	9899	8403	28547	25420	7731	33151	No	51.97	Si
SLU 47	6.56	2462.97	-25781	-21468	1825	3.0318	3.0318	-25289	10316	8758	28547	25420	7731	33151	No	18.17	Si
SLU 47	8.35	-153.04	-19715	-16417	647	3.0318	3.0318	-19339	9523	8084	28547	25420	7731	33151	No	51.24	Si
SLU 44	6.56	2415.38	-25018	-20832	1790	3.0318	3.0318	-24541	10217	8673	28547	25420	7731	33151	No	18.52	Si
SLU 44	8.35	-164.92	-18991	-15814	665	3.0318	3.0318	-18629	9428	8004	28547	25420	7731	33151	No	49.86	Si
SLU 49	6.56	2533.25	-26722	-22252	1801	3.0318	3.0318	-26213	10440	8862	28547	25420	7731	33151	No	18.41	Si
SLU 49	8.35	-142.25	-20587	-17143	614	3.0318	3.0318	-20194	9637	8181	28547	25420	7731	33151	No	53.99	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 4	6.56	-823.14	-19391	-16147	3878	3.0318	3.0318	-19021	14221	12072	28547	38130	7731	40619		10.48	Si
SLV 4	8.35	-679.37	-14794	-12319	1939	3.0318	3.0318	-14512	13319	11306	28547	38130	7731	39853		20.55	Si
SLV 12	6.56	-3851.28	-12957	-10789	3652	3.0318	3.0318	-12710	12959	11001	28547	38130	7731	39547		10.83	Si
SLV 12	8.35	-6775.26	-7892	-6572	1663	2.4254	1.9722	0	0	0	28547	30504	6185	28547		17.17	Si
SLD 3	6.56	906.23	-20503	-17073	2414	3.0318	3.0318	-20112	14439	12257	28547	38130	7731	40804		16.9	Si
SLD 3	8.35	-286.68	-15724	-13094	1010	3.0318	3.0318	-15424	13502	11461	28547	38130	7731	40008		39.62	Si
SLV 7	6.56	-4377.75	-13335	-11105	4673	3.0318	3.0318	-13081	13033	11064	28547	38130	7731	39610		8.48	Si
SLV 7	8.35	-5968.77	-8550	-7120	2276	3.0318	2.4534	-10413	12499	8586	28547	38130	7731	37133		16.32	Si
SLD 4	6.56	847.7	-20470	-17046	2416	3.0318	3.0318	-20080	14433	12252	28547	38130	7731	40798		16.88	Si
SLD 4	8.35	-317.24	-15662	-13042	1032	3.0318	3.0318	-15363	13489	11451	28547	38130	7731	39998		38.74	Si
SLV 11	6.56	-3763.24	-13006	-10830	3648	3.0318	3.0318	-12758	12968	11009	28547	38130	7731	39555		10.84	Si
SLV 11	8.35	-6729.29	-7986	-6650	1628	2.4254	2.0197	0	0	0	28547	30504	6185	28547		17.53	Si
SLV 3	6.56	-686.83	-19467	-16210	3872	3.0318	3.0318	-19096	14236	12085	28547	38130	7731	40631		10.49	Si
SLV 3	8.35	-608.2	-14939	-12440	1886	3.0318	3.0318	-14654	13347	11331	28547	38130	7731	39877		21.14	Si
SLD 8	6.56	-778.5	-17782	-14807	2780	3.0318	3.0318	-17443	13905	11804	28547	38130	7731	40351		14.51	Si
SLD 8	8.35	-2663.45	-12869	-10716	1201	3.0318	3.0318	-12624	12941	10986	28547	38130	7731	39532		32.91	Si
SLV 8	6.56	-4465.79	-13287	-11064	4677	3.0318	3.0318	-13033	13023	11055	28547	38130	7731	39602		8.47	Si
SLV 8	8.35	-6014.74	-8457	-7042	2310	3.0318	2.4139	-10467	12510	8455	28547	38130	7731	37002		16.02	Si
SLD 7	6.56	-740.04	-17803	-14825	2779	3.0318	3.0318	-17464	13909	11808	28547	38130	7731	40354		14.52	Si
SLD 7	8.35	-2643.36	-12910	-10750	1186	3.0318	3.0318	-12664	12949	10993	28547	38130	7731	39539		33.33	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 7.456 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 12	179667	0.4	12308	-10448	188	1344.89	7.15	Si
SLV 11	179667	0.4	12375	-10505	188	1351.5	7.19	Si
SLV 8	179667	0.4	12794	-10861	188	1393.17	7.41	Si





Comb.	fd	Sa	$\alpha 0$	N	M	Mc	Coeff.s.	Verifica
SLV 7	179667	0.4	12861	-10917	188	1399.73	7.45	Si
SLV 16	179667	0.4	18304	-15538	188	1914.58	10.18	Si
SLV 15	179667	0.4	18406	-15625	188	1923.85	10.23	Si
SLV 4	179667	0.4	19924	-16914	188	2058.97	10.95	Si
SLV 3	179667	0.4	20027	-17001	188	2067.99	11	Si
SLV 14	179667	0.4	23944	-20326	188	2399.49	12.76	Si
SLV 13	179667	0.4	24047	-20413	188	2407.86	12.81	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 7.456 Wa = 0.05 Ta = 0.042

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 5	-24849	-29715	-451	0.674	2847	0.966	10.13082	7.03506	Si
SLV 6	-24755	-29667	-451	0.676	2837.5	0.966	10.16451	7.03506	Si
SLV 9	-24284	-29386	204	0.696	2789.6	0.966	10.47916	7.03506	Si
SLV 10	-24191	-29337	204	0.699	2780.1	0.966	10.51507	7.03506	Si
SLV 1	-19828	-24381	-1100	0.786	2336.3	0.96	11.9112	4.9658	Si
SLV 2	-19683	-24305	-1101	0.791	2321.5	0.959	11.98823	4.9658	Si
SLV 13	-17947	-23281	1084	0.856	2145	0.956	13.01414	4.9658	Si
SLV 14	-17802	-23206	1083	0.862	2130.2	0.956	13.10745	4.9658	Si
SLV 3	-14939	-19467	-1002	1.004	1839.4	0.95	15.3553	4.9658	Si
SLV 4	-14794	-19391	-1002	1.012	1824.6	0.95	15.48639	4.9658	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	9.89	SLU 60	Si
V_SLU	18.043	SLU 51	Si
PF_SLV	2.047	SLV 12	Si
V_SLV	8.468	SLV 8	Si
PFFP_SLV	7.154	SLV 12	Si
R_SLV	1.44	SLV 5	Si

## Maschio 94

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.823	6.526	-17.718	6.526	L5	L6	2.105	0.28	3.52	3.52	3.52			

#### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	t0	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

#### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma F_d$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche,  $\gamma M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon m$	$\epsilon m_{-}$	$\epsilon m_{+}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 75	5.73	3625.52	-22584	-0.0000925	0.0003743	0.0035	2.105	14823.53	17528.51	17528.51	4.83	No	Si
SLU 75	7.53	594.27	-19903	-0.0000587	0.0003743	0.0035	2.105	13999.84	16137.73	16137.73	27.16	No	Si
SLU 79	5.73	3597.56	-22446	-0.0000918	0.0003743	0.0035	2.105	14787.44	17469.87	17469.87	4.86	No	Si
SLU 79	7.53	636.82	-19766	-0.0000586	0.0003743	0.0035	2.105	13950.84	16044.96	16044.96	25.2	No	Si
SLU 84	5.73	3704.54	-23163	-0.0000951	0.0003743	0.0035	2.105	14968.36	17777.38	17777.38	4.8	No	Si
SLU 84	7.53	634.22	-20482	-0.0000607	0.0003743	0.0035	2.105	14199.12	16531.19	16531.19	26.07	No	Si
SLU 83	5.73	3721.24	-23158	-0.0000952	0.0003743	0.0035	2.105	14967.34	17775.55	17775.55	4.78	No	Si
SLU 83	7.53	638.58	-20478	-0.0000608	0.0003743	0.0035	2.105	14197.7	16528.3	16528.3	25.88	No	Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 77	5.73	3656.59	-22817	-0.0000935	0.0003743	0.0035	2.105	14883.33	17628.5	17628.5	4.82	No	Si
SLU 77	7.53	639.37	-20137	-0.0000597	0.0003743	0.0035	2.105	14081.59	16295.86	16295.86	25.49	No	Si
SLU 82	5.73	3690.17	-22925	-0.0000942	0.0003743	0.0035	2.105	14910.34	17674.9	17674.9	4.79	No	Si
SLU 82	7.53	593.49	-20244	-0.0000597	0.0003743	0.0035	2.105	14118.75	16369.22	16369.22	27.58	No	Si
SLU 81	5.73	3706.87	-22921	-0.0000943	0.0003743	0.0035	2.105	14909.29	17673.07	17673.07	4.77	No	Si
SLU 81	7.53	597.86	-20240	-0.0000597	0.0003743	0.0035	2.105	14117.3	16366.33	16366.33	27.38	No	Si
SLU 74	5.73	3642.22	-22579	-0.0000926	0.0003743	0.0035	2.105	14822.42	17526.7	17526.7	4.81	No	Si
SLU 74	7.53	598.64	-19899	-0.0000587	0.0003743	0.0035	2.105	13998.34	16134.86	16134.86	26.95	No	Si
SLU 73	5.73	3540.98	-21978	-0.0000898	0.0003743	0.0035	2.105	14659.46	17271.18	17271.18	4.88	No	Si
SLU 73	7.53	548.09	-19297	-0.0000565	0.0003743	0.0035	2.105	13778.83	15730.44	15730.44	28.7	No	Si
SLU 78	5.73	3639.89	-22821	-0.0000934	0.0003743	0.0035	2.105	14884.4	17630.32	17630.32	4.84	No	Si
SLU 78	7.53	635	-20141	-0.0000597	0.0003743	0.0035	2.105	14083.05	16298.74	16298.74	25.67	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche,  $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 15	5.73	4411.96	-9967	-0.0000595	0.0005615	0.0035	2.105		9730.81	9730.81	2.21		Si
SLV 15	7.53	-2756.04	-7381	-0.0000389	0.0005615	0.0035	2.105		8510.96	8510.96	3.09		Si
SLD 15	5.73	3329.61	-13023	-0.0000585	0.0005615	0.0035	2.105		12138.03	12138.03	3.65		Si
SLD 15	7.53	-977.59	-10741	-0.0000347	0.0005615	0.0035	2.105		11521.65	11521.65	11.79		Si
SLV 16	5.73	4628.29	-9648	-0.0000614	0.0005615	0.0035	2.105		9483.46	9483.46	2.05		Si
SLV 16	7.53	-3105.97	-7061	-0.0000414	0.0005615	0.0035	2.105		8218.53	8218.53	2.65		Si
SLV 10	5.73	3905.53	-13129	-0.0000632	0.0005615	0.0035	2.105		12222.95	12222.95	3.13		Si
SLV 10	7.53	-464.69	-11452	-0.0000328	0.0005615	0.0035	2.105		12126.72	12126.72	26.1		Si
SLV 13	5.73	4805.35	-9732	-0.0000636	0.0005615	0.0035	2.105		9548.48	9548.48	1.99		Si
SLV 13	7.53	-2600.9	-7441	-0.0000379	0.0005615	0.0035	2.105		8566.74	8566.74	3.29		Si
SLD 14	5.73	3591.86	-12786	-0.0000599	0.0005615	0.0035	2.105		11948.85	11948.85	3.33		Si
SLD 14	7.53	-1060.49	-10630	-0.000035	0.0005615	0.0035	2.105		11425.08	11425.08	10.77		Si
SLV 9	5.73	3765.81	-13335	-0.0000627	0.0005615	0.0035	2.105		12387.93	12387.93	3.29		Si
SLV 9	7.53	-238.69	-11658	-0.0000317	0.0005615	0.0035	2.105		12299.96	12299.96	51.53		Si
SLV 14	5.73	5021.68	-9413	-0.0000663	0.0005615	0.0035	2.105		9301.69	9301.69	1.85		Si
SLV 14	7.53	-2950.83	-7122	-0.00004	0.0005615	0.0035	2.105		8274.08	8274.08	2.8		Si
SLD 13	5.73	3498.97	-12923	-0.0000595	0.0005615	0.0035	2.105		12058.13	12058.13	3.45		Si
SLD 13	7.53	-910.23	-10767	-0.0000343	0.0005615	0.0035	2.105		11544.44	11544.44	12.68		Si
SLD 16	5.73	3422.5	-12886	-0.0000589	0.0005615	0.0035	2.105		12028.64	12028.64	3.51		Si
SLD 16	7.53	-1127.85	-10604	-0.0000355	0.0005615	0.0035	2.105		11402.17	11402.17	10.11		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 76	5.73	3555.35	-22216	-18499	1627	2.105	2.105	-31387	10833	6385	40441	17649	5368	23017	No	14.15	Si
SLU 76	7.53	588.82	-19535	-16267	1627	2.105	2.105	-27600	10624	6262	40441	17649	5368	23017	No	14.15	Si
SLU 73	5.73	3540.98	-21978	-18301	1641	2.105	2.105	-31051	10833	6385	40441	17649	5368	23017	No	14.02	Si
SLU 73	7.53	548.09	-19297	-16069	1641	2.105	2.105	-27264	10580	6236	40441	17649	5368	23017	No	14.02	Si
SLU 74	5.73	3642.22	-22579	-18802	1670	2.105	2.105	-31901	10833	6385	40441	17649	5368	23017	No	13.79	Si
SLU 74	7.53	598.64	-19899	-16570	1670	2.105	2.105	-28114	10693	6302	40441	17649	5368	23017	No	13.79	Si
SLU 77	5.73	3656.59	-22817	-19000	1655	2.105	2.105	-32236	10833	6385	40441	17649	5368	23017	No	13.91	Si
SLU 77	7.53	639.37	-20137	-16768	1655	2.105	2.105	-28449	10738	6329	40441	17649	5368	23017	No	13.91	Si
SLU 78	5.73	3639.89	-22821	-19004	1648	2.105	2.105	-32242	10833	6385	40441	17649	5368	23017	No	13.97	Si
SLU 78	7.53	635	-20141	-16771	1648	2.105	2.105	-28455	10739	6329	40441	17649	5368	23017	No	13.97	Si
SLU 84	5.73	3704.54	-23163	-19288	1684	2.105	2.105	-32725	10833	6385	40441	17649	5368	23017	No	13.66	Si
SLU 84	7.53	634.22	-20482	-17056	1684	2.105	2.105	-28938	10803	6367	40441	17649	5368	23017	No	13.66	Si
SLU 82	5.73	3690.17	-22925	-19090	1699	2.105	2.105	-32389	10833	6385	40441	17649	5368	23017	No	13.55	Si
SLU 82	7.53	593.49	-20244	-16858	1699	2.105	2.105	-28602	10758	6341	40441	17649	5368	23017	No	13.55	Si
SLU 83	5.73	3721.24	-23158	-19284	1691	2.105	2.105	-32719	10833	6385	40441	17649	5368	23017	No	13.61	Si
SLU 83	7.53	638.58	-20478	-17052	1691	2.105	2.105	-28932	10802	6367	40441	17649	5368	23017	No	13.61	Si
SLU 81	5.73	3706.87	-22921	-19086	1706	2.105	2.105	-32383	10833	6385	40441	17649	5368	23017	No	13.49	Si
SLU 81	7.53	597.86	-20240	-16854	1706	2.105	2.105	-28596	10757	6340	40441	17649	5368	23017	No	13.49	Si
SLU 75	5.73	3625.52	-22584	-18806	1663	2.105	2.105	-31907	10833	6385	40441	17649	5368	23017	No	13.84	Si
SLU 75	7.53	594.27	-19903	-16574	1663	2.105	2.105	-28120	10694	6303	40441	17649	5368	23017	No	13.84	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 16	5.73	3422.5	-12886	-10730	2612	2.105	2.105	-18205	14058	8286	40441	26474	5368	31841		12.19	Si
SLD 16	7.53	-1127.85	-10604	-8830	2424	2.105	2.105	-14981	13413	7905	40441	26474	5368	31841		13.13	Si
SLD 15	5.73	3329.61	-13023	-10844	2477	2.105	2.105	-18399	14096	8308	40441	26474	5368	31841		12.86	Si
SLD 15	7.53	-977.59	-10741	-8944	2289	2.105	2.105	-15175	13452	7928	40441	26474	5368	31841		13.91	Si
SLD 13	5.73	3498.97	-12923	-10761	2568	2.105	2.105	-18258	14068	8292	40441	26474	5368	31841		12.4	Si
SLD 13	7.53	-910.23	-10767	-8966	2385	2.105	2.105	-15212	13459	7933	40441	26474	5368	31841		13.35	Si
SLV 14	5.73	5021.68	-9413	-7838	4730	2.105	1.557	-13299	13076	5701	40441	26474	5368	31841		6.73	Si
SLV 14	7.53	-2950.83	-7122	-5931	4302	2.105	1.9145	-11112	12639	6775	40441	26474	5368	31841		7.4	Si
SLV 9	5.73	3765.81	-13335	-11104	2428	2.105	2.105	-18840	14185	8360	40441	26474	5368	31841		13.12	Si
SLV 9	7.53	-238.69	-11658	-9708	2316	2.105	2.105	-16470	13711	8081	40441	26474	5368	31841		13.75	Si
SLV 15	5.73	4411.96	-9967	-8300	4201	2.105	1.8295	-14081	13233	6779	40441	26474	5368	31841		7.58	Si
SLV 15	7.53	-2756.04	-7381	-6146	3762	2.105	2.0372	-10828	12582	7177	40441	26474	5368	31841		8.46	Si
SLV 13	5.73	4805.35	-9732	-8104	4415	2.105	1.6761	-13749	13167	6179	40441	26474	5368	31841		7.21	Si
SLV 13	7.53	-2600.9	-7441	-6196	3988	2.105	2.105	-10513	12519	7379	40441	26474	5368	31841		7.99	Si
SLV 10	5.73	3905.53	-13129	-10933	2631	2.105	2.105	-18549	14126	8326	40441	26474	5368	31841		12.1	Si
SLV 10	7.53	-464.69	-11452	-9536	2519	2.105	2.105	-16179	13652	8047	40441	26474	5368	31841		12.64	Si
SLD 14	5.73	3591.86	-12786	-10647	2703	2.105	2.105	-18064	14029	8269	40441	26474	5368	31841		11.78	Si
SLD 14	7.53	-1060.49	-10630	-8852	2520	2.105	2.105	-15018	13420	7910	40441	26474	5368	31841		12.63	Si
SLV 16	5.73	4628.29	-9648	-8034	4515	2.105	1.7183	-13631	13143	6323	40441	26474	5368	31841		7.05	Si
SLV 16	7.53	-3105.97	-7061	-5880	4077	2.105	1.8379	-11488	12714	6543	40441	26474	5368	31841		7.81	Si



## Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 6.59 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\alpha_0$	N	M	Mc	Coeff.s.	Verifica
SLV 14	179667	0.38	13383	-7888	214.3	1007.53	4.7	Si
SLV 16	179667	0.38	13405	-7901	214.3	1009	4.71	Si
SLV 13	179667	0.38	13924	-8207	214.3	1044.21	4.87	Si
SLV 15	179667	0.38	13946	-8220	214.3	1045.66	4.88	Si
SLV 10	179667	0.38	20838	-12282	214.3	1484.81	6.93	Si
SLV 12	179667	0.38	20909	-12324	214.3	1489.11	6.95	Si
SLV 9	179667	0.38	21187	-12488	214.3	1505.72	7.03	Si
SLV 11	179667	0.38	21259	-12530	214.3	1509.99	7.05	Si
SLV 6	179667	0.38	27166	-16012	214.3	1842.88	8.6	Si
SLV 8	179667	0.38	27238	-16054	214.3	1846.7	8.62	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

## Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 6.59 Wa = 0.05 Ta = 0.0739

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	a0*	aLim	Verifica
SLV 7	-12684	-16854	-897	0.796	1585	0.947	12.21226	12.29974	No
SLV 8	-12657	-16481	-897	0.797	1582.2	0.947	12.23517	12.29974	No
SLV 5	-12540	-15518	689	0.818	1570.3	0.947	12.55627	12.29974	Si
SLV 6	-12512	-15145	689	0.819	1567.6	0.947	12.57981	12.29974	Si
SLV 9	-10370	-10703	886	0.94	1350.4	0.939	14.53859	12.29974	Si
SLV 10	-10343	-10331	887	0.942	1347.7	0.939	14.57107	12.29974	Si
SLV 11	-10514	-12039	-699	0.944	1365.1	0.94	14.60173	12.29974	Si
SLV 12	-10487	-11667	-699	0.946	1362.3	0.94	14.6343	12.29974	Si
SLV 3	-15172	-22105	-573	0.704	1837.6	0.953	10.73686	6.56558	Si
SLV 4	-15130	-21528	-573	0.706	1833.4	0.953	10.76324	6.56558	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

## Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	4.768	SLU 81	Si
V_SLU	13.492	SLU 81	Si
PF_SLV	1.852	SLV 14	Si
V_SLV	6.732	SLV 14	Si
PFFP_SLV	4.702	SLV 14	Si
R_SLV	0.993	SLV 7	No

## Maschio 95

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-16.818	6.526	-12.838	6.526	L5	L6	3.98	0.28	3.52	3.52	3.52			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	t0	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

## Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma_{F,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 54	5.73	3059.55	-50904	-0.0000828	0.0003743	0.0035	3.98	55850.39	69485.72	69485.72	22.71	No	Si
SLU 54	7.53	-1932.72	-46544	-0.0000727	0.0003743	0.0035	3.98	54626.12	69146.17	69146.17	35.78	No	Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 84	5.73	3319.53	-58477	-0.0000968	0.0003743	0.0035	3.98	56391.93	75231.46	75231.46	22.66	No	Si
SLU 84	7.53	-2182.86	-54100	-0.0000862	0.0003743	0.0035	3.98	56324.23	74189.03	74189.03	33.99	No	Si
SLU 73	5.73	3223.73	-55258	-0.0000908	0.0003743	0.0035	3.98	56407.53	73264.13	73264.13	22.73	No	Si
SLU 73	7.53	-2168.92	-50860	-0.0000805	0.0003743	0.0035	3.98	55841.31	72214.09	72214.09	33.29	No	Si
SLU 52	5.73	3029.03	-49280	-0.0000799	0.0003743	0.0035	3.98	55472.33	68104.41	68104.41	22.48	No	Si
SLU 52	7.53	-1991.77	-44908	-0.0000701	0.0003743	0.0035	3.98	53994.4	67721.4	67721.4	34	No	Si
SLU 63	5.73	3124.83	-52500	-0.0000857	0.0003743	0.0035	3.98	56131.73	70864.08	70864.08	22.68	No	Si
SLU 63	7.53	-2005.7	-48147	-0.0000755	0.0003743	0.0035	3.98	55153.75	70450.39	70450.39	35.13	No	Si
SLU 44	5.73	2796.93	-43543	-0.0000698	0.0003743	0.0035	3.98	53395.63	63398.93	63398.93	22.67	No	Si
SLU 44	7.53	-1710.54	-39140	-0.0000601	0.0003743	0.0035	3.98	51019.09	62602.23	62602.23	36.6	No	Si
SLU 61	5.73	3101.85	-51788	-0.0000844	0.0003743	0.0035	3.98	56017.25	70246.57	70246.57	22.65	No	Si
SLU 61	7.53	-2107.97	-47428	-0.0000746	0.0003743	0.0035	3.98	54928.28	69876.61	69876.61	33.15	No	Si
SLU 47	5.73	2819.9	-44254	-0.000071	0.0003743	0.0035	3.98	53715.95	63967.76	63967.76	22.68	No	Si
SLU 47	7.53	-1608.27	-39859	-0.000061	0.0003743	0.0035	3.98	51453.58	63211.01	63211.01	39.3	No	Si
SLU 76	5.73	3246.7	-55969	-0.0000921	0.0003743	0.0035	3.98	56435.38	73830.41	73830.41	22.74	No	Si
SLU 76	7.53	-2066.66	-51579	-0.0000815	0.0003743	0.0035	3.98	55980.25	72641.15	72641.15	35.15	No	Si
SLU 55	5.73	3052	-49992	-0.0000812	0.0003743	0.0035	3.98	55649.41	68707.09	68707.09	22.51	No	Si
SLU 55	7.53	-1889.5	-45627	-0.0000711	0.0003743	0.0035	3.98	54233.44	68358.86	68358.86	36.18	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche,  $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 3	5.73	-14491.92	-48164	-0.0001004	0.0005615	0.0035	3.98		80411.27	80411.27	5.55		Si
SLV 3	7.53	12558.88	-44654	-0.0000904	0.0005615	0.0035	3.98		71382.38	71382.38	5.68		Si
SLD 16	5.73	9336.02	-33546	-0.0000663	0.0005615	0.0035	3.98		57065.2	57065.2	6.11		Si
SLD 16	7.53	-7625.89	-30237	-0.0000577	0.0005615	0.0035	3.98		56625.51	56625.51	7.43		Si
SLV 16	5.73	18800.22	-26898	-0.0000768	0.0005615	0.0035	3.98		46851.06	46851.06	2.49		Si
SLV 16	7.53	-15851.14	-23706	-0.0000656	0.0005615	0.0035	3.98		46649.8	46649.8	2.94		Si
SLV 2	5.73	-12923.06	-49351	-0.0000988	0.0005615	0.0035	3.98		81762.85	81762.85	6.33		Si
SLV 2	7.53	11483.71	-45730	-0.0000897	0.0005615	0.0035	3.98		72665.51	72665.51	6.33		Si
SLV 4	5.73	-13161.81	-47391	-0.0000962	0.0005615	0.0035	3.98		79469.52	79469.52	6.04		Si
SLV 4	7.53	11161.79	-43851	-0.0000861	0.0005615	0.0035	3.98		70428.79	70428.79	6.31		Si
SLV 15	5.73	17470.12	-27671	-0.000075	0.0005615	0.0035	3.98		48021.75	48021.75	2.75		Si
SLV 15	7.53	-14454.06	-24510	-0.0000638	0.0005615	0.0035	3.98		47946.24	47946.24	3.32		Si
SLV 1	5.73	-14253.17	-50124	-0.0001031	0.0005615	0.0035	3.98		82632.85	82632.85	5.8		Si
SLV 1	7.53	12880.79	-46533	-0.0000942	0.0005615	0.0035	3.98		73627	73627	5.72		Si
SLD 14	5.73	9441.26	-34396	-0.0000678	0.0005615	0.0035	3.98		58394.77	58394.77	6.19		Si
SLD 14	7.53	-7486.6	-31053	-0.0000586	0.0005615	0.0035	3.98		57802.38	57802.38	7.72		Si
SLV 13	5.73	17708.87	-29631	-0.0000785	0.0005615	0.0035	3.98		51010.59	51010.59	2.88		Si
SLV 13	7.53	-14132.14	-26389	-0.0000659	0.0005615	0.0035	3.98		50819.22	50819.22	3.6		Si
SLV 14	5.73	19038.98	-28858	-0.0000802	0.0005615	0.0035	3.98		49828.94	49828.94	2.62		Si
SLV 14	7.53	-15529.22	-25586	-0.0000677	0.0005615	0.0035	3.98		49603.23	49603.23	3.19		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 83	5.73	3279.56	-58550	-48755	2649	3.98	3.98	-43750	10833	12073	40441	33370	10149	43519	No	16.43	Si
SLU 83	7.53	-2176.38	-54173	-45110	2599	3.98	3.98	-40480	10833	12073	40441	33370	10149	43519	No	16.75	Si
SLU 61	5.73	3101.85	-51788	-43124	2542	3.98	3.98	-38697	10833	12073	40441	33370	10149	43519	No	17.12	Si
SLU 61	7.53	-2107.97	-47428	-39494	2503	3.98	3.98	-35440	10833	12073	40441	33370	10149	43519	No	17.39	Si
SLU 81	5.73	3256.58	-57838	-48162	2696	3.98	3.98	-43218	10833	12073	40441	33370	10149	43519	No	16.14	Si
SLU 81	7.53	-2278.64	-53454	-44512	2650	3.98	3.98	-39942	10833	12073	40441	33370	10149	43519	No	16.42	Si
SLU 82	5.73	3296.55	-57765	-48102	2723	3.98	3.98	-43164	10833	12073	40441	33370	10149	43519	No	15.98	Si
SLU 82	7.53	-2285.13	-53381	-44451	2676	3.98	3.98	-39888	10833	12073	40441	33370	10149	43519	No	16.26	Si
SLU 73	5.73	3223.73	-55258	-46014	2629	3.98	3.98	-41290	10833	12073	40441	33370	10149	43519	No	16.55	Si
SLU 73	7.53	-2168.92	-50860	-42352	2584	3.98	3.98	-38004	10833	12073	40441	33370	10149	43519	No	16.84	Si
SLU 75	5.73	3254.25	-56882	-47366	2606	3.98	3.98	-42504	10833	12073	40441	33370	10149	43519	No	16.7	Si
SLU 75	7.53	-2109.88	-52497	-43715	2555	3.98	3.98	-39227	10833	12073	40441	33370	10149	43519	No	17.03	Si
SLU 76	5.73	3246.7	-55969	-46607	2582	3.98	3.98	-41822	10833	12073	40441	33370	10149	43519	No	16.86	Si
SLU 76	7.53	-2066.66	-51579	-42950	2533	3.98	3.98	-38541	10833	12073	40441	33370	10149	43519	No	17.18	Si
SLU 74	5.73	3214.28	-56954	-47427	2579	3.98	3.98	-42558	10833	12073	40441	33370	10149	43519	No	16.87	Si
SLU 74	7.53	-2103.4	-52570	-43776	2529	3.98	3.98	-39282	10833	12073	40441	33370	10149	43519	No	17.21	Si
SLU 84	5.73	3319.53	-58477	-48695	2676	3.98	3.98	-43696	10833	12073	40441	33370	10149	43519	No	16.27	Si
SLU 84	7.53	-2182.86	-54100	-45049	2625	3.98	3.98	-40425	10833	12073	40441	33370	10149	43519	No	16.58	Si
SLU 78	5.73	3277.22	-57593	-47959	2558	3.98	3.98	-43035	10833	12073	40441	33370	10149	43519	No	17.01	Si
SLU 78	7.53	-2007.61	-53215	-44313	2504	3.98	3.98	-39764	10833	12073	40441	33370	10149	43519	No	17.38	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	oN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 4	5.73	-13161.81	-47391	-39463	-14232	3.98	3.98	-35412	16250	18109	40441	50055	10149	58550		4.11	Si
SLV 4	7.53	11161.79	-43851	-36515	-13442	3.98	3.98	-32767	16250	18109	40441	50055	10149	58550		4.36	Si
SLV 1	5.73	-14253.17	-50124	-41739	-15328	3.98	3.98	-37454	16250	18109	40441	50055	10149	58550		3.82	Si
SLV 1	7.53	12880.79	-46533	-38749	-15139	3.98	3.98	-34771	16250	18109	40441	50055	10149	58550		3.87	Si
SLV 2	5.73	-12923.06	-49351	-41095	-13812	3.98	3.98	-36877	16250	18109	40441	50055	10149	58550		4.24	Si
SLV 2	7.53	11483.71	-45730	-38080	-13594	3.98	3.98	-34171	16250	18109	40441	50055	10149	58550		4.31	Si
SLV 13	5.73	17708.87	-29631	-24674	17878	3.98	3.98	-22141	14845	16543	40441	50055	10149	56984		3.19	Si
SLV 13	7.53	-14132.14	-26389	-21975	17025	3.98	3.98	-19719	14360	16003	40441	50055	10149	56444		3.32	Si
SLD 14	5.73	9441.26	-34396	-28642	9333	3.98	3.98	-25702	15557	17337	40441	50055	10149	57778		6.19	Si
SLD 14	7.53	-7486.6	-31053	-25858	8964	3.98	3.98	-23204	15057	16780	40441	50055	10149	57221		6.38	Si
SLV 3	5.73	14491.92	-48164	-40107	-15748	3.98	3.98	-35989	16250	18109	40441	50055	10149	58550		3.72	Si
SLV 3	7.53	12558.88	-44654	-37184	-14987	3.98	3.98	-33367	16250	18109	40441	50055	10149	58550		3.91	Si
SLV 15	5.73	17470.12	-27671	-23042	17458	3.98	3.98	-20677	14552	16217	40441	50055	10149	56658		3.25	Si
SLV 15	7.53	-14454.06	-24510	-20410	17177	3.98	3.98	-18314	14080	15690	40441	50055	10149	56131		3.27	Si
SLV 16	5.73	18800.22	-26898	-22399	18974	3.98	3.8732	-20099	14437	15656	40441	50055	10149	56097		2.96	Si
SLV 16	7.53	-15851.14	-23706	-19741	18722	3.98	3.9641	-17714	13960	15494	40441	50055	10149	55935		2.99	Si
SLV 14	5.73	19038.98	-28858	-24031	19394	3.98	3.98	-21564	14729	16415	40441	50055	10149	56855		2.93	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 14	7.53	-15529.22	-25586	-21306	18571	3.98	3.98	-19119	14240	15869	40441	50055	10149	56310		3.03	Si
SLD 16	5.73	9336.02	-33546	-27934	9154	3.98	3.98	-25066	15430	17195	40441	50055	10149	57636		6.3	Si
SLD 16	7.53	-7625.89	-30237	-25178	9029	3.98	3.98	-22594	14935	16644	40441	50055	10149	57085		6.32	Si

#### Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 6.59 Wa 0.05 denominatore 8 yM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 16	179667	0.38	22262	-24809	405.19	2966.93	7.32	Si
SLV 15	179667	0.38	22983	-25612	405.19	3046.06	7.52	Si
SLV 14	179667	0.38	23955	-26696	405.19	3151.15	7.78	Si
SLV 13	179667	0.38	24676	-27499	405.19	3227.79	7.97	Si
SLV 12	179667	0.38	27137	-30241	405.19	3481.48	8.59	Si
SLV 11	179667	0.38	27603	-30760	405.19	3528.07	8.71	Si
SLV 10	179667	0.38	32781	-36531	405.19	4016.55	9.91	Si
SLV 8	179667	0.38	32899	-36663	405.19	4027.07	9.94	Si
SLV 9	179667	0.38	33246	-37050	405.19	4057.77	10.01	Si
SLV 7	179667	0.38	33365	-37182	405.19	4068.19	10.04	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 6.59 Wa = 0.05 Ta = 0.0739

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 5	-32434	-43811	1184	0.632	3855.4	0.958	9.59692	12.29974	No
SLV 6	-32111	-43192	1184	0.638	3822.4	0.957	9.68191	12.29974	No
SLV 9	-28582	-36254	1165	0.704	3463.9	0.953	10.73229	12.29974	No
SLV 10	-28259	-35634	1165	0.711	3431	0.953	10.83991	12.29974	No
SLV 7	-27806	-38196	-1175	0.72	3385	0.952	10.98973	12.29974	No
SLV 8	-27482	-37577	-1175	0.727	3352.1	0.952	11.10301	12.29974	No
SLV 11	-23954	-30638	-1194	0.815	2994	0.947	12.50537	12.29974	Si
SLV 12	-23630	-30019	-1194	0.824	2961.1	0.946	12.65405	12.29974	Si
SLV 1	-35397	-50833	381	0.608	4156.6	0.96	9.19898	6.56558	Si
SLV 2	-34896	-49874	381	0.615	4105.6	0.96	9.31543	6.56558	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	22.484	SLU 52	Si
V_SLU	15.983	SLU 82	Si
PF_SLV	2.492	SLV 16	Si
V_SLV	2.932	SLV 14	Si
PFFP_SLV	7.322	SLV 16	Si
R_SLV	0.78	SLV 5	No

## Maschio 96

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.938	6.526	-7.958	6.526	L5	L6	3.98	0.28	3.52	3.52	3.52			

#### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

#### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica

									elim,conv / e_CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, yM = 3

Verifica condotta secondo CNR-DT 215



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 44	5.73	-583.68	-44514	-0.0000662	0.0003743	0.0035	3.98	53828.62	67360.2	67360.2	115.41	No	Si
SLU 44	7.53	568.14	-39742	-0.0000585	0.0003743	0.0035	3.98	51384.52	60297.23	60297.23	106.13	No	Si
SLU 46	5.73	-592.19	-46174	-0.0000689	0.0003743	0.0035	3.98	54491.41	68832.08	68832.08	116.23	No	Si
SLU 46	7.53	580.24	-41402	-0.0000611	0.0003743	0.0035	3.98	52325.13	61713.33	61713.33	106.36	No	Si
SLU 1	5.73	-457.38	-35856	-0.0000521	0.0003743	0.0035	3.98	48804	59926.71	59926.71	131.02	No	Si
SLU 1	7.53	482.6	-32171	-0.0000465	0.0003743	0.0035	3.98	45867.14	50879.7	50879.7	105.43	No	Si
SLU 43	5.73	-597.06	-44590	-0.0000663	0.0003743	0.0035	3.98	53861.05	67430.85	67430.85	112.94	No	Si
SLU 43	7.53	630.68	-39818	-0.0000587	0.0003743	0.0035	3.98	51429.67	60386.99	60386.99	95.75	No	Si
SLU 64	5.73	-589.89	-50490	-0.0000761	0.0003743	0.0035	3.98	55762.84	71997.06	71997.06	122.05	No	Si
SLU 64	7.53	621.04	-45662	-0.0000681	0.0003743	0.0035	3.98	54297.24	65105.3	65105.3	104.83	No	Si
SLU 60	5.73	-515.69	-52588	-0.0000795	0.0003743	0.0035	3.98	56144.71	73251.39	73251.39	142.05	No	Si
SLU 60	7.53	633.76	-47816	-0.0000717	0.0003743	0.0035	3.98	55052.08	66877.56	66877.56	105.53	No	Si
SLU 48	5.73	-608.57	-47003	-0.0000703	0.0003743	0.0035	3.98	54786.22	69528.35	69528.35	114.25	No	Si
SLU 48	7.53	593.87	-42231	-0.0000625	0.0003743	0.0035	3.98	52758.66	62361.45	62361.45	105.01	No	Si
SLU 45	5.73	-600.21	-46220	-0.000069	0.0003743	0.0035	3.98	54508.25	68870.99	68870.99	114.74	No	Si
SLU 45	7.53	617.76	-41448	-0.0000613	0.0003743	0.0035	3.98	52349.59	61748.82	61748.82	99.96	No	Si
SLU 53	5.73	-543.26	-51818	-0.0000782	0.0003743	0.0035	3.98	56022.44	72784.58	72784.58	133.98	No	Si
SLU 53	7.53	619.92	-47046	-0.0000704	0.0003743	0.0035	3.98	54800.91	66239.55	66239.55	106.85	No	Si
SLU 50	5.73	-613.78	-46157	-0.0000689	0.0003743	0.0035	3.98	54485	68817.29	68817.29	112.12	No	Si
SLU 50	7.53	582.9	-41385	-0.0000611	0.0003743	0.0035	3.98	52315.82	61699.86	61699.86	105.85	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche,  $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 2	5.73	-18911.01	-36960	-0.0000925	0.0005615	0.0035	3.98		66137.17	66137.17	3.5		Si
SLV 2	7.53	15169.35	-33143	-0.0000783	0.0005615	0.0035	3.98		56436.51	56436.51	3.72		Si
SLV 15	5.73	18032.89	-41323	-0.0000974	0.0005615	0.0035	3.98		67442.56	67442.56	3.74		Si
SLV 15	7.53	-14208.43	-37737	-0.0000833	0.0005615	0.0035	3.98		67211.07	67211.07	4.73		Si
SLV 14	5.73	19801.98	-44101	-0.0001059	0.0005615	0.0035	3.98		70725.07	70725.07	3.57		Si
SLV 14	7.53	-15778.72	-40326	-0.0000908	0.0005615	0.0035	3.98		70625.14	70625.14	4.48		Si
SLV 16	5.73	19765.2	-41413	-0.0001015	0.0005615	0.0035	3.98		67547.92	67547.92	3.42		Si
SLV 16	7.53	-15810.99	-37827	-0.000087	0.0005615	0.0035	3.98		67334.32	67334.32	4.26		Si
SLV 1	5.73	-20643.33	-36870	-0.0000962	0.0005615	0.0035	3.98		66013.48	66013.48	3.2		Si
SLV 1	7.53	16771.91	-33053	-0.0000817	0.0005615	0.0035	3.98		56296.93	56296.93	3.36		Si
SLV 3	5.73	-20680.1	-34183	-0.000092	0.0005615	0.0035	3.98		62337.8	62337.8	3.01		Si
SLV 3	7.53	16739.64	-30554	-0.0000778	0.0005615	0.0035	3.98		52427.67	52427.67	3.13		Si
SLD 3	5.73	-9091.02	-37009	-0.000071	0.0005615	0.0035	3.98		66205.15	66205.15	7.28		Si
SLD 3	7.53	7425.8	-33339	-0.0000619	0.0005615	0.0035	3.98		56743.25	56743.25	7.64		Si
SLV 4	5.73	-18947.78	-34272	-0.0000884	0.0005615	0.0035	3.98		62459.25	62459.25	3.3		Si
SLV 4	7.53	15137.08	-30644	-0.0000745	0.0005615	0.0035	3.98		52565.62	52565.62	3.47		Si
SLV 13	5.73	18069.66	-44011	-0.0001018	0.0005615	0.0035	3.98		70618.77	70618.77	3.91		Si
SLV 13	7.53	-14176.17	-40236	-0.0000871	0.0005615	0.0035	3.98		70509.56	70509.56	4.97		Si
SLD 1	5.73	-9075.41	-38182	-0.0000727	0.0005615	0.0035	3.98		67820.93	67820.93	7.47		Si
SLD 1	7.53	7443.63	-34432	-0.0000635	0.0005615	0.0035	3.98		58451.93	58451.93	7.85		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 64	5.73	-589.89	-50490	-42044	-690	3.98	3.98	-37728	10833	12073	40441	33370	10149	43519	No	63.06	Si
SLU 64	7.53	621.04	-45662	-38023	-690	3.98	3.98	-34120	10833	12073	40441	33370	10149	43519	No	63.06	Si
SLU 46	5.73	-592.19	-46174	-38450	-667	3.98	3.98	-34503	10833	12073	40441	33370	10149	43519	No	65.22	Si
SLU 46	7.53	580.24	-41402	-34476	-667	3.98	3.98	-30937	10833	12073	40441	33370	10149	43519	No	65.22	Si
SLU 69	5.73	-601.41	-52903	-44053	-676	3.98	3.98	-39531	10833	12073	40441	33370	10149	43519	No	64.37	Si
SLU 69	7.53	584.24	-48074	-40032	-676	3.98	3.98	-35923	10833	12073	40441	33370	10149	43519	No	64.37	Si
SLU 48	5.73	-608.57	-47003	-39140	-684	3.98	3.98	-35122	10833	12073	40441	33370	10149	43519	No	63.63	Si
SLU 48	7.53	593.87	-42231	-35166	-684	3.98	3.98	-31556	10833	12073	40441	33370	10149	43519	No	63.63	Si
SLU 50	5.73	-613.78	-46157	-38435	-681	3.98	3.98	-34490	10833	12073	40441	33370	10149	43519	No	63.93	Si
SLU 50	7.53	582.9	-41385	-34462	-681	3.98	3.98	-30924	10833	12073	40441	33370	10149	43519	No	63.93	Si
SLU 71	5.73	-606.61	-52057	-43348	-673	3.98	3.98	-38898	10833	12073	40441	33370	10149	43519	No	64.68	Si
SLU 71	7.53	573.26	-47228	-39328	-673	3.98	3.98	-35290	10833	12073	40441	33370	10149	43519	No	64.68	Si
SLV 53	5.73	-543.26	-51818	-43149	-662	3.98	3.98	-38720	10833	12073	40441	33370	10149	43519	No	65.72	Si
SLV 53	7.53	619.92	-47046	-39176	-662	3.98	3.98	-35154	10833	12073	40441	33370	10149	43519	No	65.72	Si
SLU 43	5.73	-597.06	-44590	-37131	-698	3.98	3.98	-33319	10833	12073	40441	33370	10149	43519	No	62.35	Si
SLU 43	7.53	630.68	-39818	-33157	-698	3.98	3.98	-29754	10833	12073	40441	33370	10149	43519	No	62.35	Si
SLU 66	5.73	-593.04	-52120	-43401	-685	3.98	3.98	-38945	10833	12073	40441	33370	10149	43519	No	63.56	Si
SLU 66	7.53	608.13	-47291	-39380	-685	3.98	3.98	-35337	10833	12073	40441	33370	10149	43519	No	63.56	Si
SLU 45	5.73	-600.21	-46220	-38488	-693	3.98	3.98	-34537	10833	12073	40441	33370	10149	43519	No	62.84	Si
SLU 45	7.53	617.76	-41448	-34514	-693	3.98	3.98	-30971	10833	12073	40441	33370	10149	43519	No	62.84	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	oN	fvd	Vt	Vt,f	Vt,c	Vt,c Int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 3	5.73	-9091.02	-37009	-30818	-9262	3.98	3.98	-27654	15948	17772	40441	50055	10149	58213		6.29	Si
SLD 3	7.53	7425.8	-33339	-27762	-9068	3.98	3.98	-24912	15399	17161	40441	50055	10149	57602		6.35	Si
SLV 16	5.73	19765.2	-41413	-34485	20328	3.98	3.98	-30945	16250	18109	40441	50055	10149	58550		2.88	Si
SLV 16	7.53	-15810.99	-37827	-31499	19264	3.98	3.98	-28265	16070	17908	40441	50055	10149	58349		3.03	Si
SLV 15	5.73	18032.89	-41323	-34410	18476	3.98	3.98	-30878	16250	18109	40441	50055	10149	58550		3.17	Si
SLV 15	7.53	-14208.43	-37737	-31424	17411	3.98	3.98	-28198	16056	17893	40441	50055	10149	58334		3.35	Si
SLV 14	5.73	19801.98	-44101	-36723	19924	3.98	3.98	-32953	16250	18109	40441	50055	10149	58550		2.94	Si
SLV 14	7.53	-15778.72	-40326	-33580	19471	3.98	3.98	-30132	16250	18109	40441	50055	10149	58550		3.01	Si
SLV 13	5.73	18069.66	-44011	-36649	18071	3.98	3.98	-32886	16250	18109	40441	50055	10149	58550		3.24	Si
SLV 13	7.53	-14176.17	-40236	-33505	17618	3.98	3.98	-30066	16250	18109	40441	50055	10149	58550		3.32	Si
SLV 4	5.73	-18947.78	-34272	-28539	-19119	3.98	3.98	-25609	15539	17316	40441	50055	10149	57757		3.02	Si
SLV 4	7.53	15137.08	-30644	-25517	-18666	3.98	3.98	-22898	14996	16712	40441	50055	10149	57153		3.06	Si
SLV 2	5.73	-18911.01	-36960	-30777	-19523	3.98	3.98	-27618	15940	17764	40441	50055	10149	58205		2.98	Si
SLV 2	7.53	15169.35	-33143	-27598	-18459	3.98	3.98	-24765	15370	17128	40441	50055	10149	57569		3.12	Si
SLD 1	5.73	-9075.41	-38182	-31795	-9436	3.98	3.98	-28531	16123	17967	40441	50055	10149	58408		6.19	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 1	7.53	7443.63	-34432	-28672	-8981	3.98	3.98	-25729	15562	17343	40441	50055	10149	57784		6.43	Si
SLV 3	5.73	-20680.1	-34183	-28464	-20972	3.98	3.98	-25542	15525	17301	40441	50055	10149	57742		2.75	Si
SLV 3	7.53	16739.64	-30554	-25443	-20519	3.98	3.98	-22831	14983	16697	40441	50055	10149	57138		2.78	Si
SLV 1	5.73	-20643.33	-36870	-30703	-21376	3.98	3.98	-27551	15927	17749	40441	50055	10149	58190		2.72	Si
SLV 1	7.53	16771.91	-33053	-27524	-20311	3.98	3.98	-24698	15356	17113	40441	50055	10149	57554		2.83	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 6.59 Wa 0.05 denominatore 8 yM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 7	179667	0.38	28748	-32037	405.19	3640.88	8.99	Si
SLV 8	179667	0.38	28800	-32095	405.19	3645.93	9	Si
SLV 3	179667	0.38	29113	-32444	405.19	3676.26	9.07	Si
SLV 4	179667	0.38	29194	-32534	405.19	3684.02	9.09	Si
SLV 11	179667	0.38	30703	-34216	405.19	3827.16	9.45	Si
SLV 12	179667	0.38	30755	-34274	405.19	3832	9.46	Si
SLV 1	179667	0.38	31394	-34985	405.19	3891.06	9.6	Si
SLV 2	179667	0.38	31474	-35075	405.19	3898.44	9.62	Si
SLV 15	179667	0.38	35630	-39707	405.19	4261.96	10.52	Si
SLV 16	179667	0.38	35711	-39796	405.19	4268.64	10.54	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.59 Wa = 0.05 Ta = 0.0739

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 10	-32312	-42625	1154	0.635	3843	0.957	9.64164	12.29974	No
SLV 9	-32265	-42539	1154	0.636	3838.2	0.957	9.65404	12.29974	No
SLV 6	-30780	-39789	1216	0.66	3687.2	0.956	10.03463	12.29974	No
SLV 5	-30733	-39703	1216	0.661	3682.4	0.956	10.04815	12.29974	No
SLV 12	-25859	-35324	-1224	0.764	3187.3	0.95	11.68388	12.29974	No
SLV 11	-25812	-35238	-1224	0.765	3182.5	0.95	11.70248	12.29974	No
SLV 8	-24327	-32488	-1161	0.806	3031.8	0.948	12.35632	12.29974	Si
SLV 7	-24280	-32402	-1161	0.807	3027	0.947	12.37716	12.29974	Si
SLV 14	-31854	-43403	249	0.668	3796.4	0.957	10.15162	6.56558	Si
SLV 13	-31781	-43270	249	0.67	3789	0.957	10.17217	6.56558	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	95.749	SLU 43	Si
V_SLU	62.347	SLU 43	Si
PF_SLV	3.014	SLV 3	Si
V_SLV	2.722	SLV 1	Si
PFFP_SLV	8.986	SLV 7	Si
R_SLV	0.784	SLV 10	No

Maschio 97

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	I	Sp.	h netta	h ini.	h fin.	a	a.s.sx	a.s.dx
-7.058	6.526	-5.093	6.526	L5	L6	1.965	0.28	3.52	3.52	3.52			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	





### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 77	5.73	-2779.63	-22683	-0.0000944	0.0003743	0.0035	1.965	13262.09	16721.69	16721.69	6.02	No	Si
SLU 77	7.53	147.96	-22291	-0.0000673	0.0003743	0.0035	1.965	13186.12	15799.22	15799.22	106.78	No	Si
SLU 76	5.73	-2714.08	-21983	-0.0000913	0.0003743	0.0035	1.965	13122.65	16385.13	16385.13	6.04	No	Si
SLU 76	7.53	159.59	-21596	-0.0000651	0.0003743	0.0035	1.965	13038.21	15531.22	15531.22	97.32	No	Si
SLU 74	5.73	-2757.74	-22346	-0.000093	0.0003743	0.0035	1.965	13197.08	16558.6	16558.6	6	No	Si
SLU 74	7.53	160.18	-21921	-0.0000662	0.0003743	0.0035	1.965	13109.52	15656.11	15656.11	97.74	No	Si
SLU 81	5.73	-2775.41	-22550	-0.0000939	0.0003743	0.0035	1.965	13236.75	16656.7	16656.7	6	No	Si
SLU 81	7.53	115.74	-22179	-0.0000666	0.0003743	0.0035	1.965	13163.44	15755.79	15755.79	136.13	No	Si
SLU 83	5.73	-2797.3	-22887	-0.0000953	0.0003743	0.0035	1.965	13299.35	16818.47	16818.47	6.01	No	Si
SLU 83	7.53	103.51	-22549	-0.0000677	0.0003743	0.0035	1.965	13236.69	15899.69	15899.69	153.6	No	Si
SLU 73	5.73	-2692.19	-21646	-0.0000899	0.0003743	0.0035	1.965	13049.36	16225.9	16225.9	6.03	No	Si
SLU 73	7.53	171.82	-21226	-0.000064	0.0003743	0.0035	1.965	12952.59	15387.8	15387.8	89.56	No	Si
SLU 82	5.73	-2774.19	-22539	-0.0000938	0.0003743	0.0035	1.965	13234.65	16651.39	16651.39	6	No	Si
SLU 82	7.53	119.49	-22210	-0.0000667	0.0003743	0.0035	1.965	13169.69	15767.66	15767.66	131.95	No	Si
SLU 78	5.73	-2778.41	-22672	-0.0000944	0.0003743	0.0035	1.965	13260.04	16716.35	16716.35	6.02	No	Si
SLU 78	7.53	151.72	-22322	-0.0000674	0.0003743	0.0035	1.965	13192.25	15811.12	15811.12	104.21	No	Si
SLU 84	5.73	-2796.08	-22876	-0.0000953	0.0003743	0.0035	1.965	13297.38	16813.5	16813.5	6.01	No	Si
SLU 84	7.53	107.27	-22580	-0.0000678	0.0003743	0.0035	1.965	13242.54	15911.66	15911.66	148.33	No	Si
SLU 75	5.73	-2756.52	-22335	-0.0000929	0.0003743	0.0035	1.965	13194.9	16553.32	16553.32	6.01	No	Si
SLU 75	7.53	163.94	-21952	-0.0000663	0.0003743	0.0035	1.965	13116.05	15667.92	15667.92	95.57	No	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche, $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 4	5.73	-3487.89	-13148	-0.0000666	0.0005615	0.0035	1.965		12424.09	12424.09	3.56		Si
SLD 4	7.53	2171.04	-11802	-0.0000512	0.0005615	0.0035	1.965		10362.61	10362.61	4.77		Si
SLV 16	5.73	2153.13	-18526	-0.0000712	0.0005615	0.0035	1.965		15381.07	15381.07	7.14		Si
SLV 16	7.53	-5065.42	-19815	-0.0001017	0.0005615	0.0035	1.965		17103.07	17103.07	3.38		Si
SLD 2	5.73	-3512.71	-13854	-0.000069	0.0005615	0.0035	1.965		12962.17	12962.17	3.69		Si
SLD 2	7.53	2235.27	-12585	-0.000054	0.0005615	0.0035	1.965		10929.93	10929.93	4.89		Si
SLD 1	5.73	-3681.6	-13749	-0.0000702	0.0005615	0.0035	1.965		12881.75	12881.75	3.5		Si
SLD 1	7.53	2456.13	-12390	-0.0000554	0.0005615	0.0035	1.965		10788.78	10788.78	4.39		Si
SLV 2	5.73	-5629.19	-12062	-0.0000869	0.0005615	0.0035	1.965		11605.4	11605.4	2.06		Si
SLV 2	7.53	4960.84	-9854	-0.0000758	0.0005615	0.0035	1.965		8971.14	8971.14	1.81		Si
SLV 3	5.73	-5967.37	-10206	-0.0000959	0.0005615	0.0035	1.572		10133.88	10133.88	1.7		Si
SLV 3	7.53	5329.64	-7606	-0.0001015	0.0005615	0.0035	1.965		7151.26	7151.26	1.34		Si
SLV 4	5.73	-5574.03	-10451	-0.0000864	0.0005615	0.0035	1.965		10326.34	10326.34	1.85		Si
SLV 4	7.53	4815.29	-8059	-0.0000772	0.0005615	0.0035	1.965		7533.98	7533.98	1.56		Si
SLD 3	5.73	-3656.79	-13043	-0.0000678	0.0005615	0.0035	1.965		12344.43	12344.43	3.38		Si
SLD 3	7.53	2391.9	-11607	-0.0000525	0.0005615	0.0035	1.965		10222.52	10222.52	4.27		Si
SLV 1	5.73	-6022.52	-11817	-0.0000933	0.0005615	0.0035	1.965		11412.02	11412.02	1.89		Si
SLV 1	7.53	5475.18	-9402	-0.0000874	0.0005615	0.0035	1.965		8639.78	8639.78	1.58		Si
SLV 7	5.73	-3128.87	-11196	-0.0000576	0.0005615	0.0035	1.965		10916.26	10916.26	3.49		Si
SLV 7	7.53	1610.52	-9706	-0.0000402	0.0005615	0.0035	1.965		8866.67	8866.67	5.51		Si

### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 44	5.73	-2292.65	-17333	-14433	-721	1.965	1.965	-26232	10442	5745	40441	16476	5011	21487	No	29.81	Si
SLU 44	7.53	385.12	-16394	-13651	-780	1.965	1.965	-24811	10253	5641	40441	16476	5011	21487	No	27.55	Si
SLU 49	5.73	-2378.87	-18359	-15288	-737	1.965	1.965	-27786	10649	5859	40441	16476	5011	21487	No	29.15	Si
SLU 49	7.53	365.02	-17489	-14564	-770	1.965	1.965	-26469	10474	5763	40441	16476	5011	21487	No	27.92	Si
SLU 64	5.73	-2504.76	-19598	-16320	-714	1.965	1.965	-29661	10833	5961	40441	16476	5011	21487	No	30.09	Si
SLU 64	7.53	281.79	-18832	-15682	-706	1.965	1.965	-28501	10745	5912	40441	16476	5011	21487	No	30.44	Si
SLU 51	5.73	-2337.24	-18015	-15001	-727	1.965	1.965	-27264	10580	5821	40441	16476	5011	21487	No	29.55	Si
SLU 51	7.53	358.17	-17113	-14250	-760	1.965	1.965	-25900	10398	5721	40441	16476	5011	21487	No	28.27	Si
SLU 48	5.73	-2380.09	-18370	-15297	-784	1.965	1.965	-27803	10651	5861	40441	16476	5011	21487	No	27.41	Si
SLU 48	7.53	361.26	-17459	-14538	-777	1.965	1.965	-26423	10468	5759	40441	16476	5011	21487	No	27.64	Si
SLU 46	5.73	-2356.98	-18022	-15007	-749	1.965	1.965	-27276	10581	5822	40441	16476	5011	21487	No	28.67	Si
SLU 46	7.53	377.24	-17119	-14256	-782	1.965	1.965	-25910	10399	5722	40441	16476	5011	21487	No	27.47	Si
SLU 50	5.73	-2338.45	-18026	-15010	-774	1.965	1.965	-27281	10582	5822	40441	16476	5011	21487	No	27.75	Si
SLU 50	7.53	354.41	-17082	-14225	-768	1.965	1.965	-25853	10392	5718	40441	16476	5011	21487	No	27.98	Si
SLU 47	5.73	-2314.54	-17670	-14714	-708	1.965	1.965	-26743	10510	5783	40441	16476	5011	21487	No	30.34	Si
SLU 47	7.53	372.89	-16764	-13959	-767	1.965	1.965	-25371	10327	5682	40441	16476	5011	21487	No	28.01	Si
SLU 43	5.73	-2294.67	-17351	-14448	-799	1.965	1.965	-26260	10446	5747	40441	16476	5011	21487	No	26.89	Si
SLU 43	7.53	378.86	-16343	-13609	-793	1.965	1.965	-24734	10242	5635	40441	16476	5011	21487	No	27.09	Si
SLU 45	5.73	-2358.2	-18033	-15016	-796	1.965	1.965	-27292	10583	5823	40441	16476	5011	21487	No	26.98	Si
SLU 45	7.53	373.48	-17089	-14230	-790	1.965	1.965	-25863	10393	5718	40441	16476	5011	21487	No	27.2	Si

### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 15	5.73	1759.8	-18282	-15223	5357	1.965	1.965	-27668	15950	8776	40441	24714	5011	29724		5.55	Si
SLV 15	7.53	-4551.07	-19363	-16124	4741	1.965	1.965	-29304	16250	8941	40441	24714	5011	29724		6.27	Si
SLD 1	5.73	-3681.6	-13749	-11449	-3319	1.965	1.965	-20808	14578	8021	40441	24714	5011	29724		8.96	Si
SLD 1	7.53	2456.13	-12390	-10318	-3046	1.965	1.965	-18752	14167	7795	40441	24714	5011	29724		9.76	Si
SLV 13	5.73	1704.64	-19893	-16565	5287	1.965	1.965	-30107	16250	8941	40441	24714	5011	29724		5.62	Si
SLV 13	7.53	-4405.53	-21158	-17619	4882	1.965	1.965	-32022	16250	8941	40441	24714	5011	29724		6.09	Si
SLD 3	5.73	-3656.79	-13043	-10861	-3288	1.965	1.965	-19740	14365	7904	40441	24714	5011	29724		9.04	Si
SLD 3	7.53	2391.9	-11607	-9666	-3105	1.965	1.965	-17567	13930	7664	40441	24714	5011	29724		9.57	Si
SLV 3	5.73	-5967.37	-10206	-8499	-6977	1.572	1.1935	0	0	0	40441	19771	4009	23779		3.41	Si
SLV 3	7.53	5329.64	-7606	-6334	-6561	1.965	0.8455	-11512	12719	3011	40441	24714	5011	29724		4.53	Si





Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 14	5.73	2097.98	-20138	-16769	5903	1.965	1.965	-30477	16250	8941	40441	24714	5011	29724		5.04	Si
SLV 14	7.53	-4919.87	-21611	-17995	5501	1.965	1.965	-32707	16250	8941	40441	24714	5011	29724		5.4	Si
SLV 2	5.73	-5629.19	-12062	-10044	-6431	1.965	1.5475	-23450	15107	6546	40441	24714	5011	29724		4.62	Si
SLV 2	7.53	4960.84	-9854	-8206	-5801	1.965	1.4373	-14914	13399	5392	40441	24714	5011	29724		5.12	Si
SLV 16	5.73	2153.13	-18526	-15427	5974	1.965	1.965	-28039	16024	8817	40441	24714	5011	29724		4.98	Si
SLV 16	7.53	-5065.42	-19815	-16500	5360	1.965	1.965	-29989	16250	8941	40441	24714	5011	29724		5.55	Si
SLV 4	5.73	-5574.03	-10451	-8703	-6360	1.965	1.3475	-23334	15084	5691	40441	24714	5011	29724		4.67	Si
SLV 4	7.53	4815.29	-8059	-6711	-5942	1.965	1.155	-12197	12856	4158	40441	24714	5011	29724		5	Si
SLV 1	5.73	-6022.52	-11817	-9840	-7047	1.965	1.4186	-25091	15435	6131	40441	24714	5011	29724		4.22	Si
SLV 1	7.53	5475.18	-9402	-7829	-6420	1.965	1.2005	-14229	13262	4458	40441	24714	5011	29724		4.63	Si

**Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)**

quota 6.59 Wa 0.05 denominatore 8 yM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 3	179667	0.38	14458	-7955	200.05	1008.25	5.04	Si
SLV 4	179667	0.38	15351	-8446	200.05	1063.64	5.32	Si
SLV 1	179667	0.38	17606	-9687	200.05	1199.82	6	Si
SLV 2	179667	0.38	18499	-10179	200.05	1252.37	6.26	Si
SLV 7	179667	0.38	18659	-10266	200.05	1261.65	6.31	Si
SLV 8	179667	0.38	19236	-10584	200.05	1295.07	6.47	Si
SLV 11	179667	0.38	25271	-13905	200.05	1624.5	8.12	Si
SLV 12	179667	0.38	25848	-14222	200.05	1654.08	8.27	Si
SLV 5	179667	0.38	29152	-16039	200.05	1816.88	9.08	Si
SLV 6	179667	0.38	29729	-16357	200.05	1844.2	9.22	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

**Verifica dei meccanismi locali di collasso con analisi cinematica lineare**

forza di aggancio al piano = 5617 quota mezzeria = 6.59 Wa = 0.05 Ta = 0.0739

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 10	-14601	-17107	648	0.68	1759.9	0.955	10.34893	12.29974	No
SLV 9	-14528	-16719	647	0.683	1752.5	0.954	10.39517	12.29974	No
SLV 6	-13025	-12593	718	0.743	1599.8	0.951	11.36395	12.29974	No
SLV 5	-12952	-12205	717	0.747	1592.4	0.95	11.42054	12.29974	No
SLV 12	-10316	-15136	-735	0.9	1325	0.942	13.88679	12.29974	Si
SLV 11	-10243	-14748	-736	0.905	1317.6	0.941	13.97061	12.29974	Si
SLV 8	-8740	-10621	-665	1.036	1165.5	0.935	16.09739	12.29974	Si
SLV 7	-8667	-10234	-666	1.043	1158.1	0.935	16.21049	12.29974	Si
SLV 14	-14959	-21790	83	0.7	1796.3	0.955	10.64628	6.56558	Si
SLV 13	-14846	-21189	81	0.704	1784.8	0.955	10.71857	6.56558	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

**Tabella dei coefficienti di sicurezza minimi**

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	6.002	SLU 81	Si
V_SLU	26.892	SLU 43	Si
PF_SLV	1.342	SLV 3	Si
V_SLV	3.408	SLV 3	Si
PFFP_SLV	5.04	SLV 3	Si
R_SLV	0.841	SLV 10	No

**Maschio 98**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati geometrici**

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-20.613	1.006	-24.633	1.006	L5	L6	4.02	0.28	3.52	3.52	3.52			

**Caratteristiche del materiale**

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

**Materiale per FRCM**

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

**Rinforzo a matrice inorganica**



									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 51	4.83	-5951.87	-43779	-0.000068	0.0004492	0.0035	4.02	59985.53	81049.06	81049.06	13.62	No	Si
SLU 51	6.93	-488.53	-37767	-0.0000488	0.0004492	0.0035	4.02	55066.71	72880.52	72880.52	149.18	No	Si
SLU 71	4.83	-6210.08	-48253	-0.0000748	0.0004492	0.0035	4.02	62960.51	86767.92	86767.92	13.97	No	Si
SLU 71	6.93	-1314.64	-42793	-0.0000572	0.0004492	0.0035	4.02	59251.07	79769.76	79769.76	60.68	No	Si
SLU 44	4.83	-5780.98	-42124	-0.0000653	0.0004492	0.0035	4.02	58736.62	78852.63	78852.63	13.64	No	Si
SLU 44	6.93	-528.31	-36140	-0.0000467	0.0004492	0.0035	4.02	53553.18	70593.32	70593.32	133.62	No	Si
SLU 50	4.83	-5960.89	-43742	-0.000068	0.0004492	0.0035	4.02	59958.29	81001.42	81001.42	13.59	No	Si
SLU 50	6.93	-472.14	-37750	-0.0000487	0.0004492	0.0035	4.02	55050.84	72856.52	72856.52	154.31	No	Si
SLU 47	4.83	-5863.41	-42964	-0.0000667	0.0004492	0.0035	4.02	59380.46	80004.16	80004.16	13.64	No	Si
SLU 47	6.93	-513.88	-36959	-0.0000477	0.0004492	0.0035	4.02	54325.05	71772.84	71772.84	139.67	No	Si
SLU 46	4.83	-5905.85	-43534	-0.0000676	0.0004492	0.0035	4.02	59805.54	80735.58	80735.58	13.67	No	Si
SLU 46	6.93	-640.59	-37592	-0.0000488	0.0004492	0.0035	4.02	54907.4	72640.17	72640.17	113.4	No	Si
SLU 43	4.83	-5796.02	-42062	-0.0000653	0.0004492	0.0035	4.02	58688.19	78767.47	78767.47	13.59	No	Si
SLU 43	6.93	-500.99	-36111	-0.0000466	0.0004492	0.0035	4.02	53525.34	70550.63	70550.63	140.82	No	Si
SLU 48	4.83	-5997.31	-44336	-0.0000689	0.0004492	0.0035	4.02	60388.17	81761.73	81761.73	13.63	No	Si
SLU 48	6.93	-609.78	-38394	-0.0000498	0.0004492	0.0035	4.02	55628.94	73739.85	73739.85	120.93	No	Si
SLU 49	4.83	-5988.28	-44374	-0.0000689	0.0004492	0.0035	4.02	60414.76	81809.37	81809.37	13.66	No	Si
SLU 49	6.93	-626.16	-38412	-0.0000499	0.0004492	0.0035	4.02	55644.48	73763.85	73763.85	117.8	No	Si
SLU 45	4.83	-5914.87	-43496	-0.0000675	0.0004492	0.0035	4.02	59778.03	80687.93	80687.93	13.64	No	Si
SLU 45	6.93	-624.2	-37575	-0.0000488	0.0004492	0.0035	4.02	54891.45	72616.18	72616.18	116.33	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 15	4.83	-9747.98	-31940	-0.0000582	0.0006738	0.0035	4.02	66413.28	66413.28	66413.28	6.81		Si
SLD 15	6.93	2929.86	-26128	-0.0000377	0.0006738	0.0035	4.02	49693.04	49693.04	49693.04	16.96		Si
SLV 4	4.83	7071.63	-48599	-0.000075	0.0006738	0.0035	4.02	83356.09	83356.09	83356.09	11.79		Si
SLV 4	6.93	-12999.12	-47143	-0.0000848	0.0006738	0.0035	4.02	89554.68	89554.68	89554.68	6.89		Si
SLD 16	4.83	-9709.4	-32107	-0.0000583	0.0006738	0.0035	4.02	66683.2	66683.2	66683.2	6.87		Si
SLD 16	6.93	2821.9	-26092	-0.0000375	0.0006738	0.0035	4.02	49632.8	49632.8	49632.8	17.59		Si
SLV 13	4.83	-16338.6	-23388	-0.0000596	0.0006738	0.0035	4.02	52239.74	52239.74	52239.74	3.2		Si
SLV 13	6.93	10709.11	-16685	-0.0000403	0.0006738	0.0035	4.02	33233.03	33233.03	33233.03	3.1		Si
SLV 14	4.83	-16248.75	-23777	-0.0000599	0.0006738	0.0035	4.02	52901.23	52901.23	52901.23	3.26		Si
SLV 14	6.93	10457.68	-16601	-0.0000397	0.0006738	0.0035	4.02	33083.33	33083.33	33083.33	3.16		Si
SLV 16	4.83	-16520.49	-26880	-0.0000645	0.0006738	0.0035	4.02	58168.01	58168.01	58168.01	3.52		Si
SLV 16	6.93	8147.57	-18294	-0.0000376	0.0006738	0.0035	4.02	36111.35	36111.35	36111.35	4.43		Si
SLV 3	4.83	6981.78	-48210	-0.0000743	0.0006738	0.0035	4.02	82780.93	82780.93	82780.93	11.86		Si
SLV 3	6.93	-12747.69	-47226	-0.0000844	0.0006738	0.0035	4.02	89675.58	89675.58	89675.58	7.03		Si
SLD 13	4.83	-9636.69	-30605	-0.0000562	0.0006738	0.0035	4.02	64258.93	64258.93	64258.93	6.67		Si
SLD 13	6.93	3926.72	-25400	-0.0000387	0.0006738	0.0035	4.02	48454.81	48454.81	48454.81	12.34		Si
SLV 15	4.83	-16610.34	-26490	-0.0000642	0.0006738	0.0035	4.02	57506.53	57506.53	57506.53	3.46		Si
SLV 15	6.93	8399	-18378	-0.0000381	0.0006738	0.0035	4.02	36261.05	36261.05	36261.05	4.32		Si
SLD 14	4.83	-9598.11	-30772	-0.0000564	0.0006738	0.0035	4.02	64528.85	64528.85	64528.85	6.72		Si
SLD 14	6.93	3818.75	-25364	-0.0000384	0.0006738	0.0035	4.02	48393.55	48393.55	48393.55	12.67		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 49	4.83	-5988.28	-44374	-31655	-2831	4.02	4.02	-28123	10833	12194	115546	40451	20502	60953	No	21.53	Si
SLU 49	6.93	-5267.16	-38412	-27402	-2823	4.02	4.02	-24344	10833	12194	115546	40451	20502	60953	No	21.59	Si
SLU 48	4.83	-5997.31	-44336	-31629	-2824	4.02	4.02	-28099	10833	12194	115546	40451	20502	60953	No	21.58	Si
SLU 48	6.93	-609.78	-38394	-27390	-2816	4.02	4.02	-24333	10833	12194	115546	40451	20502	60953	No	21.65	Si
SLU 45	4.83	-5914.87	-43496	-31029	-2759	4.02	4.02	-27567	10833	12194	115546	40451	20502	60953	No	22.1	Si
SLU 45	6.93	-624.2	-37575	-26805	-2750	4.02	4.02	-23814	10833	12194	115546	40451	20502	60953	No	22.16	Si
SLU 44	4.83	-5780.98	-42124	-30050	-2800	4.02	4.02	-26697	10833	12194	115546	40451	20502	60953	No	21.77	Si
SLU 44	6.93	-528.31	-36140	-25781	-2792	4.02	4.02	-22904	10833	12194	115546	40451	20502	60953	No	21.83	Si
SLU 50	4.83	-5960.89	-43742	-31204	-2920	4.02	4.02	-27722	10833	12194	115546	40451	20502	60953	No	20.88	Si
SLU 50	6.93	-472.14	-37750	-26930	-2912	4.02	4.02	-23925	10833	12194	115546	40451	20502	60953	No	20.93	Si
SLU 9	4.83	-4680.04	-35262	-25155	-2045	4.02	4.02	-22348	10833	12194	115546	40451	20502	60953	No	29.81	Si
SLU 9	6.93	-595.11	-30764	-21946	-2038	4.02	4.02	-19498	10833	12194	115546	40451	20502	60953	No	29.9	Si
SLU 46	4.83	-5905.85	-43534	-31056	-2765	4.02	4.02	-27591	10833	12194	115546	40451	20502	60953	No	22.04	Si
SLU 46	6.93	-640.59	-37592	-26817	-2757	4.02	4.02	-23825	10833	12194	115546	40451	20502	60953	No	22.11	Si
SLU 43	4.83	-5796.02	-42062	-30006	-2788	4.02	4.02	-26658	10833	12194	115546	40451	20502	60953	No	21.86	Si
SLU 43	6.93	-500.99	-36111	-25760	-2781	4.02	4.02	-22886	10833	12194	115546	40451	20502	60953	No	21.92	Si
SLU 51	4.83	-5951.87	-43779	-31231	-2927	4.02	4.02	-27746	10833	12194	115546	40451	20502	60953	No	20.83	Si
SLU 51	6.93	-488.53	-37767	-26942	-2919	4.02	4.02	-23936	10833	12194	115546	40451	20502	60953	No	20.88	Si
SLU 47	4.83	-5863.41	-42964	-30649	-2865	4.02	4.02	-27229	10833	12194	115546	40451	20502	60953	No	21.27	Si
SLU 47	6.93	-513.88	-36959	-26366	-2858	4.02	4.02	-23424	10833	12194	115546	40451	20502	60953	No	21.33	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 2	4.83	7343.37	-45497	-32456	13890	4.02	4.02	-28835	16250	18291	115546	60677	20502	81179		5.84	Si
SLV 2	6.93	-10689	-45450	-32423	13205	4.02	4.02	-28805	16250	18291	115546	60677	20502	81179		6.15	Si
SLV 15	4.83	-16610.34	-26490	-18897	-16547	4.02	4.02	-16789	15858	17849	115546	60677	20502	81179		4.91	Si
SLV 15	6.93	8399	-18378	-13110	-15849	4.02	4.02	-11647	14829	16692	115546	60677	20502	81179		5.12	Si



Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 4	4.83	7071.63	-48599	-34669	13268	4.02	4.02	-30801	16250	18291	115546	60677	20502	81179		6.12	Si
SLV 4	6.93	-12999.12	-47143	-33631	12206	4.02	4.02	-29878	16250	18291	115546	60677	20502	81179		6.65	Si
SLV 16	4.83	-16520.49	-26880	-19175	-16838	4.02	4.02	-17036	15907	17905	115546	60677	20502	81179		4.82	Si
SLV 16	6.93	8147.57	-18294	-13051	-16139	4.02	4.02	-11594	14819	16680	115546	60677	20502	81179		5.03	Si
SLV 3	4.83	6981.78	-48210	-34392	13558	4.02	4.02	-30554	16250	18291	115546	60677	20502	81179		5.99	Si
SLV 3	6.93	-12747.69	-47226	-33690	12496	4.02	4.02	-29931	16250	18291	115546	60677	20502	81179		6.5	Si
SLD 16	4.83	-9709.4	-32107	-22905	-7954	4.02	4.02	-20349	16250	18291	115546	60677	20502	81179		10.21	Si
SLD 16	6.93	2821.9	-26092	-18613	-7656	4.02	4.02	-16536	15807	17793	115546	60677	20502	81179		10.6	Si
SLV 13	4.83	-16338.6	-23388	-16684	-15924	4.02	3.9342	-15249	15550	17129	115546	60677	20502	81179		5.1	Si
SLV 13	6.93	10709.11	-16685	-11903	-14850	4.02	4.02	-10574	14615	16451	115546	60677	20502	81179		5.47	Si
SLV 14	4.83	-16248.75	-23777	-16962	-16215	4.02	3.9799	-15070	15514	17288	115546	60677	20502	81179		5.01	Si
SLV 14	6.93	10457.68	-16601	-11843	-15140	4.02	4.02	-10521	14604	16439	115546	60677	20502	81179		5.36	Si
SLV 1	4.83	7253.52	-45107	-32178	14181	4.02	4.02	-28588	16250	18291	115546	60677	20502	81179		5.72	Si
SLV 1	6.93	-10437.58	-45533	-32482	13496	4.02	4.02	-28858	16250	18291	115546	60677	20502	81179		6.02	Si
SLD 15	4.83	-9747.98	-31940	-22785	-7829	4.02	4.02	-20243	16250	18291	115546	60677	20502	81179		10.37	Si
SLD 15	6.93	2929.86	-26128	-18639	-7531	4.02	4.02	-16559	15812	17798	115546	60677	20502	81179		10.78	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRMC D.M. 17-01-18 (N.T.C.)

quota 6.59 Ta 0.07 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 14	-17293	0.38	418.78	2218.05	3163.92	2690.99	6.43	Si
SLV 13	-17376	0.38	418.78	2227.8	3176.6	2702.2	6.45	Si
SLV 16	-19156	0.38	418.78	2432.83	3446.22	2939.52	7.02	Si
SLV 15	-19240	0.38	418.78	2442.36	3458.89	2950.63	7.05	Si
SLV 10	-25186	0.38	418.78	3095.56	4350.22	3722.89	8.89	Si
SLV 9	-25240	0.38	418.78	3101.28	4358.17	3729.73	8.91	Si
SLV 12	-31397	0.38	418.78	3726.61	5264.52	4495.57	10.74	Si
SLV 11	-31451	0.38	418.78	3731.87	5272.42	4502.14	10.75	Si
SLV 6	-33802	0.38	418.78	3956.92	5615.79	4786.36	11.43	Si
SLV 5	-33856	0.38	418.78	3962.01	5623.69	4792.85	11.44	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 6.59 Wa = 0.05 Ta = 0.0739

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 7	-31211	-44296	1122	0.661	3736.6	0.956	10.04684	12.29974	No
SLV 8	-31160	-44548	1121	0.662	3731.4	0.956	10.06154	12.29974	No
SLV 5	-28443	-33955	-1236	0.711	3455.3	0.953	10.84496	12.29974	No
SLV 6	-28392	-34207	-1237	0.712	3450.1	0.953	10.86187	12.29974	No
SLV 11	-27272	-37780	1253	0.736	3336.4	0.951	11.24292	12.29974	No
SLV 12	-27220	-38032	1253	0.737	3331.2	0.951	11.26163	12.29974	No
SLV 9	-24503	-27439	-1105	0.81	3055.3	0.947	12.42367	12.29974	Si
SLV 10	-24452	-27691	-1105	0.811	3050.2	0.947	12.44603	12.29974	Si
SLV 3	-34852	-48210	143	0.627	4106.8	0.96	9.50361	6.56558	Si
SLV 4	-34773	-48599	142	0.629	4098.8	0.96	9.52302	6.56558	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	13.589	SLU 50	Si
V_SLU	20.827	SLU 51	Si
PF_SLV	3.103	SLV 13	Si
V_SLV	4.821	SLV 16	Si
PFFP_SLV	6.426	SLV 14	Si
R_SLV	0.817	SLV 7	No

## Maschio 99

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-12.263	1.006	-19.813	1.006	L5	L6	7.55	0.28	3.52	3.52	3.52			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica



									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 83	4.83	15037.33	-120868	-0.000094	0.0004492	0.0035	7.55	242771.76	345041.01	345041.01	22.95	No	Si
SLU 83	7.33	5174.46	-107313	-0.0000775	0.0004492	0.0035	7.55	236804.36	316296.23	316296.23	61.13	No	Si
SLU 60	4.83	14031.8	-107620	-0.0000831	0.0004492	0.0035	7.55	236999.03	316947.49	316947.49	22.59	No	Si
SLU 60	7.33	3858.59	-94384	-0.000067	0.0004492	0.0035	7.55	226108.5	288879.56	288879.56	74.87	No	Si
SLU 59	4.83	13917.79	-106376	-0.000082	0.0004492	0.0035	7.55	236193.49	314309.49	314309.49	22.58	No	Si
SLU 59	7.33	3867.07	-92861	-0.0000659	0.0004492	0.0035	7.55	224526.29	285648.75	285648.75	73.87	No	Si
SLU 63	4.83	14387.12	-109292	-0.0000846	0.0004492	0.0035	7.55	238010.26	320492.37	320492.37	22.28	No	Si
SLU 63	7.33	4069.91	-96008	-0.0000684	0.0004492	0.0035	7.55	227720.13	292322.95	292322.95	71.83	No	Si
SLU 61	4.83	14120.96	-107617	-0.0000831	0.0004492	0.0035	7.55	236996.9	316940.31	316940.31	22.44	No	Si
SLU 61	7.33	4021.24	-94386	-0.0000671	0.0004492	0.0035	7.55	226110.61	288883.95	288883.95	71.84	No	Si
SLU 84	4.83	15126.49	-120865	-0.0000941	0.0004492	0.0035	7.55	242770.94	345033.83	345033.83	22.81	No	Si
SLU 84	7.33	5337.12	-107315	-0.0000776	0.0004492	0.0035	7.55	236805.69	316300.62	316300.62	59.26	No	Si
SLU 52	4.83	13444.91	-103024	-0.0000792	0.0004492	0.0035	7.55	233797.53	307200.58	307200.58	22.85	No	Si
SLU 52	7.33	3878.19	-89619	-0.0000635	0.0004492	0.0035	7.55	220933.59	278773.69	278773.69	71.88	No	Si
SLU 58	4.83	13828.63	-106380	-0.000082	0.0004492	0.0035	7.55	236195.75	314316.68	314316.68	22.73	No	Si
SLU 58	7.33	3704.41	-92859	-0.0000658	0.0004492	0.0035	7.55	224524.1	285644.36	285644.36	77.11	No	Si
SLU 62	4.83	14297.96	-109295	-0.0000845	0.0004492	0.0035	7.55	238012.22	320499.56	320499.56	22.42	No	Si
SLU 62	7.33	3907.25	-96006	-0.0000683	0.0004492	0.0035	7.55	227718.12	292318.56	292318.56	74.81	No	Si
SLU 55	4.83	13711.07	-104699	-0.0000806	0.0004492	0.0035	7.55	235035.76	310752.64	310752.64	22.66	No	Si
SLU 55	7.33	3926.85	-91240	-0.0000647	0.0004492	0.0035	7.55	222769.11	282212.69	282212.69	71.87	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 1	4.83	81626.9	-80602	-0.0000991	0.0006738	0.0035	7.55	264315.79	264315.79	264315.79	3.24		Si
SLV 1	7.33	-29020	-80699	-0.0000698	0.0006738	0.0035	7.55	295964.85	295964.85	295964.85	10.2		Si
SLV 4	4.83	90509.06	-77077	-0.0001015	0.0006738	0.0035	7.55	254546.91	254546.91	254546.91	2.81		Si
SLV 4	7.33	-13769.17	-79096	-0.0000602	0.0006738	0.0035	7.55	291389.52	291389.52	291389.52	21.16		Si
SLV 7	4.83	49194.12	-72903	-0.0000754	0.0006738	0.0035	7.55	242979.34	242979.34	242979.34	4.94		Si
SLV 7	7.33	20004.77	-69160	-0.0000567	0.0006738	0.0035	7.55	232607.23	232607.23	232607.23	11.63		Si
SLV 14	4.83	-71758.24	-84381	-0.0000963	0.0006738	0.0035	7.55	306003.22	306003.22	306003.22	4.26		Si
SLV 14	7.33	20759.78	-60928	-0.0000514	0.0006738	0.0035	7.55	209794.21	209794.21	209794.21	10.11		Si
SLV 2	4.83	80768.92	-81194	-0.000099	0.0006738	0.0035	7.55	265955.36	265955.36	265955.36	3.29		Si
SLV 2	7.33	-28403.82	-81189	-0.0000698	0.0006738	0.0035	7.55	297364.03	297364.03	297364.03	10.47		Si
SLV 13	4.83	-70900.27	-83789	-0.0000954	0.0006738	0.0035	7.55	304409.72	304409.72	304409.72	4.29		Si
SLV 13	7.33	20143.61	-60438	-0.0000507	0.0006738	0.0035	7.55	208435.97	208435.97	208435.97	10.35		Si
SLV 3	4.83	91367.04	-76485	-0.0001015	0.0006738	0.0035	7.55	252907.35	252907.35	252907.35	2.77		Si
SLV 3	7.33	-14385.35	-78606	-0.0000602	0.0006738	0.0035	7.55	289990.34	289990.34	289990.34	20.16		Si
SLV 8	4.83	48639.97	-73285	-0.0000754	0.0006738	0.0035	7.55	244038.3	244038.3	244038.3	5.02		Si
SLV 8	7.33	20402.74	-69476	-0.0000571	0.0006738	0.0035	7.55	233484.48	233484.48	233484.48	11.44		Si
SLV 16	4.83	-62018.1	-80264	-0.0000878	0.0006738	0.0035	7.55	294723.58	294723.58	294723.58	4.75		Si
SLV 16	7.33	35394.43	-58835	-0.0000579	0.0006738	0.0035	7.55	203994.52	203994.52	203994.52	5.76		Si
SLV 15	4.83	-61160.12	-79673	-0.0000869	0.0006738	0.0035	7.55	293034.59	293034.59	293034.59	4.79		Si
SLV 15	7.33	34778.25	-58345	-0.0000572	0.0006738	0.0035	7.55	202636.28	202636.28	202636.28	5.83		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 61	4.83	14120.96	-107617	-76771	685	7.55	7.55	-36316	10833	22902	115546	75972	38505	114477	No	167.14	Si
SLU 61	7.33	4021.24	-94386	-67333	3862	7.55	7.55	-31851	10833	22902	115546	75972	38505	114477	No	29.64	Si
SLU 81	4.83	14771.17	-119193	-85030	560	7.55	7.55	-40222	10833	22902	115546	75972	38505	114477	No	204.52	Si
SLU 81	7.33	5125.8	-105691	-75398	4008	7.55	7.55	-35666	10833	22902	115546	75972	38505	114477	No	28.56	Si
SLU 39	4.83	12293.82	-100941	-72009	685	7.55	7.55	-34063	10833	22902	115546	75972	38505	114477	No	167.15	Si
SLU 39	7.33	4763.03	-90561	-64604	3546	7.55	7.55	-30560	10833	22902	115546	75972	38505	114477	No	32.28	Si
SLU 60	4.83	14031.8	-107620	-76774	696	7.55	7.55	-36317	10833	22902	115546	75972	38505	114477	No	164.5	Si
SLU 60	7.33	3858.59	-94384	-67331	3872	7.55	7.55	-31850	10833	22902	115546	75972	38505	114477	No	29.57	Si
SLU 63	4.83	14387.12	-109292	-77966	611	7.55	7.55	-36881	10833	22902	115546	75972	38505	114477	No	187.35	Si
SLU 63	7.33	4069.91	-96008	-68490	3840	7.55	7.55	-32398	10833	22902	115546	75972	38505	114477	No	29.81	Si
SLU 83	4.83	15037.33	-120868	-86225	486	7.55	7.55	-40787	10833	22902	115546	75972	38505	114477	No	235.63	Si
SLU 83	7.33	5174.46	-107313	-76555	3987	7.55	7.55	-36213	10833	22902	115546	75972	38505	114477	No	28.71	Si
SLU 62	4.83	14297.96	-109295	-77969	622	7.55	7.55	-36882	10833	22902	115546	75972	38505	114477	No	184.04	Si
SLU 62	7.33	3907.25	-96006	-68488	3850	7.55	7.55	-32398	10833	22902	115546	75972	38505	114477	No	29.73	Si
SLU 40	4.83	12382.98	-100938	-72007	674	7.55	7.55	-34062	10833	22902	115546	75972	38505	114477	No	169.87	Si
SLU 40	7.33	4925.69	-90563	-64606	3536	7.55	7.55	-30561	10833	22902	115546	75972	38505	114477	No	32.37	Si
SLU 84	4.83	15126.49	-120865	-86222	475	7.55	7.55	-40786	10833	22902	115546	75972	38505	114477	No	241.08	Si
SLU 84	7.33	5337.12	-107315	-76556	3977	7.55	7.55	-36214	10833	22902	115546	75972	38505	114477	No	28.78	Si
SLU 82	4.83	14860.33	-119190	-85027	549	7.55	7.55	-40221	10833	22902	115546	75972	38505	114477	No	208.62	Si
SLU 82	7.33	5288.46	-105694	-75399	3999	7.55	7.55	-35667	10833	22902	115546	75972	38505	114477	No	28.63	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 1	4.83	81626.9	-80602	-57499	55707	7.55	7.55	-27199	16250	34352	115546	113958	38505	149898		2.69	Si
SLV 1	7.33	-29020	-80699	-57569	53139	7.55	7.55	-27232	16250	34352	115546	113958	38505	149898		2.82	Si
SLV 14	4.83	-71758.24	-84381	-60195	-58323	7.55	7.55	-28475	16250	34352	115546	113958	38505	149898		2.57	Si
SLV 14	7.33	20759.78	-60928	-43464	-49969	7.55	7.55	-20560	16250	34352	115546	113958	38505	149898		3	Si



Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 13	4.83	-70900.27	-83789	-59773	-57694	7.55	7.55	-28275	16250	34352	115546	113958	38505	149898		2.6	Si
SLV 13	7.33	20143.61	-60438	-43115	-49374	7.55	7.55	-20395	16250	34352	115546	113958	38505	149898		3.04	Si
SLV 3	4.83	91367.04	-76485	-54563	57657	7.55	7.55	-25810	16250	34352	115546	113958	38505	149898		2.6	Si
SLV 3	7.33	-14385.35	-78606	-56076	54127	7.55	7.55	-26526	16250	34352	115546	113958	38505	149898		2.77	Si
SLV 2	4.83	80768.92	-81194	-57922	55077	7.55	7.55	-27399	16250	34352	115546	113958	38505	149898		2.72	Si
SLV 2	7.33	-28403.82	-81189	-57918	52543	7.55	7.55	-27398	16250	34352	115546	113958	38505	149898		2.85	Si
SLV 15	4.83	-61160.12	-79673	-56837	-55743	7.55	7.55	-26886	16250	34352	115546	113958	38505	149898		2.69	Si
SLV 15	7.33	34778.25	-58345	-41622	-48386	7.55	7.55	-19689	16250	34352	115546	113958	38505	149898		3.1	Si
SLD 13	4.83	-24739.77	-81885	-58415	-24847	7.55	7.55	-27632	16250	34352	115546	113958	38505	149898		6.03	Si
SLD 13	7.33	10347.23	-65795	-46936	-19910	7.55	7.55	-22203	16250	34352	115546	113958	38505	149898		7.53	Si
SLV 4	4.83	90509.06	-77077	-54985	57028	7.55	7.55	-26010	16250	34352	115546	113958	38505	149898		2.63	Si
SLV 4	7.33	-13769.17	-79096	-56425	53531	7.55	7.55	-26691	16250	34352	115546	113958	38505	149898		2.8	Si
SLD 14	4.83	-25108.19	-82139	-58596	-25117	7.55	7.55	-27718	16250	34352	115546	113958	38505	149898		5.97	Si
SLD 14	7.33	10611.81	-66005	-47086	-20166	7.55	7.55	-22274	16250	34352	115546	113958	38505	149898		7.43	Si
SLV 16	4.83	-62018.1	-80264	-57259	-56373	7.55	7.55	-27085	16250	34352	115546	113958	38505	149898		2.66	Si
SLV 16	7.33	35394.43	-58835	-41971	-48981	7.55	7.55	-19854	16250	34352	115546	113958	38505	149898		3.06	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRMC D.M. 17-01-18 (N.T.C.)

quota 6.59 Ta 0.07 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 15	-69007	0.38	786.51	7940.35	11335.15	9637.75	12.25	Si
SLV 16	-69616	0.38	786.51	7995.13	11422.77	9708.95	12.34	Si
SLV 11	-69639	0.38	786.51	7997.15	11426	9711.57	12.35	Si
SLV 12	-70032	0.38	786.51	8032.38	11482.6	9757.49	12.41	Si
SLV 13	-70817	0.38	786.51	8102.28	11595.44	9848.86	12.52	Si
SLV 14	-71426	0.38	786.51	8156.27	11683.08	9919.67	12.61	Si
SLV 7	-71898	0.38	786.51	8197.86	11750.91	9974.38	12.68	Si
SLV 8	-72291	0.38	786.51	8232.45	11807.52	10019.99	12.74	Si
SLV 9	-75671	0.38	786.51	8524.96	12293.92	10409.44	13.24	Si
SLV 10	-76065	0.38	786.51	8558.48	12350.55	10454.52	13.29	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.59 Wa = 0.05 Ta = 0.0739

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 6	-66081	-87007	-1937	0.6	7776.5	0.96	9.07714	12.29974	No
SLV 5	-65641	-86625	-1937	0.603	7731.8	0.96	9.13065	12.29974	No
SLV 8	-65937	-73285	1760	0.603	7762	0.96	9.13139	12.29974	No
SLV 7	-65498	-72903	1760	0.607	7717.2	0.96	9.18541	12.29974	No
SLV 12	-64296	-74241	1984	0.613	7595.1	0.959	9.28852	12.29974	No
SLV 10	-64440	-87964	-1713	0.616	7609.6	0.959	9.32802	12.29974	No
SLV 11	-63857	-73859	1984	0.617	7550.4	0.959	9.34485	12.29974	No
SLV 9	-64000	-87581	-1713	0.619	7564.9	0.959	9.38442	12.29974	No
SLV 2	-68066	-81194	-904	0.598	7978.4	0.961	9.05259	6.56558	Si
SLV 1	-67385	-80602	-904	0.604	7909.2	0.961	9.1332	6.56558	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	22.276	SLU 63	Si
V_SLU	28.56	SLU 81	Si
PF_SLV	2.768	SLV 3	Si
V_SLV	2.57	SLV 14	Si
PFFP_SLV	12.254	SLV 15	Si
R_SLV	0.738	SLV 6	No

## Maschio 100

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-10.478	1.006	-11.143	1.006	L5	L6	0.665	0.28	3.52	3.52	3.52			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica



									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche,  $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 62	4.83	-160.28	-11436	-0.0001048	0.0004492	0.0035	0.6647	1889.41	2888.28	2888.28	18.02	No	Si
SLU 62	7.33	122.64	-10346	-0.0000918	0.0004492	0.0035	0.6647	1874.13	2620.13	2620.13	21.36	No	Si
SLU 52	4.83	-149.79	-10792	-0.000098	0.0004492	0.0035	0.6647	1884.59	2789.24	2789.24	18.62	No	Si
SLU 52	7.33	114.42	-9596	-0.0000846	0.0004492	0.0035	0.6647	1843.46	2482.99	2482.99	21.7	No	Si
SLU 57	4.83	-156.55	-11345	-0.0001036	0.0004492	0.0035	0.6647	1889.46	2874.32	2874.32	18.36	No	Si
SLU 57	7.33	120.47	-10139	-0.0000898	0.0004492	0.0035	0.6647	1867.3	2582.25	2582.25	21.44	No	Si
SLU 54	4.83	-155.16	-11129	-0.0001015	0.0004492	0.0035	0.6647	1888.62	2841	2841	18.31	No	Si
SLU 54	7.33	119.94	-9957	-0.0000882	0.0004492	0.0035	0.6647	1860.28	2549.01	2549.01	21.25	No	Si
SLU 56	4.83	-155.47	-11356	-0.0001036	0.0004492	0.0035	0.6647	1889.47	2876.05	2876.05	18.5	No	Si
SLU 56	7.33	119.52	-10159	-0.0000899	0.0004492	0.0035	0.6647	1868.03	2585.96	2585.96	21.64	No	Si
SLU 60	4.83	-158.89	-11219	-0.0001027	0.0004492	0.0035	0.6647	1889.14	2854.96	2854.96	17.97	No	Si
SLU 60	7.33	122.12	-10164	-0.0000902	0.0004492	0.0035	0.6647	1868.21	2586.9	2586.9	21.18	No	Si
SLU 63	4.83	-161.36	-11424	-0.0001047	0.0004492	0.0035	0.6647	1889.43	2886.55	2886.55	17.89	No	Si
SLU 63	7.33	123.59	-10326	-0.0000917	0.0004492	0.0035	0.6647	1873.52	2616.42	2616.42	21.17	No	Si
SLU 53	4.83	-154.08	-11140	-0.0001015	0.0004492	0.0035	0.6647	1888.7	2842.73	2842.73	18.45	No	Si
SLU 53	7.33	119	-9977	-0.0000883	0.0004492	0.0035	0.6647	1861.11	2552.72	2552.72	21.45	No	Si
SLU 55	4.83	-151.18	-11009	-0.0001001	0.0004492	0.0035	0.6647	1887.56	2822.56	2822.56	18.67	No	Si
SLU 55	7.33	114.94	-9778	-0.0000862	0.0004492	0.0035	0.6647	1852.4	2516.23	2516.23	21.89	No	Si
SLU 61	4.83	-159.97	-11208	-0.0001026	0.0004492	0.0035	0.6647	1889.09	2853.22	2853.22	17.84	No	Si
SLU 61	7.33	123.07	-10144	-0.0000901	0.0004492	0.0035	0.6647	1867.49	2583.19	2583.19	20.99	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche,  $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 3	4.83	2848.41	-3898	-0.0363115	0.0006738	0.0035	0.5318		1248.88	1248.88	0.44	No	No
SLV 3	7.33	-2901.44	-4798	-0.0100741	0.0006738	0.0035	0.5318		1599.6	1599.6	0.55	No	No
SLV 7	4.83	823.09	-4270	-0.000105	0.0006738	0.0035	0.6647		1353.95	1353.95	1.64	No	Si
SLV 7	7.33	-842	-3444	-0.0001364	0.0006738	0.0035	0.5318		1217.51	1217.51	1.45	No	Si
SLV 1	4.83	2828.38	-5657	-0.0278074	0.0006738	0.0035	0.5318		1715.3	1715.3	0.61	No	No
SLV 1	7.33	-2893.69	-6955	-0.0080004	0.0006738	0.0035	0.5318		2163.17	2163.17	0.75	No	No
SLV 2	4.83	2797.51	-5741	-0.0267945	0.0006738	0.0035	0.5318		1735.33	1735.33	0.62	No	No
SLV 2	7.33	-2858.54	-7013	-0.0077286	0.0006738	0.0035	0.5318		2177.29	2177.29	0.76	No	No
SLV 14	4.83	-3040.23	-12625	-0.0007586	0.0006738	0.0035	0.5318		3371.18	3371.18	1.11	No	Si
SLV 14	7.33	3033.59	-10305	-0.0069172	0.0006738	0.0035	0.5318		2820.6	2820.6	0.93	No	No
SLV 16	4.83	-3020.2	-10866	-0.0028695	0.0006738	0.0035	0.5318		3050.03	3050.03	1.01	No	Si
SLV 16	7.33	3025.85	-8148	-0.0188018	0.0006738	0.0035	0.5318		2311.14	2311.14	0.76	No	No
SLV 13	4.83	-3009.35	-12541	-0.0007263	0.0006738	0.0035	0.5318		3357.81	3357.81	1.12	No	Si
SLV 13	7.33	2998.44	-10247	-0.0066025	0.0006738	0.0035	0.5318		2809.84	2809.84	0.94	No	No
SLV 15	4.83	-2989.33	-10782	-0.0025903	0.0006738	0.0035	0.5318		3032.46	3032.46	1.01	No	Si
SLV 15	7.33	2990.69	-8090	-0.0183652	0.0006738	0.0035	0.5318		2297.31	2297.31	0.77	No	No
SLV 12	4.83	-948.17	-6389	-0.0001203	0.0006738	0.0035	0.6647		2019.46	2019.46	2.13	No	Si
SLV 12	7.33	948.35	-4469	-0.0001296	0.0006738	0.0035	0.6647		1409.34	1409.34	1.49	No	Si
SLV 4	4.83	2817.53	-3982	-0.0353534	0.0006738	0.0035	0.5318		1272.62	1272.62	0.45	No	No
SLV 4	7.33	-2866.28	-4856	-0.0098489	0.0006738	0.0035	0.5318		1615.71	1615.71	0.56	No	No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 57	4.83	-156.55	-11345	-8093	-108	0.6647	0.6647	-43485	10833	2016	115546	6689	3390	10078	No	93.58	Si
SLU 57	7.33	120.47	-10139	-7233	-116	0.6647	0.6647	-38862	10833	2016	115546	6689	3390	10078	No	87.15	Si
SLU 44	4.83	-124.35	-9840	-7020	-116	0.6647	0.6647	-37716	10833	2016	115546	6689	3390	10078	No	86.91	Si
SLU 44	7.33	92.75	-8350	-5956	-112	0.6647	0.6647	-32004	10833	2016	115546	6689	3390	10078	No	90.11	Si
SLU 50	4.83	-125.33	-10292	-7342	-121	0.6647	0.6647	-39447	10833	2016	115546	6689	3390	10078	No	83.57	Si
SLU 50	7.33	92.22	-8747	-6240	-116	0.6647	0.6647	-33527	10833	2016	115546	6689	3390	10078	No	86.83	Si
SLU 45	4.83	-128.64	-10187	-7267	-117	0.6647	0.6647	-39048	10833	2016	115546	6689	3390	10078	No	86.09	Si
SLU 45	7.33	97.33	-8731	-6228	-113	0.6647	0.6647	-33465	10833	2016	115546	6689	3390	10078	No	89.59	Si
SLU 46	4.83	-129.72	-10176	-7259	-119	0.6647	0.6647	-39005	10833	2016	115546	6689	3390	10078	No	85	Si
SLU 46	7.33	98.28	-8711	-6214	-114	0.6647	0.6647	-33387	10833	2016	115546	6689	3390	10078	No	88.4	Si
SLU 51	4.83	-126.41	-10280	-7334	-122	0.6647	0.6647	-39404	10833	2016	115546	6689	3390	10078	No	82.54	Si
SLU 51	7.33	93.16	-8727	-6225	-118	0.6647	0.6647	-33449	10833	2016	115546	6689	3390	10078	No	85.72	Si
SLU 47	4.83	-125.74	-10056	-7174	-120	0.6647	0.6647	-38546	10833	2016	115546	6689	3390	10078	No	84.31	Si
SLU 47	7.33	93.27	-8531	-6086	-115	0.6647	0.6647	-32701	10833	2016	115546	6689	3390	10078	No	87.47	Si
SLU 49	4.83	-131.11	-10393	-7414	-122	0.6647	0.6647	-39835	10833	2016	115546	6689	3390	10078	No	82.51	Si
SLU 49	7.33	98.8	-8892	-6344	-117	0.6647	0.6647	-34084	10833	2016	115546	6689	3390	10078	No	85.87	Si
SLU 48	4.83	-130.03	-10404	-7422	-121	0.6647	0.6647	-39878	10833	2016	115546	6689	3390	10078	No	83.54	Si
SLU 48	7.33	97.85	-8913	-6358	-116	0.6647	0.6647	-34162	10833	2016	115546	6689	3390	10078	No	86.98	Si
SLU 59	4.83	-151.85	-11233	-8013	-108	0.6647	0.6647	-43055	10833	2016	115546	6689	3390	10078	No	93.62	Si
SLU 59	7.33	114.83	-9973	-7115	-116	0.6647	0.6647	-38226	10833	2016	115546	6689	3390	10078	No	87	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 2	4.83	2797.51	-5741	-4096	2604	0.5318	0	0	0	0	115546	8026	2712	10738		4.12	Si
SLV 2	7.33	-2858.54	-7013	-5003	2218	0.5318	0	0	0	0	115546	8026	2712	10738		4.84	Si
SLV 15	4.83	-2989.33	-10782	-7692	-2702	0.5318	0.1653	0	0	0	115546	8026	2712	10738		3.97	Si
SLV 15	7.33	2990.69	-8090	-5771	-2317	0.5318	0	0	0	0	115546	8026	2712	10738		4.64	Si



Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 14	4.83	-3040.23	-12625	-9006	-2642	0.5318	0.2746	0	0	0	115546	8026	2712	10738		4.06	Si
SLV 14	7.33	3033.59	-10305	-7351	-2308	0.5318	0.1139	0	0	0	115546	8026	2712	10738		4.65	Si
SLV 3	4.83	2848.41	-3898	-2781	2545	0.5318	0	0	0	0	115546	8026	2712	10738		4.22	Si
SLV 3	7.33	-2901.44	-4798	-3423	2209	0.5318	0	0	0	0	115546	8026	2712	10738		4.86	Si
SLV 13	4.83	-3009.35	-12541	-8947	-2614	0.5318	0.2772	0	0	0	115546	8026	2712	10738		4.11	Si
SLV 13	7.33	2998.44	-10247	-7310	-2279	0.5318	0.1192	0	0	0	115546	8026	2712	10738		4.71	Si
SLD 15	4.83	-1332.57	-9328	-6654	-1183	0.6647	0.5685	-35752	16250	2586	115546	10033	3390	13423		11.35	Si
SLD 15	7.33	1316.08	-7767	-5541	-1019	0.6647	0.4887	-29772	16250	2224	115546	10033	3390	13423		13.18	Si
SLV 4	4.83	2817.53	-3982	-2841	2516	0.5318	0	0	0	0	115546	8026	2712	10738		4.27	Si
SLV 4	7.33	-2866.28	-4856	-3464	2181	0.5318	0	0	0	0	115546	8026	2712	10738		4.92	Si
SLV 1	4.83	2828.38	-5657	-4036	2633	0.5318	0	0	0	0	115546	8026	2712	10738		4.08	Si
SLV 1	7.33	-2893.69	-6955	-4962	2246	0.5318	0	0	0	0	115546	8026	2712	10738		4.78	Si
SLV 16	4.83	-3020.2	-10866	-7751	-2730	0.5318	0.1632	0	0	0	115546	8026	2712	10738		3.93	Si
SLV 16	7.33	3025.85	-8148	-5813	-2345	0.5318	0	0	0	0	115546	8026	2712	10738		4.58	Si
SLD 16	4.83	-1345.83	-9364	-6680	-1195	0.6647	0.5658	-35890	16250	2575	115546	10033	3390	13423		11.23	Si
SLD 16	7.33	1331.18	-7792	-5559	-1031	0.6647	0.4845	-29867	16250	2205	115546	10033	3390	13423		13.02	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRMC D.M. 17-01-18 (N.T.C.)

quota 6.59 Ta 0.07 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 7	-3698	0.38	69.24	461.57	623.58	542.58	7.84	Si
SLV 8	-3734	0.38	69.24	465.5	628.97	547.23	7.9	Si
SLV 11	-4636	0.38	69.24	560.86	764.24	662.55	9.57	Si
SLV 12	-4672	0.38	69.24	564.51	769.58	667.04	9.63	Si
SLV 3	-4828	0.38	69.24	580.27	792.81	686.54	9.91	Si
SLV 4	-4884	0.38	69.24	585.82	801.07	693.44	10.01	Si
SLV 1	-6744	0.38	69.24	757.48	1073.64	915.56	13.22	Si
SLV 2	-6799	0.38	69.24	762.17	1081.65	921.91	13.31	Si
SLV 15	-7956	0.38	69.24	854.09	1248.8	1051.44	15.18	Si
SLV 16	-8012	0.38	69.24	858.22	1256.8	1057.51	15.27	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.59 Wa = 0.05 Ta = 0.0739

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 10	-7918	-12253	14	0.48	898.3	0.969	7.19747	12.29974	No
SLV 9	-7881	-12199	14	0.482	894.6	0.969	7.22747	12.29974	No
SLV 6	-7228	-10188	-29	0.517	828.2	0.966	7.77036	12.29974	No
SLV 5	-7191	-10134	-29	0.519	824.4	0.966	7.80566	12.29974	No
SLV 14	-6332	-12625	72	0.572	736.9	0.962	8.64064	6.56558	Si
SLV 13	-6274	-12541	72	0.577	731.1	0.962	8.71075	6.56558	Si
SLV 16	-4274	-10866	78	0.796	527.8	0.949	12.18701	6.56558	Si
SLV 15	-4216	-10782	78	0.805	521.9	0.949	12.33239	6.56558	Si
SLV 2	-4033	-5741	-71	0.837	503.3	0.947	12.84285	6.56558	Si
SLV 1	-3976	-5657	-71	0.847	497.5	0.947	13.00409	6.56558	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	17.836	SLU 61	Si
V_SLU	82.508	SLU 49	Si
PF_SLV	0.438	SLV 3	No
V_SLV	3.934	SLV 16	Si
PFFP_SLV	7.836	SLV 7	Si
R_SLV	0.585	SLV 10	No

## Maschio 101

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-7.463	1.006	-9.398	1.006	L5	L6	1.935	0.28	3.52	3.52	3.52			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica





									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	$e_{fd}$	$y_{F,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 65	4.83	2433.7	-30771	-0.000107	0.0004492	0.0035	1.9353	15937.79	22546.6	22546.6	9.26	No	Si
SLU 65	7.33	1259.65	-24066	-0.0000757	0.0004492	0.0035	1.9353	14823.3	18954.39	18954.39	15.05	No	Si
SLU 66	4.83	2494.11	-31791	-0.0001109	0.0004492	0.0035	1.9353	15992.21	23093.12	23093.12	9.26	No	Si
SLU 66	7.33	1312.54	-24993	-0.0000789	0.0004492	0.0035	1.9353	15055.64	19451.03	19451.03	14.82	No	Si
SLU 68	4.83	2459.98	-31334	-0.0001091	0.0004492	0.0035	1.9353	15971.61	22848.51	22848.51	9.29	No	Si
SLU 68	7.33	1296.13	-24578	-0.0000775	0.0004492	0.0035	1.9353	14954.54	19228.3	19228.3	14.84	No	Si
SLU 69	4.83	2520.4	-32354	-0.0001129	0.0004492	0.0035	1.9353	16009.22	23395.02	23395.02	9.28	No	Si
SLU 69	7.33	1349.03	-25504	-0.0000807	0.0004492	0.0035	1.9353	15173.04	19724.94	19724.94	14.62	No	Si
SLU 70	4.83	2515.02	-32338	-0.0001128	0.0004492	0.0035	1.9353	16008.86	23386.28	23386.28	9.3	No	Si
SLU 70	7.33	1347.14	-25488	-0.0000807	0.0004492	0.0035	1.9353	15169.47	19716.33	19716.33	14.64	No	Si
SLU 64	4.83	2442.66	-30798	-0.0001072	0.0004492	0.0035	1.9353	15939.64	22561.18	22561.18	9.24	No	Si
SLU 64	7.33	1262.79	-24093	-0.0000758	0.0004492	0.0035	1.9353	14830.36	18968.75	18968.75	15.02	No	Si
SLU 67	4.83	2488.74	-31774	-0.0001108	0.0004492	0.0035	1.9353	15991.57	23084.37	23084.37	9.28	No	Si
SLU 67	7.33	1310.65	-24977	-0.0000788	0.0004492	0.0035	1.9353	15051.83	19442.42	19442.42	14.83	No	Si
SLU 72	4.83	2489.85	-31909	-0.0001112	0.0004492	0.0035	1.9353	15996.53	23156.24	23156.24	9.3	No	Si
SLU 72	7.33	1333.87	-25099	-0.0000794	0.0004492	0.0035	1.9353	15080.66	19507.95	19507.95	14.63	No	Si
SLU 22	4.83	2106.74	-25463	-0.0000875	0.0004492	0.0035	1.9353	15163.9	19702.94	19702.94	9.35	No	Si
SLU 22	7.33	967.59	-20041	-0.0000614	0.0004492	0.0035	1.9353	13522.94	16294.23	16294.23	16.84	No	Si
SLU 71	4.83	2495.22	-31925	-0.0001113	0.0004492	0.0035	1.9353	15997.1	23164.99	23164.99	9.28	No	Si
SLU 71	7.33	1335.76	-25116	-0.0000795	0.0004492	0.0035	1.9353	15084.42	19516.56	19516.56	14.61	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 14	4.83	-11780.14	-17798	-0.0002123	0.0006738	0.0035	1.5482		17198.66	17198.66	1.46		Si
SLV 14	7.33	8692.21	-18766	-0.0001296	0.0006738	0.0035	1.9353		16065.85	16065.85	1.85		Si
SLV 2	4.83	16134.32	-31543	-0.0002618	0.0006738	0.0035	1.9353		24713.82	24713.82	1.53		Si
SLV 2	7.33	-6180.78	-20437	-0.0001055	0.0006738	0.0035	1.9353		19143.84	19143.84	3.1		Si
SLV 3	4.83	15397.39	-29871	-0.0002478	0.0006738	0.0035	1.9353		23802.7	23802.7	1.55		Si
SLV 3	7.33	-6633.41	-18662	-0.0001046	0.0006738	0.0035	1.9353		17836.32	17836.32	2.69		Si
SLV 4	4.83	15272.68	-29821	-0.0002452	0.0006738	0.0035	1.9353		23775.2	23775.2	1.56		Si
SLV 4	7.33	-6554.09	-18669	-0.0001038	0.0006738	0.0035	1.9353		17841.36	17841.36	2.72		Si
SLD 2	4.83	7933.93	-27139	-0.0001408	0.0006738	0.0035	1.9353		21941.93	21941.93	2.77		Si
SLD 2	7.33	-2049.47	-19461	-0.0000676	0.0006738	0.0035	1.9353		18425.72	18425.72	8.99		Si
SLD 1	4.83	7987.48	-27160	-0.0001414	0.0006738	0.0035	1.9353		21957.13	21957.13	2.75		Si
SLD 1	7.33	-2083.53	-19458	-0.0000679	0.0006738	0.0035	1.9353		18423.56	18423.56	8.84		Si
SLV 16	4.83	-12641.78	-16076	-0.000337	0.0006738	0.0035	1.5482		15897.05	15897.05	1.26		Si
SLV 16	7.33	8318.9	-16998	-0.0001234	0.0006738	0.0035	1.9353		14824.76	14824.76	1.78		Si
SLV 1	4.83	16259.03	-31593	-0.0002645	0.0006738	0.0035	1.9353		24741.32	24741.32	1.52		Si
SLV 1	7.33	-6260.11	-20430	-0.0001061	0.0006738	0.0035	1.9353		19139.08	19139.08	3.06		Si
SLV 13	4.83	-11655.43	-17848	-0.0002063	0.0006738	0.0035	1.5482		17235.89	17235.89	1.48		Si
SLV 13	7.33	8612.89	-18759	-0.0001284	0.0006738	0.0035	1.9353		16061.06	16061.06	1.86		Si
SLV 15	4.83	-12517.07	-16126	-0.0003188	0.0006738	0.0035	1.5482		15936.31	15936.31	1.27		Si
SLV 15	7.33	8239.57	-16991	-0.0001221	0.0006738	0.0035	1.9353		14819.97	14819.97	1.8		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 79	4.83	2603.31	-35186	-25101	2191	1.9353	1.9353	-46321	10833	5870	115546	19474	9870	29344	No	13.4	Si
SLU 79	7.33	1532.93	-28094	-20042	-400	1.9353	1.9353	-36985	10833	5870	115546	19474	9870	29344	No	73.38	Si
SLU 74	4.83	2602.2	-35052	-25005	2193	1.9353	1.9353	-46144	10833	5870	115546	19474	9870	29344	No	13.38	Si
SLU 74	7.33	1509.71	-27972	-19954	-383	1.9353	1.9353	-36824	10833	5870	115546	19474	9870	29344	No	76.61	Si
SLU 75	4.83	2596.83	-35035	-24993	2192	1.9353	1.9353	-46123	10833	5870	115546	19474	9870	29344	No	13.39	Si
SLU 75	7.33	1507.82	-27956	-19943	-385	1.9353	1.9353	-36803	10833	5870	115546	19474	9870	29344	No	76.16	Si
SLU 84	4.83	2617.98	-36004	-25684	2203	1.9353	1.9353	-47398	10833	5870	115546	19474	9870	29344	No	13.32	Si
SLU 84	7.33	1579.05	-28843	-20576	-375	1.9353	1.9353	-37971	10833	5870	115546	19474	9870	29344	No	78.19	Si
SLU 82	4.83	2591.7	-35440	-25282	2183	1.9353	1.9353	-46656	10833	5870	115546	19474	9870	29344	No	13.44	Si
SLU 82	7.33	1542.57	-28332	-20211	-359	1.9353	1.9353	-37298	10833	5870	115546	19474	9870	29344	No	81.85	Si
SLU 81	4.83	2597.08	-35456	-25294	2184	1.9353	1.9353	-46677	10833	5870	115546	19474	9870	29344	No	13.43	Si
SLU 81	7.33	1544.46	-28348	-20223	-356	1.9353	1.9353	-37319	10833	5870	115546	19474	9870	29344	No	82.37	Si
SLU 80	4.83	2597.94	-35169	-25089	2189	1.9353	1.9353	-46299	10833	5870	115546	19474	9870	29344	No	13.4	Si
SLU 80	7.33	1531.04	-28078	-20030	-402	1.9353	1.9353	-36964	10833	5870	115546	19474	9870	29344	No	72.97	Si
SLU 83	4.83	2623.36	-36020	-25696	2204	1.9353	1.9353	-47419	10833	5870	115546	19474	9870	29344	No	13.31	Si
SLU 83	7.33	1580.94	-28859	-20588	-373	1.9353	1.9353	-37992	10833	5870	115546	19474	9870	29344	No	78.66	Si
SLU 77	4.83	2628.48	-35615	-25407	2213	1.9353	1.9353	-46886	10833	5870	115546	19474	9870	29344	No	13.26	Si
SLU 77	7.33	1546.19	-28483	-20319	-400	1.9353	1.9353	-37497	10833	5870	115546	19474	9870	29344	No	73.4	Si
SLU 78	4.83	2623.11	-35599	-25395	2212	1.9353	1.9353	-46865	10833	5870	115546	19474	9870	29344	No	13.27	Si
SLU 78	7.33	1544.3	-28467	-20308	-402	1.9353	1.9353	-37476	10833	5870	115546	19474	9870	29344	No	72.99	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 15	4.83	-12517.07	-16126	-11504	-10495	1.5482	0.5744	0	0	0	115546	23369	7896	31265		2.98	Si
SLV 15	7.33	8239.57	-16991	-12121	-7142	1.9353	1.4481	-22368	16250	6589	115546	29211	9870	39081		5.47	Si
SLV 2	4.83	16134.32	-31543	-22502	13557	1.9353	1.3684	-41525	16250	6226	115546	29211	9870	39081		2.88	Si
SLV 2	7.33	-6180.78	-20437	-14579	6472	1.9353	1.9353	-26905	16250	8806	115546	29211	9870	39081		6.04	Si





Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 13	4.83	-11655.43	-17848	-12732	-9696	1.5482	0.9439	0	0	0	115546	23369	7896	31265		3.22	Si
SLV 13	7.33	8612.89	-18759	-13382	-7063	1.9353	1.5256	-24696	16250	6941	115546	29211	9870	39081		5.53	Si
SLV 14	4.83	-11780.14	-17798	-12696	-9807	1.5482	0.9173	0	0	0	115546	23369	7896	31265		3.19	Si
SLV 14	7.33	8692.21	-18766	-13387	-7123	1.9353	1.5134	-24705	16250	6886	115546	29211	9870	39081		5.49	Si
SLV 4	4.83	15272.68	-29821	-21274	12759	1.9353	1.3665	-39258	16250	6218	115546	29211	9870	39081		3.06	Si
SLV 4	7.33	-6554.09	-18669	-13318	6393	1.9353	1.8497	-26016	16250	8416	115546	29211	9870	39081		6.11	Si
SLV 1	4.83	16259.03	-31593	-22538	13668	1.9353	1.3591	-41592	16250	6184	115546	29211	9870	39081		2.86	Si
SLV 1	7.33	-6260.1	-20430	-14574	6532	1.9353	1.9353	-26896	16250	8806	115546	29211	9870	39081		5.98	Si
SLV 16	4.83	-12641.78	-16076	-11468	-10605	1.5482	0.5438	0	0	0	115546	23369	7896	31265		2.95	Si
SLV 16	7.33	8318.9	-16998	-12126	-7202	1.9353	1.4347	-22377	16250	6528	115546	29211	9870	39081		5.43	Si
SLV 3	4.83	15397.39	-29871	-21309	12869	1.9353	1.3566	-39325	16250	6172	115546	29211	9870	39081		3.04	Si
SLV 3	7.33	-6633.41	-18662	-13313	6452	1.9353	1.8366	-26192	16250	8357	115546	29211	9870	39081		6.06	Si
SLD 2	4.83	7933.93	-27139	-19360	6672	1.9353	1.9353	-35727	16250	8806	115546	29211	9870	39081		5.86	Si
SLD 2	7.33	-2049.47	-19461	-13883	2574	1.9353	1.9353	-25619	16250	8806	115546	29211	9870	39081		15.18	Si
SLD 1	4.83	7987.48	-27160	-19376	6719	1.9353	1.9353	-35756	16250	8806	115546	29211	9870	39081		5.82	Si
SLD 1	7.33	-2083.53	-19458	-13881	2600	1.9353	1.9353	-25616	16250	8806	115546	29211	9870	39081		15.03	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRMC D.M. 17-01-18 (N.T.C.)

quota 6.59 Ta 0.07 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 16	-14265	0.38	201.61	1710.21	2414.77	2062.49	10.23	Si
SLV 15	-14315	0.38	201.61	1715.24	2422.27	2068.75	10.26	Si
SLV 14	-16352	0.38	201.61	1912.33	2721.93	2317.13	11.49	Si
SLV 13	-16402	0.38	201.61	1917.06	2729.34	2323.2	11.52	Si
SLV 12	-16608	0.38	201.61	1936.31	2759.55	2347.93	11.65	Si
SLV 11	-16641	0.38	201.61	1939.34	2764.33	2351.84	11.67	Si
SLV 8	-20696	0.38	201.61	2293.67	3350.88	2822.27	14	Si
SLV 7	-20729	0.38	201.61	2296.33	3355.55	2825.94	14.02	Si
SLV 10	-23565	0.38	201.61	2516.32	3761.99	3139.16	15.57	Si
SLV 9	-23598	0.38	201.61	2518.72	3766.66	3142.69	15.59	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.59 Wa = 0.05 Ta = 0.0739

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 5	-18130	-28783	-848	0.548	2114.6	0.962	8.28238	12.29974	No
SLV 6	-18116	-28750	-848	0.549	2113.1	0.962	8.28823	12.29974	No
SLV 9	-17339	-24659	-792	0.572	2034.1	0.961	8.65795	12.29974	No
SLV 10	-17325	-24626	-792	0.573	2032.6	0.961	8.66435	12.29974	No
SLV 7	-14293	-23043	816	0.672	1724.4	0.954	10.2345	12.29974	No
SLV 8	-14279	-23010	817	0.673	1723	0.954	10.24342	12.29974	No
SLV 11	-13502	-18919	872	0.701	1644.1	0.952	10.70131	12.29974	No
SLV 12	-13487	-18886	872	0.702	1642.6	0.952	10.71116	12.29974	No
SLV 1	-17714	-31593	-330	0.586	2072.3	0.961	8.85543	6.56558	Si
SLV 2	-17692	-31543	-330	0.586	2070	0.961	8.86537	6.56558	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	9.236	SLU 64	Si
V_SLU	13.258	SLU 77	Si
PF_SLV	1.258	SLV 16	Si
V_SLV	2.859	SLV 1	Si
PFFP_SLV	10.23	SLV 16	Si
R_SLV	0.673	SLV 5	No

## Maschio 102

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-4.913	1.006	-6.463	1.006	L5	L6	1.55	0.28	3.52	3.52	3.52			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica



									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 45	4.83	1356.16	-23056	-0.0000978	0.0004492	0.0035	1.55	10099.6	13780.96	13780.96	10.16	No	Si
SLU 45	6.93	-1287.81	-20554	-0.0000872	0.0004492	0.0035	1.55	9755.24	13754.24	13754.24	10.68	No	Si
SLU 64	4.83	1397.82	-24945	-0.0001058	0.0004492	0.0035	1.55	10238.43	14616.82	14616.82	10.46	No	Si
SLU 64	6.93	-1296.91	-22585	-0.0000951	0.0004492	0.0035	1.55	10048.73	14639.81	14639.81	11.29	No	Si
SLU 49	4.83	1366.87	-23501	-0.0000997	0.0004492	0.0035	1.55	10141.68	13977.77	13977.77	10.23	No	Si
SLU 49	6.93	-1298.32	-20984	-0.000089	0.0004492	0.0035	1.55	9827.46	13952.71	13952.71	10.75	No	Si
SLU 46	4.83	1355.55	-23067	-0.0000978	0.0004492	0.0035	1.55	10100.75	13785.99	13785.99	10.17	No	Si
SLU 46	6.93	-1289.72	-20571	-0.0000873	0.0004492	0.0035	1.55	9758.16	13762.03	13762.03	10.67	No	Si
SLU 48	4.83	1367.48	-23489	-0.0000996	0.0004492	0.0035	1.55	10140.68	13972.74	13972.74	10.22	No	Si
SLU 48	6.93	-1296.41	-20968	-0.0000889	0.0004492	0.0035	1.55	9824.74	13945.5	13945.5	10.76	No	Si
SLU 47	4.83	1354.43	-22739	-0.0000965	0.0004492	0.0035	1.55	10066.15	13640.94	13640.94	10.07	No	Si
SLU 47	6.93	-1293.53	-20248	-0.0000861	0.0004492	0.0035	1.55	9700.56	13612.18	13612.18	10.52	No	Si
SLU 51	4.83	1366.16	-23165	-0.0000983	0.0004492	0.0035	1.55	10110.49	13829.37	13829.37	10.12	No	Si
SLU 51	6.93	-1300.86	-20650	-0.0000878	0.0004492	0.0035	1.55	9771.84	13798.85	13798.85	10.61	No	Si
SLU 44	4.83	1343.11	-22306	-0.0000947	0.0004492	0.0035	1.55	10015.58	13449.16	13449.16	10.01	No	Si
SLU 44	6.93	-1284.92	-19835	-0.0000845	0.0004492	0.0035	1.55	9622.36	13420.32	13420.32	10.44	No	Si
SLU 50	4.83	1366.77	-23154	-0.0000983	0.0004492	0.0035	1.55	10109.37	13824.34	13824.34	10.11	No	Si
SLU 50	6.93	-1298.95	-20634	-0.0000877	0.0004492	0.0035	1.55	9768.96	13791.05	13791.05	10.62	No	Si
SLU 43	4.83	1344.13	-22287	-0.0000946	0.0004492	0.0035	1.55	10013.24	13440.77	13440.77	10	No	Si
SLU 43	6.93	-1281.75	-19807	-0.0000843	0.0004492	0.0035	1.55	9616.89	13407.33	13407.33	10.46	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 4	4.83	9350.55	-17514	-0.0002779	0.0006738	0.0035	1.55	11704.35	11704.35	11704.35	1.25		Si
SLV 4	6.93	-8140.56	-13737	-0.0002839	0.0006738	0.0035	1.24	10688.03	10688.03	10688.03	1.31		Si
SLV 16	4.83	-7568.93	-20962	-0.0001822	0.0006738	0.0035	1.55	14756.44	14756.44	14756.44	1.95		Si
SLV 16	6.93	6321.57	-23122	-0.000164	0.0006738	0.0035	1.55	14837.74	14837.74	14837.74	2.35		Si
SLV 2	4.83	9551.66	-17484	-0.000296	0.0006738	0.0035	1.55	11687.12	11687.12	11687.12	1.22		Si
SLV 2	6.93	-8129.66	-11766	-0.0005066	0.0006738	0.0035	1.24	9468.82	9468.82	9468.82	1.16		Si
SLV 15	4.83	-7506.91	-21062	-0.0001809	0.0006738	0.0035	1.55	14809.43	14809.43	14809.43	1.97		Si
SLV 15	6.93	6240.61	-23310	-0.0001634	0.0006738	0.0035	1.55	14921.98	14921.98	14921.98	2.39		Si
SLD 2	4.83	4668.01	-18505	-0.0001228	0.0006738	0.0035	1.55	12274.63	12274.63	12274.63	2.63		Si
SLD 2	6.93	-4014.22	-15060	-0.0001014	0.0006738	0.0035	1.55	11473.51	11473.51	11473.51	2.86		Si
SLV 1	4.83	9613.68	-17584	-0.0002988	0.0006738	0.0035	1.55	11744.64	11744.64	11744.64	1.22		Si
SLV 1	6.93	-8210.62	-11953	-0.0004988	0.0006738	0.0035	1.24	9585.98	9585.98	9585.98	1.17		Si
SLD 1	4.83	4694.64	-18548	-0.0001233	0.0006738	0.0035	1.55	12299.33	12299.33	12299.33	2.62		Si
SLD 1	6.93	-4048.98	-15140	-0.0001022	0.0006738	0.0035	1.55	11521.26	11521.26	11521.26	2.85		Si
SLV 13	4.83	-7305.8	-21032	-0.0001751	0.0006738	0.0035	1.55	14793.55	14793.55	14793.55	2.02		Si
SLV 13	6.93	6251.51	-21339	-0.0001568	0.0006738	0.0035	1.55	13904.43	13904.43	13904.43	2.22		Si
SLV 14	4.83	-7367.83	-20932	-0.0001775	0.0006738	0.0035	1.55	14740.56	14740.56	14740.56	2		Si
SLV 14	6.93	6332.47	-21151	-0.0001576	0.0006738	0.0035	1.55	13796.69	13796.69	13796.69	2.18		Si
SLV 3	4.83	9412.57	-17614	-0.0002806	0.0006738	0.0035	1.55	11761.87	11761.87	11761.87	1.25		Si
SLV 3	6.93	-8221.52	-13924	-0.0002848	0.0006738	0.0035	1.24	10799.23	10799.23	10799.23	1.31		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 50	4.83	1366.77	-23154	-16517	1408	1.55	1.55	-38059	10833	4702	115546	15597	7905	23502	No	16.7	Si
SLU 50	6.93	-1298.95	-20634	-14719	1408	1.55	1.55	-33916	10833	4702	115546	15597	7905	23502	No	16.69	Si
SLU 71	4.83	1420.46	-25812	-18413	1397	1.55	1.55	-42427	10833	4702	115546	15597	7905	23502	No	16.82	Si
SLU 71	6.93	-1314.12	-23411	-16701	1398	1.55	1.55	-38482	10833	4702	115546	15597	7905	23502	No	16.82	Si
SLU 69	4.83	1421.18	-26147	-18653	1396	1.55	1.55	-42979	10833	4702	115546	15597	7905	23502	No	16.83	Si
SLU 69	6.93	-1311.58	-23745	-16939	1397	1.55	1.55	-39031	10833	4702	115546	15597	7905	23502	No	16.82	Si
SLU 70	4.83	1420.56	-26158	-18661	1396	1.55	1.55	-42997	10833	4702	115546	15597	7905	23502	No	16.84	Si
SLU 70	6.93	-1313.48	-23762	-16951	1396	1.55	1.55	-39058	10833	4702	115546	15597	7905	23502	No	16.83	Si
SLU 72	4.83	1419.85	-25823	-18422	1396	1.55	1.55	-42446	10833	4702	115546	15597	7905	23502	No	16.83	Si
SLU 72	6.93	-1316.02	-23428	-16713	1397	1.55	1.55	-38509	10833	4702	115546	15597	7905	23502	No	16.83	Si
SLU 45	4.83	1356.16	-23056	-16448	1392	1.55	1.55	-37898	10833	4702	115546	15597	7905	23502	No	16.89	Si
SLU 45	6.93	-1287.81	-20554	-14663	1392	1.55	1.55	-33786	10833	4702	115546	15597	7905	23502	No	16.88	Si
SLU 49	4.83	1366.87	-23501	-16765	1406	1.55	1.55	-38629	10833	4702	115546	15597	7905	23502	No	16.71	Si
SLU 49	6.93	-1298.32	-20984	-14970	1407	1.55	1.55	-34492	10833	4702	115546	15597	7905	23502	No	16.71	Si
SLU 51	4.83	1366.16	-23165	-16526	1407	1.55	1.55	-38077	10833	4702	115546	15597	7905	23502	No	16.71	Si
SLU 51	6.93	-1300.86	-20650	-14731	1407	1.55	1.55	-33943	10833	4702	115546	15597	7905	23502	No	16.7	Si
SLU 48	4.83	1367.48	-23489	-16757	1407	1.55	1.55	-38610	10833	4702	115546	15597	7905	23502	No	16.7	Si
SLU 48	6.93	-1296.41	-20968	-14958	1407	1.55	1.55	-34465	10833	4702	115546	15597	7905	23502	No	16.7	Si
SLU 47	4.83	1354.43	-22739	-16222	1391	1.55	1.55	-37377	10833	4702	115546	15597	7905	23502	No	16.89	Si
SLU 47	6.93	-1293.53	-20248	-14445	1392	1.55	1.55	-33283	10833	4702	115546	15597	7905	23502	No	16.89	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 13	4.83	-7305.8	-21032	-15004	-7528	1.55	1.2829	-42245	16250	5837	115546	23395	7905	31300		4.16	Si
SLV 13	6.93	6251.51	-21339	-15222	-7099	1.55	1.4461	-35075	16250	6580	115546	23395	7905	31300		4.41	Si
SLV 2	4.83	9551.66	-17484	-12472	-7951	1.55	0.686	-28738	16250	3121	115546	23395	7905	31300		3.15	Si
SLV 2	6.93	-8129.66	-11766	-8393	9579	1.24	0.2521	0	0	0	115546	18716	6324	25040		2.61	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 16	4.83	-7568.93	-20962	-14954	-8038	1.55	1.2418	-43946	16250	5650	115546	23395	7905	31300		3.89	Si
SLV 16	6.93	6321.57	-23122	-16495	-7666	1.55	1.5048	-38007	16250	6847	115546	23395	7905	31300		4.08	Si
SLV 15	4.83	-7506.91	-21062	-15025	-7990	1.55	1.2557	-43662	16250	5714	115546	23395	7905	31300		3.92	Si
SLV 15	6.93	6240.61	-23310	-16629	-7617	1.55	1.5218	-38315	16250	6924	115546	23395	7905	31300		4.11	Si
SLV 3	4.83	9412.57	-17614	-12565	9538	1.55	0.7218	-28952	16250	3284	115546	23395	7905	31300		3.28	Si
SLV 3	6.93	-8221.52	-13924	-9933	9110	1.24	0.5536	0	0	0	115546	18716	6324	25040		2.75	Si
SLV 14	4.83	-7367.83	-20932	-14933	-7577	1.55	1.269	-42923	16250	5774	115546	23395	7905	31300		4.13	Si
SLV 14	6.93	6332.47	-21151	-15089	-7148	1.55	1.4268	-34767	16250	6492	115546	23395	7905	31300		4.38	Si
SLD 1	4.83	4694.64	-18548	-13232	4835	1.55	1.55	-30488	16250	7052	115546	23395	7905	31300		6.47	Si
SLD 1	6.93	-4048.98	-15140	-10801	4678	1.55	1.5227	-24886	16250	6928	115546	23395	7905	31300		6.69	Si
SLV 1	4.83	9613.68	-17584	-12544	9999	1.55	0.6848	-28902	16250	3116	115546	23395	7905	31300		3.13	Si
SLV 1	6.93	-8210.62	-11953	-8527	9627	1.24	0.2643	0	0	0	115546	18716	6324	25040		2.6	Si
SLV 4	4.83	9350.55	-17514	-12494	9489	1.55	0.7233	-28787	16250	3291	115546	23395	7905	31300		3.3	Si
SLV 4	6.93	-8140.56	-13737	-9799	9061	1.24	0.5472	0	0	0	115546	18716	6324	25040		2.76	Si
SLD 2	4.83	4668.01	-18505	-13201	4814	1.55	1.55	-30417	16250	7052	115546	23395	7905	31300		6.5	Si
SLD 2	6.93	-4014.22	-15060	-10743	4657	1.55	1.5253	-24754	16250	6940	115546	23395	7905	31300		6.72	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCC D.M. 17-01-18 (N.T.C.)

quota 6.59 Ta 0.07 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 2	-12072	0.38	161.47	1433.57	2025.99	1729.78	10.71	Si
SLV 1	-12259	0.38	161.47	1451.77	2053.52	1752.64	10.85	Si
SLV 6	-13112	0.38	161.47	1533.11	2178.78	1855.94	11.49	Si
SLV 5	-13233	0.38	161.47	1544.44	2196.54	1870.49	11.58	Si
SLV 4	-14014	0.38	161.47	1616.27	2311.14	1963.7	12.16	Si
SLV 3	-14201	0.38	161.47	1633.19	2338.19	1985.69	12.3	Si
SLV 10	-15917	0.38	161.47	1782.51	2585.62	2184.06	13.53	Si
SLV 9	-16038	0.38	161.47	1792.64	2603.06	2197.85	13.61	Si
SLV 8	-19585	0.38	161.47	2066.79	3111.84	2589.31	16.04	Si
SLV 7	-19706	0.38	161.47	2075.36	3128.51	2601.94	16.11	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 6.59 Wa = 0.05 Ta = 0.0739

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 11	-16897	-19872	324	0.502	1935.4	0.966	7.54219	12.29974	No
SLV 12	-16757	-19808	324	0.505	1921.2	0.966	7.5975	12.29974	No
SLV 7	-16018	-18838	308	0.526	1845.9	0.965	7.91922	12.29974	No
SLV 8	-15878	-18773	308	0.53	1831.7	0.965	7.98057	12.29974	No
SLV 9	-10378	-19773	-305	0.759	1272.5	0.951	11.60391	12.29974	No
SLV 10	-10238	-19708	-305	0.768	1258.3	0.95	11.74266	12.29974	No
SLV 5	-9499	-18738	-321	0.816	1183.3	0.948	12.51298	12.29974	Si
SLV 6	-9359	-18673	-321	0.826	1169.1	0.947	12.6758	12.29974	Si
SLV 15	-15680	-21062	122	0.546	1811.5	0.964	8.23381	6.56558	Si
SLV 16	-15463	-20962	123	0.553	1789.4	0.964	8.3354	6.56558	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	10	SLV 43	Si
V_SLV	16.69	SLV 50	Si
PF_SLV	1.165	SLV 2	Si
V_SLV	2.601	SLV 1	Si
PFFP_SLV	10.713	SLV 2	Si
R_SLV	0.613	SLV 11	No

## Maschio 103

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-0.133	1.006	-4.113	1.006	L5	L6	3.98	0.28	3.52	3.52	3.52			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica



									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 47	4.83	6879.59	-40156	-0.0000657	0.0004492	0.0035	3.98	56344.64	67451.45	67451.45	9.8	No	Si
SLU 47	6.93	1577.94	-33973	-0.0000464	0.0004492	0.0035	3.98	50738.41	58496.41	58496.41	37.07	No	Si
SLU 49	4.83	7028.27	-41489	-0.0000679	0.0004492	0.0035	3.98	57406.69	69381.78	69381.78	9.87	No	Si
SLU 49	6.93	1708.48	-35323	-0.0000485	0.0004492	0.0035	3.98	52058.24	60452.25	60452.25	35.38	No	Si
SLU 50	4.83	6967.93	-40907	-0.0000669	0.0004492	0.0035	3.98	56949.38	68538.97	68538.97	9.84	No	Si
SLU 50	6.93	1599.05	-34705	-0.0000474	0.0004492	0.0035	3.98	51461.25	59557.78	59557.78	37.25	No	Si
SLU 51	4.83	6967.93	-40933	-0.0000669	0.0004492	0.0035	3.98	56970.29	68577.13	68577.13	9.84	No	Si
SLU 51	6.93	1602.54	-34729	-0.0000475	0.0004492	0.0035	3.98	51484.65	59592.52	59592.52	37.19	No	Si
SLU 45	4.83	6939.94	-40668	-0.0000665	0.0004492	0.0035	3.98	56758.51	68192.51	68192.51	9.83	No	Si
SLU 45	6.93	1678.07	-34526	-0.0000473	0.0004492	0.0035	3.98	51285.93	59298.22	59298.22	35.34	No	Si
SLU 48	4.83	7028.28	-41463	-0.0000678	0.0004492	0.0035	3.98	57386.2	69343.62	69343.62	9.87	No	Si
SLU 48	6.93	1704.99	-35299	-0.0000484	0.0004492	0.0035	3.98	52035.25	60417.5	60417.5	35.44	No	Si
SLU 46	4.83	6939.94	-40694	-0.0000666	0.0004492	0.0035	3.98	56779.61	68230.66	68230.66	9.83	No	Si
SLU 46	6.93	1681.56	-34550	-0.0000474	0.0004492	0.0035	3.98	51309.46	59332.97	59332.97	35.28	No	Si
SLU 43	4.83	6791.26	-39317	-0.0000643	0.0004492	0.0035	3.98	55649.7	66236.74	66236.74	9.75	No	Si
SLU 43	6.93	1545.21	-33160	-0.0000452	0.0004492	0.0035	3.98	49918.33	57319.22	57319.22	37.09	No	Si
SLU 44	4.83	6791.26	-39361	-0.0000644	0.0004492	0.0035	3.98	55686.59	66300.33	66300.33	9.76	No	Si
SLU 44	6.93	1551.02	-33200	-0.0000453	0.0004492	0.0035	3.98	49959.12	57377.13	57377.13	36.99	No	Si
SLU 64	4.83	7274.54	-43547	-0.0000713	0.0004492	0.0035	3.98	58944.53	72362.24	72362.24	9.95	No	Si
SLU 64	6.93	2428.02	-37932	-0.0000535	0.0004492	0.0035	3.98	54456.73	64230.23	64230.23	26.45	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 3	4.83	15627.32	-24449	-0.0000605	0.0006738	0.0035	3.98	46304.88	46304.88	46304.88	2.96		Si
SLV 3	6.93	-7504.23	-16946	-0.0000351	0.0006738	0.0035	3.98	40606.82	40606.82	40606.82	5.41		Si
SLV 2	4.83	14855.33	-21474	-0.0000551	0.0006738	0.0035	3.98	41233.39	41233.39	41233.39	2.78		Si
SLV 2	6.93	-8261.03	-14592	-0.0000336	0.0006738	0.0035	3.98	36456.13	36456.13	36456.13	4.41		Si
SLD 3	4.83	9872.59	-29717	-0.0000563	0.0006738	0.0035	3.98	54780.6	54780.6	54780.6	5.55		Si
SLD 3	6.93	-2072.93	-24092	-0.0000339	0.0006738	0.0035	3.98	52890.9	52890.9	52890.9	25.52		Si
SLV 1	4.83	15075.43	-21660	-0.0000558	0.0006738	0.0035	3.98	41551.8	41551.8	41551.8	2.76		Si
SLV 1	6.93	-8302.59	-14699	-0.0000338	0.0006738	0.0035	3.98	36644.57	36644.57	36644.57	4.41		Si
SLV 4	4.83	15407.22	-24263	-0.0000598	0.0006738	0.0035	3.98	45991.61	45991.61	45991.61	2.99		Si
SLV 4	6.93	-7462.67	-16840	-0.0000349	0.0006738	0.0035	3.98	40418.37	40418.37	40418.37	5.42		Si
SLV 15	4.83	-3705.66	-45793	-0.0000654	0.0006738	0.0035	3.98	86625.45	86625.45	86625.45	23.38		Si
SLV 15	6.93	12219.42	-44245	-0.0000804	0.0006738	0.0035	3.98	76039.41	76039.41	76039.41	6.22		Si
SLD 4	4.83	9778.08	-29637	-0.000056	0.0006738	0.0035	3.98	54664.05	54664.05	54664.05	5.59		Si
SLD 4	6.93	-2055.08	-24046	-0.0000338	0.0006738	0.0035	3.98	52813.84	52813.84	52813.84	25.7		Si
SLD 2	4.83	9538.63	-28436	-0.0000539	0.0006738	0.0035	3.98	52906.27	52906.27	52906.27	5.55		Si
SLD 2	6.93	-2398.18	-23076	-0.0000332	0.0006738	0.0035	3.98	51184.46	51184.46	51184.46	21.34		Si
SLV 16	4.83	-3925.76	-45608	-0.0000656	0.0006738	0.0035	3.98	86360.71	86360.71	86360.71	22		Si
SLV 16	6.93	12260.98	-44138	-0.0000803	0.0006738	0.0035	3.98	75883.02	75883.02	75883.02	6.19		Si
SLD 1	4.83	9633.14	-28516	-0.0000542	0.0006738	0.0035	3.98	53022.82	53022.82	53022.82	5.5		Si
SLD 1	6.93	-2416.02	-23122	-0.0000333	0.0006738	0.0035	3.98	51261.53	51261.53	51261.53	21.22		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 51	4.83	6967.93	-40933	-29201	3105	3.98	3.98	-26203	10833	12073	115546	40049	20298	60347	No	19.44	Si
SLU 51	6.93	1602.54	-34729	-24775	3100	3.98	3.98	-22232	10833	12073	115546	40049	20298	60347	No	19.47	Si
SLU 72	4.83	7451.21	-45163	-32218	2290	3.98	3.98	-28911	10833	12073	115546	40049	20298	60347	No	26.35	Si
SLU 72	6.93	2485.34	-39501	-28179	2285	3.98	3.98	-25287	10833	12073	115546	40049	20298	60347	No	26.41	Si
SLU 43	4.83	6791.26	-39317	-28048	3003	3.98	3.98	-25169	10833	12073	115546	40049	20298	60347	No	20.09	Si
SLU 43	6.93	1545.21	-33160	-23655	2999	3.98	3.98	-21227	10833	12073	115546	40049	20298	60347	No	20.12	Si
SLU 49	4.83	7028.27	-41489	-29597	3047	3.98	3.98	-26559	10833	12073	115546	40049	20298	60347	No	19.81	Si
SLU 49	6.93	1708.48	-35323	-25199	3042	3.98	3.98	-22612	10833	12073	115546	40049	20298	60347	No	19.84	Si
SLU 47	4.83	6879.59	-40156	-28646	3055	3.98	3.98	-25706	10833	12073	115546	40049	20298	60347	No	19.75	Si
SLU 47	6.93	1577.94	-33973	-24235	3050	3.98	3.98	-21747	10833	12073	115546	40049	20298	60347	No	19.79	Si
SLU 45	4.83	6939.94	-40668	-29011	2996	3.98	3.98	-26033	10833	12073	115546	40049	20298	60347	No	20.14	Si
SLU 45	6.93	1678.07	-34526	-24630	2991	3.98	3.98	-22102	10833	12073	115546	40049	20298	60347	No	20.17	Si
SLU 44	4.83	6791.26	-39361	-28079	3005	3.98	3.98	-25197	10833	12073	115546	40049	20298	60347	No	20.08	Si
SLU 44	6.93	1551.02	-33200	-23684	3000	3.98	3.98	-21253	10833	12073	115546	40049	20298	60347	No	20.12	Si
SLU 48	4.83	7028.28	-41463	-29578	3046	3.98	3.98	-26542	10833	12073	115546	40049	20298	60347	No	19.81	Si
SLU 48	6.93	1704.99	-35299	-25181	3041	3.98	3.98	-22596	10833	12073	115546	40049	20298	60347	No	19.84	Si
SLU 46	4.83	6939.94	-40694	-29030	2997	3.98	3.98	-26050	10833	12073	115546	40049	20298	60347	No	20.14	Si
SLU 46	6.93	1681.56	-34550	-24647	2992	3.98	3.98	-22117	10833	12073	115546	40049	20298	60347	No	20.17	Si
SLU 50	4.83	6967.93	-40907	-29182	3104	3.98	3.98	-26186	10833	12073	115546	40049	20298	60347	No	19.44	Si
SLU 50	6.93	1599.05	-34705	-24758	3099	3.98	3.98	-22216	10833	12073	115546	40049	20298	60347	No	19.47	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 16	4.83	-3925.76	-45608	-32535	-12001	3.98	3.98	-29195	16250	18109	115546	60073	20298	80371		6.7	Si
SLV 16	6.93	12260.98	-44138	-31487	-10549	3.98	3.98	-28255	16250	18109	115546	60073	20298	80371		7.62	Si
SLV 2	4.83	14855.33	-21474	-15319	14895	3.98	3.98	-13747	15249	16630	115546	60073	20298	80371		5.4	Si
SLV 2	6.93	-8261.03	-14592	-10410	13435	3.98	3.98	-9341	14368	16012	115546	60073	20298	80371		5.98	Si



Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 1	4.83	15075.43	-21660	-15452	15094	3.98	3.882	-13865	15273	16601	115546	60073	20298	80371		5.32	Si
SLV 1	6.93	-8302.59	-14699	-10486	13634	3.98	3.98	-9410	14382	16027	115546	60073	20298	80371		5.89	Si
SLD 3	4.83	9872.59	-29717	-21199	7522	3.98	3.98	-19023	16250	18109	115546	60073	20298	80371		10.68	Si
SLD 3	6.93	-2072.93	-24092	-17187	7204	3.98	3.98	-15423	15585	17367	115546	60073	20298	80371		11.16	Si
SLV 15	4.83	-3705.66	-45793	-32668	-11802	3.98	3.98	-29314	16250	18109	115546	60073	20298	80371		6.81	Si
SLV 15	6.93	12219.42	-44245	-31563	-10350	3.98	3.98	-28323	16250	18109	115546	60073	20298	80371		7.77	Si
SLD 4	4.83	9778.08	-29637	-21142	7437	3.98	3.98	-18972	16250	18109	115546	60073	20298	80371		10.81	Si
SLD 4	6.93	-2055.08	-24046	-17154	7119	3.98	3.98	-15393	15579	17361	115546	60073	20298	80371		11.29	Si
SLV 14	4.83	-4477.65	-42819	-30546	-12442	3.98	3.98	-27410	16250	18109	115546	60073	20298	80371		6.46	Si
SLV 14	6.93	11462.62	-41891	-29884	-11699	3.98	3.98	-26816	16250	18109	115546	60073	20298	80371		6.87	Si
SLV 3	4.83	15627.32	-24449	-17441	15535	3.98	3.98	-15651	15630	17418	115546	60073	20298	80371		5.17	Si
SLV 3	6.93	-7504.23	-16946	-12089	14784	3.98	3.98	-10848	14670	16348	115546	60073	20298	80371		5.44	Si
SLV 4	4.83	15407.22	-24263	-17309	15336	3.98	3.98	-15532	15606	17392	115546	60073	20298	80371		5.24	Si
SLV 4	6.93	-7462.67	-16840	-12013	14585	3.98	3.98	-10780	14656	16333	115546	60073	20298	80371		5.51	Si
SLV 13	4.83	-4257.55	-43004	-30678	-12243	3.98	3.98	-27529	16250	18109	115546	60073	20298	80371		6.56	Si
SLV 13	6.93	11421.06	-41998	-29960	-11500	3.98	3.98	-26884	16250	18109	115546	60073	20298	80371		6.99	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRMC D.M. 17-01-18 (N.T.C.)

quota 6.59 Ta 0.07 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 2	-15302	0.38	414.61	1981.74	2861.4	2421.57	5.84	Si
SLV 1	-15408	0.38	414.61	1994.45	2877.58	2436.02	5.88	Si
SLV 4	-17559	0.38	414.61	2246.95	3203.46	2725.2	6.57	Si
SLV 3	-17666	0.38	414.61	2259.33	3219.66	2739.5	6.61	Si
SLV 6	-22235	0.38	414.61	2774.04	3907.21	3340.63	8.06	Si
SLV 5	-22304	0.38	414.61	2781.6	3917.56	3349.58	8.08	Si
SLV 8	-29760	0.38	414.61	3559.38	5022.53	4290.95	10.35	Si
SLV 7	-29829	0.38	414.61	3566.22	5032.71	4299.47	10.37	Si
SLV 10	-30420	0.38	414.61	3624.47	5119.44	4371.96	10.54	Si
SLV 9	-30489	0.38	414.61	3631.26	5129.51	4380.38	10.57	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.59 Wa = 0.05 Ta = 0.0739

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 11	-31692	-41543	1154	0.646	3779.9	0.957	9.80748	12.29974	No
SLV 12	-31586	-41424	1154	0.648	3769.2	0.957	9.83608	12.29974	No
SLV 7	-27077	-35140	1179	0.736	3311	0.951	11.24576	12.29974	No
SLV 8	-26971	-35020	1180	0.739	3300.3	0.951	11.284	12.29974	No
SLV 9	-26103	-32247	-1166	0.76	3212.1	0.95	11.61845	12.29974	No
SLV 10	-25997	-32127	-1165	0.762	3201.4	0.95	11.65989	12.29974	No
SLV 5	-21488	-25844	-1140	0.893	2743.9	0.943	13.77064	12.29974	Si
SLV 6	-21383	-25724	-1139	0.897	2733.2	0.943	13.82954	12.29974	Si
SLV 15	-35149	-45793	312	0.613	4131.4	0.96	9.28331	6.56558	Si
SLV 16	-34985	-45608	312	0.616	4114.8	0.96	9.32128	6.56558	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	9.753	SLU 43	Si
V_SLU	19.438	SLU 51	Si
PF_SLV	2.756	SLV 1	Si
V_SLV	5.173	SLV 3	Si
PFFP_SLV	5.841	SLV 2	Si
R_SLV	0.797	SLV 11	No

## Maschio 104

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.003	-3.385	-11.003	-0.694	Z medio 736 cm	L6	2.691	0.28	0.994	1.787	0.201			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica



									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche,  $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 53	8.15	847.79	-22404	-0.000051	0.0003743	0.0035	2.6906	21336.74	23797.61	23797.61	28.07	No	Si
SLU 53	8.35	558.82	-22181	-0.0000491	0.0003743	0.0035	2.6906	21211.15	23620.13	23620.13	42.27	No	Si
SLU 62	8.15	843.33	-22970	-0.0000523	0.0003743	0.0035	2.6906	21647.55	24250.52	24250.52	28.76	No	Si
SLU 62	8.35	560.06	-22754	-0.0000504	0.0003743	0.0035	2.6906	21530.47	24077.54	24077.54	42.99	No	Si
SLU 48	8.15	803.3	-21015	-0.0000477	0.0003743	0.0035	2.6906	20525.99	22698.11	22698.11	28.26	No	Si
SLU 48	8.35	447.35	-20773	-0.0000454	0.0003743	0.0035	2.6906	20377.49	22508.07	22508.07	50.31	No	Si
SLU 49	8.15	786.16	-21018	-0.0000476	0.0003743	0.0035	2.6906	20527.82	22700.47	22700.47	28.87	No	Si
SLU 49	8.35	422.29	-20775	-0.0000453	0.0003743	0.0035	2.6906	20379.17	22510.2	22510.2	53.3	No	Si
SLU 56	8.15	851.8	-22997	-0.0000524	0.0003743	0.0035	2.6906	21662.16	24272.31	24272.31	28.5	No	Si
SLU 56	8.35	554.62	-22783	-0.0000505	0.0003743	0.0035	2.6906	21546.46	24100.98	24100.98	43.45	No	Si
SLU 43	8.15	770.06	-19546	-0.0000442	0.0003743	0.0035	2.6906	19594.75	21557.38	21557.38	27.99	No	Si
SLU 43	8.35	411.01	-19279	-0.0000419	0.0003743	0.0035	2.6906	19417.54	21352.96	21352.96	51.95	No	Si
SLU 45	8.15	799.3	-20422	-0.0000463	0.0003743	0.0035	2.6906	20159.37	22234.81	22234.81	27.82	No	Si
SLU 45	8.35	451.54	-20170	-0.0000441	0.0003743	0.0035	2.6906	19999.69	22038.99	22038.99	48.81	No	Si
SLU 46	8.15	782.16	-20425	-0.0000462	0.0003743	0.0035	2.6906	20161.26	22237.14	22237.14	28.43	No	Si
SLU 46	8.35	426.48	-20173	-0.0000439	0.0003743	0.0035	2.6906	20001.43	22041.11	22041.11	51.68	No	Si
SLU 54	8.15	830.65	-22407	-0.000051	0.0003743	0.0035	2.6906	21338.42	23800.01	23800.01	28.65	No	Si
SLU 54	8.35	533.76	-22184	-0.000049	0.0003743	0.0035	2.6906	21212.69	23622.3	23622.3	44.26	No	Si
SLU 60	8.15	839.33	-22377	-0.0000509	0.0003743	0.0035	2.6906	21321.57	23776.01	23776.01	28.33	No	Si
SLU 60	8.35	564.26	-22152	-0.0000491	0.0003743	0.0035	2.6906	21194.55	23596.9	23596.9	41.82	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche,  $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 9	8.15	1887.71	-18153	-0.0000454	0.0005615	0.0035	2.6906		21421.47	21421.47	11.35		Si
SLV 9	8.35	2719.66	-18011	-0.0000489	0.0005615	0.0035	2.6906		21279.87	21279.87	7.82		Si
SLV 6	8.15	1143.69	-16911	-0.0000393	0.0005615	0.0035	2.6906		20186.63	20186.63	17.65		Si
SLV 6	8.35	1957.61	-16716	-0.0000426	0.0005615	0.0035	2.6906		19993.35	19993.35	10.21		Si
SLV 8	8.15	-680.61	-15545	-0.0000343	0.0005615	0.0035	2.6906		20640.51	20640.51	30.33		Si
SLV 8	8.35	-1943.58	-15332	-0.0000396	0.0005615	0.0035	2.6906		20406.79	20406.79	10.5		Si
SLV 3	8.15	-919.97	-14442	-0.0000331	0.0005615	0.0035	2.6906		19436.51	19436.51	21.13		Si
SLV 3	8.35	-1485.21	-14170	-0.0000351	0.0005615	0.0035	2.6906		19141.39	19141.39	12.89		Si
SLV 13	8.15	2120.84	-19171	-0.0000486	0.0005615	0.0035	2.6906		22442.96	22442.96	10.58		Si
SLV 13	8.35	2249.87	-19087	-0.000049	0.0005615	0.0035	2.6906		22358.12	22358.12	9.94		Si
SLV 7	8.15	-684.64	-15490	-0.0000343	0.0005615	0.0035	2.6906		20580.71	20580.71	30.06		Si
SLV 7	8.35	-1950.95	-15276	-0.0000396	0.0005615	0.0035	2.6906		20345.68	20345.68	10.43		Si
SLV 14	8.15	2127.08	-19256	-0.0000488	0.0005615	0.0035	2.6906		22527.79	22527.79	10.59		Si
SLV 14	8.35	2261.28	-19173	-0.0000493	0.0005615	0.0035	2.6906		22444.94	22444.94	9.93		Si
SLV 4	8.15	-913.73	-14526	-0.0000333	0.0005615	0.0035	2.6906		19527.95	19527.95	21.37		Si
SLV 4	8.35	-1473.8	-14256	-0.0000353	0.0005615	0.0035	2.6906		19234.78	19234.78	13.05		Si
SLV 10	8.15	1891.74	-18207	-0.0000455	0.0005615	0.0035	2.6906		21475.83	21475.83	11.35		Si
SLV 10	8.35	2727.03	-18067	-0.0000491	0.0005615	0.0035	2.6906		21335.49	21335.49	7.82		Si
SLV 5	8.15	1139.66	-16857	-0.0000392	0.0005615	0.0035	2.6906		20132.77	20132.77	17.67		Si
SLV 5	8.35	1950.24	-16660	-0.0000425	0.0005615	0.0035	2.6906		19938.27	19938.27	10.22		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 46	8.15	782.16	-20425	-17009	3360	2.6906	2.6906	-22576	9955	7500	9516	22559	6861	17015	No	5.06	Si
SLU 46	8.35	426.48	-20173	-16798	3378	2.6906	2.6906	-22297	9917	7472	9516	22559	6861	16987	No	5.03	Si
SLU 51	8.15	760.92	-20735	-17266	3513	2.6906	2.6906	-22918	10000	7534	9516	22559	6861	17049	No	4.85	Si
SLU 51	8.35	377.56	-20487	-17060	3532	2.6906	2.6906	-22644	9964	7506	9516	22559	6861	17022	No	4.82	Si
SLU 43	8.15	770.06	-19546	-16276	3316	2.6906	2.6906	-21604	9825	7402	9516	22559	6861	16917	No	5.1	Si
SLU 43	8.35	411.01	-19279	-16054	3334	2.6906	2.6906	-21310	9786	7372	9516	22559	6861	16888	No	5.06	Si
SLU 45	8.15	799.3	-20422	-17006	3325	2.6906	2.6906	-22573	9954	7499	9516	22559	6861	17015	No	5.12	Si
SLU 45	8.35	451.54	-20170	-16796	3342	2.6906	2.6906	-22294	9917	7471	9516	22559	6861	16987	No	5.08	Si
SLU 44	8.15	741.49	-19551	-16280	3375	2.6906	2.6906	-21610	9826	7403	9516	22559	6861	16918	No	5.01	Si
SLU 44	8.35	369.24	-19284	-16058	3394	2.6906	2.6906	-21315	9786	7373	9516	22559	6861	16888	No	4.98	Si
SLU 50	8.15	778.06	-20732	-17263	3477	2.6906	2.6906	-22915	10000	7534	9516	22559	6861	17049	No	4.9	Si
SLU 50	8.35	402.62	-20484	-17057	3496	2.6906	2.6906	-22641	9963	7506	9516	22559	6861	17022	No	4.87	Si
SLU 48	8.15	803.3	-21015	-17500	3405	2.6906	2.6906	-23228	10042	7565	9516	22559	6861	17081	No	5.02	Si
SLU 48	8.35	447.35	-20773	-17298	3423	2.6906	2.6906	-22960	10006	7538	9516	22559	6861	17054	No	4.98	Si
SLU 49	8.15	786.16	-21018	-17502	3441	2.6906	2.6906	-23232	10042	7565	9516	22559	6861	17081	No	4.96	Si
SLU 49	8.35	422.29	-20775	-17300	3459	2.6906	2.6906	-22963	10006	7538	9516	22559	6861	17054	No	4.93	Si
SLU 47	8.15	745.49	-20144	-16774	3456	2.6906	2.6906	-22265	9913	7468	9516	22559	6861	16984	No	4.91	Si
SLU 47	8.35	365.05	-19886	-16560	3475	2.6906	2.6906	-21980	9875	7440	9516	22559	6861	16955	No	4.88	Si
SLU 59	8.15	809.41	-22716	-18916	3348	2.6906	2.6906	-25108	10292	7754	9516	22559	6861	17269	No	5.16	Si
SLU 59	8.35	484.84	-22498	-18734	3351	2.6906	2.6906	-24867	10260	7730	9516	22559	6861	17245	No	5.15	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 11	8.15	361.95	-16813	-14001	3028	2.6906	2.6906	-18584	14133	10648	9516	33839	6861	20163		6.66	Si
SLD 11	8.35	-307.83	-16643	-13859	3017	2.6906	2.6906	-18396	14096	10620	9516	33839	6861	20135		6.67	Si
SLD 8	8.15	43.94	-16284	-13560	3092	2.6906	2.6906	-17999	14016	10560	9516	33839	6861	20075		6.49	Si
SLD 8	8.35	-633.37	-16091	-13399	3075	2.6906	2.6906	-17785	13974	10527	9516	33839	6861	20043		6.52	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 11	8.15	63.41	-16786	-13978	3893	2.6906	2.6906	-18554	14127	10643	9516	33839	6861	20159		5.18	Si
SLV 11	8.35	-1181.53	-16627	-13845	3865	2.6906	2.6906	-18378	14092	10617	9516	33839	6861	20132		5.21	Si
SLD 12	8.15	363.71	-16837	-14021	3024	2.6906	2.6906	-18610	14139	10652	9516	33839	6861	20167		6.67	Si
SLD 12	8.35	-304.61	-16668	-13880	3013	2.6906	2.6906	-18423	14101	10624	9516	33839	6861	20139		6.68	Si
SLV 4	8.15	-913.73	-14526	-12096	3109	2.6906	2.6906	-16056	13628	10267	9516	33839	6861	19782		6.36	Si
SLV 4	8.35	-1473.8	-14256	-11871	3077	2.6906	2.6906	-15757	13568	10222	9516	33839	6861	19737		6.41	Si
SLV 7	8.15	-684.64	-15490	-12899	4054	2.6906	2.6906	-17122	13841	10427	9516	33839	6861	19943		4.92	Si
SLV 7	8.35	-1950.95	-15276	-12721	4012	2.6906	2.6906	-16885	13794	10392	9516	33839	6861	19907		4.96	Si
SLV 3	8.15	-919.97	-14442	-12026	3124	2.6906	2.6906	-15963	13609	10253	9516	33839	6861	19768		6.33	Si
SLV 3	8.35	-1485.21	-14170	-11799	3094	2.6906	2.6906	-15662	13549	10208	9516	33839	6861	19723		6.38	Si
SLV 8	8.15	-680.61	-15545	-12944	4045	2.6906	2.6906	-17182	13853	10437	9516	33839	6861	19952		4.93	Si
SLV 8	8.35	-1943.58	-15332	-12767	4002	2.6906	2.6906	-16947	13806	10401	9516	33839	6861	19917		4.98	Si
SLV 12	8.15	67.44	-16841	-14023	3883	2.6906	2.6906	-18614	14139	10652	9516	33839	6861	20168		5.19	Si
SLV 12	8.35	-1174.16	-16683	-13892	3854	2.6906	2.6906	-18439	14105	10626	9516	33839	6861	20142		5.23	Si
SLD 7	8.15	42.18	-16260	-13540	3097	2.6906	2.6906	-17972	14011	10556	9516	33839	6861	20071		6.48	Si
SLD 7	8.35	-636.59	-16067	-13379	3080	2.6906	2.6906	-17758	13968	10523	9516	33839	6861	20039		6.51	Si

#### Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 8.25 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 3	179667	0.42	18735	-14114	24.38	1733.59	71.11	Si
SLV 4	179667	0.42	18848	-14200	24.38	1742.62	71.48	Si
SLV 1	179667	0.42	19285	-14529	24.38	1777.18	72.9	Si
SLV 2	179667	0.42	19399	-14614	24.38	1786.13	73.27	Si
SLV 7	179667	0.42	20180	-15203	24.38	1847.16	75.77	Si
SLV 8	179667	0.42	20253	-15258	24.38	1852.85	76	Si
SLV 11	179667	0.42	21951	-16538	24.38	1982.48	81.32	Si
SLV 5	179667	0.42	22014	-16585	24.38	1987.19	81.51	Si
SLV 12	179667	0.42	22025	-16593	24.38	1987.99	81.54	Si
SLV 6	179667	0.42	22087	-16640	24.38	1992.7	81.74	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 8.25 Wa = 0.05 Ta = 0.0059

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 14	-19173	-19256	1371	0.838	2058.1	0.984	12.37906	3.70456	Si
SLV 13	-19087	-19171	1372	0.841	2049.3	0.984	12.42448	3.70456	Si
SLV 16	-18758	-18846	1456	0.849	2015.8	0.984	12.53867	3.70456	Si
SLV 15	-18672	-18761	1457	0.852	2007	0.983	12.58579	3.70456	Si
SLV 10	-18067	-18207	300	0.936	1945.3	0.983	13.84464	3.86455	Si
SLV 9	-18011	-18153	300	0.939	1939.6	0.983	13.88013	3.86455	Si
SLV 12	-16683	-16841	583	0.983	1804.3	0.982	14.56017	3.86455	Si
SLV 6	-16716	-16911	-534	0.985	1807.7	0.982	14.57731	3.86455	Si
SLV 11	-16627	-16786	583	0.986	1798.6	0.982	14.60089	3.86455	Si
SLV 5	-16660	-16857	-534	0.987	1802	0.982	14.61858	3.86455	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	27.818	SLU 45	Si
V_SLU	4.819	SLU 51	Si
PF_SLV	7.824	SLV 10	Si
V_SLV	4.919	SLV 7	Si
PFFP_SLV	71.11	SLV 3	Si
R_SLV	3.342	SLV 14	Si

## Maschio 105

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati geometrici

X inl.	Y inl.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h inl.	h fin.	a	a.s.,sx	a.s.,dx
-9.708	3.176	-9.708	6.526	L5	L6	3.35	0.16	3.52	3.52	3.52			

#### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

#### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio





## Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	ε <sub>f,d</sub>	γ <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche,  $\gamma_{\text{M}} = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_{\text{m}}$	$\epsilon_{\text{m}_-}$	$\epsilon_{\text{mu}}$	$\text{df}$	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 81	4.83	-8223.7	-18372	-0.0000816	0.0004492	0.0035	3.35	22140.95	33021.19	33021.19	4.02	No	Si
SLU 81	8.35	-232.84	-13580	-0.0000333	0.0004492	0.0035	3.35	18030.16	26755.36	26755.36	114.91	No	Si
SLU 42	4.83	-7006.19	-16022	-0.0000697	0.0004492	0.0035	3.35	20271.86	29983.48	29983.48	4.28	No	Si
SLU 42	8.35	-286.46	-12249	-0.0000302	0.0004492	0.0035	3.35	16679.74	24931.35	24931.35	87.03	No	Si
SLU 83	4.83	-8102.01	-19270	-0.0000835	0.0004492	0.0035	3.35	22780.56	34114.4	34114.4	4.21	No	Si
SLU 83	8.35	-249.33	-14478	-0.0000356	0.0004492	0.0035	3.35	18889.9	27985.76	27985.76	112.24	No	Si
SLU 39	4.83	-7197.93	-15060	-0.0000681	0.0004492	0.0035	3.35	19424.74	28739.24	28739.24	3.99	No	Si
SLU 39	8.35	-228.78	-11286	-0.0000277	0.0004492	0.0035	3.35	15646.83	23612.47	23612.47	103.21	No	Si
SLU 84	4.83	-8031.96	-19335	-0.0000833	0.0004492	0.0035	3.35	22824.97	34192.86	34192.86	4.26	No	Si
SLU 84	8.35	-290.52	-14543	-0.0000359	0.0004492	0.0035	3.35	18950.13	28070.89	28070.89	96.62	No	Si
SLU 18	4.83	-6229.25	-13547	-0.0000598	0.0004492	0.0035	3.35	17997.18	26709.31	26709.31	4.29	No	Si
SLU 18	8.35	-161.22	-9949	-0.0000241	0.0004492	0.0035	3.35	14133.32	21729.86	21729.86	134.79	No	Si
SLU 82	4.83	-8153.64	-18437	-0.0000814	0.0004492	0.0035	3.35	22188.32	33101.73	33101.73	4.06	No	Si
SLU 82	8.35	-274.03	-13645	-0.0000336	0.0004492	0.0035	3.35	18093.35	26843.83	26843.83	97.96	No	Si
SLU 41	4.83	-7076.24	-15958	-0.0000699	0.0004492	0.0035	3.35	20216.51	29900.01	29900.01	4.23	No	Si
SLU 41	8.35	-245.27	-12184	-0.0000299	0.0004492	0.0035	3.35	16611.93	24842.88	24842.88	101.29	No	Si
SLU 60	4.83	-7255.01	-16859	-0.0000731	0.0004492	0.0035	3.35	20969.8	31065.16	31065.16	4.28	No	Si
SLU 60	8.35	-165.27	-12243	-0.0000297	0.0004492	0.0035	3.35	16673.54	24923.25	24923.25	150.8	No	Si
SLU 40	4.83	-7127.88	-15124	-0.0000679	0.0004492	0.0035	3.35	19483.05	28822.71	28822.71	4.04	No	Si
SLU 40	8.35	-269.97	-11351	-0.000028	0.0004492	0.0035	3.35	15717.6	23700.94	23700.94	87.79	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche,  $\gamma_{\text{M}} = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_{\text{m}}$	$\epsilon_{\text{m}_-}$	$\epsilon_{\text{mu}}$	$\text{df}$	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 12	4.83	-8753.44	-16624	-0.0000776	0.0006738	0.0035	3.35		31409.7	31409.7	3.59		Si
SLV 12	8.35	-6067.7	-12324	-0.0000551	0.0006738	0.0035	3.35		25402.9	25402.9	4.19		Si
SLV 14	4.83	-7226.3	-13165	-0.0000622	0.0006738	0.0035	3.35		26591.02	26591.02	3.68		Si
SLV 14	8.35	2342.42	-9448	-0.000032	0.0006738	0.0035	3.35		16002.3	16002.3	6.83		Si
SLV 16	4.83	-8871.83	-15001	-0.0000741	0.0006738	0.0035	3.35		29181.32	29181.32	3.29		Si
SLV 16	8.35	-1347.43	-10935	-0.0000314	0.0006738	0.0035	3.35		23413.54	23413.54	17.38		Si
SLV 13	4.83	-7251.61	-13226	-0.0000625	0.0006738	0.0035	3.35		26676.45	26676.45	3.68		Si
SLV 13	8.35	2228.47	-9509	-0.0000317	0.0006738	0.0035	3.35		16092.57	16092.57	7.22		Si
SLV 9	4.83	-3284.7	-10546	-0.0000387	0.0006738	0.0035	3.35		22836.71	22836.71	6.95		Si
SLV 9	8.35	6158.21	-7405	-0.0000463	0.0006738	0.0035	3.35		12923.04	12923.04	2.1		Si
SLV 5	4.83	-1533.86	-10093	-0.0000301	0.0006738	0.0035	3.35		22165.94	22165.94	14.45		Si
SLV 5	8.35	5819.42	-7099	-0.0000437	0.0006738	0.0035	3.35		12452.7	12452.7	2.14		Si
SLV 11	4.83	-8769.78	-16663	-0.0000778	0.0006738	0.0035	3.35		31462.11	31462.11	3.59		Si
SLV 11	8.35	-6141.29	-12363	-0.0000555	0.0006738	0.0035	3.35		25458.08	25458.08	4.15		Si
SLV 10	4.83	-3268.35	-10507	-0.0000386	0.0006738	0.0035	3.35		22778.76	22778.76	6.97		Si
SLV 10	8.35	6231.81	-7366	-0.0000469	0.0006738	0.0035	3.35		12863.61	12863.61	2.06		Si
SLV 6	4.83	-1517.51	-10054	-0.00003	0.0006738	0.0035	3.35		22108	22108	14.57		Si
SLV 6	8.35	5893.02	-7060	-0.0000443	0.0006738	0.0035	3.35		12392.59	12392.59	2.1		Si
SLV 15	4.83	-8897.14	-15061	-0.0000744	0.0006738	0.0035	3.35		29266.75	29266.75	3.29		Si
SLV 15	8.35	-1461.38	-10996	-0.000032	0.0006738	0.0035	3.35		23503.25	23503.25	16.08		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_{\text{M}} = 3$

Comb.	Quota	M	N	Nmur	V	$\text{df}$	$\text{I}'$	$\sigma_{\text{N}}$	$\text{fvd}$	$\text{Vt}$	$\text{Vt}_f$	$\text{Vt}_c$	$\text{Vt}_c \text{ int.}$	$\text{Vt}_R$	res. > 50%	c.s.	Verifica
SLU 78	4.83	-7563.05	-19992	-11738	-2067	3.35	3.35	-21900	10833	5807	115546	19262	17085	36347	No	17.58	Si
SLU 78	8.35	-286.73	-15200	-8925	-2067	3.35	3.35	-16650	10553	5657	115546	19262	17085	36347	No	17.58	Si
SLU 74	4.83	-7754.79	-19029	-11173	-2138	3.35	3.35	-20845	10833	5807	115546	19262	17085	36347	No	17	Si
SLU 74	8.35	-229.05	-14237	-8359	-2138	3.35	3.35	-15596	10413	5581	115546	19262	17085	36347	No	17	Si
SLU 79	4.83	-7469.43	-19936	-11706	-2053	3.35	3.35	-21839	10833	5807	115546	19262	17085	36347	No	17.71	Si
SLU 79	8.35	-244.68	-15144	-8892	-2053	3.35	3.35	-16589	10545	5652	115546	19262	17085	36347	No	17.71	Si
SLU 75	4.83	-7684.74	-19094	-11211	-2106	3.35	3.35	-20916	10833	5807	115546	19262	17085	36347	No	17.26	Si
SLU 75	8.35	-270.24	-14302	-8397	-2106	3.35	3.35	-15667	10422	5586	115546	19262	17085	36347	No	17.26	Si
SLU 83	4.83	-8102.01	-19270	-11315	-2231	3.35	3.35	-21110	10833	5807	115546	19262	17085	36347	No	16.29	Si
SLU 83	8.35	-249.33	-14478	-8501	-2231	3.35	3.35	-15860	10448	5600	115546	19262	17085	36347	No	16.29	Si
SLU 73	4.83	-7596.05	-18248	-10714	-2078	3.35	3.35	-19989	10833	5807	115546	19262	17085	36347	No	17.49	Si
SLU 73	8.35	-280.34	-13455	-7900	-2078	3.35	3.35	-14739	10299	5520	115546	19262	17085	36347	No	17.49	Si
SLU 81	4.83	-8223.7	-18372	-10787	-2270	3.35	3.35	-20126	10833	5807	115546	19262	17085	36347	No	16.01	Si
SLU 81	8.35	-232.84	-13580	-7974	-2270	3.35	3.35	-14876	10317	5530	115546	19262	17085	36347	No	16.01	Si
SLU 84	4.83	-8031.96	-19335	-11353	-2199	3.35	3.35	-21180	10833	5807	115546	19262	17085	36347	No	16.53	Si
SLU 84	8.35	-290.52	-14543	-8539	-2199	3.35	3.35	-15931	10457	5605	115546	19262	17085	36347	No	16.53	Si
SLU 82	4.83	-8153.64	-18437	-10825	-2239	3.35	3.35	-20197	10833	5807	115546	19262	17085	36347	No	16.24	Si
SLU 82	8.35	-274.03	-13645	-8012	-2239	3.35	3.35	-14947	10326	5535	115546	19262	17085	36347	No	16.24	Si
SLU 77	4.83	-7633.1	-19927	-11700	-2099	3.35	3.35	-21829	10833	5807	115546	19262	17085	36347	No	17.32	Si
SLU 77	8.35	-245.54	-15135	-8887	-2099	3.35	3.35	-16580	10544	5652	115546	19262	17085	36347	No	17.32	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_{\text{M}} = 2$

Comb.	Quota	M	N	Nmur	V	$\text{df}$	$\text{I}'$	$\sigma_{\text{N}}$	$\text{fvd}$	$\text{Vt}$	$\text{Vt}_f$	$\text{Vt}_c$	$\text{Vt}_c \text{ int.}$	$\text{Vt}_R$	res. > 50%	c.s.	Verifica
SLV 10	4.83	-3268.35	-10507	-6169	-3436	3.35	3.35	-11510	14802	7934	115546	28894	17085	45979		13.38	Si





Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 10	8.35	6231.81	-7366	-4325	-1999	3.35	2.487	-8069	14114	5616	115546	28894	17085	45979		23	Si
SLV 13	4.83	-7251.61	-13226	-7766	-2774	3.35	3.35	-14488	15398	8253	115546	28894	17085	45979		16.58	Si
SLV 13	8.35	2228.47	-9509	-5583	-2356	3.35	3.35	-10416	14583	7817	115546	28894	17085	45979		19.52	Si
SLV 16	4.83	-8871.83	-15001	-8808	-1748	3.35	3.2507	-17069	15914	8277	115546	28894	17085	45979		26.3	Si
SLV 16	8.35	-1347.43	-10935	-6421	-2194	3.35	3.35	-11979	14896	7984	115546	28894	17085	45979		20.95	Si
SLV 9	4.83	-3284.7	-10546	-6192	-3420	3.35	3.35	-11553	14811	7938	115546	28894	17085	45979		13.44	Si
SLV 9	8.35	6158.21	-7405	-4348	-1983	3.35	2.5302	-8112	14122	5717	115546	28894	17085	45979		23.18	Si
SLD 9	4.83	-4285.12	-12111	-7111	-2295	3.35	3.35	-13267	15153	8122	115546	28894	17085	45979		20.04	Si
SLD 9	8.35	2649.4	-8689	-5102	-1663	3.35	3.35	-9519	14404	7720	115546	28894	17085	45979		27.65	Si
SLV 14	4.83	-7226.3	-13165	-7730	-2799	3.35	3.35	-14422	15384	8246	115546	28894	17085	45979		16.43	Si
SLV 14	8.35	2342.42	-9448	-5547	-2381	3.35	3.35	-10350	14570	7809	115546	28894	17085	45979		19.31	Si
SLV 15	4.83	-8897.14	-15061	-8843	-1723	3.35	3.2528	-17127	15925	8288	115546	28894	17085	45979		26.69	Si
SLV 15	8.35	-1461.38	-10996	-6456	-2169	3.35	3.35	-12045	14909	7991	115546	28894	17085	45979		21.2	Si
SLV 5	4.83	-1533.86	-10093	-5926	-2919	3.35	3.35	-11057	14711	7885	115546	28894	17085	45979		15.75	Si
SLV 5	8.35	5819.42	-7099	-4168	-1474	3.35	2.5657	-7777	14055	5770	115546	28894	17085	45979		31.2	Si
SLD 10	4.83	-4277.97	-12094	-7101	-2302	3.35	3.35	-13248	15150	8120	115546	28894	17085	45979		19.98	Si
SLD 10	8.35	2681.56	-8672	-5092	-1670	3.35	3.35	-9500	14400	7718	115546	28894	17085	45979		27.53	Si
SLV 6	4.83	-1517.51	-10054	-5903	-2935	3.35	3.35	-11014	14703	7881	115546	28894	17085	45979		15.66	Si
SLV 6	8.35	5893.02	-7060	-4145	-1490	3.35	2.5208	-7734	14047	5666	115546	28894	17085	45979		30.86	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRMC D.M. 17-01-18 (N.T.C.)

quota 6.59 Ta 0.13 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 6	-8600	0.38	206.22	627.75	1074.1	850.93	4.13	Si
SLV 5	-8639	0.38	206.22	630.33	1077.81	854.07	4.14	Si
SLV 10	-9053	0.38	206.22	657.48	1117.09	887.29	4.3	Si
SLV 9	-9092	0.38	206.22	660.03	1120.76	890.4	4.32	Si
SLV 2	-9811	0.38	206.22	706.48	1188.29	947.39	4.59	Si
SLV 1	-9871	0.38	206.22	710.35	1193.98	952.17	4.62	Si
SLV 4	-11311	0.38	206.22	800.7	1329.17	1064.94	5.16	Si
SLV 14	-11321	0.38	206.22	801.32	1330.1	1065.71	5.17	Si
SLV 3	-11372	0.38	206.22	804.43	1334.85	1069.64	5.19	Si
SLV 13	-11382	0.38	206.22	805.04	1335.78	1070.41	5.19	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.59 Wa = 0.03 Ta = 0.1293

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 11	-12363	-16663	151	1.353	1525.4	0.95	20.70779	16.49127	Si
SLV 12	-12324	-16624	151	1.357	1521.4	0.949	20.76709	16.49127	Si
SLV 7	-12056	-16211	-156	1.382	1494.3	0.949	21.17581	16.49127	Si
SLV 8	-12017	-16172	-156	1.386	1490.3	0.949	21.23783	16.49127	Si
SLV 15	-10996	-15061	507	1.468	1386.7	0.945	22.57412	11.57515	Si
SLV 16	-10935	-15001	507	1.475	1380.6	0.945	22.68565	11.57515	Si
SLV 9	-7405	-10546	145	2.078	1023.4	0.929	32.49186	16.49127	Si
SLV 10	-7366	-10507	145	2.087	1019.5	0.929	32.63812	16.49127	Si
SLV 5	-7099	-10093	-162	2.148	992.5	0.928	33.64515	16.49127	Si
SLV 6	-7060	-10054	-162	2.157	988.6	0.928	33.802	16.49127	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.993	SLU 39	Si
V_SLU	16.011	SLU 81	Si
PF_SLV	2.064	SLV 10	Si
V_SLV	13.38	SLV 10	Si
PFFP_SLV	4.126	SLV 6	Si
R_SLV	1.256	SLV 11	Si

## Maschio 106

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-5.163	1.006	-5.163	5.686	L5	L6	4.68	0.16	3.52	3.52	3.52			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica



									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche,  $\gamma_m = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 40	4.83	-2955.83	-37126	-0.0000723	0.0004492	0.0035	4.68	51623.12	82957.1	82957.1	28.07	No	Si
SLU 40	8.35	-2286.91	-22698	-0.000044	0.0004492	0.0035	4.68	39936.37	58838.01	58838.01	25.73	No	Si
SLU 83	4.83	-3308.24	-44793	-0.000088	0.0004492	0.0035	4.68	53500.71	94034.79	94034.79	28.42	No	Si
SLU 83	8.35	-2411.36	-27541	-0.0000531	0.0004492	0.0035	4.68	45047	67388.75	67388.75	27.95	No	Si
SLU 34	4.83	-2816.27	-36183	-0.0000702	0.0004492	0.0035	4.68	51184.49	81537.04	81537.04	28.95	No	Si
SLU 34	8.35	-2067.89	-22314	-0.0000429	0.0004492	0.0035	4.68	39479.81	58142.86	58142.86	28.12	No	Si
SLU 81	4.83	-3293.44	-44110	-0.0000866	0.0004492	0.0035	4.68	53455.43	93092.16	93092.16	28.27	No	Si
SLU 81	8.35	-2434.39	-26949	-0.0000521	0.0004492	0.0035	4.68	44486.88	66381.1	66381.1	27.27	No	Si
SLU 41	4.83	-2912.59	-37845	-0.0000736	0.0004492	0.0035	4.68	51927.13	84027.23	84027.23	28.85	No	Si
SLU 41	8.35	-2225.83	-23325	-0.000045	0.0004492	0.0035	4.68	40665.8	59973.29	59973.29	26.94	No	Si
SLU 82	4.83	-3351.48	-44073	-0.0000867	0.0004492	0.0035	4.68	53452.36	93042.02	93042.02	27.76	No	Si
SLU 82	8.35	-2472.44	-26914	-0.0000521	0.0004492	0.0035	4.68	44452.84	66320.89	66320.89	26.82	No	Si
SLU 39	4.83	-2897.79	-37162	-0.0000722	0.0004492	0.0035	4.68	51639.11	83011.15	83011.15	28.65	No	Si
SLU 39	8.35	-2248.86	-22733	-0.000044	0.0004492	0.0035	4.68	39978.03	58902.02	58902.02	26.19	No	Si
SLU 31	4.83	-2801.47	-35500	-0.0000688	0.0004492	0.0035	4.68	50838.38	80447.52	80447.52	28.72	No	Si
SLU 31	8.35	-2090.93	-21722	-0.0000419	0.0004492	0.0035	4.68	38761.43	57071.59	57071.59	27.29	No	Si
SLU 42	4.83	-2970.63	-37809	-0.0000736	0.0004492	0.0035	4.68	51912.41	83973.18	83973.18	28.27	No	Si
SLU 42	8.35	-2263.87	-23289	-0.0000451	0.0004492	0.0035	4.68	40625.21	59909.28	59909.28	26.46	No	Si
SLU 84	4.83	-3366.28	-44757	-0.0000881	0.0004492	0.0035	4.68	53498.9	93984.65	93984.65	27.92	No	Si
SLU 84	8.35	-2449.4	-27506	-0.0000531	0.0004492	0.0035	4.68	45014.03	67328.54	67328.54	27.49	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche,  $\gamma_m = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 12	4.83	-7972.85	-28886	-0.0000672	0.0006738	0.0035	4.68	71573.06	71573.06	71573.06	8.98		Si
SLV 12	8.35	-12390.28	-14244	-0.0000512	0.0006738	0.0035	4.68	43300.71	43300.71	43300.71	3.49		Si
SLV 9	4.83	1384.59	-34574	-0.0000624	0.0006738	0.0035	4.68	70719.65	70719.65	70719.65	51.08		Si
SLV 9	8.35	10682.22	-26494	-0.0000691	0.0006738	0.0035	4.68	56930.61	56930.61	56930.61	5.33		Si
SLV 7	4.83	-5465.89	-25675	-0.0000558	0.0006738	0.0035	4.68	65646.29	65646.29	65646.29	12.01		Si
SLV 7	8.35	-14086.94	-9860	-0.0000573	0.0006738	0.0035	3.744	34213.67	34213.67	34213.67	2.43		Si
SLV 3	4.83	658.19	-23616	-0.0000414	0.0006738	0.0035	4.68	52020.18	52020.18	52020.18	79.03		Si
SLV 3	8.35	-7142.9	-9485	-0.0000313	0.0006738	0.0035	4.68	33422.54	33422.54	33422.54	4.68		Si
SLV 11	4.83	-7911.84	-29130	-0.0000675	0.0006738	0.0035	4.68	72008.24	72008.24	72008.24	9.1		Si
SLV 11	8.35	-13072.85	-13880	-0.0000525	0.0006738	0.0035	4.68	42545.97	42545.97	42545.97	3.25		Si
SLV 6	4.83	3769.52	-30874	-0.0000612	0.0006738	0.0035	4.68	64405.7	64405.7	64405.7	17.09		Si
SLV 6	8.35	10350.7	-22838	-0.0000617	0.0006738	0.0035	4.68	50604.93	50604.93	50604.93	4.89		Si
SLV 8	4.83	-5526.91	-25430	-0.0000555	0.0006738	0.0035	4.68	65187.11	65187.11	65187.11	11.79		Si
SLV 8	8.35	-13404.37	-10224	-0.0000525	0.0006738	0.0035	3.744	34968.42	34968.42	34968.42	2.61		Si
SLV 10	4.83	1323.57	-34330	-0.0000618	0.0006738	0.0035	4.68	70302.12	70302.12	70302.12	53.12		Si
SLV 10	8.35	11364.79	-26858	-0.0000713	0.0006738	0.0035	4.68	57551.96	57551.96	57551.96	5.06		Si
SLV 4	4.83	563.72	-23237	-0.0000406	0.0006738	0.0035	4.68	51373.74	51373.74	51373.74	91.13		Si
SLV 4	8.35	-6086.09	-10049	-0.0000299	0.0006738	0.0035	4.68	34605.68	34605.68	34605.68	5.69		Si
SLV 5	4.83	3830.54	-31119	-0.0000618	0.0006738	0.0035	4.68	64823.22	64823.22	64823.22	16.92		Si
SLV 5	8.35	9668.12	-22474	-0.0000596	0.0006738	0.0035	4.68	49896.72	49896.72	49896.72	5.16		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_m = 3$

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 77	4.83	-3185.09	-44332	-26030	-4107	4.68	4.68	-34762	10833	8112	115546	26910	23868	50778	No	12.36	Si
SLU 77	8.35	-2216.68	-27609	-16211	-3845	4.68	4.68	-21649	10833	8112	115546	26910	23868	50778	No	13.21	Si
SLU 48	4.83	-2298.09	-36551	-21461	-4112	4.68	4.68	-28661	10833	8112	115546	26910	23868	50778	No	12.35	Si
SLU 48	8.35	-1283.66	-22819	-13398	-3912	4.68	4.68	-17893	10719	8026	115546	26910	23868	50778	No	12.98	Si
SLU 68	4.83	-2761.45	-39392	-23130	-4107	4.68	4.68	-30889	10833	8112	115546	26910	23868	50778	No	12.36	Si
SLU 68	8.35	-1736.96	-24308	-14273	-3959	4.68	4.68	-19061	10833	8112	115546	26910	23868	50778	No	12.83	Si
SLU 70	4.83	-2792.67	-40558	-23814	-4228	4.68	4.68	-31803	10833	8112	115546	26910	23868	50778	No	12.01	Si
SLU 70	8.35	-1738.26	-25352	-14885	-4043	4.68	4.68	-19879	10833	8112	115546	26910	23868	50778	No	12.56	Si
SLU 69	4.83	-2734.63	-40594	-23835	-4258	4.68	4.68	-31831	10833	8112	115546	26910	23868	50778	No	11.93	Si
SLU 69	8.35	-1700.21	-25387	-14906	-4027	4.68	4.68	-19907	10833	8112	115546	26910	23868	50778	No	12.61	Si
SLU 66	4.83	-2719.83	-39911	-23434	-4163	4.68	4.68	-31295	10833	8112	115546	26910	23868	50778	No	12.2	Si
SLU 66	8.35	-1723.25	-24795	-14559	-3937	4.68	4.68	-19443	10833	8112	115546	26910	23868	50778	No	12.9	Si
SLU 67	4.83	-2777.87	-39875	-23413	-4134	4.68	4.68	-31267	10833	8112	115546	26910	23868	50778	No	12.28	Si
SLU 67	8.35	-1761.29	-24760	-14538	-3952	4.68	4.68	-19415	10833	8112	115546	26910	23868	50778	No	12.85	Si
SLU 72	4.83	-2737.55	-40100	-23545	-4221	4.68	4.68	-31443	10833	8112	115546	26910	23868	50778	No	12.03	Si
SLU 72	8.35	-1688.56	-24923	-14634	-4039	4.68	4.68	-19543	10833	8112	115546	26910	23868	50778	No	12.57	Si
SLU 50	4.83	-2242.97	-36093	-21192	-4105	4.68	4.68	-28302	10833	8112	115546	26910	23868	50778	No	12.37	Si
SLU 50	8.35	-1233.96	-22390	-13147	-3909	4.68	4.68	-17557	10674	7993	115546	26910	23868	50778	No	12.99	Si
SLU 71	4.83	-2679.51	-40136	-23566	-4251	4.68	4.68	-31472	10833	8112	115546	26910	23868	50778	No	11.95	Si
SLU 71	8.35	-1650.52	-24959	-14655	-4024	4.68	4.68	-19571	10833	8112	115546	26910	23868	50778	No	12.62	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_m = 2$

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 2	4.83	3352.65	-24871	-14603	-9114	4.68	4.68	-19502	16250	12168	115546	40365	23868	64233		7.05	Si
SLV 2	8.35	1040.44	-13833	-8122	-8515	4.68	4.68	-10847	14669	10984	115546	40365	23868	64233		7.54	Si
SLV 6	4.83	3769.52	-30874	-18128	-9407	4.68	4.68	-24209	16250	12168	115546	40365	23868	64233		6.83	Si
SLV 6	8.35	10350.7	-22838	-13410	-6466	4.68	4.68	-17908	16082	12042	115546	40365	23868	64233		9.93	Si



Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 6	4.83	496.48	-30414	-17858	-5835	4.68	4.68	-23849	16250	12168	115546	40365	23868	64233		11.01	Si
SLD 6	8.35	3816.02	-20367	-11959	-4428	4.68	4.68	-15970	15694	11752	115546	40365	23868	64233		14.51	Si
SLV 10	4.83	1323.57	-34330	-20157	-6644	4.68	4.68	-26919	16250	12168	115546	40365	23868	64233		9.67	Si
SLV 10	8.35	11364.79	-26858	-15770	-3428	4.68	4.68	-21060	16250	12168	115546	40365	23868	64233		18.74	Si
SLV 4	4.83	563.72	-23237	-13644	-6112	4.68	4.68	-18221	16144	12089	115546	40365	23868	64233		10.51	Si
SLV 4	8.35	-6086.09	-10049	-5900	-7251	4.68	4.68	-7880	14076	10540	115546	40365	23868	64233		8.86	Si
SLV 9	4.83	1384.59	-34574	-20301	-6698	4.68	4.68	-27111	16250	12168	115546	40365	23868	64233		9.59	Si
SLV 9	8.35	10682.22	-26494	-15556	-3504	4.68	4.68	-20775	16250	12168	115546	40365	23868	64233		18.33	Si
SLD 5	4.83	523.14	-30521	-17921	-5859	4.68	4.68	-23933	16250	12168	115546	40365	23868	64233		10.96	Si
SLD 5	8.35	3517.8	-20208	-11865	-4461	4.68	4.68	-15846	15669	11733	115546	40365	23868	64233		14.4	Si
SLV 1	4.83	3447.12	-25249	-14825	-9198	4.68	4.68	-19799	16250	12168	115546	40365	23868	64233		6.98	Si
SLV 1	8.35	-16.38	-13269	-7791	-8632	4.68	4.68	-10405	14581	10918	115546	40365	23868	64233		7.44	Si
SLV 3	4.83	658.19	-23616	-13866	-6196	4.68	4.68	-18518	16204	12133	115546	40365	23868	64233		10.37	Si
SLV 3	8.35	-7142.9	-9485	-5569	-7369	4.68	4.68	-7437	13987	10474	115546	40365	23868	64233		8.72	Si
SLV 5	4.83	3830.54	-31119	-18272	-9462	4.68	4.68	-24401	16250	12168	115546	40365	23868	64233		6.79	Si
SLV 5	8.35	9668.12	-22474	-13196	-6542	4.68	4.68	-17623	16025	11999	115546	40365	23868	64233		9.82	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRMC D.M. 17-01-18 (N.T.C.)

quota 6.59 Ta 0.13 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 3	-19350	0.38	288.09	1329.77	2170.9	1750.33	6.08	Si
SLV 4	-19362	0.38	288.09	1330.43	2171.96	1751.2	6.08	Si
SLV 7	-19554	0.38	288.09	1341.44	2189.62	1765.53	6.13	Si
SLV 8	-19562	0.38	288.09	1341.87	2190.3	1766.09	6.13	Si
SLV 1	-21839	0.38	288.09	1469.11	2398.51	1933.81	6.71	Si
SLV 2	-21851	0.38	288.09	1469.74	2399.56	1934.65	6.72	Si
SLV 11	-22216	0.38	288.09	1489.56	2432.82	1961.19	6.81	Si
SLV 12	-22223	0.38	288.09	1489.96	2433.5	1961.73	6.81	Si
SLV 5	-27850	0.38	288.09	1775.87	2939.58	2357.73	8.18	Si
SLV 6	-27857	0.38	288.09	1776.23	2940.24	2358.23	8.19	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.59 Wa = 0.03 Ta = 0.1293

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 10	-26858	-34330	229	0.916	3105.6	0.964	13.80985	16.49127	No
SLV 9	-26494	-34574	230	0.927	3068.6	0.964	13.98517	16.49127	No
SLV 6	-22838	-30874	-228	1.059	2696.7	0.959	16.03991	16.49127	No
SLV 5	-22474	-31119	-228	1.074	2659.7	0.959	16.27903	16.49127	No
SLV 14	-27233	-36389	761	0.887	3143.8	0.964	13.36296	11.57515	Si
SLV 13	-26669	-36767	762	0.904	3086.4	0.964	13.62378	11.57515	Si
SLV 16	-23448	-34755	760	1.013	2758.8	0.96	15.34351	11.57515	Si
SLV 15	-22885	-35134	761	1.036	2701.5	0.959	15.69031	11.57515	Si
SLV 12	-14244	-28886	225	1.594	1824	0.942	24.59113	16.49127	Si
SLV 11	-13880	-29130	226	1.63	1787.1	0.941	25.1606	16.49127	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	25.728	SLU 40	Si
V_SLU	11.926	SLU 69	Si
PF_SLV	2.429	SLV 7	Si
V_SLV	6.789	SLV 5	Si
PFFP_SLV	6.076	SLV 3	Si
R_SLV	0.837	SLV 10	No

## Maschio 109

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-2.963	5.826	-5.093	5.826	L5	L6	2.13	0.28	3.52	3.52	3.52			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica



									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 69	5.73	571.42	-20864	-0.0000605	0.0003743	0.0035	2.13	14584.89	17017.95	17017.95	29.78	No	Si
SLU 69	7.53	-2267.78	-21657	-0.0000767	0.0003743	0.0035	2.13	14837.97	18222.73	18222.73	8.04	No	Si
SLU 66	5.73	590.51	-20365	-0.0000592	0.0003743	0.0035	2.13	14414.45	16674.66	16674.66	28.24	No	Si
SLU 66	7.53	-2238.62	-21110	-0.0000747	0.0003743	0.0035	2.13	14665.71	17968.81	17968.81	8.03	No	Si
SLU 71	5.73	578.36	-20605	-0.0000598	0.0003743	0.0035	2.13	14497.38	16839.14	16839.14	29.12	No	Si
SLU 71	7.53	-2254.78	-21397	-0.0000758	0.0003743	0.0035	2.13	14757.5	18101.56	18101.56	8.03	No	Si
SLU 45	5.73	615.72	-18399	-0.0000536	0.0003743	0.0035	2.13	13657.07	15349.13	15349.13	24.93	No	Si
SLU 45	7.53	-2108.54	-18872	-0.0000668	0.0003743	0.0035	2.13	13851.59	16925.03	16925.03	8.03	No	Si
SLU 60	5.73	601.68	-20029	-0.0000583	0.0003743	0.0035	2.13	14294.45	16444.54	16444.54	27.33	No	Si
SLU 60	7.53	-2214.33	-20853	-0.0000737	0.0003743	0.0035	2.13	14581.08	17851.14	17851.14	8.06	No	Si
SLU 43	5.73	641.76	-17641	-0.0000516	0.0003743	0.0035	2.13	13329.06	14848.35	14848.35	23.14	No	Si
SLU 43	7.53	-2066.38	-18065	-0.0000641	0.0003743	0.0035	2.13	13515.03	16438.51	16438.51	7.96	No	Si
SLU 50	5.73	603.58	-18638	-0.0000542	0.0003743	0.0035	2.13	13756.52	15508.05	15508.05	25.69	No	Si
SLU 50	7.53	-2124.7	-19159	-0.0000678	0.0003743	0.0035	2.13	13965.94	17077.07	17077.07	8.04	No	Si
SLU 64	5.73	616.55	-19608	-0.0000572	0.0003743	0.0035	2.13	14138.72	16158.54	16158.54	26.21	No	Si
SLU 64	7.53	-2196.46	-20303	-0.0000719	0.0003743	0.0035	2.13	14392.49	17603.36	17603.36	8.01	No	Si
SLU 48	5.73	596.63	-18897	-0.0000549	0.0003743	0.0035	2.13	13861.91	15680.84	15680.84	26.28	No	Si
SLU 48	7.53	-2137.7	-19419	-0.0000687	0.0003743	0.0035	2.13	14066.81	17207.06	17207.06	8.05	No	Si
SLU 44	5.73	606.67	-17446	-0.0000508	0.0003743	0.0035	2.13	13241.49	14720.69	14720.69	24.26	No	Si
SLU 44	7.53	-2038.67	-17889	-0.0000633	0.0003743	0.0035	2.13	13438.78	16328.9	16328.9	8.01	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 4	5.73	1443.54	-12837	-0.0000432	0.0005615	0.0035	2.13	12157.76	12157.76	12157.76	8.42		Si
SLD 4	7.53	-3085.08	-14916	-0.0000609	0.0005615	0.0035	2.13	15183.38	15183.38	15183.38	4.92		Si
SLD 1	5.73	1618.59	-14727	-0.0000495	0.0005615	0.0035	2.13	13691.79	13691.79	13691.79	8.46		Si
SLD 1	7.53	-3398.13	-17009	-0.0000691	0.0005615	0.0035	2.13	16837.11	16837.11	16837.11	4.95		Si
SLV 3	5.73	3219.93	-9680	-0.0000476	0.0005615	0.0035	2.13	9655.41	9655.41	9655.41	3		Si
SLV 3	7.53	-5575.5	-14348	-0.0000783	0.0005615	0.0035	2.13	14716.12	14716.12	14716.12	2.64		Si
SLV 8	5.73	1173.95	-6855	-0.0000255	0.0005615	0.0035	2.13	7114.7	7114.7	7114.7	6.06		Si
SLV 8	7.53	-2399.05	-8495	-0.0000385	0.0005615	0.0035	2.13	9653.25	9653.25	9653.25	4.02		Si
SLD 3	5.73	1647.38	-12768	-0.0000445	0.0005615	0.0035	2.13	12102.74	12102.74	12102.74	7.35		Si
SLD 3	7.53	-3348.76	-15084	-0.0000634	0.0005615	0.0035	2.13	15321.89	15321.89	15321.89	4.58		Si
SLV 4	5.73	2745.22	-9840	-0.0000446	0.0005615	0.0035	2.13	9779.99	9779.99	9779.99	3.56		Si
SLV 4	7.53	-4961.43	-13957	-0.0000723	0.0005615	0.0035	2.13	14397.72	14397.72	14397.72	2.9		Si
SLV 1	5.73	3152.54	-14107	-0.0000592	0.0005615	0.0035	2.13	13185.88	13185.88	13185.88	4.18		Si
SLV 1	7.53	-5685.34	-18701	-0.0000914	0.0005615	0.0035	2.13	18126.95	18126.95	18126.95	3.19		Si
SLV 7	5.73	1480.55	-6752	-0.0000274	0.0005615	0.0035	2.13	7018	7018	7018	4.74		Si
SLV 7	7.53	-2795.67	-8748	-0.0000421	0.0005615	0.0035	2.13	9884.46	9884.46	9884.46	3.54		Si
SLV 16	5.73	-2208.95	-16149	-0.0000578	0.0005615	0.0035	2.13	16168.85	16168.85	16168.85	7.32		Si
SLV 16	7.53	2304.17	-12665	-0.000049	0.0005615	0.0035	2.13	12020.03	12020.03	12020.03	5.22		Si
SLV 2	5.73	2677.83	-14267	-0.0000561	0.0005615	0.0035	2.13	13315.72	13315.72	13315.72	4.97		Si
SLV 2	7.53	-5071.26	-18311	-0.0000856	0.0005615	0.0035	2.13	17841.45	17841.45	17841.45	3.52		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 84	5.73	536.32	-22377	-18634	3914	2.13	2.13	-31244	10833	6461	40441	17859	5431	23290	No	5.95	Si
SLU 84	7.53	-2356.94	-23533	-19596	3889	2.13	2.13	-32857	10833	6461	40441	17859	5431	23290	No	5.99	Si
SLU 76	5.73	534.3	-21583	-17972	3827	2.13	2.13	-30135	10833	6461	40441	17859	5431	23290	No	6.09	Si
SLU 76	7.53	-2301.47	-22626	-18841	3775	2.13	2.13	-31592	10833	6461	40441	17859	5431	23290	No	6.17	Si
SLU 78	5.73	522.3	-22419	-18668	3861	2.13	2.13	-31302	10833	6461	40441	17859	5431	23290	No	6.03	Si
SLU 78	7.53	-2354.72	-23503	-19571	3835	2.13	2.13	-32816	10833	6461	40441	17859	5431	23290	No	6.07	Si
SLU 80	5.73	529.25	-22160	-18453	3857	2.13	2.13	-30940	10833	6461	40441	17859	5431	23290	No	6.04	Si
SLU 80	7.53	-2341.72	-23243	-19355	3831	2.13	2.13	-32453	10833	6461	40441	17859	5431	23290	No	6.08	Si
SLU 77	5.73	543.36	-22536	-18766	3851	2.13	2.13	-31465	10833	6461	40441	17859	5431	23290	No	6.05	Si
SLU 77	7.53	-2371.35	-23608	-19659	3864	2.13	2.13	-32963	10833	6461	40441	17859	5431	23290	No	6.03	Si
SLU 83	5.73	557.38	-22494	-18731	3904	2.13	2.13	-31407	10833	6461	40441	17859	5431	23290	No	5.97	Si
SLU 83	7.53	-2373.57	-23638	-19684	3918	2.13	2.13	-33004	10833	6461	40441	17859	5431	23290	No	5.94	Si
SLU 74	5.73	562.45	-22037	-18350	3814	2.13	2.13	-30769	10833	6461	40441	17859	5431	23290	No	6.11	Si
SLU 74	7.53	-2342.19	-23061	-19203	3827	2.13	2.13	-32199	10833	6461	40441	17859	5431	23290	No	6.09	Si
SLU 81	5.73	576.47	-21996	-18316	3868	2.13	2.13	-30711	10833	6461	40441	17859	5431	23290	No	6.02	Si
SLU 81	7.53	-2344.41	-23091	-19228	3881	2.13	2.13	-32240	10833	6461	40441	17859	5431	23290	No	6	Si
SLU 82	5.73	555.41	-21879	-18219	3878	2.13	2.13	-30548	10833	6461	40441	17859	5431	23290	No	6.01	Si
SLU 82	7.53	-2327.78	-22985	-19140	3853	2.13	2.13	-32093	10833	6461	40441	17859	5431	23290	No	6.04	Si
SLU 79	5.73	550.31	-22276	-18550	3847	2.13	2.13	-31103	10833	6461	40441	17859	5431	23290	No	6.05	Si
SLU 79	7.53	-2358.34	-23349	-19443	3860	2.13	2.13	-32600	10833	6461	40441	17859	5431	23290	No	6.03	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 3	5.73	1647.38	-12768	-10632	5533	2.13	2.13	-17828	13982	8339	40441	26788	5431	32219		5.82	Si
SLD 3	7.53	-3348.76	-15084	-12561	5222	2.13	2.13	-21061	14629	8725	40441	26788	5431	32219		6.17	Si
SLD 2	5.73	1414.75	-14796	-12321	5092	2.13	2.13	-20658	14548	8677	40441	26788	5431	32219		6.33	Si
SLD 2	7.53	-3134.45	-16842	-14024	4908	2.13	2.13	-23515	15120	9017	40441	26788	5431	32219		6.56	Si



Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 4	5.73	2745.22	-9840	-8194	8326	2.13	2.13	-13739	13164	7851	40441	26788	5431	32219		3.87	Si
SLV 4	7.53	-4961.43	-13957	-11622	7587	2.13	2.1286	-19488	14314	8531	40441	26788	5431	32219		4.25	Si
SLV 3	5.73	3219.93	-9680	-8061	9272	2.13	2.13	-13516	13120	7825	40441	26788	5431	32219		3.47	Si
SLV 3	7.53	-5575.5	-14348	-11948	8531	2.13	2.0292	-21245	14666	8333	40441	26788	5431	32219		3.78	Si
SLV 1	5.73	3152.54	-14107	-11747	9190	2.13	2.13	-19698	14356	8562	40441	26788	5431	32219		3.51	Si
SLV 1	7.53	-5685.34	-18701	-15573	8741	2.13	2.13	-26111	15639	9327	40441	26788	5431	32219		3.69	Si
SLV 5	5.73	1255.89	-21509	-17911	4716	2.13	2.13	-30032	16250	9691	40441	26788	5431	32219		6.83	Si
SLV 5	7.53	-3161.8	-23259	-19368	5029	2.13	2.13	-32475	16250	9691	40441	26788	5431	32219		6.41	Si
SLD 1	5.73	1618.59	-14727	-12264	5498	2.13	2.13	-20563	14529	8665	40441	26788	5431	32219		5.86	Si
SLD 1	7.53	-3398.13	-17009	-14164	5313	2.13	2.13	-23749	15167	9045	40441	26788	5431	32219		6.06	Si
SLD 4	5.73	1443.54	-12837	-10689	5127	2.13	2.13	-17923	14001	8350	40441	26788	5431	32219		6.28	Si
SLD 4	7.53	-3085.08	-14916	-12421	4816	2.13	2.13	-20827	14582	8697	40441	26788	5431	32219		6.69	Si
SLV 2	5.73	2677.83	-14267	-11880	8245	2.13	2.13	-19920	14401	8588	40441	26788	5431	32219		3.91	Si
SLV 2	7.53	-5071.26	-18311	-15248	7797	2.13	2.13	-25566	15530	9262	40441	26788	5431	32219		4.13	Si
SLV 7	5.73	1480.55	-6752	-5622	4988	2.13	2.13	-9427	12302	7337	40441	26788	5431	32219		6.46	Si
SLV 7	7.53	-2795.67	-8748	-7284	4328	2.13	2.13	-12214	12859	7669	40441	26788	5431	32219		7.44	Si

**Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)**

quota 6.59 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 12	179667	0.38	13199	-7872	216.84	1006.79	4.64	Si
SLV 8	179667	0.38	13471	-8034	216.84	1025.58	4.73	Si
SLV 11	179667	0.38	13521	-8064	216.84	1028.95	4.75	Si
SLV 7	179667	0.38	13793	-8226	216.84	1047.65	4.83	Si
SLV 16	179667	0.38	21769	-12983	216.84	1558.54	7.19	Si
SLV 15	179667	0.38	22268	-13280	216.84	1588.14	7.32	Si
SLV 4	179667	0.38	22678	-13525	216.84	1612.33	7.44	Si
SLV 3	179667	0.38	23176	-13822	216.84	1641.44	7.57	Si
SLV 14	179667	0.38	29464	-17572	216.84	1985.46	9.16	Si
SLV 13	179667	0.38	29962	-17869	216.84	2010.87	9.27	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

**Verifica dei meccanismi locali di collasso con analisi cinematica lineare**

forza di aggancio al piano = 5617 quota mezzeria = 6.59 Wa = 0.05 Ta = 0.0739

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	$\alpha_0^*$	aLim	Verifica
SLV 9	-19507	-20988	-649	0.572	2281.9	0.961	8.6495	12.29974	No
SLV 10	-19384	-20735	-653	0.575	2269.3	0.961	8.69499	12.29974	No
SLV 5	-19255	-20925	-666	0.578	2256.2	0.961	8.73735	12.29974	No
SLV 6	-19131	-20672	-670	0.581	2243.6	0.961	8.78394	12.29974	No
SLV 11	-8773	-8679	686	1.105	1192.6	0.932	17.22273	12.29974	Si
SLV 12	-8650	-8426	682	1.117	1180.1	0.931	17.43423	12.29974	Si
SLV 7	-8521	-8616	669	1.132	1167.1	0.931	17.67369	12.29974	Si
SLV 8	-8397	-8363	665	1.146	1154.6	0.93	17.89619	12.29974	Si
SLV 13	-16079	-16823	-161	0.701	1933.3	0.955	10.66465	6.56558	Si
SLV 14	-15888	-16430	-167	0.708	1913.9	0.955	10.77183	6.56558	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

**Tabella dei coefficienti di sicurezza minimi**

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	7.955	SLU 43	Si
V_SLU	5.944	SLU 83	Si
PF_SLV	2.639	SLV 3	Si
V_SLV	3.475	SLV 3	Si
PFFP_SLV	4.643	SLV 12	Si
R_SLV	0.703	SLV 9	No

**Maschio 110**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati geometrici**

X inl.	Y inl.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h inl.	h fin.	a	a.s.,sx	a.s.,dx
-0.133	5.826	-2.063	5.826	L5	L6	1.93	0.28	3.52	3.52	3.52			

**Caratteristiche del materiale**

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau_0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

**Materiale per FRCM**

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio



## Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	ε <sub>f,d</sub>	γ <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche,  $\gamma_{\text{M}} = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_{\text{m}}$	$\epsilon_{\text{m}_-}$	$\epsilon_{\text{mu}}$	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 45	5.73	1772.4	-13719	-0.0000561	0.0003743	0.0035	1.93	9937.85	10914.73	10914.73	6.16	No	Si
SLU 45	7.53	405.83	-12428	-0.0000394	0.0003743	0.0035	1.93	9284.27	10174.23	10174.23	25.07	No	Si
SLU 46	5.73	1760.19	-13627	-0.0000557	0.0003743	0.0035	1.93	9893.32	10864.22	10864.22	6.17	No	Si
SLU 46	7.53	417.09	-12368	-0.0000393	0.0003743	0.0035	1.93	9252.03	10132.9	10132.9	24.29	No	Si
SLU 44	5.73	1709.4	-13015	-0.0000533	0.0003743	0.0035	1.93	9588.58	10528.51	10528.51	6.16	No	Si
SLU 44	7.53	380.53	-11734	-0.000037	0.0003743	0.0035	1.93	8908.7	9659.02	9659.02	25.38	No	Si
SLU 64	5.73	1761.85	-14424	-0.0000583	0.0003743	0.0035	1.93	10270.4	11306.49	11306.49	6.42	No	Si
SLU 64	7.53	585.43	-13501	-0.0000443	0.0003743	0.0035	1.93	9831.46	10794.74	10794.74	18.44	No	Si
SLU 49	5.73	1788.68	-13994	-0.0000572	0.0003743	0.0035	1.93	10069.39	11066.55	11066.55	6.19	No	Si
SLU 49	7.53	446.4	-12762	-0.0000408	0.0003743	0.0035	1.93	9458.76	10388.96	10388.96	23.27	No	Si
SLU 43	5.73	1729.74	-13168	-0.000054	0.0003743	0.0035	1.93	9665.91	10612.01	10612.01	6.14	No	Si
SLU 43	7.53	361.76	-11836	-0.0000372	0.0003743	0.0035	1.93	8964.61	9736.66	9736.66	26.91	No	Si
SLU 47	5.73	1737.89	-13381	-0.0000547	0.0003743	0.0035	1.93	9772.51	10729.04	10729.04	6.17	No	Si
SLU 47	7.53	409.83	-12129	-0.0000385	0.0003743	0.0035	1.93	9124.19	9961.45	9961.45	24.31	No	Si
SLU 51	5.73	1774.52	-13809	-0.0000564	0.0003743	0.0035	1.93	9981.19	10964.32	10964.32	6.18	No	Si
SLU 51	7.53	431.63	-12564	-0.00004	0.0003743	0.0035	1.93	9355.51	10263.75	10263.75	23.78	No	Si
SLU 48	5.73	1800.89	-14085	-0.0000576	0.0003743	0.0035	1.93	10112.74	11117.46	11117.46	6.17	No	Si
SLU 48	7.53	435.14	-12823	-0.0000408	0.0003743	0.0035	1.93	9490.16	10423.9	10423.9	23.96	No	Si
SLU 50	5.73	1786.72	-13901	-0.0000569	0.0003743	0.0035	1.93	10025.13	11015.03	11015.03	6.16	No	Si
SLU 50	7.53	420.37	-12624	-0.0000401	0.0003743	0.0035	1.93	9387.33	10302.91	10302.91	24.51	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche,  $\gamma_{\text{M}} = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_{\text{m}}$	$\epsilon_{\text{m}_-}$	$\epsilon_{\text{mu}}$	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 4	5.73	4083.72	-7614	-0.0000649	0.0005615	0.0035	1.93		7014.77	7014.77	1.72		Si
SLV 4	7.53	-2101.16	-3619	-0.0000335	0.0005615	0.0035	1.544		4398.79	4398.79	2.09		Si
SLV 1	5.73	4572.12	-13417	-0.0000794	0.0005615	0.0035	1.93		11299.65	11299.65	2.47		Si
SLV 1	7.53	-2748.83	-8965	-0.0000491	0.0005615	0.0035	1.93		8944.36	8944.36	3.25		Si
SLV 16	5.73	-1883.47	-8804	-0.000041	0.0005615	0.0035	1.93		8813.86	8813.86	4.68		Si
SLV 16	7.53	3685.76	-11927	-0.0000665	0.0005615	0.0035	1.93		10228.74	10228.74	2.78		Si
SLV 11	5.73	737.16	-1830	-0.0000114	0.0005615	0.0035	1.93		1919.06	1919.06	2.6		Si
SLV 11	7.53	1472.32	-817	-0.0043084	0.0005615	0.0035	1.93		971.11	971.11	0.66		No
SLV 15	5.73	-1329.64	-8912	-0.0000365	0.0005615	0.0035	1.93		8901.1	8901.1	6.69		Si
SLV 15	7.53	3211.48	-10939	-0.0000592	0.0005615	0.0035	1.93		9528.25	9528.25	2.97		Si
SLV 3	5.73	4637.56	-7721	-0.0000782	0.0005615	0.0035	1.93		7104.21	7104.21	1.53		Si
SLV 3	7.53	-2575.45	-2631	-0.0001878	0.0005615	0.0035	1.544		3508.19	3508.19	1.36		Si
SLV 7	5.73	2527.32	-1473	-0.0083582	0.0005615	0.0035	1.93		1586.78	1586.78	0.63		No
SLV 7	7.53	-263.76	1675	0.1339276	0.0005615	0.0035	1.544		0	0	0		No
SLV 8	5.73	2169.62	-1404	-0.0059596	0.0005615	0.0035	1.93		1522	1522	0.7		No
SLV 8	7.53	42.57	1037	0.0818023	0.0005615	0.0035	1.544		0	0	0		No
SLV 12	5.73	379.46	-1761	-0.000008	0.0005615	0.0035	1.93		1854.52	1854.52	4.89		Si
SLV 12	7.53	1778.64	-1455	-0.0020422	0.0005615	0.0035	1.544		1569.84	1569.84	0.88		No
SLV 2	5.73	4018.28	-13310	-0.0000738	0.0005615	0.0035	1.93		11221.91	11221.91	2.79		Si
SLV 2	7.53	-2274.55	-9952	-0.0000479	0.0005615	0.0035	1.93		9744.94	9744.94	4.28		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_{\text{M}} = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_{\text{N}}$	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 42	5.73	1367.98	-13447	-11198	-796	1.93	1.93	-20721	9707	5246	40441	16182	4922	21104	No	26.52	Si
SLU 42	7.53	937.96	-13674	-11386	-803	1.93	1.93	-21070	9754	5271	40441	16182	4922	21104	No	26.29	Si
SLU 36	5.73	1416.47	-13562	-11293	-651	1.93	1.93	-20897	9731	5259	40441	16182	4922	21104	No	32.43	Si
SLU 36	7.53	881.1	-13627	-11347	-658	1.93	1.93	-20998	9744	5266	40441	16182	4922	21104	No	32.08	Si
SLU 34	5.73	1365.68	-12949	-10783	-644	1.93	1.93	-19954	9605	5191	40441	16182	4922	21104	No	32.77	Si
SLU 34	7.53	844.54	-12994	-10820	-658	1.93	1.93	-20022	9614	5195	40441	16182	4922	21104	No	32.08	Si
SLU 39	5.73	1351.7	-13172	-10969	-756	1.93	1.93	-20297	9651	5215	40441	16182	4922	21104	No	27.91	Si
SLU 39	7.53	897.4	-13340	-11109	-753	1.93	1.93	-20556	9685	5234	40441	16182	4922	21104	No	28.03	Si
SLU 40	5.73	1339.49	-13081	-10892	-780	1.93	1.93	-20156	9632	5205	40441	16182	4922	21104	No	27.04	Si
SLU 40	7.53	908.66	-13279	-11058	-787	1.93	1.93	-20462	9673	5227	40441	16182	4922	21104	No	26.8	Si
SLU 31	5.73	1337.19	-12583	-10478	-628	1.93	1.93	-19389	9530	5150	40441	16182	4922	21104	No	33.58	Si
SLU 31	7.53	815.23	-12599	-10492	-642	1.93	1.93	-19415	9533	5152	40441	16182	4922	21104	No	32.85	Si
SLU 33	5.73	1387.98	-13195	-10988	-635	1.93	1.93	-20333	9655	5218	40441	16182	4922	21104	No	33.22	Si
SLU 33	7.53	851.8	-13233	-11019	-642	1.93	1.93	-20390	9663	5222	40441	16182	4922	21104	No	32.85	Si
SLU 41	5.73	1380.19	-13539	-11274	-772	1.93	1.93	-20862	9726	5256	40441	16182	4922	21104	No	27.35	Si
SLU 41	7.53	926.7	-13735	-11437	-768	1.93	1.93	-21164	9766	5278	40441	16182	4922	21104	No	27.47	Si
SLU 38	5.73	1402.3	-13377	-11139	-643	1.93	1.93	-20612	9693	5238	40441	16182	4922	21104	No	32.81	Si
SLU 38	7.53	866.33	-13429	-11182	-650	1.93	1.93	-20692	9703	5244	40441	16182	4922	21104	No	32.46	Si
SLU 84	5.73	1758.69	-16154	-13452	-636	1.93	1.93	-24892	10263	5546	40441	16182	4922	21104	No	33.2	Si
SLU 84	7.53	962.46	-15966	-13295	-642	1.93	1.93	-24602	10225	5525	40441	16182	4922	21104	No	32.88	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_{\text{M}} = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_{\text{N}}$	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 15	5.73	-1329.64	-8912	-7421	-4770	1.93	1.93	-13732	13163	7113	40441	24273	4922	29195		6.12	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 15	7.53	3211.48	-10939	-9109	-4041	1.93	1.93	-16856	13788	7451	40441	24273	4922	29195		7.22	Si
SLV 3	5.73	4637.56	-7721	-6429	6189	1.93	1.0931	-11897	12796	3917	40441	24273	4922	29195		4.72	Si
SLV 3	7.53	-2575.45	-2631	-2191	5500	1.544	0	0	0	0	40441	19419	3937	23356		4.25	Si
SLV 7	5.73	2527.32	-1473	-1227	2604	1.93	0	-101949	16250	0	40441	24273	4922	29195		11.21	Si
SLV 7	7.53	-263.76	1675	1395	2451	1.544	1.93	0	0	0	40441	19419	3937	23356		9.53	Si
SLV 1	5.73	4572.12	-13417	-11173	5798	1.93	1.8727	-20675	14552	7630	40441	24273	4922	29195		5.04	Si
SLV 1	7.53	-2748.83	-8965	-7465	5075	1.93	1.93	-13814	13179	7122	40441	24273	4922	29195		5.75	Si
SLD 14	5.73	-64.78	-12602	-10494	-2740	1.93	1.93	-19418	14300	7728	40441	24273	4922	29195		10.65	Si
SLD 14	7.53	1768.41	-13832	-11518	-2441	1.93	1.93	-21314	14680	7933	40441	24273	4922	29195		11.96	Si
SLV 16	5.73	-1883.47	-8804	-7331	-5927	1.93	1.93	-13566	13130	7095	40441	24273	4922	29195		4.93	Si
SLV 16	7.53	3685.76	-11927	-9931	-5199	1.93	1.93	-18378	14092	7616	40441	24273	4922	29195		5.62	Si
SLV 14	5.73	-1948.91	-14500	-12075	-6318	1.93	1.93	-22343	14885	8044	40441	24273	4922	29195		4.62	Si
SLV 14	7.53	3512.38	-18260	-15205	-5624	1.93	1.93	-28137	16044	8670	40441	24273	4922	29195		5.19	Si
SLV 4	5.73	4083.72	-7614	-6340	5031	1.93	1.2859	-11732	12763	4595	40441	24273	4922	29195		5.8	Si
SLV 4	7.53	-2101.16	-3619	-3013	4342	1.544	1.1531	0	0	0	40441	19419	3937	23356		5.38	Si
SLV 2	5.73	4018.28	-13310	-11083	4641	1.93	1.93	-20509	14518	7846	40441	24273	4922	29195		6.29	Si
SLV 2	7.53	-2274.55	-9952	-8287	3918	1.93	1.93	-15335	13484	7287	40441	24273	4922	29195		7.45	Si
SLV 13	5.73	-1395.08	-14608	-12164	-5160	1.93	1.93	-22509	14918	8062	40441	24273	4922	29195		5.66	Si
SLV 13	7.53	3038.09	-17273	-14383	-4466	1.93	1.93	-26615	15740	8506	40441	24273	4922	29195		6.54	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 6.59 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 7	179667	0.38	0	145	196.49	0	0	No, Trazione
SLV 8	179667	0.38	0	-206	196.49	0	0	No, e>t/2
SLV 11	179667	0.38	2722	-1471	196.49	202.29	1.03	Si
SLV 12	179667	0.38	3373	-1823	196.49	249.54	1.27	Si
SLV 3	179667	0.38	9234	-4990	196.49	656.38	3.34	Si
SLV 4	179667	0.38	10241	-5534	196.49	722.85	3.68	Si
SLV 15	179667	0.38	19205	-10378	196.49	1270.25	6.46	Si
SLV 16	179667	0.38	20212	-10923	196.49	1326.78	6.75	Si
SLV 1	179667	0.38	20523	-11091	196.49	1344.06	6.84	Si
SLV 2	179667	0.38	21531	-11635	196.49	1399.28	7.12	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 6.59 Wa = 0.05 Ta = 0.0739

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 10	-20095	-18626	-544	0.515	2313.7	0.965	7.75664	12.29974	No
SLV 9	-19604	-18484	-545	0.526	2263.8	0.964	7.92695	12.29974	No
SLV 6	-18681	-16779	-345	0.558	2169.8	0.963	8.41822	12.29974	No
SLV 5	-18190	-16636	-346	0.571	2119.9	0.962	8.61783	12.29974	No
SLV 14	-14919	-15169	-461	0.668	1787.3	0.956	10.15602	6.56558	Si
SLV 13	-14159	-14948	-462	0.698	1710.1	0.954	10.63245	6.56558	Si
SLV 2	-10206	-9009	201	0.938	1308.9	0.942	14.47472	6.56558	Si
SLV 1	-9446	-8788	200	1	1231.9	0.939	15.47001	6.56558	Si
SLV 16	-8953	-10324	-192	1.045	1182.1	0.937	16.20455	6.56558	Si
SLV 15	-8193	-10102	-193	1.122	1105.2	0.933	17.4664	6.56558	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	6.135	SLU 43	Si
V_SLU	26.288	SLU 42	Si
PF_SLV	0	SLV 7	No
V_SLV	4.247	SLV 3	Si
PFFP_SLV	0	SLV 7	No
R_SLV	0.631	SLV 10	No

Maschio 111

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-0.133	-3.314	-0.133	5.826	L5	L6	9.14	0.28	3.52	3.52	3.52			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio





## Rinforzo a matrice inorganica

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	elim,conv / e,CNR DT-200							CRM / Fibrenet?			
									qt	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma F_d$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche,  $\gamma M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 40	4.83	-4748.19	-79572	-0.0000512	0.0003743	0.0035	9.14	252589.93	309446.22	309446.22	65.17	No	Si
SLU 40	8.35	-3643.81	-57457	-0.0000362	0.0003743	0.0035	9.14	204675.46	245520.66	245520.66	67.38	No	Si
SLU 76	4.83	-4980.31	-92754	-0.0000604	0.0003743	0.0035	9.14	272987.76	336995.72	336995.72	67.67	No	Si
SLU 76	8.35	-3426.03	-67251	-0.0000425	0.0003743	0.0035	9.14	228010.9	275448.78	275448.78	80.4	No	Si
SLU 73	4.83	-5035.91	-91064	-0.0000592	0.0003743	0.0035	9.14	270713.97	333787.51	333787.51	66.28	No	Si
SLU 73	8.35	-3509.12	-65560	-0.0000414	0.0003743	0.0035	9.14	224223.56	270361.11	270361.11	77.05	No	Si
SLU 42	4.83	-4692.58	-81262	-0.0000523	0.0003743	0.0035	9.14	255544.75	313462.26	313462.26	66.8	No	Si
SLU 42	8.35	-3560.73	-59147	-0.0000373	0.0003743	0.0035	9.14	208943.29	250784.42	250784.42	70.43	No	Si
SLU 34	4.83	-4547.71	-77900	-0.00005	0.0003743	0.0035	9.14	249566.4	304876.29	304876.29	67.04	No	Si
SLU 34	8.35	-3413.36	-56732	-0.0000357	0.0003743	0.0035	9.14	202814.03	243249.72	243249.72	71.26	No	Si
SLU 31	4.83	-4603.32	-76211	-0.0000489	0.0003743	0.0035	9.14	246412.37	300224.32	300224.32	65.22	No	Si
SLU 31	8.35	-3496.45	-55042	-0.0000346	0.0003743	0.0035	9.14	198402.97	237864.32	237864.32	68.03	No	Si
SLU 82	4.83	-5180.79	-94426	-0.0000616	0.0003743	0.0035	9.14	275139.95	340159.85	340159.85	65.66	No	Si
SLU 82	8.35	-3656.48	-67976	-0.0000431	0.0003743	0.0035	9.14	229604.78	277519.86	277519.86	75.9	No	Si
SLU 39	4.83	-4475.12	-79521	-0.0000511	0.0003743	0.0035	9.14	252498.68	309310.87	309310.87	69.12	No	Si
SLU 39	8.35	-3238.2	-57444	-0.0000361	0.0003743	0.0035	9.14	204642.25	245480.02	245480.02	75.81	No	Si
SLU 84	4.83	-5125.18	-96115	-0.0000628	0.0003743	0.0035	9.14	277214.52	343340.72	343340.72	66.99	No	Si
SLU 84	8.35	-3573.39	-69666	-0.0000441	0.0003743	0.0035	9.14	233248.89	282184.26	282184.26	78.97	No	Si
SLU 81	4.83	-4907.72	-94375	-0.0000614	0.0003743	0.0035	9.14	275075.42	340063.07	340063.07	69.29	No	Si
SLU 81	8.35	-3250.86	-67963	-0.0000429	0.0003743	0.0035	9.14	229576.37	277483.99	277483.99	85.36	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche,  $\gamma M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 7	4.83	-57836	-54275	-0.0000551	0.0005615	0.0035	9.14		246253.47	246253.47	4.26		Si
SLV 7	8.35	-84640.24	-41705	-0.0000597	0.0005615	0.0035	9.14		199292.11	199292.11	2.35		Si
SLV 8	4.83	-56680.78	-54251	-0.0000546	0.0005615	0.0035	9.14		246161.98	246161.98	4.34		Si
SLV 8	8.35	-80804.49	-41740	-0.0000576	0.0005615	0.0035	9.14		199425.58	199425.58	2.47		Si
SLV 5	4.83	53500.19	-56397	-0.0000547	0.0005615	0.0035	9.14		228638.52	228638.52	4.27		Si
SLV 5	8.35	79403.65	-43542	-0.0000576	0.0005615	0.0035	9.14		185466.41	185466.41	2.34		Si
SLD 6	4.83	22490.9	-60874	-0.0000452	0.0005615	0.0035	9.14		243953.37	243953.37	10.85		Si
SLD 6	8.35	35923.37	-45090	-0.0000406	0.0005615	0.0035	9.14		190602.74	190602.74	5.31		Si
SLV 6	4.83	54655.42	-56372	-0.0000552	0.0005615	0.0035	9.14		228553.72	228553.72	4.18		Si
SLV 6	8.35	83239.4	-43577	-0.0000596	0.0005615	0.0035	9.14		185582.53	185582.53	2.23		Si
SLV 9	4.83	50769.7	-74221	-0.0000651	0.0005615	0.0035	9.14		290479.59	290479.59	5.72		Si
SLV 9	8.35	77758.48	-50686	-0.0000608	0.0005615	0.0035	9.14		209308.54	209308.54	2.69		Si
SLV 10	4.83	51924.93	-74196	-0.0000655	0.0005615	0.0035	9.14		290391.57	290391.57	5.59		Si
SLV 10	8.35	81594.23	-50721	-0.0000625	0.0005615	0.0035	9.14		209426.43	209426.43	2.57		Si
SLV 11	4.83	-60566.49	-72099	-0.0000677	0.0005615	0.0035	9.14		308349.42	308349.42	5.09		Si
SLV 11	8.35	-86285.4	-48849	-0.0000636	0.0005615	0.0035	9.14		226492.64	226492.64	2.62		Si
SLV 12	4.83	-59411.27	-72074	-0.0000672	0.0005615	0.0035	9.14		308267.34	308267.34	5.19		Si
SLV 12	8.35	-82449.65	-48884	-0.0000618	0.0005615	0.0035	9.14		226619.19	226619.19	2.75		Si
SLV 2	4.83	19190.02	-34829	-0.0000278	0.0005615	0.0035	9.14		152210.66	152210.66	7.93		Si
SLV 2	8.35	28794.95	-34610	-0.0000314	0.0005615	0.0035	9.14		151346.8	151346.8	5.26		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 77	4.83	-4527.16	-95338	-79389	-5453	9.14	9.14	-31021	10833	27725	40441	76634	23307	68166	No	12.5	Si
SLU 77	8.35	-2706.47	-69853	-58167	-5492	9.14	9.14	-22729	9975	25528	40441	76634	23307	65969	No	12.01	Si
SLU 75	4.83	-4855.83	-93700	-78025	-5472	9.14	9.14	-30488	10833	27725	40441	76634	23307	68166	No	12.46	Si
SLU 75	8.35	-3195.17	-68176	-56771	-5448	9.14	9.14	-22183	9902	25342	40441	76634	23307	65783	No	12.07	Si
SLU 75	8.35	-4469.59	-94358	-78573	-5383	9.14	9.14	-30702	10833	27725	40441	76634	23307	68166	No	12.66	Si
SLU 79	8.35	-2666.92	-68920	-57390	-5420	9.14	9.14	-22425	9934	25424	40441	76634	23307	65865	No	12.15	Si
SLU 84	4.83	-5125.18	-96115	-80037	-5765	9.14	9.14	-31274	10833	27725	40441	76634	23307	68166	No	11.82	Si
SLU 84	8.35	-3573.39	-69666	-58012	-5742	9.14	9.14	-22668	9967	25507	40441	76634	23307	65948	No	11.49	Si
SLU 80	4.83	-4742.65	-94409	-78616	-5458	9.14	9.14	-30719	10833	27725	40441	76634	23307	68166	No	12.49	Si
SLU 80	8.35	-3072.53	-68933	-57401	-5434	9.14	9.14	-22429	9935	25426	40441	76634	23307	65867	No	12.12	Si
SLU 81	4.83	-4907.72	-94375	-78587	-5633	9.14	9.14	-30708	10833	27725	40441	76634	23307	68166	No	12.1	Si
SLU 81	8.35	-3250.86	-67963	-56594	-5672	9.14	9.14	-22114	9893	25318	40441	76634	23307	65759	No	11.59	Si
SLU 74	4.83	-4582.76	-93649	-77982	-5397	9.14	9.14	-30471	10833	27725	40441	76634	23307	68166	No	12.63	Si
SLU 74	8.35	-2789.56	-68163	-56760	-5435	9.14	9.14	-22179	9902	25340	40441	76634	23307	65781	No	12.1	Si
SLU 83	4.83	-4852.11	-96064	-79994	-5690	9.14	9.14	-31257	10833	27725	40441	76634	23307	68166	No	11.98	Si
SLU 83	8.35	-3167.78	-69653	-58001	-5729	9.14	9.14	-22664	9966	25506	40441	76634	23307	65947	No	11.51	Si
SLU 78	4.83	-4800.22	-95389	-79432	-5529	9.14	9.14	-31038	10833	27725	40441	76634	23307	68166	No	12.33	Si
SLU 78	8.35	-3112.09	-69866	-58178	-5505	9.14	9.14	-22733	9976	25529	40441	76634	23307	65970	No	11.98	Si
SLU 82	4.83	-5180.79	-94426	-78630	-5709	9.14	9.14	-30724	10833	27725	40441	76634	23307	68166	No	11.94	Si
SLU 82	8.35	-3656.48	-67976	-56604	-5685	9.14	9.14	-22118	9894	25319	40441	76634	23307	65760	No	11.57	Si





## Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 5	4.83	53500.19	-56397	-46963	-19808	9.14	9.14	-18351	14087	36051	40441	114951	23307	76492		3.86	Si
SLV 5	8.35	79403.65	-43542	-36258	-10820	9.14	8.2392	-14168	13250	30568	40441	114951	23307	71009		6.56	Si
SLV 2	4.83	19190.02	-34829	-29003	-13454	9.14	9.14	-11333	12683	32459	40441	114951	23307	72900		5.42	Si
SLV 2	8.35	28794.95	-34610	-28820	-11022	9.14	9.14	-11261	12669	32422	40441	114951	23307	72863		6.61	Si
SLV 8	4.83	-56680.78	-54251	-45175	12066	9.14	9.14	-17652	13947	35693	40441	114951	23307	76134		6.31	Si
SLV 8	8.35	-80804.49	-41740	-34757	2866	9.14	7.9023	-15830	13583	30054	40441	114951	23307	70495		24.6	Si
SLV 11	4.83	-60566.49	-72099	-60038	17019	9.14	9.14	-23459	15109	38666	40441	114951	23307	79107		4.65	Si
SLV 11	8.35	-86285.4	-48849	-40677	7981	9.14	8.4108	-17406	13898	32730	40441	114951	23307	73171		9.17	Si
SLV 6	4.83	54655.42	-56372	-46942	-23830	9.14	9.14	-18343	14085	36047	40441	114951	23307	76488		3.21	Si
SLV 6	8.35	83239.4	-43577	-36287	-14844	9.14	7.9795	-14179	13252	29610	40441	114951	23307	70051		4.72	Si
SLV 7	4.83	-57836	-54275	-45196	16089	9.14	9.14	-17660	13949	35698	40441	114951	23307	76138		4.73	Si
SLV 7	8.35	-84640.24	-41705	-34728	6889	9.14	7.6215	-16403	13697	29230	40441	114951	23307	69671		10.11	Si
SLD 6	4.83	22490.9	-60874	-50691	-12396	9.14	9.14	-19807	14378	36797	40441	114951	23307	77237		6.23	Si
SLD 6	8.35	35923.37	-45090	-37547	-8427	9.14	9.14	-14672	13351	34168	40441	114951	23307	74609		8.85	Si
SLV 9	4.83	50769.7	-74221	-61804	-18878	9.14	9.14	-24150	15247	39019	40441	114951	23307	79460		4.21	Si
SLV 9	8.35	77758.48	-50686	-42207	-9729	9.14	9.1076	-16492	13715	34975	40441	114951	23307	75416		7.75	Si
SLV 10	4.83	51924.93	-74196	-61784	-22901	9.14	9.14	-24142	15245	39015	40441	114951	23307	79456		3.47	Si
SLV 10	8.35	81594.23	-50721	-42236	-13752	9.14	8.8839	-16504	13717	34122	40441	114951	23307	74563		5.42	Si
SLV 12	4.83	-59411.27	-72074	-60017	12996	9.14	9.14	-23451	15107	38662	40441	114951	23307	79103		6.09	Si
SLV 12	8.35	-82449.65	-48884	-40706	3957	9.14	8.65	-16940	13805	33435	40441	114951	23307	73876		18.67	Si

## Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 6.59 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 3	179667	0.38	13812	-35347	930.5	4501.07	4.84	Si
SLV 4	179667	0.38	13823	-35376	930.5	4504.32	4.84	Si
SLV 1	179667	0.38	14058	-35977	930.5	4573.11	4.91	Si
SLV 2	179667	0.38	14069	-36005	930.5	4576.34	4.92	Si
SLV 7	179667	0.38	18699	-47856	930.5	5879.42	6.32	Si
SLV 8	179667	0.38	18707	-47874	930.5	5881.35	6.32	Si
SLV 5	179667	0.38	19519	-49954	930.5	6099.64	6.56	Si
SLV 6	179667	0.38	19526	-49972	930.5	6101.55	6.56	Si
SLV 11	179667	0.38	23133	-59202	930.5	7032.79	7.56	Si
SLV 12	179667	0.38	23140	-59220	930.5	7034.58	7.56	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

## Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 6.59 Wa = 0.05 Ta = 0.0739

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	a0*	aLim	Verifica
SLV 10	-50721	-74196	809	0.904	6440.6	0.944	13.9217	12.29974	Si
SLV 9	-50686	-74221	809	0.905	6437	0.944	13.93008	12.29974	Si
SLV 12	-48884	-72074	952	0.93	6254.4	0.942	14.33372	12.29974	Si
SLV 11	-48849	-72099	952	0.93	6250.8	0.942	14.34264	12.29974	Si
SLV 6	-43577	-56372	-925	1.021	5717	0.938	15.82644	12.29974	Si
SLV 5	-43542	-56397	-925	1.022	5713.4	0.938	15.83725	12.29974	Si
SLV 8	-41740	-54251	-782	1.06	5531.1	0.936	16.46173	12.29974	Si
SLV 7	-41705	-54275	-783	1.061	5527.6	0.936	16.47342	12.29974	Si
SLV 14	-58421	-94240	2883	0.773	7221.8	0.949	11.83485	6.56558	Si
SLV 13	-58367	-94278	2883	0.774	7216.3	0.949	11.8445	6.56558	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

## Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	65.171	SLU 40	Si
V_SLU	11.485	SLU 84	Si
PF_SLV	2.23	SLV 6	Si
V_SLV	3.21	SLV 6	Si
PFFP_SLV	4.837	SLV 3	Si
R_SLV	1.132	SLV 10	Si

## Maschio 112

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota l.	Quota s.	I	Sp.	h netta	h ini.	h fin.	a	a.s.sx	a.s.dx
-24.633	-3.314	-24.633	5.826	L6	L7	9.141	0.28	3.52	3.52	3.52			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau_0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM



Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	elim,conv / e,CNR DT-200							CRM / Fibrenet?			
									αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 73	8.35	-10674.65	-62737	-0.0000425	0.0003743	0.0035	9.1407	217696.55	261834.68	261834.68	24.53	No	Si
SLU 73	11.87	-3432.5	-34773	-0.0000219	0.0003743	0.0035	9.1407	137717.9	168095.32	168095.32	48.97	No	Si
SLU 33	8.35	-9159.78	-54941	-0.0000369	0.0003743	0.0035	9.1407	198156.64	237559.51	237559.51	25.94	No	Si
SLU 33	11.87	-2595.56	-31308	-0.0000195	0.0003743	0.0035	9.1407	125897.07	155016.28	155016.28	59.72	No	Si
SLU 39	8.35	-9198.22	-54603	-0.0000367	0.0003743	0.0035	9.1407	197260.6	236466.46	236466.46	25.71	No	Si
SLU 39	11.87	-2491.01	-30102	-0.0000187	0.0003743	0.0035	9.1407	121684.97	150546.41	150546.41	60.44	No	Si
SLU 31	8.35	-9685.68	-52435	-0.0000355	0.0003743	0.0035	9.1407	191423.03	229516.39	229516.39	23.7	No	Si
SLU 31	11.87	-3172.93	-29049	-0.0000183	0.0003743	0.0035	9.1407	117963.77	146653.38	146653.38	46.22	No	Si
SLU 76	8.35	-10442.54	-64392	-0.0000435	0.0003743	0.0035	9.1407	221568.49	266867.21	266867.21	25.56	No	Si
SLU 76	11.87	-3129.72	-36358	-0.0000228	0.0003743	0.0035	9.1407	142981.51	173973.35	173973.35	55.59	No	Si
SLU 40	8.35	-9901.61	-54618	-0.000037	0.0003743	0.0035	9.1407	197300.15	236514.56	236514.56	23.89	No	Si
SLU 40	11.87	-3039.35	-30102	-0.0000189	0.0003743	0.0035	9.1407	121682.7	150544.03	150544.03	49.53	No	Si
SLU 42	8.35	-9669.5	-56272	-0.0000379	0.0003743	0.0035	9.1407	201643.27	241826.2	241826.2	25.01	No	Si
SLU 42	11.87	-2736.57	-31686	-0.0000198	0.0003743	0.0035	9.1407	127205.9	156428.21	156428.21	57.16	No	Si
SLU 84	8.35	-10658.47	-66574	-0.000045	0.0003743	0.0035	9.1407	226530.18	273436.43	273436.43	25.65	No	Si
SLU 84	11.87	-2996.14	-37410	-0.0000234	0.0003743	0.0035	9.1407	146430.57	177679.19	177679.19	59.3	No	Si
SLU 82	8.35	-10890.57	-64920	-0.000044	0.0003743	0.0035	9.1407	222784.9	268457.28	268457.28	24.65	No	Si
SLU 82	11.87	-3298.92	-35826	-0.0000225	0.0003743	0.0035	9.1407	141225.46	172090.57	172090.57	52.17	No	Si
SLU 34	8.35	-9453.58	-54089	-0.0000364	0.0003743	0.0035	9.1407	195892.8	234811.7	234811.7	24.84	No	Si
SLU 34	11.87	-2870.15	-30633	-0.0000192	0.0003743	0.0035	9.1407	123545.46	152509.05	152509.05	53.14	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 12	8.35	-90495.06	-39248	-0.0000632	0.0005615	0.0035	9.1407		189988.49	189988.49	2.1		Si
SLV 12	11.87	-57102.21	-24584	-0.0000392	0.0005615	0.0035	9.1407		131193.1	131193.1	2.3		Si
SLV 6	8.35	76013.36	-49774	-0.0000595	0.0005615	0.0035	9.1407		206264.11	206264.11	2.71		Si
SLV 6	11.87	50838.71	-25059	-0.0000352	0.0005615	0.0035	9.1407		112631.9	112631.9	2.22		Si
SLV 9	8.35	82812.4	-42974	-0.0000591	0.0005615	0.0035	9.1407		183599.41	183599.41	2.22		Si
SLV 9	11.87	54727.92	-24158	-0.0000375	0.0005615	0.0035	9.1407		108919.63	108919.63	1.99		Si
SLV 11	8.35	-88344.7	-39103	-0.0000616	0.0005615	0.0035	9.1407		189437.98	189437.98	2.14		Si
SLV 11	11.87	-54015.17	-24525	-0.000037	0.0005615	0.0035	9.1407		130944.84	130944.84	2.42		Si
SLV 8	8.35	-95143.73	-45902	-0.0000673	0.0005615	0.0035	9.1407		215405.54	215405.54	2.26		Si
SLV 8	11.87	-57904.37	-25426	-0.0000397	0.0005615	0.0035	9.1407		134698.06	134698.06	2.33		Si
SLV 10	8.35	80662.04	-43120	-0.000058	0.0005615	0.0035	9.1407		184086.14	184086.14	2.28		Si
SLV 10	11.87	51640.88	-24218	-0.0000355	0.0005615	0.0035	9.1407		109165.3	109165.3	2.11		Si
SLD 8	8.35	-45452.81	-45038	-0.0000444	0.0005615	0.0035	9.1407		212073.68	212073.68	4.67		Si
SLD 8	11.87	-26460	-25066	-0.0000247	0.0005615	0.0035	9.1407		133197.82	133197.82	5.03		Si
SLV 5	8.35	78163.73	-49628	-0.0000603	0.0005615	0.0035	9.1407		205775.08	205775.08	2.63		Si
SLV 5	11.87	53925.75	-24999	-0.000037	0.0005615	0.0035	9.1407		112385.61	112385.61	2.08		Si
SLV 7	8.35	-92993.37	-45757	-0.0000659	0.0005615	0.0035	9.1407		214843.42	214843.42	2.31		Si
SLV 7	11.87	-54817.34	-25366	-0.0000377	0.0005615	0.0035	9.1407		134449.01	134449.01	2.45		Si
SLD 12	8.35	-43459.02	-42187	-0.0000418	0.0005615	0.0035	9.1407		201144.35	201144.35	4.63		Si
SLD 12	11.87	-26117.99	-24703	-0.0000244	0.0005615	0.0035	9.1407		131687.68	131687.68	5.04		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 41	8.35	-8966.12	-56257	-46846	-2917	9.1407	9.1407	-18304	9385	24020	40441	76640	23309	64461	No	22.1	Si
SLU 41	11.87	-2188.24	-31687	-26386	-2915	9.1407	9.1407	-10309	8319	21292	40441	76640	23309	61733	No	21.18	Si
SLU 33	8.35	-9159.78	-54941	-45750	-2753	9.1407	9.1407	-17875	9328	23874	40441	76640	23309	64315	No	23.36	Si
SLU 33	11.87	-2595.56	-31308	-26071	-2874	9.1407	9.1407	-10186	8303	21250	40441	76640	23309	61691	No	21.46	Si
SLU 42	8.35	-9669.5	-56272	-46859	-2997	9.1407	9.1407	-18308	9386	24021	40441	76640	23309	64462	No	21.51	Si
SLU 42	11.87	-2736.57	-31686	-26385	-3118	9.1407	9.1407	-10309	8319	21292	40441	76640	23309	61733	No	19.8	Si
SLU 82	8.35	-10890.57	-64920	-54060	-2872	9.1407	9.1407	-21122	9761	24982	40441	76640	23309	65423	No	22.78	Si
SLU 82	11.87	-3298.92	-35826	-29833	-2993	9.1407	9.1407	-11656	8499	21751	40441	76640	23309	62192	No	20.78	Si
SLU 34	8.35	-9453.58	-54089	-45041	-2701	9.1407	9.1407	-17598	9291	23779	40441	76640	23309	64220	No	23.78	Si
SLU 34	11.87	-2870.15	-30633	-25509	-2904	9.1407	9.1407	-9967	8273	21175	40441	76640	23309	61616	No	21.22	Si
SLU 31	8.35	-9685.68	-52435	-43663	-2738	9.1407	9.1407	-17060	9219	23595	40441	76640	23309	64036	No	23.39	Si
SLU 31	11.87	-3172.93	-29049	-24190	-2942	9.1407	9.1407	-9451	8205	20999	40441	76640	23309	61440	No	20.89	Si
SLU 39	8.35	-9198.22	-54603	-45469	-2954	9.1407	9.1407	-17765	9313	23836	40441	76640	23309	64277	No	21.76	Si
SLU 39	11.87	-2491.01	-30102	-25067	-2953	9.1407	9.1407	-9794	8250	21116	40441	76640	23309	61557	No	20.85	Si
SLU 36	8.35	-8927.68	-56595	-47128	-2715	9.1407	9.1407	-18414	9400	24057	40441	76640	23309	64498	No	23.75	Si
SLU 36	11.87	-2292.78	-32892	-27390	-2837	9.1407	9.1407	-10702	8371	21426	40441	76640	23309	61867	No	21.81	Si
SLU 84	8.35	-10658.47	-66574	-55437	-2835	9.1407	9.1407	-21660	9832	25165	40441	76640	23309	65606	No	23.14	Si
SLU 84	11.87	-2996.14	-37410	-31152	-2956	9.1407	9.1407	-12172	8567	21927	40441	76640	23309	62368	No	21.1	Si
SLU 40	8.35	-9901.61	-54618	-45481	-3035	9.1407	9.1407	-17770	9314	23838	40441	76640	23309	64279	No	21.18	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 40	11.87	-3039.35	-30102	-25066	-3156	9.1407	9.1407	-9794	8250	21116	40441	76640	23309	61557	No	19.5	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 6	8.35	76013.36	-49774	-41447	19039	9.1407	9.1295	-16194	13655	34907	40441	114959	23309	75348		3.96	Si
SLV 6	11.87	50838.71	-25059	-20867	26531	9.1407	7.6247	-8153	12047	25720	40441	114959	23309	66161		2.49	Si
SLV 10	8.35	80662.04	-43120	-35906	20098	9.1407	8.0991	-14029	13223	29985	40441	114959	23309	70426		3.5	Si
SLV 10	11.87	51640.88	-24218	-20166	27665	9.1407	7.3139	-7879	11993	24559	40441	114959	23309	65000		2.35	Si
SLV 11	8.35	-88344.7	-39103	-32561	-21528	9.1407	6.9332	-16910	13799	26788	40441	114959	23309	67229		3.12	Si
SLV 11	11.87	-54015.17	-24525	-20422	-29018	9.1407	7.1036	-10311	12479	24821	40441	114959	23309	65262		2.25	Si
SLV 5	8.35	78163.73	-49628	-41326	17546	9.1407	8.9861	-16147	13646	34335	40441	114959	23309	74776		4.26	Si
SLV 5	11.87	53925.75	-24999	-20817	25040	9.1407	7.2397	-8134	12043	24413	40441	114959	23309	64854		2.59	Si
SLV 12	8.35	-90495.06	-39248	-32683	-20035	9.1407	6.7939	-17324	13882	26407	40441	114959	23309	66848		3.34	Si
SLV 12	11.87	-57102.21	-24584	-20472	-27527	9.1407	6.743	-10895	12596	23782	40441	114959	23309	64223		2.33	Si
SLV 8	8.35	-95143.73	-45902	-38224	-21095	9.1407	7.4928	-18383	14093	29568	40441	114959	23309	70009		3.32	Si
SLV 8	11.87	-57904.37	-25426	-21172	-28660	9.1407	6.8789	-11047	12626	24319	40441	114959	23309	64760		2.26	Si
SLV 7	8.35	-92993.37	-45757	-38102	-22587	9.1407	7.614	-18030	14023	29896	40441	114959	23309	70337		3.11	Si
SLV 7	11.87	-54817.34	-25366	-21123	-30151	9.1407	7.2279	-10484	12514	25325	40441	114959	23309	65766		2.18	Si
SLV 9	8.35	82812.4	-42974	-35785	18606	9.1407	7.9299	-13982	13213	29338	40441	114959	23309	69779		3.75	Si
SLV 9	11.87	54727.92	-24158	-20117	26174	9.1407	6.9147	-7860	11989	23212	40441	114959	23309	63653		2.43	Si
SLD 7	8.35	-44513.28	-44974	-37451	-10665	9.1407	9.1407	-14633	13343	34151	40441	114959	23309	74591		6.99	Si
SLD 7	11.87	-25111.22	-25040	-20851	-14018	9.1407	9.1407	-8147	12046	30831	40441	114959	23309	71272		5.08	Si
SLD 11	8.35	-42519.49	-42123	-35077	-10212	9.1407	9.1407	-13705	13158	33676	40441	114959	23309	74117		7.26	Si
SLD 11	11.87	-24769.21	-24677	-20549	-13532	9.1407	9.1407	-8029	12022	30770	40441	114959	23309	71211		5.26	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.11  $W_a$  0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 15	179667	0.46	11155	-28549	1109.86	3704.95	3.34	Si
SLV 16	179667	0.46	11207	-28684	1109.86	3721.04	3.35	Si
SLV 13	179667	0.46	11227	-28734	1109.86	3727.04	3.36	Si
SLV 14	179667	0.46	11280	-28869	1109.86	3743.11	3.37	Si
SLV 11	179667	0.46	12592	-32227	1109.86	4139.79	3.73	Si
SLV 12	179667	0.46	12626	-32314	1109.86	4149.96	3.74	Si
SLV 9	179667	0.46	12833	-32843	1109.86	4211.72	3.79	Si
SLV 10	179667	0.46	12867	-32930	1109.86	4221.85	3.8	Si
SLV 7	179667	0.46	13888	-35544	1109.86	4523.65	4.08	Si
SLV 8	179667	0.46	13922	-35631	1109.86	4533.61	4.08	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 10.11  $W_a = 0.05$   $T_a = 0.0739$

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 8	-25426	-45902	-1070	1.549	3888.4	0.916	24.56898	14.09547	Si
SLV 7	-25366	-45757	-1070	1.551	3882.5	0.916	24.61417	14.09547	Si
SLV 6	-25059	-49774	-1083	1.565	3851.7	0.915	24.84304	14.09547	Si
SLV 5	-24999	-49628	-1083	1.568	3845.8	0.915	24.88925	14.09547	Si
SLV 12	-24584	-39248	1067	1.587	3804.3	0.915	25.2229	14.09547	Si
SLV 11	-24525	-39103	1067	1.59	3798.4	0.915	25.27053	14.09547	Si
SLV 10	-24218	-43120	1053	1.605	3767.7	0.914	25.52513	14.09547	Si
SLV 9	-24158	-42974	1053	1.608	3761.7	0.914	25.57388	14.09547	Si
SLV 4	-26295	-55060	-3567	1.438	3975.4	0.917	22.779	7.52414	Si
SLV 3	-26203	-54835	-3567	1.442	3966.2	0.917	22.84217	7.52414	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	23.696	SLU 31	Si
V_SLU	19.504	SLU 40	Si
PF_SLV	1.99	SLV 9	Si
V_SLV	2.181	SLV 7	Si
PFFP_SLV	3.338	SLV 15	Si
R_SLV	1.743	SLV 8	Si

## Maschio 113

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-24.633	5.826	-22.713	5.826	L6	L7	1.92	0.28	3.52	3.52	3.52			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2



#### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 46	9.25	979.1	-10125	-0.0000378	0.0003743	0.0035	1.92	7921.78	8397.36	8397.36	8.58	No	Si
SLU 46	11.05	329.49	-8121	-0.0000259	0.0003743	0.0035	1.92	6639.24	6952.61	6952.61	21.1	No	Si
SLU 2	9.25	713.46	-7398	-0.0000272	0.0003743	0.0035	1.92	6141.91	6447.21	6447.21	9.04	No	Si
SLU 2	11.05	256.22	-5933	-0.0000189	0.0003743	0.0035	1.92	5078.52	5424.6	5424.6	21.17	No	Si
SLU 48	9.25	997.56	-10688	-0.0000397	0.0003743	0.0035	1.92	8256.75	8815.82	8815.82	8.84	No	Si
SLU 48	11.05	378.8	-8693	-0.0000281	0.0003743	0.0035	1.92	7019.8	7358.53	7358.53	19.43	No	Si
SLU 45	9.25	977.74	-10248	-0.0000382	0.0003743	0.0035	1.92	7995.87	8488.22	8488.22	8.68	No	Si
SLU 45	11.05	319.5	-8220	-0.0000261	0.0003743	0.0035	1.92	6705.97	7022.54	7022.54	21.98	No	Si
SLU 47	9.25	972.87	-9868	-0.000037	0.0003743	0.0035	1.92	7765.17	8208.46	8208.46	8.44	No	Si
SLU 47	11.05	312.42	-7859	-0.000025	0.0003743	0.0035	1.92	6461.27	6768.63	6768.63	21.66	No	Si
SLU 43	9.25	950.79	-9633	-0.0000361	0.0003743	0.0035	1.92	7619.82	8036.52	8036.52	8.45	No	Si
SLU 43	11.05	236.49	-7551	-0.0000234	0.0003743	0.0035	1.92	6248.9	6553.68	6553.68	27.71	No	Si
SLU 49	9.25	998.92	-10565	-0.0000394	0.0003743	0.0035	1.92	8184.56	8724.02	8724.02	8.73	No	Si
SLU 49	11.05	388.78	-8594	-0.0000279	0.0003743	0.0035	1.92	6954.7	7287.85	7287.85	18.75	No	Si
SLU 44	9.25	953.06	-9428	-0.0000355	0.0003743	0.0035	1.92	7491.64	7887.48	7887.48	8.28	No	Si
SLU 44	11.05	253.13	-7386	-0.0000231	0.0003743	0.0035	1.92	6133.6	6438.99	6438.99	25.44	No	Si
SLU 51	9.25	991.78	-10390	-0.0000388	0.0003743	0.0035	1.92	8080.84	8593.67	8593.67	8.66	No	Si
SLU 51	11.05	365.06	-8398	-0.0000271	0.0003743	0.0035	1.92	6825.12	7148.69	7148.69	19.58	No	Si
SLU 50	9.25	990.42	-10513	-0.0000391	0.0003743	0.0035	1.92	8153.78	8685.15	8685.15	8.77	No	Si
SLU 50	11.05	355.08	-8497	-0.0000273	0.0003743	0.0035	1.92	6890.89	7219.07	7219.07	20.33	No	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 15	9.25	1287.12	-4929	-0.0000248	0.0005615	0.0035	1.92		4689.88	4689.88	3.64		Si
SLV 15	11.05	-1200.62	-2563	-0.0000184	0.0005615	0.0035	1.92		3428.8	3428.8	2.86		Si
SLV 7	9.25	-110.96	3501	0.277444	0.0005615	0.0035	1.536		0	0	0		No
SLV 7	11.05	1558.79	1131	0.066519	0.0005615	0.0035	1.536		0	0	0		No
SLD 8	9.25	391.42	-2723	-0.0000108	0.0005615	0.0035	1.92		2724.7	2724.7	6.96		Si
SLD 8	11.05	803.36	-2923	-0.0000149	0.0005615	0.0035	1.92		2906.05	2906.05	3.62		Si
SLV 8	9.25	42.61	3857	0.3047451	0.0005615	0.0035	1.536		0	0	0		No
SLV 8	11.05	1386.45	1763	0.1259064	0.0005615	0.0035	1.536		0	0	0		No
SLV 16	9.25	1524.9	-4377	-0.0000254	0.0005615	0.0035	1.92		4207.12	4207.12	2.76		Si
SLV 16	11.05	-1467.46	-1585	-0.0000081	0.0005615	0.0035	1.536		2536.57	2536.57	1.73		Si
SLV 11	9.25	413.77	3390	0.2654162	0.0005615	0.0035	1.536		0	0	0		No
SLV 11	11.05	444.53	2312	0.1798993	0.0005615	0.0035	1.536		0	0	0		No
SLD 7	9.25	324.32	-2879	-0.0000107	0.0005615	0.0035	1.92		2866.14	2866.14	8.84		Si
SLD 7	11.05	878.66	-3198	-0.0000164	0.0005615	0.0035	1.92		3155.97	3155.97	3.59		Si
SLV 12	9.25	567.35	3746	0.2925774	0.0005615	0.0035	1.536		0	0	0		No
SLV 12	11.05	272.19	2944	0.2310565	0.0005615	0.0035	1.536		0	0	0		No
SLV 4	9.25	-224.22	-4007	-0.000013	0.0005615	0.0035	1.92		4718.69	4718.69	21.04		Si
SLV 4	11.05	2246.74	-5522	-0.0000357	0.0005615	0.0035	1.92		5205.02	5205.02	2.32		Si
SLV 3	9.25	-462	-4559	-0.0000166	0.0005615	0.0035	1.92		5196.78	5196.78	11.25		Si
SLV 3	11.05	2513.59	-6499	-0.0000407	0.0005615	0.0035	1.92		6040.31	6040.31	2.4		Si

#### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 36	9.25	585.11	-9699	-8077	-694	1.92	1.92	-15024	8948	4810	40441	16098	4896	20994	No	30.25	Si
SLU 36	11.05	795.44	-9063	-7547	-680	1.92	1.92	-14038	8816	4740	40441	16098	4896	20994	No	30.85	Si
SLU 33	9.25	565.3	-9259	-7710	-655	1.92	1.92	-14342	8857	4761	40441	16098	4896	20994	No	32.07	Si
SLU 33	11.05	736.14	-8590	-7153	-641	1.92	1.92	-13305	8719	4687	40441	16098	4896	20994	No	32.76	Si
SLU 40	9.25	496.49	-8829	-7352	-751	1.92	1.92	-13676	8768	4714	40441	16098	4896	20994	No	27.96	Si
SLU 40	11.05	732.37	-8273	-6889	-737	1.92	1.92	-12815	8653	4652	40441	16098	4896	20994	No	28.48	Si
SLU 39	9.25	495.12	-8952	-7455	-725	1.92	1.92	-13867	8793	4727	40441	16098	4896	20994	No	28.94	Si
SLU 39	11.05	722.38	-8372	-6972	-727	1.92	1.92	-12969	8674	4663	40441	16098	4896	20994	No	28.88	Si
SLU 35	9.25	583.75	-9822	-8179	-668	1.92	1.92	-15214	8973	4824	40441	16098	4896	20994	No	31.41	Si
SLU 35	11.05	785.45	-9162	-7629	-670	1.92	1.92	-14192	8837	4751	40441	16098	4896	20994	No	31.32	Si
SLU 37	9.25	576.62	-9647	-8033	-648	1.92	1.92	-14943	8937	4804	40441	16098	4896	20994	No	32.39	Si
SLU 37	11.05	761.73	-8966	-7466	-650	1.92	1.92	-13889	8796	4729	40441	16098	4896	20994	No	32.3	Si
SLU 38	9.25	577.98	-9524	-7931	-674	1.92	1.92	-14752	8911	4791	40441	16098	4896	20994	No	31.16	Si
SLU 38	11.05	771.72	-8867	-7384	-660	1.92	1.92	-13735	8776	4718	40441	16098	4896	20994	No	31.8	Si
SLU 42	9.25	516.3	-9269	-7719	-790	1.92	1.92	-14358	8859	4762	40441	16098	4896	20994	No	26.56	Si
SLU 42	11.05	791.66	-8746	-7283	-777	1.92	1.92	-13548	8751	4704	40441	16098	4896	20994	No	27.03	Si
SLU 41	9.25	514.94	-9392	-7821	-765	1.92	1.92	-14548	8884	4776	40441	16098	4896	20994	No	27.45	Si



Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 41	11.05	781.68	-8846	-7366	-767	1.92	1.92	-13701	8771	4715	40441	16098	4896	20994	No	27.39	Si
SLU 34	9.25	559.07	-9002	-7496	-651	1.92	1.92	-13944	8804	4733	40441	16098	4896	20994	No	32.23	Si
SLU 34	11.05	719.08	-8328	-6935	-627	1.92	1.92	-12900	8664	4658	40441	16098	4896	20994	No	33.47	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 9	9.25	1280.22	-19728	-16428	2841	1.92	1.92	-30558	16250	8736	40441	24147	4896	29043		10.22	Si
SLV 9	11.05	-676.68	-15058	-12539	2366	1.92	1.92	-23324	15081	8108	40441	24147	4896	29043		12.28	Si
SLV 13	9.25	1547.05	-11864	-9879	3282	1.92	1.92	-18377	14092	7576	40441	24147	4896	29043		8.85	Si
SLV 13	11.05	-1536.98	-7774	-6473	2476	1.92	1.92	-12041	12825	6895	40441	24147	4896	29043		11.73	Si
SLV 16	9.25	1524.9	-4377	-3645	2489	1.92	1.8347	-6779	11773	6048	40441	24147	4896	29043		11.67	Si
SLV 16	11.05	-1467.46	-1585	-1320	1836	1.536	0.1028	0	0	0	40441	19318	3917	23234		12.66	Si
SLV 1	9.25	-202.07	-11494	-9571	-2571	1.92	1.92	-17804	13977	7514	40441	24147	4896	29043		11.3	Si
SLV 1	11.05	2177.22	-11710	-9751	-1920	1.92	1.92	-18138	14044	7550	40441	24147	4896	29043		15.13	Si
SLV 7	9.25	-110.96	3501	2915	-3251	1.536	1.92	0	0	0	40441	19318	3917	23234		7.15	Si
SLV 7	11.05	1558.79	1131	942	-2778	1.536	0	0	0	0	40441	19318	3917	23234		8.36	Si
SLV 14	9.25	1784.83	-11312	-9420	3789	1.92	1.92	-17522	13921	7484	40441	24147	4896	29043		7.66	Si
SLV 14	11.05	-1803.82	-6796	-5659	2983	1.92	1.92	-10527	12522	6732	40441	24147	4896	29043		9.74	Si
SLV 10	9.25	1433.8	-19371	-16131	3169	1.92	1.92	-30005	16250	8736	40441	24147	4896	29043		9.17	Si
SLV 10	11.05	-849.03	-14427	-12013	2693	1.92	1.92	-22346	14886	8003	40441	24147	4896	29043		10.78	Si
SLV 4	9.25	-224.22	-4007	-3336	-3364	1.92	1.92	-6206	11658	6267	40441	24147	4896	29043		8.63	Si
SLV 4	11.05	2246.74	-5522	-4598	-2561	1.92	1.6593	-8553	12127	5634	40441	24147	4896	29043		11.34	Si
SLV 8	9.25	42.61	3857	3212	-2923	1.536	1.92	0	0	0	40441	19318	3917	23234		7.95	Si
SLV 8	11.05	1386.45	1763	1468	-2450	1.536	0.5203	0	0	0	40441	19318	3917	23234		9.48	Si
SLV 3	9.25	-462	-4559	-3796	-3872	1.92	1.92	-7061	11829	6359	40441	24147	4896	29043		7.5	Si
SLV 3	11.05	2513.59	-6499	-5412	-3068	1.92	1.7197	-10067	12430	5985	40441	24147	4896	29043		9.47	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.11 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	α0	N	M	Mc	Coeff.s.	Verifica
SLV 8	179667	0.46	0	2346	233.12	0	0	No, Trazione
SLV 7	179667	0.46	0	1826	233.12	0	0	No, Trazione
SLV 12	179667	0.46	0	3061	233.12	0	0	No, Trazione
SLV 11	179667	0.46	0	2541	233.12	0	0	No, Trazione
SLV 16	179667	0.46	5356	-2880	233.12	389	1.67	Si
SLV 15	179667	0.46	6853	-3684	233.12	492.64	2.11	Si
SLV 4	179667	0.46	9790	-5263	233.12	689.56	2.96	Si
SLV 3	179667	0.46	11286	-6067	233.12	786.66	3.37	Si
SLV 14	179667	0.46	16385	-8808	233.12	1100.87	4.72	Si
SLV 13	179667	0.46	17882	-9613	233.12	1188.25	5.1	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.11 Wa = 0.05 Ta = 0.0739

Comb.	N top	N base	V orto	α0	M*	e*	α0*	aLim	Verifica
SLV 5	-13117	-18873	491	0.739	1602.8	0.952	11.28548	14.09547	No
SLV 6	-12627	-18417	491	0.763	1553	0.95	11.66689	14.09547	No
SLV 9	-12619	-17775	300	0.777	1552.2	0.95	11.87802	14.09547	No
SLV 10	-12129	-17318	300	0.803	1502.4	0.949	12.29546	14.09547	No
SLV 1	-8830	-12823	435	1.029	1168.2	0.937	15.96401	7.52414	Si
SLV 2	-8072	-12116	436	1.105	1091.5	0.933	17.22115	7.52414	Si
SLV 13	-7169	-9161	-201	1.24	1000.4	0.928	19.42265	7.52414	Si
SLV 14	-6410	-8455	-201	1.353	924.1	0.923	21.28744	7.52414	Si
SLV 3	-4543	-6431	197	1.746	737.2	0.91	27.88812	7.52414	Si
SLV 4	-3784	-5724	197	1.982	662.1	0.903	31.88096	7.52414	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	8.276	SLU 44	Si
V_SLU	26.561	SLU 42	Si
PF_SLV	0	SLV 7	No
V_SLV	7.147	SLV 7	Si
PFFP_SLV	0	SLV 12	No
R_SLV	0.801	SLV 5	No

## Maschio 114

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.sx	a.s.dx
-21.813	5.826	-19.613	5.826	L6	L7	2.2	0.28	3.52	3.52	3.52			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti



fb	fk	fvk0	fmedio	$\tau_0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha t$	$\alpha$	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche,  $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 44	9.25	410.7	-11733	-0.0000321	0.0003743	0.0035	2.2	10492.14	11163.02	11163.02	27.18	No	Si
SLU 44	11.05	-1362.4	-10815	-0.0000363	0.0003743	0.0035	2.2	9845.41	11701.06	11701.06	8.59	No	Si
SLU 60	9.25	400.68	-13054	-0.0000355	0.0003743	0.0035	2.2	11370.83	12322.12	12322.12	30.75	No	Si
SLU 60	11.05	-1398.2	-12278	-0.0000404	0.0003743	0.0035	2.2	10861.93	12893.68	12893.68	9.22	No	Si
SLU 46	9.25	346.71	-12760	-0.0000343	0.0003743	0.0035	2.2	11180.36	12062.23	12062.23	34.79	No	Si
SLU 46	11.05	-1366.96	-11873	-0.0000391	0.0003743	0.0035	2.2	10587.75	12578.73	12578.73	9.2	No	Si
SLU 61	9.25	393.78	-12941	-0.0000352	0.0003743	0.0035	2.2	11297.6	12221.62	12221.62	31.04	No	Si
SLU 61	11.05	-1402.28	-12183	-0.0000402	0.0003743	0.0035	2.2	10798.08	12819.44	12819.44	9.14	No	Si
SLU 43	9.25	422.21	-11923	-0.0000327	0.0003743	0.0035	2.2	10621.96	11327.22	11327.22	26.83	No	Si
SLU 43	11.05	-1355.61	-10974	-0.0000367	0.0003743	0.0035	2.2	9959.27	11833.01	11833.01	8.73	No	Si
SLU 65	9.25	349.86	-13000	-0.000035	0.0003743	0.0035	2.2	11335.97	12274.2	12274.2	35.08	No	Si
SLU 65	11.05	-1381.73	-12196	-0.0000401	0.0003743	0.0035	2.2	10806.87	12829.63	12829.63	9.29	No	Si
SLU 45	9.25	353.62	-12874	-0.0000347	0.0003743	0.0035	2.2	11254.31	12162.55	12162.55	34.39	No	Si
SLU 45	11.05	-1362.89	-11968	-0.0000394	0.0003743	0.0035	2.2	10652.64	12652.37	12652.37	9.28	No	Si
SLU 52	9.25	395.63	-12525	-0.0000341	0.0003743	0.0035	2.2	11026.32	11855.56	11855.56	29.97	No	Si
SLU 52	11.05	-1392.22	-11728	-0.0000389	0.0003743	0.0035	2.2	10488.62	12467.26	12467.26	8.95	No	Si
SLU 47	9.25	361.16	-12440	-0.0000336	0.0003743	0.0035	2.2	10969.64	11780.28	11780.28	32.62	No	Si
SLU 47	11.05	-1364.99	-11583	-0.0000383	0.0003743	0.0035	2.2	10388.48	12344.9	12344.9	9.04	No	Si
SLU 2	9.25	297.22	-9316	-0.000025	0.0003743	0.0035	2.2	8725.49	9120.4	9120.4	30.69	No	Si
SLU 2	11.05	-1054.67	-8647	-0.0000285	0.0003743	0.0035	2.2	8200.39	9848.59	9848.59	9.34	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche,  $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 16	9.25	674.37	-6844	-0.0000211	0.0005615	0.0035	2.2		7364.94	7364.94	10.92		Si
SLD 16	11.05	-2038.65	-7488	-0.0000318	0.0005615	0.0035	2.2		9005.49	9005.49	4.42		Si
SLV 12	9.25	400.3	1021	0.0708655	0.0005615	0.0035	1.76		0	0	0		No
SLV 12	11.05	-1234.83	-425	-0.0002473	0.0005615	0.0035	1.76		1800.86	1800.86	1.46		Si
SLV 11	9.25	230.14	505	0.0347926	0.0005615	0.0035	1.76		0	0	0		No
SLV 11	11.05	-1004.22	-714	-0.0001034	0.0005615	0.0035	1.76		2111.54	2111.54	2.1		Si
SLV 15	9.25	930.82	-3392	-0.0000142	0.0005615	0.0035	2.2		3884.52	3884.52	4.17		Si
SLV 15	11.05	-2992.7	-5379	-0.0000353	0.0005615	0.0035	2.2		6929.77	6929.77	2.32		Si
SLV 16	9.25	1194.29	-2593	-0.0000143	0.0005615	0.0035	2.2		3050.48	3050.48	2.55		Si
SLV 16	11.05	-3349.74	-4930	-0.000042	0.0005615	0.0035	1.76		6481.99	6481.99	1.94		Si
SLD 13	9.25	620.6	-9732	-0.0000279	0.0005615	0.0035	2.2		10106.78	10106.78	16.29		Si
SLD 13	11.05	-2052.59	-9897	-0.000038	0.0005615	0.0035	2.2		11284.95	11284.95	5.5		Si
SLV 13	9.25	1065.65	-9146	-0.0000294	0.0005615	0.0035	2.2		9577.02	9577.02	8.99		Si
SLV 13	11.05	-3371.94	-10389	-0.0000482	0.0005615	0.0035	2.2		11743.96	11743.96	3.48		Si
SLD 14	9.25	733.73	-9389	-0.0000278	0.0005615	0.0035	2.2		9804.14	9804.14	13.36		Si
SLD 14	11.05	-2205.91	-9704	-0.0000385	0.0005615	0.0035	2.2		11106.69	11106.69	5.03		Si
SLD 15	9.25	561.24	-7187	-0.0000212	0.0005615	0.0035	2.2		7701.06	7701.06	13.72		Si
SLD 15	11.05	-1885.33	-7681	-0.0000312	0.0005615	0.0035	2.2		9191.13	9191.13	4.88		Si
SLV 14	9.25	1329.11	-8347	-0.0000292	0.0005615	0.0035	2.2		8818.84	8818.84	6.64		Si
SLV 14	11.05	-3728.98	-9941	-0.0000495	0.0005615	0.0035	2.2		11325.86	11325.86	3.04		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	l'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 83	9.25	290.3	-15027	-12513	2106	2.2	2.2	-20314	9653	5946	40441	18446	5610	24056	No	11.42	Si
SLU 83	11.05	-1420.12	-14427	-12013	2106	2.2	2.2	-19502	9545	5880	40441	18446	5610	24056	No	11.42	Si
SLU 76	9.25	285.25	-14498	-12073	2089	2.2	2.2	-19599	9558	5888	40441	18446	5610	24056	No	11.51	Si
SLU 76	11.05	-1414.14	-13877	-11555	2085	2.2	2.2	-18759	9446	5819	40441	18446	5610	24056	No	11.54	Si
SLU 79	9.25	247.22	-15394	-12819	2083	2.2	2.2	-20810	9719	5987	40441	18446	5610	24056	No	11.55	Si
SLU 79	11.05	-1409.93	-14803	-12327	2083	2.2	2.2	-20011	9613	5921	40441	18446	5610	24056	No	11.55	Si
SLU 81	9.25	339.85	-14321	-11925	2094	2.2	2.2	-19359	9526	5868	40441	18446	5610	24056	No	11.49	Si
SLU 81	11.05	-1417.54	-13659	-11374	2094	2.2	2.2	-18464	9406	5794	40441	18446	5610	24056	No	11.49	Si
SLU 73	9.25	334.8	-13792	-11485	2078	2.2	2.2	-18644	9430	5809	40441	18446	5610	24056	No	11.58	Si
SLU 73	11.05	-1411.55	-13109	-10916	2074	2.2	2.2	-17721	9307	5733	40441	18446	5610	24056	No	11.6	Si
SLU 82	9.25	332.94	-14207	-11831	2105	2.2	2.2	-19205	9505	5855	40441	18446	5610	24056	No	11.43	Si
SLU 82	11.05	-1421.61	-13564	-11295	2103	2.2	2.2	-18335	9389	5784	40441	18446	5610	24056	No	11.44	Si
SLU 77	9.25	228.17	-15639	-13022	2063	2.2	2.2	-21140	9763	6014	40441	18446	5610	24056	No	11.66	Si
SLU 77	11.05	-1414.62	-15029	-12515	2063	2.2	2.2	-20317	9653	5947	40441	18446	5610	24056	No	11.66	Si
SLU 78	9.25	221.27	-15525	-12928	2074	2.2	2.2	-20986	9743	6002	40441	18446	5610	24056	No	11.6	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 78	11.05	-1418.7	-14934	-12436	2072	2.2	2.2	-20188	9636	5936	40441	18446	5610	24056	No	11.61	Si
SLU 84	9.25	283.4	-14914	-12419	2117	2.2	2.2	-20160	9632	5934	40441	18446	5610	24056	No	11.36	Si
SLU 84	11.05	-1424.2	-14332	-11934	2115	2.2	2.2	-19373	9528	5869	40441	18446	5610	24056	No	11.38	Si
SLU 80	9.25	240.31	-15280	-12724	2094	2.2	2.2	-20656	9699	5974	40441	18446	5610	24056	No	11.49	Si
SLU 80	11.05	-1414.01	-14708	-12248	2091	2.2	2.2	-19883	9595	5911	40441	18446	5610	24056	No	11.5	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 16	9.25	1194.29	-2593	-2159	5525	2.2	1.9182	-3505	11118	5971	40441	27669	5610	33279		6.02	Si
SLV 16	11.05	-3349.74	-4930	-4105	4875	1.76	1.2617	0	0	0	40441	22135	4488	26623		5.46	Si
SLD 16	9.25	674.37	-6844	-5699	3238	2.2	2.2	-9252	12267	7557	40441	27669	5610	33279		10.28	Si
SLD 16	11.05	-2038.65	-7488	-6236	2964	2.2	2.2	-10123	12441	7664	40441	27669	5610	33279		11.23	Si
SLV 11	9.25	230.14	505	421	2372	1.76	1.9339	0	0	0	40441	22135	4488	26623		11.22	Si
SLV 11	11.05	-1004.22	-714	-595	2480	1.76	0	0	0	0	40441	22135	4488	26623		10.74	Si
SLV 14	9.25	1329.11	-8347	-6950	5586	2.2	2.2	-11283	12673	7807	40441	27669	5610	33279		5.96	Si
SLV 14	11.05	-3728.98	-9941	-8278	4737	2.2	2.1747	-13438	13104	7979	40441	27669	5610	33279		7.03	Si
SLV 13	9.25	1065.65	-9146	-7616	5028	2.2	2.2	-12363	12889	7940	40441	27669	5610	33279		6.62	Si
SLV 13	11.05	-3371.94	-10389	-8651	4178	2.2	2.2	-14044	13226	8147	40441	27669	5610	33279		7.96	Si
SLV 12	9.25	400.3	1021	851	2732	1.76	2.1244	0	0	0	40441	22135	4488	26623		9.74	Si
SLV 12	11.05	-1234.83	-425	-354	2840	1.76	0	0	0	0	40441	22135	4488	26623		9.37	Si
SLD 15	9.25	561.24	-7187	-5985	2999	2.2	2.2	-9716	12360	7614	40441	27669	5610	33279		11.1	Si
SLD 15	11.05	-1885.33	-7681	-6396	2724	2.2	2.2	-10383	12493	7696	40441	27669	5610	33279		12.22	Si
SLD 13	9.25	620.6	-9732	-8104	3026	2.2	2.2	-13155	13048	8037	40441	27669	5610	33279		11	Si
SLD 13	11.05	-2052.59	-9897	-8241	2662	2.2	2.2	-13378	13092	8065	40441	27669	5610	33279		12.5	Si
SLV 15	9.25	930.82	-3392	-2825	4967	2.2	2.2	-4585	11334	6982	40441	27669	5610	33279		6.7	Si
SLV 15	11.05	-299.77	-5379	-4479	4317	2.2	1.6309	-9851	12387	5657	40441	27669	5610	33279		7.71	Si
SLD 14	9.25	733.73	-9389	-7818	3265	2.2	2.2	-12692	12955	7980	40441	27669	5610	33279		10.19	Si
SLD 14	11.05	-2205.91	-9704	-8081	2901	2.2	2.2	-13118	13040	8033	40441	27669	5610	33279		11.47	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.11 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 12	179667	0.46	0	-142	267.13	0	0	No, $e > t/2$
SLV 8	179667	0.46	0	-1626	267.13	0	0	No, $e > t/2$
SLV 11	179667	0.46	0	-527	267.13	0	0	No, $e > t/2$
SLV 7	179667	0.46	3262	-2010	267.13	275.35	1.03	Si
SLV 16	179667	0.46	7431	-4577	267.13	609.64	2.28	Si
SLV 15	179667	0.46	8396	-5172	267.13	684.29	2.56	Si
SLV 4	179667	0.46	15457	-9521	267.13	1198.07	4.49	Si
SLV 14	179667	0.46	16156	-9952	267.13	1245.91	4.66	Si
SLV 3	179667	0.46	16422	-10116	267.13	1263.96	4.73	Si
SLV 13	179667	0.46	17122	-10547	267.13	1311.04	4.91	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 10.11 Wa = 0.05 Ta = 0.0739

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 5	-14525	-20444	449	0.767	1785.3	0.95	11.73264	14.09547	No
SLV 6	-14178	-20138	449	0.783	1750	0.95	11.98325	14.09547	No
SLV 9	-13251	-18610	604	0.818	1656	0.947	12.55308	14.09547	No
SLV 10	-12904	-18305	604	0.836	1620.7	0.946	12.84583	14.09547	No
SLV 1	-11783	-16293	-103	0.938	1507.1	0.943	14.45869	7.52414	Si
SLV 2	-11245	-15820	-103	0.974	1452.6	0.941	15.05213	7.52414	Si
SLV 3	-8077	-10830	-420	1.238	1132.4	0.927	19.39986	7.52414	Si
SLV 4	-7539	-10357	-420	1.306	1078.3	0.924	20.52676	7.52414	Si
SLV 13	-7537	-10181	415	1.307	1078.1	0.924	20.5414	7.52414	Si
SLV 14	-6999	-9708	415	1.383	1024	0.921	21.80972	7.52414	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	8.589	SLU 44	Si
V_SLU	11.363	SLU 84	Si
PF_SLV	0	SLV 11	No
V_SLV	5.461	SLV 16	Si
PFFP_SLV	0	SLV 8	No
R_SLV	0.832	SLV 5	No

## Maschio 115

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-22.493	-3.314	-24.633	-3.314	L6	L7	2.14	0.28	3.52	3.52	3.52			





## Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	t0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

## Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

## Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 56	9.25	-569.89	-12949	-0.0000376	0.0003743	0.0035	2.14	10914.19	13011.43	13011.43	22.83	No	Si
SLU 56	11.05	-908.23	-11074	-0.000035	0.0003743	0.0035	2.14	9698.18	11560.98	11560.98	12.73	No	Si
SLU 58	9.25	-538.24	-12705	-0.0000367	0.0003743	0.0035	2.14	10762.95	12823.53	12823.53	23.82	No	Si
SLU 58	11.05	-904.15	-10853	-0.0000344	0.0003743	0.0035	2.14	9546.57	11381.67	11381.67	12.59	No	Si
SLU 78	9.25	-609.27	-14371	-0.0000418	0.0003743	0.0035	2.14	11754.39	14048.92	14048.92	23.06	No	Si
SLU 78	11.05	-994.35	-12472	-0.0000395	0.0003743	0.0035	2.14	10616.7	12645.37	12645.37	12.72	No	Si
SLU 16	9.25	-415.1	-10519	-0.0000299	0.0003743	0.0035	2.14	9314.75	11113.3	11113.3	26.77	No	Si
SLU 16	11.05	-786.82	-9146	-0.0000289	0.0003743	0.0035	2.14	8319.11	9981.43	9981.43	12.69	No	Si
SLU 35	9.25	-487.16	-12082	-0.0000346	0.0003743	0.0035	2.14	10367.4	12349.3	12349.3	25.35	No	Si
SLU 35	11.05	-887.48	-10682	-0.0000338	0.0003743	0.0035	2.14	9428.41	11244.02	11244.02	12.67	No	Si
SLU 79	9.25	-578.65	-14024	-0.0000406	0.0003743	0.0035	2.14	11555.84	13799.57	13799.57	23.85	No	Si
SLU 79	11.05	-1000.73	-12168	-0.0000387	0.0003743	0.0035	2.14	10422.5	12413.94	12413.94	12.4	No	Si
SLU 77	9.25	-610.3	-14268	-0.0000416	0.0003743	0.0035	2.14	11695.79	13974.53	13974.53	22.9	No	Si
SLU 77	11.05	-1004.81	-12389	-0.0000393	0.0003743	0.0035	2.14	10563.91	12581.89	12581.89	12.52	No	Si
SLU 80	9.25	-577.62	-14127	-0.0000409	0.0003743	0.0035	2.14	11615.32	13873.48	13873.48	24.02	No	Si
SLU 80	11.05	-990.27	-12251	-0.0000388	0.0003743	0.0035	2.14	10475.94	12477.05	12477.05	12.6	No	Si
SLU 37	9.25	-455.51	-11838	-0.0000337	0.0003743	0.0035	2.14	10208.75	12165.67	12165.67	26.71	No	Si
SLU 37	11.05	-883.4	-10461	-0.0000331	0.0003743	0.0035	2.14	9273.76	11066.55	11066.55	12.53	No	Si
SLU 83	9.25	-567.77	-14084	-0.0000407	0.0003743	0.0035	2.14	11590.43	13842.47	13842.47	24.38	No	Si
SLU 83	11.05	-978.47	-12211	-0.0000386	0.0003743	0.0035	2.14	10450.56	12447.02	12447.02	12.72	No	Si

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 9	9.25	-537.27	3416	0.2453163	0.0005615	0.0035	1.712		0	0	0		No
SLV 9	11.05	-1316.11	1678	0.1237334	0.0005615	0.0035	1.712		0	0	0		No
SLV 6	9.25	785.51	2042	0.1404843	0.0005615	0.0035	1.712		0	0	0		No
SLV 6	11.05	-3018.01	-567	-0.0009298	0.0005615	0.0035	1.712		1910.49	1910.49	0.63		No
SLV 13	9.25	-2302.42	-3845	-0.000029	0.0005615	0.0035	1.712		5249.59	5249.59	2.28		Si
SLV 13	11.05	1614.08	-2207	-0.0000231	0.0005615	0.0035	2.14		2559.89	2559.89	1.59		Si
SLV 10	9.25	-328.98	3039	0.2175847	0.0005615	0.0035	1.712		0	0	0		No
SLV 10	11.05	-1513.32	1007	0.0755246	0.0005615	0.0035	1.712		0	0	0		No
SLD 6	9.25	83.78	-4364	-0.0000114	0.0005615	0.0035	2.14		4736.2	4736.2	56.53		Si
SLD 6	11.05	-1642.24	-4639	-0.0000229	0.0005615	0.0035	2.14		6026.82	6026.82	3.67		Si
SLV 1	9.25	1412.55	-7168	-0.0000278	0.0005615	0.0035	2.14		7448.42	7448.42	5.27		Si
SLV 1	11.05	-3401.56	-7455	-0.0000437	0.0005615	0.0035	2.14		8724.28	8724.28	2.56		Si
SLV 14	9.25	-1979.93	-4429	-0.0000252	0.0005615	0.0035	2.14		5825.06	5825.06	2.94		Si
SLV 14	11.05	1308.74	-3246	-0.0000171	0.0005615	0.0035	2.14		3616.2	3616.2	2.76		Si
SLV 15	9.25	-2651.97	-11154	-0.0000471	0.0005615	0.0035	2.14		12088.02	12088.02	4.56		Si
SLV 15	11.05	2574.64	-7269	-0.0000363	0.0005615	0.0035	2.14		7544.24	7544.24	2.93		Si
SLV 2	9.25	1735.04	-7752	-0.0000316	0.0005615	0.0035	2.14		7997.58	7997.58	4.61		Si
SLV 2	11.05	-3706.9	-8493	-0.0000484	0.0005615	0.0035	2.14		9697.63	9697.63	2.62		Si
SLV 5	9.25	577.23	2419	0.1688408	0.0005615	0.0035	1.712		0	0	0		No
SLV 5	11.05	-2820.8	104	-0.001295	0.0005615	0.0035	1.712		854.46	854.46	0.3		No

## Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 58	9.25	-538.24	-12705	-10579	671	2.14	2.14	-17656	9299	5572	40441	17943	5457	23399	No	34.89	Si
SLU 58	11.05	-904.15	-10853	-9037	671	2.14	2.14	-15082	8955	5366	40441	17943	5457	23399	No	34.85	Si
SLU 83	9.25	-567.77	-14084	-11728	700	2.14	2.14	-19572	9554	5725	40441	17943	5457	23399	No	33.41	Si
SLU 83	11.05	-978.47	-12211	-10169	701	2.14	2.14	-16970	9207	5517	40441	17943	5457	23399	No	33.37	Si
SLU 62	9.25	-527.36	-12765	-10629	655	2.14	2.14	-17740	9310	5578	40441	17943	5457	23399	No	35.74	Si
SLU 62	11.05	-881.89	-10897	-9074	655	2.14	2.14	-15143	8964	5371	40441	17943	5457	23399	No	35.71	Si
SLU 79	9.25	-578.65	-14024	-11678	716	2.14	2.14	-19489	9543	5718	40441	17943	5457	23399	No	32.66	Si
SLU 79	11.05	-1000.73	-12168	-10132	717	2.14	2.14	-16910	9199	5512	40441	17943	5457	23399	No	32.62	Si
SLU 78	9.25	-609.27	-14371	-11967	671	2.14	2.14	-19971	9607	5757	40441	17943	5457	23399	No	34.9	Si
SLU 78	11.05	-994.35	-12472	-10386	671	2.14	2.14	-17333	9255	5546	40441	17943	5457	23399	No	34.86	Si
SLU 77	9.25	-610.3	-14268	-11881	688	2.14	2.14	-19828	9588	5745	40441	17943	5457	23399	No	34.03	Si





Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 77	11.05	-1004.81	-12389	-10316	688	2.14	2.14	-17217	9240	5537	40441	17943	5457	23399	No	33.99	Si
SLU 80	9.25	-577.62	-14127	-11764	699	2.14	2.14	-19633	9562	5730	40441	17943	5457	23399	No	33.46	Si
SLU 80	11.05	-990.27	-12251	-10202	700	2.14	2.14	-17025	9214	5521	40441	17943	5457	23399	No	33.42	Si
SLU 59	9.25	-537.21	-12808	-10665	654	2.14	2.14	-17800	9318	5583	40441	17943	5457	23399	No	35.8	Si
SLU 59	11.05	-893.69	-10936	-9107	654	2.14	2.14	-15198	8971	5375	40441	17943	5457	23399	No	35.76	Si
SLU 84	9.25	-566.74	-14187	-11814	683	2.14	2.14	-19716	9573	5736	40441	17943	5457	23399	No	34.24	Si
SLU 84	11.05	-968.01	-12295	-10238	684	2.14	2.14	-17086	9223	5526	40441	17943	5457	23399	No	34.21	Si
SLU 37	9.25	-455.51	-11838	-9858	647	2.14	2.14	-16452	9138	5475	40441	17943	5457	23399	No	36.18	Si
SLU 37	11.05	-883.4	-10461	-8711	648	2.14	2.14	-14538	8883	5323	40441	17943	5457	23399	No	36.13	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 12	9.25	-1494.15	-21325	-17758	-4055	2.14	2.14	-29636	16250	9737	40441	26914	5457	32371		7.98	Si
SLV 12	11.05	-1688.54	-15866	-13212	-3846	2.14	2.14	-22050	14827	8884	40441	26914	5457	32371		8.42	Si
SLV 15	9.25	-2651.97	-11154	-9288	-4552	2.14	2.14	-15501	13517	8099	40441	26914	5457	32371		7.11	Si
SLV 15	11.05	-2574.64	-7269	-6053	-3738	2.14	2.14	-10103	12437	7452	40441	26914	5457	32371		8.66	Si
SLV 16	9.25	-2329.48	-11738	-9775	-3933	2.14	2.14	-16313	13679	8197	40441	26914	5457	32371		8.23	Si
SLV 16	11.05	-2269.3	-8308	-6918	-3119	2.14	2.14	-11545	12726	7625	40441	26914	5457	32371		10.38	Si
SLV 1	9.25	-1412.55	-7168	-5969	-4616	2.14	2.14	-9962	12409	7435	40441	26914	5457	32371		7.01	Si
SLV 1	11.05	-3401.56	-7455	-6208	-3802	2.14	1.8411	-12111	12839	6619	40441	26914	5457	32371		8.51	Si
SLV 2	9.25	-1735.04	-7752	-6455	-5234	2.14	2.14	-10774	12571	7533	40441	26914	5457	32371		6.18	Si
SLV 2	11.05	-3706.9	-8493	-7072	-4421	2.14	1.9006	-13375	13092	6967	40441	26914	5457	32371		7.32	Si
SLV 5	9.25	-577.23	-2419	-2014	-4738	1.712	2.14	0	0	0	40441	21531	4366	25897		5.47	Si
SLV 5	11.05	-2820.8	-104	-86	-4529	1.712	0	0	0	0	40441	21531	4366	25897		5.72	Si
SLV 11	9.25	-1702.44	-20948	-17444	-4455	2.14	2.14	-29112	16239	9730	40441	26914	5457	32371		7.27	Si
SLV 11	11.05	-1885.75	-15196	-12654	-4245	2.14	2.14	-21118	14640	8772	40441	26914	5457	32371		7.63	Si
SLV 10	9.25	-328.98	-3039	-2530	-3024	1.712	2.14	0	0	0	40441	21531	4366	25897		8.56	Si
SLV 10	11.05	-1513.32	-1007	-839	-3311	1.712	0	0	0	0	40441	21531	4366	25897		7.82	Si
SLV 9	9.25	-537.27	-3416	-2845	-2625	1.712	2.14	0	0	0	40441	21531	4366	25897		9.87	Si
SLV 9	11.05	-1316.11	-1678	-1397	-2911	1.712	0.857	0	0	0	40441	21531	4366	25897		8.9	Si
SLV 6	9.25	-785.51	-2042	-1700	-5137	1.712	2.0558	0	0	0	40441	21531	4366	25897		5.04	Si
SLV 6	11.05	-3018.01	-567	-472	-4929	1.712	0	0	0	0	40441	21531	4366	25897		5.25	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.11  $W_a$  0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 9	179667	0.46	0	1939	259.84	0	0	No, Trazione
SLV 6	179667	0.46	0	321	259.84	0	0	No, Trazione
SLV 5	179667	0.46	0	873	259.84	0	0	No, Trazione
SLV 10	179667	0.46	0	1387	259.84	0	0	No, Trazione
SLV 13	179667	0.46	6027	-3611	259.84	485.62	1.87	Si
SLV 14	179667	0.46	7452	-4465	259.84	594.63	2.29	Si
SLV 1	179667	0.46	11959	-7166	259.84	924.62	3.56	Si
SLV 2	179667	0.46	13384	-8020	259.84	1024.35	3.94	Si
SLV 15	179667	0.46	15962	-9564	259.84	1199.07	4.61	Si
SLV 16	179667	0.46	17388	-10419	259.84	1292.53	4.97	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 10.11  $W_a = 0.05$   $T_a = 0.0739$

Comb.	N top	N base	V orto	α0	M*	e*	α0*	aLim	Verifica
SLV 8	-14716	-21732	540	0.735	1796.2	0.952	11.22717	14.09547	No
SLV 7	-14178	-21212	540	0.759	1741.6	0.951	11.5983	14.09547	No
SLV 12	-13904	-19603	400	0.78	1713.8	0.95	11.93346	14.09547	No
SLV 11	-13366	-19083	400	0.806	1659.2	0.948	12.35086	14.09547	No
SLV 4	-10562	-16472	373	0.981	1374.9	0.939	15.17108	7.52414	Si
SLV 3	-9729	-15667	374	1.048	1290.6	0.936	16.26966	7.52414	Si
SLV 16	-7856	-9375	-93	1.27	1101.5	0.927	19.90773	7.52414	Si
SLV 15	-7023	-8569	-93	1.385	1017.7	0.923	21.81743	7.52414	Si
SLV 2	-6064	-9712	90	1.548	921.4	0.917	24.53526	7.52414	Si
SLV 1	-5231	-8907	91	1.724	838.3	0.911	27.49931	7.52414	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	12.405	SLU 79	Si
V_SLU	32.624	SLU 79	Si
PF_SLV	0	SLV 5	No
V_SLV	5.041	SLV 6	Si
PFFP_SLV	0	SLV 10	No
R_SLV	0.797	SLV 8	No

## Maschio 116

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)



## Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.313	-3.314	-21.593	-3.314	L6	L7	2.28	0.28	3.52	3.52	3.52			

## Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

## Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

## Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 56	10.35	-991.55	-16563	-0.0000471	0.0003743	0.0035	2.28	14070.08	16780.81	16780.81	16.92	No	Si
SLU 56	11.15	-964.16	-14308	-0.000041	0.0003743	0.0035	2.28	12720.71	15068.55	15068.55	15.63	No	Si
SLU 50	10.35	-939.04	-14928	-0.0000425	0.0003743	0.0035	2.28	13109.33	15548.73	15548.73	16.56	No	Si
SLU 50	11.15	-889.84	-12785	-0.0000366	0.0003743	0.0035	2.28	11707.76	13836.44	13836.44	15.55	No	Si
SLU 80	10.35	-1082.44	-18069	-0.0000518	0.0003743	0.0035	2.28	14872.61	17867.82	17867.82	16.51	No	Si
SLU 80	11.15	-1034.57	-15691	-0.0000451	0.0003743	0.0035	2.28	13569.35	16143.18	16143.18	15.6	No	Si
SLU 51	10.35	-940.19	-14972	-0.0000426	0.0003743	0.0035	2.28	13136.84	15583.65	15583.65	16.57	No	Si
SLU 51	11.15	-893.88	-12824	-0.0000367	0.0003743	0.0035	2.28	11734.84	13868.61	13868.61	15.52	No	Si
SLU 58	10.35	-965.73	-16239	-0.0000461	0.0003743	0.0035	2.28	13887.23	16545.56	16545.56	17.13	No	Si
SLU 58	11.15	-963.4	-14012	-0.0000402	0.0003743	0.0035	2.28	12530.05	14841.45	14841.45	15.41	No	Si
SLU 57	10.35	-992.71	-16607	-0.0000473	0.0003743	0.0035	2.28	14095.02	16813.43	16813.43	16.94	No	Si
SLU 57	11.15	-968.2	-14347	-0.0000411	0.0003743	0.0035	2.28	12745.7	15098.71	15098.71	15.59	No	Si
SLU 79	10.35	-1081.28	-18025	-0.0000516	0.0003743	0.0035	2.28	14849.96	17837.72	17837.72	16.5	No	Si
SLU 79	11.15	-1030.53	-15651	-0.000045	0.0003743	0.0035	2.28	13546.21	16113.08	16113.08	15.64	No	Si
SLU 59	10.35	-966.88	-16283	-0.0000462	0.0003743	0.0035	2.28	13912.68	16577.92	16577.92	17.15	No	Si
SLU 59	11.15	-967.44	-14051	-0.0000404	0.0003743	0.0035	2.28	12555.44	14871.38	14871.38	15.37	No	Si
SLU 49	10.35	-966.02	-15296	-0.0000436	0.0003743	0.0035	2.28	13334.07	15837.79	15837.79	16.39	No	Si
SLU 49	11.15	-894.63	-13120	-0.0000375	0.0003743	0.0035	2.28	11937.85	14112.85	14112.85	15.78	No	Si
SLU 72	10.35	-1055.75	-16758	-0.0000481	0.0003743	0.0035	2.28	14178.9	16924.04	16924.04	16.03	No	Si
SLU 72	11.15	-961.01	-14463	-0.0000414	0.0003743	0.0035	2.28	12819.33	15188.15	15188.15	15.8	No	Si

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 1	10.35	315.21	-9605	-0.0000246	0.0005615	0.0035	2.28		10416	10416	33.04		Si
SLV 1	11.15	-2874.99	-8919	-0.0000389	0.0005615	0.0035	2.28		10771.22	10771.22	3.75		Si
SLD 2	10.35	-239.45	-10879	-0.0000272	0.0005615	0.0035	2.28		12666.04	12666.04	52.9		Si
SLD 2	11.15	-1739.82	-9660	-0.0000336	0.0005615	0.0035	2.28		11487.04	11487.04	6.6		Si
SLV 14	10.35	-1718.86	-10495	-0.0000355	0.0005615	0.0035	2.28		12292.52	12292.52	7.15		Si
SLV 14	11.15	1488.56	-8296	-0.0000287	0.0005615	0.0035	2.28		9127.69	9127.69	6.13		Si
SLV 13	10.35	-1825.43	-10483	-0.0000362	0.0005615	0.0035	2.28		12280.75	12280.75	6.73		Si
SLV 13	11.15	1872.05	-8141	-0.0000307	0.0005615	0.0035	2.28		8972.93	8972.93	4.79		Si
SLV 5	10.35	-336.74	-5676	-0.0000153	0.0005615	0.0035	2.28		7486.92	7486.92	22.23		Si
SLV 5	11.15	-1493.42	-5111	-0.000021	0.0005615	0.0035	2.28		6900.79	6900.79	4.62		Si
SLV 2	10.35	421.78	-9617	-0.0000253	0.0005615	0.0035	2.28		10427.79	10427.79	24.72		Si
SLV 2	11.15	-3258.48	-9074	-0.0000417	0.0005615	0.0035	2.28		10923.37	10923.37	3.35		Si
SLV 15	10.35	-1892.63	-14116	-0.0000456	0.0005615	0.0035	2.28		15654.18	15654.18	8.27		Si
SLV 15	11.15	2053.76	-11195	-0.0000394	0.0005615	0.0035	2.28		11817.37	11817.37	5.75		Si
SLV 4	10.35	354.57	-13250	-0.0000337	0.0005615	0.0035	2.28		13544.3	13544.3	38.2		Si
SLV 4	11.15	-3076.77	-12128	-0.0000482	0.0005615	0.0035	2.28		13831.54	13831.54	4.5		Si
SLV 3	10.35	248	-13238	-0.000033	0.0005615	0.0035	2.28		13534.01	13534.01	54.57		Si
SLV 3	11.15	-2693.28	-11973	-0.0000453	0.0005615	0.0035	2.28		13688.77	13688.77	5.08		Si
SLV 6	10.35	-267.91	-5684	-0.0000149	0.0005615	0.0035	2.28		7495.08	7495.08	27.98		Si
SLV 6	11.15	-1741.1	-5211	-0.0000228	0.0005615	0.0035	2.28		7004.6	7004.6	4.02		Si

## Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 77	10.35	-1107.11	-18349	-15279	-1744	2.28	2.28	-23933	10136	6471	40441	19117	5814	24931	No	14.3	Si
SLU 77	11.15	-1031.28	-15948	-13280	-1091	2.28	2.28	-20802	9718	6204	40441	19117	5814	24931	No	22.84	Si
SLU 78	10.35	-1108.27	-18393	-15316	-1748	2.28	2.28	-23991	10143	6476	40441	19117	5814	24931	No	14.26	Si
SLU 78	11.15	-1035.32	-15987	-13313	-1090	2.28	2.28	-20853	9725	6208	40441	19117	5814	24931	No	22.86	Si
SLU 84	10.35	-1056.16	-17999	-14988	-1751	2.28	2.28	-23477	10075	6432	40441	19117	5814	24931	No	14.24	Si
SLU 84	11.15	-975.08	-15598	-12989	-1093	2.28	2.28	-20346	9657	6165	40441	19117	5814	24931	No	22.8	Si
SLU 75	10.35	-1070.55	-17761	-14790	-1797	2.28	2.28	-23167	10033	6405	40441	19117	5814	24931	No	13.88	Si



Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 75	11.15	-944.3	-15369	-12798	-1134	2.28	2.28	-20046	9617	6140	40441	19117	5814	24931	No	21.98	Si
SLU 76	10.35	-1043.86	-16450	-13698	-1733	2.28	2.28	-21457	9805	6260	40441	19117	5814	24931	No	14.38	Si
SLU 67	11.15	-870.74	-14141	-11776	-1108	2.28	2.28	-18445	9404	6003	40441	19117	5814	24931	No	22.51	Si
SLU 81	10.35	-1017.28	-17322	-14424	-1794	2.28	2.28	-22594	9957	6357	40441	19117	5814	24931	No	13.89	Si
SLU 81	11.15	-880.01	-14940	-12441	-1138	2.28	2.28	-19488	9543	6092	40441	19117	5814	24931	No	21.9	Si
SLU 82	10.35	-1018.44	-17367	-14462	-1799	2.28	2.28	-22653	9965	6362	40441	19117	5814	24931	No	13.86	Si
SLU 82	11.15	-884.05	-14980	-12474	-1137	2.28	2.28	-19539	9550	6097	40441	19117	5814	24931	No	21.92	Si
SLU 73	10.35	-1007.77	-16835	-14019	-1776	2.28	2.28	-21959	9872	6303	40441	19117	5814	24931	No	14.04	Si
SLU 73	11.15	-855.22	-14480	-12058	-1125	2.28	2.28	-18887	9463	6041	40441	19117	5814	24931	No	22.16	Si
SLU 74	10.35	-1069.39	-17716	-14753	-1792	2.28	2.28	-23109	10026	6400	40441	19117	5814	24931	No	13.91	Si
SLU 74	11.15	-940.26	-15329	-12765	-1135	2.28	2.28	-19995	9610	6135	40441	19117	5814	24931	No	21.96	Si
SLU 83	10.35	-1055	-17954	-14951	-1746	2.28	2.28	-23419	10067	6427	40441	19117	5814	24931	No	14.28	Si
SLU 83	11.15	-971.04	-15559	-12956	-1094	2.28	2.28	-20295	9650	6161	40441	19117	5814	24931	No	22.78	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 12	10.35	-1134.11	-18057	-15036	-4936	2.28	2.28	-23552	15127	9657	40441	28675	5814	34489		6.99	Si
SLV 12	11.15	288.7	-15157	-12622	-2753	2.28	2.28	-19771	14371	9174	40441	28675	5814	34489		12.53	Si
SLV 16	10.35	-1786.06	-14128	-11764	-7363	2.28	2.28	-18428	14102	9003	40441	28675	5814	34489		4.68	Si
SLV 16	11.15	1670.27	-11350	-9451	-5310	2.28	2.28	-14804	13378	8540	40441	28675	5814	34489		6.5	Si
SLV 14	10.35	-1718.86	-10495	-8739	-6057	2.28	2.28	-13689	13154	8398	40441	28675	5814	34489		5.69	Si
SLV 14	11.15	1488.56	-8296	-6908	-4843	2.28	2.28	-10821	12581	8032	40441	28675	5814	34489		7.12	Si
SLV 1	10.35	315.21	-9605	-7998	4818	2.28	2.28	-12528	12922	8250	40441	28675	5814	34489		7.16	Si
SLV 1	11.15	-2874.99	-8919	-7427	3680	2.28	2.28	-11633	12743	8135	40441	28675	5814	34489		9.37	Si
SLV 4	10.35	354.57	-13250	-11033	4347	2.28	2.28	-17282	13873	8857	40441	28675	5814	34489		7.93	Si
SLV 4	11.15	-3076.77	-12128	-10099	3893	2.28	2.28	-15819	13580	8670	40441	28675	5814	34489		8.86	Si
SLV 2	10.35	421.78	-9617	-8008	5653	2.28	2.28	-12544	12925	8252	40441	28675	5814	34489		6.1	Si
SLV 2	11.15	-3258.48	-9074	-7556	4360	2.28	2.28	-11836	12784	8161	40441	28675	5814	34489		7.91	Si
SLV 13	10.35	-1825.43	-10483	-8729	-6891	2.28	2.28	-13673	13151	8396	40441	28675	5814	34489		5	Si
SLV 13	11.15	1872.05	-8141	-6779	-5523	2.28	2.28	-10618	12540	8006	40441	28675	5814	34489		6.25	Si
SLV 11	10.35	-1202.94	-18049	-15029	-5475	2.28	2.28	-23542	15125	9656	40441	28675	5814	34489		6.3	Si
SLV 11	11.15	536.38	-15057	-12538	-3193	2.28	2.28	-19640	14345	9158	40441	28675	5814	34489		10.8	Si
SLD 15	10.35	-1231.4	-12853	-10703	-4243	2.28	2.28	-16766	13770	8791	40441	28675	5814	34489		8.13	Si
SLD 15	11.15	535.1	-10609	-8834	-3033	2.28	2.28	-13838	13184	8417	40441	28675	5814	34489		11.37	Si
SLV 15	10.35	-1892.63	-14116	-11754	-8197	2.28	2.28	-18412	14099	9001	40441	28675	5814	34489		4.21	Si
SLV 15	11.15	2053.76	-11195	-9322	-5989	2.28	2.28	-14602	13337	8514	40441	28675	5814	34489		5.76	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.11 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	α0	N	M	Mc	Coeff.s.	Verifica
SLV 9	179667	0.46	8354	-5334	276.84	705.85	2.55	Si
SLV 10	179667	0.46	8497	-5424	276.84	717.14	2.59	Si
SLV 5	179667	0.46	8934	-5703	276.84	751.77	2.72	Si
SLV 6	179667	0.46	9076	-5794	276.84	762.97	2.76	Si
SLV 13	179667	0.46	13616	-8692	276.84	1108.43	4	Si
SLV 14	179667	0.46	13836	-8833	276.84	1124.55	4.06	Si
SLV 1	179667	0.46	15547	-9925	276.84	1248.09	4.51	Si
SLV 2	179667	0.46	15767	-10066	276.84	1263.71	4.56	Si
SLV 15	179667	0.46	18738	-11962	276.84	1469.26	5.31	Si
SLV 16	179667	0.46	18958	-12103	276.84	1484.06	5.36	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.11 Wa = 0.05 Ta = 0.0739

Comb.	N top	N base	V orto	α0	M*	e*	α0*	aLim	Verifica
SLV 12	-11594	-15545	627	0.94	1499.4	0.941	14.5277	14.09547	Si
SLV 8	-11632	-16870	575	0.941	1503.2	0.941	14.54544	14.09547	Si
SLV 11	-11531	-15442	627	0.944	1493	0.94	14.59618	14.09547	Si
SLV 7	-11569	-16768	575	0.946	1496.8	0.94	14.6138	14.09547	Si
SLV 6	-4285	-7232	-627	1.984	765.7	0.902	31.968	14.09547	Si
SLV 10	-4247	-5906	-575	2.004	762	0.901	32.30142	14.09547	Si
SLV 5	-4221	-7129	-627	2.003	759.5	0.901	32.30294	14.09547	Si
SLV 9	-4183	-5804	-575	2.024	755.7	0.901	32.64191	14.09547	Si
SLV 16	-8995	-10653	267	1.185	1236.6	0.93	18.51636	7.52414	Si
SLV 4	-9122	-15071	94	1.188	1249.4	0.931	18.54274	7.52414	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	15.372	SLU 59	Si
V_SLU	13.856	SLU 82	Si
PF_SLV	3.352	SLV 2	Si
V_SLV	4.207	SLV 15	Si
PFFP_SLV	2.55	SLV 9	Si
R_SLV	1.031	SLV 12	Si



## Maschio 117

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-18.263	-3.314	-18.813	-3.314	L6	L7	0.55	0.28	3.52	3.52	3.52			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau_0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_m$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 66	10.35	140.84	-4749	-0.0000654	0.0003743	0.0035	0.55	910.33	1023.23	1023.23	7.27	No	Si
SLU 66	11.15	188.42	-4259	-0.0000654	0.0003743	0.0035	0.55	853.06	941.23	941.23	5	No	Si
SLU 72	10.35	153.72	-4893	-0.0000686	0.0003743	0.0035	0.55	925.56	1047.81	1047.81	6.82	No	Si
SLU 72	11.15	184.13	-4362	-0.0000661	0.0003743	0.0035	0.55	865.76	958.29	958.29	5.2	No	Si
SLU 71	10.35	152.88	-4876	-0.0000683	0.0003743	0.0035	0.55	923.89	1045.06	1045.06	6.84	No	Si
SLU 71	11.15	183.95	-4349	-0.0000659	0.0003743	0.0035	0.55	864.22	956.18	956.18	5.2	No	Si
SLU 68	10.35	142.93	-4703	-0.0000651	0.0003743	0.0035	0.55	905.35	1015.48	1015.48	7.1	No	Si
SLU 68	11.15	181.26	-4202	-0.0000639	0.0003743	0.0035	0.55	845.79	931.75	931.75	5.14	No	Si
SLU 69	10.35	152.19	-4949	-0.0000691	0.0003743	0.0035	0.55	931.32	1057.5	1057.5	6.95	No	Si
SLU 69	11.15	191.4	-4428	-0.0000677	0.0003743	0.0035	0.55	873.71	969.2	969.2	5.06	No	Si
SLU 64	10.35	130.18	-4476	-0.000061	0.0003743	0.0035	0.55	879.5	977.32	977.32	7.51	No	Si
SLU 64	11.15	177.98	-4012	-0.0000613	0.0003743	0.0035	0.55	820.98	900.71	900.71	5.06	No	Si
SLU 67	10.35	141.69	-4765	-0.0000657	0.0003743	0.0035	0.55	912.07	1025.96	1025.96	7.24	No	Si
SLU 67	11.15	188.59	-4272	-0.0000655	0.0003743	0.0035	0.55	854.64	943.32	943.32	5	No	Si
SLU 65	10.35	131.59	-4503	-0.0000615	0.0003743	0.0035	0.55	882.64	981.79	981.79	7.46	No	Si
SLU 65	11.15	178.28	-4033	-0.0000615	0.0003743	0.0035	0.55	823.8	904.14	904.14	5.07	No	Si
SLU 70	10.35	153.03	-4965	-0.0000694	0.0003743	0.0035	0.55	932.94	1060.27	1060.27	6.93	No	Si
SLU 70	11.15	191.58	-4440	-0.0000679	0.0003743	0.0035	0.55	875.22	971.31	971.31	5.07	No	Si
SLU 24	10.35	116.06	-3960	-0.0000535	0.0003743	0.0035	0.55	813.96	892.27	892.27	7.69	No	Si
SLU 24	11.15	159.71	-3578	-0.0000542	0.0003743	0.0035	0.55	759.43	831.22	831.22	5.2	No	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_m$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 15	10.35	-392.61	-1730	-0.0001358	0.0005615	0.0035	0.44		514.64	514.64	1.31		Si
SLV 15	11.15	662.98	-2475	-0.0056999	0.0005615	0.0035	0.44		641.2	641.2	0.97		No
SLV 9	10.35	-86.11	-1299	-0.0000216	0.0005615	0.0035	0.55		407.18	407.18	4.73		Si
SLV 9	11.15	206.27	-1570	-0.0000392	0.0005615	0.0035	0.55		426.3	426.3	2.07		Si
SLD 14	10.35	-90.54	-2466	-0.0000338	0.0005615	0.0035	0.55		690.07	690.07	7.62		Si
SLD 14	11.15	311.5	-2579	-0.0000609	0.0005615	0.0035	0.55		662.61	662.61	2.13		Si
SLV 14	10.35	-351.74	-1142	-0.0006005	0.0005615	0.0035	0.44		368	368	1.05		Si
SLV 14	11.15	555.69	-1880	-0.0073057	0.0005615	0.0035	0.44		502.34	502.34	0.9		No
SLV 2	10.35	601.27	-5196	-0.000125	0.0005615	0.0035	0.55		1204.43	1204.43	2		Si
SLV 2	11.15	-402.57	-3739	-0.0000827	0.0005615	0.0035	0.55		972.28	972.28	2.42		Si
SLV 13	10.35	-409.84	-852	-0.0018871	0.0005615	0.0035	0.44		294.38	294.38	0.72		No
SLV 13	11.15	611.55	-1746	-0.014357	0.0005615	0.0035	0.44		469.69	469.69	0.77		No
SLV 16	10.35	-334.5	-2020	-0.0000676	0.0005615	0.0035	0.44		584.07	584.07	1.75		Si
SLV 16	11.15	607.11	-2609	-0.0002656	0.0005615	0.0035	0.55		668.85	668.85	1.1		Si
SLV 1	10.35	543.17	-4906	-0.0001133	0.0005615	0.0035	0.55		1148.46	1148.46	2.11		Si
SLV 1	11.15	-346.71	-3605	-0.0000742	0.0005615	0.0035	0.55		943.43	943.43	2.72		Si
SLD 15	10.35	-108.2	-2728	-0.0000384	0.0005615	0.0035	0.55		749.96	749.96	6.93		Si
SLD 15	11.15	358.61	-2842	-0.0000701	0.0005615	0.0035	0.55		715.74	715.74	2		Si
SLD 13	10.35	-115.49	-2341	-0.0000352	0.0005615	0.0035	0.55		661.21	661.21	5.73		Si
SLD 13	11.15	335.49	-2521	-0.0000649	0.0005615	0.0035	0.55		650.73	650.73	1.94		Si

### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	l'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 81	10.35	162.83	-5116	-4260	370	0.55	0.55	-27667	10633	1637	40441	4611	1402	6014	No	16.26	Si
SLU 81	11.15	171.92	-4660	-3880	-279	0.55	0.55	-25198	10304	1587	40441	4611	1402	6014	No	21.53	Si
SLU 83	10.35	174.18	-5316	-4427	395	0.55	0.55	-28748	10778	1660	40441	4611	1402	6014	No	15.22	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 83	11.15	174.91	-4828	-4021	-276	0.55	0.55	-26109	10426	1605	40441	4611	1402	6014	No	21.77	Si
SLU 77	10.35	175.05	-5397	-4494	374	0.55	0.55	-29183	10833	1668	40441	4611	1402	6014	No	16.1	Si
SLU 77	11.15	187.16	-4881	-4064	-262	0.55	0.55	-26393	10464	1611	40441	4611	1402	6014	No	22.91	Si
SLU 78	10.35	175.89	-5413	-4507	375	0.55	0.55	-29270	10833	1668	40441	4611	1402	6014	No	16.02	Si
SLU 78	11.15	187.33	-4894	-4075	-261	0.55	0.55	-26462	10473	1613	40441	4611	1402	6014	No	23.01	Si
SLU 63	10.35	164.39	-4838	-4029	382	0.55	0.55	-26160	10432	1607	40441	4611	1402	6014	No	15.72	Si
SLU 63	11.15	150.07	-4345	-3618	-245	0.55	0.55	-23497	10077	1552	40441	4611	1402	6014	No	24.53	Si
SLU 62	10.35	163.55	-4822	-4015	381	0.55	0.55	-26073	10421	1605	40441	4611	1402	6014	No	15.79	Si
SLU 62	11.15	149.89	-4333	-3608	-246	0.55	0.55	-23429	10068	1550	40441	4611	1402	6014	No	24.41	Si
SLU 82	10.35	163.67	-5132	-4274	372	0.55	0.55	-27753	10645	1639	40441	4611	1402	6014	No	16.18	Si
SLU 82	11.15	172.1	-4673	-3891	-278	0.55	0.55	-25267	10313	1588	40441	4611	1402	6014	No	21.62	Si
SLU 84	10.35	175.02	-5332	-4440	397	0.55	0.55	-28835	10789	1661	40441	4611	1402	6014	No	15.16	Si
SLU 84	11.15	175.08	-4841	-4031	-275	0.55	0.55	-26177	10435	1607	40441	4611	1402	6014	No	21.86	Si
SLU 80	10.35	176.57	-5341	-4447	383	0.55	0.55	-28879	10795	1662	40441	4611	1402	6014	No	15.69	Si
SLU 80	11.15	179.88	-4815	-4010	-253	0.55	0.55	-26038	10416	1604	40441	4611	1402	6014	No	23.75	Si
SLU 79	10.35	175.73	-5325	-4434	382	0.55	0.55	-28792	10783	1661	40441	4611	1402	6014	No	15.76	Si
SLU 79	11.15	179.71	-4803	-3999	-254	0.55	0.55	-25969	10407	1603	40441	4611	1402	6014	No	23.65	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 14	10.35	-351.74	-1142	-951	-1551	0.44	0	0	0	0	40441	5534	1122	6655		4.29	Si
SLV 14	11.15	555.69	-1880	-1566	-285	0.44	0	0	0	0	40441	5534	1122	6655		23.32	Si
SLV 4	10.35	618.51	-6073	-5057	2178	0.55	0.5194	-32839	16250	2363	40441	6917	1402	8319		3.82	Si
SLV 4	11.15	-351.15	-4468	-3721	-8	0.55	0.55	-24160	15249	2348	40441	6917	1402	8319		1013.81	Si
SLD 2	10.35	316.86	-4198	-3496	1033	0.55	0.55	-22699	14957	2303	40441	6917	1402	8319		8.06	Si
SLD 2	11.15	-98.21	-3372	-2808	-119	0.55	0.55	-18236	14064	2166	40441	6917	1402	8319		69.66	Si
SLV 15	10.35	-392.61	-1730	-1440	-1719	0.44	0.144	0	0	0	40441	5534	1122	6655		3.87	Si
SLV 15	11.15	662.98	-2475	-2061	-297	0.44	0.0214	0	0	0	40441	5534	1122	6655		22.43	Si
SLD 4	10.35	324.16	-4584	-3817	1050	0.55	0.55	-24788	15374	2368	40441	6917	1402	8319		7.92	Si
SLD 4	11.15	-75.09	-3693	-3075	-102	0.55	0.55	-19970	14411	2219	40441	6917	1402	8319		81.91	Si
SLV 13	10.35	-409.84	-852	-710	-1762	0.44	0	0	0	0	40441	5534	1122	6655		3.78	Si
SLV 13	11.15	611.55	-1746	-1454	-336	0.44	0	0	0	0	40441	5534	1122	6655		19.78	Si
SLV 1	10.35	543.17	-4906	-4085	1925	0.55	0.4928	-26527	15722	2169	40441	6917	1402	8319		4.32	Si
SLV 1	11.15	-346.71	-3605	-3002	-99	0.55	0.5364	-19492	14315	2150	40441	6917	1402	8319		83.98	Si
SLV 16	10.35	-334.5	-2020	-1682	-1508	0.44	0.3281	0	0	0	40441	5534	1122	6655		4.41	Si
SLV 16	11.15	607.11	-2609	-2173	-246	0.55	0.1269	-63604	16250	578	40441	6917	1402	8319		33.87	Si
SLV 3	10.35	560.4	-5783	-4816	1967	0.55	0.5343	-31272	16250	2431	40441	6917	1402	8319		4.23	Si
SLV 3	11.15	-295.29	-4334	-3609	-59	0.55	0.55	-23435	15104	2326	40441	6917	1402	8319		140.35	Si
SLV 2	10.35	601.27	-5196	-4326	2136	0.55	0.4778	-28095	16036	2145	40441	6917	1402	8319		3.9	Si
SLV 2	11.15	-402.57	-3739	-3113	-48	0.55	0.5019	-20217	14460	2032	40441	6917	1402	8319		173.36	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.11 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 9	179667	0.46	6569	-1012	66.78	135.54	2.03	Si
SLV 10	179667	0.46	7141	-1100	66.78	146.76	2.2	Si
SLV 13	179667	0.46	8204	-1263	66.78	167.38	2.51	Si
SLV 14	179667	0.46	9089	-1400	66.78	184.3	2.76	Si
SLV 5	179667	0.46	10062	-1550	66.78	202.64	3.03	Si
SLV 6	179667	0.46	10634	-1638	66.78	213.29	3.19	Si
SLV 15	179667	0.46	13233	-2038	66.78	260.57	3.9	Si
SLV 16	179667	0.46	14118	-2174	66.78	276.24	4.14	Si
SLV 1	179667	0.46	19847	-3056	66.78	372.28	5.57	Si
SLV 2	179667	0.46	20732	-3193	66.78	386.29	5.78	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 10.11 Wa = 0.05 Ta = 0.0739

Comb.	N top	N base	V orto	α0	M*	e*	α0*	aLim	Verifica
SLV 8	-2538	-3805	-41	1.054	335.5	0.937	16.34689	14.09547	Si
SLV 7	-2464	-3783	-41	1.079	328	0.935	16.76021	14.09547	Si
SLV 12	-2114	-3717	-43	1.218	292.7	0.929	19.04841	14.09547	Si
SLV 11	-2041	-3695	-43	1.252	285.3	0.928	19.61531	14.09547	Si
SLV 6	-1235	-1260	35	1.824	204.6	0.908	29.20044	14.09547	Si
SLV 4	-2596	-3023	-13	1.044	341.3	0.938	16.17838	7.52414	Si
SLV 5	-1161	-1238	35	1.904	197.3	0.906	30.54624	14.09547	Si
SLV 3	-2482	-2989	-13	1.082	329.8	0.936	16.80771	7.52414	Si
SLV 2	-2205	-2259	10	1.19	301.8	0.931	18.58447	7.52414	Si
SLV 1	-2091	-2226	10	1.241	290.4	0.929	19.42176	7.52414	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	4.995	SLU 66	Si
V_SLU	15.158	SLU 84	Si
PF_SLV	0.718	SLV 13	No
V_SLV	3.778	SLV 13	Si
PFFP_SLV	2.03	SLV 9	Si
R_SLV	1.16	SLV 8	Si



## Maschio 119

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.613	1.006	-19.613	5.826	L6	L7	4.82	0.16	3.52	3.52	3.52			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 61	8.35	-1562.22	-26268	-0.0000472	0.0004492	0.0035	4.82	45658.73	68024.39	68024.39	43.54	No	Si
SLU 61	11.87	-955.5	-13043	-0.0000233	0.0004492	0.0035	4.82	27082.67	42307.76	42307.76	44.28	No	Si
SLU 40	8.35	-1541.41	-24253	-0.0000437	0.0004492	0.0035	4.82	43406.32	64276.64	64276.64	41.7	No	Si
SLU 40	11.87	-884.68	-12035	-0.0000215	0.0004492	0.0035	4.82	25299.75	40207.82	40207.82	45.45	No	Si
SLU 52	8.35	-1536.81	-25290	-0.0000455	0.0004492	0.0035	4.82	44591.37	66205.26	66205.26	43.08	No	Si
SLU 52	11.87	-891.67	-12644	-0.0000225	0.0004492	0.0035	4.82	26383.18	41476.57	41476.57	46.52	No	Si
SLU 31	8.35	-1516	-23275	-0.0000419	0.0004492	0.0035	4.82	42238.16	62457.52	62457.52	41.2	No	Si
SLU 31	11.87	-820.86	-11636	-0.0000207	0.0004492	0.0035	4.82	24579.68	39376.63	39376.63	47.97	No	Si
SLU 65	8.35	-1537.57	-25680	-0.0000462	0.0004492	0.0035	4.82	45023.25	66931.32	66931.32	43.53	No	Si
SLU 65	11.87	-717.11	-13102	-0.0000229	0.0004492	0.0035	4.82	27184.62	42429.71	42429.71	59.17	No	Si
SLU 81	8.35	-1672.36	-28924	-0.0000522	0.0004492	0.0035	4.82	48310.05	72689.31	72689.31	43.47	No	Si
SLU 81	11.87	-957.13	-14419	-0.0000256	0.0004492	0.0035	4.82	29432.91	45174.74	45174.74	47.2	No	Si
SLU 75	8.35	-1691.98	-29083	-0.0000525	0.0004492	0.0035	4.82	48457.43	72967.45	72967.45	43.13	No	Si
SLU 75	11.87	-825.32	-15001	-0.0000263	0.0004492	0.0035	4.82	30397.88	46387.46	46387.46	56.21	No	Si
SLU 76	8.35	-1661.73	-28627	-0.0000516	0.0004492	0.0035	4.82	48031.48	72170.1	72170.1	43.43	No	Si
SLU 76	11.87	-703.89	-14637	-0.0000254	0.0004492	0.0035	4.82	29796.33	45628.91	45628.91	64.82	No	Si
SLU 73	8.35	-1737.11	-27915	-0.0000505	0.0004492	0.0035	4.82	47345.67	70926.06	70926.06	40.83	No	Si
SLU 73	11.87	-942.39	-13998	-0.0000249	0.0004492	0.0035	4.82	28724.06	44297.49	44297.49	47.01	No	Si
SLU 82	8.35	-1762.51	-28893	-0.0000523	0.0004492	0.0035	4.82	48281.71	72636.1	72636.1	41.21	No	Si
SLU 82	11.87	-1006.21	-14397	-0.0000257	0.0004492	0.0035	4.82	29395.91	45128.67	45128.67	44.85	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLD 12	8.35	-5426.1	-17527	-0.0000398	0.0006738	0.0035	4.82		52146.73	52146.73	9.61		Si
SLD 12	11.87	-3127.86	-8685	-0.0000204	0.0006738	0.0035	4.82		33319.43	33319.43	10.65		Si
SLV 10	8.35	7968.06	-22597	-0.0000538	0.0006738	0.0035	4.82		51758.53	51758.53	6.5		Si
SLV 10	11.87	4270.71	-11410	-0.0000272	0.0006738	0.0035	4.82		28317.88	28317.88	6.63		Si
SLV 6	8.35	8320.16	-25083	-0.0000588	0.0006738	0.0035	4.82		56547.84	56547.84	6.8		Si
SLV 6	11.87	4946.6	-13037	-0.0000313	0.0006738	0.0035	4.82		31846.54	31846.54	6.44		Si
SLV 12	8.35	-10927.97	-14548	-0.0000462	0.0006738	0.0035	4.82		45913.53	45913.53	4.2		Si
SLV 12	11.87	-6406.45	-6915	-0.0000243	0.0006738	0.0035	4.82		29395.96	29395.96	4.59		Si
SLV 5	8.35	8767.67	-25162	-0.0000599	0.0006738	0.0035	4.82		56685.85	56685.85	6.47		Si
SLV 5	11.87	5322.62	-13215	-0.0000324	0.0006738	0.0035	4.82		32232.07	32232.07	6.06		Si
SLV 7	8.35	-10128.36	-17113	-0.0000489	0.0006738	0.0035	4.82		51304.99	51304.99	5.07		Si
SLV 7	11.87	-5354.54	-8720	-0.000025	0.0006738	0.0035	4.82		33395.71	33395.71	6.24		Si
SLV 11	8.35	-10480.45	-14626	-0.0000454	0.0006738	0.0035	4.82		46081.41	46081.41	4.4		Si
SLV 11	11.87	-6030.42	-7093	-0.0000237	0.0006738	0.0035	4.82		29792.02	29792.02	4.94		Si
SLV 9	8.35	8415.57	-22676	-0.0000549	0.0006738	0.0035	4.82		51915.72	51915.72	6.17		Si
SLV 9	11.87	4646.74	-11588	-0.0000283	0.0006738	0.0035	4.82		28703.41	28703.41	6.18		Si
SLV 16	8.35	-4847.82	-14442	-0.0000335	0.0006738	0.0035	4.82		45689.46	45689.46	9.42		Si
SLV 16	11.87	-3561.07	-6542	-0.0000177	0.0006738	0.0035	4.82		28563.98	28563.98	8.02		Si
SLV 8	8.35	-10575.87	-17034	-0.0000497	0.0006738	0.0035	4.82		51145.12	51145.12	4.84		Si
SLV 8	11.87	-5730.56	-8542	-0.0000255	0.0006738	0.0035	4.82		33004.81	33004.81	5.76		Si



#### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 41	8.35	-1375.88	-24995	-14676	683	4.82	4.82	-19030	10833	8355	115546	27715	24582	52297	No	76.53	Si
SLU 41	11.87	-597.1	-12696	-7455	679	4.82	4.82	-9666	9622	7421	115546	27715	24582	52297	No	77.01	Si
SLU 47	8.35	-1261.91	-23767	-13955	-689	4.82	4.82	-18095	10746	8287	115546	27715	24582	52297	No	75.87	Si
SLU 47	11.87	-427.9	-12386	-7273	-873	4.82	4.82	-9430	9591	7396	115546	27715	24582	52297	No	59.91	Si
SLU 9	8.35	-905.33	-19859	-11660	-647	4.82	4.82	-15120	10349	7981	115546	27715	24582	52297	No	80.87	Si
SLU 9	11.87	-35.16	-10678	-6270	-757	4.82	4.82	-8130	9417	7263	115546	27715	24582	52297	No	69.08	Si
SLU 48	8.35	-1126.63	-24965	-14658	-702	4.82	4.82	-19007	10833	8355	115546	27715	24582	52297	No	74.53	Si
SLU 48	11.87	-261.75	-13412	-7875	-706	4.82	4.82	-10211	9695	7477	115546	27715	24582	52297	No	74.09	Si
SLU 39	8.35	-1451.26	-24284	-14258	840	4.82	4.82	-18488	10798	8328	115546	27715	24582	52297	No	62.29	Si
SLU 39	11.87	-835.6	-12057	-7079	835	4.82	4.82	-9180	9557	7371	115546	27715	24582	52297	No	62.65	Si
SLU 50	8.35	-1036.27	-24529	-14402	-827	4.82	4.82	-18675	10823	8347	115546	27715	24582	52297	No	63.27	Si
SLU 50	11.87	-107.6	-13062	-7670	-830	4.82	4.82	-9945	9659	7449	115546	27715	24582	52297	No	62.97	Si
SLU 51	8.35	-1126.43	-24499	-14385	-838	4.82	4.82	-18652	10820	8345	115546	27715	24582	52297	No	62.41	Si
SLU 51	11.87	-156.69	-13040	-7657	-949	4.82	4.82	-9928	9657	7448	115546	27715	24582	52297	No	55.09	Si
SLU 44	8.35	-1337.28	-23055	-13537	-533	4.82	4.82	-17553	10674	8232	115546	27715	24582	52297	No	98.1	Si
SLU 44	11.87	-666.4	-11747	-6898	-717	4.82	4.82	-8944	9526	7346	115546	27715	24582	52297	No	72.91	Si
SLU 49	8.35	-1216.78	-24934	-14640	-713	4.82	4.82	-18984	10833	8355	115546	27715	24582	52297	No	73.34	Si
SLU 49	11.87	-310.84	-13390	-7862	-825	4.82	4.82	-10194	9693	7475	115546	27715	24582	52297	No	63.41	Si
SLU 40	8.35	-1541.41	-24253	-14240	828	4.82	4.82	-18465	10795	8325	115546	27715	24582	52297	No	63.15	Si
SLU 40	11.87	-884.68	-12035	-7066	716	4.82	4.82	-9163	9555	7369	115546	27715	24582	52297	No	73.05	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 16	8.35	-4847.82	-14442	-8480	-8040	4.82	4.82	-10996	14699	11336	115546	41573	24582	66155		8.23	Si
SLV 16	11.87	-3561.07	-6542	-3841	-9612	4.82	4.82	-4981	13496	10408	115546	41573	24582	66155		6.88	Si
SLV 11	8.35	-10480.45	-14626	-8588	-4883	4.82	4.82	-11136	14727	11358	115546	41573	24582	66155		13.55	Si
SLV 11	11.87	-6030.42	-7093	-4165	-9659	4.82	4.6795	-5577	13615	10194	115546	41573	24582	66155		6.85	Si
SLV 12	8.35	-10927.97	-14548	-8542	-5342	4.82	4.82	-11076	14715	11348	115546	41573	24582	66155		12.38	Si
SLV 12	11.87	-6406.45	-6915	-4060	-10120	4.82	4.4508	-5715	13643	9716	115546	41573	24582	66155		6.54	Si
SLV 14	8.35	820.99	-16857	-9898	-6220	4.82	4.82	-12834	15067	11620	115546	41573	24582	66155		10.64	Si
SLV 14	11.87	-357.92	-7891	-4633	-4955	4.82	4.82	-6007	13701	10567	115546	41573	24582	66155		13.35	Si
SLV 1	8.35	2687.52	-25267	-14836	7906	4.82	4.82	-19237	16250	12532	115546	41573	24582	66155		8.37	Si
SLV 1	11.87	2477.24	-13588	-7978	9470	4.82	4.82	-10345	14569	11236	115546	41573	24582	66155		6.99	Si
SLV 3	8.35	-2981.28	-22852	-13418	6086	4.82	4.82	-17399	15980	12324	115546	41573	24582	66155		10.87	Si
SLV 3	11.87	-725.91	-12239	-7186	4813	4.82	4.82	-9319	14364	11077	115546	41573	24582	66155		13.75	Si
SLV 15	8.35	-4154.94	-14564	-8552	-7328	4.82	4.82	-11089	14718	11350	115546	41573	24582	66155		9.03	Si
SLV 15	11.87	-2978.87	-6817	-4003	-8899	4.82	4.82	-5190	13538	10441	115546	41573	24582	66155		7.43	Si
SLV 6	8.35	8320.16	-25083	-14728	4749	4.82	4.82	-19097	16250	12532	115546	41573	24582	66155		13.93	Si
SLV 6	11.87	4946.6	-13037	-7655	9517	4.82	4.82	-9926	14485	11171	115546	41573	24582	66155		6.95	Si
SLV 2	8.35	1994.64	-25145	-14764	7194	4.82	4.82	-19144	16250	12532	115546	41573	24582	66155		9.2	Si
SLV 2	11.87	1895.04	-13313	-7817	8757	4.82	4.82	-10136	14527	11203	115546	41573	24582	66155		7.55	Si
SLV 5	8.35	8767.67	-25162	-14774	5209	4.82	4.82	-19157	16250	12532	115546	41573	24582	66155		12.7	Si
SLV 5	11.87	5322.62	-13215	-7759	9978	4.82	4.82	-10061	14512	11192	115546	41573	24582	66155		6.63	Si

#### Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 10.11 Ta 0.13 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 12	-11374	0.46	353.87	836.69	1443.66	1140.17	3.22	Si
SLV 11	-11508	0.46	353.87	845.68	1456.36	1151.02	3.25	Si
SLV 16	-11723	0.46	353.87	860.04	1476.71	1168.37	3.3	Si
SLV 15	-11930	0.46	353.87	873.87	1496.37	1185.12	3.35	Si
SLV 8	-12877	0.46	353.87	936.31	1586.08	1261.2	3.56	Si
SLV 7	-13011	0.46	353.87	945.07	1598.77	1271.92	3.59	Si
SLV 14	-13556	0.46	353.87	980.5	1649.95	1315.22	3.72	Si
SLV 13	-13764	0.46	353.87	993.9	1669.4	1331.65	3.76	Si
SLV 4	-16733	0.46	353.87	1180.19	1945.85	1563.02	4.42	Si
SLV 3	-16941	0.46	353.87	1192.84	1964.97	1578.9	4.46	Si

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 10.11 Wa = 0.03 Ta = 0.1293

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 5	-13215	-25162	-198	1.743	1731.2	0.938	26.99545	18.89897	Si
SLV 6	-13037	-25083	-198	1.762	1713.2	0.938	27.31701	18.89897	Si
SLV 9	-11588	-22676	253	1.938	1566.7	0.933	30.19375	18.89897	Si
SLV 10	-11410	-22597	253	1.963	1548.7	0.932	30.59734	18.89897	Si
SLV 1	-13588	-25267	-744	1.669	1768.9	0.939	25.81691	13.2651	Si
SLV 2	-13313	-25145	-744	1.697	1741.1	0.939	26.28426	13.2651	Si
SLV 7	-8720	-17113	-253	2.43	1277.7	0.921	38.34055	18.89897	Si
SLV 8	-8542	-17034	-253	2.469	1259.9	0.92	38.99043	18.89897	Si
SLV 3	-12239	-22852	-761	1.819	1632.5	0.935	28.26418	13.2651	Si
SLV 4	-11964	-22730	-761	1.853	1604.7	0.934	28.82554	13.2651	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	40.83	SLU 73	Si
V_SLU	55.087	SLU 51	Si
PF_SLV	4.201	SLV 12	Si
V_SLV	6.537	SLV 12	Si
PFFP_SLV	3.222	SLV 12	Si
R_SLV	1.428	SLV 5	Si





## Maschio 120

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-16.333	-3.314	-17.363	-3.314	L6	L7	1.03	0.28	3.52	3.52	3.52			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau_0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	at	α	elim,conv	s,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_m$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 65	9.25	232.05	-7802	-0.00005	0.0003743	0.0035	1.03	2950.49	3246	3246	13.99	No	Si
SLU 65	11.05	476.66	-5696	-0.0000456	0.0003743	0.0035	1.03	2364.32	2537.95	2537.95	5.32	No	Si
SLU 24	9.25	174.92	-6765	-0.000042	0.0003743	0.0035	1.03	2681.16	2929.37	2929.37	16.75	No	Si
SLU 24	11.05	439.51	-5100	-0.000041	0.0003743	0.0035	1.03	2170.43	2296.05	2296.05	5.22	No	Si
SLU 70	9.25	243.54	-8541	-0.0000548	0.0003743	0.0035	1.03	3119.11	3478.4	3478.4	14.28	No	Si
SLU 70	11.05	535.81	-6370	-0.0000515	0.0003743	0.0035	1.03	2568.72	2805.25	2805.25	5.24	No	Si
SLU 25	9.25	176.73	-6777	-0.0000422	0.0003743	0.0035	1.03	2684.69	2933.19	2933.19	16.6	No	Si
SLU 25	11.05	440.89	-5111	-0.0000411	0.0003743	0.0035	1.03	2173.89	2300.19	2300.19	5.22	No	Si
SLU 69	9.25	241.73	-8528	-0.0000547	0.0003743	0.0035	1.03	3116.37	3474.36	3474.36	14.37	No	Si
SLU 69	11.05	534.43	-6359	-0.0000514	0.0003743	0.0035	1.03	2565.71	2801.63	2801.63	5.24	No	Si
SLU 28	9.25	188.72	-7099	-0.0000444	0.0003743	0.0035	1.03	2772.12	3030.21	3030.21	16.06	No	Si
SLU 28	11.05	460.48	-5392	-0.0000433	0.0003743	0.0035	1.03	2266.85	2413.73	2413.73	5.24	No	Si
SLU 66	9.25	229.74	-8206	-0.0000523	0.0003743	0.0035	1.03	3045.08	3372.55	3372.55	14.68	No	Si
SLU 66	11.05	514.84	-6078	-0.0000491	0.0003743	0.0035	1.03	2482.3	2695.93	2695.93	5.24	No	Si
SLU 27	9.25	186.91	-7086	-0.0000443	0.0003743	0.0035	1.03	2768.73	3026.36	3026.36	16.19	No	Si
SLU 27	11.05	459.1	-5381	-0.0000432	0.0003743	0.0035	1.03	2263.48	2409.54	2409.54	5.25	No	Si
SLU 67	9.25	231.55	-8219	-0.0000525	0.0003743	0.0035	1.03	3047.96	3376.57	3376.57	14.58	No	Si
SLU 67	11.05	516.22	-6089	-0.0000492	0.0003743	0.0035	1.03	2485.41	2700.2	2700.2	5.23	No	Si
SLU 64	9.25	229.03	-7781	-0.0000498	0.0003743	0.0035	1.03	2945.37	3239.41	3239.41	14.14	No	Si
SLU 64	11.05	474.37	-5679	-0.0000454	0.0003743	0.0035	1.03	2358.89	2530.89	2530.89	5.34	No	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_m$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 3	9.25	2804.29	-9876	-0.0001699	0.0005615	0.0035	1.03		4261.88	4261.88	1.52		Si
SLV 3	11.05	-1459.95	-4348	-0.0000903	0.0005615	0.0035	0.824		2304.9	2304.9	1.58		Si
SLV 15	9.25	-2626.41	-2871	-0.0053664	0.0005615	0.0035	0.824		1637.91	1637.91	0.62		No
SLV 15	11.05	2536.86	-5391	-0.0014568	0.0005615	0.0035	0.824		2534.68	2534.68	1		No
SLV 13	9.25	-2633.62	-1881	-0.0070664	0.0005615	0.0035	0.824		1172.67	1172.67	0.45		No
SLV 13	11.05	2309.01	-4418	-0.0067625	0.0005615	0.0035	0.824		2161.28	2161.28	0.94		No
SLD 15	9.25	-1000.6	-4685	-0.0000564	0.0005615	0.0035	1.03		2452.28	2452.28	2.45		Si
SLD 15	11.05	1276.04	-4805	-0.0000707	0.0005615	0.0035	1.03		2311.46	2311.46	1.81		Si
SLV 14	9.25	-2374.65	-2190	-0.0053474	0.0005615	0.0035	0.824		1318.74	1318.74	0.56		No
SLV 14	11.05	2122.28	-4367	-0.0022585	0.0005615	0.0035	0.824		2140.4	2140.4	1.01		Si
SLV 16	9.25	-2367.44	-3180	-0.0034132	0.0005615	0.0035	0.824		1780.23	1780.23	0.75		No
SLV 16	11.05	2350.13	-5340	-0.0003235	0.0005615	0.0035	1.03		2515.05	2515.05	1.07		Si
SLV 2	9.25	3056.04	-9194	-0.0002063	0.0005615	0.0035	1.03		4042.66	4042.66	1.32		Si
SLV 2	11.05	-1874.53	-3324	-0.0010285	0.0005615	0.0035	0.824		1845.94	1845.94	0.98		No
SLV 1	9.25	2797.08	-8885	-0.0001775	0.0005615	0.0035	1.03		3919.6	3919.6	1.4		Si
SLV 1	11.05	-1687.81	-3375	-0.000442	0.0005615	0.0035	0.824		1869.34	1869.34	1.11		Si
SLV 4	9.25	3063.25	-10185	-0.0001925	0.0005615	0.0035	1.03		4356.2	4356.2	1.42		Si
SLV 4	11.05	-1646.68	-4297	-0.0001241	0.0005615	0.0035	0.824		2282.28	2282.28	1.39		Si
SLD 13	9.25	-1002.08	-4254	-0.0000552	0.0005615	0.0035	1.03		2263.46	2263.46	2.26		Si
SLD 13	11.05	1174.8	-4378	-0.0000648	0.0005615	0.0035	1.03		2144.93	2144.93	1.83		Si

### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	l'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 81	9.25	417.85	-8804	-7331	423	1.03	1.03	-25421	10334	2980	40441	8636	2627	11262	No	26.65	Si
SLU 81	11.05	381.54	-6364	-5299	174	1.03	1.03	-18375	9394	2709	40441	8636	2627	11262	No	64.9	Si
SLU 20	9.25	378.99	-6969	-5803	421	1.03	1.03	-20121	9627	2776	40441	8636	2627	11262	No	26.77	Si





Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 20	11.05	256.77	-4994	-4159	194	1.03	1.03	-14421	8867	2557	40441	8636	2627	11262	No	58.04	Si
SLU 82	9.25	419.65	-8817	-7342	425	1.03	1.03	-25458	10339	2982	40441	8636	2627	11262	No	26.53	Si
SLU 84	11.05	382.92	-6374	-5308	172	1.03	1.03	-18404	9398	2710	40441	8636	2627	11262	No	65.63	Si
SLU 84	9.25	431.64	-9139	-7610	437	1.03	1.03	-26387	10463	3017	40441	8636	2627	11262	No	25.78	Si
SLU 84	11.05	402.51	-6655	-5542	164	1.03	1.03	-19216	9507	2742	40441	8636	2627	11262	No	68.53	Si
SLU 63	9.25	435.62	-8423	-7014	481	1.03	1.03	-24321	10187	2938	40441	8636	2627	11262	No	23.4	Si
SLU 63	11.05	333.48	-5983	-4982	175	1.03	1.03	-17274	9248	2667	40441	8636	2627	11262	No	64.23	Si
SLU 60	9.25	421.83	-8089	-6735	467	1.03	1.03	-23354	10058	2901	40441	8636	2627	11262	No	24.12	Si
SLU 60	11.05	312.51	-5691	-4739	185	1.03	1.03	-16433	9135	2635	40441	8636	2627	11262	No	61.03	Si
SLU 83	9.25	429.83	-9126	-7599	435	1.03	1.03	-26351	10458	3016	40441	8636	2627	11262	No	25.89	Si
SLU 83	11.05	401.13	-6645	-5533	166	1.03	1.03	-19186	9503	2741	40441	8636	2627	11262	No	67.73	Si
SLU 21	9.25	380.8	-6981	-5814	423	1.03	1.03	-20158	9632	2778	40441	8636	2627	11262	No	26.65	Si
SLU 21	11.05	258.14	-5005	-4167	192	1.03	1.03	-14450	8871	2558	40441	8636	2627	11262	No	58.62	Si
SLU 61	9.25	423.64	-8101	-6746	469	1.03	1.03	-23391	10063	2902	40441	8636	2627	11262	No	24.02	Si
SLU 61	11.05	313.89	-5702	-4748	183	1.03	1.03	-16462	9139	2636	40441	8636	2627	11262	No	61.68	Si
SLU 62	9.25	433.81	-8410	-7003	479	1.03	1.03	-24284	10182	2937	40441	8636	2627	11262	No	23.5	Si
SLU 62	11.05	332.1	-5972	-4973	177	1.03	1.03	-17244	9244	2666	40441	8636	2627	11262	No	63.53	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 15	9.25	-2626.41	-2871	-2391	-4897	0.824	0	0	0	0	40441	10363	2101	12464		2.55	Si
SLV 15	11.05	2536.86	-5391	-4489	-2454	0.824	0.1333	0	0	0	40441	10363	2101	12464		5.08	Si
SLV 6	9.25	1101.03	-5532	-4607	2424	1.03	0.9479	-15973	13611	3613	40441	12954	2627	15580		6.43	Si
SLV 6	11.05	-780.42	-2563	-2134	1335	0.824	0.7157	0	0	0	40441	10363	2101	12464		9.33	Si
SLV 3	9.25	2804.29	-9876	-8224	4425	1.03	0.6932	-28516	16120	3129	40441	12954	2627	15580		3.52	Si
SLV 3	11.05	-1459.95	-4348	-3621	1810	0.824	0.5377	0	0	0	40441	10363	2101	12464		6.89	Si
SLV 2	9.25	3056.04	-9194	-7656	5267	1.03	0.5479	-26547	15726	2412	40441	12954	2627	15580		2.96	Si
SLV 2	11.05	-1874.53	-3324	-2768	2419	0.824	0	0	0	0	40441	10363	2101	12464		5.15	Si
SLV 4	9.25	3063.25	-10185	-8481	4843	1.03	0.6427	-29408	16250	2924	40441	12954	2627	15580		3.22	Si
SLV 4	11.05	-1646.68	-4297	-3578	2035	0.824	0.3953	0	0	0	40441	10363	2101	12464		6.13	Si
SLV 13	9.25	-2633.62	-1881	-1566	-4473	0.824	0	0	0	0	40441	10363	2101	12464		2.79	Si
SLV 13	11.05	2309.01	-4418	-3679	-2070	0.824	0	0	0	0	40441	10363	2101	12464		6.02	Si
SLV 16	9.25	-2367.44	-3180	-2648	-4479	0.824	0	0	0	0	40441	10363	2101	12464		2.78	Si
SLV 16	11.05	2350.13	-5340	-4447	-2230	1.03	0.2246	-74289	16250	1022	40441	12954	2627	15580		6.99	Si
SLD 2	9.25	1430.23	-7380	-6146	2359	1.03	0.9636	-21310	14679	3961	40441	12954	2627	15580		6.6	Si
SLD 2	11.05	-613.71	-3910	-3256	1027	1.03	1.03	-11289	12675	3655	40441	12954	2627	15580		15.17	Si
SLV 14	9.25	-2374.65	-2190	-1823	-4055	0.824	0	0	0	0	40441	10363	2101	12464		3.07	Si
SLV 14	11.05	2122.28	-4367	-3636	-1845	0.824	0.087	0	0	0	40441	10363	2101	12464		6.75	Si
SLV 1	9.25	2797.08	-8885	-7399	4849	1.03	0.6006	-25655	15548	2615	40441	12954	2627	15580		3.21	Si
SLV 1	11.05	-1687.81	-3375	-2810	2195	0.824	0.0447	0	0	0	40441	10363	2101	12464		5.68	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.11 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 13	179667	0.46	5410	-1560	125.06	210.7	1.68	Si
SLV 14	179667	0.46	6481	-1869	125.06	250.59	2	Si
SLV 15	179667	0.46	8388	-2419	125.06	320.06	2.56	Si
SLV 16	179667	0.46	9459	-2728	125.06	358.26	2.86	Si
SLV 9	179667	0.46	10566	-3047	125.06	397.09	3.18	Si
SLV 10	179667	0.46	11258	-3247	125.06	421.03	3.37	Si
SLV 5	179667	0.46	17800	-5133	125.06	634.92	5.08	Si
SLV 6	179667	0.46	18492	-5333	125.06	656.21	5.25	Si
SLV 11	179667	0.46	20491	-5910	125.06	716.33	5.73	Si
SLV 12	179667	0.46	21183	-6109	125.06	736.64	5.89	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 10.11 Wa = 0.05 Ta = 0.0739

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 8	-4135	-6445	-77	1.178	565.8	0.931	18.3854	14.09547	Si
SLV 7	-4125	-6555	-77	1.18	564.8	0.931	18.42083	14.09547	Si
SLV 12	-4046	-7457	-49	1.204	556.9	0.93	18.80795	14.09547	Si
SLV 11	-4037	-7567	-49	1.206	555.9	0.93	18.84489	14.09547	Si
SLV 6	-3250	-3259	43	1.428	476.8	0.921	22.52441	14.09547	Si
SLV 5	-3241	-3369	43	1.431	475.8	0.921	22.57833	14.09547	Si
SLV 10	-3162	-4272	71	1.451	467.9	0.92	22.91745	14.09547	Si
SLV 9	-3152	-4382	71	1.454	466.9	0.92	22.97354	14.09547	Si
SLV 4	-3931	-4118	-68	1.228	545.2	0.929	19.20601	7.52414	Si
SLV 3	-3916	-4289	-68	1.231	543.7	0.929	19.26595	7.52414	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	5.217	SLU 25	Si
V_SLU	23.402	SLU 63	Si
PF_SLV	0.445	SLV 13	No
V_SLV	2.545	SLV 15	Si
PFFP_SLV	1.685	SLV 13	Si
R_SLV	1.304	SLV 8	Si



## Maschio 121

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-18.518	-3.314	-18.518	-0.094	L6	L7	3.221	0.16	3.52	3.52	3.52			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato \_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 62	8.35	1719.59	-16348	-0.000049	0.0004492	0.0035	3.2207	19491.1	23880.2	23880.2	13.89	No	Si
SLU 62	10.45	233.63	-12723	-0.0000325	0.0004492	0.0035	3.2207	16348.67	19519.14	19519.14	83.55	No	Si
SLU 77	8.35	1841.25	-18043	-0.0000541	0.0004492	0.0035	3.2207	20729.18	25829.57	25829.57	14.03	No	Si
SLU 77	10.45	267.45	-14355	-0.0000369	0.0004492	0.0035	3.2207	17846.52	21586.79	21586.79	80.71	No	Si
SLU 79	8.35	1845.68	-17893	-0.0000537	0.0004492	0.0035	3.2207	20625.91	25657.68	25657.68	13.9	No	Si
SLU 79	10.45	303.88	-14223	-0.0000367	0.0004492	0.0035	3.2207	17730.31	21434.75	21434.75	70.54	No	Si
SLU 60	8.35	1648.95	-15793	-0.0000472	0.0004492	0.0035	3.2207	19052.82	23240.51	23240.51	14.09	No	Si
SLU 60	10.45	184.32	-12109	-0.0000307	0.0004492	0.0035	3.2207	15750.05	18699.65	18699.65	101.45	No	Si
SLU 53	8.35	1653.87	-15964	-0.0000477	0.0004492	0.0035	3.2207	19189.31	23437.28	23437.28	14.17	No	Si
SLU 53	10.45	216.19	-12460	-0.0000318	0.0004492	0.0035	3.2207	16093.96	19170.59	19170.59	88.67	No	Si
SLU 81	8.35	1765.68	-17316	-0.0000518	0.0004492	0.0035	3.2207	20215.91	24993.11	24993.11	14.15	No	Si
SLU 81	10.45	186.27	-13391	-0.000034	0.0004492	0.0035	3.2207	16978.19	20400	20400	109.52	No	Si
SLU 50	8.35	1585.92	-15123	-0.0000452	0.0004492	0.0035	3.2207	18504.29	22470.5	22470.5	14.17	No	Si
SLU 50	10.45	346.25	-12018	-0.0000312	0.0004492	0.0035	3.2207	15659.17	18576.61	18576.61	53.65	No	Si
SLU 56	8.35	1724.51	-16519	-0.0000495	0.0004492	0.0035	3.2207	19622.73	24076.97	24076.97	13.96	No	Si
SLU 56	10.45	265.5	-13073	-0.0000336	0.0004492	0.0035	3.2207	16681.59	19981	19981	75.26	No	Si
SLU 58	8.35	1728.94	-16370	-0.0000491	0.0004492	0.0035	3.2207	19507.82	23905.08	23905.08	13.83	No	Si
SLU 58	10.45	301.93	-12941	-0.0000334	0.0004492	0.0035	3.2207	16556.71	19806.73	19806.73	65.6	No	Si
SLU 83	8.35	1836.33	-17872	-0.0000536	0.0004492	0.0035	3.2207	20610.87	25632.8	25632.8	13.96	No	Si
SLU 83	10.45	235.58	-14005	-0.0000358	0.0004492	0.0035	3.2207	17536.57	21183.82	21183.82	89.92	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLD 5	8.35	3503.03	-14108	-0.000051	0.0006738	0.0035	3.2207		21783.04	21783.04	6.22		Si
SLD 5	10.45	2169.44	-11104	-0.0000371	0.0006738	0.0035	3.2207		17634.6	17634.6	8.13		Si
SLV 12	8.35	-3959.98	-7113	-0.0000354	0.0006738	0.0035	3.2207		16600.34	16600.34	4.19		Si
SLV 12	10.45	-4328.27	-5094	-0.0000351	0.0006738	0.0035	3.2207		13644.51	13644.51	3.15		Si
SLV 11	8.35	-3772.67	-7275	-0.0000349	0.0006738	0.0035	3.2207		16831.33	16831.33	4.46		Si
SLV 11	10.45	-4107.4	-5213	-0.0000332	0.0006738	0.0035	3.2207		13822.85	13822.85	3.37		Si
SLV 9	8.35	6162.39	-15645	-0.0000675	0.0006738	0.0035	3.2207		23849.42	23849.42	3.87		Si
SLV 9	10.45	4806.52	-12257	-0.0000524	0.0006738	0.0035	3.2207		19245.14	19245.14	4		Si
SLV 7	8.35	-3542.57	-8459	-0.0000368	0.0006738	0.0035	3.2207		18521.56	18521.56	5.23		Si
SLV 7	10.45	-4227.88	-6400	-0.0000353	0.0006738	0.0035	3.2207		15570.29	15570.29	3.68		Si
SLV 6	8.35	6205.19	-16667	-0.0000704	0.0006738	0.0035	3.2207		25204.65	25204.65	4.06		Si
SLV 6	10.45	4465.19	-13323	-0.0000535	0.0006738	0.0035	3.2207		20711.8	20711.8	4.64		Si
SLV 5	8.35	6392.5	-16829	-0.0000718	0.0006738	0.0035	3.2207		25419.18	25419.18	3.98		Si
SLV 5	10.45	4686.05	-13443	-0.0000548	0.0006738	0.0035	3.2207		20876.07	20876.07	4.45		Si
SLD 9	8.35	3404.81	-13603	-0.0000492	0.0006738	0.0035	3.2207		21096.19	21096.19	6.2		Si
SLD 9	10.45	2220.79	-10597	-0.0000361	0.0006738	0.0035	3.2207		16921.65	16921.65	7.62		Si
SLV 10	8.35	5975.09	-15483	-0.0000662	0.0006738	0.0035	3.2207		23634.9	23634.9	3.96		Si
SLV 10	10.45	4585.66	-12137	-0.000051	0.0006738	0.0035	3.2207		19078.02	19078.02	4.16		Si
SLV 8	8.35	-3729.88	-8297	-0.0000373	0.0006738	0.0035	3.2207		18290.57	18290.57	4.9		Si
SLV 8	10.45	-4448.74	-6280	-0.0000365	0.0006738	0.0035	3.2207		15394.25	15394.25	3.46		Si



#### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 82	8.35	1716.65	-17282	-10147	1613	3.2207	3.2207	-19691	10833	5583	115546	18519	16426	34945	No	21.66	Si
SLU 82	10.45	145.22	-13362	-7846	1601	3.2207	3.2207	-15225	10363	5340	115546	18519	16426	34945	No	21.83	Si
SLU 60	8.35	1648.95	-15793	-9273	1454	3.2207	3.2207	-17994	10733	5531	115546	18519	16426	34945	No	24.03	Si
SLU 60	10.45	184.32	-12109	-7110	1443	3.2207	3.2207	-13798	10173	5242	115546	18519	16426	34945	No	24.21	Si
SLU 74	8.35	1770.6	-17487	-10267	1470	3.2207	3.2207	-19925	10833	5583	115546	18519	16426	34945	No	23.77	Si
SLU 74	10.45	218.14	-13741	-8068	1458	3.2207	3.2207	-15657	10421	5370	115546	18519	16426	34945	No	23.98	Si
SLU 81	8.35	1765.68	-17316	-10167	1620	3.2207	3.2207	-19730	10833	5583	115546	18519	16426	34945	No	21.57	Si
SLU 81	10.45	186.27	-13391	-7863	1608	3.2207	3.2207	-15258	10368	5343	115546	18519	16426	34945	No	21.73	Si
SLU 39	8.35	1463.09	-14484	-8504	1440	3.2207	3.2207	-16503	10534	5428	115546	18519	16426	34945	No	24.27	Si
SLU 39	10.45	129.64	-11239	-6599	1429	3.2207	3.2207	-12806	10041	5174	115546	18519	16426	34945	No	24.45	Si
SLU 75	8.35	1721.57	-17453	-10248	1463	3.2207	3.2207	-19886	10833	5583	115546	18519	16426	34945	No	23.88	Si
SLU 75	10.45	177.09	-13712	-8051	1450	3.2207	3.2207	-15624	10417	5368	115546	18519	16426	34945	No	24.09	Si
SLU 61	8.35	1599.92	-15759	-9253	1447	3.2207	3.2207	-17956	10727	5528	115546	18519	16426	34945	No	24.15	Si
SLU 61	10.45	143.28	-12080	-7093	1436	3.2207	3.2207	-13764	10169	5240	115546	18519	16426	34945	No	24.33	Si
SLU 84	8.35	1787.3	-17838	-10474	1579	3.2207	3.2207	-20325	10833	5583	115546	18519	16426	34945	No	22.13	Si
SLU 84	10.45	194.53	-13976	-8206	1566	3.2207	3.2207	-15924	10457	5388	115546	18519	16426	34945	No	22.31	Si
SLU 73	8.35	1622.67	-16725	-9820	1464	3.2207	3.2207	-19057	10833	5583	115546	18519	16426	34945	No	23.88	Si
SLU 73	10.45	136.85	-12947	-7602	1451	3.2207	3.2207	-14752	10300	5308	115546	18519	16426	34945	No	24.08	Si
SLU 83	8.35	1836.33	-17872	-10493	1586	3.2207	3.2207	-20363	10833	5583	115546	18519	16426	34945	No	22.03	Si
SLU 83	10.45	235.58	-14005	-8223	1573	3.2207	3.2207	-15958	10461	5391	115546	18519	16426	34945	No	22.21	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 10	8.35	5975.09	-15483	-9091	723	3.2207	3.2207	-17642	16028	8260	115546	27778	16426	44204		61.13	Si
SLV 10	10.45	4585.66	-12137	-7126	2061	3.2207	3.2207	-13829	15266	7867	115546	27778	16426	44204		21.45	Si
SLV 9	8.35	6162.39	-15645	-9186	740	3.2207	3.2207	-17826	16065	8279	115546	27778	16426	44204		59.77	Si
SLV 9	10.45	4806.52	-12257	-7197	2078	3.2207	3.2207	-13965	15293	7881	115546	27778	16426	44204		21.28	Si
SLV 1	8.35	3235.02	-15326	-8998	1146	3.2207	3.2207	-17462	15992	8241	115546	27778	16426	44204		38.57	Si
SLV 1	10.45	1486.17	-12395	-7278	1354	3.2207	3.2207	-14123	15325	7897	115546	27778	16426	44204		32.64	Si
SLV 6	8.35	6205.19	-16667	-9786	866	3.2207	3.2207	-18991	16250	8374	115546	27778	16426	44204		51.06	Si
SLV 6	10.45	4465.19	-13323	-7823	2101	3.2207	3.2207	-15181	15536	8006	115546	27778	16426	44204		21.04	Si
SLD 10	8.35	3322.98	-13533	-7946	846	3.2207	3.2207	-15419	15584	8031	115546	27778	16426	44204		52.25	Si
SLD 10	10.45	2124.29	-10545	-6191	1429	3.2207	3.2207	-12015	14903	7680	115546	27778	16426	44204		30.92	Si
SLD 9	8.35	3404.81	-13603	-7987	853	3.2207	3.2207	-15500	15600	8039	115546	27778	16426	44204		51.81	Si
SLD 9	10.45	2220.79	-10597	-6222	1437	3.2207	3.2207	-12075	14915	7686	115546	27778	16426	44204		30.77	Si
SLV 5	8.35	6392.5	-16829	-9881	882	3.2207	3.2207	-19175	16250	8374	115546	27778	16426	44204		50.11	Si
SLV 5	10.45	4686.05	-13443	-7893	2117	3.2207	3.2207	-15317	15563	8020	115546	27778	16426	44204		20.88	Si
SLV 2	8.35	2945.02	-15075	-8851	1121	3.2207	3.2207	-17177	15935	8212	115546	27778	16426	44204		39.44	Si
SLV 2	10.45	1144.21	-12210	-7169	1329	3.2207	3.2207	-13912	15282	7875	115546	27778	16426	44204		33.26	Si
SLD 6	8.35	3421.19	-14037	-8242	906	3.2207	3.2207	-15995	15699	8090	115546	27778	16426	44204		48.77	Si
SLD 6	10.45	2072.94	-11051	-6489	1447	3.2207	3.2207	-12592	15018	7739	115546	27778	16426	44204		30.55	Si
SLD 5	8.35	3503.03	-14108	-8284	914	3.2207	3.2207	-16075	15715	8098	115546	27778	16426	44204		48.39	Si
SLD 5	10.45	2169.44	-11104	-6520	1454	3.2207	3.2207	-12652	15030	7745	115546	27778	16426	44204		30.4	Si

#### Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 10.11 Ta 0.13 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 12	-5511	0.46	236.45	415.18	764.69	589.93	2.49	Si
SLV 11	-5647	0.46	236.45	424.76	777.75	601.26	2.54	Si
SLV 8	-6628	0.46	236.45	493.06	871.7	682.38	2.89	Si
SLV 16	-6716	0.46	236.45	499.1	880.07	689.59	2.92	Si
SLV 7	-6764	0.46	236.45	502.38	884.62	693.5	2.93	Si
SLV 15	-6927	0.46	236.45	513.5	900.08	706.79	2.99	Si
SLV 14	-8898	0.46	236.45	644.8	1087.23	866.02	3.66	Si
SLV 13	-9109	0.46	236.45	658.42	1107.04	882.73	3.73	Si
SLV 4	-10440	0.46	236.45	742.88	1232.14	987.51	4.18	Si
SLV 3	-10650	0.46	236.45	755.95	1251.91	1003.93	4.25	Si

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 10.11 Wa = 0.03 Ta = 0.1293

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 5	-9444	-16829	-203	1.641	1218.9	0.941	25.34832	18.89897	Si
SLV 6	-9338	-16667	-203	1.657	1208.2	0.94	25.60131	18.89897	Si
SLV 9	-8571	-15645	51	1.794	1130.5	0.937	27.83037	18.89897	Si
SLV 10	-8465	-15483	51	1.813	1119.9	0.937	28.13313	18.89897	Si
SLV 1	-8624	-15326	-446	1.747	1135.9	0.937	27.08314	13.2651	Si
SLV 2	-8460	-15075	-446	1.775	1119.4	0.937	27.53938	13.2651	Si
SLV 3	-7024	-12815	-400	2.071	974.3	0.929	32.39423	13.2651	Si
SLV 4	-6860	-12564	-400	2.11	957.8	0.928	33.0464	13.2651	Si
SLV 7	-4110	-8459	-51	3.17	682.4	0.908	50.76424	18.89897	Si
SLV 8	-4005	-8297	-51	3.229	671.9	0.907	51.76305	18.89897	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	13.826	SLU 58	Si
V_SLU	21.568	SLU 81	Si
PF_SLV	3.152	SLV 12	Si
V_SLV	20.877	SLV 5	Si
PFFP_SLV	2.495	SLV 12	Si
R_SLV	1.341	SLV 5	Si



## Maschio 124

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-13.778	-3.314	-15.433	-3.314	L6	L7	1.655	0.28	3.52	3.52	3.52			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau_0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma_{fd}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 82	8.35	-21.47	-11154	-0.0000377	0.0003743	0.0035	1.655	7047.99	8351	8351	388.96	No	Si
SLU 82	10.45	2020.93	-10377	-0.0000601	0.0003743	0.0035	1.655	6698.58	7331.2	7331.2	3.63	No	Si
SLU 18	8.35	79.2	-8441	-0.0000289	0.0003743	0.0035	1.655	5735.33	6073.88	6073.88	76.69	No	Si
SLU 18	10.45	1528.04	-7600	-0.0000437	0.0003743	0.0035	1.655	5275.94	5539.32	5539.32	3.63	No	Si
SLU 81	8.35	-22.88	-11141	-0.0000376	0.0003743	0.0035	1.655	7042.21	8343.52	8343.52	364.73	No	Si
SLU 81	10.45	2022.26	-10368	-0.0000601	0.0003743	0.0035	1.655	6694.05	7325.44	7325.44	3.62	No	Si
SLU 84	8.35	-13.1	-11543	-0.000039	0.0003743	0.0035	1.655	7214.96	8559.81	8559.81	653.19	No	Si
SLU 84	10.45	2060.8	-10796	-0.0000622	0.0003743	0.0035	1.655	6889.69	7540.55	7540.55	3.66	No	Si
SLU 42	8.35	-44.67	-9539	-0.0000323	0.0003743	0.0035	1.655	6297.83	7420.61	7420.61	166.13	No	Si
SLU 42	10.45	1867.26	-9131	-0.0000535	0.0003743	0.0035	1.655	6093.56	6522.54	6522.54	3.49	No	Si
SLU 40	8.35	-53.03	-9151	-0.000031	0.0003743	0.0035	1.655	6103.53	7185.82	7185.82	135.49	No	Si
SLU 40	10.45	1827.39	-8712	-0.0000515	0.0003743	0.0035	1.655	5877.97	6248.72	6248.72	3.42	No	Si
SLU 83	8.35	-14.51	-11530	-0.0000389	0.0003743	0.0035	1.655	7209.36	8552.8	8552.8	589.43	No	Si
SLU 83	10.45	2062.14	-10787	-0.0000622	0.0003743	0.0035	1.655	6885.31	7535.91	7535.91	3.65	No	Si
SLU 41	8.35	-46.07	-9526	-0.0000322	0.0003743	0.0035	1.655	6291.3	7412.56	7412.56	160.88	No	Si
SLU 41	10.45	1868.6	-9121	-0.0000535	0.0003743	0.0035	1.655	6088.6	6516.13	6516.13	3.49	No	Si
SLU 39	8.35	-54.44	-9137	-0.000031	0.0003743	0.0035	1.655	6096.83	7177.88	7177.88	131.85	No	Si
SLU 39	10.45	1828.72	-8702	-0.0000514	0.0003743	0.0035	1.655	5872.87	6242.36	6242.36	3.41	No	Si
SLU 19	8.35	80.61	-8454	-0.0000289	0.0003743	0.0035	1.655	5742.36	6082.38	6082.38	75.45	No	Si
SLU 19	10.45	1526.71	-7610	-0.0000437	0.0003743	0.0035	1.655	5281.42	5545.46	5545.46	3.63	No	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 15	8.35	-4280.99	-4905	-0.0006505	0.0005615	0.0035	1.324		4507.28	4507.28	1.05		Si
SLV 15	10.45	5288.67	-11291	-0.00012	0.0005615	0.0035	1.655		8180.27	8180.27	1.55		Si
SLV 2	8.35	4160.27	-10829	-0.0000911	0.0005615	0.0035	1.655		7889.86	7889.86	1.9		Si
SLV 2	10.45	-2923.6	-3277	-0.0004259	0.0005615	0.0035	1.324		3282.47	3282.47	1.12		Si
SLD 13	8.35	-1825.77	-6064	-0.0000413	0.0005615	0.0035	1.655		5353.17	5353.17	2.93		Si
SLD 13	10.45	2820.56	-8530	-0.0000626	0.0005615	0.0035	1.655		6469	6469	2.29		Si
SLV 4	8.35	4071.43	-12076	-0.0000919	0.0005615	0.0035	1.655		8677.78	8677.78	2.13		Si
SLV 4	10.45	-2653.93	-4355	-0.000073	0.0005615	0.0035	1.324		4095.88	4095.88	1.54		Si
SLV 16	8.35	-3985.81	-5126	-0.0003041	0.0005615	0.0035	1.324		4667.7	4667.7	1.17		Si
SLV 16	10.45	4966.96	-10969	-0.0001109	0.0005615	0.0035	1.655		7977.75	7977.75	1.61		Si
SLV 1	8.35	3865.09	-10607	-0.000085	0.0005615	0.0035	1.655		7751.14	7751.14	2.01		Si
SLV 1	10.45	-2601.89	-3599	-0.0001216	0.0005615	0.0035	1.324		3524.18	3524.18	1.35		Si
SLD 15	8.35	-1865.63	-6602	-0.0000435	0.0005615	0.0035	1.655		5737.66	5737.66	3.08		Si
SLD 15	10.45	2939.85	-9003	-0.0000657	0.0005615	0.0035	1.655		6758.01	6758.01	2.3		Si
SLV 14	8.35	-3896.97	-3879	-0.0009352	0.0005615	0.0035	1.324		3734.76	3734.76	0.96		No
SLV 14	10.45	4697.3	-9892	-0.0001058	0.0005615	0.0035	1.655		7305.81	7305.81	1.56		Si
SLV 13	8.35	-4192.16	-3657	-0.0014139	0.0005615	0.0035	1.324		3567.59	3567.59	0.85		No
SLV 13	10.45	5019.01	-10214	-0.0001155	0.0005615	0.0035	1.655		7505.65	7505.65	1.5		Si
SLV 3	8.35	3776.25	-11855	-0.0000865	0.0005615	0.0035	1.655		8537.01	8537.01	2.26		Si
SLV 3	10.45	-2332.22	-4677	-0.0000514	0.0005615	0.0035	1.324		4341.47	4341.47	1.86		Si

### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	l'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 72	8.35	-131.47	-10965	-9131	-1107	1.655	1.655	-19704	9572	4436	40441	13876	4220	18097	No	16.35	Si
SLU 72	10.45	1561.41	-10427	-8683	-2533	1.655	1.655	-18737	9443	4376	40441	13876	4220	18097	No	7.14	Si
SLU 69	8.35	-152.16	-11028	-9183	-1155	1.655	1.655	-19817	9587	4443	40441	13876	4220	18097	No	15.66	Si



Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 69	10.45	1607.42	-10546	-8782	-2610	1.655	1.655	-18950	9471	4389	40441	13876	4220	18097	No	6.93	Si
SLU 66	8.35	-160.53	-10639	-8860	-1138	1.655	1.655	-19118	9494	4399	40441	13876	4220	18097	No	15.91	Si
SLU 66	10.45	1567.54	-10127	-8433	-2538	1.655	1.655	-18197	9371	4342	40441	13876	4220	18097	No	7.13	Si
SLU 78	8.35	-62.05	-11718	-9758	-970	1.655	1.655	-21057	9752	4519	40441	13876	4220	18097	No	18.66	Si
SLU 78	10.45	1983.57	-11107	-9249	-2442	1.655	1.655	-19959	9606	4451	40441	13876	4220	18097	No	7.41	Si
SLU 64	8.35	-149.6	-10174	-8472	-1075	1.655	1.655	-18283	9382	4348	40441	13876	4220	18097	No	16.84	Si
SLU 64	10.45	1483	-9579	-7977	-2390	1.655	1.655	-17213	9240	4282	40441	13876	4220	18097	No	7.57	Si
SLU 68	8.35	-138.9	-10585	-8814	-1087	1.655	1.655	-19021	9481	4393	40441	13876	4220	18097	No	16.65	Si
SLU 68	10.45	1520.65	-10015	-8339	-2460	1.655	1.655	-17996	9344	4330	40441	13876	4220	18097	No	7.36	Si
SLU 77	8.35	-63.45	-11705	-9747	-973	1.655	1.655	-21033	9749	4518	40441	13876	4220	18097	No	18.6	Si
SLU 77	10.45	1984.9	-11098	-9241	-2443	1.655	1.655	-19942	9603	4450	40441	13876	4220	18097	No	7.41	Si
SLU 71	8.35	-132.87	-10952	-9120	-1110	1.655	1.655	-19680	9568	4434	40441	13876	4220	18097	No	16.31	Si
SLU 71	10.45	1562.75	-10417	-8675	-2534	1.655	1.655	-18719	9440	4375	40441	13876	4220	18097	No	7.14	Si
SLU 70	8.35	-150.76	-11041	-9194	-1152	1.655	1.655	-19841	9590	4444	40441	13876	4220	18097	No	15.71	Si
SLU 70	10.45	1606.08	-10556	-8790	-2609	1.655	1.655	-18968	9473	4390	40441	13876	4220	18097	No	6.94	Si
SLU 67	8.35	-159.12	-10653	-8871	-1135	1.655	1.655	-19142	9497	4401	40441	13876	4220	18097	No	15.95	Si
SLU 67	10.45	1566.21	-10137	-8441	-2537	1.655	1.655	-18215	9373	4344	40441	13876	4220	18097	No	7.13	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 15	8.35	-1865.63	-6602	-5498	-3742	1.655	1.6348	-11864	12790	5854	40441	20815	4220	25035		6.69	Si
SLD 15	10.45	2939.85	-9003	-7497	-4226	1.655	1.5029	-16178	13652	5745	40441	20815	4220	25035		5.92	Si
SLV 2	8.35	4160.27	-10829	-9017	6392	1.655	1.33	-19459	14308	5328	40441	20815	4220	25035		3.92	Si
SLV 2	10.45	-2923.6	-3277	-2729	4263	1.324	0	0	0	0	40441	16652	3376	20028		4.7	Si
SLV 13	8.35	-4192.16	-3657	-3045	-7992	1.324	0	0	0	0	40441	16652	3376	20028		2.51	Si
SLV 13	10.45	5019.01	-10214	-8505	-7135	1.655	1.0083	-18353	14087	3977	40441	20815	4220	25035		3.51	Si
SLV 15	8.35	-4280.99	-4905	-4084	-7806	1.324	0	0	0	0	40441	16652	3376	20028		2.57	Si
SLV 15	10.45	5288.67	-11291	-9402	-7627	1.655	1.0773	-20289	14474	4366	40441	20815	4220	25035		3.28	Si
SLV 14	8.35	-3896.97	-3879	-3230	-7483	1.324	0	0	0	0	40441	16652	3376	20028		2.68	Si
SLV 14	10.45	4697.3	-9892	-8237	-6627	1.655	1.0579	-17775	13972	4139	40441	20815	4220	25035		3.78	Si
SLV 1	8.35	3865.09	-10607	-8833	5883	1.655	1.3894	-19061	14229	5535	40441	20815	4220	25035		4.26	Si
SLV 1	10.45	-2601.89	-3599	-2997	3755	1.324	0.3138	0	0	0	40441	16652	3376	20028		5.33	Si
SLV 11	8.35	-1512.34	-8832	-7354	-2642	1.655	1.655	-15871	13591	6298	40441	20815	4220	25035		9.48	Si
SLV 11	10.45	2879.01	-10176	-8473	-4300	1.655	1.6337	-18285	14074	6438	40441	20815	4220	25035		5.82	Si
SLV 4	8.35	4071.43	-12076	-10056	6578	1.655	1.4711	-21701	14757	6079	40441	20815	4220	25035		3.81	Si
SLV 4	10.45	-2653.93	-4355	-3626	3771	1.324	0.6542	0	0	0	40441	16652	3376	20028		5.31	Si
SLV 3	8.35	3776.25	-11855	-9872	6070	1.655	1.5269	-21303	14677	6275	40441	20815	4220	25035		4.12	Si
SLV 3	10.45	-2332.22	-4677	-3894	3263	1.324	0.9864	0	0	0	40441	16652	3376	20028		6.14	Si
SLV 16	8.35	-3985.81	-5126	-4269	-7297	1.324	0.1499	0	0	0	40441	16652	3376	20028		2.74	Si
SLV 16	10.45	4966.96	-10969	-9134	-7119	1.655	1.1241	-19711	14359	4519	40441	20815	4220	25035		3.52	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.11 Wa 0.05 denominatore 8  $\gamma M = 2$

Comb.	fd	Sa	$\sigma 0$	N	M	Mc	Coeff.s.	Verifica
SLV 2	179667	0.46	7671	-3555	200.95	472.7	2.35	Si
SLV 1	179667	0.46	8366	-3877	200.95	513.03	2.55	Si
SLV 4	179667	0.46	9995	-4632	200.95	606.02	3.02	Si
SLV 6	179667	0.46	10104	-4682	200.95	612.14	3.05	Si
SLV 5	179667	0.46	10553	-4890	200.95	637.31	3.17	Si
SLV 3	179667	0.46	10690	-4954	200.95	644.98	3.21	Si
SLV 10	179667	0.46	14407	-6676	200.95	846.51	4.21	Si
SLV 9	179667	0.46	14856	-6884	200.95	870.04	4.33	Si
SLV 8	179667	0.46	17850	-8272	200.95	1022.68	5.09	Si
SLV 7	179667	0.46	18298	-8480	200.95	1044.89	5.2	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 10.11 Wa = 0.05 Ta = 0.0739

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 8	-5850	-11060	239	1.286	829.1	0.926	20.18079	14.09547	Si
SLV 7	-5835	-10917	239	1.288	827.6	0.926	20.22204	14.09547	Si
SLV 12	-5458	-8975	376	1.336	789.7	0.923	21.03988	14.09547	Si
SLV 11	-5443	-8832	376	1.339	788.2	0.923	21.08543	14.09547	Si
SLV 6	-4116	-6901	-376	1.648	655.4	0.912	26.26403	14.09547	Si
SLV 5	-4101	-6758	-376	1.652	653.9	0.912	26.33649	14.09547	Si
SLV 10	-3725	-4816	-239	1.795	616.5	0.908	28.73624	14.09547	Si
SLV 9	-3710	-4673	-239	1.8	615	0.908	28.82153	14.09547	Si
SLV 4	-5704	-12076	-137	1.325	814.4	0.925	20.82405	7.52414	Si
SLV 3	-5681	-11855	-137	1.329	812.2	0.925	20.89306	7.52414	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.414	SLU 39	Si
V_SLU	6.934	SLU 69	Si
PF_SLV	0.851	SLV 13	No
V_SLV	2.506	SLV 13	Si
PFFP_SLV	2.352	SLV 2	Si
R_SLV	1.432	SLV 8	Si



## Maschio 127

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-15.033	2.166	-15.033	6.386	L6	L7	4.22	0.16	3.52	3.52	3.52			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	s,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 45	8.35	602.36	-14862	-0.0000296	0.0004492	0.0035	4.22	25709.32	30323.8	30323.8	50.34	No	Si
SLU 45	10.45	384.75	-11553	-0.0000226	0.0004492	0.0035	4.22	20962.95	24349.13	24349.13	63.29	No	Si
SLU 35	8.35	125.32	-14701	-0.0000279	0.0004492	0.0035	4.22	25491.23	30038.28	30038.28	239.68	No	Si
SLU 35	10.45	458.25	-11979	-0.0000236	0.0004492	0.0035	4.22	21605.76	25132.78	25132.78	54.84	No	Si
SLU 14	8.35	281.87	-13333	-0.0000257	0.0004492	0.0035	4.22	23586.77	27590.65	27590.65	97.88	No	Si
SLU 14	10.45	420.88	-10751	-0.0000212	0.0004492	0.0035	4.22	19729.1	22875.63	22875.63	54.35	No	Si
SLU 8	8.35	521.65	-12918	-0.0000256	0.0004492	0.0035	4.22	22988.53	26839.78	26839.78	51.45	No	Si
SLU 8	10.45	363.76	-10336	-0.0000202	0.0004492	0.0035	4.22	19075.94	22101.33	22101.33	60.76	No	Si
SLU 49	8.35	589.05	-15813	-0.0000314	0.0004492	0.0035	4.22	26970.65	32009.54	32009.54	54.34	No	Si
SLU 49	10.45	366.8	-12504	-0.0000244	0.0004492	0.0035	4.22	22385.34	26093.68	26093.68	71.14	No	Si
SLU 51	8.35	610.42	-15852	-0.0000315	0.0004492	0.0035	4.22	27020.87	32076.74	32076.74	52.55	No	Si
SLU 51	10.45	351.19	-12543	-0.0000244	0.0004492	0.0035	4.22	22442.1	26163.44	26163.44	74.5	No	Si
SLU 50	8.35	691.28	-15790	-0.0000316	0.0004492	0.0035	4.22	26940.62	31969.42	31969.42	46.25	No	Si
SLU 50	10.45	425.97	-12481	-0.0000245	0.0004492	0.0035	4.22	22351.41	26052.03	26052.03	61.16	No	Si
SLU 43	8.35	556.17	-14010	-0.0000278	0.0004492	0.0035	4.22	24541.73	28812.99	28812.99	51.81	No	Si
SLU 43	10.45	312.31	-10702	-0.0000208	0.0004492	0.0035	4.22	19651.28	22783.98	22783.98	72.95	No	Si
SLU 6	8.35	500.28	-12879	-0.0000255	0.0004492	0.0035	4.22	22932.51	26770.02	26770.02	53.51	No	Si
SLU 6	10.45	379.37	-10297	-0.0000202	0.0004492	0.0035	4.22	19014.81	22029.03	22029.03	58.07	No	Si
SLU 48	8.35	669.92	-15752	-0.0000315	0.0004492	0.0035	4.22	26890.27	31901.21	31901.21	47.62	No	Si
SLU 48	10.45	441.58	-12443	-0.0000245	0.0004492	0.0035	4.22	22294.52	25982.27	25982.27	58.84	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 12	8.35	-12228.36	-13165	-0.0000592	0.0006738	0.0035	4.22		35910.97	35910.97	2.94		Si
SLV 12	10.45	-10522.99	-10374	-0.00005	0.0006738	0.0035	4.22		30696.99	30696.99	2.92		Si
SLV 14	8.35	6830.97	-9970	-0.0000367	0.0006738	0.0035	4.22		21684.35	21684.35	3.17		Si
SLV 14	10.45	3731.87	-6726	-0.0000223	0.0006738	0.0035	4.22		15392.14	15392.14	4.12		Si
SLV 10	8.35	14257.25	-9456	-0.0000846	0.0006738	0.0035	4.22		20696.37	20696.37	1.45		Si
SLV 10	10.45	11100.72	-6633	-0.0000817	0.0006738	0.0035	4.22		15209.97	15209.97	1.37		Si
SLV 6	8.35	12643.1	-10121	-0.0000626	0.0006738	0.0035	4.22		21969.85	21969.85	1.74		Si
SLV 6	10.45	10887.23	-7668	-0.000059	0.0006738	0.0035	4.22		17239.05	17239.05	1.58		Si
SLV 8	8.35	-13842.52	-13830	-0.0000665	0.0006738	0.0035	4.22		37152.49	37152.49	2.68		Si
SLV 8	10.45	-10736.49	-11409	-0.0000516	0.0006738	0.0035	4.22		32631.32	32631.32	3.04		Si
SLV 7	8.35	-13698.44	-13860	-0.0000659	0.0006738	0.0035	4.22		37209.9	37209.9	2.72		Si
SLV 7	10.45	-10555.46	-11440	-0.0000509	0.0006738	0.0035	4.22		32688.73	32688.73	3.1		Si
SLV 13	8.35	7054.04	-10018	-0.0000374	0.0006738	0.0035	4.22		21774.72	21774.72	3.09		Si
SLV 13	10.45	4012.15	-6773	-0.0000231	0.0006738	0.0035	4.22		15485.38	15485.38	3.86		Si
SLV 9	8.35	14401.33	-9487	-0.0000864	0.0006738	0.0035	4.22		20755.66	20755.66	1.44		Si
SLV 9	10.45	11281.75	-6663	-0.0000862	0.0006738	0.0035	4.22		15270.2	15270.2	1.35		Si
SLV 11	8.35	-12084.29	-13196	-0.0000587	0.0006738	0.0035	4.22		35968.38	35968.38	2.98		Si
SLV 11	10.45	-10341.96	-10405	-0.0000492	0.0006738	0.0035	4.22		30754.4	30754.4	2.97		Si
SLV 5	8.35	12787.17	-10152	-0.0000636	0.0006738	0.0035	4.22		22028.22	22028.22	1.72		Si
SLV 5	10.45	11068.26	-7699	-0.0000609	0.0006738	0.0035	4.22		17299.27	17299.27	1.56		Si



#### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 51	8.35	610.42	-15852	-9308	152	4.22	4.22	-13785	10171	6868	115546	24265	21522	45787	No	301.94	Si
SLU 51	10.45	351.19	-12543	-7365	152	4.22	4.22	-10907	9788	6609	115546	24265	21522	45787	No	301.94	Si
SLU 42	8.35	-95.33	-14106	-8282	-181	4.22	4.22	-12266	9969	6731	115546	24265	21522	45787	No	253.53	Si
SLU 42	10.45	328.82	-11384	-6684	-181	4.22	4.22	-9900	9653	6518	115546	24265	21522	45787	No	253.53	Si
SLU 33	8.35	-23.09	-13872	-8145	-145	4.22	4.22	-12063	9942	6713	115546	24265	21522	45787	No	315.43	Si
SLU 33	10.45	326.64	-11151	-6547	-145	4.22	4.22	-9697	9626	6500	115546	24265	21522	45787	No	315.43	Si
SLU 50	8.35	691.28	-15790	-9271	155	4.22	4.22	-13731	10164	6863	115546	24265	21522	45787	No	296.28	Si
SLU 50	10.45	425.97	-12481	-7329	155	4.22	4.22	-10854	9781	6604	115546	24265	21522	45787	No	296.28	Si
SLU 39	8.35	-82.03	-13154	-7724	-183	4.22	4.22	-11439	9859	6656	115546	24265	21522	45787	No	250.46	Si
SLU 39	10.45	346.77	-10433	-6126	-183	4.22	4.22	-9072	9543	6443	115546	24265	21522	45787	No	250.46	Si
SLU 40	8.35	-162.89	-13216	-7760	-186	4.22	4.22	-11493	9866	6661	115546	24265	21522	45787	No	246.56	Si
SLU 40	10.45	271.99	-10494	-6162	-186	4.22	4.22	-9126	9550	6448	115546	24265	21522	45787	No	246.56	Si
SLU 32	8.35	57.77	-13811	-8109	-142	4.22	4.22	-12010	9935	6708	115546	24265	21522	45787	No	321.85	Si
SLU 32	10.45	401.42	-11089	-6511	-142	4.22	4.22	-9643	9619	6495	115546	24265	21522	45787	No	321.85	Si
SLU 43	8.35	556.17	-14010	-8226	144	4.22	4.22	-12183	9958	6724	115546	24265	21522	45787	No	317.25	Si
SLU 43	10.45	312.31	-10702	-6283	144	4.22	4.22	-9306	9574	6464	115546	24265	21522	45787	No	317.25	Si
SLU 41	8.35	-14.47	-14044	-8246	-178	4.22	4.22	-12213	9962	6726	115546	24265	21522	45787	No	257.66	Si
SLU 41	10.45	403.6	-11323	-6648	-178	4.22	4.22	-9846	9646	6513	115546	24265	21522	45787	No	257.66	Si
SLU 47	8.35	488.96	-15003	-8809	145	4.22	4.22	-13047	10073	6801	115546	24265	21522	45787	No	316.63	Si
SLU 47	10.45	244.5	-11694	-6866	145	4.22	4.22	-10169	9689	6542	115546	24265	21522	45787	No	316.63	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 8	8.35	-13842.52	-13830	-8120	-575	4.22	3.3272	-15355	15571	8289	115546	36398	21522	57920		100.73	Si
SLV 8	10.45	-10736.49	-11409	-6699	-1718	4.22	3.5069	-12003	14901	8361	115546	36398	21522	57920		33.72	Si
SLV 10	8.35	14257.25	-9456	-5552	642	4.22	1.8068	-8223	14145	4089	115546	36398	21522	57920		90.2	Si
SLV 10	10.45	11100.72	-6633	-3894	1785	4.22	1.309	-18761	16250	3403	115546	36398	21522	57920		32.45	Si
SLV 6	8.35	12643.1	-10121	-5942	161	4.22	2.5823	-8801	14260	5892	115546	36398	21522	57920		360.64	Si
SLV 6	10.45	10887.23	-7668	-4502	1226	4.22	2.0706	-6668	13834	4583	115546	36398	21522	57920		47.26	Si
SLV 13	8.35	7054.04	-10018	-5882	924	4.22	4.2176	-8712	14242	9611	115546	36398	21522	57920		62.68	Si
SLV 13	10.45	4012.15	-6773	-3977	1385	4.22	4.22	-5890	13678	9235	115546	36398	21522	57920		41.82	Si
SLV 7	8.35	-13698.44	-13860	-8138	-593	4.22	3.365	-15217	15544	8369	115546	36398	21522	57920		97.74	Si
SLV 7	10.45	-10555.46	-11440	-6717	-1735	4.22	3.562	-11849	14870	8475	115546	36398	21522	57920		33.37	Si
SLV 4	8.35	-6495.23	-13298	-7808	-875	4.22	4.22	-11564	14813	10002	115546	36398	21522	57920		66.23	Si
SLV 4	10.45	-3466.89	-11300	-6635	-1335	4.22	4.22	-9826	14465	9767	115546	36398	21522	57920		43.37	Si
SLV 5	8.35	12787.17	-10152	-5961	143	4.22	2.5511	-8828	14266	5823	115546	36398	21522	57920		405.02	Si
SLV 5	10.45	11068.26	-7699	-4520	1208	4.22	2.017	-6695	13839	4466	115546	36398	21522	57920		47.95	Si
SLV 3	8.35	-6272.16	-13346	-7836	-902	4.22	4.22	-11606	14821	10007	115546	36398	21522	57920		64.23	Si
SLV 3	10.45	-3186.61	-11347	-6663	-1363	4.22	4.22	-9867	14473	9773	115546	36398	21522	57920		42.5	Si
SLV 9	8.35	14401.33	-9487	-5570	625	4.22	1.7759	-8250	14150	4021	115546	36398	21522	57920		92.74	Si
SLV 9	10.45	11281.75	-6663	-3912	1767	4.22	1.2507	-19735	16250	3252	115546	36398	21522	57920		32.77	Si
SLV 14	8.35	6830.97	-9970	-5854	951	4.22	4.22	-8670	14234	9611	115546	36398	21522	57920		60.88	Si
SLV 14	10.45	3731.87	-6726	-3949	1412	4.22	4.22	-5849	13670	9230	115546	36398	21522	57920		41.01	Si

#### Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 10.11 Ta 0.13 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 10	-7492	0.46	309.82	563.09	1029.38	796.23	2.57	Si
SLV 9	-7523	0.46	309.82	565.25	1032.32	798.79	2.58	Si
SLV 14	-7744	0.46	309.82	580.78	1053.57	817.18	2.64	Si
SLV 13	-7792	0.46	309.82	584.1	1058.14	821.12	2.65	Si
SLV 6	-8264	0.46	309.82	616.97	1103.4	860.19	2.78	Si
SLV 5	-8295	0.46	309.82	619.1	1106.33	862.72	2.78	Si
SLV 16	-8740	0.46	309.82	649.78	1148.63	899.21	2.9	Si
SLV 15	-8787	0.46	309.82	653.05	1153.15	903.1	2.91	Si
SLV 2	-10317	0.46	309.82	756.56	1298.46	1027.51	3.32	Si
SLV 1	-10365	0.46	309.82	759.73	1302.97	1031.35	3.33	Si

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 10.11 Wa = 0.03 Ta = 0.1293

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 7	-8636	-13860	-274	2.202	1219.4	0.926	34.5429	18.89897	Si
SLV 8	-8599	-13830	-274	2.209	1215.7	0.926	34.6676	18.89897	Si
SLV 11	-7691	-13196	209	2.418	1124.4	0.922	38.12801	18.89897	Si
SLV 12	-7654	-13165	209	2.427	1120.7	0.921	38.27929	18.89897	Si
SLV 3	-8713	-13346	-814	2.136	1227.2	0.927	33.50522	13.2651	Si
SLV 4	-8656	-13298	-814	2.148	1221.4	0.926	33.69144	13.2651	Si
SLV 5	-5678	-10152	-207	3.035	923.2	0.91	48.4882	18.89897	Si
SLV 6	-5641	-10121	-207	3.049	919.5	0.909	48.73066	18.89897	Si
SLV 1	-7826	-12233	-794	2.327	1137.9	0.922	36.66348	13.2651	Si
SLV 2	-7769	-12186	-794	2.34	1132.2	0.922	36.88594	13.2651	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	46.247	SLU 50	Si
V_SLU	246.56	SLU 40	Si
PF_SLV	1.354	SLV 9	Si
V_SLV	32.447	SLV 10	Si
PFFP_SLV	2.57	SLV 10	Si
R_SLV	1.828	SLV 7	Si





## Maschio 128

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-13.778	-4.824	-13.778	-3.384	L6	L7	1.44	0.28	3.52	3.52	3.52			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato \_Corti

fb	fk	fvk0	fmedio	$\tau_0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma_{f,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 76	8.35	-514.7	-11254	-0.0000525	0.0003743	0.0035	1.4402	5882.83	7026.32	7026.32	13.65	No	Si
SLU 76	11.87	-2.75	-6009	-0.0000227	0.0003743	0.0035	1.4402	3693.61	4363.41	4363.41	1588.71	No	Si
SLU 73	8.35	-505.59	-10926	-0.0000509	0.0003743	0.0035	1.4402	5773.96	6884.32	6884.32	13.62	No	Si
SLU 73	11.87	12.82	-5688	-0.0000216	0.0003743	0.0035	1.4402	3528.57	3724.63	3724.63	290.54	No	Si
SLU 41	8.35	-473.77	-9821	-0.0000457	0.0003743	0.0035	1.4402	5380.37	6366.41	6366.41	13.44	No	Si
SLU 41	11.87	47.83	-5057	-0.0000197	0.0003743	0.0035	1.4402	3193.33	3404.76	3404.76	71.18	No	Si
SLU 40	8.35	-471.49	-9529	-0.0000445	0.0003743	0.0035	1.4402	5269.24	6223.54	6223.54	13.2	No	Si
SLU 40	11.87	60.62	-4764	-0.0000188	0.0003743	0.0035	1.4402	3032.61	3249.4	3249.4	53.6	No	Si
SLU 83	8.35	-538.09	-11601	-0.0000544	0.0003743	0.0035	1.4402	5993.47	7177.98	7177.98	13.34	No	Si
SLU 83	11.87	25.73	-6043	-0.0000232	0.0003743	0.0035	1.4402	3710.91	3907.19	3907.19	151.83	No	Si
SLU 82	8.35	-535.81	-11309	-0.0000531	0.0003743	0.0035	1.4402	5900.57	7050.12	7050.12	13.16	No	Si
SLU 82	11.87	38.52	-5749	-0.0000222	0.0003743	0.0035	1.4402	3560.32	3755.96	3755.96	97.5	No	Si
SLU 42	8.35	-480.6	-9858	-0.000046	0.0003743	0.0035	1.4402	5394.22	6383.41	6383.41	13.28	No	Si
SLU 42	11.87	45.05	-5085	-0.0000198	0.0003743	0.0035	1.4402	3208.03	3418.51	3418.51	75.88	No	Si
SLU 84	8.35	-544.92	-11638	-0.0000547	0.0003743	0.0035	1.4402	6005.02	7194.27	7194.27	13.2	No	Si
SLU 84	11.87	22.96	-6070	-0.0000232	0.0003743	0.0035	1.4402	3724.67	3921.24	3921.24	170.8	No	Si
SLU 39	8.35	-464.66	-9492	-0.0000442	0.0003743	0.0035	1.4402	5254.96	6205.27	6205.27	13.35	No	Si
SLU 39	11.87	63.4	-4737	-0.0000187	0.0003743	0.0035	1.4402	3017.6	3234.45	3234.45	51.02	No	Si
SLU 81	8.35	-528.98	-11272	-0.0000528	0.0003743	0.0035	1.4402	5888.61	7034.05	7034.05	13.3	No	Si
SLU 81	11.87	41.3	-5722	-0.0000222	0.0003743	0.0035	1.4402	3546.26	3742.06	3742.06	90.61	No	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 5	8.35	824.64	-2595	-0.0000228	0.0005615	0.0035	1.4402		1919.13	1919.13	2.33		Si
SLV 5	11.87	-460.42	-1278	-0.0000125	0.0005615	0.0035	1.4402		1407.06	1407.06	3.06		Si
SLV 2	8.35	655.98	-5948	-0.0000324	0.0005615	0.0035	1.4402		4082.7	4082.7	6.22		Si
SLV 2	11.87	-1059.38	-3803	-0.0000306	0.0005615	0.0035	1.4402		3099.07	3099.07	2.93		Si
SLV 1	8.35	597.84	-5975	-0.0000316	0.0005615	0.0035	1.4402		4099.21	4099.21	6.86		Si
SLV 1	11.87	-1006.5	-3765	-0.0000296	0.0005615	0.0035	1.4402		3073.8	3073.8	3.05		Si
SLV 14	8.35	-669.05	-6353	-0.0000342	0.0005615	0.0035	1.4402		4703.25	4703.25	7.03		Si
SLV 14	11.87	866.15	-2690	-0.0000239	0.0005615	0.0035	1.4402		1982.59	1982.59	2.29		Si
SLV 4	8.35	72.89	-8963	-0.0000349	0.0005615	0.0035	1.4402		5751.55	5751.55	78.9		Si
SLV 4	11.87	-957.82	-5606	-0.0000358	0.0005615	0.0035	1.4402		4245.82	4245.82	4.43		Si
SLV 13	8.35	-727.19	-6380	-0.0000352	0.0005615	0.0035	1.4402		4719.81	4719.81	6.49		Si
SLV 13	11.87	919.03	-2652	-0.0000252	0.0005615	0.0035	1.4402		1957.14	1957.14	2.13		Si
SLV 15	8.35	-1310.27	-9394	-0.0000565	0.0005615	0.0035	1.4402		6481.19	6481.19	4.95		Si
SLV 15	11.87	1020.6	-4456	-0.0000323	0.0005615	0.0035	1.4402		3141.56	3141.56	3.08		Si
SLV 10	8.35	464.68	-2699	-0.000017	0.0005615	0.0035	1.4402		1988.53	1988.53	4.28		Si
SLV 10	11.87	83.09	-969	-0.0000048	0.0005615	0.0035	1.4402		803.72	803.72	9.67		Si
SLV 6	8.35	862.19	-2578	-0.0000237	0.0005615	0.0035	1.4402		1907.5	1907.5	2.21		Si
SLV 6	11.87	-494.57	-1303	-0.0000134	0.0005615	0.0035	1.4402		1423.99	1423.99	2.88		Si
SLV 16	8.35	-1252.13	-9367	-0.0000554	0.0005615	0.0035	1.4402		6465.96	6465.96	5.16		Si
SLV 16	11.87	967.72	-4494	-0.0000316	0.0005615	0.0035	1.4402		3165.96	3165.96	3.27		Si

### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	l'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 84	8.35	-544.92	-11638	-9691	-2548	1.4402	1.4402	-24032	10149	4093	40441	12075	3673	15748	No	6.18	Si
SLU 84	11.87	22.96	-6070	-5054	-87	1.4402	1.4402	-12534	8616	3474	40441	12075	3673	15748	No	182.03	Si
SLU 77	8.35	-516.72	-11595	-9655	-2445	1.4402	1.4402	-23943	10137	4088	40441	12075	3673	15748	No	6.44	Si





Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 77	11.87	3.86	-6315	-5258	71	1.4402	1.4402	-13040	8683	3502	40441	12075	3673	15748	No	222.55	Si
SLU 80	8.35	-519.26	-11559	-9625	-2420	1.4402	1.4402	-23868	10127	4084	40441	12075	3673	15748	No	6.51	Si
SLU 80	11.87	-16.46	-6311	-5255	92	1.4402	1.4402	-13032	8682	3501	40441	12075	3673	15748	No	171.46	Si
SLU 79	8.35	-512.42	-11522	-9594	-2416	1.4402	1.4402	-23792	10117	4080	40441	12075	3673	15748	No	6.52	Si
SLU 79	11.87	-13.68	-6284	-5233	95	1.4402	1.4402	-12976	8675	3498	40441	12075	3673	15748	No	165.14	Si
SLU 83	8.35	-538.09	-11601	-9660	-2544	1.4402	1.4402	-23955	10138	4088	40441	12075	3673	15748	No	6.19	Si
SLU 83	11.87	25.73	-6043	-5032	-83	1.4402	1.4402	-12478	8608	3471	40441	12075	3673	15748	No	189.75	Si
SLU 74	8.35	-507.61	-11266	-9381	-2399	1.4402	1.4402	-23264	10046	4051	40441	12075	3673	15748	No	6.56	Si
SLU 74	11.87	19.43	-5994	-4991	18	1.4402	1.4402	-12378	8595	3466	40441	12075	3673	15748	No	888.66	Si
SLU 81	8.35	-528.98	-11272	-9386	-2498	1.4402	1.4402	-23276	10048	4052	40441	12075	3673	15748	No	6.31	Si
SLU 81	11.87	41.3	-5722	-4765	-136	1.4402	1.4402	-11816	8520	3436	40441	12075	3673	15748	No	115.76	Si
SLU 82	8.35	-535.81	-11309	-9417	-2502	1.4402	1.4402	-23353	10058	4056	40441	12075	3673	15748	No	6.29	Si
SLU 82	11.87	38.52	-5749	-4787	-140	1.4402	1.4402	-11872	8527	3439	40441	12075	3673	15748	No	112.84	Si
SLU 75	8.35	-514.45	-11303	-9412	-2404	1.4402	1.4402	-23340	10056	4055	40441	12075	3673	15748	No	6.55	Si
SLU 75	11.87	16.65	-6021	-5014	14	1.4402	1.4402	-12434	8602	3469	40441	12075	3673	15748	No	1108.81	Si
SLU 78	8.35	-523.56	-11632	-9686	-2450	1.4402	1.4402	-24019	10147	4092	40441	12075	3673	15748	No	6.43	Si
SLU 78	11.87	1.08	-6342	-5281	67	1.4402	1.4402	-13096	8691	3505	40441	12075	3673	15748	No	234.19	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 13	8.35	-493.71	-7097	-5910	-3495	1.4402	1.4402	-14656	13348	5383	40441	18113	3673	21786		6.23	Si
SLD 13	11.87	380.59	-3486	-2903	-1101	1.4402	1.4402	-7198	11856	4781	40441	18113	3673	21786		19.79	Si
SLV 14	8.35	-669.05	-6353	-5290	-5816	1.4402	1.4402	-13118	13040	5259	40441	18113	3673	21786		3.75	Si
SLV 14	11.87	866.15	-2690	-2240	-2569	1.4402	1.1945	-5555	11528	3856	40441	18113	3673	21786		8.48	Si
SLV 2	8.35	-655.98	-5948	-4953	3007	1.4402	1.4402	-12283	12873	5191	40441	18113	3673	21786		7.25	Si
SLV 2	11.87	-1059.38	-3803	-3167	4335	1.4402	1.3246	-8567	12130	4499	40441	18113	3673	21786		5.03	Si
SLV 15	8.35	-751.85	-8430	-7020	-3461	1.4402	1.4402	-17408	13898	5605	40441	18113	3673	21786		6.29	Si
SLV 15	11.87	426.37	-4281	-3565	-1645	1.4402	1.4402	-8841	12185	4914	40441	18113	3673	21786		13.24	Si
SLV 13	8.35	-727.19	-6380	-5312	-6137	1.4402	1.4402	-13173	13051	5263	40441	18113	3673	21786		3.55	Si
SLV 13	11.87	919.03	-2652	-2209	-2800	1.4402	1.1208	-5477	11512	3613	40441	18113	3673	21786		7.78	Si
SLV 15	8.35	-1310.27	-9394	-7822	-6054	1.4402	1.4402	-19398	14296	5765	40441	18113	3673	21786		3.6	Si
SLV 15	11.87	1020.6	-4456	-3710	-4031	1.4402	1.4402	-9201	12257	4943	40441	18113	3673	21786		5.4	Si
SLD 14	8.35	-468.75	-7086	-5900	-3357	1.4402	1.4402	-14632	13343	5381	40441	18113	3673	21786		6.49	Si
SLD 14	11.87	357.88	-3502	-2916	-1002	1.4402	1.4402	-7232	11863	4784	40441	18113	3673	21786		21.75	Si
SLD 16	8.35	-726.89	-8419	-7010	-3323	1.4402	1.4402	-17384	13893	5603	40441	18113	3673	21786		6.56	Si
SLD 16	11.87	403.66	-4298	-3579	-1546	1.4402	1.4402	-8874	12192	4916	40441	18113	3673	21786		14.09	Si
SLV 16	8.35	-1252.13	-9367	-7800	-5733	1.4402	1.4402	-19342	14285	5761	40441	18113	3673	21786		3.8	Si
SLV 16	11.87	967.72	-4494	-3742	-3800	1.4402	1.4402	-9279	12273	4949	40441	18113	3673	21786		5.73	Si
SLV 1	8.35	597.84	-5975	-4976	2686	1.4402	1.4402	-12339	12884	5196	40441	18113	3673	21786		8.11	Si
SLV 1	11.87	-1006.5	-3765	-3135	4104	1.4402	1.3583	-7774	11972	4553	40441	18113	3673	21786		5.31	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.11 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 6	179667	0.46	3440	-1387	178.94	189.85	1.06	Si
SLV 5	179667	0.46	3449	-1391	178.94	190.33	1.06	Si
SLV 10	179667	0.46	3734	-1506	178.94	205.63	1.15	Si
SLV 9	179667	0.46	3742	-1509	178.94	206.1	1.15	Si
SLV 2	179667	0.46	10241	-4130	178.94	539.38	3.01	Si
SLV 1	179667	0.46	10254	-4135	178.94	540.05	3.02	Si
SLV 14	179667	0.46	11218	-4524	178.94	586.82	3.28	Si
SLV 13	179667	0.46	11232	-4529	178.94	587.47	3.28	Si
SLV 4	179667	0.46	16365	-6599	178.94	824.9	4.61	Si
SLV 3	179667	0.46	16378	-6605	178.94	825.5	4.61	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 10.11 Wa = 0.05 Ta = 0.0739

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 8	-7314	-12626	-128	0.972	946.2	0.94	15.02587	14.09547	Si
SLV 7	-7290	-12643	-129	0.975	943.7	0.94	15.06714	14.09547	Si
SLV 12	-6980	-12747	-76	1.016	912.4	0.939	15.73589	14.09547	Si
SLV 11	-6956	-12764	-78	1.019	909.9	0.938	15.7811	14.09547	Si
SLV 4	-5606	-8963	-113	1.206	773.5	0.93	18.85109	7.52414	Si
SLV 3	-5568	-8990	-115	1.212	769.7	0.929	18.95384	7.52414	Si
SLV 16	-4494	-9367	60	1.44	661.5	0.921	22.73116	7.52414	Si
SLV 15	-4456	-9394	58	1.45	657.7	0.92	22.89196	7.52414	Si
SLV 2	-3803	-5948	-48	1.633	592.4	0.914	25.96066	7.52414	Si
SLV 1	-3765	-5975	-50	1.644	588.6	0.914	26.15717	7.52414	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	13.158	SLU 82	Si
V_SLU	6.18	SLU 84	Si
PF_SLV	2.13	SLV 13	Si
V_SLV	3.55	SLV 13	Si
PFFP_SLV	1.061	SLV 6	Si
R_SLV	1.066	SLV 8	Si



## Maschio 130

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.sx	a.s.dx
-13.778	-3.384	-13.778	-0.354	Z medio 922 cm	L7	3.03	0.28	2.651	1.783	3.52			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	t0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 42	10.09	1118.66	-14539	-0.0000302	0.0003743	0.0035	3.0298	18317.22	19251.41	19251.41	17.21	No	Si
SLU 42	11.87	239.46	-9898	-0.0000184	0.0003743	0.0035	3.0298	13276.13	14094.96	14094.96	58.86	No	Si
SLU 19	10.09	990.15	-12338	-0.0000256	0.0003743	0.0035	3.0298	16020.25	16762.33	16762.33	16.93	No	Si
SLU 19	11.87	202.3	-8137	-0.0000151	0.0003743	0.0035	3.0298	11165.16	11927.87	11927.87	58.96	No	Si
SLU 18	10.09	1038.42	-12393	-0.0000259	0.0003743	0.0035	3.0298	16080.37	16824.26	16824.26	16.2	No	Si
SLU 18	11.87	241.62	-8182	-0.0000153	0.0003743	0.0035	3.0298	11220.31	11987.04	11987.04	49.61	No	Si
SLU 41	10.09	1166.93	-14594	-0.0000305	0.0003743	0.0035	3.0298	18373.05	19315.3	19315.3	16.55	No	Si
SLU 41	11.87	278.79	-9943	-0.0000187	0.0003743	0.0035	3.0298	13328.51	14143.18	14143.18	50.73	No	Si
SLU 40	10.09	1090.81	-13790	-0.0000287	0.0003743	0.0035	3.0298	17555.33	18396.34	18396.34	16.86	No	Si
SLU 40	11.87	187.98	-9200	-0.000017	0.0003743	0.0035	3.0298	12451.89	13306.42	13306.42	70.79	No	Si
SLU 20	10.09	1066.27	-13142	-0.0000274	0.0003743	0.0035	3.0298	16878.94	17662.42	17662.42	16.56	No	Si
SLU 20	11.87	293.11	-8880	-0.0000168	0.0003743	0.0035	3.0298	12069.49	12894.52	12894.52	43.99	No	Si
SLU 39	10.09	1139.08	-13846	-0.000029	0.0003743	0.0035	3.0298	17612.62	18459.56	18459.56	16.21	No	Si
SLU 39	11.87	227.3	-9244	-0.0000172	0.0003743	0.0035	3.0298	12505.36	13360.56	13360.56	58.78	No	Si
SLU 81	10.09	1255.8	-16842	-0.0000351	0.0003743	0.0035	3.0298	20538.34	21942.12	21942.12	17.47	No	Si
SLU 81	11.87	180.99	-11149	-0.0000205	0.0003743	0.0035	3.0298	14709.18	15450.67	15450.67	85.37	No	Si
SLU 60	10.09	1155.14	-15389	-0.000032	0.0003743	0.0035	3.0298	19158.76	20233.61	20233.61	17.52	No	Si
SLU 60	11.87	195.31	-10086	-0.0000186	0.0003743	0.0035	3.0298	13495.13	14297.21	14297.21	73.2	No	Si
SLU 21	10.09	1018	-13086	-0.0000271	0.0003743	0.0035	3.0298	16820.28	17599.84	17599.84	17.29	No	Si
SLU 21	11.87	253.79	-8835	-0.0000166	0.0003743	0.0035	3.0298	12015.45	12836.53	12836.53	50.58	No	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 8	10.09	-6023.37	-4742	-0.0000681	0.0005615	0.0035	2.4238		9487.85	9487.85	1.58		Si
SLV 8	11.87	-3849.85	-2518	-0.0001083	0.0005615	0.0035	2.4238		6295.11	6295.11	1.64		Si
SLV 6	10.09	6522.06	-20543	-0.0000606	0.0005615	0.0035	3.0298		27242.98	27242.98	4.18		Si
SLV 6	11.87	3829.77	-14104	-0.0000386	0.0005615	0.0035	3.0298		20046.76	20046.76	5.23		Si
SLV 13	10.09	3747.45	-13120	-0.0000365	0.0005615	0.0035	3.0298		18809.68	18809.68	5.02		Si
SLV 13	11.87	731.41	-8619	-0.0000177	0.0005615	0.0035	3.0298		12840.25	12840.25	17.56		Si
SLV 14	10.09	3616.75	-13083	-0.000036	0.0005615	0.0035	3.0298		18762.39	18762.39	5.19		Si
SLV 14	11.87	638.16	-8549	-0.0000172	0.0005615	0.0035	3.0298		12745.58	12745.58	19.97		Si
SLV 5	10.09	6606.48	-20566	-0.000061	0.0005615	0.0035	3.0298		27270.12	27270.12	4.13		Si
SLV 5	11.87	3890.01	-14148	-0.0000389	0.0005615	0.0035	3.0298		20095.59	20095.59	5.17		Si
SLV 7	10.09	-5938.96	-4766	-0.0000627	0.0005615	0.0035	2.4238		9521.65	9521.65	1.6		Si
SLV 7	11.87	-3789.62	-2563	-0.0000904	0.0005615	0.0035	2.4238		6359.8	6359.8	1.68		Si
SLV 9	10.09	7302.82	-19679	-0.0000618	0.0005615	0.0035	3.0298		26260.12	26260.12	3.6		Si
SLV 9	11.87	3665.13	-13462	-0.0000369	0.0005615	0.0035	3.0298		19249.35	19249.35	5.25		Si
SLV 10	10.09	7218.4	-19655	-0.0000615	0.0005615	0.0035	3.0298		26233.15	26233.15	3.63		Si
SLV 10	11.87	3604.89	-13417	-0.0000366	0.0005615	0.0035	3.0298		19191.88	19191.88	5.32		Si
SLV 11	10.09	-5242.62	-3879	-0.0000774	0.0005615	0.0035	2.4238		8255.78	8255.78	1.57		Si
SLV 11	11.87	-4014.5	-1877	-0.0002612	0.0005615	0.0035	2.4238		5362.35	5362.35	1.34		Si
SLV 12	10.09	-5327.03	-3855	-0.0000886	0.0005615	0.0035	2.4238		8221.7	8221.7	1.54		Si
SLV 12	11.87	-4074.73	-1832	-0.0002797	0.0005615	0.0035	2.4238		5296.95	5296.95	1.3		Si



#### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 84	10.09	1235.38	-17535	-14601	-65	3.0298	3.0298	-17212	9239	7838	28547	25403	7726	33129	No	509.18	Si
SLU 84	11.87	193.15	-11803	-9828	-920	3.0298	3.0298	-11585	8489	7202	28547	25403	7726	33129	No	36.01	Si
SLU 61	10.09	1106.87	-15333	-12768	2	3.0298	3.0298	-15051	8951	7594	28547	25403	7726	33129	No	13258.64	Si
SLU 61	11.87	155.99	-10041	-8362	-859	3.0298	3.0298	-9856	8259	7006	28547	25403	7726	33129	No	38.57	Si
SLU 60	10.09	1155.14	-15389	-12815	21	3.0298	3.0298	-15106	8959	7600	28547	25403	7726	33129	No	1546.89	Si
SLU 60	11.87	195.31	-10086	-8399	-852	3.0298	3.0298	-9900	8265	7011	28547	25403	7726	33129	No	38.88	Si
SLU 83	10.09	1283.65	-17590	-14648	-46	3.0298	3.0298	-17266	9247	7844	28547	25403	7726	33129	No	717.93	Si
SLU 83	11.87	232.47	-11847	-9866	-913	3.0298	3.0298	-11629	8495	7207	28547	25403	7726	33129	No	36.27	Si
SLU 42	10.09	1118.66	-14539	-12107	-151	3.0298	3.0298	-14271	8847	7505	28547	25403	7726	33129	No	218.71	Si
SLU 42	11.87	239.46	-9898	-8242	-852	3.0298	3.0298	-9716	8240	6990	28547	25403	7726	33129	No	38.87	Si
SLU 63	10.09	1134.72	-16082	-13391	24	3.0298	3.0298	-15786	9049	7677	28547	25403	7726	33129	No	1381.98	Si
SLU 63	11.87	207.47	-10740	-8943	-909	3.0298	3.0298	-10542	8350	7084	28547	25403	7726	33129	No	36.43	Si
SLU 62	10.09	1182.99	-16137	-13438	43	3.0298	3.0298	-15840	9056	7683	28547	25403	7726	33129	No	772.42	Si
SLU 62	11.87	246.8	-10785	-8981	-903	3.0298	3.0298	-10586	8356	7089	28547	25403	7726	33129	No	36.7	Si
SLU 82	10.09	1207.53	-16786	-13978	-87	3.0298	3.0298	-16477	9141	7755	28547	25403	7726	33129	No	382.83	Si
SLU 82	11.87	141.66	-11104	-9246	-869	3.0298	3.0298	-10900	8398	7124	28547	25403	7726	33129	No	38.1	Si
SLU 41	10.09	1166.93	-14594	-12153	-133	3.0298	3.0298	-14326	8855	7512	28547	25403	7726	33129	No	249.93	Si
SLU 41	11.87	278.79	-9943	-8280	-846	3.0298	3.0298	-9760	8246	6995	28547	25403	7726	33129	No	39.18	Si
SLU 81	10.09	1255.8	-16842	-14024	-68	3.0298	3.0298	-16532	9149	7761	28547	25403	7726	33129	No	489.94	Si
SLU 81	11.87	180.99	-11149	-9284	-863	3.0298	3.0298	-10944	8404	7129	28547	25403	7726	33129	No	38.4	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 15	10.09	-16.18	-8380	-6978	-1998	3.0298	3.0298	-8226	12062	10232	28547	38104	7726	38779		19.4	Si
SLV 15	11.87	-1572.48	-5143	-4283	-2751	3.0298	3.0298	-5048	11426	9693	28547	38104	7726	38240		13.9	Si
SLV 11	10.09	-5242.62	-3879	-3230	-3751	2.4238	0.4896	0	0	0	28547	30484	6181	28547		7.61	Si
SLV 11	11.87	-4014.5	-1877	-1563	-4702	2.4238	0	0	0	0	28547	30484	6181	28547		6.07	Si
SLV 10	10.09	7218.4	-19655	-16367	3328	3.0298	3.0298	-19293	14275	12110	28547	38104	7726	40657		12.22	Si
SLV 10	11.87	3604.89	-13417	-11173	3290	3.0298	3.0298	-13170	13051	11071	28547	38104	7726	39618		12.04	Si
SLV 8	10.09	-6023.37	-4742	-3949	-3148	2.4238	0.7341	0	0	0	28547	30484	6181	28547		9.07	Si
SLV 8	11.87	-3849.85	-2518	-2097	-3966	2.4238	0	0	0	0	28547	30484	6181	28547		7.2	Si
SLV 12	10.09	-5327.03	-3855	-3210	-3793	2.4238	0.3989	0	0	0	28547	30484	6181	28547		7.53	Si
SLV 12	11.87	-4074.73	-1832	-1525	-4678	2.4238	0	0	0	0	28547	30484	6181	28547		6.1	Si
SLV 5	10.09	6606.48	-20566	-17126	4014	3.0298	3.0298	-20188	14454	12262	28547	38104	7726	40809		10.17	Si
SLV 5	11.87	3890.01	-14148	-11782	3977	3.0298	3.0298	-13888	13194	11193	28547	38104	7726	39740		9.99	Si
SLV 6	10.09	6522.06	-20543	-17106	3972	3.0298	3.0298	-20164	14450	12258	28547	38104	7726	40805		10.27	Si
SLV 6	11.87	3829.77	-14104	-11744	4002	3.0298	3.0298	-13844	13185	11186	28547	38104	7726	39732		9.93	Si
SLV 9	10.09	7302.82	-19679	-16387	3370	3.0298	3.0298	-19317	14280	12114	28547	38104	7726	40661		12.07	Si
SLV 9	11.87	3665.13	-13462	-11210	3265	3.0298	3.0298	-13214	13059	11079	28547	38104	7726	39625		12.14	Si
SLV 16	10.09	-146.88	-8343	-6948	-2064	3.0298	3.0298	-8190	12055	10226	28547	38104	7726	38773		18.79	Si
SLV 16	11.87	-1665.73	-5074	-4225	-2713	3.0298	3.0298	-4980	11413	9682	28547	38104	7726	38228		14.09	Si
SLV 7	10.09	-5938.96	-4766	-3969	-3106	2.4238	0.8063	0	0	0	28547	30484	6181	28547		9.19	Si
SLV 7	11.87	-3789.62	-2563	-2134	-3990	2.4238	0.1087	0	0	0	28547	30484	6181	28547		7.15	Si

#### Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.979 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 12	179667	0.47	3257	-2763	222.09	378.55	1.7	Si
SLV 11	179667	0.47	3286	-2788	222.09	381.88	1.72	Si
SLV 8	179667	0.47	4356	-3695	222.09	502.55	2.26	Si
SLV 7	179667	0.47	4385	-3720	222.09	505.83	2.28	Si
SLV 16	179667	0.47	7556	-6410	222.09	853.03	3.84	Si
SLV 15	179667	0.47	7602	-6449	222.09	857.88	3.86	Si
SLV 4	179667	0.47	11219	-9518	222.09	1234.57	5.56	Si
SLV 3	179667	0.47	11264	-9556	222.09	1239.17	5.58	Si
SLV 14	179667	0.47	12347	-10475	222.09	1347.88	6.07	Si
SLV 13	179667	0.47	12393	-10513	222.09	1352.39	6.09	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.979 Wa = 0.05 Ta = 0.0419

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	a0*	aLim	Verifica
SLV 5	-14148	-20566	-665	1.071	1758.7	0.948	16.41132	8.01668	Si
SLV 6	-14104	-20543	-665	1.073	1754.1	0.948	16.45649	8.01668	Si
SLV 9	-13462	-19679	282	1.14	1689	0.946	17.51529	8.01668	Si
SLV 10	-13417	-19655	282	1.144	1684.5	0.946	17.56592	8.01668	Si
SLV 1	-10906	-16078	-1618	1.252	1430.1	0.938	19.39758	5.66237	Si
SLV 2	-10837	-16041	-1618	1.258	1423.1	0.938	19.50263	5.66237	Si
SLV 13	-8619	-13120	1539	1.517	1198.9	0.928	23.74989	5.66237	Si
SLV 14	-8549	-13083	1538	1.527	1192	0.928	23.9083	5.66237	Si
SLV 3	-7431	-11338	-1488	1.707	1079.4	0.922	26.88887	5.66237	Si
SLV 4	-7362	-11301	-1489	1.719	1072.4	0.922	27.09185	5.66237	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	16.202	SLU 18	Si



Stato limite	Coeff.s.	Comb.	Verifica
V_SLV	36.006	SLV 84	Si
PF_SLV	1.3	SLV 12	Si
V_SLV	6.071	SLV 11	Si
PFFP_SLV	1.705	SLV 12	Si
R_SLV	2.047	SLV 5	Si

## Maschio 132

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.823	6.526	-17.718	6.526	L6	L7	2.105	0.28	3.52	3.52	3.52			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 54	9.25	1196.96	-13883	-0.0000458	0.0003743	0.0035	2.105	11231.06	12262.12	12262.12	10.24	No	Si
SLU 54	11.05	407.42	-11368	-0.0000327	0.0003743	0.0035	2.105	9697.94	10341.67	10341.67	25.38	No	Si
SLU 60	9.25	1208.47	-13745	-0.0000455	0.0003743	0.0035	2.105	11153.07	12178.31	12178.31	10.08	No	Si
SLU 60	11.05	386.61	-11230	-0.0000322	0.0003743	0.0035	2.105	9607.84	10226.76	10226.76	26.45	No	Si
SLU 45	9.25	1134.29	-12840	-0.0000424	0.0003743	0.0035	2.105	10622.11	11585.98	11585.98	10.21	No	Si
SLU 45	11.05	322.01	-10325	-0.0000292	0.0003743	0.0035	2.105	8996.96	9475.86	9475.86	29.43	No	Si
SLU 82	9.25	1263.86	-15001	-0.0000496	0.0003743	0.0035	2.105	11841.5	12952.74	12952.74	10.25	No	Si
SLU 82	11.05	510.08	-12454	-0.0000365	0.0003743	0.0035	2.105	10387.54	11260.09	11260.09	22.08	No	Si
SLU 53	9.25	1204.79	-13886	-0.0000459	0.0003743	0.0035	2.105	11232.99	12264.2	12264.2	10.18	No	Si
SLU 53	11.05	408.75	-11371	-0.0000327	0.0003743	0.0035	2.105	9700.17	10344.53	10344.53	25.31	No	Si
SLU 43	9.25	1107.76	-12250	-0.0000405	0.0003743	0.0035	2.105	10261.23	11086.83	11086.83	10.01	No	Si
SLU 43	11.05	262.7	-9735	-0.0000272	0.0003743	0.0035	2.105	8584.1	8996.12	8996.12	34.24	No	Si
SLU 61	9.25	1200.64	-13742	-0.0000455	0.0003743	0.0035	2.105	11151.13	12176.24	12176.24	10.14	No	Si
SLU 61	11.05	385.28	-11227	-0.0000322	0.0003743	0.0035	2.105	9605.59	10223.91	10223.91	26.54	No	Si
SLU 81	9.25	1271.68	-15004	-0.0000496	0.0003743	0.0035	2.105	11843.29	12954.87	12954.87	10.19	No	Si
SLU 81	11.05	511.41	-12458	-0.0000365	0.0003743	0.0035	2.105	10389.64	11262.99	11262.99	22.02	No	Si
SLU 52	9.25	1165.22	-13291	-0.0000439	0.0003743	0.0035	2.105	10890.42	11898.42	11898.42	10.21	No	Si
SLU 52	11.05	347.22	-10776	-0.0000306	0.0003743	0.0035	2.105	9305.11	9848.69	9848.69	28.36	No	Si
SLU 44	9.25	1094.72	-12245	-0.0000404	0.0003743	0.0035	2.105	10257.69	11082	11082	10.12	No	Si
SLU 44	11.05	260.49	-9730	-0.0000271	0.0003743	0.0035	2.105	8580.06	8991.52	8991.52	34.52	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 10	9.25	1831.47	-10826	-0.0000413	0.0005615	0.0035	2.105		10400.29	10400.29	5.68		Si
SLV 10	11.05	-402.34	-9575	-0.0000274	0.0005615	0.0035	2.105		10492.43	10492.43	26.08		Si
SLV 2	9.25	-352.72	-11087	-0.000031	0.0005615	0.0035	2.105		11821.33	11821.33	33.51		Si
SLV 2	11.05	2745.18	-8690	-0.0000423	0.0005615	0.0035	2.105		8703.88	8703.88	3.17		Si
SLV 15	9.25	2166.72	-9741	-0.0000408	0.0005615	0.0035	2.105		9555.6	9555.6	4.41		Si
SLV 15	11.05	-2154.32	-8235	-0.0000367	0.0005615	0.0035	2.105		9299.05	9299.05	4.32		Si
SLV 13	9.25	2456.75	-10027	-0.0000438	0.0005615	0.0035	2.105		9777.59	9777.59	3.98		Si
SLV 13	11.05	-2076.05	-8834	-0.0000377	0.0005615	0.0035	2.105		9841.67	9841.67	4.74		Si
SLV 16	9.25	2208.29	-9939	-0.0000417	0.0005615	0.0035	2.105		9709.11	9709.11	4.4		Si
SLV 16	11.05	-2376.39	-8433	-0.0000389	0.0005615	0.0035	2.105		9479.93	9479.93	3.99		Si
SLV 1	9.25	-394.3	-10889	-0.0000308	0.0005615	0.0035	2.105		11650.76	11650.76	29.55		Si
SLV 1	11.05	2967.25	-8492	-0.0000434	0.0005615	0.0035	2.105		8526.06	8526.06	2.87		Si
SLV 14	9.25	2498.32	-10225	-0.0000446	0.0005615	0.0035	2.105		9931.53	9931.53	3.98		Si
SLV 14	11.05	-2298.12	-9031	-0.0000399	0.0005615	0.0035	2.105		10014.7	10014.7	4.36		Si
SLV 9	9.25	1804.62	-10698	-0.0000407	0.0005615	0.0035	2.105		10300.29	10300.29	5.71		Si
SLV 9	11.05	-258.91	-9448	-0.0000326	0.0005615	0.0035	2.105		10379.84	10379.84	40.09		Si
SLV 4	9.25	-642.76	-10801	-0.0000324	0.0005615	0.0035	2.105		11574.36	11574.36	18.01		Si
SLV 4	11.05	2666.92	-8091	-0.0000401	0.0005615	0.0035	2.105		8162.74	8162.74	3.06		Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 3	9.25	-684.33	-10603	-0.0000322	0.0005615	0.0035	2.105		11401.93	11401.93	16.66		Si
SLV 3	11.05	2888.98	-7893	-0.0000413	0.0005615	0.0035	2.105		7981.05	7981.05	2.76		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	oN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 53	9.25	1204.79	-13886	-11563	482	2.105	2.105	-19619	9560	5635	40441	17649	5368	23017	No	47.75	Si
SLU 53	11.05	408.75	-11371	-9469	482	2.105	2.105	-16066	9087	5356	40441	17649	5368	23017	No	47.75	Si
SLU 60	9.25	1208.47	-13745	-11446	496	2.105	2.105	-19420	9534	5619	40441	17649	5368	23017	No	46.37	Si
SLU 60	11.05	386.61	-11230	-9352	496	2.105	2.105	-15867	9060	5340	40441	17649	5368	23017	No	46.37	Si
SLU 45	9.25	1134.29	-12840	-10692	491	2.105	2.105	-18140	9363	5519	40441	17649	5368	23017	No	46.87	Si
SLU 45	11.05	322.01	-10325	-8598	491	2.105	2.105	-14587	8889	5239	40441	17649	5368	23017	No	46.87	Si
SLU 52	9.25	1165.22	-13291	-11068	494	2.105	2.105	-18778	9448	5569	40441	17649	5368	23017	No	46.57	Si
SLU 52	11.05	347.22	-10776	-8974	494	2.105	2.105	-15225	8974	5289	40441	17649	5368	23017	No	46.57	Si
SLU 64	9.25	1170.97	-13509	-11249	475	2.105	2.105	-19086	9489	5593	40441	17649	5368	23017	No	48.44	Si
SLU 64	11.05	387.5	-10963	-9129	475	2.105	2.105	-15489	9010	5310	40441	17649	5368	23017	No	48.44	Si
SLU 61	9.25	1200.64	-13742	-11443	493	2.105	2.105	-19415	9533	5619	40441	17649	5368	23017	No	46.71	Si
SLU 61	11.05	385.28	-11227	-9349	493	2.105	2.105	-15862	9059	5340	40441	17649	5368	23017	No	46.71	Si
SLU 43	9.25	1107.76	-12250	-10201	509	2.105	2.105	-17308	9252	5453	40441	17649	5368	23017	No	45.19	Si
SLU 43	11.05	262.7	-9735	-8107	509	2.105	2.105	-13755	8778	5174	40441	17649	5368	23017	No	45.19	Si
SLU 54	9.25	1196.96	-13883	-11560	478	2.105	2.105	-19614	9560	5634	40441	17649	5368	23017	No	48.11	Si
SLU 54	11.05	407.42	-11368	-9466	478	2.105	2.105	-16061	9086	5355	40441	17649	5368	23017	No	48.11	Si
SLU 44	9.25	1094.72	-12245	-10196	503	2.105	2.105	-17300	9251	5453	40441	17649	5368	23017	No	45.73	Si
SLU 44	11.05	260.49	-9730	-8102	503	2.105	2.105	-13747	8777	5173	40441	17649	5368	23017	No	45.73	Si
SLU 46	9.25	1126.47	-12836	-10689	487	2.105	2.105	-18135	9362	5518	40441	17649	5368	23017	No	47.22	Si
SLU 46	11.05	320.69	-10321	-8595	487	2.105	2.105	-14582	8889	5239	40441	17649	5368	23017	No	47.22	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	oN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 13	9.25	2456.75	-10027	-8350	2481	2.105	2.105	-14167	13250	7809	40441	26474	5368	31841		12.84	Si
SLV 13	11.05	-2076.05	-8834	-7356	1970	2.105	2.105	-12480	12913	7611	40441	26474	5368	31841		16.16	Si
SLV 3	9.25	-684.33	-10603	-8829	-1886	2.105	2.105	-14981	13413	7905	40441	26474	5368	31841		16.88	Si
SLV 3	11.05	2888.98	-7893	-6573	-1376	2.105	2.0594	-11151	12647	7293	40441	26474	5368	31841		23.14	Si
SLV 2	9.25	-352.72	-11087	-9233	-1603	2.105	2.105	-15665	13550	7986	40441	26474	5368	31841		19.87	Si
SLV 2	11.05	2745.18	-8690	-7236	-1028	2.105	2.105	-12277	12872	7587	40441	26474	5368	31841		30.96	Si
SLV 16	9.25	2208.29	-9939	-8276	2490	2.105	2.105	-14042	13225	7795	40441	26474	5368	31841		12.79	Si
SLV 16	11.05	-2376.39	-8433	-7022	1916	2.105	2.105	-11914	12799	7544	40441	26474	5368	31841		16.62	Si
SLV 15	9.25	2166.72	-9741	-8111	2344	2.105	2.105	-13762	13169	7762	40441	26474	5368	31841		13.59	Si
SLV 15	11.05	-2154.32	-8235	-6857	1769	2.105	2.105	-11634	12744	7511	40441	26474	5368	31841		18	Si
SLV 14	9.25	2498.32	-10225	-8515	2627	2.105	2.105	-14446	13306	7842	40441	26474	5368	31841		12.12	Si
SLV 14	11.05	-2298.12	-9031	-7521	2117	2.105	2.105	-12760	12969	7644	40441	26474	5368	31841		15.04	Si
SLV 1	9.25	-394.3	-10889	-9068	-1749	2.105	2.105	-15385	13494	7953	40441	26474	5368	31841		18.2	Si
SLV 1	11.05	2967.25	-8492	-7071	-1175	2.105	2.105	-11997	12816	7554	40441	26474	5368	31841		27.1	Si
SLV 4	9.25	-642.76	-10801	-8994	-1740	2.105	2.105	-15260	13469	7938	40441	26474	5368	31841		18.3	Si
SLV 4	11.05	2666.92	-8091	-6737	-1229	2.105	2.105	-11431	12703	7487	40441	26474	5368	31841		25.9	Si
SLD 14	9.25	1588.88	-10332	-8604	1336	2.105	2.105	-14597	13336	7860	40441	26474	5368	31841		23.83	Si
SLD 14	11.05	-813.72	-8705	-7249	1119	2.105	2.105	-12299	12876	7589	40441	26474	5368	31841		28.47	Si
SLV 10	9.25	1831.47	-10826	-9015	1281	2.105	2.105	-15295	13476	7942	40441	26474	5368	31841		24.86	Si
SLV 10	11.05	-402.34	-9575	-7974	1224	2.105	2.105	-13528	13122	7734	40441	26474	5368	31841		26.01	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.11 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	o0	N	M	Mc	Coeff.s.	Verifica
SLV 11	179667	0.46	14971	-8824	255.59	1114.23	4.36	Si
SLV 7	179667	0.46	15007	-8845	255.59	1116.59	4.37	Si
SLV 12	179667	0.46	15188	-8952	255.59	1128.59	4.42	Si
SLV 8	179667	0.46	15223	-8973	255.59	1130.95	4.42	Si
SLV 15	179667	0.46	15342	-9043	255.59	1138.79	4.46	Si
SLV 3	179667	0.46	15461	-9113	255.59	1146.61	4.49	Si
SLV 16	179667	0.46	15678	-9241	255.59	1160.87	4.54	Si
SLV 13	179667	0.46	15747	-9281	255.59	1165.4	4.56	Si
SLV 4	179667	0.46	15797	-9311	255.59	1168.65	4.57	Si
SLV 1	179667	0.46	15866	-9351	255.59	1173.17	4.59	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 10.11 Wa = 0.05 Ta = 0.0739

Comb.	N top	N base	V orto	o0	M*	e*	a0*	aLim	Verifica
SLV 10	-8405	-9113	607	1.139	1151.8	0.931	17.78432	14.09547	Si
SLV 9	-8221	-9093	607	1.159	1133.2	0.93	18.11423	14.09547	Si
SLV 6	-7524	-10822	537	1.25	1063	0.926	19.6068	14.09547	Si
SLV 5	-7340	-10803	537	1.274	1044.5	0.925	20.0072	14.09547	Si
SLV 12	-6789	-8658	533	1.353	989	0.922	21.3231	14.09547	Si
SLV 11	-6605	-8639	533	1.381	970.6	0.921	21.79862	14.09547	Si
SLV 8	-5908	-10368	603	1.492	900.7	0.916	23.66986	14.09547	Si
SLV 7	-5724	-10349	603	1.528	882.3	0.915	24.26086	14.09547	Si
SLV 14	-8917	-6965	290	1.116	1203.5	0.933	17.3827	7.52414	Si
SLV 13	-8633	-6935	290	1.145	1174.8	0.932	17.86171	7.52414	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.



Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	10.008	SLU 43	Si
V_SLU	45.195	SLU 43	Si
PF_SLV	2.763	SLV 3	Si
V_SLV	12.12	SLV 14	Si
PFFP_SLV	4.359	SLV 11	Si
R_SLV	1.262	SLV 10	Si

## Maschio 133

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-16.818	6.526	-12.838	6.526	L6	L7	3.98	0.28	3.52	3.52	3.52			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	t0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 83	9.25	2781.68	-35117	-0.0000562	0.0003743	0.0035	3.98	48252.82	54463.97	54463.97	19.58	No	Si
SLU 83	11.05	-610.38	-30846	-0.0000448	0.0003743	0.0035	3.98	44694.76	53980.49	53980.49	88.44	No	Si
SLU 73	9.25	2630.15	-33158	-0.0000528	0.0003743	0.0035	3.98	46700.28	52069.71	52069.71	19.8	No	Si
SLU 73	11.05	-779.98	-28887	-0.0000422	0.0003743	0.0035	3.98	42848.71	51535.02	51535.02	66.07	No	Si
SLU 84	9.25	2765.06	-35060	-0.0000561	0.0003743	0.0035	3.98	48209.84	54394.15	54394.15	19.67	No	Si
SLU 84	11.05	-613.42	-30789	-0.0000447	0.0003743	0.0035	3.98	44643.31	53910.45	53910.45	87.88	No	Si
SLU 81	9.25	2763.5	-34347	-0.0000549	0.0003743	0.0035	3.98	47658.72	53517.62	53517.62	19.37	No	Si
SLU 81	11.05	-824.78	-30076	-0.0000441	0.0003743	0.0035	3.98	43985.31	53020.26	53020.26	64.28	No	Si
SLU 82	9.25	2746.87	-34290	-0.0000548	0.0003743	0.0035	3.98	47614.21	53448.31	53448.31	19.46	No	Si
SLU 82	11.05	-827.82	-30019	-0.000044	0.0003743	0.0035	3.98	43932.33	52949.77	52949.77	63.96	No	Si
SLU 61	9.25	2530.43	-31099	-0.0000494	0.0003743	0.0035	3.98	44924.06	49593.61	49593.61	19.6	No	Si
SLU 61	11.05	-869.73	-26891	-0.0000394	0.0003743	0.0035	3.98	40829.64	48912.17	48912.17	56.24	No	Si
SLU 74	9.25	2715.63	-34853	-0.0000556	0.0003743	0.0035	3.98	48052.01	54139.59	54139.59	19.94	No	Si
SLU 74	11.05	-604.15	-30582	-0.0000443	0.0003743	0.0035	3.98	44454.51	53653.72	53653.72	88.81	No	Si
SLU 63	9.25	2548.61	-31869	-0.0000506	0.0003743	0.0035	3.98	45605.86	50516.48	50516.48	19.82	No	Si
SLU 63	11.05	-655.33	-27661	-0.0000401	0.0003743	0.0035	3.98	41625.1	49944.96	49944.96	76.21	No	Si
SLU 60	9.25	2547.06	-31156	-0.0000495	0.0003743	0.0035	3.98	44974.9	49661.24	49661.24	19.5	No	Si
SLU 60	11.05	-866.69	-26947	-0.0000395	0.0003743	0.0035	3.98	40888.84	48987.73	48987.73	56.52	No	Si
SLU 62	9.25	2565.24	-31926	-0.0000507	0.0003743	0.0035	3.98	45655.17	50584.61	50584.61	19.72	No	Si
SLU 62	11.05	-652.29	-27717	-0.0000401	0.0003743	0.0035	3.98	41682.77	50021.35	50021.35	76.69	No	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 14	9.25	5315.92	-22354	-0.0000414	0.0005615	0.0035	3.98		40055.58	40055.58	7.54		Si
SLD 14	11.05	-5237.56	-19045	-0.0000365	0.0005615	0.0035	3.98		39095.39	39095.39	7.46		Si
SLV 3	9.25	-6154.58	-26674	-0.0000494	0.0005615	0.0035	3.98		51252.79	51252.79	8.33		Si
SLV 3	11.05	10420.49	-23489	-0.0000537	0.0005615	0.0035	3.98		41739.32	41739.32	4.01		Si
SLD 16	9.25	5170.88	-21601	-0.00004	0.0005615	0.0035	3.98		38944.2	38944.2	7.53		Si
SLD 16	11.05	-5281.32	-18298	-0.0000356	0.0005615	0.0035	3.98		37845.29	37845.29	7.17		Si
SLV 13	9.25	9536.73	-20921	-0.0000482	0.0005615	0.0035	3.98		37945	37945	3.98		Si
SLV 13	11.05	-10532.92	-17563	-0.0000454	0.0005615	0.0035	3.98		36620.62	36620.62	3.48		Si
SLV 16	9.25	9575.42	-18887	-0.0000453	0.0005615	0.0035	3.98		34974.14	34974.14	3.65		Si
SLV 16	11.05	-11616.75	-15543	-0.000045	0.0005615	0.0035	3.98		33214.19	33214.19	2.86		Si
SLV 1	9.25	-5819.92	-28397	-0.0000512	0.0005615	0.0035	3.98		53889.85	53889.85	9.26		Si
SLV 1	11.05	10518.7	-25197	-0.0000564	0.0005615	0.0035	3.98		44289.85	44289.85	4.21		Si
SLV 4	9.25	-5781.23	-26363	-0.0000481	0.0005615	0.0035	3.98		50779.58	50779.58	8.78		Si
SLV 4	11.05	9434.88	-23178	-0.0000512	0.0005615	0.0035	3.98		41276.86	41276.86	4.37		Si
SLV 14	9.25	9910.09	-20610	-0.0000485	0.0005615	0.0035	3.98		37488.41	37488.41	3.78		Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 14	11.05	-11518.53	-17251	-0.000047	0.0005615	0.0035	3.98		36104.81	36104.81	3.13		Si
SLV 2	9.25	-5446.56	-28086	-0.0000499	0.0005615	0.0035	3.98		53411.14	53411.14	9.81		Si
SLV 2	11.05	9533.09	-24886	-0.0000539	0.0005615	0.0035	3.98		43823.44	43823.44	4.6		Si
SLV 15	9.25	9202.06	-19198	-0.000045	0.0005615	0.0035	3.98		35426.85	35426.85	3.85		Si
SLV 15	11.05	-10631.14	-15855	-0.0000432	0.0005615	0.0035	3.98		33758.51	33758.51	3.18		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 81	9.25	2763.5	-34347	-28601	1986	3.98	3.98	-25665	10366	11552	40441	33370	10149	43519	No	21.91	Si
SLU 81	11.05	-824.78	-30076	-25044	1986	3.98	3.98	-22473	9941	11078	40441	33370	10149	43519	No	21.91	Si
SLU 75	9.25	2699.01	-34797	-28976	1829	3.98	3.98	-26001	10411	11602	40441	33370	10149	43519	No	23.79	Si
SLU 75	11.05	-607.19	-30526	-25419	1829	3.98	3.98	-22810	9986	11128	40441	33370	10149	43519	No	23.79	Si
SLU 83	9.25	2781.68	-35117	-29242	1877	3.98	3.98	-26240	10443	11638	40441	33370	10149	43519	No	23.19	Si
SLU 83	11.05	-610.38	-30846	-25686	1877	3.98	3.98	-23049	10018	11164	40441	33370	10149	43519	No	23.19	Si
SLU 74	9.25	2715.63	-34853	-29023	1837	3.98	3.98	-26044	10417	11609	40441	33370	10149	43519	No	23.69	Si
SLU 74	11.05	-604.15	-30582	-25466	1837	3.98	3.98	-22852	9991	11134	40441	33370	10149	43519	No	23.69	Si
SLU 82	9.25	2746.87	-34290	-28554	1978	3.98	3.98	-25623	10361	11546	40441	33370	10149	43519	No	22	Si
SLU 82	11.05	-827.82	-30019	-24997	1978	3.98	3.98	-22431	9935	11072	40441	33370	10149	43519	No	22	Si
SLU 52	9.25	2413.71	-29967	-24954	1790	3.98	3.98	-22392	9930	11066	40441	33370	10149	43519	No	24.32	Si
SLU 52	11.05	-821.88	-25758	-21449	1790	3.98	3.98	-19247	9511	10599	40441	33370	10149	43519	No	24.32	Si
SLU 73	9.25	2630.15	-33158	-27611	1887	3.98	3.98	-24776	10248	11420	40441	33370	10149	43519	No	23.06	Si
SLU 73	11.05	-779.98	-28887	-24054	1887	3.98	3.98	-21585	9822	10946	40441	33370	10149	43519	No	23.06	Si
SLU 60	9.25	2547.06	-31156	-25944	1889	3.98	3.98	-23281	10049	11198	40441	33370	10149	43519	No	23.04	Si
SLU 60	11.05	-866.69	-26947	-22439	1889	3.98	3.98	-20136	9629	10731	40441	33370	10149	43519	No	23.04	Si
SLU 61	9.25	2530.43	-31099	-25897	1881	3.98	3.98	-23238	10043	11192	40441	33370	10149	43519	No	23.13	Si
SLU 61	11.05	-869.73	-26891	-22392	1881	3.98	3.98	-20094	9624	10725	40441	33370	10149	43519	No	23.13	Si
SLU 84	9.25	2765.06	-35060	-29195	1869	3.98	3.98	-26198	10438	11632	40441	33370	10149	43519	No	23.28	Si
SLU 84	11.05	-613.42	-30789	-25638	1869	3.98	3.98	-23006	10012	11157	40441	33370	10149	43519	No	23.28	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 4	9.25	-5781.23	-26363	-21953	-9301	3.98	3.98	-19699	14357	15999	40441	50055	10149	56440		6.07	Si
SLV 4	11.05	9434.88	-23178	-19301	-8230	3.98	3.98	-17319	13881	15468	40441	50055	10149	55909		6.79	Si
SLV 16	9.25	9575.42	-18887	-15727	11876	3.98	3.98	-14113	13239	14754	40441	50055	10149	55195		4.65	Si
SLV 16	11.05	-11616.75	-15543	-12943	10834	3.98	3.7279	-12469	12910	13476	40441	50055	10149	53917		4.98	Si
SLV 2	9.25	-5446.56	-28086	-23388	-8436	3.98	3.98	-20987	14614	16286	40441	50055	10149	56727		6.72	Si
SLV 2	11.05	9533.09	-24886	-20723	-7394	3.98	3.98	-18596	14136	15753	40441	50055	10149	56194		7.6	Si
SLV 10	9.25	4859.6	-25292	-21061	6203	3.98	3.98	-18899	14196	15820	40441	50055	10149	56261		9.07	Si
SLV 10	11.05	-3861.36	-21971	-18296	5839	3.98	3.98	-16418	13700	15268	40441	50055	10149	55708		9.54	Si
SLV 14	9.25	9910.09	-20610	-17162	12740	3.98	3.98	-15400	13497	15041	40441	50055	10149	55482		4.35	Si
SLV 14	11.05	-11518.53	-17251	-14366	11670	3.98	3.9669	-12891	12995	14434	40441	50055	10149	54875		4.7	Si
SLV 3	9.25	-6154.58	-26674	-22212	-10056	3.98	3.98	-19932	14403	16051	40441	50055	10149	56492		5.62	Si
SLV 3	11.05	10420.49	-23489	-19560	-8985	3.98	3.98	-17552	13927	15520	40441	50055	10149	55961		6.23	Si
SLV 1	9.25	-5819.92	-28397	-23647	-9191	3.98	3.98	-21219	14661	16338	40441	50055	10149	56779		6.18	Si
SLV 1	11.05	10518.7	-25197	-20982	-8149	3.98	3.98	-18828	14182	15805	40441	50055	10149	56246		6.9	Si
SLV 13	9.25	9536.73	-20921	-17421	11985	3.98	3.98	-15633	13543	15093	40441	50055	10149	55534		4.63	Si
SLV 13	11.05	-10532.92	-17563	-14625	10915	3.98	3.98	-13123	13041	14533	40441	50055	10149	54974		5.04	Si
SLD 14	9.25	5315.92	-22354	-18614	6218	3.98	3.98	-16703	13757	15331	40441	50055	10149	55772		8.97	Si
SLD 14	11.05	-5237.56	-19045	-15859	5761	3.98	3.98	-14231	13263	14780	40441	50055	10149	55221		9.59	Si
SLV 15	9.25	9202.06	-19198	-15987	11121	3.98	3.98	-14345	13286	14806	40441	50055	10149	55247		4.97	Si
SLV 15	11.05	-10631.14	-15855	-13202	10079	3.98	3.9584	-11847	12786	14171	40441	50055	10149	54612		5.42	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.11 Wa 0.05 denominatore  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 16	179667	0.46	15239	-16982	483.25	2140.25	4.43	Si
SLV 15	179667	0.46	15518	-17293	483.25	2175.05	4.5	Si
SLV 12	179667	0.46	15934	-17757	483.25	2226.6	4.61	Si
SLV 11	179667	0.46	16115	-17958	483.25	2248.84	4.65	Si
SLV 14	179667	0.46	16792	-18713	483.25	2331.73	4.83	Si
SLV 13	179667	0.46	17071	-19024	483.25	2365.65	4.9	Si
SLV 8	179667	0.46	18041	-20105	483.25	2482.17	5.14	Si
SLV 7	179667	0.46	18221	-20306	483.25	2503.63	5.18	Si
SLV 10	179667	0.46	21111	-23526	483.25	2838.36	5.87	Si
SLV 9	179667	0.46	21291	-23727	483.25	2858.69	5.92	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 10.11 Wa = 0.05 Ta = 0.0739

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	$\alpha_0^*$	aLim	Verifica
SLV 5	-18047	-27617	1087	1.032	2395.5	0.936	16.02381	14.09547	Si
SLV 6	-17924	-27318	1087	1.038	2383.1	0.936	16.11692	14.09547	Si
SLV 9	-16861	-23946	1064	1.091	2275.6	0.933	16.98789	14.09547	Si
SLV 10	-16738	-23647	1064	1.097	2263.2	0.933	17.09272	14.09547	Si
SLV 7	-13570	-23132	-1061	1.293	1943.8	0.924	20.33437	14.09547	Si
SLV 8	-13447	-22833	-1061	1.302	1931.5	0.924	20.48544	14.09547	Si
SLV 11	-12384	-19461	-1085	1.385	1824.7	0.921	21.8685	14.09547	Si
SLV 12	-12261	-19162	-1085	1.396	1812.3	0.92	22.04365	14.09547	Si
SLV 1	-17898	-30412	363	1.073	2380.4	0.936	16.66219	7.52414	Si
SLV 2	-17707	-29949	363	1.082	2361.2	0.935	16.81388	7.52414	Si





Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	19.366	SLU 81	Si
V_SLU	21.914	SLU 81	Si
PF_SLV	2.859	SLV 16	Si
V_SLV	4.355	SLV 14	Si
PFFP_SLV	4.429	SLV 16	Si
R_SLV	1.137	SLV 5	Si

## Maschio 134

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.938	6.526	-7.958	6.526	L6	L7	3.98	0.28	3.52	3.52	3.52			

#### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

#### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	at	α	elim,conv	s,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 65	9.25	-733.38	-30947	-0.0000452	0.0003743	0.0035	3.98	44786.73	54105.9	54105.9	73.78	No	Si
SLU 65	11.05	-351.43	-26562	-0.0000378	0.0003743	0.0035	3.98	40483.25	48474.13	48474.13	137.94	No	Si
SLU 43	9.25	-684.78	-27845	-0.0000404	0.0003743	0.0035	3.98	41812.9	50194.49	50194.49	73.3	No	Si
SLU 43	11.05	-199.86	-23523	-0.000033	0.0003743	0.0035	3.98	37105.45	44303.83	44303.83	221.67	No	Si
SLU 72	9.25	-755.19	-32675	-0.0000479	0.0003743	0.0035	3.98	46296.83	56209.9	56209.9	74.43	No	Si
SLU 72	11.05	-552.82	-28289	-0.0000408	0.0003743	0.0035	3.98	42259.12	50773.89	50773.89	91.85	No	Si
SLU 37	9.25	-615.7	-29621	-0.0000429	0.0003743	0.0035	3.98	43556.87	52456.28	52456.28	85.2	No	Si
SLU 37	11.05	-657.25	-26217	-0.0000379	0.0003743	0.0035	3.98	40116.3	48017.47	48017.47	73.06	No	Si
SLU 47	9.25	-709.05	-28622	-0.0000416	0.0003743	0.0035	3.98	42589.33	51199.54	51199.54	72.21	No	Si
SLU 47	11.05	-301.04	-24300	-0.0000343	0.0003743	0.0035	3.98	37999.67	45409.34	45409.34	150.84	No	Si
SLU 38	9.25	-622.38	-29578	-0.0000429	0.0003743	0.0035	3.98	43515.45	52402.18	52402.18	84.2	No	Si
SLU 38	11.05	-657.49	-26173	-0.0000379	0.0003743	0.0035	3.98	40069.68	47959.99	47959.99	72.94	No	Si
SLU 50	9.25	-711.04	-29544	-0.000043	0.0003743	0.0035	3.98	43483.31	52360.22	52360.22	73.64	No	Si
SLU 50	11.05	-401.42	-25221	-0.0000359	0.0003743	0.0035	3.98	39033.43	46702.48	46702.48	116.34	No	Si
SLU 51	9.25	-717.73	-29501	-0.000043	0.0003743	0.0035	3.98	43441.78	52306.01	52306.01	72.88	No	Si
SLU 51	11.05	-401.66	-25178	-0.0000358	0.0003743	0.0035	3.98	38985.29	46644.03	46644.03	116.13	No	Si
SLU 68	9.25	-746.51	-31796	-0.0000465	0.0003743	0.0035	3.98	45542.18	55147.53	55147.53	73.87	No	Si
SLU 68	11.05	-452.2	-27411	-0.0000393	0.0003743	0.0035	3.98	41369.35	49608.71	49608.71	109.7	No	Si
SLU 44	9.25	-695.92	-27773	-0.0000403	0.0003743	0.0035	3.98	41739.31	50096.44	50096.44	71.99	No	Si
SLU 44	11.05	-200.26	-23450	-0.0000329	0.0003743	0.0035	3.98	37020.87	44201.21	44201.21	220.72	No	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 16	9.25	3721.69	-23741	-0.0000401	0.0005615	0.0035	3.98		42113.12	42113.12	11.32		Si
SLD 16	11.05	-5759.07	-20396	-0.0000395	0.0005615	0.0035	3.98		41369.41	41369.41	7.18		Si
SLV 13	9.25	9034.97	-25808	-0.0000542	0.0005615	0.0035	3.98		45207.02	45207.02	5		Si
SLV 13	11.05	-11881.36	-22465	-0.0000553	0.0005615	0.0035	3.98		44658.12	44658.12	3.76		Si
SLV 14	9.25	9667.81	-25786	-0.0000555	0.0005615	0.0035	3.98		45173.77	45173.77	4.67		Si
SLV 14	11.05	-13040.03	-22443	-0.0000577	0.0005615	0.0035	3.98		44622.84	44622.84	3.42		Si
SLV 4	9.25	-10138.41	-21943	-0.0000509	0.0005615	0.0035	3.98		43827.5	43827.5	4.32		Si
SLV 4	11.05	11344.38	-18567	-0.0000485	0.0005615	0.0035	3.98		34510.19	34510.19	3.04		Si
SLV 15	9.25	8811.29	-23610	-0.0000505	0.0005615	0.0035	3.98		41918.32	41918.32	4.76		Si
SLV 15	11.05	-11950.67	-20286	-0.0000523	0.0005615	0.0035	3.98		41185.19	41185.19	3.45		Si
SLV 2	9.25	-9914.72	-24142	-0.0000536	0.0005615	0.0035	3.98		47351.89	47351.89	4.78		Si
SLV 2	11.05	11413.69	-20746	-0.0000518	0.0005615	0.0035	3.98		37688.45	37688.45	3.3		Si





Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 1	9.25	-10547.56	-24164	-0.000055	0.0005615	0.0035	3.98		47387.63	47387.63	4.49		Si
SLV 1	11.05	12572.35	-20768	-0.0000543	0.0005615	0.0035	3.98		37720.89	37720.89	3		Si
SLV 3	9.25	-10771.24	-21965	-0.0000523	0.0005615	0.0035	3.98		43862.66	43862.66	4.07		Si
SLV 3	11.05	12503.04	-18590	-0.000051	0.0005615	0.0035	3.98		34542.27	34542.27	2.76		Si
SLV 16	9.25	9444.12	-23587	-0.0000518	0.0005615	0.0035	3.98		41885.42	41885.42	4.44		Si
SLV 16	11.05	-13109.33	-20264	-0.0000547	0.0005615	0.0035	3.98		41148.26	41148.26	3.14		Si
SLD 3	9.25	-4922.57	-23047	-0.0000416	0.0005615	0.0035	3.98		45589.9	45589.9	9.26		Si
SLD 3	11.05	5187.49	-19681	-0.0000373	0.0005615	0.0035	3.98		36130.1	36130.1	6.96		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 43	9.25	-684.78	-27845	-23187	-276	3.98	3.98	-20807	9719	10831	40441	33370	10149	43519	No	157.96	Si
SLU 43	11.05	-199.86	-23523	-19588	-276	3.98	3.98	-17577	9288	10351	40441	33370	10149	43519	No	157.96	Si
SLU 46	9.25	-701.41	-29465	-24536	-231	3.98	3.98	-22017	9880	11010	40441	33370	10149	43519	No	188.09	Si
SLU 46	11.05	-295.93	-25142	-20936	-231	3.98	3.98	-18787	9449	10530	40441	33370	10149	43519	No	188.09	Si
SLU 52	9.25	-711.25	-30265	-25202	-228	3.98	3.98	-22615	9960	11099	40441	33370	10149	43519	No	190.57	Si
SLU 52	11.05	-311.19	-25942	-21602	-228	3.98	3.98	-19385	9529	10619	40441	33370	10149	43519	No	190.57	Si
SLU 47	9.25	-709.05	-28622	-23834	-233	3.98	3.98	-21387	9796	10917	40441	33370	10149	43519	No	186.95	Si
SLU 47	11.05	-301.04	-24300	-20235	-233	3.98	3.98	-18157	9365	10437	40441	33370	10149	43519	No	186.95	Si
SLU 65	9.25	-733.38	-30947	-25770	-218	3.98	3.98	-23125	10028	11175	40441	33370	10149	43519	No	199.44	Si
SLU 65	11.05	-351.43	-26562	-22118	-218	3.98	3.98	-19848	9591	10688	40441	33370	10149	43519	No	199.44	Si
SLU 61	9.25	-713.36	-31362	-26115	-203	3.98	3.98	-23434	10069	11221	40441	33370	10149	43519	No	214.15	Si
SLU 61	11.05	-358.57	-27039	-22516	-203	3.98	3.98	-20204	9638	10741	40441	33370	10149	43519	No	214.15	Si
SLU 44	9.25	-695.92	-27773	-23127	-281	3.98	3.98	-20753	9711	10822	40441	33370	10149	43519	No	154.61	Si
SLU 44	11.05	-200.26	-23450	-19527	-281	3.98	3.98	-17523	9281	10343	40441	33370	10149	43519	No	154.61	Si
SLU 2	9.25	-547.77	-22184	-18473	-201	3.98	3.98	-16577	9155	10202	40441	33370	10149	43519	No	216.29	Si
SLU 2	11.05	-194.01	-18843	-15690	-201	3.98	3.98	-14080	8822	9831	40441	33370	10149	43519	No	216.29	Si
SLU 64	9.25	-722.24	-31020	-25830	-212	3.98	3.98	-23179	10035	11183	40441	33370	10149	43519	No	205.04	Si
SLU 64	11.05	-351.03	-26634	-22179	-212	3.98	3.98	-19902	9598	10696	40441	33370	10149	43519	No	205.04	Si
SLU 45	9.25	-694.73	-29508	-24572	-228	3.98	3.98	-22049	9884	11015	40441	33370	10149	43519	No	191.04	Si
SLU 45	11.05	-295.69	-25185	-20972	-228	3.98	3.98	-18819	9454	10535	40441	33370	10149	43519	No	191.04	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 1	9.25	-10547.56	-24164	-20121	-13161	3.98	3.98	-18056	14028	15633	40441	50055	10149	56074		4.26	Si
SLV 1	11.05	12572.35	-20768	-17294	-12391	3.98	3.98	-15519	13520	15067	40441	50055	10149	55508		4.48	Si
SLV 2	9.25	-9914.72	-24142	-20103	-12166	3.98	3.98	-18039	14025	15629	40441	50055	10149	56070		4.61	Si
SLV 2	11.05	11413.69	-20746	-17276	-11396	3.98	3.98	-15502	13517	15063	40441	50055	10149	55504		4.87	Si
SLV 3	9.25	-10771.24	-21965	-18291	-13885	3.98	3.98	-16413	13699	15266	40441	50055	10149	55707		4.01	Si
SLV 3	11.05	12503.04	-18590	-15480	-12471	3.98	3.9522	-13891	13195	14602	40441	50055	10149	55043		4.41	Si
SLV 16	9.25	9444.12	-23587	-19642	12837	3.98	3.98	-17625	13942	15537	40441	50055	10149	55978		4.36	Si
SLV 16	11.05	-13109.33	-20264	-16874	12067	3.98	3.98	-15142	13445	14983	40441	50055	10149	55424		4.59	Si
SLV 15	9.25	8811.29	-23610	-19660	11842	3.98	3.98	-17642	13945	15540	40441	50055	10149	55981		4.73	Si
SLV 15	11.05	-11950.67	-20286	-16892	11072	3.98	3.98	-15158	13448	14987	40441	50055	10149	55428		5.01	Si
SLD 3	9.25	-4922.57	-23047	-19192	-6030	3.98	3.98	-17222	13861	15447	40441	50055	10149	55888		9.27	Si
SLD 3	11.05	5187.49	-19681	-16388	-5424	3.98	3.98	-14706	13358	14886	40441	50055	10149	55327		10.2	Si
SLV 4	9.25	-10138.41	-21943	-18272	-12890	3.98	3.98	-16397	13696	15263	40441	50055	10149	55704		4.32	Si
SLV 4	11.05	11344.38	-18567	-15461	-11476	3.98	3.98	-13874	13191	14701	40441	50055	10149	55142		4.81	Si
SLV 13	9.25	9034.97	-25808	-21491	12566	3.98	3.98	-19285	14274	15906	40441	50055	10149	56347		4.48	Si
SLV 13	11.05	-11881.36	-22465	-18707	11152	3.98	3.98	-16786	13774	15350	40441	50055	10149	55791		5	Si
SLV 14	9.25	9667.81	-25786	-21472	13561	3.98	3.98	-19268	14270	15903	40441	50055	10149	56344		4.15	Si
SLV 14	11.05	-13040.03	-22443	-18688	12147	3.98	3.98	-16770	13771	15346	40441	50055	10149	55787		4.59	Si
SLD 1	9.25	-4825.13	-24011	-19994	-5718	3.98	3.98	-17942	14005	15607	40441	50055	10149	56048		9.8	Si
SLD 1	11.05	5222.09	-20636	-17184	-5391	3.98	3.98	-15420	13501	15045	40441	50055	10149	55486		10.29	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.11 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 8	179667	0.46	16464	-18348	483.25	2291.77	4.74	Si
SLV 7	179667	0.46	16477	-18362	483.25	2293.33	4.75	Si
SLV 12	179667	0.46	16909	-18843	483.25	2345.96	4.85	Si
SLV 11	179667	0.46	16922	-18857	483.25	2347.52	4.86	Si
SLV 4	179667	0.46	18225	-20310	483.25	2504.1	5.18	Si
SLV 3	179667	0.46	18245	-20332	483.25	2506.45	5.19	Si
SLV 16	179667	0.46	19707	-21961	483.25	2677.85	5.54	Si
SLV 15	179667	0.46	19727	-21984	483.25	2680.15	5.55	Si
SLV 2	179667	0.46	20182	-22491	483.25	2732.62	5.65	Si
SLV 1	179667	0.46	20202	-22513	483.25	2734.9	5.66	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 10.11 Wa = 0.05 Ta = 0.0739

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	$\alpha_0^*$	aLim	Verifica
SLV 9	-18520	-27473	1138	1.008	2443.3	0.937	15.64045	14.09547	Si
SLV 10	-18517	-27479	1138	1.009	2443.1	0.937	15.64246	14.09547	Si
SLV 5	-18382	-26452	1047	1.019	2429.4	0.937	15.80426	14.09547	Si
SLV 6	-18379	-26458	1047	1.019	2429.1	0.937	15.8063	14.09547	Si
SLV 11	-12946	-21247	-1045	1.342	1881.1	0.922	21.14052	14.09547	Si
SLV 12	-12943	-21253	-1045	1.342	1880.8	0.922	21.14414	14.09547	Si
SLV 7	-12808	-20226	-1136	1.347	1867.2	0.922	21.2362	14.09547	Si



Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 8	-12806	-20232	-1136	1.347	1867	0.922	21.23988	14.09547	Si
SLV 13	-16731	-26483	480	1.126	2262.5	0.933	17.54807	7.52414	Si
SLV 14	-16726	-26492	480	1.127	2262	0.933	17.55188	7.52414	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

**Tabella dei coefficienti di sicurezza minimi**

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	71.986	SLU 44	Si
V_SLU	154.613	SLU 44	Si
PF_SLV	2.763	SLV 3	Si
V_SLV	4.012	SLV 3	Si
PFFP_SLV	4.742	SLV 8	Si
R_SLV	1.11	SLV 9	Si

**Maschio 135**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati geometrici**

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-7.058	6.526	-5.093	6.526	L6	L7	1.965	0.28	3.52	3.52	3.52			

**Caratteristiche del materiale**

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	t0	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

**Materiale per FRCM**

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

**Rinforzo a matrice inorganica**

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	elim,conv / $\epsilon_{CNR}$ DT-200							CRM / Fibrenet?			
									$\alpha t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma F_d$	connettori	tipo di muratura	CRM	Intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

**Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche,  $\gamma M = 3$**

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_m$ _	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 47	9.25	-1139.19	-12139	-0.0000442	0.0003743	0.0035	1.965	9342.31	11114.6	11114.6	9.76	No	Si
SLU 47	11.05	-585.43	-9653	-0.0000319	0.0003743	0.0035	1.965	7850.06	9336.58	9336.58	15.95	No	Si
SLU 44	9.25	-1137.07	-11839	-0.0000433	0.0003743	0.0035	1.965	9173.63	10906.58	10906.58	9.59	No	Si
SLU 44	11.05	-545.68	-9353	-0.0000307	0.0003743	0.0035	1.965	7655.2	9115.9	9115.9	16.71	No	Si
SLU 49	9.25	-1167.35	-12815	-0.0000465	0.0003743	0.0035	1.965	9710.68	11565.24	11565.24	9.91	No	Si
SLU 49	11.05	-650.39	-10329	-0.0000345	0.0003743	0.0035	1.965	8277.38	9838.54	9838.54	15.13	No	Si
SLU 48	9.25	-1164.91	-12816	-0.0000465	0.0003743	0.0035	1.965	9710.81	11565.4	11565.4	9.93	No	Si
SLU 48	11.05	-654.2	-10330	-0.0000345	0.0003743	0.0035	1.965	8277.54	9838.73	9838.73	15.04	No	Si
SLU 45	9.25	-1162.79	-12515	-0.0000455	0.0003743	0.0035	1.965	9549.25	11368.21	11368.21	9.78	No	Si
SLU 45	11.05	-614.45	-10029	-0.0000333	0.0003743	0.0035	1.965	8089.8	9615.94	9615.94	15.65	No	Si
SLU 43	9.25	-1132.99	-11839	-0.0000432	0.0003743	0.0035	1.965	9173.87	10906.87	10906.87	9.63	No	Si
SLU 43	11.05	-552.04	-9354	-0.0000307	0.0003743	0.0035	1.965	7655.47	9116.2	9116.2	16.51	No	Si
SLU 65	9.25	-1137.6	-13120	-0.0000472	0.0003743	0.0035	1.965	9871.32	11767	11767	10.34	No	Si
SLU 65	11.05	-730.28	-10604	-0.000036	0.0003743	0.0035	1.965	8446.63	10038.96	10038.96	13.75	No	Si
SLU 50	9.25	-1137.23	-12440	-0.0000451	0.0003743	0.0035	1.965	9508.07	11318.83	11318.83	9.95	No	Si
SLU 50	11.05	-631.55	-9954	-0.0000332	0.0003743	0.0035	1.965	8042.03	9559.48	9559.48	15.14	No	Si
SLU 51	9.25	-1139.68	-12440	-0.0000451	0.0003743	0.0035	1.965	9507.93	11318.67	11318.67	9.93	No	Si
SLU 51	11.05	-627.73	-9954	-0.0000331	0.0003743	0.0035	1.965	8041.87	9559.3	9559.3	15.23	No	Si
SLU 46	9.25	-1165.23	-12515	-0.0000456	0.0003743	0.0035	1.965	9549.11	11368.05	11368.05	9.76	No	Si
SLU 46	11.05	-610.64	-10029	-0.0000332	0.0003743	0.0035	1.965	8089.64	9615.75	9615.75	15.75	No	Si

**Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche,  $\gamma M = 2$**

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_m$ _	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 16	9.25	498.69	-9723	-0.0000309	0.0005615	0.0035	1.965		8878.27	8878.27	17.8		Si
SLD 16	11.05	-2325.43	-7658	-0.0000404	0.0005615	0.0035	1.965		8028.49	8028.49	3.45		Si
SLV 2	9.25	-3812.97	-10806	-0.0000626	0.0005615	0.0035	1.965		10606.79	10606.79	2.78		Si
SLV 2	11.05	3161.14	-9197	-0.0000521	0.0005615	0.0035	1.965		8482.51	8482.51	2.68		Si
SLV 3	9.25	-3893.51	-9737	-0.0000608	0.0005615	0.0035	1.965		9755.47	9755.47	2.51		Si
SLV 3	11.05	3450.06	-8113	-0.0000527	0.0005615	0.0035	1.965		7579.57	7579.57	2.2		Si
SLV 13	9.25	1926.78	-10650	-0.0000457	0.0005615	0.0035	1.965		9536.47	9536.47	4.95		Si
SLV 13	11.05	-4251.17	-8417	-0.0000644	0.0005615	0.0035	1.965		8662.07	8662.07	2.04		Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 15	9.25	2083.44	-9404	-0.0000434	0.0005615	0.0035	1.965		8641.35	8641.35	4.15		Si
SLV 15	11.05	-4313.42	-7156	-0.000069	0.0005615	0.0035	1.572		7594.5	7594.5	1.76		Si
SLV 1	9.25	-4050.17	-10983	-0.0000654	0.0005615	0.0035	1.965		10746.92	10746.92	2.65		Si
SLV 1	11.05	3512.32	-9374	-0.000056	0.0005615	0.0035	1.965		8618.89	8618.89	2.45		Si
SLV 12	9.25	369.47	-7921	-0.0000247	0.0005615	0.0035	1.965		7417.39	7417.39	20.08		Si
SLV 12	11.05	-1957.83	-5873	-0.0000322	0.0005615	0.0035	1.965		6492	6492	3.32		Si
SLV 16	9.25	2320.63	-9227	-0.0000449	0.0005615	0.0035	1.965		8505.46	8505.46	3.67		Si
SLV 16	11.05	-4664.6	-6979	-0.000082	0.0005615	0.0035	1.572		7441.74	7441.74	1.6		Si
SLV 4	9.25	-3656.31	-9560	-0.0000579	0.0005615	0.0035	1.965		9608.94	9608.94	2.63		Si
SLV 4	11.05	3098.89	-7936	-0.0000484	0.0005615	0.0035	1.965		7430.24	7430.24	2.4		Si
SLV 14	9.25	2163.98	-10473	-0.0000472	0.0005615	0.0035	1.965		9410.47	9410.47	4.35		Si
SLV 14	11.05	-4602.35	-8240	-0.0000713	0.0005615	0.0035	1.572		8516.82	8516.82	1.85		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 46	9.25	-1165.23	-12515	-10422	-297	1.965	1.965	-18941	9470	5210	40441	16476	5011	21487	No	72.46	Si
SLU 46	11.05	-610.64	-10029	-8351	-297	1.965	1.965	-15179	8968	4934	40441	16476	5011	21487	No	72.46	Si
SLU 44	9.25	-1137.07	-11839	-9859	-317	1.965	1.965	-17918	9333	5135	40441	16476	5011	21487	No	67.79	Si
SLU 44	11.05	-545.68	-9353	-7788	-317	1.965	1.965	-14155	8832	4859	40441	16476	5011	21487	No	67.79	Si
SLU 49	9.25	-1167.35	-12815	-10671	-276	1.965	1.965	-19395	9530	5244	40441	16476	5011	21487	No	77.95	Si
SLU 49	11.05	-650.39	-10329	-8601	-276	1.965	1.965	-15633	9029	4968	40441	16476	5011	21487	No	77.95	Si
SLU 48	9.25	-1164.91	-12816	-10672	-272	1.965	1.965	-19396	9531	5244	40441	16476	5011	21487	No	78.95	Si
SLU 48	11.05	-654.2	-10330	-8602	-272	1.965	1.965	-15633	9029	4968	40441	16476	5011	21487	No	78.95	Si
SLU 47	9.25	-1139.19	-12139	-10108	-296	1.965	1.965	-18372	9394	5169	40441	16476	5011	21487	No	72.57	Si
SLU 47	11.05	-585.43	-9653	-8038	-296	1.965	1.965	-14610	8892	4893	40441	16476	5011	21487	No	72.57	Si
SLU 43	9.25	-1132.99	-11839	-9859	-311	1.965	1.965	-17918	9334	5135	40441	16476	5011	21487	No	69.05	Si
SLU 43	11.05	-552.04	-9354	-7789	-311	1.965	1.965	-14156	8832	4859	40441	16476	5011	21487	No	69.05	Si
SLU 50	9.25	-1137.23	-12440	-10359	-269	1.965	1.965	-18827	9455	5202	40441	16476	5011	21487	No	79.77	Si
SLU 50	11.05	-631.55	-9954	-8289	-269	1.965	1.965	-15065	8953	4926	40441	16476	5011	21487	No	79.77	Si
SLU 51	9.25	-1139.68	-12440	-10359	-273	1.965	1.965	-18827	9455	5202	40441	16476	5011	21487	No	78.75	Si
SLU 51	11.05	-627.73	-9954	-8289	-273	1.965	1.965	-15064	8953	4926	40441	16476	5011	21487	No	78.75	Si
SLU 2	9.25	-875.75	-9445	-7865	-218	1.965	1.965	-14294	8850	4870	40441	16476	5011	21487	No	98.48	Si
SLU 2	11.05	-466.97	-7525	-6266	-218	1.965	1.965	-11388	8463	4656	40441	16476	5011	21487	No	98.48	Si
SLU 45	9.25	-1162.79	-12515	-10422	-293	1.965	1.965	-18941	9470	5210	40441	16476	5011	21487	No	73.32	Si
SLU 45	11.05	-614.45	-10029	-8352	-293	1.965	1.965	-15179	8968	4934	40441	16476	5011	21487	No	73.32	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 2	9.25	-3812.97	-10806	-8998	-4002	1.965	1.889	-17152	13847	7324	40441	24714	5011	29724		7.43	Si
SLV 2	11.05	3161.14	-9197	-7659	-3491	1.965	1.9164	-13920	13201	7084	40441	24714	5011	29724		8.51	Si
SLV 1	9.25	-4050.17	-10983	-9146	-4329	1.965	1.8412	-17887	13994	7215	40441	24714	5011	29724		6.87	Si
SLV 1	11.05	3512.32	-9374	-7806	-3818	1.965	1.8235	-14187	13254	6767	40441	24714	5011	29724		7.79	Si
SLV 16	9.25	2320.63	-9227	-7683	4026	1.965	1.965	-13964	13210	7268	40441	24714	5011	29724		7.38	Si
SLV 16	11.05	-4664.6	-6979	-5811	3515	1.572	0.9424	0	0	0	40441	19771	4009	23779		6.76	Si
SLV 13	9.25	1926.78	-10650	-8868	3592	1.965	1.965	-16118	13640	7505	40441	24714	5011	29724		8.27	Si
SLV 13	11.05	-4251.17	-8417	-7009	3150	1.965	1.4324	-17625	13942	5592	40441	24714	5011	29724		9.44	Si
SLV 15	9.25	2083.44	-9404	-7831	3699	1.965	1.965	-14232	13263	7297	40441	24714	5011	29724		8.04	Si
SLV 15	11.05	-4313.42	-7156	-5959	3188	1.572	1.1392	0	0	0	40441	19771	4009	23779		7.46	Si
SLV 3	9.25	-3893.51	-9737	-8108	-4222	1.965	1.7479	-16672	13751	6730	40441	24714	5011	29724		7.04	Si
SLV 3	11.05	3450.06	-8113	-6756	-3780	1.965	1.6718	-12278	12872	6025	40441	24714	5011	29724		7.86	Si
SLD 1	9.25	-2228.22	-10487	-8733	-1938	1.965	1.965	-15872	13591	7478	40441	24714	5011	29724		15.34	Si
SLD 1	11.05	1173.15	-8696	-7241	-1720	1.965	1.965	-13160	13049	7180	40441	24714	5011	29724		17.28	Si
SLV 4	9.25	-3656.31	-9560	-7961	-3895	1.965	1.8001	-15903	13597	6854	40441	24714	5011	29724		7.63	Si
SLV 4	11.05	3098.89	-7936	-6608	-3453	1.965	1.7761	-12011	12819	6375	40441	24714	5011	29724		8.61	Si
SLD 3	9.25	-2158.46	-9940	-8277	-1891	1.965	1.965	-15043	13425	7387	40441	24714	5011	29724		15.72	Si
SLD 3	11.05	1144.16	-8141	-6779	-1701	1.965	1.965	-12321	12881	7087	40441	24714	5011	29724		17.47	Si
SLV 14	9.25	2163.98	-10473	-8721	3919	1.965	1.965	-15851	13587	7476	40441	24714	5011	29724		7.58	Si
SLV 14	11.05	-4602.35	-8240	-6862	3477	1.572	1.272	0	0	0	40441	19771	4009	23779		6.84	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.11 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 12	179667	0.46	12653	-6962	238.59	893.92	3.75	Si
SLV 11	179667	0.46	12861	-7076	238.59	907.24	3.8	Si
SLV 8	179667	0.46	12982	-7143	238.59	914.97	3.83	Si
SLV 7	179667	0.46	13189	-7257	238.59	928.22	3.89	Si
SLV 16	179667	0.46	14784	-8134	238.59	1028.57	4.31	Si
SLV 15	179667	0.46	15106	-8311	238.59	1048.48	4.39	Si
SLV 4	179667	0.46	15879	-8736	238.59	1095.94	4.59	Si
SLV 3	179667	0.46	16200	-8913	238.59	1115.5	4.68	Si
SLV 14	179667	0.46	16988	-9347	238.59	1162.98	4.87	Si
SLV 13	179667	0.46	17309	-9524	238.59	1182.18	4.95	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.11 Wa = 0.05 Ta = 0.0739

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	$\alpha_0^*$	aLim	Verifica
SLV 5	-9601	-10245	570	0.969	1252.6	0.939	14.99291	14.09547	Si
SLV 6	-9358	-10333	570	0.989	1228	0.938	15.32449	14.09547	Si
SLV 9	-7917	-12466	584	1.129	1082.4	0.931	17.62177	14.09547	Si



Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 10	-7674	-12553	584	1.157	1057.9	0.93	18.08559	14.09547	Si
SLV 7	-5371	-6559	-583	1.519	826.4	0.915	24.11962	14.09547	Si
SLV 8	-5128	-6647	-583	1.571	802.2	0.914	25.00053	14.09547	Si
SLV 1	-10152	-6341	149	0.961	1308.4	0.941	14.83963	7.52414	Si
SLV 2	-9775	-6476	149	0.991	1270.3	0.94	15.3288	7.52414	Si
SLV 3	-8883	-5235	-196	1.067	1179.9	0.936	16.56358	7.52414	Si
SLV 11	-3687	-8780	-568	1.98	659.4	0.902	31.91981	14.09547	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	9.592	SLU 44	Si
V_SLU	67.787	SLU 44	Si
PF_SLV	1.595	SLV 16	Si
V_SLV	6.765	SLV 16	Si
PFFP_SLV	3.747	SLV 12	Si
R_SLV	1.064	SLV 5	Si

Maschio 136

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-20.613	1.006	-24.633	1.006	L6	L7	4.02	0.28	3.52	3.52	3.52			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	$\tau 0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche,  $\gamma M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon m$	$\epsilon m_{-}$	$\epsilon m_u$	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 43	8.35	-4919.5	-27224	-0.0000435	0.0004492	0.0035	4.02	43888.57	57242.84	57242.84	11.64	No	Si
SLU 43	10.45	-2187.66	-21796	-0.0000312	0.0004492	0.0035	4.02	36866.59	48570.09	48570.09	22.2	No	Si
SLU 47	8.35	-5030.84	-28029	-0.0000448	0.0004492	0.0035	4.02	44856.43	58495.21	58495.21	11.63	No	Si
SLU 47	10.45	-2264.5	-22578	-0.0000323	0.0004492	0.0035	4.02	37931.93	49860.03	49860.03	22.02	No	Si
SLU 44	8.35	-4944.85	-27256	-0.0000436	0.0004492	0.0035	4.02	43928.04	57293.43	57293.43	11.59	No	Si
SLU 44	10.45	-2220.73	-21840	-0.0000313	0.0004492	0.0035	4.02	36927.87	48643.7	48643.7	21.9	No	Si
SLU 51	8.35	-5106.68	-28788	-0.0000459	0.0004492	0.0035	4.02	45752.2	59676.74	59676.74	11.69	No	Si
SLU 51	10.45	-2295.03	-23298	-0.0000333	0.0004492	0.0035	4.02	38896.35	51046.91	51046.91	22.24	No	Si
SLU 50	8.35	-5091.47	-28769	-0.0000459	0.0004492	0.0035	4.02	45729.39	59646.39	59646.39	11.71	No	Si
SLU 50	10.45	-2275.19	-23271	-0.0000332	0.0004492	0.0035	4.02	38860.73	51002.74	51002.74	22.42	No	Si
SLU 48	8.35	-5165.19	-29398	-0.0000468	0.0004492	0.0035	4.02	46459.62	60625.95	60625.95	11.74	No	Si
SLU 48	10.45	-2543.81	-24013	-0.0000347	0.0004492	0.0035	4.02	39838.76	52225.14	52225.14	20.53	No	Si
SLU 49	8.35	-5180.4	-29418	-0.0000469	0.0004492	0.0035	4.02	46482.06	60656.31	60656.31	11.71	No	Si
SLU 49	10.45	-2563.65	-24040	-0.0000348	0.0004492	0.0035	4.02	39873.79	52269.31	52269.31	20.39	No	Si
SLU 45	8.35	-5079.2	-28626	-0.0000457	0.0004492	0.0035	4.02	45562.13	59424.18	59424.18	11.7	No	Si
SLU 45	10.45	-2500.04	-23275	-0.0000337	0.0004492	0.0035	4.02	38865.63	51008.82	51008.82	20.4	No	Si
SLU 65	8.35	-4981.74	-29212	-0.0000462	0.0004492	0.0035	4.02	46244.43	60335.66	60335.66	12.11	No	Si
SLU 65	10.45	-2981.39	-24562	-0.0000363	0.0004492	0.0035	4.02	40553.32	53101.65	53101.65	17.81	No	Si
SLU 46	8.35	-5094.41	-28645	-0.0000457	0.0004492	0.0035	4.02	45585.02	59454.53	59454.53	11.67	No	Si
SLU 46	10.45	-2519.89	-23302	-0.0000337	0.0004492	0.0035	4.02	38901.25	51052.98	51052.98	20.26	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche,  $\gamma M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon m$	$\epsilon m_{-}$	$\epsilon m_u$	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 3	8.35	-27.56	-28246	-0.0000349	0.0006738	0.0035	4.02		60453.62	60453.62	2193.32		Si
SLV 3	10.45	-12543.52	-27400	-0.0000576	0.0006738	0.0035	4.02		59051.8	59051.8	4.71		Si
SLV 1	8.35	627.19	-27223	-0.0000348	0.0006738	0.0035	4.02		51529.47	51529.47	82.16		Si
SLV 1	10.45	-10731.24	-26093	-0.0000524	0.0006738	0.0035	4.02		56832.1	56832.1	5.3		Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 2	8.35	317.48	-27192	-0.0000341	0.0006738	0.0035	4.02		51476.73	51476.73	162.14		Si
SLV 2	10.45	-10844.81	-26121	-0.0000527	0.0006738	0.0035	4.02		56880.4	56880.4	5.24		Si
SLV 14	8.35	-7504.18	-16471	-0.000034	0.0006738	0.0035	4.02		40162.29	40162.29	5.35		Si
SLV 14	10.45	7878.13	-10387	-0.0000272	0.0006738	0.0035	4.02		21704.72	21704.72	2.76		Si
SLV 4	8.35	-337.27	-28215	-0.0000355	0.0006738	0.0035	4.02		60402.85	60402.85	179.09		Si
SLV 4	10.45	-12657.09	-27429	-0.0000578	0.0006738	0.0035	4.02		59100.1	59100.1	4.67		Si
SLV 16	8.35	-8158.93	-17494	-0.0000366	0.0006738	0.0035	4.02		41984.82	41984.82	5.15		Si
SLV 16	10.45	6065.85	-11695	-0.0000254	0.0006738	0.0035	4.02		24134.36	24134.36	3.98		Si
SLV 15	8.35	-7849.22	-17526	-0.000036	0.0006738	0.0035	4.02		42040.9	42040.9	5.36		Si
SLV 15	10.45	6179.41	-11666	-0.0000256	0.0006738	0.0035	4.02		24081.88	24081.88	3.9		Si
SLV 7	8.35	-3583.86	-25681	-0.0000384	0.0006738	0.0035	4.02		56133.55	56133.55	15.66		Si
SLV 7	10.45	-8124.93	-23424	-0.0000441	0.0006738	0.0035	4.02		52301	52301	6.44		Si
SLV 13	8.35	-7194.47	-16503	-0.0000335	0.0006738	0.0035	4.02		40218.37	40218.37	5.59		Si
SLV 13	10.45	7991.69	-10359	-0.0000274	0.0006738	0.0035	4.02		21651.44	21651.44	2.71		Si
SLV 8	8.35	-3783.89	-25661	-0.0000387	0.0006738	0.0035	4.02		56099.04	56099.04	14.83		Si
SLV 8	10.45	-8198.28	-23442	-0.0000442	0.0006738	0.0035	4.02		52332.19	52332.19	6.38		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 42	8.35	-3738.91	-25919	-18490	2669	4.02	4.02	-16427	10524	11845	115546	40451	20502	60953	No	22.84	Si
SLU 42	10.45	-3867.38	-24132	-17215	2681	4.02	4.02	-15294	10373	11675	115546	40451	20502	60953	No	22.74	Si
SLU 35	8.35	-3941.35	-26787	-19109	2199	4.02	4.02	-16977	10597	11928	115546	40451	20502	60953	No	27.72	Si
SLU 35	10.45	-3812.01	-24636	-17575	2209	4.02	4.02	-15614	10415	11723	115546	40451	20502	60953	No	27.59	Si
SLU 33	8.35	-3870.57	-26034	-18572	2261	4.02	4.02	-16500	10533	11856	115546	40451	20502	60953	No	26.96	Si
SLU 33	10.45	-3788.09	-23925	-17067	2272	4.02	4.02	-15163	10355	11656	115546	40451	20502	60953	No	26.83	Si
SLU 39	8.35	-3637.71	-25127	-17925	2714	4.02	4.02	-15925	10457	11770	115546	40451	20502	60953	No	22.46	Si
SLU 39	10.45	-3803.77	-23367	-16669	2723	4.02	4.02	-14809	10308	11603	115546	40451	20502	60953	No	22.38	Si
SLU 82	8.35	-4778.46	-30914	-22053	2163	4.02	4.02	-19592	10833	12194	115546	40451	20502	60953	No	28.17	Si
SLU 82	10.45	-4127.84	-27706	-19764	2176	4.02	4.02	-17559	10675	12015	115546	40451	20502	60953	No	28.01	Si
SLU 40	8.35	-3652.93	-25147	-17939	2723	4.02	4.02	-15937	10458	11772	115546	40451	20502	60953	No	22.39	Si
SLU 40	10.45	-3823.61	-23394	-16689	2734	4.02	4.02	-14826	10310	11605	115546	40451	20502	60953	No	22.3	Si
SLU 81	8.35	-4763.25	-30894	-22039	2155	4.02	4.02	-19580	10833	12194	115546	40451	20502	60953	No	28.29	Si
SLU 81	10.45	-4108	-27679	-19745	2166	4.02	4.02	-17542	10672	12013	115546	40451	20502	60953	No	28.14	Si
SLU 36	8.35	-3956.56	-26807	-19123	2208	4.02	4.02	-16989	10599	11930	115546	40451	20502	60953	No	27.61	Si
SLU 36	10.45	-3831.85	-24663	-17594	2219	4.02	4.02	-15630	10417	11726	115546	40451	20502	60953	No	27.47	Si
SLU 32	8.35	-3855.36	-26015	-18558	2253	4.02	4.02	-16487	10532	11854	115546	40451	20502	60953	No	27.06	Si
SLU 32	10.45	-3768.25	-23898	-17048	2262	4.02	4.02	-15146	10353	11653	115546	40451	20502	60953	No	26.94	Si
SLU 41	8.35	-3723.7	-25900	-18476	2661	4.02	4.02	-16415	10522	11843	115546	40451	20502	60953	No	22.91	Si
SLU 41	10.45	-3847.53	-24105	-17196	2670	4.02	4.02	-15277	10370	11673	115546	40451	20502	60953	No	22.83	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 16	8.35	-8158.93	-17494	-12480	-9120	4.02	4.02	-11087	14717	16566	115546	60677	20502	81179		8.9	Si
SLV 16	10.45	6065.85	-11695	-8343	-7775	4.02	4.02	-7412	13982	15739	115546	60677	20502	81179		10.44	Si
SLV 14	8.35	-7504.18	-16471	-11750	-10469	4.02	4.02	-10439	14588	16420	115546	60677	20502	81179		7.75	Si
SLV 14	10.45	7878.13	-10387	-7410	-9074	4.02	3.7546	-6583	13817	14525	115546	60677	20502	81179		8.95	Si
SLV 4	8.35	-337.27	-28215	-20128	10918	4.02	4.02	-17882	16076	18096	115546	60677	20502	81179		7.44	Si
SLV 4	10.45	-12657.09	-27429	-19567	9538	4.02	4.02	-17384	15977	17983	115546	60677	20502	81179		8.51	Si
SLV 8	8.35	-3783.89	-25661	-18306	5484	4.02	4.02	-16263	15753	17731	115546	60677	20502	81179		14.8	Si
SLV 8	10.45	-8198.28	-23442	-16723	4999	4.02	4.02	-14857	15471	17415	115546	60677	20502	81179		16.24	Si
SLV 2	8.35	317.48	-27192	-19398	9569	4.02	4.02	-17233	15947	17950	115546	60677	20502	81179		8.48	Si
SLV 2	10.45	-10844.81	-26121	-18634	8239	4.02	4.02	-16555	15811	17797	115546	60677	20502	81179		9.85	Si
SLV 7	8.35	-3583.86	-25681	-18321	5508	4.02	4.02	-16276	15755	17734	115546	60677	20502	81179		14.74	Si
SLV 7	10.45	-8124.93	-23424	-16710	5023	4.02	4.02	-14845	15469	17412	115546	60677	20502	81179		16.16	Si
SLV 13	8.35	-7194.47	-16503	-11773	-10432	4.02	4.02	-10459	14592	16425	115546	60677	20502	81179		7.78	Si
SLV 13	10.45	7991.69	-10359	-7390	-9038	4.02	3.7155	-6565	13813	14370	115546	60677	20502	81179		8.98	Si
SLV 1	8.35	627.19	-27223	-19420	9605	4.02	4.02	-17253	15951	17954	115546	60677	20502	81179		8.45	Si
SLV 1	10.45	-10731.24	-26093	-18614	8275	4.02	4.02	-16537	15807	17793	115546	60677	20502	81179		9.81	Si
SLV 15	8.35	-7849.22	-17526	-12502	-9084	4.02	4.02	-11107	14721	16570	115546	60677	20502	81179		8.94	Si
SLV 15	10.45	6179.41	-11666	-8322	-7739	4.02	4.02	-7394	13979	15734	115546	60677	20502	81179		10.49	Si
SLV 3	8.35	-27.56	-28246	-20150	10954	4.02	4.02	-17902	16080	18100	115546	60677	20502	81179		7.41	Si
SLV 3	10.45	-12543.52	-27400	-19547	9574	4.02	4.02	-17366	15973	17979	115546	60677	20502	81179		8.48	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCC D.M. 17-01-18 (N.T.C.)

quota 10.11 Ta 0.07 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 13	-11080	0.46	499.46	1467.89	2217.27	1842.58	3.69	Si
SLV 14	-11108	0.46	499.46	1471.44	2221.63	1846.54	3.7	Si
SLV 15	-12457	0.46	499.46	1638.66	2428.24	2033.45	4.07	Si
SLV 16	-12485	0.46	499.46	1642.16	2432.6	2037.38	4.08	Si
SLV 9	-14956	0.46	499.46	1941.99	2809.68	2375.83	4.76	Si
SLV 10	-14974	0.46	499.46	1944.19	2812.46	2378.33	4.76	Si
SLV 11	-19545	0.46	499.46	2477.08	3504.88	2990.98	5.99	Si
SLV 12	-19563	0.46	499.46	2479.16	3507.63	2993.4	5.99	Si
SLV 5	-19650	0.46	499.46	2488.97	3520.61	3004.79	6.02	Si
SLV 6	-19668	0.46	499.46	2491.05	3523.36	3007.21	6.02	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 10.11 Wa = 0.05 Ta = 0.0739

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 8	-18062	-25661	1102	1.039	2402.7	0.936	16.14658	14.09547	Si
SLV 7	-18039	-25681	1102	1.04	2400.4	0.936	16.16341	14.09547	Si
SLV 6	-16530	-22252	-1096	1.116	2247.9	0.932	17.40152	14.09547	Si
SLV 5	-16507	-22272	-1096	1.117	2245.6	0.932	17.42183	14.09547	Si
SLV 12	-16249	-22445	1094	1.131	2219.6	0.931	17.65491	14.09547	Si



Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 11	-16226	-22465	1094	1.133	2217.3	0.931	17.67513	14.09547	Si
SLV 10	-14717	-19036	-1105	1.222	2065.1	0.927	19.15678	14.09547	Si
SLV 9	-14694	-19056	-1104	1.224	2062.8	0.927	19.18144	14.09547	Si
SLV 4	-19647	-28215	342	1.004	2563.1	0.939	15.53891	7.52414	Si
SLV 3	-19612	-28246	342	1.005	2559.5	0.939	15.5622	7.52414	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	11.586	SLV 44	Si
V_SLV	22.298	SLV 40	Si
PF_SLV	2.709	SLV 13	Si
V_SLV	7.411	SLV 3	Si
PFFP_SLV	3.689	SLV 13	Si
R_SLV	1.146	SLV 8	Si

Maschio 137

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-12.263	1.006	-19.813	1.006	L6	L7	7.55	0.28	3.52	3.52	3.52			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	$\tau 0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma F_d$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche,  $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 50	8.35	737.38	-66112	-0.0000448	0.0004492	0.0035	7.55	185695.74	214992.87	214992.87	291.56	No	Si
SLU 50	10.85	-1413.92	-52972	-0.000036	0.0004492	0.0035	7.55	158960.94	208675.77	208675.77	147.59	No	Si
SLU 45	8.35	40.86	-66598	-0.0000448	0.0004492	0.0035	7.55	186587.5	216325.54	216325.54	5294.61	No	Si
SLU 45	10.85	-1962.14	-53527	-0.0000367	0.0004492	0.0035	7.55	160191.16	210287.51	210287.51	107.17	No	Si
SLU 43	8.35	250.26	-62995	-0.0000423	0.0004492	0.0035	7.55	179810.45	206442.96	206442.96	824.91	No	Si
SLU 43	10.85	-1704.04	-49937	-0.0000341	0.0004492	0.0035	7.55	152067.26	199852.9	199852.9	117.28	No	Si
SLU 34	8.35	-148.76	-62019	-0.0000416	0.0004492	0.0035	7.55	177908.67	234298.52	234298.52	1574.99	No	Si
SLU 34	10.85	1206.56	-52545	-0.0000356	0.0004492	0.0035	7.55	158005.99	177776.69	177776.69	147.34	No	Si
SLU 3	8.35	-230.68	-53647	-0.0000358	0.0004492	0.0035	7.55	160455.85	210635.83	210635.83	913.1	No	Si
SLU 3	10.85	-1264.08	-43583	-0.0000295	0.0004492	0.0035	7.55	136765.95	180909.63	180909.63	143.12	No	Si
SLU 42	8.35	-159.21	-63866	-0.0000429	0.0004492	0.0035	7.55	181482.86	239339.86	239339.86	1503.34	No	Si
SLU 42	10.85	1325.78	-54716	-0.0000372	0.0004492	0.0035	7.55	162799.91	183733.79	183733.79	138.59	No	Si
SLU 44	8.35	490.23	-63044	-0.0000425	0.0004492	0.0035	7.55	179904	206575.72	206575.72	421.39	No	Si
SLU 44	10.85	-1376.35	-49924	-0.0000339	0.0004492	0.0035	7.55	152037.27	199815.26	199815.26	145.18	No	Si
SLU 48	8.35	284.42	-68156	-0.000046	0.0004492	0.0035	7.55	189401.52	220600.49	220600.49	775.62	No	Si
SLU 48	10.85	-1817.07	-55045	-0.0000377	0.0004492	0.0035	7.55	163512.4	214698.94	214698.94	118.16	No	Si
SLU 49	8.35	428.4	-68185	-0.0000461	0.0004492	0.0035	7.55	189453.28	220680.15	220680.15	515.13	No	Si
SLU 49	10.85	-1620.46	-55037	-0.0000376	0.0004492	0.0035	7.55	163495.57	214676.35	214676.35	132.48	No	Si
SLU 46	8.35	184.84	-66627	-0.0000449	0.0004492	0.0035	7.55	186640.58	216405.19	216405.19	1170.79	No	Si
SLU 46	10.85	-1765.52	-53519	-0.0000366	0.0004492	0.0035	7.55	160173.98	210264.92	210264.92	119.1	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche,  $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 15	8.35	-29895.92	-51283	-0.0000497	0.0006738	0.0035	7.55		209098.94	209098.94	6.99		Si
SLV 15	10.85	43094.4	-32377	-0.0000439	0.0006738	0.0035	7.55		120426.34	120426.34	2.79		Si
SLV 16	8.35	-29837.9	-52012	-0.0000502	0.0006738	0.0035	7.55		211417.53	211417.53	7.09		Si
SLV 16	10.85	43954.58	-32721	-0.0000446	0.0006738	0.0035	7.55		121583.35	121583.35	2.77		Si
SLV 14	8.35	-42599.6	-52281	-0.0000573	0.0006738	0.0035	7.55		212271.69	212271.69	4.98		Si
SLV 14	10.85	29311.4	-34507	-0.000038	0.0006738	0.0035	7.55		127575.29	127575.29	4.35		Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 11	8.35	10239.33	-51955	-0.0000396	0.0006738	0.0035	7.55		184096.21	184096.21	17.98		Si
SLV 11	10.85	34632.14	-37150	-0.0000426	0.0006738	0.0035	7.55		136346.03	136346.03	3.94		Si
SLV 1	8.35	29446.2	-54000	-0.0000513	0.0006738	0.0035	7.55		190524.66	190524.66	6.47		Si
SLV 1	10.85	-44972.38	-53577	-0.0000594	0.0006738	0.0035	7.55		216322.65	216322.65	4.81		Si
SLV 2	8.35	29504.22	-54730	-0.0000519	0.0006738	0.0035	7.55		192617.51	192617.51	6.53		Si
SLV 2	10.85	-44112.2	-53922	-0.0000592	0.0006738	0.0035	7.55		217362.35	217362.35	4.93		Si
SLV 12	8.35	10276.81	-52427	-0.00004	0.0006738	0.0035	7.55		185577.97	185577.97	18.06		Si
SLV 12	10.85	35187.71	-37373	-0.000043	0.0006738	0.0035	7.55		137081.5	137081.5	3.9		Si
SLV 13	8.35	-42657.62	-51552	-0.0000568	0.0006738	0.0035	7.55		209953.09	209953.09	4.92		Si
SLV 13	10.85	28451.22	-34162	-0.0000373	0.0006738	0.0035	7.55		126418.28	126418.28	4.44		Si
SLV 3	8.35	42207.89	-53731	-0.0000581	0.0006738	0.0035	7.55		189679.49	189679.49	4.49		Si
SLV 3	10.85	-30329.21	-51792	-0.0000503	0.0006738	0.0035	7.55		210716.86	210716.86	6.95		Si
SLV 4	8.35	42265.92	-54461	-0.0000586	0.0006738	0.0035	7.55		191872.57	191872.57	4.54		Si
SLV 4	10.85	-29469.03	-52137	-0.0000501	0.0006738	0.0035	7.55		211812.2	211812.2	7.19		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 62	8.35	778.96	-70774	-50489	51	7.55	7.55	-23883	10833	22902	115546	75972	38505	114477	No	2263.34	Si
SLU 62	10.85	-724.66	-58676	-41858	1989	7.55	7.55	-19801	10833	22902	115546	75972	38505	114477	No	57.56	Si
SLU 18	8.35	263.86	-56265	-40138	379	7.55	7.55	-18987	10833	22902	115546	75972	38505	114477	No	302.4	Si
SLU 18	10.85	-171.66	-47215	-33682	1872	7.55	7.55	-15933	10458	22108	115546	75972	38505	114477	No	61.15	Si
SLU 60	8.35	535.4	-69216	-49377	166	7.55	7.55	-23357	10833	22902	115546	75972	38505	114477	No	689.83	Si
SLU 60	10.85	-869.72	-57159	-40776	2058	7.55	7.55	-19288	10833	22902	115546	75972	38505	114477	No	55.62	Si
SLU 19	8.35	407.84	-56294	-40159	319	7.55	7.55	-18996	10833	22902	115546	75972	38505	114477	No	358.45	Si
SLU 19	10.85	24.96	-47207	-33676	1809	7.55	7.55	-15930	10457	22107	115546	75972	38505	114477	No	63.29	Si
SLU 84	8.35	112.33	-76817	-54799	-215	7.55	7.55	-25922	10833	22902	115546	75972	38505	114477	No	532.49	Si
SLU 84	10.85	627.72	-64660	-46127	1821	7.55	7.55	-21820	10833	22902	115546	75972	38505	114477	No	62.88	Si
SLU 63	8.35	922.94	-70803	-50509	-9	7.55	7.55	-23893	10833	22902	115546	75972	38505	114477	No	13286.93	Si
SLU 63	10.85	-528.04	-58669	-41853	1925	7.55	7.55	-19798	10833	22902	115546	75972	38505	114477	No	59.46	Si
SLU 81	8.35	-275.21	-75230	-53667	-40	7.55	7.55	-25386	10833	22902	115546	75972	38505	114477	No	2832.22	Si
SLU 81	10.85	286.04	-63150	-45050	1954	7.55	7.55	-21310	10833	22902	115546	75972	38505	114477	No	58.6	Si
SLU 82	8.35	-131.23	-75259	-53688	-100	7.55	7.55	-25396	10833	22902	115546	75972	38505	114477	No	1149.2	Si
SLU 82	10.85	482.66	-63142	-45044	1890	7.55	7.55	-21308	10833	22902	115546	75972	38505	114477	No	60.57	Si
SLU 83	8.35	-31.65	-76788	-54779	-156	7.55	7.55	-25912	10833	22902	115546	75972	38505	114477	No	734.81	Si
SLU 83	10.85	431.11	-64668	-46132	1884	7.55	7.55	-21822	10833	22902	115546	75972	38505	114477	No	60.76	Si
SLU 61	8.35	679.38	-69245	-49398	107	7.55	7.55	-23367	10833	22902	115546	75972	38505	114477	No	1072.33	Si
SLU 61	10.85	-673.1	-57151	-40770	1995	7.55	7.55	-19286	10833	22902	115546	75972	38505	114477	No	57.38	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 2	8.35	29504.22	-54730	-39043	41445	7.55	7.55	-18469	16194	34234	115546	113958	38505	149779		3.61	Si
SLV 2	10.85	-44112.2	-53922	-38467	38172	7.55	7.55	-18196	16139	34118	115546	113958	38505	149664		3.92	Si
SLD 15	8.35	-12823.65	-52273	-37290	-18784	7.55	7.55	-17640	16028	33883	115546	113958	38505	149429		7.96	Si
SLD 15	10.85	18217.65	-38534	-27489	-15272	7.55	7.55	-13003	15101	31923	115546	113958	38505	147468		9.66	Si
SLV 15	8.35	-29895.92	-51283	-36584	-42923	7.55	7.55	-17306	15961	33742	115546	113958	38505	149287		3.48	Si
SLV 15	10.85	43094.4	-32377	-23097	-36682	7.55	7.3319	-10926	14685	30148	115546	113958	38505	145693		3.97	Si
SLV 14	8.35	-42599.6	-52281	-37296	-40959	7.55	7.55	-17642	16028	33884	115546	113958	38505	149430		3.65	Si
SLV 14	10.85	29311.4	-34507	-24616	-33875	7.55	7.55	-11644	14829	31348	115546	113958	38505	146894		4.34	Si
SLV 4	8.35	42265.92	-54461	-38851	38669	7.55	7.55	-18378	16176	34195	115546	113958	38505	149741		3.87	Si
SLV 4	10.85	-29469.03	-52137	-37193	34553	7.55	7.55	-17594	16019	33864	115546	113958	38505	149409		4.32	Si
SLV 13	8.35	-42657.62	-51552	-36776	-40147	7.55	7.55	-17396	15979	33780	115546	113958	38505	149326		3.72	Si
SLV 13	10.85	28451.22	-34162	-24370	-33063	7.55	7.55	-11528	14806	31299	115546	113958	38505	146845		4.44	Si
SLV 1	8.35	29446.2	-54000	-38522	42257	7.55	7.55	-18222	16144	34129	115546	113958	38505	149675		3.54	Si
SLV 1	10.85	-44972.38	-53577	-38221	38984	7.55	7.55	-18080	16116	34069	115546	113958	38505	149615		3.84	Si
SLV 3	8.35	42207.89	-53731	-38330	39481	7.55	7.55	-18132	16126	34091	115546	113958	38505	149637		3.79	Si
SLV 3	10.85	-30329.21	-51792	-36947	35366	7.55	7.55	-17477	15995	33814	115546	113958	38505	149360		4.22	Si
SLV 16	8.35	-29837.9	-52012	-37104	-43735	7.55	7.55	-17552	16010	33846	115546	113958	38505	149361		3.42	Si
SLV 16	10.85	43954.58	-32721	-23343	-37494	7.55	7.2951	-11042	14708	30044	115546	113958	38505	145589		3.88	Si
SLD 16	8.35	-12798.73	-52586	-37514	-19133	7.55	7.55	-17745	16049	33928	115546	113958	38505	149473		7.81	Si
SLD 16	10.85	18587.01	-38682	-27595	-15621	7.55	7.55	-13053	15111	31944	115546	113958	38505	147490		9.44	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRM D.M. 17-01-18 (N.T.C.)

quota 10.11 Ta 0.07 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 15	-40504	0.46	938.04	5077.75	7139.96	6108.86	6.51	Si
SLV 16	-41010	0.46	938.04	5133.7	7215.09	6174.4	6.58	Si
SLV 13	-41445	0.46	938.04	5181.66	7279.71	6230.69	6.64	Si
SLV 14	-41951	0.46	938.04	5237.28	7354.88	6296.08	6.71	Si
SLV 11	-43363	0.46	938.04	5391.38	7564.61	6477.99	6.91	Si
SLV 12	-43690	0.46	938.04	5426.86	7613.21	6520.04	6.95	Si
SLV 9	-46501	0.46	938.04	5728.79	8031.37	6880.08	7.33	Si
SLV 7	-46678	0.46	938.04	5747.64	8057.48	6902.56	7.36	Si
SLV 10	-46828	0.46	938.04	5763.54	8079.53	6921.53	7.38	Si
SLV 8	-47005	0.46	938.04	5782.35	8105.65	6944	7.4	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 10.11 Wa = 0.05 Ta = 0.0739

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	$\alpha 0^*$	aLim	Verifica
SLV 8	-43442	-53161	1736	0.856	5476.8	0.945	13.16453	14.09547	No
SLV 7	-43098	-52690	1735	0.862	5441.9	0.945	13.25588	14.09547	No
SLV 12	-42724	-52427	1931	0.864	5404	0.945	13.29514	14.09547	No
SLV 11	-42380	-51955	1930	0.87	5369.1	0.944	13.38882	14.09547	No
SLV 6	-36777	-54057	-1889	0.978	4801.4	0.939	15.13877	14.09547	Si
SLV 5	-36432	-53586	-1890	0.985	4766.6	0.938	15.26042	14.09547	Si
SLV 10	-36059	-53323	-1694	0.998	4728.8	0.938	15.46613	14.09547	Si





Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 9	-35715	-52851	-1695	1.006	4693.9	0.938	15.59268	14.09547	Si
SLV 4	-42041	-54461	240	0.91	5334.7	0.944	14.01578	7.52414	Si
SLV 3	-41508	-53731	239	0.92	5280.7	0.944	14.17187	7.52414	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

**Tabella dei coefficienti di sicurezza minimi**

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	107.173	SLU 45	Si
V_SLU	55.616	SLU 60	Si
PF_SLV	2.766	SLV 16	Si
V_SLV	3.416	SLV 16	Si
PFFP_SLV	6.512	SLV 15	Si
R_SLV	0.934	SLV 8	No

**Maschio 138**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati geometrici**

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-10.478	1.006	-11.143	1.006	L6	L7	0.665	0.28	3.52	3.52	3.52			

**Caratteristiche del materiale**

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	t0	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

**Materiale per FRCM**

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

**Rinforzo a matrice inorganica**

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	elim,conv / e,CNR DT-200							CRM / Fibrenet?			
									$\alpha t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma_{F,d}$	connettori	tipo di muratura	CRM	Intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

**Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche,  $\gamma_M = 3$**

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 23	8.35	86.59	-4404	-0.0000393	0.0004492	0.0035	0.6647	1180.21	1340.58	1340.58	15.48	No	Si
SLU 23	10.85	-55.48	-5349	-0.0000446	0.0004492	0.0035	0.6647	1359.6	1694.38	1694.38	30.54	No	Si
SLU 38	8.35	94.91	-4961	-0.0000443	0.0004492	0.0035	0.6647	1289.01	1472.14	1472.14	15.51	No	Si
SLU 38	10.85	-58.86	-6385	-0.0000532	0.0004492	0.0035	0.6647	1526.24	1943.08	1943.08	33.01	No	Si
SLU 37	8.35	95.72	-4991	-0.0000446	0.0004492	0.0035	0.6647	1294.74	1479.39	1479.39	15.46	No	Si
SLU 37	10.85	-59.44	-6400	-0.0000534	0.0004492	0.0035	0.6647	1528.44	1946.61	1946.61	32.75	No	Si
SLU 29	8.35	98.24	-4818	-0.0000434	0.0004492	0.0035	0.6647	1261.93	1438.35	1438.35	14.64	No	Si
SLU 29	10.85	-67.87	-5692	-0.0000483	0.0004492	0.0035	0.6647	1418.18	1778.61	1778.61	26.21	No	Si
SLU 28	8.35	93.08	-4887	-0.0000436	0.0004492	0.0035	0.6647	1275.09	1454.67	1454.67	15.63	No	Si
SLU 28	10.85	-60.78	-5888	-0.0000493	0.0004492	0.0035	0.6647	1450.25	1826.95	1826.95	30.06	No	Si
SLU 27	8.35	93.88	-4917	-0.0000439	0.0004492	0.0035	0.6647	1280.89	1461.92	1461.92	15.57	No	Si
SLU 27	10.85	-61.36	-5903	-0.0000495	0.0004492	0.0035	0.6647	1452.67	1830.67	1830.67	29.83	No	Si
SLU 26	8.35	91.74	-4585	-0.0000411	0.0004492	0.0035	0.6647	1216.64	1383.42	1383.42	15.08	No	Si
SLU 26	10.85	-61.19	-5508	-0.0000463	0.0004492	0.0035	0.6647	1387.16	1733.39	1733.39	28.33	No	Si
SLU 34	8.35	89.22	-4759	-0.0000423	0.0004492	0.0035	0.6647	1250.63	1424.46	1424.46	15.97	No	Si
SLU 34	10.85	-52.76	-6216	-0.0000514	0.0004492	0.0035	0.6647	1501.23	1903.71	1903.71	36.08	No	Si
SLU 22	8.35	87.92	-4455	-0.0000398	0.0004492	0.0035	0.6647	1190.58	1352.66	1352.66	15.38	No	Si
SLU 22	10.85	-56.45	-5374	-0.0000449	0.0004492	0.0035	0.6647	1364.03	1700.58	1700.58	30.13	No	Si
SLU 30	8.35	97.44	-4787	-0.0000431	0.0004492	0.0035	0.6647	1256.04	1431.1	1431.1	14.69	No	Si
SLU 30	10.85	-67.29	-5677	-0.0000481	0.0004492	0.0035	0.6647	1415.67	1774.89	1774.89	26.38	No	Si

**Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche,  $\gamma_M = 2$**

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 7	8.35	1044.67	802	-0.0224767	0.0006738	0.0035	0.5318		0	0	0		No
SLV 7	10.85	-893.71	-2837	-0.0004087	0.0006738	0.0035	0.5318		1041.28	1041.28	1.17		Si
SLV 1	8.35	3060.71	-4668	-0.0368861	0.0006738	0.0035	0.5318		1464.71	1464.71	0.48		No
SLV 1	10.85	-2755.23	-5692	-0.0085288	0.0006738	0.0035	0.5318		1839.13	1839.13	0.67		No
SLV 3	8.35	3103.68	-1771	-0.0502711	0.0006738	0.0035	0.5318		618.35	618.35	0.2		No
SLV 3	10.85	-2777.22	-4441	-0.0097196	0.0006738	0.0035	0.5318		1500.11	1500.11	0.54		No
SLV 8	8.35	1018.76	753	-0.0217907	0.0006738	0.0035	0.5318		0	0	0		No
SLV 8	10.85	-867.31	-2856	-0.0003158	0.0006738	0.0035	0.5318		1046.93	1046.93	1.21		Si





Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 11	8.35	-757.07	122	-0.0019575	0.0006738	0.0035	0.5318		118.59	118.59	0.16	No	No
SLV 11	10.85	736.52	-2709	-0.0001589	0.0006738	0.0035	0.6647		902.5	902.5	1.23		Si
SLV 2	8.35	3020.6	-4744	-0.0357793	0.0006738	0.0035	0.5318		1485.42	1485.42	0.49		No
SLV 2	10.85	-2714.36	-5722	-0.0082749	0.0006738	0.0035	0.5318		1847.06	1847.06	0.68		No
SLV 12	8.35	-782.98	73	-0.0020564	0.0006738	0.0035	0.5318		134.57	134.57	0.17		No
SLV 12	10.85	762.92	-2728	-0.0001866	0.0006738	0.0035	0.6647		908.23	908.23	1.19		Si
SLV 4	8.35	3063.57	-1847	-0.0492036	0.0006738	0.0035	0.5318		641.72	641.72	0.21		No
SLV 4	10.85	-2736.35	-4471	-0.0094887	0.0006738	0.0035	0.5318		1508.38	1508.38	0.55		No
SLV 15	8.35	-2902.14	-4038	-0.0106366	0.0006738	0.0035	0.5318		1387.62	1387.62	0.48		No
SLV 15	10.85	2656.86	-4012	-0.0321664	0.0006738	0.0035	0.5318		1281.22	1281.22	0.48		No
SLV 16	8.35	-2942.25	-4113	-0.010782	0.0006738	0.0035	0.5318		1408.73	1408.73	0.48		No
SLV 16	10.85	2697.73	-4042	-0.03281	0.0006738	0.0035	0.5318		1289.63	1289.63	0.48		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 83	8.35	90.68	-6119	-4365	269	0.6647	0.6647	-23452	10833	2016	115546	6689	3390	10078	No	37.46	Si
SLU 83	10.85	-44.3	-7519	-5364	251	0.6647	0.6647	-28819	10833	2016	115546	6689	3390	10078	No	40.18	Si
SLU 82	8.35	84.72	-5907	-4214	267	0.6647	0.6647	-22640	10833	2016	115546	6689	3390	10078	No	37.72	Si
SLU 82	10.85	-38	-7345	-5240	249	0.6647	0.6647	-28153	10833	2016	115546	6689	3390	10078	No	40.5	Si
SLU 81	8.35	85.52	-5937	-4236	267	0.6647	0.6647	-22758	10833	2016	115546	6689	3390	10078	No	37.81	Si
SLU 81	10.85	-38.59	-7360	-5250	248	0.6647	0.6647	-28211	10833	2016	115546	6689	3390	10078	No	40.61	Si
SLU 35	8.35	91.36	-5091	-3632	258	0.6647	0.6647	-19514	10833	2016	115546	6689	3390	10078	No	39.06	Si
SLU 35	10.85	-52.94	-6612	-4717	246	0.6647	0.6647	-25343	10833	2016	115546	6689	3390	10078	No	41.03	Si
SLU 36	8.35	90.56	-5060	-3610	259	0.6647	0.6647	-19396	10833	2016	115546	6689	3390	10078	No	38.96	Si
SLU 36	10.85	-52.36	-6597	-4706	246	0.6647	0.6647	-25285	10833	2016	115546	6689	3390	10078	No	40.92	Si
SLU 39	8.35	84.32	-4703	-3355	269	0.6647	0.6647	-18027	10737	1998	115546	6689	3390	10078	No	37.44	Si
SLU 39	10.85	-44.41	-6386	-4556	250	0.6647	0.6647	-24479	10833	2016	115546	6689	3390	10078	No	40.29	Si
SLU 40	8.35	83.52	-4672	-3333	270	0.6647	0.6647	-17910	10721	1995	115546	6689	3390	10078	No	37.35	Si
SLU 40	10.85	-43.83	-6371	-4545	251	0.6647	0.6647	-24421	10833	2016	115546	6689	3390	10078	No	40.18	Si
SLU 84	8.35	89.88	-6088	-4343	270	0.6647	0.6647	-23335	10833	2016	115546	6689	3390	10078	No	37.37	Si
SLU 84	10.85	-43.72	-7504	-5353	252	0.6647	0.6647	-28761	10833	2016	115546	6689	3390	10078	No	40.07	Si
SLU 41	8.35	89.48	-4884	-3484	272	0.6647	0.6647	-18722	10830	2016	115546	6689	3390	10078	No	37.1	Si
SLU 41	10.85	-50.12	-6545	-4669	253	0.6647	0.6647	-25087	10833	2016	115546	6689	3390	10078	No	39.86	Si
SLU 42	8.35	88.68	-4854	-3463	272	0.6647	0.6647	-18604	10814	2013	115546	6689	3390	10078	No	37.01	Si
SLU 42	10.85	-49.54	-6530	-4658	254	0.6647	0.6647	-25029	10833	2016	115546	6689	3390	10078	No	39.75	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 16	8.35	-2942.25	-4113	-2934	-2399	0.5318	0	0	0	0	115546	8026	2712	10738		4.48	Si
SLV 16	10.85	2697.73	-4042	-2883	-1901	0.5318	0	0	0	0	115546	8026	2712	10738		5.65	Si
SLV 3	8.35	3103.68	-1771	-1264	2855	0.5318	0	0	0	0	115546	8026	2712	10738		3.76	Si
SLV 3	10.85	-2777.22	-4441	-3168	2332	0.5318	0	0	0	0	115546	8026	2712	10738		4.61	Si
SLV 1	8.35	3060.71	-4668	-3330	2688	0.5318	0	0	0	0	115546	8026	2712	10738		3.99	Si
SLV 1	10.85	-2755.23	-5692	-4061	2185	0.5318	0	0	0	0	115546	8026	2712	10738		4.91	Si
SLV 14	8.35	-2985.22	-7011	-5001	-2566	0.5318	0	0	0	0	115546	8026	2712	10738		4.19	Si
SLV 14	10.85	2719.72	-5293	-3776	-2048	0.5318	0	0	0	0	115546	8026	2712	10738		5.24	Si
SLV 2	8.35	3020.6	-4744	-3384	2652	0.5318	0	0	0	0	115546	8026	2712	10738		4.05	Si
SLV 2	10.85	-2714.36	-5722	-4082	2149	0.5318	0	0	0	0	115546	8026	2712	10738		5	Si
SLD 4	8.35	1343.15	-3284	-2343	1289	0.5318	0	0	0	0	115546	8026	2712	10738		8.33	Si
SLD 4	10.85	-1185.88	-4692	-3347	1063	0.5318	0.2388	0	0	0	115546	8026	2712	10738		10.1	Si
SLV 13	8.35	-2945.11	-6935	-4947	-2530	0.5318	0	0	0	0	115546	8026	2712	10738		4.24	Si
SLV 13	10.85	2678.85	-5263	-3755	-2012	0.5318	0	0	0	0	115546	8026	2712	10738		5.34	Si
SLV 15	8.35	-2902.14	-4038	-2880	-2363	0.5318	0	0	0	0	115546	8026	2712	10738		4.54	Si
SLV 15	10.85	2656.86	-4012	-2862	-1865	0.5318	0	0	0	0	115546	8026	2712	10738		5.76	Si
SLD 3	8.35	1360.38	-3251	-2319	1304	0.5318	0	0	0	0	115546	8026	2712	10738		8.23	Si
SLD 3	10.85	-1203.43	-4679	-3338	1079	0.5318	0.2255	0	0	0	115546	8026	2712	10738		9.95	Si
SLV 4	8.35	3063.57	-1847	-1318	2819	0.5318	0	0	0	0	115546	8026	2712	10738		3.81	Si
SLV 4	10.85	-2736.35	-4471	-3189	2296	0.5318	0	0	0	0	115546	8026	2712	10738		4.68	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRM D.M. 17-01-18 (N.T.C.)

quota 10.11 Ta 0.07 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 11	-1431	0.46	82.58	191.91	277.48	234.69	2.84	Si
SLV 12	-1456	0.46	82.58	195.11	281.34	238.23	2.88	Si
SLV 7	-1654	0.46	82.58	220.33	312.02	266.18	3.22	Si
SLV 8	-1679	0.46	82.58	223.49	315.89	269.69	3.27	Si
SLV 15	-3153	0.46	82.58	400.63	541.32	470.98	5.7	Si
SLV 16	-3192	0.46	82.58	405.04	547.2	476.12	5.77	Si
SLV 3	-3897	0.46	82.58	483.25	653.58	568.42	6.88	Si
SLV 4	-3936	0.46	82.58	487.42	659.41	573.42	6.94	Si
SLV 13	-4858	0.46	82.58	583.3	797.32	690.31	8.36	Si
SLV 14	-4897	0.46	82.58	587.17	803.08	695.12	8.42	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 10.11 Wa = 0.05 Ta = 0.0739

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	$\alpha 0^*$	aLim	Verifica
SLV 10	-5176	-9584	18	0.688	619.4	0.956	10.46285	14.09547	No
SLV 9	-5140	-9535	18	0.692	615.7	0.956	10.52779	14.09547	No
SLV 6	-4900	-8904	-8	0.723	591.3	0.954	11.00836	14.09547	No
SLV 5	-4863	-8855	-8	0.727	587.6	0.954	11.07987	14.09547	No
SLV 14	-3468	-7011	46	0.954	446	0.942	14.73235	7.52414	Si
SLV 13	-3412	-6935	46	0.967	440.4	0.941	14.94019	7.52414	Si
SLV 2	-2547	-4744	-40	1.225	352.9	0.929	19.16265	7.52414	Si
SLV 1	-2491	-4668	-40	1.246	347.3	0.928	19.51734	7.52414	Si
SLV 16	-1719	-4113	44	1.648	269.8	0.913	26.22732	7.52414	Si



Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 15	-1663	-4038	44	1.688	264.2	0.912	26.90076	7.52414	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	14.641	SLU 29	Si
V_SLU	37.009	SLU 42	Si
PF_SLV	0	SLV 7	No
V_SLV	3.761	SLV 3	Si
PFFP_SLV	2.842	SLV 11	Si
R_SLV	0.742	SLV 10	No

Maschio 139

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-7.463	1.006	-9.398	1.006	L6	L7	1.935	0.28	3.52	3.52	3.52			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	$\tau 0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche,  $\gamma M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon m$	$\epsilon m_{-}$	$\epsilon m_u$	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 24	8.35	1447.49	-17108	-0.0000572	0.0004492	0.0035	1.9353	12277.36	14257.94	14257.94	9.85	No	Si
SLU 24	10.85	151.64	-12530	-0.0000337	0.0004492	0.0035	1.9353	9830.34	11079.05	11079.05	73.06	No	Si
SLU 23	8.35	1434.93	-16004	-0.000054	0.0004492	0.0035	1.9353	11743.34	13491.39	13491.39	9.4	No	Si
SLU 23	10.85	99.2	-11500	-0.0000305	0.0004492	0.0035	1.9353	9195.46	10363.95	10363.95	104.47	No	Si
SLU 30	8.35	1436.71	-17170	-0.0000573	0.0004492	0.0035	1.9353	12306.15	14300.77	14300.77	9.95	No	Si
SLU 30	10.85	160.81	-12590	-0.0000339	0.0004492	0.0035	1.9353	9866.05	11120.34	11120.34	69.15	No	Si
SLU 22	8.35	1426.8	-16033	-0.000054	0.0004492	0.0035	1.9353	11757.69	13511.33	13511.33	9.47	No	Si
SLU 22	10.85	114.67	-11536	-0.0000307	0.0004492	0.0035	1.9353	9218.21	10388.98	10388.98	90.6	No	Si
SLU 25	8.35	1452.38	-17091	-0.0000572	0.0004492	0.0035	1.9353	12269.3	14245.98	14245.98	9.81	No	Si
SLU 25	10.85	142.36	-12509	-0.0000335	0.0004492	0.0035	1.9353	9817.32	11064.03	11064.03	77.72	No	Si
SLU 26	8.35	1437.45	-16582	-0.0000557	0.0004492	0.0035	1.9353	12026.94	13892.09	13892.09	9.66	No	Si
SLU 26	10.85	126.91	-12038	-0.0000322	0.0004492	0.0035	1.9353	9530.65	10737.14	10737.14	84.6	No	Si
SLU 40	8.35	1509.94	-17779	-0.0000597	0.0004492	0.0035	1.9353	12584.13	14723.23	14723.23	9.75	No	Si
SLU 40	10.85	155.37	-13148	-0.0000354	0.0004492	0.0035	1.9353	10196.08	11507.75	11507.75	74.06	No	Si
SLU 34	8.35	1492.23	-17815	-0.0000596	0.0004492	0.0035	1.9353	12600.61	14748.79	14748.79	9.88	No	Si
SLU 34	10.85	161.9	-13181	-0.0000355	0.0004492	0.0035	1.9353	10215.42	11530.79	11530.79	71.22	No	Si
SLU 31	8.35	1489.72	-17238	-0.000058	0.0004492	0.0035	1.9353	12337.83	14348.09	14348.09	9.63	No	Si
SLU 31	10.85	134.19	-12643	-0.0000338	0.0004492	0.0035	1.9353	9898.19	11157.6	11157.6	83.15	No	Si
SLU 39	8.35	1505.06	-17796	-0.0000597	0.0004492	0.0035	1.9353	12591.85	14735.19	14735.19	9.79	No	Si
SLU 39	10.85	164.66	-13169	-0.0000355	0.0004492	0.0035	1.9353	10208.69	11522.77	11522.77	69.98	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche,  $\gamma M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon m$	$\epsilon m_{-}$	$\epsilon m_u$	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 2	8.35	10712.5	-17169	-0.0001794	0.0006738	0.0035	1.9353		14945.13	14945.13	1.4		Si
SLV 2	10.85	-6671.44	-8798	-0.0001442	0.0006738	0.0035	1.5482		10011.88	10011.88	1.5		Si
SLV 3	8.35	11115.87	-15516	-0.0002289	0.0006738	0.0035	1.9353		13784.99	13784.99	1.24		Si
SLV 3	10.85	-7851.01	-7206	-0.0006149	0.0006738	0.0035	1.5482		8644.62	8644.62	1.1		Si
SLV 14	8.35	-8804.16	-14719	-0.0001394	0.0006738	0.0035	1.5482		14841.33	14841.33	1.69		Si
SLV 14	10.85	8356.31	-14491	-0.0001291	0.0006738	0.0035	1.9353		13049.57	13049.57	1.56		Si
SLV 15	8.35	-8400.79	-13066	-0.0001406	0.0006738	0.0035	1.5482		13545.06	13545.06	1.61		Si
SLV 15	10.85	7176.74	-12899	-0.0001079	0.0006738	0.0035	1.9353		11773.01	11773.01	1.64		Si
SLV 1	8.35	10870.5	-17201	-0.0001847	0.0006738	0.0035	1.9353		14967.58	14967.58	1.38		Si
SLV 1	10.85	-6800.67	-8736	-0.0001581	0.0006738	0.0035	1.5482		9958.46	9958.46	1.46		Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 13	8.35	-8646.16	-14751	-0.0001349	0.0006738	0.0035	1.5482		14866.23	14866.23	1.72		Si
SLV 13	10.85	8227.08	-14429	-0.0001262	0.0006738	0.0035	1.9353		12999.95	12999.95	1.58		Si
SLV 8	8.35	4441.28	-12666	-0.000069	0.0006738	0.0035	1.9353		11584.39	11584.39	2.61		Si
SLV 8	10.85	-3710.35	-7465	-0.0000528	0.0006738	0.0035	1.9353		8867.04	8867.04	2.39		Si
SLV 7	8.35	4543.33	-12687	-0.00007	0.0006738	0.0035	1.9353		11601.17	11601.17	2.55		Si
SLV 7	10.85	-3793.81	-7425	-0.0000541	0.0006738	0.0035	1.9353		8832.53	8832.53	2.33		Si
SLV 16	8.35	-8558.79	-13034	-0.0001469	0.0006738	0.0035	1.5482		13518.87	13518.87	1.58		Si
SLV 16	10.85	7305.97	-12961	-0.0001105	0.0006738	0.0035	1.9353		11823.52	11823.52	1.62		Si
SLV 4	8.35	10957.87	-15484	-0.0002194	0.0006738	0.0035	1.9353		13762.53	13762.53	1.26		Si
SLV 4	10.85	-7721.78	-7268	-0.0005672	0.0006738	0.0035	1.5482		8698.05	8698.05	1.13		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 77	8.35	1674.9	-22588	-16114	1668	1.9353	1.9353	-29736	10833	5870	115546	19474	9870	29344	No	17.59	Si
SLU 77	10.85	363.92	-16758	-11955	311	1.9353	1.9353	-22062	10833	5870	115546	19474	9870	29344	No	94.38	Si
SLU 81	8.35	1675.16	-21464	-15312	1648	1.9353	1.9353	-28257	10833	5870	115546	19474	9870	29344	No	17.8	Si
SLU 81	10.85	314.24	-15717	-11212	367	1.9353	1.9353	-20691	10833	5870	115546	19474	9870	29344	No	79.93	Si
SLU 80	8.35	1661.6	-22073	-15746	1655	1.9353	1.9353	-29058	10833	5870	115546	19474	9870	29344	No	17.73	Si
SLU 80	10.85	345.38	-16280	-11614	310	1.9353	1.9353	-21433	10833	5870	115546	19474	9870	29344	No	94.78	Si
SLU 78	8.35	1679.78	-22571	-16101	1676	1.9353	1.9353	-29714	10833	5870	115546	19474	9870	29344	No	17.51	Si
SLU 78	10.85	354.64	-16737	-11940	316	1.9353	1.9353	-22033	10833	5870	115546	19474	9870	29344	No	92.96	Si
SLU 82	8.35	1680.05	-21447	-15300	1656	1.9353	1.9353	-28235	10833	5870	115546	19474	9870	29344	No	17.72	Si
SLU 82	10.85	304.96	-15695	-11197	372	1.9353	1.9353	-20662	10833	5870	115546	19474	9870	29344	No	78.91	Si
SLU 75	8.35	1677.26	-21994	-15690	1670	1.9353	1.9353	-28954	10833	5870	115546	19474	9870	29344	No	17.57	Si
SLU 75	10.85	326.93	-16199	-11556	321	1.9353	1.9353	-21326	10833	5870	115546	19474	9870	29344	No	91.47	Si
SLU 76	8.35	1662.34	-21484	-15326	1654	1.9353	1.9353	-28283	10833	5870	115546	19474	9870	29344	No	17.74	Si
SLU 76	10.85	311.48	-15728	-11220	318	1.9353	1.9353	-20706	10833	5870	115546	19474	9870	29344	No	92.3	Si
SLU 74	8.35	1672.38	-22011	-15702	1662	1.9353	1.9353	-28977	10833	5870	115546	19474	9870	29344	No	17.66	Si
SLU 74	10.85	336.21	-16221	-11572	316	1.9353	1.9353	-21354	10833	5870	115546	19474	9870	29344	No	92.84	Si
SLU 84	8.35	1682.56	-22024	-15712	1663	1.9353	1.9353	-28994	10833	5870	115546	19474	9870	29344	No	17.65	Si
SLU 84	10.85	332.67	-16233	-11580	367	1.9353	1.9353	-21370	10833	5870	115546	19474	9870	29344	No	80.02	Si
SLU 83	8.35	1677.68	-22042	-15724	1655	1.9353	1.9353	-29017	10833	5870	115546	19474	9870	29344	No	17.73	Si
SLU 83	10.85	341.95	-16254	-11595	362	1.9353	1.9353	-21398	10833	5870	115546	19474	9870	29344	No	81.07	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 4	8.35	10957.87	-15484	-11046	10715	1.9353	0.7799	-20384	16250	3549	115546	29211	9870	39081		3.65	Si
SLV 4	10.85	-7721.78	-7268	-5185	6692	1.5482	0	0	0	0	115546	23369	7896	31265		4.67	Si
SLV 2	8.35	10712.5	-17169	-12248	9711	1.9353	1.0312	-22603	16250	4692	115546	29211	9870	39081		4.02	Si
SLV 2	10.85	-6671.44	-8798	-6276	5998	1.5482	0.628	0	0	0	115546	23369	7896	31265		5.21	Si
SLV 1	8.35	10870.5	-17201	-12271	9872	1.9353	1.0071	-22645	16250	4582	115546	29211	9870	39081		3.96	Si
SLV 1	10.85	-6800.67	-8736	-6232	6092	1.5482	0.5674	0	0	0	115546	23369	7896	31265		5.13	Si
SLV 3	8.35	11115.87	-15516	-11069	10876	1.9353	0.7537	-20427	16250	3430	115546	29211	9870	39081		3.59	Si
SLV 3	10.85	-7851.01	-7206	-5140	6786	1.5482	0	0	0	0	115546	23369	7896	31265		4.61	Si
SLV 15	8.35	-8400.79	-13066	-9321	-7380	1.5482	0.9741	0	0	0	115546	23369	7896	31265		4.24	Si
SLV 15	10.85	7176.74	-12899	-9202	-5765	1.9353	1.2338	-16981	15896	5492	115546	29211	9870	39081		6.78	Si
SLV 7	8.35	4543.33	-12687	-9051	5629	1.9353	1.8286	-16702	15840	8111	115546	29211	9870	39081		6.94	Si
SLV 7	10.85	-3793.81	-7425	-5296	3187	1.9353	1.37	-13886	15278	5861	115546	29211	9870	39081		12.26	Si
SLV 13	8.35	-8646.16	-14751	-10523	-8384	1.5482	1.1446	0	0	0	115546	23369	7896	31265		3.73	Si
SLV 13	10.85	8227.08	-14429	-10293	-6459	1.9353	1.1924	-18995	16250	5425	115546	29211	9870	39081		6.05	Si
SLV 14	8.35	-8804.16	-14719	-10500	-8545	1.5482	1.1085	0	0	0	115546	23369	7896	31265		3.66	Si
SLV 14	10.85	8356.31	-14491	-10337	-6553	1.9353	1.173	-19077	16250	5337	115546	29211	9870	39081		5.96	Si
SLV 8	8.35	4441.28	-12666	-9036	5525	1.9353	1.8511	-16675	15835	8207	115546	29211	9870	39081		7.07	Si
SLV 8	10.85	-3710.35	-7465	-5325	3126	1.9353	1.4118	-13547	15210	6013	115546	29211	9870	39081		12.5	Si
SLV 16	8.35	-8558.79	-13034	-9298	-7541	1.5482	0.933	0	0	0	115546	23369	7896	31265		4.15	Si
SLV 16	10.85	7305.97	-12961	-9246	-5859	1.9353	1.2119	-17063	15913	5400	115546	29211	9870	39081		6.67	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCC D.M. 17-01-18 (N.T.C.)

quota 10.11 Ta 0.07 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 12	-11073	0.46	240.45	1377.39	1939.06	1658.22	6.9	Si
SLV 11	-11094	0.46	240.45	1379.64	1942.16	1660.9	6.91	Si
SLV 16	-11577	0.46	240.45	1431.81	2014.7	1723.26	7.17	Si
SLV 15	-11609	0.46	240.45	1435.25	2019.51	1727.38	7.18	Si
SLV 8	-11818	0.46	240.45	1457.64	2050.95	1754.29	7.3	Si
SLV 7	-11839	0.46	240.45	1459.84	2054.06	1756.95	7.31	Si
SLV 14	-12758	0.46	240.45	1556.68	2190.96	1873.82	7.79	Si
SLV 13	-12790	0.46	240.45	1560.01	2195.72	1877.86	7.81	Si
SLV 4	-14060	0.46	240.45	1689.69	2384.31	2037	8.47	Si
SLV 3	-14092	0.46	240.45	1692.9	2389.07	2040.99	8.49	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 10.11 Wa = 0.05 Ta = 0.0739

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	$\alpha_0^*$	aLim	Verifica
SLV 6	-9709	-18283	-751	0.931	1259.3	0.94	14.40129	14.09547	Si
SLV 5	-9689	-18304	-751	0.933	1257.3	0.94	14.42602	14.09547	Si
SLV 10	-9637	-17548	-710	0.941	1252	0.94	14.54803	14.09547	Si
SLV 9	-9618	-17569	-711	0.942	1250	0.94	14.57318	14.09547	Si
SLV 8	-8366	-12666	727	1.053	1123.4	0.934	16.37743	14.09547	Si
SLV 7	-8347	-12687	727	1.055	1121.5	0.934	16.40985	14.09547	Si
SLV 12	-8295	-11931	768	1.056	1116.2	0.934	16.43296	14.09547	Si
SLV 11	-8275	-11952	768	1.058	1114.2	0.934	16.46573	14.09547	Si
SLV 2	-9328	-17169	-281	1.005	1220.7	0.938	15.56137	7.52414	Si
SLV 1	-9297	-17201	-281	1.007	1217.6	0.938	15.6044	7.52414	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita



dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	9.402	SLU 23	Si
V_SLU	17.509	SLU 78	Si
PF_SLV	1.101	SLV 3	Si
V_SLV	3.593	SLV 3	Si
PFFP_SLV	6.896	SLV 12	Si
R_SLV	1.022	SLV 6	Si

## Maschio 140

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-4.913	1.006	-6.463	1.006	L6	L7	1.55	0.28	3.52	3.52	3.52			

#### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato \_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

#### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	elim,conv / e,CNR DT-200							CRM / Fibrenet?			
									αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 46	8.35	988.33	-14367	-0.0000604	0.0004492	0.0035	1.55	8117.74	9525.88	9525.88	9.64	No	Si
SLU 46	10.45	-822.42	-12725	-0.0000524	0.0004492	0.0035	1.55	7495.55	9752.33	9752.33	11.86	No	Si
SLU 49	8.35	983.89	-14754	-0.0000617	0.0004492	0.0035	1.55	8253.21	9746.51	9746.51	9.91	No	Si
SLU 49	10.45	-808.4	-13113	-0.0000536	0.0004492	0.0035	1.55	7649.67	9973	9973	12.34	No	Si
SLU 47	8.35	998.9	-14026	-0.0000593	0.0004492	0.0035	1.55	7995	9331.88	9331.88	9.34	No	Si
SLU 47	10.45	-841.47	-12349	-0.0000513	0.0004492	0.0035	1.55	7341.97	9538.44	9538.44	11.34	No	Si
SLU 43	8.35	1000.66	-13604	-0.0000579	0.0004492	0.0035	1.55	7838.44	9091.87	9091.87	9.09	No	Si
SLU 43	10.45	-848.87	-11945	-0.00005	0.0004492	0.0035	1.55	7171.95	9308.09	9308.09	10.97	No	Si
SLU 1	8.35	763.82	-10766	-0.0000448	0.0004492	0.0035	1.55	6649.91	7476.97	7476.97	9.79	No	Si
SLU 1	10.45	-643.02	-9564	-0.0000392	0.0004492	0.0035	1.55	6075.14	7885.18	7885.18	12.26	No	Si
SLU 51	8.35	993.38	-14400	-0.0000606	0.0004492	0.0035	1.55	8129.5	9544.76	9544.76	9.61	No	Si
SLU 51	10.45	-824.79	-12730	-0.0000524	0.0004492	0.0035	1.55	7497.6	9755.23	9755.23	11.83	No	Si
SLU 2	8.35	766.5	-10800	-0.000045	0.0004492	0.0035	1.55	6665.57	7496.36	7496.36	9.78	No	Si
SLU 2	10.45	-649.64	-9581	-0.0000393	0.0004492	0.0035	1.55	6083.56	7895.46	7895.46	12.15	No	Si
SLU 44	8.35	1003.34	-13638	-0.000058	0.0004492	0.0035	1.55	7851.28	9111.25	9111.25	9.08	No	Si
SLU 44	10.45	-855.49	-11962	-0.0000502	0.0004492	0.0035	1.55	7179.19	9317.77	9317.77	10.89	No	Si
SLU 50	8.35	991.77	-14379	-0.0000605	0.0004492	0.0035	1.55	8122.26	9533.13	9533.13	9.61	No	Si
SLU 50	10.45	-820.82	-12720	-0.0000523	0.0004492	0.0035	1.55	7493.49	9749.42	9749.42	11.88	No	Si
SLU 45	8.35	986.72	-14346	-0.0000603	0.0004492	0.0035	1.55	8110.48	9514.25	9514.25	9.64	No	Si
SLU 45	10.45	-818.45	-12715	-0.0000523	0.0004492	0.0035	1.55	7491.44	9746.52	9746.52	11.91	No	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 13	8.35	-5185.93	-11471	-0.0001232	0.0006738	0.0035	1.24		9284.53	9284.53	1.79		Si
SLV 13	10.45	4743	-12973	-0.000109	0.0006738	0.0035	1.55		9093.12	9093.12	1.92		Si
SLV 5	8.35	2360.25	-7300	-0.0000538	0.0006738	0.0035	1.55		5564.37	5564.37	2.36		Si
SLV 5	10.45	-1571.75	-7210	-0.0000426	0.0006738	0.0035	1.55		6497.64	6497.64	4.13		Si
SLV 14	8.35	-5272.67	-11209	-0.0001279	0.0006738	0.0035	1.24		9120.62	9120.62	1.73		Si
SLV 14	10.45	4845.8	-12780	-0.0001113	0.0006738	0.0035	1.55		8982.03	8982.03	1.85		Si
SLV 1	8.35	6590.14	-9138	-0.0011907	0.0006738	0.0035	1.55		6798.28	6798.28	1.03		Si
SLV 1	10.45	-5636.49	-6533	-0.00072	0.0006738	0.0035	1.24		6031.1	6031.1	1.07		Si
SLV 3	8.35	6669.77	-11373	-0.0002227	0.0006738	0.0035	1.55		8172.34	8172.34	1.23		Si
SLV 3	10.45	-5991.1	-7856	-0.000526	0.0006738	0.0035	1.24		6938.49	6938.49	1.16		Si
SLD 1	8.35	3216.22	-10357	-0.0000752	0.0006738	0.0035	1.55		7588.07	7588.07	2.36		Si
SLD 1	10.45	-2735.56	-8692	-0.0000632	0.0006738	0.0035	1.55		7488.33	7488.33	2.74		Si
SLV 2	8.35	6503.4	-8876	-0.0018165	0.0006738	0.0035	1.55		6624.21	6624.21	1.02		Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 2	10.45	-5533.68	-6340	-0.0007209	0.0006738	0.0035	1.24		5897.99	5897.99	1.07		Si
SLV 4	8.35	6583.03	-11111	-0.0002251	0.0006738	0.0035	1.55		8021.61	8021.61	1.22		Si
SLV 4	10.45	-5888.29	-7663	-0.0005297	0.0006738	0.0035	1.24		6809.36	6809.36	1.16		Si
SLV 16	8.35	993.38	-5193.03	-13444	-0.0001198	0.0006738	1.55		10514.23	10514.23	2.02		Si
SLV 16	10.45	4491.19	-14103	-0.0001061	0.0006738	0.0035	1.55		9742.67	9742.67	2.17		Si
SLV 15	8.35	-5106.3	-13706	-0.0001178	0.0006738	0.0035	1.55		10669.79	10669.79	2.09		Si
SLV 15	10.45	4388.39	-14296	-0.0001048	0.0006738	0.0035	1.55		9853.77	9853.77	2.25		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 45	8.35	986.72	-14346	-10234	750	1.55	1.55	-23581	10833	4702	115546	15597	7905	23502	No	31.35	Si
SLU 45	10.45	-818.45	-12715	-9071	749	1.55	1.55	-20900	10833	4702	115546	15597	7905	23502	No	31.36	Si
SLU 51	8.35	993.38	-14400	-10273	766	1.55	1.55	-23670	10833	4702	115546	15597	7905	23502	No	30.67	Si
SLU 51	10.45	-824.79	-12730	-9082	766	1.55	1.55	-20925	10833	4702	115546	15597	7905	23502	No	30.68	Si
SLU 43	8.35	1000.66	-13604	-9705	779	1.55	1.55	-22361	10833	4702	115546	15597	7905	23502	No	30.17	Si
SLU 43	10.45	-848.87	-11945	-8521	779	1.55	1.55	-19634	10833	4702	115546	15597	7905	23502	No	30.17	Si
SLU 49	8.35	983.89	-14754	-10525	746	1.55	1.55	-24252	10833	4702	115546	15597	7905	23502	No	31.51	Si
SLU 49	10.45	-808.4	-13113	-9355	746	1.55	1.55	-21554	10833	4702	115546	15597	7905	23502	No	31.52	Si
SLU 44	8.35	1003.34	-13638	-9729	788	1.55	1.55	-22417	10833	4702	115546	15597	7905	23502	No	29.82	Si
SLU 44	10.45	-855.49	-11962	-8533	788	1.55	1.55	-19662	10833	4702	115546	15597	7905	23502	No	29.83	Si
SLU 65	8.35	980.89	-14782	-10545	672	1.55	1.55	-24298	10833	4702	115546	15597	7905	23502	No	34.98	Si
SLU 65	10.45	-817.75	-13385	-9549	672	1.55	1.55	-22002	10833	4702	115546	15597	7905	23502	No	34.99	Si
SLU 46	8.35	988.33	-14367	-10249	755	1.55	1.55	-23615	10833	4702	115546	15597	7905	23502	No	31.13	Si
SLU 46	10.45	-822.42	-12725	-9078	755	1.55	1.55	-20917	10833	4702	115546	15597	7905	23502	No	31.14	Si
SLU 48	8.35	982.28	-14734	-10511	740	1.55	1.55	-24219	10833	4702	115546	15597	7905	23502	No	31.74	Si
SLU 48	10.45	-804.42	-13103	-9347	740	1.55	1.55	-21538	10833	4702	115546	15597	7905	23502	No	31.75	Si
SLU 50	8.35	991.77	-14379	-10258	761	1.55	1.55	-23636	10833	4702	115546	15597	7905	23502	No	30.89	Si
SLU 50	10.45	-820.82	-12720	-9074	761	1.55	1.55	-20909	10833	4702	115546	15597	7905	23502	No	30.9	Si
SLU 47	8.35	998.9	-14026	-10006	779	1.55	1.55	-23055	10833	4702	115546	15597	7905	23502	No	30.17	Si
SLU 47	10.45	-841.47	-12349	-8810	779	1.55	1.55	-20299	10833	4702	115546	15597	7905	23502	No	30.18	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 4	8.35	3213.62	-11229	-8011	3164	1.55	1.4664	-18458	16192	6648	115546	23395	7905	31300		9.89	Si
SLD 4	10.45	-2846.36	-9193	-6558	2952	1.55	1.3961	-16884	15877	6206	115546	23395	7905	31300		10.6	Si
SLD 3	8.35	3250.87	-11342	-8091	3212	1.55	1.4651	-18643	16229	6657	115546	23395	7905	31300		9.74	Si
SLD 3	10.45	-2890.51	-9276	-6617	3000	1.55	1.3902	-17108	15922	6197	115546	23395	7905	31300		10.43	Si
SLV 2	8.35	6503.4	-8876	-6332	6476	1.55	0.1268	-171896	16250	577	115546	23395	7905	31300		4.83	Si
SLV 2	10.45	-5533.68	-6340	-4523	5889	1.24	0	0	0	0	115546	18716	6324	25040		4.25	Si
SLV 13	8.35	-5185.93	-11471	-8183	-5938	1.24	0.9687	0	0	0	115546	18716	6324	25040		4.22	Si
SLV 13	10.45	4743	-12973	-9255	-5439	1.55	1.2282	-21325	16250	5588	115546	23395	7905	31300		5.75	Si
SLV 3	8.35	6669.77	-11373	-8113	6925	1.55	0.5656	-18693	16239	2572	115546	23395	7905	31300		4.52	Si
SLV 3	10.45	-5991.1	-7856	-5604	6425	1.24	0.0371	0	0	0	115546	18716	6324	25040		3.9	Si
SLV 15	8.35	-5106.3	-13706	-9777	-5602	1.55	1.2073	-29308	16250	5493	115546	23395	7905	31300		5.59	Si
SLV 15	10.45	4388.39	-14296	-10198	-5014	1.55	1.4041	-23499	16250	6389	115546	23395	7905	31300		6.24	Si
SLV 16	8.35	-5193.03	-13444	-9591	-5714	1.55	1.1662	-29781	16250	5306	115546	23395	7905	31300		5.48	Si
SLV 16	10.45	4491.19	-14103	-10061	-5126	1.55	1.3696	-23181	16250	6232	115546	23395	7905	31300		6.11	Si
SLV 14	8.35	-5272.67	-11209	-7996	-6050	1.24	0.9138	0	0	0	115546	18716	6324	25040		4.14	Si
SLV 14	10.45	4845.8	-12780	-9117	-5551	1.55	1.1875	-21007	16250	5403	115546	23395	7905	31300		5.64	Si
SLV 1	8.35	6590.14	-9138	-6519	6588	1.55	0.1614	-154774	16250	734	115546	23395	7905	31300		4.75	Si
SLV 1	10.45	-5636.49	-6533	-4661	6001	1.24	0	0	0	0	115546	18716	6324	25040		4.17	Si
SLV 4	8.35	6583.03	-11111	-7926	6813	1.55	0.5475	-18263	16153	2476	115546	23395	7905	31300		4.59	Si
SLV 4	10.45	-5888.29	-7663	-5466	6313	1.24	0.0196	0	0	0	115546	18716	6324	25040		3.97	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRDM D.M. 17-01-18 (N.T.C.)

quota 10.11 Ta 0.07 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 2	-6497	0.46	192.58	835.34	1190.86	1013.1	5.26	Si
SLV 1	-6691	0.46	192.58	857.9	1220.19	1039.05	5.4	Si
SLV 6	-6910	0.46	192.58	883.41	1253.57	1068.49	5.55	Si
SLV 5	-7035	0.46	192.58	897.81	1272.52	1085.16	5.63	Si
SLV 4	-8093	0.46	192.58	1017.74	1432.37	1225.05	6.36	Si
SLV 3	-8286	0.46	192.58	1039.21	1461.4	1250.31	6.49	Si
SLV 10	-8830	0.46	192.58	1099.03	1543.24	1321.13	6.86	Si
SLV 9	-8955	0.46	192.58	1112.59	1561.99	1337.29	6.94	Si
SLV 8	-12229	0.46	192.58	1448.81	2049.03	1748.92	9.08	Si
SLV 7	-12353	0.46	192.58	1460.88	2067.35	1764.11	9.16	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.11 Wa = 0.05 Ta = 0.0739

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	$\alpha 0^*$	aLim	Verifica
SLV 11	-10685	-15450	275	0.743	1303.7	0.952	11.34953	14.09547	No
SLV 12	-10524	-15281	275	0.753	1287.3	0.951	11.50207	14.09547	No
SLV 7	-10176	-14750	261	0.776	1252	0.95	11.86317	14.09547	No
SLV 8	-10015	-14581	261	0.786	1235.6	0.95	12.03029	14.09547	No
SLV 9	-4672	-8000	-255	1.446	695.5	0.919	22.86587	14.09547	Si
SLV 10	-4511	-7831	-255	1.485	679.3	0.918	23.51096	14.09547	Si
SLV 15	-9219	-13706	106	0.857	1154.8	0.947	13.1547	7.52414	Si
SLV 5	-4164	-7300	-269	1.573	644.6	0.915	24.99308	14.09547	Si
SLV 16	-8969	-13444	106	0.877	1129.5	0.946	13.47301	7.52414	Si
SLV 6	-4002	-7131	-270	1.619	628.5	0.913	25.76672	14.09547	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.



Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	9.081	SLU 44	Si
V_SLU	29.824	SLU 44	Si
PF_SLV	1.019	SLV 2	Si
V_SLV	3.897	SLV 3	Si
PFFP_SLV	5.261	SLV 2	Si
R_SLV	0.805	SLV 11	No

Maschio 141

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-0.133	1.006	-4.113	1.006	L6	L7	3.98	0.28	3.52	3.52	3.52			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	t0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 47	8.35	4761.58	-26649	-0.000043	0.0004492	0.0035	3.98	42653.36	47890.85	47890.85	10.06	No	Si
SLU 47	10.45	1657.64	-21722	-0.0000304	0.0004492	0.0035	3.98	36330.47	40723.65	40723.65	24.57	No	Si
SLU 49	8.35	4907.62	-28006	-0.0000451	0.0004492	0.0035	3.98	44269.88	49856.11	49856.11	10.16	No	Si
SLU 49	10.45	1926.73	-23167	-0.0000328	0.0004492	0.0035	3.98	38259.09	42847.97	42847.97	22.24	No	Si
SLU 43	8.35	4686.97	-25862	-0.0000418	0.0004492	0.0035	3.98	41690.93	46750.78	46750.78	9.97	No	Si
SLU 43	10.45	1578.84	-20945	-0.0000292	0.0004492	0.0035	3.98	35269.01	39439.4	39439.4	24.98	No	Si
SLU 51	8.35	4830.93	-27390	-0.0000441	0.0004492	0.0035	3.98	43541.75	48962.79	48962.79	10.14	No	Si
SLU 51	10.45	1705.18	-22448	-0.0000314	0.0004492	0.0035	3.98	37307.16	41806.22	41806.22	24.52	No	Si
SLU 50	8.35	4828.66	-27369	-0.0000441	0.0004492	0.0035	3.98	43517.76	48933.59	48933.59	10.13	No	Si
SLU 50	10.45	1691.78	-22426	-0.0000314	0.0004492	0.0035	3.98	37278.36	41774.96	41774.96	24.69	No	Si
SLU 46	8.35	4836.77	-27253	-0.0000439	0.0004492	0.0035	3.98	43378.79	48764.71	48764.71	10.08	No	Si
SLU 46	10.45	1870.26	-22426	-0.0000317	0.0004492	0.0035	3.98	37278.48	41775.09	41775.09	22.34	No	Si
SLU 44	8.35	4690.73	-25896	-0.0000418	0.0004492	0.0035	3.98	41732.38	46799.45	46799.45	9.98	No	Si
SLU 44	10.45	1601.17	-20981	-0.0000293	0.0004492	0.0035	3.98	35318.56	39498.87	39498.87	24.67	No	Si
SLU 45	8.35	4834.51	-27233	-0.0000439	0.0004492	0.0035	3.98	43354.72	48735.51	48735.51	10.08	No	Si
SLU 45	10.45	1856.86	-22405	-0.0000317	0.0004492	0.0035	3.98	37249.66	41743.82	41743.82	22.48	No	Si
SLU 48	8.35	4905.36	-27986	-0.000045	0.0004492	0.0035	3.98	44246.25	49826.91	49826.91	10.16	No	Si
SLU 48	10.45	1913.33	-23146	-0.0000327	0.0004492	0.0035	3.98	38230.74	42816.71	42816.71	22.38	No	Si
SLU 64	8.35	4697.19	-27754	-0.0000443	0.0004492	0.0035	3.98	43972.89	49490.09	49490.09	10.54	No	Si
SLU 64	10.45	2187.07	-23602	-0.0000339	0.0004492	0.0035	3.98	38826.62	43477.06	43477.06	19.88	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 16	8.35	1192.46	-28674	-0.0000381	0.0006738	0.0035	3.98		53255.32	53255.32	44.66		Si
SLV 16	10.45	11605.34	-27820	-0.0000572	0.0006738	0.0035	3.98		51939.86	51939.86	4.48		Si
SLV 1	8.35	5913.99	-13829	-0.0000282	0.0006738	0.0035	3.98		27741.59	27741.59	4.69		Si
SLV 1	10.45	-8107.01	-8531	-0.0000269	0.0006738	0.0035	3.98		25475.68	25475.68	3.14		Si
SLV 14	8.35	770.73	-26920	-0.000035	0.0006738	0.0035	3.98		50443.51	50443.51	65.45		Si
SLV 14	10.45	10397.65	-26024	-0.0000524	0.0006738	0.0035	3.98		48955.86	48955.86	4.71		Si
SLV 11	8.35	3579.62	-26231	-0.0000395	0.0006738	0.0035	3.98		49300.06	49300.06	13.77		Si
SLV 11	10.45	6545.09	-23856	-0.0000422	0.0006738	0.0035	3.98		45304.3	45304.3	6.92		Si
SLV 15	8.35	1393.35	-28867	-0.0000387	0.0006738	0.0035	3.98		53537.2	53537.2	38.42		Si
SLV 15	10.45	11620.97	-27953	-0.0000574	0.0006738	0.0035	3.98		52159.88	52159.88	4.49		Si
SLV 3	8.35	6335.71	-15584	-0.0000312	0.0006738	0.0035	3.98		30899.62	30899.62	4.88		Si
SLV 3	10.45	-6899.31	-10328	-0.0000256	0.0006738	0.0035	3.98		28785.25	28785.25	4.17		Si
SLV 12	8.35	3449.88	-26107	-0.0000391	0.0006738	0.0035	3.98		49093.38	49093.38	14.23		Si
SLV 12	10.45	6534.99	-23771	-0.0000421	0.0006738	0.0035	3.98		45159.82	45159.82	6.91		Si
SLV 4	8.35	6134.83	-15391	-0.0000306	0.0006738	0.0035	3.98		30552.96	30552.96	4.98		Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 4	10.45	-6914.94	-10195	-0.0000255	0.0006738	0.0035	3.98		28541.22	28541.22	4.13		Si
SLV 2	8.35	5713.1	-13636	-0.0000275	0.0006738	0.0035	3.98		27394.93	27394.93	4.8		Si
SLV 2	10.45	-8122.64	-8399	-0.0000269	0.0006738	0.0035	3.98		25231.64	25231.64	3.11		Si
SLV 13	8.35	971.62	-27112	-0.0000356	0.0006738	0.0035	3.98		50763.51	50763.51	52.25		Si
SLV 13	10.45	10413.28	-26156	-0.0000526	0.0006738	0.0035	3.98		49175.89	49175.89	4.72		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 41	8.35	3400.36	-24630	-17570	-2740	3.98	3.98	-15767	10436	11629	115546	40049	20298	60347	No	22.03	Si
SLU 41	10.45	3042.02	-23233	-16574	-2749	3.98	3.98	-14873	10316	11497	115546	40049	20298	60347	No	21.95	Si
SLU 82	8.35	4410.68	-29366	-20949	-2282	3.98	3.98	-18798	10833	12073	115546	40049	20298	60347	No	26.44	Si
SLU 82	10.45	3202.88	-26647	-19009	-2293	3.98	3.98	-17058	10608	11821	115546	40049	20298	60347	No	26.31	Si
SLU 35	8.35	3634.54	-25523	-18207	-2296	3.98	3.98	-16338	10512	11714	115546	40049	20298	60347	No	26.29	Si
SLU 35	10.45	3019.31	-23786	-16969	-2306	3.98	3.98	-15227	10364	11549	115546	40049	20298	60347	No	26.17	Si
SLU 36	8.35	3636.8	-25543	-18222	-2302	3.98	3.98	-16351	10513	11716	115546	40049	20298	60347	No	26.21	Si
SLU 36	10.45	3032.7	-23808	-16984	-2312	3.98	3.98	-15240	10365	11551	115546	40049	20298	60347	No	26.1	Si
SLU 42	8.35	3402.62	-24650	-17585	-2746	3.98	3.98	-15780	10437	11631	115546	40049	20298	60347	No	21.97	Si
SLU 42	10.45	3055.41	-23255	-16589	-2756	3.98	3.98	-14886	10318	11499	115546	40049	20298	60347	No	21.9	Si
SLU 33	8.35	3565.95	-24789	-17684	-2321	3.98	3.98	-15869	10449	11645	115546	40049	20298	60347	No	26	Si
SLU 33	10.45	2976.24	-23067	-16455	-2331	3.98	3.98	-14766	10302	11481	115546	40049	20298	60347	No	25.89	Si
SLU 40	8.35	3331.77	-23896	-17047	-2765	3.98	3.98	-15297	10373	11560	115546	40049	20298	60347	No	21.82	Si
SLU 40	10.45	2998.94	-22514	-16061	-2775	3.98	3.98	-14412	10255	11428	115546	40049	20298	60347	No	21.75	Si
SLU 32	8.35	3563.69	-24769	-17670	-2315	3.98	3.98	-15856	10447	11643	115546	40049	20298	60347	No	26.07	Si
SLU 32	10.45	2962.84	-23045	-16440	-2324	3.98	3.98	-14752	10300	11479	115546	40049	20298	60347	No	25.96	Si
SLU 81	8.35	4408.42	-29346	-20934	-2276	3.98	3.98	-18785	10833	12073	115546	40049	20298	60347	No	26.52	Si
SLU 81	10.45	3189.49	-26625	-18994	-2287	3.98	3.98	-17044	10606	11819	115546	40049	20298	60347	No	26.39	Si
SLU 39	8.35	3329.51	-23876	-17033	-2759	3.98	3.98	-15284	10371	11558	115546	40049	20298	60347	No	21.87	Si
SLU 39	10.45	2985.55	-22492	-16045	-2768	3.98	3.98	-14398	10253	11426	115546	40049	20298	60347	No	21.8	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 1	8.35	5913.99	-13829	-9865	8402	3.98	3.98	-8852	14270	15903	115546	60073	20298	80371		9.57	Si
SLV 1	10.45	-8107.01	-8531	-6086	7126	3.98	3.1193	-6986	13897	12138	115546	60073	20298	80371		11.28	Si
SLV 3	8.35	6335.71	-15584	-11117	7741	3.98	3.98	-9976	14495	16153	115546	60073	20298	80371		10.38	Si
SLV 3	10.45	-6899.31	-10328	-7368	6510	3.98	3.9659	-6611	13822	15349	115546	60073	20298	80371		12.35	Si
SLV 14	8.35	770.73	-26920	-19204	-8508	3.98	3.98	-17232	15946	17771	115546	60073	20298	80371		9.45	Si
SLV 14	10.45	10397.65	-26024	-18565	-7292	3.98	3.98	-16659	15832	17643	115546	60073	20298	80371		11.02	Si
SLV 4	8.35	6134.83	-15391	-10980	7595	3.98	3.98	-9853	14471	16126	115546	60073	20298	80371		10.58	Si
SLV 4	10.45	-6914.94	-10195	-7273	6365	3.98	3.9353	-6526	13805	15212	115546	60073	20298	80371		12.63	Si
SLV 16	8.35	1192.46	-28674	-20456	-9169	3.98	3.98	-18356	16171	18021	115546	60073	20298	80371		8.77	Si
SLV 16	10.45	11605.34	-27820	-19846	-7908	3.98	3.98	-17809	16062	17899	115546	60073	20298	80371		10.16	Si
SLD 16	8.35	2545.18	-24435	-17431	-4146	3.98	3.98	-15642	15628	17416	115546	60073	20298	80371		19.39	Si
SLD 16	10.45	5971.2	-22312	-15917	-3611	3.98	3.98	-14283	15357	17113	115546	60073	20298	80371		22.26	Si
SLV 2	8.35	5713.1	-13636	-9728	8257	3.98	3.98	-8729	14246	15876	115546	60073	20298	80371		9.73	Si
SLV 2	10.45	-8122.64	-8399	-5992	6981	3.98	3.0687	-6990	13898	11942	115546	60073	20298	80371		11.51	Si
SLV 13	8.35	971.62	-27112	-19341	-8363	3.98	3.98	-17356	15971	17798	115546	60073	20298	80371		9.61	Si
SLV 13	10.45	10413.28	-26156	-18659	-7147	3.98	3.98	-16744	15849	17662	115546	60073	20298	80371		11.25	Si
SLD 15	8.35	2631.44	-24518	-17490	-4083	3.98	3.98	-15695	15639	17428	115546	60073	20298	80371		19.68	Si
SLD 15	10.45	5977.91	-22369	-15958	-3549	3.98	3.98	-14319	15364	17122	115546	60073	20298	80371		22.65	Si
SLV 15	8.35	1393.35	-28867	-20593	-9024	3.98	3.98	-18479	16196	18049	115546	60073	20298	80371		8.91	Si
SLV 15	10.45	11620.97	-27953	-19941	-7763	3.98	3.98	-17894	16079	17918	115546	60073	20298	80371		10.35	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCC D.M. 17-01-18 (N.T.C.)

quota 10.11 Ta 0.07 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 2	-9086	0.46	494.49	1215.45	1910.33	1562.89	3.16	Si
SLV 1	-9218	0.46	494.49	1232.33	1930.82	1581.58	3.2	Si
SLV 4	-10886	0.46	494.49	1442.77	2186.93	1814.85	3.67	Si
SLV 3	-11018	0.46	494.49	1459.33	2207.22	1833.27	3.71	Si
SLV 6	-13191	0.46	494.49	1727.42	2539.86	2133.64	4.31	Si
SLV 5	-13276	0.46	494.49	1737.85	2552.94	2145.39	4.34	Si
SLV 10	-18488	0.46	494.49	2354.08	3344.29	2849.18	5.76	Si
SLV 9	-18574	0.46	494.49	2363.88	3357.24	2860.56	5.78	Si
SLV 8	-19190	0.46	494.49	2434.14	3450.38	2942.26	5.95	Si
SLV 7	-19275	0.46	494.49	2443.86	3463.21	2953.54	5.97	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 10.11 Wa = 0.05 Ta = 0.0739

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	$\alpha_0^*$	aLim	Verifica
SLV 11	-18737	-26231	1077	1.002	2465.3	0.937	15.52891	14.09547	Si
SLV 12	-18666	-26107	1078	1.005	2458.1	0.937	15.57856	14.09547	Si
SLV 7	-16259	-22246	1113	1.12	2214.9	0.932	17.47444	14.09547	Si
SLV 8	-16189	-22122	1114	1.124	2207.8	0.932	17.5378	14.09547	Si
SLV 9	-15765	-20382	-1115	1.148	2165	0.93	17.92844	14.09547	Si
SLV 10	-15695	-20257	-1115	1.152	2157.9	0.93	17.99585	14.09547	Si
SLV 5	-13288	-16397	-1079	1.313	1915.5	0.923	20.66712	14.09547	Si
SLV 6	-13218	-16272	-1079	1.319	1908.4	0.923	20.75685	14.09547	Si
SLV 15	-20606	-28867	268	0.961	2654.5	0.941	14.83429	7.52414	Si
SLV 16	-20497	-28674	268	0.965	2643.5	0.941	14.90187	7.52414	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.





Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	9.975	SLU 43	Si
V_SLU	21.748	SLU 40	Si
PF_SLV	3.106	SLV 2	Si
V_SLV	8.765	SLV 16	Si
PFFP_SLV	3.161	SLV 2	Si
R_SLV	1.102	SLV 11	Si

Maschio 142

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.003	-4.824	-11.003	-3.383	L6	L7	1.441	0.28	3.52	3.52	3.52			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	t0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv / e,CNR DT-200					CRM / Fibrenet?			
											elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 34	8.35	-383.55	-10059	-0.0000452	0.0003743	0.0035	1.4409	5472.44	6480.32	6480.32	16.9	No	Si
SLU 34	11.87	-52.29	-5137	-0.0000201	0.0003743	0.0035	1.4409	3237.94	3859.7	3859.7	73.81	No	Si
SLU 41	8.35	-402.28	-10430	-0.0000471	0.0003743	0.0035	1.4409	5606.43	6653.92	6653.92	16.54	No	Si
SLU 41	11.87	-32.41	-5184	-0.0000199	0.0003743	0.0035	1.4409	3263.53	3887.59	3887.59	119.96	No	Si
SLU 32	8.35	-384.25	-10100	-0.0000454	0.0003743	0.0035	1.4409	5487.41	6499.29	6499.29	16.91	No	Si
SLU 32	11.87	-25.35	-5131	-0.0000196	0.0003743	0.0035	1.4409	3234.96	3856.45	3856.45	152.12	No	Si
SLU 82	8.35	-438.97	-11998	-0.0000544	0.0003743	0.0035	1.4409	6119.21	7358.54	7358.54	16.76	No	Si
SLU 82	11.87	-63.44	-5891	-0.0000232	0.0003743	0.0035	1.4409	3635.55	4297.08	4297.08	67.73	No	Si
SLU 31	8.35	-383.03	-9746	-0.0000439	0.0003743	0.0035	1.4409	5355.37	6333.34	6333.34	16.53	No	Si
SLU 31	11.87	-31.15	-4834	-0.0000186	0.0003743	0.0035	1.4409	3072.95	3678.1	3678.1	118.08	No	Si
SLU 33	8.35	-395.15	-10146	-0.0000458	0.0003743	0.0035	1.4409	5504.17	6520.64	6520.64	16.5	No	Si
SLU 33	11.87	-26.4	-5161	-0.0000198	0.0003743	0.0035	1.4409	3251.08	3874.03	3874.03	146.76	No	Si
SLU 39	8.35	-401.77	-10117	-0.0000457	0.0003743	0.0035	1.4409	5493.44	6506.95	6506.95	16.2	No	Si
SLU 39	11.87	-11.26	-4882	-0.0000184	0.0003743	0.0035	1.4409	3099.04	3706.92	3706.92	329.1	No	Si
SLU 36	8.35	-395.67	-10460	-0.0000471	0.0003743	0.0035	1.4409	5616.83	6667.77	6667.77	16.85	No	Si
SLU 36	11.87	-47.54	-5463	-0.0000213	0.0003743	0.0035	1.4409	3412.61	4050.12	4050.12	85.19	No	Si
SLU 40	8.35	-412.66	-10162	-0.0000461	0.0003743	0.0035	1.4409	5510.16	6528.31	6528.31	15.82	No	Si
SLU 40	11.87	-12.31	-4912	-0.0000186	0.0003743	0.0035	1.4409	3115.42	3725.09	3725.09	302.62	No	Si
SLU 42	8.35	-413.18	-10476	-0.0000475	0.0003743	0.0035	1.4409	5622.65	6675.54	6675.54	16.16	No	Si
SLU 42	11.87	-33.45	-5214	-0.0000201	0.0003743	0.0035	1.4409	3279.59	3905.11	3905.11	116.73	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 6	8.35	710.55	-1974	-0.0000193	0.0005615	0.0035	1.4409		1498.28	1498.28	2.11		Si
SLV 6	11.87	-272.9	-187	-0.0001163	0.0005615	0.0035	1.1527		646.66	646.66	2.37		Si
SLV 2	8.35	-799.98	-6646	-0.0000374	0.0005615	0.0035	1.4409		4885.53	4885.53	6.11		Si
SLV 2	11.87	447.85	-2714	-0.0000168	0.0005615	0.0035	1.4409		1999.25	1999.25	4.46		Si
SLV 3	8.35	-1459.31	-10301	-0.0000626	0.0005615	0.0035	1.4409		6986.39	6986.39	4.79		Si
SLV 3	11.87	645.18	-5052	-0.0000288	0.0005615	0.0035	1.4409		3524.04	3524.04	5.46		Si
SLV 14	8.35	979.94	-5875	-0.0000372	0.0005615	0.0035	1.4409		4039.36	4039.36	4.12		Si
SLV 14	11.87	-830.27	-3332	-0.0000251	0.0005615	0.0035	1.4409		2789.02	2789.02	3.36		Si
SLV 9	8.35	1301.4	-1676	-0.0010609	0.0005615	0.0035	1.1527		1295.06	1295.06	1		No
SLV 9	11.87	-677.1	-364	-0.0003508	0.0005615	0.0035	1.1527		771.75	771.75	1.14		Si
SLV 1	8.35	-711.91	-6544	-0.0000356	0.0005615	0.0035	1.4409		4822.91	4822.91	6.77		Si
SLV 1	11.87	415.71	-2702	-0.0000163	0.0005615	0.0035	1.4409		1991.35	1991.35	4.79		Si
SLV 4	8.35	-1547.37	-10404	-0.0000644	0.0005615	0.0035	1.4409		7041.57	7041.57	4.55		Si
SLV 4	11.87	677.32	-5063	-0.0000293	0.0005615	0.0035	1.4409		3531.56	3531.56	5.21		Si
SLV 13	8.35	1068.01	-5772	-0.0000382	0.0005615	0.0035	1.4409		3975.5	3975.5	3.72		Si





Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 13	11.87	-862.41	-3320	-0.0000255	0.0005615	0.0035	1.4409		2781.24	2781.24	3.22		Si
SLV 5	8.35	767.43	-1908	-0.0000212	0.0005615	0.0035	1.4409		1453.27	1453.27	1.89		Si
SLV 5	11.87	-293.66	-179	-0.000135	0.0005615	0.0035	1.1527		641.3	641.3	2.18		Si
SLV 10	8.35	1244.52	-1742	-0.0003702	0.0005615	0.0035	1.1527		1340.78	1340.78	1.08		Si
SLV 10	11.87	-656.34	-372	-0.0003296	0.0005615	0.0035	1.1527		777.11	777.11	1.18		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 76	8.35	-409.85	-11895	-9905	-2308	1.4409	1.4409	-24551	10218	4122	40441	12081	3674	15755	No	6.83	Si
SLU 76	11.87	-103.43	-6116	-5093	606	1.4409	1.4409	-12624	8628	3481	40441	12081	3674	15755	No	26.01	Si
SLU 82	8.35	-438.97	-11998	-9991	-2466	1.4409	1.4409	-24764	10246	4134	40441	12081	3674	15755	No	6.39	Si
SLU 82	11.87	-63.44	-5891	-4906	421	1.4409	1.4409	-12159	8566	3456	40441	12081	3674	15755	No	37.44	Si
SLU 75	8.35	-421.46	-11982	-9977	-2382	1.4409	1.4409	-24730	10242	4132	40441	12081	3674	15755	No	6.61	Si
SLU 75	11.87	-77.53	-6141	-5113	556	1.4409	1.4409	-12674	8634	3484	40441	12081	3674	15755	No	28.32	Si
SLU 81	8.35	-428.07	-11952	-9953	-2445	1.4409	1.4409	-24669	10234	4129	40441	12081	3674	15755	No	6.44	Si
SLU 81	11.87	-62.4	-5861	-4881	433	1.4409	1.4409	-12097	8557	3453	40441	12081	3674	15755	No	36.37	Si
SLU 84	8.35	-439.49	-12312	-10252	-2483	1.4409	1.4409	-25412	10333	4169	40441	12081	3674	15755	No	6.35	Si
SLU 84	11.87	-84.59	-6194	-5157	505	1.4409	1.4409	-12783	8649	3489	40441	12081	3674	15755	No	31.22	Si
SLU 80	8.35	-403.11	-12178	-10141	-2310	1.4409	1.4409	-25136	10296	4154	40441	12081	3674	15755	No	6.82	Si
SLU 80	11.87	-123.87	-6399	-5328	698	1.4409	1.4409	-13207	8705	3512	40441	12081	3674	15755	No	22.58	Si
SLU 74	8.35	-140.56	-11936	-9939	-2361	1.4409	1.4409	-24635	10229	4127	40441	12081	3674	15755	No	6.67	Si
SLU 74	11.87	-76.49	-6111	-5088	569	1.4409	1.4409	-12612	8626	3480	40441	12081	3674	15755	No	27.7	Si
SLU 83	8.35	-428.59	-12266	-10214	-2461	1.4409	1.4409	-25317	10320	4164	40441	12081	3674	15755	No	6.4	Si
SLU 83	11.87	-83.54	-6164	-5133	517	1.4409	1.4409	-12722	8641	3486	40441	12081	3674	15755	No	30.47	Si
SLU 77	8.35	-411.08	-12250	-10200	-2377	1.4409	1.4409	-25283	10316	4162	40441	12081	3674	15755	No	6.63	Si
SLU 77	11.87	-97.63	-6413	-5340	653	1.4409	1.4409	-13237	8709	3514	40441	12081	3674	15755	No	24.14	Si
SLU 78	8.35	-421.98	-12296	-10239	-2398	1.4409	1.4409	-25378	10328	4167	40441	12081	3674	15755	No	6.57	Si
SLU 78	11.87	-98.68	-6443	-5365	640	1.4409	1.4409	-13298	8718	3517	40441	12081	3674	15755	No	24.61	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 8	8.35	-1780.77	-14500	-12074	-3852	1.4409	1.4409	-29927	16250	6556	40441	18122	3674	21796		5.66	Si
SLV 8	11.87	492	-8019	-6677	-3312	1.4409	1.4409	-16551	13727	5538	40441	18122	3674	21796		6.58	Si
SLV 1	8.35	-711.91	-6544	-5449	-4535	1.4409	1.4409	-13506	13118	5292	40441	18122	3674	21796		4.81	Si
SLV 1	11.87	415.71	-2702	-2250	-2069	1.4409	1.4409	-5577	11532	4653	40441	18122	3674	21796		10.53	Si
SLV 7	8.35	-1723.89	-14434	-12019	-3651	1.4409	1.4409	-29791	16250	6556	40441	18122	3674	21796		5.97	Si
SLV 7	11.87	471.24	-8011	-6671	-3141	1.4409	1.4409	-16535	13724	5537	40441	18122	3674	21796		6.94	Si
SLV 14	8.35	979.94	-5875	-4892	2422	1.4409	1.4409	-12125	12842	5181	40441	18122	3674	21796		9	Si
SLV 14	11.87	-830.27	-3332	-2774	4871	1.4409	1.4138	-6877	11792	4668	40441	18122	3674	21796		4.47	Si
SLV 2	8.35	-799.98	-6646	-5534	-4847	1.4409	1.4409	-13717	13160	5309	40441	18122	3674	21796		4.5	Si
SLV 2	11.87	447.85	-2714	-2260	-2335	1.4409	1.4409	-5601	11537	4655	40441	18122	3674	21796		9.33	Si
SLV 3	8.35	-1459.31	-10301	-8578	-5276	1.4409	1.4409	-21262	14669	5918	40441	18122	3674	21796		4.13	Si
SLV 3	11.87	645.18	-5052	-4207	-3706	1.4409	1.4409	-10426	12502	5044	40441	18122	3674	21796		5.88	Si
SLV 4	8.35	-1547.37	-10404	-8663	-5587	1.4409	1.4409	-21473	14711	5935	40441	18122	3674	21796		3.9	Si
SLV 4	11.87	677.32	-5063	-4216	-3972	1.4409	1.4409	-10451	12507	5046	40441	18122	3674	21796		5.49	Si
SLV 10	8.35	1244.52	-1742	-1451	797	1.1527	0.0186	0	0	0	40441	14497	2939	17437		21.87	Si
SLV 10	11.87	-656.34	-372	-310	4305	1.1527	0	0	0	0	40441	14497	2939	17437		4.05	Si
SLV 9	8.35	1301.4	-1676	-1396	998	1.1527	0	0	0	0	40441	14497	2939	17437		17.47	Si
SLV 9	11.87	-677.1	-364	-303	4477	1.1527	0	0	0	0	40441	14497	2939	17437		3.89	Si
SLV 13	8.35	1068.01	-5772	-4807	2733	1.4409	1.4409	-11914	12799	5164	40441	18122	3674	21796		7.97	Si
SLV 13	11.87	-862.41	-3320	-2765	5136	1.4409	1.3821	-6852	11787	4561	40441	18122	3674	21796		4.24	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.11 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 10	179667	0.46	0	-829	179.02	0	0	No, $e > t/2$
SLV 6	179667	0.46	0	-264	179.02	0	0	No, $e > t/2$
SLV 5	179667	0.46	0	-282	179.02	0	0	No, $e > t/2$
SLV 9	179667	0.46	0	-848	179.02	0	0	No, $e > t/2$
SLV 2	179667	0.46	7824	-3157	179.02	419.28	2.34	Si
SLV 1	179667	0.46	7895	-3185	179.02	422.86	2.36	Si
SLV 14	179667	0.46	12494	-5041	179.02	647.98	3.62	Si
SLV 13	179667	0.46	12565	-5069	179.02	651.32	3.64	Si
SLV 4	179667	0.46	15381	-6206	179.02	781.29	4.36	Si
SLV 3	179667	0.46	15452	-6234	179.02	784.47	4.38	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 10.11 Wa = 0.05 Ta = 0.0739

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	$\alpha_0^*$	aLim	Verifica
SLV 12	-8204	-14268	128	0.885	1036.5	0.945	13.61481	14.09547	No
SLV 11	-8197	-14202	126	0.886	1035.7	0.945	13.6292	14.09547	No
SLV 8	-8019	-14500	85	0.907	1017.7	0.944	13.95802	14.09547	No
SLV 7	-8011	-14434	83	0.908	1016.9	0.944	13.973	14.09547	No
SLV 16	-5681	-9632	99	1.196	781.2	0.93	18.68107	7.52414	Si
SLV 15	-5670	-9530	96	1.198	780	0.93	18.7208	7.52414	Si
SLV 4	-5063	-10404	-44	1.317	718.9	0.926	20.68301	7.52414	Si
SLV 3	-5052	-10301	-47	1.319	717.7	0.925	20.71452	7.52414	Si
SLV 14	-3332	-5875	31	1.8	545.5	0.909	28.77626	7.52414	Si
SLV 13	-3320	-5772	28	1.805	544.4	0.909	28.86399	7.52414	Si



Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	15.82	SLU 40	Si
V_SLU	6.347	SLU 84	Si
PF_SLV	0.995	SLV 9	No
V_SLV	3.895	SLV 9	Si
PFFP_SLV	0	SLV 5	No
R_SLV	0.966	SLV 12	No

## Maschio 143

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.003	-3.383	-11.003	-0.694	L6	Z medio 1088 cm	2.689	0.28	2.528	1.737	3.32			

#### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_ Corti

fb	fk	fvk0	fmedio	t0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

#### Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 45	8.35	702.4	-19596	-0.000044	0.0003743	0.0035	2.6886	19608.45	21574.92	21574.92	30.72	No	Si
SLU 45	10.09	388.5	-15794	-0.0000342	0.0003743	0.0035	2.6886	16856.87	18146.95	18146.95	46.71	No	Si
SLU 51	8.35	702.33	-19908	-0.0000447	0.0003743	0.0035	2.6886	19811.5	21814.92	21814.92	31.06	No	Si
SLU 51	10.09	305.4	-16111	-0.0000345	0.0003743	0.0035	2.6886	17105.91	18481.35	18481.35	60.52	No	Si
SLU 48	8.35	721.04	-20188	-0.0000454	0.0003743	0.0035	2.6886	19990.71	22031.15	22031.15	30.55	No	Si
SLU 48	10.09	381.14	-16373	-0.0000354	0.0003743	0.0035	2.6886	17308.52	18758.77	18758.77	49.22	No	Si
SLU 47	8.35	666.99	-19319	-0.0000432	0.0003743	0.0035	2.6886	19424.51	21361.87	21361.87	32.03	No	Si
SLU 47	10.09	304.53	-15533	-0.0000332	0.0003743	0.0035	2.6886	16649.44	17873.22	17873.22	58.69	No	Si
SLU 50	8.35	727.38	-19906	-0.0000448	0.0003743	0.0035	2.6886	19809.92	21813.04	21813.04	29.99	No	Si
SLU 50	10.09	317.73	-16110	-0.0000345	0.0003743	0.0035	2.6886	17105.18	18480.37	18480.37	58.16	No	Si
SLU 8	8.35	544.13	-16160	-0.0000357	0.0003743	0.0035	2.6886	17143.68	18532.79	18532.79	34.06	No	Si
SLU 8	10.09	256.7	-13132	-0.0000279	0.0003743	0.0035	2.6886	14629.07	15406.4	15406.4	60.02	No	Si
SLU 49	8.35	695.98	-20190	-0.0000453	0.0003743	0.0035	2.6886	19992.27	22033.04	22033.04	31.66	No	Si
SLU 49	10.09	368.8	-16374	-0.0000353	0.0003743	0.0035	2.6886	17309.24	18759.76	18759.76	50.87	No	Si
SLU 44	8.35	648.35	-18727	-0.0000418	0.0003743	0.0035	2.6886	19024.22	20911.66	20911.66	32.25	No	Si
SLU 44	10.09	311.88	-14954	-0.000032	0.0003743	0.0035	2.6886	16180.74	17269.75	17269.75	55.37	No	Si
SLU 46	8.35	677.35	-19599	-0.0000439	0.0003743	0.0035	2.6886	19610.05	21576.79	21576.79	31.85	No	Si
SLU 46	10.09	376.16	-15795	-0.0000341	0.0003743	0.0035	2.6886	16857.61	18147.93	18147.93	48.25	No	Si
SLU 43	8.35	690.1	-18723	-0.000042	0.0003743	0.0035	2.6886	19021.42	20908.58	20908.58	30.3	No	Si
SLU 43	10.09	332.44	-14952	-0.0000321	0.0003743	0.0035	2.6886	16179.47	17268.14	17268.14	51.94	No	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 10	8.35	2447.83	-16269	-0.000044	0.0005615	0.0035	2.6886		19534.51	19534.51	7.98		Si
SLD 10	10.09	1395.71	-13132	-0.0000326	0.0005615	0.0035	2.6886		16477.26	16477.26	11.81		Si
SLV 10	8.35	4982.86	-16441	-0.000056	0.0005615	0.0035	2.6886		19703.96	19703.96	3.95		Si
SLV 10	10.09	2929.08	-13370	-0.00004	0.0005615	0.0035	2.6886		16710.63	16710.63	5.71		Si
SLV 6	8.35	4529.1	-15097	-0.000051	0.0005615	0.0035	2.6886		18385.67	18385.67	4.06		Si
SLV 6	10.09	3011.38	-11782	-0.0000371	0.0005615	0.0035	2.6886		14976.88	14976.88	4.97		Si
SLV 9	8.35	4980.27	-16385	-0.0000559	0.0005615	0.0035	2.6886		19649.21	19649.21	3.95		Si
SLV 9	10.09	2890.47	-13377	-0.0000399	0.0005615	0.0035	2.6886		16716.61	16716.61	5.78		Si
SLV 5	8.35	4526.51	-15042	-0.0000509	0.0005615	0.0035	2.6886		18331.44	18331.44	4.05		Si
SLV 5	10.09	2972.77	-11788	-0.0000369	0.0005615	0.0035	2.6886		14983.99	14983.99	5.04		Si
SLV 11	8.35	-3634.42	-17205	-0.0000514	0.0005615	0.0035	2.6886		22382.64	22382.64	6.16		Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 11	10.09	-2649.96	-14145	-0.0000404	0.0005615	0.0035	2.6886		19099.78	19099.78	7.21		Si
SLV 7	8.35	-4088.18	-15861	-0.0000506	0.0005615	0.0035	2.6886		20970.13	20970.13	5.13		Si
SLV 7	10.09	-2567.66	-12557	-0.0000367	0.0005615	0.0035	2.6886		17332.25	17332.25	6.75		Si
SLV 8	8.35	-4085.59	-15917	-0.0000508	0.0005615	0.0035	2.6886		21030.19	21030.19	5.15		Si
SLV 8	10.09	-2529.05	-12551	-0.0000365	0.0005615	0.0035	2.6886		17325.17	17325.17	6.85		Si
SLD 9	8.35	2446.7	-16245	-0.0000439	0.0005615	0.0035	2.6886		19510.62	19510.62	7.97		Si
SLD 9	10.09	1378.85	-13134	-0.0000325	0.0005615	0.0035	2.6886		16479.95	16479.95	11.95		Si
SLV 12	8.35	-3631.82	-17260	-0.0000516	0.0005615	0.0035	2.6886		22440.15	22440.15	6.18		Si
SLV 12	10.09	-2611.35	-14139	-0.0000402	0.0005615	0.0035	2.6886		19093.07	19093.07	7.31		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 42	8.35	241.87	-20506	-17075	-1176	2.6886	2.6886	-22682	9969	7505	28547	22543	6856	29399	No	25	Si
SLU 42	10.09	-227.29	-16733	-13934	-760	2.6886	2.6886	-18509	9412	7086	28547	22543	6856	29399	No	38.66	Si
SLU 41	8.35	256.81	-19089	-15896	-1019	2.6886	2.6886	-21115	9760	7347	28547	22543	6856	29399	No	28.86	Si
SLU 31	10.09	-66.61	-15439	-12856	-683	2.6886	2.6886	-17077	9221	6942	28547	22543	6856	29399	No	43.06	Si
SLU 50	8.35	727.38	-19906	-16576	874	2.6886	2.6886	-22018	9880	7438	28547	22543	6856	29399	No	33.65	Si
SLU 50	10.09	317.73	-16110	-13415	962	2.6886	2.6886	-17820	9320	7017	28547	22543	6856	29399	No	30.55	Si
SLU 39	8.35	248.28	-19912	-16581	-1250	2.6886	2.6886	-22025	9881	7439	28547	22543	6856	29399	No	23.52	Si
SLU 39	10.09	-207.6	-16154	-13451	-824	2.6886	2.6886	-17868	9327	7021	28547	22543	6856	29399	No	35.69	Si
SLU 82	8.35	406.48	-23660	-19702	-961	2.6886	2.6886	-26171	10434	7855	28547	22543	6856	29399	No	30.59	Si
SLU 82	10.09	-158.91	-19133	-15932	-521	2.6886	2.6886	-21163	9766	7352	28547	22543	6856	29399	No	56.39	Si
SLU 36	8.35	304.45	-20552	-17114	-988	2.6886	2.6886	-22733	9976	7510	28547	22543	6856	29399	No	29.76	Si
SLU 36	10.09	-9.69	-16858	-14038	-652	2.6886	2.6886	-18647	9431	7100	28547	22543	6856	29399	No	45.07	Si
SLU 40	8.35	223.23	-19914	-16583	-1282	2.6886	2.6886	-22028	9881	7439	28547	22543	6856	29399	No	22.93	Si
SLU 40	10.09	-219.94	-16154	-13452	-857	2.6886	2.6886	-17869	9327	7022	28547	22543	6856	29399	No	34.3	Si
SLU 33	8.35	285.81	-19961	-16622	-1094	2.6886	2.6886	-22079	9888	7444	28547	22543	6856	29399	No	26.87	Si
SLU 33	10.09	-2.33	-16279	-13556	-749	2.6886	2.6886	-18007	9345	7035	28547	22543	6856	29399	No	39.25	Si
SLU 41	8.35	266.92	-20503	-17073	-1144	2.6886	2.6886	-22679	9968	7504	28547	22543	6856	29399	No	25.71	Si
SLU 41	10.09	-214.96	-16732	-13933	-727	2.6886	2.6886	-18508	9412	7086	28547	22543	6856	29399	No	40.44	Si
SLU 32	8.35	310.86	-19958	-16620	-1062	2.6886	2.6886	-22077	9888	7444	28547	22543	6856	29399	No	27.69	Si
SLU 32	10.09	10	-16279	-13555	-716	2.6886	2.6886	-18006	9345	7035	28547	22543	6856	29399	No	41.09	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 12	8.35	-3631.82	-17260	-14373	-5889	2.6886	2.6886	-19092	14235	10716	28547	33814	6856	39263		6.67	Si
SLV 12	10.09	-2611.35	-14139	-11774	-7157	2.6886	2.6886	-15639	13545	10197	28547	33814	6856	38743		5.41	Si
SLV 2	8.35	985.28	-13832	-11518	4244	2.6886	2.6886	-15300	13477	10145	28547	33814	6856	38692		9.12	Si
SLV 2	10.09	1178.83	-10197	-8491	5064	2.6886	2.6886	-11279	12672	9540	28547	33814	6856	38087		7.52	Si
SLV 10	8.35	4982.86	-16441	-13690	4190	2.6886	2.6886	-18185	14054	10580	28547	33814	6856	39127		9.34	Si
SLV 10	10.09	2929.08	-13370	-11134	5626	2.6886	2.6886	-14789	13375	10069	28547	33814	6856	38615		6.86	Si
SLV 1	8.35	981.27	-13746	-11446	4217	2.6886	2.6886	-15204	13458	10131	28547	33814	6856	38678		9.17	Si
SLV 1	10.09	1119.05	-10206	-8499	5044	2.6886	2.6886	-11289	12675	9542	28547	33814	6856	38088		7.55	Si
SLV 5	8.35	4526.51	-15042	-12525	5824	2.6886	2.6886	-16638	13744	10347	28547	33814	6856	38894		6.68	Si
SLV 5	10.09	2972.77	-11788	-9816	7417	2.6886	2.6886	-13039	13025	9805	28547	33814	6856	38352		5.17	Si
SLV 7	8.35	-4088.18	-15861	-13208	-4256	2.6886	2.6886	-17544	13926	10483	28547	33814	6856	39030		9.17	Si
SLV 7	10.09	-2567.66	-12557	-10456	-5366	2.6886	2.6886	-13889	13195	9933	28547	33814	6856	38480		7.17	Si
SLV 6	8.35	4529.1	-15097	-12572	5841	2.6886	2.6886	-16699	13757	10356	28547	33814	6856	38903		6.66	Si
SLV 6	10.09	3011.38	-11782	-9811	7430	2.6886	2.6886	-13033	13023	9804	28547	33814	6856	38351		5.16	Si
SLV 8	8.35	-4085.59	-15917	-13254	-4238	2.6886	2.6886	-17606	13938	10493	28547	33814	6856	39039		9.21	Si
SLV 8	10.09	-2529.05	-12551	-10451	-5353	2.6886	2.6886	-13883	13193	9932	28547	33814	6856	38479		7.19	Si
SLV 9	8.35	4980.27	-16385	-13644	4173	2.6886	2.6886	-18124	14041	10571	28547	33814	6856	39117		9.37	Si
SLV 9	10.09	2890.47	-13377	-11139	5613	2.6886	2.6886	-14796	13376	10070	28547	33814	6856	38616		6.88	Si
SLV 11	8.35	-3634.42	-17205	-14327	-5907	2.6886	2.6886	-19030	14223	10707	28547	33814	6856	39254		6.65	Si
SLV 11	10.09	-2649.96	-14145	-11779	-7169	2.6886	2.6886	-15646	13546	10198	28547	33814	6856	38744		5.4	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 9.219 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 1	179667	0.44	16116	-12133	165.31	1519.33	9.19	Si
SLV 3	179667	0.44	16166	-12170	165.31	1523.47	9.22	Si
SLV 2	179667	0.44	16174	-12176	165.31	1524.16	9.22	Si
SLV 4	179667	0.44	16224	-12214	165.31	1528.3	9.25	Si
SLV 5	179667	0.44	18534	-13953	165.31	1716.33	10.38	Si
SLV 6	179667	0.44	18572	-13981	165.31	1719.33	10.4	Si
SLV 7	179667	0.44	18700	-14078	165.31	1729.57	10.46	Si
SLV 8	179667	0.44	18738	-14106	165.31	1732.56	10.48	Si
SLV 9	179667	0.44	20648	-15544	165.31	1881.93	11.38	Si
SLV 10	179667	0.44	20685	-15572	165.31	1884.81	11.4	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 9.219 Wa = 0.05 Ta = 0.0381

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	a0*	aLim	Verifica
SLV 11	-14145	-17205	-56	1.01	1708.8	0.954	15.38766	7.00457	Si
SLV 12	-14139	-17260	-56	1.011	1708.2	0.954	15.39376	7.00457	Si
SLV 9	-13377	-16385	-48	1.059	1630.8	0.952	16.16984	7.00457	Si
SLV 10	-13370	-16441	-48	1.06	1630.1	0.952	16.17659	7.00457	Si
SLV 7	-12557	-15861	15	1.119	1547.5	0.95	17.12602	7.00457	Si
SLV 8	-12551	-15917	15	1.12	1546.9	0.95	17.13324	7.00457	Si



Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 5	-11788	-15042	23	1.179	1469.5	0.948	18.08721	7.00457	Si
SLV 6	-11782	-15097	24	1.18	1468.9	0.947	18.09531	7.00457	Si
SLV 15	-15731	-18470	-137	0.919	1870	0.958	13.94332	5.12604	Si
SLV 16	-15721	-18556	-137	0.919	1869	0.958	13.95106	5.12604	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	29.989	SLU 50	Si
V_SLU	22.928	SLU 40	Si
PF_SLV	3.945	SLV 9	Si
V_SLV	5.162	SLV 6	Si
PFFP_SLV	9.191	SLV 1	Si
R_SLV	2.197	SLV 11	Si

Maschio 144

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s,sx	a.s,dx
-11.003	-3.383	-11.003	-0.694	Z medio 1088 cm	L7	2.689	0.28	0.992	1.783	0.2			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau 0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma F_d$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche,  $\gamma M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon m$	$\epsilon m_{-}$	$\epsilon m_u$	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 35	11.67	314.41	-11310	-0.0000243	0.0003743	0.0035	2.6886	12960.9	13597.38	13597.38	43.25	No	Si
SLU 35	11.87	735.18	-10972	-0.0000255	0.0003743	0.0035	2.6886	12638.82	13267.87	13267.87	18.05	No	Si
SLU 81	11.67	369.07	-12367	-0.0000267	0.0003743	0.0035	2.6886	13942.93	14640.44	14640.44	39.67	No	Si
SLU 81	11.87	802.51	-11904	-0.0000278	0.0003743	0.0035	2.6886	13517.28	14181	14181	17.67	No	Si
SLU 33	11.67	284.02	-10784	-0.000023	0.0003743	0.0035	2.6886	12457.41	13084.83	13084.83	46.07	No	Si
SLU 33	11.87	714.49	-10440	-0.0000243	0.0003743	0.0035	2.6886	12123.05	12752.16	12752.16	17.85	No	Si
SLU 82	11.67	351.77	-12368	-0.0000267	0.0003743	0.0035	2.6886	13944.08	14641.7	14641.7	41.62	No	Si
SLU 82	11.87	791.6	-11905	-0.0000277	0.0003743	0.0035	2.6886	13517.91	14181.68	14181.68	17.92	No	Si
SLU 41	11.67	292.62	-10782	-0.0000231	0.0003743	0.0035	2.6886	12455.94	13083.35	13083.35	44.71	No	Si
SLU 41	11.87	739.17	-10437	-0.0000244	0.0003743	0.0035	2.6886	12120.23	12749.38	12749.38	17.25	No	Si
SLU 32	11.67	301.32	-10783	-0.0000231	0.0003743	0.0035	2.6886	12456.19	13083.6	13083.6	43.42	No	Si
SLU 32	11.87	725.41	-10439	-0.0000243	0.0003743	0.0035	2.6886	12122.38	12751.5	12751.5	17.58	No	Si
SLU 40	11.67	262.24	-10256	-0.0000218	0.0003743	0.0035	2.6886	11942.71	12575.21	12575.21	47.95	No	Si
SLU 40	11.87	718.48	-9905	-0.0000232	0.0003743	0.0035	2.6886	11594.46	12238.23	12238.23	17.03	No	Si
SLU 83	11.67	382.16	-12895	-0.0000279	0.0003743	0.0035	2.6886	14418.32	15167.67	15167.67	39.69	No	Si
SLU 83	11.87	812.29	-12437	-0.0000289	0.0003743	0.0035	2.6886	14006.34	14709.89	14709.89	18.11	No	Si
SLU 42	11.67	275.33	-10784	-0.000023	0.0003743	0.0035	2.6886	12457.16	13084.58	13084.58	47.52	No	Si
SLU 42	11.87	728.26	-10438	-0.0000243	0.0003743	0.0035	2.6886	12120.9	12750.04	12750.04	17.51	No	Si
SLU 39	11.67	279.53	-10255	-0.0000219	0.0003743	0.0035	2.6886	11941.46	12573.99	12573.99	44.98	No	Si
SLU 39	11.87	729.4	-9904	-0.0000232	0.0003743	0.0035	2.6886	11593.77	12237.58	12237.58	16.78	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche,  $\gamma M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon m$	$\epsilon m_{-}$	$\epsilon m_u$	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 12	11.67	-2442.72	-9593	-0.00003	0.0005615	0.0035	2.6886		13922.33	13922.33	5.7		Si
SLV 12	11.87	-883.33	-8662	-0.0000211	0.0005615	0.0035	2.6886		12823.5	12823.5	14.52		Si
SLV 1	11.67	1455.64	-7420	-0.0000211	0.0005615	0.0035	2.6886		9839.4	9839.4	6.76		Si
SLV 1	11.87	501.74	-7366	-0.0000168	0.0005615	0.0035	2.6886		9774.11	9774.11	19.48		Si
SLV 2	11.67	1489.41	-7425	-0.0000213	0.0005615	0.0035	2.6886		9845.72	9845.72	6.61		Si
SLV 2	11.87	540.2	-7372	-0.000017	0.0005615	0.0035	2.6886		9781.83	9781.83	18.11		Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 10	11.67	2744.29	-8895	-0.0000299	0.0005615	0.0035	2.6886		11610.25	11610.25	4.23		Si
SLV 10	11.87	2059.13	-9017	-0.0000271	0.0005615	0.0035	2.6886		11754.56	11754.56	5.71		Si
SLV 6	11.67	3000.25	-8104	-0.0000294	0.0005615	0.0035	2.6886		10665.45	10665.45	3.55		Si
SLV 6	11.87	1830.26	-8314	-0.0000246	0.0005615	0.0035	2.6886		10917.6	10917.6	5.97		Si
SLV 7	11.67	-2208.57	-8798	-0.0000273	0.0005615	0.0035	2.6886		12983.13	12983.13	5.88		Si
SLV 7	11.87	-1137.04	-7956	-0.0000208	0.0005615	0.0035	2.6886		11991.19	11991.19	10.55		Si
SLV 9	11.67	2722.48	-8892	-0.0000298	0.0005615	0.0035	2.6886		11606.23	11606.23	4.26		Si
SLV 9	11.87	2034.29	-9012	-0.000027	0.0005615	0.0035	2.6886		11749.63	11749.63	5.78		Si
SLV 8	11.67	-2186.76	-8802	-0.0000272	0.0005615	0.0035	2.6886		12987.11	12987.11	5.94		Si
SLV 8	11.87	-1112.2	-7960	-0.0000207	0.0005615	0.0035	2.6886		11996.12	11996.12	10.79		Si
SLV 5	11.67	2978.44	-8100	-0.0000293	0.0005615	0.0035	2.6886		10661.39	10661.39	3.58		Si
SLV 5	11.87	1805.42	-8310	-0.0000245	0.0005615	0.0035	2.6886		10912.65	10912.65	6.04		Si
SLV 11	11.67	-2464.53	-9590	-0.0000301	0.0005615	0.0035	2.6886		13918.31	13918.31	5.65		Si
SLV 11	11.87	-908.17	-8658	-0.0000212	0.0005615	0.0035	2.6886		12818.64	12818.64	14.11		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 32	11.67	301.32	-10783	-8979	-916	2.6886	2.6886	-11927	8535	6425	9516	22543	6856	15941	No	17.4	Si
SLU 32	11.87	725.41	-10439	-8693	-979	2.6886	2.6886	-11547	8484	6387	9516	22543	6856	15903	No	16.25	Si
SLU 35	11.67	314.41	-11310	-9418	-842	2.6886	2.6886	-12510	8613	6484	9516	22543	6856	15999	No	19.01	Si
SLU 35	11.87	735.18	-10972	-9137	-905	2.6886	2.6886	-12137	8563	6446	9516	22543	6856	15962	No	17.64	Si
SLU 33	11.67	284.02	-10784	-8980	-951	2.6886	2.6886	-11928	8535	6425	9516	22543	6856	15941	No	16.77	Si
SLU 33	11.87	714.49	-10440	-8694	-1013	2.6886	2.6886	-11548	8484	6387	9516	22543	6856	15903	No	15.69	Si
SLU 34	11.67	252.23	-10568	-8800	-829	2.6886	2.6886	-11690	8503	6401	9516	22543	6856	15917	No	19.19	Si
SLU 34	11.87	652.54	-10221	-8511	-890	2.6886	2.6886	-11305	8452	6363	9516	22543	6856	15878	No	17.83	Si
SLU 39	11.67	279.53	-10255	-8539	-1113	2.6886	2.6886	-11343	8457	6367	9516	22543	6856	15882	No	14.27	Si
SLU 39	11.87	729.4	-9904	-8247	-1181	2.6886	2.6886	-10955	8405	6328	9516	22543	6856	15843	No	13.41	Si
SLU 31	11.67	239.14	-10041	-8361	-904	2.6886	2.6886	-11106	8425	6343	9516	22543	6856	15858	No	17.54	Si
SLU 31	11.87	642.77	-9688	-8067	-964	2.6886	2.6886	-10716	8373	6304	9516	22543	6856	15819	No	16.4	Si
SLU 42	11.67	275.33	-10784	-8980	-1073	2.6886	2.6886	-11928	8535	6425	9516	22543	6856	15941	No	14.86	Si
SLU 42	11.87	728.26	-10438	-8692	-1142	2.6886	2.6886	-11545	8484	6387	9516	22543	6856	15902	No	13.93	Si
SLU 41	11.67	292.62	-10782	-8979	-1038	2.6886	2.6886	-11927	8535	6425	9516	22543	6856	15941	No	15.35	Si
SLU 41	11.87	739.17	-10437	-8691	-1107	2.6886	2.6886	-11545	8484	6387	9516	22543	6856	15902	No	14.36	Si
SLU 40	11.67	262.24	-10256	-8541	-1148	2.6886	2.6886	-11345	8457	6367	9516	22543	6856	15882	No	13.84	Si
SLU 40	11.87	718.48	-9905	-8248	-1216	2.6886	2.6886	-10956	8405	6328	9516	22543	6856	15843	No	13.03	Si
SLU 36	11.67	297.11	-11311	-9419	-876	2.6886	2.6886	-12512	8613	6484	9516	22543	6856	15999	No	18.26	Si
SLU 36	11.87	724.26	-10973	-9137	-939	2.6886	2.6886	-12138	8563	6446	9516	22543	6856	15962	No	16.99	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 9	11.67	2722.48	-8892	-7404	8245	2.6886	2.6886	-9836	12384	9323	9516	33814	6856	18838		2.28	Si
SLV 9	11.87	2034.29	-9012	-7505	8296	2.6886	2.6886	-9969	12410	9343	9516	33814	6856	18858		2.27	Si
SLV 11	11.67	-2464.53	-9590	-7986	-9351	2.6886	2.6886	-10608	12538	9439	9516	33814	6856	18955		2.03	Si
SLV 11	11.87	-908.17	-8658	-7210	-9489	2.6886	2.6886	-9577	12332	9284	9516	33814	6856	18799		1.98	Si
SLV 7	11.67	-2208.57	-8798	-7326	-8154	2.6886	2.6886	-9732	12363	9307	9516	33814	6856	18823		2.31	Si
SLV 7	11.87	-1137.04	-7956	-6625	-8277	2.6886	2.6886	-8800	12177	9167	9516	33814	6856	18682		2.26	Si
SLV 8	11.67	-2186.76	-8802	-7329	-8165	2.6886	2.6886	-9736	12364	9308	9516	33814	6856	18823		2.31	Si
SLV 8	11.87	-1112.2	-7960	-6629	-8288	2.6886	2.6886	-8805	12178	9168	9516	33814	6856	18683		2.25	Si
SLV 1	11.67	1455.64	-7420	-6179	4684	2.6886	2.6886	-8207	12058	9078	9516	33814	6856	18593		3.97	Si
SLV 1	11.87	501.74	-7366	-6133	4701	2.6886	2.6886	-8147	12046	9069	9516	33814	6856	18584		3.95	Si
SLV 10	11.67	2744.29	-8895	-7407	8233	2.6886	2.6886	-9839	12385	9323	9516	33814	6856	18839		2.29	Si
SLV 10	11.87	2059.13	-9017	-7508	8285	2.6886	2.6886	-9973	12411	9344	9516	33814	6856	18859		2.28	Si
SLV 5	11.67	2978.44	-8100	-6745	9442	2.6886	2.6886	-8960	12209	9191	9516	33814	6856	18706		1.98	Si
SLV 5	11.87	1805.42	-8310	-6920	9509	2.6886	2.6886	-9192	12255	9226	9516	33814	6856	18741		1.97	Si
SLV 2	11.67	1489.41	-7425	-6183	4666	2.6886	2.6886	-8213	12059	9078	9516	33814	6856	18594		3.98	Si
SLV 2	11.87	540.2	-7372	-6139	4683	2.6886	2.6886	-8154	12048	9070	9516	33814	6856	18585		3.97	Si
SLV 6	11.67	3000.25	-8104	-6748	9431	2.6886	2.6886	-8964	12209	9191	9516	33814	6856	18707		1.98	Si
SLV 6	11.87	1830.26	-8314	-6923	9497	2.6886	2.6886	-9197	12256	9227	9516	33814	6856	18742		1.97	Si
SLV 12	11.67	-2442.72	-9593	-7989	-9363	2.6886	2.6886	-10611	12539	9440	9516	33814	6856	18955		2.02	Si
SLV 12	11.87	-883.33	-8662	-7213	-9501	2.6886	2.6886	-9582	12333	9285	9516	33814	6856	18800		1.98	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 11.77 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\alpha_0$	N	M	Mc	Coeff.s.	Verifica
SLV 3	179667	0.49	9620	-7242	28.53	950.04	33.3	Si
SLV 4	179667	0.49	9628	-7248	28.53	950.77	33.33	Si
SLV 1	179667	0.49	9735	-7329	28.53	960.62	33.68	Si
SLV 2	179667	0.49	9743	-7335	28.53	961.35	33.7	Si
SLV 7	179667	0.49	10586	-7970	28.53	1038.41	36.4	Si
SLV 8	179667	0.49	10592	-7974	28.53	1038.88	36.42	Si
SLV 5	179667	0.49	10969	-8258	28.53	1073.08	37.62	Si
SLV 6	179667	0.49	10975	-8262	28.53	1073.55	37.63	Si
SLV 11	179667	0.49	11528	-8679	28.53	1123.32	39.38	Si
SLV 12	179667	0.49	11534	-8683	28.53	1123.78	39.39	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 11.77 Wa = 0.05 Ta = 0.0059

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	$\alpha_0^*$	aLim	Verifica
SLV 14	-9713	-10064	1663	1.444	1094	0.971	21.62795	4.2096	Si



Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 13	-9707	-10059	1663	1.445	1093.3	0.971	21.63976	4.2096	Si
SLV 16	-9607	-10274	1789	1.446	1083.2	0.97	21.65218	4.2096	Si
SLV 15	-9600	-10268	1789	1.446	1082.5	0.97	21.66413	4.2096	Si
SLV 10	-9017	-8895	314	1.677	1023.1	0.969	25.16475	4.39049	Si
SLV 9	-9012	-8892	314	1.678	1022.7	0.969	25.17449	4.39049	Si
SLV 12	-8662	-9593	734	1.691	987	0.968	25.3917	4.39049	Si
SLV 11	-8658	-9590	734	1.691	986.6	0.968	25.40192	4.39049	Si
SLV 6	-8314	-8104	-717	1.753	951.6	0.967	26.35249	4.39049	Si
SLV 5	-8310	-8100	-716	1.753	951.2	0.967	26.36448	4.39049	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	16.778	SLU 39	Si
V_SLU	13.029	SLU 40	Si
PF_SLV	3.555	SLV 6	Si
V_SLV	1.971	SLV 5	Si
PFFP_SLV	33.304	SLV 3	Si
R_SLV	5.138	SLV 14	Si

Maschio 146

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-9.708	3.176	-9.708	6.386	L6	L7	3.21	0.16	3.52	3.52	3.52			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	$\tau 0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche,  $\gamma M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon m$	$\epsilon m_{-}$	$\epsilon m_u$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 69	8.35	823.19	-14546	-0.0000402	0.0004492	0.0035	3.21	17935.21	21712.22	21712.22	26.38	No	Si
SLU 69	11.87	244.29	-9954	-0.0000256	0.0004492	0.0035	3.21	13442.48	15708.77	15708.77	64.3	No	Si
SLU 43	8.35	706.86	-11443	-0.0000316	0.0004492	0.0035	3.21	15017.49	17734.31	17734.31	25.09	No	Si
SLU 43	11.87	266.45	-7020	-0.0000184	0.0004492	0.0035	3.21	10006.87	11592.25	11592.25	43.51	No	Si
SLU 56	8.35	786.77	-13773	-0.000038	0.0004492	0.0035	3.21	17254.36	20823.35	20823.35	26.47	No	Si
SLU 56	11.87	271.15	-9350	-0.0000242	0.0004492	0.0035	3.21	12770.89	14872.81	14872.81	54.85	No	Si
SLU 51	8.35	762.93	-13304	-0.0000367	0.0004492	0.0035	3.21	16826.11	20206.26	20206.26	26.49	No	Si
SLU 51	11.87	165.48	-8881	-0.0000226	0.0004492	0.0035	3.21	12236.45	14219.32	14219.32	85.93	No	Si
SLU 45	8.35	751.76	-12333	-0.0000341	0.0004492	0.0035	3.21	15904.11	18926.62	18926.62	25.18	No	Si
SLU 45	11.87	252.31	-7909	-0.0000205	0.0004492	0.0035	3.21	11094.72	12854.4	12854.4	50.95	No	Si
SLU 71	8.35	824.66	-14555	-0.0000402	0.0004492	0.0035	3.21	17942.64	21722.13	21722.13	26.34	No	Si
SLU 71	11.87	225.39	-9963	-0.0000256	0.0004492	0.0035	3.21	13451.94	15720.56	15720.56	69.75	No	Si
SLU 48	8.35	798.13	-13231	-0.0000366	0.0004492	0.0035	3.21	16758.29	20110.01	20110.01	25.2	No	Si
SLU 48	11.87	219.27	-8807	-0.0000226	0.0004492	0.0035	3.21	12152.08	14117.39	14117.39	64.38	No	Si
SLU 1	8.35	550.35	-9150	-0.000025	0.0004492	0.0035	3.21	12544.01	14593.71	14593.71	26.52	No	Si
SLU 1	11.87	211.57	-5703	-0.0000149	0.0004492	0.0035	3.21	8320.91	9689.45	9689.45	45.8	No	Si
SLU 50	8.35	799.59	-13239	-0.0000367	0.0004492	0.0035	3.21	16766.31	20121.36	20121.36	25.16	No	Si
SLU 50	11.87	200.37	-8816	-0.0000226	0.0004492	0.0035	3.21	12162.04	14129.41	14129.41	70.52	No	Si
SLU 58	8.35	788.24	-13782	-0.000038	0.0004492	0.0035	3.21	17262.13	20834.7	20834.7	26.43	No	Si
SLU 58	11.87	252.25	-9359	-0.0000242	0.0004492	0.0035	3.21	12780.62	14884.83	14884.83	59.01	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche,  $\gamma M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon m$	$\epsilon m_{-}$	$\epsilon m_u$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 10	8.35	6711.97	-7654	-0.0000557	0.0006738	0.0035	3.21		12647.72	12647.72	1.88		Si
SLV 10	11.87	4091.6	-4013	-0.0000359	0.0006738	0.0035	3.21		7248.67	7248.67	1.77		Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLD 10	8.35	3274.68	-8782	-0.0000366	0.0006738	0.0035	3.21		14274.49	14274.49	4.36		Si
SLD 10	11.87	1936.47	-5223	-0.0000215	0.0006738	0.0035	3.21		9065.86	9065.86	4.68		Si
SLV 5	8.35	6511.54	-7206	-0.0000544	0.0006738	0.0035	3.21		11992.53	11992.53	1.84		Si
SLV 5	11.87	4059.61	-3537	-0.0000407	0.0006738	0.0035	3.21		6528.59	6528.59	1.61		Si
SLV 11	8.35	-5473.87	-12194	-0.0000556	0.0006738	0.0035	3.21		23680.1	23680.1	4.33		Si
SLV 11	11.87	-3701.83	-8873	-0.0000388	0.0006738	0.0035	3.21		19050.63	19050.63	5.15		Si
SLV 7	8.35	-5603.45	-11707	-0.000055	0.0006738	0.0035	3.21		23020.4	23020.4	4.11		Si
SLV 7	11.87	-3624.52	-8357	-0.0000371	0.0006738	0.0035	3.21		18317.19	18317.19	5.05		Si
SLV 8	8.35	-5532.58	-11668	-0.0000545	0.0006738	0.0035	3.21		22967.42	22967.42	4.15		Si
SLV 8	11.87	-3515.22	-8318	-0.0000365	0.0006738	0.0035	3.21		18261.59	18261.59	5.19		Si
SLV 6	8.35	6582.4	-7167	-0.0000553	0.0006738	0.0035	3.21		11935.31	11935.31	1.81		Si
SLV 6	11.87	4168.91	-3498	-0.0000446	0.0006738	0.0035	3.21		6469.52	6469.52	1.55		Si
SLD 6	8.35	3218.31	-8576	-0.0000358	0.0006738	0.0035	3.21		13978.62	13978.62	4.34		Si
SLD 6	11.87	1970.06	-5006	-0.0000211	0.0006738	0.0035	3.21		8742.67	8742.67	4.44		Si
SLV 9	8.35	6641.11	-7693	-0.000055	0.0006738	0.0035	3.21		12704.93	12704.93	1.91		Si
SLV 9	11.87	3982.3	-4053	-0.0000341	0.0006738	0.0035	3.21		7307.74	7307.74	1.84		Si
SLV 12	8.35	-5403.01	-12155	-0.0000552	0.0006738	0.0035	3.21		23627.12	23627.12	4.37		Si
SLV 12	11.87	-3592.53	-8834	-0.0000382	0.0006738	0.0035	3.21		18995.03	18995.03	5.29		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 49	8.35	761.46	-13295	-7806	164	3.21	3.21	-15199	10360	5321	115546	18458	16371	34829	No	212.44	Si
SLU 49	11.87	184.38	-8872	-5209	164	3.21	3.21	-10143	9686	4975	115546	18458	16371	34829	No	212.44	Si
SLU 79	8.35	813.3	-15098	-8865	152	3.21	3.21	-17260	10635	5462	115546	18458	16371	34829	No	228.71	Si
SLU 79	11.87	277.27	-10506	-6168	152	3.21	3.21	-12010	9935	5102	115546	18458	16371	34829	No	228.71	Si
SLU 50	8.35	799.59	-13239	-7774	170	3.21	3.21	-15135	10351	5316	115546	18458	16371	34829	No	204.59	Si
SLU 50	11.87	200.37	-8816	-5176	170	3.21	3.21	-10079	9677	4970	115546	18458	16371	34829	No	204.59	Si
SLU 58	8.35	788.24	-13782	-8092	152	3.21	3.21	-15756	10434	5359	115546	18458	16371	34829	No	228.73	Si
SLU 58	11.87	252.25	-9359	-5495	152	3.21	3.21	-10699	9760	5013	115546	18458	16371	34829	No	228.73	Si
SLU 69	8.35	823.19	-14546	-8541	164	3.21	3.21	-16630	10551	5419	115546	18458	16371	34829	No	211.78	Si
SLU 69	11.87	244.29	-9954	-5845	164	3.21	3.21	-11380	9851	5059	115546	18458	16371	34829	No	211.78	Si
SLU 72	8.35	787.99	-14620	-8584	170	3.21	3.21	-16713	10562	5425	115546	18458	16371	34829	No	205.19	Si
SLU 72	11.87	190.5	-10028	-5888	170	3.21	3.21	-11464	9862	5065	115546	18458	16371	34829	No	205.19	Si
SLU 70	8.35	786.52	-14611	-8579	164	3.21	3.21	-16703	10560	5424	115546	18458	16371	34829	No	212.43	Si
SLU 70	11.87	209.4	-10019	-5883	164	3.21	3.21	-11454	9861	5064	115546	18458	16371	34829	No	212.43	Si
SLU 51	8.35	762.93	-13304	-7811	170	3.21	3.21	-15209	10361	5322	115546	18458	16371	34829	No	205.2	Si
SLU 51	11.87	165.48	-8881	-5214	170	3.21	3.21	-10153	9687	4975	115546	18458	16371	34829	No	205.2	Si
SLU 48	8.35	798.13	-13231	-7769	164	3.21	3.21	-15126	10350	5316	115546	18458	16371	34829	No	211.79	Si
SLU 48	11.87	219.27	-8807	-5171	164	3.21	3.21	-10069	9676	4970	115546	18458	16371	34829	No	211.79	Si
SLU 71	8.35	824.66	-14555	-8546	170	3.21	3.21	-16639	10552	5419	115546	18458	16371	34829	No	204.58	Si
SLU 71	11.87	225.39	-9963	-5850	170	3.21	3.21	-11390	9852	5060	115546	18458	16371	34829	No	204.58	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 8	8.35	-5532.58	-11668	-6851	338	3.21	3.21	-13339	15168	7790	115546	27686	16371	44057		130.4	Si
SLV 8	11.87	-3515.22	-8318	-4884	-1048	3.21	3.21	-9509	14402	7397	115546	27686	16371	44057		42.03	Si
SLV 10	8.35	6711.97	-7654	-4494	-167	3.21	2.1842	-8750	14250	4980	115546	27686	16371	44057		264.53	Si
SLV 10	11.87	4091.6	-4013	-2357	1219	3.21	1.7566	-4588	13418	3771	115546	27686	16371	44057		36.13	Si
SLV 12	8.35	-5403.01	-12155	-7137	369	3.21	3.21	-13896	15279	7847	115546	27686	16371	44057		119.39	Si
SLV 12	11.87	-3592.53	-8834	-5187	-1023	3.21	3.21	-10099	14520	7457	115546	27686	16371	44057		43.05	Si
SLV 9	8.35	6641.11	-7693	-4517	-156	3.21	2.2252	-8795	14259	5077	115546	27686	16371	44057		283.09	Si
SLV 9	11.87	3982.3	-4053	-2379	1230	3.21	1.867	-4633	13427	4011	115546	27686	16371	44057		35.81	Si
SLD 9	8.35	3243.72	-8799	-5166	-18	3.21	3.21	-10059	14512	7453	115546	27686	16371	44057		2431.34	Si
SLD 9	11.87	1888.72	-5240	-3077	596	3.21	3.21	-5991	13698	7035	115546	27686	16371	44057		73.9	Si
SLV 5	8.35	6511.54	-7206	-4231	-187	3.21	2.1042	-8238	14148	4763	115546	27686	16371	44057		235.86	Si
SLV 5	11.87	4059.61	-3537	-2077	1206	3.21	1.3716	-4043	13309	2921	115546	27686	16371	44057		36.55	Si
SLD 10	8.35	3274.68	-8782	-5156	-23	3.21	3.21	-10039	14508	7451	115546	27686	16371	44057		1924.64	Si
SLD 10	11.87	1936.47	-5223	-3067	591	3.21	3.21	-5971	13694	7033	115546	27686	16371	44057		74.5	Si
SLV 7	8.35	-5603.45	-11707	-6874	349	3.21	3.21	-13384	15177	7795	115546	27686	16371	44057		126.32	Si
SLV 7	11.87	-3624.52	-8357	-4907	-1037	3.21	3.21	-9554	14411	7401	115546	27686	16371	44057		42.47	Si
SLV 11	8.35	-5473.87	-12194	-7160	380	3.21	3.21	-13940	15288	7852	115546	27686	16371	44057		115.96	Si
SLV 11	11.87	-3701.83	-8873	-5210	-1012	3.21	3.21	-10143	14529	7462	115546	27686	16371	44057		43.52	Si
SLV 6	8.35	6582.4	-7167	-4208	-198	3.21	2.0597	-8194	14139	4660	115546	27686	16371	44057		222.84	Si
SLV 6	11.87	4168.91	-3498	-2054	1195	3.21	1.2394	-3999	13300	2637	115546	27686	16371	44057		36.88	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRM D.M. 17-01-18 (N.T.C.)

quota 10.11 Ta 0.13 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 6	-5155	0.46	235.67	389.79	730.3	560.05	2.38	Si
SLV 5	-5194	0.46	235.67	392.58	734.06	563.32	2.39	Si
SLV 10	-5749	0.46	235.67	431.81	787.42	609.61	2.59	Si
SLV 9	-5788	0.46	235.67	434.55	791.17	612.86	2.6	Si
SLV 2	-6048	0.46	235.67	452.72	816.15	634.44	2.69	Si
SLV 1	-6108	0.46	235.67	456.94	821.97	639.45	2.71	Si
SLV 4	-7416	0.46	235.67	546.54	946.52	746.53	3.17	Si
SLV 3	-7477	0.46	235.67	550.62	952.28	751.45	3.19	Si
SLV 14	-8028	0.46	235.67	587.44	1004.61	796.02	3.38	Si
SLV 13	-8088	0.46	235.67	591.45	1010.35	800.9	3.4	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.11 Wa = 0.03 Ta = 0.1293

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	$\alpha 0^*$	aLim	Verifica
SLV 11	-8873	-12194	176	1.727	1160.2	0.939	26.73757	18.89897	Si
SLV 12	-8834	-12155	176	1.733	1156.2	0.938	26.84121	18.89897	Si
SLV 7	-8357	-11707	-162	1.816	1108	0.936	28.19466	18.89897	Si





Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 8	-8318	-11668	-162	1.823	1104.1	0.936	28.30983	18.89897	Si
SLV 15	-7798	-11197	567	1.88	1051.5	0.933	29.26639	13.2651	Si
SLV 16	-7737	-11137	567	1.892	1045.4	0.933	29.46329	13.2651	Si
SLV 13	-6352	-9847	564	2.216	905.7	0.925	34.82711	13.2651	Si
SLV 14	-6291	-9786	564	2.233	899.6	0.925	35.10554	13.2651	Si
SLV 9	-4053	-7693	165	3.175	675.8	0.907	50.85636	18.89897	Si
SLV 10	-4013	-7654	165	3.197	671.9	0.907	51.22592	18.89897	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	25.089	SLU 43	Si
V_SLU	204.579	SLU 71	Si
PF_SLV	1.552	SLV 6	Si
V_SLV	35.807	SLV 9	Si
PFFP_SLV	2.376	SLV 6	Si
R_SLV	1.415	SLV 11	Si

## Maschio 149

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s,sx	a.s,dx
-9.333	-3.314	-11.003	-3.314	L6	L7	1.67	0.28	3.52	3.52	3.52			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau 0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche,  $\gamma m = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon m$	$\epsilon m_{-}$	$\epsilon m_{u}$	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 83	8.35	179.75	-12544	-0.0000442	0.0003743	0.0035	1.67	7714.43	8484.12	8484.12	47.2	No	Si
SLU 83	10.45	-2165.08	-11543	-0.0000655	0.0003743	0.0035	1.67	7301.72	8652.03	8652.03	4	No	Si
SLU 40	8.35	132.37	-10177	-0.0000352	0.0003743	0.0035	1.67	6681.06	7280.66	7280.66	55	No	Si
SLU 40	10.45	-1856.08	-9378	-0.0000536	0.0003743	0.0035	1.67	6288.3	7397.37	7397.37	3.99	No	Si
SLU 82	8.35	171.19	-12207	-0.0000429	0.0003743	0.0035	1.67	7579.2	8317.46	8317.46	48.59	No	Si
SLU 82	10.45	-2108.89	-11149	-0.0000633	0.0003743	0.0035	1.67	7129.31	8434.86	8434.86	4	No	Si
SLU 84	8.35	182.07	-12564	-0.0000443	0.0003743	0.0035	1.67	7722.51	8494.28	8494.28	46.65	No	Si
SLU 84	10.45	-2169.17	-11569	-0.0000657	0.0003743	0.0035	1.67	7312.58	8665.55	8665.55	3.99	No	Si
SLU 81	8.35	168.87	-12186	-0.0000428	0.0003743	0.0035	1.67	7570.87	8307.39	8307.39	49.19	No	Si
SLU 81	10.45	-2104.8	-11124	-0.0000632	0.0003743	0.0035	1.67	7118.08	8420.37	8420.37	4	No	Si
SLU 42	8.35	143.25	-10534	-0.0000366	0.0003743	0.0035	1.67	6849.85	7499.39	7499.39	52.35	No	Si
SLU 42	10.45	-1916.37	-9798	-0.0000559	0.0003743	0.0035	1.67	6497.65	7653.1	7653.1	3.99	No	Si
SLU 77	8.35	245.5	-12652	-0.0000454	0.0003743	0.0035	1.67	7757.02	8537.94	8537.94	34.78	No	Si
SLU 77	10.45	-2113.51	-11840	-0.000066	0.0003743	0.0035	1.67	7427.89	8811.65	8811.65	4.17	No	Si
SLU 41	8.35	140.93	-10514	-0.0000365	0.0003743	0.0035	1.67	6840.31	7487.49	7487.49	53.13	No	Si
SLU 41	10.45	-1912.28	-9773	-0.0000557	0.0003743	0.0035	1.67	6485.22	7637.86	7637.86	3.99	No	Si
SLU 39	8.35	130.05	-10156	-0.0000351	0.0003743	0.0035	1.67	6671.27	7267.47	7267.47	55.88	No	Si
SLU 39	10.45	-1851.99	-9353	-0.0000534	0.0003743	0.0035	1.67	6275.5	7381.95	7381.95	3.99	No	Si
SLU 78	8.35	247.82	-12673	-0.0000455	0.0003743	0.0035	1.67	7765.02	8548.12	8548.12	34.49	No	Si
SLU 78	10.45	-2117.6	-11866	-0.0000662	0.0003743	0.0035	1.67	7438.48	8825.31	8825.31	4.17	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche,  $\gamma m = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon m$	$\epsilon m_{-}$	$\epsilon m_{u}$	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 4	8.35	5118.32	-4826	-0.0130879	0.0005615	0.0035	1.336		3980.44	3980.44	0.78		No
SLV 4	10.45	-6250.46	-12647	-0.0001443	0.0005615	0.0035	1.336		9834.47	9834.47	1.57		Si
SLV 14	8.35	-4383.27	-11819	-0.0000953	0.0005615	0.0035	1.67		9320.62	9320.62	2.13		Si
SLV 14	10.45	3297.91	-3290	-0.0068894	0.0005615	0.0035	1.336		2810.26	2810.26	0.85		No





Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 5	8.35	1782.77	-3355	-0.0000396	0.0005615	0.0035	1.67		2860.24	2860.24	1.6		Si
SLV 5	10.45	-2654	-5972	-0.0000554	0.0005615	0.0035	1.67		5334.26	5334.26	2.01		Si
SLV 2	8.35	5243.38	-2582	-0.0297	0.0005615	0.0035	1.336		2257.35	2257.35	0.43		No
SLV 2	10.45	-6259.26	-10933	-0.0001642	0.0005615	0.0035	1.336		8748.49	8748.49	1.4		Si
SLV 1	8.35	4955.16	-2773	-0.0256658	0.0005615	0.0035	1.336		2406.08	2406.08	0.49		No
SLV 1	10.45	-5930.55	-10586	-0.0001503	0.0005615	0.0035	1.336		8521.67	8521.67	1.44		Si
SLV 13	8.35	-4671.48	-12010	-0.0001012	0.0005615	0.0035	1.67		9438.1	9438.1	2.02		Si
SLV 13	10.45	3626.63	-2943	-0.0123158	0.0005615	0.0035	1.336		2538.96	2538.96	0.7		No
SLV 6	8.35	1968.93	-3232	-0.0000518	0.0005615	0.0035	1.67		2764.79	2764.79	1.4		Si
SLV 6	10.45	-2866.31	-6197	-0.0000606	0.0005615	0.0035	1.336		5501.05	5501.05	1.92		Si
SLV 3	8.35	4830.1	-5016	-0.0092786	0.0005615	0.0035	1.336		4123.19	4123.19	0.85		No
SLV 3	10.45	-5921.75	-12300	-0.0001342	0.0005615	0.0035	1.336		9618	9618	1.62		Si
SLV 15	8.35	-4796.54	-14253	-0.0001081	0.0005615	0.0035	1.67		10807.37	10807.37	2.25		Si
SLV 15	10.45	3635.43	-4657	-0.0003951	0.0005615	0.0035	1.67		3853.33	3853.33	1.06		Si
SLV 16	8.35	-4508.33	-14063	-0.0001029	0.0005615	0.0035	1.67		10694.78	10694.78	2.37		Si
SLV 16	10.45	3306.71	-5004	-0.0001086	0.0005615	0.0035	1.67		4114.51	4114.51	1.24		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 71	8.35	391.16	-11597	-9657	1359	1.67	1.67	-20653	9698	4535	40441	14002	4259	18261	No	13.44	Si
SLU 71	10.45	-1788.99	-11090	-9234	2789	1.67	1.67	-19748	9578	4479	40441	14002	4259	18261	No	6.55	Si
SLU 66	8.35	374.99	-11382	-9478	1310	1.67	1.67	-20268	9647	4511	40441	14002	4259	18261	No	13.94	Si
SLU 66	10.45	-1747.77	-10809	-9001	2716	1.67	1.67	-19249	9511	4447	40441	14002	4259	18261	No	6.72	Si
SLU 65	8.35	373.27	-10916	-9090	1269	1.67	1.67	-19439	9536	4459	40441	14002	4259	18261	No	14.39	Si
SLU 65	10.45	-1675.25	-10292	-8570	2593	1.67	1.67	-18328	9388	4390	40441	14002	4259	18261	No	7.04	Si
SLU 72	8.35	393.48	-11618	-9674	1363	1.67	1.67	-20689	9703	4537	40441	14002	4259	18261	No	13.39	Si
SLU 72	10.45	-1793.09	-11115	-9256	2795	1.67	1.67	-19793	9584	4481	40441	14002	4259	18261	No	6.53	Si
SLU 69	8.35	385.87	-11739	-9775	1359	1.67	1.67	-20905	9732	4551	40441	14002	4259	18261	No	13.44	Si
SLU 69	10.45	-1808.05	-11229	-9350	2819	1.67	1.67	-19996	9611	4494	40441	14002	4259	18261	No	6.48	Si
SLU 68	8.35	384.15	-11274	-9388	1318	1.67	1.67	-20076	9621	4499	40441	14002	4259	18261	No	13.86	Si
SLU 68	10.45	-1735.53	-10712	-8920	2696	1.67	1.67	-19076	9488	4437	40441	14002	4259	18261	No	6.77	Si
SLU 67	8.35	377.31	-11402	-9495	1315	1.67	1.67	-20305	9652	4513	40441	14002	4259	18261	No	13.89	Si
SLU 67	10.45	-1751.86	-10834	-9022	2722	1.67	1.67	-19294	9517	4450	40441	14002	4259	18261	No	6.71	Si
SLU 64	8.35	369.4	-10882	-9061	1261	1.67	1.67	-19379	9528	4455	40441	14002	4259	18261	No	14.48	Si
SLU 64	10.45	-1668.42	-10250	-8535	2582	1.67	1.67	-18253	9378	4385	40441	14002	4259	18261	No	7.07	Si
SLU 70	8.35	388.19	-11760	-9793	1364	1.67	1.67	-20942	9737	4553	40441	14002	4259	18261	No	13.39	Si
SLU 70	10.45	-1812.14	-11254	-9371	2826	1.67	1.67	-20041	9617	4497	40441	14002	4259	18261	No	6.46	Si
SLU 78	8.35	247.82	-12673	-10553	1046	1.67	1.67	-22568	9953	4654	40441	14002	4259	18261	No	17.45	Si
SLU 78	10.45	-2117.6	-11866	-9881	2530	1.67	1.67	-21131	9762	4565	40441	14002	4259	18261	No	7.22	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 1	8.35	4955.16	-2773	-2309	9129	1.336	0	0	0	0	40441	16803	3407	20209		2.21	Si
SLV 1	10.45	-5930.55	-10586	-8815	9144	1.336	0.8243	0	0	0	40441	16803	3407	20209		2.21	Si
SLV 6	8.35	1968.93	-3232	-2691	4171	1.67	0.6772	-5755	11568	2193	40441	21003	4259	25262		6.06	Si
SLV 6	10.45	-2866.31	-6197	-5160	4941	1.336	1.1174	0	0	0	40441	16803	3407	20209		4.09	Si
SLV 16	8.35	-4508.33	-14063	-11710	-7460	1.67	1.5433	-27494	15915	6877	40441	21003	4259	25262		3.39	Si
SLV 16	10.45	3306.71	-5004	-4167	-5513	1.67	0.5227	-28911	16199	2371	40441	21003	4259	25262		4.58	Si
SLV 13	8.35	-4671.48	-12010	-10001	-7567	1.67	1.3381	-27064	15830	5931	40441	21003	4259	25262		3.34	Si
SLV 13	10.45	3626.63	-2943	-2450	-5569	1.336	0	0	0	0	40441	16803	3407	20209		3.63	Si
SLV 3	8.35	4830.1	-5016	-4177	8728	1.336	0	0	0	0	40441	16803	3407	20209		2.32	Si
SLV 3	10.45	-5921.75	-12300	-10242	8692	1.336	1.0607	0	0	0	40441	16803	3407	20209		2.33	Si
SLV 15	8.35	-4796.54	-14253	-11869	-7968	1.67	1.4954	-28779	16173	6772	40441	21003	4259	25262		3.17	Si
SLV 15	10.45	3635.43	-4657	-3878	-6022	1.67	0.163	-86049	16250	742	40441	21003	4259	25262		4.2	Si
SLV 4	8.35	5118.32	-4826	-4018	9236	1.336	0	0	0	0	40441	16803	3407	20209		2.19	Si
SLV 4	10.45	-6250.46	-12647	-10532	9201	1.336	1.0224	0	0	0	40441	16803	3407	20209		2.2	Si
SLD 2	8.35	2370.76	-5911	-4922	4599	1.67	1.3017	-10526	12522	4564	40441	21003	4259	25262		5.49	Si
SLD 2	10.45	-3427.97	-9126	-7599	5167	1.67	1.3781	-19889	14394	5555	40441	21003	4259	25262		4.89	Si
SLV 14	8.35	-4383.27	-11819	-9842	-7059	1.67	1.3925	-25578	15532	6056	40441	21003	4259	25262		3.58	Si
SLV 14	10.45	3297.91	-3290	-2740	-5060	1.336	0	0	0	0	40441	16803	3407	20209		3.99	Si
SLV 2	8.35	5243.38	-2582	-2150	9637	1.336	0	0	0	0	40441	16803	3407	20209		2.1	Si
SLV 2	10.45	-6259.26	-10933	-9104	9653	1.336	0.7875	0	0	0	40441	16803	3407	20209		2.09	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.11 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 13	179667	0.46	6940	-3245	202.77	433.65	2.14	Si
SLV 14	179667	0.46	7683	-3592	202.77	477.64	2.36	Si
SLV 9	179667	0.46	8557	-4001	202.77	528.79	2.61	Si
SLV 10	179667	0.46	9037	-4226	202.77	556.59	2.74	Si
SLV 15	179667	0.46	10572	-4944	202.77	644.18	3.18	Si
SLV 16	179667	0.46	11315	-5291	202.77	685.86	3.38	Si
SLV 5	179667	0.46	13463	-6295	202.77	803.65	3.96	Si
SLV 6	179667	0.46	13943	-6520	202.77	829.44	4.09	Si
SLV 11	179667	0.46	20665	-9663	202.77	1169.78	5.77	Si
SLV 12	179667	0.46	21145	-9888	202.77	1192.6	5.88	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.11 Wa = 0.05 Ta = 0.0739



Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 12	-7015	-13481	251	1.121	948.8	0.933	17.46757	14.09547	Si
SLV 11	-7013	-13604	251	1.121	948.6	0.933	17.47138	14.09547	Si
SLV 8	-6362	-10710	357	1.198	882.9	0.929	18.74004	14.09547	Si
SLV 7	-6360	-10833	357	1.198	882.7	0.929	18.74445	14.09547	Si
SLV 10	-2981	-6003	-359	2.074	545.4	0.9	33.49229	14.09547	Si
SLV 9	-2980	-6126	-359	2.075	545.3	0.9	33.50396	14.09547	Si
SLV 16	-6366	-14063	-86	1.232	883.3	0.929	19.27111	7.52414	Si
SLV 15	-6363	-14253	-87	1.232	883	0.929	19.27668	7.52414	Si
SLV 6	-2328	-3232	-253	2.451	482.1	0.894	39.85824	14.09547	Si
SLV 5	-2327	-3355	-253	2.452	481.9	0.894	39.87453	14.09547	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.985	SLV 40	Si
V_SLV	6.462	SLV 70	Si
PF_SLV	0.431	SLV 2	No
V_SLV	2.094	SLV 2	Si
PFFP_SLV	2.139	SLV 13	Si
R_SLV	1.239	SLV 12	Si

## Maschio 151

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-6.268	-3.314	-6.268	-0.194	L6	L7	3.12	0.16	3.52	3.52	3.52			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato \_Corti

fb	fk	fvk0	fmedio	$\tau 0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e_CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	at	α	elim,conv	e,f,d	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche, $\gamma M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon m$	$\epsilon m_{-}$	$\epsilon m_{u}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 79	8.35	1863.39	-18541	-0.0000578	0.0004492	0.0035	3.12	20132.07	25397.08	25397.08	13.63	No	Si
SLU 79	10.45	496.94	-14736	-0.0000403	0.0004492	0.0035	3.12	17434.67	21138.38	21138.38	42.54	No	Si
SLU 82	8.35	1799.5	-18007	-0.000056	0.0004492	0.0035	3.12	19798.02	24799.1	24799.1	13.78	No	Si
SLU 82	10.45	398.54	-13947	-0.0000377	0.0004492	0.0035	3.12	16782.7	20255.39	20255.39	50.82	No	Si
SLU 62	8.35	1723.45	-16934	-0.0000526	0.0004492	0.0035	3.12	19083.16	23598.41	23598.41	13.69	No	Si
SLU 62	10.45	413.47	-13204	-0.0000358	0.0004492	0.0035	3.12	16138.94	19420.65	19420.65	46.97	No	Si
SLU 81	8.35	1829.66	-18030	-0.0000562	0.0004492	0.0035	3.12	19812.64	24824.75	24824.75	13.57	No	Si
SLU 81	10.45	420.28	-13968	-0.0000379	0.0004492	0.0035	3.12	16800.03	20278.32	20278.32	48.25	No	Si
SLU 83	8.35	1888.66	-18581	-0.000058	0.0004492	0.0035	3.12	20156.51	25441.87	25441.87	13.47	No	Si
SLU 83	10.45	455.59	-14573	-0.0000397	0.0004492	0.0035	3.12	17302.52	20955.88	20955.88	46	No	Si
SLU 74	8.35	1812.03	-18156	-0.0000564	0.0004492	0.0035	3.12	19892.68	24965.93	24965.93	13.78	No	Si
SLU 74	10.45	437.08	-14276	-0.0000388	0.0004492	0.0035	3.12	17058.53	20623.72	20623.72	47.19	No	Si
SLU 77	8.35	1871.04	-18707	-0.0000583	0.0004492	0.0035	3.12	20232.99	25583.05	25583.05	13.67	No	Si
SLU 77	10.45	472.39	-14882	-0.0000406	0.0004492	0.0035	3.12	17551.47	21301.28	21301.28	45.09	No	Si
SLU 41	8.35	1612.96	-15690	-0.0000486	0.0004492	0.0035	3.12	18180.27	22205.76	22205.76	13.77	No	Si
SLU 41	10.45	374.78	-12367	-0.0000334	0.0004492	0.0035	3.12	15381.28	18348.86	18348.86	48.96	No	Si
SLU 84	8.35	1858.51	-18558	-0.0000578	0.0004492	0.0035	3.12	20142.53	25416.22	25416.22	13.68	No	Si
SLU 84	10.45	433.85	-14553	-0.0000395	0.0004492	0.0035	3.12	17285.83	20932.95	20932.95	48.25	No	Si
SLU 60	8.35	1664.44	-16383	-0.0000508	0.0004492	0.0035	3.12	18692.84	22981.29	22981.29	13.81	No	Si
SLU 60	10.45	378.16	-12598	-0.000034	0.0004492	0.0035	3.12	15594.04	18644.77	18644.77	49.3	No	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche, $\gamma M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon m$	$\epsilon m_{-}$	$\epsilon m_{u}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 1	8.35	1807.25	-10865	-0.0000363	0.0006738	0.0035	3.12		16671.63	16671.63	9.22		Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 1	10.45	2017.4	-7967	-0.0000298	0.0006738	0.0035	3.12		12667.26	12667.26	6.28		Si
SLV 9	8.35	5833.89	-17021	-0.0000729	0.0006738	0.0035	3.12		24616.68	24616.68	4.22		Si
SLV 9	10.45	4029.89	-13553	-0.0000544	0.0006738	0.0035	3.12		20270.03	20270.03	5.03		Si
SLV 2	8.35	2065.36	-11112	-0.0000382	0.0006738	0.0035	3.12		17006.94	17006.94	8.23		Si
SLV 2	10.45	2349.56	-8139	-0.0000319	0.0006738	0.0035	3.12		12907.62	12907.62	5.49		Si
SLV 6	8.35	5622.59	-15633	-0.000068	0.0006738	0.0035	3.12		22974.62	22974.62	4.09		Si
SLV 6	10.45	4637.71	-12149	-0.0000537	0.0006738	0.0035	3.12		18404.73	18404.73	3.97		Si
SLV 10	8.35	6000.6	-17181	-0.0000742	0.0006738	0.0035	3.12		24797.28	24797.28	4.13		Si
SLV 10	10.45	4244.42	-13664	-0.0000558	0.0006738	0.0035	3.12		20415.23	20415.23	4.81		Si
SLV 8	8.35	-3411.48	-7749	-0.0000361	0.0006738	0.0035	3.12		16987.14	16987.14	4.98		Si
SLV 8	10.45	-3378.88	-5655	-0.0000307	0.0006738	0.0035	3.12		14060.41	14060.41	4.16		Si
SLV 5	8.35	5455.88	-15474	-0.0000667	0.0006738	0.0035	3.12		22768.91	22768.91	4.17		Si
SLV 5	10.45	4423.18	-12038	-0.0000524	0.0006738	0.0035	3.12		18257.03	18257.03	4.13		Si
SLV 7	8.35	-3578.19	-7589	-0.0000365	0.0006738	0.0035	3.12		16766.8	16766.8	4.69		Si
SLV 7	10.45	-3593.41	-5544	-0.0000318	0.0006738	0.0035	3.12		13902.78	13902.78	3.87		Si
SLV 12	8.35	-3033.47	-9296	-0.0000383	0.0006738	0.0035	3.12		19122.49	19122.49	6.3		Si
SLV 12	10.45	-3772.17	-7170	-0.0000364	0.0006738	0.0035	3.12		16188.91	16188.91	4.29		Si
SLV 11	8.35	-3200.18	-9137	-0.0000387	0.0006738	0.0035	3.12		18902.15	18902.15	5.91		Si
SLV 11	10.45	-3986.7	-7059	-0.0000372	0.0006738	0.0035	3.12		16036.09	16036.09	4.02		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 39	8.35	1553.96	-15139	-8889	1507	3.12	3.12	-17806	10707	5345	115546	17940	15912	33852	No	22.46	Si
SLU 39	10.45	339.47	-11762	-6906	1496	3.12	3.12	-13834	10178	5081	115546	17940	15912	33852	No	22.63	Si
SLU 84	8.35	1858.51	-18558	-10897	1645	3.12	3.12	-21828	10833	5408	115546	17940	15912	33852	No	20.57	Si
SLU 84	10.45	433.85	-14553	-8545	1632	3.12	3.12	-17117	10616	5299	115546	17940	15912	33852	No	20.74	Si
SLU 81	8.35	1829.66	-18030	-10586	1680	3.12	3.12	-21207	10833	5408	115546	17940	15912	33852	No	20.15	Si
SLU 81	10.45	420.28	-13968	-8201	1667	3.12	3.12	-16429	10524	5254	115546	17940	15912	33852	No	20.31	Si
SLU 83	8.35	1888.66	-18581	-10910	1651	3.12	3.12	-21855	10833	5408	115546	17940	15912	33852	No	20.5	Si
SLU 83	10.45	455.59	-14573	-8557	1638	3.12	3.12	-17141	10619	5301	115546	17940	15912	33852	No	20.67	Si
SLU 75	8.35	1781.87	-18133	-10647	1522	3.12	3.12	-21328	10833	5408	115546	17940	15912	33852	No	22.24	Si
SLU 75	10.45	415.35	-14256	-8370	1509	3.12	3.12	-16768	10569	5276	115546	17940	15912	33852	No	22.43	Si
SLU 73	8.35	1695.12	-17400	-10217	1516	3.12	3.12	-20466	10833	5408	115546	17940	15912	33852	No	22.33	Si
SLU 73	10.45	390.1	-13491	-7922	1504	3.12	3.12	-15868	10449	5216	115546	17940	15912	33852	No	22.51	Si
SLU 40	8.35	1523.8	-15116	-8875	1501	3.12	3.12	-17779	10704	5343	115546	17940	15912	33852	No	22.55	Si
SLU 40	10.45	317.73	-11741	-6894	1490	3.12	3.12	-13810	10175	5079	115546	17940	15912	33852	No	22.71	Si
SLU 74	8.35	1812.03	-18156	-10660	1528	3.12	3.12	-21355	10833	5408	115546	17940	15912	33852	No	22.15	Si
SLU 74	10.45	437.08	-14276	-8382	1515	3.12	3.12	-16792	10572	5278	115546	17940	15912	33852	No	22.35	Si
SLU 82	8.35	1799.5	-18007	-10573	1674	3.12	3.12	-21180	10833	5408	115546	17940	15912	33852	No	20.22	Si
SLU 82	10.45	398.54	-13947	-8189	1661	3.12	3.12	-16405	10521	5252	115546	17940	15912	33852	No	20.38	Si
SLU 77	8.35	1871.04	-18707	-10984	1500	3.12	3.12	-22004	10833	5408	115546	17940	15912	33852	No	22.57	Si
SLU 77	10.45	472.39	-14882	-8738	1486	3.12	3.12	-17504	10667	5325	115546	17940	15912	33852	No	22.78	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 15	8.35	357.05	-13658	-8019	1650	3.12	3.12	-16064	15713	7844	115546	26910	15912	42822		25.96	Si
SLV 15	10.45	-1698.55	-11070	-6500	1329	3.12	3.12	-13020	15104	7540	115546	26910	15912	42822		32.22	Si
SLV 13	8.35	3067.27	-16023	-9408	1585	3.12	3.12	-18847	16250	8112	115546	26910	15912	42822		27.01	Si
SLV 13	10.45	706.43	-13018	-7644	1959	3.12	3.12	-15312	15562	7769	115546	26910	15912	42822		21.86	Si
SLV 16	8.35	615.16	-13905	-8165	1671	3.12	3.12	-16355	15771	7873	115546	26910	15912	42822		25.63	Si
SLV 16	10.45	-1366.39	-11241	-6600	1350	3.12	3.12	-13222	15144	7560	115546	26910	15912	42822		31.72	Si
SLV 6	8.35	5622.59	-15633	-9179	655	3.12	3.12	-18388	16178	8076	115546	26910	15912	42822		65.37	Si
SLV 6	10.45	4637.71	-12149	-7133	1793	3.12	3.12	-14290	15358	7667	115546	26910	15912	42822		23.89	Si
SLV 9	8.35	5833.89	-17021	-9994	1044	3.12	3.12	-20020	16250	8112	115546	26910	15912	42822		41.02	Si
SLV 9	10.45	4029.89	-13553	-7958	2203	3.12	3.12	-15942	15688	7832	115546	26910	15912	42822		19.44	Si
SLD 10	8.35	3324.77	-14492	-8509	1001	3.12	3.12	-17045	15909	7942	115546	26910	15912	42822		42.79	Si
SLD 10	10.45	2058.91	-11386	-6685	1507	3.12	3.12	-13392	15178	7577	115546	26910	15912	42822		28.42	Si
SLV 14	8.35	3325.38	-16271	-9553	1606	3.12	3.12	-19138	16250	8112	115546	26910	15912	42822		26.66	Si
SLV 14	10.45	1038.59	-13189	-7744	1980	3.12	3.12	-15513	15603	7789	115546	26910	15912	42822		21.63	Si
SLV 5	8.35	5455.88	-15474	-9086	641	3.12	3.12	-18200	16140	8057	115546	26910	15912	42822		66.76	Si
SLV 5	10.45	4423.18	-12038	-7068	1779	3.12	3.12	-14159	15332	7654	115546	26910	15912	42822		24.07	Si
SLD 9	8.35	3251.94	-14422	-8468	995	3.12	3.12	-16963	15893	7934	115546	26910	15912	42822		43.05	Si
SLD 9	10.45	1965.18	-11338	-6657	1501	3.12	3.12	-13335	15167	7571	115546	26910	15912	42822		28.53	Si
SLV 10	8.35	6000.6	-17181	-10088	1058	3.12	3.12	-20208	16250	8112	115546	26910	15912	42822		40.49	Si
SLV 10	10.45	4244.42	-13664	-8023	2217	3.12	3.12	-16072	15714	7845	115546	26910	15912	42822		19.32	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCC D.M. 17-01-18 (N.T.C.)

quota 10.11 Ta 0.13 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 7	-5961	0.46	229.06	445.78	806.97	626.37	2.73	Si
SLV 8	-6088	0.46	229.06	454.66	819.2	636.93	2.78	Si
SLV 3	-6628	0.46	229.06	491.8	870.51	681.16	2.97	Si
SLV 4	-6826	0.46	229.06	505.31	889.34	697.32	3.04	Si
SLV 11	-7393	0.46	229.06	543.63	943.33	743.48	3.25	Si
SLV 12	-7521	0.46	229.06	552.19	955.48	753.84	3.29	Si
SLV 1	-8662	0.46	229.06	627.34	1063.58	845.46	3.69	Si
SLV 2	-8860	0.46	229.06	640.14	1082.21	861.18	3.76	Si
SLV 15	-11402	0.46	229.06	798.47	1320.55	1059.51	4.63	Si
SLV 16	-11600	0.46	229.06	810.33	1338.94	1074.63	4.69	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 10.11 Wa = 0.03 Ta = 0.1293

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	$\alpha 0^*$	aLim	Verifica
SLV 10	-9558	-17181	204	1.581	1222.3	0.943	24.37498	18.89897	Si
SLV 9	-9456	-17021	204	1.595	1212	0.942	24.60681	18.89897	Si



Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 6	-8544	-15633	-45	1.753	1119.6	0.938	27.15038	18.89897	Si
SLV 5	-8442	-15474	-45	1.77	1109.3	0.938	27.43582	18.89897	Si
SLV 14	-9020	-16271	440	1.638	1167.8	0.94	25.31233	13.2651	Si
SLV 13	-8863	-16023	440	1.662	1151.9	0.94	25.70703	13.2651	Si
SLV 16	-7521	-13905	392	1.909	1016.2	0.933	29.73444	13.2651	Si
SLV 15	-7364	-13658	392	1.942	1000.3	0.932	30.27879	13.2651	Si
SLV 12	-4562	-9296	45	2.874	718.7	0.913	45.76296	18.89897	Si
SLV 11	-4460	-9137	45	2.922	708.6	0.912	46.5702	18.89897	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	13.471	SLV 83	Si
V_SLV	20.153	SLV 81	Si
PF_SLV	3.869	SLV 7	Si
V_SLV	19.319	SLV 10	Si
PFFP_SLV	2.735	SLV 7	Si
R_SLV	1.29	SLV 10	Si

Maschio 153

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-7.413	-3.314	-8.433	-3.314	L6	L7	1.02	0.28	3.52	3.52	3.52			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau 0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche,  $\gamma M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon m$	$\epsilon m_{-}$	$\epsilon m_u$	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 48	9.25	-47.48	-7661	-0.0000436	0.0003743	0.0035	1.02	2877.6	3414.43	3414.43	71.92	No	Si
SLU 48	11.05	-650	-5858	-0.0000529	0.0003743	0.0035	1.02	2385.77	2792.48	2792.48	4.3	No	Si
SLU 71	9.25	-50.04	-8304	-0.0000475	0.0003743	0.0035	1.02	3025.59	3613.44	3613.44	72.21	No	Si
SLU 71	11.05	-703.86	-6447	-0.0000583	0.0003743	0.0035	1.02	2559	3003.59	3003.59	4.27	No	Si
SLU 70	9.25	-50.02	-8440	-0.0000483	0.0003743	0.0035	1.02	3054.99	3650.27	3650.27	72.98	No	Si
SLU 70	11.05	-717.65	-6574	-0.0000595	0.0003743	0.0035	1.02	2594.64	3048.36	3048.36	4.25	No	Si
SLU 72	9.25	-47.45	-8314	-0.0000474	0.0003743	0.0035	1.02	3027.73	3616.15	3616.15	76.2	No	Si
SLU 72	11.05	-707.27	-6459	-0.0000585	0.0003743	0.0035	1.02	2562.3	3007.72	3007.72	4.25	No	Si
SLU 51	9.25	-42.33	-7544	-0.0000427	0.0003743	0.0035	1.02	2849.3	3377.98	3377.98	79.81	No	Si
SLU 51	11.05	-643.03	-5755	-0.0000521	0.0003743	0.0035	1.02	2354.14	2754.74	2754.74	4.28	No	Si
SLU 50	9.25	-44.92	-7534	-0.0000427	0.0003743	0.0035	1.02	2846.9	3374.85	3374.85	75.14	No	Si
SLU 50	11.05	-639.62	-5743	-0.0000519	0.0003743	0.0035	1.02	2350.55	2750.46	2750.46	4.3	No	Si
SLU 69	9.25	-52.61	-8430	-0.0000483	0.0003743	0.0035	1.02	3052.89	3647.67	3647.67	69.34	No	Si
SLU 69	11.05	-714.24	-6562	-0.0000594	0.0003743	0.0035	1.02	2591.39	3044.25	3044.25	4.26	No	Si
SLU 49	9.25	-44.89	-7670	-0.0000435	0.0003743	0.0035	1.02	2879.97	3417.49	3417.49	76.13	No	Si
SLU 49	11.05	-653.41	-5870	-0.0000531	0.0003743	0.0035	1.02	2389.32	2796.73	2796.73	4.28	No	Si
SLU 68	9.25	-45.05	-8011	-0.0000456	0.0003743	0.0035	1.02	2959.9	3524.62	3524.62	78.24	No	Si
SLU 68	11.05	-678.33	-6177	-0.0000558	0.0003743	0.0035	1.02	2480.91	2907.29	2907.29	4.29	No	Si
SLU 67	9.25	-49.33	-8130	-0.0000464	0.0003743	0.0035	1.02	2987.03	3562.75	3562.75	72.22	No	Si
SLU 67	11.05	-686.44	-6284	-0.0000567	0.0003743	0.0035	1.02	2512.14	2945.33	2945.33	4.29	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche,  $\gamma M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon m$	$\epsilon m_{-}$	$\epsilon m_u$	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 6	9.25	1124.63	-2575	-0.0001356	0.0005615	0.0035	1.02		1319.12	1319.12	1.17		Si
SLV 6	11.05	-959.61	-3180	-0.0000553	0.0005615	0.0035	0.816		1762.71	1762.71	1.84		Si
SLV 13	9.25	-3385.6	-9547	-0.0002637	0.0005615	0.0035	0.816		4316	4316	1.27		Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 13	11.05	1854.41	-3135	-0.0094894	0.0005615	0.0035	0.816		1576.61	1576.61	0.85		No
SLV 16	9.25	-3228.63	-10524	-0.0002133	0.0005615	0.0035	0.816		4649.21	4649.21	1.44		Si
SLV 16	11.05	1562.49	-4171	-0.0001173	0.0005615	0.0035	1.02		2035.24	2035.24	1.3		Si
SLV 15	9.25	-3477.21	-10786	-0.0002427	0.0005615	0.0035	0.816		4735.6	4735.6	1.36		Si
SLV 15	11.05	1729.69	-4090	-0.0001896	0.0005615	0.0035	1.02		2001.88	2001.88	1.16		Si
SLV 3	9.25	2982.45	-2619	-0.0413651	0.0005615	0.0035	0.816		1339.34	1339.34	0.45		No
SLV 3	11.05	-2611.73	-5773	-0.0004585	0.0005615	0.0035	0.816		2885.49	2885.49	1.1		Si
SLV 1	9.25	3074.06	-1379	-0.0584721	0.0005615	0.0035	0.816		752.59	752.59	0.24		No
SLV 1	11.05	-2487.01	-4817	-0.0012659	0.0005615	0.0035	0.816		2483.32	2483.32	1		No
SLD 2	9.25	1376.41	-3878	-0.0000934	0.0005615	0.0035	1.02		1909.68	1909.68	1.39		Si
SLD 2	11.05	-1398.57	-4661	-0.0000821	0.0005615	0.0035	0.816		2416.78	2416.78	1.73		Si
SLV 14	9.25	-3137.02	-9284	-0.0002239	0.0005615	0.0035	0.816		4224.39	4224.39	1.35		Si
SLV 14	11.05	1687.21	-3215	-0.004718	0.0005615	0.0035	0.816		1613.12	1613.12	0.96		No
SLV 4	9.25	3231.03	-2356	-0.0503344	0.0005615	0.0035	0.816		1216.95	1216.95	0.38		No
SLV 4	11.05	-2778.93	-5853	-0.000854	0.0005615	0.0035	0.816		2919.04	2919.04	1.05		Si
SLV 2	9.25	3322.64	-1116	-0.0680984	0.0005615	0.0035	0.816		624.65	624.65	0.19		No
SLV 2	11.05	-2654.21	-4898	-0.0018803	0.0005615	0.0035	0.816		2517.55	2517.55	0.95		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	oN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 50	9.25	-44.92	-7534	-6274	150	1.02	1.02	-21968	9874	2820	40441	8552	2601	11153	No	74.53	Si
SLU 50	11.05	-639.62	-5743	-4783	348	1.02	1.02	-16746	9177	2621	40441	8552	2601	11153	No	32.07	Si
SLU 69	9.25	-52.61	-8430	-7020	175	1.02	1.02	-24579	10222	2919	40441	8552	2601	11153	No	63.72	Si
SLU 69	11.05	-714.24	-6562	-5464	362	1.02	1.02	-19133	9495	2712	40441	8552	2601	11153	No	30.78	Si
SLU 51	9.25	-42.33	-7544	-6282	154	1.02	1.02	-21997	9877	2821	40441	8552	2601	11153	No	72.55	Si
SLU 51	11.05	-643.03	-5755	-4792	352	1.02	1.02	-16780	9182	2622	40441	8552	2601	11153	No	31.7	Si
SLU 67	9.25	-49.33	-8130	-6770	169	1.02	1.02	-23705	10105	2886	40441	8552	2601	11153	No	65.93	Si
SLU 67	11.05	-686.44	-6284	-5233	346	1.02	1.02	-18321	9387	2681	40441	8552	2601	11153	No	32.26	Si
SLU 49	9.25	-44.89	-7670	-6387	154	1.02	1.02	-22364	9926	2835	40441	8552	2601	11153	No	72.59	Si
SLU 49	11.05	-653.41	-5870	-4888	358	1.02	1.02	-17115	9226	2635	40441	8552	2601	11153	No	31.15	Si
SLU 48	9.25	-47.48	-7661	-6379	150	1.02	1.02	-22336	9923	2834	40441	8552	2601	11153	No	74.57	Si
SLU 48	11.05	-650	-5858	-4878	354	1.02	1.02	-17081	9222	2634	40441	8552	2601	11153	No	31.51	Si
SLU 72	9.25	-47.45	-8314	-6923	179	1.02	1.02	-24240	10176	2906	40441	8552	2601	11153	No	62.24	Si
SLU 72	11.05	-707.27	-6459	-5378	360	1.02	1.02	-18832	9455	2700	40441	8552	2601	11153	No	30.96	Si
SLU 71	9.25	-50.04	-8304	-6915	175	1.02	1.02	-24212	10173	2905	40441	8552	2601	11153	No	63.69	Si
SLU 71	11.05	-703.86	-6447	-5369	356	1.02	1.02	-18798	9451	2699	40441	8552	2601	11153	No	31.31	Si
SLU 68	9.25	-45.05	-8011	-6671	172	1.02	1.02	-23356	10059	2873	40441	8552	2601	11153	No	64.85	Si
SLU 68	11.05	-678.33	-6177	-5143	342	1.02	1.02	-18009	9346	2669	40441	8552	2601	11153	No	32.58	Si
SLU 70	9.25	-50.02	-8440	-7028	179	1.02	1.02	-24608	10226	2920	40441	8552	2601	11153	No	62.27	Si
SLU 70	11.05	-717.65	-6574	-5474	366	1.02	1.02	-19167	9500	2713	40441	8552	2601	11153	No	30.44	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	oN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 15	9.25	-1530.98	-8025	-6682	-2448	1.02	0.9577	-23398	15096	4048	40441	12828	2601	15429		6.3	Si
SLD 15	11.05	474.05	-4327	-3603	-770	1.02	1.02	-12616	12940	3696	40441	12828	2601	15429		20.05	Si
SLV 3	9.25	2982.45	-2619	-2181	5224	0.816	0	0	0	0	40441	10263	2081	12343		2.36	Si
SLV 3	11.05	-2611.73	-5773	-4807	2462	0.816	0.1727	0	0	0	40441	10263	2081	12343		5.01	Si
SLV 13	9.25	-3385.6	-9547	-7950	-5510	0.816	0.4661	0	0	0	40441	10263	2081	12343		2.24	Si
SLV 13	11.05	1854.41	-3135	-2610	-2273	0.816	0	0	0	0	40441	10263	2081	12343		5.43	Si
SLV 16	9.25	-3228.63	-10524	-8763	-5404	0.816	0.6096	0	0	0	40441	10263	2081	12343		2.28	Si
SLV 16	11.05	1562.49	-4171	-3473	-1865	1.02	0.4061	-12160	12849	1461	40441	12828	2601	15429		8.27	Si
SLV 15	9.25	-3477.21	-10786	-8982	-5801	0.816	0.5629	0	0	0	40441	10263	2081	12343		2.13	Si
SLV 15	11.05	1729.69	-4090	-3406	-2059	1.02	0.2613	-47845	16250	1189	40441	12828	2601	15429		7.49	Si
SLV 14	9.25	-3137.02	-9284	-7731	-5113	0.816	0.5163	0	0	0	40441	10263	2081	12343		2.41	Si
SLV 14	11.05	1687.21	-3215	-2678	-2079	0.816	0	0	0	0	40441	10263	2081	12343		5.94	Si
SLD 2	9.25	1376.41	-3878	-3229	2560	1.02	0.4652	-11306	12678	1651	40441	12828	2601	15429		6.03	Si
SLD 2	11.05	-1398.57	-4661	-3881	1152	0.816	0.6299	0	0	0	40441	10263	2081	12343		10.71	Si
SLV 1	9.25	3074.06	-1379	-1148	5516	0.816	0	0	0	0	40441	10263	2081	12343		2.24	Si
SLV 1	11.05	-2487.01	-4817	-4011	2248	0.816	0	0	0	0	40441	10263	2081	12343		5.49	Si
SLV 4	9.25	3231.03	-2356	-1962	5621	0.816	0	0	0	0	40441	10263	2081	12343		2.2	Si
SLV 4	11.05	-2778.93	-5853	-4874	2655	0.816	0.1057	0	0	0	40441	10263	2081	12343		4.65	Si
SLV 2	9.25	3322.64	-1116	-930	5913	0.816	0	0	0	0	40441	10263	2081	12343		2.09	Si
SLV 2	11.05	-2654.21	-4898	-4079	2442	0.816	0	0	0	0	40441	10263	2081	12343		5.06	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.11 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	o0	N	M	Mc	Coeff.s.	Verifica
SLV 2	179667	0.46	0	-761	123.85	0	0	No, e>t/2
SLV 1	179667	0.46	3583	-1023	123.85	139.89	1.13	Si
SLV 4	179667	0.46	6773	-1934	123.85	258.8	2.09	Si
SLV 3	179667	0.46	7692	-2197	123.85	292.08	2.36	Si
SLV 6	179667	0.46	7995	-2283	123.85	302.92	2.45	Si
SLV 5	179667	0.46	8588	-2453	123.85	324.08	2.62	Si
SLV 10	179667	0.46	16534	-4722	123.85	589.53	4.76	Si
SLV 9	179667	0.46	17128	-4892	123.85	608.04	4.91	Si
SLV 8	179667	0.46	21694	-6196	123.85	744.19	6.01	Si
SLV 7	179667	0.46	22288	-6365	123.85	761.09	6.15	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.



Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeraia = 10.11 Wa = 0.05 Ta = 0.0739

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 8	-5299	-7886	-50	0.961	682.1	0.941	14.83876	14.09547	Si
SLV 7	-5229	-7760	-49	0.972	675.1	0.941	15.00801	14.09547	Si
SLV 12	-4176	-6635	-71	1.161	568.5	0.932	18.10256	14.09547	Si
SLV 11	-4107	-6509	-70	1.176	561.5	0.931	18.3582	14.09547	Si
SLV 6	-3351	-4574	64	1.38	485.4	0.923	21.72799	14.09547	Si
SLV 5	-3281	-4449	64	1.402	478.4	0.922	22.09715	14.09547	Si
SLV 4	-5946	-8221	15	0.879	747.7	0.946	13.5104	7.52414	Si
SLV 3	-5839	-8027	15	0.893	736.8	0.945	13.72506	7.52414	Si
SLV 2	-5361	-7227	49	0.952	688.5	0.942	14.69152	7.52414	Si
SLV 1	-5254	-7033	49	0.968	677.6	0.941	14.94867	7.52414	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	4.248	SLU 70	Si
V_SLU	30.441	SLU 70	Si
PF_SLV	0.188	SLV 2	No
V_SLV	2.088	SLV 2	Si
PFFP_SLV	0	SLV 2	No
R_SLV	1.053	SLV 8	Si

Maschio 154

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-5.163	1.006	-5.163	5.686	L6	L7	4.68	0.16	3.52	3.52	3.52			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fν0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma_{F,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 76	8.35	-3919.1	-24619	-0.0000513	0.0004492	0.0035	4.68	42107.74	62316.58	62316.58	15.9	No	Si
SLU 76	11.87	-894.08	-13571	-0.0000248	0.0004492	0.0035	4.68	27046.63	41491.98	41491.98	46.41	No	Si
SLU 73	8.35	-3881.77	-24051	-0.0000502	0.0004492	0.0035	4.68	41485.71	61288.58	61288.58	15.79	No	Si
SLU 73	11.87	-954.29	-13044	-0.0000241	0.0004492	0.0035	4.68	26172.05	40424.62	40424.62	42.36	No	Si
SLU 84	8.35	-4013.42	-25486	-0.0000531	0.0004492	0.0035	4.68	43024.56	63884.29	63884.29	15.92	No	Si
SLU 84	11.87	-884.02	-13969	-0.0000255	0.0004492	0.0035	4.68	27696.23	42296.23	42296.23	47.85	No	Si
SLU 82	8.35	-3976.08	-24918	-0.0000519	0.0004492	0.0035	4.68	42427.69	62856.28	62856.28	15.81	No	Si
SLU 82	11.87	-944.22	-13442	-0.0000247	0.0004492	0.0035	4.68	26832.36	41228.87	41228.87	43.66	No	Si
SLU 78	8.35	-3971.02	-25637	-0.0000532	0.0004492	0.0035	4.68	43180.72	64146.35	64146.35	16.15	No	Si
SLU 78	11.87	-962.81	-14466	-0.0000265	0.0004492	0.0035	4.68	28499.11	43304.35	43304.35	44.98	No	Si
SLU 65	8.35	-3534.63	-22112	-0.0000458	0.0004492	0.0035	4.68	39236.87	57777.58	57777.58	16.35	No	Si
SLU 65	11.87	-896.18	-12175	-0.0000224	0.0004492	0.0035	4.68	24697.91	38663.46	38663.46	43.14	No	Si
SLU 81	8.35	-3894.4	-24970	-0.0000519	0.0004492	0.0035	4.68	42483.24	62950.77	62950.77	16.16	No	Si
SLU 81	11.87	-891.76	-13478	-0.0000247	0.0004492	0.0035	4.68	26892.88	41303.07	41303.07	46.32	No	Si
SLU 75	8.35	-3933.69	-25069	-0.0000521	0.0004492	0.0035	4.68	42588.25	63130.04	63130.04	16.05	No	Si
SLU 75	11.87	-1023.02	-13939	-0.0000258	0.0004492	0.0035	4.68	27648.66	42236.99	42236.99	41.29	No	Si
SLU 83	8.35	-3931.73	-25538	-0.000053	0.0004492	0.0035	4.68	43078.59	63977.72	63977.72	16.27	No	Si
SLU 83	11.87	-831.56	-14005	-0.0000255	0.0004492	0.0035	4.68	27755.76	42370.43	42370.43	50.95	No	Si
SLU 80	8.35	-3901.99	-25222	-0.0000523	0.0004492	0.0035	4.68	42749.83	63407.58	63407.58	16.25	No	Si
SLU 80	11.87	-798.91	-14123	-0.0000256	0.0004492	0.0035	4.68	27946.53	42608.81	42608.81	53.33	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 8	8.35	-12734.42	-9860	-0.0000496	0.0006738	0.0035	3.744		34215.1	34215.1	2.69		Si
SLV 8	11.87	-5427.7	-5599	-0.0000213	0.0006738	0.0035	4.68		25054.87	25054.87	4.62		Si
SLV 11	8.35	-16772.3	-11484	-0.0000695	0.0006738	0.0035	3.744		37579.95	37579.95	2.24		Si
SLV 11	11.87	-9766.63	-5628	-0.0000483	0.0006738	0.0035	3.744		25118.29	25118.29	2.57		Si
SLV 6	8.35	11519.54	-22771	-0.0000642	0.0006738	0.0035	4.68		50473.77	50473.77	4.38		Si
SLV 6	11.87	8496.21	-13133	-0.0000405	0.0006738	0.0035	4.68		31091.22	31091.22	3.66		Si
SLV 16	8.35	-11279.4	-18815	-0.0000566	0.0006738	0.0035	4.68		52476.93	52476.93	4.65		Si
SLV 16	11.87	-8734.36	-9059	-0.0000345	0.0006738	0.0035	4.68		32511.57	32511.57	3.72		Si
SLV 12	8.35	-16069.71	-11860	-0.000064	0.0006738	0.0035	3.744		38360.07	38360.07	2.39		Si
SLV 12	11.87	-9266.39	-5940	-0.0000398	0.0006738	0.0035	3.744		25795.56	25795.56	2.78		Si
SLV 1	8.35	6026.63	-15440	-0.0000391	0.0006738	0.0035	4.68		35860.54	35860.54	5.95		Si
SLV 1	11.87	7463.94	-9703	-0.0000323	0.0006738	0.0035	4.68		23835.47	23835.47	3.19		Si
SLV 15	8.35	-12367.21	-18232	-0.000058	0.0006738	0.0035	4.68		51326.21	51326.21	4.15		Si
SLV 15	11.87	-9508.87	-8577	-0.0000365	0.0006738	0.0035	4.68		31481.66	31481.66	3.31		Si
SLV 5	8.35	10816.95	-22394	-0.000062	0.0006738	0.0035	4.68		49741.77	49741.77	4.6		Si
SLV 5	11.87	7995.97	-12822	-0.0000389	0.0006738	0.0035	4.68		30444.82	30444.82	3.81		Si
SLV 7	8.35	-13437.01	-9484	-0.0000543	0.0006738	0.0035	3.744		33420.35	33420.35	2.49		Si
SLV 7	11.87	-5927.94	-5288	-0.0000226	0.0006738	0.0035	4.68		24373.26	24373.26	4.11		Si
SLV 2	8.35	7114.45	-16022	-0.0000425	0.0006738	0.0035	4.68		37051.53	37051.53	5.21		Si
SLV 2	11.87	8238.45	-10185	-0.0000349	0.0006738	0.0035	4.68		24868.05	24868.05	3.02		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 83	8.35	-3931.73	-25538	-14995	1557	4.68	4.68	-20025	10833	8112	115546	26910	23868	50778	No	32.62	Si
SLU 83	11.87	-831.56	-14005	-8223	1624	4.68	4.68	-10982	9798	7336	115546	26910	23868	50778	No	31.26	Si
SLU 39	8.35	-3305.93	-20979	-12318	1583	4.68	4.68	-16450	10527	7882	115546	26910	23868	50778	No	32.07	Si
SLU 39	11.87	-713.01	-11284	-6625	1640	4.68	4.68	-8848	9513	7123	115546	26910	23868	50778	No	30.97	Si
SLU 40	8.35	-3387.61	-20926	-12287	1559	4.68	4.68	-16409	10521	7878	115546	26910	23868	50778	No	32.57	Si
SLU 40	11.87	-765.47	-11247	-6604	1611	4.68	4.68	-8819	9509	7121	115546	26910	23868	50778	No	31.51	Si
SLU 42	8.35	-3424.95	-21494	-12621	1531	4.68	4.68	-16854	10581	7923	115546	26910	23868	50778	No	33.16	Si
SLU 42	11.87	-705.27	-11774	-6913	1586	4.68	4.68	-9233	9564	7162	115546	26910	23868	50778	No	32.01	Si
SLU 41	8.35	-3343.26	-21547	-12651	1556	4.68	4.68	-16895	10586	7927	115546	26910	23868	50778	No	32.64	Si
SLU 41	11.87	-652.81	-11811	-6935	1615	4.68	4.68	-9261	9568	7165	115546	26910	23868	50778	No	31.45	Si
SLU 32	8.35	-3263.53	-21130	-12407	1374	4.68	4.68	-16569	10542	7894	115546	26910	23868	50778	No	36.95	Si
SLU 32	11.87	-791.81	-11782	-6918	1431	4.68	4.68	-9238	9565	7162	115546	26910	23868	50778	No	35.48	Si
SLU 84	8.35	-4013.42	-25486	-14964	1532	4.68	4.68	-19984	10833	8112	115546	26910	23868	50778	No	33.14	Si
SLU 84	11.87	-884.02	-13969	-8202	1596	4.68	4.68	-10953	9794	7334	115546	26910	23868	50778	No	31.82	Si
SLU 82	8.35	-3976.08	-24918	-14630	1560	4.68	4.68	-19539	10833	8112	115546	26910	23868	50778	No	32.56	Si
SLU 82	11.87	-944.22	-13442	-7892	1621	4.68	4.68	-10540	9739	7292	115546	26910	23868	50778	No	31.33	Si
SLU 74	8.35	-3852	-25121	-14750	1375	4.68	4.68	-19698	10833	8112	115546	26910	23868	50778	No	36.92	Si
SLU 74	11.87	-970.56	-13976	-8206	1441	4.68	4.68	-10959	9795	7334	115546	26910	23868	50778	No	35.24	Si
SLU 81	8.35	-3894.4	-24970	-14661	1584	4.68	4.68	-19580	10833	8112	115546	26910	23868	50778	No	32.06	Si
SLU 81	11.87	-891.76	-13478	-7914	1649	4.68	4.68	-10569	9742	7295	115546	26910	23868	50778	No	30.79	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 9	8.35	7481.65	-24394	-14323	2299	4.68	4.68	-19128	16250	12168	115546	40365	23868	64233		27.95	Si
SLV 9	11.87	4157.28	-13162	-7728	7307	4.68	4.68	-10321	14564	10906	115546	40365	23868	64233		8.79	Si
SLV 7	8.35	-13437.01	-9484	-5569	-1122	3.744	2.7696	0	0	0	115546	32292	19094	51386		45.81	Si
SLV 7	11.87	-5927.94	-5288	-3105	-6044	4.68	3.6571	-5316	13563	7936	115546	40365	23868	64233		10.63	Si
SLV 13	8.35	-5091.02	-22105	-12979	4213	4.68	4.68	-17333	15967	11956	115546	40365	23868	64233		15.25	Si
SLV 13	11.87	-5331.7	-10837	-6363	4957	4.68	4.68	-8498	14200	10633	115546	40365	23868	64233		12.96	Si
SLV 11	8.35	-16772.3	-11484	-6743	956	3.744	2.6384	0	0	0	115546	32292	19094	51386		53.76	Si
SLV 11	11.87	-9766.63	-5628	-3305	-4487	3.744	1.8143	0	0	0	115546	32292	19094	51386		11.45	Si
SLV 12	8.35	-16069.71	-11860	-6964	1098	3.744	2.9552	0	0	0	115546	32292	19094	51386		46.8	Si
SLV 12	11.87	-9266.39	-5940	-3488	-4346	3.744	2.3397	0	0	0	115546	32292	19094	51386		11.82	Si
SLV 10	8.35	8184.24	-24770	-14544	2441	4.68	4.68	-19423	16250	12168	115546	40365	23868	64233		26.32	Si
SLV 10	11.87	4657.52	-13474	-7911	7448	4.68	4.68	-10565	14613	10942	115546	40365	23868	64233		8.62	Si
SLV 14	8.35	-4003.21	-22688	-13321	4433	4.68	4.68	-17790	16058	12024	115546	40365	23868	64233		14.49	Si
SLV 14	11.87	-4557.18	-11319	-6646	5176	4.68	4.68	-8876	14275	10689	115546	40365	23868	64233		12.41	Si
SLV 6	8.35	11519.54	-22771	-13370	363	4.68	4.68	-17855	16071	12034	115546	40365	23868	64233		176.77	Si
SLV 6	11.87	8496.21	-13133	-7711	5891	4.68	4.68	-10298	14560	10902	115546	40365	23868	64233		10.9	Si
SLV 5	8.35	10816.95	-22394	-13149	221	4.68	4.68	-17560	16012	11990	115546	40365	23868	64233		290.43	Si
SLV 5	11.87	7995.97	-12822	-7529	5750	4.68	4.68	-10054	14511	10866	115546	40365	23868	64233		11.17	Si
SLV 8	8.35	-12734.42	-9860	-5790	-979	3.744	3.1456	0	0	0	115546	32292	19094	51386		52.47	Si
SLV 8	11.87	-5427.7	-5599	-3288	-5903	4.68	4.112	-5008	13502	8883	115546	40365	23868	64233		10.88	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRDM D.M. 17-01-18 (N.T.C.)

quota 10.11 Ta 0.13 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 3	-5314	0.46	343.59	408.64	849.36	629	1.83	Si
SLV 4	-5852	0.46	343.59	448.19	901.67	674.93	1.96	Si
SLV 7	-6523	0.46	343.59	497.06	966.48	731.77	2.13	Si
SLV 8	-6871	0.46	343.59	522.15	999.99	761.07	2.22	Si
SLV 1	-8324	0.46	343.59	625.54	1139.56	882.55	2.57	Si
SLV 2	-8862	0.46	343.59	663.2	1191.23	927.21	2.7	Si
SLV 11	-10489	0.46	343.59	774.98	1345.87	1060.42	3.09	Si
SLV 12	-10836	0.46	343.59	798.46	1378.89	1088.68	3.17	Si
SLV 5	-16558	0.46	343.59	1164.82	1914.79	1539.81	4.48	Si
SLV 6	-16906	0.46	343.59	1185.85	1946.61	1566.23	4.56	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.11 Wa = 0.03 Ta = 0.1293

Comb.	N top	N base	V orto	$\alpha O$	M*	e*	aO*	aLim	Verifica
SLV 10	-13474	-24770	223	1.671	1746	0.94	25.83131	18.89897	Si





Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 9	-13162	-24394	223	1.704	1714.5	0.939	26.36719	18.89897	Si
SLV 6	-13133	-22771	-264	1.705	1711.5	0.939	26.37765	18.89897	Si
SLV 5	-12822	-22394	-263	1.739	1680	0.938	26.93867	18.89897	Si
SLV 14	-11319	-22688	804	1.888	1528	0.933	29.40364	13.2651	Si
SLV 13	-10837	-22105	805	1.956	1479.4	0.931	30.52058	13.2651	Si
SLV 2	-10185	-16022	-818	2.055	1413.6	0.929	32.15925	13.2651	Si
SLV 1	-9703	-15440	-817	2.137	1365	0.927	33.50147	13.2651	Si
SLV 16	-9059	-18815	816	2.256	1300.1	0.924	35.47898	13.2651	Si
SLV 12	-5940	-11860	263	3.16	988.3	0.907	50.61315	18.89897	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	15.789	SLU 73	Si
V_SLU	30.789	SLU 81	Si
PF_SLV	2.241	SLV 11	Si
V_SLV	8.624	SLV 10	Si
PFFP_SLV	1.831	SLV 3	Si
R_SLV	1.367	SLV 10	Si

Maschio 157

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-5.963	-3.314	-6.513	-3.314	L6	L7	0.55	0.28	3.52	3.52	3.52			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau 0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche,  $\gamma M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 65	10.35	-58.75	-4469	-0.0000525	0.0003743	0.0035	0.55	878.7	1044	1044	17.77	No	Si
SLU 65	11.15	-250.32	-4189	-0.0000719	0.0003743	0.0035	0.55	844.29	1001.33	1001.33	4	No	Si
SLU 70	10.35	-77.91	-4952	-0.0000603	0.0003743	0.0035	0.55	931.77	1108.45	1108.45	14.23	No	Si
SLU 70	11.15	-265.12	-4621	-0.0000788	0.0003743	0.0035	0.55	896.33	1064.94	1064.94	4.02	No	Si
SLU 68	10.35	-67.67	-4673	-0.0000559	0.0003743	0.0035	0.55	902.16	1071.78	1071.78	15.84	No	Si
SLU 68	11.15	-255.53	-4367	-0.0000746	0.0003743	0.0035	0.55	866.49	1029.31	1029.31	4.03	No	Si
SLU 66	10.35	-69.32	-4742	-0.0000568	0.0003743	0.0035	0.55	909.72	1080.7	1080.7	15.59	No	Si
SLU 66	11.15	-258.95	-4438	-0.0000759	0.0003743	0.0035	0.55	875.04	1039.61	1039.61	4.01	No	Si
SLU 64	10.35	-59.3	-4460	-0.0000525	0.0003743	0.0035	0.55	877.61	1042.7	1042.7	17.58	No	Si
SLU 64	11.15	-248.73	-4180	-0.0000716	0.0003743	0.0035	0.55	843.08	999.68	999.68	4.02	No	Si
SLU 72	10.35	-76.8	-4874	-0.0000592	0.0003743	0.0035	0.55	923.77	1098.07	1098.07	14.3	No	Si
SLU 72	11.15	-260.11	-4541	-0.0000772	0.0003743	0.0035	0.55	887.15	1054.09	1054.09	4.05	No	Si
SLU 69	10.35	-78.23	-4947	-0.0000602	0.0003743	0.0035	0.55	931.22	1107.71	1107.71	14.16	No	Si
SLU 69	11.15	-264.17	-4616	-0.0000786	0.0003743	0.0035	0.55	895.69	1064.19	1064.19	4.03	No	Si
SLU 71	10.35	-77.13	-4869	-0.0000592	0.0003743	0.0035	0.55	923.2	1097.34	1097.34	14.23	No	Si
SLU 71	11.15	-259.15	-4535	-0.0000771	0.0003743	0.0035	0.55	886.5	1053.31	1053.31	4.06	No	Si
SLU 44	10.35	-52.19	-3961	-0.0000461	0.0003743	0.0035	0.55	814.18	961.13	961.13	18.42	No	Si
SLU 44	11.15	-222.02	-3667	-0.0000625	0.0003743	0.0035	0.55	772.56	907.48	907.48	4.09	No	Si
SLU 67	10.35	-68.99	-4748	-0.0000569	0.0003743	0.0035	0.55	910.31	1081.42	1081.42	15.67	No	Si
SLU 67	11.15	-259.91	-4444	-0.0000761	0.0003743	0.0035	0.55	875.71	1040.42	1040.42	4	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche,  $\gamma M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 5	10.35	193.69	-1098	-0.0000399	0.0005615	0.0035	0.55		308.02	308.02	1.59		Si
SLV 5	11.15	-322.57	-1679	-0.0000743	0.0005615	0.0035	0.44		502.4	502.4	1.56		Si





Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 3	10.35	488.96	-1148	-0.0163177	0.0005615	0.0035	0.44		320.55	320.55	0.66		No
SLV 3	11.15	-805.76	-2311	-0.0037955	0.0005615	0.0035	0.44		653.93	653.93	0.81		No
SLD 2	10.35	227.15	-1932	-0.0000441	0.0005615	0.0035	0.55		514.88	514.88	2.27		Si
SLD 2	11.15	-466.28	-2474	-0.001077	0.0005615	0.0035	0.44		692.1	692.1	1.48		Si
SLV 2	10.35	597.86	95	-0.054666	0.0005615	0.0035	0.44		0	0	0		No
SLV 2	11.15	-845.48	-1459	-0.0072679	0.0005615	0.0035	0.44		447.24	447.24	0.53		No
SLV 4	10.35	547.04	-850	-0.0272818	0.0005615	0.0035	0.44		244.32	244.32	0.45		No
SLV 4	11.15	-865.87	-2177	-0.005356	0.0005615	0.0035	0.44		621.84	621.84	0.72		No
SLD 1	10.35	202.21	-2060	-0.0000418	0.0005615	0.0035	0.55		545.77	545.77	2.7		Si
SLD 1	11.15	-440.47	-2532	-0.0000935	0.0005615	0.0035	0.44		705.24	705.24	1.6		Si
SLD 4	10.35	204.81	-2349	-0.000045	0.0005615	0.0035	0.55		614.51	614.51	3		Si
SLD 4	11.15	-475.3	-2790	-0.0001	0.0005615	0.0035	0.44		764.36	764.36	1.61		Si
SLV 1	10.35	539.78	-203	-0.0419234	0.0005615	0.0035	0.44		73.03	73.03	0.14		No
SLV 1	11.15	-785.38	-1592	-0.0058973	0.0005615	0.0035	0.44		480.75	480.75	0.61		No
SLV 6	10.35	231.2	-906	-0.0001765	0.0005615	0.0035	0.44		258.74	258.74	1.12		Si
SLV 6	11.15	-361.39	-1593	-0.0001236	0.0005615	0.0035	0.44		480.87	480.87	1.33		Si
SLD 3	10.35	179.87	-2476	-0.0000436	0.0005615	0.0035	0.55		641.54	641.54	3.57		Si
SLD 3	11.15	-449.49	-2848	-0.0000905	0.0005615	0.0035	0.44		777.48	777.48	1.73		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 81	10.35	-90.4	-5146	-4285	-135	0.55	0.55	-27825	10654	1641	40441	4612	1403	6014	No	44.59	Si
SLU 81	11.15	-239.33	-4875	-4060	388	0.55	0.55	-26362	10459	1611	40441	4612	1403	6014	No	15.5	Si
SLU 75	10.35	-90.77	-5228	-4354	-110	0.55	0.55	-28269	10714	1650	40441	4612	1403	6014	No	54.72	Si
SLU 75	11.15	-253.33	-4930	-4106	376	0.55	0.55	-26659	10499	1617	40441	4612	1403	6014	No	16.01	Si
SLU 83	10.35	-99.32	-5351	-4456	-152	0.55	0.55	-28931	10802	1664	40441	4612	1403	6014	No	39.53	Si
SLU 83	11.15	-244.54	-5053	-4208	385	0.55	0.55	-27323	10588	1631	40441	4612	1403	6014	No	15.61	Si
SLU 73	10.35	-80.52	-4949	-4121	-91	0.55	0.55	-26761	10513	1619	40441	4612	1403	6014	No	65.92	Si
SLU 73	11.15	-243.74	-4676	-3894	370	0.55	0.55	-25285	10316	1589	40441	4612	1403	6014	No	16.26	Si
SLU 74	10.35	-91.09	-5223	-4349	-112	0.55	0.55	-28239	10710	1649	40441	4612	1403	6014	No	53.73	Si
SLU 74	11.15	-252.38	-4925	-4101	375	0.55	0.55	-26629	10495	1616	40441	4612	1403	6014	No	16.03	Si
SLU 82	10.35	-90.07	-5152	-4290	-133	0.55	0.55	-27855	10658	1641	40441	4612	1403	6014	No	45.27	Si
SLU 82	11.15	-240.29	-4881	-4065	388	0.55	0.55	-26392	10463	1611	40441	4612	1403	6014	No	15.48	Si
SLU 77	10.35	-100.01	-5427	-4519	-129	0.55	0.55	-29346	10833	1668	40441	4612	1403	6014	No	46.55	Si
SLU 77	11.15	-257.59	-5103	-4249	372	0.55	0.55	-27590	10623	1636	40441	4612	1403	6014	No	16.16	Si
SLU 84	10.35	-98.99	-5356	-4460	-150	0.55	0.55	-28961	10806	1664	40441	4612	1403	6014	No	40.07	Si
SLU 84	11.15	-245.5	-5059	-4213	386	0.55	0.55	-27353	10592	1631	40441	4612	1403	6014	No	15.59	Si
SLU 78	10.35	-99.68	-5433	-4524	-127	0.55	0.55	-29375	10833	1668	40441	4612	1403	6014	No	47.29	Si
SLU 78	11.15	-258.54	-5108	-4254	373	0.55	0.55	-27620	10627	1637	40441	4612	1403	6014	No	16.14	Si
SLU 76	10.35	-89.44	-5154	-4292	-108	0.55	0.55	-27867	10660	1642	40441	4612	1403	6014	No	55.43	Si
SLU 76	11.15	-248.95	-4854	-4042	367	0.55	0.55	-26246	10444	1608	40441	4612	1403	6014	No	16.38	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 15	10.35	-327.93	-4981	-4148	-1123	0.55	0.55	-26931	15803	2434	40441	6917	1403	8320		7.41	Si
SLD 15	11.15	99.82	-4005	-3335	58	0.55	0.55	-21654	14748	2271	40441	6917	1403	8320		144.23	Si
SLV 3	10.35	488.96	-1148	-956	2160	0.44	0	0	0	0	40441	5534	1122	6656		3.08	Si
SLV 3	11.15	-805.76	-2311	-1924	529	0.44	0	0	0	0	40441	5534	1122	6656		12.58	Si
SLV 2	10.35	597.86	95	79	2537	0.44	0	0	0	0	40441	5534	1122	6656		2.62	Si
SLV 2	11.15	-845.48	-1459	-1215	708	0.44	0	0	0	0	40441	5534	1122	6656		9.4	Si
SLV 15	10.35	-698.64	-7007	-5835	-2589	0.55	0.5259	-37888	16250	2393	40441	6917	1403	8320		3.21	Si
SLV 15	11.15	479.02	-5020	-4181	-203	0.55	0.5388	-27146	15846	2391	40441	6917	1403	8320		41.05	Si
SLV 14	10.35	-589.75	-5765	-4800	-2213	0.55	0.5181	-31170	16250	2357	40441	6917	1403	8320		3.76	Si
SLV 14	11.15	439.3	-4169	-3471	-23	0.55	0.5089	-22539	14925	2127	40441	6917	1403	8320		357.65	Si
SLV 13	10.35	-647.82	-6062	-5048	-2431	0.55	0.5044	-32779	16250	2295	40441	6917	1403	8320		3.42	Si
SLV 13	11.15	499.4	-4302	-3583	-90	0.55	0.4768	-23263	15069	2012	40441	6917	1403	8320		92.09	Si
SLV 1	10.35	539.78	-203	-169	2319	0.44	0	0	0	0	40441	5534	1122	6656		2.87	Si
SLV 1	11.15	-785.38	-1592	-1326	641	0.44	0	0	0	0	40441	5534	1122	6656		10.38	Si
SLV 16	10.35	-640.57	-6710	-5587	-2371	0.55	0.5386	-36279	16250	2451	40441	6917	1403	8320		3.51	Si
SLV 16	11.15	418.91	-4887	-4069	-136	0.55	0.55	-26423	15701	2418	40441	6917	1403	8320		61.36	Si
SLV 6	10.35	231.2	-906	-755	1020	0.44	0.0597	0	0	0	40441	5534	1122	6656		6.52	Si
SLV 6	11.15	-361.39	-1593	-1326	571	0.44	0.1444	0	0	0	40441	5534	1122	6656		11.65	Si
SLV 4	10.35	547.04	-850	-708	2378	0.44	0	0	0	0	40441	5534	1122	6656		2.8	Si
SLV 4	11.15	-865.87	-2177	-1813	596	0.44	0	0	0	0	40441	5534	1122	6656		11.17	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.11 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 2	179667	0.46	5927	-913	66.78	122.83	1.84	Si
SLV 6	179667	0.46	6630	-1021	66.78	136.75	2.05	Si
SLV 1	179667	0.46	7012	-1080	66.78	144.24	2.16	Si
SLV 5	179667	0.46	7331	-1129	66.78	150.47	2.25	Si
SLV 4	179667	0.46	11409	-1757	66.78	227.61	3.41	Si
SLV 3	179667	0.46	12494	-1924	66.78	247.34	3.7	Si
SLV 10	179667	0.46	12550	-1933	66.78	248.35	3.72	Si
SLV 9	179667	0.46	13251	-2041	66.78	260.91	3.91	Si
SLV 8	179667	0.46	24903	-3835	66.78	449.37	6.73	Si
SLV 7	179667	0.46	25603	-3943	66.78	459.48	6.88	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.



## Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeraia = 10.11  $W_a = 0.05$   $T_a = 0.0739$

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	a0*	aLim	Verifica
SLV 11	-2720	-4023	-40	0.996	353.9	0.939	15.41244	14.09547	Si
SLV 12	-2649	-4003	-40	1.018	346.8	0.938	15.76525	14.09547	Si
SLV 7	-2166	-3890	-41	1.196	297.9	0.93	18.68053	14.09547	Si
SLV 8	-2095	-3870	-41	1.227	290.7	0.929	19.20555	14.09547	Si
SLV 15	-2895	-3344	-14	0.955	371.6	0.942	14.73314	7.52414	Si
SLV 9	-1315	-1624	33	1.746	212.6	0.91	27.87291	14.09547	Si
SLV 16	-2785	-3313	-13	0.986	360.5	0.94	15.23237	7.52414	Si
SLV 10	-1244	-1604	33	1.815	205.5	0.908	29.05313	14.09547	Si
SLV 13	-2473	-2624	8	1.087	329	0.936	16.88207	7.52414	Si
SLV 14	-2363	-2593	8	1.127	317.8	0.934	17.54243	7.52414	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	4	SLU 65	Si
V_SLU	15.481	SLU 82	Si
PF_SLV	0	SLV 2	No
V_SLV	2.624	SLV 2	Si
PFFP_SLV	1.839	SLV 2	Si
R_SLV	1.093	SLV 11	Si

## Maschio 158

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.sx	a.s.dx
-3.183	-3.314	-5.463	-3.314	L6	L7	2.28	0.28	3.52	3.52	3.52			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau_0$	f <sub>v0</sub>	$\mu$	$\phi$	f <sub>v,lim</sub>	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	t <sub>fv</sub>	t <sub>fo</sub>	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma_{F,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	e <sub>m</sub>	e <sub>m_</sub>	e <sub>mu</sub>	d <sub>f</sub>	M <sub>0d</sub>	M <sub>1d</sub>	M <sub>Rd</sub>	c.s.	Incremento > 50%	Verifica
SLU 77	10.35	1287.9	-18877	-0.0000554	0.0003743	0.0035	2.28	15269.42	17012.4	17012.4	13.21	No	Si
SLU 77	11.15	710.39	-16081	-0.000044	0.0003743	0.0035	2.28	13796.35	15115.56	15115.56	21.28	No	Si
SLU 72	10.35	1230.96	-17267	-0.0000506	0.0003743	0.0035	2.28	14454.96	15909.87	15909.87	12.92	No	Si
SLU 72	11.15	611.99	-14572	-0.0000394	0.0003743	0.0035	2.28	12887.43	14121.9	14121.9	23.08	No	Si
SLU 71	10.35	1229.92	-17236	-0.0000505	0.0003743	0.0035	2.28	14438.2	15888.67	15888.67	12.92	No	Si
SLU 71	11.15	617.29	-14547	-0.0000394	0.0003743	0.0035	2.28	12871.78	14102.68	14102.68	22.85	No	Si
SLU 69	10.35	1247.35	-17552	-0.0000515	0.0003743	0.0035	2.28	14605.81	16103.14	16103.14	12.91	No	Si
SLU 69	11.15	624	-14841	-0.0000402	0.0003743	0.0035	2.28	13055.32	14300.54	14300.54	22.92	No	Si
SLU 66	10.35	1201.26	-16897	-0.0000494	0.0003743	0.0035	2.28	14254.53	15659.97	15659.97	13.04	No	Si
SLU 66	11.15	542.09	-14208	-0.000038	0.0003743	0.0035	2.28	12656.52	13829.98	13829.98	25.51	No	Si
SLU 64	10.35	1137.73	-15925	-0.0000464	0.0003743	0.0035	2.28	13705.99	15012.25	15012.25	13.19	No	Si
SLU 64	11.15	453.47	-13282	-0.000035	0.0003743	0.0035	2.28	12047.1	13000.31	13000.31	28.67	No	Si
SLU 67	10.35	1202.3	-16928	-0.0000495	0.0003743	0.0035	2.28	14271.66	15681.04	15681.04	13.04	No	Si
SLU 67	11.15	536.79	-14233	-0.000038	0.0003743	0.0035	2.28	12672.47	13850.71	13850.71	25.8	No	Si
SLU 65	10.35	1139.46	-15977	-0.0000466	0.0003743	0.0035	2.28	13736.31	15046.78	15046.78	13.21	No	Si
SLU 65	11.15	444.63	-13323	-0.0000351	0.0003743	0.0035	2.28	12075.01	13038.01	13038.01	29.32	No	Si
SLU 70	10.35	1248.4	-17584	-0.0000516	0.0003743	0.0035	2.28	14622.23	16124.45	16124.45	12.92	No	Si
SLU 70	11.15	618.7	-14866	-0.0000402	0.0003743	0.0035	2.28	13070.71	14316.73	14316.73	23.14	No	Si
SLU 68	10.35	1185.56	-16632	-0.0000486	0.0003743	0.0035	2.28	14108.75	15482.87	15482.87	13.06	No	Si
SLU 68	11.15	526.54	-13956	-0.0000372	0.0003743	0.0035	2.28	12493.45	13613.29	13613.29	25.85	No	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche, $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 4	10.35	2077.8	-14456	-0.0000477	0.0005615	0.0035	2.28		14572.24	14572.24	7.01		Si
SLV 4	11.15	-3106.43	-10827	-0.0000451	0.0005615	0.0035	2.28		12614.98	12614.98	4.06		Si
SLV 16	10.35	-296.32	-13435	-0.0000338	0.0005615	0.0035	2.28		15044.66	15044.66	50.77		Si
SLV 16	11.15	3443.12	-12364	-0.0000511	0.0005615	0.0035	2.28		12796.18	12796.18	3.72		Si
SLV 2	10.35	2113.86	-11027	-0.0000393	0.0005615	0.0035	2.28		11677.44	11677.44	5.52		Si
SLV 2	11.15	-3121.08	-7896	-0.0000379	0.0005615	0.0035	2.28		9746.92	9746.92	3.12		Si
SLV 13	10.35	-361.31	-10002	-0.0000258	0.0005615	0.0035	2.28		11815.6	11815.6	32.7		Si
SLV 13	11.15	3834.03	-9589	-0.0000467	0.0005615	0.0035	2.28		10400.36	10400.36	2.71		Si
SLV 15	10.35	-397.37	-13431	-0.0000344	0.0005615	0.0035	2.28		15041.01	15041.01	37.85		Si
SLV 15	11.15	3848.68	-12519	-0.0000541	0.0005615	0.0035	2.28		12926.75	12926.75	3.36		Si
SLV 14	10.35	-260.27	-10006	-0.0000252	0.0005615	0.0035	2.28		11819.48	11819.48	45.41		Si
SLV 14	11.15	3428.47	-9434	-0.0000437	0.0005615	0.0035	2.28		10249.76	10249.76	2.99		Si
SLV 1	10.35	2012.81	-11023	-0.0000387	0.0005615	0.0035	2.28		11674.1	11674.1	5.8		Si
SLV 1	11.15	-2715.52	-8051	-0.0000358	0.0005615	0.0035	2.28		9903.03	9903.03	3.65		Si
SLV 10	10.35	594.85	-6362	-0.0000185	0.0005615	0.0035	2.28		7170.8	7170.8	12.05		Si
SLV 10	11.15	1190.84	-5504	-0.0000201	0.0005615	0.0035	2.28		6282.35	6282.35	5.28		Si
SLV 9	10.35	529.58	-6359	-0.0000181	0.0005615	0.0035	2.28		7168.11	7168.11	13.54		Si
SLV 9	11.15	1452.78	-5604	-0.000022	0.0005615	0.0035	2.28		6386.44	6386.44	4.4		Si
SLV 3	10.35	1976.75	-14452	-0.000047	0.0005615	0.0035	2.28		14568.79	14568.79	7.37		Si
SLV 3	11.15	-2700.87	-10982	-0.0000429	0.0005615	0.0035	2.28		12764.68	12764.68	4.73		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 78	10.35	1288.94	-18908	-15745	2912	2.28	2.28	-24663	10233	6533	40441	19116	5814	24930	No	8.56	Si
SLU 78	11.15	705.09	-16106	-13411	1986	2.28	2.28	-21008	9746	6221	40441	19116	5814	24930	No	12.55	Si
SLU 77	10.35	1287.9	-18877	-15719	2893	2.28	2.28	-24623	10227	6529	40441	19116	5814	24930	No	8.62	Si
SLU 77	11.15	710.39	-16081	-13391	1975	2.28	2.28	-20976	9741	6219	40441	19116	5814	24930	No	12.63	Si
SLU 82	10.35	1196.68	-17848	-14862	2915	2.28	2.28	-23281	10049	6415	40441	19116	5814	24930	No	8.55	Si
SLU 82	11.15	571.59	-15078	-12556	1999	2.28	2.28	-19668	9567	6107	40441	19116	5814	24930	No	12.47	Si
SLU 83	10.35	1241.74	-18472	-15382	2886	2.28	2.28	-24095	10157	6484	40441	19116	5814	24930	No	8.64	Si
SLU 83	11.15	658.8	-15686	-13062	1971	2.28	2.28	-20460	9672	6175	40441	19116	5814	24930	No	12.65	Si
SLU 81	10.35	1195.64	-17817	-14836	2897	2.28	2.28	-23240	10043	6411	40441	19116	5814	24930	No	8.61	Si
SLU 81	11.15	576.89	-15053	-12535	1988	2.28	2.28	-19635	9562	6105	40441	19116	5814	24930	No	12.54	Si
SLU 74	10.35	1241.8	-18221	-15173	2904	2.28	2.28	-23767	10113	6456	40441	19116	5814	24930	No	8.58	Si
SLU 74	11.15	628.48	-15448	-12864	1992	2.28	2.28	-20150	9631	6148	40441	19116	5814	24930	No	12.52	Si
SLU 75	10.35	1242.84	-18252	-15199	2922	2.28	2.28	-23808	10119	6460	40441	19116	5814	24930	No	8.53	Si
SLU 75	11.15	623.18	-15473	-12885	2003	2.28	2.28	-20183	9635	6151	40441	19116	5814	24930	No	12.45	Si
SLU 73	10.35	1180	-17301	-14407	2898	2.28	2.28	-22568	9953	6354	40441	19116	5814	24930	No	8.6	Si
SLU 73	11.15	531.03	-14563	-12127	1994	2.28	2.28	-18996	9477	6050	40441	19116	5814	24930	No	12.5	Si
SLU 76	10.35	1226.1	-17957	-14953	2887	2.28	2.28	-23423	10067	6427	40441	19116	5814	24930	No	8.64	Si
SLU 76	11.15	612.93	-15196	-12654	1977	2.28	2.28	-19821	9587	6120	40441	19116	5814	24930	No	12.61	Si
SLU 84	10.35	1242.78	-18504	-15408	2904	2.28	2.28	-24136	10163	6488	40441	19116	5814	24930	No	8.58	Si
SLU 84	11.15	653.49	-15711	-13082	1982	2.28	2.28	-20493	9677	6178	40441	19116	5814	24930	No	12.58	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 4	10.35	2077.8	-14456	-12038	10559	2.28	2.28	-18856	14188	9057	40441	28675	5814	34489		3.27	Si
SLV 4	11.15	-3106.43	-10827	-9016	7926	2.28	2.28	-14122	13241	8453	40441	28675	5814	34489		4.35	Si
SLV 3	10.35	1976.75	-14452	-12034	9678	2.28	2.28	-18851	14187	9057	40441	28675	5814	34489		3.56	Si
SLV 3	11.15	-2700.87	-10982	-9145	7213	2.28	2.28	-14325	13282	8479	40441	28675	5814	34489		4.78	Si
SLV 8	10.35	1186.91	-18099	-15071	5929	2.28	2.28	-23608	15138	9664	40441	28675	5814	34489		5.82	Si
SLV 8	11.15	-725.18	-14811	-12334	3681	2.28	2.28	-19320	14281	9117	40441	28675	5814	34489		9.37	Si
SLV 1	10.35	2012.81	-11023	-9179	8927	2.28	2.28	-14378	13292	8486	40441	28675	5814	34489		3.86	Si
SLV 1	11.15	-2715.52	-8051	-6704	7106	2.28	2.28	-10502	12517	7991	40441	28675	5814	34489		4.85	Si
SLV 2	10.35	2113.86	-11027	-9182	9809	2.28	2.28	-14383	13293	8486	40441	28675	5814	34489		3.52	Si
SLV 2	11.15	-3121.08	-7896	-6575	7819	2.28	2.2342	-10300	12477	7805	40441	28675	5814	34489		4.41	Si
SLD 4	10.35	1379.45	-13204	-10995	5721	2.28	2.28	-17223	13861	8849	40441	28675	5814	34489		6.03	Si
SLD 4	11.15	-1119.76	-10492	-8737	4223	2.28	2.28	-13686	13154	8397	40441	28675	5814	34489		8.17	Si
SLV 13	10.35	-361.31	-10002	-8329	-6359	2.28	2.28	-13047	13026	8316	40441	28675	5814	34489		5.42	Si
SLV 13	11.15	3834.03	-9589	-7985	-5018	2.28	2.2204	-12508	12918	8032	40441	28675	5814	34489		6.87	Si
SLV 14	10.35	-260.27	-10006	-8332	-5478	2.28	2.28	-13052	13027	8316	40441	28675	5814	34489		6.3	Si
SLV 14	11.15	3428.47	-9434	-7856	-4305	2.28	2.28	-12305	12878	8221	40441	28675	5814	34489		8.01	Si
SLV 15	10.35	-397.37	-13431	-11184	-5609	2.28	2.28	-17519	13921	8887	40441	28675	5814	34489		6.15	Si
SLV 15	11.15	3848.68	-12519	-10425	-4911	2.28	2.28	-16330	13683	8735	40441	28675	5814	34489		7.02	Si
SLD 2	10.35	1396.18	-11692	-9736	5393	2.28	2.28	-15250	13467	8597	40441	28675	5814	34489		6.39	Si
SLD 2	11.15	-1126.4	-9199	-7660	4175	2.28	2.28	-11999	12817	8182	40441	28675	5814	34489		8.26	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.11 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 6	179667	0.46	8512	-5434	276.84	718.37	2.59	Si
SLV 5	179667	0.46	8691	-5548	276.84	732.52	2.65	Si
SLV 10	179667	0.46	9775	-6240	276.84	817.71	2.95	Si
SLV 9	179667	0.46	9953	-6354	276.84	831.59	3	Si
SLV 2	179667	0.46	12781	-8159	276.84	1046.67	3.78	Si
SLV 1	179667	0.46	13057	-8335	276.84	1067.17	3.85	Si
SLV 14	179667	0.46	16989	-10846	276.84	1349.51	4.87	Si
SLV 13	179667	0.46	17266	-11022	276.84	1368.65	4.94	Si
SLV 4	179667	0.46	17744	-11327	276.84	1401.59	5.06	Si
SLV 3	179667	0.46	18020	-11504	276.84	1420.49	5.13	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.



- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeraia = 10.11  $W_a = 0.05$   $T_a = 0.0739$

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	a0*	aLim	Verifica
SLV 11	-11395	-16739	537	0.96	1479.2	0.94	14.84866	14.09547	Si
SLV 7	-11243	-15162	672	0.961	1463.8	0.939	14.86294	14.09547	Si
SLV 12	-11333	-16654	537	0.964	1473	0.94	14.91757	14.09547	Si
SLV 8	-11181	-15077	672	0.965	1457.6	0.939	14.93274	14.09547	Si
SLV 9	-4513	-7153	-672	1.909	788.1	0.903	30.7061	14.09547	Si
SLV 10	-4451	-7068	-672	1.927	782.1	0.903	31.00714	14.09547	Si
SLV 5	-4360	-5576	-537	1.975	773.1	0.902	31.80344	14.09547	Si
SLV 6	-4299	-5491	-537	1.993	767.1	0.902	32.12267	14.09547	Si
SLV 15	-9181	-15247	-44	1.186	1255.3	0.931	18.51413	7.52414	Si
SLV 16	-9085	-15115	-44	1.196	1245.7	0.931	18.676	7.52414	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	12.91	SLU 69	Si
V_SLU	8.531	SLU 75	Si
PF_SLV	2.713	SLV 13	Si
V_SLV	3.266	SLV 4	Si
PFFP_SLV	2.595	SLV 6	Si
R_SLV	1.053	SLV 11	Si

## Maschio 159

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota l.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-0.133	-3.314	-2.283	-3.314	L6	L7	2.15	0.28	3.52	3.52	3.52			

#### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato Corti

fb	fk	fvk0	fmedio	$\tau_0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

#### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica

									elim,conv / $\epsilon_s$ CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	$\epsilon_s$ ,fd	$\gamma_F$ ,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 64	9.25	1042.56	-12494	-0.0000396	0.0003743	0.0035	2.15	10693.07	11545.23	11545.23	11.07	No	Si
SLU 64	11.05	310.44	-9986	-0.0000275	0.0003743	0.0035	2.15	8986.14	9423.79	9423.79	30.36	No	Si
SLU 46	9.25	1002.41	-11859	-0.0000376	0.0003743	0.0035	2.15	10282.01	10997.94	10997.94	10.97	No	Si
SLU 46	11.05	303.8	-9396	-0.0000259	0.0003743	0.0035	2.15	8552.4	8940.36	8940.36	29.43	No	Si
SLU 45	9.25	996.81	-11802	-0.0000374	0.0003743	0.0035	2.15	10244.31	10949	10949	10.98	No	Si
SLU 45	11.05	317.5	-9362	-0.0000259	0.0003743	0.0035	2.15	8527.14	8912.79	8912.79	28.07	No	Si
SLU 2	9.25	771.35	-9032	-0.0000283	0.0003743	0.0035	2.15	8278.61	8644.86	8644.86	11.21	No	Si
SLU 2	11.05	183.56	-7086	-0.000019	0.0003743	0.0035	2.15	6736.63	7102.44	7102.44	38.69	No	Si
SLU 47	9.25	983.32	-11665	-0.0000369	0.0003743	0.0035	2.15	10153.08	10831.64	10831.64	11.02	No	Si
SLU 47	11.05	282.64	-9197	-0.0000253	0.0003743	0.0035	2.15	8402.95	8778.17	8778.17	31.06	No	Si
SLU 49	9.25	1012.86	-12268	-0.0000388	0.0003743	0.0035	2.15	10548.41	11350.13	11350.13	11.21	No	Si
SLU 49	11.05	362.92	-9841	-0.0000275	0.0003743	0.0035	2.15	8880.26	9303.98	9303.98	25.64	No	Si
SLU 65	9.25	1051.88	-12589	-0.00004	0.0003743	0.0035	2.15	10753.54	11627.61	11627.61	11.05	No	Si
SLU 65	11.05	287.59	-10043	-0.0000275	0.0003743	0.0035	2.15	9026.99	9470.33	9470.33	32.93	No	Si
SLU 43	9.25	963.55	-11161	-0.0000354	0.0003743	0.0035	2.15	9813.11	10404.09	10404.09	10.8	No	Si
SLU 43	11.05	246.36	-8696	-0.0000237	0.0003743	0.0035	2.15	8021.65	8373.91	8373.91	33.99	No	Si
SLU 48	9.25	1007.27	-12211	-0.0000386	0.0003743	0.0035	2.15	10511.52	11300.83	11300.83	11.22	No	Si
SLU 48	11.05	376.63	-9807	-0.0000275	0.0003743	0.0035	2.15	8855.52	9276.16	9276.16	24.63	No	Si
SLU 44	9.25	972.87	-11256	-0.0000357	0.0003743	0.0035	2.15	9878.03	10484.57	10484.57	10.78	No	Si
SLU 44	11.05	223.51	-8752	-0.0000237	0.0003743	0.0035	2.15	8065.05	8419.26	8419.26	37.67	No	Si



## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, $\gamma M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em <sub>-</sub>	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 5	9.25	939.81	1954	0.1332494	0.0005615	0.0035	1.72		0	0	0		No
SLV 5	11.05	681.18	1293	0.0876989	0.0005615	0.0035	1.72		0	0	0		No
SLV 4	9.25	2864.58	-12497	-0.0000519	0.0005615	0.0035	2.15	12018.48	12018.48		4.2		Si
SLV 4	11.05	-3487.25	-6602	-0.0000434	0.0005615	0.0035	2.15	7966.89	7966.89		2.28		Si
SLV 2	9.25	2701.94	-5513	-0.0000336	0.0005615	0.0035	2.15	5893.08	5893.08		2.18		Si
SLV 2	11.05	-2723.3	-1552	-0.0004303	0.0005615	0.0035	1.72	2941.69	2941.69		1.08		Si
SLV 9	9.25	-157.33	1771	0.1267655	0.0005615	0.0035	1.72		0	0	0		No
SLV 9	11.05	2603.48	-563	-0.0122576	0.0005615	0.0035	2.15	857.27	857.27		0.33		No
SLV 14	9.25	-955.21	-6121	-0.0000218	0.0005615	0.0035	2.15	7501.78	7501.78		7.85		Si
SLV 14	11.05	3684.35	-7739	-0.0000465	0.0005615	0.0035	2.15	8027.21	8027.21		2.18		Si
SLV 10	9.25	72.14	2139	0.1518672	0.0005615	0.0035	1.72		0	0	0		No
SLV 10	11.05	2391.15	128	-0.0159153	0.0005615	0.0035	2.15		0	0	0		No
SLV 6	9.25	1169.28	2321	0.1579039	0.0005615	0.0035	1.72		0	0	0		No
SLV 6	11.05	468.86	1984	0.138678	0.0005615	0.0035	1.72		0	0	0		No
SLV 1	9.25	2346.65	-6082	-0.0000314	0.0005615	0.0035	2.15	6445.93	6445.93		2.75		Si
SLV 1	11.05	-2394.56	-2622	-0.0000559	0.0005615	0.0035	1.72	4037.61	4037.61		1.69		Si
SLV 13	9.25	-1310.49	-6689	-0.0000257	0.0005615	0.0035	2.15	8050.13	8050.13		6.14		Si
SLV 13	11.05	4013.08	-8809	-0.0000514	0.0005615	0.0035	2.15	9023.73	9023.73		2.25		Si
SLV 3	9.25	2509.29	-13066	-0.0000509	0.0005615	0.0035	2.15	12478.9	12478.9		4.97		Si
SLV 3	11.05	-3158.51	-7671	-0.0000415	0.0005615	0.0035	2.15	8969.25	8969.25		2.84		Si

## Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 47	9.25	983.32	-11665	-9713	416	2.15	2.15	-16135	9096	5476	40441	18027	5483	23509	No	56.53	Si
SLU 47	11.05	282.64	-9197	-7658	415	2.15	2.15	-12721	8641	5202	40441	18027	5483	23509	No	56.63	Si
SLU 68	9.25	1062.33	-12998	-10823	431	2.15	2.15	-17979	9342	5624	40441	18027	5483	23509	No	54.6	Si
SLU 68	11.05	346.72	-10487	-8733	430	2.15	2.15	-14506	8879	5345	40441	18027	5483	23509	No	54.72	Si
SLU 64	9.25	1042.56	-12494	-10404	438	2.15	2.15	-17282	9249	5568	40441	18027	5483	23509	No	53.69	Si
SLU 64	11.05	310.44	-9986	-8316	437	2.15	2.15	-13813	8786	5289	40441	18027	5483	23509	No	53.77	Si
SLU 66	9.25	1075.82	-13135	-10938	402	2.15	2.15	-18169	9367	5639	40441	18027	5483	23509	No	58.5	Si
SLU 66	11.05	381.58	-10653	-8871	401	2.15	2.15	-14735	8909	5363	40441	18027	5483	23509	No	58.63	Si
SLU 65	9.25	1051.88	-12589	-10483	479	2.15	2.15	-17413	9266	5578	40441	18027	5483	23509	No	49.09	Si
SLU 65	11.05	287.59	-10043	-8363	478	2.15	2.15	-13891	8797	5296	40441	18027	5483	23509	No	49.16	Si
SLU 46	9.25	1002.41	-11859	-9875	412	2.15	2.15	-16404	9132	5497	40441	18027	5483	23509	No	57.09	Si
SLU 46	11.05	303.8	-9396	-7824	411	2.15	2.15	-12997	8677	5224	40441	18027	5483	23509	No	57.19	Si
SLU 45	9.25	996.81	-11802	-9828	387	2.15	2.15	-16325	9121	5491	40441	18027	5483	23509	No	60.72	Si
SLU 45	11.05	317.5	-9362	-7796	386	2.15	2.15	-12950	8671	5220	40441	18027	5483	23509	No	60.83	Si
SLU 67	9.25	1081.42	-13192	-10985	426	2.15	2.15	-18248	9378	5645	40441	18027	5483	23509	No	55.13	Si
SLU 67	11.05	367.88	-10687	-8899	426	2.15	2.15	-14782	8915	5367	40441	18027	5483	23509	No	55.24	Si
SLU 43	9.25	963.55	-11161	-9294	423	2.15	2.15	-15438	9003	5420	40441	18027	5483	23509	No	55.55	Si
SLU 43	11.05	246.36	-8696	-7241	423	2.15	2.15	-12028	8548	5146	40441	18027	5483	23509	No	55.62	Si
SLU 44	9.25	972.87	-11256	-9373	464	2.15	2.15	-15570	9020	5430	40441	18027	5483	23509	No	50.65	Si
SLU 44	11.05	223.51	-8752	-7288	464	2.15	2.15	-12106	8559	5152	40441	18027	5483	23509	No	50.7	Si

## Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 15	9.25	-1147.85	-13673	-11386	-4059	2.15	2.15	-18913	14199	8548	40441	27040	5483	32523		8.01	Si
SLV 15	11.05	3249.13	-13858	-11540	-3190	2.15	2.15	-19169	14251	8579	40441	27040	5483	32523		10.19	Si
SLV 14	9.25	-955.21	-6121	-5097	-5124	2.15	2.15	-8466	12110	7290	40441	27040	5483	32523		6.35	Si
SLV 14	11.05	3684.35	-7739	-6445	-4257	2.15	1.7969	-10705	12558	6318	40441	27040	5483	32523		7.64	Si
SLV 9	9.25	-157.33	1771	1475	-4300	1.72	2.15	0	0	0	40441	21632	4386	26018		6.05	Si
SLV 9	11.05	2603.48	-563	-469	-4043	2.15	0	0	16250	0	40441	27040	5483	32523		8.04	Si
SLV 10	9.25	72.14	2139	1781	-3862	1.72	2.15	0	0	0	40441	21632	4386	26018		6.74	Si
SLV 10	11.05	2391.15	128	106	-3605	2.15	0	0	4874	0	40441	27040	5483	32523		9.02	Si
SLV 2	9.25	2701.94	-5513	-4591	4637	2.15	1.7548	-7626	11942	5867	40441	27040	5483	32523		7.01	Si
SLV 2	11.05	-2723.3	-1552	-1292	3768	1.72	0	0	0	0	40441	21632	4386	26018		6.91	Si
SLV 13	9.25	-1310.49	-6689	-5570	-5802	2.15	2.15	-9253	12267	7385	40441	27040	5483	32523		5.61	Si
SLV 13	11.05	4013.08	-8809	-7335	-4936	2.15	1.8583	-12185	12854	6688	40441	27040	5483	32523		6.59	Si
SLV 8	9.25	1711.42	-20958	-17452	4879	2.15	2.15	-28989	16215	9761	40441	27040	5483	32523		6.67	Si
SLV 8	11.05	-2077.64	-14848	-12364	4621	2.15	2.15	-20538	14524	8744	40441	27040	5483	32523		7.04	Si
SLV 4	9.25	2864.58	-12497	-10406	6381	2.15	2.15	-17286	13874	8352	40441	27040	5483	32523		5.1	Si
SLV 4	11.05	-3487.25	-6602	-5497	5513	2.15	1.6403	-12029	12823	5889	40441	27040	5483	32523		5.9	Si
SLV 3	9.25	2509.29	-13066	-10880	5702	2.15	2.15	-18073	14031	8447	40441	27040	5483	32523		5.7	Si
SLV 3	11.05	-3158.51	-7671	-6388	4834	2.15	1.9898	-11522	12721	7087	40441	27040	5483	32523		6.73	Si
SLV 7	9.25	1481.95	-21325	-17758	4440	2.15	2.15	-29498	16250	9783	40441	27040	5483	32523		7.32	Si
SLV 7	11.05	-1865.32	-15538	-12939	4182	2.15	2.15	-21493	14715	8859	40441	27040	5483	32523		7.78	Si

## Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.11 Wa 0.05 denominatore 8  $\gamma M = 2$

Comb.	fd	Sa	$\sigma 0$	N	M	Mc	Coeff.s.	Verifica
SLV 9	179667	0.46	0	65	261.06	0	0	No, Trazione
SLV 10	179667	0.46	0	624	261.06	0	0	No, Trazione
SLV 6	179667	0.46	0	1936	261.06	0	0	No, Trazione
SLV 5	179667	0.46	0	1377	261.06	0	0	No, Trazione
SLV 2	179667	0.46	5287	-3183	261.06	430.14	1.65	Si
SLV 1	179667	0.46	6724	-4048	261.06	541.78	2.08	Si
SLV 14	179667	0.46	12548	-7554	261.06	970.69	3.72	Si
SLV 13	179667	0.46	13986	-8420	261.06	1070.81	4.1	Si
SLV 4	179667	0.46	14971	-9013	261.06	1138.09	4.36	Si
SLV 3	179667	0.46	16409	-9878	261.06	1234.36	4.73	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:



- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 10.11  $W_a = 0.05$   $T_a = 0.0739$

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	a0*	aLim	Verifica
SLV 11	-14560	-21476	519	0.746	1781.8	0.951	11.40053	14.09547	No
SLV 12	-14007	-20951	519	0.771	1725.6	0.95	11.79279	14.09547	No
SLV 7	-13661	-19467	404	0.794	1690.5	0.949	12.16611	14.09547	No
SLV 8	-13107	-18942	405	0.822	1634.3	0.947	12.61201	14.09547	No
SLV 15	-10618	-16295	328	0.984	1382	0.939	15.22116	7.52414	Si
SLV 16	-9761	-15482	329	1.053	1295.2	0.936	16.3517	7.52414	Si
SLV 3	-7619	-9597	-54	1.31	1079.1	0.926	20.55977	7.52414	Si
SLV 4	-6762	-8784	-53	1.435	992.9	0.921	22.65138	7.52414	Si
SLV 13	-6209	-9721	50	1.531	937.5	0.918	24.24919	7.52414	Si
SLV 14	-5352	-8908	51	1.707	851.9	0.912	27.20918	7.52414	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	10.777	SLV 44	Si
V_SLV	49.092	SLV 65	Si
PF_SLV	0	SLV 5	No
V_SLV	5.097	SLV 4	Si
PFFP_SLV	0	SLV 10	No
R_SLV	0.809	SLV 11	No

## Maschio 160

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.sx	a.s.dx
-2.963	5.826	-5.093	5.826	L6	L7	2.13	0.28	3.52	3.52	3.52			

#### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau_0$	f <sub>v0</sub>	$\mu$	$\phi$	f <sub>v,lim</sub>	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

#### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	t <sub>fv</sub>	t <sub>fo</sub>	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma_F,d$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 49	9.25	581.88	-15732	-0.0000457	0.0003743	0.0035	2.13	12413.37	13616.31	13616.31	23.4	No	Si
SLU 49	11.05	-1225.95	-13294	-0.0000437	0.0003743	0.0035	2.13	11057.94	13208.6	13208.6	10.77	No	Si
SLU 51	9.25	602.57	-15447	-0.000045	0.0003743	0.0035	2.13	12265.64	13435.23	13435.23	22.3	No	Si
SLU 51	11.05	-1213.19	-13008	-0.0000428	0.0003743	0.0035	2.13	10885.82	12989.11	12989.11	10.71	No	Si
SLU 43	9.25	656.62	-14217	-0.000042	0.0003743	0.0035	2.13	11595.7	12665.07	12665.07	19.29	No	Si
SLU 43	11.05	-1230.8	-11779	-0.0000395	0.0003743	0.0035	2.13	10110.69	12056.89	12056.89	9.8	No	Si
SLU 50	9.25	594.02	-15500	-0.0000451	0.0003743	0.0035	2.13	12293.22	13468.7	13468.7	22.67	No	Si
SLU 50	11.05	-1229.17	-13061	-0.0000431	0.0003743	0.0035	2.13	10917.92	13029.83	13029.83	10.6	No	Si
SLU 47	9.25	639.57	-14770	-0.0000434	0.0003743	0.0035	2.13	11903.67	13009.37	13009.37	20.34	No	Si
SLU 47	11.05	-1203.36	-12332	-0.0000409	0.0003743	0.0035	2.13	10465.99	12472.53	12472.53	10.36	No	Si
SLU 1	9.25	497.77	-11349	-0.0000329	0.0003743	0.0035	2.13	9827.43	10457.18	10457.18	21.01	No	Si
SLU 1	11.05	-944.53	-9465	-0.0000311	0.0003743	0.0035	2.13	8508.78	10202.32	10202.32	10.8	No	Si
SLU 46	9.25	613.17	-15090	-0.0000441	0.0003743	0.0035	2.13	12077.05	13210.33	13210.33	21.54	No	Si
SLU 46	11.05	-1226.77	-12652	-0.0000419	0.0003743	0.0035	2.13	10666.76	12715.96	12715.96	10.37	No	Si
SLU 45	9.25	604.62	-15143	-0.0000442	0.0003743	0.0035	2.13	12105.29	13243.58	13243.58	21.9	No	Si
SLU 45	11.05	-1242.74	-12705	-0.0000422	0.0003743	0.0035	2.13	10699.52	12756.29	12756.29	10.26	No	Si
SLU 48	9.25	573.32	-15785	-0.0000458	0.0003743	0.0035	2.13	12440.42	13649.86	13649.86	23.81	No	Si
SLU 48	11.05	-1241.93	-13346	-0.000044	0.0003743	0.0035	2.13	11089.51	13246.68	13246.68	10.67	No	Si
SLU 44	9.25	670.87	-14129	-0.0000419	0.0003743	0.0035	2.13	11545.72	12610.63	12610.63	18.8	No	Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 44	11.05	-1204.17	-11691	-0.0000391	0.0003743	0.0035	2.13	10053.18	11991.07	11991.07	9.96	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche,  $\gamma M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 6	9.25	676.83	-16182	-0.0000465	0.0005615	0.0035	2.13		14890.79	14890.79	22		Si
SLV 6	11.05	-3032.49	-14152	-0.0000584	0.0005615	0.0035	2.13		14556.21	14556.21	4.8		Si
SLV 5	9.25	963.1	-16034	-0.0000482	0.0005615	0.0035	2.13		14767.74	14767.74	15.33		Si
SLV 5	11.05	-3204.74	-14004	-0.0000593	0.0005615	0.0035	2.13		14435.29	14435.29	4.5		Si
SLV 8	9.25	1475.05	-7063	-0.0000282	0.0005615	0.0035	2.13		7310.7	7310.7	4.96		Si
SLV 8	11.05	186.2	-5115	-0.0000141	0.0005615	0.0035	2.13		5445.3	5445.3	29.24		Si
SLV 3	9.25	3270.72	-8752	-0.0000456	0.0005615	0.0035	2.13		8877.48	8877.48	2.71		Si
SLV 3	11.05	-2502.16	-6551	-0.0000342	0.0005615	0.0035	2.13		7844.53	7844.53	3.14		Si
SLV 1	9.25	3031.26	-11488	-0.0000511	0.0005615	0.0035	2.13		11079.03	11079.03	3.65		Si
SLV 1	11.05	-3467.76	-9262	-0.0000484	0.0005615	0.0035	2.13		10343.57	10343.57	2.98		Si
SLD 1	9.25	1573.98	-11868	-0.0000415	0.0005615	0.0035	2.13		11381.6	11381.6	7.23		Si
SLD 1	11.05	-2025.27	-9831	-0.0000394	0.0005615	0.0035	2.13		10851.48	10851.48	5.36		Si
SLV 12	9.25	9.08	-8189	-0.0000206	0.0005615	0.0035	2.13		8361.89	8361.89	921.32		Si
SLV 12	11.05	1336.77	-6433	-0.0000256	0.0005615	0.0035	2.13		6714.87	6714.87	5.02		Si
SLV 7	9.25	1761.32	-6914	-0.0000298	0.0005615	0.0035	2.13		7171.02	7171.02	4.07		Si
SLV 7	11.05	13.94	-4967	-0.0000125	0.0005615	0.0035	2.13		5300.42	5300.42	380.22		Si
SLV 2	9.25	2588.03	-11717	-0.0000485	0.0005615	0.0035	2.13		11261.81	11261.81	4.35		Si
SLV 2	11.05	-3201.06	-9492	-0.000047	0.0005615	0.0035	2.13		10548.12	10548.12	3.3		Si
SLV 4	9.25	2827.5	-8982	-0.0000429	0.0005615	0.0035	2.13		9082.8	9082.8	3.21		Si
SLV 4	11.05	-2235.45	-6781	-0.0000328	0.0005615	0.0035	2.13		8058.22	8058.22	3.6		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	oN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 64	9.25	628.88	-15782	-13142	1004	2.13	2.13	-22036	9883	5894	40441	17859	5431	23290	No	23.2	Si
SLU 64	11.05	-1222.3	-13312	-11085	1004	2.13	2.13	-18587	9423	5620	40441	17859	5431	23290	No	23.2	Si
SLU 45	9.25	604.62	-15143	-12610	1002	2.13	2.13	-21144	9764	5823	40441	17859	5431	23290	No	23.24	Si
SLU 45	11.05	-1242.74	-12705	-10580	1002	2.13	2.13	-17739	9310	5552	40441	17859	5431	23290	No	23.24	Si
SLU 47	9.25	639.57	-14770	-12299	1000	2.13	2.13	-20623	9694	5782	40441	17859	5431	23290	No	23.3	Si
SLU 47	11.05	-1203.36	-12332	-10269	1000	2.13	2.13	-17218	9240	5511	40441	17859	5431	23290	No	23.3	Si
SLU 52	9.25	657.7	-15232	-12684	995	2.13	2.13	-21268	9780	5833	40441	17859	5431	23290	No	23.42	Si
SLU 52	11.05	-1175.79	-12794	-10654	995	2.13	2.13	-17864	9326	5562	40441	17859	5431	23290	No	23.42	Si
SLU 46	9.25	613.17	-15090	-12566	998	2.13	2.13	-21070	9754	5817	40441	17859	5431	23290	No	23.33	Si
SLU 46	11.05	-1226.77	-12652	-10536	998	2.13	2.13	-17666	9300	5546	40441	17859	5431	23290	No	23.33	Si
SLU 50	9.25	594.02	-15500	-12907	989	2.13	2.13	-21641	9830	5863	40441	17859	5431	23290	No	23.55	Si
SLU 50	11.05	-1229.17	-13061	-10876	989	2.13	2.13	-18237	9376	5592	40441	17859	5431	23290	No	23.55	Si
SLU 65	9.25	643.13	-15694	-13069	997	2.13	2.13	-21913	9866	5884	40441	17859	5431	23290	No	23.36	Si
SLU 65	11.05	-1195.67	-13224	-11012	997	2.13	2.13	-18464	9406	5610	40441	17859	5431	23290	No	23.36	Si
SLU 44	9.25	670.87	-14129	-11765	1018	2.13	2.13	-19727	9575	5710	40441	17859	5431	23290	No	22.89	Si
SLU 44	11.05	-1204.17	-11691	-9735	1018	2.13	2.13	-16323	9121	5440	40441	17859	5431	23290	No	22.89	Si
SLU 60	9.25	637.81	-15793	-13151	991	2.13	2.13	-22051	9885	5895	40441	17859	5431	23290	No	23.49	Si
SLU 60	11.05	-1190.25	-13355	-11121	991	2.13	2.13	-18647	9431	5624	40441	17859	5431	23290	No	23.49	Si
SLU 43	9.25	656.62	-14217	-11839	1024	2.13	2.13	-19850	9591	5720	40441	17859	5431	23290	No	22.73	Si
SLU 43	11.05	-1230.8	-11779	-9808	1024	2.13	2.13	-16446	9137	5449	40441	17859	5431	23290	No	22.73	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	oN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 2	9.25	2588.03	-11717	-9757	3331	2.13	2.13	-16360	13689	8164	40441	26788	5431	32219		9.67	Si
SLV 2	11.05	-3201.06	-9492	-7904	2784	2.13	2.13	-13253	13067	7793	40441	26788	5431	32219		11.57	Si
SLV 1	9.25	3031.26	-11488	-9566	3725	2.13	2.13	-16040	13625	8126	40441	26788	5431	32219		8.65	Si
SLV 1	11.05	-3467.76	-9262	-7713	3179	2.13	2.13	-13379	13092	7595	40441	26788	5431	32219		10.14	Si
SLD 3	9.25	1679.24	-10658	-8875	1830	2.13	2.13	-14882	13393	7988	40441	26788	5431	32219		17.61	Si
SLD 3	11.05	-1597.68	-8633	-7189	1609	2.13	2.13	-12053	12827	7650	40441	26788	5431	32219		20.02	Si
SLV 5	9.25	963.1	-16034	-13352	2439	2.13	2.13	-22387	14894	8883	40441	26788	5431	32219		13.21	Si
SLV 5	11.05	-3204.74	-14004	-11661	2230	2.13	2.13	-19552	14327	8545	40441	26788	5431	32219		14.45	Si
SLD 2	9.25	1383.66	-11966	-9965	1868	2.13	2.13	-16708	13758	8205	40441	26788	5431	32219		17.25	Si
SLD 2	11.05	-1910.75	-9930	-8269	1635	2.13	2.13	-13865	13190	7866	40441	26788	5431	32219		19.71	Si
SLV 16	9.25	-2059.08	-12736	-10605	-2185	2.13	2.13	-17782	13973	8333	40441	26788	5431	32219		14.75	Si
SLV 16	11.05	1599.79	-11175	-9306	-1638	2.13	2.13	-15603	13537	8074	40441	26788	5431	32219		19.67	Si
SLV 6	9.25	676.83	-16182	-13475	2184	2.13	2.13	-22595	14936	8908	40441	26788	5431	32219		14.75	Si
SLV 6	11.05	-3032.49	-14152	-11785	1975	2.13	2.13	-19760	14369	8569	40441	26788	5431	32219		16.31	Si
SLD 1	9.25	1573.98	-11868	-9882	2037	2.13	2.13	-16570	13731	8189	40441	26788	5431	32219		15.81	Si
SLD 1	11.05	-2025.27	-9831	-8187	1804	2.13	2.13	-13727	13162	7850	40441	26788	5431	32219		17.86	Si
SLV 4	9.25	2827.5	-8982	-7479	2860	2.13	2.13	-12540	12925	7708	40441	26788	5431	32219		11.26	Si
SLV 4	11.05	-2235.45	-6781	-5646	2343	2.13	2.13	-9468	12310	7342	40441	26788	5431	32219		13.75	Si
SLV 3	9.25	3270.72	-8752	-7288	3255	2.13	2.0738	-12220	12861	7468	40441	26788	5431	32219		9.9	Si
SLV 3	11.05	-2502.16	-6551	-5455	2738	2.13	2.0491	-9548	12326	7072	40441	26788	5431	32219		11.77	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.11 Wa 0.05 denominatore 8  $\gamma M = 2$

Comb.	fd	Sa	o0	N	M	Mc	Coeff.s.	Verifica
SLV 7	179667	0.46	10171	-6066	258.62	792.69	3.07	Si
SLV 8	179667	0.46	10420	-6215	258.62	810.67	3.13	Si
SLV 11	179667	0.46	12223	-7290	258.62	938.9	3.63	Si
SLV 12	179667	0.46	12472	-7438	258.62	956.32	3.7	Si
SLV 3	179667	0.46	13019	-7764	258.62	994.33	3.84	Si
SLV 4	179667	0.46	13404	-7994	258.62	1020.93	3.95	Si
SLV 1	179667	0.46	17569	-10478	258.62	1298.2	5.02	Si
SLV 2	179667	0.46	17955	-10708	258.62	1322.89	5.12	Si
SLV 15	179667	0.46	19858	-11843	258.62	1442.47	5.58	Si





Comb.	fd	Sa	$\alpha_0$	N	M	Mc	Coeff.s.	Verifica
SLV 16	179667	0.46	20244	-12073	258.62	1466.2	5.67	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 10.11  $W_a = 0.05$   $T_a = 0.0739$

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	$\alpha_0^*$	aLim	Verifica
SLV 10	-12509	-17156	-683	0.828	1570.8	0.946	12.72646	14.09547	No
SLV 9	-12199	-17271	-683	0.846	1539.4	0.945	13.00612	14.09547	No
SLV 6	-10438	-17034	-594	0.968	1360.9	0.939	14.98414	14.09547	Si
SLV 5	-10128	-17149	-594	0.992	1329.5	0.938	15.37453	14.09547	Si
SLV 12	-6071	-7944	595	1.477	920.7	0.917	23.41366	14.09547	Si
SLV 14	-12758	-14043	-339	0.839	1596	0.947	12.87159	7.52414	Si
SLV 11	-5761	-8059	595	1.536	889.7	0.915	24.3926	14.09547	Si
SLV 13	-12278	-14220	-339	0.866	1547.3	0.945	13.30733	7.52414	Si
SLV 16	-10826	-11280	44	0.983	1400.2	0.941	15.19106	7.52414	Si
SLV 15	-10346	-11457	44	1.02	1351.6	0.939	15.79324	7.52414	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	9.796	SLU 43	Si
V_SLU	22.734	SLU 43	Si
PF_SLV	2.714	SLV 3	Si
V_SLV	8.649	SLV 1	Si
PFFP_SLV	3.065	SLV 7	Si
R_SLV	0.903	SLV 10	No

## Maschio 161

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.sx	a.s.dx
-0.133	5.826	-2.063	5.826	L6	L7	1.93	0.28	3.52	3.52	3.52			

#### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau_0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

#### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica

									elim,conv / e_CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	εfd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_m$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 39	9.25	358.25	-9212	-0.0000292	0.0003743	0.0035	1.93	7401.51	7778.42	7778.42	21.71	No	Si
SLU 39	11.05	1097.35	-9069	-0.0000355	0.0003743	0.0035	1.93	7309.4	7675	7675	6.99	No	Si
SLU 41	9.25	368.71	-9599	-0.0000305	0.0003743	0.0035	1.93	7647.05	8059.83	8059.83	21.86	No	Si
SLU 41	11.05	1148.63	-9491	-0.0000372	0.0003743	0.0035	1.93	7579.13	7981.14	7981.14	6.95	No	Si
SLU 42	9.25	358.49	-9529	-0.0000302	0.0003743	0.0035	1.93	7602.69	8008.36	8008.36	22.34	No	Si
SLU 42	11.05	1155.06	-9447	-0.0000371	0.0003743	0.0035	1.93	7551.13	7948.89	7948.89	6.88	No	Si
SLU 40	9.25	348.03	-9142	-0.0000289	0.0003743	0.0035	1.93	7356.18	7727.38	7727.38	22.2	No	Si
SLU 40	11.05	1103.78	-9025	-0.0000354	0.0003743	0.0035	1.93	7280.75	7643.05	7643.05	6.92	No	Si
SLU 35	9.25	436.96	-9986	-0.0000323	0.0003743	0.0035	1.93	7887.25	8343.53	8343.53	19.09	No	Si
SLU 35	11.05	1128.18	-9749	-0.0000378	0.0003743	0.0035	1.93	7741.04	8169.81	8169.81	7.24	No	Si
SLU 33	9.25	416.29	-9528	-0.0000307	0.0003743	0.0035	1.93	7602.57	8008.22	8008.22	19.24	No	Si
SLU 33	11.05	1083.32	-9283	-0.000036	0.0003743	0.0035	1.93	7446.87	7829.78	7829.78	7.23	No	Si
SLU 37	9.25	428.51	-9785	-0.0000316	0.0003743	0.0035	1.93	7763.4	8196.17	8196.17	19.13	No	Si
SLU 37	11.05	1097.89	-9523	-0.0000368	0.0003743	0.0035	1.93	7599.39	8004.54	8004.54	7.29	No	Si





Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 38	9.25	418.29	-9715	-0.0000313	0.0003743	0.0035	1.93	7719.49	8144.48	8144.48	19.47	No	Si
SLU 38	11.05	1104.32	-9479	-0.0000368	0.0003743	0.0035	1.93	7571.44	7972.27	7972.27	7.22	No	Si
SLU 34	9.25	401.02	-9281	-0.0000298	0.0003743	0.0035	1.93	7445.5	7828.23	7828.23	19.52	No	Si
SLU 34	11.05	1057.32	-9028	-0.000035	0.0003743	0.0035	1.93	7282.42	7644.92	7644.92	7.23	No	Si
SLU 36	9.25	426.74	-9915	-0.0000319	0.0003743	0.0035	1.93	7843.83	8291.61	8291.61	19.43	No	Si
SLU 36	11.05	1134.61	-9705	-0.0000377	0.0003743	0.0035	1.93	7713.44	8137.38	8137.38	7.17	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche,  $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 8	9.25	344.43	2643	0.2070038	0.0005615	0.0035	1.544		0	0	0	No	No
SLV 8	11.05	1030.83	1201	0.084837	0.0005615	0.0035	1.544		0	0	0	No	No
SLV 11	9.25	-83.94	3049	0.2417375	0.0005615	0.0035	1.544		0	0	0	No	No
SLV 11	11.05	2156.75	431	-0.0172578	0.0005615	0.0035	1.93		0	0	0	No	No
SLV 7	9.25	522.37	2993	0.2335467	0.0005615	0.0035	1.544		0	0	0	No	No
SLV 7	11.05	839.73	1867	0.1414316	0.0005615	0.0035	1.544		0	0	0	No	No
SLV 4	9.25	1294.86	-5188	-0.0000254	0.0005615	0.0035	1.93		4944.51	4944.51	3.82		Si
SLV 4	11.05	-1114.24	-2907	-0.0000176	0.0005615	0.0035	1.93		3758.45	3758.45	3.37		Si
SLV 16	9.25	-726.16	-5003	-0.00002	0.0005615	0.0035	1.93		5612.86	5612.86	7.73		Si
SLV 16	11.05	3275.83	-7696	-0.0000516	0.0005615	0.0035	1.93		7083.01	7083.01	2.16		Si
SLV 12	9.25	-261.88	2698	0.2149595	0.0005615	0.0035	1.544		0	0	0	No	No
SLV 12	11.05	2347.85	-235	-0.0160487	0.0005615	0.0035	1.93		419.69	419.69	0.18		No
SLD 11	9.25	271.21	-3178	-0.000011	0.0005615	0.0035	1.93		3156.33	3156.33	11.64		Si
SLD 11	11.05	1308.32	-3813	-0.0000217	0.0005615	0.0035	1.93		3727.38	3727.38	2.85		Si
SLV 3	9.25	1570.37	-4646	-0.0000263	0.0005615	0.0035	1.93		4469.01	4469.01	2.85		Si
SLV 3	11.05	-1410.12	-1877	-0.0000308	0.0005615	0.0035	1.544		2817.37	2817.37	2		Si
SLV 15	9.25	-450.66	-4460	-0.0000161	0.0005615	0.0035	1.93		5137.68	5137.68	11.4		Si
SLV 15	11.05	2979.95	-6665	-0.0000464	0.0005615	0.0035	1.93		6216.83	6216.83	2.09		Si
SLD 12	9.25	193.47	-3331	-0.0000108	0.0005615	0.0035	1.93		3294.95	3294.95	17.03		Si
SLD 12	11.05	1391.82	-4103	-0.0000232	0.0005615	0.0035	1.93		3987.56	3987.56	2.86		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 84	9.25	566.92	-11582	-9645	-1238	1.93	1.93	-17847	9324	5039	40441	16182	4922	21104	No	17.04	Si
SLU 84	11.05	1224.13	-11019	-9176	-1251	1.93	1.93	-16980	9208	4976	40441	16182	4922	21104	No	16.87	Si
SLU 40	9.25	348.03	-9142	-7613	-1267	1.93	1.93	-14087	8823	4768	40441	16182	4922	21104	No	16.65	Si
SLU 40	11.05	1103.78	-9025	-7515	-1280	1.93	1.93	-13907	8799	4755	40441	16182	4922	21104	No	16.49	Si
SLU 83	9.25	577.14	-11653	-9703	-1221	1.93	1.93	-17956	9339	5047	40441	16182	4922	21104	No	17.29	Si
SLU 83	11.05	1217.7	-11064	-9213	-1223	1.93	1.93	-17048	9217	4981	40441	16182	4922	21104	No	17.26	Si
SLU 41	9.25	368.71	-9599	-7993	-1291	1.93	1.93	-14791	8917	4819	40441	16182	4922	21104	No	16.35	Si
SLU 41	11.05	1148.63	-9491	-7903	-1293	1.93	1.93	-14625	8894	4807	40441	16182	4922	21104	No	16.32	Si
SLU 42	9.25	358.49	-9529	-7935	-1309	1.93	1.93	-14683	8902	4811	40441	16182	4922	21104	No	16.13	Si
SLU 42	11.05	1155.06	-9447	-7867	-1321	1.93	1.93	-14557	8885	4802	40441	16182	4922	21104	No	15.97	Si
SLU 38	9.25	418.29	-9715	-8090	-1165	1.93	1.93	-14969	8940	4831	40441	16182	4922	21104	No	18.12	Si
SLU 38	11.05	1104.32	-9479	-7893	-1177	1.93	1.93	-14606	8892	4805	40441	16182	4922	21104	No	17.92	Si
SLU 81	9.25	566.69	-11266	-9381	-1179	1.93	1.93	-17360	9259	5004	40441	16182	4922	21104	No	17.9	Si
SLU 81	11.05	1166.41	-10642	-8862	-1181	1.93	1.93	-16398	9131	4934	40441	16182	4922	21104	No	17.87	Si
SLU 39	9.25	358.25	-9212	-7671	-1250	1.93	1.93	-14195	8837	4776	40441	16182	4922	21104	No	16.89	Si
SLU 39	11.05	1097.35	-9069	-7552	-1251	1.93	1.93	-13975	8808	4760	40441	16182	4922	21104	No	16.87	Si
SLU 36	9.25	426.74	-9915	-8256	-1190	1.93	1.93	-15278	8982	4854	40441	16182	4922	21104	No	17.73	Si
SLU 36	11.05	1134.61	-9705	-8081	-1203	1.93	1.93	-14954	8938	4830	40441	16182	4922	21104	No	17.54	Si
SLU 82	9.25	556.47	-11195	-9323	-1197	1.93	1.93	-17251	9245	4996	40441	16182	4922	21104	No	17.63	Si
SLU 82	11.05	1172.84	-10597	-8825	-1210	1.93	1.93	-16330	9122	4929	40441	16182	4922	21104	No	17.45	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 16	9.25	-726.16	-5003	-4166	-4872	1.93	1.93	-7709	11958	6462	40441	24273	4922	29195		5.99	Si
SLV 16	11.05	3275.83	-7696	-6408	-4092	1.93	1.618	-11858	12788	5794	40441	24273	4922	29195		7.13	Si
SLV 1	9.25	1820.53	-11220	-9343	3939	1.93	1.93	-17289	13875	7498	40441	24273	4922	29195		7.41	Si
SLV 1	11.05	-1976.64	-6679	-5561	3156	1.93	1.93	-10291	12475	6741	40441	24273	4922	29195		9.25	Si
SLV 5	9.25	1356.25	-18921	-15756	3132	1.93	1.93	-29156	16248	8780	40441	24273	4922	29195		9.32	Si
SLV 5	11.05	-1048.66	-14139	-11774	2932	1.93	1.93	-21787	14774	7984	40441	24273	4922	29195		9.96	Si
SLV 15	9.25	-450.66	-4460	-3714	-4293	1.93	1.93	-6873	11791	6372	40441	24273	4922	29195		6.8	Si
SLV 15	11.05	2979.95	-6665	-5550	-3513	1.93	1.5537	-10270	12471	5425	40441	24273	4922	29195		8.31	Si
SLV 2	9.25	1545.02	-11763	-9795	3360	1.93	1.93	-18125	14042	7588	40441	24273	4922	29195		8.69	Si
SLV 2	11.05	-1680.76	-7709	-6420	2577	1.93	1.93	-11879	12792	6913	40441	24273	4922	29195		11.33	Si
SLV 8	9.25	344.43	2643	2200	-2026	1.544	1.93	0	0	0	40441	19419	3937	23356		11.53	Si
SLV 8	11.05	1030.83	1201	1000	-2305	1.544	0.3209	0	0	0	40441	19419	3937	23356		10.13	Si
SLV 13	9.25	-200.49	-11035	-9189	-2858	1.93	1.93	-17003	13817	7467	40441	24273	4922	29195		10.22	Si
SLV 13	11.05	2413.43	-11467	-9549	-2054	1.93	1.93	-17669	13950	7539	40441	24273	4922	29195		14.22	Si
SLV 14	9.25	-476	-11577	-9640	-3437	1.93	1.93	-17839	13984	7557	40441	24273	4922	29195		8.49	Si
SLV 14	11.05	2709.31	-12497	-10407	-2633	1.93	1.93	-19257	14268	7711	40441	24273	4922	29195		11.09	Si
SLV 12	9.25	-261.88	2698	2247	-4065	1.544	1.93	0	0	0	40441	19419	3937	23356		5.75	Si
SLV 12	11.05	2347.85	-235	-196	-3868	1.93	0	0	0	0	40441	24273	4922	29195		7.55	Si
SLV 11	9.25	-83.94	3049	2539	-3691	1.544	1.93	0	0	0	40441	19419	3937	23356		6.33	Si
SLV 11	11.05	2156.75	431	359	-3494	1.93	0	0	9862	0	40441	24273	4922	29195		8.36	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.11 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 12		179667	0.46	0	582	234.34	0	No, Trazione
SLV 11		179667	0.46	0	1120	234.34	0	No, Trazione
SLV 7		179667	0.46	0	2165	234.34	0	No, Trazione
SLV 8		179667	0.46	0	1627	234.34	0	No, Trazione



Comb.	fd	Sa	$\alpha 0$	N	M	Mc	Coeff.s.	Verifica
SLV 3	179667	0.46	5396	-2916	234.34	393.81	1.68	Si
SLV 4	179667	0.46	6936	-3748	234.34	500.94	2.14	Si
SLV 15	179667	0.46	11843	-6400	234.34	826.52	3.53	Si
SLV 16	179667	0.46	13383	-7232	234.34	923.81	3.94	Si
SLV 1	179667	0.46	15623	-8443	234.34	1061.06	4.53	Si
SLV 2	179667	0.46	17163	-9275	234.34	1152.57	4.92	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 10.11  $W_a = 0.05$   $T_a = 0.0739$

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 10	-13227	-18574	-437	0.741	1615.4	0.952	11.3122	14.09547	No
SLV 9	-12716	-18116	-437	0.766	1563.5	0.95	11.70772	14.09547	No
SLV 6	-12531	-17220	-210	0.791	1544.7	0.95	12.10336	14.09547	No
SLV 5	-12020	-16761	-210	0.819	1492.9	0.948	12.55019	14.09547	No
SLV 14	-9413	-13293	-474	0.978	1228.5	0.939	15.13609	7.52414	Si
SLV 13	-8622	-12583	-474	1.049	1148.6	0.935	16.30651	7.52414	Si
SLV 2	-7093	-8778	283	1.247	994.2	0.927	19.53571	7.52414	Si
SLV 1	-6303	-8068	283	1.366	914.7	0.923	21.51453	7.52414	Si
SLV 16	-5328	-7303	-278	1.55	816.9	0.916	24.59841	7.52414	Si
SLV 15	-4537	-6593	-279	1.741	738.1	0.91	27.81534	7.52414	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	6.882	SLV 42	Si
V_SLV	15.973	SLV 42	Si
PF_SLV	0	SLV 7	No
V_SLV	5.745	SLV 12	Si
PFFP_SLV	0	SLV 12	No
R_SLV	0.803	SLV 10	No

## Maschio 162

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-0.133	-3.314	-0.133	5.826	L6	L7	9.14	0.28	3.52	3.52	3.52			

#### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau 0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

#### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma_m = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	$\epsilon m_{-}$	$\epsilon m_u$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 84	8.35	-5126.47	-68267	-0.0000439	0.0003743	0.0035	9.14	230240.01	278323.94	278323.94	54.29	No	Si
SLU 84	11.87	-357.95	-38525	-0.000023	0.0003743	0.0035	9.14	150028.56	181617.11	181617.11	507.39	No	Si
SLU 73	8.35	-4964.51	-64352	-0.0000412	0.0003743	0.0035	9.14	221454.79	266724.84	266724.84	53.73	No	Si
SLU 73	11.87	-518.78	-35840	-0.0000214	0.0003743	0.0035	9.14	141258.03	172127.56	172127.56	331.79	No	Si
SLU 40	8.35	-5085.52	-56041	-0.0000359	0.0003743	0.0035	9.14	201021.89	241076.98	241076.98	47.4	No	Si
SLU 40	11.87	-621.62	-31075	-0.0000186	0.0003743	0.0035	9.14	125075.17	154134.9	154134.9	247.96	No	Si
SLU 42	8.35	-5010.41	-57729	-0.000037	0.0003743	0.0035	9.14	205368.58	246370.06	246370.06	49.17	No	Si
SLU 42	11.87	-513.71	-32699	-0.0000195	0.0003743	0.0035	9.14	130679.89	160218.54	160218.54	311.88	No	Si
SLU 33	8.35	-4543.38	-56416	-0.0000359	0.0003743	0.0035	9.14	201995.84	242256.13	242256.13	53.32	No	Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 33	11.87	-392.46	-32356	-0.0000193	0.0003743	0.0035	9.14	129505.91	158930.47	158930.47	404.96	No	Si
SLU 39	8.35	-4647.61	-56029	-0.0000357	0.0003743	0.0035	9.14	200993	241042.06	241042.06	51.86	No	Si
SLU 39	11.87	-337.58	-31071	-0.0000185	0.0003743	0.0035	9.14	125062.7	154121.59	154121.59	456.55	No	Si
SLU 41	8.35	-4572.5	-57718	-0.0000368	0.0003743	0.0035	9.14	205340.35	246335.41	246335.41	53.87	No	Si
SLU 41	11.87	-229.67	-32695	-0.0000194	0.0003743	0.0035	9.14	130667.63	160205.05	160205.05	697.55	No	Si
SLU 31	8.35	-4848.45	-53814	-0.0000344	0.0003743	0.0035	9.14	195136.06	233905.52	233905.52	48.24	No	Si
SLU 31	11.87	-674.55	-30013	-0.0000179	0.0003743	0.0035	9.14	121360.43	150204.85	150204.85	222.67	No	Si
SLU 82	8.35	-5201.58	-66579	-0.0000428	0.0003743	0.0035	9.14	226517.45	273426.34	273426.34	52.57	No	Si
SLU 82	11.87	-465.85	-36901	-0.0000221	0.0003743	0.0035	9.14	144755.74	175870.84	175870.84	377.52	No	Si
SLU 34	8.35	-4773.34	-55502	-0.0000354	0.0003743	0.0035	9.14	199614.63	239356.95	239356.95	50.14	No	Si
SLU 34	11.87	-566.64	-31637	-0.0000189	0.0003743	0.0035	9.14	127025.64	156232.78	156232.78	275.72	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche,  $\gamma M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 9	8.35	80738.69	-49440	-0.0000613	0.0005615	0.0035	9.14		205124.14	205124.14	2.54		Si
SLV 9	11.87	53464.41	-26294	-0.0000371	0.0005615	0.0035	9.14		117727.13	117727.13	2.2		Si
SLV 11	8.35	-91144.74	-48968	-0.000066	0.0005615	0.0035	9.14		226925.33	226925.33	2.49		Si
SLV 11	11.87	-55419.96	-24998	-0.000038	0.0005615	0.0035	9.14		132903.26	132903.26	2.4		Si
SLV 6	8.35	86335.86	-42205	-0.0000609	0.0005615	0.0035	9.14		180911.96	180911.96	2.1		Si
SLV 6	11.87	55740.48	-26068	-0.0000384	0.0005615	0.0035	9.14		116790.76	116790.76	2.1		Si
SLD 6	8.35	36793.88	-44137	-0.0000404	0.0005615	0.0035	9.14		187439.47	187439.47	5.09		Si
SLD 6	11.87	24722.88	-25768	-0.0000245	0.0005615	0.0035	9.14		115551.52	115551.52	4.67		Si
SLV 5	8.35	83276.12	-42168	-0.0000591	0.0005615	0.0035	9.14		180779.39	180779.39	2.17		Si
SLV 5	11.87	52334.22	-26078	-0.0000364	0.0005615	0.0035	9.14		116833.44	116833.44	2.23		Si
SLV 12	8.35	-88085.01	-49006	-0.0000645	0.0005615	0.0035	9.14		227060.27	227060.27	2.58		Si
SLV 12	11.87	-52013.7	-24987	-0.0000359	0.0005615	0.0035	9.14		132860.26	132860.26	2.55		Si
SLD 10	8.35	35710.93	-47252	-0.0000419	0.0005615	0.0035	9.14		197801.25	197801.25	5.54		Si
SLD 10	11.87	25205.88	-25863	-0.0000247	0.0005615	0.0035	9.14		115942.91	115942.91	4.6		Si
SLV 8	8.35	-85547.58	-41734	-0.0000603	0.0005615	0.0035	9.14		199402.63	199402.63	2.33		Si
SLV 8	11.87	-53143.89	-24771	-0.0000365	0.0005615	0.0035	9.14		131961.11	131961.11	2.48		Si
SLV 7	8.35	-88607.31	-41697	-0.0000622	0.0005615	0.0035	9.14		199260.37	199260.37	2.25		Si
SLV 7	11.87	-56550.14	-24782	-0.0000388	0.0005615	0.0035	9.14		132004.05	132004.05	2.33		Si
SLV 10	8.35	83798.42	-49477	-0.0000627	0.0005615	0.0035	9.14		205249.5	205249.5	2.45		Si
SLV 10	11.87	56870.66	-26284	-0.0000391	0.0005615	0.0035	9.14		117684.42	117684.42	2.07		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 82	8.35	-5201.58	-66579	-55441	-4538	9.14	9.14	-21663	9833	25164	40441	76634	23307	65605	No	14.46	Si
SLU 82	11.87	-465.85	-36901	-30728	-4469	9.14	9.14	-12007	8545	21869	40441	76634	23307	62310	No	13.94	Si
SLU 41	8.35	-4572.5	-57718	-48062	-4195	9.14	9.14	-18780	9448	24181	40441	76634	23307	64622	No	15.4	Si
SLU 41	11.87	-229.67	-32695	-27226	-4193	9.14	9.14	-10638	8363	21402	40441	76634	23307	61843	No	14.75	Si
SLU 73	8.35	-4964.51	-64352	-53587	-4288	9.14	9.14	-20939	9736	24917	40441	76634	23307	65358	No	15.24	Si
SLU 73	11.87	-518.78	-35840	-29844	-4175	9.14	9.14	-11662	8499	21751	40441	76634	23307	62192	No	14.9	Si
SLU 81	8.35	-4763.67	-66568	-55432	-4351	9.14	9.14	-21660	9832	25163	40441	76634	23307	65604	No	15.08	Si
SLU 81	11.87	-181.81	-36898	-30725	-4349	9.14	9.14	-12006	8545	21869	40441	76634	23307	62310	No	14.33	Si
SLU 76	8.35	-4889.4	-66040	-54993	-4298	9.14	9.14	-21488	9810	25105	40441	76634	23307	65546	No	15.25	Si
SLU 76	11.87	-410.87	-37464	-31196	-4184	9.14	9.14	-12190	8570	21932	40441	76634	23307	62373	No	14.91	Si
SLU 39	8.35	-4647.61	-56029	-46657	-4186	9.14	9.14	-18231	9375	23993	40441	76634	23307	64434	No	15.39	Si
SLU 39	11.87	-337.58	-31071	-25873	-4184	9.14	9.14	-10110	8292	21222	40441	76634	23307	61663	No	14.74	Si
SLU 83	8.35	-4688.56	-68256	-56838	-4360	9.14	9.14	-22209	9906	25351	40441	76634	23307	65792	No	15.09	Si
SLU 83	11.87	-73.9	-38522	-32078	-4358	9.14	9.14	-12534	8616	22049	40441	76634	23307	62490	No	14.34	Si
SLU 40	8.35	-5085.52	-56041	-46666	-4373	9.14	9.14	-18235	9376	23994	40441	76634	23307	64435	No	14.73	Si
SLU 40	11.87	-621.62	-31775	-25876	-4305	9.14	9.14	-10111	8293	21222	40441	76634	23307	61663	No	14.32	Si
SLU 42	8.35	-5010.41	-57729	-48072	-4383	9.14	9.14	-18784	9449	24182	40441	76634	23307	64623	No	14.75	Si
SLU 42	11.87	-513.71	-32699	-27229	-4314	9.14	9.14	-10640	8363	21403	40441	76634	23307	61844	No	14.34	Si
SLU 84	8.35	-5126.47	-68267	-56847	-4548	9.14	9.14	-22213	9906	25352	40441	76634	23307	65793	No	14.47	Si
SLU 84	11.87	-357.95	-38525	-32081	-4479	9.14	9.14	-12535	8616	22050	40441	76634	23307	62491	No	13.95	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 7	8.35	-88607.31	-41697	-34721	-21299	9.14	7.3349	-17043	13826	28394	40441	114951	23307	68835		3.23	Si
SLV 7	11.87	-56550.14	-24782	-20636	-28921	9.14	6.8642	-10789	12575	24168	40441	114951	23307	64609		2.23	Si
SLV 12	8.35	-88085.01	-49006	-40808	-22379	9.14	8.3177	-17655	13948	32484	40441	114951	23307	72925		3.26	Si
SLV 12	11.87	-52013.7	-24987	-20807	-29811	9.14	7.4652	-9999	12416	25954	40441	114951	23307	66395		2.23	Si
SLV 9	8.35	80738.69	-49440	-41169	17985	9.14	8.8108	-16087	13634	33635	40441	114951	23307	74076		4.12	Si
SLV 9	11.87	53464.41	-26294	-21895	25608	9.14	7.61	-8556	12128	25842	40441	114951	23307	66283		2.59	Si
SLV 8	8.35	-85547.58	-41734	-34752	-22766	9.14	7.5605	-16548	13726	29058	40441	114951	23307	69499		3.05	Si
SLV 8	11.87	-53143.89	-24771	-20628	-30387	9.14	7.2739	-10173	12451	25359	40441	114951	23307	65800		2.17	Si
SLV 10	8.35	83798.42	-49477	-41200	16518	9.14	8.629	-16099	13636	32947	40441	114951	23307	73388		4.44	Si
SLV 10	11.87	56870.66	-26284	-21887	24142	9.14	7.2188	-8552	12127	24512	40441	114951	23307	64953		2.69	Si
SLV 5	8.35	83276.12	-42168	-35114	17598	9.14	7.7854	-13721	13161	28689	40441	114951	23307	69130		3.93	Si
SLV 5	11.87	52334.22	-26078	-21716	25032	9.14	7.6895	-8485	12114	26082	40441	114951	23307	66523		2.66	Si
SLV 6	8.35	86335.86	-42205	-35145	16131	9.14	7.5732	-13733	13163	27912	40441	114951	23307	68353		4.24	Si
SLV 6	11.87	55740.48	-26068	-21707	23566	9.14	7.2951	-8482	12113	24743	40441	114951	23307	65184		2.77	Si
SLV 11	8.35	-91144.74	-48968	-40777	-20912	9.14	8.1261	-18047	14026	31914	40441	114951	23307	72355		3.46	Si
SLV 11	11.87	-55419.96	-24998	-20816	-28345	9.14	7.059	-10577	12532	24770	40441	114951	23307	65211		2.3	Si
SLD 8	8.35	-39182.96	-43938	-36588	-11390	9.14	9.14	-14297	13276	33976	40441	114951	23307	74417		6.53	Si
SLD 8	11.87	-23397.11	-25198	-20983	-14766	9.14	9.14	-8199	12056	30855	40441	114951	23307	71296		4.83	Si
SLD 12	8.35	-40265.92	-47053	-39181	-11226	9.14	9.14	-15310	13479	34495	40441	114951	23307	74936		6.68	Si
SLD 12	11.87	-22914.1	-25293	-21062	-14520	9.14	9.14	-8230	12063	30871	40441	114951	23307	71312		4.91	Si



Comb.	fd	Sa	$\alpha 0$	N	M	Mc	Coeff.s.	Verifica
SLV 3	179667	0.46	11767	-30114	1109.78	3891.09	3.51	Si
SLV 4	179667	0.46	11773	-30129	1109.78	3892.9	3.51	Si
SLV 1	179667	0.46	11944	-30568	1109.78	3944.81	3.55	Si
SLV 2	179667	0.46	11950	-30583	1109.78	3946.62	3.56	Si
SLV 7	179667	0.46	12861	-32914	1109.78	4219.85	3.8	Si
SLV 8	179667	0.46	12865	-32923	1109.78	4221	3.8	Si
SLV 5	179667	0.46	13453	-34428	1109.78	4395.33	3.96	Si
SLV 6	179667	0.46	13456	-34438	1109.78	4396.47	3.96	Si
SLV 11	179667	0.46	13975	-35765	1109.78	4548.94	4.1	Si
SLV 12	179667	0.46	13979	-35775	1109.78	4550.08	4.1	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzaria = 10.11  $W_a = 0.05$   $T_a = 0.0739$

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	$\alpha 0^*$	aLim	Verifica
SLV 9	-26294	-49440	1150	1.508	3975.2	0.917	23.89118	14.09547	Si
SLV 10	-26284	-49477	1150	1.509	3974.2	0.917	23.8986	14.09547	Si
SLV 5	-26078	-42168	-926	1.524	3953.6	0.917	24.15099	14.09547	Si
SLV 6	-26068	-42205	-926	1.524	3952.6	0.917	24.15848	14.09547	Si
SLV 11	-24998	-48968	943	1.572	3845.5	0.915	24.95594	14.09547	Si
SLV 12	-24987	-49006	943	1.572	3844.5	0.915	24.964	14.09547	Si
SLV 7	-24782	-41697	-1133	1.576	3824	0.915	25.03349	14.09547	Si
SLV 8	-24771	-41734	-1133	1.577	3822.9	0.915	25.04157	14.09547	Si
SLV 13	-26095	-57748	3499	1.448	3955.3	0.917	22.94593	7.52414	Si
SLV 14	-26079	-57806	3499	1.449	3953.7	0.917	22.95702	7.52414	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	47.405	SLU 40	Si
V_SLU	13.941	SLU 82	Si
PF_SLV	2.069	SLV 10	Si
V_SLV	2.165	SLV 8	Si
PFFP_SLV	3.506	SLV 3	Si
R_SLV	1.695	SLV 9	Si

## Maschio 163

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-24.633	-3.314	-24.633	5.826	L7	L8	9.141	0.28	3.16	3.16	3.16			

#### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau 0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

#### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	at	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche,  $\gamma M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_m$ _	$\epsilon_m$ u	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 23	11.87	-2899.99	-25592	-0.0000161	0.0003743	0.0035	9.1407	105478.43	133053.51	133053.51	45.88	No	Si
SLU 23	15.03	362.8	-4860	-0.0000029	0.0003743	0.0035	9.1407	21795.76	25825.25	25825.25	71.18	No	Si
SLU 19	11.87	-2866.12	-25393	-0.000016	0.0003743	0.0035	9.1407	104745.55	132270.36	132270.36	46.15	No	Si
SLU 19	15.03	384.08	-4072	-0.0000025	0.0003743	0.0035	9.1407	18319.29	22324.94	22324.94	58.13	No	Si
SLU 10	11.87	-2988.16	-24524	-0.0000155	0.0003743	0.0035	9.1407	101532.85	128872.68	128872.68	43.13	No	Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 10	15.03	338.95	-3986	-0.0000024	0.0003743	0.0035	9.1407	17940.64	21944.4	21944.4	64.74	No	Si
SLU 40	11.87	-3481.05	-28485	-0.0000181	0.0003743	0.0035	9.1407	115953.33	144477.73	144477.73	41.5	No	Si
SLU 40	15.03	530.92	-5120	-0.0000032	0.0003743	0.0035	9.1407	22941.2	26975.94	26975.94	50.81	No	Si
SLU 42	11.87	-3136.86	-30051	-0.0000189	0.0003743	0.0035	9.1407	121505.19	150357.66	150357.66	47.93	No	Si
SLU 42	15.03	454.87	-6557	-0.000004	0.0003743	0.0035	9.1407	29212.71	33265.32	33265.32	73.13	No	Si
SLU 73	11.87	-3760.24	-33307	-0.0000212	0.0003743	0.0035	9.1407	132768.38	162527.98	162527.98	43.22	No	Si
SLU 73	15.03	494.55	-5827	-0.0000035	0.0003743	0.0035	9.1407	26033.77	30078.72	30078.72	60.82	No	Si
SLU 52	11.87	-3145.31	-30216	-0.000019	0.0003743	0.0035	9.1407	122083.62	150965.52	150965.52	48	No	Si
SLU 52	15.03	347.7	-4778	-0.0000029	0.0003743	0.0035	9.1407	21437.84	25464.29	25464.29	73.24	No	Si
SLU 34	11.87	-3258.9	-29182	-0.0000185	0.0003743	0.0035	9.1407	118434.57	147157.83	147157.83	45.16	No	Si
SLU 34	15.03	409.75	-6471	-0.0000039	0.0003743	0.0035	9.1407	28841.51	32891.54	32891.54	80.27	No	Si
SLU 82	11.87	-3638.2	-34177	-0.0000216	0.0003743	0.0035	9.1407	135713.16	165824.07	165824.07	45.58	No	Si
SLU 82	15.03	539.67	-5912	-0.0000036	0.0003743	0.0035	9.1407	26406.91	30451.07	30451.07	56.42	No	Si
SLU 31	11.87	-3603.09	-27615	-0.0000176	0.0003743	0.0035	9.1407	112834.92	141053.45	141053.45	39.15	No	Si
SLU 31	15.03	485.8	-5035	-0.0000031	0.0003743	0.0035	9.1407	22565.68	26600.04	26600.04	54.76	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche,  $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 11	11.87	-59536.66	-23328	-0.0000414	0.0005615	0.0035	7.3126		125975.32	125975.32	2.12		Si
SLV 11	15.03	7771.22	-3004	-0.0000053	0.0005615	0.0035	9.1407		17618.32	17618.32	2.27		Si
SLV 5	11.87	59428.12	-24556	-0.000041	0.0005615	0.0035	9.1407		110559.8	110559.8	1.86		Si
SLV 5	15.03	-7455.99	-5360	-0.0000059	0.0005615	0.0035	9.1407		49429.01	49429.01	6.63		Si
SLV 6	11.87	56330.25	-24610	-0.0000386	0.0005615	0.0035	9.1407		110780.9	110780.9	1.97		Si
SLV 6	15.03	-7223.03	-5370	-0.0000058	0.0005615	0.0035	9.1407		49471.9	49471.9	6.85		Si
SLV 12	11.87	-62634.53	-23381	-0.0000444	0.0005615	0.0035	7.3126		126197.79	126197.79	2.01		Si
SLV 12	15.03	8004.17	-3014	-0.0000055	0.0005615	0.0035	9.1407		17662.04	17662.04	2.21		Si
SLV 8	11.87	-63084.58	-24320	-0.0000442	0.0005615	0.0035	7.3126		130094.42	130094.42	2.06		Si
SLV 8	15.03	6519.48	-5145	-0.0000054	0.0005615	0.0035	9.1407		27168.19	27168.19	4.17		Si
SLV 15	11.87	-16367.14	-22319	-0.0000192	0.0005615	0.0035	9.1407		121802.99	121802.99	7.44		Si
SLV 15	15.03	4629.62	-593	-0.00002704	0.0005615	0.0035	9.1407		6763.97	6763.97	1.46		Si
SLV 9	11.87	59878.17	-23617	-0.0000416	0.0005615	0.0035	9.1407		106690.16	106690.16	1.78		Si
SLV 9	15.03	-5971.29	-3229	-0.0000041	0.0005615	0.0035	9.1407		40008.3	40008.3	6.7		Si
SLV 7	11.87	-59986.71	-24267	-0.0000415	0.0005615	0.0035	9.1407		129871.36	129871.36	2.17		Si
SLV 7	15.03	6286.52	-5135	-0.0000053	0.0005615	0.0035	9.1407		27124.9	27124.9	4.31		Si
SLV 16	11.87	-21163.55	-22402	-0.0000211	0.0005615	0.0035	9.1407		122146.12	122146.12	5.77		Si
SLV 16	15.03	4990.3	-609	-0.0000314	0.0005615	0.0035	9.1407		6832.33	6832.33	1.37		Si
SLV 10	11.87	56780.3	-23671	-0.000039	0.0005615	0.0035	9.1407		106912.84	106912.84	1.88		Si
SLV 10	15.03	-5738.34	-3239	-0.000004	0.0005615	0.0035	9.1407		40051.52	40051.52	6.98		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 34	11.87	-3258.9	-29182	-24300	-2129	9.1407	9.1407	-9494	8210	21014	35683	76640	23309	56697	No	26.64	Si
SLU 34	15.03	409.75	-6471	-5389	-1993	9.1407	9.1407	-2105	7225	18492	35683	76640	23309	54175	No	27.18	Si
SLU 76	11.87	-3416.05	-34874	-29040	-1847	9.1407	9.1407	-11346	8457	21646	35683	76640	23309	57329	No	31.04	Si
SLU 76	15.03	418.5	-7263	-6048	-1712	9.1407	9.1407	-2363	7260	18580	35683	76640	23309	54263	No	31.7	Si
SLU 39	11.87	-2845.99	-28489	-23723	-1809	9.1407	9.1407	-9269	8180	20937	35683	76640	23309	56620	No	31.3	Si
SLU 39	15.03	519.55	-5136	-4277	-1809	9.1407	9.1407	-1671	7167	18344	35683	76640	23309	54027	No	29.87	Si
SLU 33	11.87	-2958.69	-29813	-24826	-1908	9.1407	9.1407	-9700	8238	21084	35683	76640	23309	56767	No	29.76	Si
SLU 33	15.03	426.77	-6411	-5338	-1826	9.1407	9.1407	-2086	7223	18485	35683	76640	23309	54169	No	29.66	Si
SLU 42	11.87	-3136.86	-30051	-25024	-2052	9.1407	9.1407	-9777	8248	21110	35683	76640	23309	56793	No	27.68	Si
SLU 42	15.03	454.87	-6557	-5460	-1970	9.1407	9.1407	-2133	7229	18502	35683	76640	23309	54185	No	27.5	Si
SLU 73	11.87	-3760.24	-33307	-27736	-2171	9.1407	9.1407	-10837	8389	21472	35683	76640	23309	57155	No	26.33	Si
SLU 73	15.03	494.55	-5827	-4852	-2034	9.1407	9.1407	-1896	7197	18420	35683	76640	23309	54104	No	26.59	Si
SLU 84	11.87	-3294.01	-35744	-29764	-1770	9.1407	9.1407	-11629	8495	21742	35683	76640	23309	57425	No	32.44	Si
SLU 84	15.03	463.62	-7349	-6119	-1689	9.1407	9.1407	-2391	7263	18589	35683	76640	23309	54273	No	32.13	Si
SLU 31	11.87	-3603.09	-27615	-22995	-2452	9.1407	9.1407	-8985	8142	20840	35683	76640	23309	56523	No	23.05	Si
SLU 31	15.03	485.8	-5035	-4192	-2316	9.1407	9.1407	-1638	7163	18333	35683	76640	23309	54016	No	23.32	Si
SLU 82	11.87	-3638.2	-34177	-28460	-2094	9.1407	9.1407	-11120	8427	21568	35683	76640	23309	57251	No	27.34	Si
SLU 82	15.03	539.67	-5912	-4923	-2012	9.1407	9.1407	-1924	7201	18430	35683	76640	23309	54113	No	26.9	Si
SLU 40	11.87	-3481.05	-28485	-23719	-2375	9.1407	9.1407	-9268	8180	20936	35683	76640	23309	56619	No	23.84	Si
SLU 40	15.03	530.92	-5120	-4264	-2293	9.1407	9.1407	-1666	7167	18342	35683	76640	23309	54025	No	23.56	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	oN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 11	11.87	-59536.66	-23328	-19425	-45695	7.3126	6.0545	0	0	0	35683	91968	18647	35683		0.78	No
SLV 11	15.03	7771.22	-3004	-2501	-48631	9.1407	5.9501	-977	10612	17680	35683	114959	23309	53363		1.1	Si
SLV 9	11.87	59878.17	-23617	-19667	47020	9.1407	6.105	-7684	11953	20433	35683	114959	23309	56117		1.19	Si
SLV 9	15.03	-5971.29	-3229	-2689	49639	9.1407	8.163	-1176	10652	24346	35683	114959	23309	60029		1.21	Si
SLV 8	11.87	-63084.58	-24320	-20252	-47872	7.3126	5.9293	0	0	0	35683	91968	18647	35683		0.75	No
SLV 8	15.03	6519.48	-5145	-4284	-50490	9.1407	9.1407	-1674	10751	27517	35683	114959	23309	63200		1.25	Si
SLV 10	11.87	56780.3	-23671	-19711	44940	9.1407	6.5149	-7702	11957	21811	35683	114959	23309	57495		1.28	Si
SLV 10	15.03	-5738.34	-3239	-2697	47559	9.1407	8.3955	-1147	10646	25026	35683	114959	23309	60709		1.28	Si
SLV 16	11.87	-21163.55	-22402	-18655	-15783	9.1407	9.1407	-7289	11874	30391	35683	114959	23309	66074		4.19	Si
SLV 16	15.03	4990.3	-609	-507	-17146	9.1407	0	0	16250	0	35683	114959	23309	35683		2.08	Si
SLV 12	11.87	-62634.53	-23381	-19470	-47775	7.3126	5.6746	0	0	0	35683	91968	18647	35683		0.75	No
SLV 12	15.03	8004.17	-3014	-2510	-50712	9.1407	5.7433	-981	10613	17067	35683	114959	23309	52750		1.04	Si
SLV 5	11.87	59428.12	-24556	-20448	46924	9.1407	6.4508	-7989	12015	21701	35683	114959	23309	57384		1.22	Si
SLV 5	15.03	-7455.99	-5360	-4464	49861	9.1407	9.1407	-1744	10765	27553	35683	114959	23309	63236		1.27	Si
SLV 15	11.87	-16367.14	-22319	-18585	-12562	9.1407	9.1407	-7262	11869	30377	35683	114959	23309	66061		5.26	Si
SLV 15	15.03	4629.62	-593	-494	-13925	9.1407	0	0	16250	0	35683	114959	23309	35683		2.56	Si
SLV 7	11.87	-59986.71	-24267	-20207	-45791	9.1407	6.2951	-11521	12721	22423	35683	114959	23309	58106		1.27	Si
SLV 7	15.03	6286.52	-5135	-4276	-48409	9.1407	9.1407	-1671	10751	27516	35683	114959	23309	63199		1.31	Si
SLV 6	11.87	56330.25	-24610	-20493	44843	9.1407	6.8442	-8007	12018	23031	35683	114959	23309	58714		1.31	Si
SLV 6	15.03	-7723.03	-5370	-4472	47781	9.1407	9.1407	-1747	10766	27555	35683	114959	23309	63238		1.32	Si



## Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.45 Wa 0.05 denominatore 8  $\gamma M = 2$

Comb.	fd	Sa	$\alpha 0$	N	M	Mc	Coeff.s.	Verifica
SLV 15	179667	0.53	5362	-13724	1031.56	1853.88	1.8	Si
SLV 16	179667	0.53	5380	-13770	1031.56	1859.94	1.8	Si
SLV 11	179667	0.53	5411	-13848	1031.56	1870	1.81	Si
SLV 13	179667	0.53	5414	-13857	1031.56	1871.22	1.81	Si
SLV 12	179667	0.53	5422	-13878	1031.56	1873.91	1.82	Si
SLV 14	179667	0.53	5432	-13904	1031.56	1877.28	1.82	Si
SLV 7	179667	0.53	5501	-14080	1031.56	1900.21	1.84	Si
SLV 8	179667	0.53	5513	-14110	1031.56	1904.11	1.85	Si
SLV 9	179667	0.53	5584	-14292	1031.56	1927.72	1.87	Si
SLV 10	179667	0.53	5596	-14322	1031.56	1931.62	1.87	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

## Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.45 Wa = 0.05 Ta = 0.0596

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	$\alpha 0^*$	aLim	Verifica
SLV 6	-5370	-24610	-1485	4.011	1810.3	0.891	65.42196	12.19367	Si
SLV 5	-5360	-24556	-1485	4.015	1809.4	0.891	65.47007	12.19367	Si
SLV 8	-5145	-24320	-1439	4.087	1791.2	0.892	66.60359	12.19367	Si
SLV 7	-5135	-24267	-1439	4.09	1790.3	0.892	66.65315	12.19367	Si
SLV 10	-3239	-23671	1474	4.817	1639.4	0.904	77.45916	12.19367	Si
SLV 9	-3229	-23617	1474	4.821	1638.7	0.904	77.52151	12.19367	Si
SLV 12	-3014	-23381	1519	4.916	1623.1	0.906	78.84881	12.19367	Si
SLV 11	-3004	-23328	1520	4.921	1622.4	0.906	78.91274	12.19367	Si
SLV 2	-7781	-25618	-4921	3.148	2024.3	0.889	51.46874	7.3	Si
SLV 1	-7765	-25535	-4921	3.151	2023	0.889	51.52024	7.3	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

## Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	39.148	SLV 31	Si
V_SLV	23.05	SLV 31	Si
PF_SLV	1.369	SLV 16	Si
V_SLV	0.745	SLV 8	No
PFFP_SLV	1.797	SLV 15	Si
R_SLV	5.365	SLV 6	Si

## Maschio 164

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-22.713	5.826	-24.633	5.826	L7	L8	1.92	0.28	3.16	3.16	3.16			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau 0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

## Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma F_d$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon m$	$\epsilon m_{-}$	$\epsilon m_u$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 29	12.77	-457.56	-4872	-0.0000176	0.0003743	0.0035	1.92	4260.97	5391.72	5391.72	11.78	No	Si
SLU 29	14.57	-1722.34	-4011	-0.0000271	0.0003743	0.0035	1.92	3568.45	4664.15	4664.15	2.71	No	Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 30	12.77	-440.08	-4811	-0.0000173	0.0003743	0.0035	1.92	4212.84	5342.04	5342.04	12.14	No	Si
SLU 30	14.57	-1710.09	-4016	-0.000027	0.0003743	0.0035	1.92	3572.33	4668.23	4668.23	2.73	No	Si
SLU 27	12.77	-481.88	-5107	-0.0000185	0.0003743	0.0035	1.92	4444.91	5583.71	5583.71	11.59	No	Si
SLU 27	14.57	-1762.45	-4346	-0.0000281	0.0003743	0.0035	1.92	3840.62	4952.8	4952.8	2.81	No	Si
SLU 35	12.77	-306.97	-4830	-0.0000162	0.0003743	0.0035	1.92	4227.88	5357.53	5357.53	17.45	No	Si
SLU 35	14.57	-1814.16	-4348	-0.0000288	0.0003743	0.0035	1.92	3842.83	4955.13	4955.13	2.73	No	Si
SLU 80	12.77	-466.09	-5718	-0.0000201	0.0003743	0.0035	1.92	4915.98	6093.12	6093.12	13.07	No	Si
SLU 80	14.57	-1829.67	-4707	-0.0000296	0.0003743	0.0035	1.92	4130.11	5256.98	5256.98	2.87	No	Si
SLU 38	12.77	-265.17	-4535	-0.0000149	0.0003743	0.0035	1.92	3992.95	5113.28	5113.28	19.28	No	Si
SLU 38	14.57	-1761.81	-4019	-0.0000276	0.0003743	0.0035	1.92	3574.57	4670.6	4670.6	2.65	No	Si
SLU 28	12.77	-464.4	-5046	-0.0000182	0.0003743	0.0035	1.92	4397.28	5533.68	5533.68	11.92	No	Si
SLU 28	14.57	-1750.21	-4350	-0.000028	0.0003743	0.0035	1.92	3844.44	4956.83	4956.83	2.83	No	Si
SLU 36	12.77	-289.49	-4769	-0.0000158	0.0003743	0.0035	1.92	4179.66	5307.9	5307.9	18.34	No	Si
SLU 36	14.57	-1801.92	-4353	-0.0000286	0.0003743	0.0035	1.92	3846.65	4959.17	4959.17	2.75	No	Si
SLU 79	12.77	-483.57	-5779	-0.0000204	0.0003743	0.0035	1.92	4962.17	6142.62	6142.62	12.7	No	Si
SLU 79	14.57	-1841.91	-4702	-0.0000298	0.0003743	0.0035	1.92	4126.35	5253.05	5253.05	2.85	No	Si
SLU 37	12.77	-282.65	-4596	-0.0000153	0.0003743	0.0035	1.92	4041.67	5164.41	5164.41	18.27	No	Si
SLU 37	14.57	-1774.05	-4014	-0.0000278	0.0003743	0.0035	1.92	3703.69	4666.51	4666.51	2.63	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche,  $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 8	12.77	18.06	2418	0.1910366	0.0005615	0.0035	1.536		0	0	0		No
SLV 8	14.57	-1325.29	-1903	-0.0000254	0.0005615	0.0035	1.536		2828.37	2828.37	2.13		Si
SLV 15	12.77	754.9	-1473	-0.0000115	0.0005615	0.0035	1.92		1576.43	1576.43	2.09		Si
SLV 15	14.57	-1318.6	-2698	-0.0000202	0.0005615	0.0035	1.92		3551.36	3551.36	2.69		Si
SLD 11	12.77	26.58	-1086	-0.0000032	0.0005615	0.0035	1.92		1216.29	1216.29	45.75		Si
SLD 11	14.57	-1085.33	-2494	-0.0000167	0.0005615	0.0035	1.92		3366.17	3366.17	3.1		Si
SLV 7	12.77	55.58	2086	0.1645922	0.0005615	0.0035	1.536		0	0	0		No
SLV 7	14.57	-1354.07	-2007	-0.0000248	0.0005615	0.0035	1.536		2923.05	2923.05	2.16		Si
SLV 12	12.77	578.54	2912	0.2264179	0.0005615	0.0035	1.536		0	0	0		No
SLV 12	14.57	-1547.1	-1917	-0.0000431	0.0005615	0.0035	1.536		2840.85	2840.85	1.84		Si
SLV 4	12.77	-1171.43	-2607	-0.000018	0.0005615	0.0035	1.92		3469.46	3469.46	2.96		Si
SLV 4	14.57	-534.64	-2492	-0.0000114	0.0005615	0.0035	1.92		3364.98	3364.98	6.29		Si
SLV 11	12.77	616.06	2580	0.1998511	0.0005615	0.0035	1.536		0	0	0		No
SLV 11	14.57	-1575.89	-2020	-0.0000392	0.0005615	0.0035	1.536		2935.44	2935.44	1.86		Si
SLD 7	12.77	-213.51	-1298	-0.0000054	0.0005615	0.0035	1.92		2272.32	2272.32	10.64		Si
SLD 7	14.57	-990.17	-2488	-0.0000156	0.0005615	0.0035	1.92		3360.59	3360.59	3.39		Si
SLD 12	12.77	10.19	-942	-0.0000027	0.0005615	0.0035	1.92		1080.66	1080.66	106.05		Si
SLD 12	14.57	-1072.76	-2448	-0.0000165	0.0005615	0.0035	1.92		3325	3325	3.1		Si
SLV 16	12.77	696.81	-960	-0.0000144	0.0005615	0.0035	1.92		1097.55	1097.55	1.58		Si
SLV 16	14.57	-1274.03	-2538	-0.0000196	0.0005615	0.0035	1.92		3406.29	3406.29	2.67		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 79	12.77	-483.57	-5779	-4812	1444	1.92	1.92	-8952	8138	4375	35683	16098	4896	20994	No	14.54	Si
SLU 79	14.57	-1841.91	-4702	-3916	1441	1.92	1.7049	-8250	8045	3840	35683	16098	4896	20994	No	14.57	Si
SLU 77	12.77	-507.89	-6014	-5008	1506	1.92	1.92	-9315	8186	4401	35683	16098	4896	20994	No	13.94	Si
SLU 77	14.57	-1882.02	-5037	-4194	1503	1.92	1.759	-8561	8086	3983	35683	16098	4896	20994	No	13.96	Si
SLU 78	12.77	-490.4	-5953	-4957	1537	1.92	1.92	-9220	8174	4394	35683	16098	4896	20994	No	13.66	Si
SLU 78	14.57	-1869.78	-5042	-4198	1547	1.92	1.7674	-8529	8082	3999	35683	16098	4896	20994	No	13.57	Si
SLU 37	12.77	-282.65	-4596	-3827	1497	1.92	1.92	-7119	7894	4244	35683	16098	4896	20994	No	14.02	Si
SLU 37	14.57	-1774.05	-4014	-3342	1494	1.92	1.554	-7721	7974	3470	35683	16098	4896	20994	No	14.05	Si
SLU 35	12.77	-306.97	-4830	-4022	1559	1.92	1.92	-7482	7942	4270	35683	16098	4896	20994	No	13.46	Si
SLU 35	14.57	-1814.16	-4348	-3621	1557	1.92	1.6284	-7986	8009	3652	35683	16098	4896	20994	No	13.49	Si
SLU 80	12.77	-466.09	-5718	-4762	1475	1.92	1.92	-8857	8125	4368	35683	16098	4896	20994	No	14.23	Si
SLU 80	14.57	-1829.67	-4707	-3920	1484	1.92	1.7138	-8204	8038	3857	35683	16098	4896	20994	No	14.14	Si
SLU 36	12.77	-289.49	-4769	-3972	1591	1.92	1.92	-7388	7929	4263	35683	16098	4896	20994	No	13.2	Si
SLU 36	14.57	-1801.92	-4353	-3625	1600	1.92	1.6382	-7947	8004	3671	35683	16098	4896	20994	No	13.12	Si
SLU 41	12.77	-174.01	-4104	-3417	1380	1.92	1.92	-6357	7792	4189	35683	16098	4896	20994	No	15.21	Si
SLU 41	14.57	-1393.96	-3585	-2985	1378	1.92	1.7136	-6241	7777	3731	35683	16098	4896	20994	No	15.23	Si
SLU 38	12.77	-265.17	-4535	-3776	1529	1.92	1.92	-7025	7881	4237	35683	16098	4896	20994	No	13.73	Si
SLU 38	14.57	-1761.81	-4019	-3346	1538	1.92	1.5647	-7678	7968	3491	35683	16098	4896	20994	No	13.65	Si
SLU 42	12.77	-156.53	-4043	-3367	1411	1.92	1.92	-6262	7779	4182	35683	16098	4896	20994	No	14.88	Si
SLU 42	14.57	-1381.71	-3590	-2989	1421	1.92	1.7253	-6208	7772	3755	35683	16098	4896	20994	No	14.77	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 6	12.77	-1482.87	-10551	-8786	-3104	1.92	1.92	-16344	13685	7357	35683	24147	4896	29043		9.36	Si
SLV 6	14.57	171.77	-3713	-3092	-3667	1.92	1.92	-5752	11567	6218	35683	24147	4896	29043		7.92	Si
SLV 11	12.77	616.06	2580	2149	4146	1.536	1.92	0	0	0	35683	19318	3917	23234		5.6	Si
SLV 11	14.57	-1575.89	-2020	-1682	4708	1.536	0.5399	0	0	0	35683	19318	3917	23234		4.93	Si
SLV 12	12.77	578.54	2912	2425	4231	1.536	1.92	0	0	0	35683	19318	3917	23234		5.49	Si
SLV 12	14.57	-1547.1	-1917	-1596	4793	1.536	0.4586	0	0	0	35683	19318	3917	23234		4.85	Si
SLV 16	12.77	696.81	-960	-799	1263	1.92	0.7016	-1486	10714	2105	35683	24147	4896	29043		23	Si
SLV 16	14.57	-1274.03	-2538	-2113	3157	1.92	1.3739	-5505	11518	4431	35683	24147	4896	29043		9.2	Si
SLV 9	12.77	-884.87	-10389	-8651	-3468	1.92	1.92	-16092	13635	7330	35683	24147	4896	29043		8.37	Si
SLV 9	14.57	-78.83	-3830	-3190	-2894	1.92	1.92	-5933	11603	6238	35683	24147	4896	29043		10.04	Si
SLV 7	12.77	55.58	2086	1737	4425	1.536	1.92	0	0	0	35683	19318	3917	23234		5.25	Si
SLV 7	14.57	-1354.07	-2007	-1671	3850	1.536	0.8557	0	0	0	35683	19318	3917	23234		6.03	Si
SLV 8	12.77	18.06	2418	2013	4510	1.536	1.92	0	0	0	35683	19318	3917	23234		5.15	Si
SLV 8	14.57	-1325.29	-1903	-1585	3935	1.536	0.7909	0	0	0	35683	19318	3917	23234		5.91	Si
SLV 15	12.77	754.9	-1473	-1227	1132	1.92	1.3424	-2282	10873	4087	35683	24147	4896	29043		25.66	Si
SLV 15	14.57	-1318.6	-2698	-2247	3026	1.92	1.4138	-5688	11554	4574	35683	24147	4896	29043		9.6	Si
SLV 5	12.77	-1445.35	-10883	-9062	-3189	1.92	1.92	-16857	13788	7412	35683	24147	4896	29043		9.11	Si





Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 5	14.57	142.98	-3817	-3178	-3752	1.92	1.92	-5912	11599	6236	35683	24147	4896	29043		7.74	Si
SLV 10	12.77	-922.39	-10057	-8375	-3384	1.92	1.92	-15578	13532	7275	35683	24147	4896	29043		8.58	Si
SLV 10	14.57	-50.05	-3727	-3103	-2809	1.92	1.92	-5773	11571	6221	35683	24147	4896	29043		10.34	Si

#### Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.45 Wa 0.05 denominatore 8  $\gamma M = 2$

Comb.	fd	Sa	$\sigma 0$	N	M	Mc	Coeff.s.	Verifica
SLV 12	179667	0.53	0	964	216.68	0	0	No, Trazione
SLV 8	179667	0.53	0	676	216.68	0	0	No, Trazione
SLV 7	179667	0.53	0	438	216.68	0	0	No, Trazione
SLV 11	179667	0.53	0	725	216.68	0	0	No, Trazione
SLV 16	179667	0.53	3122	-1678	216.68	230.15	1.06	Si
SLV 15	179667	0.53	3809	-2047	216.68	279.5	1.29	Si
SLV 4	179667	0.53	4904	-2637	216.68	357.26	1.65	Si
SLV 3	179667	0.53	5591	-3006	216.68	405.4	1.87	Si
SLV 14	179667	0.53	7973	-4286	216.68	568.77	2.62	Si
SLV 13	179667	0.53	8660	-4656	216.68	614.83	2.84	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 13.45 Wa = 0.05 Ta = 0.0596

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 5	-2701	-11385	-429	2.508	526.3	0.897	40.65852	12.19367	Si
SLV 6	-2668	-10934	-429	2.528	523.1	0.896	40.99634	12.19367	Si
SLV 9	-2466	-10918	-271	2.693	503.6	0.894	43.75877	12.19367	Si
SLV 10	-2432	-10467	-271	2.716	500.4	0.894	44.14245	12.19367	Si
SLV 7	-1961	2460	274	3.075	455.6	0.89	50.19224	12.19367	Si, Trazione
SLV 8	-1928	2911	275	3.105	452.4	0.89	50.68441	12.19367	Si, Trazione
SLV 11	-1726	2926	432	3.246	433.6	0.889	53.04545	12.19367	Si, Trazione
SLV 12	-1692	3377	433	3.279	430.5	0.889	53.5976	12.19367	Si, Trazione
SLV 1	-2726	-7207	-368	2.508	528.7	0.897	40.65051	7.3	Si
SLV 2	-2674	-6509	-367	2.539	523.7	0.896	41.17288	7.3	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	2.63	SLU 37	Si
V_SLU	13.122	SLU 36	Si
PF_SLV	0	SLV 7	No
V_SLV	4.848	SLV 12	Si
PFFP_SLV	0	SLV 12	No
R_SLV	3.334	SLV 5	Si

## Maschio 165

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.613	5.826	-21.813	5.826	L7	L8	2.2	0.28	3.16	3.16	3.16			

#### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau 0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

#### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica

									elim,conv / e <sub>CNR DT-200</sub>						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε <sub>fd</sub>	γF <sub>d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma M = 3$

Verifica condotta secondo CNR-DT 215





Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 52	12.77	-206.26	-5810	-0.0000155	0.0003743	0.0035	2.2	5799.08	7244.6	7244.6	35.12	No	Si
SLU 52	14.57	1683.99	-4453	-0.000022	0.0003743	0.0035	2.2	4550.99	4898.41	4898.41	2.91	No	Si
SLU 19	12.77	-151.79	-4536	-0.000012	0.0003743	0.0035	2.2	4628.88	6017.22	6017.22	39.64	No	Si
SLU 19	14.57	1282.83	-3504	-0.0000169	0.0003743	0.0035	2.2	3639.32	3952.01	3952.01	3.08	No	Si
SLU 44	12.77	-187.58	-5979	-0.0000158	0.0003743	0.0035	2.2	5950.08	7405.38	7405.38	39.48	No	Si
SLU 44	14.57	1700.84	-4619	-0.0000225	0.0003743	0.0035	2.2	4706.38	5061.34	5061.34	2.98	No	Si
SLU 18	12.77	-151.5	-4576	-0.0000121	0.0003743	0.0035	2.2	4666.32	6056.9	6056.9	39.98	No	Si
SLU 18	14.57	1308.25	-3515	-0.0000171	0.0003743	0.0035	2.2	3649.54	3962.53	3962.53	3.03	No	Si
SLU 10	12.77	-143.98	-4582	-0.0000121	0.0003743	0.0035	2.2	4672.03	6062.97	6062.97	42.11	No	Si
SLU 10	14.57	1273.11	-3568	-0.000017	0.0003743	0.0035	2.2	3701.59	4016.1	4016.1	3.15	No	Si
SLU 43	12.77	-187.1	-6046	-0.000016	0.0003743	0.0035	2.2	6009.09	7468.69	7468.69	39.92	No	Si
SLU 43	14.57	1743.19	-4636	-0.0000229	0.0003743	0.0035	2.2	4722.74	5078.28	5078.28	2.91	No	Si
SLU 60	12.77	-213.78	-5804	-0.0000156	0.0003743	0.0035	2.2	5793.63	7238.83	7238.83	33.86	No	Si
SLU 60	14.57	1719.12	-4400	-0.0000221	0.0003743	0.0035	2.2	4500.6	4845.48	4845.48	2.82	No	Si
SLU 1	12.77	-124.82	-4817	-0.0000125	0.0003743	0.0035	2.2	4892.18	6298.43	6298.43	50.46	No	Si
SLU 1	14.57	1332.32	-3751	-0.0000179	0.0003743	0.0035	2.2	3879.01	4199.1	4199.1	3.15	No	Si
SLU 61	12.77	-214.07	-5764	-0.0000155	0.0003743	0.0035	2.2	5757.91	7201.06	7201.06	33.64	No	Si
SLU 61	14.57	1693.71	-4390	-0.0000219	0.0003743	0.0035	2.2	4490.7	4835.1	4835.1	2.85	No	Si
SLU 2	12.77	-125.3	-4751	-0.0000124	0.0003743	0.0035	2.2	4830.31	6231.9	6231.9	49.74	No	Si
SLU 2	14.57	1289.96	-3733	-0.0000175	0.0003743	0.0035	2.2	3862.11	4181.64	4181.64	3.24	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche,  $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 12	12.77	717.23	74	-0.0037382	0.0005615	0.0035	1.76		91.61	91.61	0.13		No
SLV 12	14.57	624.9	-2614	-0.0000103	0.0005615	0.0035	2.2		3072.84	3072.84	4.92		Si
SLV 10	12.77	-572.71	-8195	-0.0000237	0.0005615	0.0035	2.2		9689.47	9689.47	16.92		Si
SLV 10	14.57	2969.57	-4783	-0.0000357	0.0005615	0.0035	2.2		5310.67	5310.67	1.79		Si
SLV 14	12.77	293.45	-3549	-0.0000104	0.0005615	0.0035	2.2		4046.75	4046.75	13.79		Si
SLV 14	14.57	3174.83	-3650	-0.0000576	0.0005615	0.0035	2.2		4150.69	4150.69	1.31		Si
SLV 9	12.77	-583.19	-8557	-0.0000247	0.0005615	0.0035	2.2		10037.68	10037.68	17.21		Si
SLV 9	14.57	2866.61	-4899	-0.0000339	0.0005615	0.0035	2.2		5427.36	5427.36	1.89		Si
SLV 13	12.77	277.21	-4108	-0.0000117	0.0005615	0.0035	2.2		4622.15	4622.15	16.67		Si
SLV 13	14.57	3015.42	-3829	-0.0000441	0.0005615	0.0035	2.2		4334.72	4334.72	1.44		Si
SLV 11	12.77	706.75	-288	-0.0011017	0.0005615	0.0035	1.76		589.73	589.73	0.83		No
SLV 11	14.57	521.95	-2730	-0.0000099	0.0005615	0.0035	2.2		3193.83	3193.83	6.12		Si
SLV 15	12.77	664.2	-1628	-0.0000082	0.0005615	0.0035	2.2		2030.01	2030.01	3.06		Si
SLV 15	14.57	2312.02	-3178	-0.0000304	0.0005615	0.0035	2.2		3662.26	3662.26	1.58		Si
SLD 14	12.77	58.55	-4368	-0.0000109	0.0005615	0.0035	2.2		4888.02	4888.02	83.48		Si
SLD 14	14.57	2117.62	-3800	-0.0000248	0.0005615	0.0035	2.2		4305.46	4305.46	2.03		Si
SLD 13	12.77	51.58	-4608	-0.0000114	0.0005615	0.0035	2.2		5134.3	5134.3	99.54		Si
SLD 13	14.57	2049.17	-3877	-0.000024	0.0005615	0.0035	2.2		4384.45	4384.45	2.14		Si
SLV 16	12.77	680.43	-1068	-0.0000081	0.0005615	0.0035	2.2		1430.89	1430.89	2.1		Si
SLV 16	14.57	2471.43	-2999	-0.0000389	0.0005615	0.0035	2.2		3475.26	3475.26	1.41		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 67	12.77	35.31	-7895	-6574	-1966	2.2	2.2	-10673	8367	5154	35683	18446	5610	24056	No	12.24	Si
SLU 67	14.57	1755.54	-6728	-5603	-1965	2.2	2.2	-9095	8157	5025	35683	18446	5610	24056	No	12.24	Si
SLU 77	12.77	119.73	-8786	-7316	-1960	2.2	2.2	-11877	8528	5253	35683	18446	5610	24056	No	12.28	Si
SLU 77	14.57	1723.65	-7713	-6423	-1962	2.2	2.2	-10427	8335	5134	35683	18446	5610	24056	No	12.26	Si
SLU 75	12.77	16.63	-7726	-6434	-1968	2.2	2.2	-10444	8337	5136	35683	18446	5610	24056	No	12.22	Si
SLU 75	14.57	1738.69	-6563	-5465	-1968	2.2	2.2	-8872	8127	5007	35683	18446	5610	24056	No	12.22	Si
SLU 74	12.77	16.92	-7766	-6467	-1964	2.2	2.2	-10498	8344	5140	35683	18446	5610	24056	No	12.25	Si
SLU 74	14.57	1764.11	-6574	-5474	-1965	2.2	2.2	-8886	8129	5008	35683	18446	5610	24056	No	12.24	Si
SLU 53	12.77	-55.51	-7132	-5939	-1962	2.2	2.2	-9642	8230	5070	35683	18446	5610	24056	No	12.26	Si
SLU 53	14.57	1796.71	-5874	-4892	-1963	2.2	2.2	-7941	8003	4930	35683	18446	5610	24056	No	12.25	Si
SLU 66	12.77	35.59	-7935	-6607	-1961	2.2	2.2	-10726	8375	5159	35683	18446	5610	24056	No	12.27	Si
SLU 66	14.57	1780.96	-6739	-5611	-1963	2.2	2.2	-9109	8159	5026	35683	18446	5610	24056	No	12.26	Si
SLU 78	12.77	119.45	-8746	-7283	-1964	2.2	2.2	-11823	8521	5249	35683	18446	5610	24056	No	12.25	Si
SLU 78	14.57	1698.23	-7703	-6414	-1964	2.2	2.2	-10413	8333	5133	35683	18446	5610	24056	No	12.25	Si
SLU 46	12.77	-37.12	-7262	-6047	-1964	2.2	2.2	-9816	8253	5084	35683	18446	5610	24056	No	12.25	Si
SLU 46	14.57	1788.15	-6029	-5020	-1963	2.2	2.2	-8150	8031	4947	35683	18446	5610	24056	No	12.25	Si
SLU 54	12.77	-55.79	-7093	-5906	-1967	2.2	2.2	-9588	8223	5065	35683	18446	5610	24056	No	12.23	Si
SLU 54	14.57	1771.3	-5864	-4883	-1966	2.2	2.2	-7927	8001	4929	35683	18446	5610	24056	No	12.24	Si
SLU 57	12.77	47.02	-8113	-6755	-1962	2.2	2.2	-10967	8407	5179	35683	18446	5610	24056	No	12.26	Si
SLU 57	14.57	1730.84	-7004	-5832	-1962	2.2	2.2	-9467	8207	5055	35683	18446	5610	24056	No	12.26	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 12	12.77	717.23	74	61	-2950	1.76	0	0	0	0	35683	22135	4488	26623		9.02	Si
SLV 12	14.57	624.9	-2614	-2177	-2282	2.2	2.2	-3534	11123	6852	35683	27669	5610	33279		14.58	Si
SLD 15	12.77	223.3	-3511	-2924	-2267	2.2	2.2	-4747	11366	7002	35683	27669	5610	33279		14.68	Si
SLD 15	14.57	1737.81	-3590	-2990	-1404	2.2	1.8479	-4853	11387	5892	35683	27669	5610	33279		23.7	Si
SLV 11	12.77	706.75	-288	-240	-2749	1.76	0	0	0	0	35683	22135	4488	26623		9.69	Si
SLV 11	14.57	521.95	-2730	-2273	-2081	2.2	2.2	-3690	11155	6871	35683	27669	5610	33279		15.99	Si
SLV 16	12.77	680.43	-1068	-889	-3630	2.2	1.3886	-1444	10705	4162	35683	27669	5610	33279		9.17	Si
SLV 16	14.57	2471.43	-2999	-2497	-1615	2.2	0.8277	-4054	11227	2602	35683	27669	5610	33279		20.61	Si
SLV 13	12.77	277.21	-4108	-3421	-2807	2.2	2.2	-5554	11527	7101	35683	27669	5610	33279		11.86	Si
SLV 13	14.57	3015.42	-3829	-3188	-833	2.2	0.9372	-5175	11452	3005	35683	27669	5610	33279		39.94	Si
SLD 16	12.77	230.27	-3271	-2724	-2401	2.2	2.2	-4422	11301	6962	35683	27669	5610	33279		13.86	Si
SLD 16	14.57	1806.26	-3513	-2926	-1538	2.2	1.7577	-4749	11367	5594	35683	27669	5610	33279		21.63	Si
SLV 8	12.77	364.26	-1344	-1119	-1903	2.2	2.2	-1816	10780	6640	35683	27669	5610	33279		17.49	Si
SLV 8	14.57	-230.24	-2908	-2421	-2432	2.2	2.2	-3931	11203	6901	35683	27669	5610	33279		13.69	Si
SLV 7	12.77	353.77	-1705	-1420	-1701	2.2	2.2	-2305	10878	6701	35683	27669	5610	33279		19.56	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 7	14.57	-333.19	-3024	-2518	-2230	2.2	2.2	-4087	11234	6920	35683	27669	5610	33279		14.92	Si
SLV 14	12.77	293.45	-3549	-2955	-3119	2.2	2.2	-4797	11376	7008	35683	27669	5610	33279		10.67	Si
SLV 14	14.57	3174.83	-3650	-3039	-1145	2.2	0.6902	-15846	13586	2626	35683	27669	5610	33279		29.06	Si
SLV 15	12.77	664.2	-1628	-1355	-3318	2.2	2.0759	-2200	10857	6311	35683	27669	5610	33279		10.03	Si
SLV 15	14.57	2312.02	-3178	-2646	-1303	2.2	1.1174	-4296	11276	3528	35683	27669	5610	33279		25.54	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.45 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 11	179667	0.53	0	-1323	248.28	0	0	No, e>t/2
SLV 12	179667	0.53	0	-1058	248.28	0	0	No, e>t/2
SLV 16	179667	0.53	3068	-1890	248.28	259.31	1.04	Si
SLV 8	179667	0.53	3319	-2044	248.28	279.98	1.13	Si
SLV 15	179667	0.53	3735	-2301	248.28	314.26	1.27	Si
SLV 7	179667	0.53	3749	-2310	248.28	315.4	1.27	Si
SLV 14	179667	0.53	5929	-3653	248.28	491.51	1.98	Si
SLV 13	179667	0.53	6596	-4063	248.28	544.3	2.19	Si
SLV 4	179667	0.53	8407	-5179	248.28	685.1	2.76	Si
SLV 3	179667	0.53	9074	-5589	248.28	736.03	2.96	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.45 Wa = 0.05 Ta = 0.0596

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 7	-3609	-844	644	2.244	653.2	0.901	36.19996	12.19367	Si
SLV 8	-3514	-491	639	2.284	643.9	0.9	36.88591	12.19367	Si
SLV 11	-3139	480	368	2.512	607.3	0.897	40.70094	12.19367	Si, Trazione
SLV 12	-3044	833	363	2.562	598.1	0.896	41.54285	12.19367	Si, Trazione
SLV 5	-2946	-11606	-365	2.614	588.6	0.895	42.43057	12.19367	Si
SLV 6	-2851	-11253	-370	2.666	579.5	0.895	43.30712	12.19367	Si
SLV 9	-2475	-10282	-641	2.834	543.6	0.892	46.19051	12.19367	Si
SLV 10	-2381	-9929	-645	2.897	534.6	0.891	47.24422	12.19367	Si
SLV 3	-3951	-6252	614	2.117	686.8	0.904	34.0443	7.3	Si
SLV 4	-3804	-5705	606	2.173	672.4	0.903	34.99359	7.3	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	2.819	SLU 60	Si
V_SLU	12.223	SLU 75	Si
PF_SLV	0.128	SLV 12	No
V_SLV	9.024	SLV 12	Si
PFFP_SLV	0	SLV 11	No
R_SLV	2.969	SLV 7	Si

Maschio 166

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	I	Sp.	h netta	h ini.	h fin.	a	a.s.sx	a.s.dx
-22.493	-3.314	-24.633	-3.314	L7	L8	2.14	0.28	3.16	3.16	3.16			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	



### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 27	12.77	-505.39	-5813	-0.0000181	0.0003743	0.0035	2.14	5627.14	7047.46	7047.46	13.94	No	Si
SLU 27	14.57	-1693.51	-4730	-0.0000237	0.0003743	0.0035	2.14	4668.48	6044.7	6044.7	3.57	No	Si
SLU 35	12.77	-406.57	-5788	-0.0000174	0.0003743	0.0035	2.14	5605.75	7024.68	7024.68	17.28	No	Si
SLU 35	14.57	-1698.01	-4741	-0.0000238	0.0003743	0.0035	2.14	4679.03	6056.07	6056.07	3.57	No	Si
SLU 29	12.77	-454.84	-5545	-0.0000171	0.0003743	0.0035	2.14	5393.91	6801.04	6801.04	14.95	No	Si
SLU 29	14.57	-1667.67	-4426	-0.0000228	0.0003743	0.0035	2.14	4392.56	5750.34	5750.34	3.45	No	Si
SLU 72	12.77	-560.49	-6779	-0.000021	0.0003743	0.0035	2.14	6447.29	7932.57	7932.57	14.15	No	Si
SLU 72	14.57	-1833.82	-5177	-0.0000259	0.0003743	0.0035	2.14	5069.6	6464.71	6464.71	3.53	No	Si
SLU 80	12.77	-461.67	-6754	-0.0000203	0.0003743	0.0035	2.14	6426.74	7911.13	7911.13	17.14	No	Si
SLU 80	14.57	-1838.32	-5189	-0.000026	0.0003743	0.0035	2.14	5079.96	6475.45	6475.45	3.52	No	Si
SLU 71	12.77	-550.76	-6712	-0.0000208	0.0003743	0.0035	2.14	6391.71	7874.65	7874.65	14.3	No	Si
SLU 71	14.57	-1844.81	-5179	-0.000026	0.0003743	0.0035	2.14	5070.6	6465.75	6465.75	3.5	No	Si
SLU 37	12.77	-356.03	-5520	-0.0000163	0.0003743	0.0035	2.14	5372.29	6778.42	6778.42	19.04	No	Si
SLU 37	14.57	-1672.17	-4438	-0.0000228	0.0003743	0.0035	2.14	4403.23	5761.62	5761.62	3.45	No	Si
SLU 79	12.77	-451.95	-6687	-0.00002	0.0003743	0.0035	2.14	6371.1	7853.25	7853.25	17.38	No	Si
SLU 79	14.57	-1849.31	-5190	-0.000026	0.0003743	0.0035	2.14	5080.96	6476.49	6476.49	3.5	No	Si
SLU 38	12.77	-365.75	-5587	-0.0000166	0.0003743	0.0035	2.14	5430.67	6839.59	6839.59	18.7	No	Si
SLU 38	14.57	-1661.18	-4437	-0.0000228	0.0003743	0.0035	2.14	4402.21	5760.54	5760.54	3.47	No	Si
SLU 30	12.77	-464.57	-5612	-0.0000173	0.0003743	0.0035	2.14	5452.23	6862.24	6862.24	14.77	No	Si
SLU 30	14.57	-1656.68	-4425	-0.0000227	0.0003743	0.0035	2.14	4391.54	5749.26	5749.26	3.47	No	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche, $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 10	12.77	119.76	-1190	-0.0000037	0.0005615	0.0035	2.14		1507.24	1507.24	12.59		Si
SLD 10	14.57	-1486.25	-2780	-0.0000183	0.0005615	0.0035	2.14		4181.06	4181.06	2.81		Si
SLV 10	12.77	685.42	2958	0.2065742	0.0005615	0.0035	1.712		0	0	0		No
SLV 10	14.57	-2299.22	-2365	-0.0000742	0.0005615	0.0035	1.712		3760.38	3760.38	1.64		Si
SLD 5	12.77	72.76	-1150	-0.0000033	0.0005615	0.0035	2.14		1464.94	1464.94	20.13		Si
SLD 5	14.57	-1436.61	-2889	-0.0000178	0.0005615	0.0035	2.14		4291.18	4291.18	2.99		Si
SLD 6	12.77	108.54	-1293	-0.0000039	0.0005615	0.0035	2.14		1613.67	1613.67	14.87		Si
SLD 6	14.57	-1456.73	-2941	-0.000018	0.0005615	0.0035	2.14		4343.89	4343.89	2.98		Si
SLV 9	12.77	603.55	3284	0.23034	0.0005615	0.0035	1.712		0	0	0		No
SLV 9	14.57	-2253.18	-2246	-0.0000867	0.0005615	0.0035	1.712		3639.03	3639.03	1.62		Si
SLD 9	12.77	83.98	-1048	-0.0000031	0.0005615	0.0035	2.14		1358.12	1358.12	16.17		Si
SLD 9	14.57	-1466.13	-2728	-0.0000181	0.0005615	0.0035	2.14		4128.06	4128.06	2.82		Si
SLV 14	12.77	67.06	-2085	-0.0000056	0.0005615	0.0035	2.14		2434.25	2434.25	36.3		Si
SLV 14	14.57	-1414.87	-2385	-0.0000176	0.0005615	0.0035	1.712		3780.58	3780.58	2.67		Si
SLV 13	12.77	-59.71	-1579	-0.0000043	0.0005615	0.0035	2.14		2957.69	2957.69	49.53		Si
SLV 13	14.57	-1343.58	-2200	-0.0000169	0.0005615	0.0035	1.712		3592.46	3592.46	2.67		Si
SLV 5	12.77	576.9	3045	0.2134562	0.0005615	0.0035	1.712		0	0	0		No
SLV 5	14.57	-2184.04	-2622	-0.0000391	0.0005615	0.0035	1.712		4020.56	4020.56	1.84		Si
SLV 6	12.77	658.77	2718	0.1896824	0.0005615	0.0035	1.712		0	0	0		No
SLV 6	14.57	-2230.08	-2742	-0.0000378	0.0005615	0.0035	1.712		4141.84	4141.84	1.86		Si

### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 80	12.77	-461.67	-6754	-5624	1415	2.14	2.14	-9386	8196	4911	35683	17943	5457	23399	No	16.54	Si
SLU 80	14.57	-1838.32	-5189	-4321	1412	2.14	2.14	-7211	7906	4737	35683	17943	5457	23399	No	16.57	Si
SLU 78	12.77	-512.22	-7022	-5847	1422	2.14	2.14	-9759	8246	4941	35683	17943	5457	23399	No	16.45	Si
SLU 78	14.57	-1864.16	-5492	-4574	1419	2.14	2.14	-7633	7962	4771	35683	17943	5457	23399	No	16.49	Si
SLU 70	12.77	-611.03	-7047	-5868	1343	2.14	2.14	-9793	8250	4943	35683	17943	5457	23399	No	17.42	Si
SLU 70	14.57	-1859.66	-5481	-4564	1340	2.14	2.14	-7617	7960	4770	35683	17943	5457	23399	No	17.46	Si
SLU 56	12.77	-476.46	-6542	-5448	1370	2.14	2.14	-9092	8157	4887	35683	17943	5457	23399	No	17.08	Si
SLU 56	14.57	-1697.88	-5079	-4229	1368	2.14	2.14	-7059	7886	4725	35683	17943	5457	23399	No	17.11	Si
SLU 79	12.77	-451.95	-6687	-5569	1467	2.14	2.14	-9294	8184	4904	35683	17943	5457	23399	No	15.95	Si
SLU 79	14.57	-1849.31	-5190	-4322	1464	2.14	2.14	-7213	7906	4737	35683	17943	5457	23399	No	15.99	Si
SLU 69	12.77	-601.31	-6980	-5812	1395	2.14	2.14	-9700	8238	4936	35683	17943	5457	23399	No	16.77	Si
SLU 69	14.57	-1870.65	-5482	-4565	1392	2.14	2.14	-7618	7960	4770	35683	17943	5457	23399	No	16.81	Si
SLU 72	12.77	-560.49	-6779	-5645	1336	2.14	2.14	-9421	8201	4914	35683	17943	5457	23399	No	17.51	Si
SLU 72	14.57	-1833.82	-5177	-4311	1333	2.14	2.14	-7195	7904	4736	35683	17943	5457	23399	No	17.56	Si
SLU 77	12.77	-502.49	-6955	-5792	1474	2.14	2.14	-9666	8233	4933	35683	17943	5457	23399	No	15.87	Si
SLU 77	14.57	-1875.15	-5494	-4575	1471	2.14	2.14	-7635	7962	4771	35683	17943	5457	23399	No	15.9	Si
SLU 58	12.77	-425.91	-6274	-5225	1363	2.14	2.14	-8719	8107	4858	35683	17943	5457	23399	No	17.17	Si
SLU 58	14.57	-1672.04	-4776	-3977	1360	2.14	2.14	-6637	7829	4691	35683	17943	5457	23399	No	17.2	Si
SLU 71	12.77	-550.76	-6712	-5589	1388	2.14	2.14	-9328	8188	4906	35683	17943	5457	23399	No	16.86	Si
SLU 71	14.57	-1844.81	-5179	-4312	1385	2.14	2.14	-7197	7904	4736	35683	17943	5457	23399	No	16.9	Si

### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 9	12.77	603.55	3284	2735	5824	1.712	2.14	0	0	0	35683	21531	4366	25897		4.45	Si
SLV 9	14.57	-2253.18	-2246	-1870	6282	1.712	0.1999	0	0	0	35683	21531	4366	25897		4.12	Si
SLV 11	12.77	-1316.17	-11665	-9714	-4869	2.14	2.14	-16212	13659	8184	35683	26914	5457	32371		6.65	Si
SLV 11	14.57	540.09	-3463	-2884	-4313	2.14	2.14	-4813	11379	6818	35683	26914	5457	32371		7.51	Si
SLV 13	12.77	-59.71	-1579	-1315	1555	2.14	2.14	-2195	10856	6505	35683	26914	5457	32371		20.82	Si
SLV 13	14.57	-1343.58	-2200	-1832	3233	1.712	1.3778	0	0	0	35683	21531	4366	25897		8.01	Si
SLV 8	12.77	-1260.94	-12231	-10185	-4458	2.14	2.14	-16998	13816	8279	35683	26914	5457	32371		7.26	Si
SLV 8	14.57	563.19	-3959	-3297	-4918	2.14	2.14	-5502	11517	6901	35683	26914	5457	32371		6.58	Si
SLV 6	12.77	658.77	2718	2624	6235	1.712	2.14	0	0	0	35683	21531	4366	25897		4.15	Si
SLV 6	14.57	-2230.08	-2742	-2283	5678	1.712	0.7697	0	0	0	35683	21531	4366	25897		4.56	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 10	12.77	685.42	2958	2463	5772	1.712	2.14	0	0	0	35683	21531	4366	25897		4.49	Si
SLV 10	14.57	-2299.22	-2365	-1970	6230	1.712	0.2937	0	0	0	35683	21531	4366	25897		4.16	Si
SLV 12	12.77	-1234.3	-11992	-9986	-4921	2.14	2.14	-16665	13750	8239	35683	26914	5457	32371		6.58	Si
SLV 12	14.57	494.04	-3583	-2984	-4365	2.14	2.14	-4979	11413	6838	35683	26914	5457	32371		7.42	Si
SLV 14	12.77	67.06	-2085	-1736	1474	2.14	2.14	-2898	10996	6589	35683	26914	5457	32371		21.96	Si
SLV 14	14.57	-1414.87	-2385	-1986	3152	1.712	1.4304	0	0	0	35683	21531	4366	25897		8.22	Si
SLV 7	12.77	-1342.82	-11905	-9913	-4406	2.14	2.14	-16544	13725	8224	35683	26914	5457	32371		7.35	Si
SLV 7	14.57	609.23	-3840	-3197	-4866	2.14	2.14	-5336	11484	6881	35683	26914	5457	32371		6.65	Si
SLV 5	12.77	576.9	3045	2536	6287	1.712	2.14	0	0	0	35683	21531	4366	25897		4.12	Si
SLV 5	14.57	-2184.04	-2622	-2183	5729	1.712	0.711	0	0	0	35683	21531	4366	25897		4.52	Si

#### Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.45 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 9	179667	0.53	0	928	241.5	0	0	No, Trazione
SLV 6	179667	0.53	0	373	241.5	0	0	No, Trazione
SLV 5	179667	0.53	0	615	241.5	0	0	No, Trazione
SLV 10	179667	0.53	0	686	241.5	0	0	No, Trazione
SLV 13	179667	0.53	3062	-1835	241.5	251.68	1.04	Si
SLV 14	179667	0.53	3687	-2209	241.5	301.82	1.25	Si
SLV 1	179667	0.53	4801	-2876	241.5	390.04	1.62	Si
SLV 2	179667	0.53	5426	-3251	241.5	438.99	1.82	Si
SLV 15	179667	0.53	7630	-4572	241.5	608.07	2.52	Si
SLV 16	179667	0.53	8255	-4946	241.5	655.07	2.71	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.45 Wa = 0.05 Ta = 0.0596

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 8	-2825	-12330	410	2.624	568.7	0.895	42.61746	12.19367	Si
SLV 7	-2788	-11863	410	2.646	565.1	0.895	42.98238	12.19367	Si
SLV 12	-2564	-11753	247	2.82	543.6	0.893	45.90645	12.19367	Si
SLV 11	-2526	-11286	247	2.845	540	0.893	46.3218	12.19367	Si
SLV 6	-2221	1748	-248	3.062	511.1	0.891	49.97197	12.19367	Si, Trazione
SLV 5	-2184	2215	-249	3.091	507.6	0.89	50.45705	12.19367	Si, Trazione
SLV 10	-1960	2324	-411	3.233	486.7	0.889	52.83094	12.19367	Si, Trazione
SLV 9	-1923	2791	-411	3.266	483.2	0.889	53.37502	12.19367	Si, Trazione
SLV 4	-2929	-8203	369	2.575	578.7	0.896	41.78091	7.3	Si
SLV 3	-2871	-7480	369	2.608	573.1	0.895	42.32557	7.3	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.446	SLV 37	Si
V_SLV	15.872	SLV 77	Si
PF_SLV	0	SLV 5	No
V_SLV	4.119	SLV 5	Si
PFFP_SLV	0	SLV 10	No
R_SLV	3.495	SLV 8	Si

## Maschio 167

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.313	-3.314	-21.593	-3.314	L7	L8	2.28	0.28	3.16	3.16	3.16			

#### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

#### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica



									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 84	13.87	-61.58	-7465	-0.000018	0.0003743	0.0035	2.28	7532.76	9116.34	9116.34	148.03	No	Si
SLU 84	14.67	333.6	-5686	-0.0000154	0.0003743	0.0035	2.28	5915.19	6346.97	6346.97	19.03	No	Si
SLU 39	13.87	-115.69	-5479	-0.0000136	0.0003743	0.0035	2.28	5719.71	7187.16	7187.16	62.12	No	Si
SLU 39	14.67	264.09	-4118	-0.0000112	0.0003743	0.0035	2.28	4396.78	4755.93	4755.93	18.01	No	Si
SLU 42	13.87	-42.74	-6242	-0.0000149	0.0003743	0.0035	2.28	6432.37	7938.18	7938.18	185.72	No	Si
SLU 42	14.67	305.19	-4822	-0.0000132	0.0003743	0.0035	2.28	5089.25	5478.6	5478.6	17.95	No	Si
SLU 38	13.87	27.61	-7006	-0.0000167	0.0003743	0.0035	2.28	7126.23	7616.43	7616.43	275.88	No	Si
SLU 38	14.67	335.47	-5529	-0.000015	0.0003743	0.0035	2.28	5767.23	6190.81	6190.81	18.45	No	Si
SLU 34	13.87	-47.08	-6265	-0.000015	0.0003743	0.0035	2.28	6453.64	7961.15	7961.15	169.09	No	Si
SLU 34	14.67	297.69	-4837	-0.0000132	0.0003743	0.0035	2.28	5104.3	5494.43	5494.43	18.46	No	Si
SLU 40	13.87	-116.74	-5492	-0.0000136	0.0003743	0.0035	2.28	5731.83	7199.64	7199.64	61.67	No	Si
SLU 40	14.67	266.08	-4125	-0.0000113	0.0003743	0.0035	2.28	4404.21	4763.62	4763.62	17.9	No	Si
SLU 41	13.87	-41.7	-6229	-0.0000149	0.0003743	0.0035	2.28	6420.59	7925.47	7925.47	190.06	No	Si
SLU 41	14.67	303.2	-4814	-0.0000131	0.0003743	0.0035	2.28	5082	5470.99	5470.99	18.04	No	Si
SLU 31	13.87	-121.08	-5515	-0.0000137	0.0003743	0.0035	2.28	5753.71	7222.19	7222.19	59.65	No	Si
SLU 31	14.67	258.58	-4141	-0.0000113	0.0003743	0.0035	2.28	4419.65	4779.62	4779.62	18.48	No	Si
SLU 37	13.87	28.65	-6993	-0.0000167	0.0003743	0.0035	2.28	7114.78	7606.12	7606.12	265.48	No	Si
SLU 37	14.67	333.49	-5522	-0.000015	0.0003743	0.0035	2.28	5760.17	6183.37	6183.37	18.54	No	Si
SLU 83	13.87	-60.54	-7452	-0.000018	0.0003743	0.0035	2.28	7521.52	9104.28	9104.28	150.38	No	Si
SLU 83	14.67	331.61	-5679	-0.0000154	0.0003743	0.0035	2.28	5908.17	6339.55	6339.55	19.12	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 11	13.87	-180.31	-6090	-0.0000153	0.0005615	0.0035	2.28		7920.05	7920.05	43.92		Si
SLD 11	14.67	445.12	-4328	-0.0000128	0.0005615	0.0035	2.28		5045.54	5045.54	11.34		Si
SLV 12	13.87	-226.81	-7432	-0.0000188	0.0005615	0.0035	2.28		9282.4	9282.4	40.93		Si
SLV 12	14.67	697.4	-5126	-0.0000162	0.0005615	0.0035	2.28		5888.1	5888.1	8.44		Si
SLV 15	13.87	-530.02	-6461	-0.0000183	0.0005615	0.0035	2.28		8305.25	8305.25	15.67		Si
SLV 15	14.67	694.28	-4633	-0.000015	0.0005615	0.0035	2.28		5369.34	5369.34	7.73		Si
SLV 11	13.87	-281.04	-7430	-0.0000191	0.0005615	0.0035	2.28		9280.28	9280.28	33.02		Si
SLV 11	14.67	763.96	-5098	-0.0000165	0.0005615	0.0035	2.28		5858.71	5858.71	7.67		Si
SLV 16	13.87	-446.06	-6465	-0.0000178	0.0005615	0.0035	2.28		8308.64	8308.64	18.63		Si
SLV 16	14.67	591.22	-4677	-0.0000145	0.0005615	0.0035	2.28		5415.54	5415.54	9.16		Si
SLV 8	13.87	-3.13	-6964	-0.0000163	0.0005615	0.0035	2.28		8816.84	8816.84	2818.56		Si
SLV 8	14.67	507.64	-4786	-0.0000142	0.0005615	0.0035	2.28		5531.37	5531.37	10.9		Si
SLD 15	13.87	-286.63	-5654	-0.0000149	0.0005615	0.0035	2.28		7464.16	7464.16	26.04		Si
SLD 15	14.67	410.31	-4117	-0.0000121	0.0005615	0.0035	2.28		4821.36	4821.36	11.75		Si
SLV 13	13.87	-507.01	-5164	-0.0000151	0.0005615	0.0035	2.28		6955.63	6955.63	13.72		Si
SLV 13	14.67	429.14	-3901	-0.0000117	0.0005615	0.0035	2.28		4591.87	4591.87	10.7		Si
SLV 7	13.87	-57.36	-6962	-0.0000166	0.0005615	0.0035	2.28		8814.73	8814.73	153.68		Si
SLV 7	14.67	574.2	-4758	-0.0000146	0.0005615	0.0035	2.28		5501.59	5501.59	9.58		Si
SLV 6	13.87	73.57	-2639	-0.0000066	0.0005615	0.0035	2.28		3231.61	3231.61	43.92		Si
SLV 6	14.67	-376.15	-2345	-0.0000077	0.0005615	0.0035	2.28		3964.73	3964.73	10.54		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 75	13.87	-101	-7877	-6559	-1478	2.28	2.28	-10274	8314	5308	35683	19117	5814	24931	No	16.87	Si
SLU 75	14.67	320.84	-6061	-5047	-1190	2.28	2.28	-7906	7999	5106	35683	19117	5814	24931	No	20.94	Si
SLU 70	13.87	-35.51	-8661	-7212	-1510	2.28	2.28	-11297	8451	5395	35683	19117	5814	24931	No	16.51	Si
SLU 70	14.67	339.36	-6783	-5648	-1208	2.28	2.28	-8847	8124	5186	35683	19117	5814	24931	No	20.64	Si
SLU 72	13.87	0.26	-8263	-6881	-1421	2.28	2.28	-10779	8382	5351	35683	19117	5814	24931	No	17.55	Si
SLU 72	14.67	343.3	-6418	-5344	-1139	2.28	2.28	-8372	8061	5146	35683	19117	5814	24931	No	21.88	Si
SLU 77	13.87	-25.96	-8614	-7173	-1498	2.28	2.28	-11236	8443	5390	35683	19117	5814	24931	No	16.64	Si
SLU 77	14.67	357.96	-6750	-5621	-1213	2.28	2.28	-8805	8118	5183	35683	19117	5814	24931	No	20.55	Si
SLU 67	13.87	-109.5	-7911	-6588	-1477	2.28	2.28	-10319	8320	5312	35683	19117	5814	24931	No	16.88	Si
SLU 67	14.67	300.25	-6086	-5068	-1180	2.28	2.28	-7938	8003	5109	35683	19117	5814	24931	No	21.13	Si
SLU 69	13.87	-34.46	-8648	-7201	-1498	2.28	2.28	-11280	8448	5394	35683	19117	5814	24931	No	16.64	Si
SLU 69	14.67	337.38	-6775	-5642	-1202	2.28	2.28	-8837	8123	5186	35683	19117	5814	24931	No	20.74	Si
SLU 66	13.87	-108.46	-7898	-6577	-1465	2.28	2.28	-10302	8318	5310	35683	19117	5814	24931	No	17.02	Si
SLU 66	14.67	298.27	-6078	-5061	-1174	2.28	2.28	-7928	8002	5108	35683	19117	5814	24931	No	21.24	Si
SLU 78	13.87	-27	-8627	-7184	-1510	2.28	2.28	-11253	8445	5391	35683	19117	5814	24931	No	16.51	Si
SLU 78	14.67	359.95	-6758	-5627	-1219	2.28	2.28	-8815	8120	5184	35683	19117	5814	24931	No	20.46	Si
SLU 80	13.87	8.77	-8229	-6853	-1421	2.28	2.28	-10734	8376	5347	35683	19117	5814	24931	No	17.55	Si
SLU 80	14.67	363.88	-6394	-5324	-1150	2.28	2.28	-8339	8056	5143	35683	19117	5814	24931	No	21.68	Si
SLU 74	13.87	-99.95	-7864	-6549	-1465	2.28	2.28	-10258	8312	5307	35683	19117	5814	24931	No	17.01	Si
SLU 74	14.67	318.85	-6054	-5041	-1185	2.28	2.28	-7896	7997	5105	35683	19117	5814	24931	No	21.04	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 12	13.87	-226.81	-7432	-6189	-2607	2.28	2.28	-9694	12355	7888	35683	28675	5814	34489		13.23	Si
SLV 12	14.67	697.4	-5126	-4269	-1569	2.28	2.28	-6686	11754	7504	35683	28675	5814	34489		21.97	Si
SLV 16	13.87	-446.06	-6465	-5383	-2592	2.28	2.28	-8432	12103	7727	35683	28675	5814	34489		13.31	Si
SLV 16	14.67	591.22	-4677	-3894	-1615	2.28	2.28	-6100	11637	7429	35683	28675	5814	34489		21.35	Si



Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 11	13.87	-180.31	-6090	-5071	-1781	2.28	2.28	-7943	12005	7664	35683	28675	5814	34489		19.36	Si
SLD 11	14.67	445.12	-4328	-3604	-1206	2.28	2.28	-5645	11546	7371	35683	28675	5814	34489		28.61	Si
SLV 13	13.87	-507.01	-5164	-4300	-2104	2.28	2.28	-6736	11764	7510	35683	28675	5814	34489		16.39	Si
SLV 13	14.67	429.14	-3901	-3248	-1487	2.28	2.28	-5088	11434	7300	35683	28675	5814	34489		23.19	Si
SLD 15	13.87	-286.63	-5654	-4708	-1806	2.28	2.28	-7375	11892	7592	35683	28675	5814	34489		19.09	Si
SLD 15	14.67	410.31	-4117	-3428	-1255	2.28	2.28	-5370	11491	7336	35683	28675	5814	34489		27.48	Si
SLV 7	13.87	-57.36	-6962	-5797	-1981	2.28	2.28	-9081	12233	7809	35683	28675	5814	34489		17.41	Si
SLV 7	14.67	574.2	-4758	-3962	-1275	2.28	2.28	-6206	11658	7442	35683	28675	5814	34489		27.04	Si
SLV 8	13.87	-3.13	-6964	-5799	-1789	2.28	2.28	-9083	12233	7810	35683	28675	5814	34489		19.28	Si
SLV 8	14.67	507.64	-4786	-3985	-1114	2.28	2.28	-6243	11665	7447	35683	28675	5814	34489		30.97	Si
SLV 15	13.87	-530.02	-6461	-5381	-2889	2.28	2.28	-8428	12102	7726	35683	28675	5814	34489		11.94	Si
SLV 15	14.67	694.28	-4633	-3858	-1866	2.28	2.28	-6043	11625	7422	35683	28675	5814	34489		18.49	Si
SLV 11	13.87	-281.04	-7430	-6187	-2799	2.28	2.28	-9691	12355	7887	35683	28675	5814	34489		12.32	Si
SLV 11	14.67	763.96	-5098	-4245	-1731	2.28	2.28	-6650	11747	7499	35683	28675	5814	34489		19.92	Si
SLV 14	13.87	-423.05	-5167	-4303	-1806	2.28	2.28	-6740	11765	7511	35683	28675	5814	34489		19.09	Si
SLV 14	14.67	326.09	-3944	-3285	-1237	2.28	2.28	-5145	11446	7307	35683	28675	5814	34489		27.89	Si

**Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)**

quota 13.45 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	α0	N	M	Mc	Coeff.s.	Verifica
SLV 5	179667	0.53	4789	-3057	257.31	414.62	1.61	Si
SLV 6	179667	0.53	4883	-3117	257.31	422.45	1.64	Si
SLV 9	179667	0.53	4951	-3161	257.31	428.18	1.66	Si
SLV 10	179667	0.53	5045	-3221	257.31	435.99	1.69	Si
SLV 1	179667	0.53	6653	-4247	257.31	568.72	2.21	Si
SLV 2	179667	0.53	6798	-4340	257.31	580.51	2.26	Si
SLV 13	179667	0.53	7193	-4592	257.31	612.61	2.38	Si
SLV 14	179667	0.53	7338	-4684	257.31	624.31	2.43	Si
SLV 3	179667	0.53	8434	-5385	257.31	712.21	2.77	Si
SLV 4	179667	0.53	8579	-5477	257.31	723.7	2.81	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

**Verifica dei meccanismi locali di collasso con analisi cinematica lineare**

forza di aggancio al piano = 5617 quota mezzera = 13.45 Wa = 0.05 Ta = 0.0596

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 12	-3949	-8647	671	2.163	697.5	0.903	34.8332	12.19367	Si
SLV 11	-3935	-8557	671	2.169	696	0.903	34.9251	12.19367	Si
SLV 8	-3560	-8891	604	2.329	659.4	0.899	37.63572	12.19367	Si
SLV 7	-3546	-8800	604	2.335	657.9	0.899	37.74205	12.19367	Si
SLV 10	-2475	-2821	-590	2.91	554.7	0.891	47.46172	12.19367	Si
SLV 9	-2460	-2731	-590	2.92	553.3	0.891	47.62798	12.19367	Si
SLV 6	-2086	-3065	-657	3.179	518.3	0.889	51.95238	12.19367	Si
SLV 5	-2071	-2974	-657	3.191	516.9	0.889	52.14989	12.19367	Si
SLV 16	-3891	-6349	307	2.249	691.8	0.902	36.22679	7.3	Si
SLV 15	-3868	-6209	307	2.258	689.5	0.902	36.37657	7.3	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

**Tabella dei coefficienti di sicurezza minimi**

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	17.903	SLU 40	Si
V_SLU	16.507	SLU 78	Si
PF_SLV	7.669	SLV 11	Si
V_SLV	11.936	SLV 15	Si
PFFP_SLV	1.611	SLV 5	Si
R_SLV	2.857	SLV 12	Si

**Maschio 168**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati geometrici**

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-18.263	-3.314	-18.813	-3.314	L7	L8	0.55	0.28	3.16	3.16	3.16			

**Caratteristiche del materiale**

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

**Materiale per FRCM**

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio



## Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche,  $\gamma M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	$d_f$	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 26	13.87	28.69	-1600	-0.0000187	0.0003743	0.0035	0.55	395.17	422.67	422.67	14.73	No	Si
SLU 26	14.67	54.66	-1596	-0.0000214	0.0003743	0.0035	0.55	394.11	421.6	421.6	7.71	No	Si
SLU 24	13.87	27.49	-1708	-0.0000197	0.0003743	0.0035	0.55	418.61	446.36	446.36	16.23	No	Si
SLU 24	14.67	63.35	-1725	-0.0000237	0.0003743	0.0035	0.55	422.23	449.71	449.71	7.1	No	Si
SLU 65	13.87	26.64	-1816	-0.0000207	0.0003743	0.0035	0.55	441.63	467.63	467.63	17.55	No	Si
SLU 65	14.67	64.64	-1740	-0.000024	0.0003743	0.0035	0.55	425.31	452.53	452.53	7	No	Si
SLU 25	13.87	27.75	-1711	-0.0000197	0.0003743	0.0035	0.55	419.22	446.96	446.96	16.11	No	Si
SLU 25	14.67	63.71	-1723	-0.0000237	0.0003743	0.0035	0.55	421.84	449.35	449.35	7.05	No	Si
SLU 64	13.87	26.22	-1812	-0.0000206	0.0003743	0.0035	0.55	440.63	466.7	466.7	17.8	No	Si
SLU 64	14.67	64.04	-1743	-0.000024	0.0003743	0.0035	0.55	425.97	453.13	453.13	7.08	No	Si
SLU 66	13.87	36.84	-2077	-0.0000244	0.0003743	0.0035	0.55	495.49	519.63	519.63	14.11	No	Si
SLU 66	14.67	69.16	-2041	-0.0000276	0.0003743	0.0035	0.55	488.26	512.45	512.45	7.41	No	Si
SLU 23	13.87	17.3	-1448	-0.000016	0.0003743	0.0035	0.55	361.38	388.15	388.15	22.43	No	Si
SLU 23	14.67	58.83	-1424	-0.0000202	0.0003743	0.0035	0.55	355.94	382.48	382.48	6.5	No	Si
SLU 22	13.87	16.88	-1443	-0.0000159	0.0003743	0.0035	0.55	360.31	387.04	387.04	22.93	No	Si
SLU 22	14.67	58.23	-1427	-0.0000201	0.0003743	0.0035	0.55	356.63	383.2	383.2	6.58	No	Si
SLU 67	13.87	37.09	-2080	-0.0000245	0.0003743	0.0035	0.55	496.07	520.2	520.2	14.03	No	Si
SLU 67	14.67	69.52	-2040	-0.0000276	0.0003743	0.0035	0.55	487.89	512.08	512.08	7.37	No	Si
SLU 31	13.87	17.98	-1484	-0.0000164	0.0003743	0.0035	0.55	369.35	396.43	396.43	22.05	No	Si
SLU 31	14.67	49.87	-1490	-0.0000199	0.0003743	0.0035	0.55	370.7	397.81	397.81	7.98	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche,  $\gamma M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	$d_f$	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 13	13.87	-135.17	-416	-0.0002277	0.0005615	0.0035	0.44		180.1	180.1	1.33		Si
SLV 13	14.67	287.55	-1020	-0.0013756	0.0005615	0.0035	0.44		287.83	287.83	1		Si
SLD 15	13.87	-38.95	-1015	-0.0000139	0.0005615	0.0035	0.55		336.19	336.19	8.63		Si
SLD 15	14.67	159.96	-1086	-0.0000303	0.0005615	0.0035	0.55		304.75	304.75	1.91		Si
SLV 12	13.87	16.39	-1358	-0.0000148	0.0005615	0.0035	0.55		373.54	373.54	22.79		Si
SLV 12	14.67	149.69	-796	-0.0000326	0.0005615	0.0035	0.55		230.25	230.25	1.54		Si
SLD 13	13.87	-45.41	-969	-0.0000141	0.0005615	0.0035	0.55		324.28	324.28	7.14		Si
SLD 13	14.67	147.23	-1194	-0.000028	0.0005615	0.0035	0.55		332.19	332.19	2.26		Si
SLV 11	13.87	-2.63	-1262	-0.0000125	0.0005615	0.0035	0.55		397.95	397.95	151.37		Si
SLV 11	14.67	174.57	-778	-0.0000557	0.0005615	0.0035	0.55		225.65	225.65	1.29		Si
SLV 16	13.87	-90.46	-673	-0.0000169	0.0005615	0.0035	0.55		247.55	247.55	2.74		Si
SLV 16	14.67	277.5	-801	-0.0057485	0.0005615	0.0035	0.44		231.43	231.43	0.83		No
SLV 2	13.87	163.55	-2240	-0.0000394	0.0005615	0.0035	0.55		588.57	588.57	3.6		Si
SLV 2	14.67	-230.6	-1869	-0.0000443	0.0005615	0.0035	0.55		548	548	2.38		Si
SLD 16	13.87	-26.3	-1079	-0.0000132	0.0005615	0.0035	0.55		352.22	352.22	13.39		Si
SLD 16	14.67	143.42	-1097	-0.000027	0.0005615	0.0035	0.55		307.72	307.72	2.15		Si
SLV 14	13.87	-105.72	-565	-0.0000227	0.0005615	0.0035	0.44		219.28	219.28	2.07		Si
SLV 14	14.67	249.02	-1047	-0.0001062	0.0005615	0.0035	0.55		294.84	294.84	1.18		Si
SLV 15	13.87	-119.9	-524	-0.0000396	0.0005615	0.0035	0.44		208.5	208.5	1.74		Si
SLV 15	14.67	316.03	-773	-0.0096864	0.0005615	0.0035	0.44		224.31	224.31	0.71		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma M = 3$

Comb.	Quota	M	N	Nmur	V	$d_f$	$l'$	$\sigma_N$	$f_{vd}$	$V_t$	$V_{t,f}$	$V_{t,c}$	$V_{t,c.int.}$	$V_{t,R}$	res. > 50%	c.s.	Verifica
SLU 58	13.87	56.32	-2052	-1709	237	0.55	0.55	-11098	8424	1297	35683	4611	1402	6014	No	25.4	Si
SLU 58	14.67	28.63	-1978	-1647	-121	0.55	0.55	-10698	8371	1289	35683	4611	1402	6014	No	49.75	Si
SLU 79	13.87	49.66	-2152	-1792	207	0.55	0.55	-11639	8496	1308	35683	4611	1402	6014	No	29.03	Si
SLU 79	14.67	46.76	-2153	-1792	-149	0.55	0.55	-11640	8496	1308	35683	4611	1402	6014	No	40.4	Si
SLU 80	13.87	49.92	-2155	-1795	206	0.55	0.55	-11654	8498	1309	35683	4611	1402	6014	No	29.16	Si
SLU 80	14.67	47.12	-2151	-1791	-147	0.55	0.55	-11630	8495	1308	35683	4611	1402	6014	No	40.9	Si
SLU 62	13.87	45.22	-1915	-1595	215	0.55	0.55	-10356	8325	1282	35683	4611	1402	6014	No	27.95	Si
SLU 62	14.67	28.95	-1835	-1528	-132	0.55	0.55	-9921	8267	1273	35683	4611	1402	6014	No	45.49	Si
SLU 59	13.87	56.57	-2055	-1711	236	0.55	0.55	-11113	8426	1298	35683	4611	1402	6014	No	25.5	Si
SLU 59	14.67	28.99	-1977	-1646	-119	0.55	0.55	-10688	8369	1289	35683	4611	1402	6014	No	50.51	Si
SLU 51	13.87	55.9	-2020	-1682	202	0.55	0.55	-10920	8400	1294	35683	4611	1402	6014	No	29.78	Si
SLU 51	14.67	37.94	-1911	-1591	-95	0.55	0.55	-10331	8322	1282	35683	4611	1402	6014	No	63.26	Si
SLU 50	13.87	55.64	-2017	-1679	203	0.55	0.55	-10905	8398	1293	35683	4611	1402	6014	No	29.64	Si
SLU 50	14.67	37.58	-1912	-1592	-97	0.55	0.55	-10341	8323	1282	35683	4611	1402	6014	No	62.07	Si
SLU 56	13.87	55.55	-2165	-1803	231	0.55	0.55	-11708	8505	1310	35683	4611	1402	6014	No	26	Si
SLU 56	14.67	37.91	-2105	-1753	-131	0.55	0.55	-11383	8462	1303	35683	4611	1402	6014	No	45.91	Si
SLU 63	13.87	45.48	-1918	-1597	214	0.55	0.55	-10371	8327	1282	35683	4611	1402	6014	No	28.08	Si
SLU 63	14.67	29.31	-1833	-1526	-130	0.55	0.55	-9911	8266	1273	35683	4611	1402	6014	No	46.12	Si
SLU 57	13.87	55.8	-2168	-1805	230	0.55	0.55	-11723	8508	1310	35683	4611	1402	6014	No	26.1	Si
SLU 57	14.67	38.27	-2103	-1751	-129	0.55	0.55	-11373	8461	1303	35683	4611	1402	6014	No	46.56	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma M = 2$

Comb.	Quota	M	N	Nmur	V	$d_f$	$l'$	$\sigma_N$	$f_{vd}$	$V_t$	$V_{t,f}$	$V_{t,c}$	$V_{t,c.int.}$	$V_{t,R}$	res. > 50%	c.s.	Verifica
SLV 15	13.87	-119.9	-524	-436	-795	0.44	0.1384	0	0	0	35683	5534	1122	6655		8.38	Si





Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 15	14.67	316.03	-773	-644	68	0.44	0	0	0	0	35683	5534	1122	6655		97.59	Si
SLV 14	13.87	-105.72	-565	-470	-671	0.44	0.2636	0	0	0	35683	5534	1122	6655		9.93	Si
SLV 14	14.67	249.02	-1047	-872	0	0.55	0.1114	-28313	16083	502	35683	6917	1402	8319		99329	Si
SLV 16	13.87	-90.46	-673	-560	-671	0.55	0.4215	-4752	11367	1341	35683	6917	1402	8319		12.39	Si
SLV 16	14.67	277.5	-801	-667	111	0.44	0	0	0	0	35683	5534	1122	6655		60.08	Si
SLD 2	13.87	82.59	-1748	-1456	474	0.55	0.55	-9454	12307	1895	35683	6917	1402	8319		17.55	Si
SLD 2	14.67	-74.52	-1557	-1296	-170	0.55	0.55	-8417	12100	1863	35683	6917	1402	8319		48.95	Si
SLD 4	13.87	89.05	-1795	-1495	473	0.55	0.55	-9706	12358	1903	35683	6917	1402	8319		17.59	Si
SLD 4	14.67	-61.79	-1448	-1206	-121	0.55	0.55	-7832	11983	1845	35683	6917	1402	8319		68.69	Si
SLV 4	13.87	178.82	-2347	-1955	981	0.55	0.55	-12693	12955	1995	35683	6917	1402	8319		8.48	Si
SLV 4	14.67	-202.12	-1623	-1351	-154	0.55	0.4513	-10746	12566	1588	35683	6917	1402	8319		53.99	Si
SLV 13	13.87	-135.17	-416	-347	-794	0.44	0	0	0	0	35683	5534	1122	6655		8.39	Si
SLV 13	14.67	287.55	-1020	-849	-43	0.44	0	0	0	0	35683	5534	1122	6655		155.99	Si
SLV 2	13.87	163.55	-2240	-1865	982	0.55	0.55	-12111	12839	1977	35683	6917	1402	8319		8.47	Si
SLV 2	14.67	-230.6	-1869	-1556	-265	0.55	0.4548	-12291	12875	1640	35683	6917	1402	8319		31.4	Si
SLV 3	13.87	149.37	-2199	-1831	858	0.55	0.55	-11889	12794	1970	35683	6917	1402	8319		9.7	Si
SLV 3	14.67	-163.59	-1595	-1328	-197	0.55	0.5174	-8627	12142	1759	35683	6917	1402	8319		42.3	Si
SLV 1	13.87	134.11	-2091	-1741	859	0.55	0.55	-11307	12678	1952	35683	6917	1402	8319		9.69	Si
SLV 1	14.67	-192.07	-1842	-1534	-308	0.55	0.5121	-9959	12408	1779	35683	6917	1402	8319		27.05	Si

#### Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.45 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 9	179667	0.53	0	-185	62.07	0	0	No, e>t/2
SLV 6	179667	0.53	0	-100	62.07	0	0	No, e>t/2
SLV 5	179667	0.53	0	-69	62.07	0	0	No, e>t/2
SLV 10	179667	0.53	0	-216	62.07	0	0	No, e>t/2
SLV 1	179667	0.53	3289	-507	62.07	69.39	1.12	Si
SLV 2	179667	0.53	3601	-555	62.07	75.8	1.22	Si
SLV 13	179667	0.53	5800	-893	62.07	120.29	1.94	Si
SLV 14	179667	0.53	6112	-941	62.07	126.49	2.04	Si
SLV 3	179667	0.53	6523	-1005	62.07	134.63	2.17	Si
SLV 4	179667	0.53	6835	-1053	62.07	140.76	2.27	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 13.45 Wa = 0.05 Ta = 0.0596

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 6	-1314	-449	9	1.814	204.1	0.914	28.83173	12.19367	Si
SLV 5	-1300	-397	10	1.828	202.7	0.914	29.06341	12.19367	Si
SLV 10	-1119	-343	6	2.037	184.7	0.908	32.59418	12.19367	Si
SLV 9	-1105	-291	6	2.054	183.3	0.908	32.88953	12.19367	Si
SLV 8	-674	-2167	2	2.839	141.1	0.893	46.19266	12.19367	Si
SLV 7	-660	-2115	2	2.874	139.8	0.893	46.77383	12.19367	Si
SLV 2	-1320	-1189	10	1.807	204.7	0.914	28.71025	7.3	Si
SLV 1	-1299	-1109	11	1.828	202.6	0.914	29.06762	7.3	Si
SLV 4	-1128	-1704	8	2.024	185.6	0.908	32.37829	7.3	Si
SLV 3	-1107	-1624	8	2.051	183.5	0.908	32.83206	7.3	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	6.502	SLV 23	Si
V_SLV	25.395	SLV 58	Si
PF_SLV	0.71	SLV 15	No
V_SLV	8.377	SLV 15	Si
PFFP_SLV	0	SLV 5	No
R_SLV	2.364	SLV 6	Si

## Maschio 169

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Maschio considerato membratura sismica secondaria

#### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.sx	a.s.dx
-17.203	-3.314	-17.363	-3.314	L7	L8	0.16	0.28	3.16	3.16	3.16			

#### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_ Corti

fb	fk	fvk0	fmedio	τ0	fν0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

#### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio





## Rinforzo a matrice inorganica

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	elim,conv / e,CNR DT-200							CRM / Fibrenet?			
									αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	2	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche,  $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 57	12.77	4.92	-812	-0.0000342	0.0003743	0.0035	0.16	53.39	170.86	170.86	34.71	No	Si
SLU 57	14.57	5.48	-613	-0.0000278	0.0003743	0.0035	0.16	42.44	163.52	163.52	29.83	No	Si
SLU 70	12.77	5.6	-844	-0.0000363	0.0003743	0.0035	0.16	55.03	171.88	171.88	30.7	No	Si
SLU 70	14.57	4.36	-666	-0.0000282	0.0003743	0.0035	0.16	45.51	165.71	165.71	37.97	No	Si
SLU 58	12.77	4.6	-782	-0.0000327	0.0003743	0.0035	0.16	51.85	169.9	169.9	36.95	No	Si
SLU 58	14.57	5.41	-580	-0.0000265	0.0003743	0.0035	0.16	40.49	162.14	162.14	29.96	No	Si
SLU 69	12.77	5.58	-844	-0.0000362	0.0003743	0.0035	0.16	55.01	171.87	171.87	30.82	No	Si
SLU 69	14.57	4.38	-665	-0.0000282	0.0003743	0.0035	0.16	45.46	165.68	165.68	37.79	No	Si
SLU 63	12.77	4.24	-712	-0.0000297	0.0003743	0.0035	0.16	48.09	167.57	167.57	39.54	No	Si
SLU 63	14.57	5.16	-509	-0.0000237	0.0003743	0.0035	0.16	36.15	159.06	159.06	30.82	No	Si
SLU 77	12.77	5.16	-829	-0.0000351	0.0003743	0.0035	0.16	54.28	171.41	171.41	33.21	No	Si
SLU 77	14.57	5.31	-633	-0.0000283	0.0003743	0.0035	0.16	43.63	164.37	164.37	30.93	No	Si
SLU 59	12.77	4.62	-783	-0.0000327	0.0003743	0.0035	0.16	51.86	169.91	169.91	36.78	No	Si
SLU 59	14.57	5.39	-581	-0.0000265	0.0003743	0.0035	0.16	40.54	162.17	162.17	30.08	No	Si
SLU 56	12.77	4.9	-812	-0.0000342	0.0003743	0.0035	0.16	53.38	170.85	170.85	34.86	No	Si
SLU 56	14.57	5.5	-612	-0.0000278	0.0003743	0.0035	0.16	42.39	163.49	163.49	29.72	No	Si
SLU 78	12.77	5.18	-829	-0.0000352	0.0003743	0.0035	0.16	54.29	171.42	171.42	33.08	No	Si
SLU 78	14.57	5.29	-634	-0.0000283	0.0003743	0.0035	0.16	43.68	164.4	164.4	31.05	No	Si
SLU 62	12.77	4.22	-712	-0.0000297	0.0003743	0.0035	0.16	48.08	167.56	167.56	39.74	No	Si
SLU 62	14.57	5.18	-508	-0.0000237	0.0003743	0.0035	0.16	36.1	159.02	159.02	30.7	No	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 57	12.77	4.92	-812	-676	0	0.16	0.16	-15092	8957	401	2537	1342	408	1750	No	21615.52	Si
SLU 57	14.57	5.48	-613	-510	0	0.16	0.16	-11391	8463	379	2537	1342	408	1750	No	49954.28	Si
SLU 56	12.77	4.9	-812	-676	0	0.16	0.16	-15087	8956	401	2537	1342	408	1750	No	21432.72	Si
SLU 56	14.57	5.5	-612	-510	0	0.16	0.16	-11377	8461	379	2537	1342	408	1750	No	49222.94	Si
SLU 60	12.77	4.01	-648	-540	0	0.16	0.16	-12048	8551	383	2537	1342	408	1750	No	21373.69	Si
SLU 60	14.57	4.55	-449	-374	0	0.16	0.16	-8351	8058	361	2537	1342	408	1750	No	44066.24	Si
SLU 58	12.77	4.6	-782	-651	0	0.16	0.16	-14541	8883	398	2537	1342	408	1750	No	20908.03	Si
SLU 58	14.57	5.41	-580	-483	0	0.16	0.16	-10779	8382	375	2537	1342	408	1750	No	46694.51	Si
SLU 83	12.77	4.48	-730	-608	0	0.16	0.16	-13562	8753	392	2537	1342	408	1750	No	21132.05	Si
SLU 83	14.57	4.99	-529	-441	0	0.16	0.16	-9833	8256	370	2537	1342	408	1750	No	38616.82	Si
SLU 84	12.77	4.5	-730	-608	0	0.16	0.16	-13567	8753	392	2537	1342	408	1750	No	21309.73	Si
SLU 84	14.57	4.97	-530	-441	0	0.16	0.16	-9848	8258	370	2537	1342	408	1750	No	39065.51	Si
SLU 61	12.77	4.04	-648	-540	0	0.16	0.16	-12053	8551	383	2537	1342	408	1750	No	21555.47	Si
SLU 61	14.57	4.53	-450	-375	0	0.16	0.16	-8366	8060	361	2537	1342	408	1750	No	44651.46	Si
SLU 63	12.77	4.24	-712	-593	0	0.16	0.16	-13241	8710	390	2537	1342	408	1750	No	19604.59	Si
SLU 63	14.57	5.16	-509	-423	0	0.16	0.16	-9452	8205	368	2537	1342	408	1750	No	41747.67	Si
SLU 59	12.77	4.62	-783	-652	0	0.16	0.16	-14546	8884	398	2537	1342	408	1750	No	21081.94	Si
SLU 59	14.57	5.39	-581	-484	0	0.16	0.16	-10794	8384	376	2537	1342	408	1750	No	47352.14	Si
SLU 62	12.77	4.22	-712	-593	0	0.16	0.16	-13237	8709	390	2537	1342	408	1750	No	19454.11	Si
SLU 62	14.57	5.18	-508	-423	0	0.16	0.16	-9438	8203	367	2537	1342	408	1750	No	41235.65	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.45 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 15	179667	0.53	6108	-274	18.06	36.78	2.04	Si
SLV 16	179667	0.53	6790	-304	18.06	40.7	2.25	Si
SLV 13	179667	0.53	7036	-315	18.06	42.1	2.33	Si
SLV 14	179667	0.53	7718	-346	18.06	45.96	2.55	Si
SLV 11	179667	0.53	7916	-355	18.06	47.08	2.61	Si
SLV 12	179667	0.53	8357	-374	18.06	49.55	2.74	Si
SLV 7	179667	0.53	10291	-461	18.06	60.19	3.33	Si
SLV 8	179667	0.53	10731	-481	18.06	62.58	3.47	Si
SLV 9	179667	0.53	11010	-493	18.06	64.08	3.55	Si
SLV 10	179667	0.53	11450	-513	18.06	66.43	3.68	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.45 Wa = 0.05 Ta = 0.0596

Comb.	N top	N base	V orto	α0	M*	e*	α0*	αLim	Verifica
SLV 10	-167	-129	1	3.116	38.3	0.891	50.84519	12.19367	Si



Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 9	-165	-135	1	3.135	38.1	0.891	51.17045	12.19367	Si
SLV 14	-250	-275	0	2.437	46.3	0.899	39.37687	7.3	Si
SLV 13	-247	-282	1	2.455	46	0.899	39.68329	7.3	Si
SLV 16	-224	-337	0	2.617	43.7	0.896	42.43406	7.3	Si
SLV 15	-221	-345	1	2.638	43.5	0.896	42.78958	7.3	Si
SLV 12	-78	-338	2	4.435	30.4	0.895	72.053	12.19367	Si
SLV 11	-76	-343	2	4.476	30.2	0.895	72.66203	12.19367	Si
SLV 6	-69	-67	2	4.644	29.6	0.898	75.17871	12.19367	Si
SLV 5	-67	-72	2	4.688	29.5	0.899	75.83021	12.19367	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	29.722	SLU 56	Si
V_SLU	19454.11	SLU 62	Si
PFFP_SLV	2.037	SLV 15	Si
R_SLV	4.17	SLV 10	Si

Maschio 170

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)  
Maschio considerato membratura sismica secondaria

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.683	5.826	-19.683	6.386	L7	L8	0.56	0.28	3.16	3.16	3.16			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau 0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	2	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche,  $\gamma M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon m$	$\epsilon m_{-}$	$\epsilon m_u$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 49	11.87	-63.43	-2245	-0.0000284	0.0003743	0.0035	0.56	540.22	2030.38	2030.38	32.01	No	Si
SLU 49	15.03	-61.9	-1057	-0.0000164	0.0003743	0.0035	0.56	276.37	1837.64	1837.64	29.69	No	Si
SLU 29	11.87	-46.57	-2260	-0.0000268	0.0003743	0.0035	0.56	543.19	2032.4	2032.4	43.64	No	Si
SLU 29	15.03	-66.25	-1389	-0.0000201	0.0003743	0.0035	0.56	354.97	1899.47	1899.47	28.67	No	Si
SLU 7	11.87	-50.82	-1906	-0.0000236	0.0003743	0.0035	0.56	469.88	1982.64	1982.64	39.02	No	Si
SLU 7	15.03	-60.5	-1024	-0.0000159	0.0003743	0.0035	0.56	268.21	1830.34	1830.34	30.25	No	Si
SLU 51	11.87	-64.49	-2174	-0.0000278	0.0003743	0.0035	0.56	525.75	2020.52	2020.52	31.33	No	Si
SLU 51	15.03	-68.56	-1005	-0.0000165	0.0003743	0.0035	0.56	263.72	1826.31	1826.31	26.64	No	Si
SLU 72	11.87	-58.95	-2588	-0.0000314	0.0003743	0.0035	0.56	607.19	2075.01	2075.01	35.2	No	Si
SLU 72	15.03	-69.12	-1417	-0.0000207	0.0003743	0.0035	0.56	361.47	1904.43	1904.43	27.55	No	Si
SLU 30	11.87	-46.33	-2249	-0.0000266	0.0003743	0.0035	0.56	540.94	2030.87	2030.87	43.83	No	Si
SLU 30	15.03	-67.72	-1383	-0.0000202	0.0003743	0.0035	0.56	353.74	1898.53	1898.53	28.03	No	Si
SLU 71	11.87	-59.19	-2599	-0.0000316	0.0003743	0.0035	0.56	609.31	2076.36	2076.36	35.08	No	Si
SLU 71	15.03	-67.64	-1422	-0.0000206	0.0003743	0.0035	0.56	362.7	1905.36	1905.36	28.17	No	Si
SLU 8	11.87	-52.11	-1845	-0.0000232	0.0003743	0.0035	0.56	456.97	1973.93	1973.93	37.88	No	Si
SLU 8	15.03	-65.68	-977	-0.000016	0.0003743	0.0035	0.56	256.81	1820.12	1820.12	27.71	No	Si
SLU 9	11.87	-51.87	-1834	-0.000023	0.0003743	0.0035	0.56	454.56	1972.3	1972.3	38.02	No	Si
SLU 9	15.03	-67.16	-972	-0.0000161	0.0003743	0.0035	0.56	255.51	1818.94	1818.94	27.09	No	Si
SLU 50	11.87	-64.73	-2185	-0.0000279	0.0003743	0.0035	0.56	528.03	2022.07	2022.07	31.24	No	Si
SLU 50	15.03	-67.08	-1010	-0.0000164	0.0003743	0.0035	0.56	265.02	1827.48	1827.48	27.24	No	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma M = 3$

Comb.	Quota	M	N	Nmur	V	df	l'	$\sigma N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 31	11.87	-16.95	-2383	-1984	-1	0.56	0.56	-12656	8632	1353	8881	4695	1428	6123	No	4801.75	Si
SLU 31	15.03	14.5	-1333	-1110	-1	0.56	0.56	-7077	7888	1237	8881	4695	1428	6123	No	8578.15	Si
SLU 55	11.87	-43.3	-2428	-2022	-1	0.56	0.56	-12895	8664	1358	8881	4695	1428	6123	No	5047.49	Si
SLU 55	15.03	-16.52	-1152	-959	-1	0.56	0.56	-6118	7760	1217	8881	4695	1428	6123	No	9931.71	Si
SLU 82	11.87	-24.23	-2894	-2410	-1	0.56	0.56	-15368	8994	1410	8881	4695	1428	6123	No	4675.32	Si
SLU 82	15.03	23.87	-1519	-1265	-1	0.56	0.56	-8066	8020	1258	8881	4695	1428	6123	No	6186.9	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 52	11.87	-35.11	-2308	-1922	-1	0.56	0.56	-12258	8579	1345	8881	4695	1428	6123	No	4728.96	Si
SLU 52	15.03	13.66	-955	-795	-1	0.56	0.56	-5069	7620	1195	8881	4695	1428	6123	No	9103.61	Si
SLU 76	11.87	-37.76	-2843	-2367	-1	0.56	0.56	-15096	8957	1405	8881	4695	1428	6123	No	4577.09	Si
SLU 76	15.03	-17.09	-1564	-1302	-1	0.56	0.56	-8304	8052	1262	8881	4695	1428	6123	No	7839.58	Si
SLU 68	11.87	-50.59	-2461	-2049	-1	0.56	0.56	-13068	8687	1362	8881	4695	1428	6123	No	5035.89	Si
SLU 68	15.03	-39.92	-1216	-1012	-1	0.56	0.56	-6456	7805	1224	8881	4695	1428	6123	No	9860.15	Si
SLU 73	11.87	-29.57	-2723	-2267	-1	0.56	0.56	-14459	8872	1391	8881	4695	1428	6123	No	4313.61	Si
SLU 73	15.03	13.1	-1366	-1138	-1	0.56	0.56	-7255	7912	1241	8881	4695	1428	6123	No	7314.4	Si
SLU 65	11.87	-42.39	-2341	-1949	-1	0.56	0.56	-12430	8602	1349	8881	4695	1428	6123	No	4718.78	Si
SLU 65	15.03	-9.73	-1018	-848	-1	0.56	0.56	-5407	7665	1202	8881	4695	1428	6123	No	9043.46	Si
SLU 84	11.87	-32.43	-3014	-2510	-1	0.56	0.56	-16006	9079	1424	8881	4695	1428	6123	No	4986.43	Si
SLU 84	15.03	-6.32	-1716	-1429	-1	0.56	0.56	-9115	8160	1279	8881	4695	1428	6123	No	6558.54	Si
SLU 75	11.87	-36.87	-2922	-2433	-1	0.56	0.56	-15516	9013	1413	8881	4695	1428	6123	No	5069.56	Si
SLU 75	15.03	-9.44	-1619	-1348	-1	0.56	0.56	-8598	8091	1269	8881	4695	1428	6123	No	6838.12	Si

**Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)**

quota 13.45 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 12	179667	0.53	0	-187	64.67	0	0	No, e>t/2
SLV 16	179667	0.53	0	263	64.67	0	0	No, Trazione
SLV 14	179667	0.53	0	-147	64.67	0	0	No, e>t/2
SLV 11	179667	0.53	0	-221	64.67	0	0	No, e>t/2
SLV 15	179667	0.53	0	210	64.67	0	0	No, Trazione
SLV 13	179667	0.53	0	-200	64.67	0	0	No, e>t/2
SLV 8	179667	0.53	6215	-975	64.67	130.88	2.02	Si
SLV 7	179667	0.53	6433	-1009	64.67	135.27	2.09	Si
SLV 10	179667	0.53	9917	-1555	64.67	203.55	3.15	Si
SLV 9	179667	0.53	10134	-1589	64.67	207.71	3.21	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

**Verifica dei meccanismi locali di collasso con analisi cinematica lineare**

forza di aggancio al piano = 5617 quota mezzeria = 13.45 Wa = 0.05 Ta = 0.0596

Comb.	N top	N base	V orto	α0	M*	e*	α0*	aLim	Verifica
SLV 5	-1585	-3135	-54	1.576	232.6	0.921	24.86646	12.19367	Si
SLV 6	-1543	-3089	-54	1.609	228.3	0.92	25.41661	12.19367	Si
SLV 1	-2371	-3472	-57	1.147	311.9	0.938	17.78766	7.3	Si
SLV 2	-2305	-3400	-57	1.174	305.2	0.936	18.22172	7.3	Si
SLV 3	-2172	-2945	-33	1.241	291.7	0.934	19.3111	7.3	Si
SLV 4	-2106	-2874	-32	1.272	285	0.933	19.82137	7.3	Si
SLV 7	-919	-1381	27	2.343	166.3	0.901	37.79735	12.19367	Si
SLV 8	-877	-1335	28	2.417	162.2	0.899	39.04955	12.19367	Si
SLV 9	-721	-2331	-28	2.732	147.1	0.894	44.39793	12.19367	Si
SLV 10	-679	-2285	-27	2.834	143	0.893	46.12104	12.19367	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

**Tabella dei coefficienti di sicurezza minimi**

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	26.64	SLU 51	Si
V_SLU	4313.61	SLU 73	Si
PFFP_SLV	0	SLV 16	No
R_SLV	2.039	SLV 5	Si

**Maschio 171**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati geometrici**

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.613	1.006	-19.613	5.826	L7	L8	4.82	0.16	3.16	3.16	3.16			

**Caratteristiche del materiale**

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

**Materiale per FRCM**

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

**Rinforzo a matrice inorganica**



									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma_{F,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 19	11.87	-154.07	-9788	-0.0000162	0.0004492	0.0035	4.82	21138.58	35527.08	35527.08	230.59	No	Si
SLU 19	15.03	-1172.14	-318	-0.0000213	0.0004492	0.0035	3.856	0	14430.26	14430.26	12.31	No	Si
SLU 61	11.87	-290.19	-12054	-0.0000203	0.0004492	0.0035	4.82	25334.54	40248.21	40248.21	138.7	No	Si
SLU 61	15.03	-1470.13	-389	-0.0000271	0.0004492	0.0035	3.856	0	14595.83	14595.83	9.93	No	Si
SLU 44	11.87	-551.8	-11082	-0.0000192	0.0004492	0.0035	4.82	23566.6	38222.78	38222.78	69.27	No	Si
SLU 44	15.03	-1112.51	-465	-0.0000113	0.0004492	0.0035	3.856	1114.7	14770.69	14770.69	13.28	No	Si
SLU 52	11.87	-413.15	-11752	-0.00002	0.0004492	0.0035	4.82	24789.93	39618.35	39618.35	95.89	No	Si
SLU 52	15.03	-1346.08	-414	-0.0000224	0.0004492	0.0035	3.856	0	14653.48	14653.48	10.89	No	Si
SLU 18	11.87	-58.76	-9811	-0.0000161	0.0004492	0.0035	4.82	21182.23	35574.72	35574.72	605.43	No	Si
SLU 18	15.03	-1208.06	-313	-0.0000225	0.0004492	0.0035	3.856	0	14419.13	14419.13	11.94	No	Si
SLU 73	11.87	-240.87	-12889	-0.0000215	0.0004492	0.0035	4.82	26812.93	41986.08	41986.08	174.31	No	Si
SLU 73	15.03	-1242.04	-543	-0.0000111	0.0004492	0.0035	3.856	1299.97	14950.46	14950.46	12.04	No	Si
SLU 43	11.87	-392.95	-11120	-0.0000189	0.0004492	0.0035	4.82	23636.81	38302.19	38302.19	97.47	No	Si
SLU 43	15.03	-1172.37	-457	-0.0000141	0.0004492	0.0035	3.856	0	14752.14	14752.14	12.58	No	Si
SLU 82	11.87	-117.91	-13191	-0.0000218	0.0004492	0.0035	4.82	27339.95	42615.94	42615.94	361.44	No	Si
SLU 82	15.03	-1366.09	-518	-0.0000174	0.0004492	0.0035	3.856	0	14892.81	14892.81	10.9	No	Si
SLU 81	11.87	-22.6	-13214	-0.0000216	0.0004492	0.0035	4.82	27379.63	42663.58	42663.58	1888.17	No	Si
SLU 81	15.03	-1402	-513	-0.000019	0.0004492	0.0035	3.856	0	14881.69	14881.69	10.61	No	Si
SLU 60	11.87	-194.88	-12077	-0.0000201	0.0004492	0.0035	4.82	25375.54	40295.86	40295.86	206.78	No	Si
SLU 60	15.03	-1506.05	-384	-0.0000283	0.0004492	0.0035	3.856	0	14584.7	14584.7	9.68	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 12	11.87	-9067.87	-6512	-0.0000335	0.0006738	0.0035	3.856		28496.4	28496.4	3.14		Si
SLV 12	15.03	2037.69	-399	-0.0002575	0.0006738	0.0035	3.856		3323.98	3323.98	1.63		Si
SLV 9	11.87	6901.29	-10721	-0.0000315	0.0006738	0.0035	4.82		26804.78	26804.78	3.88		Si
SLV 9	15.03	-3463.78	-429	-0.0000782	0.0006738	0.0035	3.856		14676.09	14676.09	4.24		Si
SLV 6	11.87	8130.91	-12056	-0.0000362	0.0006738	0.0035	4.82		29719.03	29719.03	3.66		Si
SLV 6	15.03	-3734.83	-398	-0.0000857	0.0006738	0.0035	3.856		14604.31	14604.31	3.91		Si
SLV 11	11.87	-8466.9	-6684	-0.0000306	0.0006738	0.0035	4.82		28879.32	28879.32	3.41		Si
SLV 11	15.03	1912.05	-416	-0.0002237	0.0006738	0.0035	3.856		3364.51	3364.51	1.76		Si
SLV 7	11.87	-6636.3	-8191	-0.0000267	0.0006738	0.0035	4.82		32231.85	32231.85	4.86		Si
SLV 7	15.03	1515.36	-403	-0.0001463	0.0006738	0.0035	3.856		3332.29	3332.29	2.2		Si
SLV 16	11.87	-5989.45	-6119	-0.0000222	0.0006738	0.0035	4.82		27622.13	27622.13	4.61		Si
SLV 16	15.03	653.39	-415	-0.0000026	0.0006738	0.0035	4.82		3361.13	3361.13	5.14		Si
SLV 10	11.87	6300.32	-10549	-0.0000299	0.0006738	0.0035	4.82		26426.13	26426.13	4.19		Si
SLV 10	15.03	-3338.14	-412	-0.0000754	0.0006738	0.0035	3.856		14636.1	14636.1	4.38		Si
SLV 1	11.87	5653.47	-12620	-0.0000321	0.0006738	0.0035	4.82		30942.76	30942.76	5.47		Si
SLV 1	15.03	-2476.18	-400	-0.0000536	0.0006738	0.0035	3.856		14607.65	14607.65	5.9		Si
SLV 8	11.87	-7237.27	-8019	-0.0000278	0.0006738	0.0035	4.82		31853.93	31853.93	4.4		Si
SLV 8	15.03	1641	-385	-0.0001793	0.0006738	0.0035	3.856		3291.72	3291.72	2.01		Si
SLV 5	11.87	8731.88	-12228	-0.0000378	0.0006738	0.0035	4.82		30091.76	30091.76	3.45		Si
SLV 5	15.03	-3860.47	-416	-0.0000886	0.0006738	0.0035	3.856		14644.3	14644.3	3.79		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 18	11.87	-58.76	-9811	-5760	1526	4.82	4.82	-7469	9329	7195	101952	27715	24582	52297	No	34.27	Si
SLU 18	15.03	-1208.06	-313	-184	1530	3.856	0	0	0	0	101952	22172	19666	41838	No	27.35	Si
SLU 60	11.87	-194.88	-12077	-7091	1595	4.82	4.82	-9195	9559	7372	101952	27715	24582	52297	No	32.79	Si
SLU 60	15.03	-1506.05	-384	-226	1600	3.856	0	0	0	0	101952	22172	19666	41838	No	26.15	Si
SLU 82	11.87	-117.91	-13191	-7745	1703	4.82	4.82	-10043	9672	7459	101952	27715	24582	52297	No	30.71	Si
SLU 82	15.03	-1366.09	-518	-304	1777	3.856	0	0	0	0	101952	22172	19666	41838	No	23.55	Si
SLU 40	11.87	18.21	-10925	-6414	1634	4.82	4.82	-8317	9442	7282	101952	27715	24582	52297	No	32.01	Si
SLU 40	15.03	-1068.1	-446	-262	1707	3.856	0.0463	0	0	0	101952	22172	19666	41838	No	24.52	Si
SLU 62	11.87	-13.48	-12697	-7455	1369	4.82	4.82	-9667	9622	7421	101952	27715	24582	52297	No	38.21	Si
SLU 62	15.03	-999.09	-629	-369	1358	3.856	2.4626	0	0	0	101952	22172	19666	41838	No	30.8	Si
SLU 73	11.87	-240.87	-12889	-7568	1288	4.82	4.82	-9813	9642	7436	101952	27715	24582	52297	No	40.61	Si
SLU 73	15.03	-1242.04	-543	-319	1409	3.856	0.362	0	0	0	101952	22172	19666	41838	No	29.7	Si
SLU 39	11.87	113.52	-10947	-6428	1828	4.82	4.82	-8335	9445	7284	101952	27715	24582	52297	No	28.6	Si
SLU 39	15.03	-1104.01	-441	-259	1828	3.856	0	0	0	0	101952	22172	19666	41838	No	22.89	Si
SLU 61	11.87	-290.19	-12054	-7078	1400	4.82	4.82	-9178	9557	7370	101952	27715	24582	52297	No	37.34	Si
SLU 61	15.03	-1470.13	-389	-229	1479	3.856	0	0	0	0	101952	22172	19666	41838	No	28.29	Si
SLU 81	11.87	-22.6	-13214	-7759	1897	4.82	4.82	-10060	9675	7461	101952	27715	24582	52297	No	27.57	Si
SLU 81	15.03	-1402	-513	-301	1898	3.856	0	0	0	0	101952	22172	19666	41838	No	22.05	Si
SLU 19	11.87	-154.07	-9788	-5747	1332	4.82	4.82	-7452	9327	7193	101952	27715	24582	52297	No	39.27	Si
SLU 19	15.03	-1172.14	-318	-187	1409	3.856	0	0	0	0	101952	22172	19666	41838	No	29.7	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 6	11.87	8130.91	-12056	-7079	14213	4.82	4.82	-9179	14336	11056	101952	41572	24582	66154		4.65	Si
SLV 6	15.03	-3734.83	-398	-234	15556	3.856	0	0	0	0	101952	33258	19666	52924		3.4	Si
SLV 8	11.87	-7237.27	-8019	-4708	-10665	4.82	4.5224	-6525	13805	9989	101952	41572	24582	66154		6.57	Si
SLV 8	15.03	1641	-385	-226	-11432	3.856	0	0	0	0	101952	33258	19666	52924		4.63	Si



Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 11	11.87	-8466.9	-6684	-3924	-12511	4.82	3.4295	-7169	13934	7646	101952	41572	24582	66154		5.29	Si
SLV 11	15.03	1912.05	-416	-245	-13857	3.856	0	0	0	0	101952	33258	19666	52924		3.82	Si
SLV 2	11.87	4722.99	-12354	-7254	9392	4.82	4.82	-9406	14381	11091	101952	41572	24582	66154		7.04	Si
SLV 2	15.03	-2281.65	-373	-219	9767	3.856	0	0	0	0	101952	33258	19666	52924		5.42	Si
SLV 1	11.87	5653.47	-12620	-7410	10821	4.82	4.82	-9608	14422	11122	101952	41572	24582	66154		6.11	Si
SLV 1	15.03	-2476.18	-400	-235	11203	3.856	0	0	0	0	101952	33258	19666	52924		4.72	Si
SLV 12	11.87	-9067.87	-6512	-3823	-13433	3.856	3.0524	0	0	0	101952	33258	19666	52924		3.94	Si
SLV 12	15.03	2037.69	-399	-234	-14784	3.856	0	0	0	0	101952	33258	19666	52924		3.58	Si
SLV 10	11.87	6300.32	-10549	-6194	10845	4.82	4.82	-8032	14106	10879	101952	41572	24582	66154		6.1	Si
SLV 10	15.03	-3338.14	-412	-242	12204	3.856	0	0	0	0	101952	33258	19666	52924		4.34	Si
SLV 7	11.87	-6636.3	-8191	-4809	-9142	4.82	4.7993	-6236	13747	10556	101952	41572	24582	66154		7.24	Si
SLV 7	15.03	1515.36	-403	-236	-10504	3.856	0	0	0	0	101952	33258	19666	52924		5.04	Si
SLV 5	11.87	8731.88	-12228	-7180	15136	4.82	4.82	-9310	14362	11076	101952	41572	24582	66154		4.37	Si
SLV 5	15.03	-3860.47	-416	-244	16484	3.856	0	0	0	0	101952	33258	19666	52924		3.21	Si
SLV 9	11.87	6901.29	-10721	-6295	11768	4.82	4.82	-8162	14132	10899	101952	41572	24582	66154		5.62	Si
SLV 9	15.03	-3463.78	-429	-252	13131	3.856	0	0	0	0	101952	33258	19666	52924		4.03	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRMC D.M. 17-01-18 (N.T.C.)

quota 13.45 Ta 0.1 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 16	-3395	0.53	328.9	0	673.69	336.84	1.02	Si
SLV 12	-3471	0.53	328.9	0	681.17	340.58	1.04	Si
SLV 15	-3575	0.53	328.9	0	691.54	345.77	1.05	Si
SLV 11	-3587	0.53	328.9	0	692.7	346.35	1.05	Si
SLV 14	-4125	0.53	328.9	320.33	745.77	533.05	1.62	Si
SLV 8	-4237	0.53	328.9	328.81	756.83	542.82	1.65	Si
SLV 13	-4305	0.53	328.9	333.88	763.44	548.66	1.67	Si
SLV 7	-4354	0.53	328.9	337.55	768.24	552.9	1.68	Si
SLV 10	-5902	0.53	328.9	452.44	919.61	686.02	2.09	Si
SLV 4	-5951	0.53	328.9	456.02	924.36	690.19	2.1	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.45 Wa = 0.03 Ta = 0.1042

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 9	-429	-10721	62	10.346	459.5	0.936	160.64919	21.1834	Si
SLV 11	-416	-6684	98	10.383	458.8	0.937	161.0235	21.1834	Si
SLV 5	-416	-12228	-98	10.386	458.8	0.937	161.05304	21.1834	Si
SLV 10	-412	-10549	62	10.414	458.6	0.938	161.42745	21.1834	Si
SLV 12	-399	-6512	98	10.452	458	0.939	161.80211	21.1834	Si
SLV 6	-398	-12056	-98	10.455	458	0.939	161.83033	21.1834	Si
SLV 7	-403	-8191	-63	10.452	458.2	0.938	161.8498	21.1834	Si
SLV 8	-385	-8019	-63	10.521	457.4	0.94	162.62934	21.1834	Si
SLV 13	-446	-7597	262	10.207	460.3	0.934	158.74435	11.54873	Si
SLV 15	-442	-6386	273	10.218	460.1	0.935	158.85524	11.54873	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	9.684	SLU 60	Si
V_SLU	22.047	SLU 81	Si
PF_SLV	1.631	SLV 12	Si
V_SLV	3.211	SLV 5	Si
PFFP_SLV	1.024	SLV 16	Si
R_SLV	7.584	SLV 9	Si

## Maschio 172

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-18.518	-3.314	-18.518	-0.094	L7	L8	3.221	0.16	3.16	3.16	3.16			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica



									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 79	11.87	1479.67	-9832	-0.000031	0.0004492	0.0035	3.2207	13360.14	15602.6	15602.6	10.54	No	Si
SLU 79	13.97	1018.37	-5888	-0.000019	0.0004492	0.0035	3.2207	8594.79	9997.95	9997.95	9.82	No	Si
SLU 30	11.87	1100	-7867	-0.0000243	0.0004492	0.0035	3.2207	11086.03	12845.24	12845.24	11.68	No	Si
SLU 30	13.97	941.49	-5000	-0.0000164	0.0004492	0.0035	3.2207	7412.93	8693.33	8693.33	9.23	No	Si
SLU 80	11.87	1430.17	-9804	-0.0000307	0.0004492	0.0035	3.2207	13329.04	15564.14	15564.14	10.88	No	Si
SLU 80	13.97	1010.8	-5882	-0.0000189	0.0004492	0.0035	3.2207	8587.69	9990.1	9990.1	9.88	No	Si
SLU 38	11.87	1275.08	-8365	-0.0000264	0.0004492	0.0035	3.2207	11681.28	13553.8	13553.8	10.63	No	Si
SLU 38	13.97	1024.21	-5184	-0.0000173	0.0004492	0.0035	3.2207	7660.86	8964.21	8964.21	8.75	No	Si
SLU 36	11.87	1252.95	-8449	-0.0000265	0.0004492	0.0035	3.2207	11780.53	13673.14	13673.14	10.91	No	Si
SLU 36	13.97	896.84	-5187	-0.0000167	0.0004492	0.0035	3.2207	7664.88	8968.61	8968.61	10	No	Si
SLU 42	11.87	1229.37	-7965	-0.0000251	0.0004492	0.0035	3.2207	11203.93	12984.39	12984.39	10.56	No	Si
SLU 42	13.97	805.77	-4580	-0.0000148	0.0004492	0.0035	3.2207	6838.67	8073.05	8073.05	10.02	No	Si
SLU 29	11.87	1149.5	-7895	-0.0000246	0.0004492	0.0035	3.2207	11119.91	12885.16	12885.16	11.21	No	Si
SLU 29	13.97	949.06	-5006	-0.0000165	0.0004492	0.0035	3.2207	7420.27	8701.32	8701.32	9.17	No	Si
SLU 41	11.87	1278.87	-7993	-0.0000254	0.0004492	0.0035	3.2207	11237.66	13024.31	13024.31	10.18	No	Si
SLU 41	13.97	813.34	-4585	-0.0000148	0.0004492	0.0035	3.2207	6846.13	8081.04	8081.04	9.94	No	Si
SLU 37	11.87	1324.58	-8393	-0.0000267	0.0004492	0.0035	3.2207	11714.44	13593.72	13593.72	10.26	No	Si
SLU 37	13.97	1031.78	-5190	-0.0000173	0.0004492	0.0035	3.2207	7668.15	8972.2	8972.2	8.7	No	Si
SLU 35	11.87	1302.45	-8477	-0.0000268	0.0004492	0.0035	3.2207	11813.58	13712.33	13712.33	10.53	No	Si
SLU 35	13.97	904.41	-5193	-0.0000167	0.0004492	0.0035	3.2207	7672.17	8976.6	8976.6	9.93	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 8	11.87	-3542.36	-3680	-0.0000296	0.0006738	0.0035	2.5766		11532.35	11532.35	3.26		Si
SLV 8	13.97	-731.88	-2676	-0.0000097	0.0006738	0.0035	3.2207		10019.28	10019.28	13.69		Si
SLV 10	11.87	4948.99	-8568	-0.0000437	0.0006738	0.0035	3.2207		14021.18	14021.18	2.83		Si
SLV 10	13.97	1268.31	-3824	-0.000015	0.0006738	0.0035	3.2207		6992.7	6992.7	5.51		Si
SLD 9	11.87	2760.34	-7297	-0.0000303	0.0006738	0.0035	3.2207		12174.07	12174.07	4.41		Si
SLD 9	13.97	756.38	-3512	-0.0000119	0.0006738	0.0035	3.2207		6518.97	6518.97	8.62		Si
SLV 5	11.87	5405.89	-9454	-0.0000481	0.0006738	0.0035	3.2207		15298.08	15298.08	2.83		Si
SLV 5	13.97	1305.36	-4203	-0.000016	0.0006738	0.0035	3.2207		7567.17	7567.17	5.8		Si
SLV 9	11.87	5197.75	-8691	-0.0000453	0.0006738	0.0035	3.2207		14199.64	14199.64	2.73		Si
SLV 9	13.97	1337.69	-3834	-0.0000153	0.0006738	0.0035	3.2207		7006.84	7006.84	5.24		Si
SLV 6	11.87	5157.13	-9331	-0.0000465	0.0006738	0.0035	3.2207		15122.55	15122.55	2.93		Si
SLV 6	13.97	1235.98	-4194	-0.0000157	0.0006738	0.0035	3.2207		7553.04	7553.04	6.11		Si
SLD 5	11.87	2849.22	-7623	-0.0000315	0.0006738	0.0035	3.2207		12652.53	12652.53	4.44		Si
SLD 5	13.97	742.46	-3670	-0.0000122	0.0006738	0.0035	3.2207		6758.3	6758.3	9.1		Si
SLV 11	11.87	-3501.73	-3041	-0.0000343	0.0006738	0.0035	2.5766		10568.66	10568.66	3.02		Si
SLV 11	13.97	-630.16	-2316	-0.0000084	0.0006738	0.0035	3.2207		9470.59	9470.59	15.03		Si
SLV 7	11.87	-3293.6	-3803	-0.0000266	0.0006738	0.0035	3.2207		11718.63	11718.63	3.56		Si
SLV 7	13.97	-662.49	-2686	-0.0000094	0.0006738	0.0035	3.2207		10033.47	10033.47	15.15		Si
SLV 12	11.87	-3750.5	-2917	-0.0000453	0.0006738	0.0035	2.5766		10382.39	10382.39	2.77		Si
SLV 12	13.97	-699.55	-2307	-0.0000087	0.0006738	0.0035	3.2207		9456.39	9456.39	13.52		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 39	11.87	1158.13	-7379	-4333	1268	3.2207	3.2207	-8408	9454	4872	101952	18519	16426	34945	No	27.57	Si
SLU 39	13.97	559.44	-3902	-2291	1266	3.2207	3.2207	-4446	8926	4600	101952	18519	16426	34945	No	27.59	Si
SLU 81	11.87	1313.23	-8818	-5177	1458	3.2207	3.2207	-10047	9673	4985	101952	18519	16426	34945	No	23.97	Si
SLU 81	13.97	546.03	-4601	-2701	1456	3.2207	3.2207	-5242	9032	4654	101952	18519	16426	34945	No	23.99	Si
SLU 60	11.87	1130.75	-7943	-4664	1353	3.2207	3.2207	-9051	9540	4916	101952	18519	16426	34945	No	25.83	Si
SLU 60	13.97	319.23	-3988	-2342	1351	3.2207	3.2207	-4544	8939	4606	101952	18519	16426	34945	No	25.87	Si
SLU 74	11.87	1336.81	-9302	-5462	1332	3.2207	3.2207	-10599	9747	5022	101952	18519	16426	34945	No	26.24	Si
SLU 74	13.97	637.1	-5208	-3058	1331	3.2207	3.2207	-5934	9125	4702	101952	18519	16426	34945	No	26.26	Si
SLU 83	11.87	1433.97	-9431	-5538	1341	3.2207	3.2207	-10746	9766	5033	101952	18519	16426	34945	No	26.05	Si
SLU 83	13.97	799.92	-5284	-3102	1341	3.2207	3.2207	-6020	9136	4708	101952	18519	16426	34945	No	26.06	Si
SLU 75	11.87	1287.31	-9274	-5445	1294	3.2207	3.2207	-10567	9742	5020	101952	18519	16426	34945	No	27	Si
SLU 75	13.97	629.53	-5202	-3055	1293	3.2207	3.2207	-5928	9124	4702	101952	18519	16426	34945	No	27.02	Si
SLU 84	11.87	1384.47	-9403	-5521	1304	3.2207	3.2207	-10714	9762	5030	101952	18519	16426	34945	No	26.8	Si
SLU 84	13.97	792.35	-5278	-3099	1304	3.2207	3.2207	-6014	9135	4707	101952	18519	16426	34945	No	26.81	Si
SLU 82	11.87	1263.73	-8790	-5161	1421	3.2207	3.2207	-10015	9669	4982	101952	18519	16426	34945	No	24.59	Si
SLU 82	13.97	538.46	-4595	-2698	1419	3.2207	3.2207	-5236	9031	4654	101952	18519	16426	34945	No	24.63	Si
SLU 73	11.87	1155.69	-8557	-5025	1274	3.2207	3.2207	-9751	9633	4964	101952	18519	16426	34945	No	27.43	Si
SLU 73	13.97	497.96	-4513	-2650	1272	3.2207	3.2207	-5142	9019	4648	101952	18519	16426	34945	No	27.47	Si
SLU 61	11.87	1081.24	-7915	-4647	1315	3.2207	3.2207	-9019	9536	4914	101952	18519	16426	34945	No	26.57	Si
SLU 61	13.97	311.66	-3983	-2338	1313	3.2207	3.2207	-4538	8938	4606	101952	18519	16426	34945	No	26.61	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 11	11.87	-3501.73	-3041	-1785	-2192	2.5766	1.3761	0	0	0	101952	22223	13140	35363		16.13	Si
SLV 11	13.97	-630.16	-2316	-1360	-3036	3.2207	3.2207	-2639	13028	6713	101952	27778	16426	44204		14.56	Si
SLV 5	11.87	5405.89	-9454	-5551	4098	3.2207	3.1156	-10772	14654	7305	101952	27778	16426	44204		10.79	Si
SLV 5	13.97	1305.36	-4203	-2468	4940	3.2207	3.2207	-4789	13458	6935	101952	27778	16426	44204		8.95	Si



Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 1	11.87	2672.08	-8400	-4932	2610	3.2207	3.2207	-9571	14414	7428	101952	27778	16426	44204		16.94	Si
SLV 1	13.97	597.92	-4106	-2411	2931	3.2207	3.2207	-4678	13436	6924	101952	27778	16426	44204		15.08	Si
SLV 6	11.87	5157.13	-9331	-5479	3925	3.2207	3.1729	-10632	14626	7425	101952	27778	16426	44204		11.26	Si
SLV 6	13.97	1235.98	-4194	-2462	4767	3.2207	3.2207	-4779	13456	6934	101952	27778	16426	44204		9.27	Si
SLV 2	11.87	2286.93	-8209	-4820	2342	3.2207	3.2207	-9353	14371	7405	101952	27778	16426	44204		18.88	Si
SLV 2	13.97	490.49	-4091	-2402	2663	3.2207	3.2207	-4662	13432	6922	101952	27778	16426	44204		16.6	Si
Sld 5	11.87	2849.22	-7623	-4476	2292	3.2207	3.2207	-8686	14237	7337	101952	27778	16426	44204		19.29	Si
Sld 5	13.97	742.46	-3670	-2155	2661	3.2207	3.2207	-4181	13336	6872	101952	27778	16426	44204		16.61	Si
SLV 10	11.87	4948.99	-8568	-5031	3486	3.2207	3.0982	-9762	14452	7164	101952	27778	16426	44204		12.68	Si
SLV 10	13.97	1268.31	-3824	-2245	4282	3.2207	3.2207	-4357	13371	6890	101952	27778	16426	44204		10.32	Si
SLV 12	11.87	-3750.5	-2917	-1713	-2365	2.5766	0.974	0	0	0	101952	22223	13140	35363		14.96	Si
SLV 12	13.97	-699.55	-2307	-1354	-3209	3.2207	3.2207	-2628	13026	6712	101952	27778	16426	44204		13.78	Si
SLV 8	11.87	-3542.36	-3680	-2161	-1926	2.5766	1.9431	0	0	0	101952	22223	13140	35363		18.36	Si
SLV 8	13.97	-731.88	-2676	-1571	-2724	3.2207	3.2207	-3049	13110	6756	101952	27778	16426	44204		16.23	Si
SLV 9	11.87	5197.75	-8691	-5103	3659	3.2207	3.0369	-9903	14481	7036	101952	27778	16426	44204		12.08	Si
SLV 9	13.97	1337.69	-3834	-2251	4455	3.2207	3.2207	-4368	13374	6892	101952	27778	16426	44204		9.92	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRMC D.M. 17-01-18 (N.T.C.)

quota 13.45 Ta 0.1 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 12	-2586	0.53	219.77	0	480.88	240.44	1.09	Si
SLV 11	-2644	0.53	219.77	0	486.57	243.28	1.11	Si
SLV 8	-2965	0.53	219.77	229.77	518.04	373.9	1.7	Si
SLV 7	-3023	0.53	219.77	234.11	523.72	378.91	1.72	Si
SLV 16	-3118	0.53	219.77	241.19	532.98	387.08	1.76	Si
SLV 15	-3208	0.53	219.77	247.89	541.76	394.83	1.8	Si
SLV 14	-3966	0.53	219.77	303.96	615.69	459.83	2.09	Si
SLV 13	-4056	0.53	219.77	310.53	624.42	467.48	2.13	Si
SLV 4	-4381	0.53	219.77	334.23	655.87	495.05	2.25	Si
SLV 3	-4471	0.53	219.77	340.74	664.54	502.64	2.29	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.45 Wa = 0.03 Ta = 0.1042

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 6	-1629	-9331	-211	5.814	413.4	0.889	95.03589	21.1834	Si
SLV 5	-1623	-9454	-211	5.826	412.8	0.889	95.23258	21.1834	Si
SLV 8	-1563	-3680	-30	6.001	407.3	0.889	98.10762	21.1834	Si
SLV 7	-1557	-3803	-30	6.014	406.7	0.889	98.31427	21.1834	Si
SLV 10	-1431	-8568	29	6.274	395.2	0.889	102.58296	21.1834	Si
SLV 9	-1424	-8691	29	6.288	394.7	0.889	102.80643	21.1834	Si
SLV 12	-1364	-2917	211	6.357	389.3	0.889	103.91484	21.1834	Si
SLV 11	-1358	-3041	211	6.371	388.7	0.889	104.14524	21.1834	Si
SLV 2	-1840	-8209	-428	5.381	432.9	0.89	87.84623	11.54873	Si
SLV 1	-1830	-8400	-428	5.396	432	0.89	88.11291	11.54873	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	8.696	SLU 37	Si
V_SLU	23.966	SLU 81	Si
PF_SLV	2.732	SLV 9	Si
V_SLV	8.948	SLV 5	Si
PFFP_SLV	1.094	SLV 12	Si
R_SLV	4.486	SLV 6	Si

## Maschio 173

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Maschio considerato membratura sismica secondaria

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.sx	a.s.dx
-18.518	0.706	-18.518	1.006	L7	L8	0.3	0.16	3.16	3.16	3.16			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fν0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica





									elim,conv / ε,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Esterna	100	100	100	100	2	CNR DT215	0.8			0.008				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 83	11.87	-15.8	-1009	-0.0000352	0.0004492	0.0035	0.3	125.36	1023.96	1023.96	64.8	No	Si
SLU 83	13.97	-14.08	-761	-0.0000275	0.0004492	0.0035	0.3	99.39	1034.35	1034.35	73.44	No	Si
SLU 38	11.87	-14.79	-879	-0.0000311	0.0004492	0.0035	0.3	112.09	1029.43	1029.43	69.62	No	Si
SLU 38	13.97	-13.34	-684	-0.000025	0.0004492	0.0035	0.3	90.67	1037.58	1037.58	77.76	No	Si
SLU 37	11.87	-15.04	-883	-0.0000313	0.0004492	0.0035	0.3	112.47	1029.27	1029.27	68.45	No	Si
SLU 37	13.97	-13.61	-688	-0.0000253	0.0004492	0.0035	0.3	91.1	1037.43	1037.43	76.24	No	Si
SLU 79	11.87	-15.26	-1050	-0.000036	0.0004492	0.0035	0.3	129.3	1022.26	1022.26	66.99	No	Si
SLU 79	13.97	-14.26	-798	-0.0000286	0.0004492	0.0035	0.3	103.46	1032.81	1032.81	72.42	No	Si
SLU 80	11.87	-15.01	-1046	-0.0000358	0.0004492	0.0035	0.3	128.95	1022.42	1022.42	68.13	No	Si
SLU 80	13.97	-14	-795	-0.0000284	0.0004492	0.0035	0.3	103.05	1032.96	1032.96	73.8	No	Si
SLU 77	11.87	-14.57	-1076	-0.0000364	0.0004492	0.0035	0.3	131.79	1021.18	1021.18	70.09	No	Si
SLU 77	13.97	-13.19	-826	-0.0000288	0.0004492	0.0035	0.3	106.49	1031.63	1031.63	78.19	No	Si
SLU 41	11.87	-15.58	-842	-0.0000305	0.0004492	0.0035	0.3	108.18	1030.97	1030.97	66.18	No	Si
SLU 41	13.97	-13.43	-651	-0.0000242	0.0004492	0.0035	0.3	86.82	1038.98	1038.98	77.36	No	Si
SLU 81	11.87	-14.72	-954	-0.0000331	0.0004492	0.0035	0.3	119.8	1026.3	1026.3	69.72	No	Si
SLU 81	13.97	-12.74	-707	-0.0000253	0.0004492	0.0035	0.3	93.28	1036.63	1036.63	81.36	No	Si
SLU 84	11.87	-15.55	-1006	-0.000035	0.0004492	0.0035	0.3	125	1024.12	1024.12	65.86	No	Si
SLU 84	13.97	-13.82	-758	-0.0000273	0.0004492	0.0035	0.3	98.97	1034.51	1034.51	74.85	No	Si
SLU 42	11.87	-15.33	-838	-0.0000303	0.0004492	0.0035	0.3	107.79	1031.13	1031.13	67.27	No	Si
SLU 42	13.97	-13.17	-647	-0.0000239	0.0004492	0.0035	0.3	86.39	1039.13	1039.13	78.92	No	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 83	11.87	-15.8	-1009	-593	0	0.3	0.3	-12348	9980	479	12083	1725	1530	3255	No	10915.89	Si
SLU 83	13.97	-14.08	-761	-447	0	0.3	0.3	-9314	9575	460	12083	1725	1530	3255	No	16512.22	Si
SLU 33	11.87	-13.01	-849	-499	0	0.3	0.3	-10388	9718	466	12083	1725	1530	3255	No	10900.26	Si
SLU 33	13.97	-10.93	-658	-386	0	0.3	0.3	-8048	9406	452	12083	1725	1530	3255	No	15142.65	Si
SLU 82	11.87	-14.47	-950	-558	0	0.3	0.3	-11621	9883	474	12083	1725	1530	3255	No	10127.09	Si
SLU 82	13.97	-12.48	-703	-413	0	0.3	0.3	-8604	9481	455	12083	1725	1530	3255	No	14299.43	Si
SLU 42	11.87	-15.33	-838	-492	0	0.3	0.3	-10257	9701	466	12083	1725	1530	3255	No	10143.92	Si
SLU 42	13.97	-13.17	-647	-380	0	0.3	0.3	-7919	9389	451	12083	1725	1530	3255	No	14603.61	Si
SLU 84	11.87	-15.55	-1006	-591	0	0.3	0.3	-12303	9974	479	12083	1725	1530	3255	No	10663.28	Si
SLU 84	13.97	-13.82	-758	-445	0	0.3	0.3	-9269	9569	459	12083	1725	1530	3255	No	15957.66	Si
SLU 81	11.87	-14.72	-954	-560	0	0.3	0.3	-11666	9889	475	12083	1725	1530	3255	No	10354.66	Si
SLU 81	13.97	-12.74	-707	-415	0	0.3	0.3	-8649	9487	455	12083	1725	1530	3255	No	14743.12	Si
SLU 39	11.87	-14.5	-786	-462	0	0.3	0.3	-9620	9616	462	12083	1725	1530	3255	No	9864.24	Si
SLU 39	13.97	-12.09	-597	-350	0	0.3	0.3	-7300	9307	447	12083	1725	1530	3255	No	13579.82	Si
SLU 31	11.87	-12.46	-765	-449	0	0.3	0.3	-9359	9581	460	12083	1725	1530	3255	No	11102.51	Si
SLU 31	13.97	-10.48	-573	-337	0	0.3	0.3	-7011	9268	445	12083	1725	1530	3255	No	15363.15	Si
SLU 41	11.87	-15.58	-842	-494	0	0.3	0.3	-10301	9707	466	12083	1725	1530	3255	No	10372.26	Si
SLU 41	13.97	-13.43	-651	-382	0	0.3	0.3	-7965	9395	451	12083	1725	1530	3255	No	15066.68	Si
SLU 40	11.87	-14.25	-783	-460	0	0.3	0.3	-9575	9610	461	12083	1725	1530	3255	No	9657.49	Si
SLU 40	13.97	-11.82	-593	-348	0	0.3	0.3	-7254	9301	446	12083	1725	1530	3255	No	13202.49	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRM D.M. 17-01-18 (N.T.C.)

quota 13.45 Ta 0.1 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 8	-238	0.53	20.47	0	1166.76	583.38	28.5	Si
SLV 11	-203	0.53	20.47	0	1168.68	584.34	28.54	Si
SLV 12	-182	0.53	20.47	0	1169.82	584.91	28.57	Si
SLV 7	-258	0.53	20.47	20.06	1165.62	592.84	28.96	Si
SLV 16	-329	0.53	20.47	25.32	1161.96	593.64	29	Si
SLV 15	-361	0.53	20.47	27.68	1160.29	593.98	29.02	Si
SLV 4	-514	0.53	20.47	38.72	1152.32	595.52	29.09	Si
SLV 14	-515	0.53	20.47	38.78	1152.28	595.53	29.09	Si
SLV 3	-546	0.53	20.47	40.98	1150.65	595.82	29.11	Si
SLV 13	-547	0.53	20.47	41.04	1150.61	595.82	29.11	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.45 Wa = 0.03 Ta = 0.1042

Comb.	N top	N base	V orto	α0	M*	e*	α0*	αLim	Verifica
SLV 8	-696	-394	0	2.054	92.4	0.936	31.89725	21.1834	Si
SLV 7	-678	-413	0	2.098	90.6	0.935	32.62364	21.1834	Si
SLV 12	-646	-344	-1	2.183	87.4	0.933	34.00663	21.1834	Si
SLV 11	-628	-363	-1	2.233	85.6	0.932	34.83421	21.1834	Si
SLV 4	-394	-663	2	3.207	62	0.913	51.06661	11.54873	Si
SLV 3	-366	-693	2	3.382	59.3	0.91	54.01428	11.54873	Si
SLV 16	-227	-495	-2	4.666	45.6	0.895	75.76706	11.54873	Si
SLV 15	-199	-526	-2	5.048	43	0.892	82.21351	11.54873	Si
SLV 2	-80	-847	2	7.798	32.3	0.896	126.55113	11.54873	Si
SLV 1	-53	-878	2	8.931	30.2	0.909	142.8637	11.54873	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.





Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	64.805	SLU 83	Si
V_SLU	9657.491	SLU 40	Si
PFFP_SLV	28.498	SLV 8	Si
R_SLV	1.506	SLV 8	Si

## Maschio 174

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Maschio considerato membratura sismica secondaria

## Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-15.033	1.006	-15.033	1.366	L7	L8	0.36	0.16	3.16	3.16	3.16			

## Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	t0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

## Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

## Rinforzo a matrice inorganica

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	elim,conv / e,CNR DT-200							CRM / Fibrenet?			
									αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Esterna	100	100	100	100	2	CNR DT215	0.8			0.008				Si	GeoCalce F Antisismico	0.02	

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 48	11.87	-8.05	-878	-0.0000221	0.0004492	0.0035	0.36	138.34	1493.15	1493.15	185.51	No	Si
SLU 48	13.97	-9.49	-589	-0.0000163	0.0004492	0.0035	0.36	97.19	1507.72	1507.72	158.84	No	Si
SLU 70	11.87	-6	-931	-0.0000226	0.0004492	0.0035	0.36	145.43	1490.47	1490.47	248.22	No	Si
SLU 70	13.97	-8.32	-636	-0.0000169	0.0004492	0.0035	0.36	104.19	1505.34	1505.34	181.02	No	Si
SLU 46	11.87	-7.66	-848	-0.0000213	0.0004492	0.0035	0.36	134.23	1494.68	1494.68	195.24	No	Si
SLU 46	13.97	-8.9	-558	-0.0000153	0.0004492	0.0035	0.36	92.41	1509.32	1509.32	169.52	No	Si
SLU 49	11.87	-7.57	-885	-0.0000221	0.0004492	0.0035	0.36	139.25	1492.81	1492.81	197.11	No	Si
SLU 49	13.97	-8.98	-596	-0.0000162	0.0004492	0.0035	0.36	98.17	1507.39	1507.39	167.8	No	Si
SLU 56	11.87	-6.03	-875	-0.0000213	0.0004492	0.0035	0.36	137.89	1493.32	1493.32	247.65	No	Si
SLU 56	13.97	-8.31	-588	-0.0000158	0.0004492	0.0035	0.36	97.05	1507.77	1507.77	181.5	No	Si
SLU 67	11.87	-6.09	-894	-0.0000218	0.0004492	0.0035	0.36	140.49	1492.34	1492.34	245.18	No	Si
SLU 67	13.97	-8.24	-598	-0.000016	0.0004492	0.0035	0.36	98.51	1507.27	1507.27	183.01	No	Si
SLU 45	11.87	-8.13	-841	-0.0000214	0.0004492	0.0035	0.36	133.3	1495.02	1495.02	183.87	No	Si
SLU 45	13.97	-9.41	-551	-0.0000154	0.0004492	0.0035	0.36	91.42	1509.65	1509.65	160.39	No	Si
SLU 66	11.87	-6.56	-887	-0.0000218	0.0004492	0.0035	0.36	139.59	1492.68	1492.68	227.47	No	Si
SLU 66	13.97	-8.74	-592	-0.000016	0.0004492	0.0035	0.36	97.53	1507.6	1507.6	172.41	No	Si
SLU 53	11.87	-6.11	-838	-0.0000205	0.0004492	0.0035	0.36	132.85	1495.18	1495.18	244.63	No	Si
SLU 53	13.97	-8.23	-550	-0.0000149	0.0004492	0.0035	0.36	91.28	1509.7	1509.7	183.49	No	Si
SLU 69	11.87	-6.48	-924	-0.0000226	0.0004492	0.0035	0.36	144.54	1490.81	1490.81	230.06	No	Si
SLU 69	13.97	-8.82	-630	-0.0000169	0.0004492	0.0035	0.36	103.23	1505.67	1505.67	170.63	No	Si

## Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 61	11.87	-2.72	-780	-458	0	0.36	0.36	-7953	9394	541	14500	2070	1836	3906	No	11178.36	Si
SLU 61	13.97	-5.05	-493	-290	0	0.36	0.36	-5027	9004	519	14500	2070	1836	3906	No	11279.43	Si
SLU 42	11.87	0.75	-696	-409	0	0.36	0.36	-7096	9279	534	14500	2070	1836	3906	No	11272.67	Si
SLU 42	13.97	-2.61	-470	-276	0	0.36	0.36	-4792	8972	517	14500	2070	1836	3906	No	11685.62	Si
SLU 75	11.87	-4.07	-891	-523	0	0.36	0.36	-9080	9544	550	14500	2070	1836	3906	No	11315.14	Si
SLU 75	13.97	-7.05	-597	-351	0	0.36	0.36	-6088	9145	527	14500	2070	1836	3906	No	11301.93	Si
SLU 60	11.87	-3.19	-773	-454	0	0.36	0.36	-7885	9385	541	14500	2070	1836	3906	No	11251.31	Si
SLU 60	13.97	-5.56	-487	-286	0	0.36	0.36	-4960	8995	518	14500	2070	1836	3906	No	11314.36	Si
SLU 40	11.87	0.67	-659	-387	0	0.36	0.36	-6719	9229	532	14500	2070	1836	3906	No	10610.91	Si
SLU 40	13.97	-2.53	-432	-254	0	0.36	0.36	-4402	8920	514	14500	2070	1836	3906	No	11024.88	Si
SLU 83	11.87	-1.54	-857	-503	0	0.36	0.36	-8734	9498	547	14500	2070	1836	3906	No	10669.42	Si
SLU 83	13.97	-4.97	-565	-332	0	0.36	0.36	-5764	9102	524	14500	2070	1836	3906	No	10896.14	Si
SLU 81	11.87	-1.63	-820	-481	0	0.36	0.36	-8356	9448	544	14500	2070	1836	3906	No	10074.73	Si
SLU 81	13.97	-4.89	-527	-310	0	0.36	0.36	-5374	9050	521	14500	2070	1836	3906	No	10319.46	Si
SLU 84	11.87	-1.07	-864	-507	0	0.36	0.36	-8803	9507	548	14500	2070	1836	3906	No	10603.79	Si
SLU 84	13.97	-4.46	-572	-336	0	0.36	0.36	-5830	9111	525	14500	2070	1836	3906	No	10863.74	Si
SLU 39	11.87	0.19	-652	-383	0	0.36	0.36	-6650	9220	531	14500	2070	1836	3906	No	10676.63	Si
SLU 39	13.97	-3.04	-425	-250	0	0.36	0.36	-4335	8911	513	14500	2070	1836	3906	No	11058.24	Si
SLU 82	11.87	-1.15	-827	-485	0	0.36	0.36	-8425	9457	545	14500	2070	1836	3906	No	10016.19	Si



Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 82	13.97	-4.38	-534	-313	0	0.36	0.36	-5440	9059	522	14500	2070	1836	3906	No	10290.4	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRM D.M. 17-01-18 (N.T.C.)

quota 13.45 Ta 0.1 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 14	-177	0.53	24.57	0	1406.73	703.37	28.63	Si
SLV 13	-154	0.53	24.57	0	1407.97	703.99	28.66	Si
SLV 1	-334	0.53	24.57	25.9	1398.15	712.03	28.99	Si
SLV 2	-357	0.53	24.57	27.58	1396.99	712.28	29	Si
SLV 6	149	0.53	24.57	0	1424.72	712.36	29	Si
SLV 5	164	0.53	24.57	0	1425.52	712.76	29.01	Si
SLV 10	203	0.53	24.57	0	1427.7	713.85	29.06	Si
SLV 15	-531	0.53	24.57	40.31	1387.95	714.13	29.07	Si
SLV 9	218	0.53	24.57	0	1428.5	714.25	29.08	Si
SLV 16	-553	0.53	24.57	41.92	1386.78	714.35	29.08	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 13.45 Wa = 0.03 Ta = 0.1042

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 7	-198	-1259	-1	5.621	47.7	0.89	91.80807	21.1834	Si
SLV 8	-198	-1274	-1	5.625	47.7	0.89	91.88212	21.1834	Si
SLV 11	-194	-1193	0	5.693	47.3	0.89	93.01334	21.1834	Si
SLV 12	-193	-1208	0	5.698	47.2	0.89	93.08916	21.1834	Si
SLV 5	-81	-39	0	8.298	37.5	0.9	133.95235	21.1834	Si
SLV 6	-81	-54	0	8.308	37.5	0.9	134.09538	21.1834	Si
SLV 9	-77	28	1	8.451	37.2	0.902	136.14532	21.1834	Si, Trazione
SLV 10	-76	12	1	8.461	37.1	0.902	136.2918	21.1834	Si, Trazione
SLV 3	-163	-905	-1	6.231	44.4	0.889	101.86922	11.54873	Si
SLV 4	-162	-928	-1	6.239	44.4	0.889	102.00776	11.54873	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	158.841	SLU 48	Si
V_SLU	10016.194	SLU 82	Si
PFFP_SLV	28.632	SLV 14	Si
R_SLV	4.334	SLV 7	Si

## Maschio 175

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-15.033	2.166	-15.033	6.386	L7	L8	4.22	0.16	3.16	3.16	3.16			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 82	11.87	984.06	-9751	-0.0000208	0.0004492	0.0035	4.22	18142.79	21007.23	21007.23	21.35	No	Si
SLU 82	13.97	4491.03	-6285	-0.0000236	0.0004492	0.0035	4.22	12250.57	14402.83	14402.83	3.21	No	Si
SLU 39	11.87	902.04	-8177	-0.0000176	0.0004492	0.0035	4.22	15543.67	18037.36	18037.36	20	No	Si
SLU 39	13.97	4018.59	-5441	-0.0000207	0.0004492	0.0035	4.22	10724.13	12767.59	12767.59	3.18	No	Si
SLU 61	11.87	887.01	-8611	-0.0000184	0.0004492	0.0035	4.22	16272.62	18863.48	18863.48	21.27	No	Si
SLU 61	13.97	3852.37	-5285	-0.00002	0.0004492	0.0035	4.22	10436.89	12459.22	12459.22	3.23	No	Si
SLU 19	11.87	724.32	-7102	-0.0000151	0.0004492	0.0035	4.22	13695.65	15986.92	15986.92	22.07	No	Si
SLU 19	13.97	3413.19	-4507	-0.0000174	0.0004492	0.0035	4.22	8989.91	10925.74	10925.74	3.2	No	Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 18	11.87	804.99	-7037	-0.0000152	0.0004492	0.0035	4.22	13581.72	15860.65	15860.65	19.7	No	Si
SLU 18	13.97	3379.92	-4442	-0.0000172	0.0004492	0.0035	4.22	8867.32	10797.32	10797.32	3.19	No	Si
SLU 60	11.87	967.68	-8546	-0.0000185	0.0004492	0.0035	4.22	16163.71	18739.36	18739.36	19.37	No	Si
SLU 60	13.97	3819.1	-5220	-0.0000198	0.0004492	0.0035	4.22	10316.9	12330.8	12330.8	3.23	No	Si
SLU 73	11.87	884.74	-9583	-0.0000202	0.0004492	0.0035	4.22	17871.15	20692.53	20692.53	23.39	No	Si
SLU 73	13.97	4157.37	-6117	-0.0000224	0.0004492	0.0035	4.22	11949.12	14077.02	14077.02	3.39	No	Si
SLU 40	11.87	821.37	-8242	-0.0000175	0.0004492	0.0035	4.22	15653.8	18161.48	18161.48	22.11	No	Si
SLU 40	13.97	4051.86	-5507	-0.000021	0.0004492	0.0035	4.22	10843.38	12895.07	12895.07	3.18	No	Si
SLU 81	11.87	1064.73	-9686	-0.0000209	0.0004492	0.0035	4.22	18037.69	20885.27	20885.27	19.62	No	Si
SLU 81	13.97	4457.76	-6220	-0.0000234	0.0004492	0.0035	4.22	12133.91	14276.56	14276.56	3.2	No	Si
SLU 31	11.87	722.05	-8074	-0.0000169	0.0004492	0.0035	4.22	15369.18	17841.22	17841.22	24.71	No	Si
SLU 31	13.97	3718.2	-5338	-0.0000197	0.0004492	0.0035	4.22	10535.23	12564.65	12564.65	3.38	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche,  $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLD 10	11.87	4381.49	-5588	-0.0000219	0.0006738	0.0035	4.22		13150.11	13150.11	3		Si
SLD 10	13.97	1681.93	-2982	-0.0000099	0.0006738	0.0035	4.22		7933.04	7933.04	4.72		Si
SLV 1	11.87	3471.44	-7656	-0.0000233	0.0006738	0.0035	4.22		17215.43	17215.43	4.96		Si
SLV 1	13.97	4690.14	-4681	-0.000022	0.0006738	0.0035	4.22		11346.31	11346.31	2.42		Si
SLV 3	11.87	-1586.67	-9032	-0.0000209	0.0006738	0.0035	4.22		28191.03	28191.03	17.77		Si
SLV 3	13.97	5510.17	-6076	-0.0000263	0.0006738	0.0035	4.22		14118.88	14118.88	2.56		Si
SLV 2	11.87	3137.95	-7614	-0.0000224	0.0006738	0.0035	4.22		17132.7	17132.7	5.46		Si
SLV 2	13.97	4553.78	-4639	-0.0000214	0.0006738	0.0035	4.22		11262.31	11262.31	2.47		Si
SLV 10	11.87	9014.49	-4034	-0.000564	0.0006738	0.0035	4.22		10056.34	10056.34	1.12		Si
SLV 10	13.97	477.2	-1467	-0.000039	0.0006738	0.0035	4.22		4856.8	4856.8	10.18		Si
SLV 6	11.87	9053.1	-4948	-0.0000953	0.0006738	0.0035	4.22		11877.91	11877.91	1.31		Si
SLV 6	13.97	1928.28	-2183	-0.0000092	0.0006738	0.0035	4.22		6318.82	6318.82	3.28		Si
SLV 4	11.87	-1920.16	-8990	-0.0000217	0.0006738	0.0035	4.22		28112.17	28112.17	14.64		Si
SLV 4	13.97	5373.81	-6034	-0.0000258	0.0006738	0.0035	4.22		14036.15	14036.15	2.61		Si
SLD 9	11.87	4475.6	-5600	-0.0000222	0.0006738	0.0035	4.22		13173.82	13173.82	2.94		Si
SLD 9	13.97	1720.41	-2994	-0.00001	0.0006738	0.0035	4.22		7957.11	7957.11	4.63		Si
SLV 9	11.87	9229.89	-4061	-0.00064	0.0006738	0.0035	4.22		10111.41	10111.41	1.1		Si
SLV 9	13.97	565.28	-1494	-0.0000042	0.0006738	0.0035	4.22		4912.65	4912.65	8.69		Si
SLV 5	11.87	9268.49	-4976	-0.0001092	0.0006738	0.0035	4.22		11932.16	11932.16	1.29		Si
SLV 5	13.97	2016.36	-2211	-0.0000095	0.0006738	0.0035	4.22		6373.9	6373.9	3.16		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 82	11.87	984.06	-9751	-5725	-1648	4.22	4.22	-8479	9464	6390	101952	24265	21522	45787	No	27.79	Si
SLU 82	13.97	4491.03	-6285	-3690	-1648	4.22	4.1862	-5465	9062	6070	101952	24265	21522	45787	No	27.79	Si
SLU 83	11.87	1073.51	-10590	-6218	-1563	4.22	4.22	-9209	9561	6456	101952	24265	21522	45787	No	29.29	Si
SLU 83	13.97	4402.55	-7124	-4183	-1563	4.22	4.22	-6195	9159	6184	101952	24265	21522	45787	No	29.29	Si
SLU 40	11.87	821.37	-8242	-4840	-1521	4.22	4.22	-7168	9289	6272	101952	24265	21522	45787	No	30.09	Si
SLU 40	13.97	4051.86	-5507	-3233	-1521	4.22	4.1225	-4789	8972	5918	101952	24265	21522	45787	No	30.09	Si
SLU 76	11.87	893.52	-10487	-6157	-1506	4.22	4.22	-9119	9549	6448	101952	24265	21522	45787	No	30.41	Si
SLU 76	13.97	4102.16	-7021	-4122	-1506	4.22	4.22	-6105	9147	6176	101952	24265	21522	45787	No	30.41	Si
SLU 81	11.87	1064.73	-9686	-5687	-1594	4.22	4.22	-8423	9456	6385	101952	24265	21522	45787	No	28.73	Si
SLU 81	13.97	4457.76	-6220	-3652	-1594	4.22	4.1798	-5409	9054	6055	101952	24265	21522	45787	No	28.73	Si
SLU 73	11.87	884.74	-9583	-5627	-1536	4.22	4.22	-8333	9444	6377	101952	24265	21522	45787	No	29.8	Si
SLU 73	13.97	4157.37	-6117	-3591	-1536	4.22	4.22	-5319	9043	6106	101952	24265	21522	45787	No	29.8	Si
SLU 75	11.87	984.34	-10406	-6110	-1559	4.22	4.22	-9049	9540	6441	101952	24265	21522	45787	No	29.36	Si
SLU 75	13.97	4305.52	-6940	-4075	-1559	4.22	4.22	-6035	9138	6170	101952	24265	21522	45787	No	29.36	Si
SLU 74	11.87	1065.02	-10341	-6072	-1505	4.22	4.22	-8993	9532	6436	101952	24265	21522	45787	No	30.42	Si
SLU 74	13.97	4272.25	-6875	-4037	-1505	4.22	4.22	-5978	9130	6165	101952	24265	21522	45787	No	30.42	Si
SLU 78	11.87	993.11	-11310	-6641	-1529	4.22	4.22	-9835	9645	6512	101952	24265	21522	45787	No	29.95	Si
SLU 78	13.97	4250.31	-7844	-4606	-1529	4.22	4.22	-6821	9243	6241	101952	24265	21522	45787	No	29.95	Si
SLU 84	11.87	992.83	-10655	-6256	-1617	4.22	4.22	-9266	9569	6461	101952	24265	21522	45787	No	28.31	Si
SLU 84	13.97	4435.82	-7189	-4221	-1617	4.22	4.22	-6251	9167	6189	101952	24265	21522	45787	No	28.31	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 6	11.87	9053.1	-4948	-2905	3195	4.22	0.8414	-21715	16250	2188	101952	36398	21522	57920		18.13	Si
SLV 6	13.97	1928.28	-2183	-1282	3233	4.22	3.6805	-1899	12880	7585	101952	36398	21522	57920		17.92	Si
SLV 10	11.87	9014.49	-4034	-2368	3851	4.22	0	-85207	16250	0	101952	36398	21522	57920		15.04	Si
SLV 10	13.97	477.2	-1467	-861	3974	4.22	4.22	-1276	12755	8612	101952	36398	21522	57920		14.58	Si
SLV 8	11.87	-7807.28	-9536	-5599	-5689	4.22	3.8739	-9067	14313	8872	101952	36398	21522	57920		10.18	Si
SLV 8	13.97	4661.74	-6832	-4011	-5812	4.22	4.22	-5941	13688	9242	101952	36398	21522	57920		9.97	Si
SLV 3	11.87	-1586.67	-9032	-5303	-3269	4.22	4.22	-7855	14071	9501	101952	36398	21522	57920		17.72	Si
SLV 3	13.97	5510.17	-6076	-3567	-3434	4.22	3.6093	-5284	13557	7829	101952	36398	21522	57920		16.87	Si
SLV 4	11.87	-1920.16	-8990	-5279	-3363	4.22	4.22	-7818	14064	9496	101952	36398	21522	57920		17.22	Si
SLV 4	13.97	5373.81	-6034	-3543	-3528	4.22	3.658	-5247	13549	7930	101952	36398	21522	57920		16.42	Si
SLV 7	11.87	-7591.89	-9564	-5615	-5629	4.22	3.9485	-8923	14285	9024	101952	36398	21522	57920		10.29	Si
SLV 7	13.97	4749.81	-6859	-4027	-5751	4.22	4.22	-5965	13693	9245	101952	36398	21522	57920		10.07	Si
SLV 9	11.87	9229.89	-4061	-2384	3912	4.22	0	-89734	16250	0	101952	36398	21522	57920		14.81	Si
SLV 9	13.97	565.28	-1494	-877	4034	4.22	4.22	-1299	12760	8615	101952	36398	21522	57920		14.36	Si
SLV 5	11.87	9268.49	-4976	-2921	3255	4.22	0.7416	-24707	16250	1928	101952	36398	21522	57920		17.79	Si
SLV 5	13.97	2016.36	-2211	-1298	3293	4.22	3.5937	-1922	12884	7408	101952	36398	21522	57920		17.59	Si
SLV 11	11.87	-7630.49	-8649	-5078	-4972	4.22	3.6832	-8651	14230	8386	101952	36398	21522	57920		11.65	Si
SLV 11	13.97	3298.73	-6143	-3607	-5010	4.22	4.22	-5342	13568	9161	101952	36398	21522	57920		11.56	Si
SLV 12	11.87	-7845.88	-8622	-5062	-5033	4.22	3.5999	-8823	14265	8216	101952	36398	21522	57920		11.51	Si
SLV 12	13.97	3210.66	-6115	-3591	-5070	4.22	4.22	-5318	13564	9158	101952	36398	21522	57920		11.42	Si



## Verifica a pressoflessione fuori piano muratura rinforzata con FRM D.M. 17-01-18 (N.T.C.)

quota 13.45 Ta 0.1 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 10	-2122	0.53	287.96	0	505.38	252.69	0.88	No
SLV 9	-2150	0.53	287.96	0	508.13	254.07	0.88	No
SLV 14	-2654	0.53	287.96	0	558.69	279.34	0.97	No
SLV 13	-2697	0.53	287.96	0	562.89	281.45	0.98	No
SLV 6	-2954	0.53	287.96	0	588.48	294.24	1.02	Si
SLV 5	-2982	0.53	287.96	0	591.17	295.59	1.03	Si
SLV 16	-3949	0.53	287.96	305.82	686.41	496.11	1.72	Si
SLV 15	-3991	0.53	287.96	308.98	690.54	499.76	1.74	Si
SLV 2	-5427	0.53	287.96	415.14	830.62	622.88	2.16	Si
SLV 1	-5469	0.53	287.96	418.22	834.69	626.45	2.18	Si

## Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.45 Wa = 0.03 Ta = 0.1042

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 7	-5455	-9564	-222	3.216	864.3	0.912	51.2376	21.1834	Si
SLV 8	-5435	-9536	-222	3.225	862.3	0.912	51.38545	21.1834	Si
SLV 11	-4627	-8649	193	3.624	782.1	0.906	58.12448	21.1834	Si
SLV 12	-4606	-8622	193	3.635	780.1	0.906	58.31322	21.1834	Si
SLV 3	-4691	-9032	-697	3.512	788.5	0.907	56.30579	11.54873	Si
SLV 4	-4660	-8990	-697	3.529	785.4	0.906	56.58666	11.54873	Si
SLV 1	-3204	-7656	-689	4.526	642.8	0.895	73.47999	11.54873	Si
SLV 2	-3173	-7614	-689	4.553	639.8	0.895	73.94823	11.54873	Si
SLV 5	-498	-4976	-196	9.767	408.8	0.924	153.55689	21.1834	Si
SLV 6	-478	-4948	-196	9.85	407.7	0.926	154.56363	21.1834	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

## Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.177	SLU 39	Si
V_SLU	27.786	SLU 82	Si
PF_SLV	1.096	SLV 9	Si
V_SLV	9.966	SLV 8	Si
PFFP_SLV	0.878	SLV 10	No
R_SLV	2.419	SLV 7	Si

## Maschio 176

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-13.778	-3.454	-13.778	-0.194	L7	L8	3.261	0.28	3.16	3.16	3.16			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	t0	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

## Rinforzo a matrice inorganica

									elim,conv / e_CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	at	α	elim,conv	e_fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 8	11.87	383.94	-9637	-0.000017	0.0003743	0.0035	3.2607	14082.65	15038.3	15038.3	39.17	No	Si
SLU 8	13.97	1092.2	-5551	-0.0000123	0.0003743	0.0035	3.2607	8510.21	9166.37	9166.37	8.39	No	Si
SLU 29	11.87	296.08	-10601	-0.0000184	0.0003743	0.0035	3.2607	15311.93	16330.38	16330.38	55.16	No	Si
SLU 29	13.97	1286.43	-6264	-0.0000141	0.0003743	0.0035	3.2607	9524.28	10219.41	10219.41	7.94	No	Si
SLU 72	11.87	288.37	-12617	-0.0000218	0.0003743	0.0035	3.2607	17777.88	18670.22	18670.22	64.74	No	Si
SLU 72	13.97	1400.24	-7144	-0.0000159	0.0003743	0.0035	3.2607	10751.66	11501.94	11501.94	8.21	No	Si
SLU 69	11.87	290.64	-12695	-0.000022	0.0003743	0.0035	3.2607	17870.54	18762.05	18762.05	64.55	No	Si
SLU 69	13.97	1354.54	-7074	-0.0000157	0.0003743	0.0035	3.2607	10655.4	11400.19	11400.19	8.42	No	Si
SLU 27	11.87	220.7	-10621	-0.0000182	0.0003743	0.0035	3.2607	15337.8	16355.9	16355.9	74.11	No	Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 27	13.97	1224.34	-6181	-0.0000138	0.0003743	0.0035	3.2607	9407.5	10096.87	10096.87	8.25	No	Si
SLU 30	11.87	218.43	-10543	-0.0000181	0.0003743	0.0035	3.2607	15239.46	16258.42	16258.42	74.43	No	Si
SLU 30	13.97	1270.05	-6251	-0.000014	0.0003743	0.0035	3.2607	9505.94	10200.22	10200.22	8.03	No	Si
SLU 71	11.87	366.02	-12675	-0.0000222	0.0003743	0.0035	3.2607	17846.16	18737.86	18737.86	51.19	No	Si
SLU 71	13.97	1416.63	-7157	-0.000016	0.0003743	0.0035	3.2607	10769.59	11520.93	11520.93	8.13	No	Si
SLU 9	11.87	306.29	-9579	-0.0000167	0.0003743	0.0035	3.2607	14008.23	14958.47	14958.47	48.84	No	Si
SLU 9	13.97	1075.81	-5538	-0.0000123	0.0003743	0.0035	3.2607	8491.54	9147.01	9147.01	8.5	No	Si
SLU 37	11.87	-123.14	-10546	-0.0000178	0.0003743	0.0035	3.2607	15242.53	18632.33	18632.33	151.31	No	Si
SLU 37	13.97	1206.89	-6271	-0.0000139	0.0003743	0.0035	3.2607	9533.65	10229.22	10229.22	8.48	No	Si
SLU 28	11.87	143.05	-10564	-0.0000179	0.0003743	0.0035	3.2607	15265.38	16284.23	16284.23	113.83	No	Si
SLU 28	13.97	1207.95	-6168	-0.0000137	0.0003743	0.0035	3.2607	9389.12	10077.61	10077.61	8.34	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche,  $\gamma M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLD 12	11.87	-3959.25	-4911	-0.000021	0.0005615	0.0035	3.2607		10673.88	10673.88	2.7		Si
SLD 12	13.97	-89.44	-2876	-0.0000049	0.0005615	0.0035	3.2607		7527.36	7527.36	84.16		Si
SLV 11	11.87	-8847.07	-727	-0.001476	0.0005615	0.0035	2.6085		4146.79	4146.79	0.47		No
SLV 11	13.97	-1042.29	-1436	-0.0000055	0.0005615	0.0035	3.2607		5269.73	5269.73	5.06		Si
SLV 15	11.87	-3906.61	-4979	-0.0000208	0.0005615	0.0035	3.2607		10777.68	10777.68	2.76		Si
SLV 15	13.97	594.93	-2417	-0.0000057	0.0005615	0.0035	3.2607		4412.64	4412.64	7.42		Si
SLV 6	11.87	8822.76	-15819	-0.0000534	0.0005615	0.0035	3.2607		24058.33	24058.33	2.73		Si
SLV 6	13.97	2419.77	-6555	-0.0000179	0.0005615	0.0035	3.2607		10809.87	10809.87	4.47		Si
SLV 8	11.87	-8090.75	-1365	-0.0010273	0.0005615	0.0035	2.6085		5156.5	5156.5	0.64		No
SLV 8	13.97	-1339.26	-1982	-0.0000073	0.0005615	0.0035	3.2607		6128.95	6128.95	4.58		Si
SLV 16	11.87	-4074.68	-4869	-0.0000217	0.0005615	0.0035	3.2607		10608.31	10608.31	2.6		Si
SLV 16	13.97	551.71	-2445	-0.0000056	0.0005615	0.0035	3.2607		4456.82	4456.82	8.08		Si
SLD 11	11.87	-3911.82	-4943	-0.0000208	0.0005615	0.0035	3.2607		10721.65	10721.65	2.74		Si
SLD 11	13.97	-77.25	-2868	-0.0000049	0.0005615	0.0035	3.2607		7515.04	7515.04	97.28		Si
SLV 5	11.87	8931.31	-15891	-0.0000539	0.0005615	0.0035	3.2607		24144.65	24144.65	2.7		Si
SLV 5	13.97	2447.68	-6537	-0.0000179	0.0005615	0.0035	3.2607		10782.61	10782.61	4.41		Si
SLV 7	11.87	-7982.2	-1436	-0.0009805	0.0005615	0.0035	2.6085		5269.51	5269.51	0.66		No
SLV 7	13.97	-1311.35	-1964	-0.0000071	0.0005615	0.0035	3.2607		6100.48	6100.48	4.65		Si
SLV 12	11.87	-8955.62	-656	-0.0015447	0.0005615	0.0035	2.6085		4033.12	4033.12	0.45		No
SLV 12	13.97	-1070.2	-1454	-0.0000057	0.0005615	0.0035	3.2607		5298.29	5298.29	4.95		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 45	11.87	252.89	-10920	-9093	610	3.2607	3.2607	-9960	8272	7553	35683	27339	8315	35654	No	58.48	Si
SLU 45	13.97	942.19	-5481	-4564	377	3.2607	3.2607	-4999	7611	6949	35683	27339	8315	35654	No	94.45	Si
SLU 48	11.87	378.5	-11731	-9769	486	3.2607	3.2607	-10700	8371	7643	35683	27339	8315	35654	No	73.36	Si
SLU 48	13.97	1160.3	-6361	-5297	403	3.2607	3.2607	-5802	7718	7047	35683	27339	8315	35654	No	88.54	Si
SLU 66	11.87	165.03	-11883	-9896	580	3.2607	3.2607	-10839	8390	7660	35683	27339	8315	35654	No	61.43	Si
SLU 66	13.97	1136.42	-6193	-5157	376	3.2607	3.2607	-5649	7698	7028	35683	27339	8315	35654	No	94.95	Si
SLU 64	11.87	114.81	-11051	-9203	634	3.2607	3.2607	-10080	8288	7567	35683	27339	8315	35654	No	56.2	Si
SLU 64	13.97	980.4	-5395	-4493	305	3.2607	3.2607	-4921	7601	6939	35683	27339	8315	35654	No	117.09	Si
SLU 1	11.87	132.72	-8014	-6673	503	3.2607	3.2607	-7309	7919	7230	35683	27339	8315	35654	No	70.91	Si
SLU 1	13.97	655.97	-3790	-3156	235	3.2607	3.2607	-3457	7405	6761	35683	27339	8315	35654	No	151.56	Si
SLU 43	11.87	202.66	-10087	-8400	664	3.2607	3.2607	-9201	8171	7460	35683	27339	8315	35654	No	53.72	Si
SLU 43	13.97	786.17	-4683	-3900	306	3.2607	3.2607	-4271	7514	6860	35683	27339	8315	35654	No	116.33	Si
SLU 46	11.87	175.24	-10862	-9045	546	3.2607	3.2607	-9907	8265	7546	35683	27339	8315	35654	No	65.29	Si
SLU 46	13.97	925.8	-5468	-4553	313	3.2607	3.2607	-4987	7609	6947	35683	27339	8315	35654	No	113.88	Si
SLU 65	11.87	-14.61	-10955	-9123	528	3.2607	3.2607	-9992	8277	7557	35683	27339	8315	35654	No	67.48	Si
SLU 65	13.97	953.09	-5374	-4475	197	3.2607	3.2607	-4901	7598	6937	35683	27339	8315	35654	No	180.84	Si
SLU 67	11.87	87.39	-11826	-9848	517	3.2607	3.2607	-10786	8383	7653	35683	27339	8315	35654	No	69	Si
SLU 67	13.97	1120.04	-6180	-5147	311	3.2607	3.2607	-5637	7696	7026	35683	27339	8315	35654	No	114.61	Si
SLU 44	11.87	73.25	-9992	-8320	558	3.2607	3.2607	-9113	8160	7450	35683	27339	8315	35654	No	63.93	Si
SLU 44	13.97	758.86	-4661	-3881	199	3.2607	3.2607	-4251	7511	6858	35683	27339	8315	35654	No	179.04	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 8	11.87	-8090.75	-1365	-1136	-5998	2.6085	0	0	0	0	35683	32807	6652	35683		5.95	Si
SLV 8	13.97	-1339.26	-1982	-1650	-7812	3.2607	2.8637	-2059	10829	8683	35683	41008	8315	44366		5.68	Si
SLV 12	11.87	-8955.62	-656	-546	-6564	2.6085	0	0	0	0	35683	32807	6652	35683		5.44	Si
SLV 12	13.97	-1070.2	-1454	-1211	-8626	3.2607	2.6834	-1612	10739	8069	35683	41008	8315	43752		5.07	Si
SLV 10	11.87	7957.88	-15111	-12583	6765	3.2607	3.2607	-13782	13173	12027	35683	41008	8315	47710		7.05	Si
SLV 10	13.97	2688.83	-6028	-5019	8061	3.2607	3.2607	-5498	11516	10514	35683	41008	8315	46197		5.73	Si
SLV 9	11.87	8066.43	-15182	-12643	6872	3.2607	3.2607	-13847	13186	12039	35683	41008	8315	47722		6.94	Si
SLV 9	13.97	2716.74	-6009	-5004	8145	3.2607	3.2607	-5481	11513	10511	35683	41008	8315	46194		5.67	Si
SLV 5	11.87	8931.31	-15891	-13233	7439	3.2607	3.2049	-14494	13315	11949	35683	41008	8315	47632		6.4	Si
SLV 5	13.97	2447.68	-6537	-5443	8958	3.2607	3.2607	-5962	11609	10599	35683	41008	8315	46282		5.17	Si
SLV 6	11.87	8822.76	-15819	-13173	7331	3.2607	3.2179	-14429	13302	11985	35683	41008	8315	47669		6.5	Si
SLV 6	13.97	2419.77	-6555	-5458	8875	3.2607	3.2607	-5979	11612	10602	35683	41008	8315	46285		5.22	Si
SLV 11	11.87	-8847.07	-727	-606	-6456	2.6085	0	0	0	0	35683	32807	6652	35683		5.53	Si
SLV 11	13.97	-1042.29	-1436	-1196	-8542	3.2607	2.7139	-1574	10732	8155	35683	41008	8315	43838		5.13	Si
SLV 1	11.87	4050.36	-11678	-9725	3464	3.2607	3.2607	-10651	12547	11455	35683	41008	8315	47138		13.61	Si
SLV 1	13.97	825.77	-5547	-4619	4091	3.2607	3.2607	-5059	11428	10434	35683	41008	8315	46117		11.27	Si
SLV 7	11.87	-7982.2	-1436	-1196	-5890	2.6085	0	0	0	0	35683	32807	6652	35683		6.06	Si
SLV 7	13.97	-1311.35	-1964	-1635	-7728	3.2607	2.8876	-2021	10821	8749	35683	41008	8315	44432		5.75	Si
SLD 5	11.87	3934.94	-11635	-9689	3527	3.2607	3.2607	-10612	12539	11448	35683	41008	8315	47131		13.36	Si
SLD 5	13.97	1466.92	-5116	-4260	4045	3.2607	3.2607	-4666	11350	10362	35683	41008	8315	46045		11.38	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.45 Wa 0.05 denominatore 8  $\gamma M = 2$



Comb.	fd	Sa	$\alpha 0$	N	M	Mc	Coeff.s.	Verifica
SLV 7	179667	0.53	0	-2007	376.54	0	0	No, $e > t/2$
SLV 8	179667	0.53	0	-2011	376.54	0	0	No, $e > t/2$
SLV 12	179667	0.53	0	-1373	376.54	0	0	No, $e > t/2$
SLV 11	179667	0.53	0	-1369	376.54	0	0	No, $e > t/2$
SLV 15	179667	0.53	3114	-2843	376.54	389.9	1.04	Si
SLV 16	179667	0.53	3120	-2848	376.54	390.64	1.04	Si
SLV 13	179667	0.53	5197	-4745	376.54	641.69	1.7	Si
SLV 14	179667	0.53	5203	-4750	376.54	642.41	1.71	Si
SLV 3	179667	0.53	5443	-4970	376.54	670.94	1.78	Si
SLV 4	179667	0.53	5449	-4975	376.54	671.65	1.78	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 13.45  $W_a = 0.05$   $T_a = 0.0596$

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 6	-1806	-15819	-507	4.115	636.5	0.892	67.04218	12.19367	Si
SLV 5	-1790	-15891	-506	4.13	635.1	0.892	67.27698	12.19367	Si
SLV 10	-1701	-15111	196	4.287	627.7	0.893	69.75543	12.19367	Si
SLV 9	-1685	-15182	196	4.303	626.4	0.893	70.00239	12.19367	Si
SLV 8	-960	-1365	-188	5.173	571	0.91	82.59415	12.19367	Si
SLV 7	-944	-1436	-188	5.197	569.9	0.911	82.91268	12.19367	Si
SLV 12	-855	-656	514	5.235	564	0.915	83.16962	12.19367	Si
SLV 11	-839	-727	514	5.259	562.9	0.916	83.49071	12.19367	Si
SLV 2	-1637	-11567	-1214	4.111	622.4	0.894	66.82598	7.3	Si
SLV 1	-1612	-11678	-1214	4.135	620.4	0.894	67.19744	7.3	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	7.944	SLU 29	Si
V_SLU	53.718	SLU 43	Si
PF_SLV	0.45	SLV 12	No
V_SLV	5.072	SLV 12	Si
PFFP_SLV	0	SLV 7	No
R_SLV	5.498	SLV 6	Si

## Maschio 177

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.823	6.526	-17.718	6.526	L7	L8	2.105	0.28	3.16	3.16	3.16			

#### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	t0	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

#### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	at	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche,  $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_m$ _	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 27	12.77	534.7	-5291	-0.0000173	0.0003743	0.0035	2.105	5077.71	5435.27	5435.27	10.17	No	Si
SLU 27	14.57	1477.69	-3292	-0.0000194	0.0003743	0.0035	2.105	3274.9	3551.23	3551.23	2.4	No	Si
SLU 29	12.77	477.28	-4820	-0.0000157	0.0003743	0.0035	2.105	4665.33	4999.32	4999.32	10.47	No	Si
SLU 29	14.57	1418.04	-2821	-0.0000182	0.0003743	0.0035	2.105	2829.48	3094.24	3094.24	2.18	No	Si
SLU 38	12.77	425.33	-4587	-0.0000147	0.0003743	0.0035	2.105	4458.96	4782.2	4782.2	11.24	No	Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 38	14.57	1467.58	-2588	-0.0000189	0.0003743	0.0035	2.105	2606.8	2866.03	2866.03	1.95	No	Si
SLU 37	12.77	433.25	-4604	-0.0000148	0.0003743	0.0035	2.105	4473.85	4797.82	4797.82	11.07	No	Si
SLU 37	14.57	1451.46	-2605	-0.0000187	0.0003743	0.0035	2.105	2622.86	2882.48	2882.48	1.99	No	Si
SLU 28	12.77	526.78	-5274	-0.0000172	0.0003743	0.0035	2.105	5063.22	5419.81	5419.81	10.29	No	Si
SLU 28	14.57	1493.81	-3275	-0.0000195	0.0003743	0.0035	2.105	3259.24	3535.11	3535.11	2.37	No	Si
SLU 30	12.77	469.36	-4803	-0.0000156	0.0003743	0.0035	2.105	4650.57	4983.75	4983.75	10.62	No	Si
SLU 30	14.57	1434.15	-2804	-0.0000184	0.0003743	0.0035	2.105	2813.54	3077.99	3077.99	2.15	No	Si
SLU 42	12.77	398.17	-4486	-0.0000143	0.0003743	0.0035	2.105	4368.29	4687.17	4687.17	11.77	No	Si
SLU 42	14.57	1129.41	-2487	-0.0000147	0.0003743	0.0035	2.105	2509.02	2766.05	2766.05	2.45	No	Si
SLU 35	12.77	490.68	-5075	-0.0000165	0.0003743	0.0035	2.105	4889.8	5235.94	5235.94	10.67	No	Si
SLU 35	14.57	1511.12	-3076	-0.0000195	0.0003743	0.0035	2.105	3071.85	3342.72	3342.72	2.21	No	Si
SLU 36	12.77	482.76	-5058	-0.0000164	0.0003743	0.0035	2.105	4875.18	5220.54	5220.54	10.81	No	Si
SLU 36	14.57	1527.23	-3060	-0.0000197	0.0003743	0.0035	2.105	3056.06	3326.55	3326.55	2.18	No	Si
SLU 17	12.77	442.4	-4568	-0.0000148	0.0003743	0.0035	2.105	4442.13	4764.55	4764.55	10.77	No	Si
SLU 17	14.57	1183.46	-2599	-0.0000154	0.0003743	0.0035	2.105	2616.64	2876.11	2876.11	2.43	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche,  $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 1	12.77	1313.25	-2343	-0.0000168	0.0005615	0.0035	2.105		2646.13	2646.13	2.01		Si
SLV 1	14.57	1912.99	-242	-0.0108085	0.0005615	0.0035	2.105		496.66	496.66	0.26		No
SLD 1	12.77	824.48	-3709	-0.0000152	0.0005615	0.0035	2.105		4005.77	4005.77	4.86		Si
SLD 1	14.57	1114.06	-1678	-0.0000152	0.0005615	0.0035	2.105		1972.48	1972.48	1.77		Si
SLV 2	12.77	1130.71	-2619	-0.0000148	0.0005615	0.0035	2.105		2922.99	2922.99	2.59		Si
SLV 2	14.57	1785.38	-518	-0.0077609	0.0005615	0.0035	2.105		783.32	783.32	0.44		No
SLV 3	12.77	1310.64	-1778	-0.0000199	0.0005615	0.0035	2.105		2074.95	2074.95	1.58		Si
SLV 3	14.57	2316.85	189	-0.0168527	0.0005615	0.0035	2.105		0	0	0		No
SLD 4	12.77	744.68	-3585	-0.0000143	0.0005615	0.0035	2.105		3883.11	3883.11	5.21		Si
SLD 4	14.57	1233.45	-1611	-0.0000198	0.0005615	0.0035	2.105		1904.49	1904.49	1.54		Si
SLV 8	12.77	625.11	-3117	-0.0000123	0.0005615	0.0035	2.105		3421.08	3421.08	5.47		Si
SLV 8	14.57	1610.99	-1344	-0.0008149	0.0005615	0.0035	2.105		1633.09	1633.09	1.01		Si
SLD 3	12.77	823.06	-3466	-0.0000146	0.0005615	0.0035	2.105		3766.25	3766.25	4.58		Si
SLD 3	14.57	1288.25	-1492	-0.000028	0.0005615	0.0035	2.105		1784.02	1784.02	1.38		Si
SLV 7	12.77	743.01	-2939	-0.0000127	0.0005615	0.0035	2.105		3243.52	3243.52	4.37		Si
SLV 7	14.57	1693.41	-1166	-0.0020559	0.0005615	0.0035	2.105		1450.42	1450.42	0.86		No
SLV 4	12.77	1128.11	-2054	-0.0000143	0.0005615	0.0035	2.105		2356	2356	2.09		Si
SLV 4	14.57	2189.24	-87	-0.0139677	0.0005615	0.0035	2.105		335.45	335.45	0.15		No
SLD 2	12.77	746.1	-3828	-0.000015	0.0005615	0.0035	2.105		4122.51	4122.51	5.53		Si
SLD 2	14.57	1059.26	-1796	-0.0000136	0.0005615	0.0035	2.105		2093.06	2093.06	1.98		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 35	12.77	490.68	-5075	-4226	-550	2.105	2.105	-7170	7900	4657	35683	17649	5368	23017	No	41.84	Si
SLU 35	14.57	1511.12	-3076	-2562	-550	2.105	1.6839	-4346	7524	3547	35683	17649	5368	23017	No	41.84	Si
SLU 38	12.77	425.33	-4587	-3820	-562	2.105	2.105	-6481	7809	4602	35683	17649	5368	23017	No	40.94	Si
SLU 38	14.57	1467.58	-2588	-2155	-562	2.105	1.4566	-3657	7432	3031	35683	17649	5368	23017	No	40.94	Si
SLU 30	12.77	469.36	-4803	-4000	-519	2.105	2.105	-6786	7849	4626	35683	17649	5368	23017	No	44.33	Si
SLU 30	14.57	1434.15	-2804	-2335	-519	2.105	1.6232	-3962	7473	3396	35683	17649	5368	23017	No	44.33	Si
SLU 36	12.77	482.76	-5058	-4212	-563	2.105	2.105	-7147	7897	4655	35683	17649	5368	23017	No	40.85	Si
SLU 36	14.57	1527.23	-3060	-2548	-563	2.105	1.66	-4323	7521	3496	35683	17649	5368	23017	No	40.85	Si
SLU 27	12.77	534.7	-5291	-4406	-507	2.105	2.105	-7475	7941	4680	35683	17649	5368	23017	No	45.39	Si
SLU 27	14.57	1477.69	-3292	-2741	-507	2.105	1.8109	-4651	7565	3836	35683	17649	5368	23017	No	45.39	Si
SLU 78	12.77	631.93	-6487	-5402	-493	2.105	2.105	-9165	8166	4813	35683	17649	5368	23017	No	46.7	Si
SLU 78	14.57	1558.51	-3907	-3254	-493	2.105	1.9608	-5520	7680	4217	35683	17649	5368	23017	No	46.7	Si
SLU 29	12.77	477.28	-4820	-4014	-506	2.105	2.105	-6810	7852	4628	35683	17649	5368	23017	No	45.5	Si
SLU 29	14.57	1418.04	-2821	-2349	-506	2.105	1.6494	-3986	7476	3453	35683	17649	5368	23017	No	45.5	Si
SLU 80	12.77	574.51	-6016	-5009	-492	2.105	2.105	-8499	8078	4761	35683	17649	5368	23017	No	46.81	Si
SLU 80	14.57	1498.85	-3436	-2861	-492	2.105	1.8488	-4854	7592	3930	35683	17649	5368	23017	No	46.81	Si
SLU 37	12.77	433.25	-4604	-3834	-549	2.105	2.105	-6505	7812	4604	35683	17649	5368	23017	No	41.93	Si
SLU 37	14.57	1451.46	-2605	-2169	-549	2.105	1.486	-3681	7435	3094	35683	17649	5368	23017	No	41.93	Si
SLU 28	12.77	526.78	-5274	-4392	-520	2.105	2.105	-7452	7938	4679	35683	17649	5368	23017	No	44.22	Si
SLU 28	14.57	1493.81	-3275	-2728	-520	2.105	1.7893	-4628	7561	3788	35683	17649	5368	23017	No	44.22	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 1	12.77	1313.25	-2343	-1951	-797	2.105	1.4757	-3310	11079	4578	35683	26474	5368	31841		39.94	Si
SLV 1	14.57	1912.99	-242	-201	78	2.105	0	0	0	0	35683	26474	5368	31841		409.72	Si
SLV 14	12.77	-390.06	-7675	-6391	989	2.105	2.105	-10843	12585	7418	35683	26474	5368	31841		32.19	Si
SLV 14	14.57	-1277.49	-5686	-4735	185	2.105	2.105	-8034	12023	7087	35683	26474	5368	31841		171.72	Si
SLV 7	12.77	743.01	-2939	-2447	-653	2.105	2.105	-4152	11247	6629	35683	26474	5368	31841		48.78	Si
SLV 7	14.57	1693.41	-1166	-971	-520	2.105	0	-93328	16250	0	35683	26474	5368	31841		61.29	Si
SLV 13	12.77	-207.52	-7399	-6161	1020	2.105	2.105	-10453	12507	7372	35683	26474	5368	31841		31.23	Si
SLV 13	14.57	-1149.88	-5410	-4505	216	2.105	2.105	-7644	11945	7041	35683	26474	5368	31841		147.45	Si
SLV 16	12.77	-392.67	-7111	-5921	765	2.105	2.105	-10046	12426	7324	35683	26474	5368	31841		41.63	Si
SLV 16	14.57	-873.64	-5256	-4376	-110	2.105	2.105	-7425	11902	7015	35683	26474	5368	31841		289.28	Si
SLV 2	12.77	1130.71	-2619	-2181	-828	2.105	1.8621	-3700	11157	5817	35683	26474	5368	31841		38.47	Si
SLV 2	14.57	1785.38	-518	-431	47	2.105	0	0	16250	0	35683	26474	5368	31841		674.6	Si
SLV 3	12.77	1310.64	-1778	-1481	-1022	2.105	0.9465	-2513	10919	2894	35683	26474	5368	31841		31.17	Si
SLV 3	14.57	2316.85	189	158	-218	2.105	0	0	6413	0	35683	26474	5368	31841		146.21	Si
SLV 8	12.77	625.11	-3117	-2596	-672	2.105	2.105	-4404	11297	6659	35683	26474	5368	31841		47.35	Si
SLV 8	14.57	1610.99	-1344	-1119	-539	2.105	0	-92032	16250	0	35683	26474	5368	31841		59.05	Si
SLV 4	12.77	1128.11	-2054	-1711	-1052	2.105	1.5101	-2903	10997	4650	35683	26474	5368	31841		30.27	Si
SLV 4	14.57	2189.24	-87	-72	-248	2.105	0	0	0	0	35683	26474	5368	31841		128.24	Si
SLV 15	12.77	-210.13	-6835	-5691	795	2.105	2.105	-9656	12348	7278	35683	26474	5368	31841		40.03	Si





## Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.45 Wa 0.05 denominatore 8  $\gamma M = 2$

Comb.	fd	Sa	$\alpha 0$	N	M	Mc	Coeff.s.	Verifica
SLV 4	179667	0.53	0	-1517	237.55	0	0	No, $e > t/2$
SLV 3	179667	0.53	0	-1241	237.55	0	0	No, $e > t/2$
SLV 1	179667	0.53	2925	-1724	237.55	236.75	1	No, $M > M_u$
SLV 2	179667	0.53	3394	-2000	237.55	273.79	1.15	Si
SLV 7	179667	0.53	4118	-2427	237.55	330.62	1.39	Si
SLV 8	179667	0.53	4420	-2605	237.55	354.18	1.49	Si
SLV 11	179667	0.53	6591	-3885	237.55	520.37	2.19	Si
SLV 5	179667	0.53	6849	-4037	237.55	539.82	2.27	Si
SLV 12	179667	0.53	6893	-4063	237.55	543.12	2.29	Si
SLV 6	179667	0.53	7152	-4215	237.55	562.49	2.37	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

## Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.45 Wa = 0.05 Ta = 0.0596

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 10	-3822	-6419	762	2.07	661.3	0.904	33.26467	12.19367	Si
SLV 9	-3671	-6223	761	2.127	646.4	0.903	34.23704	12.19367	Si
SLV 6	-2412	-5300	826	2.753	524.2	0.892	44.84231	12.19367	Si
SLV 5	-2261	-5104	826	2.857	509.9	0.891	46.59168	12.19367	Si
SLV 14	-4895	-7239	128	1.836	767.7	0.913	29.21125	7.3	Si
SLV 12	-2067	-4878	-836	3	491.6	0.89	48.98851	12.19367	Si
SLV 13	-4661	-6935	127	1.902	744.4	0.911	30.3284	7.3	Si
SLV 11	-1915	-4681	-837	3.124	477.6	0.889	51.05322	12.19367	Si
SLV 16	-4368	-6776	-352	1.955	715.3	0.909	31.25397	7.3	Si
SLV 15	-4134	-6472	-352	2.031	692.1	0.907	32.5532	7.3	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

## Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.953	SLV 38	Si
V_SLV	40.848	SLV 36	Si
PF_SLV	0	SLV 3	No
V_SLV	30.265	SLV 4	Si
PFFP_SLV	0	SLV 3	No
R_SLV	2.728	SLV 10	Si

## Maschio 178

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-16.818	6.526	-12.838	6.526	L7	L8	3.98	0.28	3.16	3.16	3.16			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau 0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

## Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma F_d$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon m$	$\epsilon m_{-}$	$\epsilon m_u$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 39	12.77	2357.63	-9431	-0.0000175	0.0003743	0.0035	3.98	17207.56	18393.63	18393.63	7.8	No	Si
SLU 39	14.57	960.6	-5819	-0.0000097	0.0003743	0.0035	3.98	10986.39	11914.36	11914.36	12.4	No	Si





Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 37	12.77	2455.94	-11462	-0.0000205	0.0003743	0.0035	3.98	20505.3	21898.99	21898.99	8.92	No	Si
SLU 37	14.57	1917.17	-7864	-0.0000144	0.0003743	0.0035	3.98	14563.98	15618.01	15618.01	8.15	No	Si
SLU 40	12.77	2326.99	-9376	-0.0000173	0.0003743	0.0035	3.98	17116.93	18297.69	18297.69	7.86	No	Si
SLU 40	14.57	979.82	-5765	-0.0000097	0.0003743	0.0035	3.98	10888.96	11813.99	11813.99	12.06	No	Si
SLU 42	12.77	2427.9	-10281	-0.0000188	0.0003743	0.0035	3.98	18605.35	19871.38	19871.38	8.18	No	Si
SLU 42	14.57	1472.95	-6675	-0.0000119	0.0003743	0.0035	3.98	12501.24	13476.32	13476.32	9.15	No	Si
SLU 41	12.77	2458.54	-10336	-0.0000189	0.0003743	0.0035	3.98	18694.25	19966.25	19966.25	8.12	No	Si
SLU 41	14.57	1453.72	-6729	-0.0000119	0.0003743	0.0035	3.98	12596.93	13575.01	13575.01	9.34	No	Si
SLU 18	12.77	2090.71	-8886	-0.0000162	0.0003743	0.0035	3.98	16298.59	17434.1	17434.1	8.34	No	Si
SLU 18	14.57	611.62	-5336	-0.0000083	0.0003743	0.0035	3.98	10118.42	11025.21	11025.21	18.03	No	Si
SLU 82	12.77	2759.18	-12077	-0.000022	0.0003743	0.0035	3.98	21475.45	22904.18	22904.18	8.3	No	Si
SLU 82	14.57	1013.98	-7424	-0.000012	0.0003743	0.0035	3.98	13807	14832.14	14832.14	14.63	No	Si
SLU 81	12.77	2789.82	-12132	-0.0000221	0.0003743	0.0035	3.98	21560.91	22981.22	22981.22	8.24	No	Si
SLU 81	14.57	994.75	-7478	-0.000012	0.0003743	0.0035	3.98	13901.25	14930.09	14930.09	15.01	No	Si
SLU 83	12.77	2890.73	-13037	-0.0000236	0.0003743	0.0035	3.98	22961.88	24264.87	24264.87	8.39	No	Si
SLU 83	14.57	1487.88	-8388	-0.0000143	0.0003743	0.0035	3.98	15458.83	16555.56	16555.56	11.13	No	Si
SLU 38	12.77	2425.3	-11408	-0.0000204	0.0003743	0.0035	3.98	20418.56	21805.71	21805.71	8.99	No	Si
SLU 38	14.57	1936.39	-7809	-0.0000144	0.0003743	0.0035	3.98	14470.46	15520.6	15520.6	8.02	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche,  $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 13	12.77	3916.82	-11080	-0.0000227	0.0005615	0.0035	3.98		21717.93	21717.93	5.54		Si
SLV 13	14.57	-2919.99	-7719	-0.0000161	0.0005615	0.0035	3.98		19316.96	19316.96	6.62		Si
SLD 4	12.77	1022.53	-9005	-0.0000141	0.0005615	0.0035	3.98		17957.33	17957.33	17.56		Si
SLD 4	14.57	2152.77	-5363	-0.0000114	0.0005615	0.0035	3.98		11191.51	11191.51	5.2		Si
SLV 3	12.77	248.95	-8258	-0.0000115	0.0005615	0.0035	3.98		16591.2	16591.2	66.64		Si
SLV 3	14.57	4068.17	-4493	-0.0000146	0.0005615	0.0035	3.98		9542.08	9542.08	2.35		Si
SLV 1	12.77	468.55	-9917	-0.0000142	0.0005615	0.0035	3.98		19620.85	19620.85	41.88		Si
SLV 1	14.57	3302.46	-6029	-0.0000146	0.0005615	0.0035	3.98		12442.12	12442.12	3.77		Si
SLV 8	12.77	883.76	-6672	-0.0000106	0.0005615	0.0035	3.98		13646.33	13646.33	15.44		Si
SLV 8	14.57	2879.23	-3238	-0.0000103	0.0005615	0.0035	3.98		7138.62	7138.62	2.48		Si
SLV 15	12.77	3697.22	-9421	-0.00002	0.0005615	0.0035	3.98		18718.08	18718.08	5.06		Si
SLV 15	14.57	-2154.28	-6184	-0.0000125	0.0005615	0.0035	3.98		16471.91	16471.91	7.65		Si
SLV 4	12.77	-134.9	-8187	-0.0000112	0.0005615	0.0035	3.98		20167.01	20167.01	149.5		Si
SLV 4	14.57	4184.33	-4425	-0.0000149	0.0005615	0.0035	3.98		9412.97	9412.97	2.25		Si
SLV 2	12.77	84.7	-9845	-0.0000133	0.0005615	0.0035	3.98		19491.05	19491.05	230.12		Si
SLV 2	14.57	3418.62	-5960	-0.0000147	0.0005615	0.0035	3.98		12314.04	12314.04	3.6		Si
SLV 7	12.77	1131.68	-6718	-0.0000112	0.0005615	0.0035	3.98		13733.04	13733.04	12.14		Si
SLV 7	14.57	2804.21	-3282	-0.0000101	0.0005615	0.0035	3.98		7223.62	7223.62	2.58		Si
SLD 3	12.77	1187.36	-9036	-0.0000144	0.0005615	0.0035	3.98		18013.56	18013.56	15.17		Si
SLD 3	14.57	2102.89	-5393	-0.0000113	0.0005615	0.0035	3.98		11246.83	11246.83	5.35		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 73	12.77	2635.25	-12263	-10211	856	3.98	3.98	-9163	8166	9100	35683	33370	10149	43519	No	50.86	Si
SLU 73	14.57	997.11	-7612	-6339	861	3.98	3.98	-5688	7703	8584	35683	33370	10149	43519	No	50.57	Si
SLU 81	12.77	2789.82	-12132	-10102	944	3.98	3.98	-9065	8153	9086	35683	33370	10149	43519	No	46.12	Si
SLU 81	14.57	994.75	-7478	-6227	950	3.98	3.98	-5588	7690	8569	35683	33370	10149	43519	No	45.79	Si
SLU 60	12.77	2522.89	-11587	-9649	990	3.98	3.98	-8658	8099	9025	35683	33370	10149	43519	No	43.94	Si
SLU 60	14.57	645.77	-6995	-5825	997	3.98	3.98	-5227	7641	8516	35683	33370	10149	43519	No	43.67	Si
SLU 52	12.77	2368.32	-11718	-9758	902	3.98	3.98	-8756	8112	9040	35683	33370	10149	43519	No	48.23	Si
SLU 52	14.57	648.13	-7128	-5936	907	3.98	3.98	-5326	7655	8530	35683	33370	10149	43519	No	47.99	Si
SLU 44	12.77	2126.81	-12236	-10189	805	3.98	3.98	-9143	8163	9097	35683	33370	10149	43519	No	54.08	Si
SLU 44	14.57	578.87	-7652	-6372	805	3.98	3.98	-5718	7707	8588	35683	33370	10149	43519	No	54.05	Si
SLU 53	12.77	2558.48	-13516	-11255	799	3.98	3.98	-10100	8291	9240	35683	33370	10149	43519	No	54.43	Si
SLU 53	14.57	1015.72	-8935	-7440	800	3.98	3.98	-6676	7835	8731	35683	33370	10149	43519	No	54.39	Si
SLU 82	12.77	2759.18	-12077	-10057	916	3.98	3.98	-9025	8148	9080	35683	33370	10149	43519	No	47.51	Si
SLU 82	14.57	1013.98	-7424	-6182	923	3.98	3.98	-5547	7684	8563	35683	33370	10149	43519	No	47.17	Si
SLU 64	12.77	2444.81	-12871	-10718	804	3.98	3.98	-9618	8227	9168	35683	33370	10149	43519	No	54.13	Si
SLU 64	14.57	895.81	-8227	-6850	805	3.98	3.98	-6147	7764	8652	35683	33370	10149	43519	No	54.05	Si
SLU 61	12.77	2492.25	-11533	-9603	963	3.98	3.98	-8617	8093	9019	35683	33370	10149	43519	No	45.2	Si
SLU 61	14.57	665	-6940	-5779	969	3.98	3.98	-5186	7636	8509	35683	33370	10149	43519	No	44.92	Si
SLU 43	12.77	2177.88	-12327	-10264	851	3.98	3.98	-9211	8173	9107	35683	33370	10149	43519	No	51.16	Si
SLU 43	14.57	546.83	-7743	-6448	851	3.98	3.98	-5786	7716	8599	35683	33370	10149	43519	No	51.11	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	oN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 16	12.77	3313.37	-9350	-7786	3942	3.98	3.98	-6986	11814	13165	35683	50055	10149	48849		12.39	Si
SLV 16	14.57	-2038.12	-6116	-5093	2196	3.98	3.98	-4570	11331	12627	35683	50055	10149	48310		22	Si
SLV 1	12.77	468.55	-9917	-8258	-2629	3.98	3.98	-7410	11899	13260	35683	50055	10149	48943		18.62	Si
SLV 1	14.57	3302.46	-6029	-5020	-879	3.98	3.98	-4505	11318	12612	35683	50055	10149	48296		54.95	Si
SLV 10	12.77	2650.24	-12549	-10450	2514	3.98	3.98	-9377	12292	13698	35683	50055	10149	49381		19.64	Si
SLV 10	14.57	-1539.86	-8863	-7380	2010	3.98	3.98	-6622	11741	13084	35683	50055	10149	48768		24.27	Si
SLV 13	12.77	3916.82	-11080	-9226	4727	3.98	3.98	-8279	12073	13454	35683	50055	10149	49137		10.4	Si
SLV 13	14.57	-2919.99	-7719	-6428	2994	3.98	3.98	-5768	11570	12894	35683	50055	10149	48577		16.23	Si
SLV 9	12.77	2898.16	-12595	-10488	2694	3.98	3.98	-9411	12299	13706	35683	50055	10149	49389		18.33	Si
SLV 9	14.57	-1614.89	-8907	-7417	2191	3.98	3.98	-6655	11748	13092	35683	50055	10149	48775		22.26	Si
SLV 4	12.77	-134.9	-8187	-6817	-3414	3.98	3.98	-6117	11640	12972	35683	50055	10149	48655		14.25	Si
SLV 4	14.57	4184.33	-4425	-3685	-1677	3.98	3.1331	-3306	11078	9718	35683	50055	10149	45402		27.08	Si
SLV 2	12.77	84.7	-9845	-8198	-2907	3.98	3.98	-7357	11888	13248	35683	50055	10149	48931		16.83	Si
SLV 2	14.57	3418.62	-5960	-4963	-1160	3.98	3.98	-4454	11307	12601	35683	50055	10149	48284		41.62	Si
SLV 15	12.77	3697.22	-9421	-7845	4220	3.98	3.98	-7040	11825	13177	35683	50055	10149	48861		11.58	Si
SLV 15	14.57	-2154.28	-6184	-5150	2477	3.98	3.98	-4621	11341	12638	35683	50055	10149	48321		19.51	Si
SLV 14	12.77	3532.97	-11008	-9167	4449	3.98	3.98	-8226	12062	13442	35683	50055	10149	49125		11.04	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 14	14.57	-2803.82	-7651	-6371	2713	3.98	3.98	-5717	11560	12883	35683	50055	10149	48566		17.9	Si
SLV 3	12.77	248.95	-8258	-6877	-3135	3.98	3.98	-6171	11651	12984	35683	50055	10149	48667		15.52	Si
SLV 3	14.57	4068.17	-4493	-3742	-1396	3.98	3.2538	-3357	11088	10102	35683	50055	10149	45785		32.81	Si

#### Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.45 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 8	179667	0.53	4561	-5083	449.16	690.37	1.54	Si
SLV 7	179667	0.53	4601	-5127	449.16	696.17	1.55	Si
SLV 12	179667	0.53	5292	-5898	449.16	797.05	1.77	Si
SLV 11	179667	0.53	5332	-5942	449.16	802.8	1.79	Si
SLV 4	179667	0.53	5359	-5972	449.16	806.76	1.8	Si
SLV 3	179667	0.53	5420	-6040	449.16	815.64	1.82	Si
SLV 2	179667	0.53	6783	-7559	449.16	1011.27	2.25	Si
SLV 1	179667	0.53	6844	-7627	449.16	1019.98	2.27	Si
SLV 16	179667	0.53	7796	-8687	449.16	1154.14	2.57	Si
SLV 15	179667	0.53	7857	-8756	449.16	1162.73	2.59	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 13.45 Wa = 0.05 Ta = 0.0596

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 9	-7301	-12747	1341	2.065	1257.7	0.905	33.17517	12.19367	Si
SLV 10	-7284	-12655	1340	2.068	1256	0.904	33.23099	12.19367	Si
SLV 5	-6394	-13461	1307	2.26	1168.5	0.9	36.48333	12.19367	Si
SLV 6	-6377	-13369	1307	2.264	1166.8	0.9	36.55041	12.19367	Si
SLV 13	-6514	-10381	453	2.321	1180.2	0.901	37.44206	7.3	Si
SLV 14	-6487	-10238	453	2.327	1177.6	0.901	37.54754	7.3	Si
SLV 11	-2014	-8295	-1306	4.133	761	0.894	67.19646	12.19367	Si
SLV 12	-1997	-8202	-1307	4.146	759.6	0.894	67.40116	12.19367	Si
SLV 15	-4927	-9045	-341	2.781	1026.2	0.894	45.22502	7.3	Si
SLV 16	-4901	-8902	-341	2.79	1023.7	0.893	45.37537	7.3	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	7.802	SLU 39	Si
V_SLU	43.668	SLU 60	Si
PF_SLV	2.25	SLV 4	Si
V_SLV	10.395	SLV 13	Si
PFFP_SLV	1.537	SLV 8	Si
R_SLV	2.721	SLV 9	Si

## Maschio 179

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.938	6.526	-7.958	6.526	L7	L8	3.98	0.28	3.16	3.16	3.16			

#### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

#### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 37	12.77	-855.56	-11224	-0.0000169	0.0003743	0.0035	3.98	20126.68	25191.47	25191.47	29.44	No	Si
SLU 37	14.57	-2568.16	-7652	-0.0000154	0.0003743	0.0035	3.98	14200.78	18963.86	18963.86	7.38	No	Si
SLU 36	12.77	-847.5	-11948	-0.0000179	0.0003743	0.0035	3.98	21272.6	26444.68	26444.68	31.2	No	Si
SLU 36	14.57	-2504.73	-8382	-0.0000163	0.0003743	0.0035	3.98	15448.55	20264.56	20264.56	8.09	No	Si
SLU 38	12.77	-889.55	-11177	-0.0000169	0.0003743	0.0035	3.98	20050.52	25109.33	25109.33	28.23	No	Si
SLU 38	14.57	-2549.19	-7605	-0.0000153	0.0003743	0.0035	3.98	14119.09	18879.84	18879.84	7.41	No	Si
SLU 34	12.77	-816.98	-10194	-0.0000154	0.0003743	0.0035	3.98	18463.47	23432.8	23432.8	28.68	No	Si
SLU 34	14.57	-2103.74	-6612	-0.0000131	0.0003743	0.0035	3.98	12391.74	17136.15	17136.15	8.15	No	Si
SLU 41	12.77	-788.22	-10030	-0.0000151	0.0003743	0.0035	3.98	18195.93	23156.27	23156.27	29.38	No	Si
SLU 41	14.57	-2231.91	-6445	-0.0000131	0.0003743	0.0035	3.98	12096.27	16831.12	16831.12	7.54	No	Si
SLU 42	12.77	-822.2	-9983	-0.0000151	0.0003743	0.0035	3.98	18117.77	23075.79	23075.79	28.07	No	Si
SLU 42	14.57	-2212.94	-6397	-0.000013	0.0003743	0.0035	3.98	12012.57	16744.13	16744.13	7.57	No	Si
SLU 35	12.77	-813.51	-11996	-0.0000179	0.0003743	0.0035	3.98	21347.47	26527.71	26527.71	32.61	No	Si
SLU 35	14.57	-2523.71	-8430	-0.0000164	0.0003743	0.0035	3.98	15528.95	20349.61	20349.61	8.06	No	Si
SLU 79	12.77	-971.43	-13865	-0.0000208	0.0003743	0.0035	3.98	24219.27	29593.34	29593.34	30.46	No	Si
SLU 79	14.57	-2725.85	-9253	-0.000018	0.0003743	0.0035	3.98	16912.22	21835.69	21835.69	8.01	No	Si
SLU 83	12.77	-904.09	-12671	-0.000019	0.0003743	0.0035	3.98	22399.1	27654.45	27654.45	30.59	No	Si
SLU 83	14.57	-2389.6	-8046	-0.0000156	0.0003743	0.0035	3.98	14875.53	19663.13	19663.13	8.23	No	Si
SLU 80	12.77	-1005.42	-13817	-0.0000208	0.0003743	0.0035	3.98	24147.53	29515.02	29515.02	29.36	No	Si
SLU 80	14.57	-2706.87	-9206	-0.0000179	0.0003743	0.0035	3.98	16833.19	21752.08	21752.08	8.04	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche,  $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 15	12.77	2656.44	-8126	-0.0000162	0.0005615	0.0035	3.98		16345.41	16345.41	6.15		Si
SLV 15	14.57	-5251.31	-4694	-0.000019	0.0005615	0.0035	3.184		13675.5	13675.5	2.6		Si
SLV 1	12.77	-3568.65	-10560	-0.0000213	0.0005615	0.0035	3.98		24438.83	24438.83	6.85		Si
SLV 1	14.57	2843.23	-6899	-0.0000149	0.0005615	0.0035	3.98		14071.58	14071.58	4.95		Si
SLV 14	12.77	3209.83	-9715	-0.0000194	0.0005615	0.0035	3.98		19254.7	19254.7	6		Si
SLV 14	14.57	-5513.41	-6222	-0.0000199	0.0005615	0.0035	3.98		16541.89	16541.89	3		Si
SLV 13	12.77	3392.39	-9671	-0.0000197	0.0005615	0.0035	3.98		19174.31	19174.31	5.65		Si
SLV 13	14.57	-5472.63	-6177	-0.0000197	0.0005615	0.0035	3.98		16457.72	16457.72	3.01		Si
SLV 3	12.77	-4304.59	-9015	-0.0000207	0.0005615	0.0035	3.98		21650.74	21650.74	5.03		Si
SLV 3	14.57	3064.55	-5416	-0.0000133	0.0005615	0.0035	3.98		11290.59	11290.59	3.68		Si
SLV 4	12.77	-4487.15	-9059	-0.0000211	0.0005615	0.0035	3.98		21729.79	21729.79	4.84		Si
SLV 4	14.57	3023.77	-5461	-0.0000133	0.0005615	0.0035	3.98		11375.69	11375.69	3.76		Si
SLD 16	12.77	741.43	-8844	-0.0000133	0.0005615	0.0035	3.98		17663.31	17663.31	23.82		Si
SLD 16	14.57	-2966.14	-5345	-0.000013	0.0005615	0.0035	3.98		14900.26	14900.26	5.02		Si
SLV 16	12.77	2473.89	-8170	-0.0000158	0.0005615	0.0035	3.98		16427.19	16427.19	6.64		Si
SLV 16	14.57	-5292.09	-4739	-0.0000191	0.0005615	0.0035	3.184		13760.99	13760.99	2.6		Si
SLV 2	12.77	-3751.2	-10604	-0.0000217	0.0005615	0.0035	3.98		24518.85	24518.85	6.54		Si
SLV 2	14.57	2802.45	-6944	-0.0000148	0.0005615	0.0035	3.98		14155.87	14155.87	5.05		Si
SLD 15	12.77	819.82	-8825	-0.0000134	0.0005615	0.0035	3.98		17628.79	17628.79	21.5		Si
SLD 15	14.57	-2948.63	-5326	-0.0000129	0.0005615	0.0035	3.98		14863.84	14863.84	5.04		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 79	12.77	-971.43	-13865	-11545	922	3.98	3.98	-10360	8326	9278	35683	33370	10149	43519	No	47.21	Si
SLU 79	14.57	-2725.85	-9253	-7705	901	3.98	3.98	-6914	7866	8766	35683	33370	10149	43519	No	48.33	Si
SLU 71	12.77	-906.38	-14432	-12018	830	3.98	3.98	-10784	8382	9341	35683	33370	10149	43519	No	52.41	Si
SLU 71	14.57	-2500.57	-9829	-8185	803	3.98	3.98	-7345	7924	8830	35683	33370	10149	43519	No	54.21	Si
SLU 37	12.77	-855.56	-11224	-9347	906	3.98	3.98	-8387	8063	8985	35683	33370	10149	43519	No	48.01	Si
SLU 37	14.57	-2568.16	-7652	-6372	891	3.98	3.98	-5718	7707	8588	35683	33370	10149	43519	No	48.84	Si
SLU 36	12.77	-847.5	-11948	-9949	872	3.98	3.98	-8928	8135	9065	35683	33370	10149	43519	No	49.92	Si
SLU 36	14.57	-2504.73	-8382	-6980	854	3.98	3.98	-6264	7780	8670	35683	33370	10149	43519	No	50.97	Si
SLU 80	12.77	-1005.42	-13817	-11506	892	3.98	3.98	-10325	8321	9273	35683	33370	10149	43519	No	48.77	Si
SLU 80	14.57	-2706.87	-9206	-7666	871	3.98	3.98	-6879	7862	8761	35683	33370	10149	43519	No	49.97	Si
SLU 38	12.77	-889.55	-11177	-9307	877	3.98	3.98	-8352	8058	8980	35683	33370	10149	43519	No	49.62	Si
SLU 38	14.57	-2549.19	-7605	-6333	861	3.98	3.98	-5682	7702	8583	35683	33370	10149	43519	No	50.53	Si
SLU 77	12.77	-929.39	-14636	-12188	916	3.98	3.98	-10937	8403	9364	35683	33370	10149	43519	No	47.49	Si
SLU 77	14.57	-2681.39	-10031	-8353	893	3.98	3.98	-7495	7944	8853	35683	33370	10149	43519	No	48.74	Si
SLU 35	12.77	-813.51	-11996	-9989	901	3.98	3.98	-8964	8140	9071	35683	33370	10149	43519	No	48.3	Si
SLU 35	14.57	-2523.71	-8430	-7020	883	3.98	3.98	-6299	7784	8675	35683	33370	10149	43519	No	49.26	Si
SLU 78	12.77	-963.37	-14588	-12148	887	3.98	3.98	-10901	8398	9359	35683	33370	10149	43519	No	49.06	Si
SLU 78	14.57	-2662.42	-9983	-8313	863	3.98	3.98	-7460	7939	8847	35683	33370	10149	43519	No	50.41	Si
SLU 69	12.77	-864.33	-15203	-12660	825	3.98	3.98	-11360	8459	9427	35683	33370	10149	43519	No	52.75	Si
SLU 69	14.57	-2456.11	-10607	-8832	795	3.98	3.98	-7926	8001	8917	35683	33370	10149	43519	No	54.73	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	oN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 10	12.77	1664.4	-11820	-9843	2672	3.98	3.98	-8833	12183	13577	35683	50055	10149	49260		18.44	Si
SLV 10	14.57	-2853.85	-8197	-6826	1967	3.98	3.98	-6125	11642	12973	35683	50055	10149	48657		24.74	Si
SLV 9	12.77	1782.31	-11792	-9819	2724	3.98	3.98	-8811	12179	13572	35683	50055	10149	49255		18.08	Si
SLV 9	14.57	-2827.51	-8168	-6801	2018	3.98	3.98	-6103	11637	12969	35683	50055	10149	48652		24.1	Si
SLV 3	12.77	-4304.59	-9015	-7507	-4832	3.98	3.98	-6737	11764	13110	35683	50055	10149	48793		10.1	Si
SLV 3	14.57	3064.55	-5416	-4510	-3480	3.98	3.98	-4047	11226	12510	35683	50055	10149	48194		13.85	Si
SLV 2	12.77	-3751.2	-10604	-8830	-4394	3.98	3.98	-7924	12001	13374	35683	50055	10149	49058		11.16	Si
SLV 2	14.57	2802.45	-6944	-5783	-3226	3.98	3.98	-5189	11454	12765	35683	50055	10149	48448		15.02	Si
SLV 1	12.77	-3568.65	-10560	-8793	-4313	3.98	3.98	-7891	11995	13367	35683	50055	10149	49050		11.37	Si
SLV 1	14.57	2843.23	-6899	-5745	-3146	3.98	3.98	-5155	11448	12757	35683	50055	10149	48441		15.4	Si
SLV 15	12.77	2656.44	-8126	-6767	5085	3.98	3.98	-6072	11631	12962	35683	50055	10149	48645		9.57	Si
SLV 15	14.57	-5251.31	-4694	-3908	3886	3.184	2.6135	0	0	0	35683	40044	8119	35683		9.18	Si
SLV 4	12.77	-4487.15	-9059	-7544	-4914	3.98	3.98	-6770	11771	13117	35683	50055	10149	48800		9.93	Si
SLV 4	14.57	3023.77	-5461	-4548	-3560	3.98	3.98	-4081	11233	12518	35683	50055	10149	48201		13.54	Si
SLV 13	12.77	3392.39	-9671	-8053	5604	3.98	3.98	-7226	11862	13219	35683	50055	10149	48902		8.73	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 13	14.57	-5472.63	-6177	-5143	4221	3.98	3.3119	-5559	11528	10691	35683	50055	10149	46374		10.99	Si
SLV 14	12.77	3209.83	-9715	-8090	5522	3.98	3.98	-7259	11869	13226	35683	50055	10149	48909		8.86	Si
SLV 14	14.57	-5513.41	-6222	-5181	4141	3.98	3.3115	-5600	11537	10697	35683	50055	10149	46380		11.2	Si
SLV 16	12.77	2473.89	-8170	-6803	5003	3.98	3.98	-6105	11638	12969	35683	50055	10149	48652		9.72	Si
SLV 16	14.57	-5292.09	-4739	-3946	3807	3.184	2.6196	0	0	0	35683	40044	8119	35683		9.37	Si

#### Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.45 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 11	179667	0.53	4652	-5185	449.16	703.74	1.57	Si
SLV 12	179667	0.53	4679	-5214	449.16	707.58	1.58	Si
SLV 7	179667	0.53	4935	-5499	449.16	745.04	1.66	Si
SLV 8	179667	0.53	4961	-5529	449.16	748.86	1.67	Si
SLV 15	179667	0.53	6140	-6843	449.16	919.45	2.05	Si
SLV 16	179667	0.53	6181	-6888	449.16	925.27	2.06	Si
SLV 3	179667	0.53	7082	-7892	449.16	1053.61	2.35	Si
SLV 4	179667	0.53	7122	-7937	449.16	1059.34	2.36	Si
SLV 13	179667	0.53	7704	-8585	449.16	1141.31	2.54	Si
SLV 14	179667	0.53	7745	-8630	449.16	1146.99	2.55	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 13.45 Wa = 0.05 Ta = 0.0596

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 6	-6552	-13362	1261	2.229	1183.9	0.901	35.95071	12.19367	Si
SLV 5	-6510	-13360	1261	2.238	1179.8	0.901	36.11006	12.19367	Si
SLV 10	-6034	-13423	1287	2.349	1133.3	0.899	37.98998	12.19367	Si
SLV 9	-5992	-13421	1287	2.359	1129.2	0.898	38.16753	12.19367	Si
SLV 2	-5398	-11478	337	2.631	1071.5	0.896	42.69142	7.3	Si
SLV 1	-5333	-11474	337	2.65	1065.3	0.895	43.02322	7.3	Si
SLV 8	-1496	-8180	-1291	4.589	720.2	0.902	73.95763	12.19367	Si
SLV 7	-1455	-8177	-1292	4.63	717.1	0.903	74.54055	12.19367	Si
SLV 12	-979	-8241	-1265	5.163	684.2	0.917	81.79213	12.19367	Si
SLV 11	-937	-8238	-1265	5.214	681.7	0.919	82.4553	12.19367	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	7.384	SLU 37	Si
V_SLU	47.214	SLU 79	Si
PF_SLV	2.6	SLV 16	Si
V_SLV	8.726	SLV 13	Si
PFFP_SLV	1.567	SLV 11	Si
R_SLV	2.948	SLV 6	Si

## Maschio 180

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	I	Sp.	h netta	h ini.	h fin.	a	a.s.sx	a.s.dx
-7.058	6.526	-5.233	6.526	L7	L8	1.825	0.28	3.16	3.16	3.16			

#### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

#### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	



### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 40	12.77	-29.84	-3851	-0.0000115	0.0003743	0.0035	1.825	3254.13	4176.22	4176.22	139.93	No	Si
SLU 40	14.57	-961.04	-2133	-0.0000163	0.0003743	0.0035	1.825	1866.57	2744.59	2744.59	2.86	No	Si
SLU 39	12.77	-21.79	-3845	-0.0000114	0.0003743	0.0035	1.825	3248.96	4170.72	4170.72	191.37	No	Si
SLU 39	14.57	-979.46	-2126	-0.0000167	0.0003743	0.0035	1.825	1860.6	2738.56	2738.56	2.8	No	Si
SLU 34	12.77	-57.65	-4155	-0.0000127	0.0003743	0.0035	1.825	3489.03	4424.73	4424.73	76.76	No	Si
SLU 34	14.57	-1016.18	-2440	-0.0000174	0.0003743	0.0035	1.825	2122.36	3006.25	3006.25	2.96	No	Si
SLU 41	12.77	-11.04	-4036	-0.0000119	0.0003743	0.0035	1.825	3397.14	4327.72	4327.72	391.97	No	Si
SLU 41	14.57	-1104.68	-2318	-0.0000189	0.0003743	0.0035	1.825	2020.7	2901.57	2901.57	2.63	No	Si
SLU 35	12.77	-56.66	-4730	-0.0000144	0.0003743	0.0035	1.825	3924.08	4876.81	4876.81	86.08	No	Si
SLU 35	14.57	-1253.47	-3019	-0.0000216	0.0003743	0.0035	1.825	2595.1	3495.21	3495.21	2.79	No	Si
SLU 83	12.77	-92.63	-5258	-0.0000164	0.0003743	0.0035	1.825	4312.79	5294.38	5294.38	57.16	No	Si
SLU 83	14.57	-1193.22	-3045	-0.0000208	0.0003743	0.0035	1.825	2615.72	3515.88	3515.88	2.95	No	Si
SLU 42	12.77	-19.09	-4043	-0.000012	0.0003743	0.0035	1.825	3402.27	4333.14	4333.14	226.96	No	Si
SLU 42	14.57	-1086.26	-2325	-0.0000185	0.0003743	0.0035	1.825	2026.62	2907.64	2907.64	2.68	No	Si
SLU 38	12.77	-41.53	-4342	-0.0000131	0.0003743	0.0035	1.825	3631.76	4573.01	4573.01	110.12	No	Si
SLU 38	14.57	-1153.68	-2627	-0.0000197	0.0003743	0.0035	1.825	2276.46	3166.7	3166.7	2.74	No	Si
SLU 36	12.77	-64.71	-4737	-0.0000145	0.0003743	0.0035	1.825	3929.04	4882.05	4882.05	75.45	No	Si
SLU 36	14.57	-1235.05	-3026	-0.0000214	0.0003743	0.0035	1.825	2600.85	3500.96	3500.96	2.83	No	Si
SLU 37	12.77	-33.47	-4336	-0.000013	0.0003743	0.0035	1.825	3626.7	4567.83	4567.83	136.46	No	Si
SLU 37	14.57	-1172.1	-2620	-0.00002	0.0003743	0.0035	1.825	2270.61	3160.58	3160.58	2.7	No	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche, $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 12	12.77	162.79	-1727	-0.0000065	0.0005615	0.0035	1.825		1725.48	1725.48	10.6		Si
SLV 12	14.57	-2356.91	78	-0.0017674	0.0005615	0.0035	1.46		660.48	660.48	0.28		No
SLD 13	12.77	167.29	-3045	-0.0000104	0.0005615	0.0035	1.825		2869.22	2869.22	17.15		Si
SLD 13	14.57	-1950.11	-1349	-0.0004405	0.0005615	0.0035	1.46		2080.54	2080.54	1.07		Si
SLV 14	12.77	588.44	-1276	-0.0000099	0.0005615	0.0035	1.825		1328.01	1328.01	2.26		Si
SLV 14	14.57	-3964.27	430	0.0239262	0.0005615	0.0035	1.46		0	0	0		No
SLV 16	12.77	642.23	-473	-0.0008129	0.0005615	0.0035	1.46		613.83	613.83	0.96		No
SLV 16	14.57	-4326.06	1292	0.1248584	0.0005615	0.0035	1.46		0	0	0		No
SLD 16	12.77	186.84	-2542	-0.0000091	0.0005615	0.0035	1.825		2435.71	2435.71	13.04		Si
SLD 16	14.57	-2227.68	-819	-0.000838	0.0005615	0.0035	1.46		1613.22	1613.22	0.72		No
SLD 15	12.77	191.06	-2692	-0.0000096	0.0005615	0.0035	1.825		2565.32	2565.32	13.43		Si
SLD 15	14.57	-2110.02	-971	-0.0006881	0.0005615	0.0035	1.46		1747.47	1747.47	0.83		No
SLV 15	12.77	652.04	-822	-0.0000243	0.0005615	0.0035	1.825		925.07	925.07	1.42		Si
SLV 15	14.57	-4052.05	937	0.091025	0.0005615	0.0035	1.46		0	0	0		No
SLD 14	12.77	163.08	-2895	-0.0000099	0.0005615	0.0035	1.825		2740.78	2740.78	16.81		Si
SLD 14	14.57	-2067.77	-1197	-0.0005655	0.0005615	0.0035	1.46		1947.07	1947.07	0.94		No
SLV 13	12.77	598.25	-1625	-0.0000105	0.0005615	0.0035	1.825		1635.42	1635.42	2.73		Si
SLV 13	14.57	-3690.27	76	-0.0036099	0.0005615	0.0035	1.46		687.94	687.94	0.19		No
SLV 11	12.77	169.13	-1952	-0.0000072	0.0005615	0.0035	1.825		1924.11	1924.11	11.38		Si
SLV 11	14.57	-2179.94	-151	-0.0013058	0.0005615	0.0035	1.46		1019.92	1019.92	0.47		No

### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 83	12.77	-92.63	-5258	-4378	576	1.825	1.825	-8568	8087	4132	35683	15302	4654	19956	No	34.64	Si
SLU 83	14.57	-1193.22	-3045	-2535	556	1.825	1.5618	-5820	7720	3376	35683	15302	4654	19956	No	35.86	Si
SLU 36	12.77	-64.71	-4737	-3945	620	1.825	1.825	-7719	7974	4075	35683	15302	4654	19956	No	32.21	Si
SLU 36	14.57	-1235.05	-3026	-2520	606	1.825	1.5132	-5971	7741	3280	35683	15302	4654	19956	No	32.91	Si
SLU 38	12.77	-41.53	-4342	-3616	588	1.825	1.825	-7076	7888	4031	35683	15302	4654	19956	No	33.95	Si
SLU 38	14.57	-1153.68	-2627	-2188	576	1.825	1.4202	-5520	7680	3054	35683	15302	4654	19956	No	34.67	Si
SLU 37	12.77	-33.47	-4336	-3610	602	1.825	1.825	-7065	7886	4030	35683	15302	4654	19956	No	33.14	Si
SLU 37	14.57	-1172.1	-2620	-2182	591	1.825	1.3956	-5602	7691	3005	35683	15302	4654	19956	No	33.79	Si
SLU 41	12.77	-11.04	-4036	-3361	579	1.825	1.825	-6577	7821	3997	35683	15302	4654	19956	No	34.47	Si
SLU 41	14.57	-1104.68	-2318	-1930	567	1.825	1.3076	-5289	7650	2801	35683	15302	4654	19956	No	35.22	Si
SLU 79	12.77	-115.07	-5557	-4628	599	1.825	1.825	-9056	8152	4166	35683	15302	4654	19956	No	33.3	Si
SLU 79	14.57	-1260.64	-3347	-2787	580	1.825	1.6077	-6218	7774	3499	35683	15302	4654	19956	No	34.38	Si
SLU 35	12.77	-56.66	-4730	-3939	634	1.825	1.825	-7708	7972	4074	35683	15302	4654	19956	No	31.48	Si
SLU 35	14.57	-1253.47	-3019	-2514	621	1.825	1.492	-6042	7750	3238	35683	15302	4654	19956	No	32.12	Si
SLU 78	12.77	-146.3	-5959	-4962	617	1.825	1.825	-9710	8239	4210	35683	15302	4654	19956	No	32.36	Si
SLU 78	14.57	-1323.59	-3753	-3125	596	1.825	1.6796	-6673	7834	3684	35683	15302	4654	19956	No	33.47	Si
SLU 80	12.77	-123.12	-5564	-4633	585	1.825	1.825	-9067	8153	4166	35683	15302	4654	19956	No	34.12	Si
SLU 80	14.57	-1242.22	-3354	-2793	566	1.825	1.6266	-6151	7765	3536	35683	15302	4654	19956	No	35.29	Si
SLU 77	12.77	-138.25	-5952	-4956	631	1.825	1.825	-9699	8238	4210	35683	15302	4654	19956	No	31.62	Si
SLU 77	14.57	-1342.01	-3746	-3119	611	1.825	1.6628	-6726	7841	3651	35683	15302	4654	19956	No	32.66	Si

### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 15	12.77	652.04	-822	-685	2920	1.825	0.3584	-6831	11784	1182	35683	22953	4654	27606		9.45	Si
SLV 15	14.57	-4052.05	937	781	2307	1.46	0	0	0	0	35683	18362	3723	22085		9.57	Si
SLV 11	12.77	169.13	-1952	-1626	1498	1.825	1.825	-3181	11053	5648	35683	22953	4654	27606		18.43	Si
SLV 11	14.57	-2179.94	-151	-126	1152	1.46	0	0	0	0	35683	18362	3723	22085		19.18	Si
SLV 16	12.77	642.23	-473	-394	3062	1.46	0	0	0	0	35683	18362	3723	22085		7.21	Si
SLV 16	14.57	-4326.06	1292	1076	2456	1.46	0	0	0	0	35683	18362	3723	22085		8.99	Si
SLV 3	12.77	-902.06	-6903	-5748	-2243	1.825	1.825	-11248	12666	6473	35683	22953	4654	27606		12.31	Si
SLV 3	14.57	2641.41	-5225	-4351	-1773	1.825	1.221	-8515	12120	4143	35683	22953	4654	27606		15.57	Si
SLV 4	12.77	-911.87	-6554	-5457	-2101	1.825	1.825	-10679	12553	6414	35683	22953	4654	27606		13.14	Si
SLV 4	14.57	2367.41	-4870	-4056	-1623	1.825	1.2793	-7937	12004	4300	35683	22953	4654	27606		17.01	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 2	12.77	-965.66	-7356	-6125	-2409	1.825	1.825	-11987	12814	6548	35683	22953	4654	27606		11.46	Si
SLV 2	14.57	2729.19	-5732	-4773	-1834	1.825	1.3091	-9341	12285	4503	35683	22953	4654	27606		15.05	Si
SLV 14	12.77	588.44	-1276	-1062	2754	1.825	1.3536	-2079	10832	4106	35683	22953	4654	27606		10.02	Si
SLV 14	14.57	-3964.27	430	358	2245	1.46	0	0	0	0	35683	18362	3723	22085		9.84	Si
SLV 1	12.77	-955.85	-7705	-6416	-2552	1.825	1.825	-12556	12928	6606	35683	22953	4654	27606		10.82	Si
SLV 1	14.57	3003.2	-6087	-5068	-1984	1.825	1.2573	-9919	12400	4366	35683	22953	4654	27606		13.92	Si
SLV 13	12.77	598.25	-1625	-1353	2612	1.825	1.6328	-2647	10946	5004	35683	22953	4654	27606		10.57	Si
SLV 13	14.57	-3690.27	76	63	2096	1.46	0	0	0	0	35683	18362	3723	22085		10.54	Si
SLV 12	12.77	162.79	-1727	-1438	1590	1.825	1.825	-2814	10979	5611	35683	22953	4654	27606		17.37	Si
SLV 12	14.57	-2356.91	78	65	1248	1.46	0	0	0	0	35683	18362	3723	22085		17.7	Si

**Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)**

quota 13.45 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 11	179667	0.53	0	-1208	205.96	0	0	No, e>t/2
SLV 13	179667	0.53	0	-877	205.96	0	0	No, e>t/2
SLV 12	179667	0.53	0	-979	205.96	0	0	No, e>t/2
SLV 14	179667	0.53	0	-523	205.96	0	0	No, e>t/2
SLV 16	179667	0.53	0	292	205.96	0	0	No, Trazione
SLV 15	179667	0.53	0	-63	205.96	0	0	No, e>t/2
SLV 8	179667	0.53	5534	-2828	205.96	381.58	1.85	Si
SLV 7	179667	0.53	5983	-3057	205.96	411.23	2	Si
SLV 10	179667	0.53	7227	-3693	205.96	492.58	2.39	Si
SLV 9	179667	0.53	7676	-3922	205.96	521.52	2.53	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

**Verifica dei meccanismi locali di collasso con analisi cinematica lineare**

forza di aggancio al piano = 5617 quota mezzeria = 13.45 Wa = 0.05 Ta = 0.0596

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 5	-4277	-5970	543	1.75	668.9	0.914	27.83675	12.19367	Si
SLV 6	-4038	-5820	543	1.824	645.1	0.911	29.08622	12.19367	Si
SLV 1	-5791	-5835	108	1.453	820.8	0.926	22.81472	7.3	Si
SLV 2	-5422	-5603	108	1.529	783.6	0.923	24.07393	7.3	Si
SLV 3	-4960	-5150	-231	1.617	737.3	0.919	25.55507	7.3	Si
SLV 9	-2204	-5435	577	2.707	465.2	0.893	44.05424	12.19367	Si
SLV 4	-4591	-4918	-231	1.713	700.3	0.916	27.16625	7.3	Si
SLV 10	-1965	-5285	577	2.893	442.5	0.891	47.18286	12.19367	Si
SLV 7	-1507	-3686	-586	3.331	399.9	0.889	54.45969	12.19367	Si
SLV 8	-1268	-3536	-586	3.619	378.5	0.889	59.14288	12.19367	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

**Tabella dei coefficienti di sicurezza minimi**

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.627	SLV 41	Si
V_SLV	31.48	SLV 35	Si
PF_SLV	0	SLV 14	No
V_SLV	7.212	SLV 16	Si
PFFP_SLV	0	SLV 16	No
R_SLV	2.283	SLV 5	Si

**Maschio 181**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati geometrici**

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-20.613	1.006	-24.633	1.006	L7	L8	4.02	0.28	3.16	3.16	3.16			

**Caratteristiche del materiale**

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

**Materiale per FRCM**

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

**Rinforzo a matrice inorganica**



									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 45	11.87	-3256.84	-15815	-0.0000255	0.0004492	0.0035	4.02	28132.77	38509.1	38509.1	11.82	No	Si
SLU 45	13.97	-2031.12	-11656	-0.000018	0.0004492	0.0035	4.02	21443.17	31259.93	31259.93	15.39	No	Si
SLU 46	11.87	-3254.03	-15831	-0.0000256	0.0004492	0.0035	4.02	28157.6	38537.04	38537.04	11.84	No	Si
SLU 46	13.97	-2054.67	-11678	-0.0000181	0.0004492	0.0035	4.02	21478.98	31299.27	31299.27	15.23	No	Si
SLU 32	11.87	-1275.81	-11002	-0.0000158	0.0004492	0.0035	4.02	20345.01	30060.55	30060.55	23.56	No	Si
SLU 32	13.97	-2316.43	-9634	-0.000016	0.0004492	0.0035	4.02	18008.63	27552.95	27552.95	11.89	No	Si
SLU 43	11.87	-3025.97	-14305	-0.0000232	0.0004492	0.0035	4.02	25763.08	35880.87	35880.87	11.86	No	Si
SLU 43	13.97	-1466.73	-9935	-0.0000148	0.0004492	0.0035	4.02	18526.46	28103.7	28103.7	19.16	No	Si
SLU 48	11.87	-3337.8	-16512	-0.0000266	0.0004492	0.0035	4.02	29204.31	39722.47	39722.47	11.9	No	Si
SLU 48	13.97	-2177.75	-12291	-0.0000191	0.0004492	0.0035	4.02	22497.08	32373.62	32373.62	14.87	No	Si
SLU 49	11.87	-3334.99	-16528	-0.0000266	0.0004492	0.0035	4.02	29228.81	39750.4	39750.4	11.92	No	Si
SLU 49	13.97	-2201.3	-12312	-0.0000192	0.0004492	0.0035	4.02	22532.48	32410.96	32410.96	14.72	No	Si
SLU 44	11.87	-3021.29	-14332	-0.0000232	0.0004492	0.0035	4.02	25805.64	35927.43	35927.43	11.89	No	Si
SLU 44	13.97	-1505.98	-9971	-0.0000149	0.0004492	0.0035	4.02	18587.92	28169.26	28169.26	18.7	No	Si
SLU 33	11.87	-1273	-11018	-0.0000158	0.0004492	0.0035	4.02	20372.1	30089.97	30089.97	23.64	No	Si
SLU 33	13.97	-2339.97	-9656	-0.0000161	0.0004492	0.0035	4.02	18045.7	27592.28	27592.28	11.79	No	Si
SLU 36	11.87	-1353.96	-11715	-0.0000168	0.0004492	0.0035	4.02	21541.35	31367.82	31367.82	23.17	No	Si
SLU 36	13.97	-2486.6	-10291	-0.0000172	0.0004492	0.0035	4.02	19136.72	28756.39	28756.39	11.56	No	Si
SLU 35	11.87	-1356.77	-11699	-0.0000168	0.0004492	0.0035	4.02	21514.58	31338.4	31338.4	23.1	No	Si
SLU 35	13.97	-2463.05	-10269	-0.0000171	0.0004492	0.0035	4.02	19100.05	28717.05	28717.05	11.66	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 10	11.87	-3661.91	-9543	-0.0000183	0.0006738	0.0035	4.02		27593.88	27593.88	7.54		Si
SLV 10	13.97	-2312.84	-5668	-0.0000111	0.0006738	0.0035	4.02		12777.9	12777.9	5.52		Si
SLV 2	11.87	-1532.81	-12731	-0.0000183	0.0006738	0.0035	4.02		33478.68	33478.68	21.84		Si
SLV 2	13.97	-4246.59	-10275	-0.0000203	0.0006738	0.0035	4.02		28957.19	28957.19	6.82		Si
SLV 14	11.87	-3155.67	-8180	-0.0000157	0.0006738	0.0035	4.02		25055.88	25055.88	7.94		Si
SLV 14	13.97	-2988.08	-4615	-0.000011	0.0006738	0.0035	4.02		10747.11	10747.11	3.6		Si
SLV 7	11.87	-93.94	-11520	-0.0000142	0.0006738	0.0035	4.02		31253.8	31253.8	332.7		Si
SLV 7	13.97	-5054.72	-9955	-0.0000214	0.0006738	0.0035	4.02		28362.02	28362.02	5.61		Si
SLV 3	11.87	-600.18	-12883	-0.0000168	0.0006738	0.0035	4.02		33757.71	33757.71	56.25		Si
SLV 3	13.97	-5729.96	-11008	-0.0000239	0.0006738	0.0035	4.02		30312.41	30312.41	5.29		Si
SLV 9	11.87	-3655.27	-9517	-0.0000183	0.0006738	0.0035	4.02		27546.39	27546.39	7.54		Si
SLV 9	13.97	-2373.55	-5633	-0.0000111	0.0006738	0.0035	4.02		12710.32	12710.32	5.35		Si
SLV 4	11.87	-610.47	-12922	-0.0000169	0.0006738	0.0035	4.02		33830.29	33830.29	55.42		Si
SLV 4	13.97	-5823.95	-11062	-0.0000242	0.0006738	0.0035	4.02		30412.08	30412.08	5.22		Si
SLV 13	11.87	-3145.38	-8140	-0.0000156	0.0006738	0.0035	4.02		24981.5	24981.5	7.94		Si
SLV 13	13.97	-3082.08	-4561	-0.0000111	0.0006738	0.0035	4.02		10642.48	10642.48	3.45		Si
SLV 1	11.87	-1522.52	-12692	-0.0000183	0.0006738	0.0035	4.02		33406.1	33406.1	21.94		Si
SLV 1	13.97	-4152.6	-10221	-0.00002	0.0006738	0.0035	4.02		28856.2	28856.2	6.95		Si
SLV 8	11.87	-100.58	-11546	-0.0000142	0.0006738	0.0035	4.02		31300.68	31300.68	311.19		Si
SLV 8	13.97	-5115.43	-9990	-0.0000215	0.0006738	0.0035	4.02		28427.24	28427.24	5.56		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 40	11.87	-731.72	-8978	-6405	3713	4.02	4.02	-5690	9092	10234	101952	40451	20502	60953	No	16.42	Si
SLU 40	13.97	-1857.58	-7786	-5554	3715	4.02	4.02	-4934	8991	10121	101952	40451	20502	60953	No	16.41	Si
SLU 81	11.87	-1549.38	-12320	-8789	3505	4.02	4.02	-7808	9374	10552	101952	40451	20502	60953	No	17.39	Si
SLU 81	13.97	-2082.26	-9928	-7082	3509	4.02	4.02	-6292	9172	10324	101952	40451	20502	60953	No	17.37	Si
SLU 82	11.87	-1546.57	-12336	-8800	3523	4.02	4.02	-7818	9376	10553	101952	40451	20502	60953	No	17.3	Si
SLU 82	13.97	-2105.81	-9950	-7098	3526	4.02	4.02	-6306	9174	10326	101952	40451	20502	60953	No	17.29	Si
SLU 84	11.87	-1627.53	-13033	-9298	3495	4.02	4.02	-8260	9435	10620	101952	40451	20502	60953	No	17.44	Si
SLU 84	13.97	-2252.44	-10584	-7551	3498	4.02	4.02	-6708	9228	10387	101952	40451	20502	60953	No	17.43	Si
SLU 42	11.87	-812.68	-9675	-6902	3685	4.02	4.02	-6132	9151	10300	101952	40451	20502	60953	No	16.54	Si
SLU 42	13.97	-2004.21	-8421	-6007	3687	4.02	4.02	-5337	9045	10181	101952	40451	20502	60953	No	16.53	Si
SLU 36	11.87	-1353.96	-11715	-8357	3494	4.02	4.02	-7425	9323	10494	101952	40451	20502	60953	No	17.45	Si
SLU 36	13.97	-2486.6	-10291	-7341	3495	4.02	4.02	-6522	9203	10359	101952	40451	20502	60953	No	17.44	Si
SLU 32	11.87	-1275.81	-11002	-7849	3504	4.02	4.02	-6973	9263	10426	101952	40451	20502	60953	No	17.4	Si
SLU 32	13.97	-2316.43	-9634	-6873	3507	4.02	4.02	-6106	9147	10296	101952	40451	20502	60953	No	17.38	Si
SLU 39	11.87	-734.53	-8962	-6393	3695	4.02	4.02	-5680	9091	10232	101952	40451	20502	60953	No	16.5	Si
SLU 39	13.97	-1834.04	-7764	-5539	3698	4.02	4.02	-4921	8989	10119	101952	40451	20502	60953	No	16.48	Si
SLU 41	11.87	-815.49	-9659	-6890	3667	4.02	4.02	-6121	9150	10299	101952	40451	20502	60953	No	16.62	Si
SLU 41	13.97	-1980.66	-8399	-5992	3670	4.02	4.02	-5323	9043	10179	101952	40451	20502	60953	No	16.61	Si
SLU 33	11.87	-1273	-11018	-7860	3522	4.02	4.02	-6983	9264	10428	101952	40451	20502	60953	No	17.31	Si
SLU 33	13.97	-2339.97	-9656	-6888	3524	4.02	4.02	-6120	9149	10298	101952	40451	20502	60953	No	17.3	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 3	11.87	-1322.18	-11539	-8232	3282	4.02	4.02	-7313	13963	15716	101952	60677	20502	81179		24.73	Si
SLD 3	13.97	-3247.17	-9185	-6553	2244	4.02	4.02	-5821	13664	15381	101952	60677	20502	81179		36.17	Si
SLV 2	11.87	-1532.81	-12731	-9082	4108	4.02	4.02	-8069	14114	15886	101952	60677	20502	81179		19.76	Si
SLV 2	13.97	-4246.59	-10275	-7330	1657	4.02	4.02	-6512	13802	15536	101952	60677	20502	81179		48.99	Si





Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 7	11.87	-93.94	-11520	-8218	5306	4.02	4.02	-7301	13960	15714	101952	60677	20502	81179		15.3	Si
SLV 7	13.97	-5054.72	-9955	-7102	4615	4.02	4.02	-6309	13762	15490	101952	60677	20502	81179		17.59	Si
SLV 12	11.87	-587.44	-10180	-7262	3212	4.02	4.02	-6452	13790	15522	101952	60677	20502	81179		25.27	Si
SLV 12	13.97	-2945.02	-8292	-5916	3987	4.02	4.02	-5256	13551	15253	101952	60677	20502	81179		20.36	Si
SLV 11	11.87	-580.8	-10155	-7244	3177	4.02	4.02	-6436	13787	15519	101952	60677	20502	81179		25.55	Si
SLV 11	13.97	-2884.32	-8257	-5891	3952	4.02	4.02	-5233	13547	15248	101952	60677	20502	81179		20.54	Si
SLV 8	11.87	-100.58	-11546	-8236	5341	4.02	4.02	-7317	13963	15717	101952	60677	20502	81179		15.2	Si
SLV 8	13.97	-5115.43	-9990	-7127	4650	4.02	4.02	-6332	13766	15495	101952	60677	20502	81179		17.46	Si
SLV 4	11.87	-610.47	-12922	-9219	5827	4.02	4.02	-8190	14138	15914	101952	60677	20502	81179		13.93	Si
SLV 4	13.97	-5823.95	-11062	-7891	3400	4.02	4.02	-7011	13902	15648	101952	60677	20502	81179		23.88	Si
SLD 4	11.87	-1326.6	-11556	-8244	3306	4.02	4.02	-7324	13965	15719	101952	60677	20502	81179		24.56	Si
SLD 4	13.97	-3287.53	-9209	-6569	2268	4.02	4.02	-5836	13667	15384	101952	60677	20502	81179		35.8	Si
SLV 3	11.87	-600.18	-12883	-9190	5773	4.02	4.02	-8165	14133	15908	101952	60677	20502	81179		14.06	Si
SLV 3	13.97	-5729.96	-11008	-7853	3346	4.02	4.02	-6977	13895	15641	101952	60677	20502	81179		24.26	Si
SLV 1	11.87	-1522.52	-12692	-9054	4054	4.02	4.02	-8044	14109	15881	101952	60677	20502	81179		20.03	Si
SLV 1	13.97	-4152.6	-10221	-7291	1603	4.02	4.02	-6478	13796	15528	101952	60677	20502	81179		50.64	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCC D.M. 17-01-18 (N.T.C.)

quota 13.45 Ta 0.06 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 13	-4918	0.53	464.22	672.05	1263.53	967.79	2.08	Si
SLV 14	-4970	0.53	464.22	679.04	1271.77	975.4	2.1	Si
SLV 15	-5604	0.53	464.22	763.28	1371.06	1067.17	2.3	Si
SLV 16	-5657	0.53	464.22	770.22	1379.26	1074.74	2.32	Si
SLV 9	-6210	0.53	464.22	843.19	1465.29	1154.24	2.49	Si
SLV 10	-6244	0.53	464.22	847.65	1470.55	1159.1	2.5	Si
SLV 5	-7996	0.53	464.22	1076.04	1742.18	1409.11	3.04	Si
SLV 6	-8030	0.53	464.22	1080.42	1747.42	1413.92	3.05	Si
SLV 11	-8499	0.53	464.22	1140.78	1819.91	1480.35	3.19	Si
SLV 12	-8532	0.53	464.22	1145.14	1825.15	1485.15	3.2	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.45 Wa = 0.05 Ta = 0.0596

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 8	-6799	-11546	619	2.255	1213.7	0.902	36.33167	12.19367	Si
SLV 7	-6795	-11520	619	2.256	1213.2	0.902	36.34845	12.19367	Si
SLV 12	-6533	-10180	661	2.311	1187.6	0.901	37.28598	12.19367	Si
SLV 11	-6529	-10155	661	2.312	1187.1	0.901	37.30366	12.19367	Si
SLV 6	-6406	-10908	-661	2.34	1175.2	0.9	37.79341	12.19367	Si
SLV 5	-6402	-10882	-662	2.341	1174.7	0.9	37.81063	12.19367	Si
SLV 10	-6141	-9543	-619	2.41	1149.2	0.899	38.97566	12.19367	Si
SLV 9	-6136	-9517	-619	2.411	1148.7	0.899	38.99391	12.19367	Si
SLV 4	-6973	-12922	122	2.266	1230.8	0.903	36.47763	7.3	Si
SLV 3	-6966	-12883	121	2.267	1230.1	0.903	36.5033	7.3	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	11.565	SLU 36	Si
V_SLU	16.405	SLU 40	Si
PF_SLV	3.453	SLV 13	Si
V_SLV	13.931	SLV 4	Si
PFFP_SLV	2.085	SLV 13	Si
R_SLV	2.98	SLV 8	Si

## Maschio 182

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-12.263	1.006	-19.813	1.006	L7	L8	7.55	0.28	3.16	3.16	3.16			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica





									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 39	11.87	-6632.3	-25690	-0.0000203	0.0004492	0.0035	7.55	87334.95	124209.21	124209.21	18.73	No	Si
SLU 39	14.37	-2433.01	-17871	-0.0000129	0.0004492	0.0035	7.55	62795.9	97918.42	97918.42	40.25	No	Si
SLU 33	11.87	-7011.51	-30343	-0.0000236	0.0004492	0.0035	7.55	101089.98	139380.3	139380.3	19.88	No	Si
SLU 33	14.37	-2787.24	-22312	-0.000016	0.0004492	0.0035	7.55	76953.41	113184.46	113184.46	40.61	No	Si
SLU 32	11.87	-7091.27	-30315	-0.0000236	0.0004492	0.0035	7.55	101007.86	139287.61	139287.61	19.64	No	Si
SLU 32	14.37	-2856.11	-22356	-0.0000161	0.0004492	0.0035	7.55	77088.96	113333.69	113333.69	39.68	No	Si
SLU 75	11.87	-7971.24	-38184	-0.0000294	0.0004492	0.0035	7.55	122836.3	164261.6	164261.6	20.61	No	Si
SLU 75	14.37	-4133	-27315	-0.00002	0.0004492	0.0035	7.55	92210.77	129507.67	129507.67	31.34	No	Si
SLU 82	11.87	-7512.27	-33559	-0.000026	0.0004492	0.0035	7.55	110227.11	149866.02	149866.02	19.95	No	Si
SLU 82	14.37	-3709.9	-22831	-0.0000168	0.0004492	0.0035	7.55	78567.8	114885.8	114885.8	30.97	No	Si
SLU 73	11.87	-7360.11	-34279	-0.0000264	0.0004492	0.0035	7.55	112230.54	152212.66	152212.66	20.68	No	Si
SLU 73	14.37	-3799.58	-23161	-0.0000171	0.0004492	0.0035	7.55	79593.82	115963.92	115963.92	30.52	No	Si
SLU 81	11.87	-7592.03	-33531	-0.0000261	0.0004492	0.0035	7.55	110147.66	149773.32	149773.32	19.73	No	Si
SLU 81	14.37	-3778.77	-22874	-0.0000169	0.0004492	0.0035	7.55	78702.69	115027.35	115027.35	30.44	No	Si
SLU 74	11.87	-8051	-38156	-0.0000294	0.0004492	0.0035	7.55	122760.7	164173.93	164173.93	20.39	No	Si
SLU 74	14.37	-4201.87	-27359	-0.0000201	0.0004492	0.0035	7.55	92339.97	129649.22	129649.22	30.86	No	Si
SLU 31	11.87	-6400.38	-26438	-0.0000206	0.0004492	0.0035	7.55	89589.29	126648.55	126648.55	19.79	No	Si
SLU 31	14.37	-2453.82	-18158	-0.0000131	0.0004492	0.0035	7.55	63729.03	98905.81	98905.81	40.31	No	Si
SLU 40	11.87	-6552.54	-25719	-0.0000202	0.0004492	0.0035	7.55	87420.91	124301.91	124301.91	18.97	No	Si
SLU 40	14.37	-2364.13	-17828	-0.0000128	0.0004492	0.0035	7.55	62654.66	97769.19	97769.19	41.36	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 1	11.87	8513.74	-26008	-0.0000213	0.0006738	0.0035	7.55		98814.13	98814.13	11.61		Si
SLV 1	14.37	-27977.11	-24639	-0.0000306	0.0006738	0.0035	7.55		122090.91	122090.91	4.36		Si
SLV 15	11.87	-19446.37	-27376	-0.000028	0.0006738	0.0035	7.55		131256.71	131256.71	6.75		Si
SLV 15	14.37	21300.31	-11631	-0.0000195	0.0006738	0.0035	7.55		48305.89	48305.89	2.27		Si
SLV 13	11.87	-23712.14	-25500	-0.000029	0.0006738	0.0035	7.55		124990.54	124990.54	5.27		Si
SLV 13	14.37	17829.76	-13510	-0.000018	0.0006738	0.0035	7.55		55009.54	55009.54	3.09		Si
SLV 12	11.87	-2972.67	-30133	-0.0000212	0.0006738	0.0035	7.55		140461.34	140461.34	47.25		Si
SLV 12	14.37	9333.61	-13166	-0.0000133	0.0006738	0.0035	7.55		53781.91	53781.91	5.76		Si
SLV 4	11.87	13044.3	-28358	-0.0000253	0.0006738	0.0035	7.55		106825.64	106825.64	8.19		Si
SLV 4	14.37	-24486.23	-22555	-0.0000274	0.0006738	0.0035	7.55		114911.19	114911.19	4.69		Si
SLV 11	11.87	-3143.7	-29828	-0.000021	0.0006738	0.0035	7.55		139441.28	139441.28	44.36		Si
SLV 11	14.37	9320.48	-13299	-0.0000134	0.0006738	0.0035	7.55		54256.15	54256.15	5.82		Si
SLV 16	11.87	-19181.58	-27849	-0.0000281	0.0006738	0.0035	7.55		132836.06	132836.06	6.93		Si
SLV 16	14.37	21320.64	-11426	-0.0000195	0.0006738	0.0035	7.55		47567.95	47567.95	2.23		Si
SLV 2	11.87	8778.53	-26481	-0.0000218	0.0006738	0.0035	7.55		100426.89	100426.89	11.44		Si
SLV 2	14.37	-27956.78	-24433	-0.0000305	0.0006738	0.0035	7.55		121382.14	121382.14	4.34		Si
SLV 14	11.87	-23447.35	-25973	-0.0000291	0.0006738	0.0035	7.55		126569.89	126569.89	5.4		Si
SLV 14	14.37	17850.09	-13304	-0.0000178	0.0006738	0.0035	7.55		54275.28	54275.28	3.04		Si
SLV 3	11.87	12779.51	-27885	-0.0000248	0.0006738	0.0035	7.55		105212.87	105212.87	8.23		Si
SLV 3	14.37	-24506.56	-22760	-0.0000275	0.0006738	0.0035	7.55		115619.97	115619.97	4.72		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 74	11.87	-8051	-38156	-27219	908	7.55	7.55	-12876	10050	21246	101952	75972	38505	114477	No	126.13	Si
SLU 74	14.37	-4201.87	-27359	-19517	1853	7.55	7.55	-9232	9564	20219	101952	75972	38505	114477	No	61.79	Si
SLU 54	11.87	-6523.07	-37302	-26610	930	7.55	7.55	-12588	10012	21165	101952	75972	38505	114477	No	123.14	Si
SLU 54	14.37	-4880.07	-26198	-18689	1892	7.55	7.55	-8841	9512	20109	101952	75972	38505	114477	No	60.51	Si
SLU 61	11.87	-6064.1	-32677	-23311	1235	7.55	7.55	-11027	9804	20725	101952	75972	38505	114477	No	92.7	Si
SLU 61	14.37	-4456.97	-21714	-15490	2068	7.55	7.55	-7327	9310	19682	101952	75972	38505	114477	No	55.37	Si
SLU 18	11.87	-5184.12	-24808	-17697	1311	7.55	7.55	-8372	9450	19976	101952	75972	38505	114477	No	87.3	Si
SLU 18	14.37	-3180.08	-16754	-11952	1918	7.55	7.55	-5654	9087	19210	101952	75972	38505	114477	No	59.69	Si
SLU 82	11.87	-7512.27	-33559	-23940	1120	7.55	7.55	-11325	9843	20809	101952	75972	38505	114477	No	102.23	Si
SLU 82	14.37	-3709.9	-22831	-16287	1931	7.55	7.55	-7704	9361	19788	101952	75972	38505	114477	No	59.3	Si
SLU 53	11.87	-6602.83	-37273	-26590	1023	7.55	7.55	-12578	10010	21162	101952	75972	38505	114477	No	111.93	Si
SLU 53	14.37	-4948.94	-26242	-18720	1990	7.55	7.55	-8855	9514	20113	101952	75972	38505	114477	No	57.53	Si
SLU 62	11.87	-5569.64	-34081	-24312	1092	7.55	7.55	-11501	9867	20858	101952	75972	38505	114477	No	104.8	Si
SLU 62	14.37	-3325.03	-23246	-16583	1962	7.55	7.55	-7844	9379	19828	101952	75972	38505	114477	No	58.35	Si
SLU 60	11.87	-6143.86	-32649	-23291	1328	7.55	7.55	-11017	9802	20722	101952	75972	38505	114477	No	86.2	Si
SLU 60	14.37	-4525.84	-21757	-15521	2166	7.55	7.55	-7342	9312	19686	101952	75972	38505	114477	No	52.86	Si
SLU 81	11.87	-7592.03	-33531	-23920	1213	7.55	7.55	-11315	9842	20806	101952	75972	38505	114477	No	94.38	Si
SLU 81	14.37	-3778.77	-22874	-16318	2029	7.55	7.55	-7719	9363	19792	101952	75972	38505	114477	No	56.43	Si
SLU 63	11.87	-5489.88	-34109	-24333	999	7.55	7.55	-11510	9868	20861	101952	75972	38505	114477	No	114.57	Si
SLU 63	14.37	-3256.16	-23202	-16552	1864	7.55	7.55	-7830	9377	19824	101952	75972	38505	114477	No	61.42	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 14	11.87	-23447.35	-25973	-18528	-22407	7.55	7.55	-8765	14253	30131	101952	113958	38505	132083		5.89	Si
SLV 14	14.37	17850.09	-13304	-9491	-16696	7.55	7.2999	-4489	13398	27385	101952	113958	38505	129337		7.75	Si
SLV 4	11.87	13044.3	-28358	-20230	21885	7.55	7.55	-9569	14414	30471	101952	113958	38505	132423		6.05	Si
SLV 4	14.37	-24486.23	-22555	-16090	17569	7.55	7.55	-7611	14022	29643	101952	113958	38505	131595		7.49	Si



Comb.	Quota	M	N	Nmur	V	df	I'	oN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 3	11.87	12779.51	-27885	-19892	22744	7.55	7.55	-9410	14382	30403	101952	113958	38505	132355		5.82	Si
SLV 3	14.37	-24506.56	-22760	-16237	18456	7.55	7.55	-7681	14036	29672	101952	113958	38505	131624		7.13	Si
SLV 15	11.87	-19446.37	-27376	-19530	-25973	7.55	7.55	-9238	14348	30331	101952	113958	38505	132283		5.09	Si
SLV 15	14.37	21300.31	-11631	-8298	-20439	7.55	5.8311	-3925	13285	21691	101952	113958	38505	123643		6.05	Si
SLV 12	11.87	-2972.67	-30133	-21496	-14792	7.55	7.55	-10169	14534	30724	101952	113958	38505	132676		8.97	Si
SLV 12	14.37	9333.61	-13166	-9392	-12958	7.55	7.55	-4443	13389	28303	101952	113958	38505	130255		10.05	Si
SLV 5	11.87	-7695.17	-23724	-16924	15129	7.55	7.55	-8006	14101	29810	101952	113958	38505	131762		8.71	Si
SLV 5	14.37	-15990.07	-22899	-16335	14718	7.55	7.55	-7727	14045	29692	101952	113958	38505	131644		8.94	Si
SLV 2	11.87	8778.53	-26481	-18891	26310	7.55	7.55	-8936	14287	30203	101952	113958	38505	132155		5.02	Si
SLV 2	14.37	-27956.78	-24433	-17430	22199	7.55	7.55	-8245	14149	29911	101952	113958	38505	131863		5.94	Si
SLV 16	11.87	-19181.58	-27849	-19867	-26833	7.55	7.55	-9398	14380	30398	101952	113958	38505	132350		4.93	Si
SLV 16	14.37	21320.64	-11426	-8151	-21326	7.55	5.7269	-3856	13271	21281	101952	113958	38505	123233		5.78	Si
SLV 1	11.87	8513.74	-26008	-18554	27170	7.55	7.55	-8777	14255	30136	101952	113958	38505	132088		4.86	Si
SLV 1	14.37	-27977.11	-24639	-17577	23086	7.55	7.55	-8314	14163	29940	101952	113958	38505	131892		5.71	Si
SLV 13	11.87	-23712.14	-25500	-18191	-21548	7.55	7.55	-8605	14221	30063	101952	113958	38505	132015		6.13	Si
SLV 13	14.37	17829.76	-13510	-9638	-15809	7.55	7.3657	-4559	13412	27660	101952	113958	38505	129612		8.2	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCC D.M. 17-01-18 (N.T.C.)

quota 13.45 Ta 0.06 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 15	-18144	0.53	871.86	2421.25	3761.43	3091.34	3.55	Si
SLV 16	-18227	0.53	871.86	2431.71	3774.14	3102.93	3.56	Si
SLV 13	-18492	0.53	871.86	2465.32	3814.75	3140.03	3.6	Si
SLV 14	-18574	0.53	871.86	2475.76	3827.37	3151.57	3.61	Si
SLV 11	-19686	0.53	871.86	2615.99	3997.54	3306.76	3.79	Si
SLV 12	-19739	0.53	871.86	2622.69	4005.69	3314.19	3.8	Si
SLV 9	-20845	0.53	871.86	2761.26	4174.9	3468.08	3.98	Si
SLV 10	-20898	0.53	871.86	2767.91	4183.03	3475.47	3.99	Si
SLV 7	-21342	0.53	871.86	2823.33	4250.86	3537.09	4.06	Si
SLV 8	-21396	0.53	871.86	2829.97	4258.99	3544.48	4.07	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 13.45 Wa = 0.05 Ta = 0.0596

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 5	-16999	-23724	-574	1.874	2698.2	0.912	29.86167	12.19367	Si
SLV 6	-16860	-24030	-573	1.885	2684.3	0.912	30.0505	12.19367	Si
SLV 9	-16086	-23572	-368	1.959	2607.3	0.91	31.28723	12.19367	Si
SLV 10	-15946	-23877	-367	1.971	2593.4	0.91	31.49339	12.19367	Si
SLV 7	-14211	-29980	411	2.134	2421.4	0.905	34.25642	12.19367	Si
SLV 8	-14072	-30286	412	2.149	2407.7	0.905	34.50169	12.19367	Si
SLV 11	-13298	-29828	617	2.222	2331.3	0.903	35.76069	12.19367	Si
SLV 12	-13158	-30133	618	2.238	2317.6	0.903	36.02878	12.19367	Si
SLV 1	-17127	-26008	-470	1.868	2711	0.912	29.76236	7.3	Si
SLV 2	-16911	-26481	-469	1.885	2689.4	0.912	30.05312	7.3	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	18.728	SLU 39	Si
V_SLU	52.856	SLU 60	Si
PF_SLV	2.231	SLV 16	Si
V_SLV	4.862	SLV 1	Si
PFFP_SLV	3.546	SLV 15	Si
R_SLV	2.449	SLV 5	Si

## Maschio 183

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-10.478	1.006	-11.143	1.006	L7	L8	0.665	0.28	3.16	3.16	3.16			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica



									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	Intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 29	11.87	115.46	-1877	-0.0000217	0.0004492	0.0035	0.6647	572.44	643.25	643.25	5.57	No	Si
SLU 29	14.37	-71.99	-3333	-0.0000299	0.0004492	0.0035	0.6647	945.31	1165.51	1165.51	16.19	No	Si
SLU 40	11.87	68.59	-1002	-0.0000119	0.0004492	0.0035	0.6647	318.29	375.22	375.22	5.47	No	Si
SLU 40	14.37	1.44	-3145	-0.0000236	0.0004492	0.0035	0.6647	900.65	1011.6	1011.6	700.82	No	Si
SLU 36	11.87	95.13	-1580	-0.0000181	0.0004492	0.0035	0.6647	488.67	553.49	553.49	5.82	No	Si
SLU 36	14.37	-31.81	-3756	-0.0000304	0.0004492	0.0035	0.6647	1042.17	1280.62	1280.62	40.26	No	Si
SLU 37	11.87	109.42	-1492	-0.0000184	0.0004492	0.0035	0.6647	463.28	526.55	526.55	4.81	No	Si
SLU 37	14.37	-61.6	-3390	-0.0000296	0.0004492	0.0035	0.6647	958.6	1181.23	1181.23	19.18	No	Si
SLU 41	11.87	88.09	-1181	-0.0000146	0.0004492	0.0035	0.6647	372.01	430.76	430.76	4.89	No	Si
SLU 41	14.37	-28.48	-3279	-0.0000265	0.0004492	0.0035	0.6647	932.75	1150.39	1150.39	40.39	No	Si
SLU 30	11.87	114.69	-1845	-0.0000214	0.0004492	0.0035	0.6647	563.3	633.4	633.4	5.52	No	Si
SLU 30	14.37	-70.73	-3332	-0.0000298	0.0004492	0.0035	0.6647	945.24	1165.43	1165.43	16.48	No	Si
SLU 38	11.87	108.64	-1459	-0.0000181	0.0004492	0.0035	0.6647	453.78	516.52	516.52	4.75	No	Si
SLU 38	14.37	-60.34	-3389	-0.0000295	0.0004492	0.0035	0.6647	958.53	1181.15	1181.15	19.57	No	Si
SLU 39	11.87	69.36	-1035	-0.0000122	0.0004492	0.0035	0.6647	328.23	385.43	385.43	5.56	No	Si
SLU 39	14.37	0.18	-3145	-0.0000235	0.0004492	0.0035	0.6647	900.71	1011.68	1011.68	5501.84	No	Si
SLU 42	11.87	87.32	-1148	-0.0000143	0.0004492	0.0035	0.6647	362.21	420.55	420.55	4.82	No	Si
SLU 42	14.37	-27.22	-3279	-0.0000264	0.0004492	0.0035	0.6647	932.68	1150.31	1150.31	42.25	No	Si
SLU 34	11.87	89.39	-1291	-0.0000155	0.0004492	0.0035	0.6647	404.74	465.07	465.07	5.2	No	Si
SLU 34	14.37	-30.83	-3255	-0.0000264	0.0004492	0.0035	0.6647	926.88	1143.36	1143.36	37.08	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 8	11.87	463.13	266	-0.0091907	0.0006738	0.0035	0.5318		0	0	0		No
SLD 8	14.37	-450.38	-3260	-0.0000056	0.0006738	0.0035	0.6647		1164.17	1164.17	2.58		Si
SLV 16	11.87	-2563.7	-928	-0.0106988	0.0006738	0.0035	0.5318		455.81	455.81	0.18		No
SLV 16	14.37	2325.36	-2311	-0.0334134	0.0006738	0.0035	0.5318		783.29	783.29	0.34		No
SLV 8	11.87	1014.91	2735	-0.0296347	0.0006738	0.0035	0.5318		0	0	0		No
SLV 8	14.37	-1065.78	-3905	-0.0000239	0.0006738	0.0035	0.5318		1350.52	1350.52	1.27		Si
SLV 11	11.87	-546.79	2486	-0.0008875	0.0006738	0.0035	0.5318		0	0	0		No
SLV 11	14.37	348.3	-3493	-0.0000498	0.0006738	0.0035	0.6647		1132.67	1132.67	3.25		Si
SLV 7	11.87	1041.29	2785	-0.0303269	0.0006738	0.0035	0.5318		0	0	0		No
SLV 7	14.37	-1092.83	-3920	-0.000268	0.0006738	0.0035	0.5318		1354.68	1354.68	1.24		Si
SLV 3	11.87	2770.76	142	-0.0520183	0.0006738	0.0035	0.5318		7.99	7.99	0		No
SLV 3	14.37	-2520.3	-3756	-0.0089313	0.0006738	0.0035	0.5318		1308.08	1308.08	0.52		No
SLD 7	11.87	474.66	288	-0.0095086	0.0006738	0.0035	0.5318		0	0	0		No
SLD 7	14.37	-462.2	-3267	-0.0000571	0.0006738	0.0035	0.6647		1166.06	1166.06	2.52		Si
SLV 15	11.87	-2522.85	-852	-0.0105377	0.0006738	0.0035	0.5318		431.77	431.77	0.17		No
SLV 15	14.37	2283.47	-2334	-0.0325266	0.0006738	0.0035	0.5318		790.3	790.3	0.35		No
SLV 4	11.87	2729.91	66	-0.0509452	0.0006738	0.0035	0.5318		32.93	32.93	0.01		No
SLV 4	14.37	-2478.41	-3733	-0.0087359	0.0006738	0.0035	0.5318		1301.37	1301.37	0.53		No
SLV 12	11.87	-573.18	2437	-0.0010246	0.0006738	0.0035	0.5318		0	0	0		No
SLV 12	14.37	375.35	-3478	-0.0000516	0.0006738	0.0035	0.6647		1128.36	1128.36	3.01		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 80	11.87	106.23	-2119	-1512	304	0.6647	0.6647	-8123	9416	1753	101952	6689	3390	10078	No	33.15	Si
SLU 80	14.37	-41.16	-4010	-2861	295	0.6647	0.6647	-15370	10383	1932	101952	6689	3390	10078	No	34.14	Si
SLU 37	11.87	109.42	-1492	-1064	294	0.6647	0.6647	-5718	9096	1693	101952	6689	3390	10078	No	34.23	Si
SLU 37	14.37	-61.6	-3390	-2418	285	0.6647	0.6647	-12992	10066	1873	101952	6689	3390	10078	No	35.37	Si
SLU 77	11.87	93.5	-2273	-1622	304	0.6647	0.6647	-8713	9495	1767	101952	6689	3390	10078	No	33.11	Si
SLU 77	14.37	-13.89	-4377	-3123	296	0.6647	0.6647	-16778	10570	1967	101952	6689	3390	10078	No	34.01	Si
SLU 35	11.87	95.91	-1613	-1151	297	0.6647	0.6647	-6183	9158	1704	101952	6689	3390	10078	No	33.99	Si
SLU 35	14.37	-33.07	-3757	-2680	288	0.6647	0.6647	-14399	10253	1908	101952	6689	3390	10078	No	35.03	Si
SLU 84	11.87	84.91	-1808	-1290	301	0.6647	0.6647	-6930	9257	1723	101952	6689	3390	10078	No	33.47	Si
SLU 84	14.37	-8.05	-3900	-2782	287	0.6647	0.6647	-14949	10326	1922	101952	6689	3390	10078	No	35.09	Si
SLU 83	11.87	85.68	-1841	-1313	299	0.6647	0.6647	-7056	9274	1726	101952	6689	3390	10078	No	33.66	Si
SLU 83	14.37	-9.31	-3900	-2782	285	0.6647	0.6647	-14950	10327	1922	101952	6689	3390	10078	No	35.3	Si
SLU 38	11.87	108.64	-1459	-1041	296	0.6647	0.6647	-5592	9079	1690	101952	6689	3390	10078	No	34.03	Si
SLU 38	14.37	-60.34	-3389	-2418	287	0.6647	0.6647	-12991	10065	1873	101952	6689	3390	10078	No	35.16	Si
SLU 36	11.87	95.13	-1580	-1127	298	0.6647	0.6647	-6057	9141	1701	101952	6689	3390	10078	No	33.79	Si
SLU 36	14.37	-31.81	-3756	-2680	289	0.6647	0.6647	-14398	10253	1908	101952	6689	3390	10078	No	34.82	Si
SLU 78	11.87	92.72	-2240	-1598	306	0.6647	0.6647	-8587	9478	1764	101952	6689	3390	10078	No	32.92	Si
SLU 78	14.37	-12.64	-4377	-3122	298	0.6647	0.6647	-16777	10570	1967	101952	6689	3390	10078	No	33.81	Si
SLU 79	11.87	107	-2152	-1535	302	0.6647	0.6647	-8249	9433	1756	101952	6689	3390	10078	No	33.34	Si
SLU 79	14.37	-42.42	-4010	-2861	293	0.6647	0.6647	-15371	10383	1932	101952	6689	3390	10078	No	34.34	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 8	11.87	1014.91	2735	1951	1468	0.5318	0	0	0	0	101952	8026	2712	10738		7.32	Si
SLV 8	14.37	-1065.78	-3905	-2785	1260	0.5318	0.1782	0	0	0	101952	8026	2712	10738		8.52	Si
SLV 14	11.87	-2675.58	-3503	-2499	-2434	0.5318	0	0	0	0	101952	8026	2712	10738		4.41	Si
SLV 14	14.37	2549.31	-1741	-1242	-1824	0.5318	0	0	0	0	101952	8026	2712	10738		5.89	Si



Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 13	11.87	-2634.73	-3427	-2445	-2393	0.5318	0	0	0	0	101952	8026	2712	10738		4.49	Si
SLV 13	14.37	2507.42	-1764	-1259	-1784	0.5318	0	0	0	0	101952	8026	2712	10738		6.02	Si
SLV 3	11.87	2770.76	142	101	2769	0.5318	0	0	0	0	101952	8026	2712	10738		3.88	Si
SLV 3	14.37	-2520.3	-3756	-2680	2156	0.5318	0	0	0	0	101952	8026	2712	10738		4.98	Si
SLV 4	11.87	2729.91	66	47	2729	0.5318	0	0	0	0	101952	8026	2712	10738		3.94	Si
SLV 4	14.37	-2478.41	-3733	-2663	2116	0.5318	0	0	0	0	101952	8026	2712	10738		5.08	Si
SLV 1	11.87	2658.88	-2433	-1735	2414	0.5318	0	0	0	0	101952	8026	2712	10738		4.45	Si
SLV 1	14.37	-2296.35	-3186	-2273	1816	0.5318	0	0	0	0	101952	8026	2712	10738		5.91	Si
SLV 15	11.87	-2522.85	-852	-608	-2038	0.5318	0	0	0	0	101952	8026	2712	10738		5.27	Si
SLV 15	14.37	2283.47	-2334	-1665	-1443	0.5318	0	0	0	0	101952	8026	2712	10738		7.44	Si
SLV 16	11.87	-2563.7	-928	-662	-2079	0.5318	0	0	0	0	101952	8026	2712	10738		5.17	Si
SLV 16	14.37	2325.36	-2311	-1649	-1484	0.5318	0	0	0	0	101952	8026	2712	10738		7.24	Si
SLV 7	11.87	1041.29	2785	1986	1494	0.5318	0	0	0	0	101952	8026	2712	10738		7.19	Si
SLV 7	14.37	-1092.83	-3920	-2796	1286	0.5318	0.1606	0	0	0	101952	8026	2712	10738		8.35	Si
SLV 2	11.87	2618.03	-2509	-1790	2373	0.5318	0	0	0	0	101952	8026	2712	10738		4.52	Si
SLV 2	14.37	-2254.46	-3163	-2256	1775	0.5318	0	0	0	0	101952	8026	2712	10738		6.05	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRMC D.M. 17-01-18 (N.T.C.)

quota 13.45 Ta 0.06 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 11	-534	0.53	76.76	0	137.94	68.97	0.9	No
SLV 12	-543	0.53	76.76	0	139.38	69.69	0.91	No
SLV 7	-798	0.53	76.76	109.09	179.19	144.14	1.88	Si
SLV 8	-807	0.53	76.76	110.31	180.63	145.47	1.9	Si
SLV 15	-1218	0.53	76.76	164.4	244.49	204.45	2.66	Si
SLV 16	-1232	0.53	76.76	166.25	246.7	206.47	2.69	Si
SLV 13	-2071	0.53	76.76	272.31	376.09	324.2	4.22	Si
SLV 14	-2085	0.53	76.76	274.06	378.28	326.17	4.25	Si
SLV 3	-2099	0.53	76.76	275.76	380.41	328.09	4.27	Si
SLV 4	-2113	0.53	76.76	277.51	382.59	330.05	4.3	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 13.45 Wa = 0.05 Ta = 0.0596

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 7	-1303	2785	4	2.093	218.3	0.907	33.53607	12.19367	Si, Trazione
SLV 8	-1299	2735	4	2.097	217.9	0.907	33.60492	12.19367	Si, Trazione
SLV 11	-1158	2486	-12	2.264	204	0.903	36.44738	12.19367	Si, Trazione
SLV 12	-1154	2437	-12	2.269	203.6	0.903	36.52863	12.19367	Si, Trazione
SLV 5	-842	-5798	15	2.773	173.3	0.894	45.06994	12.19367	Si
SLV 6	-839	-5847	15	2.78	172.9	0.894	45.19233	12.19367	Si
SLV 9	-697	-6096	-2	3.106	159.4	0.891	50.68133	12.19367	Si
SLV 10	-694	-6145	-2	3.115	159.1	0.891	50.83365	12.19367	Si
SLV 3	-1312	142	27	2.07	219.2	0.907	33.16629	7.3	Si, Trazione
SLV 4	-1307	66	27	2.076	218.7	0.907	33.27129	7.3	Si, Trazione

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	4.754	SLV 38	Si
V_SLV	32.923	SLV 78	Si
PF_SLV	0	SLD 7	No
V_SLV	3.878	SLV 3	Si
PFFP_SLV	0.899	SLV 11	No
R_SLV	2.75	SLV 7	Si

## Maschio 184

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-7.463	1.006	-9.398	1.006	L7	L8	1.935	0.28	3.16	3.16	3.16			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica



									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 82	11.87	1750.48	-8323	-0.0000356	0.0004492	0.0035	1.9353	7041.32	7806.7	7806.7	4.46	No	Si
SLU 82	14.37	-1084.44	-3810	-0.0000182	0.0004492	0.0035	1.9353	3474.21	5611.11	5611.11	5.17	No	Si
SLU 81	11.87	1735.66	-8339	-0.0000355	0.0004492	0.0035	1.9353	7053.25	7820.28	7820.28	4.51	No	Si
SLU 81	14.37	-1068.31	-3832	-0.0000182	0.0004492	0.0035	1.9353	3493.61	5631.13	5631.13	5.27	No	Si
SLU 39	11.87	1555.98	-6248	-0.0000284	0.0004492	0.0035	1.9353	5475.17	6052.53	6052.53	3.89	No	Si
SLU 39	14.37	-1031.93	-2753	-0.0000152	0.0004492	0.0035	1.9353	2553.13	4677.65	4677.65	4.53	No	Si
SLU 42	11.87	1569.61	-6896	-0.0000303	0.0004492	0.0035	1.9353	5978.23	6607.87	6607.87	4.21	No	Si
SLU 42	14.37	-1052.86	-3305	-0.0000167	0.0004492	0.0035	1.9353	3038.12	5165.03	5165.03	4.91	No	Si
SLU 34	11.87	1549.45	-7194	-0.0000309	0.0004492	0.0035	1.9353	6204.92	6860.61	6860.61	4.43	No	Si
SLU 34	14.37	-1010.39	-3528	-0.0000169	0.0004492	0.0035	1.9353	3231.68	5362.08	5362.08	5.31	No	Si
SLU 31	11.87	1550.63	-6529	-0.0000291	0.0004492	0.0035	1.9353	5694.71	6293.22	6293.22	4.06	No	Si
SLU 31	14.37	-1005.6	-2953	-0.0000154	0.0004492	0.0035	1.9353	2730.31	4854.67	4854.67	4.83	No	Si
SLU 40	11.87	1570.79	-6231	-0.0000285	0.0004492	0.0035	1.9353	5462.24	6038.44	6038.44	3.84	No	Si
SLU 40	14.37	-1048.07	-2730	-0.0000153	0.0004492	0.0035	1.9353	2533.01	4657.62	4657.62	4.44	No	Si
SLU 73	11.87	1730.31	-8620	-0.0000362	0.0004492	0.0035	1.9353	7255.6	8052.15	8052.15	4.65	No	Si
SLU 73	14.37	-1041.97	-4033	-0.0000185	0.0004492	0.0035	1.9353	3664.47	5808.15	5808.15	5.57	No	Si
SLU 41	11.87	1554.79	-6913	-0.0000302	0.0004492	0.0035	1.9353	5990.85	6621.97	6621.97	4.26	No	Si
SLU 41	14.37	-1036.73	-3327	-0.0000166	0.0004492	0.0035	1.9353	3057.86	5185.06	5185.06	5	No	Si
SLU 23	11.87	1480.53	-7249	-0.0000305	0.0004492	0.0035	1.9353	6246.45	6906.74	6906.74	4.67	No	Si
SLU 23	14.37	-881.4	-3509	-0.0000158	0.0004492	0.0035	1.9353	3215.55	5345.6	5345.6	6.06	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 13	11.87	-6127.77	-6771	-0.0002508	0.0006738	0.0035	1.5482	8271.14	8271.14	8271.14	1.35		Si
SLV 13	14.37	4881.09	-5939	-0.000143	0.0006738	0.0035	1.9353	5864.72	5864.72	5864.72	1.2		Si
SLV 4	11.87	8508.23	-7168	-0.0081338	0.0006738	0.0035	1.9353	6947.67	6947.67	6947.67	0.82		No
SLV 4	14.37	-6172.24	-871	-0.0009624	0.0006738	0.0035	1.5482	2954.96	2954.96	2954.96	0.48		No
SLV 8	11.87	5598.77	-6709	-0.0001808	0.0006738	0.0035	1.9353	6545.3	6545.3	6545.3	1.17		Si
SLV 8	14.37	-4221.6	-1330	-0.0005427	0.0006738	0.0035	1.5482	3379.69	3379.69	3379.69	0.8		No
SLV 7	11.87	5711.93	-6683	-0.0002165	0.0006738	0.0035	1.9353	6521.82	6521.82	6521.82	1.14		Si
SLV 7	14.37	-4284.35	-1246	-0.0005583	0.0006738	0.0035	1.5482	3302.42	3302.42	3302.42	0.77		No
SLV 16	11.87	-4823.79	-6597	-0.0000938	0.0006738	0.0035	1.5482	8121.47	8121.47	8121.47	1.68		Si
SLV 16	14.37	3702.53	-5186	-0.0000687	0.0006738	0.0035	1.9353	5192.58	5192.58	5192.58	1.4		Si
SLV 3	11.87	8683.45	-7126	-0.0087621	0.0006738	0.0035	1.9353	6911.9	6911.9	6911.9	0.8		No
SLV 3	14.37	-6269.39	-742	-0.0009916	0.0006738	0.0035	1.5482	2834.35	2834.35	2834.35	0.45		No
SLD 3	11.87	4402.77	-7035	-0.0000692	0.0006738	0.0035	1.9353	6832.72	6832.72	6832.72	1.55		Si
SLD 3	14.37	-3057.64	-2261	-0.0002739	0.0006738	0.0035	1.5482	4237.05	4237.05	4237.05	1.39		Si
SLV 14	11.87	-6302.98	-6812	-0.0002841	0.0006738	0.0035	1.5482	8306.49	8306.49	8306.49	1.32		Si
SLV 14	14.37	4978.24	-6068	-0.0001447	0.0006738	0.0035	1.9353	5979.04	5979.04	5979.04	1.2		Si
SLV 1	11.87	7204.26	-7342	-0.0024987	0.0006738	0.0035	1.9353	7099.15	7099.15	7099.15	0.99		No
SLV 1	14.37	-4993.68	-1623	-0.0006666	0.0006738	0.0035	1.5482	3651.13	3651.13	3651.13	0.73		No
SLV 2	11.87	7029.05	-7383	-0.0014818	0.0006738	0.0035	1.9353	7134.92	7134.92	7134.92	1.02		Si
SLV 2	14.37	-4896.53	-1753	-0.0006394	0.0006738	0.0035	1.5482	3770.75	3770.75	3770.75	0.77		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 80	11.87	1718.07	-9962	-7106	1722	1.9353	1.9353	-13114	10082	5463	101952	19474	9870	29344	No	17.04	Si
SLU 80	14.37	-1040.81	-5196	-3707	1375	1.9353	1.9353	-6841	9245	5010	101952	19474	9870	29344	No	21.34	Si
SLU 66	11.87	1665.06	-10663	-7607	1734	1.9353	1.9353	-14038	10205	5530	101952	19474	9870	29344	No	16.92	Si
SLU 66	14.37	-913.69	-5744	-4097	1172	1.9353	1.9353	-7561	9342	5062	101952	19474	9870	29344	No	25.04	Si
SLU 72	11.87	1647.97	-10682	-7620	1724	1.9353	1.9353	-14062	10208	5532	101952	19474	9870	29344	No	17.02	Si
SLU 72	14.37	-916.62	-5752	-4103	1237	1.9353	1.9353	-7572	9343	5063	101952	19474	9870	29344	No	23.73	Si
SLU 69	11.87	1663.88	-11328	-8081	1763	1.9353	1.9353	-14913	10322	5593	101952	19474	9870	29344	No	16.64	Si
SLU 69	14.37	-918.49	-6318	-4507	1263	1.9353	1.9353	-8317	9442	5117	101952	19474	9870	29344	No	23.23	Si
SLU 67	11.87	1679.88	-10647	-7595	1750	1.9353	1.9353	-14016	10202	5528	101952	19474	9870	29344	No	16.77	Si
SLU 67	14.37	-929.83	-5721	-4081	1182	1.9353	1.9353	-7531	9338	5060	101952	19474	9870	29344	No	24.82	Si
SLU 70	11.87	1678.7	-11312	-8069	1779	1.9353	1.9353	-14892	10319	5592	101952	19474	9870	29344	No	16.5	Si
SLU 70	14.37	-934.63	-6295	-4491	1274	1.9353	1.9353	-8288	9438	5115	101952	19474	9870	29344	No	23.03	Si
SLU 74	11.87	1735.16	-9943	-7093	1732	1.9353	1.9353	-13090	10079	5461	101952	19474	9870	29344	No	16.94	Si
SLU 74	14.37	-1037.89	-5188	-3701	1310	1.9353	1.9353	-6830	9244	5009	101952	19474	9870	29344	No	22.39	Si
SLU 78	11.87	1748.79	-10592	-7556	1777	1.9353	1.9353	-13944	10192	5523	101952	19474	9870	29344	No	16.52	Si
SLU 78	14.37	-1058.82	-5740	-4095	1412	1.9353	1.9353	-7556	9341	5062	101952	19474	9870	29344	No	20.77	Si
SLU 75	11.87	1749.98	-9927	-7081	1748	1.9353	1.9353	-13068	10076	5460	101952	19474	9870	29344	No	16.79	Si
SLU 75	14.37	-1054.02	-5165	-3685	1321	1.9353	1.9353	-6800	9240	5007	101952	19474	9870	29344	No	22.22	Si
SLU 77	11.87	1733.98	-10608	-7568	1761	1.9353	1.9353	-13965	10195	5525	101952	19474	9870	29344	No	16.66	Si
SLU 77	14.37	-1042.69	-5762	-4111	1402	1.9353	1.9353	-7586	9345	5064	101952	19474	9870	29344	No	20.93	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 2	11.87	7029.05	-7383	-5267	6614	1.9353	0.0468	-157065	16250	213	101952	29211	9870	39081		5.91	Si
SLV 2	14.37	-4896.53	-1753	-1250	3973	1.5482	0	0	0	0	101952	23369	7896	31265		7.87	Si
SLV 13	11.87	-6127.77	-6771	-4830	-5613	1.5482	0.1879	0	0	0	101952	23369	7896	31265		5.57	Si
SLV 13	14.37	4881.09	-5939	-4237	-3537	1.9353	0.4373	-35145	16250	1989	101952	29211	9870	39081		11.05	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 1	11.87	7204.26	-7342	-5237	6769	1.9353	0	-166956	16250	0	101952	29211	9870	39081		5.77	Si
SLV 1	14.37	-4993.68	-1623	-1158	4036	1.5482	0	0	0	0	101952	23369	7896	31265		7.75	Si
SLV 7	11.87	5711.93	-6683	-4767	5428	1.9353	0.3387	-51274	16250	1541	101952	29211	9870	39081		7.2	Si
SLV 7	14.37	-4284.35	-1246	-889	3711	1.5482	0	0	0	0	101952	23369	7896	31265		8.43	Si
SLV 15	11.87	-4648.58	-6555	-4676	-4219	1.5482	0.7756	0	0	0	101952	23369	7896	31265		7.41	Si
SLV 15	14.37	3605.38	-5057	-3608	-2458	1.9353	0.7641	-6657	13831	2959	101952	29211	9870	39081		15.9	Si
SLV 8	11.87	5598.77	-6709	-4786	5328	1.9353	0.3994	-43619	16250	1817	101952	29211	9870	39081		7.34	Si
SLV 8	14.37	-4221.6	-1330	-949	3670	1.5482	0	0	0	0	101952	23369	7896	31265		8.52	Si
SLV 4	11.87	8508.23	-7168	-5113	8008	1.9353	0	-188593	16250	0	101952	29211	9870	39081		4.88	Si
SLV 4	14.37	-6172.24	-871	-621	5051	1.5482	0	0	0	0	101952	23369	7896	31265		6.19	Si
SLV 16	11.87	-4823.79	-6597	-4706	-4374	1.5482	0.7092	0	0	0	101952	23369	7896	31265		7.15	Si
SLV 16	14.37	3702.53	-5186	-3700	-2522	1.9353	0.7613	-6828	13866	2956	101952	29211	9870	39081		15.5	Si
SLV 3	11.87	8683.45	-7126	-5084	8163	1.9353	0	-191555	16250	0	101952	29211	9870	39081		4.79	Si
SLV 3	14.37	-6269.39	-742	-529	5115	1.5482	0	0	0	0	101952	23369	7896	31265		6.11	Si
SLV 14	11.87	-6302.98	-6812	-4860	-5768	1.5482	0.1271	0	0	0	101952	23369	7896	31265		5.42	Si
SLV 14	14.37	4978.24	-6068	-4329	-3600	1.9353	0.4418	-35553	16250	2010	101952	29211	9870	39081		10.86	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRMC D.M. 17-01-18 (N.T.C.)

quota 13.45 Ta 0.06 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 11	-4834	0.53	223.49	643.78	990.96	817.37	3.66	Si
SLV 12	-4860	0.53	223.49	647.14	995.04	821.09	3.67	Si
SLV 15	-4891	0.53	223.49	651.06	999.81	825.44	3.69	Si
SLV 16	-4933	0.53	223.49	656.26	1006.12	831.19	3.72	Si
SLV 7	-4998	0.53	223.49	664.5	1016.15	840.32	3.76	Si
SLV 8	-5024	0.53	223.49	667.84	1020.23	844.04	3.78	Si
SLV 13	-5111	0.53	223.49	678.75	1033.54	856.14	3.83	Si
SLV 14	-5152	0.53	223.49	683.91	1039.85	861.88	3.86	Si
SLV 3	-5439	0.53	223.49	719.73	1083.77	901.75	4.03	Si
SLV 4	-5480	0.53	223.49	724.86	1090.09	907.47	4.06	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 13.45 Wa = 0.05 Ta = 0.0596

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 10	-2842	-7256	-312	2.469	542.1	0.898	39.96684	12.19367	Si
SLV 9	-2775	-7229	-312	2.507	535.5	0.897	40.61205	12.19367	Si
SLV 6	-2723	-7427	-363	2.524	530.6	0.897	40.92166	12.19367	Si
SLV 5	-2656	-7401	-363	2.564	524	0.896	41.59994	12.19367	Si
SLV 12	-2300	-6538	365	2.797	489.8	0.893	45.53849	12.19367	Si
SLV 11	-2232	-6511	365	2.847	483.3	0.892	46.37145	12.19367	Si
SLV 8	-2181	-6709	314	2.899	478.5	0.892	47.2419	12.19367	Si
SLV 7	-2113	-6683	314	2.952	472	0.891	48.13128	12.19367	Si
SLV 14	-2810	-6812	-16	2.555	539	0.897	41.37492	7.3	Si
SLV 16	-2647	-6597	187	2.612	523.2	0.896	42.36869	7.3	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.844	SLU 40	Si
V_SLU	16.496	SLU 70	Si
PF_SLV	0.452	SLV 3	No
V_SLV	4.788	SLV 3	Si
PFFP_SLV	3.657	SLV 11	Si
R_SLV	3.278	SLV 10	Si

## Maschio 185

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-4.913	1.006	-6.463	1.006	L7	L8	1.55	0.28	3.16	3.16	3.16			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica



									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 46	11.87	634.76	-7605	-0.0000325	0.0004492	0.0035	1.55	5048.6	5651.7	5651.7	8.9	No	Si
SLU 46	13.97	-516.38	-6956	-0.0000288	0.0004492	0.0035	1.55	4683.97	6233.73	6233.73	12.07	No	Si
SLU 44	11.87	693.57	-6814	-0.0000306	0.0004492	0.0035	1.55	4602.32	5132.94	5132.94	7.4	No	Si
SLU 44	13.97	-644.56	-5942	-0.0000271	0.0004492	0.0035	1.55	4088.84	5555.45	5555.45	8.62	No	Si
SLU 65	11.87	624.69	-6704	-0.0000293	0.0004492	0.0035	1.55	4538.93	5060.23	5060.23	8.1	No	Si
SLU 65	13.97	-585.27	-6112	-0.0000269	0.0004492	0.0035	1.55	4190.95	5670.32	5670.32	9.69	No	Si
SLU 43	11.87	687	-6780	-0.0000304	0.0004492	0.0035	1.55	4582.61	5110.28	5110.28	7.44	No	Si
SLU 43	13.97	-631.26	-5947	-0.0000269	0.0004492	0.0035	1.55	4091.79	5558.75	5558.75	8.81	No	Si
SLU 47	11.87	658.88	-7179	-0.0000313	0.0004492	0.0035	1.55	4810.59	5374.43	5374.43	8.16	No	Si
SLU 47	13.97	-570.97	-6384	-0.0000276	0.0004492	0.0035	1.55	4351.93	5853.4	5853.4	10.25	No	Si
SLU 1	11.87	510.29	-5186	-0.0000229	0.0004492	0.0035	1.55	3626.3	4036.67	4036.67	7.91	No	Si
SLU 1	13.97	-469.95	-4619	-0.0000205	0.0004492	0.0035	1.55	3268.07	4664.54	4664.54	9.93	No	Si
SLU 23	11.87	447.98	-5111	-0.0000219	0.0004492	0.0035	1.55	3579.1	3984.92	3984.92	8.9	No	Si
SLU 23	13.97	-423.95	-4785	-0.0000205	0.0004492	0.0035	1.55	3373.66	4776.11	4776.11	11.27	No	Si
SLU 64	11.87	618.11	-6670	-0.0000291	0.0004492	0.0035	1.55	4519.11	5037.57	5037.57	8.15	No	Si
SLU 64	13.97	-571.97	-6117	-0.0000267	0.0004492	0.0035	1.55	4193.86	5673.61	5673.61	9.92	No	Si
SLU 45	11.87	630.82	-7584	-0.0000323	0.0004492	0.0035	1.55	5037.25	5638.34	5638.34	8.94	No	Si
SLU 45	13.97	-508.41	-6959	-0.0000287	0.0004492	0.0035	1.55	4685.65	6235.61	6235.61	12.27	No	Si
SLU 2	11.87	516.87	-5221	-0.0000231	0.0004492	0.0035	1.55	3647.61	4060.09	4060.09	7.86	No	Si
SLU 2	13.97	-483.25	-4614	-0.0000207	0.0004492	0.0035	1.55	3264.94	4661.24	4661.24	9.65	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 5	11.87	1088.22	-1740	-0.0000384	0.0006738	0.0035	1.55		1598.57	1598.57	1.47		Si
SLV 5	13.97	-836.82	-4853	-0.0000257	0.0006738	0.0035	1.55		4871.67	4871.67	5.82		Si
SLV 4	11.87	3823.34	-5135	-0.0006427	0.0006738	0.0035	1.55		4060.75	4060.75	1.06		Si
SLV 4	13.97	-3582.71	-2436	-0.000691	0.0006738	0.0035	1.24		3135.48	3135.48	0.88		No
SLV 2	11.87	3605.39	-3267	-0.0064453	0.0006738	0.0035	1.24		2721.8	2721.8	0.75		No
SLV 2	13.97	-3267.04	-2953	-0.0005105	0.0006738	0.0035	1.24		3511.09	3511.09	1.07		Si
SLV 13	11.87	-2965.01	-4771	-0.0001034	0.0006738	0.0035	1.24		4812.91	4812.91	1.62		Si
SLV 13	13.97	2770.2	-6734	-0.000062	0.0006738	0.0035	1.55		5176.5	5176.5	1.87		Si
SLV 6	11.87	1038.04	-1567	-0.000046	0.0006738	0.0035	1.55		1469.63	1469.63	1.42		Si
SLV 6	13.97	-767.05	-4888	-0.0000249	0.0006738	0.0035	1.55		4896.33	4896.33	6.38		Si
SLV 14	11.87	-3042.69	-4503	-0.0001412	0.0006738	0.0035	1.24		4622.86	4622.86	1.52		Si
SLV 14	13.97	2878.23	-6788	-0.0000648	0.0006738	0.0035	1.55		5213.32	5213.32	1.81		Si
SLV 3	11.87	3901.03	-5402	-0.0004025	0.0006738	0.0035	1.55		4249.48	4249.48	1.09		Si
SLV 3	13.97	-3690.74	-2383	-0.0007367	0.0006738	0.0035	1.24		3096.36	3096.36	0.84		No
SLD 2	11.87	1785.42	-4220	-0.0000396	0.0006738	0.0035	1.55		3409.72	3409.72	1.91		Si
SLD 2	13.97	-1627.5	-3892	-0.0000359	0.0006738	0.0035	1.24		4187.88	4187.88	2.57		Si
SLV 16	11.87	-2824.74	-6371	-0.0000643	0.0006738	0.0035	1.24		5919.32	5919.32	2.1		Si
SLV 16	13.97	2562.56	-6271	-0.0000571	0.0006738	0.0035	1.55		4856.28	4856.28	1.9		Si
SLV 1	11.87	3683.08	-3534	-0.0060347	0.0006738	0.0035	1.24		2915.98	2915.98	0.79		No
SLV 1	13.97	-3375.07	-2899	-0.0005542	0.0006738	0.0035	1.24		3471.98	3471.98	1.03		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 40	11.87	138.15	-4086	-2915	-371	1.55	1.55	-6716	9229	4005	101952	15597	7905	23502	No	63.42	Si
SLU 40	13.97	-184.86	-4373	-3119	-371	1.55	1.55	-7188	9292	4033	101952	15597	7905	23502	No	63.41	Si
SLU 37	11.87	156.99	-5099	-3637	-402	1.55	1.55	-8381	9451	4102	101952	15597	7905	23502	No	58.46	Si
SLU 37	13.97	-99.84	-5384	-3841	-402	1.55	1.55	-8851	9513	4129	101952	15597	7905	23502	No	58.44	Si
SLU 35	11.87	135.5	-5538	-3951	-472	1.55	1.55	-9103	9547	4143	101952	15597	7905	23502	No	49.8	Si
SLU 35	13.97	-50.57	-5955	-4248	-472	1.55	1.55	-9788	9638	4183	101952	15597	7905	23502	No	49.79	Si
SLU 42	11.87	103.46	-4451	-3175	-444	1.55	1.55	-7316	9309	4040	101952	15597	7905	23502	No	52.92	Si
SLU 42	13.97	-111.28	-4815	-3435	-444	1.55	1.55	-7915	9389	4075	101952	15597	7905	23502	No	52.91	Si
SLU 38	11.87	160.94	-5119	-3652	-390	1.55	1.55	-8415	9455	4104	101952	15597	7905	23502	No	60.25	Si
SLU 38	13.97	-107.82	-5382	-3839	-390	1.55	1.55	-8846	9513	4129	101952	15597	7905	23502	No	60.23	Si
SLU 36	11.87	139.44	-5559	-3965	-460	1.55	1.55	-9137	9552	4145	101952	15597	7905	23502	No	51.1	Si
SLU 36	13.97	-58.55	-5952	-4246	-460	1.55	1.55	-9783	9638	4183	101952	15597	7905	23502	No	51.08	Si
SLU 33	11.87	174.13	-5194	-3705	-386	1.55	1.55	-8537	9472	4111	101952	15597	7905	23502	No	60.82	Si
SLU 33	13.97	-132.14	-5510	-3931	-387	1.55	1.55	-9056	9541	4141	101952	15597	7905	23502	No	60.8	Si
SLU 41	11.87	99.52	-4430	-3160	-456	1.55	1.55	-7282	9304	4038	101952	15597	7905	23502	No	51.53	Si
SLU 41	13.97	-103.3	-4818	-3437	-456	1.55	1.55	-7919	9389	4075	101952	15597	7905	23502	No	51.52	Si
SLU 32	11.87	170.18	-5173	-3690	-398	1.55	1.55	-8503	9467	4109	101952	15597	7905	23502	No	58.99	Si
SLU 32	13.97	-124.16	-5513	-3933	-398	1.55	1.55	-9061	9542	4141	101952	15597	7905	23502	No	58.98	Si
SLU 39	11.87	134.2	-4065	-2900	-383	1.55	1.55	-6682	9224	4003	101952	15597	7905	23502	No	61.43	Si
SLU 39	13.97	-176.89	-4376	-3122	-383	1.55	1.55	-7192	9292	4033	101952	15597	7905	23502	No	61.42	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 16	11.87	-2824.74	-6371	-4545	-3421	1.24	0.9949	0	0	0	101952	18716	6324	25040		7.32	Si
SLV 16	13.97	2562.56	-6271	-4474	-2847	1.55	1.0991	-10308	14562	4481	101952	23395	7905	31300		10.99	Si
SLV 9	11.87	-906.21	-2111	-1506	-2482	1.24	1.0373	0	0	0	101952	18716	6324	25040		10.09	Si
SLV 9	13.97	1006.76	-6004	-4283	-2239	1.55	1.55	-9869	14474	6282	101952	23395	7905	31300		13.98	Si





Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 2	11.87	3605.39	-3267	-2330	3375	1.24	0	0	0	0	101952	18716	6324	25040		7.42	Si
SLV 2	13.97	-3267.04	-2953	-2106	2800	1.24	0	0	0	0	101952	18716	6324	25040		8.94	Si
SLV 10	11.87	-956.38	-1938	-1383	-2595	1.24	0.8448	0	0	0	101952	18716	6324	25040		9.65	Si
SLV 10	13.97	1076.53	-6039	-4308	-2352	1.55	1.55	-9926	14485	6287	101952	23395	7905	31300		13.31	Si
SLV 3	11.87	3901.03	-5402	-3854	4422	1.55	0.1587	-85734	16250	722	101952	23395	7905	31300		7.08	Si
SLV 3	13.97	-3690.74	-2383	-1700	3808	1.24	0	0	0	0	101952	18716	6324	25040		6.58	Si
SLV 14	11.87	-3042.69	-4503	-3212	-4293	1.24	0.2979	0	0	0	101952	18716	6324	25040		5.83	Si
SLV 14	13.97	2878.23	-6788	-4842	-3679	1.55	1.0529	-11157	14731	4343	101952	23395	7905	31300		8.51	Si
SLV 13	11.87	-2965.01	-4771	-3403	-4118	1.24	0.4605	0	0	0	101952	18716	6324	25040		6.08	Si
SLV 13	13.97	2770.2	-6734	-4804	-3504	1.55	1.0909	-11069	14714	4494	101952	23395	7905	31300		8.93	Si
SLV 1	11.87	3683.08	-3534	-2521	3550	1.24	0	0	0	0	101952	18716	6324	25040		7.05	Si
SLV 1	13.97	-3375.07	-2899	-2068	2976	1.24	0	0	0	0	101952	18716	6324	25040		8.42	Si
SLV 15	11.87	-2747.06	-6639	-4736	-3246	1.55	1.0836	-15711	15643	4746	101952	23395	7905	31300		9.64	Si
SLV 15	13.97	2454.53	-6217	-4435	-2671	1.55	1.1407	-10220	14544	4645	101952	23395	7905	31300		11.72	Si
SLV 4	11.87	3823.34	-5135	-3663	4247	1.55	0.0912	-116368	16250	415	101952	23395	7905	31300		7.37	Si
SLV 4	13.97	-3582.71	-2436	-1738	3633	1.24	0	0	0	0	101952	18716	6324	25040		6.89	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRMC D.M. 17-01-18 (N.T.C.)

quota 13.45 Ta 0.06 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 2	-2791	0.53	178.99	377.04	622.27	499.66	2.79	Si
SLV 1	-2807	0.53	178.99	379.1	624.72	501.91	2.8	Si
SLV 4	-2826	0.53	178.99	381.59	627.7	504.65	2.82	Si
SLV 3	-2842	0.53	178.99	383.65	630.15	506.9	2.83	Si
SLV 6	-3913	0.53	178.99	520.85	795.7	658.28	3.68	Si
SLV 5	-3923	0.53	178.99	522.14	797.27	659.71	3.69	Si
SLV 8	-4030	0.53	178.99	535.56	813.62	674.59	3.77	Si
SLV 7	-4040	0.53	178.99	536.84	815.19	676.01	3.78	Si
SLV 10	-4907	0.53	178.99	644.6	948.25	796.42	4.45	Si
SLV 9	-4917	0.53	178.99	645.85	949.82	797.83	4.46	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.45 Wa = 0.05 Ta = 0.0596

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 10	-3609	-1938	-5	1.852	565.8	0.913	29.4733	12.19367	Si
SLV 9	-3574	-2111	-4	1.866	562.3	0.913	29.70001	12.19367	Si
SLV 6	-3308	-1567	-16	1.969	535.8	0.91	31.45543	12.19367	Si
SLV 5	-3272	-1740	-16	1.985	532.3	0.91	31.71363	12.19367	Si
SLV 12	-2432	-8165	8	2.432	449.4	0.9	39.28691	12.19367	Si
SLV 11	-2396	-8338	9	2.455	445.9	0.899	39.68078	12.19367	Si
SLV 8	-2131	-7794	-3	2.647	420.1	0.896	42.93568	12.19367	Si
SLV 7	-2095	-7967	-3	2.675	416.6	0.896	43.40852	12.19367	Si
SLV 14	-3558	-4503	13	1.87	560.8	0.913	29.76785	7.3	Si
SLV 13	-3503	-4771	14	1.891	555.3	0.912	30.12213	7.3	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	7.401	SLV 44	Si
V_SLV	49.789	SLV 35	Si
PF_SLV	0.755	SLV 2	No
V_SLV	5.832	SLV 14	Si
PFFP_SLV	2.792	SLV 2	Si
R_SLV	2.417	SLV 10	Si

## Maschio 186

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-0.133	1.006	-4.113	1.006	L7	L8	3.98	0.28	3.16	3.16	3.16			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica





									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 78	11.87	1848.95	-14635	-0.0000217	0.0004492	0.0035	3.98	25993.32	28730.68	28730.68	15.54	No	Si
SLU 78	13.97	2512.46	-12208	-0.0000199	0.0004492	0.0035	3.98	22115.43	24458.85	24458.85	9.74	No	Si
SLU 35	11.87	1105.2	-11367	-0.0000161	0.0004492	0.0035	3.98	20732.85	22967.37	22967.37	20.78	No	Si
SLU 35	13.97	2234.08	-10065	-0.0000166	0.0004492	0.0035	3.98	18548.68	20616.58	20616.58	9.23	No	Si
SLU 14	11.87	1542.75	-11567	-0.0000172	0.0004492	0.0035	3.98	21062.82	23321.75	23321.75	15.12	No	Si
SLU 14	13.97	1999.86	-9599	-0.0000156	0.0004492	0.0035	3.98	17755.52	19775.87	19775.87	9.89	No	Si
SLU 27	11.87	1795.9	-12610	-0.000019	0.0004492	0.0035	3.98	22769.31	25171.82	25171.82	14.02	No	Si
SLU 27	13.97	2151.28	-10458	-0.000017	0.0004492	0.0035	3.98	19213.64	21326.64	21326.64	9.91	No	Si
SLU 32	11.87	1048.67	-10674	-0.0000151	0.0004492	0.0035	3.98	19575.92	21715.54	21715.54	20.71	No	Si
SLU 32	13.97	2045.61	-9413	-0.0000154	0.0004492	0.0035	3.98	17436.43	19439.53	19439.53	9.5	No	Si
SLU 28	11.87	1794.48	-12623	-0.000019	0.0004492	0.0035	3.98	22791.12	25195.7	25195.7	14.04	No	Si
SLU 28	13.97	2169.75	-10477	-0.000017	0.0004492	0.0035	3.98	19244.54	21359.76	21359.76	9.84	No	Si
SLU 15	11.87	1541.33	-11580	-0.0000172	0.0004492	0.0035	3.98	21085.05	23345.63	23345.63	15.15	No	Si
SLU 15	13.97	2018.33	-9617	-0.0000156	0.0004492	0.0035	3.98	17786.88	19808.99	19808.99	9.81	No	Si
SLU 33	11.87	1047.25	-10687	-0.0000152	0.0004492	0.0035	3.98	19598.49	21739.82	21739.82	20.76	No	Si
SLU 33	13.97	2064.08	-9431	-0.0000155	0.0004492	0.0035	3.98	17467.89	19472.65	19472.65	9.43	No	Si
SLU 36	11.87	1103.79	-11381	-0.0000161	0.0004492	0.0035	3.98	20755.15	22991.65	22991.65	20.83	No	Si
SLU 36	13.97	2252.56	-10083	-0.0000167	0.0004492	0.0035	3.98	18579.79	20649.69	20649.69	9.17	No	Si
SLU 77	11.87	1850.37	-14621	-0.0000217	0.0004492	0.0035	3.98	25972.29	28707.22	28707.22	15.51	No	Si
SLU 77	13.97	2493.98	-12189	-0.0000198	0.0004492	0.0035	3.98	22085.46	24426.29	24426.29	9.79	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 15	11.87	1970.7	-14209	-0.0000212	0.0006738	0.0035	3.98	28424.72	28424.72	28424.72	14.42		Si
SLV 15	13.97	5148.98	-10955	-0.0000231	0.0006738	0.0035	3.98	22504.53	22504.53	22504.53	4.37		Si
SLV 12	11.87	1235.34	-12620	-0.0000178	0.0006738	0.0035	3.98	25547.4	25547.4	25547.4	20.68		Si
SLV 12	13.97	3739.38	-9927	-0.0000192	0.0006738	0.0035	3.98	20601.23	20601.23	20601.23	5.51		Si
SLD 16	11.87	1759.02	-11874	-0.0000179	0.0006738	0.0035	3.98	24184.35	24184.35	24184.35	13.75		Si
SLD 16	13.97	2892.48	-9030	-0.0000165	0.0006738	0.0035	3.98	18936.8	18936.8	18936.8	6.55		Si
SLV 1	11.87	1421.17	-6317	-0.0000104	0.0006738	0.0035	3.98	13848.45	13848.45	13848.45	9.74		Si
SLV 1	13.97	2656.38	-4387	-0.0000103	0.0006738	0.0035	3.98	17730.12	17730.12	17730.12	6.67		Si
SLV 11	11.87	1279.85	-12693	-0.000018	0.0006738	0.0035	3.98	25680.25	25680.25	25680.25	20.07		Si
SLV 11	13.97	3767.41	-9974	-0.0000193	0.0006738	0.0035	3.98	20688.32	20688.32	20688.32	5.49		Si
SLD 15	11.87	1788.61	-11923	-0.000018	0.0006738	0.0035	3.98	24272.67	24272.67	24272.67	13.57		Si
SLD 15	13.97	2911.11	-9061	-0.0000165	0.0006738	0.0035	3.98	18994.7	18994.7	18994.7	6.52		Si
SLV 13	11.87	2291.34	-13374	-0.0000208	0.0006738	0.0035	3.98	26922.21	26922.21	26922.21	11.75		Si
SLV 13	13.97	4253.6	-10078	-0.0000203	0.0006738	0.0035	3.98	20879.88	20879.88	20879.88	4.91		Si
SLV 2	11.87	1352.26	-6205	-0.0000101	0.0006738	0.0035	3.98	13636.52	13636.52	13636.52	10.08		Si
SLV 2	13.97	2699.77	-4314	-0.0000103	0.0006738	0.0035	3.98	17593.25	17593.25	17593.25	6.52		Si
SLV 14	11.87	2222.44	-13261	-0.0000205	0.0006738	0.0035	3.98	26718.04	26718.04	26718.04	12.02		Si
SLV 14	13.97	4210.2	-10005	-0.0000202	0.0006738	0.0035	3.98	20745.04	20745.04	20745.04	4.93		Si
SLV 16	11.87	1901.79	-14096	-0.0000209	0.0006738	0.0035	3.98	28222.15	28222.15	28222.15	14.84		Si
SLV 16	13.97	5105.58	-10882	-0.0000229	0.0006738	0.0035	3.98	22371.7	22371.7	22371.7	4.38		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 35	11.87	1105.2	-11367	-8109	-3536	3.98	3.98	-7277	9304	10368	101952	40049	20298	60347	No	17.07	Si
SLU 35	13.97	2234.08	-10065	-7180	-3534	3.98	3.98	-6443	9192	10244	101952	40049	20298	60347	No	17.08	Si
SLU 33	11.87	1047.25	-10687	-7624	-3526	3.98	3.98	-6841	9246	10303	101952	40049	20298	60347	No	17.11	Si
SLU 33	13.97	2064.08	-9431	-6728	-3526	3.98	3.98	-6037	9138	10184	101952	40049	20298	60347	No	17.11	Si
SLU 42	11.87	614.7	-9352	-6671	-3644	3.98	3.98	-5987	9132	10176	101952	40049	20298	60347	No	16.56	Si
SLU 42	13.97	1693.49	-8188	-5841	-3643	3.98	3.98	-5242	9032	10066	101952	40049	20298	60347	No	16.56	Si
SLU 36	11.87	1103.79	-11381	-8119	-3550	3.98	3.98	-7285	9305	10369	101952	40049	20298	60347	No	17	Si
SLU 36	13.97	2252.56	-10083	-7193	-3548	3.98	3.98	-6455	9194	10246	101952	40049	20298	60347	No	17.01	Si
SLU 83	11.87	1361.29	-12592	-8983	-3527	3.98	3.98	-8061	9408	10484	101952	40049	20298	60347	No	17.11	Si
SLU 83	13.97	1934.91	-10294	-7344	-3528	3.98	3.98	-6590	9212	10266	101952	40049	20298	60347	No	17.11	Si
SLU 39	11.87	559.58	-8645	-6167	-3606	3.98	3.98	-5534	9071	10109	101952	40049	20298	60347	No	16.74	Si
SLU 39	13.97	1486.54	-7518	-5363	-3607	3.98	3.98	-4812	8975	10002	101952	40049	20298	60347	No	16.73	Si
SLU 84	11.87	1359.87	-12606	-8993	-3541	3.98	3.98	-8070	9409	10486	101952	40049	20298	60347	No	17.04	Si
SLU 84	13.97	1953.39	-10313	-7357	-3542	3.98	3.98	-6602	9214	10268	101952	40049	20298	60347	No	17.04	Si
SLU 41	11.87	616.12	-9338	-6662	-3630	3.98	3.98	-5978	9130	10175	101952	40049	20298	60347	No	16.63	Si
SLU 41	13.97	1675.01	-8170	-5828	-3629	3.98	3.98	-5230	9031	10064	101952	40049	20298	60347	No	16.63	Si
SLU 40	11.87	558.16	-8658	-6177	-3620	3.98	3.98	-5543	9072	10110	101952	40049	20298	60347	No	16.67	Si
SLU 40	13.97	1505.01	-7536	-5376	-3621	3.98	3.98	-4824	8977	10004	101952	40049	20298	60347	No	16.66	Si
SLU 82	11.87	1303.33	-11912	-8498	-3518	3.98	3.98	-7625	9350	10420	101952	40049	20298	60347	No	17.16	Si
SLU 82	13.97	1764.91	-9661	-6892	-3520	3.98	3.98	-6184	9158	10206	101952	40049	20298	60347	No	17.14	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 16	11.87	1901.79	-14096	-10056	-4279	3.98	3.98	-9023	14305	15941	101952	60073	20298	80371		18.78	Si
SLV 16	13.97	5105.58	-10882	-7763	-895	3.98	3.98	-6966	13893	15483	101952	60073	20298	80371		89.81	Si
SLV 4	11.87	1031.62	-7040	-5022	296	3.98	3.98	-4506	13401	14934	101952	60073	20298	80371		271.07	Si
SLV 4	13.97	-1804.4	-5192	-3704	-2963	3.98	3.98	-3324	13165	14671	101952	60073	20298	80371		27.12	Si



Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 14	11.87	2222.44	-13261	-9460	-3364	3.98	3.98	-8489	14198	15822	101952	60073	20298	80371		23.89	Si
SLV 14	13.97	4210.2	-10005	-7137	-108	3.98	3.98	-6405	13781	15357	101952	60073	20298	80371		742.43	Si
SLV 8	11.87	974.29	-10504	-7493	-2363	3.98	3.98	-6724	13845	15429	101952	60073	20298	80371		34.02	Si
SLV 8	13.97	1666.39	-8220	-5864	-3148	3.98	3.98	-5262	13552	15103	101952	60073	20298	80371		25.53	Si
SLV 13	11.87	2291.34	-13374	-9540	-13374	3.98	3.98	-8561	14212	15838	101952	60073	20298	80371		24.25	Si
SLV 13	13.97	4253.6	-10078	-7189	-58	3.98	3.98	-6451	13790	15368	101952	60073	20298	80371		1376.56	Si
SLV 7	11.87	1018.8	-10576	-7545	-2330	3.98	3.98	-6770	13854	15439	101952	60073	20298	80371		34.49	Si
SLV 7	13.97	1694.42	-8267	-5898	-3116	3.98	3.98	-5292	13558	15110	101952	60073	20298	80371		25.79	Si
SLV 3	11.87	1100.52	-7152	-5102	346	3.98	3.98	-4579	13416	14951	101952	60073	20298	80371		231.99	Si
SLV 3	13.97	-1761	-5265	-3756	-2913	3.98	3.98	-3370	13174	14681	101952	60073	20298	80371		27.59	Si
SLV 11	11.87	1279.85	-12693	-9055	-3703	3.98	3.98	-8125	14125	15741	101952	60073	20298	80371		21.7	Si
SLV 11	13.97	3767.41	-9974	-7115	-2495	3.98	3.98	-6385	13777	15353	101952	60073	20298	80371		32.21	Si
SLV 15	11.87	1970.7	-14209	-10136	-4229	3.98	3.98	-9095	14319	15957	101952	60073	20298	80371		19.01	Si
SLV 15	13.97	5148.98	-10955	-7815	-845	3.98	3.98	-7013	13903	15493	101952	60073	20298	80371		95.11	Si
SLV 12	11.87	1235.34	-12620	-9003	-3735	3.98	3.98	-8079	14116	15731	101952	60073	20298	80371		21.52	Si
SLV 12	13.97	3739.38	-9927	-7082	-2528	3.98	3.98	-6355	13771	15346	101952	60073	20298	80371		31.8	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRMC D.M. 17-01-18 (N.T.C.)

quota 13.45 Ta 0.06 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 2	-4399	0.53	459.6	602.6	1181.73	892.17	1.94	Si
SLV 1	-4480	0.53	459.6	613.45	1194.46	903.96	1.97	Si
SLV 4	-5243	0.53	459.6	715.18	1314.24	1014.71	2.21	Si
SLV 3	-5324	0.53	459.6	725.93	1326.9	1026.42	2.23	Si
SLV 6	-5666	0.53	459.6	771.3	1380.42	1075.86	2.34	Si
SLV 5	-5719	0.53	459.6	778.21	1388.6	1083.41	2.36	Si
SLV 10	-7584	0.53	459.6	1022.4	1678.11	1350.25	2.94	Si
SLV 9	-7637	0.53	459.6	1029.18	1686.2	1357.69	2.95	Si
SLV 8	-8480	0.53	459.6	1137.86	1816.55	1477.2	3.21	Si
SLV 7	-8532	0.53	459.6	1144.58	1824.64	1484.61	3.23	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.45 Wa = 0.05 Ta = 0.0596

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 11	-6845	-12693	666	2.224	1212.7	0.902	35.82189	12.19367	Si
SLV 12	-6835	-12620	666	2.226	1211.7	0.902	35.85937	12.19367	Si
SLV 7	-6569	-10576	740	2.278	1185.6	0.901	36.74669	12.19367	Si
SLV 8	-6559	-10504	740	2.281	1184.6	0.901	36.78619	12.19367	Si
SLV 9	-6328	-9910	-740	2.335	1162	0.9	37.70746	12.19367	Si
SLV 10	-6318	-9837	-741	2.337	1161.1	0.9	37.74794	12.19367	Si
SLV 5	-6052	-7793	-666	2.412	1135.1	0.899	39.00037	12.19367	Si
SLV 6	-6042	-7720	-666	2.414	1134.1	0.899	39.04346	12.19367	Si
SLV 15	-6988	-14209	87	2.25	1226.9	0.903	36.21535	7.3	Si
SLV 16	-6973	-14096	87	2.254	1225.3	0.903	36.27325	7.3	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	9.167	SLV 36	Si
V_SLV	16.562	SLV 42	Si
PF_SLV	4.371	SLV 15	Si
V_SLV	18.784	SLV 16	Si
PFFP_SLV	1.941	SLV 2	Si
R_SLV	2.938	SLV 11	Si

## Maschio 187

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.003	-3.454	-11.003	-0.694	L7	L8	2.76	0.28	3.16	3.16	3.16			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica



									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 41	11.87	230.78	-10215	-0.000021	0.0003743	0.0035	2.7596	12264.34	12832.86	12832.86	55.61	No	Si
SLU 41	15.03	1729.73	-2111	-0.0000133	0.0003743	0.0035	2.7596	2834.95	3248.81	3248.81	1.88	No	Si
SLU 84	11.87	335.12	-12216	-0.0000255	0.0003743	0.0035	2.7596	14238.18	14889.9	14889.9	44.43	No	Si
SLU 84	15.03	1846.62	-2310	-0.0000141	0.0003743	0.0035	2.7596	3093.07	3509.88	3509.88	1.9	No	Si
SLU 40	11.87	166.86	-9670	-0.0000196	0.0003743	0.0035	2.7596	11702.07	12283.56	12283.56	73.62	No	Si
SLU 40	15.03	1360.24	-1501	-0.0000112	0.0003743	0.0035	2.7596	2031.31	2440.71	2440.71	1.79	No	Si
SLU 81	11.87	339.05	-11665	-0.0000244	0.0003743	0.0035	2.7596	13708.31	14316.59	14316.59	42.23	No	Si
SLU 81	15.03	1438.92	-1699	-0.0000112	0.0003743	0.0035	2.7596	2292.97	2703.04	2703.04	1.88	No	Si
SLU 82	11.87	305.12	-11668	-0.0000243	0.0003743	0.0035	2.7596	13711.25	14319.72	14319.72	46.93	No	Si
SLU 82	15.03	1458.03	-1699	-0.0000115	0.0003743	0.0035	2.7596	2293.32	2703.39	2703.39	1.85	No	Si
SLU 39	11.87	200.78	-9667	-0.0000198	0.0003743	0.0035	2.7596	11698.92	12280.52	12280.52	61.16	No	Si
SLU 39	15.03	1341.13	-1501	-0.0000109	0.0003743	0.0035	2.7596	2030.96	2440.36	2440.36	1.82	No	Si
SLU 42	11.87	196.86	-10218	-0.0000209	0.0003743	0.0035	2.7596	12267.43	12835.93	12835.93	65.2	No	Si
SLU 42	15.03	1748.84	-2112	-0.0000135	0.0003743	0.0035	2.7596	2835.3	3249.16	3249.16	1.86	No	Si
SLU 31	11.87	172.64	-9482	-0.0000193	0.0003743	0.0035	2.7596	11505.77	12095.27	12095.27	70.06	No	Si
SLU 31	15.03	1317.6	-1501	-0.0000105	0.0003743	0.0035	2.7596	2032.05	2441.45	2441.45	1.85	No	Si
SLU 33	11.87	200.61	-10233	-0.0000209	0.0003743	0.0035	2.7596	12282.76	12851.12	12851.12	64.06	No	Si
SLU 33	15.03	1689.99	-2056	-0.000013	0.0003743	0.0035	2.7596	2762.78	3175.93	3175.93	1.88	No	Si
SLU 32	11.87	234.53	-10230	-0.000021	0.0003743	0.0035	2.7596	12279.67	12848.05	12848.05	54.78	No	Si
SLU 32	15.03	1670.88	-2056	-0.0000128	0.0003743	0.0035	2.7596	2762.43	3175.58	3175.58	1.9	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 8	11.87	-3987.82	-8660	-0.0000336	0.0005615	0.0035	2.7596		13380.68	13380.68	3.36		Si
SLV 8	15.03	3453.78	-488	-0.0103615	0.0005615	0.0035	2.7596		1080.54	1080.54	0.31		No
SLD 11	11.87	-1679.41	-8820	-0.0000241	0.0005615	0.0035	2.7596		13572.9	13572.9	8.08		Si
SLD 11	15.03	2325.11	-1221	-0.0014089	0.0005615	0.0035	2.2076		2072.3	2072.3	0.89		No
SLV 3	11.87	-705.86	-7310	-0.000017	0.0005615	0.0035	2.7596		11700.81	11700.81	16.58		Si
SLV 3	15.03	719.15	100	-0.0018736	0.0005615	0.0035	2.2076		0	0	0		No
SLV 11	11.87	-4221.14	-9402	-0.0000361	0.0005615	0.0035	2.7596		14270.24	14270.24	3.38		Si
SLV 11	15.03	4112.01	-1234	-0.0089208	0.0005615	0.0035	2.7596		2089.39	2089.39	0.51		No
SLV 4	11.87	-645.25	-7324	-0.0000168	0.0005615	0.0035	2.7596		11718.79	11718.79	18.16		Si
SLV 4	15.03	693.97	119	-0.0014082	0.0005615	0.0035	2.2076		0	0	0		No
SLD 7	11.87	-1596.13	-8500	-0.0000231	0.0005615	0.0035	2.7596		13186.58	13186.58	8.26		Si
SLD 7	15.03	2050.67	-907	-0.0017755	0.0005615	0.0035	2.2076		1649.63	1649.63	0.8		No
SLV 7	11.87	-4026.96	-8651	-0.0000338	0.0005615	0.0035	2.7596		13369.58	13369.58	3.32		Si
SLV 7	15.03	3470.05	-500	-0.0103562	0.0005615	0.0035	2.7596		1097.35	1097.35	0.32		No
SLD 8	11.87	-1579.03	-8504	-0.0000231	0.0005615	0.0035	2.7596		13191.46	13191.46	8.35		Si
SLD 8	15.03	2043.56	-902	-0.001775	0.0005615	0.0035	2.2076		1642.27	1642.27	0.8		No
SLV 12	11.87	-4182	-9411	-0.0000359	0.0005615	0.0035	2.7596		14281.33	14281.33	3.41		Si
SLV 12	15.03	4095.74	-1221	-0.0089206	0.0005615	0.0035	2.7596		2072.71	2072.71	0.51		No
SLD 12	11.87	-1662.3	-8824	-0.0000241	0.0005615	0.0035	2.7596		13577.71	13577.71	8.17		Si
SLD 12	15.03	2318	-1216	-0.0014082	0.0005615	0.0035	2.2076		2065.01	2065.01	0.89		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 35	11.87	264.53	-10779	-8975	-2301	2.7596	2.7596	-11616	8493	6563	35683	23137	7037	30174	No	13.11	Si
SLU 35	15.03	2059.48	-2667	-2220	-890	2.7596	1.8223	-2874	7328	3739	35683	23137	7037	30174	No	33.91	Si
SLU 41	11.87	230.78	-10215	-8506	-2300	2.7596	2.7596	-11009	8412	6500	35683	23137	7037	30174	No	13.12	Si
SLU 41	15.03	1729.73	-2111	-1758	-1307	2.7596	1.6815	-2275	7248	3412	35683	23137	7037	30174	No	23.08	Si
SLU 36	11.87	230.6	-10782	-8978	-2393	2.7596	2.7596	-11619	8494	6563	35683	23137	7037	30174	No	12.61	Si
SLU 36	15.03	2078.58	-2667	-2221	-994	2.7596	1.8011	-2874	7328	3695	35683	23137	7037	30174	No	30.36	Si
SLU 78	11.87	368.87	-12780	-10642	-2348	2.7596	2.7596	-13773	8781	6785	35683	23137	7037	30174	No	12.85	Si
SLU 78	15.03	2176.37	-2865	-2386	-762	2.7596	1.8602	-3087	7356	3831	35683	23137	7037	30174	No	39.59	Si
SLU 42	11.87	196.86	-10218	-8509	-2393	2.7596	2.7596	-11012	8413	6500	35683	23137	7037	30174	No	12.61	Si
SLU 42	15.03	1748.84	-2112	-1758	-1412	2.7596	1.6547	-2276	7248	3358	35683	23137	7037	30174	No	21.37	Si
SLU 84	11.87	335.12	-12216	-10173	-2348	2.7596	2.7596	-13166	8700	6722	35683	23137	7037	30174	No	12.85	Si
SLU 84	15.03	1846.62	-2310	-1923	-1180	2.7596	1.7406	-2489	7276	3546	35683	23137	7037	30174	No	25.57	Si
SLU 33	11.87	200.61	-10233	-8521	-2391	2.7596	2.7596	-11028	8415	6502	35683	23137	7037	30174	No	12.62	Si
SLU 33	15.03	1689.99	-2056	-1712	-1343	2.7596	1.6735	-2216	7240	3392	35683	23137	7037	30174	No	22.46	Si
SLU 82	11.87	305.12	-11668	-9716	-2345	2.7596	2.7596	-12575	8621	6661	35683	23137	7037	30174	No	12.87	Si
SLU 82	15.03	1458.03	-1699	-1415	-1529	2.7596	1.5645	-1831	7189	3149	35683	23137	7037	30174	No	19.73	Si
SLU 40	11.87	166.86	-9670	-8052	-2390	2.7596	2.7596	-10421	8334	6439	35683	23137	7037	30174	No	12.62	Si
SLU 40	15.03	1360.24	-1501	-1250	-1761	2.7596	1.4204	-1617	7160	2848	35683	23137	7037	30174	No	17.14	Si
SLU 75	11.87	338.87	-12231	-10185	-2346	2.7596	2.7596	-13182	8702	6724	35683	23137	7037	30174	No	12.86	Si
SLU 75	15.03	1787.77	-2254	-1877	-1111	2.7596	1.7599	-2429	7268	3582	35683	23137	7037	30174	No	27.15	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 12	11.87	-4182	-9411	-7837	-14162	2.7596	2.7596	-10142	12445	9616	35683	34706	7037	41743		2.95	Si
SLV 12	15.03	4095.74	-1221	-1017	-16599	2.7596	0	0	16250	0	35683	34706	7037	35683		2.15	Si
SLD 12	11.87	-1662.3	-8824	-7348	-6825	2.7596	2.7596	-9510	12319	9518	35683	34706	7037	41743		6.12	Si
SLD 12	15.03	2318	-1216	-1012	-7520	2.2076	0	0	0	0	35683	27765	5629	33394		4.44	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 7	11.87	-4026.96	-8651	-7204	-12346	2.7596	2.7429	-9323	12281	9432	35683	34706	7037	41743		3.38	Si
SLV 7	15.03	3470.05	-500	-416	-15889	2.7596	0	0	16250	0	35683	34706	7037	35683		2.25	Si
SLV 6	11.87	4884.45	-7336	-6109	12214	2.7596	2.142	-7906	11998	7196	35683	34706	7037	41743		3.42	Si
SLV 6	15.03	-2278.81	-1208	-1006	16014	2.2076	0	0	0	0	35683	27765	5629	33394		2.09	Si
SLV 5	11.87	4845.31	-7327	-6101	12095	2.7596	2.1555	-7896	11996	7240	35683	34706	7037	41743		3.45	Si
SLV 5	15.03	-2262.54	-1220	-1016	15939	2.2076	0	0	0	0	35683	27765	5629	33394		2.1	Si
SLV 10	11.87	4690.27	-8087	-6734	10279	2.7596	2.3994	-8715	12160	8169	35683	34706	7037	41743		4.06	Si
SLV 10	15.03	-1636.85	-1942	-1617	15229	2.2076	1.6103	0	0	0	35683	27765	5629	33394		2.19	Si
SLV 11	11.87	-4221.14	-9402	-7829	-14281	2.7596	2.7596	-10132	12443	9614	35683	34706	7037	41743		2.92	Si
SLV 11	15.03	4112.01	-1234	-1027	-16674	2.7596	0	0	16250	0	35683	34706	7037	35683		2.14	Si
SLV 9	11.87	4651.13	-8078	-6726	10159	2.7596	2.4119	-8705	12158	8211	35683	34706	7037	41743		4.11	Si
SLV 9	15.03	-1620.59	-1954	-1627	15155	2.2076	1.6513	0	0	0	35683	27765	5629	33394		2.2	Si
SLV 8	11.87	-3987.82	-8660	-7212	-12226	2.7596	2.7579	-9333	12283	9485	35683	34706	7037	41743		3.41	Si
SLV 8	15.03	3453.78	-488	-406	-15814	2.7596	0	0	16250	0	35683	34706	7037	35683		2.26	Si
SLD 11	11.87	-1679.41	-8820	-7345	-6877	2.7596	2.7596	-9506	12318	9518	35683	34706	7037	41743		6.07	Si
SLD 11	15.03	2325.11	-1221	-1017	-7553	2.2076	0	0	0	0	35683	27765	5629	33394		4.42	Si

**Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)**

quota 13.45 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 2	179667	0.53	4199	-3244	318.67	441.7	1.39	Si
SLV 1	179667	0.53	4230	-3268	318.67	444.87	1.4	Si
SLV 4	179667	0.53	4382	-3386	318.67	460.45	1.44	Si
SLV 3	179667	0.53	4413	-3410	318.67	463.61	1.45	Si
SLV 6	179667	0.53	5067	-3915	318.67	529.89	1.66	Si
SLV 5	179667	0.53	5087	-3930	318.67	531.91	1.67	Si
SLV 8	179667	0.53	5679	-4388	318.67	591.47	1.86	Si
SLV 7	179667	0.53	5699	-4403	318.67	593.47	1.86	Si
SLV 10	179667	0.53	5990	-4628	318.67	622.51	1.95	Si
SLV 9	179667	0.53	6010	-4643	318.67	624.5	1.96	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

**Verifica dei meccanismi locali di collasso con analisi cinematica lineare**

forza di aggancio al piano = 5617 quota mezzera = 13.45 Wa = 0.05 Ta = 0.0596

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 9	-1954	-8078	157	3.763	575.5	0.889	61.50968	12.19367	Si
SLV 10	-1942	-8087	157	3.775	574.4	0.889	61.68883	12.19367	Si
SLV 11	-1234	-9402	359	4.486	514.5	0.897	72.69771	12.19367	Si
SLV 12	-1221	-9411	359	4.502	513.5	0.897	72.93686	12.19367	Si
SLV 5	-1220	-7327	-361	4.502	513.5	0.897	72.93954	12.19367	Si
SLV 6	-1208	-7336	-361	4.518	512.5	0.897	73.18077	12.19367	Si
SLV 13	-2561	-9414	833	3.147	630.7	0.889	51.42006	7.3	Si
SLV 14	-2542	-9428	833	3.16	628.9	0.889	51.62818	7.3	Si
SLV 15	-2345	-9811	893	3.281	610.8	0.889	53.64326	7.3	Si
SLV 16	-2326	-9826	894	3.295	609	0.889	53.8689	7.3	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

**Tabella dei coefficienti di sicurezza minimi**

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.794	SLV 40	Si
V_SLV	12.607	SLV 36	Si
PF_SLV	0	SLV 3	No
V_SLV	2.085	SLV 6	Si
PFFP_SLV	1.386	SLV 2	Si
R_SLV	5.044	SLV 9	Si

**Maschio 189**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati geometrici**

X inl.	Y inl.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h inl.	h fin.	a	a.s.,sx	a.s.,dx
-9.708	3.176	-9.708	6.386	L7	L8	3.21	0.16	3.16	3.16	3.16			

**Caratteristiche del materiale**

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

**Materiale per FRCM**

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio



## Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche,  $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 18	11.87	285.67	-6453	-0.0000171	0.0004492	0.0035	3.21	9292.54	10773.8	10773.8	37.71	No	Si
SLU 18	15.03	4519.51	-3362	-0.0000701	0.0004492	0.0035	3.21	5106.36	6222.16	6222.16	1.38	No	Si
SLU 61	11.87	305.67	-7835	-0.0000206	0.0004492	0.0035	3.21	11005.77	12749.47	12749.47	41.71	No	Si
SLU 61	15.03	5291.52	-3867	-0.0000902	0.0004492	0.0035	3.21	5824.54	6978.72	6978.72	1.32	No	Si
SLU 60	11.87	340.56	-7771	-0.0000206	0.0004492	0.0035	3.21	10927.9	12657.89	12657.89	37.17	No	Si
SLU 60	15.03	5256.83	-3803	-0.0000946	0.0004492	0.0035	3.21	5733.57	6882.12	6882.12	1.31	No	Si
SLU 52	11.87	260.17	-7646	-0.0000199	0.0004492	0.0035	3.21	10776.7	12480.76	12480.76	47.97	No	Si
SLU 52	15.03	4871.05	-3678	-0.0000713	0.0004492	0.0035	3.21	5557.01	6695.28	6695.28	1.37	No	Si
SLU 10	11.87	205.28	-6328	-0.0000164	0.0004492	0.0035	3.21	9132.92	10593.43	10593.43	51.6	No	Si
SLU 10	15.03	4133.73	-3237	-0.000053	0.0004492	0.0035	3.21	4926.98	6035.32	6035.32	1.46	No	Si
SLU 43	11.87	266.45	-6996	-0.0000183	0.0004492	0.0035	3.21	9976.67	11557.27	11557.27	43.38	No	Si
SLU 43	15.03	3778.22	-3028	-0.0000452	0.0004492	0.0035	3.21	4625.02	5722.66	5722.66	1.51	No	Si
SLU 73	11.87	285.19	-8772	-0.0000229	0.0004492	0.0035	3.21	12110.73	14067.57	14067.57	49.33	No	Si
SLU 73	15.03	5381.32	-4654	-0.0000558	0.0004492	0.0035	3.21	6916.28	8148.61	8148.61	1.51	No	Si
SLU 19	11.87	250.78	-6518	-0.0000171	0.0004492	0.0035	3.21	9374.76	10867.05	10867.05	43.33	No	Si
SLU 19	15.03	4554.2	-3426	-0.0000674	0.0004492	0.0035	3.21	5198.78	6318.76	6318.76	1.39	No	Si
SLU 82	11.87	330.69	-8961	-0.0000235	0.0004492	0.0035	3.21	12328.9	14331.38	14331.38	43.34	No	Si
SLU 82	15.03	5801.78	-4844	-0.0000644	0.0004492	0.0035	3.21	7174.34	8427.14	8427.14	1.45	No	Si
SLU 81	11.87	365.58	-8897	-0.0000235	0.0004492	0.0035	3.21	12254.75	14241.47	14241.47	38.96	No	Si
SLU 81	15.03	5767.1	-4779	-0.000065	0.0004492	0.0035	3.21	7086.6	8332.21	8332.21	1.44	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche,  $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 12	11.87	-3630.93	-8606	-0.0000378	0.0006738	0.0035	3.21		18671.04	18671.04	5.14		Si
SLV 12	15.03	8033.05	-5385	-0.0002676	0.0006738	0.0035	3.21		9305.75	9305.75	1.16		Si
SLD 12	11.87	-1472.25	-7231	-0.0000244	0.0006738	0.0035	3.21		16715.68	16715.68	11.35		Si
SLD 12	15.03	5479.4	-4060	-0.0000856	0.0006738	0.0035	3.21		7319.25	7319.25	1.34		Si
SLV 8	11.87	-3585.5	-8154	-0.0000364	0.0006738	0.0035	3.21		18029.01	18029.01	5.03		Si
SLV 8	15.03	7247.72	-5034	-0.00017	0.0006738	0.0035	3.21		8783.77	8783.77	1.21		Si
SLV 16	11.87	-926.51	-7550	-0.0000226	0.0006738	0.0035	3.21		17170.03	17170.03	18.53		Si
SLV 16	15.03	6003.49	-4238	-0.000123	0.0006738	0.0035	3.21		7587.47	7587.47	1.26		Si
SLD 11	11.87	-1520	-7248	-0.0000246	0.0006738	0.0035	3.21		16739.98	16739.98	11.01		Si
SLD 11	15.03	5504.04	-4077	-0.0000861	0.0006738	0.0035	3.21		7345.06	7345.06	1.33		Si
SLV 11	11.87	-3740.23	-8645	-0.0000384	0.0006738	0.0035	3.21		18726.64	18726.64	5.01		Si
SLV 11	15.03	8089.45	-5424	-0.0002691	0.0006738	0.0035	3.21		9363.89	9363.89	1.16		Si
SLV 7	11.87	-3694.79	-8193	-0.000037	0.0006738	0.0035	3.21		18084.62	18084.62	4.89		Si
SLV 7	15.03	7304.12	-5073	-0.0001715	0.0006738	0.0035	3.21		8841.91	8841.91	1.21		Si
SLV 15	11.87	-1095.73	-7611	-0.0000236	0.0006738	0.0035	3.21		17256.12	17256.12	15.75		Si
SLV 15	15.03	6090.82	-4298	-0.0001251	0.0006738	0.0035	3.21		7678.92	7678.92	1.26		Si
SLD 7	11.87	-1499.95	-7058	-0.0000241	0.0006738	0.0035	3.21		16469.88	16469.88	10.98		Si
SLD 7	15.03	5173.5	-3930	-0.0000728	0.0006738	0.0035	3.21		7123.26	7123.26	1.38		Si
SLD 8	11.87	-1452.2	-7041	-0.0000238	0.0006738	0.0035	3.21		16445.58	16445.58	11.32		Si
SLD 8	15.03	5148.86	-3913	-0.0000723	0.0006738	0.0035	3.21		7097.45	7097.45	1.38		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 60	11.87	340.56	-7771	-4563	-1556	3.21	3.21	-8884	9518	4888	101952	18458	16371	34829	No	22.39	Si
SLU 60	15.03	5256.83	-3803	-2233	-1556	3.21	0.6679	-21140	10833	1158	101952	18458	16371	34829	No	22.39	Si
SLU 40	11.87	275.8	-7644	-4488	-1515	3.21	3.21	-8738	9498	4878	101952	18458	16371	34829	No	22.98	Si
SLU 40	15.03	5064.46	-4403	-2585	-1515	3.21	1.3641	-5033	9004	1965	101952	18458	16371	34829	No	22.98	Si
SLU 83	11.87	332.54	-9795	-5751	-1526	3.21	3.21	-11197	9826	5047	101952	18458	16371	34829	No	22.82	Si
SLU 83	15.03	5155.18	-5677	-3333	-1526	3.21	2.0909	-6490	9199	3077	101952	18458	16371	34829	No	22.82	Si
SLU 81	11.87	365.58	-8897	-5224	-1709	3.21	3.21	-10171	9689	4976	101952	18458	16371	34829	No	20.38	Si
SLU 81	15.03	5767.1	-4779	-2806	-1709	3.21	1.195	-5464	9062	1733	101952	18458	16371	34829	No	20.38	Si
SLU 75	11.87	294.31	-9618	-5647	-1521	3.21	3.21	-10995	9799	5033	101952	18458	16371	34829	No	22.9	Si
SLU 75	15.03	5100.96	-5501	-3230	-1521	3.21	2.033	-6289	9172	2983	101952	18458	16371	34829	No	22.9	Si
SLU 82	11.87	330.69	-8961	-5262	-1731	3.21	3.21	-10245	9699	4982	101952	18458	16371	34829	No	20.12	Si
SLU 82	15.03	5801.78	-4844	-2844	-1731	3.21	1.2217	-5538	9072	1773	101952	18458	16371	34829	No	20.12	Si
SLU 84	11.87	297.64	-9859	-5789	-1548	3.21	3.21	-11271	9836	5052	101952	18458	16371	34829	No	22.5	Si
SLU 84	15.03	5189.86	-5742	-3371	-1548	3.21	2.1034	-6564	9209	3099	101952	18458	16371	34829	No	22.5	Si
SLU 61	11.87	305.67	-7835	-4601	-1578	3.21	3.21	-8958	9528	4893	101952	18458	16371	34829	No	22.07	Si
SLU 61	15.03	5291.52	-3867	-2271	-1578	3.21	0.7102	-20227	10833	1231	101952	18458	16371	34829	No	22.07	Si
SLU 74	11.87	329.2	-9553	-5609	-1499	3.21	3.21	-10922	9790	5028	101952	18458	16371	34829	No	23.23	Si
SLU 74	15.03	5066.28	-5436	-3192	-1499	3.21	2.0191	-6215	9162	2960	101952	18458	16371	34829	No	23.23	Si
SLU 73	11.87	285.19	-8772	-5150	-1613	3.21	3.21	-10028	9670	4967	101952	18458	16371	34829	No	21.6	Si
SLU 73	15.03	5381.32	-4654	-2733	-1613	3.21	1.3465	-5321	9043	1948	101952	18458	16371	34829	No	21.6	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 6	11.87	4207.29	-3665	-2152	1283	3.21	1.3711	-4190	13338	2926	101952	27686	16371	44057		34.34	Si



Comb.	Quota	M	N	Nmur	V	df	I'	oN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 6	15.03	-1124.63	-617	-363	2281	2.568	0	0	0	0	101952	22149	13097	35246		15.45	Si
SLD 11	11.87	-1520	-7248	-4256	-2046	3.21	3.21	-8286	14157	7271	101952	27686	16371	44057		21.54	Si
SLD 11	15.03	5504.04	-4077	-2394	-2482	3.21	0.7652	-19710	16250	1990	101952	27686	16371	44057		17.75	Si
SLV 7	11.87	-3694.79	-8193	-4811	-3071	3.21	3.21	-9367	14373	7382	101952	27686	16371	44057		14.35	Si
SLV 7	15.03	7304.12	-5073	-2978	-4102	3.21	0.4954	-37664	16250	1288	101952	27686	16371	44057		10.74	Si
SLV 15	11.87	-1095.73	-7611	-4469	-2161	3.21	3.21	-8701	14240	7314	101952	27686	16371	44057		20.39	Si
SLV 15	15.03	6090.82	-4298	-2524	-2411	3.21	0.5639	-28106	16250	1466	101952	27686	16371	44057		18.27	Si
SLV 11	11.87	-3740.23	-8645	-5076	-3339	3.21	3.21	-9883	14477	7435	101952	27686	16371	44057		13.19	Si
SLV 11	15.03	8089.45	-5424	-3185	-4338	3.21	0.3405	-55995	16250	885	101952	27686	16371	44057		10.16	Si
SLV 5	11.87	4097.99	-3704	-2175	1231	3.21	1.496	-4235	13347	3195	101952	27686	16371	44057		35.8	Si
SLV 5	15.03	-1068.23	-657	-385	2229	2.568	0	0	0	0	101952	22149	13097	35246		15.81	Si
SLD 12	11.87	-1472.25	-7231	-4246	-2023	3.21	3.21	-8267	14153	7269	101952	27686	16371	44057		21.78	Si
SLD 12	15.03	5479.4	-4060	-2384	-2459	3.21	0.7664	-19596	16250	1993	101952	27686	16371	44057		17.92	Si
SLD 7	11.87	-1499.95	-7058	-4144	-1932	3.21	3.21	-8069	14114	7249	101952	27686	16371	44057		22.8	Si
SLD 7	15.03	5173.5	-3930	-2308	-2383	3.21	0.8662	-16775	15856	2198	101952	27686	16371	44057		18.49	Si
SLV 12	11.87	-3630.93	-8606	-5053	-3287	3.21	3.21	-9838	14468	7431	101952	27686	16371	44057		13.4	Si
SLV 12	15.03	8033.05	-5385	-3162	-4285	3.21	0.3395	-55717	16250	883	101952	27686	16371	44057		10.28	Si
SLV 8	11.87	-3585.5	-8154	-4788	-3019	3.21	3.21	-9322	14364	7378	101952	27686	16371	44057		14.6	Si
SLV 8	15.03	7247.72	-5034	-2956	-4049	3.21	0.4954	-37363	16250	1288	101952	27686	16371	44057		10.88	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRMC D.M. 17-01-18 (N.T.C.)

quota 13.45 Ta 0.1 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 6	-2070	0.53	219.04	0	429.84	214.92	0.98	No
SLV 5	-2109	0.53	219.04	0	433.73	216.87	0.99	No
SLV 10	-2423	0.53	219.04	0	464.72	232.36	1.06	Si
SLV 9	-2462	0.53	219.04	0	468.56	234.28	1.07	Si
SLV 2	-3262	0.53	219.04	251.91	546.99	399.45	1.82	Si
SLV 1	-3322	0.53	219.04	256.41	552.92	404.66	1.85	Si
SLV 14	-4439	0.53	219.04	338.34	661.32	499.83	2.28	Si
SLV 13	-4499	0.53	219.04	342.72	667.16	504.94	2.31	Si
SLV 4	-4646	0.53	219.04	353.34	681.35	517.34	2.36	Si
SLV 3	-4707	0.53	219.04	357.7	687.19	522.45	2.39	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.45 Wa = 0.03 Ta = 0.1042

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 11	-5424	-8645	176	2.624	785.1	0.923	41.32623	21.1834	Si
SLV 12	-5385	-8606	176	2.639	781.1	0.923	41.57332	21.1834	Si
SLV 7	-5073	-8193	-180	2.763	749.8	0.92	43.64474	21.1834	Si
SLV 8	-5034	-8154	-179	2.78	745.9	0.92	43.92006	21.1834	Si
SLV 15	-4298	-7611	591	3.06	672.3	0.914	48.68037	11.54873	Si
SLV 16	-4238	-7550	591	3.092	666.3	0.913	49.22283	11.54873	Si
SLV 3	-3128	-6106	-592	3.833	556.3	0.902	61.75596	11.54873	Si
SLV 4	-3068	-6046	-592	3.884	550.4	0.902	62.6191	11.54873	Si
SLV 13	-2973	-6264	593	3.966	541.1	0.901	64.01163	11.54873	Si
SLV 9	-1008	-4156	180	7.273	357.3	0.892	118.4622	21.1834	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	1.309	SLU 60	Si
V_SLU	20.116	SLU 82	Si
PF_SLV	1.158	SLV 11	Si
V_SLV	10.157	SLV 11	Si
PFFP_SLV	0.981	SLV 6	No
R_SLV	1.951	SLV 11	Si

## Maschio 191

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-6.268	-3.314	-6.268	-0.194	L7	L8	3.12	0.16	3.16	3.16	3.16			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica



									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 38	11.87	1275.22	-8611	-0.0000281	0.0004492	0.0035	3.12	11536.3	13383.01	13383.01	10.49	No	Si
SLU 38	13.97	1090.14	-5457	-0.000019	0.0004492	0.0035	3.12	7751.48	9009.47	9009.47	8.26	No	Si
SLU 80	11.87	1429.61	-10081	-0.0000327	0.0004492	0.0035	3.12	13127.24	15358.74	15358.74	10.74	No	Si
SLU 80	13.97	1086.95	-6202	-0.0000209	0.0004492	0.0035	3.12	8691.37	10056.94	10056.94	9.25	No	Si
SLU 29	11.87	1112.6	-8072	-0.0000259	0.0004492	0.0035	3.12	10926.19	12653	12653	11.37	No	Si
SLU 29	13.97	1000.67	-5230	-0.000018	0.0004492	0.0035	3.12	7458.72	8683.98	8683.98	8.68	No	Si
SLU 30	11.87	1084.6	-8053	-0.0000257	0.0004492	0.0035	3.12	10903.74	12626.46	12626.46	11.64	No	Si
SLU 30	13.97	998.21	-5226	-0.000018	0.0004492	0.0035	3.12	7453.7	8678.43	8678.43	8.69	No	Si
SLU 79	11.87	1457.61	-10101	-0.0000329	0.0004492	0.0035	3.12	13147.66	15384.78	15384.78	10.55	No	Si
SLU 79	13.97	1089.41	-6206	-0.0000209	0.0004492	0.0035	3.12	8696.19	10062.4	10062.4	9.24	No	Si
SLU 41	11.87	1284.19	-8269	-0.0000272	0.0004492	0.0035	3.12	11151.25	12920.23	12920.23	10.06	No	Si
SLU 41	13.97	882.03	-4885	-0.0000165	0.0004492	0.0035	3.12	7010.3	8191.04	8191.04	9.29	No	Si
SLU 35	11.87	1292.1	-8720	-0.0000284	0.0004492	0.0035	3.12	11658.17	13530.99	13530.99	10.47	No	Si
SLU 35	13.97	966.66	-5473	-0.0000184	0.0004492	0.0035	3.12	7771.6	9031.94	9031.94	9.34	No	Si
SLU 42	11.87	1256.18	-8250	-0.000027	0.0004492	0.0035	3.12	11129	12893.71	12893.71	10.26	No	Si
SLU 42	13.97	879.57	-4881	-0.0000165	0.0004492	0.0035	3.12	7005.21	8185.48	8185.48	9.31	No	Si
SLU 37	11.87	1303.23	-8630	-0.0000283	0.0004492	0.0035	3.12	11558.19	13409.53	13409.53	10.29	No	Si
SLU 37	13.97	1092.6	-5461	-0.000019	0.0004492	0.0035	3.12	7756.45	9015.03	9015.03	8.25	No	Si
SLU 36	11.87	1264.1	-8700	-0.0000282	0.0004492	0.0035	3.12	11636.37	13504.46	13504.46	10.68	No	Si
SLU 36	13.97	964.2	-5469	-0.0000184	0.0004492	0.0035	3.12	7766.63	9026.4	9026.4	9.36	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 6	11.87	4837.93	-8710	-0.0000457	0.0006738	0.0035	3.12	13707.89	13707.89	13707.89	2.83		Si
SLV 6	13.97	1270.41	-4013	-0.0000161	0.0006738	0.0035	3.12	6989.28	6989.28	6989.28	5.5		Si
SLD 6	11.87	2604.8	-7412	-0.0000313	0.0006738	0.0035	3.12	11887.64	11887.64	11887.64	4.56		Si
SLD 6	13.97	756.56	-3717	-0.0000129	0.0006738	0.0035	3.12	6554.21	6554.21	6554.21	8.66		Si
SLV 7	11.87	-3500.94	-3180	-0.0000359	0.0006738	0.0035	2.496	10489.18	10489.18	10489.18	3		Si
SLV 7	13.97	-313.72	-2590	-0.0000079	0.0006738	0.0035	3.12	9627.84	9627.84	9627.84	30.69		Si
SLV 12	11.87	-2941.94	-4161	-0.0000254	0.0006738	0.0035	3.12	11914.33	11914.33	11914.33	4.05		Si
SLV 12	13.97	-499.74	-2951	-0.0000097	0.0006738	0.0035	3.12	10155.44	10155.44	10155.44	20.32		Si
SLV 10	11.87	5167.77	-9569	-0.0000496	0.0006738	0.0035	3.12	14897.53	14897.53	14897.53	2.88		Si
SLV 10	13.97	1026.81	-4370	-0.0000158	0.0006738	0.0035	3.12	7513.51	7513.51	7513.51	7.32		Si
SLV 11	11.87	-3171.1	-4040	-0.0000272	0.0006738	0.0035	3.12	11740.45	11740.45	11740.45	3.7		Si
SLV 11	13.97	-557.32	-2947	-0.00001	0.0006738	0.0035	3.12	10148.51	10148.51	10148.51	18.21		Si
SLV 5	11.87	4608.77	-8589	-0.0000442	0.0006738	0.0035	3.12	13538.89	13538.89	13538.89	2.94		Si
SLV 5	13.97	1212.83	-4008	-0.0000158	0.0006738	0.0035	3.12	6982.29	6982.29	6982.29	5.76		Si
SLV 9	11.87	4938.61	-9449	-0.0000481	0.0006738	0.0035	3.12	14731.27	14731.27	14731.27	2.98		Si
SLV 9	13.97	969.23	-4365	-0.0000156	0.0006738	0.0035	3.12	7506.52	7506.52	7506.52	7.74		Si
SLD 10	11.87	2745.45	-7779	-0.0000329	0.0006738	0.0035	3.12	12403.15	12403.15	12403.15	4.52		Si
SLD 10	13.97	652.43	-3869	-0.0000128	0.0006738	0.0035	3.12	6778.12	6778.12	6778.12	10.39		Si
SLV 8	11.87	-3271.78	-3301	-0.0000302	0.0006738	0.0035	2.496	10665.06	10665.06	10665.06	3.26		Si
SLV 8	13.97	-256.14	-2595	-0.0000077	0.0006738	0.0035	3.12	9634.85	9634.85	9634.85	37.62		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 61	11.87	1124.79	-8200	-4815	1316	3.12	3.12	-9645	9619	4802	101952	17940	15912	33852	No	25.72	Si
SLU 61	13.97	387.78	-4299	-2524	1315	3.12	3.12	-5057	9008	4497	101952	17940	15912	33852	No	25.75	Si
SLU 84	11.87	1410.57	-9720	-5707	1293	3.12	3.12	-11433	9858	4921	101952	17940	15912	33852	No	26.17	Si
SLU 84	13.97	876.38	-5626	-3303	1294	3.12	3.12	-6617	9216	4600	101952	17940	15912	33852	No	26.17	Si
SLU 82	11.87	1309.83	-9120	-5355	1420	3.12	3.12	-10727	9764	4874	101952	17940	15912	33852	No	23.83	Si
SLU 82	13.97	626.41	-4951	-2907	1419	3.12	3.12	-5823	9110	4548	101952	17940	15912	33852	No	23.85	Si
SLU 74	11.87	1345.74	-9590	-5631	1306	3.12	3.12	-11280	9837	4911	101952	17940	15912	33852	No	25.93	Si
SLU 74	13.97	713.5	-5543	-3254	1306	3.12	3.12	-6519	9203	4594	101952	17940	15912	33852	No	25.93	Si
SLU 75	11.87	1317.74	-9571	-5619	1282	3.12	3.12	-11257	9834	4909	101952	17940	15912	33852	No	26.41	Si
SLU 75	13.97	711.04	-5539	-3252	1282	3.12	3.12	-6515	9202	4594	101952	17940	15912	33852	No	26.41	Si
SLU 81	11.87	1337.83	-9140	-5367	1444	3.12	3.12	-10750	9767	4876	101952	17940	15912	33852	No	23.44	Si
SLU 81	13.97	628.87	-4955	-2909	1443	3.12	3.12	-5828	9110	4548	101952	17940	15912	33852	No	23.46	Si
SLU 83	11.87	1438.57	-9740	-5719	1317	3.12	3.12	-11456	9861	4923	101952	17940	15912	33852	No	25.7	Si
SLU 83	13.97	878.84	-5630	-3306	1317	3.12	3.12	-6622	9216	4601	101952	17940	15912	33852	No	25.7	Si
SLU 60	11.87	1152.79	-8220	-4826	1340	3.12	3.12	-9668	9622	4804	101952	17940	15912	33852	No	25.26	Si
SLU 60	13.97	390.23	-4303	-2527	1338	3.12	3.12	-5061	9008	4497	101952	17940	15912	33852	No	25.29	Si
SLU 39	11.87	1183.45	-7669	-4503	1258	3.12	3.12	-9021	9536	4760	101952	17940	15912	33852	No	26.91	Si
SLU 39	13.97	632.06	-4210	-2472	1257	3.12	3.12	-4952	8994	4490	101952	17940	15912	33852	No	26.93	Si
SLU 73	11.87	1209.46	-8868	-5207	1280	3.12	3.12	-10431	9724	4854	101952	17940	15912	33852	No	26.44	Si
SLU 73	13.97	585.38	-4849	-2847	1279	3.12	3.12	-5703	9094	4540	101952	17940	15912	33852	No	26.46	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 9	11.87	4938.61	-9449	-5548	3900	3.12	3.112	-11114	14723	7331	101952	26910	15912	42822		10.98	Si
SLV 9	13.97	969.23	-4365	-2563	4690	3.12	3.12	-5134	13527	6753	101952	26910	15912	42822		9.13	Si
SLV 13	11.87	2422.19	-8526	-5006	2593	3.12	3.12	-10028	14506	7241	101952	26910	15912	42822		16.51	Si
SLV 13	13.97	134.95	-4283	-2515	2852	3.12	3.12	-5038	13508	6743	101952	26910	15912	42822		15.02	Si





Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 9	11.87	2645.33	-7726	-4536	2195	3.12	3.12	-9087	14317	7147	101952	26910	15912	42822		19.51	Si
SLV 9	13.97	627.27	-3867	-2271	2543	3.12	3.12	-4549	13410	6694	101952	26910	15912	42822		16.84	Si
SLV 7	11.87	-3500.94	-3180	-1867	-2363	2.496	1.3774	0	0	0	101952	21528	12730	34258		14.5	Si
SLV 7	13.97	-313.72	-2590	-1521	-3155	3.12	3.12	-3046	13109	6544	101952	26910	15912	42822		13.57	Si
SLV 10	11.87	5167.77	-9569	-5619	4068	3.12	3.0599	-11255	14751	7222	101952	26910	15912	42822		10.53	Si
SLV 10	13.97	1026.81	-4370	-2566	4858	3.12	3.12	-5140	13528	6753	101952	26910	15912	42822		8.81	Si
SLV 14	11.87	2777	-8712	-5116	2853	3.12	3.12	-10248	14550	7263	101952	26910	15912	42822		15.01	Si
SLV 14	13.97	224.1	-4291	-2519	3111	3.12	3.12	-5047	13509	6744	101952	26910	15912	42822		13.76	Si
SLV 6	11.87	4837.93	-8710	-5114	3454	3.12	3.0136	-10244	14549	7015	101952	26910	15912	42822		12.4	Si
SLV 6	13.97	1270.41	-4013	-2356	4230	3.12	3.12	-4720	13444	6711	101952	26910	15912	42822		10.12	Si
SLV 5	11.87	4608.77	-8589	-5043	3286	3.12	3.0702	-10102	14520	7133	101952	26910	15912	42822		13.03	Si
SLV 5	13.97	1212.83	-4008	-2354	4062	3.12	3.12	-4715	13443	6711	101952	26910	15912	42822		10.54	Si
SLD 10	11.87	2745.45	-7779	-4567	2268	3.12	3.12	-9149	14330	7153	101952	26910	15912	42822		18.88	Si
SLD 10	13.97	652.43	-3869	-2272	2616	3.12	3.12	-4551	13410	6694	101952	26910	15912	42822		16.37	Si
SLV 8	11.87	-3271.78	-3301	-1938	-2195	2.496	1.7064	0	0	0	101952	21528	12730	34258		15.61	Si
SLV 8	13.97	-256.14	-2595	-1524	-2987	3.12	3.12	-3052	13110	6545	101952	26910	15912	42822		14.34	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRMC D.M. 17-01-18 (N.T.C.)

quota 13.45 Ta 0.1 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 7	-2887	0.53	212.9	223.65	509.46	366.56	1.72	Si
SLV 8	-2942	0.53	212.9	227.83	514.93	371.38	1.74	Si
SLV 11	-3244	0.53	212.9	250.33	544.49	397.41	1.87	Si
SLV 12	-3300	0.53	212.9	254.47	549.94	402.21	1.89	Si
SLV 3	-3393	0.53	212.9	261.41	559.09	410.25	1.93	Si
SLV 4	-3480	0.53	212.9	267.79	567.5	417.64	1.96	Si
SLV 1	-4198	0.53	212.9	320.45	637.27	478.86	2.25	Si
SLV 2	-4285	0.53	212.9	326.72	645.61	486.16	2.28	Si
SLV 15	-4585	0.53	212.9	348.41	674.62	511.51	2.4	Si
SLV 16	-4671	0.53	212.9	354.61	682.94	518.78	2.44	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.45 Wa = 0.03 Ta = 0.1042

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 9	-1735	-9449	240	5.516	414.9	0.89	90.08631	21.1834	Si
SLV 10	-1723	-9569	240	5.537	413.8	0.89	90.43093	21.1834	Si
SLV 11	-1718	-4040	4	5.621	413.4	0.89	91.81187	21.1834	Si
SLV 12	-1706	-4161	4	5.642	412.2	0.89	92.16472	21.1834	Si
SLV 7	-1592	-3180	-239	5.776	401.7	0.889	94.40929	21.1834	Si
SLV 8	-1580	-3301	-240	5.799	400.6	0.889	94.78436	21.1834	Si
SLV 5	-1609	-8589	-3	5.822	403.3	0.889	95.15143	21.1834	Si
SLV 6	-1597	-8710	-3	5.845	402.2	0.889	95.52773	21.1834	Si
SLV 13	-1879	-8526	442	5.215	428.4	0.891	85.08732	11.54873	Si
SLV 15	-1874	-6903	371	5.245	428	0.891	85.57315	11.54873	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	8.251	SLU 37	Si
V_SLU	23.441	SLU 81	Si
PF_SLV	2.833	SLV 6	Si
V_SLV	8.814	SLV 10	Si
PFFP_SLV	1.722	SLV 7	Si
R_SLV	4.253	SLV 9	Si

## Maschio 192

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Maschio considerato membratura sismica secondaria

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-6.268	0.706	-6.268	1.006	L7	L8	0.3	0.16	3.16	3.16	3.16			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fν0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica





									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma_{F,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Esterna	100	100	100	100	2	CNR DT215	0.8			0.008				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 80	11.87	-18.65	-1106	-0.0000394	0.0004492	0.0035	0.3	134.62	1019.91	1019.91	54.69	No	Si
SLU 80	13.97	-14.04	-877	-0.0000306	0.0004492	0.0035	0.3	111.84	1029.53	1029.53	73.35	No	Si
SLU 39	11.87	-18.86	-805	-0.0000312	0.0004492	0.0035	0.3	104.13	1032.55	1032.55	54.76	No	Si
SLU 39	13.97	-12.63	-639	-0.0000234	0.0004492	0.0035	0.3	85.43	1039.48	1039.48	82.32	No	Si
SLU 84	11.87	-19.89	-1051	-0.0000386	0.0004492	0.0035	0.3	129.42	1022.21	1022.21	51.39	No	Si
SLU 84	13.97	-14.33	-827	-0.0000294	0.0004492	0.0035	0.3	106.57	1031.6	1031.6	72.01	No	Si
SLU 79	11.87	-18.87	-1108	-0.0000396	0.0004492	0.0035	0.3	134.83	1019.82	1019.82	54.05	No	Si
SLU 79	13.97	-14.15	-880	-0.0000307	0.0004492	0.0035	0.3	112.15	1029.4	1029.4	72.77	No	Si
SLU 38	11.87	-18.73	-917	-0.0000342	0.0004492	0.0035	0.3	116	1027.85	1027.85	54.88	No	Si
SLU 38	13.97	-12.84	-750	-0.0000265	0.0004492	0.0035	0.3	98.13	1034.83	1034.83	80.6	No	Si
SLU 42	11.87	-19.97	-862	-0.0000334	0.0004492	0.0035	0.3	110.27	1030.15	1030.15	51.57	No	Si
SLU 42	13.97	-13.13	-701	-0.0000253	0.0004492	0.0035	0.3	92.55	1036.9	1036.9	78.98	No	Si
SLU 81	11.87	-18.78	-994	-0.0000364	0.0004492	0.0035	0.3	123.84	1024.61	1024.61	54.57	No	Si
SLU 81	13.97	-13.82	-766	-0.0000275	0.0004492	0.0035	0.3	99.85	1034.18	1034.18	74.81	No	Si
SLU 83	11.87	-20.11	-1053	-0.0000388	0.0004492	0.0035	0.3	129.63	1022.12	1022.12	50.82	No	Si
SLU 83	13.97	-14.43	-830	-0.0000296	0.0004492	0.0035	0.3	106.9	1031.48	1031.48	71.46	No	Si
SLU 37	11.87	-18.95	-919	-0.0000344	0.0004492	0.0035	0.3	116.23	1027.76	1027.76	54.24	No	Si
SLU 37	13.97	-12.95	-753	-0.0000267	0.0004492	0.0035	0.3	98.47	1034.7	1034.7	79.91	No	Si
SLU 41	11.87	-20.19	-864	-0.0000336	0.0004492	0.0035	0.3	110.5	1030.06	1030.06	51.01	No	Si
SLU 41	13.97	-13.24	-704	-0.0000255	0.0004492	0.0035	0.3	92.89	1036.77	1036.77	78.32	No	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 41	11.87	-20.19	-864	-507	0	0.3	0.3	-10568	9742	468	12083	1725	1530	3255	No	8679.21	Si
SLU 41	13.97	-13.24	-704	-413	0	0.3	0.3	-8608	9481	455	12083	1725	1530	3255	No	11439.3	Si
SLU 81	11.87	-18.78	-994	-584	0	0.3	0.3	-12160	9955	478	12083	1725	1530	3255	No	8291.49	Si
SLU 81	13.97	-13.82	-766	-450	0	0.3	0.3	-9366	9582	460	12083	1725	1530	3255	No	10664.22	Si
SLU 82	11.87	-18.56	-992	-582	0	0.3	0.3	-12133	9951	478	12083	1725	1530	3255	No	8208.1	Si
SLU 82	13.97	-13.71	-763	-448	0	0.3	0.3	-9329	9577	460	12083	1725	1530	3255	No	10497.03	Si
SLU 83	11.87	-20.11	-1053	-619	0	0.3	0.3	-12886	10051	482	12083	1725	1530	3255	No	8551.85	Si
SLU 83	13.97	-14.43	-830	-487	0	0.3	0.3	-10154	9687	465	12083	1725	1530	3255	No	11219.88	Si
SLU 39	11.87	-18.86	-805	-472	0	0.3	0.3	-9842	9646	463	12083	1725	1530	3255	No	8411.16	Si
SLU 39	13.97	-12.63	-639	-375	0	0.3	0.3	-7819	9376	450	12083	1725	1530	3255	No	10862.26	Si
SLU 84	11.87	-19.89	-1051	-617	0	0.3	0.3	-12859	10048	482	12083	1725	1530	3255	No	8463.17	Si
SLU 84	13.97	-14.33	-827	-486	0	0.3	0.3	-10118	9682	465	12083	1725	1530	3255	No	11034.96	Si
SLU 42	11.87	-19.97	-862	-506	0	0.3	0.3	-10541	9739	467	12083	1725	1530	3255	No	8587.88	Si
SLU 42	13.97	-13.13	-701	-411	0	0.3	0.3	-8571	9476	455	12083	1725	1530	3255	No	11247.14	Si
SLU 74	11.87	-16.92	-1079	-633	0	0.3	0.3	-13195	10093	484	12083	1725	1530	3255	No	9172.45	Si
SLU 74	13.97	-11.88	-852	-500	0	0.3	0.3	-10416	9722	467	12083	1725	1530	3255	No	11506.5	Si
SLU 75	11.87	-16.7	-1077	-632	0	0.3	0.3	-13169	10089	484	12083	1725	1530	3255	No	9070.51	Si
SLU 75	13.97	-11.77	-849	-498	0	0.3	0.3	-10379	9717	466	12083	1725	1530	3255	No	11312.1	Si
SLU 40	11.87	-18.64	-802	-471	0	0.3	0.3	-9815	9642	463	12083	1725	1530	3255	No	8325.36	Si
SLU 40	13.97	-12.52	-636	-374	0	0.3	0.3	-7782	9371	450	12083	1725	1530	3255	No	10688.85	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRM D.M. 17-01-18 (N.T.C.)

quota 13.45 Ta 0.1 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 4	-210	0.53	20.47	0	1168.28	584.14	28.53	Si
SLV 3	-167	0.53	20.47	0	1170.66	585.33	28.59	Si
SLV 8	-132	0.53	20.47	0	1172.58	586.29	28.64	Si
SLV 7	-104	0.53	20.47	0	1174.12	587.06	28.68	Si
SLV 11	-276	0.53	20.47	21.42	1164.68	593.05	28.97	Si
SLV 12	-304	0.53	20.47	23.5	1163.23	593.36	28.99	Si
SLV 1	-400	0.53	20.47	30.51	1158.28	594.39	29.04	Si
SLV 2	-443	0.53	20.47	33.63	1156.03	594.83	29.06	Si
SLV 15	-741	0.53	20.47	54.29	1140.52	597.41	29.18	Si
SLV 16	-784	0.53	20.47	57.14	1138.28	597.71	29.2	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.45 Wa = 0.03 Ta = 0.1042

Comb.	N top	N base	V orto	α0	M*	e*	α0*	αLim	Verifica
SLV 7	-484	-453	1	2.745	71.1	0.921	43.30895	21.1834	Si
SLV 11	-477	-437	0	2.779	70.3	0.92	43.87515	21.1834	Si
SLV 8	-476	-472	1	2.78	70.3	0.92	43.90157	21.1834	Si
SLV 12	-469	-456	0	2.815	69.5	0.92	44.48237	21.1834	Si
SLV 3	-274	-667	1	4.133	50.2	0.9	66.73249	11.54873	Si
SLV 4	-262	-696	1	4.261	49	0.899	68.89843	11.54873	Si
SLV 15	-250	-613	-1	4.396	47.8	0.897	71.19241	11.54873	Si
SLV 16	-237	-642	-1	4.541	46.6	0.896	73.64553	11.54873	Si
SLV 1	-85	-838	1	7.644	32.6	0.894	124.23468	11.54873	Si
SLV 2	-73	-867	1	8.096	31.6	0.898	130.98949	11.54873	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.



Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	50.823	SLU 83	Si
V_SLU	8208.105	SLU 82	Si
PFFP_SLV	28.535	SLV 4	Si
R_SLV	2.044	SLV 7	Si

## Maschio 193

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

## Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota l.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-5.163	1.006	-5.163	5.686	L7	L8	4.68	0.16	3.16	3.16	3.16			

## Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

## Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tiv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

## Rinforzo a matrice inorganica

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	elim,conv / e,CNR DT-200							CRM / Fibrenet?			
									αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 38	11.87	759.67	-11140	-0.0000204	0.0004492	0.0035	4.68	22894.32	26571.36	26571.36	34.98	No	Si
SLU 38	15.03	2006.22	-1962	-0.0000077	0.0004492	0.0035	4.68	4492.42	6772.33	6772.33	3.38	No	Si
SLU 37	11.87	822.58	-11174	-0.0000206	0.0004492	0.0035	4.68	22953.17	26640.53	26640.53	32.39	No	Si
SLU 37	15.03	1996.87	-1961	-0.0000077	0.0004492	0.0035	4.68	4491.11	6771.01	6771.01	3.39	No	Si
SLU 71	11.87	390.76	-12611	-0.0000221	0.0004492	0.0035	4.68	25441.65	29589.91	29589.91	75.72	No	Si
SLU 71	15.03	1889.54	-2104	-0.0000075	0.0004492	0.0035	4.68	4809.16	7092.5	7092.5	3.75	No	Si
SLU 36	11.87	630.05	-11469	-0.0000206	0.0004492	0.0035	4.68	23473.22	27254.74	27254.74	43.26	No	Si
SLU 36	15.03	1907.5	-2007	-0.0000075	0.0004492	0.0035	4.68	4593.65	6874.54	6874.54	3.6	No	Si
SLU 79	11.87	737.31	-13303	-0.000024	0.0004492	0.0035	4.68	26603.35	31005.38	31005.38	42.05	No	Si
SLU 79	15.03	2030.62	-2193	-0.000008	0.0004492	0.0035	4.68	5008.08	7292.61	7292.61	3.59	No	Si
SLU 35	11.87	692.96	-11502	-0.0000208	0.0004492	0.0035	4.68	23531.52	27323.91	27323.91	39.43	No	Si
SLU 35	15.03	1898.15	-2007	-0.0000074	0.0004492	0.0035	4.68	4592.34	6873.21	6873.21	3.62	No	Si
SLU 29	11.87	476.03	-10481	-0.0000186	0.0004492	0.0035	4.68	21716.03	25200.08	25200.08	52.94	No	Si
SLU 29	15.03	1855.79	-1872	-0.0000072	0.0004492	0.0035	4.68	4291.14	6569.41	6569.41	3.54	No	Si
SLU 72	11.87	327.85	-12577	-0.0000219	0.0004492	0.0035	4.68	25385.25	29521.94	29521.94	90.05	No	Si
SLU 72	15.03	1898.89	-2104	-0.0000076	0.0004492	0.0035	4.68	4810.47	7093.82	7093.82	3.74	No	Si
SLU 30	11.87	413.12	-10448	-0.0000184	0.0004492	0.0035	4.68	21656	25130.91	25130.91	60.83	No	Si
SLU 30	15.03	1865.14	-1873	-0.0000072	0.0004492	0.0035	4.68	4292.46	6570.74	6570.74	3.52	No	Si
SLU 80	11.87	674.4	-13270	-0.0000238	0.0004492	0.0035	4.68	26548.12	30937.41	30937.41	45.87	No	Si
SLU 80	15.03	2039.97	-2193	-0.0000081	0.0004492	0.0035	4.68	5009.38	7293.91	7293.91	3.58	No	Si

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 2	11.87	8259.42	-8508	-0.0000325	0.0006738	0.0035	4.68		21273.9	21273.9	2.58		Si
SLV 2	15.03	-5870.96	1489	-0.0001521	0.0006738	0.0035	3.744	9288.27	9288.27		1.58		Si
SLV 5	11.87	9597.59	-11472	-0.0000401	0.0006738	0.0035	4.68		27598.44	27598.44	2.88		Si
SLV 5	15.03	-7567.23	1527	-0.000203	0.0006738	0.0035	3.744	9203.21	9203.21		1.22		Si
SLV 7	11.87	-6605.26	-5046	-0.0000255	0.0006738	0.0035	3.744	23842.51	23842.51		3.61		Si
SLV 7	15.03	6481.51	-2671	-0.0002639	0.0006738	0.0035	4.68	8391.87	8391.87		1.29		Si
SLV 1	11.87	7379.92	-8063	-0.0000296	0.0006738	0.0035	4.68		20304.42	20304.42	2.75		Si
SLV 1	15.03	-5740.31	1503	-0.0001479	0.0006738	0.0035	3.744	9258.2	9258.2		1.61		Si
SLV 12	11.87	-9130.69	-6260	-0.0000372	0.0006738	0.0035	3.744	26489.75	26489.75		2.9		Si
SLV 12	15.03	9065.64	-3916	-0.0002632	0.0006738	0.0035	4.68	11183.11	11183.11		1.23		Si
SLV 8	11.87	-6037.21	-5334	-0.000023	0.0006738	0.0035	4.68	24472.76	24472.76		4.05		Si
SLV 8	15.03	6397.12	-2680	-0.0002328	0.0006738	0.0035	4.68	8411.08	8411.08		1.31		Si
SLV 15	11.87	-7792.51	-9224	-0.0000323	0.0006738	0.0035	4.68	32864.09	32864.09		4.22		Si
SLV 15	15.03	7369.38	-3879	-0.0000465	0.0006738	0.0035	4.68	11098.96	11098.96		1.51		Si
SLV 6	11.87	10165.64	-11760	-0.0000419	0.0006738	0.0035	4.68	28205.63	28205.63		2.77		Si
SLV 6	15.03	-7651.61	1518	-0.0002056	0.0006738	0.0035	3.744	9222.63	9222.63		1.21		Si
SLV 16	11.87	-6913.02	-9669	-0.0000311	0.0006738	0.0035	4.68	33816.4	33816.4		4.89		Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 16	15.03	7238.73	-3892	-0.0000427	0.0006738	0.0035	4.68		11128.71	11128.71	1.54		Si
SLV 11	11.87	-9698.73	-5972	-0.0000435	0.0006738	0.0035	3.744		25866.62	25866.62	2.67		Si
SLV 11	15.03	9150.03	-3908	-0.0002962	0.0006738	0.0035	4.68		11163.9	11163.9	1.22		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 78	11.87	544.78	-13599	-7984	2707	4.68	4.68	-10663	9755	7305	101952	26910	23868	50778	No	18.76	Si
SLU 78	15.03	1941.25	-2239	-1314	2741	4.68	4.4184	-1755	8567	6057	101952	26910	23868	50778	No	18.53	Si
SLU 74	11.87	541.56	-13118	-7702	2795	4.68	4.68	-10286	9705	7267	101952	26910	23868	50778	No	18.17	Si
SLU 74	15.03	1507.55	-1986	-1166	2837	4.68	4.68	-1557	8541	6395	101952	26910	23868	50778	No	17.9	Si
SLU 73	11.87	500.2	-12220	-7175	2533	4.68	4.68	-9582	9611	7197	101952	26910	23868	50778	No	20.05	Si
SLU 73	15.03	1197.51	-1690	-992	2583	4.68	4.68	-1325	8510	6372	101952	26910	23868	50778	No	19.66	Si
SLU 81	11.87	753.58	-12572	-7382	2850	4.68	4.68	-9858	9648	7224	101952	26910	23868	50778	No	17.82	Si
SLU 81	15.03	1242.39	-1727	-1014	2892	4.68	4.68	-1354	8514	6375	101952	26910	23868	50778	No	17.56	Si
SLU 77	11.87	607.69	-13632	-8004	2762	4.68	4.68	-10689	9759	7307	101952	26910	23868	50778	No	18.38	Si
SLU 77	15.03	1931.9	-2238	-1314	2795	4.68	4.4303	-1755	8567	6073	101952	26910	23868	50778	No	18.17	Si
SLU 79	11.87	737.31	-13303	-7811	2559	4.68	4.68	-10431	9724	7281	101952	26910	23868	50778	No	19.84	Si
SLU 79	15.03	2030.62	-2193	-1287	2588	4.68	4.2418	-1719	8563	5811	101952	26910	23868	50778	No	19.62	Si
SLU 75	11.87	478.65	-13085	-7683	2740	4.68	4.68	-10260	9701	7264	101952	26910	23868	50778	No	18.53	Si
SLU 75	15.03	1516.9	-1987	-1166	2783	4.68	4.68	-1558	8541	6396	101952	26910	23868	50778	No	18.25	Si
SLU 83	11.87	819.7	-13086	-7684	2817	4.68	4.68	-10261	9701	7264	101952	26910	23868	50778	No	18.03	Si
SLU 83	15.03	1666.74	-1979	-1162	2850	4.68	4.4933	-1552	8540	6140	101952	26910	23868	50778	No	17.82	Si
SLU 84	11.87	756.79	-13053	-7664	2761	4.68	4.68	-10235	9698	7262	101952	26910	23868	50778	No	18.39	Si
SLU 84	15.03	1676.09	-1980	-1162	2796	4.68	4.4799	-1552	8540	6122	101952	26910	23868	50778	No	18.16	Si
SLU 82	11.87	690.67	-12539	-7362	2794	4.68	4.68	-9832	9644	7222	101952	26910	23868	50778	No	18.17	Si
SLU 82	15.03	1251.74	-1728	-1014	2838	4.68	4.68	-1355	8514	6375	101952	26910	23868	50778	No	17.89	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 11	11.87	-9698.73	-5972	-3507	-7721	3.744	2.1483	0	0	0	101952	32292	19094	51386		6.66	Si
SLV 11	15.03	9150.03	-3908	-2294	-8868	4.68	0	-56824	16250	0	101952	40365	23868	64233		7.24	Si
SLV 12	11.87	-9130.69	-6260	-3676	-7201	3.744	2.6445	0	0	0	101952	32292	19094	51386		7.14	Si
SLV 12	15.03	9065.64	-3916	-2299	-8354	4.68	0.0753	-52166	16250	196	101952	40365	23868	64233		7.69	Si
SLV 7	11.87	-6605.26	-5046	-2963	-8854	3.744	3.0929	0	0	0	101952	32292	19094	51386		5.8	Si
SLV 7	15.03	6481.51	-2671	-1568	-9929	4.68	0	-48603	16250	0	101952	40365	23868	64233		6.47	Si
SLV 9	11.87	6504.12	-12398	-7280	11721	4.68	4.68	-9722	14444	10816	101952	40365	23868	64233		5.48	Si
SLV 9	15.03	-4898.71	290	170	12894	3.744	0	0	0	0	101952	32292	19094	51386		3.99	Si
SLV 6	11.87	10165.64	-11760	-6905	11108	4.68	4.4267	-9221	14344	10159	101952	40365	23868	64233		5.78	Si
SLV 6	15.03	-7651.61	1518	891	12347	3.744	0	0	0	0	101952	32292	19094	51386		4.16	Si
SLV 10	11.87	7072.16	-12686	-7449	12241	4.68	4.68	-9948	14490	10850	101952	40365	23868	64233		5.25	Si
SLV 10	15.03	-4983.09	282	165	13407	3.744	0	0	0	0	101952	32292	19094	51386		3.83	Si
SLD 9	11.87	3029.05	-10419	-6118	6115	4.68	4.68	-8170	14134	10584	101952	40365	23868	64233		10.5	Si
SLD 9	15.03	-1764.76	-530	-311	6659	3.744	0	0	0	0	101952	32292	19094	51386		7.72	Si
SLV 8	11.87	-6037.21	-5334	-3132	-8334	4.68	3.6243	-5410	13582	7876	101952	40365	23868	64233		7.71	Si
SLV 8	15.03	6397.12	-2680	-1573	-9415	4.68	0	-44738	16250	0	101952	40365	23868	64233		6.82	Si
SLV 5	11.87	9597.59	-11472	-6736	10588	4.68	4.5101	-8995	14299	10319	101952	40365	23868	64233		6.07	Si
SLV 5	15.03	-7567.23	1527	896	11833	3.744	0	0	0	0	101952	32292	19094	51386		4.34	Si
SLD 10	11.87	3277.24	-10545	-6191	6342	4.68	4.68	-8268	14154	10598	101952	40365	23868	64233		10.13	Si
SLD 10	15.03	-1801.63	-533	-313	6883	3.744	0	0	0	0	101952	32292	19094	51386		7.47	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRM D.M. 17-01-18 (N.T.C.)

quota 13.45 Ta 0.1 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 3	1032	0.53	319.35	0	0	0	0	No
SLV 4	802	0.53	319.35	0	212.68	106.34	0.33	No
SLV 1	758	0.53	319.35	0	218.57	109.29	0.34	No
SLV 2	527	0.53	319.35	0	248.27	124.14	0.39	No
SLV 7	-2959	0.53	319.35	0	618.01	309.01	0.97	No
SLV 8	-3108	0.53	319.35	0	632.84	316.42	0.99	No
SLV 5	-3873	0.53	319.35	0	708.48	354.24	1.11	Si
SLV 6	-4022	0.53	319.35	312.33	723.06	517.69	1.62	Si
SLV 11	-6619	0.53	319.35	503.97	975.68	739.82	2.32	Si
SLV 12	-6768	0.53	319.35	514.71	990.03	752.37	2.36	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 13.45 Wa = 0.03 Ta = 0.1042

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	$\alpha 0^*$	aLim	Verifica
SLV 12	-3916	-6260	93	4.367	748	0.898	70.70738	21.1834	Si
SLV 11	-3908	-5972	94	4.373	747.2	0.898	70.80838	21.1834	Si
SLV 8	-2680	-5334	-121	5.477	629.6	0.89	89.42655	21.1834	Si
SLV 7	-2671	-5046	-119	5.487	628.8	0.89	89.59343	21.1834	Si
SLV 16	-3892	-9669	349	4.342	745.7	0.897	70.31443	11.54873	Si
SLV 15	-3879	-9224	351	4.351	744.4	0.897	70.47062	11.54873	Si
SLV 14	-2633	-11597	356	5.482	625.2	0.89	89.5202	11.54873	Si
SLV 13	-2619	-11152	358	5.497	624	0.89	89.76749	11.54873	Si
SLV 10	282	-12686	115	13.211	434.2	1	192.00054	21.1834	Si, Trazione
SLV 9	290	-12398	116	13.239	434.2	1	192.40405	21.1834	Si, Trazione

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.376	SLU 38	Si
V_SLU	17.557	SLU 81	Si



Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.205	SLV 6	Si
V_SLV	3.833	SLV 10	Si
PFFP_SLV	0	SLV 3	No
R_SLV	3.338	SLV 12	Si

## Maschio 194

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)  
Maschio considerato membratura sismica secondaria

### Dati geometrici

X inl.	Y inl.	X fin.	Y fin.	Quota l.	Quota s.	l	Sp.	h netta	h inl.	h fin.	a	a.s.,sx	a.s.,dx
-5.093	5.686	-5.093	6.006	L7	L8	0.32	0.28	3.16	3.16	3.16			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e_CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε <sub>f,d</sub>	γ <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.01	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γ<sub>M</sub> = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 78	13.87	-64.75	-1114	-0.0000394	0.0003743	0.0035	0.32	156.53	919.75	919.75	14.2	No	Si
SLU 78	14.67	-80.45	-1044	-0.0000455	0.0003743	0.0035	0.32	147.9	921.7	921.7	11.46	No	Si
SLU 82	13.87	-67.61	-728	-0.0000382	0.0003743	0.0035	0.32	107.23	930.53	930.53	13.76	No	Si
SLU 82	14.67	-80.77	-642	-0.0000529	0.0003743	0.0035	0.32	95.54	932.99	932.99	11.55	No	Si
SLU 81	13.87	-68.01	-723	-0.0000385	0.0003743	0.0035	0.32	106.56	930.68	930.68	13.68	No	Si
SLU 81	14.67	-81.15	-637	-0.0000536	0.0003743	0.0035	0.32	94.84	933.14	933.14	11.5	No	Si
SLU 79	13.87	-65.99	-1087	-0.0000395	0.0003743	0.0035	0.32	153.25	920.49	920.49	13.95	No	Si
SLU 79	14.67	-81.52	-1016	-0.000046	0.0003743	0.0035	0.32	144.41	922.47	922.47	11.32	No	Si
SLU 84	13.87	-68.98	-905	-0.0000388	0.0003743	0.0035	0.32	130.42	925.52	925.52	13.42	No	Si
SLU 84	14.67	-83.56	-828	-0.0000488	0.0003743	0.0035	0.32	120.39	927.69	927.69	11.1	No	Si
SLU 80	13.87	-65.6	-1092	-0.0000394	0.0003743	0.0035	0.32	153.86	920.35	920.35	14.03	No	Si
SLU 80	14.67	-81.15	-1021	-0.0000458	0.0003743	0.0035	0.32	145.04	922.33	922.33	11.37	No	Si
SLU 83	13.87	-69.38	-900	-0.000039	0.0003743	0.0035	0.32	129.77	925.66	925.66	13.34	No	Si
SLU 83	14.67	-83.93	-822	-0.0000493	0.0003743	0.0035	0.32	119.72	927.84	927.84	11.05	No	Si
SLU 74	13.87	-63.78	-933	-0.0000366	0.0003743	0.0035	0.32	134.01	924.75	924.75	14.5	No	Si
SLU 74	14.67	-78.04	-854	-0.0000443	0.0003743	0.0035	0.32	123.79	926.95	926.95	11.88	No	Si
SLU 77	13.87	-65.15	-1109	-0.0000395	0.0003743	0.0035	0.32	155.92	919.89	919.89	14.12	No	Si
SLU 77	14.67	-80.83	-1039	-0.0000457	0.0003743	0.0035	0.32	147.27	921.84	921.84	11.41	No	Si
SLU 76	13.87	-63.97	-919	-0.0000365	0.0003743	0.0035	0.32	132.27	925.13	925.13	14.46	No	Si
SLU 76	14.67	-78.12	-839	-0.0000445	0.0003743	0.0035	0.32	121.89	927.37	927.37	11.87	No	Si

### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γ<sub>M</sub> = 3

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 74	13.87	-63.78	-933	-777	-1	0.32	0.2749	-10148	8299	639	7250	2683	816	3499	No	4933.51	Si
SLU 74	14.67	-78.04	-854	-711	-1	0.32	0.2057	-12102	8573	494	7250	2683	816	3499	No	4912.55	Si
SLU 81	13.87	-68.01	-723	-602	-1	0.32	0.198	-10573	8370	464	7250	2683	816	3499	No	4459.05	Si
SLU 81	14.67	-81.15	-637	-531	-1	0.32	0.098	-13783	8900	244	7250	2683	816	3499	No	4405.98	Si
SLU 82	13.87	-67.61	-728	-607	-1	0.32	0.2015	-10492	8358	472	7250	2683	816	3499	No	4473.16	Si
SLU 82	14.67	-80.77	-642	-535	-1	0.32	0.1028	-13665	8877	255	7250	2683	816	3499	No	4434.91	Si
SLU 83	13.87	-69.38	-900	-749	-1	0.32	0.2487	-10770	8384	584	7250	2683	816	3499	No	4704.34	Si
SLU 83	14.67	-83.93	-822	-685	-1	0.32	0.1738	-13288	8750	426	7250	2683	816	3499	No	4746.43	Si
SLU 60	13.87	-55.76	-635	-529	-1	0.32	0.2167	-8598	8099	491	7250	2683	816	3499	No	5226.82	Si
SLU 60	14.67	-66.8	-538	-448	-1	0.32	0.1073	-11258	8530	256	7250	2683	816	3499	No	5070.39	Si
SLU 40	13.87	-61.63	-596	-497	-1	0.32	0.17	-9772	8274	394	7250	2683	816	3499	No	4971.61	Si
SLU 40	14.67	-73.13	-538	-448	-1	0.32	0.0724	-12648	8777	178	7250	2683	816	3499	No	4985.11	Si
SLU 75	13.87	-63.38	-938	-781	-1	0.32	0.2773	-10119	8295	644	7250	2683	816	3499	No	4950.8	Si
SLU 75	14.67	-77.67	-859	-715	-1	0.32	0.2086	-12030	8563	500	7250	2683	816	3499	No	4948.54	Si
SLU 84	13.87	-68.98	-905	-753	-1	0.32	0.2513	-10725	8378	590	7250	2683	816	3499	No	4720.05	Si
SLU 84	14.67	-83.56	-828	-689	-1	0.32	0.1771	-13193	8735	433	7250	2683	816	3499	No	4780.02	Si
SLU 73	13.87	-62.6	-743	-619	-1	0.32	0.2272	-9650	8238	524	7250	2683	816	3499	No	4851.56	Si
SLU 73	14.67	-75.33	-654	-544	-1	0.32	0.1344	-12377	8658	326	7250	2683	816	3499	No	4810.5	Si
SLU 39	13.87	-62.02	-591	-492	-1	0.32	0.1654	-9879	8291	384	7250	2683	816	3499	No	4954.18	Si
SLU 39	14.67	-73.51	-533	-444	-1	0.32	0.0664	-12756	8803	164	7250	2683	816	3499	No	4948.58	Si



## Verifica a pressoflessione fuori piano muratura rinforzata con FRM D.M. 17-01-18 (N.T.C.)

quota 13.45 Ta 0.06 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 10	-230	0.53	36.95	0	1737.02	868.51	23.5	Si
SLV 16	5524	0.53	36.95	0	1751.68	875.84	23.7	Si
SLV 15	5387	0.53	36.95	0	1767.36	883.68	23.91	Si
SLV 9	-318	0.53	36.95	43.52	1730.24	886.88	24	Si
SLV 8	-761	0.53	36.95	100.67	1696.13	898.4	24.31	Si
SLV 7	-849	0.53	36.95	111.54	1689.67	900.61	24.37	Si
SLV 1	-6603	0.53	36.95	478.34	1328.1	903.22	24.44	Si
SLV 2	-6467	0.53	36.95	477.48	1336.28	906.88	24.54	Si
SLV 14	4680	0.53	36.95	0	1843.69	921.84	24.95	Si
SLV 3	-5759	0.53	36.95	466.94	1378.75	922.84	24.97	Si

## Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeraia = 13.45 Wa = 0.05 Ta = 0.0596

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 11	-1462	-2171	298	0.925	189	0.941	14.28651	12.19367	Si
SLV 15	-1945	-5528	565	0.61	238	0.951	9.31721	7.3	Si
SLV 12	-1305	-2229	295	1.015	173.1	0.936	15.75819	12.19367	Si
SLV 16	-1702	-5618	561	0.682	213.3	0.946	10.47646	7.3	Si
SLV 13	-1586	-5618	483	0.764	201.6	0.944	11.7705	7.3	Si
SLV 14	-1343	-5708	479	0.876	177	0.937	13.59094	7.3	Si
SLV 7	-726	630	-12	1.875	114.9	0.912	29.87198	12.19367	Si, Trazione
SLV 8	-569	572	-15	2.221	99.4	0.904	35.72762	12.19367	Si, Trazione
SLV 9	-267	-2471	25	3.461	70.4	0.889	56.58026	12.19367	Si
SLV 10	-110	-2530	23	4.939	57.2	0.905	79.33673	12.19367	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

## Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	11.055	SLU 83	Si
V_SLU	4405.979	SLU 81	Si
PFFP_SLV	23.503	SLV 10	Si
R_SLV	1.172	SLV 11	Si

## Maschio 196

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

## Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s,sx	a.s,dx
-2.963	5.826	-4.953	5.826	L7	L8	1.99	0.28	3.16	3.16	3.16			

## Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_ Corti

fb	fk	fvk0	fmedio	$\tau 0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

## Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

## Rinforzo a matrice inorganica

									elim_conv / e_CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha t$	$\alpha$	elim_conv	$\epsilon_{fd}$	$\gamma F,d$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche, $\gamma M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 46	12.77	-376.73	-7659	-0.000024	0.0003743	0.0035	1.99	6591.89	7921.98	7921.98	21.03	No	Si
SLU 46	14.57	-1705.24	-5042	-0.0000275	0.0003743	0.0035	1.99	4570.87	5734.64	5734.64	3.36	No	Si
SLU 43	12.77	-206.01	-6603	-0.0000196	0.0003743	0.0035	1.99	5805.05	7054.05	7054.05	34.24	No	Si
SLU 43	14.57	-1460.1	-3986	-0.0000226	0.0003743	0.0035	1.99	3687.05	4807.71	4807.71	3.29	No	Si
SLU 45	12.77	-373.34	-7703	-0.0000241	0.0003743	0.0035	1.99	6623.82	7956.13	7956.13	21.31	No	Si
SLU 45	14.57	-1684.8	-5086	-0.0000275	0.0003743	0.0035	1.99	4606.84	5772.11	5772.11	3.43	No	Si
SLU 51	12.77	-472.26	-8115	-0.000026	0.0003743	0.0035	1.99	6918.98	8277.38	8277.38	17.53	No	Si
SLU 51	14.57	-1882.62	-5497	-0.0000303	0.0003743	0.0035	1.99	4939.76	6126.35	6126.35	3.25	No	Si
SLU 50	12.77	-468.87	-8159	-0.0000261	0.0003743	0.0035	1.99	6950.21	8311.97	8311.97	17.73	No	Si
SLU 50	14.57	-1862.18	-5541	-0.0000303	0.0003743	0.0035	1.99	4975.03	6164.51	6164.51	3.31	No	Si
SLU 47	12.77	-343.09	-7307	-0.0000227	0.0003743	0.0035	1.99	6334.15	7638.99	7638.99	22.27	No	Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 47	14.57	-1695.2	-4690	-0.0000265	0.0003743	0.0035	1.99	4280.83	5433.97	5433.97	3.21	No	Si
SLU 49	12.77	-508.16	-8437	-0.0000273	0.0003743	0.0035	1.99	7146.25	8531.89	8531.89	16.79	No	Si
SLU 49	14.57	-1906.28	-5820	-0.0000314	0.0003743	0.0035	1.99	5196.65	6407.11	6407.11	3.36	No	Si
SLU 48	12.77	-504.77	-8481	-0.0000274	0.0003743	0.0035	1.99	7176.98	8566.8	8566.8	16.97	No	Si
SLU 48	14.57	-1885.84	-5864	-0.0000314	0.0003743	0.0035	1.99	5231.42	6444.97	6444.97	3.42	No	Si
SLU 5	12.77	-333.1	-5963	-0.0000188	0.0003743	0.0035	1.99	5309.35	6528.03	6528.03	19.6	No	Si
SLU 5	14.57	-1343.05	-3943	-0.0000215	0.0003743	0.0035	1.99	3650.35	4769.38	4769.38	3.55	No	Si
SLU 44	12.77	-211.65	-6529	-0.0000194	0.0003743	0.0035	1.99	5748.96	6993.82	6993.82	33.04	No	Si
SLU 44	14.57	-1494.16	-3912	-0.0000228	0.0003743	0.0035	1.99	3624.22	4742.16	4742.16	3.17	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche,  $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 8	12.77	-1441.49	-1945	-0.000027	0.0005615	0.0035	1.592		2961.47	2961.47	2.05		Si
SLV 8	14.57	-2392.96	96	-0.0013259	0.0005615	0.0035	1.592		657.07	657.07	0.27		No
SLV 7	12.77	-1469.44	-1424	-0.0001087	0.0005615	0.0035	1.592		2465.91	2465.91	1.68		Si
SLV 7	14.57	-2864.16	617	0.0537916	0.0005615	0.0035	1.592		0	0	0		No
SLV 4	12.77	-1276.59	163	0.0123507	0.0005615	0.0035	1.592		0	0	0		No
SLV 4	14.57	-5954.95	1949	0.1659978	0.0005615	0.0035	1.592		0	0	0		No
SLD 4	12.77	-693.57	-3050	-0.0000136	0.0005615	0.0035	1.99		4001.86	4001.86	5.77		Si
SLD 4	14.57	-3131.38	-1126	-0.0009768	0.0005615	0.0035	1.592		2179.65	2179.65	0.7		No
SLD 3	12.77	-712.15	-2704	-0.0000129	0.0005615	0.0035	1.99		3678.13	3678.13	5.16		Si
SLD 3	14.57	-3444.65	-780	-0.0013724	0.0005615	0.0035	1.592		1846.83	1846.83	0.54		No
SLV 3	12.77	-1319.87	969	0.0806798	0.0005615	0.0035	1.592		0	0	0		No
SLV 3	14.57	-6684.51	2755	0.2327792	0.0005615	0.0035	1.592		0	0	0		No
SLV 2	12.77	-690.36	-1135	-0.0000103	0.0005615	0.0035	1.592		2187.85	2187.85	3.17		Si
SLV 2	14.57	-5945.99	594	0.030505	0.0005615	0.0035	1.592		0	0	0		No
SLD 2	12.77	-434.8	-3623	-0.0000131	0.0005615	0.0035	1.99		4533.79	4533.79	10.43		Si
SLD 2	14.57	-3130.27	-1723	-0.0007193	0.0005615	0.0035	1.592		2749.97	2749.97	0.88		No
SLD 1	12.77	-453.38	-3276	-0.0000123	0.0005615	0.0035	1.99		4213.95	4213.95	9.29		Si
SLD 1	14.57	-3443.54	-1377	-0.0010486	0.0005615	0.0035	1.592		2420.12	2420.12	0.7		No
SLV 1	12.77	-733.63	-329	-0.0001627	0.0005615	0.0035	1.592		1409.59	1409.59	1.92		Si
SLV 1	14.57	-6675.55	1400	0.1212018	0.0005615	0.0035	1.592		0	0	0		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 48	12.77	-504.77	-8481	-7062	771	1.99	1.99	-12675	8634	4811	35683	16685	5074	21759	No	28.21	Si
SLU 48	14.57	-1885.84	-5864	-4883	771	1.99	1.99	-8763	8113	4520	35683	16685	5074	21759	No	28.21	Si
SLU 72	12.77	-614.63	-8794	-7323	676	1.99	1.99	-13143	8697	4846	35683	16685	5074	21759	No	32.17	Si
SLU 72	14.57	-1824.95	-6151	-5122	676	1.99	1.99	-9192	8170	4552	35683	16685	5074	21759	No	32.17	Si
SLU 43	12.77	-206.01	-6603	-5498	701	1.99	1.99	-9868	8260	4603	35683	16685	5074	21759	No	31.05	Si
SLU 43	14.57	-1460.1	-3986	-3319	701	1.99	1.8859	-6311	7786	4111	35683	16685	5074	21759	No	31.05	Si
SLU 51	12.77	-472.26	-8115	-6757	788	1.99	1.99	-12127	8561	4770	35683	16685	5074	21759	No	27.62	Si
SLU 51	14.57	-1882.62	-5497	-4578	788	1.99	1.9576	-8216	8040	4407	35683	16685	5074	21759	No	27.62	Si
SLU 44	12.77	-211.65	-6529	-5437	717	1.99	1.99	-9758	8246	4594	35683	16685	5074	21759	No	30.36	Si
SLU 44	14.57	-1494.16	-3912	-3258	717	1.99	1.8392	-6351	7791	4012	35683	16685	5074	21759	No	30.36	Si
SLU 45	12.77	-373.34	-7703	-6415	733	1.99	1.99	-11512	8479	4725	35683	16685	5074	21759	No	29.7	Si
SLU 45	14.57	-1684.8	-5086	-4235	733	1.99	1.99	-7601	7958	4434	35683	16685	5074	21759	No	29.7	Si
SLU 50	12.77	-468.87	-8159	-6794	778	1.99	1.99	-12193	8570	4775	35683	16685	5074	21759	No	27.96	Si
SLU 50	14.57	-1862.18	-5541	-4614	778	1.99	1.9768	-8281	8049	4455	35683	16685	5074	21759	No	27.96	Si
SLU 49	12.77	-508.16	-8437	-7026	781	1.99	1.99	-12609	8626	4806	35683	16685	5074	21759	No	27.86	Si
SLU 49	14.57	-1906.28	-5820	-4846	781	1.99	1.99	-8698	8104	4516	35683	16685	5074	21759	No	27.86	Si
SLU 47	12.77	-343.09	-7307	-6085	755	1.99	1.99	-10921	8401	4681	35683	16685	5074	21759	No	28.81	Si
SLU 47	14.57	-1695.2	-4690	-3906	755	1.99	1.9007	-7375	7928	4219	35683	16685	5074	21759	No	28.81	Si
SLU 46	12.77	-376.73	-7659	-6378	742	1.99	1.99	-11446	8471	4720	35683	16685	5074	21759	No	29.32	Si
SLU 46	14.57	-1705.24	-5042	-4199	742	1.99	1.9704	-7535	7949	4386	35683	16685	5074	21759	No	29.32	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 1	12.77	-733.63	-329	-274	3549	1.592	0	0	0	0	35683	20022	4060	24081		6.79	Si
SLV 1	14.57	-6675.55	1400	1166	2685	1.592	0	0	0	0	35683	20022	4060	24081		8.97	Si
SLV 14	12.77	814.51	-11892	-9902	-2304	1.99	1.99	-17772	13971	7785	35683	25027	5074	30102		13.06	Si
SLV 14	14.57	4630.09	-9622	-8013	-1505	1.99	1.5414	-14380	13293	5737	35683	25027	5074	30102		20	Si
SLV 4	12.77	-1276.59	163	136	2790	1.592	0	0	0	0	35683	20022	4060	24081		8.63	Si
SLV 4	14.57	-5954.95	1949	1623	1991	1.592	0	0	0	0	35683	20022	4060	24081		12.1	Si
SLV 16	12.77	228.27	-10594	-8822	-2682	1.99	1.99	-15832	13583	7568	35683	25027	5074	30102		11.22	Si
SLV 16	14.57	4621.13	-8267	-6884	-1818	1.99	1.3081	-12355	12888	4720	35683	25027	5074	30102		16.56	Si
SLV 5	12.77	484.67	-5751	-4789	2007	1.99	1.99	-8594	12136	6762	35683	25027	5074	30102		15	Si
SLV 5	14.57	-2834.28	-3899	-3247	1649	1.592	0.8044	0	0	0	35683	20022	4060	24081		14.61	Si
SLV 3	12.77	-1319.87	969	807	3171	1.592	0	0	0	0	35683	20022	4060	24081		7.59	Si
SLV 3	14.57	-6684.51	2755	2294	2372	1.592	0	0	0	0	35683	20022	4060	24081		10.15	Si
SLV 2	12.77	-690.36	-1135	-945	3168	1.592	1.1597	0	0	0	35683	20022	4060	24081		7.6	Si
SLV 2	14.57	-5945.99	594	495	2303	1.592	0	0	0	0	35683	20022	4060	24081		10.45	Si
SLV 13	12.77	771.23	-11086	-9231	-1923	1.99	1.99	-16568	13730	7650	35683	25027	5074	30102		15.65	Si
SLV 13	14.57	3900.53	-8816	-7342	-1124	1.99	1.6577	-13176	13052	6058	35683	25027	5074	30102		26.78	Si
SLV 15	12.77	185	-9788	-8151	-2301	1.99	1.99	-14628	13342	7434	35683	25027	5074	30102		13.08	Si
SLV 15	14.57	3891.57	-7462	-6213	-1437	1.99	1.4203	-11151	12647	5030	35683	25027	5074	30102		20.95	Si
SLD 1	12.77	-453.38	-3276	-2728	1769	1.99	1.99	-4897	11396	6350	35683	25027	5074	30102		17.02	Si
SLD 1	14.57	-3443.54	-1377	-1146	1399	1.592	0	0	0	0	35683	20022	4060	24081		17.21	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.45 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 3	179667	0.53	0	1876	224.58	0	0	No, Trazione



Comb.	fd	Sa	$\alpha 0$	N	M	Mc	Coeff.s.	Verifica
SLV 4	179667	0.53	0	1070	224.58	0	0	No, Trazione
SLV 1	179667	0.53	0	492	224.58	0	0	No, Trazione
SLV 8	179667	0.53	0	-950	224.58	0	0	No, e>t/2
SLV 2	179667	0.53	0	-313	224.58	0	0	No, e>t/2
SLV 7	179667	0.53	0	-429	224.58	0	0	No, e>t/2
SLV 11	179667	0.53	6581	-3667	224.58	491.25	2.19	Si
SLV 12	179667	0.53	7515	-4187	224.58	557.39	2.48	Si
SLV 5	179667	0.53	9049	-5042	224.58	664.08	2.96	Si
SLV 6	179667	0.53	9983	-5563	224.58	727.87	3.24	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.45 Wa = 0.05 Ta = 0.0596

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 10	-5818	-10184	-725	1.466	845.1	0.922	23.09566	12.19367	Si
SLV 9	-5294	-9808	-725	1.574	792.5	0.919	24.90555	12.19367	Si
SLV 14	-8532	-11161	-403	1.116	1118.8	0.938	17.29576	7.3	Si
SLV 13	-7720	-10578	-403	1.21	1036.8	0.934	18.82488	7.3	Si
SLV 16	-7697	-9452	-7	1.255	1034.4	0.934	19.53749	7.3	Si
SLV 15	-6885	-8869	-7	1.371	952.5	0.929	21.44766	7.3	Si
SLV 12	-3035	-4489	595	2.351	568.4	0.899	38.01057	12.19367	Si
SLV 6	-2780	-7727	-605	2.483	543.6	0.896	40.25411	12.19367	Si
SLV 11	-2511	-4112	595	2.646	517.6	0.894	43.00928	12.19367	Si
SLV 5	-2256	-7350	-605	2.815	493.3	0.892	45.87511	12.19367	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.174	SLU 44	Si
V_SLU	27.624	SLU 51	Si
PF_SLV	0	SLV 1	No
V_SLV	6.785	SLV 1	Si
PFFP_SLV	0	SLV 4	No
R_SLV	1.894	SLV 10	Si

## Maschio 197

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.sx	a.s.dx
-0.133	5.826	-2.063	5.826	L7	L8	1.93	0.28	3.16	3.16	3.16			

#### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau 0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

#### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	at	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche,  $\gamma M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_m$	$\epsilon_{mu}$	df	M0d	M1d	M1Rd	c.s.	incremento > 50%	Verifica
SLU 36	12.77	-37.62	-4750	-0.0000135	0.0003743	0.0035	1.93	4188.2	5320.17	5320.17	141.41	No	Si
SLU 36	14.57	2273.96	-4642	-0.0000354	0.0003743	0.0035	1.93	4102.01	4383.1	4383.1	1.93	No	Si
SLU 37	12.77	-48.93	-4534	-0.000013	0.0003743	0.0035	1.93	4014.81	5138.9	5138.9	105.03	No	Si
SLU 37	14.57	2238.06	-4283	-0.000035	0.0003743	0.0035	1.93	3811.73	4078.47	4078.47	1.82	No	Si
SLU 35	12.77	-34.83	-4776	-0.0000135	0.0003743	0.0035	1.93	4209.12	5341.62	5341.62	153.34	No	Si
SLU 35	14.57	2285.28	-4634	-0.0000356	0.0003743	0.0035	1.93	4095.35	4376.05	4376.05	1.91	No	Si





Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 27	12.77	177.22	-5063	-0.0000156	0.0003743	0.0035	1.93	4436.51	4737.42	4737.42	26.73	No	Si
SLU 27	14.57	2195.74	-4599	-0.0000341	0.0003743	0.0035	1.93	4067.37	4346.47	4346.47	1.98	No	Si
SLU 80	12.77	80.12	-5687	-0.0000165	0.0003743	0.0035	1.93	4921	5255.96	5255.96	65.6	No	Si
SLU 80	14.57	2387.98	-5048	-0.0000372	0.0003743	0.0035	1.93	4424.32	4724.45	4724.45	1.98	No	Si
SLU 16	12.77	107.53	-4437	-0.0000132	0.0003743	0.0035	1.93	3936.16	4208.71	4208.71	39.14	No	Si
SLU 16	14.57	1879.28	-3860	-0.000029	0.0003743	0.0035	1.93	3463.77	3712.61	3712.61	1.98	No	Si
SLU 30	12.77	160.34	-4795	-0.0000147	0.0003743	0.0035	1.93	4223.76	4511.74	4511.74	28.14	No	Si
SLU 30	14.57	2137.2	-4257	-0.0000332	0.0003743	0.0035	1.93	3790.1	4055.49	4055.49	1.9	No	Si
SLU 29	12.77	163.13	-4821	-0.0000148	0.0003743	0.0035	1.93	4244.64	4533.81	4533.81	27.79	No	Si
SLU 29	14.57	2148.52	-4249	-0.0000334	0.0003743	0.0035	1.93	3783.33	4048.3	4048.3	1.88	No	Si
SLU 38	12.77	-51.71	-4508	-0.0000129	0.0003743	0.0035	1.93	3993.67	5116.68	5116.68	98.94	No	Si
SLU 38	14.57	2226.74	-4292	-0.0000348	0.0003743	0.0035	1.93	3818.5	4085.67	4085.67	1.83	No	Si
SLU 79	12.77	82.9	-5714	-0.0000166	0.0003743	0.0035	1.93	4941.06	5277.39	5277.39	63.66	No	Si
SLU 79	14.57	2399.3	-5040	-0.0000374	0.0003743	0.0035	1.93	4417.77	4717.48	4717.48	1.97	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche,  $\gamma M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 11	12.77	-674.22	2452	0.1973504	0.0005615	0.0035	1.544		0	0	0		No
SLV 11	14.57	2062.28	-2645	-0.0000516	0.0005615	0.0035	1.93		2669.69	2669.69	1.29		Si
SLV 3	12.77	116.5	-2024	-0.0000065	0.0005615	0.0035	1.93		2099.53	2099.53	18.02		Si
SLV 3	14.57	1282.82	-2563	-0.0000195	0.0005615	0.0035	1.93		2595.1	2595.1	2.02		Si
SLD 12	12.77	-237.19	-1277	-0.0000055	0.0005615	0.0035	1.93		2262.98	2262.98	9.54		Si
SLD 12	14.57	1519.8	-2956	-0.0000232	0.0005615	0.0035	1.93		2953.44	2953.44	1.94		Si
SLD 7	12.77	-170.59	-1181	-0.0000047	0.0005615	0.0035	1.93		2173.45	2173.45	12.74		Si
SLD 7	14.57	1492.83	-2831	-0.0000229	0.0005615	0.0035	1.93		2839.56	2839.56	1.9		Si
SLV 8	12.77	-637.68	2059	0.166028	0.0005615	0.0035	1.544		0	0	0		No
SLV 8	14.57	2041.22	-2526	-0.0000585	0.0005615	0.0035	1.93		2560.85	2560.85	1.25		Si
SLV 4	12.77	25.39	-2497	-0.000007	0.0005615	0.0035	1.93		2535.1	2535.1	99.86		Si
SLV 4	14.57	1314.86	-2695	-0.0000199	0.0005615	0.0035	1.93		2715.85	2715.85	2.07		Si
SLD 8	12.77	-196.3	-1314	-0.0000052	0.0005615	0.0035	1.93		2297.73	2297.73	11.71		Si
SLD 8	14.57	1501.87	-2868	-0.000023	0.0005615	0.0035	1.93		2873.61	2873.61	1.91		Si
SLV 7	12.77	-578.83	2365	0.1900283	0.0005615	0.0035	1.544		0	0	0		No
SLV 7	14.57	2020.53	-2440	-0.000065	0.0005615	0.0035	1.93		2482.81	2482.81	1.23		Si
SLV 12	12.77	-733.07	2146	0.17333	0.0005615	0.0035	1.544		0	0	0		No
SLV 12	14.57	2082.98	-2730	-0.0000488	0.0005615	0.0035	1.93		2747.66	2747.66	1.32		Si
SLD 11	12.77	-211.48	-1143	-0.0000049	0.0005615	0.0035	1.93		2138.72	2138.72	10.11		Si
SLD 11	14.57	1510.76	-2918	-0.0000231	0.0005615	0.0035	1.93		2919.4	2919.4	1.93		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 35	12.77	-34.83	-4776	-3977	-2229	1.93	1.93	-7360	7926	4283	35683	16182	4922	21104	No	9.47	Si
SLU 35	14.57	2285.28	-4634	-3859	-2223	1.93	1.4156	-7141	7897	3130	35683	16182	4922	21104	No	9.49	Si
SLU 79	12.77	82.9	-5714	-4758	-2237	1.93	1.93	-8804	8118	4387	35683	16182	4922	21104	No	9.43	Si
SLU 79	14.57	2399.3	-5040	-4197	-2230	1.93	1.4668	-7765	7980	3277	35683	16182	4922	21104	No	9.46	Si
SLU 37	12.77	-48.93	-4534	-3776	-2153	1.93	1.93	-6987	7876	4256	35683	16182	4922	21104	No	9.8	Si
SLU 37	14.57	2238.06	-4283	-3567	-2146	1.93	1.3275	-6600	7824	2908	35683	16182	4922	21104	No	9.83	Si
SLU 83	12.77	-37.45	-5250	-4372	-2127	1.93	1.93	-8090	8023	4336	35683	16182	4922	21104	No	9.92	Si
SLU 83	14.57	2016.55	-4644	-3867	-2122	1.93	1.5923	-7156	7899	3522	35683	16182	4922	21104	No	9.94	Si
SLU 80	12.77	80.12	-5687	-4736	-2246	1.93	1.93	-8764	8113	4384	35683	16182	4922	21104	No	9.4	Si
SLU 80	14.57	2387.98	-5048	-4203	-2249	1.93	1.4758	-7778	7982	3298	35683	16182	4922	21104	No	9.39	Si
SLU 38	12.77	-51.71	-4508	-3754	-2161	1.93	1.93	-6946	7871	4253	35683	16182	4922	21104	No	9.76	Si
SLU 38	14.57	2226.74	-4292	-3574	-2164	1.93	1.3385	-6613	7826	2933	35683	16182	4922	21104	No	9.75	Si
SLU 84	12.77	-40.24	-5224	-4350	-2135	1.93	1.93	-8050	8018	4333	35683	16182	4922	21104	No	9.88	Si
SLU 84	14.57	2005.23	-4652	-3874	-2140	1.93	1.6019	-7169	7900	3544	35683	16182	4922	21104	No	9.86	Si
SLU 36	12.77	-37.62	-4750	-3956	-2238	1.93	1.93	-7320	7920	4280	35683	16182	4922	21104	No	9.43	Si
SLU 36	14.57	2273.96	-4642	-3866	-2241	1.93	1.4256	-7154	7898	3153	35683	16182	4922	21104	No	9.42	Si
SLU 77	12.77	97	-5956	-4960	-2313	1.93	1.93	-9177	8168	4414	35683	16182	4922	21104	No	9.12	Si
SLU 77	14.57	2446.52	-5390	-4489	-2307	1.93	1.5334	-8306	8052	3457	35683	16182	4922	21104	No	9.15	Si
SLU 78	12.77	94.21	-5930	-4938	-2322	1.93	1.93	-9137	8163	4411	35683	16182	4922	21104	No	9.09	Si
SLU 78	14.57	2435.2	-5399	-4495	-2325	1.93	1.5418	-8319	8054	3477	35683	16182	4922	21104	No	9.08	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 12	12.77	-733.07	2146	1787	-5301	1.544	1.8703	0	0	0	35683	19419	3937	23356		4.41	Si
SLV 12	14.57	2082.98	-2730	-2273	-4822	1.93	0.6061	-13481	13113	2226	35683	24273	4922	29195		6.06	Si
SLV 15	12.77	-201.47	-1734	-1444	-3061	1.93	1.93	-2672	10951	5918	35683	24273	4922	29195		9.54	Si
SLV 15	14.57	1422.01	-3245	-2702	-1612	1.93	1.5803	-5000	11417	5052	35683	24273	4922	29195		18.11	Si
SLV 9	12.77	948.37	-10037	-8358	2748	1.93	1.93	-15466	13510	7301	35683	24273	4922	29195		10.62	Si
SLV 9	14.57	109.95	-3744	-3118	3133	1.93	1.93	-5770	11571	6253	35683	24273	4922	29195		9.32	Si
SLV 5	12.77	1043.76	-10124	-8430	3184	1.93	1.93	-15600	13537	7315	35683	24273	4922	29195		9.17	Si
SLV 5	14.57	68.2	-3540	-2948	2709	1.93	1.93	-5455	11508	6219	35683	24273	4922	29195		10.78	Si
SLV 8	12.77	-637.68	2059	1715	-4864	1.544	1.93	0	0	0	35683	19419	3937	23356		4.8	Si
SLV 8	14.57	2041.22	-2526	-2103	-5245	1.93	0.4704	-16087	13635	1796	35683	24273	4922	29195		5.57	Si
SLV 7	12.77	-578.83	2365	1969	-4938	1.544	1.93	0	0	0	35683	19419	3937	23356		4.73	Si
SLV 7	14.57	2020.53	-2440	-2032	-5319	1.93	0.411	-17795	13977	1608	35683	24273	4922	29195		5.49	Si
SLV 10	12.77	889.52	-10342	-8612	2822	1.93	1.93	-15936	13604	7352	35683	24273	4922	29195		10.35	Si
SLV 10	14.57	130.65	-3830	-3189	3206	1.93	1.93	-5901	11597	6267	35683	24273	4922	29195		9.11	Si
SLV 3	12.77	116.5	-2024	-1686	-1606	1.93	1.93	-3119	11040	5966	35683	24273	4922	29195		18.18	Si
SLV 3	14.57	1282.82	-2563	-2134	-3023	1.93	1.3935	-3949	11207	4373	35683	24273	4922	29195		9.66	Si
SLV 6	12.77	984.91	-10429	-8685	3258	1.93	1.93	-16071	13631	7366	35683	24273	4922	29195		8.96	Si
SLV 6	14.57	88.89	-3625	-3019	2783	1.93	1.93	-5586	11534	6233	35683	24273	4922	29195		10.49	Si
SLV 11	12.77	-674.22	2452	2042	-5374	1.544	1.93	0	0	0	35683	19419	3937	23356		4.35	Si
SLV 11	14.57	2062.28	-2645	-2202	-4895	1.93	0.5557	-14250	13267	2064	35683	24273	4922	29195		5.96	Si





## Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.45 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\alpha_0$	N	M	Mc	Coeff.s.	Verifica
SLV 12	179667	0.53	0	530	217.81	0	0	No, Trazione
SLV 8	179667	0.53	0	504	217.81	0	0	No, Trazione
SLV 7	179667	0.53	0	720	217.81	0	0	No, Trazione
SLV 11	179667	0.53	0	745	217.81	0	0	No, Trazione
SLV 15	179667	0.53	4136	-2235	217.81	304.43	1.4	Si
SLV 3	179667	0.53	4293	-2320	217.81	315.68	1.45	Si
SLV 16	179667	0.53	4752	-2568	217.81	348.35	1.6	Si
SLV 4	179667	0.53	4910	-2653	217.81	359.5	1.65	Si
SLV 13	179667	0.53	9003	-4865	217.81	641.01	2.94	Si
SLV 1	179667	0.53	9161	-4951	217.81	651.5	2.99	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

## Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.45 Wa = 0.05 Ta = 0.0596

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	$\alpha_0^*$	aLim	Verifica
SLV 10	-2521	-11079	-394	2.636	510.2	0.895	42.81455	12.19367	Si
SLV 9	-2499	-10633	-393	2.65	508.2	0.895	43.05217	12.19367	Si
SLV 6	-2335	-10652	-217	2.806	492.4	0.893	45.65608	12.19367	Si
SLV 5	-2314	-10207	-216	2.821	490.4	0.893	45.92063	12.19367	Si
SLV 12	-2101	1907	216	2.984	470.1	0.891	48.65842	12.19367	Si, Trazione
SLV 11	-2079	2352	216	3.002	468.1	0.891	48.95277	12.19367	Si, Trazione
SLV 8	-1915	2333	393	3.09	452.7	0.89	50.46117	12.19367	Si, Trazione
SLV 7	-1894	2779	393	3.11	450.6	0.89	50.78073	12.19367	Si, Trazione
SLV 14	-2596	-7154	-388	2.59	517.5	0.895	42.0411	7.3	Si
SLV 13	-2562	-6464	-387	2.611	514.3	0.895	42.39726	7.3	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

## Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.822	SLV 37	Si
V_SLV	9.076	SLV 78	Si
PF_SLV	0	SLV 7	No
V_SLV	4.346	SLV 11	Si
PFFP_SLV	0	SLV 12	No
R_SLV	3.511	SLV 10	Si

## Maschio 198

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-0.133	-3.314	-0.133	5.826	L7	L8	9.14	0.28	3.16	3.16	3.16			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau_0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

## Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma_{F,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 72	11.87	-441.31	-35477	-0.0000212	0.0003743	0.0035	9.14	140054.37	170771.72	170771.72	386.97	No	Si
SLU 72	15.03	-924.55	-8890	-0.0000055	0.0003743	0.0035	9.14	39241.37	64629.33	64629.33	69.9	No	Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 51	11.87	-5.41	-32120	-0.000019	0.0003743	0.0035	9.14	128693.66	158043.51	158043.51	29225.73	No	Si
SLU 51	15.03	-921.63	-7775	-0.0000048	0.0003743	0.0035	9.14	34469.82	59871.41	59871.41	64.96	No	Si
SLU 71	11.87	-110.1	-35474	-0.0000211	0.0003743	0.0035	9.14	140045.24	170761.21	170761.21	1550.95	No	Si
SLU 71	15.03	-923.89	-8900	-0.0000055	0.0003743	0.0035	9.14	39285.49	64673.44	64673.44	70	No	Si
SLU 50	11.87	325.8	-32117	-0.0000191	0.0003743	0.0035	9.14	128684.21	135365.07	135365.07	415.49	No	Si
SLU 50	15.03	-920.97	-7785	-0.0000048	0.0003743	0.0035	9.14	34514.34	59915.71	59915.71	65.06	No	Si
SLU 49	11.87	-42.05	-32794	-0.0000194	0.0003743	0.0035	9.14	131005.39	160576.96	160576.96	3818.71	No	Si
SLU 49	15.03	-903.99	-7708	-0.0000048	0.0003743	0.0035	9.14	34184.97	59588.11	59588.11	65.92	No	Si
SLU 7	11.87	-179.22	-27010	-0.0000159	0.0003743	0.0035	9.14	110639.27	138638.55	138638.55	773.58	No	Si
SLU 7	15.03	-850.75	-6904	-0.0000043	0.0003743	0.0035	9.14	30713.15	56135.77	56135.77	65.98	No	Si
SLU 6	11.87	151.99	-27007	-0.0000159	0.0003743	0.0035	9.14	110629.32	117865.47	117865.47	775.5	No	Si
SLU 6	15.03	-850.08	-6914	-0.0000043	0.0003743	0.0035	9.14	30757.99	56180.2	56180.2	66.09	No	Si
SLU 48	11.87	289.15	-32791	-0.0000195	0.0003743	0.0035	9.14	130996.01	137579.39	137579.39	475.8	No	Si
SLU 48	15.03	-903.32	-7719	-0.0000048	0.0003743	0.0035	9.14	34229.52	59632.4	59632.4	66.01	No	Si
SLU 8	11.87	188.63	-26333	-0.0000155	0.0003743	0.0035	9.14	108180.83	115240.75	115240.75	610.94	No	Si
SLU 8	15.03	-867.72	-6980	-0.0000044	0.0003743	0.0035	9.14	31044.68	56464.89	56464.89	65.07	No	Si
SLU 9	11.87	-142.58	-26336	-0.0000155	0.0003743	0.0035	9.14	108190.84	135973	135973	953.69	No	Si
SLU 9	15.03	-868.39	-6970	-0.0000044	0.0003743	0.0035	9.14	30999.87	56420.31	56420.31	64.97	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche,  $\gamma M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 6	11.87	59824.48	-25071	-0.0000412	0.0005615	0.0035	9.14		112671.18	112671.18	1.88		Si
SLV 6	15.03	-8902.14	-4188	-0.000006	0.0005615	0.0035	9.14		44254.32	44254.32	4.97		Si
SLV 8	11.87	-58860.74	-24165	-0.0000406	0.0005615	0.0035	9.14		129438.82	129438.82	2.2		Si
SLV 8	15.03	5144.49	-4394	-0.0000045	0.0005615	0.0035	9.14		23828.82	23828.82	4.63		Si
SLV 12	11.87	-57057.1	-24240	-0.0000392	0.0005615	0.0035	9.14		129750.58	129750.58	2.27		Si
SLV 12	15.03	8347.68	-4470	-0.0000058	0.0005615	0.0035	9.14		24166.71	24166.71	2.9		Si
SLV 5	11.87	56441.93	-25082	-0.0000387	0.0005615	0.0035	9.14		112718.86	112718.86	2		Si
SLV 5	15.03	-8626.07	-4185	-0.0000058	0.0005615	0.0035	9.14		44237.34	44237.34	5.13		Si
SLV 16	11.87	-12485.71	-24641	-0.0000191	0.0005615	0.0035	9.14		131419.44	131419.44	10.53		Si
SLV 16	15.03	7092.73	-4488	-0.0000052	0.0005615	0.0035	9.14		24244.44	24244.44	3.42		Si
SLV 9	11.87	58245.57	-25157	-0.00004	0.0005615	0.0035	9.14		113028.54	113028.54	1.94		Si
SLV 9	15.03	-5422.88	-4260	-0.0000045	0.0005615	0.0035	9.14		44572.59	44572.59	8.22		Si
SLV 11	11.87	-60439.65	-24251	-0.0000419	0.0005615	0.0035	9.14		129798.59	129798.59	2.15		Si
SLV 11	15.03	8623.74	-4466	-0.0000059	0.0005615	0.0035	9.14		24149.64	24149.64	2.8		Si
SLV 10	11.87	61628.12	-25146	-0.0000426	0.0005615	0.0035	9.14		112980.86	112980.86	1.83		Si
SLV 10	15.03	-5698.95	-4264	-0.0000046	0.0005615	0.0035	9.14		44589.57	44589.57	7.82		Si
SLV 15	11.87	-17722.88	-24659	-0.0000211	0.0005615	0.0035	9.14		131493.86	131493.86	7.42		Si
SLV 15	15.03	7520.16	-4482	-0.0000054	0.0005615	0.0035	9.14		24218	24218	3.22		Si
SLV 7	11.87	-62243.29	-24176	-0.0000435	0.0005615	0.0035	7.312		129486.82	129486.82	2.08		Si
SLV 7	15.03	5420.55	-4390	-0.0000046	0.0005615	0.0035	9.14		23811.68	23811.68	4.39		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 42	11.87	-1403.75	-31011	-25823	-2930	9.14	9.14	-10090	8290	21215	35683	76634	23307	56899	No	19.42	Si
SLU 42	15.03	-315.56	-6829	-5687	-2879	9.14	9.14	-2222	7241	18530	35683	76634	23307	54214	No	18.83	Si
SLU 73	11.87	-1389.03	-34311	-28571	-2965	9.14	9.14	-11164	8433	21582	35683	76634	23307	57265	No	19.31	Si
SLU 73	15.03	-89.49	-6039	-5029	-2877	9.14	9.14	-1965	7206	18443	35683	76634	23307	54126	No	18.81	Si
SLU 81	11.87	-1050.17	-35184	-29298	-2787	9.14	9.14	-11448	8471	21679	35683	76634	23307	57362	No	20.58	Si
SLU 81	15.03	-24.69	-6133	-5107	-2787	9.14	9.14	-1996	7211	18453	35683	76634	23307	54136	No	19.42	Si
SLU 39	11.87	-1187.34	-29400	-24482	-2798	9.14	9.14	-9566	8220	21036	35683	76634	23307	56720	No	20.27	Si
SLU 39	15.03	28.55	-5328	-4437	-2798	9.14	9.14	-1734	7176	18364	35683	76634	23307	54047	No	19.32	Si
SLU 76	11.87	-1274.24	-35919	-29910	-2810	9.14	9.14	-11687	8503	21760	35683	76634	23307	57443	No	20.44	Si
SLU 76	15.03	-432.94	-7551	-6288	-2724	9.14	9.14	-2457	7272	18611	35683	76634	23307	54294	No	19.93	Si
SLU 82	11.87	-1381.37	-35187	-29301	-3074	9.14	9.14	-11449	8471	21679	35683	76634	23307	57362	No	18.66	Si
SLU 82	15.03	-25.36	-6123	-5099	-3022	9.14	9.14	-1992	7210	18452	35683	76634	23307	54135	No	19.92	Si
SLU 31	11.87	-1526.19	-28527	-23755	-2976	9.14	9.14	-9282	8182	20939	35683	76634	23307	56623	No	19.03	Si
SLU 31	15.03	-36.25	-5235	-4359	-2888	9.14	9.14	-1703	7172	18353	35683	76634	23307	54037	No	18.71	Si
SLU 84	11.87	-1265.59	-36795	-30640	-2919	9.14	9.14	-11972	8541	21858	35683	76634	23307	57541	No	19.71	Si
SLU 84	15.03	-368.81	-7634	-6357	-2868	9.14	9.14	-2484	7276	18620	35683	76634	23307	54303	No	18.94	Si
SLU 34	11.87	-1411.41	-30135	-25094	-2821	9.14	9.14	-9805	8252	21118	35683	76634	23307	56801	No	20.14	Si
SLU 34	15.03	-379.7	-6746	-5617	-2734	9.14	9.14	-2195	7237	18521	35683	76634	23307	54204	No	19.82	Si
SLU 40	11.87	-1518.54	-29403	-24484	-3085	9.14	9.14	-9567	8220	21037	35683	76634	23307	56720	No	18.39	Si
SLU 40	15.03	27.89	-5318	-4428	-3032	9.14	9.14	-1730	7175	18363	35683	76634	23307	54046	No	17.82	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	oN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 5	11.87	56441.93	-25082	-20886	42376	9.14	6.9592	-8161	12049	23478	35683	114951	23307	59161		1.4	Si
SLV 5	15.03	-8626.07	-4185	-3485	45908	9.14	7.5259	-1654	10747	22648	35683	114951	23307	58331		1.27	Si
SLV 7	11.87	-62243.29	-24176	-20132	-49021	7.312	5.9863	0	0	0	35683	91961	18646	35683		0.73	No
SLV 7	15.03	5420.55	-4390	-3656	-51315	9.14	9.14	-1429	10702	27390	35683	114951	23307	63073		1.23	Si
SLV 11	11.87	-60439.65	-24251	-20194	-47265	9.14	6.2334	-11628	12743	22240	35683	114951	23307	57924		1.23	Si
SLV 11	15.03	8623.74	-4466	-3719	-50797	9.14	7.9174	-1453	10707	23737	35683	114951	23307	59420		1.17	Si
SLD 7	11.87	-27666.3	-24449	-20359	-22426	9.14	9.14	-7955	12008	30730	35683	114951	23307	66413		2.96	Si
SLD 7	15.03	2331.74	-4356	-3627	-23453	9.14	9.14	-1417	10700	27384	35683	114951	23307	63067		2.69	Si
SLV 8	11.87	-58860.74	-24165	-20122	-46905	9.14	6.4026	-11279	12673	22719	35683	114951	23307	58402		1.25	Si
SLV 8	15.03	5144.49	-4394	-3659	-49198	9.14	9.14	-1430	10703	27390	35683	114951	23307	63073		1.28	Si
SLD 11	11.87	-26900.62	-24483	-20388	-21676	9.14	9.14	-7966	12010	30736	35683	114951	23307	66419		3.06	Si
SLD 11	15.03	3701.39	-4389	-3655	-23232	9.14	9.14	-1428	10702	27389	35683	114951	23307	63072		2.71	Si
SLV 9	11.87	58245.57	-25157	-20949	44133	9.14	6.7642	-8186	12054	22830	35683	114951	23307	58513		1.33	Si
SLV 9	15.03	-5422.88	-4260	-3548	46426	9.14	9.14	-1386	10694	27368	35683	114951	23307	63051		1.36	Si
SLV 6	11.87	59824.48	-25071	-20877	44493	9.14	6.5513	-8157	12048	22101	35683	114951	23307	57784		1.3	Si
SLV 6	15.03	-8902.14	-4188	-3488	48025	9.14	7.3338	-1699	10756	22088	35683	114951	23307	57771		1.2	Si
SLV 10	11.87	61628.12	-25146	-20939	46249	9.14	6.3575	-8182	12053	21456	35683	114951	23307	57139		1.24	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 10	15.03	-5698.95	-4264	-3551	48543	9.14	9.14	-1388	10694	27369	35683	114951	23307	63052		1.3	Si
SLV 12	11.87	-57057.1	-24240	-20185	-45148	9.14	6.6484	-10895	12596	23448	35683	114951	23307	59131		1.31	Si
SLV 12	15.03	8347.68	-4470	-3722	-48680	9.14	8.1077	-1454	10708	24308	35683	114951	23307	59991		1.23	Si

#### Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.45 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 12	179667	0.53	5679	-14534	1067.46	1959.05	1.84	Si
SLV 11	179667	0.53	5681	-14540	1067.46	1959.82	1.84	Si
SLV 16	179667	0.53	5701	-14590	1067.46	1966.29	1.84	Si
SLV 8	179667	0.53	5702	-14592	1067.46	1966.61	1.84	Si
SLV 7	179667	0.53	5704	-14598	1067.46	1967.38	1.84	Si
SLV 15	179667	0.53	5704	-14599	1067.46	1967.48	1.84	Si
SLV 14	179667	0.53	5743	-14697	1067.46	1980.23	1.86	Si
SLV 13	179667	0.53	5746	-14706	1067.46	1981.42	1.86	Si
SLV 4	179667	0.53	5777	-14784	1067.46	1991.48	1.87	Si
SLV 3	179667	0.53	5780	-14793	1067.46	1992.67	1.87	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 13.45 Wa = 0.05 Ta = 0.0596

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 12	-4470	-24240	1249	4.335	1735	0.895	70.43212	12.19367	Si
SLV 11	-4466	-24251	1249	4.337	1734.7	0.895	70.45325	12.19367	Si
SLV 8	-4394	-24165	-1533	4.339	1728.9	0.895	70.45952	12.19367	Si
SLV 7	-4390	-24176	-1533	4.34	1728.6	0.895	70.48102	12.19367	Si
SLV 10	-4264	-25146	1467	4.393	1718.4	0.896	71.28046	12.19367	Si
SLV 9	-4260	-25157	1467	4.394	1718.1	0.896	71.30205	12.19367	Si
SLV 6	-4188	-25071	-1315	4.435	1712.3	0.896	71.92665	12.19367	Si
SLV 5	-4185	-25082	-1315	4.436	1712	0.896	71.9488	12.19367	Si
SLV 16	-4488	-24641	4571	4.047	1736.5	0.894	65.74829	7.3	Si
SLV 15	-4482	-24659	4571	4.049	1736	0.895	65.77876	7.3	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	64.962	SLU 51	Si
V_SLU	17.823	SLU 40	Si
PF_SLV	1.833	SLV 10	Si
V_SLV	0.728	SLV 7	No
PFFP_SLV	1.835	SLV 12	Si
R_SLV	5.776	SLV 12	Si

## Maschio 200

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-16.333	-3.314	-17.203	-3.314	L7	F1	0.87	0.28	3.224	3.224	3.225			

#### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

#### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica

									elim,conv / e_CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 67	11.87	-471.5	-4284	-0.0000479	0.0003743	0.0035	0.87	1541.74	1777.45	1777.45	3.77	No	Si
SLU 67	13.97	194.72	-2726	-0.0000252	0.0003743	0.0035	0.87	1055.34	1137.21	1137.21	5.84	No	Si
SLU 64	11.87	-431.64	-3815	-0.0000429	0.0003743	0.0035	0.87	1404.12	1619.36	1619.36	3.75	No	Si
SLU 64	13.97	193.55	-2292	-0.0000224	0.0003743	0.0035	0.87	904.82	975.53	975.53	5.04	No	Si
SLU 65	11.87	-434.05	-3820	-0.000043	0.0003743	0.0035	0.87	1405.7	1621.15	1621.15	3.73	No	Si
SLU 65	13.97	195.59	-2295	-0.0000225	0.0003743	0.0035	0.87	905.79	976.57	976.57	4.99	No	Si
SLU 25	11.87	-402.31	-3471	-0.0000393	0.0003743	0.0035	0.87	1298.68	1501.29	1501.29	3.73	No	Si
SLU 25	13.97	173.34	-2232	-0.0000211	0.0003743	0.0035	0.87	883.65	952.93	952.93	5.5	No	Si
SLU 22	11.87	-362.45	-3002	-0.0000344	0.0003743	0.0035	0.87	1147.67	1335.6	1335.6	3.68	No	Si
SLU 22	13.97	172.17	-1799	-0.0000183	0.0003743	0.0035	0.87	725.63	786.41	786.41	4.57	No	Si
SLU 31	11.87	-344.62	-2880	-0.0000328	0.0003743	0.0035	0.87	1107.27	1291.63	1291.63	3.75	No	Si
SLU 31	13.97	144.65	-1731	-0.0000167	0.0003743	0.0035	0.87	700.53	760.32	760.32	5.26	No	Si
SLU 23	11.87	-364.86	-3007	-0.0000345	0.0003743	0.0035	0.87	1149.4	1337.44	1337.44	3.67	No	Si
SLU 23	13.97	174.21	-1801	-0.0000184	0.0003743	0.0035	0.87	726.64	787.47	787.47	4.52	No	Si
SLU 66	11.87	-470.05	-4281	-0.0000478	0.0003743	0.0035	0.87	1540.84	1776.43	1776.43	3.78	No	Si
SLU 66	13.97	193.5	-2724	-0.0000252	0.0003743	0.0035	0.87	1054.79	1136.61	1136.61	5.87	No	Si
SLU 24	11.87	-400.86	-3468	-0.0000392	0.0003743	0.0035	0.87	1297.7	1500.2	1500.2	3.74	No	Si
SLU 24	13.97	172.12	-2231	-0.0000211	0.0003743	0.0035	0.87	883.07	952.31	952.31	5.53	No	Si
SLU 26	11.87	-382.92	-3330	-0.0000375	0.0003743	0.0035	0.87	1254.13	1452.26	1452.26	3.79	No	Si
SLU 26	13.97	162.12	-2111	-0.0000199	0.0003743	0.0035	0.87	840.05	906.8	906.8	5.59	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche,  $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 16	11.87	-1259.73	-2146	-0.0020481	0.0005615	0.0035	0.696		1033.17	1033.17	0.82		No
SLV 16	13.97	1128.36	-203	-0.0293712	0.0005615	0.0035	0.696		135.8	135.8	0.12		No
SLV 13	11.87	-1323.52	-2242	-0.0022694	0.0005615	0.0035	0.696		1071.05	1071.05	0.81		No
SLV 13	13.97	1127.88	-289	-0.0282058	0.0005615	0.0035	0.696		172.21	172.21	0.15		No
SLD 14	11.87	-717.04	-2633	-0.0000588	0.0005615	0.0035	0.696		1225.15	1225.15	1.71		Si
SLD 14	13.97	523.69	-1170	-0.0000694	0.0005615	0.0035	0.696		542.49	542.49	1.04		Si
SLD 13	11.87	-744.94	-2601	-0.0000638	0.0005615	0.0035	0.696		1212.69	1212.69	1.63		Si
SLD 13	13.97	556.3	-1113	-0.0018048	0.0005615	0.0035	0.696		519.24	519.24	0.93		No
SLV 14	11.87	-1258.54	-2315	-0.0016918	0.0005615	0.0035	0.696		1100.18	1100.18	0.87		No
SLV 14	13.97	1051.96	-420	-0.0243074	0.0005615	0.0035	0.696		228.16	228.16	0.22		No
SLV 15	11.87	-1324.7	-2072	-0.002685	0.0005615	0.0035	0.696		1003.99	1003.99	0.76		No
SLV 15	13.97	1204.29	-72	-0.0333482	0.0005615	0.0035	0.696		79.61	79.61	0.07		No
SLD 16	11.87	-717.52	-2558	-0.0000602	0.0005615	0.0035	0.696		1195.63	1195.63	1.67		Si
SLD 16	13.97	557.3	-1075	-0.00223	0.0005615	0.0035	0.696		503.1	503.1	0.9		No
SLD 15	11.87	-745.42	-2526	-0.0000659	0.0005615	0.0035	0.696		1183.16	1183.16	1.59		Si
SLD 15	13.97	589.9	-1018	-0.0041051	0.0005615	0.0035	0.696		479.62	479.62	0.81		No
SLV 12	11.87	-587.39	-2406	-0.0000454	0.0005615	0.0035	0.87		1136.01	1136.01	1.93		Si
SLV 12	13.97	532.32	-964	-0.0027622	0.0005615	0.0035	0.696		457.08	457.08	0.86		No
SLV 11	11.87	-629.35	-2359	-0.0000507	0.0005615	0.0035	0.696		1117.22	1117.22	1.78		Si
SLV 11	13.97	581.36	-879	-0.0055816	0.0005615	0.0035	0.696		421.68	421.68	0.73		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 75	11.87	-451.26	-4157	-3462	-642	0.87	0.87	-14211	8839	2153	35683	7294	2219	9513	No	14.81	Si
SLU 75	13.97	165.16	-2656	-2211	-229	0.87	0.87	-9078	8155	1987	35683	7294	2219	9513	No	41.48	Si
SLU 79	11.87	-447.52	-4334	-3609	-652	0.87	0.87	-14817	8920	2173	35683	7294	2219	9513	No	14.58	Si
SLU 79	13.97	139.82	-2841	-2366	-198	0.87	0.87	-9711	8239	2007	35683	7294	2219	9513	No	48	Si
SLU 70	11.87	-489.57	-4608	-3837	-658	0.87	0.87	-15751	9045	2203	35683	7294	2219	9513	No	14.46	Si
SLU 70	13.97	182.63	-3035	-2527	-281	0.87	0.87	-10375	8328	2029	35683	7294	2219	9513	No	33.84	Si
SLU 74	11.87	-449.81	-4154	-3459	-642	0.87	0.87	-14201	8838	2153	35683	7294	2219	9513	No	14.83	Si
SLU 74	13.97	163.94	-2654	-2210	-227	0.87	0.87	-9072	8154	1986	35683	7294	2219	9513	No	41.89	Si
SLU 80	11.87	-448.97	-4338	-3612	-653	0.87	0.87	-14827	8921	2173	35683	7294	2219	9513	No	14.56	Si
SLU 80	13.97	141.04	-2843	-2367	-200	0.87	0.87	-9717	8240	2007	35683	7294	2219	9513	No	47.46	Si
SLU 69	11.87	-488.12	-4605	-3834	-657	0.87	0.87	-15740	9043	2203	35683	7294	2219	9513	No	14.48	Si
SLU 69	13.97	181.41	-3034	-2526	-279	0.87	0.87	-10370	8327	2028	35683	7294	2219	9513	No	34.12	Si
SLU 78	11.87	-469.33	-4481	-3731	-674	0.87	0.87	-15317	8987	2189	35683	7294	2219	9513	No	14.11	Si
SLU 78	13.97	153.07	-2965	-2469	-220	0.87	0.87	-10136	8296	2021	35683	7294	2219	9513	No	43.14	Si
SLU 71	11.87	-467.76	-4461	-3715	-636	0.87	0.87	-15251	8978	2187	35683	7294	2219	9513	No	14.95	Si
SLU 71	13.97	169.38	-2911	-2424	-259	0.87	0.87	-9951	8271	2015	35683	7294	2219	9513	No	36.76	Si
SLU 77	11.87	-467.88	-4478	-3729	-673	0.87	0.87	-15306	8985	2189	35683	7294	2219	9513	No	14.13	Si
SLU 77	13.97	151.85	-2964	-2468	-218	0.87	0.87	-10130	8295	2021	35683	7294	2219	9513	No	43.59	Si
SLU 72	11.87	-469.21	-4465	-3718	-637	0.87	0.87	-15261	8979	2187	35683	7294	2219	9513	No	14.93	Si
SLU 72	13.97	170.6	-2913	-2425	-261	0.87	0.87	-9956	8272	2015	35683	7294	2219	9513	No	36.44	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 1	11.87	634.27	-3591	-2990	297	0.87	0.7751	-12274	12871	2793	35683	10942	2219	13160		44.33	Si
SLV 1	13.97	-868.18	-3251	-2707	1130	0.696	0.5039	0	0	0	35683	8753	1775	10528		9.31	Si
SLV 11	11.87	-629.35	-2359	-1964	-720	0.696	0.5045	0	0	0	35683	8753	1775	10528		14.62	Si
SLV 11	13.97	581.36	-879	-732	-824	0.696	0	0	0	0	35683	8753	1775	10528		12.78	Si
SLV 15	11.87	-1324.7	-2072	-1725	-1185	0.696	0	0	0	0	35683	8753	1775	10528		8.89	Si
SLV 15	13.97	1204.29	-72	-60	-1609	0.696	0	0	0	0	35683	8753	1775	10528		6.54	Si
SLV 4	11.87	698.06	-3495	-2910	286	0.87	0.7057	-11946	12806	2531	35683	10942	2219	13160		46.03	Si
SLV 4	13.97	-867.7	-3166	-2636	1118	0.696	0.4827	0	0	0	35683	8753	1775	10528		9.42	Si
SLV 2	11.87	699.25	-3665	-3052	325	0.87	0.7326	-12527	12922	2651	35683	10942	2219	13160		40.53	Si
SLV 2	13.97	-944.11	-3382	-2817	1246	0.696	0.4676	0	0	0	35683	8753	1775	10528		8.45	Si
SLV 3	11.87	633.09	-3421	-2849	258	0.87	0.7498	-11693	12755	2678	35683	10942	2219	13160		50.99	Si
SLV 3	13.97	-791.78	-3034	-2527	1002	0.696	0.5222	0	0	0	35683	8753	1775	10528		10.5	Si
SLV 14	11.87	-1258.54	-2315	-1928	-1118	0.696	0	0	0	0	35683	8753	1775	10528		9.42	Si
SLV 14	13.97	1051.96	-420	-350	-1366	0.696	0	0	0	0	35683	8753	1775	10528		7.71	Si
SLD 15	11.87	-745.42	-2526	-2104	-753	0.696	0.4198	0	0	0	35683	8753	1775	10528		13.99	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 15	13.97	589.9	-1018	-848	-793	0.696	0	0	0	0	35683	8753	1775	10528		13.28	Si
SLV 16	11.87	-1259.73	-2146	-1787	-1157	0.696	0	0	0	0	35683	8753	1775	10528		9.1	Si
SLV 16	13.97	1128.36	-203	-169	-1494	0.696	0	0	0	0	35683	8753	1775	10528		7.05	Si
SLV 13	11.87	-1323.52	-2242	-1867	-1146	0.696	0	0	0	0	35683	8753	1775	10528		9.19	Si
SLV 13	13.97	1127.88	-289	-240	-1482	0.696	0	0	0	0	35683	8753	1775	10528		7.11	Si

**Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)**

quota 13.482 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 13	179667	0.53	0	-576	102.36	0	0	No, e>t/2
SLV 14	179667	0.53	0	-697	102.36	0	0	No, e>t/2
SLV 15	179667	0.53	0	-468	102.36	0	0	No, e>t/2
SLV 16	179667	0.53	0	-590	102.36	0	0	No, e>t/2
SLV 11	179667	0.53	5506	-1341	102.36	181	1.77	Si
SLV 12	179667	0.53	5827	-1420	102.36	191.16	1.87	Si
SLV 9	179667	0.53	6975	-1699	102.36	227.01	2.22	Si
SLV 10	179667	0.53	7297	-1778	102.36	236.96	2.32	Si
SLV 7	179667	0.53	8942	-2178	102.36	287.11	2.8	Si
SLV 8	179667	0.53	9264	-2257	102.36	296.78	2.9	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

**Verifica dei meccanismi locali di collasso con analisi cinematica lineare**

forza di aggancio al piano = 5617 quota mezzeria = 13.482 Wa = 0.05 Ta = 0.062

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 11	-1041	-2359	6	2.853	223.4	0.893	46.45464	12.78435	Si
SLV 12	-1026	-2406	6	2.878	221.9	0.892	46.88046	12.78435	Si
SLV 9	-945	-2925	3	3.018	214.3	0.891	49.22603	12.78435	Si
SLV 10	-930	-2973	3	3.046	212.8	0.891	49.70074	12.78435	Si
SLV 7	-677	-2763	-4	3.593	189.5	0.889	58.73975	12.78435	Si
SLV 8	-662	-2811	-4	3.633	188.1	0.889	59.40011	12.78435	Si
SLV 5	-582	-3330	-8	3.854	181	0.89	62.93926	12.78435	Si
SLV 6	-566	-3377	-8	3.9	179.6	0.89	63.6855	12.78435	Si
SLV 15	-1436	-2072	18	2.329	261.6	0.9	37.59604	7.48798	Si
SLV 16	-1412	-2146	18	2.355	259.3	0.9	38.0375	7.48798	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

**Tabella dei coefficienti di sicurezza minimi**

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.666	SLU 23	Si
V_SLU	14.112	SLU 78	Si
PF_SLV	0.066	SLV 15	No
V_SLV	6.542	SLV 15	Si
PFFP_SLV	0	SLV 13	No
R_SLV	3.634	SLV 11	Si

**Maschio 201**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati geometrici**

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	I	Sp.	h netta	h ini.	h fin.	a	a.s.sx	a.s.dx
-13.778	-3.314	-15.433	-3.314	L7	F1	1.655	0.28	3.223	3.222	3.223			

**Caratteristiche del materiale**

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

**Materiale per FRCM**

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

**Rinforzo a matrice inorganica**

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	



### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 22	11.87	-801.97	-3456	-0.0000206	0.0003743	0.0035	1.655	2650.43	3378.53	3378.53	4.21	No	Si
SLU 22	13.97	1030.31	-4136	-0.0000256	0.0003743	0.0035	1.655	3122.64	3358.68	3358.68	3.26	No	Si
SLU 65	11.87	-900.41	-4484	-0.0000252	0.0003743	0.0035	1.655	3357.6	4121.18	4121.18	4.58	No	Si
SLU 65	13.97	1241.08	-5024	-0.0000311	0.0003743	0.0035	1.655	3714.92	3972.5	3972.5	3.2	No	Si
SLU 75	11.87	-995.26	-4657	-0.0000269	0.0003743	0.0035	1.655	3473.54	4247.37	4247.37	4.27	No	Si
SLU 75	13.97	1357.22	-5743	-0.000035	0.0003743	0.0035	1.655	4173.96	4400.62	4400.62	3.24	No	Si
SLU 67	11.87	-964.18	-4949	-0.0000275	0.0003743	0.0035	1.655	3666.05	4454.31	4454.31	4.62	No	Si
SLU 67	13.97	1412.61	-5844	-0.0000361	0.0003743	0.0035	1.655	4236.76	4460.85	4460.85	3.16	No	Si
SLU 68	11.87	-916.62	-4865	-0.0000267	0.0003743	0.0035	1.655	3610.9	4396.63	4396.63	4.8	No	Si
SLU 68	13.97	1329.42	-5597	-0.0000342	0.0003743	0.0035	1.655	4082.12	4313.44	4313.44	3.24	No	Si
SLU 69	11.87	-978.54	-5323	-0.000029	0.0003743	0.0035	1.655	3908.02	4709.76	4709.76	4.81	No	Si
SLU 69	13.97	1499.26	-6407	-0.0000391	0.0003743	0.0035	1.655	4581.6	4800.96	4800.96	3.2	No	Si
SLU 64	11.87	-897.33	-4470	-0.0000251	0.0003743	0.0035	1.655	3348.71	4111.59	4111.59	4.58	No	Si
SLU 64	13.97	1238.27	-5008	-0.000031	0.0003743	0.0035	1.655	3704.31	3962.32	3962.32	3.2	No	Si
SLU 70	11.87	-980.39	-5331	-0.0000291	0.0003743	0.0035	1.655	3913.11	4715.23	4715.23	4.81	No	Si
SLU 70	13.97	1500.95	-6416	-0.0000392	0.0003743	0.0035	1.655	4587.49	4806.91	4806.91	3.2	No	Si
SLU 66	11.87	-962.33	-4941	-0.0000275	0.0003743	0.0035	1.655	3660.85	4448.91	4448.91	4.62	No	Si
SLU 66	13.97	1410.93	-5834	-0.000036	0.0003743	0.0035	1.655	4230.67	4454.99	4454.99	3.16	No	Si
SLU 74	11.87	-993.41	-4649	-0.0000269	0.0003743	0.0035	1.655	3468.26	4241.58	4241.58	4.27	No	Si
SLU 74	13.97	1355.53	-5733	-0.000035	0.0003743	0.0035	1.655	4167.84	4394.78	4394.78	3.24	No	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche, $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 10	11.87	-1268.35	-1880	-0.0000432	0.0005615	0.0035	1.324		2198.72	2198.72	1.73		Si
SLV 10	13.97	1778.13	-4796	-0.0000376	0.0005615	0.0035	1.655		3918.74	3918.74	2.2		Si
SLD 15	11.87	-1661.38	-2802	-0.0000427	0.0005615	0.0035	1.324		2918.48	2918.48	1.76		Si
SLD 15	13.97	1669.5	-4638	-0.0000354	0.0005615	0.0035	1.655		3800.77	3800.77	2.28		Si
SLD 13	11.87	-1653.27	-2531	-0.0000517	0.0005615	0.0035	1.324		2708.76	2708.76	1.64		Si
SLD 13	13.97	1765.07	-4760	-0.0000373	0.0005615	0.0035	1.655		3892.22	3892.22	2.21		Si
SLV 14	11.87	-2865.41	-1540	-0.0013911	0.0005615	0.0035	1.324		1930.76	1930.76	0.67		No
SLV 14	13.97	2791.6	-6032	-0.0000602	0.0005615	0.0035	1.655		4825.41	4825.41	1.73		Si
SLV 16	11.87	-2880.44	-2161	-0.0010103	0.0005615	0.0035	1.324		2419.59	2419.59	0.84		No
SLV 16	13.97	2573.37	-5753	-0.0000549	0.0005615	0.0035	1.655		4622.78	4622.78	1.8		Si
SLV 4	11.87	1700.03	-5251	-0.0000373	0.0005615	0.0035	1.655		4254.65	4254.65	2.5		Si
SLV 4	13.97	-1113.55	-1215	-0.0001587	0.0005615	0.0035	1.324		1673.43	1673.43	1.5		Si
SLV 15	11.87	-3014.01	-2065	-0.0012034	0.0005615	0.0035	1.324		2344.94	2344.94	0.78		No
SLV 15	13.97	2699.54	-5900	-0.000058	0.0005615	0.0035	1.655		4730.37	4730.37	1.75		Si
SLD 14	11.87	-1595.91	-2572	-0.0000443	0.0005615	0.0035	1.324		2740.64	2740.64	1.72		Si
SLD 14	13.97	1710.89	-4697	-0.0000362	0.0005615	0.0035	1.655		3845.06	3845.06	2.25		Si
SLV 9	11.87	-1354.62	-1818	-0.0000709	0.0005615	0.0035	1.324		2150.32	2150.32	1.59		Si
SLV 9	13.97	1859.62	-4891	-0.0000392	0.0005615	0.0035	1.655		3989.56	3989.56	2.15		Si
SLV 13	11.87	-2998.98	-1444	-0.0016091	0.0005615	0.0035	1.324		1855.23	1855.23	0.62		No
SLV 13	13.97	2917.78	-6180	-0.0000635	0.0005615	0.0035	1.655		4931.02	4931.02	1.69		Si

### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 72	11.87	-931.59	-5242	-4365	-2365	1.655	1.655	-9419	8200	3800	35683	13876	4220	18097	No	7.65	Si
SLU 72	13.97	1416.63	-6163	-5132	-2360	1.655	1.655	-11075	8421	3902	35683	13876	4220	18097	No	7.67	Si
SLU 79	11.87	-960.82	-4942	-4115	-2428	1.655	1.655	-8880	8128	3767	35683	13876	4220	18097	No	7.45	Si
SLU 79	13.97	1359.54	-6053	-5040	-2420	1.655	1.655	-10876	8395	3890	35683	13876	4220	18097	No	7.48	Si
SLU 78	11.87	-1011.47	-5039	-4196	-2558	1.655	1.655	-9075	8152	3778	35683	13876	4220	18097	No	7.07	Si
SLU 78	13.97	1445.55	-6316	-5259	-2550	1.655	1.655	-11349	8458	3919	35683	13876	4220	18097	No	7.1	Si
SLU 69	11.87	-978.54	-5323	-4433	-2490	1.655	1.655	-9566	8220	3809	35683	13876	4220	18097	No	7.27	Si
SLU 69	13.97	1499.26	-6407	-5335	-2485	1.655	1.655	-11512	8479	3929	35683	13876	4220	18097	No	7.28	Si
SLU 70	11.87	-980.39	-5331	-4439	-2492	1.655	1.655	-9580	8222	3810	35683	13876	4220	18097	No	7.26	Si
SLU 70	13.97	1500.95	-6416	-5343	-2488	1.655	1.655	-11530	8482	3930	35683	13876	4220	18097	No	7.27	Si
SLU 74	11.87	-993.41	-4649	-3872	-2430	1.655	1.655	-8355	8058	3734	35683	13876	4220	18097	No	7.45	Si
SLU 74	13.97	1355.53	-5733	-4774	-2425	1.655	1.655	-10302	8318	3855	35683	13876	4220	18097	No	7.46	Si
SLU 67	11.87	-964.18	-4949	-4121	-2367	1.655	1.655	-8894	8130	3768	35683	13876	4220	18097	No	7.65	Si
SLU 67	13.97	1412.61	-5844	-4866	-2365	1.655	1.655	-10501	8345	3867	35683	13876	4220	18097	No	7.65	Si
SLU 80	11.87	-962.67	-4950	-4122	-2431	1.655	1.655	-8894	8130	3768	35683	13876	4220	18097	No	7.45	Si
SLU 80	13.97	1361.23	-6063	-5048	-2422	1.655	1.655	-10894	8397	3891	35683	13876	4220	18097	No	7.47	Si
SLU 75	11.87	-995.26	-4657	-3878	-2433	1.655	1.655	-8369	8060	3735	35683	13876	4220	18097	No	7.44	Si
SLU 75	13.97	1357.22	-5743	-4782	-2428	1.655	1.655	-10320	8320	3856	35683	13876	4220	18097	No	7.45	Si
SLU 77	11.87	-1009.62	-5031	-4189	-2556	1.655	1.655	-9041	8150	3777	35683	13876	4220	18097	No	7.08	Si
SLU 77	13.97	1443.87	-6306	-5251	-2548	1.655	1.655	-11331	8455	3918	35683	13876	4220	18097	No	7.1	Si

### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 14	11.87	-2865.41	-1540	-1282	-5573	1.324	0	0	0	0	35683	16652	3376	20028		3.59	Si
SLV 14	13.97	2791.6	-6032	-5023	-4395	1.655	1.0942	-10840	12585	3856	35683	20815	4220	25035		5.7	Si
SLV 16	11.87	-2880.44	-2161	-1799	-5249	1.324	0	0	0	0	35683	16652	3376	20028		3.82	Si
SLV 16	13.97	2573.37	-5753	-4791	-4065	1.655	1.1407	-10338	12484	3987	35683	20815	4220	25035		6.16	Si
SLD 13	11.87	-1653.27	-2531	-2108	-3366	1.324	0.5231	0	0	0	35683	16652	3376	20028		5.95	Si
SLD 13	13.97	1765.07	-4760	-3964	-2864	1.655	1.3702	-8554	12127	4653	35683	20815	4220	25035		8.74	Si
SLD 14	11.87	-1595.91	-2572	-2142	-3272	1.324	0.6211	0	0	0	35683	16652	3376	20028		6.12	Si
SLD 14	13.97	1710.89	-4697	-3911	-2769	1.655	1.3898	-8441	12105	4711	35683	20815	4220	25035		9.04	Si
SLD 16	11.87	-1604.02	-2843	-2367	-3133	1.324	0.7898	0	0	0	35683	16652	3376	20028		6.39	Si
SLD 16	13.97	1615.32	-4575	-3809	-2626	1.655	1.4232	-8220	12061	4806	35683	20815	4220	25035		9.53	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 13	11.87	-2998.98	-1444	-1203	-5792	1.324	0	0	0	0	35683	16652	3376	20028		3.46	Si
SLV 13	13.97	2917.78	-6180	-5146	-4614	1.655	1.066	-11104	12638	3772	35683	20815	4220	25035		5.43	Si
SLD 15	11.87	-1661.38	-2802	-2333	-3227	1.324	0.7037	0	0	0	35683	16652	3376	20028		6.21	Si
SLD 15	13.97	1669.5	-4638	-3862	-2720	1.655	1.4026	-8334	12083	4746	35683	20815	4220	25035		9.2	Si
SLV 9	11.87	-1354.62	-1818	-1514	-3354	1.324	0.2474	0	0	0	35683	16652	3376	20028		5.97	Si
SLV 9	13.97	1859.62	-4891	-4073	-3009	1.655	1.3419	-8789	12174	4574	35683	20815	4220	25035		8.32	Si
SLV 15	11.87	-3014.01	-2065	-1720	-5468	1.324	0	0	0	0	35683	16652	3376	20028		3.66	Si
SLV 15	13.97	2699.54	-5900	-4913	-4285	1.655	1.11	-10603	12537	3897	35683	20815	4220	25035		5.84	Si
SLV 10	11.87	-1268.35	-1880	-1565	-3213	1.324	0.4582	0	0	0	35683	16652	3376	20028		6.23	Si
SLV 10	13.97	1778.13	-4796	-3994	-2867	1.655	1.3702	-8618	12140	4658	35683	20815	4220	25035		8.73	Si

#### Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.481 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 4	179667	0.53	3793	-1758	194.47	239.97	1.23	Si
SLV 3	179667	0.53	4032	-1869	194.47	254.69	1.31	Si
SLV 2	179667	0.53	4111	-1905	194.47	259.56	1.33	Si
SLV 1	179667	0.53	4350	-2016	194.47	274.21	1.41	Si
SLV 8	179667	0.53	6175	-2861	194.47	384.39	1.98	Si
SLV 7	179667	0.53	6329	-2933	194.47	393.59	2.02	Si
SLV 6	179667	0.53	7236	-3353	194.47	447.19	2.3	Si
SLV 5	179667	0.53	7390	-3425	194.47	456.25	2.35	Si
SLV 12	179667	0.53	8498	-3938	194.47	520.64	2.68	Si
SLV 11	179667	0.53	8652	-4010	194.47	529.54	2.72	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.481 Wa = 0.05 Ta = 0.0619

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 10	-2100	-1880	-90	2.733	436.2	0.894	44.45187	12.76594	Si
SLV 9	-2088	-1818	-90	2.743	435.1	0.894	44.6057	12.76594	Si
SLV 6	-1930	-2807	-185	2.844	419.9	0.892	46.34001	12.76594	Si
SLV 5	-1918	-2745	-185	2.854	418.8	0.892	46.50788	12.76594	Si
SLV 12	-1363	-3950	188	3.429	367.1	0.889	56.06948	12.76594	Si
SLV 11	-1352	-3888	188	3.444	366.1	0.889	56.30534	12.76594	Si
SLV 8	-1193	-4877	93	3.694	351.8	0.889	60.36836	12.76594	Si
SLV 7	-1182	-4815	93	3.71	350.8	0.889	60.63544	12.76594	Si
SLV 14	-2044	-1540	117	2.77	430.8	0.893	45.07593	7.4821	Si
SLV 13	-2026	-1444	117	2.784	429.1	0.893	45.31817	7.4821	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.157	SLV 66	Si
V_SLV	7.074	SLV 78	Si
PF_SLV	0.619	SLV 13	No
V_SLV	3.458	SLV 13	Si
PFFP_SLV	1.234	SLV 4	Si
R_SLV	3.482	SLV 10	Si

## Maschio 203

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.sx	a.s.dx
-13.778	-4.824	-13.778	-3.454	L7	F1	1.369	0.28	2.765	2.385	3.144			

#### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

#### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica





									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	Intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 8	11.87	-242.86	-4017	-0.00002	0.0003743	0.0035	1.3693	2467.1	3020.24	3020.24	12.44	No	Si
SLU 8	14.26	193.11	-480	-0.000006	0.0003743	0.0035	1.3693	324.58	427.58	427.58	2.21	No	Si
SLU 36	11.87	-359.79	-4596	-0.0000244	0.0003743	0.0035	1.3693	2776.25	3351.4	3351.4	9.31	No	Si
SLU 36	14.26	242.32	-631	-0.0000074	0.0003743	0.0035	1.3693	425.04	527.97	527.97	2.18	No	Si
SLU 9	11.87	-251.61	-4041	-0.0000202	0.0003743	0.0035	1.3693	2480.32	3034.36	3034.36	12.06	No	Si
SLU 9	14.26	196.39	-489	-0.000006	0.0003743	0.0035	1.3693	330.58	433.55	433.55	2.21	No	Si
SLU 27	11.87	-301.27	-4463	-0.0000228	0.0003743	0.0035	1.3693	2706.48	3275.72	3275.72	10.87	No	Si
SLU 27	14.26	230.33	-565	-0.0000072	0.0003743	0.0035	1.3693	381.32	484.16	484.16	2.1	No	Si
SLU 29	11.87	-302.31	-4435	-0.0000227	0.0003743	0.0035	1.3693	2691.58	3259.81	3259.81	10.78	No	Si
SLU 29	14.26	231.1	-538	-0.0000074	0.0003743	0.0035	1.3693	363.01	465.87	465.87	2.02	No	Si
SLU 35	11.87	-351.04	-4572	-0.0000241	0.0003743	0.0035	1.3693	2763.5	3337.49	3337.49	9.51	No	Si
SLU 35	14.26	239.04	-622	-0.0000073	0.0003743	0.0035	1.3693	419.08	521.98	521.98	2.18	No	Si
SLU 30	11.87	-311.06	-4460	-0.000023	0.0003743	0.0035	1.3693	2704.45	3273.55	3273.55	10.52	No	Si
SLU 30	14.26	234.38	-547	-0.0000075	0.0003743	0.0035	1.3693	369	471.85	471.85	2.01	No	Si
SLU 38	11.87	-360.83	-4568	-0.0000243	0.0003743	0.0035	1.3693	2761.48	3335.29	3335.29	9.24	No	Si
SLU 38	14.26	243.09	-603	-0.0000075	0.0003743	0.0035	1.3693	406.8	509.67	509.67	2.1	No	Si
SLU 28	11.87	-310.02	-4488	-0.000023	0.0003743	0.0035	1.3693	2719.33	3289.56	3289.56	10.61	No	Si
SLU 28	14.26	233.61	-574	-0.0000072	0.0003743	0.0035	1.3693	387.3	490.14	490.14	2.1	No	Si
SLU 37	11.87	-352.08	-4544	-0.000024	0.0003743	0.0035	1.3693	2748.71	3321.39	3321.39	9.43	No	Si
SLU 37	14.26	239.8	-594	-0.0000074	0.0003743	0.0035	1.3693	400.83	503.68	503.68	2.1	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 13	11.87	-334.96	-2461	-0.0000152	0.0005615	0.0035	1.3693		2107.25	2107.25	6.29		Si
SLV 13	14.26	192.68	-643	-0.0000058	0.0005615	0.0035	1.3693		537.33	537.33	2.79		Si
SLV 9	11.87	540.12	-857	-0.0000563	0.0005615	0.0035	1.3693		680.38	680.38	1.26		Si
SLV 9	14.26	-112.07	425	0.0517879	0.0005615	0.0035	1.0955		0	0	0		No
SLV 5	11.87	767.61	-1061	-0.0004968	0.0005615	0.0035	1.0955		815.76	815.76	1.06		Si
SLV 5	14.26	-216.6	708	0.0865613	0.0005615	0.0035	1.0955		0	0	0		No
SLV 14	11.87	-326.09	-2486	-0.0000151	0.0005615	0.0035	1.3693		2123.11	2123.11	6.51		Si
SLV 14	14.26	196.2	-632	-0.0000059	0.0005615	0.0035	1.3693		530.56	530.56	2.7		Si
SLV 15	11.87	-856.19	-4044	-0.0000304	0.0005615	0.0035	1.3693		3094.93	3094.93	3.61		Si
SLV 15	14.26	349.91	-1272	-0.0000109	0.0005615	0.0035	1.3693		955.35	955.35	2.73		Si
SLV 2	11.87	432.21	-3167	-0.0000196	0.0005615	0.0035	1.3693		2175.15	2175.15	5.03		Si
SLV 2	14.26	-152.21	312	0.0384804	0.0005615	0.0035	1.0955		0	0	0		No
SLV 16	11.87	-847.32	-4069	-0.0000304	0.0005615	0.0035	1.3693		3110.07	3110.07	3.67		Si
SLV 16	14.26	353.44	-1262	-0.0000109	0.0005615	0.0035	1.3693		948.68	948.68	2.68		Si
SLV 1	11.87	423.34	-3142	-0.0000194	0.0005615	0.0035	1.3693		2159.5	2159.5	5.1		Si
SLV 1	14.26	-155.73	302	0.037278	0.0005615	0.0035	1.0955		0	0	0		No
SLV 6	11.87	773.34	-1077	-0.0004681	0.0005615	0.0035	1.0955		826.42	826.42	1.07		Si
SLV 6	14.26	-214.32	715	0.0873331	0.0005615	0.0035	1.0955		0	0	0		No
SLV 10	11.87	545.85	-873	-0.0000526	0.0005615	0.0035	1.3693		691.17	691.17	1.27		Si
SLV 10	14.26	-109.8	431	0.0525576	0.0005615	0.0035	1.0955		0	0	0		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 78	11.87	-393.65	-5489	-4571	-1534	1.3693	1.3693	-11922	8534	3272	30925	11481	3492	14973	No	9.76	Si
SLU 78	14.26	254.95	-745	-621	-1641	1.3693	1.028	-1619	7160	2061	30925	11481	3492	14973	No	9.12	Si
SLU 77	11.87	-384.9	-5465	-4551	-1502	1.3693	1.3693	-11869	8527	3269	30925	11481	3492	14973	No	9.97	Si
SLU 77	14.26	251.67	-736	-613	-1613	1.3693	1.0288	-1599	7158	2062	30925	11481	3492	14973	No	9.28	Si
SLU 35	11.87	-351.04	-4572	-3807	-1386	1.3693	1.3693	-9929	8268	3170	30925	11481	3492	14973	No	10.8	Si
SLU 35	14.26	239.04	-622	-518	-1576	1.3693	0.9011	-1351	7125	1798	30925	11481	3492	14973	No	9.5	Si
SLU 79	11.87	-385.93	-5437	-4527	-1453	1.3693	1.3693	-11807	8519	3266	30925	11481	3492	14973	No	10.3	Si
SLU 79	14.26	252.43	-709	-590	-1604	1.3693	0.9857	-1540	7150	1973	30925	11481	3492	14973	No	9.33	Si
SLU 38	11.87	-360.83	-4568	-3804	-1369	1.3693	1.3693	-9921	8267	3170	30925	11481	3492	14973	No	10.94	Si
SLU 38	14.26	243.09	-603	-503	-1595	1.3693	0.8456	-1311	7119	1686	30925	11481	3492	14973	No	9.39	Si
SLU 37	11.87	-352.08	-4544	-3783	-1337	1.3693	1.3693	-9868	8260	3167	30925	11481	3492	14973	No	11.2	Si
SLU 37	14.26	239.8	-594	-495	-1567	1.3693	0.8439	-1291	7117	1681	30925	11481	3492	14973	No	9.56	Si
SLU 36	11.87	-359.79	-4596	-3827	-1418	1.3693	1.3693	-9982	8275	3173	30925	11481	3492	14973	No	10.56	Si
SLU 36	14.26	242.32	-631	-525	-1604	1.3693	0.9019	-1370	7127	1800	30925	11481	3492	14973	No	9.33	Si
SLU 80	11.87	-394.68	-5461	-4547	-1485	1.3693	1.3693	-11860	8526	3269	30925	11481	3492	14973	No	10.09	Si
SLU 80	14.26	255.71	-718	-598	-1632	1.3693	0.9854	-1559	7152	1973	30925	11481	3492	14973	No	9.17	Si
SLU 72	11.87	-344.91	-5353	-4457	-1279	1.3693	1.3693	-11625	8494	3257	30925	11481	3492	14973	No	11.71	Si
SLU 72	14.26	247.01	-661	-550	-1482	1.3693	0.933	-1436	7136	1864	30925	11481	3492	14973	No	10.1	Si
SLU 70	11.87	-343.87	-5381	-4481	-1328	1.3693	1.3693	-11686	8503	3260	30925	11481	3492	14973	No	11.28	Si
SLU 70	14.26	246.24	-689	-573	-1491	1.3693	0.9811	-1495	7144	1963	30925	11481	3492	14973	No	10.04	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 2	11.87	432.21	-3167	-2637	3400	1.3693	1.3693	-6878	11792	4521	30925	17222	3492	20713		6.09	Si
SLV 2	14.26	-152.21	312	260	2366	1.0955	0.5922	0	0	0	30925	13777	2793	16571		7.01	Si
SLV 6	11.87	773.34	-1077	-897	3305	1.0955	0	0	0	0	30925	13777	2793	16571		5.01	Si
SLV 6	14.26	-214.32	715	595	2454	1.0955	1.1545	0	0	0	30925	13777	2793	16571		6.75	Si





Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 16	11.87	-847.32	-4069	-3388	-4916	1.3693	1.3693	-8838	12184	4672	30925	17222	3492	20713		4.21	Si
SLV 16	14.26	353.44	-1262	-1051	-3524	1.3693	1.214	-2742	10965	3727	30925	17222	3492	20713		5.88	Si
SLV 15	11.87	-856.19	-4044	-3368	-5013	1.3693	1.3693	-8783	12173	4667	30925	17222	3492	20713		4.13	Si
SLV 15	14.26	349.91	-1272	-1060	-3568	1.3693	1.229	-2764	10969	3775	30925	17222	3492	20713		5.81	Si
SLV 11	11.87	-1197.31	-6134	-5108	-4919	1.3693	1.3693	-13322	13081	5015	30925	17222	3492	20713		4.21	Si
SLV 11	14.26	412.03	-1675	-1395	-3656	1.3693	1.316	-3638	11144	4106	30925	17222	3492	20713		5.67	Si
SLV 14	11.87	-326.09	-2486	-2070	-3048	1.3693	1.3693	-5399	11496	4408	30925	17222	3492	20713		6.8	Si
SLV 14	14.26	196.2	-632	-527	-2102	1.3693	1.1232	-1373	10691	3362	30925	17222	3492	20713		9.85	Si
SLV 1	11.87	423.34	-3142	-2616	3303	1.3693	1.3693	-6824	11781	4517	30925	17222	3492	20713		6.27	Si
SLV 1	14.26	-155.73	302	252	2322	1.0955	0.5083	0	0	0	30925	13777	2793	16571		7.14	Si
SLV 12	11.87	-1191.58	-6150	-5121	-4856	1.3693	1.3693	-13358	13088	5018	30925	17222	3492	20713		4.27	Si
SLV 12	14.26	414.31	-1668	-1389	-3628	1.3693	1.309	-3623	11141	4083	30925	17222	3492	20713		5.71	Si
SLV 5	11.87	767.61	-1061	-883	3243	1.0955	0	0	0	0	30925	13777	2793	16571		5.11	Si
SLV 5	14.26	-216.6	708	590	2425	1.0955	1.1366	0	0	0	30925	13777	2793	16571		6.83	Si
SLV 13	11.87	-334.96	-2461	-2049	-3145	1.3693	1.3693	-5345	11486	4404	30925	17222	3492	20713		6.59	Si
SLV 13	14.26	192.68	-643	-535	-2145	1.3693	1.1543	-1395	10696	3457	30925	17222	3492	20713		9.65	Si

**Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)**

quota 13.063 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 6	179667	0.52	0	147	119.18	0	0	No, Trazione
SLV 5	179667	0.52	0	143	119.18	0	0	No, Trazione
SLV 9	179667	0.52	0	-88	119.18	0	0	No, e>t/2
SLV 10	179667	0.52	0	-84	119.18	0	0	No, e>t/2
SLV 2	179667	0.52	2484	-952	119.18	131.17	1.1	Si
SLV 1	179667	0.52	2502	-959	119.18	132.08	1.11	Si
SLV 14	179667	0.52	4496	-1724	119.18	234.23	1.97	Si
SLV 13	179667	0.52	4513	-1730	119.18	235.11	1.97	Si
SLV 4	179667	0.52	5549	-2128	119.18	287.04	2.41	Si
SLV 3	179667	0.52	5567	-2134	119.18	287.91	2.42	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

**Verifica dei meccanismi locali di collasso con analisi cinematica lineare**

forza di aggancio al piano = 5617 quota mezzeria = 13.063 Wa = 0.05 Ta = 0.0456

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 11	-1675	-6134	-130	2.945	327.4	0.896	47.75151	9.22151	Si
SLV 12	-1668	-6150	-131	2.952	326.8	0.896	47.87113	9.22151	Si
SLV 7	-1391	-6338	-84	3.314	300.1	0.892	53.98253	9.22151	Si
SLV 8	-1385	-6355	-85	3.323	299.5	0.892	54.13316	9.22151	Si
SLV 15	-1272	-4044	-107	3.479	288.8	0.891	56.74786	6.29204	Si
SLV 16	-1262	-4069	-108	3.494	287.9	0.891	57.00528	6.29204	Si
SLV 13	-643	-2461	-42	4.872	232.1	0.893	79.32424	6.29204	Si
SLV 14	-632	-2486	-42	4.903	231.3	0.893	79.791	6.29204	Si
SLV 3	-328	-4725	45	6.054	208.1	0.913	96.35246	6.29204	Si
SLV 4	-318	-4750	45	6.102	207.4	0.914	96.99025	6.29204	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

**Tabella dei coefficienti di sicurezza minimi**

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	2.013	SLU 30	Si
V_SLU	9.122	SLU 78	Si
PF_SLV	0	SLV 1	No
V_SLV	4.132	SLV 15	Si
PFFP_SLV	0	SLV 6	No
R_SLV	5.178	SLV 11	Si

**Maschio 204**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati geometrici**

X inl.	Y inl.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h inl.	h fin.	a	a.s.,sx	a.s.,dx
-11.003	-4.824	-11.003	-3.454	L7	F1	1.37	0.28	2.763	2.383	3.142			

**Caratteristiche del materiale**

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

**Materiale per FRCM**

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio



## Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche,  $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 71	11.87	-269.61	-5295	-0.0000256	0.0003743	0.0035	1.37	3135.4	3746.09	3746.09	13.89	No	Si
SLU 71	14.25	253.34	-393	-0.000033	0.0003743	0.0035	1.37	266.68	370.07	370.07	1.46	No	Si
SLU 38	11.87	-319.94	-4611	-0.0000237	0.0003743	0.0035	1.37	2785.64	3361.69	3361.69	10.51	No	Si
SLU 38	14.25	271.9	-422	-0.0000361	0.0003743	0.0035	1.37	285.64	388.99	388.99	1.43	No	Si
SLU 29	11.87	-255.07	-4425	-0.0000218	0.0003743	0.0035	1.37	2687.79	3255.85	3255.85	12.76	No	Si
SLU 29	14.25	244.4	-334	-0.0001547	0.0003743	0.0035	1.096	0	330.04	330.04	1.35	No	Si
SLU 37	11.87	-309.79	-4585	-0.0000234	0.0003743	0.0035	1.37	2771.8	3346.57	3346.57	10.8	No	Si
SLU 37	14.25	267.61	-411	-0.0000409	0.0003743	0.0035	1.37	278.38	381.74	381.74	1.43	No	Si
SLU 9	11.87	-189.02	-3984	-0.0000189	0.0003743	0.0035	1.37	2450.84	3002.99	3002.99	15.89	No	Si
SLU 9	14.25	192.08	-261	-0.0001237	0.0003743	0.0035	1.096	0	281.15	281.15	1.46	No	Si
SLU 28	11.87	-277.81	-4491	-0.0000225	0.0003743	0.0035	1.37	2722.56	3293.1	3293.1	11.85	No	Si
SLU 28	14.25	252.03	-378	-0.0000547	0.0003743	0.0035	1.096	256.58	360	360	1.43	No	Si
SLU 72	11.87	-279.76	-5322	-0.0000259	0.0003743	0.0035	1.37	3148.58	3760.55	3760.55	13.44	No	Si
SLU 72	14.25	257.63	-404	-0.0000296	0.0003743	0.0035	1.37	273.95	377.33	377.33	1.46	No	Si
SLU 8	11.87	-178.86	-3958	-0.0000186	0.0003743	0.0035	1.37	2436.43	2987.6	2987.6	16.7	No	Si
SLU 8	14.25	187.79	-250	-0.0001368	0.0003743	0.0035	1.096	0	273.85	273.85	1.46	No	Si
SLU 30	11.87	-265.22	-4452	-0.0000221	0.0003743	0.0035	1.37	2701.77	3270.76	3270.76	12.33	No	Si
SLU 30	14.25	248.69	-344	-0.0001413	0.0003743	0.0035	1.096	0	337.31	337.31	1.36	No	Si
SLU 27	11.87	-267.65	-4465	-0.0000222	0.0003743	0.0035	1.37	2708.61	3278.07	3278.07	12.25	No	Si
SLU 27	14.25	247.75	-367	-0.0000649	0.0003743	0.0035	1.096	249.3	352.74	352.74	1.42	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche,  $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 14	11.87	653.28	-2700	-0.0000215	0.0005615	0.0035	1.37		1880.77	1880.77	2.88		Si
SLV 14	14.25	-212.56	305	0.037844	0.0005615	0.0035	1.096		0	0	0		No
SLV 10	11.87	1212.35	-115	-0.0157794	0.0005615	0.0035	1.096		183.4	183.4	0.15		No
SLV 10	14.25	-409.68	1392	0.1700665	0.0005615	0.0035	1.096		0	0	0		No
SLV 13	11.87	676.1	-2688	-0.0000219	0.0005615	0.0035	1.37		1872.69	1872.69	2.77		Si
SLV 13	14.25	-214.81	311	0.038622	0.0005615	0.0035	1.096		0	0	0		No
SLD 6	11.87	318.81	-2029	-0.0000132	0.0005615	0.0035	1.37		1450.08	1450.08	4.55		Si
SLD 6	14.25	-66.1	389	0	0.0005615	0.0035	1.096		0	0	0		No
SLV 6	11.87	935.52	-28	-0.0126739	0.0005615	0.0035	1.096		124.33	124.33	0.13		No
SLV 6	14.25	-295.82	1307	0.1591539	0.0005615	0.0035	1.096		0	0	0		No
SLD 9	11.87	443.53	-2063	-0.0000154	0.0005615	0.0035	1.37		1471.8	1471.8	3.32		Si
SLD 9	14.25	-115.39	427	0.0520548	0.0005615	0.0035	1.096		0	0	0		No
SLD 5	11.87	325.25	-2025	-0.0000133	0.0005615	0.0035	1.37		1447.76	1447.76	4.45		Si
SLD 5	14.25	-66.74	391	0	0.0005615	0.0035	1.096		0	0	0		No
SLV 5	11.87	950.26	-20	-0.0129765	0.0005615	0.0035	1.096		118.74	118.74	0.12		No
SLV 5	14.25	-297.27	1312	0.1596562	0.0005615	0.0035	1.096		0	0	0		No
SLD 10	11.87	437.09	-2066	-0.0000153	0.0005615	0.0035	1.37		1474.12	1474.12	3.37		Si
SLD 10	14.25	-114.76	425	0.0518354	0.0005615	0.0035	1.096		0	0	0		No
SLV 9	11.87	1227.08	-107	-0.0160801	0.0005615	0.0035	1.096		177.83	177.83	0.14		No
SLV 9	14.25	-411.12	1396	0.1705687	0.0005615	0.0035	1.096		0	0	0		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 84	11.87	-336.28	-5287	-4403	-1622	1.37	1.37	-11478	8475	3251	30925	11487	3494	14980	No	9.24	Si
SLU 84	14.25	244.14	-537	-447	-1383	1.37	0.6903	-1165	7100	1372	30925	11487	3494	14980	No	10.83	Si
SLU 36	11.87	-332.52	-4650	-3872	-1625	1.37	1.37	-10095	8290	3180	30925	11487	3494	14980	No	9.22	Si
SLU 36	14.25	275.24	-455	-379	-1645	1.37	0.2418	-5601	7692	521	30925	11487	3494	14980	No	9.11	Si
SLU 29	11.87	-255.07	-4425	-3685	-1221	1.37	1.37	-9606	8225	3155	30925	11487	3494	14980	No	12.27	Si
SLU 29	14.25	244.4	-334	-278	-1413	1.096	0	0	0	0	30925	9189	2795	11984	No	8.48	Si
SLU 75	11.87	-325.41	-5258	-4379	-1631	1.37	1.37	-11415	8466	3248	30925	11487	3494	14980	No	9.18	Si
SLU 75	14.25	237.53	-537	-448	-1330	1.37	0.7291	-1167	7100	1450	30925	11487	3494	14980	No	11.27	Si
SLU 27	11.87	-267.65	-4465	-3718	-1336	1.37	1.37	-9692	8237	3160	30925	11487	3494	14980	No	11.21	Si
SLU 27	14.25	247.75	-367	-306	-1436	1.096	0.032	0	0	0	30925	9189	2795	11984	No	8.35	Si
SLU 28	11.87	-277.81	-4491	-3740	-1377	1.37	1.37	-9749	8244	3163	30925	11487	3494	14980	No	10.88	Si
SLU 28	14.25	252.03	-378	-315	-1467	1.096	0.0559	0	0	0	30925	9189	2795	11984	No	8.17	Si
SLU 78	11.87	-347.06	-5520	-4597	-1697	1.37	1.37	-11984	8542	3277	30925	11487	3494	14980	No	8.83	Si
SLU 78	14.25	284.18	-515	-429	-1630	1.37	0.4001	-3838	7456	835	30925	11487	3494	14980	No	9.19	Si
SLU 77	11.87	-336.91	-5494	-4575	-1656	1.37	1.37	-11926	8535	3274	30925	11487	3494	14980	No	9.04	Si
SLU 77	14.25	279.89	-504	-420	-1598	1.37	0.39	-3854	7458	814	30925	11487	3494	14980	No	9.37	Si
SLU 30	11.87	-265.22	-4452	-3707	-1261	1.37	1.37	-9663	8233	3158	30925	11487	3494	14980	No	11.88	Si
SLU 30	14.25	248.69	-344	-287	-1444	1.096	0	0	0	0	30925	9189	2795	11984	No	8.3	Si
SLU 38	11.87	-319.94	-4611	-3840	-1510	1.37	1.37	-10010	8279	3176	30925	11487	3494	14980	No	9.92	Si
SLU 38	14.25	271.9	-422	-351	-1622	1.37	0.12	-9962	8282	278	30925	11487	3494	14980	No	9.23	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 10	11.87	1212.35	-115	-96	4773	1.096	0	0	0	0	30925	13784	2795	16579		3.47	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 10	14.25	-409.68	1392	1159	3262	1.096	1.1721	0	0	0	30925	13784	2795	16579		5.08	Si
SLV 4	11.87	-1022.03	-4538	-3779	-5263	1.37	1.37	-9851	12387	4752	30925	17230	3494	20724		3.94	Si
SLV 4	14.25	449.41	-992	-826	-3489	1.37	0.6963	-2154	10847	2115	30925	17230	3494	20724		5.94	Si
SLV 5	11.87	950.26	-20	-17	3110	1.096	0	0	0	0	30925	13784	2795	16579		5.33	Si
SLV 5	14.25	-297.27	1312	1092	2156	1.096	1.37	0	0	0	30925	13784	2795	16579		7.69	Si
SLV 6	11.87	935.52	-28	-24	3040	1.096	0	0	0	0	30925	13784	2795	16579		5.45	Si
SLV 6	14.25	-295.82	1307	1089	2122	1.096	1.37	0	0	0	30925	13784	2795	16579		7.81	Si
SLV 8	11.87	-1573.02	-7119	-5928	-6596	1.37	1.37	-15454	13507	5181	30925	17230	3494	20724		3.14	Si
SLV 8	14.25	645.73	-2077	-1730	-4449	1.37	1.1224	-4509	11318	3557	30925	17230	3494	20724		4.66	Si
SLV 11	11.87	-1281.45	-7198	-5993	-4794	1.37	1.37	-15624	13542	5195	30925	17230	3494	20724		4.32	Si
SLV 11	14.25	530.43	-1989	-1656	-3274	1.37	1.2548	-4317	11280	3963	30925	17230	3494	20724		6.33	Si
SLV 7	11.87	-1558.28	-7111	-5921	-6526	1.37	1.37	-15436	13504	5180	30925	17230	3494	20724		3.18	Si
SLV 7	14.25	644.28	-2073	-1726	-4414	1.37	1.1226	-4500	11317	3557	30925	17230	3494	20724		4.69	Si
SLV 3	11.87	-999.21	-4525	-3768	-5155	1.37	1.37	-9824	12381	4750	30925	17230	3494	20724		4.02	Si
SLV 3	14.25	447.17	-986	-821	-3435	1.37	0.6944	-2140	10845	2108	30925	17230	3494	20724		6.03	Si
SLV 9	11.87	1227.08	-107	-89	4843	1.096	0	0	0	0	30925	13784	2795	16579		3.42	Si
SLV 9	14.25	-411.12	1396	1163	3297	1.096	1.1715	0	0	0	30925	13784	2795	16579		5.03	Si
SLV 12	11.87	-1296.19	-7206	-6000	-4864	1.37	1.37	-15642	13545	5196	30925	17230	3494	20724		4.26	Si
SLV 12	14.25	531.88	-1993	-1659	-3308	1.37	1.2542	-4326	11282	3962	30925	17230	3494	20724		6.26	Si

#### Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.061 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 6	179667	0.52	0	932	119.04	0	0	No, Trazione
SLV 5	179667	0.52	0	947	119.04	0	0	No, Trazione
SLV 13	179667	0.52	0	-758	119.04	0	0	No, e>t/2
SLV 10	179667	0.52	0	1058	119.04	0	0	No, Trazione
SLV 9	179667	0.52	0	1073	119.04	0	0	No, Trazione
SLV 14	179667	0.52	0	-781	119.04	0	0	No, e>t/2
SLV 1	179667	0.52	3070	-1178	119.04	161.55	1.36	Si
SLV 2	179667	0.52	3129	-1200	119.04	164.62	1.38	Si
SLV 15	179667	0.52	6405	-2457	119.04	329.56	2.77	Si
SLV 16	179667	0.52	6465	-2480	119.04	332.49	2.79	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.061 Wa = 0.05 Ta = 0.0455

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 8	-2077	-7119	52	2.588	366.6	0.903	41.67512	9.20785	Si
SLV 7	-2073	-7111	52	2.592	366.2	0.903	41.73264	9.20785	Si
SLV 12	-1993	-7206	66	2.656	358.3	0.901	42.83128	9.20785	Si
SLV 11	-1989	-7198	67	2.66	357.9	0.901	42.89206	9.20785	Si
SLV 4	-992	-4538	-7	4.026	262.8	0.889	65.82573	6.28723	Si
SLV 3	-986	-4525	-7	4.039	262.2	0.889	66.04102	6.28723	Si
SLV 16	-711	-4828	41	4.679	237.8	0.891	76.31899	6.28723	Si
SLV 15	-704	-4815	41	4.697	237.2	0.891	76.59456	6.28723	Si
SLV 2	23	-2411	-43	8.223	194.4	1	119.50514	6.28723	Si, Trazione
SLV 1	29	-2398	-43	8.25	194.4	1	119.90724	6.28723	Si, Trazione

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.35	SLV 29	Si
V_SLV	8.168	SLV 28	Si
PF_SLV	0	SLD 5	No
V_SLV	3.142	SLV 8	Si
PFFP_SLV	0	SLV 10	No
R_SLV	4.526	SLV 8	Si

## Maschio 206

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-9.333	-3.314	-11.003	-3.314	L7	F1	1.67	0.28	3.219	3.218	3.22			

#### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

#### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio



## Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche,  $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 46	11.87	861.36	-5030	-0.0000263	0.0003743	0.0035	1.67	3756.43	4022.46	4022.46	4.67	No	Si
SLU 46	13.97	-1407.05	-5203	-0.0000333	0.0003743	0.0035	1.67	3869.81	4671.08	4671.08	3.32	No	Si
SLU 68	11.87	1014.11	-5194	-0.0000286	0.0003743	0.0035	1.67	3864.02	4124.57	4124.57	4.07	No	Si
SLU 68	13.97	-1485.13	-5658	-0.0000358	0.0003743	0.0035	1.67	4163.07	4987.96	4987.96	3.36	No	Si
SLU 45	11.87	863.53	-5013	-0.0000262	0.0003743	0.0035	1.67	3745.32	4011.71	4011.71	4.65	No	Si
SLU 45	13.97	-1406.57	-5193	-0.0000332	0.0003743	0.0035	1.67	3863.38	4664.27	4664.27	3.32	No	Si
SLU 44	11.87	804.05	-4575	-0.000024	0.0003743	0.0035	1.67	3453.35	3712.13	3712.13	4.62	No	Si
SLU 44	13.97	-1250.21	-4425	-0.0000288	0.0003743	0.0035	1.67	3351.45	4116.25	4116.25	3.29	No	Si
SLU 65	11.87	972.59	-4836	-0.0000269	0.0003743	0.0035	1.67	3627.73	3895.69	3895.69	4.01	No	Si
SLU 65	13.97	-1388.73	-5021	-0.0000324	0.0003743	0.0035	1.67	3750.61	4545.81	4545.81	3.27	No	Si
SLU 69	11.87	1073.59	-5632	-0.0000308	0.0003743	0.0035	1.67	4146.49	4385.74	4385.74	4.09	No	Si
SLU 69	13.97	-1641.48	-6426	-0.0000403	0.0003743	0.0035	1.67	4641.77	5512.98	5512.98	3.36	No	Si
SLU 67	11.87	1029.9	-5290	-0.0000291	0.0003743	0.0035	1.67	3926.66	4181.83	4181.83	4.06	No	Si
SLU 67	13.97	-1545.56	-5799	-0.000037	0.0003743	0.0035	1.67	4252.7	5087.39	5087.39	3.29	No	Si
SLU 43	11.87	807.67	-4547	-0.000024	0.0003743	0.0035	1.67	3434.37	3692.04	3692.04	4.57	No	Si
SLU 43	13.97	-1249.41	-4409	-0.0000287	0.0003743	0.0035	1.67	3340.27	4104.27	4104.27	3.28	No	Si
SLU 64	11.87	976.22	-4808	-0.0000268	0.0003743	0.0035	1.67	3609.01	3876.86	3876.86	3.97	No	Si
SLU 64	13.97	-1387.93	-5005	-0.0000324	0.0003743	0.0035	1.67	3739.78	4534.53	4534.53	3.27	No	Si
SLU 66	11.87	1032.08	-5274	-0.0000291	0.0003743	0.0035	1.67	3915.7	4171.82	4171.82	4.04	No	Si
SLU 66	13.97	-1545.09	-5790	-0.000037	0.0003743	0.0035	1.67	4246.47	5080.44	5080.44	3.29	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche,  $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 1	11.87	3938.39	-698	-0.0320877	0.0005615	0.0035	1.336		745.54	745.54	0.19		No
SLV 1	13.97	-3876.51	-7276	-0.0000895	0.0005615	0.0035	1.336		6268.64	6268.64	1.62		Si
SLV 6	11.87	1979.82	-700	-0.013032	0.0005615	0.0035	1.336		747.76	747.76	0.38		No
SLV 6	13.97	-2264.11	-5030	-0.0000471	0.0005615	0.0035	1.67		4640.27	4640.27	2.05		Si
SLV 15	11.87	-2670.91	-6613	-0.0000556	0.0005615	0.0035	1.67		5799.81	5799.81	2.17		Si
SLV 15	13.97	1995.13	114	-0.0201093	0.0005615	0.0035	1.336		0	0	0		No
SLV 4	11.87	3910.67	-1960	-0.0218371	0.0005615	0.0035	1.336		1764.54	1764.54	0.45		No
SLV 4	13.97	-3795.21	-7372	-0.0000854	0.0005615	0.0035	1.336		6336.85	6336.85	1.67		Si
SLV 16	11.87	-2537.28	-6548	-0.000053	0.0005615	0.0035	1.67		5753.37	5753.37	2.27		Si
SLV 16	13.97	1858.63	-94	-0.0169987	0.0005615	0.0035	1.336		249.87	249.87	0.13		No
SLV 3	11.87	3777.04	-2026	-0.020122	0.0005615	0.0035	1.336		1816.58	1816.58	0.48		No
SLV 3	13.97	-3658.71	-7164	-0.0000817	0.0005615	0.0035	1.336		6189.37	6189.37	1.69		Si
SLV 5	11.87	1893.51	-743	-0.0118522	0.0005615	0.0035	1.336		782.27	782.27	0.41		No
SLV 5	13.97	-2175.94	-4896	-0.0000451	0.0005615	0.0035	1.67		4542.4	4542.4	2.09		Si
SLV 2	11.87	4072.02	-632	-0.0339483	0.0005615	0.0035	1.336		692.08	692.08	0.17		No
SLV 2	13.97	-4013.01	-7484	-0.0000934	0.0005615	0.0035	1.336		6416.38	6416.38	1.6		Si
SLV 14	11.87	-2375.93	-5220	-0.0000496	0.0005615	0.0035	1.336		4779.67	4779.67	2.01		Si
SLV 14	13.97	1640.83	-205	-0.0138539	0.0005615	0.0035	1.336		342.09	342.09	0.21		No
SLV 13	11.87	-2509.56	-5286	-0.0000531	0.0005615	0.0035	1.336		4827.64	4827.64	1.92		Si
SLV 13	13.97	1777.33	2	-0.0170352	0.0005615	0.0035	1.336		169.63	169.63	0.1		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 69	11.87	1073.59	-5632	-4690	2506	1.67	1.67	-10030	8282	3873	35683	14002	4259	18261	No	7.29	Si
SLU 69	13.97	-1641.48	-6426	-5351	2503	1.67	1.67	-11444	8470	3961	35683	14002	4259	18261	No	7.29	Si
SLU 72	11.87	1057.08	-5542	-4615	2451	1.67	1.67	-9868	8260	3863	35683	14002	4259	18261	No	7.45	Si
SLU 72	13.97	-1581.2	-6288	-5236	2447	1.67	1.67	-11198	8438	3945	35683	14002	4259	18261	No	7.46	Si
SLU 79	11.87	1012.57	-5461	-4548	2365	1.67	1.67	-9726	8241	3854	35683	14002	4259	18261	No	7.72	Si
SLU 79	13.97	-1481.83	-6159	-5129	2359	1.67	1.67	-10969	8407	3931	35683	14002	4259	18261	No	7.74	Si
SLU 78	11.87	1024.74	-5586	-4651	2413	1.67	1.67	-9947	8271	3867	35683	14002	4259	18261	No	7.57	Si
SLU 78	13.97	-1543.07	-6317	-5260	2407	1.67	1.67	-11250	8444	3949	35683	14002	4259	18261	No	7.59	Si
SLU 77	11.87	1026.91	-5569	-4637	2416	1.67	1.67	-9917	8267	3866	35683	14002	4259	18261	No	7.56	Si
SLU 77	13.97	-1542.59	-6307	-5252	2411	1.67	1.67	-11232	8442	3948	35683	14002	4259	18261	No	7.57	Si
SLU 66	11.87	1032.08	-5274	-4391	2330	1.67	1.67	-9391	8197	3833	35683	14002	4259	18261	No	7.84	Si
SLU 66	13.97	-1545.09	-5790	-4821	2329	1.67	1.67	-10310	8319	3890	35683	14002	4259	18261	No	7.84	Si
SLU 67	11.87	1029.9	-5290	-4405	2326	1.67	1.67	-9421	8201	3835	35683	14002	4259	18261	No	7.85	Si
SLU 67	13.97	-1545.56	-5799	-4829	2325	1.67	1.67	-10328	8321	3891	35683	14002	4259	18261	No	7.85	Si
SLU 80	11.87	1010.39	-5478	-4562	2361	1.67	1.67	-9756	8245	3856	35683	14002	4259	18261	No	7.73	Si
SLU 80	13.97	-1482.31	-6169	-5137	2355	1.67	1.67	-10986	8409	3932	35683	14002	4259	18261	No	7.75	Si
SLU 70	11.87	1071.42	-5649	-4704	2503	1.67	1.67	-10060	8286	3874	35683	14002	4259	18261	No	7.3	Si
SLU 70	13.97	-1641.96	-6436	-5360	2500	1.67	1.67	-11462	8473	3962	35683	14002	4259	18261	No	7.31	Si
SLU 71	11.87	1059.25	-5525	-4600	2455	1.67	1.67	-9838	8256	3861	35683	14002	4259	18261	No	7.44	Si
SLU 71	13.97	-1580.73	-6278	-5228	2451	1.67	1.67	-11181	8435	3944	35683	14002	4259	18261	No	7.45	Si



## Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 2	11.87	4072.02	-632	-527	7718	1.336	0	0	0	0	35683	16803	3407	20209		2.62	Si
SLV 2	13.97	-4013.01	-7484	-6232	6472	1.336	0.8963	0	0	0	35683	16803	3407	20209		3.12	Si
SLV 3	11.87	3777.04	-2026	-1687	6829	1.336	0	0	0	0	35683	16803	3407	20209		2.96	Si
SLV 3	13.97	-3658.71	-7164	-5966	5544	1.336	0.973	0	0	0	35683	16803	3407	20209		3.64	Si
SLV 4	11.87	3910.67	-1960	-1632	7066	1.336	0	0	0	0	35683	16803	3407	20209		2.86	Si
SLV 4	13.97	-3795.21	-7372	-6139	5782	1.336	0.9606	0	0	0	35683	16803	3407	20209		3.5	Si
SLV 14	11.87	-2375.93	-5220	-4347	-3775	1.336	1.1396	0	0	0	35683	16803	3407	20209		5.35	Si
SLV 14	13.97	1640.83	-205	-171	-2491	1.336	0	0	0	0	35683	16803	3407	20209		8.11	Si
SLV 6	11.87	1979.82	-700	-583	4415	1.336	0	0	0	0	35683	16803	3407	20209		4.58	Si
SLV 6	13.97	-2264.11	-5030	-4188	4097	1.67	1.1546	-13033	13024	4210	35683	21003	4259	25262		6.17	Si
SLV 13	11.87	-2509.56	-5286	-4401	-4012	1.336	1.0806	0	0	0	35683	16803	3407	20209		5.04	Si
SLV 13	13.97	1777.33	2	2	-2728	1.336	0	0	0	0	35683	16803	3407	20209		7.41	Si
SLD 2	11.87	2143.23	-2336	-1945	4177	1.336	0	0	0	0	35683	16803	3407	20209		4.84	Si
SLD 2	13.97	-2293.5	-5308	-4420	3644	1.67	1.2087	-13140	13045	4415	35683	21003	4259	25262		6.93	Si
SLV 5	11.87	1893.51	-743	-618	4262	1.336	0	0	0	0	35683	16803	3407	20209		4.74	Si
SLV 5	13.97	-2175.94	-4896	-4077	3944	1.67	1.1716	-12498	12916	4237	35683	21003	4259	25262		6.4	Si
SLD 1	11.87	2085.85	-2364	-1969	4075	1.336	0	0	0	0	35683	16803	3407	20209		4.96	Si
SLD 1	13.97	-2234.89	-5218	-4345	3542	1.67	1.2202	-12794	12976	4433	35683	21003	4259	25262		7.13	Si
SLV 1	11.87	3938.39	-698	-581	7482	1.336	0	0	0	0	35683	16803	3407	20209		2.7	Si
SLV 1	13.97	-3876.51	-7276	-6059	6234	1.336	0.9067	0	0	0	35683	16803	3407	20209		3.24	Si

## Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.479 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 16	179667	0.53	0	-1093	195.79	0	0	No, $e > t/2$
SLV 15	179667	0.53	0	-929	195.79	0	0	No, $e > t/2$
SLV 14	179667	0.53	0	-906	195.79	0	0	No, $e > t/2$
SLV 13	179667	0.53	0	-742	195.79	0	0	No, $e > t/2$
SLV 9	179667	0.53	5387	-2519	195.79	340.19	1.74	Si
SLV 10	179667	0.53	5613	-2624	195.79	353.92	1.81	Si
SLV 11	179667	0.53	6716	-3141	195.79	420.34	2.15	Si
SLV 12	179667	0.53	6942	-3246	195.79	433.81	2.22	Si
SLV 5	179667	0.53	8989	-4203	195.79	553.8	2.83	Si
SLV 6	179667	0.53	9215	-4309	195.79	566.83	2.9	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

## Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 13.479 Wa = 0.05 Ta = 0.0618

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	a0*	aLim	Verifica
SLV 6	-2169	-700	-118	2.689	444.7	0.894	43.69946	12.73219	Si
SLV 5	-2149	-743	-118	2.704	442.7	0.894	43.95735	12.73219	Si
SLV 10	-2072	-2077	-278	2.717	435.4	0.893	44.20212	12.73219	Si
SLV 9	-2052	-2119	-278	2.733	433.5	0.893	44.4697	12.73219	Si
SLV 8	-412	-5127	284	5.226	292.1	0.918	82.73844	12.73219	Si
SLV 7	-392	-5169	284	5.286	290.8	0.92	83.50715	12.73219	Si
SLV 2	-1673	-632	209	3.093	397.5	0.89	50.50096	7.47138	Si
SLV 1	-1641	-698	209	3.125	394.6	0.89	51.03492	7.47138	Si
SLV 12	-315	-6503	124	5.622	286.4	0.929	87.95853	12.73219	Si
SLV 11	-295	-6545	124	5.69	285.3	0.932	88.77224	12.73219	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

## Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.267	SLU 64	Si
V_SLU	7.286	SLU 69	Si
PF_SLV	0	SLV 15	No
V_SLV	2.618	SLV 2	Si
PFFP_SLV	0	SLV 13	No
R_SLV	3.432	SLV 6	Si

## Maschio 208

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota l.	Quota s.	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-7.413	-3.314	-8.433	-3.314	L7	F1	1.02	0.28	3.217	3.216	3.217			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau_0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM



Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	e,fd	$\gamma_F,d$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 1	12.77	108.41	-2762	-0.0000179	0.0003743	0.0035	1.02	1274.66	1376.07	1376.07	12.69	No	Si
SLU 1	14.57	-209.33	-1715	-0.0000154	0.0003743	0.0035	1.02	822.91	1071.73	1071.73	5.12	No	Si
SLU 65	12.77	156.8	-3704	-0.0000246	0.0003743	0.0035	1.02	1648.35	1730.9	1730.9	11.04	No	Si
SLU 65	14.57	-271.46	-2323	-0.0000206	0.0003743	0.0035	1.02	1089.96	1351.14	1351.14	4.98	No	Si
SLU 68	12.77	148.72	-4104	-0.0000265	0.0003743	0.0035	1.02	1797.8	1882.48	1882.48	12.66	No	Si
SLU 68	14.57	-276.66	-2623	-0.0000224	0.0003743	0.0035	1.02	1217.23	1484.6	1484.6	5.37	No	Si
SLU 2	12.77	109.95	-2773	-0.000018	0.0003743	0.0035	1.02	1279.48	1381.25	1381.25	12.56	No	Si
SLU 2	14.57	-210.37	-1723	-0.0000154	0.0003743	0.0035	1.02	826.67	1075.61	1075.61	5.11	No	Si
SLU 47	12.77	126.93	-3949	-0.000025	0.0003743	0.0035	1.02	1740.53	1823.4	1823.4	14.37	No	Si
SLU 47	14.57	-279.27	-2494	-0.0000218	0.0003743	0.0035	1.02	1162.68	1426.72	1426.72	5.11	No	Si
SLU 46	12.77	120.32	-4114	-0.0000257	0.0003743	0.0035	1.02	1801.16	1885.99	1885.99	15.68	No	Si
SLU 46	14.57	-285.12	-2618	-0.0000226	0.0003743	0.0035	1.02	1215.02	1482.23	1482.23	5.2	No	Si
SLU 44	12.77	135.01	-3549	-0.000023	0.0003743	0.0035	1.02	1588.89	1672.85	1672.85	12.39	No	Si
SLU 44	14.57	-274.07	-2193	-0.0000199	0.0003743	0.0035	1.02	1034.04	1292.06	1292.06	4.71	No	Si
SLU 45	12.77	119.39	-4107	-0.0000256	0.0003743	0.0035	1.02	1798.59	1883.31	1883.31	15.77	No	Si
SLU 45	14.57	-284.49	-2613	-0.0000226	0.0003743	0.0035	1.02	1212.92	1479.98	1479.98	5.2	No	Si
SLU 64	12.77	155.25	-3692	-0.0000244	0.0003743	0.0035	1.02	1643.9	1726.52	1726.52	11.12	No	Si
SLU 64	14.57	-270.41	-2314	-0.0000205	0.0003743	0.0035	1.02	1086.38	1347.4	1347.4	4.98	No	Si
SLU 43	12.77	133.46	-3537	-0.0000229	0.0003743	0.0035	1.02	1584.38	1668.5	1668.5	12.5	No	Si
SLU 43	14.57	-273.03	-2185	-0.0000199	0.0003743	0.0035	1.02	1030.42	1288.24	1288.24	4.72	No	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche, $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 13	12.77	-2244.75	-5383	-0.0002376	0.0005615	0.0035	0.816		2722.13	2722.13	1.21		Si
SLV 13	14.57	1155.01	-804	-0.0182814	0.0005615	0.0035	0.816		471.37	471.37	0.41		No
SLV 1	12.77	2070.29	-308	-0.0476661	0.0005615	0.0035	0.816		224.92	224.92	0.11		No
SLV 1	14.57	-1334.28	-2392	-0.0006085	0.0005615	0.0035	0.816		1400.89	1400.89	1.05		Si
SLV 3	12.77	2283.27	-369	-0.0521838	0.0005615	0.0035	0.816		255.28	255.28	0.11		No
SLV 3	14.57	-1450.75	-2577	-0.0007139	0.0005615	0.0035	0.816		1486.95	1486.95	1.02		Si
SLV 2	12.77	2202.96	-131	-0.0534722	0.0005615	0.0035	0.816		136.08	136.08	0.06		No
SLV 2	14.57	-1402.35	-2401	-0.0007778	0.0005615	0.0035	0.816		1405.02	1405.02	1		Si
SLV 4	12.77	2415.94	-191	-0.0579883	0.0005615	0.0035	0.816		166.5	166.5	0.07		No
SLV 4	14.57	-1518.83	-2586	-0.0008973	0.0005615	0.0035	0.816		1491	1491	0.98		No
SLV 16	12.77	-1899.1	-5267	-0.0001357	0.0005615	0.0035	0.816		2673.37	2673.37	1.41		Si
SLV 16	14.57	970.46	-998	-0.0115633	0.0005615	0.0035	0.816		566.79	566.79	0.58		No
SLD 2	12.77	990.38	-1650	-0.0045332	0.0005615	0.0035	0.816		882.89	882.89	0.89		No
SLD 2	14.57	-703.27	-1996	-0.0000454	0.0005615	0.0035	0.816		1216.06	1216.06	1.73		Si
SLD 4	12.77	1082.35	-1679	-0.0066815	0.0005615	0.0035	0.816		896.49	896.49	0.83		No
SLD 4	14.57	-753.93	-2077	-0.0000509	0.0005615	0.0035	0.816		1253.45	1253.45	1.66		Si
SLV 15	12.77	2031.77	-5444	-0.0001554	0.0005615	0.0035	0.816		2747.56	2747.56	1.35		Si
SLV 15	14.57	1038.53	-989	-0.0133112	0.0005615	0.0035	0.816		562.49	562.49	0.54		No
SLV 14	12.77	-2112.08	-5206	-0.0002002	0.0005615	0.0035	0.816		2648.04	2648.04	1.25		Si
SLV 14	14.57	1086.93	-813	-0.0165103	0.0005615	0.0035	0.816		475.72	475.72	0.44		No

#### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 72	12.77	140.03	-4500	-3748	520	1.02	1.02	-13122	8694	2483	35683	8552	2601	11153	No	21.46	Si
SLU 72	14.57	-281.45	-2921	-2432	25	1.02	1.02	-8516	8080	2308	35683	8552	2601	11153	No	437.47	Si
SLU 68	12.77	148.72	-4104	-3418	525	1.02	1.02	-11967	8540	2439	35683	8552	2601	11153	No	21.23	Si
SLU 68	14.57	-276.66	-2623	-2185	59	1.02	1.02	-7649	7964	2275	35683	8552	2601	11153	No	188.52	Si
SLU 64	12.77	155.25	-3692	-3075	529	1.02	1.02	-10765	8380	2393	35683	8552	2601	11153	No	21.09	Si
SLU 64	14.57	-270.41	-2314	-1927	90	1.02	1.02	-6748	7844	2240	35683	8552	2601	11153	No	123.32	Si
SLU 66	12.77	141.18	-4262	-3549	524	1.02	1.02	-12426	8601	2457	35683	8552	2601	11153	No	21.29	Si
SLU 66	14.57	-281.88	-2743	-2284	47	1.02	1.02	-7997	8011	2288	35683	8552	2601	11153	No	235.93	Si
SLU 65	12.77	156.8	-3704	-3084	530	1.02	1.02	-10799	8384	2395	35683	8552	2601	11153	No	21.04	Si
SLU 65	14.57	-271.46	-2323	-1934	92	1.02	1.02	-6772	7847	2241	35683	8552	2601	11153	No	121.04	Si
SLU 71	12.77	139.1	-4493	-3742	519	1.02	1.02	-13101	8691	2482	35683	8552	2601	11153	No	21.49	Si
SLU 71	14.57	-280.82	-2916	-2428	24	1.02	1.02	-8501	8078	2307	35683	8552	2601	11153	No	455.77	Si
SLU 69	12.77	133.1	-4663	-3883	519	1.02	1.02	-13595	8757	2501	35683	8552	2601	11153	No	21.5	Si
SLU 69	14.57	-287.08	-3044	-2534	14	1.02	1.02	-8874	8128	2321	35683	8552	2601	11153	No	780.52	Si
SLU 44	12.77	135.01	-3549	-2955	475	1.02	1.02	-10346	8324	2377	35683	8552	2601	11153	No	23.46	Si
SLU 44	14.57	-274.07	-2193	-1826	117	1.02	1.02	-6394	7797	2227	35683	8552	2601	11153	No	95.55	Si
SLU 70	12.77	134.03	-4670	-3888	520	1.02	1.02	-13615	8760	2502	35683	8552	2601	11153	No	21.46	Si
SLU 70	14.57	-287.71	-3049	-2539	15	1.02	1.02	-8889	8130	2322	35683	8552	2601	11153	No	728.35	Si
SLU 67	12.77	142.1	-4269	-3555	525	1.02	1.02	-12447	8604	2457	35683	8552	2601	11153	No	21.26	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 67	14.57	-282.5	-2748	-2288	48	1.02	1.02	-8012	8013	2288	35683	8552	2601	11153	No	230.93	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 4	12.77	2415.94	-191	-159	4202	0.816	0	0	0	0	35683	10263	2081	12343		2.94	Si
SLV 4	14.57	-1518.83	-2586	-2153	1765	0.816	0	0	0	0	35683	10263	2081	12343		6.99	Si
SLV 14	12.77	-2112.08	-5206	-4335	-3301	0.816	0.313	0	0	0	35683	10263	2081	12343		3.74	Si
SLV 14	14.57	1086.93	-813	-677	-1583	0.816	0	0	0	0	35683	10263	2081	12343		7.8	Si
SLD 3	12.77	1025.39	-1755	-1461	1911	0.816	0	0	0	0	35683	10263	2081	12343		6.46	Si
SLD 3	14.57	-724.7	-2073	-1726	733	0.816	0.4811	0	0	0	35683	10263	2081	12343		16.84	Si
SLV 3	12.77	2283.27	-369	-307	4002	0.816	0	0	0	0	35683	10263	2081	12343		3.08	Si
SLV 3	14.57	-1450.75	-2577	-2146	1661	0.816	0	0	0	0	35683	10263	2081	12343		7.43	Si
SLV 2	12.77	2202.96	-131	-109	3966	0.816	0	0	0	0	35683	10263	2081	12343		3.11	Si
SLV 2	14.57	-1402.35	-2401	-1999	1556	0.816	0	0	0	0	35683	10263	2081	12343		7.93	Si
SLV 16	12.77	-1899.1	-5267	-4386	-3065	0.816	0.4483	0	0	0	35683	10263	2081	12343		4.03	Si
SLV 16	14.57	970.46	-998	-831	-1375	0.816	0	0	0	0	35683	10263	2081	12343		8.98	Si
SLD 4	12.77	1082.35	-1679	-1398	1997	0.816	0	0	0	0	35683	10263	2081	12343		6.18	Si
SLD 4	14.57	-753.93	-2077	-1729	778	0.816	0.4408	0	0	0	35683	10263	2081	12343		15.88	Si
SLV 13	12.77	-2244.75	-5383	-4483	-3501	0.816	0.2791	0	0	0	35683	10263	2081	12343		3.53	Si
SLV 13	14.57	1155.01	-804	-670	-1687	0.816	0	0	0	0	35683	10263	2081	12343		7.32	Si
SLV 15	12.77	-2031.77	-5444	-4533	-3265	0.816	0.4104	0	0	0	35683	10263	2081	12343		3.78	Si
SLV 15	14.57	1038.53	-989	-824	-1479	0.816	0	0	0	0	35683	10263	2081	12343		8.35	Si
SLV 1	12.77	2070.29	-308	-256	3766	0.816	0	0	0	0	35683	10263	2081	12343		3.28	Si
SLV 1	14.57	-1334.28	-2392	-1992	1452	0.816	0	0	0	0	35683	10263	2081	12343		8.5	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.478 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 2	179667	0.53	0	251	119.43	0	0	No, Trazione
SLV 1	179667	0.53	0	74	119.43	0	0	No, Trazione
SLV 3	179667	0.53	0	-32	119.43	0	0	No, e>t/2
SLV 4	179667	0.53	0	145	119.43	0	0	No, Trazione
SLV 6	179667	0.53	4955	-1415	119.43	191.68	1.61	Si
SLV 5	179667	0.53	5355	-1529	119.43	206.61	1.73	Si
SLV 8	179667	0.53	6192	-1768	119.43	237.55	1.99	Si
SLV 7	179667	0.53	6593	-1883	119.43	252.22	2.11	Si
SLV 10	179667	0.53	10232	-2922	119.43	381.7	3.2	Si
SLV 9	179667	0.53	10632	-3037	119.43	395.53	3.31	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 13.478 Wa = 0.05 Ta = 0.0617

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 5	-1274	-3314	-20	2.779	266.6	0.893	45.20394	12.71348	Si
SLV 6	-1256	-3362	-20	2.802	264.9	0.893	45.60278	12.71348	Si
SLV 9	-1124	-2316	-25	2.987	252.3	0.891	48.70536	12.71348	Si
SLV 10	-1106	-2364	-25	3.014	250.6	0.891	49.16485	12.71348	Si
SLV 7	-756	-3849	28	3.669	218.4	0.889	59.97735	12.71348	Si
SLV 8	-738	-3897	28	3.711	216.8	0.889	60.64653	12.71348	Si
SLV 11	-605	-2851	23	4.053	205.2	0.891	66.0889	12.71348	Si
SLV 12	-587	-2898	23	4.104	203.7	0.892	66.8804	12.71348	Si
SLV 1	-1272	-4653	3	2.788	266.5	0.893	45.36096	7.46549	Si
SLV 2	-1245	-4727	3	2.825	263.8	0.893	45.97968	7.46549	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	4.714	SLU 44	Si
V_SLV	21.036	SLU 65	Si
PF_SLV	0.062	SLV 2	No
V_SLV	2.937	SLV 4	Si
PFFP_SLV	0	SLV 4	No
R_SLV	3.556	SLV 5	Si

## Maschio 209

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-5.963	-3.314	-6.513	-3.314	L7	F1	0.55	0.28	3.215	3.215	3.216			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2





#### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	elim,conv / e,CNR DT-200							CRM / Fibrenet?			
									at	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 65	13.87	11.08	-1756	-0.0000184	0.0003743	0.0035	0.55	428.94	455.87	455.87	41.14	No	Si
SLU 65	14.67	-141.02	-1909	-0.0000341	0.0003743	0.0035	0.55	460.97	544.55	544.55	3.86	No	Si
SLU 22	13.87	12.83	-1403	-0.000015	0.0003743	0.0035	0.55	351.4	377.74	377.74	29.44	No	Si
SLU 22	14.67	-118.38	-1578	-0.0000281	0.0003743	0.0035	0.55	390.35	468.74	468.74	3.96	No	Si
SLU 2	13.87	4.56	-1297	-0.0000131	0.0003743	0.0035	0.55	327.09	352.02	352.02	77.16	No	Si
SLU 2	14.67	-98.71	-1358	-0.0000238	0.0003743	0.0035	0.55	341.08	416.07	416.07	4.21	No	Si
SLU 44	13.87	3.61	-1648	-0.0000165	0.0003743	0.0035	0.55	405.51	433.15	433.15	120.15	No	Si
SLU 44	14.67	-122	-1692	-0.0000297	0.0003743	0.0035	0.55	415.17	494.94	494.94	4.06	No	Si
SLU 43	13.87	4.4	-1646	-0.0000165	0.0003743	0.0035	0.55	405.06	432.7	432.7	98.43	No	Si
SLU 43	14.67	-122.63	-1697	-0.0000298	0.0003743	0.0035	0.55	416.09	495.91	495.91	4.04	No	Si
SLU 64	13.87	11.87	-1754	-0.0000184	0.0003743	0.0035	0.55	428.5	455.47	455.47	38.37	No	Si
SLU 64	14.67	-141.66	-1913	-0.0000342	0.0003743	0.0035	0.55	461.86	545.52	545.52	3.85	No	Si
SLU 23	13.87	12.04	-1405	-0.000015	0.0003743	0.0035	0.55	351.86	378.22	378.22	31.42	No	Si
SLU 23	14.67	-117.74	-1574	-0.000028	0.0003743	0.0035	0.55	389.42	467.77	467.77	3.97	No	Si
SLU 67	13.87	-1.58	-2026	-0.0000201	0.0003743	0.0035	0.55	485.28	571.61	571.61	361.45	No	Si
SLU 67	14.67	-147.48	-2247	-0.0000383	0.0003743	0.0035	0.55	529.31	620.11	620.11	4.2	No	Si
SLU 66	13.87	-1.11	-2025	-0.00002	0.0003743	0.0035	0.55	485.03	571.32	571.32	516.1	No	Si
SLU 66	14.67	-147.86	-2249	-0.0000384	0.0003743	0.0035	0.55	529.81	620.66	620.66	4.2	No	Si
SLU 1	13.87	5.35	-1295	-0.0000131	0.0003743	0.0035	0.55	326.62	351.53	351.53	65.67	No	Si
SLU 1	14.67	-99.35	-1362	-0.0000239	0.0003743	0.0035	0.55	342.04	417.11	417.11	4.2	No	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 4	13.87	287.24	-46	-0.0238103	0.0005615	0.0035	0.44		30.52	30.52	0.11		No
SLV 4	14.67	-478.31	-879	-0.0028511	0.0005615	0.0035	0.44		301.27	301.27	0.63		No
SLV 6	13.87	137.04	-720	-0.0000303	0.0005615	0.0035	0.55		210.41	210.41	1.54		Si
SLV 6	14.67	-203.51	-1757	-0.0000395	0.0005615	0.0035	0.55		521.1	521.1	2.56		Si
SLD 4	13.87	126.43	-787	-0.0000244	0.0005615	0.0035	0.55		228.01	228.01	1.8		Si
SLD 4	14.67	-263.17	-1202	-0.000078	0.0005615	0.0035	0.44		383.07	383.07	1.46		Si
SLV 3	13.87	252.87	-200	-0.0168276	0.0005615	0.0035	0.44		72.2	72.2	0.29		No
SLV 3	14.67	-440.9	-895	-0.0021983	0.0005615	0.0035	0.44		305.42	305.42	0.69		No
SLV 8	13.87	62.81	-1097	-0.0000172	0.0005615	0.0035	0.55		307.7	307.7	4.9		Si
SLV 8	14.67	-236.55	-868	-0.0002149	0.0005615	0.0035	0.44		298.45	298.45	1.26		Si
SLD 3	13.87	111.67	-854	-0.0000209	0.0005615	0.0035	0.55		245.16	245.16	2.2		Si
SLD 3	14.67	-247.11	-1209	-0.000062	0.0005615	0.0035	0.44		384.81	384.81	1.56		Si
SLD 2	13.87	136.14	-738	-0.000029	0.0005615	0.0035	0.55		215.11	215.11	1.58		Si
SLD 2	14.67	-258.8	-1318	-0.0000608	0.0005615	0.0035	0.44		412.07	412.07	1.59		Si
SLV 2	13.87	309.5	68	-0.0285885	0.0005615	0.0035	0.44		0	0	0		No
SLV 2	14.67	-468.4	-1146	-0.0018697	0.0005615	0.0035	0.44		368.89	368.89	0.79		No
SLV 1	13.87	275.14	-87	-0.0216677	0.0005615	0.0035	0.44		41.62	41.62	0.15		No
SLV 1	14.67	-430.99	-1162	-0.0013632	0.0005615	0.0035	0.44		372.93	372.93	0.87		No
SLV 7	13.87	40.61	-1197	-0.0000158	0.0005615	0.0035	0.55		332.96	332.96	8.2		Si
SLV 7	14.67	-212.39	-879	-0.0000915	0.0005615	0.0035	0.44		301.13	301.13	1.42		Si

#### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 78	13.87	-16.47	-2234	-1860	-10	0.55	0.55	-12077	8555	1317	35683	4612	1403	6014	No	590.77	Si
SLU 78	14.67	-137.17	-2539	-2115	244	0.55	0.55	-13730	8775	1351	35683	4612	1403	6014	No	24.61	Si
SLU 79	13.87	-14.04	-2116	-1762	-5	0.55	0.55	-11441	8470	1304	35683	4612	1403	6014	No	1121.08	Si
SLU 79	14.67	-130	-2425	-2019	238	0.55	0.55	-13110	8692	1339	35683	4612	1403	6014	No	25.27	Si
SLU 83	13.87	-4.67	-1984	-1652	5	0.55	0.55	-10729	8375	1290	35683	4612	1403	6014	No	1224.68	Si
SLU 83	14.67	-127.5	-2237	-1863	244	0.55	0.55	-12096	8557	1318	35683	4612	1403	6014	No	24.65	Si
SLU 74	13.87	-4.96	-2078	-1730	20	0.55	0.55	-11236	8443	1300	35683	4612	1403	6014	No	306.63	Si
SLU 74	14.67	-138.89	-2323	-1934	243	0.55	0.55	-12559	8619	1327	35683	4612	1403	6014	No	24.72	Si
SLU 75	13.87	-5.44	-2079	-1731	19	0.55	0.55	-11242	8443	1300	35683	4612	1403	6014	No	320.63	Si
SLU 75	14.67	-138.51	-2320	-1932	241	0.55	0.55	-12546	8617	1327	35683	4612	1403	6014	No	24.94	Si
SLU 80	13.87	-14.52	-2117	-1763	-6	0.55	0.55	-11448	8471	1305	35683	4612	1403	6014	No	966.74	Si
SLU 80	14.67	-129.62	-2422	-2017	236	0.55	0.55	-13096	8691	1338	35683	4612	1403	6014	No	25.49	Si
SLU 84	13.87	-5.14	-1985	-1653	4	0.55	0.55	-10735	8376	1290	35683	4612	1403	6014	No	1483.38	Si
SLU 84	14.67	-127.11	-2235	-1861	242	0.55	0.55	-12082	8555	1318	35683	4612	1403	6014	No	24.86	Si
SLU 81	13.87	6.36	-1830	-1524	34	0.55	0.55	-9894	8264	1273	35683	4612	1403	6014	No	177.68	Si
SLU 81	14.67	-128.84	-2018	-1680	241	0.55	0.55	-10911	8399	1294	35683	4612	1403	6014	No	24.98	Si
SLU 82	13.87	5.89	-1831	-1525	33	0.55	0.55	-9900	8264	1273	35683	4612	1403	6014	No	182.29	Si





Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 82	14.67	-128.45	-2015	-1678	239	0.55	0.55	-10898	8397	1293	35683	4612	1403	6014	No	25.2	Si
SLU 77	13.87	-15.99	-2232	-1859	-9	0.55	0.55	-12071	8554	1317	35683	4612	1403	6014	No	645.04	Si
SLU 77	14.67	-137.55	-2542	-2117	246	0.55	0.55	-13744	8777	1352	35683	4612	1403	6014	No	24.41	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 1	13.87	275.14	-87	-72	1353	0.44	0	0	0	0	35683	5534	1122	6656		4.92	Si
SLV 1	14.67	-430.99	-1162	-967	171	0.44	0	0	0	0	35683	5534	1122	6656		39	Si
SLD 2	13.87	136.14	-738	-614	667	0.55	0.2716	-3990	11215	853	35683	6917	1403	8320		12.47	Si
SLD 2	14.67	-258.8	-1318	-1098	187	0.44	0.2361	0	0	0	35683	5534	1122	6656		35.52	Si
SLV 16	13.87	-262.36	-2595	-2161	-1245	0.55	0.5217	-14030	13223	1932	35683	6917	1403	8320		6.69	Si
SLV 16	14.67	226.55	-1728	-1439	150	0.55	0.4317	-9343	12285	1485	35683	6917	1403	8320		55.44	Si
SLV 13	13.87	-274.46	-2636	-2195	-1357	0.55	0.5126	-14252	13267	1904	35683	6917	1403	8320		6.13	Si
SLV 13	14.67	273.87	-2011	-1674	211	0.55	0.4164	-10872	12591	1468	35683	6917	1403	8320		39.51	Si
SLV 15	13.87	-296.73	-2749	-2289	-1379	0.55	0.5012	-14864	13389	1879	35683	6917	1403	8320		6.03	Si
SLV 15	14.67	263.95	-1744	-1452	100	0.55	0.371	-9431	12303	1278	35683	6917	1403	8320		83.4	Si
SLV 2	13.87	309.5	68	56	1488	0.44	0	0	0	0	35683	5534	1122	6656		4.47	Si
SLV 2	14.67	-468.4	-1146	-954	221	0.44	0	0	0	0	35683	5534	1122	6656		30.12	Si
SLD 4	13.87	126.43	-787	-656	658	0.55	0.3433	-4257	11268	1083	35683	6917	1403	8320		12.65	Si
SLD 4	14.67	-263.17	-1202	-1001	138	0.44	0.1684	0	0	0	35683	5534	1122	6656		48.06	Si
SLV 14	13.87	-240.09	-2482	-2067	-1222	0.55	0.5348	-13418	13100	1962	35683	6917	1403	8320		6.81	Si
SLV 14	14.67	236.46	-1995	-1661	261	0.55	0.4694	-10784	12574	1652	35683	6917	1403	8320		31.89	Si
SLV 4	13.87	287.24	-46	-38	1465	0.44	0	0	0	0	35683	5534	1122	6656		4.54	Si
SLV 4	14.67	-478.31	-879	-732	110	0.44	0	0	0	0	35683	5534	1122	6656		60.43	Si
SLV 3	13.87	252.87	-200	-166	1331	0.44	0	0	0	0	35683	5534	1122	6656		5	Si
SLV 3	14.67	-440.9	-895	-745	60	0.44	0	0	0	0	35683	5534	1122	6656		111.23	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.478 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 9	179667	0.53	0	-289	64.34	0	0	No, e>t/2
SLV 10	179667	0.53	0	-269	64.34	0	0	No, e>t/2
SLV 14	179667	0.53	3108	-479	64.34	65.65	1.02	Si
SLV 13	179667	0.53	3313	-510	64.34	69.89	1.09	Si
SLV 6	179667	0.53	3397	-523	64.34	71.62	1.11	Si
SLV 5	179667	0.53	3530	-544	64.34	74.35	1.16	Si
SLV 16	179667	0.53	5961	-918	64.34	123.51	1.92	Si
SLV 15	179667	0.53	6166	-950	64.34	127.58	1.98	Si
SLV 2	179667	0.53	8618	-1327	64.34	175.33	2.73	Si
SLV 1	179667	0.53	8823	-1359	64.34	179.25	2.79	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.478 Wa = 0.05 Ta = 0.0617

Comb.	N top	N base	V orto	σ0	M*	e*	a0*	aLim	Verifica
SLV 9	-1315	-516	-17	1.8	205.5	0.914	28.62717	12.69935	Si
SLV 10	-1298	-475	-18	1.816	203.8	0.913	28.90466	12.69935	Si
SLV 5	-992	-479	-11	2.199	173.4	0.903	35.36971	12.69935	Si
SLV 6	-975	-438	-11	2.223	171.8	0.903	35.79084	12.69935	Si
SLV 13	-1477	-1130	-13	1.653	221.7	0.918	26.16541	7.461	Si
SLV 11	-690	-2116	15	2.767	144	0.893	45.01333	12.69935	Si
SLV 14	-1452	-1068	-13	1.675	219.2	0.918	26.52549	7.461	Si
SLV 12	-674	-2075	15	2.807	142.5	0.893	45.68873	12.69935	Si
SLV 15	-1290	-1610	-4	1.833	203	0.913	29.17493	7.461	Si
SLV 16	-1265	-1548	-4	1.859	200.5	0.912	29.62163	7.461	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.851	SLU 64	Si
V_SLU	24.405	SLU 77	Si
PF_SLV	0	SLV 2	No
V_SLV	4.474	SLV 2	Si
PFFP_SLV	0	SLV 9	No
R_SLV	2.254	SLV 9	Si

## Maschio 210

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.sx	a.s.dx
-3.183	-3.314	-5.463	-3.314	L7	F1	2.28	0.28	3.214	3.213	3.215			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti



fb	fk	fvk0	fmedio	$\tau_0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma_{F,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche,  $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 39	13.87	238.87	-5762	-0.000015	0.0003743	0.0035	2.28	5986.63	6422.53	6422.53	26.89	No	Si
SLU 39	14.67	-443.37	-4261	-0.0000127	0.0003743	0.0035	2.28	4539.14	5948.79	5948.79	13.42	No	Si
SLU 83	13.87	236.86	-7821	-0.00002	0.0003743	0.0035	2.28	7842.86	8278.27	8278.27	34.95	No	Si
SLU 83	14.67	-555.65	-5866	-0.0000172	0.0003743	0.0035	2.28	6083.42	7565.98	7565.98	13.62	No	Si
SLU 82	13.87	296.29	-7078	-0.0000185	0.0003743	0.0035	2.28	7190.47	7674.41	7674.41	25.9	No	Si
SLU 82	14.67	-511.95	-5175	-0.0000153	0.0003743	0.0035	2.28	5429.44	6888	6888	13.45	No	Si
SLU 73	13.87	304.47	-7101	-0.0000187	0.0003743	0.0035	2.28	7210.68	7692.72	7692.72	25.27	No	Si
SLU 73	14.67	-506.63	-5191	-0.0000153	0.0003743	0.0035	2.28	5444.9	6904.03	6904.03	13.63	No	Si
SLU 31	13.87	243.91	-5788	-0.0000151	0.0003743	0.0035	2.28	6010.53	6447.85	6447.85	26.43	No	Si
SLU 31	14.67	-440.62	-4277	-0.0000127	0.0003743	0.0035	2.28	4555.19	5965.33	5965.33	13.54	No	Si
SLU 41	13.87	176.3	-6508	-0.0000164	0.0003743	0.0035	2.28	6675.87	7156.94	7156.94	40.6	No	Si
SLU 41	14.67	-489.64	-4952	-0.0000146	0.0003743	0.0035	2.28	5215.35	6663.14	6663.14	13.61	No	Si
SLU 84	13.87	233.72	-7824	-0.00002	0.0003743	0.0035	2.28	7845.3	8280.58	8280.58	35.43	No	Si
SLU 84	14.67	-558.21	-5866	-0.0000172	0.0003743	0.0035	2.28	6083.5	7566.06	7566.06	13.55	No	Si
SLU 40	13.87	235.74	-5765	-0.000015	0.0003743	0.0035	2.28	5989.27	6425.33	6425.33	27.26	No	Si
SLU 40	14.67	-445.94	-4261	-0.0000127	0.0003743	0.0035	2.28	4539.22	5948.88	5948.88	13.34	No	Si
SLU 42	13.87	173.16	-6510	-0.0000164	0.0003743	0.0035	2.28	6678.44	7159.69	7159.69	41.35	No	Si
SLU 42	14.67	-492.2	-4952	-0.0000146	0.0003743	0.0035	2.28	5215.42	6663.23	6663.23	13.54	No	Si
SLU 81	13.87	299.43	-7076	-0.0000186	0.0003743	0.0035	2.28	7187.95	7672.13	7672.13	25.62	No	Si
SLU 81	14.67	-509.39	-5175	-0.0000153	0.0003743	0.0035	2.28	5429.36	6887.91	6887.91	13.52	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche,  $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 2	13.87	1292.88	-6057	-0.0000221	0.0005615	0.0035	2.28		6855.85	6855.85	5.3		Si
SLV 2	14.67	-900.65	-4343	-0.0000156	0.0005615	0.0035	2.28		6103.92	6103.92	6.78		Si
SLV 14	13.87	-661.75	-3408	-0.0000119	0.0005615	0.0035	2.28		5110.52	5110.52	7.72		Si
SLV 14	14.67	271.3	-2529	-0.0000075	0.0005615	0.0035	2.28		3111.37	3111.37	11.47		Si
SLV 5	13.87	580.6	-3683	-0.0000121	0.0005615	0.0035	2.28		4358.81	4358.81	7.51		Si
SLV 5	14.67	-111.22	-2724	-0.000007	0.0005615	0.0035	2.28		4373.77	4373.77	39.33		Si
SLV 1	13.87	1193.05	-6034	-0.0000214	0.0005615	0.0035	2.28		6832.61	6832.61	5.73		Si
SLV 1	14.67	-760.84	-4370	-0.0000148	0.0005615	0.0035	2.28		6132.53	6132.53	8.06		Si
SLV 15	13.87	-807.85	-4609	-0.0000157	0.0005615	0.0035	2.28		6382.88	6382.88	7.9		Si
SLV 15	14.67	184.66	-3419	-0.000009	0.0005615	0.0035	2.28		4075.46	4075.46	22.07		Si
SLV 13	13.87	-761.57	-3385	-0.0000125	0.0005615	0.0035	2.28		5086.34	5086.34	6.68		Si
SLV 13	14.67	411.11	-2556	-0.0000084	0.0005615	0.0035	2.28		3140.96	3140.96	7.64		Si
SLV 4	13.87	1246.6	-7281	-0.0000247	0.0005615	0.0035	2.28		8107.22	8107.22	6.5		Si
SLV 4	14.67	-1127.11	-5206	-0.000019	0.0005615	0.0035	2.28		6998.49	6998.49	6.21		Si
SLV 6	13.87	645.07	-3698	-0.0000125	0.0005615	0.0035	2.28		4374.43	4374.43	6.78		Si
SLV 6	14.67	-201.52	-2706	-0.0000075	0.0005615	0.0035	2.28		4354.74	4354.74	21.61		Si
SLV 8	13.87	490.81	-7778	-0.0000213	0.0005615	0.0035	2.28		8608.47	8608.47	17.54		Si
SLV 8	14.67	-956.36	-5582	-0.0000189	0.0005615	0.0035	2.28		7389.4	7389.4	7.73		Si
SLV 3	13.87	1146.77	-7258	-0.0000241	0.0005615	0.0035	2.28		8084.38	8084.38	7.05		Si
SLV 3	14.67	-987.29	-5233	-0.0000182	0.0005615	0.0035	2.28		7026.71	7026.71	7.12		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	l'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 67	13.87	290.91	-8281	-6895	2200	2.28	2.28	-10801	8385	5353	35683	19116	5814	24930	No	11.33	Si
SLU 67	14.67	-521.89	-6282	-5231	1784	2.28	2.28	-8195	8037	5131	35683	19116	5814	24930	No	13.98	Si
SLU 66	13.87	294.04	-8278	-6893	2196	2.28	2.28	-10798	8384	5352	35683	19116	5814	24930	No	11.35	Si
SLU 66	14.67	-519.32	-6282	-5231	1783	2.28	2.28	-8194	8037	5131	35683	19116	5814	24930	No	13.98	Si
SLU 69	13.87	231.47	-9023	-7514	2252	2.28	2.28	-11770	8514	5435	35683	19116	5814	24930	No	11.07	Si
SLU 69	14.67	-565.58	-6973	-5807	1836	2.28	2.28	-9096	8157	5208	35683	19116	5814	24930	No	13.58	Si
SLU 71	13.87	208.51	-8635	-7191	2203	2.28	2.28	-11264	8446	5392	35683	19116	5814	24930	No	11.32	Si
SLU 71	14.67	-578.48	-6610	-5505	1799	2.28	2.28	-8623	8094	5167	35683	19116	5814	24930	No	13.86	Si
SLU 72	13.87	205.38	-8638	-7193	2206	2.28	2.28	-11268	8447	5392	35683	19116	5814	24930	No	11.3	Si
SLU 72	14.67	-581.04	-6611	-5505	1799	2.28	2.28	-8623	8094	5167	35683	19116	5814	24930	No	13.86	Si
SLU 80	13.87	181.41	-8590	-7153	2180	2.28	2.28	-11204	8438	5387	35683	19116	5814	24930	No	11.44	Si
SLU 80	14.67	-597.44	-6573	-5473	1785	2.28	2.28	-8574	8088	5163	35683	19116	5814	24930	No	13.97	Si
SLU 70	13.87	228.33	-9026	-7516	2255	2.28	2.28	-11773	8514	5435	35683	19116	5814	24930	No	11.05	Si
SLU 70	14.67	-568.15	-6973	-5807	1836	2.28	2.28	-9096	8157	5208	35683	19116	5814	24930	No	13.58	Si
SLU 78	13.87	204.37	-8977	-7476	2228	2.28	2.28	-11710	8506	5430	35683	19116	5814	24930	No	11.19	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 78	14.67	-584.55	-6936	-5776	1822	2.28	2.28	-9047	8151	5203	35683	19116	5814	24930	No	13.68	Si
SLU 77	13.87	207.5	-8975	-7473	2225	2.28	2.28	-11706	8505	5430	35683	19116	5814	24930	No	11.21	Si
SLU 77	14.67	-581.99	-6936	-5776	1822	2.28	2.28	-9047	8151	5203	35683	19116	5814	24930	No	13.68	Si
SLU 79	13.87	184.55	-8587	-7150	2176	2.28	2.28	-11201	8438	5387	35683	19116	5814	24930	No	11.46	Si
SLU 79	14.67	-594.88	-6573	-5473	1785	2.28	2.28	-8574	8088	5163	35683	19116	5814	24930	No	13.97	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 8	13.87	490.81	-7778	-6477	3741	2.28	2.28	-10145	12446	7945	35683	28675	5814	34489		9.22	Si
SLV 8	14.67	-956.36	-5582	-4648	2502	2.28	2.28	-7281	11873	7580	35683	28675	5814	34489		13.79	Si
SLV 1	13.87	1193.05	-6034	-5025	3810	2.28	2.28	-7871	11991	7655	35683	28675	5814	34489		9.05	Si
SLV 1	14.67	-760.84	-4370	-3639	2975	2.28	2.28	-5700	11557	7378	35683	28675	5814	34489		11.59	Si
SLV 2	13.87	1292.88	-6057	-5044	4187	2.28	2.28	-7901	11997	7659	35683	28675	5814	34489		8.24	Si
SLV 2	14.67	-900.65	-4343	-3616	3294	2.28	2.28	-5665	11550	7373	35683	28675	5814	34489		10.47	Si
SLV 4	13.87	1246.6	-7281	-6063	4925	2.28	2.28	-9497	12316	7863	35683	28675	5814	34489		7	Si
SLV 4	14.67	-1127.1	-5206	-4335	3616	2.28	2.28	-6790	11775	7517	35683	28675	5814	34489		9.54	Si
SLD 1	13.87	649.7	-5625	-4684	2509	2.28	2.28	-7337	11884	7587	35683	28675	5814	34489		13.75	Si
SLD 1	14.67	-529.08	-4084	-3401	1986	2.28	2.28	-5328	11482	7330	35683	28675	5814	34489		17.37	Si
SLD 4	13.87	671.08	-6174	-5141	2996	2.28	2.28	-8053	12027	7678	35683	28675	5814	34489		11.51	Si
SLD 4	14.67	-689.79	-4452	-3708	2265	2.28	2.28	-5808	11578	7391	35683	28675	5814	34489		15.23	Si
SLD 3	13.87	628.21	-6164	-5133	2834	2.28	2.28	-8041	12025	7677	35683	28675	5814	34489		12.17	Si
SLD 3	14.67	-629.76	-4464	-3717	2128	2.28	2.28	-5823	11581	7393	35683	28675	5814	34489		16.21	Si
SLV 7	13.87	426.34	-7763	-6465	3497	2.28	2.28	-10126	12442	7943	35683	28675	5814	34489		9.86	Si
SLV 7	14.67	-866.06	-5600	-4663	2295	2.28	2.28	-7304	11878	7583	35683	28675	5814	34489		15.03	Si
SLV 3	13.87	1146.77	-7258	-6044	4547	2.28	2.28	-9468	12310	7859	35683	28675	5814	34489		7.58	Si
SLV 3	14.67	-987.29	-5233	-4357	3296	2.28	2.28	-6826	11782	7521	35683	28675	5814	34489		10.46	Si
SLD 2	13.87	692.57	-5635	-4692	2671	2.28	2.28	-7350	11887	7588	35683	28675	5814	34489		12.91	Si
SLD 2	14.67	-589.11	-4073	-3391	2123	2.28	2.28	-5312	11479	7328	35683	28675	5814	34489		16.25	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.476 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 6	179667	0.53	4489	-2865	266.4	389.37	1.46	Si
SLV 5	179667	0.53	4632	-2957	266.4	401.45	1.51	Si
SLV 10	179667	0.53	4787	-3056	266.4	414.41	1.56	Si
SLV 9	179667	0.53	4931	-3148	266.4	426.44	1.6	Si
SLV 2	179667	0.53	6160	-3933	266.4	528.36	1.98	Si
SLV 1	179667	0.53	6383	-4075	266.4	546.62	2.05	Si
SLV 14	179667	0.53	7154	-4567	266.4	609.46	2.29	Si
SLV 13	179667	0.53	7377	-4709	266.4	627.46	2.36	Si
SLV 4	179667	0.53	7925	-5059	266.4	671.54	2.52	Si
SLV 3	179667	0.53	8148	-5201	266.4	689.34	2.59	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 13.476 Wa = 0.05 Ta = 0.0616

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 8	-3949	-8688	642	2.157	702.7	0.902	34.74493	12.68311	Si
SLV 7	-3946	-8779	642	2.158	702.4	0.902	34.76294	12.68311	Si
SLV 12	-3466	-9136	645	2.348	655.4	0.898	37.99394	12.68311	Si
SLV 11	-3463	-9228	645	2.349	655.1	0.898	38.01538	12.68311	Si
SLV 6	-2430	-2772	-635	2.908	556	0.891	47.45404	12.68311	Si
SLV 5	-2427	-2863	-635	2.91	555.7	0.891	47.48698	12.68311	Si
SLV 10	-1947	-3221	-631	3.274	511.1	0.889	53.52837	12.68311	Si
SLV 9	-1944	-3312	-631	3.277	510.8	0.889	53.56947	12.68311	Si
SLV 4	-3982	-6068	190	2.222	705.9	0.902	35.79004	7.45579	Si
SLV 3	-3977	-6210	190	2.224	705.5	0.902	35.81864	7.45579	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	13.34	SLU 40	Si
V_SLU	11.054	SLU 70	Si
PF_SLV	5.303	SLV 2	Si
V_SLV	7.003	SLV 4	Si
PFFP_SLV	1.462	SLV 6	Si
R_SLV	2.739	SLV 8	Si

## Maschio 211

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.sx	a.s.dx
-0.133	-3.314	-2.283	-3.314	L7	F1	2.15	0.28	3.211	3.21	3.212			



## Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	t0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

## Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 8	12.77	701.35	-5294	-0.0000181	0.0003743	0.0035	2.15	5199.78	5570.26	5570.26	7.94	No	Si
SLU 8	14.57	1125.31	-3912	-0.0000175	0.0003743	0.0035	2.15	3936.56	4247	4247	3.77	No	Si
SLU 38	12.77	647.11	-5711	-0.0000188	0.0003743	0.0035	2.15	5567.08	5960.75	5960.75	9.21	No	Si
SLU 38	14.57	1268.06	-4297	-0.0000195	0.0003743	0.0035	2.15	4295.04	4620.65	4620.65	3.64	No	Si
SLU 27	12.77	774.3	-5973	-0.0000203	0.0003743	0.0035	2.15	5795.59	6203.66	6203.66	8.01	No	Si
SLU 27	14.57	1304.78	-4598	-0.0000205	0.0003743	0.0035	2.15	4572.45	4909.94	4909.94	3.76	No	Si
SLU 35	12.77	675.36	-5931	-0.0000195	0.0003743	0.0035	2.15	5758.5	6163.98	6163.98	9.13	No	Si
SLU 35	14.57	1316.28	-4608	-0.0000206	0.0003743	0.0035	2.15	4581.46	4919.35	4919.35	3.74	No	Si
SLU 30	12.77	746.05	-5754	-0.0000196	0.0003743	0.0035	2.15	5604.5	6000.27	6000.27	8.04	No	Si
SLU 30	14.57	1256.56	-4287	-0.0000194	0.0003743	0.0035	2.15	4285.93	4611.07	4611.07	3.67	No	Si
SLU 36	12.77	680.08	-5961	-0.0000196	0.0003743	0.0035	2.15	5784.69	6191.99	6191.99	9.1	No	Si
SLU 36	14.57	1311.42	-4606	-0.0000206	0.0003743	0.0035	2.15	4579.06	4916.84	4916.84	3.75	No	Si
SLU 16	12.77	602.42	-5251	-0.0000173	0.0003743	0.0035	2.15	5161.67	5530.02	5530.02	9.18	No	Si
SLU 16	14.57	1136.81	-3921	-0.0000176	0.0003743	0.0035	2.15	3945.8	4256.63	4256.63	3.74	No	Si
SLU 29	12.77	741.33	-5723	-0.0000195	0.0003743	0.0035	2.15	5578.09	5972.37	5972.37	8.06	No	Si
SLU 29	14.57	1261.41	-4289	-0.0000194	0.0003743	0.0035	2.15	4288.36	4613.62	4613.62	3.66	No	Si
SLU 17	12.77	607.14	-5282	-0.0000174	0.0003743	0.0035	2.15	5188.58	5558.42	5558.42	9.16	No	Si
SLU 17	14.57	1131.95	-3919	-0.0000175	0.0003743	0.0035	2.15	3943.34	4254.07	4254.07	3.76	No	Si
SLU 37	12.77	642.39	-5681	-0.0000186	0.0003743	0.0035	2.15	5540.63	5932.87	5932.87	9.24	No	Si
SLU 37	14.57	1272.91	-4299	-0.0000195	0.0003743	0.0035	2.15	4297.47	4623.2	4623.2	3.63	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 10	12.77	-268.74	2707	0.1938343	0.0005615	0.0035	1.72		0	0	0		No
SLV 10	14.57	2055.07	-2864	-0.0000285	0.0005615	0.0035	2.15		3246.67	3246.67	1.58		Si
SLD 6	12.77	266.36	-1394	-0.0000052	0.0005615	0.0035	2.15		1729.17	1729.17	6.49		Si
SLD 6	14.57	985.19	-2588	-0.0000131	0.0005615	0.0035	2.15		2964.47	2964.47	3.01		Si
SLV 5	12.77	-238.45	2301	0.1648005	0.0005615	0.0035	1.72		0	0	0		No
SLV 5	14.57	1585.78	-2127	-0.0000228	0.0005615	0.0035	2.15		2491.88	2491.88	1.57		Si
SLD 5	12.77	224.27	-1537	-0.0000053	0.0005615	0.0035	2.15		1878.31	1878.31	8.38		Si
SLD 5	14.57	1013.95	-2651	-0.0000134	0.0005615	0.0035	2.15		3028.92	3028.92	2.99		Si
SLV 13	12.77	52.35	-2576	-0.0000067	0.0005615	0.0035	2.15		2951.75	2951.75	56.39		Si
SLV 13	14.57	1878.02	-4466	-0.0000242	0.0005615	0.0035	2.15		4861.89	4861.89	2.59		Si
SLV 9	12.77	-365.06	2379	0.1709319	0.0005615	0.0035	1.72		0	0	0		No
SLV 9	14.57	2120.9	-3008	-0.0000289	0.0005615	0.0035	2.15		3394.03	3394.03	1.6		Si
SLV 6	12.77	-142.13	2628	0.1876769	0.0005615	0.0035	1.72		0	0	0		No
SLV 6	14.57	1519.94	-1983	-0.0000227	0.0005615	0.0035	2.15		2341.99	2341.99	1.54		Si
SLD 10	12.77	211.56	-1360	-0.0000048	0.0005615	0.0035	2.15		1693.96	1693.96	8.01		Si
SLD 10	14.57	1214.01	-2965	-0.0000157	0.0005615	0.0035	2.15		3349.94	3349.94	2.76		Si
SLD 9	12.77	169.48	-1503	-0.0000048	0.0005615	0.0035	2.15		1843.31	1843.31	10.88		Si
SLD 9	14.57	1242.77	-3028	-0.000016	0.0005615	0.0035	2.15		3414.31	3414.31	2.75		Si
SLV 14	12.77	201.48	-2069	-0.0000064	0.0005615	0.0035	2.15		2430.98	2430.98	12.07		Si
SLV 14	14.57	1776.08	-4243	-0.0000229	0.0005615	0.0035	2.15		4638.76	4638.76	2.61		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 14	12.77	635.38	-5502	-4581	-654	2.15	2.15	-7610	7959	4791	35683	18027	5483	23509	No	35.95	Si
SLU 14	14.57	1180.18	-4230	-3523	-649	2.15	2.15	-5852	7725	4650	35683	18027	5483	23509	No	36.2	Si
SLU 77	12.77	844.15	-7124	-5932	-726	2.15	2.15	-9854	8258	4972	35683	18027	5483	23509	No	32.37	Si
SLU 77	14.57	1423.7	-5362	-4465	-721	2.15	2.15	-7417	7933	4776	35683	18027	5483	23509	No	32.63	Si
SLU 37	12.77	642.39	-5681	-4730	-656	2.15	2.15	-7857	7992	4811	35683	18027	5483	23509	No	35.83	Si
SLU 37	14.57	1272.91	-4299	-3580	-650	2.15	2.15	-5947	7737	4658	35683	18027	5483	23509	No	36.15	Si
SLU 35	12.77	675.36	-5931	-4938	-697	2.15	2.15	-8203	8038	4839	35683	18027	5483	23509	No	33.73	Si
SLU 35	14.57	1316.28	-4608	-3837	-691	2.15	2.15	-6374	7794	4692	35683	18027	5483	23509	No	34	Si
SLU 79	12.77	811.18	-6874	-5724	-685	2.15	2.15	-9508	8212	4944	35683	18027	5483	23509	No	34.3	Si
SLU 79	14.57	1380.33	-5053	-4207	-679	2.15	2.15	-6989	7876	4742	35683	18027	5483	23509	No	34.6	Si
SLU 56	12.77	804.17	-6695	-5575	-683	2.15	2.15	-9260	8179	4924	35683	18027	5483	23509	No	34.41	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 56	14.57	1287.59	-4984	-4150	-679	2.15	2.15	-6894	7864	4734	35683	18027	5483	23509	No	34.65	Si
SLU 36	12.77	680.08	-5961	-4964	-672	2.15	2.15	-8245	8044	4842	35683	18027	5483	23509	No	34.98	Si
SLU 36	14.57	1311.42	-4606	-3835	-667	2.15	2.15	-6371	7794	4692	35683	18027	5483	23509	No	35.27	Si
SLU 80	12.77	815.9	-6904	-5749	-660	2.15	2.15	-9550	8218	4947	35683	18027	5483	23509	No	35.6	Si
SLU 80	14.57	1375.47	-5050	-4205	-654	2.15	2.15	-6985	7876	4741	35683	18027	5483	23509	No	35.92	Si
SLU 78	12.77	848.87	-7154	-5957	-701	2.15	2.15	-9896	8264	4975	35683	18027	5483	23509	No	33.52	Si
SLU 78	14.57	1418.84	-5359	-4463	-696	2.15	2.15	-7413	7933	4776	35683	18027	5483	23509	No	33.8	Si
SLU 57	12.77	808.89	-6725	-5600	-658	2.15	2.15	-9302	8185	4927	35683	18027	5483	23509	No	35.71	Si
SLU 57	14.57	1282.74	-4981	-4148	-654	2.15	2.15	-6890	7863	4734	35683	18027	5483	23509	No	35.97	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 13	12.77	52.35	-2576	-2145	-3670	2.15	2.15	-3563	11129	6700	35683	27040	5483	32523		8.86	Si
SLV 13	14.57	1878.02	-4466	-3719	-2468	2.15	1.9634	-6177	11652	6406	35683	27040	5483	32523		13.18	Si
SLV 8	12.77	1547.98	-11535	-9605	5403	2.15	2.15	-15956	13608	8192	35683	27040	5483	32523		6.02	Si
SLV 8	14.57	-1009.34	-3101	-2582	5027	2.15	2.15	-4289	11274	6787	35683	27040	5483	32523		6.47	Si
SLV 5	12.77	-238.45	2301	1916	-4574	1.72	2.15	0	0	0	35683	21632	4386	26018		5.69	Si
SLV 5	14.57	1585.78	-2127	-1772	-4911	2.15	0.9889	-2943	11005	3047	35683	27040	5483	32523		6.62	Si
SLV 9	12.77	-365.06	2379	1981	-5774	1.72	2.15	0	0	0	35683	21632	4386	26018		4.51	Si
SLV 9	14.57	2120.9	-3008	-2505	-5394	2.15	1.1097	-4161	11249	3495	35683	27040	5483	32523		6.03	Si
SLV 7	12.77	1451.65	-11862	-9878	5423	2.15	2.15	-16408	13698	8246	35683	27040	5483	32523		6	Si
SLV 7	14.57	-943.51	-3245	-2702	5046	2.15	2.15	-4488	11314	6811	35683	27040	5483	32523		6.45	Si
SLV 12	12.77	1421.36	-11456	-9540	4203	2.15	2.15	-15847	13586	8179	35683	27040	5483	32523		7.74	Si
SLV 12	14.57	-474.21	-3981	-3315	4543	2.15	2.15	-5507	11518	6934	35683	27040	5483	32523		7.16	Si
SLV 14	12.77	201.48	-2069	-1723	-3700	2.15	2.15	-2862	10989	6615	35683	27040	5483	32523		8.79	Si
SLV 14	14.57	1776.08	-4243	-3533	-2498	2.15	1.9691	-5868	11590	6390	35683	27040	5483	32523		13.02	Si
SLV 6	12.77	-142.13	2628	2188	-4593	1.72	2.15	0	0	0	35683	21632	4386	26018		5.66	Si
SLV 6	14.57	1519.94	-1983	-1652	-4930	2.15	0.9259	-2743	10965	2843	35683	27040	5483	32523		6.6	Si
SLV 10	12.77	-268.74	2707	2254	-5793	1.72	2.15	0	0	0	35683	21632	4386	26018		4.49	Si
SLV 10	14.57	2055.07	-2864	-2385	-5413	2.15	1.0722	-3961	11209	3365	35683	27040	5483	32523		6.01	Si
SLV 11	12.77	1325.04	-11784	-9812	4222	2.15	2.15	-16299	13677	8233	35683	27040	5483	32523		7.7	Si
SLV 11	14.57	-408.38	-4125	-3435	4563	2.15	2.15	-5706	11558	6958	35683	27040	5483	32523		7.13	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.475 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 9	179667	0.53	0	186	250.76	0	0	No, Trazione
SLV 10	179667	0.53	0	437	250.76	0	0	No, Trazione
SLV 5	179667	0.53	0	252	250.76	0	0	No, Trazione
SLV 6	179667	0.53	0	504	250.76	0	0	No, Trazione
SLV 2	179667	0.53	3971	-2390	250.76	325.94	1.3	Si
SLV 14	179667	0.53	4338	-2612	250.76	355.24	1.42	Si
SLV 1	179667	0.53	4618	-2780	250.76	377.4	1.51	Si
SLV 13	179667	0.53	4985	-3001	250.76	406.44	1.62	Si
SLV 4	179667	0.53	8300	-4996	250.76	661.48	2.64	Si
SLV 16	179667	0.53	8667	-5218	250.76	689.02	2.75	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.475 Wa = 0.05 Ta = 0.0615

Comb.	N top	N base	V orto	α0	M*	e*	α0*	αLim	Verifica
SLV 11	-2998	-12120	404	2.524	591.5	0.896	40.9372	12.65708	Si
SLV 12	-2944	-11642	404	2.552	586.3	0.895	41.4216	12.65708	Si
SLV 9	-2328	1580	-265	2.966	527.4	0.891	48.38504	12.65708	Si, Trazione
SLV 10	-2274	2058	-265	3.006	522.3	0.891	49.0436	12.65708	Si, Trazione
SLV 7	-2258	-11589	265	3.017	520.9	0.891	49.23596	12.65708	Si
SLV 8	-2204	-11111	265	3.058	515.8	0.89	49.91673	12.65708	Si
SLV 5	-1588	2111	-404	3.574	459.3	0.889	58.41772	12.65708	Si, Trazione
SLV 6	-1534	2590	-404	3.632	454.5	0.889	59.35673	12.65708	Si, Trazione
SLV 15	-3641	-8076	332	2.241	654.2	0.901	36.1255	7.44753	Si
SLV 16	-3557	-7336	332	2.275	646	0.901	36.71406	7.44753	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.632	SLU 37	Si
V_SLU	32.372	SLU 77	Si
PF_SLV	0	SLV 5	No
V_SLV	4.491	SLV 10	Si
PFFP_SLV	0	SLV 10	No
R_SLV	3.234	SLV 11	Si

## Maschio 216

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)



## Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s,sx	a.s,dx
-11.013	-4.784	-13.763	-4.784	L2	L3	2.75	0.45	1.98	1.98	1.98			

## Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

## Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

## Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 82	-1.59	-3684.06	-14968	-0.0000289	0.0003743	0.0035	2.75	18135.96	20803.24	20803.24	5.65	No	Si
SLU 82	0.39	1011.32	-19601	-0.0000275	0.0003743	0.0035	2.75	22758.38	23551.3	23551.3	23.29	No	Si
SLU 79	-1.59	-3650.79	-14760	-0.0000285	0.0003743	0.0035	2.75	17917.02	20570.01	20570.01	5.63	No	Si
SLU 79	0.39	1195.38	-19076	-0.0000273	0.0003743	0.0035	2.75	22258.38	23005.13	23005.13	19.25	No	Si
SLU 84	-1.59	-3726.15	-15133	-0.0000292	0.0003743	0.0035	2.75	18309.05	20988.7	20988.7	5.63	No	Si
SLU 84	0.39	1057.4	-19884	-0.000028	0.0003743	0.0035	2.75	23025.77	23846.96	23846.96	22.55	No	Si
SLU 75	-1.59	-3611.74	-14652	-0.0000283	0.0003743	0.0035	2.75	17803.47	20449.63	20449.63	5.66	No	Si
SLU 75	0.39	1082.16	-18933	-0.0000268	0.0003743	0.0035	2.75	22120.66	22856.2	22856.2	21.12	No	Si
SLU 80	-1.59	-3642.09	-14750	-0.0000285	0.0003743	0.0035	2.75	17906.73	20559.08	20559.08	5.64	No	Si
SLU 80	0.39	1169.59	-19079	-0.0000273	0.0003743	0.0035	2.75	22260.87	23007.84	23007.84	19.67	No	Si
SLU 81	-1.59	-3692.76	-14978	-0.0000289	0.0003743	0.0035	2.75	18146.2	20814.19	20814.19	5.64	No	Si
SLU 81	0.39	1037.11	-19598	-0.0000276	0.0003743	0.0035	2.75	22755.91	23548.59	23548.59	22.71	No	Si
SLU 78	-1.59	-3653.83	-14817	-0.0000286	0.0003743	0.0035	2.75	17977.71	20634.51	20634.51	5.65	No	Si
SLU 78	0.39	1128.24	-19216	-0.0000273	0.0003743	0.0035	2.75	22392.18	23150.45	23150.45	20.52	No	Si
SLU 77	-1.59	-3662.53	-14827	-0.0000287	0.0003743	0.0035	2.75	17987.98	20645.44	20645.44	5.64	No	Si
SLU 77	0.39	1154.03	-19213	-0.0000274	0.0003743	0.0035	2.75	22389.7	23147.74	23147.74	20.06	No	Si
SLU 83	-1.59	-3734.85	-15143	-0.0000293	0.0003743	0.0035	2.75	18319.26	20999.66	20999.66	5.62	No	Si
SLU 83	0.39	1083.19	-19882	-0.0000281	0.0003743	0.0035	2.75	23023.32	23844.24	23844.24	22.01	No	Si
SLU 74	-1.59	-3620.44	-14662	-0.0000283	0.0003743	0.0035	2.75	17813.78	20460.55	20460.55	5.65	No	Si
SLU 74	0.39	1107.95	-18930	-0.0000269	0.0003743	0.0035	2.75	22118.16	22853.5	22853.5	20.63	No	Si

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 15	-1.59	-3970.96	-10195	-0.0000232	0.0005615	0.0035	2.75		15476.06	15476.06	3.9		Si
SLD 15	0.39	8634.63	-11405	-0.0000423	0.0005615	0.0035	2.75		15304.17	15304.17	1.77		Si
SLV 3	-1.59	442.7	-9226	-0.0000125	0.0005615	0.0035	2.75		12564.91	12564.91	28.38		Si
SLV 3	0.39	-15888.79	-12984	-0.0002024	0.0005615	0.0035	2.2		18960.48	18960.48	1.19		Si
SLV 1	-1.59	452.13	-10371	-0.000014	0.0005615	0.0035	2.75		14013.87	14013.87	30.99		Si
SLV 1	0.39	-15786.13	-15254	-0.0001074	0.0005615	0.0035	2.2		21680.62	21680.62	1.37		Si
SLV 4	-1.59	780.59	-9219	-0.0000134	0.0005615	0.0035	2.75		12556	12556	16.09		Si
SLV 4	0.39	-17160.12	-13156	-0.0003466	0.0005615	0.0035	2.2		19168.46	19168.46	1.12		Si
SLV 14	-1.59	-5535.89	-11275	-0.0000289	0.0005615	0.0035	2.75		16821.84	16821.84	3.04		Si
SLV 14	0.39	17771.31	-12248	-0.007547	0.0005615	0.0035	2.75		16350.98	16350.98	0.92		No
SLV 15	-1.59	-5883.21	-10137	-0.0000289	0.0005615	0.0035	2.75		15403.76	15403.76	2.62		Si
SLV 15	0.39	18939.98	-9806	-0.0211737	0.0005615	0.0035	2.75		13299.39	13299.39	0.7		No
SLV 13	-1.59	-5873.78	-11282	-0.00003	0.0005615	0.0035	2.75		16830.62	16830.62	2.87		Si
SLV 13	0.39	19042.64	-12076	-0.0122466	0.0005615	0.0035	2.75		16137.4	16137.4	0.85		No
SLV 11	-1.59	-3620.32	-8480	-0.0000201	0.0005615	0.0035	2.75		13338.47	13338.47	3.68		Si
SLV 11	0.39	6405.03	-8300	-0.0000312	0.0005615	0.0035	2.75		11389.47	11389.47	1.78		Si
SLV 2	-1.59	790.02	-10364	-0.0000149	0.0005615	0.0035	2.75		14004.99	14004.99	17.73		Si
SLV 2	0.39	-17057.46	-15426	-0.0001394	0.0005615	0.0035	2.2		21886.57	21886.57	1.28		Si
SLV 16	-1.59	-5545.32	-10130	-0.0000277	0.0005615	0.0035	2.75		15395.02	15395.02	2.78		Si
SLV 16	0.39	17668.65	-9978	-0.0162833	0.0005615	0.0035	2.75		13517.15	13517.15	0.77		No

## Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 81	-1.59	-3692.76	-14978	-13314	-8764	2.75	2.75	-10758	8379	10369	21410	37056	7013	31779	No	3.63	Si
SLU 81	0.39	1037.11	-19598	-17421	-6392	2.75	2.75	-14077	8821	10917	21410	37056	7013	32326	No	5.06	Si
SLU 82	-1.59	-3684.06	-14968	-13305	-8717	2.75	2.75	-10751	8378	10368	21410	37056	7013	31778	No	3.65	Si
SLU 82	0.39	1011.32	-19601	-17423	-6359	2.75	2.75	-14079	8822	10917	21410	37056	7013	32327	No	5.08	Si
SLU 83	-1.59	-3734.85	-15143	-13461	-8893	2.75	2.75	-10877	8395	10388	21410	37056	7013	31798	No	3.58	Si
SLU 83	0.39	1083.19	-19882	-17673	-6485	2.75	2.75	-14281	8849	10950	21410	37056	7013	32360	No	4.99	Si
SLU 74	-1.59	-3620.44	-14662	-13033	-8636	2.75	2.75	-10531	8349	10331	21410	37056	7013	31741	No	3.68	Si



Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 74	0.39	1107.95	-18930	-16827	-6242	2.75	2.75	-13597	8757	10837	21410	37056	7013	32247	No	5.17	Si
SLU 75	-1.59	-3611.74	-14652	-13024	-8589	2.75	2.75	-10524	8348	10330	21410	37056	7013	31740	No	3.7	Si
SLU 75	0.39	1082.16	-18933	-16829	-6209	2.75	2.75	-13599	8758	10838	21410	37056	7013	32248	No	5.19	Si
SLU 80	-1.59	-3642.09	-14750	-13111	-8726	2.75	2.75	-10595	8357	10342	21410	37056	7013	31752	No	3.64	Si
SLU 80	0.39	1169.59	-19079	-16959	-6318	2.75	2.75	-13704	8772	10855	21410	37056	7013	32265	No	5.11	Si
SLU 77	-1.59	-3662.53	-14827	-13180	-8765	2.75	2.75	-10650	8364	10351	21410	37056	7013	31761	No	3.62	Si
SLU 77	0.39	1154.03	-19213	-17079	-6335	2.75	2.75	-13801	8785	10871	21410	37056	7013	32281	No	5.1	Si
SLU 78	-1.59	-3653.83	-14817	-13171	-8718	2.75	2.75	-10643	8364	10350	21410	37056	7013	31760	No	3.64	Si
SLU 78	0.39	1128.24	-19216	-17081	-6302	2.75	2.75	-13803	8785	10871	21410	37056	7013	32281	No	5.12	Si
SLU 79	-1.59	-3650.79	-14760	-13120	-8773	2.75	2.75	-10602	8358	10343	21410	37056	7013	31753	No	3.62	Si
SLU 79	0.39	1195.38	-19076	-16957	-6351	2.75	2.75	-13702	8771	10855	21410	37056	7013	32265	No	5.08	Si
SLU 84	-1.59	-3726.15	-15133	-13452	-8845	2.75	2.75	-10870	8394	10387	21410	37056	7013	31797	No	3.59	Si
SLU 84	0.39	1057.4	-19884	-17675	-6452	2.75	2.75	-14283	8849	10950	21410	37056	7013	32360	No	5.02	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 13	-1.59	-3970.17	-10698	-9509	-18662	2.75	2.75	-7684	11954	14792	21410	55584	7013	36202		1.94	Si
SLD 13	0.39	8677.36	-12393	-11016	-14360	2.75	2.0244	-8902	12197	11111	21410	55584	7013	32521		2.26	Si
SLV 13	-1.59	-5873.78	-11282	-10029	-35387	2.75	2.5631	-8728	12162	14028	21410	55584	7013	35438		1	Si
SLV 13	0.39	19042.64	-12076	-10734	-27670	2.75	0	-228604	16250	0	21410	55584	7013	21410		0.77	No
SLV 14	-1.59	-5535.89	-11275	-10022	-33186	2.75	2.652	-8431	12103	14444	21410	55584	7013	35854		1.08	Si
SLV 14	0.39	17771.31	-12248	-10887	-26063	2.75	0	-189733	16250	0	21410	55584	7013	21410		0.82	No
SLV 16	-1.59	-5545.32	-10130	-9004	-30798	2.75	2.4827	-8083	12033	13444	21410	55584	7013	34854		1.13	Si
SLV 16	0.39	17668.65	-9978	-8869	-24467	2.75	0	-232688	16250	0	21410	55584	7013	21410		0.88	No
SLV 1	-1.59	452.13	-10371	-9219	18464	2.75	2.75	-7450	11907	14734	21410	55584	7013	36144		1.96	Si
SLV 1	0.39	-15786.13	-15254	-13559	15632	2.2	1.0204	0	0	0	21410	44468	5610	21410		1.37	Si
SLV 9	-1.59	-3588.88	-12298	-10932	-18936	2.75	2.75	-8834	12183	15077	21410	55584	7013	36487		1.93	Si
SLV 9	0.39	6747.23	-15867	-14104	-14091	2.75	2.75	-11397	12696	15711	21410	55584	7013	37121		2.63	Si
SLV 15	-1.59	-5883.21	-10137	-9010	-32999	2.75	2.3838	-8433	12103	12983	21410	55584	7013	34393		1.04	Si
SLV 15	0.39	18939.98	-9806	-8716	-26075	2.75	0	-254795	16250	0	21410	55584	7013	21410		0.82	No
SLV 2	-1.59	790.02	-10364	-9213	20665	2.75	2.75	-7445	11906	14733	21410	55584	7013	36143		1.75	Si
SLV 2	0.39	-17057.46	-15426	-13712	17240	2.2	0.8078	0	0	0	21410	44468	5610	21410		1.24	Si
SLV 4	-1.59	780.59	-9219	-8194	23053	2.75	2.75	-6622	11741	14529	21410	55584	7013	35939		1.56	Si
SLV 4	0.39	-17160.12	-13156	-11694	18835	2.2	0.212	0	0	0	21410	44468	5610	21410		1.14	Si
SLV 3	-1.59	442.7	-9226	-8201	20852	2.75	2.75	-6627	11742	14531	21410	55584	7013	35941		1.72	Si
SLV 3	0.39	-15888.79	-12984	-11542	17228	2.2	0.4539	0	0	0	21410	44468	5610	21410		1.24	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota -0.6 Wa 0.08 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	α0	N	M	Mc	Coeff.s.	Verifica
SLV 11	179667	0.24	7510	-9294	88.9	1988.33	22.37	Si
SLV 12	179667	0.24	7560	-9355	88.9	2000.77	22.51	Si
SLV 7	179667	0.24	7784	-9632	88.9	2056.79	23.14	Si
SLV 8	179667	0.24	7833	-9694	88.9	2069.19	23.28	Si
SLV 15	179667	0.24	8342	-10323	88.9	2195.88	24.7	Si
SLV 16	179667	0.24	8419	-10418	88.9	2214.92	24.92	Si
SLV 3	179667	0.24	9253	-11451	88.9	2420.28	27.23	Si
SLV 4	179667	0.24	9330	-11546	88.9	2439.06	27.44	Si
SLV 13	179667	0.24	9340	-11558	88.9	2441.56	27.46	Si
SLV 14	179667	0.24	9417	-11653	88.9	2460.32	27.68	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = -0.6 Wa = 0.08 Ta = 0.0145

Comb.	N top	N base	V orto	α0	M*	e*	α0*	aLim	Verifica
SLV 6	-16932	-12021	-649	0.9	2070	0.951	13.74631	2.92073	Si
SLV 5	-16820	-12025	-649	0.905	2058.7	0.951	13.82023	2.92073	Si
SLV 10	-15978	-12294	-658	0.941	1973.2	0.949	14.40009	2.92073	Si
SLV 9	-15867	-12298	-658	0.946	1961.9	0.949	14.4822	2.92073	Si
SLV 2	-15426	-10364	-579	0.971	1917.2	0.948	14.88511	2.6206	Si
SLV 1	-15254	-10371	-579	0.98	1899.7	0.948	15.0218	2.6206	Si
SLV 4	-13156	-9219	-528	1.101	1687	0.942	16.98633	2.6206	Si
SLV 3	-12984	-9226	-528	1.112	1669.6	0.942	17.16893	2.6206	Si
SLV 14	-12248	-11275	-610	1.158	1595	0.939	17.91066	2.6206	Si
SLV 13	-12076	-11282	-609	1.17	1577.6	0.939	18.11685	2.6206	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	5.623	SLU 83	Si
V_SLU	3.576	SLU 83	Si
PF_SLV	0.702	SLV 15	No
V_SLV	0.774	SLV 13	No
PFFP_SLV	22.367	SLV 11	Si
R_SLV	4.706	SLV 6	Si





## Maschio 229

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-22.543	-3.314	-24.633	-3.314	L4	L6	2.09	0.28	7.24	7.24	7.24			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau_0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	at	α	elim,conv	s,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	2	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_m$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 82	2.01	-381.17	-20283	-0.0000585	0.0003743	0.0035	2.09	13979.8	32668.61	32668.61	85.71	No	Si
SLU 82	3.91	-843.56	-19125	-0.0000589	0.0003743	0.0035	2.09	13569.95	32356.92	32356.92	38.36	No	Si
SLU 78	2.01	-398.98	-20472	-0.0000593	0.0003743	0.0035	2.09	14042.31	32718.22	32718.22	82	No	Si
SLU 78	3.91	-875.48	-19304	-0.0000597	0.0003743	0.0035	2.09	13636.47	32406.09	32406.09	37.02	No	Si
SLU 76	2.01	-385.88	-19957	-0.0000576	0.0003743	0.0035	2.09	13869.36	32582.43	32582.43	84.44	No	Si
SLU 76	3.91	-847.71	-18800	-0.0000579	0.0003743	0.0035	2.09	13446.56	32267	32267	38.06	No	Si
SLU 77	2.01	-410.89	-20468	-0.0000594	0.0003743	0.0035	2.09	14040.97	32717.15	32717.15	79.62	No	Si
SLU 77	3.91	-863.21	-19255	-0.0000594	0.0003743	0.0035	2.09	13618.29	32392.6	32392.6	37.53	No	Si
SLU 63	2.01	-347.4	-18810	-0.0000539	0.0003743	0.0035	2.09	13450.41	32269.78	32269.78	92.89	No	Si
SLU 63	3.91	-839.46	-17665	-0.0000545	0.0003743	0.0035	2.09	12986.4	31924.57	31924.57	38.03	No	Si
SLU 83	2.01	-382.19	-20600	-0.0000595	0.0003743	0.0035	2.09	14083.87	32751.55	32751.55	85.69	No	Si
SLU 83	3.91	-875.32	-19429	-0.0000601	0.0003743	0.0035	2.09	13682.12	32440.12	32440.12	37.06	No	Si
SLU 84	2.01	-370.28	-20604	-0.0000594	0.0003743	0.0035	2.09	14085.19	32752.61	32752.61	88.45	No	Si
SLU 84	3.91	-887.6	-19478	-0.0000603	0.0003743	0.0035	2.09	13700	32453.52	32453.52	36.56	No	Si
SLU 79	2.01	-394.84	-20272	-0.0000586	0.0003743	0.0035	2.09	13976.16	32665.74	32665.74	82.73	No	Si
SLU 79	3.91	-871.29	-19071	-0.0000589	0.0003743	0.0035	2.09	13549.85	32342.17	32342.17	37.12	No	Si
SLU 80	2.01	-382.93	-20276	-0.0000585	0.0003743	0.0035	2.09	13977.52	32666.81	32666.81	85.31	No	Si
SLU 80	3.91	-883.57	-19120	-0.0000592	0.0003743	0.0035	2.09	13568.35	32355.75	32355.75	36.62	No	Si
SLU 59	2.01	-360.05	-18481	-0.000053	0.0003743	0.0035	2.09	13322.07	32177.65	32177.65	89.37	No	Si
SLU 59	3.91	-835.43	-17307	-0.0000534	0.0003743	0.0035	2.09	12832	31811.51	31811.51	38.08	No	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_m$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 2	2.01	5755.6	-17076	-0.0000898	0.0005615	0.0035	2.09		35547.58	35547.58	6.18		Si
SLV 2	3.91	-3782.65	-21354	-0.0000868	0.0005615	0.0035	2.09		37328.61	37328.61	9.87		Si
SLV 4	2.01	4547.3	-20080	-0.0000891	0.0005615	0.0035	2.09		36811.37	36811.37	8.1		Si
SLV 4	3.91	-4708.41	-25842	-0.000108	0.0005615	0.0035	2.09		38908.44	38908.44	8.26		Si
SLV 15	2.01	-6439.59	-10868	-0.000087	0.0005615	0.0035	2.09		32537.03	32537.03	5.05		Si
SLV 15	3.91	2707.34	-4497	-0.0000354	0.0005615	0.0035	2.09		28058.12	28058.12	10.36		Si
SLV 3	2.01	3813.52	-20653	-0.0000849	0.0005615	0.0035	2.09		37043.07	37043.07	9.71		Si
SLV 3	3.91	-4052.24	-25124	-0.0001004	0.0005615	0.0035	2.09		38666.83	38666.83	9.54		Si
SLV 14	2.01	-4497.51	-7291	-0.0000603	0.0005615	0.0035	2.09		30355.64	30355.64	6.75		Si
SLV 14	3.91	2976.93	-727	-0.000136	0.0005615	0.0035	2.09		22961.02	22961.02	7.71		Si
SLV 1	2.01	5021.82	-17649	-0.0000857	0.0005615	0.0035	2.09		35795.16	35795.16	7.13		Si
SLV 1	3.91	-3126.48	-20636	-0.0000794	0.0005615	0.0035	2.09		37053.71	37053.71	11.85		Si
SLV 6	2.01	3446.77	-10248	-0.0000523	0.0005615	0.0035	2.09		32160.6	32160.6	9.33		Si
SLV 6	3.91	-220.56	-8772	-0.0000241	0.0005615	0.0035	2.09		31294.08	31294.08	141.89		Si
SLV 16	2.01	-5705.81	-10295	-0.0000759	0.0005615	0.0035	2.09		32206.33	32206.33	5.64		Si
SLV 16	3.91	2051.17	-5215	-0.0000284	0.0005615	0.0035	2.09		28736.86	28736.86	14.01		Si
SLV 11	2.01	-4130.76	-17696	-0.0000788	0.0005615	0.0035	2.09		35833.27	35833.27	8.67		Si
SLV 11	3.91	-854.75	-17079	-0.0000514	0.0005615	0.0035	2.09		35567.12	35567.12	41.61		Si
SLV 13	2.01	-5231.29	-7864	-0.0000729	0.0005615	0.0035	2.09		30725.35	30725.35	5.87		Si
SLV 13	3.91	3633.1	-9	-0.0002691	0.0005615	0.0035	2.09		21408.91	21408.91	5.89		Si

### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	l'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 78	2.01	-398.98	-20472	-17048	1037	2.09	2.09	-29132	10829	6337	33145	17523	5329	22853	No	22.05	Si
SLU 78	3.91	-875.48	-19304	-16075	1079	2.09	2.09	-27469	10607	6207	33145	17523	5329	22853	No	21.18	Si
SLU 82	2.01	-381.17	-20283	-16890	1035	2.09	2.09	-28862	10793	6316	33145	17523	5329	22853	No	22.09	Si





Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 82	3.91	-843.56	-19125	-15925	1077	2.09	2.09	-27214	10573	6187	33145	17523	5329	22853	No	21.22	Si
SLU 84	2.01	-370.28	-20604	-17158	1081	2.09	2.09	-29320	10833	6340	33145	17523	5329	22853	No	21.15	Si
SLU 84	3.91	-887.6	-19478	-16220	1124	2.09	2.09	-27717	10640	6226	33145	17523	5329	22853	No	20.33	Si
SLU 80	2.01	-382.93	-20276	-16884	1056	2.09	2.09	-28852	10791	6315	33145	17523	5329	22853	No	21.63	Si
SLU 80	3.91	-883.57	-19120	-15922	1099	2.09	2.09	-27208	10572	6187	33145	17523	5329	22853	No	20.8	Si
SLU 63	2.01	-347.4	-18810	-15663	1042	2.09	2.09	-26766	10513	6152	33145	17523	5329	22853	No	21.93	Si
SLU 63	3.91	-839.46	-17665	-14710	1081	2.09	2.09	-25136	10296	6025	33145	17523	5329	22853	No	21.14	Si
SLU 76	2.01	-385.88	-19957	-16619	1035	2.09	2.09	-28399	10731	6280	33145	17523	5329	22853	No	22.07	Si
SLU 76	3.91	-847.71	-18800	-15655	1077	2.09	2.09	-26751	10511	6151	33145	17523	5329	22853	No	21.22	Si
SLU 59	2.01	-360.05	-18481	-15390	1018	2.09	2.09	-26299	10451	6116	33145	17523	5329	22853	No	22.46	Si
SLU 59	3.91	-835.43	-17307	-14412	1056	2.09	2.09	-24627	10228	5985	33145	17523	5329	22853	No	21.64	Si
SLU 83	2.01	-382.19	-20600	-17154	1043	2.09	2.09	-29314	10833	6340	33145	17523	5329	22853	No	21.91	Si
SLU 83	3.91	-875.32	-19429	-16179	1086	2.09	2.09	-27647	10631	6221	33145	17523	5329	22853	No	21.04	Si
SLU 62	2.01	-359.31	-18806	-15660	1004	2.09	2.09	-26760	10512	6152	33145	17523	5329	22853	No	22.76	Si
SLU 62	3.91	-827.18	-17615	-14669	1044	2.09	2.09	-25066	10287	6020	33145	17523	5329	22853	No	21.9	Si
SLU 79	2.01	-394.84	-20272	-16881	1019	2.09	2.09	-28847	10791	6315	33145	17523	5329	22853	No	22.43	Si
SLU 79	3.91	-871.29	-19071	-15881	1061	2.09	2.09	-27137	10563	6181	33145	17523	5329	22853	No	21.54	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 2	2.01	5755.6	-17076	-14219	8395	2.09	2.09	0	15258	8929	33145	26285	5329	31614		3.77	Si
SLV 2	3.91	-3782.65	-21354	-17782	7692	2.09	2.09	-30386	16250	9509	33145	26285	5329	31614		4.11	Si
SLV 15	2.01	-6439.59	-10868	-9050	-7146	2.09	1.3574	-23460	15152	5759	33145	26285	5329	31614		4.42	Si
SLV 15	3.91	2707.34	-4497	-3744	-6385	2.09	1.3287	-9826	12401	4614	33145	26285	5329	31614		4.95	Si
SLV 16	2.01	-5705.81	-10295	-8573	-5705	2.09	1.4722	-20683	14577	6009	33145	26285	5329	31614		5.54	Si
SLV 16	3.91	2051.17	-5215	-4342	-4944	2.09	1.9549	-7958	12009	6573	33145	26285	5329	31614		6.39	Si
SLV 14	2.01	-4497.51	-7291	-6071	-6737	2.09	1.2843	-16428	13740	4941	33145	26285	5329	31614		4.69	Si
SLV 14	3.91	2976.93	-727	-605	-6660	2.09	0	0	16250	0	33145	26285	5329	31614		4.75	Si
SLV 13	2.01	-5231.29	-7864	-6548	-8177	2.09	1.1393	-19461	14380	4587	33145	26285	5329	31614		3.87	Si
SLV 13	3.91	3633.1	-9	-7	-8101	2.09	0	0	8397	0	33145	26285	5329	31614		3.9	Si
SLV 1	2.01	5021.82	-17649	-14697	6955	2.09	2.09	-25114	15439	9035	33145	26285	5329	31614		4.55	Si
SLV 1	3.91	-3126.48	-20636	-17184	6251	2.09	2.09	-29364	16250	9509	33145	26285	5329	31614		5.06	Si
SLV 7	2.01	-1054.83	-20631	-17180	4148	2.09	2.09	-29358	16250	9509	33145	26285	5329	31614		7.62	Si
SLV 7	3.91	-2882.63	-23267	-19375	5202	2.09	2.09	-33108	16250	9509	33145	26285	5329	31614		6.08	Si
SLV 8	2.01	-580.9	-20261	-16872	5079	2.09	2.09	-28831	16183	9470	33145	26285	5329	31614		6.22	Si
SLV 8	3.91	-3306.43	-23731	-19761	6133	2.09	2.09	-33768	16250	9509	33145	26285	5329	31614		5.16	Si
SLV 3	2.01	3813.52	-20653	-17198	7986	2.09	2.09	-29389	16250	9509	33145	26285	5329	31614		3.96	Si
SLV 3	3.91	-4052.24	-25124	-20921	7967	2.09	2.09	-35750	16250	9509	33145	26285	5329	31614		3.97	Si
SLV 4	2.01	4547.3	-20080	-16721	9427	2.09	2.09	-28573	16131	9440	33145	26285	5329	31614		3.35	Si
SLV 4	3.91	-4708.41	-25842	-21519	9409	2.09	2.09	-36772	16250	9509	33145	26285	5329	31614		3.36	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 4.73 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\alpha 0$	N	M	Mc	Coeff.s.	Verifica
SLV 5	179667	0.34	0	-4732	808.49	0	0	No, $e > t/2$
SLV 9	179667	0.34	0	-973	808.49	0	0	No, $e > t/2$
SLV 13	179667	0.34	0	-2616	808.49	0	0	No, $e > t/2$
SLV 10	179667	0.34	0	-1215	808.49	0	0	No, $e > t/2$
SLV 6	179667	0.34	0	-4974	808.49	0	0	No, $e > t/2$
SLV 14	179667	0.34	0	-2990	808.49	0	0	No, $e > t/2$
SLV 15	179667	0.34	13397	-7840	808.49	1001.32	1.24	Si
SLV 16	179667	0.34	14037	-8214	808.49	1044.31	1.29	Si
SLV 1	179667	0.34	25882	-15146	808.49	1761.09	2.18	Si
SLV 2	179667	0.34	26522	-15520	808.49	1795.51	2.22	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 4.73 Wa = 0.05 Ta = 0.3126

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	$\alpha 0^*$	aLim	Verifica
SLV 4	-18869	-20600	357	0.524	2524.4	0.935	8.15403	15.21903	No
SLV 3	-17979	-20964	358	0.545	2434.4	0.933	8.49216	15.21903	No
SLV 2	-12147	-20639	217	0.746	1847.6	0.917	11.82655	15.21903	No
SLV 1	-11256	-21003	218	0.789	1758.6	0.914	12.54747	15.21903	No
SLV 16	-9877	-6557	-227	0.866	1621.3	0.909	13.84563	15.21903	No
SLV 15	-8986	-6920	-226	0.925	1533.1	0.905	14.84394	15.21903	No
SLV 8	-23407	-15704	317	0.442	2983.7	0.943	6.80549	5.02815	Si
SLV 7	-22831	-15939	318	0.451	2925.4	0.942	6.95271	5.02815	Si
SLV 12	-20709	-11491	142	0.495	2710.4	0.938	7.67058	5.02815	Si
SLV 11	-20134	-11726	143	0.507	2652.2	0.937	7.85666	5.02815	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	36.563	SLU 84	Si
V_SLU	20.334	SLU 84	Si
PF_SLV	5.053	SLV 15	Si
V_SLV	3.354	SLV 4	Si
PFFP_SLV	0	SLV 5	No
R_SLV	0.536	SLV 4	No



## Maschio 230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.313	-3.314	-21.543	-3.314	L4	L6	2.23	0.28	7.24	7.24	7.24			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	1900000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	2	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 83	6.83	-2403.26	-28493	-0.0000939	0.0003743	0.0035	2.23	17530.55	38339.33	38339.33	15.95	No	Si
SLU 83	7.63	-458.76	-24897	-0.0000681	0.0003743	0.0035	2.23	16888.25	37893.52	37893.52	82.6	No	Si
SLU 79	6.83	-2387.03	-27946	-0.0000921	0.0003743	0.0035	2.23	17462.11	38283.15	38283.15	16.04	No	Si
SLU 79	7.63	-475.39	-24408	-0.0000668	0.0003743	0.0035	2.23	16766.02	37819.36	37819.36	79.55	No	Si
SLU 74	6.83	-2360.69	-27634	-0.0000909	0.0003743	0.0035	2.23	17418.3	38250.08	38250.08	16.2	No	Si
SLU 74	7.63	-422.59	-24098	-0.0000655	0.0003743	0.0035	2.23	16683.97	37771.35	37771.35	89.38	No	Si
SLU 75	6.83	-2359.11	-27673	-0.000091	0.0003743	0.0035	2.23	17424.01	38254.29	38254.29	16.22	No	Si
SLU 75	7.63	-432.19	-24138	-0.0000657	0.0003743	0.0035	2.23	16694.77	37777.6	37777.6	87.41	No	Si
SLU 78	6.83	-2408.32	-28272	-0.0000933	0.0003743	0.0035	2.23	17504.18	38316.9	38316.9	15.91	No	Si
SLU 78	7.63	-483.22	-24707	-0.0000677	0.0003743	0.0035	2.23	16841.92	37865.01	37865.01	78.36	No	Si
SLU 81	6.83	-2354.05	-27894	-0.0000917	0.0003743	0.0035	2.23	17455.03	38277.67	38277.67	16.26	No	Si
SLU 81	7.63	-407.73	-24327	-0.0000661	0.0003743	0.0035	2.23	16744.88	37806.86	37806.86	92.72	No	Si
SLU 80	6.83	-2385.45	-27985	-0.0000922	0.0003743	0.0035	2.23	17467.39	38287.26	38287.26	16.05	No	Si
SLU 80	7.63	-485	-24448	-0.000067	0.0003743	0.0035	2.23	16776.39	37825.52	37825.52	77.99	No	Si
SLU 77	6.83	-2409.9	-28233	-0.0000932	0.0003743	0.0035	2.23	17499.3	38312.87	38312.87	15.9	No	Si
SLU 77	7.63	-473.61	-24667	-0.0000675	0.0003743	0.0035	2.23	16831.92	37858.92	37858.92	79.94	No	Si
SLU 84	6.83	-2401.69	-28533	-0.0000941	0.0003743	0.0035	2.23	17535.08	38343.29	38343.29	15.97	No	Si
SLU 84	7.63	-468.36	-24937	-0.0000683	0.0003743	0.0035	2.23	16897.93	37899.55	37899.55	80.92	No	Si
SLU 82	6.83	-2352.48	-27933	-0.0000918	0.0003743	0.0035	2.23	17460.38	38281.8	38281.8	16.27	No	Si
SLU 82	7.63	-417.34	-24367	-0.0000662	0.0003743	0.0035	2.23	16755.36	37813.05	37813.05	90.61	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 15	6.83	-3580.27	-20539	-0.0000755	0.0005615	0.0035	2.23		41540.71	41540.71	11.6		Si
SLV 15	7.63	3511.61	-15961	-0.0000627	0.0005615	0.0035	2.23		39444.16	39444.16	11.23		Si
SLV 1	6.83	59.39	-16992	-0.0000421	0.0005615	0.0035	2.23		39931.01	39931.01	672.3		Si
SLV 1	7.63	-3422.44	-16210	-0.0000628	0.0005615	0.0035	2.23		39586.14	39586.14	11.57		Si
SLD 15	6.83	-2470.3	-19473	-0.0000649	0.0005615	0.0035	2.23		41074.23	41074.23	16.63		Si
SLD 15	7.63	1364.46	-16072	-0.0000485	0.0005615	0.0035	2.23		39500.91	39500.91	28.95		Si
SLV 14	6.83	-3265.36	-16231	-0.0000618	0.0005615	0.0035	2.23		39595.86	39595.86	12.13		Si
SLV 14	7.63	3142.08	-12345	-0.0000508	0.0005615	0.0035	2.23		37454.8	37454.8	11.92		Si
SLV 16	6.83	-3336.67	-20273	-0.0000731	0.0005615	0.0035	2.23		41425.34	41425.34	12.42		Si
SLV 16	7.63	2947.21	-16018	-0.000059	0.0005615	0.0035	2.23		39474.15	39474.15	13.39		Si
SLV 3	6.83	-11.91	-21034	-0.0000522	0.0005615	0.0035	2.23		41754.08	41754.08	3504.85		Si
SLV 3	7.63	-3617.3	-19883	-0.000074	0.0005615	0.0035	2.23		41255.13	41255.13	11.4		Si
SLV 13	6.83	-3508.97	-16497	-0.0000641	0.0005615	0.0035	2.23		39720.43	39720.43	11.32		Si
SLV 13	7.63	3706.47	-12288	-0.0000544	0.0005615	0.0035	2.23		37421.64	37421.64	10.1		Si
SLD 13	6.83	-2436.19	-17696	-0.00006	0.0005615	0.0035	2.23		40275.04	40275.04	16.53		Si
SLD 13	7.63	1448.19	-14457	-0.0000449	0.0005615	0.0035	2.23		38640.44	38640.44	26.68		Si
SLV 2	6.83	303	-16726	-0.000043	0.0005615	0.0035	2.23		39807.51	39807.51	131.38		Si
SLV 2	7.63	-3986.84	-16268	-0.0000668	0.0005615	0.0035	2.23		39613.04	39613.04	9.94		Si
SLV 4	6.83	231.69	-20768	-0.000053	0.0005615	0.0035	2.23		41620.7	41620.7	179.64		Si
SLV 4	7.63	-4181.7	-19941	-0.0000781	0.0005615	0.0035	2.23		41280.24	41280.24	9.87		Si



#### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 77	6.83	-2409.9	-28233	-23510	-5924	2.23	2.23	-37652	10833	6764	35366	18697	5687	24384	No	4.12	Si
SLU 77	7.63	-473.61	-24667	-20541	-4148	2.23	2.23	-32896	10833	6764	35366	18697	5687	24384	No	5.88	Si
SLU 78	6.83	-2408.32	-28272	-23543	-5909	2.23	2.23	-37704	10833	6764	35366	18697	5687	24384	No	4.13	Si
SLU 78	7.63	-483.22	-24707	-20574	-4134	2.23	2.23	-32950	10833	6764	35366	18697	5687	24384	No	5.9	Si
SLU 75	6.83	-2359.11	-27673	-23044	-5866	2.23	2.23	-36905	10833	6764	35366	18697	5687	24384	No	4.16	Si
SLU 75	7.63	-432.19	-24138	-20100	-4109	2.23	2.23	-32190	10833	6764	35366	18697	5687	24384	No	5.93	Si
SLU 81	6.83	-2354.05	-27894	-23228	-5938	2.23	2.23	-37200	10833	6764	35366	18697	5687	24384	No	4.11	Si
SLU 81	7.63	-407.73	-24327	-20257	-4160	2.23	2.23	-32442	10833	6764	35366	18697	5687	24384	No	5.86	Si
SLU 79	6.83	-2387.03	-27946	-23271	-5851	2.23	2.23	-37269	10833	6764	35366	18697	5687	24384	No	4.17	Si
SLU 79	7.63	-475.39	-24408	-20325	-4098	2.23	2.23	-32551	10833	6764	35366	18697	5687	24384	No	5.95	Si
SLU 74	6.83	-2360.69	-27634	-23011	-5881	2.23	2.23	-36852	10833	6764	35366	18697	5687	24384	No	4.15	Si
SLU 74	7.63	-422.59	-24098	-20066	-4123	2.23	2.23	-32137	10833	6764	35366	18697	5687	24384	No	5.91	Si
SLU 80	6.83	-2385.45	-27985	-23304	-5836	2.23	2.23	-37322	10833	6764	35366	18697	5687	24384	No	4.18	Si
SLU 80	7.63	-485	-24448	-20358	-4084	2.23	2.23	-32604	10833	6764	35366	18697	5687	24384	No	5.97	Si
SLU 84	6.83	-2401.69	-28533	-23759	-5966	2.23	2.23	-38051	10833	6764	35366	18697	5687	24384	No	4.09	Si
SLU 84	7.63	-468.36	-24937	-20765	-4171	2.23	2.23	-33256	10833	6764	35366	18697	5687	24384	No	5.85	Si
SLU 82	6.83	-2352.48	-27933	-23260	-5923	2.23	2.23	-37252	10833	6764	35366	18697	5687	24384	No	4.12	Si
SLU 82	7.63	-417.34	-24367	-20291	-4146	2.23	2.23	-32496	10833	6764	35366	18697	5687	24384	No	5.88	Si
SLU 83	6.83	-2403.26	-28493	-23727	-5981	2.23	2.23	-37999	10833	6764	35366	18697	5687	24384	No	4.08	Si
SLU 83	7.63	-458.76	-24897	-20732	-4185	2.23	2.23	-33202	10833	6764	35366	18697	5687	24384	No	5.83	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 14	6.83	-2331.59	-17582	-14641	-7672	2.23	2.23	-23447	15106	9432	35366	28046	5687	33733		4.4	Si
SLD 14	7.63	1205.84	-14481	-12059	-5765	2.23	2.23	-19313	14279	8916	35366	28046	5687	33733		5.85	Si
SLD 16	6.83	-2365.69	-19359	-16120	-7813	2.23	2.23	-25817	15580	9728	35366	28046	5687	33733		4.32	Si
SLD 16	7.63	1122.11	-16097	-13404	-5736	2.23	2.23	-21467	14710	9185	35366	28046	5687	33733		5.88	Si
SLD 15	6.83	-2470.3	-19473	-16215	-8458	2.23	2.23	-25969	15610	9747	35366	28046	5687	33733		3.99	Si
SLD 15	7.63	1364.46	-16072	-13384	-6234	2.23	2.23	-21434	14703	9181	35366	28046	5687	33733		5.41	Si
SLV 11	6.83	-2371.41	-25380	-21134	-7905	2.23	2.23	-33847	16250	10147	35366	28046	5687	33733		4.27	Si
SLV 11	7.63	689.22	-21629	-18011	-5305	2.23	2.23	-28844	16186	10106	35366	28046	5687	33733		6.36	Si
SLV 13	6.83	-3508.97	-16497	-13737	-13955	2.23	2.23	-22000	14817	9252	35366	28046	5687	33733		2.42	Si
SLV 13	7.63	3706.47	-12288	-10232	-10780	2.23	2.23	-16387	13694	8551	35366	28046	5687	33733		3.13	Si
SLV 16	6.83	-3336.67	-20273	-16882	-12774	2.23	2.23	-27036	15824	9881	35366	28046	5687	33733		2.64	Si
SLV 16	7.63	2947.21	-16018	-13338	-9531	2.23	2.23	-21362	14689	9172	35366	28046	5687	33733		3.54	Si
SLV 14	6.83	-3265.36	-16231	-13516	-12454	2.23	2.23	-21646	14746	9207	35366	28046	5687	33733		2.71	Si
SLV 14	7.63	3142.08	-12345	-10280	-9619	2.23	2.23	-16463	13709	8560	35366	28046	5687	33733		3.51	Si
SLV 15	6.83	-3580.27	-20539	-17103	-14275	2.23	2.23	-27390	15895	9925	35366	28046	5687	33733		2.36	Si
SLV 15	7.63	3511.61	-15961	-13291	-10692	2.23	2.23	-21285	14674	9162	35366	28046	5687	33733		3.15	Si
SLV 12	6.83	-2214.07	-25209	-20992	-6936	2.23	2.23	-33618	16250	10147	35366	28046	5687	33733		4.86	Si
SLV 12	7.63	324.69	-21666	-18041	-4555	2.23	2.23	-28894	16195	10113	35366	28046	5687	33733		7.41	Si
SLD 13	6.83	-2436.19	-17696	-14736	-8316	2.23	2.23	-23599	15137	9451	35366	28046	5687	33733		4.06	Si
SLD 13	7.63	1448.19	-14457	-12038	-6263	2.23	2.23	-19280	14273	8912	35366	28046	5687	33733		5.39	Si

#### Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 4.73 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 10	179667	0.34	16635	-10387	862.66	1295.78	1.5	Si
SLV 9	179667	0.34	16776	-10475	862.66	1305.43	1.51	Si
SLV 6	179667	0.34	19174	-11973	862.66	1465.71	1.7	Si
SLV 5	179667	0.34	19316	-12061	862.66	1474.95	1.71	Si
SLV 14	179667	0.34	19443	-12140	862.66	1483.23	1.72	Si
SLV 13	179667	0.34	19662	-12277	862.66	1497.47	1.74	Si
SLV 16	179667	0.34	24422	-15249	862.66	1793.47	2.08	Si
SLV 15	179667	0.34	24641	-15386	862.66	1806.46	2.09	Si
SLV 2	179667	0.34	27907	-17425	862.66	1993.75	2.31	Si
SLV 1	179667	0.34	28126	-17562	862.66	2005.87	2.33	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 4.73 Wa = 0.05 Ta = 0.3126

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	$\alpha_0^*$	aLim	Verifica
SLV 4	-16153	-19707	-46	0.64	2291.9	0.926	10.05464	15.21903	No
SLV 3	-16116	-19732	-46	0.642	2288.2	0.926	10.07374	15.21903	No
SLV 16	-13437	-10239	346	0.72	2019.1	0.918	11.39135	15.21903	No
SLV 15	-13400	-10264	346	0.721	2015.4	0.918	11.41619	15.21903	No
SLV 2	-13149	-16774	-348	0.731	1990.3	0.917	11.5856	15.21903	No
SLV 1	-13112	-16799	-348	0.733	1986.5	0.917	11.61157	15.21903	No
SLV 14	-10433	-7306	44	0.886	1719.4	0.908	14.16871	15.21903	No
SLV 13	-10396	-7331	44	0.888	1715.7	0.908	14.20621	15.21903	No
SLV 8	-18701	-19820	444	0.553	2548.8	0.932	8.63332	5.02815	Si
SLV 7	-18677	-19836	444	0.554	2546.4	0.932	8.64254	5.02815	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	15.898	SLU 77	Si



Stato limite	Coeff.s.	Comb.	Verifica
V_SLU	4.077	SLU 83	Si
PF_SLV	9.872	SLV 4	Si
V_SLV	2.363	SLV 15	Si
PFFP_SLV	1.502	SLV 10	Si
R_SLV	0.661	SLV 4	No

## Maschio 231

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-18.313	-3.314	-18.813	-3.314	L4	L6	0.5	0.28	7.24	7.24	7.24			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_ Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	2	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 84	6.83	-7.39	-7880	-0.0000973	0.0003743	0.0035	0.5	880.83	1943.78	1943.78	262.91	No	Si
SLU 84	7.63	382.75	-7965	-0.0001629	0.0003743	0.0035	0.5	878.46	1940.48	1940.48	5.07	No	Si
SLU 78	6.83	-11.7	-7777	-0.0000965	0.0003743	0.0035	0.5	883.36	1943.78	1943.78	166.1	No	Si
SLU 78	7.63	389.25	-7853	-0.0001621	0.0003743	0.0035	0.5	881.51	1940.52	1940.52	4.99	No	Si
SLU 70	6.83	-26.76	-6974	-0.0000875	0.0003743	0.0035	0.5	890.37	1937.21	1937.21	72.41	No	Si
SLU 70	7.63	377.54	-7046	-0.0001461	0.0003743	0.0035	0.5	890.66	1934.94	1934.94	5.13	No	Si
SLU 69	6.83	-27.79	-6958	-0.0000874	0.0003743	0.0035	0.5	890.28	1936.95	1936.95	69.69	No	Si
SLU 69	7.63	378.09	-7031	-0.0001459	0.0003743	0.0035	0.5	890.62	1934.77	1934.77	5.12	No	Si
SLU 77	6.83	-12.74	-7761	-0.0000964	0.0003743	0.0035	0.5	883.73	1943.77	1943.77	152.57	No	Si
SLU 77	7.63	389.79	-7838	-0.0001619	0.0003743	0.0035	0.5	881.89	1940.52	1940.52	4.98	No	Si
SLU 80	6.83	-10.41	-7713	-0.0000954	0.0003743	0.0035	0.5	884.75	1943.73	1943.73	186.74	No	Si
SLU 80	7.63	383.58	-7784	-0.0001598	0.0003743	0.0035	0.5	883.2	1940.5	1940.5	5.06	No	Si
SLU 79	6.83	-11.45	-7697	-0.0000953	0.0003743	0.0035	0.5	885.07	1943.66	1943.66	169.8	No	Si
SLU 79	7.63	384.12	-7769	-0.0001597	0.0003743	0.0035	0.5	883.54	1940.49	1940.49	5.05	No	Si
SLU 74	6.83	-16.18	-7583	-0.0000944	0.0003743	0.0035	0.5	887.12	1942.97	1942.97	120.11	No	Si
SLU 74	7.63	383.95	-7673	-0.000158	0.0003743	0.0035	0.5	885.54	1940.28	1940.28	5.05	No	Si
SLU 83	6.83	-8.43	-7864	-0.0000972	0.0003743	0.0035	0.5	881.25	1943.78	1943.78	230.54	No	Si
SLU 83	7.63	383.3	-7950	-0.0001627	0.0003743	0.0035	0.5	878.89	1940.49	1940.49	5.06	No	Si
SLU 75	6.83	-15.14	-7599	-0.0000945	0.0003743	0.0035	0.5	886.85	1943.08	1943.08	128.36	No	Si
SLU 75	7.63	383.41	-7688	-0.0001581	0.0003743	0.0035	0.5	885.25	1940.37	1940.37	5.06	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 16	6.83	-259.65	-4069	-0.00008	0.0005615	0.0035	0.5		2034.71	2034.71	7.84		Si
SLD 16	7.63	539.91	-4985	-0.0001354	0.0005615	0.0035	0.5		2120.18	2120.18	3.93		Si
SLV 2	6.83	615.73	-7811	-0.0001834	0.0005615	0.0035	0.5		2333.38	2333.38	3.79		Si
SLV 2	7.63	-441.87	-5628	-0.0001258	0.0005615	0.0035	0.5		2181.51	2181.51	4.94		Si
SLD 14	6.83	-274.43	-3577	-0.000076	0.0005615	0.0035	0.5		1982.01	1982.01	7.22		Si
SLD 14	7.63	526.34	-4501	-0.0001291	0.0005615	0.0035	0.5		2074.82	2074.82	3.94		Si
SLV 14	6.83	-614.02	-1567	-0.0003563	0.0005615	0.0035	0.5		1709.43	1709.43	2.78		Si
SLV 14	7.63	868.34	-3640	-0.0003455	0.0005615	0.0035	0.5		1984.42	1984.42	2.29		Si
SLV 13	6.83	-694.37	-1245	-0.0005109	0.0005615	0.0035	0.5		1648.69	1648.69	2.37		Si
SLV 13	7.63	956.22	-3584	-0.0004412	0.0005615	0.0035	0.5		1978.28	1978.28	2.07		Si
SLV 4	6.83	651.27	-8931	-0.0002066	0.0005615	0.0035	0.5		2375.85	2375.85	3.65		Si
SLV 4	7.63	-412.1	-6727	-0.0001363	0.0005615	0.0035	0.5		2267.5	2267.5	5.5		Si
SLV 16	6.83	-578.49	-2688	-0.0001914	0.0005615	0.0035	0.5		1875.59	1875.59	3.24		Si
SLV 16	7.63	898.11	-4740	-0.0002825	0.0005615	0.0035	0.5		2097.46	2097.46	2.34		Si
SLV 15	6.83	-658.83	-2366	-0.0002906	0.0005615	0.0035	0.5		1833.04	1833.04	2.78		Si
SLV 15	7.63	985.98	-4684	-0.0003542	0.0005615	0.0035	0.5		2092.2	2092.2	2.12		Si
SLD 13	6.83	-308.93	-3439	-0.0000793	0.0005615	0.0035	0.5		1966.78	1966.78	6.37		Si
SLD 13	7.63	564.08	-4477	-0.000138	0.0005615	0.0035	0.5		2072.39	2072.39	3.67		Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLD 15	6.83	-294.15	-3931	-0.0000831	0.0005615	0.0035	0.5		2020.15	2020.15	6.87		Si
SLD 15	7.63	577.64	-4961	-0.0001434	0.0005615	0.0035	0.5		2117.98	2117.98	3.67		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 77	6.83	-12.74	-7761	-6462	-39	0.5	0.5	-46161	10833	1517	7929	4192	1275	5467	No	139.75	Si
SLU 77	7.63	389.79	-7838	-6527	-874	0.5	0.5	-46624	10833	1517	7929	4192	1275	5467	No	6.26	Si
SLU 80	6.83	-10.41	-7713	-6423	-28	0.5	0.5	-45877	10833	1517	7929	4192	1275	5467	No	198.32	Si
SLU 80	7.63	383.58	-7784	-6482	-866	0.5	0.5	-46300	10833	1517	7929	4192	1275	5467	No	6.31	Si
SLU 75	6.83	-15.14	-7599	-6328	-43	0.5	0.5	-45203	10833	1517	7929	4192	1275	5467	No	126.03	Si
SLU 75	7.63	383.41	-7688	-6402	-866	0.5	0.5	-45730	10833	1517	7929	4192	1275	5467	No	6.31	Si
SLU 84	6.83	-7.39	-7880	-6561	-4	0.5	0.5	-46870	10833	1517	7929	4192	1275	5467	No	1311.96	Si
SLU 84	7.63	382.75	-7965	-6632	-896	0.5	0.5	-47375	10833	1517	7929	4192	1275	5467	No	6.1	Si
SLU 78	6.83	-11.7	-7777	-6476	-35	0.5	0.5	-46257	10833	1517	7929	4192	1275	5467	No	156.78	Si
SLU 78	7.63	389.25	-7853	-6540	-874	0.5	0.5	-46713	10833	1517	7929	4192	1275	5467	No	6.25	Si
SLU 81	6.83	-11.87	-7686	-6401	-17	0.5	0.5	-45720	10833	1517	7929	4192	1275	5467	No	322.98	Si
SLU 81	7.63	377.46	-7784	-6482	-887	0.5	0.5	-46303	10833	1517	7929	4192	1275	5467	No	6.16	Si
SLU 79	6.83	-11.45	-7697	-6409	-32	0.5	0.5	-45781	10833	1517	7929	4192	1275	5467	No	171.83	Si
SLU 79	7.63	384.12	-7769	-6469	-866	0.5	0.5	-46211	10833	1517	7929	4192	1275	5467	No	6.31	Si
SLU 82	6.83	-10.83	-7702	-6414	-13	0.5	0.5	-45816	10833	1517	7929	4192	1275	5467	No	431.25	Si
SLU 82	7.63	376.92	-7799	-6495	-888	0.5	0.5	-46392	10833	1517	7929	4192	1275	5467	No	6.16	Si
SLU 74	6.83	-16.18	-7583	-6315	-48	0.5	0.5	-45107	10833	1517	7929	4192	1275	5467	No	114.78	Si
SLU 74	7.63	383.95	-7673	-6389	-865	0.5	0.5	-45641	10833	1517	7929	4192	1275	5467	No	6.32	Si
SLU 83	6.83	-8.43	-7864	-6548	-8	0.5	0.5	-46774	10833	1517	7929	4192	1275	5467	No	649.53	Si
SLU 83	7.63	383.3	-7950	-6620	-895	0.5	0.5	-47286	10833	1517	7929	4192	1275	5467	No	6.11	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 13	6.83	-694.37	-1245	-1037	-2862	0.5	0	-43845	16250	0	7929	6288	1275	7563		2.64	Si
SLV 13	7.63	956.22	-3584	-2984	-971	0.5	0	-71350	16250	0	7929	6288	1275	7563		7.79	Si
SLV 1	6.83	535.39	-7489	-6236	2164	0.5	0.5	-44546	16250	2275	7929	6288	1275	7563		3.49	Si
SLV 1	7.63	-353.99	-5572	-4640	-200	0.5	0.5	-33143	16250	2275	7929	6288	1275	7563		37.83	Si
SLV 14	6.83	-614.02	-1567	-1305	-2544	0.5	0	-44246	16250	0	7929	6288	1275	7563		2.97	Si
SLV 14	7.63	868.34	-3640	-3031	-880	0.5	0.0343	-64472	16250	156	7929	6288	1275	7563		8.59	Si
SLV 3	6.83	570.92	-8610	-7169	2398	0.5	0.5	-51213	16250	2275	7929	6288	1275	7563		3.15	Si
SLV 3	7.63	-324.23	-6671	-5555	-306	0.5	0.5	-39683	16250	2275	7929	6288	1275	7563		24.68	Si
SLV 9	6.83	-291.18	-2180	-1815	-1319	0.5	0.3493	-18425	14124	1381	7929	6288	1275	7563		5.73	Si
SLV 9	7.63	447.36	-3007	-2504	-561	0.5	0.3037	-28750	16239	1381	7929	6288	1275	7563		13.49	Si
SLD 13	6.83	-308.93	-3439	-2864	-1264	0.5	0.4805	-21507	14719	1980	7929	6288	1275	7563		5.98	Si
SLD 13	7.63	564.08	-4477	-3728	-755	0.5	0.372	-36088	16250	1693	7929	6288	1275	7563		10.02	Si
SLV 2	6.83	615.73	-7811	-6504	2482	0.5	0.5	0	16250	2275	7929	6288	1275	7563		3.05	Si
SLV 2	7.63	-441.87	-5628	-4686	-109	0.5	0.5	-33476	16250	2275	7929	6288	1275	7563		69.38	Si
SLV 15	6.83	-658.83	-2366	-1970	-2628	0.5	0	-49926	16250	0	7929	6288	1275	7563		2.88	Si
SLV 15	7.63	985.98	-4684	-3900	-1077	0.5	0.1184	-71031	16250	539	7929	6288	1275	7563		7.02	Si
SLV 4	6.83	651.27	-8931	-7437	2716	0.5	0.5	-53125	16250	2275	7929	6288	1275	7563		2.78	Si
SLV 4	7.63	-412.1	-6727	-5602	-216	0.5	0.5	-40016	16250	2275	7929	6288	1275	7563		35.09	Si
SLV 16	6.83	-578.49	-2688	-2238	-2310	0.5	0.1042	-42135	16250	474	7929	6288	1275	7563		3.27	Si
SLV 16	7.63	898.11	-4740	-3947	-987	0.5	0.1815	-62631	16250	826	7929	6288	1275	7563		7.67	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 4.73 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 10	179667	0.34	15753	-2205	193.41	276.9	1.43	Si
SLV 9	179667	0.34	15805	-2213	193.41	277.71	1.44	Si
SLV 14	179667	0.34	17248	-2415	193.41	299.86	1.55	Si
SLV 13	179667	0.34	17329	-2426	193.41	301.09	1.56	Si
SLV 6	179667	0.34	18547	-2596	193.41	319.35	1.65	Si
SLV 5	179667	0.34	18599	-2604	193.41	320.13	1.66	Si
SLV 16	179667	0.34	21334	-2987	193.41	359.72	1.86	Si
SLV 15	179667	0.34	21416	-2998	193.41	360.87	1.87	Si
SLV 2	179667	0.34	26560	-3718	193.41	430.02	2.22	Si
SLV 1	179667	0.34	26641	-3730	193.41	431.05	2.23	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 4.73 Wa = 0.05 Ta = 0.3126

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	$\alpha_0^*$	aLim	Verifica
SLV 4	-3917	-3621	-5	0.604	543.6	0.929	9.44346	15.21903	No
SLV 3	-3817	-3733	-5	0.616	533.6	0.928	9.64663	15.21903	No
SLV 2	-3296	-4421	-1	0.691	481.1	0.922	10.88855	15.21903	No
SLV 1	-3197	-4533	-1	0.707	471.1	0.921	11.15972	15.21903	No
SLV 16	-2215	-3602	-13	0.919	373.2	0.906	14.73796	15.21903	No
SLV 15	-2115	-3713	-12	0.949	363.4	0.905	15.23821	15.21903	Si
SLV 14	-1594	-4402	-9	1.143	312.3	0.896	18.54225	15.21903	Si
SLV 13	-1495	-4513	-9	1.19	302.7	0.895	19.32776	15.21903	Si
SLV 8	-4028	-2701	-12	0.589	554.8	0.93	9.20502	5.02815	Si
SLV 7	-3964	-2773	-12	0.597	548.3	0.929	9.32892	5.02815	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.



Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	4.978	SLU 77	Si
V_SLU	6.102	SLU 84	Si
PF_SLV	2.069	SLV 13	Si
V_SLV	2.643	SLV 13	Si
PFFP_SLV	1.432	SLV 10	Si
R_SLV	0.621	SLV 4	No

## Maschio 232

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

## Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-16.383	-3.314	-17.313	-3.314	L4	L6	0.93	0.28	7.24	7.24	7.24			

## Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	t0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

## Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

## Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	2	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 78	2.01	1904.33	-18581	-0.0002386	0.0003743	0.0035	0.93	2584.55	6295.63	6295.63	3.31	No	Si
SLU 78	3.91	946.48	-13101	-0.0001284	0.0003743	0.0035	0.93	3081.55	6707.06	6707.06	7.09	No	Si
SLU 81	2.01	1933.65	-18535	-0.0002399	0.0003743	0.0035	0.93	2593.16	6301.72	6301.72	3.26	No	Si
SLU 81	3.91	918.65	-12976	-0.000126	0.0003743	0.0035	0.93	3080.6	6704.09	6704.09	7.3	No	Si
SLU 80	2.01	1900.16	-18464	-0.0002368	0.0003743	0.0035	0.93	2606.12	6311.05	6311.05	3.32	No	Si
SLU 80	3.91	932.92	-12995	-0.0001269	0.0003743	0.0035	0.93	3080.78	6704.56	6704.56	7.19	No	Si
SLU 77	2.01	1899.11	-18576	-0.0002382	0.0003743	0.0035	0.93	2585.52	6296.31	6296.31	3.32	No	Si
SLU 77	3.91	949.74	-13105	-0.0001286	0.0003743	0.0035	0.93	3081.57	6707.16	6707.16	7.06	No	Si
SLU 82	2.01	1938.88	-18540	-0.0002403	0.0003743	0.0035	0.93	2592.2	6301.04	6301.04	3.25	No	Si
SLU 82	3.91	915.39	-12972	-0.0001258	0.0003743	0.0035	0.93	3080.56	6703.99	6703.99	7.32	No	Si
SLU 84	2.01	1968.3	-18847	-0.0002463	0.0003743	0.0035	0.93	2533.61	6260.63	6260.63	3.18	No	Si
SLU 84	3.91	933.81	-13209	-0.0001287	0.0003743	0.0035	0.93	3081.94	6709.55	6709.55	7.19	No	Si
SLU 76	2.01	1874.23	-18161	-0.0002312	0.0003743	0.0035	0.93	2659.99	6352.05	6352.05	3.39	No	Si
SLU 76	3.91	912.32	-12755	-0.0001239	0.0003743	0.0035	0.93	3077.57	6698.06	6698.06	7.34	No	Si
SLU 75	2.01	1874.91	-18274	-0.0002327	0.0003743	0.0035	0.93	2640.28	6336.61	6336.61	3.38	No	Si
SLU 75	3.91	928.06	-12863	-0.0001255	0.0003743	0.0035	0.93	3079.27	6701.31	6701.31	7.22	No	Si
SLU 79	2.01	1894.94	-18459	-0.0002364	0.0003743	0.0035	0.93	2607.07	6311.74	6311.74	3.33	No	Si
SLU 79	3.91	936.17	-12999	-0.0001271	0.0003743	0.0035	0.93	3080.82	6704.65	6704.65	7.16	No	Si
SLU 83	2.01	1963.07	-18842	-0.0002459	0.0003743	0.0035	0.93	2534.63	6261.32	6261.32	3.19	No	Si
SLU 83	3.91	937.07	-13213	-0.0001289	0.0003743	0.0035	0.93	3081.94	6709.64	6709.64	7.16	No	Si

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 13	2.01	-1580.27	-6093	-0.0001091	0.0005615	0.0035	0.93		6750.16	6750.16	4.27		Si
SLV 13	3.91	2393.16	-9970	-0.0001738	0.0005615	0.0035	0.93		7469.73	7469.73	3.12		Si
SLV 2	2.01	4620.82	-18540	-0.0004125	0.0005615	0.0035	0.93		8334.38	8334.38	1.8		Si
SLV 2	3.91	-1130.09	-6885	-0.0000849	0.0005615	0.0035	0.93		6914.21	6914.21	6.12		Si
SLD 1	2.01	2580.44	-15077	-0.0002109	0.0005615	0.0035	0.93		8133.36	8133.36	3.15		Si
SLD 1	3.91	-24.62	-8208	-0.0000495	0.0005615	0.0035	0.93		7172.75	7172.75	291.38		Si
SLV 6	2.01	3071.4	-13493	-0.000236	0.0005615	0.0035	0.93		7972.62	7972.62	2.6		Si
SLV 6	3.91	31.77	-6870	-0.0000416	0.0005615	0.0035	0.93		6902.99	6902.99	217.29		Si
SLV 15	2.01	-2071.28	-6716	-0.0001577	0.0005615	0.0035	0.93		6879.88	6879.88	3.32		Si
SLV 15	3.91	2424.41	-10848	-0.000178	0.0005615	0.0035	0.93		7608.3	7608.3	3.14		Si
SLV 3	2.01	3851.51	-18948	-0.0003285	0.0005615	0.0035	0.93		8350.89	8350.89	2.17		Si
SLV 3	3.91	-897.48	-8168	-0.0000839	0.0005615	0.0035	0.93		7165.38	7165.38	7.98		Si
SLV 1	2.01	4342.52	-18324	-0.0003759	0.0005615	0.0035	0.93		8325.24	8325.24	1.92		Si
SLV 1	3.91	-928.73	-7289	-0.0000794	0.0005615	0.0035	0.93		6995.5	6995.5	7.53		Si
SLV 4	2.01	4129.81	-19163	-0.0003563	0.0005615	0.0035	0.93		8359.21	8359.21	2.02		Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 4	3.91	-1098.84	-7763	-0.0000893	0.0005615	0.0035	0.93		7088.56	7088.56	6.45		Si
SLD 2	2.01	2699.94	-15170	-0.0002185	0.0005615	0.0035	0.93		8140.28	8140.28	3.01		Si
SLD 2	3.91	-111.08	-8035	-0.0000519	0.0005615	0.0035	0.93		7140.92	7140.92	64.29		Si
SLV 5	2.01	2891.66	-13354	-0.0002212	0.0005615	0.0035	0.93		7955.3	7955.3	2.75		Si
SLV 5	3.91	161.82	-7131	-0.0000482	0.0005615	0.0035	0.93		6955.78	6955.78	42.98		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 80	2.01	1900.16	-18464	-15376	2301	0.93	0.93	-59046	10833	2821	14749	7798	2372	10169	No	4.42	Si
SLU 80	3.91	932.92	-12995	-10821	-338	0.93	0.93	-41556	10833	2821	14749	7798	2372	10169	No	30.08	Si
SLU 78	2.01	1904.33	-18581	-15473	2301	0.93	0.93	-59420	10833	2821	14749	7798	2372	10169	No	4.42	Si
SLU 78	3.91	946.48	-13101	-10909	-350	0.93	0.93	-41894	10833	2821	14749	7798	2372	10169	No	29.04	Si
SLU 76	2.01	1874.23	-18161	-15123	2273	0.93	0.93	-58075	10833	2821	14749	7798	2372	10169	No	4.47	Si
SLU 76	3.91	912.32	-12755	-10621	-327	0.93	0.93	-40787	10833	2821	14749	7798	2372	10169	No	31.08	Si
SLU 81	2.01	1933.65	-18535	-15434	2366	0.93	0.93	-59272	10833	2821	14749	7798	2372	10169	No	4.3	Si
SLU 81	3.91	918.65	-12976	-10805	-316	0.93	0.93	-41494	10833	2821	14749	7798	2372	10169	No	32.14	Si
SLU 79	2.01	1894.94	-18459	-15371	2293	0.93	0.93	-59030	10833	2821	14749	7798	2372	10169	No	4.43	Si
SLU 79	3.91	936.17	-12999	-10825	-343	0.93	0.93	-41569	10833	2821	14749	7798	2372	10169	No	29.67	Si
SLU 63	2.01	1842.92	-17389	-14480	2281	0.93	0.93	-55607	10833	2821	14749	7798	2372	10169	No	4.46	Si
SLU 63	3.91	829.91	-12039	-10025	-252	0.93	0.93	-38500	10833	2821	14749	7798	2372	10169	No	40.29	Si
SLU 77	2.01	1899.11	-18576	-15469	2293	0.93	0.93	-59403	10833	2821	14749	7798	2372	10169	No	4.44	Si
SLU 77	3.91	949.74	-13105	-10913	-355	0.93	0.93	-41907	10833	2821	14749	7798	2372	10169	No	28.66	Si
SLU 83	2.01	1963.07	-18842	-15690	2400	0.93	0.93	-60254	10833	2821	14749	7798	2372	10169	No	4.24	Si
SLU 83	3.91	937.07	-13213	-11003	-324	0.93	0.93	-42254	10833	2821	14749	7798	2372	10169	No	31.37	Si
SLU 84	2.01	1968.3	-18847	-15694	2408	0.93	0.93	-60270	10833	2821	14749	7798	2372	10169	No	4.22	Si
SLU 84	3.91	933.81	-13209	-11000	-320	0.93	0.93	-42241	10833	2821	14749	7798	2372	10169	No	31.83	Si
SLU 82	2.01	1938.88	-18540	-15439	2374	0.93	0.93	-59288	10833	2821	14749	7798	2372	10169	No	4.28	Si
SLU 82	3.91	915.39	-12972	-10802	-312	0.93	0.93	-41481	10833	2821	14749	7798	2372	10169	No	32.62	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 16	2.01	-1792.98	-6932	-5772	-4088	0.93	0.619	-33078	16250	2817	14749	11696	2372	14068		3.44	Si
SLV 16	3.91	2223.06	-10444	-8697	-2652	0.93	0.7564	-41807	16250	3442	14749	11696	2372	14068		5.3	Si
SLV 2	2.01	4620.82	-18540	-15438	7647	0.93	0.6473	-88664	16250	2945	14749	11696	2372	14068		1.84	Si
SLV 2	3.91	-1130.09	-6885	-5733	2441	0.93	0.9026	-22949	15007	3792	14749	11696	2372	14068		5.76	Si
SLV 1	2.01	4342.52	-18324	-15259	7136	0.93	0.6841	-83100	16250	3112	14749	11696	2372	14068		1.97	Si
SLV 1	3.91	-928.73	-7289	-6070	2154	0.93	0.93	-23310	15079	3926	14749	11696	2372	14068		6.53	Si
SLD 2	2.01	2699.94	-15170	-12632	4137	0.93	0.8611	-54076	16250	3918	14749	11696	2372	14068		3.4	Si
SLD 2	3.91	-111.08	-8035	-6691	902	0.93	0.93	-25693	15555	4051	14749	11696	2372	14068		15.6	Si
SLV 5	2.01	2891.66	-13354	-11120	4257	0.93	0.7454	-54679	16250	3392	14749	11696	2372	14068		3.3	Si
SLV 5	3.91	161.82	-7131	-5938	438	0.93	0.93	-22804	14977	3900	14749	11696	2372	14068		32.14	Si
SLV 6	2.01	3071.4	-13493	-11236	4587	0.93	0.7121	-57755	16250	3240	14749	11696	2372	14068		3.07	Si
SLV 6	3.91	31.77	-6870	-5721	623	0.93	0.93	-21968	14810	3857	14749	11696	2372	14068		22.56	Si
SLV 15	2.01	-2071.28	-6716	-5593	-4599	0.93	0.4698	-39654	16250	2138	14749	11696	2372	14068		3.06	Si
SLV 15	3.91	2424.41	-10848	-9033	-2939	0.93	0.7245	-45311	16250	3297	14749	11696	2372	14068		4.79	Si
SLV 4	2.01	4129.81	-19163	-15958	6897	0.93	0.7485	-79894	16250	3406	14749	11696	2372	14068		2.04	Si
SLV 4	3.91	-1098.84	-7763	-6464	2431	0.93	0.93	-24824	15382	4005	14749	11696	2372	14068		5.79	Si
SLD 1	2.01	2580.44	-15077	-12555	3917	0.93	0.8816	-52456	16250	4011	14749	11696	2372	14068		3.59	Si
SLD 1	3.91	-24.62	-8208	-6835	778	0.93	0.93	-26249	15666	4080	14749	11696	2372	14068		18.08	Si
SLV 3	2.01	3851.51	-18948	-15778	6385	0.93	0.7852	-75188	16250	3573	14749	11696	2372	14068		2.2	Si
SLV 3	3.91	-897.48	-8168	-6801	2143	0.93	0.93	-26118	15640	4073	14749	11696	2372	14068		6.56	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 4.73 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 2	179667	0.34	14853	-3868	359.76	488.82	1.36	Si
SLV 1	179667	0.34	16033	-4175	359.76	523.14	1.45	Si
SLV 4	179667	0.34	17040	-4437	359.76	551.89	1.53	Si
SLV 6	179667	0.34	17525	-4564	359.76	565.59	1.57	Si
SLV 3	179667	0.34	18220	-4744	359.76	584.98	1.63	Si
SLV 5	179667	0.34	18288	-4762	359.76	586.86	1.63	Si
SLV 10	179667	0.34	21824	-5683	359.76	681.92	1.9	Si
SLV 9	179667	0.34	22586	-5881	359.76	701.62	1.95	Si
SLV 8	179667	0.34	24815	-6462	359.76	757.66	2.11	Si
SLV 7	179667	0.34	25577	-6660	359.76	776.28	2.16	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 4.73 Wa = 0.05 Ta = 0.3126

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	$\alpha_0^*$	aLim	Verifica
SLV 15	-7536	-9839	83	0.58	1036.4	0.93	9.05607	15.21903	No
SLV 16	-7337	-9501	83	0.592	1016.3	0.929	9.25953	15.21903	No
SLV 13	-6751	-9776	117	0.628	957.2	0.926	9.85629	15.21903	No
SLV 14	-6552	-9438	117	0.642	937.2	0.924	10.09984	15.21903	No
SLV 3	-4043	-8773	-119	0.914	686.5	0.906	14.67439	15.21903	No
SLV 4	-3844	-8435	-119	0.947	666.9	0.904	15.22016	15.21903	Si
SLV 1	-3257	-8710	-85	1.063	609.3	0.899	17.19202	15.21903	Si
SLV 2	-3058	-8372	-85	1.107	590	0.897	17.93405	15.21903	Si
SLV 11	-7195	-9479	-27	0.608	1002	0.928	9.51123	5.02815	Si
SLV 12	-7066	-9261	-26	0.616	989	0.928	9.65428	5.02815	Si





Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.181	SLU 84	Si
V_SLU	4.222	SLU 84	Si
PF_SLV	1.804	SLV 2	Si
V_SLV	1.84	SLV 2	Si
PFFP_SLV	1.359	SLV 2	Si
R_SLV	0.595	SLV 15	No

## Maschio 233

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-18.518	-3.314	-18.518	-0.094	L4	L6	3.221	0.16	7.24	7.24	7.24			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	$\tau 0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Verifica a pressoflessione nel piano secondo D.M. 17-01-18 NTC §7.8.2.2.1 in combinazioni non sismiche,  $\gamma M = 3$

Comb.	Quota	N	M	$\sigma 0$	Mu	c.s.	Verifica
SLU 58	4.83	-27028	4192.2	52450	24841.29	5.926	Si
SLU 58	6.93	-21826	924.65	42355	22963.94	24.835	Si
SLU 50	4.83	-24927	4098.5	48373	24249.76	5.917	Si
SLU 50	6.93	-20030	1099.33	38869	21994.16	20.007	Si
SLU 59	4.83	-27017	4187.03	52428	24838.69	5.932	Si
SLU 59	6.93	-21800	886.58	42305	22951.23	25.887	Si
SLU 77	4.83	-29538	4251.92	57321	25252	5.939	Si
SLU 77	6.93	-24047	809.61	46665	23934.8	29.563	Si
SLU 80	4.83	-29338	4260.6	56933	25231.09	5.922	Si
SLU 80	6.93	-23843	783.5	46270	23856.3	30.448	Si
SLU 78	4.83	-29527	4246.75	57299	25250.86	5.946	Si
SLU 78	6.93	-24021	771.54	46615	23925	31.009	Si
SLU 51	4.83	-24916	4093.33	48351	24245.93	5.923	Si
SLU 51	6.93	-20004	1061.25	38819	21979.08	20.71	Si
SLU 79	4.83	-29349	4265.77	56955	25232.33	5.915	Si
SLU 79	6.93	-23869	821.57	46320	23866.33	29.05	Si
SLU 48	4.83	-25116	4084.65	48739	24312.08	5.952	Si
SLU 48	6.93	-20208	1087.37	39214	22097.56	20.322	Si
SLU 56	4.83	-27217	4178.35	52816	24883.35	5.955	Si
SLU 56	6.93	-22004	912.69	42700	23051.01	25.256	Si

Verifica a pressoflessione nel piano secondo D.M. 17-01-18 NTC §7.8.2.2.1 in combinazioni sismiche,  $\gamma M = 2$

Comb.	Quota	N	M	$\sigma 0$	Mu	c.s.	Verifica
SLV 6	4.83	-23869	6212.8	46319	28723.14	4.623	Si
SLV 6	6.93	-20931	5957.29	40618	26236.31	4.404	Si
SLV 5	4.83	-24028	6177.85	46628	28849.54	4.67	Si
SLV 5	6.93	-21064	6140.05	40877	26355.68	4.292	Si
SLV 2	4.83	-24550	5114.42	47642	29257.98	5.721	Si
SLV 2	6.93	-20545	1962.92	39869	25887.42	13.188	Si
SLV 1	4.83	-24797	5060.31	48120	29447.58	5.819	Si
SLV 1	6.93	-20751	2245.87	40270	26074.69	11.61	Si
SLV 12	4.83	-16266	-27.17	31565	21682.49	798.103	Si
SLV 12	6.93	-11213	-4778.16	21760	15913.54	3.33	Si
SLV 8	4.83	-18498	682.3	35898	23954.46	35.108	Si
SLV 8	6.93	-13225	-4901.37	25665	18315.12	3.737	Si
SLV 10	4.83	-21636	5503.33	41987	26860.03	4.881	Si
SLV 10	6.93	-18919	6080.5	36714	24363.41	4.007	Si
SLV 11	4.83	-16425	-62.12	31874	21850.17	351.741	Si
SLV 11	6.93	-11347	-4595.41	22019	16077.14	3.499	Si
SLV 9	4.83	-21795	5468.38	42296	26998.56	4.937	Si
SLV 9	6.93	-19053	6263.25	36973	24491.93	3.91	Si
SLV 7	4.83	-18658	647.35	36207	24110.02	37.244	Si
SLV 7	6.93	-13359	-4718.61	25924	18469.56	3.914	Si

Verifica a taglio nel piano secondo D.M. 17-01-18 (N.T.C.) §7.8.2.2.2 con rottura per scorrimento in combinazioni non sismiche,  $\gamma M = 3$

Comb.	Quota	N	V par	M	$\sigma 0$	$\sigma N$	I'	fvd	Vt scorr.	Vt fess.diag.	Vt,lim	c.s.	Verifica
SLU 83	4.83	-29662	3810	4211.98		57562	3.2207	10833	5583			1.47	Si
SLU 83	6.93	-24051	3818	708.91		46673	3.2207	10833	5583			1.46	Si
SLU 76	4.83	-28743	3700	4163.2		55778	3.2207	10833	5583			1.51	Si
SLU 76	6.93	-23238	3707	720.32		45096	3.2207	10833	5583			1.51	Si
SLU 81	4.83	-29075	3784	4118.02		56423	3.2207	10833	5583			1.48	Si
SLU 81	6.93	-23463	3791	671.12		45532	3.2207	10833	5583			1.47	Si
SLU 82	4.83	-29064	3811	4112.85		56400	3.2207	10833	5583			1.46	Si
SLU 82	6.93	-23438	3818	633.05		45483	3.2207	10833	5583			1.46	Si
SLU 84	4.83	-29651	3837	4206.81		57540	3.2207	10833	5583			1.45	Si
SLU 84	6.93	-24025	3844	670.84		46623	3.2207	10833	5583			1.45	Si
SLU 77	4.83	-29538	3689	4251.92		57321	3.2207	10833	5583			1.51	Si
SLU 77	6.93	-24047	3697	809.61		46665	3.2207	10833	5583			1.51	Si





Comb.	Quota	N	V par	M	$\sigma_0$	$\sigma_N$	I'	fvd	Vt scorr.	Vt fess.diag.	Vt,lim	c.s.	Verifica
SLU 79	4.83	-29349	3682	4265.77		56955	3.2207	10833	5583			1.52	Si
SLU 79	6.93	-23869	3689	821.57		46320	3.2207	10833	5583			1.51	Si
SLU 78	4.83	-29527	3716	4246.75		57299	3.2207	10833	5583			1.5	Si
SLU 78	6.93	-24021	3723	771.54		46615	3.2207	10833	5583			1.5	Si
SLU 75	4.83	-28939	3690	4152.8		56159	3.2207	10833	5583			1.51	Si
SLU 75	6.93	-23434	3697	733.75		45475	3.2207	10833	5583			1.51	Si
SLU 80	4.83	-29338	3709	4260.6		56933	3.2207	10833	5583			1.51	Si
SLU 80	6.93	-23843	3716	783.5		46270	3.2207	10833	5583			1.5	Si

Verifica a taglio nel piano secondo D.M. 17-01-18 (N.T.C.) §7.8.2.2.2 con rottura per scorrimento in combinazioni sismiche,  $\gamma_M = 2$

Comb.	Quota	N	V par	M	$\sigma_0$	$\sigma_N$	I'	fvd	Vt scorr.	Vt fess.diag.	Vt,lim	c.s.	Verifica
SLD 4	4.83	-21317	3780	3220.16		41367	3.2207	16250	8374			2.22	Si
SLD 4	6.93	-17011	3215	-189.26		33012	3.2207	16250	8374			2.6	Si
SLD 7	4.83	-19478	4146	1999.7		37798	3.2207	16250	8374			2.02	Si
SLD 7	6.93	-14899	3402	-1703.83		28913	3.2207	16250	8374			2.46	Si
SLD 3	4.83	-21423	3724	3196.93		41572	3.2207	16250	8374			2.25	Si
SLD 3	6.93	-17100	3159	-67.76		33184	3.2207	16250	8374			2.65	Si
SLV 4	4.83	-22939	5405	3455.27		44515	3.2207	16250	8374			1.55	Si
SLV 4	6.93	-18233	4076	-1294.68		35383	3.2207	16250	8374			2.05	Si
SLD 8	4.83	-19408	4182	2014.97		37663	3.2207	16250	8374			2	Si
SLD 8	6.93	-14841	3439	-1783.68		28800	3.2207	16250	8374			2.43	Si
SLV 3	4.83	-23186	5275	3401.16		44994	3.2207	16250	8374			1.59	Si
SLV 3	6.93	-18440	3946	-1011.72		35784	3.2207	16250	8374			2.12	Si
SLV 7	4.83	-18658	6201	647.35		36207	3.2207	16250	8374			1.35	Si
SLV 7	6.93	-13359	4490	-4718.61		25924	3.2207	16250	8374			1.87	Si
SLV 8	4.83	-18498	6284	682.3		35898	3.2207	16250	8374			1.33	Si
SLV 8	6.93	-13225	4574	-4901.37		25665	3.2207	16250	8374			1.83	Si
SLV 11	4.83	-16425	5100	-62.12		31874	3.2207	16250	8374			1.64	Si
SLV 11	6.93	-11347	3930	-4595.41		22019	3.2207	16250	8374			2.13	Si
SLV 12	4.83	-16266	5184	-27.17		31565	3.2207	16250	8374			1.62	Si
SLV 12	6.93	-11213	4014	-4778.16		21760	3.2207	16250	8374			2.09	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 4.73 Wa 0.03 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 16	215625	0.34	27965	-14411	753.33	976.97	1.3	Si
SLV 15	215625	0.34	28398	-14634	753.33	989.31	1.31	Si
SLV 14	215625	0.34	30602	-15770	753.33	1050.93	1.4	Si
SLV 12	215625	0.34	30616	-15777	753.33	1051.32	1.4	Si
SLV 11	215625	0.34	30896	-15921	753.33	1058.96	1.41	Si
SLV 13	215625	0.34	31034	-15992	753.33	1062.76	1.41	Si
SLV 8	215625	0.34	35459	-18273	753.33	1178.99	1.57	Si
SLV 7	215625	0.34	35739	-18417	753.33	1186.03	1.57	Si
SLV 10	215625	0.34	39405	-20306	753.33	1275.21	1.69	Si
SLV 9	215625	0.34	39684	-20450	753.33	1281.76	1.7	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 4.73 Wa = 0.03 Ta = 0.5471

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	a0*	aLim	Verifica
SLV 1	-15458	-32229	-476	0.949	2105.9	0.932	14.80611	5.88486	Si
SLV 2	-15254	-31929	-476	0.959	2085.3	0.931	14.97522	5.88486	Si
SLV 3	-13435	-32985	-415	1.066	1901.9	0.926	16.72915	5.88486	Si
SLV 4	-13231	-32685	-415	1.079	1881.4	0.925	16.94423	5.88486	Si
SLV 13	-10702	-23811	416	1.271	1627.5	0.917	20.14772	5.88486	Si
SLV 14	-10498	-23511	416	1.289	1607.1	0.916	20.4589	5.88486	Si
SLV 15	-8679	-24567	477	1.477	1425.9	0.909	23.63191	5.88486	Si
SLV 16	-8475	-24267	477	1.503	1405.6	0.908	24.05928	5.88486	Si
SLV 5	-16117	-28348	-235	0.93	2172.5	0.933	14.47726	2.39674	Si
SLV 6	-15985	-28154	-235	0.936	2159.2	0.933	14.57991	2.39674	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	5.915	SLU 79	Si
V_SLU	1.452	SLU 84	Si
PF_SLV	3.33	SLV 12	Si
V_SLV	1.332	SLV 8	Si
PFFP_SLV	1.297	SLV 16	Si
R_SLV	2.516	SLV 1	Si

## Maschio 236

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-13.778	-3.314	-15.433	-3.314	L4	L6	1.655	0.28	7.24	7.24	7.24			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau_0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	32000000	128000000	1.2

Materiale per FRM



Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	$e_{fd}$	$\gamma_{F,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	2	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche, $\gamma_{\text{M}} = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_{\text{m}}$	$\epsilon_{\text{m}_-}$	$\epsilon_{\text{mu}}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 77	4.83	936.41	-19666	-0.0000823	0.0003743	0.0035	1.655	9490.44	20976.48	20976.48	22.4	No	Si
SLU 77	6.93	1561.1	-18235	-0.000085	0.0003743	0.0035	1.655	9257.45	20827.89	20827.89	13.34	No	Si
SLU 81	4.83	981.6	-19584	-0.0000826	0.0003743	0.0035	1.655	9478.96	20968.81	20968.81	21.36	No	Si
SLU 81	6.93	1599.38	-18072	-0.0000849	0.0003743	0.0035	1.655	9226.32	20809.57	20809.57	13.01	No	Si
SLU 80	4.83	940.56	-19565	-0.0000819	0.0003743	0.0035	1.655	9476.31	20967.05	20967.05	22.29	No	Si
SLU 80	6.93	1536.07	-18116	-0.0000842	0.0003743	0.0035	1.655	9234.99	20814.63	20814.63	13.55	No	Si
SLU 84	4.83	1006.6	-19995	-0.0000846	0.0003743	0.0035	1.655	9533.75	21006.53	21006.53	20.87	No	Si
SLU 84	6.93	1617.29	-18484	-0.0000868	0.0003743	0.0035	1.655	9303.22	20855.54	20855.54	12.9	No	Si
SLU 78	4.83	941.79	-19679	-0.0000824	0.0003743	0.0035	1.655	9492.12	20977.61	20977.61	22.27	No	Si
SLU 78	6.93	1556.25	-18238	-0.000085	0.0003743	0.0035	1.655	9258.12	20828.29	20828.29	13.38	No	Si
SLU 82	4.83	986.98	-19596	-0.0000827	0.0003743	0.0035	1.655	9480.68	20969.95	20969.95	21.25	No	Si
SLU 82	6.93	1594.52	-18075	-0.0000848	0.0003743	0.0035	1.655	9227.01	20809.97	20809.97	13.05	No	Si
SLU 75	4.83	922.18	-19280	-0.0000805	0.0003743	0.0035	1.655	9434.62	20940.14	20940.14	22.71	No	Si
SLU 75	6.93	1533.48	-17829	-0.000083	0.0003743	0.0035	1.655	9178.39	20782.03	20782.03	13.55	No	Si
SLU 74	4.83	916.79	-19268	-0.0000804	0.0003743	0.0035	1.655	9432.77	20938.97	20938.97	22.84	No	Si
SLU 74	6.93	1538.34	-17826	-0.000083	0.0003743	0.0035	1.655	9177.67	20781.62	20781.62	13.51	No	Si
SLU 79	4.83	935.17	-19553	-0.0000818	0.0003743	0.0035	1.655	9474.58	20965.91	20965.91	22.42	No	Si
SLU 79	6.93	1540.92	-18113	-0.0000843	0.0003743	0.0035	1.655	9234.3	20814.23	20814.23	13.51	No	Si
SLU 83	4.83	1001.22	-19983	-0.0000845	0.0003743	0.0035	1.655	9532.2	21005.42	21005.42	20.98	No	Si
SLU 83	6.93	1622.15	-18481	-0.0000869	0.0003743	0.0035	1.655	9302.57	20855.15	20855.15	12.86	No	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche, $\gamma_{\text{M}} = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_{\text{m}}$	$\epsilon_{\text{m}_-}$	$\epsilon_{\text{mu}}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 13	4.83	-1353.43	-11611	-0.0000547	0.0005615	0.0035	1.655		21631.55	21631.55	15.98		Si
SLD 13	6.93	2619.39	-14124	-0.0000796	0.0005615	0.0035	1.655		22498.91	22498.91	8.59		Si
SLV 14	4.83	-3567.18	-9785	-0.0000777	0.0005615	0.0035	1.655		20922.79	20922.79	5.87		Si
SLV 14	6.93	4431.36	-16357	-0.0001114	0.0005615	0.0035	1.655		23224.55	23224.55	5.24		Si
SLV 1	4.83	4539.3	-15290	-0.0001089	0.0005615	0.0035	1.655		22887.93	22887.93	5.04		Si
SLV 1	6.93	-2620.47	-6481	-0.000055	0.0005615	0.0035	1.655		19426.35	19426.35	7.41		Si
SLV 13	4.83	-3952.72	-9581	-0.0000847	0.0005615	0.0035	1.655		20836.36	20836.36	5.27		Si
SLV 13	6.93	4813.95	-16963	-0.0001189	0.0005615	0.0035	1.655		23405.29	23405.29	4.86		Si
SLD 15	4.83	-1278.74	-12104	-0.0000556	0.0005615	0.0035	1.655		21809.06	21809.06	17.06		Si
SLD 15	6.93	2683.22	-14642	-0.0000823	0.0005615	0.0035	1.655		22673.52	22673.52	8.45		Si
SLV 15	4.83	-3762.13	-10749	-0.0000832	0.0005615	0.0035	1.655		21314.68	21314.68	5.67		Si
SLV 15	6.93	4964.57	-18151	-0.0001256	0.0005615	0.0035	1.655		23751.06	23751.06	4.78		Si
SLV 4	4.83	5115.43	-16661	-0.0001223	0.0005615	0.0035	1.655		23315.5	23315.5	4.56		Si
SLV 4	6.93	-2852.43	-7063	-0.0000601	0.0005615	0.0035	1.655		19706.08	19706.08	6.91		Si
SLV 3	4.83	4729.89	-16457	-0.0001159	0.0005615	0.0035	1.655		23254.51	23254.51	4.92		Si
SLV 3	6.93	-2469.85	-7669	-0.0000549	0.0005615	0.0035	1.655		19989.34	19989.34	8.09		Si
SLV 16	4.83	-3376.59	-10952	-0.0000778	0.0005615	0.0035	1.655		21390.2	21390.2	6.33		Si
SLV 16	6.93	4581.99	-17545	-0.000118	0.0005615	0.0035	1.655		23576.16	23576.16	5.15		Si
SLV 2	4.83	4924.84	-15493	-0.0001155	0.0005615	0.0035	1.655		22954.66	22954.66	4.66		Si
SLV 2	6.93	-3003.06	-5875	-0.0000655	0.0005615	0.0035	1.655		19126.82	19126.82	6.37		Si

#### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_{\text{M}} = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_{\text{N}}$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 66	4.83	716.92	-17335	-14435	-153	1.655	1.655	-31149	10833	5020	26247	13876	4220	18097	No	118.64	Si
SLU 66	6.93	1295.68	-16013	-13334	-2199	1.655	1.655	-28775	10781	4996	26247	13876	4220	18097	No	8.23	Si
SLU 69	4.83	736.54	-17733	-14767	-149	1.655	1.655	-31866	10833	5020	26247	13876	4220	18097	No	121.34	Si
SLU 69	6.93	1318.45	-16422	-13675	-2248	1.655	1.655	-29510	10833	5020	26247	13876	4220	18097	No	8.05	Si
SLU 77	4.83	936.41	-19666	-16376	176	1.655	1.655	-35339	10833	5020	26247	13876	4220	18097	No	102.78	Si
SLU 77	6.93	1561.1	-18235	-15184	-2017	1.655	1.655	-32767	10833	5020	26247	13876	4220	18097	No	8.97	Si
SLU 70	4.83	741.92	-17745	-14777	-140	1.655	1.655	-31888	10833	5020	26247	13876	4220	18097	No	128.89	Si
SLU 70	6.93	1313.59	-16426	-13678	-2241	1.655	1.655	-29516	10833	5020	26247	13876	4220	18097	No	8.07	Si
SLU 65	4.83	705.04	-16843	-14025	-134	1.655	1.655	-30265	10833	5020	26247	13876	4220	18097	No	135.09	Si
SLU 65	6.93	1244.64	-15488	-12897	-2106	1.655	1.655	-27832	10655	4938	26247	13876	4220	18097	No	8.59	Si
SLU 72	4.83	740.69	-17632	-14682	-133	1.655	1.655	-31684	10833	5020	26247	13876	4220	18097	No	136.07	Si
SLU 72	6.93	1293.41	-16304	-13577	-2207	1.655	1.655	-29297	10833	5020	26247	13876	4220	18097	No	8.2	Si
SLU 67	4.83	722.3	-17347	-14445	-144	1.655	1.655	-31171	10833	5020	26247	13876	4220	18097	No	125.85	Si
SLU 67	6.93	1290.83	-16017	-13337	-2193	1.655	1.655	-28781	10782	4996	26247	13876	4220	18097	No	8.25	Si
SLU 64	4.83	696.07	-16822	-14008	-149	1.655	1.655	-30229	10833	5020	26247	13876	4220	18097	No	121.85	Si
SLU 64	6.93	1252.74	-15482	-12892	-2116	1.655	1.655	-27821	10654	4937	26247	13876	4220	18097	No	8.55	Si
SLU 68	4.83	724.66	-17241	-14357	-131	1.655	1.655	-30982	10833	5020	26247	13876	4220	18097	No	138.6	Si
SLU 68	6.93	1267.41	-15897	-13238	-2154	1.655	1.655	-28567	10753	4983	26247	13876	4220	18097	No	8.4	Si
SLU 71	4.83	735.3	-17620	-14672	-142	1.655	1.655	-31662	10833	5020	26247	13876	4220	18097	No	127.68	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 71	6.93	1298.27	-16300	-13574	-2213	1.655	1.655	-29291	10833	5020	26247	13876	4220	18097	No	8.18	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 4	4.83	5115.43	-16661	-13874	8172	1.655	1.5614	-32272	16250	7105	26247	20815	4220	25035		3.06	Si
SLV 4	6.93	-2852.43	-7063	-5882	4950	1.655	1.271	-16525	13732	4887	26247	20815	4220	25035		5.06	Si
SLV 1	4.83	4539.3	-15290	-12732	6708	1.655	1.5919	-28998	16217	7228	26247	20815	4220	25035		3.73	Si
SLV 1	6.93	-2620.47	-6481	-5397	4271	1.655	1.2696	-15169	13460	4785	26247	20815	4220	25035		5.86	Si
SLV 14	4.83	-3567.18	-9785	-8148	-7491	1.655	1.3889	-21106	14644	5695	26247	20815	4220	25035		3.34	Si
SLV 14	6.93	4431.36	-16357	-13621	-7220	1.655	1.655	0	16250	7530	26247	20815	4220	25035		3.47	Si
SLD 13	4.83	-1353.43	-11611	-9669	-3493	1.655	1.655	-20865	14590	6761	26247	20815	4220	25035		7.17	Si
SLD 13	6.93	2619.39	-14124	-11761	-4221	1.655	1.655	-25380	15493	7179	26247	20815	4220	25035		5.93	Si
SLV 3	4.83	4729.89	-16457	-13704	7485	1.655	1.6203	-30701	16250	7372	26247	20815	4220	25035		3.34	Si
SLV 3	6.93	-2469.85	-7669	-6386	4266	1.655	1.5163	-15129	13444	5708	26247	20815	4220	25035		5.87	Si
SLV 2	4.83	4924.84	-15493	-12902	7395	1.655	1.5289	-30608	16250	6957	26247	20815	4220	25035		3.39	Si
SLV 2	6.93	-3003.06	-5875	-4893	4955	1.655	0.9492	-17666	14003	3722	26247	20815	4220	25035		5.05	Si
SLV 15	4.83	-3762.13	-10749	-8951	-7401	1.655	1.4325	-22521	14926	5987	26247	20815	4220	25035		3.38	Si
SLV 15	6.93	4964.57	-18151	-15114	-7908	1.655	1.655	-33065	16250	7530	26247	20815	4220	25035		3.17	Si
SLV 13	4.83	-3952.72	-9581	-7978	-8177	1.655	1.2449	-22919	15018	5235	26247	20815	4220	25035		3.06	Si
SLV 13	6.93	4813.95	-16963	-14125	-7903	1.655	1.6312	-31450	16250	7422	26247	20815	4220	25035		3.17	Si
SLV 16	4.83	-3376.59	-10952	-9120	-6714	1.655	1.5576	-21114	14640	6385	26247	20815	4220	25035		3.73	Si
SLV 16	6.93	4581.99	-17545	-14610	-7225	1.655	1.655	-31527	16250	7530	26247	20815	4220	25035		3.47	Si
SLD 15	4.83	-1278.74	-12104	-10079	-3170	1.655	1.655	-21750	14767	6843	26247	20815	4220	25035		7.9	Si
SLD 15	6.93	2683.22	-14642	-12193	-4229	1.655	1.655	-26312	15679	7266	26247	20815	4220	25035		5.92	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 4.73  $W_a$  0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 9	179667	0.34	21274	-9859	640.23	1187.94	1.86	Si
SLV 10	179667	0.34	21357	-9897	640.23	1191.82	1.86	Si
SLV 13	179667	0.34	21766	-10087	640.23	1210.87	1.89	Si
SLV 14	179667	0.34	21895	-10146	640.23	1216.81	1.9	Si
SLV 5	179667	0.34	22817	-10574	640.23	1259.13	1.97	Si
SLV 6	179667	0.34	22900	-10612	640.23	1262.89	1.97	Si
SLV 15	179667	0.34	23750	-11006	640.23	1301.21	2.03	Si
SLV 16	179667	0.34	23879	-11065	640.23	1306.94	2.04	Si
SLV 1	179667	0.34	26908	-12470	640.23	1438.14	2.25	Si
SLV 2	179667	0.34	27037	-12529	640.23	1443.52	2.25	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 4.73  $W_a = 0.05$   $T_a = 0.3126$

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 4	-11143	-13791	-158	0.669	1615.9	0.923	10.53385	15.21903	No
SLV 3	-11054	-13691	-157	0.673	1607	0.922	10.60298	15.21903	No
SLV 2	-10061	-12790	-282	0.713	1507.4	0.918	11.28108	15.21903	No
SLV 1	-9972	-12691	-281	0.718	1498.5	0.918	11.36138	15.21903	No
SLV 16	-7869	-9771	317	0.849	1288.6	0.909	13.58082	15.21903	No
SLV 15	-7781	-9672	318	0.856	1279.8	0.909	13.6945	15.21903	No
SLV 14	-6787	-8771	193	0.954	1181.6	0.904	15.33497	15.21903	Si
SLV 13	-6699	-8672	194	0.962	1172.9	0.903	15.47777	15.21903	Si
SLV 8	-11243	-13534	153	0.664	1626	0.923	10.4628	5.02815	Si
SLV 7	-11186	-13469	154	0.667	1620.3	0.923	10.50541	5.02815	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	12.856	SLU 83	Si
V_SLU	8.051	SLU 69	Si
PF_SLV	4.558	SLV 4	Si
V_SLV	3.061	SLV 13	Si
PFFP_SLV	1.855	SLV 9	Si
R_SLV	0.692	SLV 4	No

## Maschio 241

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-13.778	-4.824	-13.778	-3.386	L4	L6	1.438	0.28	7.24	7.24	7.24			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2



#### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	elim,conv / e,CNR DT-200							CRM / Fibrenet?			
									at	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Destro	Interna	100	100	100	100	2	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.03	

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 39	1.11	-564.61	-18517	-0.0000836	0.0003743	0.0035	1.4382	7301.91	18617.9	18617.9	32.97	No	Si
SLU 39	8.35	-322.19	-9622	-0.0000411	0.0003743	0.0035	1.4382	5295.47	17156.87	17156.87	53.25	No	Si
SLU 81	1.11	-589.49	-21963	-0.0001007	0.0003743	0.0035	1.4382	7333.32	18586.91	18586.91	31.53	No	Si
SLU 81	8.35	-386.67	-11377	-0.0000493	0.0003743	0.0035	1.4382	5911.04	17551.76	17551.76	45.39	No	Si
SLU 82	1.11	-586.62	-21966	-0.0001006	0.0003743	0.0035	1.4382	7333.15	18586.02	18586.02	31.68	No	Si
SLU 82	8.35	-396.52	-11414	-0.0000497	0.0003743	0.0035	1.4382	5922.99	17559.42	17559.42	44.28	No	Si
SLU 40	1.11	-561.73	-18520	-0.0000836	0.0003743	0.0035	1.4382	7302.14	18618.2	18618.2	33.14	No	Si
SLU 40	8.35	-332.04	-9659	-0.0000415	0.0003743	0.0035	1.4382	5309.73	17165.59	17165.59	51.7	No	Si
SLU 42	1.11	-575.5	-18866	-0.0000855	0.0003743	0.0035	1.4382	7324.05	18646.94	18646.94	32.4	No	Si
SLU 42	8.35	-338.13	-9983	-0.0000429	0.0003743	0.0035	1.4382	5430.86	17240.43	17240.43	50.99	No	Si
SLU 41	1.11	-578.38	-18863	-0.0000855	0.0003743	0.0035	1.4382	7323.86	18646.67	18646.67	32.24	No	Si
SLU 41	8.35	-328.28	-9945	-0.0000425	0.0003743	0.0035	1.4382	5417.03	17231.82	17231.82	52.49	No	Si
SLU 83	1.11	-603.26	-22309	-0.0001027	0.0003743	0.0035	1.4382	7313.48	18496.47	18496.47	30.66	No	Si
SLU 83	8.35	-392.76	-11700	-0.0000508	0.0003743	0.0035	1.4382	6012.69	17617.5	17617.5	44.86	No	Si
SLU 84	1.11	-600.39	-22312	-0.0001026	0.0003743	0.0035	1.4382	7313.27	18495.62	18495.62	30.81	No	Si
SLU 84	8.35	-402.61	-11738	-0.0000511	0.0003743	0.0035	1.4382	6024.22	17625.05	17625.05	43.78	No	Si
SLU 78	1.11	-563.44	-21903	-0.0000999	0.0003743	0.0035	1.4382	7336.32	18602.81	18602.81	33.02	No	Si
SLU 78	8.35	-398.58	-11716	-0.0000509	0.0003743	0.0035	1.4382	6017.46	17620.62	17620.62	44.21	No	Si
SLU 77	1.11	-566.32	-21900	-0.0000999	0.0003743	0.0035	1.4382	7336.48	18603.7	18603.7	32.85	No	Si
SLU 77	8.35	-388.73	-11678	-0.0000506	0.0003743	0.0035	1.4382	6005.89	17613.06	17613.06	45.31	No	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 4	1.11	-543.66	-15808	-0.0000682	0.0005615	0.0035	1.4382		20364.37	20364.37	37.46		Si
SLV 4	8.35	-1557.49	-9575	-0.0000593	0.0005615	0.0035	1.4382		18681.03	18681.03	11.99		Si
SLV 7	1.11	373.36	-15261	-0.0000632	0.0005615	0.0035	1.4382		20219.42	20219.42	54.16		Si
SLV 7	8.35	-1374.2	-12833	-0.0000695	0.0005615	0.0035	1.4382		19614.47	19614.47	14.27		Si
SLV 2	1.11	-1014.07	-15650	-0.0000752	0.0005615	0.0035	1.4382		20327.02	20327.02	20.05		Si
SLV 2	8.35	-1057.86	-6555	-0.0000398	0.0005615	0.0035	1.4382		17699.87	17699.87	16.73		Si
SLV 5	1.11	-1194.67	-14734	-0.0000743	0.0005615	0.0035	1.4382		20106.84	20106.84	16.83		Si
SLV 5	8.35	291.23	-2766	-0.0000142	0.0005615	0.0035	1.4382		15898.2	15898.2	54.59		Si
SLV 9	1.11	-932.62	-14200	-0.0000679	0.0005615	0.0035	1.4382		19975.06	19975.06	21.42		Si
SLV 9	8.35	890.76	-2560	-0.0000235	0.0005615	0.0035	1.4382		15771.36	15771.36	17.71		Si
SLV 3	1.11	-467.74	-15675	-0.0000664	0.0005615	0.0035	1.4382		20332.99	20332.99	43.47		Si
SLV 3	8.35	-1476.39	-9544	-0.0000579	0.0005615	0.0035	1.4382		18671.27	18671.27	12.65		Si
SLV 8	1.11	324.33	-15346	-0.0000628	0.0005615	0.0035	1.4382		20239.98	20239.98	62.41		Si
SLV 8	8.35	-1426.58	-12853	-0.0000704	0.0005615	0.0035	1.4382		19619.91	19619.91	13.75		Si
SLV 1	1.11	-938.15	-15517	-0.0000734	0.0005615	0.0035	1.4382		20295.48	20295.48	21.63		Si
SLV 1	8.35	-976.76	-6524	-0.0000385	0.0005615	0.0035	1.4382		17689.49	17689.49	18.11		Si
SLV 13	1.11	-64.63	-13739	-0.0000523	0.0005615	0.0035	1.4382		19854.93	19854.93	307.19		Si
SLV 13	8.35	1021.67	-5838	-0.0000366	0.0005615	0.0035	1.4382		17413.46	17413.46	17.04		Si
SLV 6	1.11	-1243.7	-14820	-0.0000755	0.0005615	0.0035	1.4382		20127.72	20127.72	16.18		Si
SLV 6	8.35	238.85	-2786	-0.0000135	0.0005615	0.0035	1.4382		15910.63	15910.63	66.61		Si

#### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 83	1.11	-603.26	-22309	-17143	-3681	1.4382	1.4382	-42569	10833	4363	22809	12059	5501	17560	No	4.77	Si
SLU 83	8.35	-392.76	-11700	-8991	1456	1.4382	1.4382	-22326	9921	3995	22809	12059	5501	17560	No	12.06	Si
SLU 84	1.11	-600.39	-22312	-17145	-3658	1.4382	1.4382	-42576	10833	4363	22809	12059	5501	17560	No	4.8	Si
SLU 84	8.35	-402.61	-11738	-9020	1477	1.4382	1.4382	-22398	9931	3999	22809	12059	5501	17560	No	11.89	Si
SLU 79	1.11	-552.81	-21754	-16717	-3515	1.4382	1.4382	-41511	10833	4363	22809	12059	5501	17560	No	5	Si
SLU 79	8.35	-386.94	-11601	-8914	1527	1.4382	1.4382	-22136	9896	3985	22809	12059	5501	17560	No	11.5	Si
SLU 81	1.11	-589.49	-21963	-16877	-3619	1.4382	1.4382	-41910	10833	4363	22809	12059	5501	17560	No	4.85	Si
SLU 81	8.35	-386.67	-11377	-8742	1416	1.4382	1.4382	-21709	9849	3962	22809	12059	5501	17560	No	12.4	Si
SLU 77	1.11	-566.32	-21900	-16829	-3552	1.4382	1.4382	-41790	10833	4363	22809	12059	5501	17560	No	4.94	Si
SLU 77	8.35	-388.73	-11678	-8974	1536	1.4382	1.4382	-22284	9916	3993	22809	12059	5501	17560	No	11.43	Si
SLU 74	1.11	-552.55	-21554	-16563	-3491	1.4382	1.4382	-41130	10833	4363	22809	12059	5501	17560	No	5.03	Si
SLU 74	8.35	-382.64	-11355	-8725	1496	1.4382	1.4382	-21667	9833	3960	22809	12059	5501	17560	No	11.74	Si
SLU 82	1.11	-586.62	-21966	-16880	-3597	1.4382	1.4382	-41916	10833	4363	22809	12059	5501	17560	No	4.88	Si
SLU 82	8.35	-396.52	-11414	-8771	1437	1.4382	1.4382	-21781	9849	3966	22809	12059	5501	17560	No	12.22	Si
SLU 80	1.11	-549.93	-21757	-16719	-3493	1.4382	1.4382	-41518	10833	4363	22809	12059	5501	17560	No	5.03	Si
SLU 80	8.35	-396.79	-11638	-8943	1548	1.4382	1.4382	-22208	9905	3989	22809	12059	5501	17560	No	11.34	Si
SLU 78	1.11	-563.44	-21903	-16831	-3530	1.4382	1.4382	-41796	10833	4363	22809	12059	5501	17560	No	4.97	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 78	8.35	-398.58	-11716	-9003	1558	1.4382	1.4382	-22356	9925	3997	22809	12059	5501	17560	No	11.27	Si
SLU 75	1.11	-549.67	-21558	-16566	-3469	1.4382	1.4382	-41136	10833	4363	22809	12059	5501	17560	No	5.06	Si
SLU 75	8.35	-392.5	-11392	-8754	1517	1.4382	1.4382	-21739	9843	3964	22809	12059	5501	17560	No	11.57	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 15	1.11	405.77	-13897	-10679	-7308	1.4382	1.4382	-26518	15720	6331	22809	18088	5501	23589		3.23	Si
SLV 15	8.35	522.04	-8858	-6807	-3057	1.4382	1.4382	-16903	13797	5556	22809	18088	5501	23589		7.72	Si
SLV 3	1.11	-467.74	-15675	-12045	4613	1.4382	1.4382	-29911	16250	6544	22809	18088	5501	23589		5.11	Si
SLV 3	8.35	-1476.39	-9544	-7334	5282	1.4382	1.4382	-18211	14059	5662	22809	18088	5501	23589		4.47	Si
SLV 10	1.11	-981.65	-14286	-10978	-7565	1.4382	1.4382	-27261	15869	6390	22809	18088	5501	23589		3.12	Si
SLV 10	8.35	838.38	-2580	-1983	-584	1.4382	1.1826	-5979	11614	3846	22809	18088	5501	23589		40.38	Si
SLD 13	1.11	-203.68	-14325	-11008	-5362	1.4382	1.4382	-27335	15884	6396	22809	18088	5501	23589		4.4	Si
SLD 13	8.35	287	-6886	-5292	-812	1.4382	1.4382	-13140	13045	5253	22809	18088	5501	23589		29.07	Si
SLV 9	1.11	-932.62	-14200	-10912	-7803	1.4382	1.4382	-27097	15836	6377	22809	18088	5501	23589		3.02	Si
SLV 9	8.35	890.76	-2560	-1967	-839	1.4382	1.1135	-6282	11677	3641	22809	18088	5501	23589		28.12	Si
SLV 4	1.11	-543.66	-15808	-12147	4982	1.4382	1.4382	-30164	16250	6544	22809	18088	5501	23589		4.73	Si
SLV 4	8.35	-1557.49	-9575	-7358	5677	1.4382	1.4382	-18271	14071	5666	22809	18088	5501	23589		4.16	Si
SLV 2	1.11	-1014.07	-15650	-12026	2798	1.4382	1.4382	-29863	16250	6544	22809	18088	5501	23589		8.43	Si
SLV 2	8.35	-1057.86	-6555	-5037	5321	1.4382	1.4382	-12508	12918	5202	22809	18088	5501	23589		4.43	Si
SLV 14	1.11	-140.55	-13872	-10659	-9123	1.4382	1.4382	-26470	15711	6327	22809	18088	5501	23589		2.59	Si
SLV 14	8.35	940.57	-5869	-4510	-3018	1.4382	1.4382	-11200	12657	5097	22809	18088	5501	23589		7.82	Si
SLV 13	1.11	-64.63	-13739	-10557	-9492	1.4382	1.4382	-26216	15660	6306	22809	18088	5501	23589		2.49	Si
SLV 13	8.35	1021.67	-5838	-4486	-3412	1.4382	1.4382	-11140	12645	5092	22809	18088	5501	23589		6.91	Si
SLV 16	1.11	329.86	-14030	-10781	-6939	1.4382	1.4382	-26771	15771	6351	22809	18088	5501	23589		3.4	Si
SLV 16	8.35	440.94	-8889	-6831	-2662	1.4382	1.4382	-16963	13809	5561	22809	18088	5501	23589		8.86	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 4.73 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 9	179667	0.34	16111	-6488	569.31	812.48	1.43	Si
SLV 10	179667	0.34	16258	-6547	569.31	819.03	1.44	Si
SLV 5	179667	0.34	16755	-6747	569.31	840.98	1.48	Si
SLV 6	179667	0.34	16902	-6807	569.31	847.46	1.49	Si
SLV 13	179667	0.34	20963	-8442	569.31	1019.63	1.79	Si
SLV 14	179667	0.34	21191	-8534	569.31	1028.95	1.81	Si
SLV 1	179667	0.34	23109	-9306	569.31	1105.72	1.94	Si
SLV 2	179667	0.34	23338	-9398	569.31	1114.68	1.96	Si
SLV 15	179667	0.34	25801	-10390	569.31	1208.85	2.12	Si
SLV 16	179667	0.34	26029	-10482	569.31	1217.35	2.14	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 4.73 Wa = 0.05 Ta = 0.3126

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 4	-9575	-15808	-123	0.676	1393.4	0.922	10.64861	15.21903	No
SLV 3	-9544	-15675	-123	0.677	1390.3	0.922	10.67671	15.21903	No
SLV 16	-8889	-14030	80	0.718	1324.6	0.919	11.35979	15.21903	No
SLV 15	-8858	-13897	80	0.72	1321.4	0.919	11.39185	15.21903	No
SLV 2	-6555	-15650	-74	0.897	1091.7	0.907	14.36513	15.21903	No
SLV 1	-6524	-15517	-74	0.9	1088.6	0.907	14.4159	15.21903	No
SLV 14	-5869	-13872	129	0.961	1024	0.904	15.46253	15.21903	Si
SLV 13	-5838	-13739	129	0.965	1020.9	0.903	15.52186	15.21903	Si
SLV 8	-12853	-15346	-108	0.538	1723.8	0.934	8.36325	5.02815	Si
SLV 7	-12833	-15261	-108	0.538	1721.8	0.934	8.37434	5.02815	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	30.661	SLU 83	Si
V_SLU	4.771	SLU 83	Si
PF_SLV	11.994	SLV 4	Si
V_SLV	2.485	SLV 13	Si
PFFP_SLV	1.427	SLV 9	Si
R_SLV	0.7	SLV 4	No

## Maschio 242

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.sx	a.s.dx
-13.778	-3.386	-13.778	-0.354	L4	Z medio 570 cm	3.032	0.28	4.586	5.453	3.72			



## Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	t0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

## Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

## Rinforzo a matrice inorganica

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv / e,CNR DT-200					CRM / Fibrenet?			
											elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Destro	Interna	100	100	100	100	2	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.03	

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 83	1.11	4482.1	-43443	-0.0001018	0.0003743	0.0035	3.0318	32752.35	83112.24	83112.24	18.54	No	Si
SLU 83	4.83	-51.3	-38559	-0.0000728	0.0003743	0.0035	3.0318	32373.3	82592.99	82592.99	1610.04	No	Si
SLU 63	1.11	4357.79	-40168	-0.0000937	0.0003743	0.0035	3.0318	32590.61	82853.52	82853.52	19.01	No	Si
SLU 63	4.83	102.81	-35552	-0.0000667	0.0003743	0.0035	3.0318	31723.85	81904.5	81904.5	796.64	No	Si
SLU 62	1.11	4342.88	-40168	-0.0000936	0.0003743	0.0035	3.0318	32590.57	82853.45	82853.45	19.08	No	Si
SLU 62	4.83	127.62	-35577	-0.0000668	0.0003743	0.0035	3.0318	31730.51	81910.56	81910.56	641.83	No	Si
SLU 79	1.11	4354.27	-42447	-0.0000989	0.0003743	0.0035	3.0318	32742.96	83061.37	83061.37	19.08	No	Si
SLU 79	4.83	-209	-37673	-0.0000716	0.0003743	0.0035	3.0318	32214.83	82415.56	82415.56	394.33	No	Si
SLU 80	1.11	4369.18	-42447	-0.000099	0.0003743	0.0035	3.0318	32742.97	83061.39	83061.39	19.01	No	Si
SLU 80	4.83	-233.81	-37648	-0.0000716	0.0003743	0.0035	3.0318	32209.99	82410.41	82410.41	352.47	No	Si
SLU 77	1.11	4338.96	-42663	-0.0000993	0.0003743	0.0035	3.0318	32747.96	83073.51	83073.51	19.15	No	Si
SLU 77	4.83	-239.51	-37856	-0.0000721	0.0003743	0.0035	3.0318	32249.89	82452.91	82452.91	344.26	No	Si
SLU 81	1.11	4432.37	-42820	-0.0001001	0.0003743	0.0035	3.0318	32750.55	83082.13	83082.13	18.74	No	Si
SLU 81	4.83	-39.34	-37832	-0.0000712	0.0003743	0.0035	3.0318	32245.28	82447.95	82447.95	2096.04	No	Si
SLU 78	1.11	4353.87	-42663	-0.0000994	0.0003743	0.0035	3.0318	32747.96	83073.53	83073.53	19.08	No	Si
SLU 78	4.83	-264.32	-37831	-0.0000721	0.0003743	0.0035	3.0318	32245.22	82447.88	82447.88	311.93	No	Si
SLU 82	1.11	4447.28	-42820	-0.0001002	0.0003743	0.0035	3.0318	32750.56	83082.15	83082.15	18.68	No	Si
SLU 82	4.83	-64.14	-37807	-0.0000713	0.0003743	0.0035	3.0318	32240.58	82442.9	82442.9	1285.27	No	Si
SLU 84	1.11	4497.01	-43443	-0.0001018	0.0003743	0.0035	3.0318	32752.34	83112.26	83112.26	18.48	No	Si
SLU 84	4.83	-76.11	-38534	-0.0000729	0.0003743	0.0035	3.0318	32369.24	82588.13	82588.13	1085.14	No	Si

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 3	1.11	5775.97	-25295	-0.0000649	0.0005615	0.0035	3.0318		86033.85	86033.85	14.9		Si
SLV 3	4.83	-674.35	-21726	-0.0000403	0.0005615	0.0035	3.0318		83854.19	83854.19	124.35		Si
SLV 6	1.11	1224.93	-28255	-0.0000543	0.0005615	0.0035	3.0318		87757.79	87757.79	71.64		Si
SLV 6	4.83	4733.02	-29788	-0.0000698	0.0005615	0.0035	3.0318		88573.82	88573.82	18.71		Si
SLV 7	1.11	6086.73	-27717	-0.0000707	0.0005615	0.0035	3.0318		87467.51	87467.51	14.37		Si
SLV 7	4.83	-4658.31	-19652	-0.0000504	0.0005615	0.0035	3.0318		82521.24	82521.24	17.71		Si
SLV 12	1.11	4925.35	-29881	-0.0000707	0.0005615	0.0035	3.0318		88622.87	88622.87	17.99		Si
SLV 12	4.83	-5245.13	-20859	-0.0000547	0.0005615	0.0035	3.0318		83300.99	83300.99	15.88		Si
SLV 11	1.11	4859.12	-30040	-0.0000707	0.0005615	0.0035	3.0318		88706.3	88706.3	18.26		Si
SLV 11	4.83	-5267.95	-20981	-0.000055	0.0005615	0.0035	3.0318		83379.63	83379.63	15.83		Si
SLV 2	1.11	4400.1	-25258	-0.00006	0.0005615	0.0035	3.0318		86011.49	86011.49	19.55		Si
SLV 2	4.83	2171.53	-24613	-0.0000508	0.0005615	0.0035	3.0318		85619.6	85619.6	39.43		Si
SLD 8	1.11	4397.83	-28471	-0.0000661	0.0005615	0.0035	3.0318		87873.93	87873.93	19.98		Si
SLD 8	4.83	-2203.51	-22809	-0.0000476	0.0005615	0.0035	3.0318		84536.24	84536.24	38.36		Si
SLV 5	1.11	1158.71	-28413	-0.0000543	0.0005615	0.0035	3.0318		87843.12	87843.12	75.81		Si
SLV 5	4.83	4710.21	-29910	-0.00007	0.0005615	0.0035	3.0318		88638.39	88638.39	18.82		Si
SLV 8	1.11	6152.95	-27558	-0.0000706	0.0005615	0.0035	3.0318		87381.37	87381.37	14.2		Si
SLV 8	4.83	-4635.5	-19530	-0.0000501	0.0005615	0.0035	3.0318		82441.25	82441.25	17.78		Si
SLV 4	1.11	5878.51	-25049	-0.0000648	0.0005615	0.0035	3.0318		85884.79	85884.79	14.61		Si
SLV 4	4.83	-639.03	-21536	-0.0000398	0.0005615	0.0035	3.0318		83733.54	83733.54	131.03		Si

## Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 49	1.11	3800.36	-35611	-27365	3884	3.0318	3.0318	-32236	10833	9196	48081	25420	11597	37016	No	9.53	Si
SLU 49	4.83	-425.45	-31085	-23887	1979	3.0318	3.0318	-28139	10696	9080	48081	25420	11597	37016	No	18.7	Si
SLU 58	1.11	4215.05	-39172	-30101	3841	3.0318	3.0318	-35459	10833	9196	48081	25420	11597	37016	No	9.64	Si
SLU 58	4.83	-30.08	-34691	-26658	1695	3.0318	3.0318	-31403	10833	9196	48081	25420	11597	37016	No	21.84	Si
SLU 51	1.11	3815.67	-35395	-27199	3941	3.0318	3.0318	-32040	10833	9196	48081	25420	11597	37016	No	9.39	Si
SLU 51	4.83	-394.94	-30901	-23746	1978	3.0318	3.0318	-27973	10674	9061	48081	25420	11597	37016	No	18.72	Si
SLU 55	1.11	4190.17	-38550	-29623	3847	3.0318	3.0318	-34896	10833	9196	48081	25420	11597	37016	No	9.62	Si
SLU 55	4.83	-59.47	-33922	-26067	1744	3.0318	3.0318	-30707	10833	9196	48081	25420	11597	37016	No	21.22	Si
SLU 48	1.11	3785.45	-35611	-27365	3840	3.0318	3.0318	-32236	10833	9196	48081	25420	11597	37016	No	9.64	Si
SLU 48	4.83	-400.64	-31110	-23906	1942	3.0318	3.0318	-28161	10699	9083	48081	25420	11597	37016	No	19.06	Si
SLU 44	1.11	3726.16	-34150	-26242	3837	3.0318	3.0318	-30913	10833	9196	48081	25420	11597	37016	No	9.65	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 44	4.83	-387.56	-29430	-22615	1979	3.0318	3.0318	-26641	10497	8910	48081	25420	11597	37016	No	18.71	Si
SLU 47	1.11	3775.89	-34772	-26720	3903	3.0318	3.0318	-31477	10833	9196	48081	25420	11597	37016	No	9.48	Si
SLU 47	4.83	-399.52	-30157	-23174	1990	3.0318	3.0318	-27299	10584	8985	48081	25420	11597	37016	No	18.6	Si
SLU 72	1.11	3954.89	-38670	-29715	3847	3.0318	3.0318	-35005	10833	9196	48081	25420	11597	37016	No	9.62	Si
SLU 72	4.83	-573.86	-33883	-26037	2086	3.0318	3.0318	-30672	10833	9196	48081	25420	11597	37016	No	17.75	Si
SLU 50	1.11	3800.76	-35394	-27199	3897	3.0318	3.0318	-32040	10833	9196	48081	25420	11597	37016	No	9.5	Si
SLU 50	4.83	-370.13	-30926	-23765	1941	3.0318	3.0318	-27995	10677	9064	48081	25420	11597	37016	No	19.07	Si
SLU 59	1.11	4229.96	-39172	-30101	3884	3.0318	3.0318	-35460	10833	9196	48081	25420	11597	37016	No	9.53	Si
SLU 59	4.83	-54.89	-34666	-26639	1731	3.0318	3.0318	-31381	10833	9196	48081	25420	11597	37016	No	21.38	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 10	1.11	-2.67	-30577	-23497	-6409	3.0318	3.0318	-27679	15953	13542	48081	38130	11597	49726		7.76	Si
SLV 10	4.83	4123.39	-31117	-23911	-3535	3.0318	3.0318	-28167	16050	13625	48081	38130	11597	49726		14.06	Si
SLV 3	1.11	5775.97	-25295	-19437	8745	3.0318	3.0318	-22897	14996	12730	48081	38130	11597	49726		5.69	Si
SLV 3	4.83	-674.35	-21726	-16695	4148	3.0318	3.0318	-19667	14350	12182	48081	38130	11597	49726		11.99	Si
SLV 8	1.11	6152.95	-27558	-21177	12016	3.0318	3.0318	-24946	15406	13078	48081	38130	11597	49726		4.14	Si
SLV 8	4.83	-4635.5	-19530	-15007	6457	3.0318	3.0318	-17679	13952	11844	48081	38130	11597	49726		7.7	Si
SLD 7	1.11	4368.9	-28540	-21931	6893	3.0318	3.0318	-25835	15584	13229	48081	38130	11597	49726		7.21	Si
SLD 7	4.83	-2213.47	-22862	-17568	3663	3.0318	3.0318	-20695	14556	12356	48081	38130	11597	49726		13.58	Si
SLV 9	1.11	-68.9	-30736	-23619	-6361	3.0318	3.0318	-27823	15981	13566	48081	38130	11597	49726		7.82	Si
SLV 9	4.83	4100.57	-31239	-24006	-3529	3.0318	3.0318	-28279	16072	13644	48081	38130	11597	49726		14.09	Si
SLV 12	1.11	4925.35	-29881	-22962	9962	3.0318	3.0318	-27049	15826	13435	48081	38130	11597	49726		4.99	Si
SLV 12	4.83	-5245.13	-20859	-16029	5679	3.0318	3.0318	-18882	14193	12048	48081	38130	11597	49726		8.76	Si
SLV 7	1.11	6086.73	-27717	-21299	12065	3.0318	3.0318	-25090	15435	13102	48081	38130	11597	49726		4.12	Si
SLV 7	4.83	-4658.31	-19652	-15102	6464	3.0318	3.0318	-17790	13975	11863	48081	38130	11597	49726		7.69	Si
SLV 11	1.11	4859.12	-30040	-23084	10011	3.0318	3.0318	-27193	15855	13459	48081	38130	11597	49726		4.97	Si
SLV 11	4.83	-5267.95	-20981	-16123	5686	3.0318	3.0318	-18993	14215	12067	48081	38130	11597	49726		8.75	Si
SLV 4	1.11	5878.51	-25049	-19248	8670	3.0318	3.0318	-22675	14952	12692	48081	38130	11597	49726		5.74	Si
SLV 4	4.83	-639.03	-21536	-16549	4138	3.0318	3.0318	-19495	14316	12152	48081	38130	11597	49726		12.02	Si
SLD 8	1.11	4397.83	-28471	-21878	6871	3.0318	3.0318	-25772	15571	13218	48081	38130	11597	49726		7.24	Si
SLD 8	4.83	-2203.51	-22809	-17527	3660	3.0318	3.0318	-20647	14546	12348	48081	38130	11597	49726		13.59	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 2.97 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 8	179667	0.31	31156	-26448	429.95	2947.34	6.86	Si
SLV 7	179667	0.31	31216	-26499	429.95	2951.58	6.86	Si
SLV 4	179667	0.31	31844	-27032	429.95	2995.38	6.97	Si
SLV 3	179667	0.31	31937	-27111	429.95	3001.83	6.98	Si
SLV 12	179667	0.31	33081	-28083	429.95	3079.91	7.16	Si
SLV 11	179667	0.31	33142	-28134	429.95	3083.97	7.17	Si
SLV 2	179667	0.31	34373	-29179	429.95	3165.63	7.36	Si
SLV 1	179667	0.31	34467	-29259	429.95	3171.72	7.38	Si
SLV 16	179667	0.31	38262	-32480	429.95	3407.97	7.93	Si
SLV 15	179667	0.31	38355	-32560	429.95	3413.5	7.94	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 2.97 Wa = 0.05 Ta = 0.1255

Comb.	N top	N base	V orto	α0	M*	e*	α0*	aLim	Verifica
SLV 9	-31239	-30736	-8	0.524	3729.7	0.957	7.95338	14.01518	No
SLV 10	-31117	-30577	-8	0.525	3717.2	0.956	7.98107	14.01518	No
SLV 5	-29910	-28413	-343	0.533	3594.6	0.955	8.1113	14.01518	No
SLV 6	-29788	-28255	-343	0.535	3582.2	0.955	8.14073	14.01518	No
SLV 11	-20981	-30040	331	0.717	2688.3	0.942	11.05738	14.01518	No
SLV 12	-20859	-29881	331	0.72	2675.9	0.942	11.11331	14.01518	No
SLV 7	-19652	-27717	-4	0.77	2553.7	0.94	11.91511	14.01518	No
SLV 8	-19530	-27558	-4	0.774	2541.3	0.939	11.97932	14.01518	No
SLV 13	-29233	-33246	501	0.539	3525.8	0.954	8.2028	9.4771	No
SLV 14	-29043	-33000	501	0.542	3506.5	0.954	8.24981	9.4771	No

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	18.482	SLU 84	Si
V_SLU	9.393	SLU 51	Si
PF_SLV	14.202	SLV 8	Si
V_SLV	4.122	SLV 7	Si
PFFP_SLV	6.855	SLV 8	Si
R_SLV	0.567	SLV 9	No

## Maschio 245

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)





## Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-13.638	-4.824	-13.143	-4.824	L3	F1	0.495	0.3	13.865	13.865	13.865			

## Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

## Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

## Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	2	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.03	

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 77	0.39	304.93	-6699	-0.0001163	0.0003743	0.0035	0.495	923.29	2266.28	2266.28	7.43	No	Si
SLU 77	2.89	18.24	-6916	-0.0000778	0.0003743	0.0035	0.495	928.64	2273.27	2273.27	124.6	No	Si
SLU 80	0.39	303.46	-6658	-0.0001155	0.0003743	0.0035	0.495	922.12	2264.92	2264.92	7.46	No	Si
SLU 80	2.89	16.18	-6872	-0.0000769	0.0003743	0.0035	0.495	927.69	2271.89	2271.89	140.41	No	Si
SLU 81	0.39	298.15	-6673	-0.0001149	0.0003743	0.0035	0.495	922.55	2265.41	2265.41	7.6	No	Si
SLU 81	2.89	20.24	-6906	-0.0000779	0.0003743	0.0035	0.495	928.42	2272.94	2272.94	112.3	No	Si
SLU 78	0.39	303.49	-6689	-0.0001159	0.0003743	0.0035	0.495	923.02	2265.96	2265.96	7.47	No	Si
SLU 78	2.89	21.01	-6937	-0.0000784	0.0003743	0.0035	0.495	929.08	2273.92	2273.92	108.25	No	Si
SLU 84	0.39	302.72	-6780	-0.0001171	0.0003743	0.0035	0.495	925.47	2268.94	2268.94	7.5	No	Si
SLU 84	2.89	21.32	-7044	-0.0000798	0.0003743	0.0035	0.495	931.07	2277.16	2277.16	106.83	No	Si
SLU 83	0.39	304.16	-6790	-0.0001174	0.0003743	0.0035	0.495	925.72	2269.25	2269.25	7.46	No	Si
SLU 83	2.89	18.55	-7023	-0.0000792	0.0003743	0.0035	0.495	930.71	2276.53	2276.53	122.7	No	Si
SLU 79	0.39	304.9	-6668	-0.0001158	0.0003743	0.0035	0.495	922.4	2265.24	2265.24	7.43	No	Si
SLU 79	2.89	13.42	-6851	-0.0000763	0.0003743	0.0035	0.495	927.21	2271.23	2271.23	169.26	No	Si
SLU 74	0.39	298.92	-6582	-0.0001138	0.0003743	0.0035	0.495	919.77	2262.34	2262.34	7.57	No	Si
SLU 74	2.89	19.93	-6799	-0.0000765	0.0003743	0.0035	0.495	925.95	2269.55	2269.55	113.87	No	Si
SLU 75	0.39	297.48	-6572	-0.0001134	0.0003743	0.0035	0.495	919.46	2262.01	2262.01	7.6	No	Si
SLU 75	2.89	22.69	-6820	-0.0000772	0.0003743	0.0035	0.495	926.46	2270.23	2270.23	100.04	No	Si
SLU 76	0.39	296.49	-6535	-0.0001128	0.0003743	0.0035	0.495	918.23	2260.72	2260.72	7.62	No	Si
SLU 76	2.89	19.71	-6769	-0.0000761	0.0003743	0.0035	0.495	925.19	2268.59	2268.59	115.11	No	Si

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 4	0.39	-725.31	2962	0.0049738	0.0005615	0.0035	0.396		0	0	0		No
SLV 4	2.89	2072.24	-14674	-0.0011991	0.0005615	0.0035	0.495		2671.07	2671.07	1.29		Si
SLV 10	0.39	550.24	-7724	-0.0001564	0.0005615	0.0035	0.495		2628.74	2628.74	4.78		Si
SLV 10	2.89	-832.64	842	0.0000473	0.0005615	0.0035	0.396		271.14	271.14	0.33		No
SLV 3	0.39	-654.47	2477	0.0040707	0.0005615	0.0035	0.396		0	0	0		No
SLV 3	2.89	1930.85	-13989	-0.0008604	0.0005615	0.0035	0.495		2709.25	2709.25	1.4		Si
SLV 13	0.39	1155.27	-12082	-0.0003295	0.0005615	0.0035	0.495		2780.53	2780.53	2.41		Si
SLV 13	2.89	-2062.44	5442	0.0074287	0.0005615	0.0035	0.396		0	0	0		No
SLV 1	0.39	-597.32	1727	0.0025561	0.0005615	0.0035	0.396		0	0	0		No
SLV 1	2.89	1743.46	-12167	-0.0006029	0.0005615	0.0035	0.495		2781.27	2781.27	1.6		Si
SLV 15	0.39	1098.13	-11332	-0.0003047	0.0005615	0.0035	0.495		2772.28	2772.28	2.52		Si
SLV 15	2.89	-1875.06	3620	0.0037787	0.0005615	0.0035	0.396		0	0	0		No
SLV 16	0.39	1027.28	-10848	-0.0002818	0.0005615	0.0035	0.495		2764.62	2764.62	2.69		Si
SLV 16	2.89	-1733.67	2935	0.0025942	0.0005615	0.0035	0.396		0	0	0		No
SLV 14	0.39	1084.43	-11597	-0.0003053	0.0005615	0.0035	0.495		2775.54	2775.54	2.56		Si
SLV 14	2.89	-1921.05	4757	0.0062105	0.0005615	0.0035	0.396		0	0	0		No
SLV 9	0.39	595.99	-8037	-0.0001671	0.0005615	0.0035	0.495		2647.9	2647.9	4.44		Si
SLV 9	2.89	-923.96	1284	0.0008248	0.0005615	0.0035	0.396		0	0	0		No
SLV 2	0.39	-668.16	2212	0.0034561	0.0005615	0.0035	0.396		0	0	0		No
SLV 2	2.89	1884.85	-12851	-0.0007742	0.0005615	0.0035	0.495		2759.21	2759.21	1.46		Si

## Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 84	0.39	302.72	-6780	-5292	764	0.495	0.495	-35636	10833	1609	7850	4447	1893	6340	No	8.3	Si
SLU 84	2.89	21.32	-7044	-5498	-333	0.495	0.495	-37024	10833	1609	7850	4447	1893	6340	No	19.06	Si
SLU 75	0.39	297.48	-6572	-5129	753	0.495	0.495	-34543	10833	1609	7850	4447	1893	6340	No	8.42	Si
SLU 75	2.89	22.69	-6820	-5323	-332	0.495	0.495	-35846	10833	1609	7850	4447	1893	6340	No	19.11	Si
SLU 81	0.39	298.15	-6673	-5208	752	0.495	0.495	-35072	10833	1609	7850	4447	1893	6340	No	8.43	Si
SLU 81	2.89	20.24	-6906	-5390	-324	0.495	0.495	-36297	10833	1609	7850	4447	1893	6340	No	19.59	Si
SLU 78	0.39	303.49	-6689	-5221	767	0.495	0.495	-35158	10833	1609	7850	4447	1893	6340	No	8.27	Si





Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 78	2.89	21.01	-6937	-5414	-333	0.495	0.495	-36462	10833	1609	7850	4447	1893	6340	No	19.07	Si
SLU 83	0.39	304.16	-6790	-5299	766	0.495	0.495	-35686	10833	1609	7850	4447	1893	6340	No	8.28	Si
SLU 83	2.89	18.55	-7023	-5481	-324	0.495	0.495	-36913	10833	1609	7850	4447	1893	6340	No	19.54	Si
SLU 79	0.39	304.9	-6668	-5204	766	0.495	0.495	-35045	10833	1609	7850	4447	1893	6340	No	8.27	Si
SLU 79	2.89	13.42	-6851	-5347	-313	0.495	0.495	-36010	10833	1609	7850	4447	1893	6340	No	20.28	Si
SLU 74	0.39	298.92	-6582	-5137	755	0.495	0.495	-34594	10833	1609	7850	4447	1893	6340	No	8.4	Si
SLU 74	2.89	19.93	-6799	-5306	-323	0.495	0.495	-35735	10833	1609	7850	4447	1893	6340	No	19.6	Si
SLU 77	0.39	304.93	-6699	-5228	769	0.495	0.495	-35208	10833	1609	7850	4447	1893	6340	No	8.25	Si
SLU 77	2.89	18.24	-6916	-5398	-324	0.495	0.495	-36352	10833	1609	7850	4447	1893	6340	No	19.55	Si
SLU 80	0.39	303.46	-6658	-5196	764	0.495	0.495	-34994	10833	1609	7850	4447	1893	6340	No	8.3	Si
SLU 80	2.89	16.18	-6872	-5364	-321	0.495	0.495	-36121	10833	1609	7850	4447	1893	6340	No	19.76	Si
SLU 82	0.39	296.71	-6663	-5200	750	0.495	0.495	-35021	10833	1609	7850	4447	1893	6340	No	8.46	Si
SLU 82	2.89	23	-6927	-5406	-332	0.495	0.495	-36407	10833	1609	7850	4447	1893	6340	No	19.1	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 1	0.39	-597.32	1727	1348	-190	0.396	0	0	0	0	7850	5336	1515	6851		36.11	Si
SLV 1	2.89	1743.46	-12167	-9496	-4351	0.495	0.3126	-106109	16250	1524	7850	6670	1893	8563		1.97	Si
SLV 4	0.39	-725.31	2962	2311	-397	0.396	0.0077	0	0	0	7850	5336	1515	6851		17.27	Si
SLV 4	2.89	2072.24	-14674	-11453	-5363	0.495	0.3188	-131433	16250	1554	7850	6670	1893	8563		1.6	Si
SLV 15	0.39	1098.13	-11332	-8845	1359	0.495	0.4518	-68164	16250	2202	7850	6670	1893	8563		6.3	Si
SLV 15	2.89	-1875.06	3620	2825	4280	0.396	0	0	0	0	7850	5336	1515	6851		1.6	Si
SLV 16	0.39	1027.28	-10848	-8466	1268	0.495	0.4584	-64091	16250	2235	7850	6670	1893	8563		6.76	Si
SLV 16	2.89	-1733.67	2935	2291	3925	0.396	0	0	0	0	7850	5336	1515	6851		1.75	Si
SLV 3	0.39	-654.47	2477	1933	-305	0.396	0	0	0	0	7850	5336	1515	6851		22.45	Si
SLV 3	2.89	1930.85	-13989	-10918	-5007	0.495	0.3284	-121140	16250	1601	7850	6670	1893	8563		1.71	Si
SLV 9	0.39	595.99	-8037	-6273	1010	0.495	0.495	-42244	16250	2413	7850	6670	1893	8563		8.48	Si
SLV 9	2.89	-923.96	1284	1002	2389	0.396	0	0	0	0	7850	5336	1515	6851		2.87	Si
SLV 2	0.39	-668.16	2212	1726	-281	0.396	0	0	0	0	7850	5336	1515	6851		24.36	Si
SLV 2	2.89	1884.85	-12851	-10030	-4706	0.495	0.3025	-117006	16250	1475	7850	6670	1893	8563		1.82	Si
SLV 8	0.39	-166.03	-1083	-845	67	0.495	0.2825	-9559	12355	1047	7850	6670	1893	8563		126.94	Si
SLV 8	2.89	933.75	-10516	-8207	-2815	0.495	0.4761	-59623	16250	2321	7850	6670	1893	8563		3.04	Si
SLV 14	0.39	1084.43	-11597	-9052	1383	0.495	0.4619	-68267	16250	2252	7850	6670	1893	8563		6.19	Si
SLV 14	2.89	-1921.05	4757	3713	4581	0.396	0	0	0	0	7850	5336	1515	6851		1.5	Si
SLV 13	0.39	1155.27	-12082	-9430	1474	0.495	0.4556	-72378	16250	2221	7850	6670	1893	8563		5.81	Si
SLV 13	2.89	-2062.44	5442	4247	4937	0.396	0	0	0	0	7850	5336	1515	6851		1.39	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 7.323 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	α0	N	M	Mc	Coeff.s.	Verifica
SLV 9	179667	0.4	0	-136	869.93	0	0	No, $e > t/2$
SLV 8	179667	0.4	0	-5079	869.93	0	0	No, $e > t/2$
SLV 4	179667	0.4	0	-3188	869.93	0	0	No, $e > t/2$
SLV 3	179667	0.4	0	-3193	869.93	0	0	No, $e > t/2$
SLV 1	179667	0.4	0	-1678	869.93	0	0	No, $e > t/2$
SLV 5	179667	0.4	0	-31	869.93	0	0	No, $e > t/2$
SLV 10	179667	0.4	0	-133	869.93	0	0	No, $e > t/2$
SLV 7	179667	0.4	0	-5082	869.93	0	0	No, $e > t/2$
SLV 2	179667	0.4	0	-1672	869.93	0	0	No, $e > t/2$
SLV 6	179667	0.4	0	-28	869.93	0	0	No, $e > t/2$

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 7.323 Wa = 0.05 Ta = 1.0701

Comb.	N top	N base	V orto	α0	M*	e*	α0*	aLim	Verifica
SLV 8	-678	-1083	-38	1.103	407	0.911	17.59499	2.39674	Si
SLV 4	-667	2962	-41	1.106	406.3	0.911	17.63367	2.39674	Si, Trazione
SLV 7	-667	-1396	-37	1.107	406.2	0.911	17.65823	2.39674	Si
SLV 3	-651	2477	-41	1.113	405.1	0.912	17.732	2.39674	Si, Trazione
SLV 12	-492	-5226	-24	1.195	395.2	0.923	18.80193	2.39674	Si
SLV 11	-481	-5538	-24	1.2	394.5	0.924	18.86991	2.39674	Si
SLV 2	-470	2212	-30	1.203	393.9	0.925	18.8956	2.39674	Si, Trazione
SLV 1	-454	1727	-30	1.212	393	0.927	19.00139	2.39674	Si, Trazione
SLV 16	-48	-10848	3	1.482	378	0.988	21.80514	2.39674	Si
SLV 15	-32	-11332	3	1.495	377.9	0.992	21.9064	2.39674	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	7.429	SLU 79	Si
V_SLU	8.246	SLU 77	Si
PF_SLV	0	SLV 1	No
V_SLV	1.388	SLV 13	Si
PFFP_SLV	0	SLV 1	No
R_SLV	7.341	SLV 8	Si



## Maschio 246

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.743	-4.824	-11.143	-4.824	L3	F1	0.6	0.3	13.863	13.864	13.863			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau_0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	elim,conv / $\epsilon_{CNR}$ DT-200							CRM / Fibrenet?			
									$\alpha t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma_{fd}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	2	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.03	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_m$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 58	0.39	353.6	-6349	-0.0000877	0.0003743	0.0035	0.6	1244.88	3235.33	3235.33	9.15	No	Si
SLU 58	2.89	-402.95	-8973	-0.0001216	0.0003743	0.0035	0.6	1373.95	3360.51	3360.51	8.34	No	Si
SLU 80	0.39	361.42	-7103	-0.0000964	0.0003743	0.0035	0.6	1305.04	3282.77	3282.77	9.08	No	Si
SLU 80	2.89	-411.63	-9778	-0.0001321	0.0003743	0.0035	0.6	1368.36	3349.63	3349.63	8.14	No	Si
SLU 81	0.39	371.39	-7153	-0.0000979	0.0003743	0.0035	0.6	1308.42	3285.74	3285.74	8.85	No	Si
SLU 81	2.89	-409.09	-9815	-0.0001323	0.0003743	0.0035	0.6	1367.58	3345.71	3345.71	8.18	No	Si
SLU 78	0.39	359.44	-7182	-0.0000971	0.0003743	0.0035	0.6	1310.26	3287.39	3287.39	9.15	No	Si
SLU 78	2.89	-408.3	-9834	-0.0001325	0.0003743	0.0035	0.6	1367.18	3343.82	3343.82	8.19	No	Si
SLU 82	0.39	368.7	-7165	-0.0000978	0.0003743	0.0035	0.6	1309.19	3286.43	3286.43	8.91	No	Si
SLU 82	2.89	-405.76	-9812	-0.0001319	0.0003743	0.0035	0.6	1367.65	3346.04	3346.04	8.25	No	Si
SLU 62	0.39	367.42	-6516	-0.0000908	0.0003743	0.0035	0.6	1259.83	3246.61	3246.61	8.84	No	Si
SLU 62	2.89	-406.36	-9183	-0.0001244	0.0003743	0.0035	0.6	1374.54	3362.7	3362.7	8.28	No	Si
SLU 79	0.39	364.1	-7091	-0.0000966	0.0003743	0.0035	0.6	1304.24	3282.07	3282.07	9.01	No	Si
SLU 79	2.89	-414.96	-9781	-0.0001325	0.0003743	0.0035	0.6	1368.3	3349.3	3349.3	8.07	No	Si
SLU 84	0.39	375.23	-7270	-0.0000996	0.0003743	0.0035	0.6	1315.86	3292.29	3292.29	8.77	No	Si
SLU 84	2.89	-415.03	-9987	-0.0001351	0.0003743	0.0035	0.6	1363.42	3328.17	3328.17	8.02	No	Si
SLU 77	0.39	362.13	-7170	-0.0000972	0.0003743	0.0035	0.6	1309.5	3286.7	3286.7	9.08	No	Si
SLU 77	2.89	-411.64	-9837	-0.0001329	0.0003743	0.0035	0.6	1367.11	3343.49	3343.49	8.12	No	Si
SLU 83	0.39	377.92	-7258	-0.0000997	0.0003743	0.0035	0.6	1315.13	3291.68	3291.68	8.71	No	Si
SLU 83	2.89	-418.37	-9991	-0.0001355	0.0003743	0.0035	0.6	1363.34	3327.85	3327.85	7.95	No	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_m$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 3	0.39	-1482.17	-11466	-0.0002609	0.0005615	0.0035	0.6		4006.89	4006.89	2.7		Si
SLV 3	2.89	2170.76	1758	-0.0000771	0.0005615	0.0035	0.6		0	0	0		No
SLV 16	0.39	2059.14	2894	0.0021417	0.0005615	0.0035	0.48		0	0	0		No
SLV 16	2.89	-2764.33	-16585	-0.0007715	0.0005615	0.0035	0.6		4010.76	4010.76	1.45		Si
SLV 1	0.39	-1569.6	-12541	-0.0002848	0.0005615	0.0035	0.6		4054.89	4054.89	2.58		Si
SLV 1	2.89	2188.35	3300	0.0026656	0.0005615	0.0035	0.48		0	0	0		No
SLV 2	0.39	-1716.9	-13123	-0.0003162	0.0005615	0.0035	0.6		4068.67	4068.67	2.37		Si
SLV 2	2.89	2375.2	4011	0.0036539	0.0005615	0.0035	0.48		0	0	0		No
SLV 14	0.39	1971.7	1818	0.0003417	0.0005615	0.0035	0.48		0	0	0		No
SLV 14	2.89	-2746.73	-15043	-0.0007512	0.0005615	0.0035	0.6		4093.73	4093.73	1.49		Si
SLV 13	0.39	2118.99	2400	0.0011624	0.0005615	0.0035	0.48		0	0	0		No
SLV 13	2.89	-2933.58	-15755	-0.0009736	0.0005615	0.0035	0.6		4053.06	4053.06	1.38		Si
SLD 15	0.39	1083.58	-1270	-0.0005308	0.0005615	0.0035	0.6		2828.83	2828.83	2.61		Si
SLD 15	2.89	-1426.09	-11205	-0.0002498	0.0005615	0.0035	0.6		3992.88	3992.88	2.8		Si
SLV 15	0.39	2206.43	3476	0.0029528	0.0005615	0.0035	0.48		0	0	0		No
SLV 15	2.89	-2951.18	-17297	-0.0010223	0.0005615	0.0035	0.6		3965.05	3965.05	1.34		Si
SLV 11	0.39	991.35	-602	-0.0005827	0.0005615	0.0035	0.6		2634.6	2634.6	2.66		Si
SLV 11	2.89	-1145.94	-12301	-0.000225	0.0005615	0.0035	0.6		4048.27	4048.27	3.53		Si
SLV 4	0.39	-1629.46	-12048	-0.000291	0.0005615	0.0035	0.6		4036.34	4036.34	2.48		Si
SLV 4	2.89	2357.61	2469	0.0009185	0.0005615	0.0035	0.48		0	0	0		No

### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	l'	$\sigma N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 74	0.39	355.6	-7065	-5514	40	0.6	0.6	-30634	10833	1950	9516	5390	2295	7685	No	194.09	Si
SLU 74	2.89	-402.36	-9662	-7541	1265	0.6	0.6	-41892	10833	1950	9516	5390	2295	7685	No	6.08	Si
SLU 78	0.39	359.44	-7182	-5605	38	0.6	0.6	-31139	10833	1950	9516	5390	2295	7685	No	204	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 78	2.89	-408.3	-9834	-7675	1285	0.6	0.6	-42638	10833	1950	9516	5390	2295	7685	No	5.98	Si
SLU 81	0.39	371.39	-7153	-5583	55	0.6	0.6	-31017	10833	1950	9516	5390	2295	7685	No	140.21	Si
SLU 81	2.89	-409.09	-9815	-7661	1286	0.6	0.6	-42559	10833	1950	9516	5390	2295	7685	No	5.98	Si
SLU 83	0.39	377.92	-7258	-5665	56	0.6	0.6	-31471	10833	1950	9516	5390	2295	7685	No	137.61	Si
SLU 83	2.89	-418.37	-9991	-7798	1312	0.6	0.6	-43318	10833	1950	9516	5390	2295	7685	No	5.86	Si
SLU 79	0.39	364.1	-7091	-5534	46	0.6	0.6	-30746	10833	1950	9516	5390	2295	7685	No	166.53	Si
SLU 79	2.89	-414.96	-9781	-7634	1297	0.6	0.6	-42410	10833	1950	9516	5390	2295	7685	No	5.93	Si
SLU 80	0.39	361.42	-7103	-5544	43	0.6	0.6	-30797	10833	1950	9516	5390	2295	7685	No	177.94	Si
SLU 80	2.89	-411.63	-9778	-7632	1291	0.6	0.6	-42396	10833	1950	9516	5390	2295	7685	No	5.95	Si
SLU 84	0.39	375.23	-7270	-5674	53	0.6	0.6	-31522	10833	1950	9516	5390	2295	7685	No	145.31	Si
SLU 84	2.89	-415.03	-9987	-7795	1306	0.6	0.6	-43305	10833	1950	9516	5390	2295	7685	No	5.89	Si
SLU 82	0.39	368.7	-7165	-5592	52	0.6	0.6	-31068	10833	1950	9516	5390	2295	7685	No	148.22	Si
SLU 82	2.89	-405.76	-9812	-7658	1280	0.6	0.6	-42545	10833	1950	9516	5390	2295	7685	No	6	Si
SLU 62	0.39	367.42	-6516	-5086	85	0.6	0.6	-28253	10712	1928	9516	5390	2295	7685	No	90.45	Si
SLU 62	2.89	-406.36	-9183	-7167	1266	0.6	0.6	-39817	10833	1950	9516	5390	2295	7685	No	6.07	Si
SLU 77	0.39	362.13	-7170	-5596	41	0.6	0.6	-31088	10833	1950	9516	5390	2295	7685	No	189.14	Si
SLU 77	2.89	-411.64	-9837	-7678	1291	0.6	0.6	-42652	10833	1950	9516	5390	2295	7685	No	5.95	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 16	0.39	2059.14	2894	2259	2125	0.48	0	0	0	0	9516	6468	1836	8304		3.91	Si
SLV 16	2.89	-2764.33	-16585	-12945	6158	0.6	0.4	-117036	16250	1950	9516	8085	2295	10380		1.69	Si
SLV 1	0.39	-1569.6	-12541	-9788	-2069	0.6	0.5246	-64644	16250	2557	9516	8085	2295	10380		5.02	Si
SLV 1	2.89	-2188.35	-3300	2575	-4355	0.48	0	0	0	0	9516	6468	1836	8304		1.91	Si
SLV 4	0.39	-1629.46	-12048	-9403	-2231	0.6	0.4943	-65759	16250	2410	9516	8085	2295	10380		4.65	Si
SLV 4	2.89	-2357.61	-2469	1927	-5180	0.48	0	0	0	0	9516	6468	1836	8304		1.6	Si
SLD 13	0.39	1045.45	-1739	-1357	995	0.6	0	-42910	16250	0	9516	8085	2295	9516		9.57	Si
SLD 13	2.89	-1420.11	-10533	-8221	3503	0.6	0.4955	-56946	16250	2416	9516	8085	2295	10380		2.96	Si
SLV 9	0.39	699.89	-4187	-3268	742	0.6	0.3986	-27102	15880	1899	9516	8085	2295	10380		14	Si
SLV 9	2.89	-1087.3	-7161	-5589	3394	0.6	0.4445	-42414	16250	2167	9516	8085	2295	10380		3.06	Si
SLV 13	0.39	2118.99	2400	1873	2288	0.48	0	0	0	0	9516	6468	1836	8304		3.63	Si
SLV 13	2.89	-2933.58	-15755	-12296	6983	0.6	0.3414	-124861	16250	1664	9516	8085	2295	10380		1.49	Si
SLV 15	0.39	2206.43	3476	2713	2282	0.48	0	0	0	0	9516	6468	1836	8304		3.64	Si
SLV 15	2.89	-2951.18	-17297	-13500	6593	0.6	0.3882	-126820	16250	1892	9516	8085	2295	10380		1.57	Si
SLV 3	0.39	-1482.17	-11466	-8949	-2075	0.6	0.5122	-60235	16250	2497	9516	8085	2295	10380		5	Si
SLV 3	2.89	2170.76	1758	1372	-4746	0.6	0	0	9198	0	9516	8085	2295	9516		2.01	Si
SLV 2	0.39	-1716.9	-13123	-10243	-2226	0.6	0.5075	-70144	16250	2474	9516	8085	2295	10380		4.66	Si
SLV 2	2.89	2375.2	4011	3131	-4790	0.48	0	0	0	0	9516	6468	1836	8304		1.73	Si
SLV 14	0.39	1971.7	1818	1419	2131	0.48	0	0	0	0	9516	6468	1836	8304		3.9	Si
SLV 14	2.89	-2746.73	-15043	-11741	6549	0.6	0.3523	-115737	16250	1717	9516	8085	2295	10380		1.59	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 7.322 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 1	179667	0.4	0	-2219	1054.22	0	0	No, $e > t/2$
SLV 2	179667	0.4	0	-2239	1054.22	0	0	No, $e > t/2$
SLV 8	179667	0.4	0	-5825	1054.22	0	0	No, $e > t/2$
SLV 9	179667	0.4	0	151	1054.22	0	0	No, Trazione
SLV 10	179667	0.4	0	138	1054.22	0	0	No, Trazione
SLV 3	179667	0.4	0	-3960	1054.22	0	0	No, $e > t/2$
SLV 4	179667	0.4	0	-3981	1054.22	0	0	No, $e > t/2$
SLV 6	179667	0.4	0	-19	1054.22	0	0	No, $e > t/2$
SLV 7	179667	0.4	0	-5812	1054.22	0	0	No, $e > t/2$
SLV 5	179667	0.4	0	-6	1054.22	0	0	No, $e > t/2$

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 7.322 Wa = 0.05 Ta = 1.0698

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 15	-804	3476	-66	1.102	492.1	0.912	17.57482	2.39674	Si, Trazione
SLV 16	-788	2894	-66	1.108	491	0.912	17.64949	2.39674	Si, Trazione
SLV 11	-756	-602	-61	1.121	488.9	0.914	17.8342	2.39674	Si
SLV 12	-746	-978	-61	1.125	488.2	0.914	17.88322	2.39674	Si
SLV 13	-627	2400	-50	1.175	480.8	0.921	18.53619	2.39674	Si, Trazione
SLV 14	-611	1818	-50	1.182	479.9	0.922	18.61536	2.39674	Si, Trazione
SLV 7	-541	-5084	-39	1.215	475.8	0.927	19.03652	2.39674	Si
SLV 8	-531	-5460	-39	1.219	475.2	0.928	19.08886	2.39674	Si
SLV 9	-167	-4187	-6	1.415	460.1	0.969	21.23233	2.39674	Si
SLV 10	-157	-4563	-6	1.421	459.8	0.97	21.28559	2.39674	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	7.954	SLU 83	Si
V_SLU	5.859	SLU 83	Si
PF_SLV	0	SLV 1	No
V_SLV	1.486	SLV 13	Si
PFFP_SLV	0	SLV 10	No
R_SLV	7.333	SLV 15	Si



## Maschio 248

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.003	-4.824	-11.003	-3.385	L4	L6	1.439	0.28	7.24	7.24	7.24			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fV0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Destro	Interna	100	100	100	100	2	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.03	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 80	1.11	228.03	-24448	-0.0001063	0.0003743	0.0035	1.4389	7105.97	17984.45	17984.45	78.87	No	Si
SLU 80	8.35	-668.55	-12470	-0.0000585	0.0003743	0.0035	1.4389	6244.23	17780.09	17780.09	26.6	No	Si
SLU 75	1.11	220.56	-24270	-0.0001053	0.0003743	0.0035	1.4389	7129.94	18023.61	18023.61	81.72	No	Si
SLU 75	8.35	-660.48	-12278	-0.0000576	0.0003743	0.0035	1.4389	6189.47	17742.55	17742.55	26.86	No	Si
SLU 83	1.11	197.47	-25127	-0.0001092	0.0003743	0.0035	1.4389	7003.98	17838.75	17838.75	90.34	No	Si
SLU 83	8.35	-678.46	-12584	-0.0000592	0.0003743	0.0035	1.4389	6276.13	17802.21	17802.21	26.24	No	Si
SLU 77	1.11	212.45	-24633	-0.000107	0.0003743	0.0035	1.4389	7079.75	17943.71	17943.71	84.46	No	Si
SLU 77	8.35	-662.08	-12546	-0.0000587	0.0003743	0.0035	1.4389	6265.58	17794.87	17794.87	26.88	No	Si
SLU 78	1.11	217.18	-24633	-0.000107	0.0003743	0.0035	1.4389	7079.73	17943.68	17943.68	82.62	No	Si
SLU 78	8.35	-670.71	-12590	-0.0000591	0.0003743	0.0035	1.4389	6277.93	17803.46	17803.46	26.54	No	Si
SLU 79	1.11	223.3	-24448	-0.0001062	0.0003743	0.0035	1.4389	7105.99	17984.48	17984.48	80.54	No	Si
SLU 79	8.35	-659.92	-12426	-0.0000582	0.0003743	0.0035	1.4389	6231.7	17771.45	17771.45	26.93	No	Si
SLU 82	1.11	205.58	-24764	-0.0001075	0.0003743	0.0035	1.4389	7060.46	17915.35	17915.35	87.14	No	Si
SLU 82	8.35	-676.86	-12316	-0.000058	0.0003743	0.0035	1.4389	6200.37	17749.98	17749.98	26.22	No	Si
SLU 84	1.11	202.2	-25127	-0.0001093	0.0003743	0.0035	1.4389	7003.96	17838.72	17838.72	88.22	No	Si
SLU 84	8.35	-687.08	-12628	-0.0000595	0.0003743	0.0035	1.4389	6288.42	17810.78	17810.78	25.92	No	Si
SLU 76	1.11	234.57	-24085	-0.0001046	0.0003743	0.0035	1.4389	7153.8	18065.28	18065.28	77.02	No	Si
SLU 76	8.35	-664.07	-12187	-0.0000573	0.0003743	0.0035	1.4389	6163.09	17724.66	17724.66	26.69	No	Si
SLU 81	1.11	200.85	-24764	-0.0001074	0.0003743	0.0035	1.4389	7060.48	17915.38	17915.38	89.2	No	Si
SLU 81	8.35	-668.23	-12272	-0.0000577	0.0003743	0.0035	1.4389	6187.6	17741.28	17741.28	26.55	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 3	1.11	1109.76	-14515	-0.000072	0.0005615	0.0035	1.4389		20049.62	20049.62	18.07		Si
SLV 3	8.35	65.29	-9785	-0.0000369	0.0005615	0.0035	1.4389		18740.8	18740.8	287.06		Si
SLV 13	1.11	-724.57	-18753	-0.0000833	0.0005615	0.0035	1.4389		21024.23	21024.23	29.02		Si
SLV 13	8.35	-1015.19	-6713	-0.0000398	0.0005615	0.0035	1.4389		17761.93	17761.93	17.5		Si
SLV 15	1.11	-246.68	-19040	-0.0000766	0.0005615	0.0035	1.4389		21082.64	21082.64	85.46		Si
SLV 15	8.35	-1594.43	-10487	-0.0000635	0.0005615	0.0035	1.4389		18971.25	18971.25	11.9		Si
SLV 12	1.11	836.49	-17722	-0.0000808	0.0005615	0.0035	1.4389		20794.37	20794.37	24.86		Si
SLV 12	8.35	-1646.61	-14678	-0.0000814	0.0005615	0.0035	1.4389		20104.62	20104.62	12.21		Si
SLV 16	1.11	-184.85	-18957	-0.0000753	0.0005615	0.0035	1.4389		21065.72	21065.72	113.96		Si
SLV 16	8.35	-1542.54	-10529	-0.0000628	0.0005615	0.0035	1.4389		18984.15	18984.15	12.31		Si
SLV 8	1.11	1243.42	-16364	-0.0000818	0.0005615	0.0035	1.4389		20491.57	20491.57	16.48		Si
SLV 8	8.35	-1148.7	-14468	-0.0000725	0.0005615	0.0035	1.4389		20053.02	20053.02	17.46		Si
SLV 11	1.11	796.55	-17776	-0.0000804	0.0005615	0.0035	1.4389		20805.83	20805.83	26.12		Si
SLV 11	8.35	-1680.12	-14651	-0.0000818	0.0005615	0.0035	1.4389		20097.91	20097.91	11.96		Si
SLV 7	1.11	1203.48	-16418	-0.0000814	0.0005615	0.0035	1.4389		20504.05	20504.05	17.04		Si
SLV 7	8.35	-1182.21	-14440	-0.0000729	0.0005615	0.0035	1.4389		20046.27	20046.27	16.96		Si
SLV 14	1.11	-662.74	-18670	-0.000082	0.0005615	0.0035	1.4389		21007.12	21007.12	31.7		Si
SLV 14	8.35	-963.3	-6756	-0.0000391	0.0005615	0.0035	1.4389		17776.13	17776.13	18.45		Si
SLV 4	1.11	1171.59	-14431	-0.0000727	0.0005615	0.0035	1.4389		20029.1	20029.1	17.1		Si
SLV 4	8.35	117.17	-9828	-0.0000379	0.0005615	0.0035	1.4389		18753.96	18753.96	160.05		Si



#### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 76	1.11	234.57	-24085	-18508	-2164	1.4389	1.4389	-45936	10833	4365	22820	12065	5504	17568	No	8.12	Si
SLU 76	8.35	-664.07	-12187	-9365	2846	1.4389	1.4389	-23244	10044	4047	22820	12065	5504	17568	No	6.17	Si
SLU 70	1.11	285.35	-22200	-17059	-1819	1.4389	1.4389	-42341	10833	4365	22820	12065	5504	17568	No	9.66	Si
SLU 70	8.35	-603.6	-11492	-8831	2854	1.4389	1.4389	-21919	9867	3975	22820	12065	5504	17568	No	6.16	Si
SLU 84	1.11	202.2	-25127	-19309	-2356	1.4389	1.4389	-47925	10833	4365	22820	12065	5504	17568	No	7.46	Si
SLU 84	8.35	-687.08	-12628	-9704	2860	1.4389	1.4389	-24085	10156	4092	22820	12065	5504	17568	No	6.14	Si
SLU 79	1.11	223.3	-24448	-18786	-2208	1.4389	1.4389	-46628	10833	4365	22820	12065	5504	17568	No	7.96	Si
SLU 79	8.35	-659.92	-12426	-9548	2898	1.4389	1.4389	-23699	10104	4071	22820	12065	5504	17568	No	6.06	Si
SLU 83	1.11	197.47	-25127	-19309	-2364	1.4389	1.4389	-47925	10833	4365	22820	12065	5504	17568	No	7.43	Si
SLU 83	8.35	-678.46	-12584	-9670	2849	1.4389	1.4389	-24001	10145	4087	22820	12065	5504	17568	No	6.17	Si
SLU 77	1.11	212.45	-24633	-18929	-2263	1.4389	1.4389	-46982	10833	4365	22820	12065	5504	17568	No	7.76	Si
SLU 77	8.35	-662.08	-12546	-9641	2894	1.4389	1.4389	-23929	10135	4083	22820	12065	5504	17568	No	6.07	Si
SLU 72	1.11	296.2	-22014	-16917	-1764	1.4389	1.4389	-41987	10833	4365	22820	12065	5504	17568	No	9.96	Si
SLU 72	8.35	-601.44	-11372	-8739	2857	1.4389	1.4389	-21690	9836	3963	22820	12065	5504	17568	No	6.15	Si
SLU 80	1.11	228.03	-24448	-18787	-2201	1.4389	1.4389	-46629	10833	4365	22820	12065	5504	17568	No	7.98	Si
SLU 80	8.35	-668.55	-12470	-9582	2909	1.4389	1.4389	-23784	10116	4076	22820	12065	5504	17568	No	6.04	Si
SLU 71	1.11	291.47	-22014	-16916	-1772	1.4389	1.4389	-41987	10833	4365	22820	12065	5504	17568	No	9.92	Si
SLU 71	8.35	-592.82	-11328	-8705	2846	1.4389	1.4389	-21605	9825	3959	22820	12065	5504	17568	No	6.17	Si
SLU 78	1.11	217.18	-24633	-18929	-2256	1.4389	1.4389	-46982	10833	4365	22820	12065	5504	17568	No	7.79	Si
SLU 78	8.35	-670.71	-12590	-9675	2906	1.4389	1.4389	-24013	10146	4088	22820	12065	5504	17568	No	6.05	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 5	1.11	-389.47	-15463	-11882	-5624	1.4389	1.4389	-29492	16250	6547	22820	18097	5504	23601		4.2	Si
SLV 5	8.35	748.6	-1863	-1432	-397	1.4389	0.9529	-5262	11477	3062	22820	18097	5504	23601		59.42	Si
SLV 2	1.11	693.7	-14145	-10869	-7699	1.4389	1.4389	-26978	15812	6371	22820	18097	5504	23601		3.07	Si
SLV 2	8.35	696.41	-6054	-4653	-2962	1.4389	1.4389	-11548	12726	5127	22820	18097	5504	23601		7.97	Si
SLV 1	1.11	631.87	-14228	-10933	-7244	1.4389	1.4389	-27137	15844	6384	22820	18097	5504	23601		3.26	Si
SLV 1	8.35	644.53	-6012	-4620	-2597	1.4389	1.4389	-11467	12710	5121	22820	18097	5504	23601		9.09	Si
SLV 15	1.11	-246.68	-19040	-14631	5014	1.4389	1.4389	-36315	16250	6547	22820	18097	5504	23601		4.71	Si
SLV 15	8.35	-1594.43	-10487	-8058	7116	1.4389	1.4389	-20001	14417	5809	22820	18097	5504	23601		3.32	Si
SLV 6	1.11	-349.53	-15409	-11841	-5918	1.4389	1.4389	-29389	16250	6547	22820	18097	5504	23601		3.99	Si
SLV 6	8.35	782.11	-1890	-1453	-633	1.4389	0.9172	-5517	11530	2961	22820	18097	5504	23601		37.28	Si
SLV 16	1.11	-184.85	-18957	-14567	4559	1.4389	1.4389	-36156	16250	6547	22820	18097	5504	23601		5.18	Si
SLV 16	8.35	-1542.54	-10529	-8091	6751	1.4389	1.4389	-20082	14433	5815	22820	18097	5504	23601		3.5	Si
SLV 4	1.11	1171.59	-14431	-11090	-5992	1.4389	1.4389	-27525	15922	6415	22820	18097	5504	23601		3.94	Si
SLV 4	8.35	117.17	-9828	-7552	-2214	1.4389	1.4389	-18744	14166	5707	22820	18097	5504	23601		10.66	Si
SLV 3	1.11	1109.76	-14515	-11154	-5537	1.4389	1.4389	-27684	15953	6428	22820	18097	5504	23601		4.26	Si
SLV 3	8.35	65.29	-9785	-7519	-1849	1.4389	1.4389	-18663	14149	5701	22820	18097	5504	23601		12.77	Si
SLV 13	1.11	-724.57	-18753	-14411	3307	1.4389	1.4389	-35768	16250	6547	22820	18097	5504	23601		7.14	Si
SLV 13	8.35	-1015.19	-6713	-5159	6367	1.4389	1.4389	-12804	12978	5229	22820	18097	5504	23601		3.71	Si
SLV 14	1.11	-662.74	-18670	-14347	2852	1.4389	1.4389	-35609	16250	6547	22820	18097	5504	23601		8.28	Si
SLV 14	8.35	-963.3	-6756	-5192	6002	1.4389	1.4389	-12886	12994	5235	22820	18097	5504	23601		3.93	Si

#### Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 4.73 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\alpha 0$	N	M	Mc	Coeff.s.	Verifica
SLV 6	179667	0.34	16629	-6700	569.58	835.82	1.47	Si
SLV 5	179667	0.34	16702	-6729	569.58	839.06	1.47	Si
SLV 10	179667	0.34	17357	-6993	569.58	867.74	1.52	Si
SLV 9	179667	0.34	17430	-7022	569.58	870.94	1.53	Si
SLV 2	179667	0.34	22475	-9055	569.58	1081.16	1.9	Si
SLV 1	179667	0.34	22589	-9101	569.58	1085.68	1.91	Si
SLV 14	179667	0.34	24902	-10033	569.58	1175.56	2.06	Si
SLV 13	179667	0.34	25015	-10079	569.58	1179.87	2.07	Si
SLV 4	179667	0.34	28232	-11375	569.58	1298.05	2.28	Si
SLV 3	179667	0.34	28345	-11420	569.58	1302.08	2.29	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 4.73 Wa = 0.05 Ta = 0.3126

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	$\alpha 0^*$	aLim	Verifica
SLV 16	-10529	-18957	142	0.627	1489.6	0.926	9.83738	15.21903	No
SLV 15	-10487	-19040	142	0.629	1485.3	0.926	9.87048	15.21903	No
SLV 4	-9828	-14431	-98	0.665	1419	0.923	10.46245	15.21903	No
SLV 3	-9785	-14515	-98	0.667	1414.7	0.923	10.49886	15.21903	No
SLV 14	-6756	-18670	90	0.877	1111.9	0.908	14.02453	15.21903	No
SLV 13	-6713	-18753	90	0.881	1107.7	0.908	14.09113	15.21903	No
SLV 2	-6054	-14145	-149	0.939	1042.4	0.905	15.08904	15.21903	No
SLV 1	-6012	-14228	-150	0.944	1038.2	0.904	15.16521	15.21903	No
SLV 12	-14678	-17722	118	0.483	1908.6	0.94	7.46404	5.02815	Si
SLV 11	-14651	-17776	118	0.483	1905.9	0.939	7.47621	5.02815	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	25.922	SLU 84	Si



Stato limite	Coeff.s.	Comb.	Verifica
V_SLU	6.039	SLU 80	Si
PF_SLV	11.898	SLV 15	Si
V_SLV	3.065	SLV 2	Si
PFFP_SLV	1.467	SLV 6	Si
R_SLV	0.646	SLV 16	No

## Maschio 250

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.003	-3.314	-11.003	-0.354	Z medio 398 cm	Z medio 748 cm	2.96	0.28	3.497	1.775	3.52			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma_{F,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Destro	Interna	100	100	100	100	2	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.03	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 81	4.83	2679.43	-41081	-0.0000917	0.0003743	0.0035	2.96	31199.32	79126.17	79126.17	29.53	No	Si
SLU 81	6.6	3101.09	-33167	-0.0000756	0.0003743	0.0035	2.96	29792.83	77650.48	77650.48	25.04	No	Si
SLU 70	4.83	3152.17	-37639	-0.0000858	0.0003743	0.0035	2.96	30857.56	78672.58	78672.58	24.96	No	Si
SLU 70	6.6	2199.18	-30826	-0.0000669	0.0003743	0.0035	2.96	28955.84	76977.32	76977.32	35	No	Si
SLU 71	4.83	3133.67	-37253	-0.0000848	0.0003743	0.0035	2.96	30793.23	78597.27	78597.27	25.08	No	Si
SLU 71	6.6	2180.05	-30472	-0.000066	0.0003743	0.0035	2.96	28812.15	76868.44	76868.44	35.26	No	Si
SLU 84	4.83	2719.07	-41789	-0.0000935	0.0003743	0.0035	2.96	31218.06	79166.02	79166.02	29.12	No	Si
SLU 84	6.6	3100.11	-33834	-0.0000771	0.0003743	0.0035	2.96	29996.15	77826.87	77826.87	25.1	No	Si
SLU 69	4.83	3159.91	-37632	-0.0000858	0.0003743	0.0035	2.96	30856.4	78671.2	78671.2	24.9	No	Si
SLU 69	6.6	2219.14	-30831	-0.000067	0.0003743	0.0035	2.96	28957.65	76978.7	76978.7	34.69	No	Si
SLU 66	4.83	3112.52	-36932	-0.000084	0.0003743	0.0035	2.96	30735.83	78533.61	78533.61	25.23	No	Si
SLU 66	6.6	2200.16	-30159	-0.0000655	0.0003743	0.0035	2.96	28682.14	76771.69	76771.69	34.89	No	Si
SLU 67	4.83	3104.78	-36939	-0.000084	0.0003743	0.0035	2.96	30737.18	78535.07	78535.07	25.29	No	Si
SLU 67	6.6	2180.2	-30155	-0.0000654	0.0003743	0.0035	2.96	28680.22	76770.27	76770.27	35.21	No	Si
SLU 82	4.83	2671.68	-41089	-0.0000917	0.0003743	0.0035	2.96	31199.6	79126.64	79126.64	29.62	No	Si
SLU 82	6.6	3081.13	-33163	-0.0000755	0.0003743	0.0035	2.96	29791.39	77649.26	77649.26	25.2	No	Si
SLU 72	4.83	3125.93	-37260	-0.0000848	0.0003743	0.0035	2.96	30794.49	78598.71	78598.71	25.14	No	Si
SLU 72	6.6	2160.09	-30467	-0.000066	0.0003743	0.0035	2.96	28810.29	76867.04	76867.04	35.59	No	Si
SLU 83	4.83	2726.82	-41782	-0.0000935	0.0003743	0.0035	2.96	31217.96	79165.62	79165.62	29.03	No	Si
SLU 83	6.6	3120.07	-33839	-0.0000771	0.0003743	0.0035	2.96	29997.48	77828.06	77828.06	24.94	No	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 16	4.83	4324.39	-32123	-0.0000751	0.0005615	0.0035	2.96		85927.84	85927.84	19.87		Si
SLV 16	6.6	1542.69	-26703	-0.000054	0.0005615	0.0035	2.96		83136.13	83136.13	53.89		Si
SLV 9	4.83	4420.49	-28720	-0.0000687	0.0005615	0.0035	2.96		84200.52	84200.52	19.05		Si
SLV 9	6.6	4589.67	-24209	-0.0000606	0.0005615	0.0035	2.96		81705.06	81705.06	17.8		Si
SLV 10	4.83	4404.81	-28842	-0.0000689	0.0005615	0.0035	2.96		84264.02	84264.02	19.13		Si
SLV 10	6.6	4653.22	-24253	-0.0000609	0.0005615	0.0035	2.96		81731.38	81731.38	17.56		Si
SLD 13	4.83	3509.92	-29499	-0.0000668	0.0005615	0.0035	2.96		84603.35	84603.35	24.1		Si
SLD 13	6.6	2338.87	-24391	-0.0000525	0.0005615	0.0035	2.96		81814.05	81814.05	34.98		Si
SLV 5	4.83	2903.22	-26236	-0.0000582	0.0005615	0.0035	2.96		82885.56	82885.56	28.55		Si
SLV 5	6.6	4282.15	-21647	-0.0000545	0.0005615	0.0035	2.96		80140.04	80140.04	18.71		Si
SLV 13	4.83	5200.8	-31773	-0.0000778	0.0005615	0.0035	2.96		85754.01	85754.01	16.49		Si
SLV 13	6.6	3053.55	-26889	-0.00006	0.0005615	0.0035	2.96		83235.48	83235.48	27.26		Si
SLD 14	4.83	3499.49	-29580	-0.0000669	0.0005615	0.0035	2.96		84645.11	84645.11	24.19		Si
SLD 14	6.6	2381.12	-24420	-0.0000527	0.0005615	0.0035	2.96		81831.5	81831.5	34.37		Si
SLV 15	4.83	4348.68	-31934	-0.0000748	0.0005615	0.0035	2.96		85834.1	85834.1	19.74		Si
SLV 15	6.6	1444.29	-26635	-0.0000535	0.0005615	0.0035	2.96		83099.78	83099.78	57.54		Si
SLV 14	4.83	5176.51	-31962	-0.0000781	0.0005615	0.0035	2.96		85847.98	85847.98	16.58		Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 14	6.6	3151.94	-26957	-0.0000605	0.0005615	0.0035	2.96		83271.71	83271.71	26.42		Si
SLV 6	4.83	2887.54	-26358	-0.0000583	0.0005615	0.0035	2.96		82951.29	82951.29	28.73		Si
SLV 6	6.6	4345.7	-21691	-0.0000548	0.0005615	0.0035	2.96		80167.31	80167.31	18.45		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 47	4.83	2928.21	-32849	-25243	3177	2.96	2.96	-30457	10833	8979	46943	24818	11322	36140	No	11.38	Si
SLU 47	6.6	1882.23	-26665	-20491	3423	2.96	2.96	-24723	10241	8488	46943	24818	11322	36140	No	10.56	Si
SLU 49	4.83	3007.01	-33924	-26068	3131	2.96	2.96	-31453	10833	8979	46943	24818	11322	36140	No	11.54	Si
SLU 49	6.6	1953.6	-27699	-21285	3387	2.96	2.96	-25682	10369	8594	46943	24818	11322	36140	No	10.67	Si
SLU 55	4.83	2676.59	-36510	-28056	2720	2.96	2.96	-33851	10833	8979	46943	24818	11322	36140	No	13.28	Si
SLU 55	6.6	2553.53	-29492	-22663	3292	2.96	2.96	-27345	10590	8777	46943	24818	11322	36140	No	10.98	Si
SLU 50	4.83	2988.51	-33537	-25771	3180	2.96	2.96	-31095	10833	8979	46943	24818	11322	36140	No	11.37	Si
SLU 50	6.6	1934.47	-27344	-21013	3448	2.96	2.96	-25353	10325	8557	46943	24818	11322	36140	No	10.48	Si
SLU 44	4.83	2880.82	-32149	-24705	3099	2.96	2.96	-29808	10833	8979	46943	24818	11322	36140	No	11.66	Si
SLU 44	6.6	1863.25	-25994	-19975	3332	2.96	2.96	-24101	10158	8419	46943	24818	11322	36140	No	10.84	Si
SLU 48	4.83	3014.75	-33917	-26063	3086	2.96	2.96	-31446	10833	8979	46943	24818	11322	36140	No	11.71	Si
SLU 48	6.6	1973.56	-27704	-21289	3349	2.96	2.96	-25686	10369	8594	46943	24818	11322	36140	No	10.79	Si
SLU 58	4.83	2736.88	-37198	-28584	2723	2.96	2.96	-34489	10833	8979	46943	24818	11322	36140	No	13.27	Si
SLU 58	6.6	2605.77	-30172	-23185	3317	2.96	2.96	-27974	10674	8847	46943	24818	11322	36140	No	10.89	Si
SLU 59	4.83	2729.14	-37205	-28590	2768	2.96	2.96	-34495	10833	8979	46943	24818	11322	36140	No	13.05	Si
SLU 59	6.6	2585.81	-30167	-23181	3356	2.96	2.96	-27970	10674	8846	46943	24818	11322	36140	No	10.77	Si
SLU 51	4.83	2980.77	-33545	-25777	3225	2.96	2.96	-31102	10833	8979	46943	24818	11322	36140	No	11.21	Si
SLU 51	6.6	1914.51	-27340	-21009	3487	2.96	2.96	-25349	10324	8557	46943	24818	11322	36140	No	10.36	Si
SLU 46	4.83	2959.62	-33224	-25530	3053	2.96	2.96	-30804	10833	8979	46943	24818	11322	36140	No	11.84	Si
SLU 46	6.6	1934.62	-27028	-20769	3297	2.96	2.96	-25059	10286	8525	46943	24818	11322	36140	No	10.96	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 8	4.83	47.13	-26896	-20668	9083	2.96	2.96	-24937	15404	12767	46943	37227	11322	48549		5.35	Si
SLV 8	6.6	-1018.49	-20845	-16018	6275	2.96	2.96	-19327	14282	11837	46943	37227	11322	48549		7.74	Si
SLV 3	4.83	-708.89	-23654	-18176	5302	2.96	2.96	-21931	14803	12269	46943	37227	11322	48549		9.16	Si
SLV 3	6.6	419.23	-18097	-13907	5297	2.96	2.96	-16779	13772	11415	46943	37227	11322	48549		9.17	Si
SLV 12	4.83	1564.4	-29380	-22577	8303	2.96	2.96	-27240	15865	13149	46943	37227	11322	48549		5.85	Si
SLV 12	6.6	-710.97	-23407	-17987	5080	2.96	2.96	-21702	14757	12231	46943	37227	11322	48549		9.56	Si
SLV 9	4.83	4420.49	-28720	-22070	-5137	2.96	2.96	-26629	15742	13047	46943	37227	11322	48549		9.45	Si
SLV 9	6.6	4589.67	-24209	-18603	-1727	2.96	2.96	-22446	14906	12354	46943	37227	11322	48549		28.11	Si
SLD 8	4.83	1272.55	-27427	-21076	5095	2.96	2.96	-25429	15502	12848	46943	37227	11322	48549		9.53	Si
SLD 8	6.6	547.82	-21807	-16757	4019	2.96	2.96	-20219	14460	11985	46943	37227	11322	48549		12.08	Si
SLV 11	4.83	1580.09	-29258	-22483	8317	2.96	2.96	-27127	15842	13130	46943	37227	11322	48549		5.84	Si
SLV 11	6.6	-774.52	-23363	-17953	5092	2.96	2.96	-21661	14749	12224	46943	37227	11322	48549		9.53	Si
SLV 10	4.83	4404.81	-28842	-22164	-5152	2.96	2.96	-26742	15765	13066	46943	37227	11322	48549		9.42	Si
SLV 10	6.6	4653.22	-24253	-18637	-1739	2.96	2.96	-22486	14914	12361	46943	37227	11322	48549		27.92	Si
SLD 7	4.83	1279.4	-27373	-21035	5101	2.96	2.96	-25380	15493	12840	46943	37227	11322	48549		9.52	Si
SLD 7	6.6	520.06	-21788	-16743	4025	2.96	2.96	-20201	14457	11982	46943	37227	11322	48549		12.06	Si
SLV 4	4.83	-733.17	-23843	-18322	5280	2.96	2.96	-22106	14838	12298	46943	37227	11322	48549		9.19	Si
SLV 4	6.6	517.63	-18165	-13959	5279	2.96	2.96	-16842	13785	11425	46943	37227	11322	48549		9.2	Si
SLV 7	4.83	62.82	-26773	-20574	9097	2.96	2.96	-24824	15381	12748	46943	37227	11322	48549		5.34	Si
SLV 7	6.6	-1082.04	-20801	-15985	6287	2.96	2.96	-19286	14274	11830	46943	37227	11322	48549		7.72	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 5.717 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\alpha 0$	N	M	Mc	Coeff.s.	Verifica
SLV 1	179667	0.36	25711	-21309	289.86	2481.04	8.56	Si
SLV 3	179667	0.36	25809	-21391	289.86	2488.59	8.59	Si
SLV 2	179667	0.36	25884	-21453	289.86	2494.32	8.61	Si
SLV 4	179667	0.36	25982	-21534	289.86	2501.84	8.63	Si
SLV 5	179667	0.36	28946	-23990	289.86	2722.05	9.39	Si
SLV 6	179667	0.36	29058	-24083	289.86	2730.08	9.42	Si
SLV 7	179667	0.36	29273	-24261	289.86	2745.54	9.47	Si
SLV 8	179667	0.36	29385	-24354	289.86	2753.51	9.5	Si
SLV 9	179667	0.36	31790	-26348	289.86	2920.84	10.08	Si
SLV 10	179667	0.36	31902	-26440	289.86	2928.39	10.1	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 5.717 Wa = 0.05 Ta = 0.0729

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	$\alpha 0^*$	aLim	Verifica
SLV 10	-24253	-28842	22	0.662	2877.9	0.958	10.04368	11.66727	No
SLV 9	-24209	-28720	22	0.663	2873.5	0.958	10.05982	11.66727	No
SLV 12	-23407	-29380	-138	0.678	2791.9	0.957	10.29538	11.66727	No
SLV 11	-23363	-29258	-139	0.679	2787.4	0.957	10.31232	11.66727	No
SLV 6	-21691	-26358	116	0.724	2617.6	0.954	11.02297	11.66727	No
SLV 5	-21647	-26236	115	0.725	2613.1	0.954	11.04271	11.66727	No
SLV 8	-20845	-26896	-45	0.751	2531.6	0.953	11.46085	11.66727	No
SLV 7	-20801	-26773	-45	0.753	2527.2	0.953	11.48197	11.66727	No
SLV 14	-26957	-31962	-143	0.601	3152.9	0.961	9.08724	6.26711	Si
SLV 13	-26889	-31773	-143	0.602	3146	0.961	9.10738	6.26711	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita





dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	24.897	SLU 69	Si
V_SLU	10.364	SLU 51	Si
PF_SLV	16.489	SLV 13	Si
V_SLV	5.337	SLV 7	Si
PFFP_SLV	8.559	SLV 1	Si
R_SLV	0.861	SLV 10	No

## Maschio 251

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.003	-0.694	-11.003	-0.354	Z medio 825 cm	Z medio 1177 cm	0.34	0.28	3.52	3.52	3.52			

#### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_ Corti

fb	fk	fvk0	fmedio	t0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

#### Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.015	

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 84	8.35	-154.43	-3018	-0.0000935	0.0003743	0.0035	0.3404	353.99	1108.85	1108.85	7.18	No	Si
SLU 84	11.67	1.59	-2263	-0.0000352	0.0003743	0.0035	0.3404	295.42	1123.65	1123.65	707.28	No	Si
SLU 42	8.35	-158.33	-2460	-0.0000849	0.0003743	0.0035	0.3404	312.6	1123.23	1123.23	7.09	No	Si
SLU 42	11.67	2.75	-1942	-0.0000304	0.0003743	0.0035	0.3404	264.47	1131.76	1131.76	412.06	No	Si
SLU 40	8.35	-160.82	-2376	-0.0000846	0.0003743	0.0035	0.3404	305.44	1125.39	1125.39	7	No	Si
SLU 40	11.67	3.13	-1866	-0.0000293	0.0003743	0.0035	0.3404	256.6	1133.69	1133.69	361.87	No	Si
SLU 81	8.35	-156.24	-2941	-0.0000926	0.0003743	0.0035	0.3404	348.89	1110.85	1110.85	7.11	No	Si
SLU 81	11.67	2.25	-2193	-0.0000343	0.0003743	0.0035	0.3404	288.99	1125.42	1125.42	499.77	No	Si
SLU 19	8.35	-134.72	-2099	-0.0000713	0.0003743	0.0035	0.3404	280.03	1132.52	1132.52	8.41	No	Si
SLU 19	11.67	8.32	-1697	-0.0000281	0.0003743	0.0035	0.3404	238.4	1137.97	1137.97	136.71	No	Si
SLU 18	8.35	-134.03	-2105	-0.0000711	0.0003743	0.0035	0.3404	280.63	1132.36	1132.36	8.45	No	Si
SLU 18	11.67	8.6	-1704	-0.0000283	0.0003743	0.0035	0.3404	239.08	1137.8	1137.8	132.29	No	Si
SLU 39	8.35	-160.14	-2382	-0.0000845	0.0003743	0.0035	0.3404	305.98	1125.23	1125.23	7.03	No	Si
SLU 39	11.67	3.41	-1873	-0.0000295	0.0003743	0.0035	0.3404	257.24	1133.53	1133.53	332.43	No	Si
SLU 83	8.35	-153.74	-3025	-0.0000934	0.0003743	0.0035	0.3404	354.39	1108.69	1108.69	7.21	No	Si
SLU 83	11.67	1.87	-2270	-0.0000354	0.0003743	0.0035	0.3404	295.98	1123.5	1123.5	602.21	No	Si
SLU 82	8.35	-156.93	-2934	-0.0000927	0.0003743	0.0035	0.3404	348.47	1111.01	1111.01	7.08	No	Si
SLU 82	11.67	1.97	-2187	-0.0000341	0.0003743	0.0035	0.3404	288.41	1125.58	1125.58	569.93	No	Si
SLU 41	8.35	-157.64	-2466	-0.0000848	0.0003743	0.0035	0.3404	313.12	1123.07	1123.07	7.12	No	Si
SLU 41	11.67	3.02	-1949	-0.0000306	0.0003743	0.0035	0.3404	265.1	1131.61	1131.61	374.26	No	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 8	8.35	-115.52	-993	-0.000059	0.0005615	0.0035	0.3404		1396.36	1396.36	12.09		Si
SLV 8	11.67	-54.79	-388	-0.0000308	0.0005615	0.0035	0.3404		1407.18	1407.18	25.68		Si
SLV 12	8.35	-148.96	-1365	-0.0000748	0.0005615	0.0035	0.3404		1389.7	1389.7	9.33		Si
SLV 12	11.67	-67.81	-494	-0.0000376	0.0005615	0.0035	0.3404		1405.3	1405.3	20.72		Si
SLV 7	8.35	-115.75	-980	-0.0000596	0.0005615	0.0035	0.3404		1396.59	1396.59	12.07		Si
SLV 7	11.67	-54.99	-380	-0.0000315	0.0005615	0.0035	0.3404		1407.33	1407.33	25.59		Si
SLD 15	8.35	-82.87	-2361	-0.0000588	0.0005615	0.0035	0.3404		1371.88	1371.88	16.55		Si
SLD 15	11.67	-24.1	-1344	-0.0000266	0.0005615	0.0035	0.3404		1390.09	1390.09	57.69		Si
SLV 11	8.35	-149.2	-1352	-0.0000753	0.0005615	0.0035	0.3404		1389.94	1389.94	9.32		Si
SLV 11	11.67	-68.02	-485	-0.0000383	0.0005615	0.0035	0.3404		1405.45	1405.45	20.66		Si
SLD 12	8.35	-92.3	-1853	-0.0000532	0.0005615	0.0035	0.3404		1380.98	1380.98	14.96		Si
SLD 12	11.67	-34.16	-998	-0.000024	0.0005615	0.0035	0.3404		1396.27	1396.27	40.88		Si





Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLD 16	8.35	-82.72	-2370	-0.0000589	0.0005615	0.0035	0.3404		1371.73	1371.73	16.58		Si
SLD 16	11.67	-23.96	-1349	-0.0000266	0.0005615	0.0035	0.3404		1389.98	1389.98	58.01		Si
SLD 11	8.35	-92.4	-1847	-0.0000531	0.0005615	0.0035	0.3404		1381.08	1381.08	14.95		Si
SLD 11	11.67	-34.24	-994	-0.0000239	0.0005615	0.0035	0.3404		1396.34	1396.34	40.78		Si
SLV 16	8.35	-128.69	-2551	-0.0000748	0.0005615	0.0035	0.3404		1368.49	1368.49	10.63		Si
SLV 16	11.67	-45.29	-1293	-0.0000315	0.0005615	0.0035	0.3404		1391	1391	30.71		Si
SLV 15	8.35	-129.05	-2531	-0.0000746	0.0005615	0.0035	0.3404		1368.85	1368.85	10.61		Si
SLV 15	11.67	-45.61	-1279	-0.0000314	0.0005615	0.0035	0.3404		1391.24	1391.24	30.51		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 82	8.35	-156.93	-2934	-2255	-568	0.3404	0.3404	-23656	10099	963	7713	2854	1302	4157	No	7.31	Si
SLU 82	11.67	1.97	-2187	-1681	-835	0.3404	0.3404	-17633	9295	886	7713	2854	1302	4157	No	4.98	Si
SLU 42	8.35	-158.33	-2460	-1890	-584	0.3404	0.3176	-21640	9831	874	7713	2854	1302	4157	No	7.11	Si
SLU 42	11.67	2.75	-1942	-1493	-808	0.3404	0.3404	-15659	9032	861	7713	2854	1302	4157	No	5.15	Si
SLU 75	8.35	-122.98	-3091	-2375	-464	0.3404	0.3404	-24918	10267	979	7713	2854	1302	4157	No	8.96	Si
SLU 75	11.67	-5.79	-2168	-1666	-749	0.3404	0.3404	-17481	9275	884	7713	2854	1302	4157	No	5.55	Si
SLU 81	8.35	-156.24	-2941	-2260	-565	0.3404	0.3404	-23706	10105	963	7713	2854	1302	4157	No	7.35	Si
SLU 81	11.67	2.25	-2193	-1686	-831	0.3404	0.3404	-17682	9302	887	7713	2854	1302	4157	No	5	Si
SLU 83	8.35	-153.74	-3025	-2324	-552	0.3404	0.3404	-24382	10195	972	7713	2854	1302	4157	No	7.53	Si
SLU 83	11.67	1.87	-2270	-1744	-829	0.3404	0.3404	-18296	9384	895	7713	2854	1302	4157	No	5.01	Si
SLU 84	8.35	-154.43	-3018	-2319	-555	0.3404	0.3404	-24332	10189	971	7713	2854	1302	4157	No	7.48	Si
SLU 84	11.67	1.59	-2263	-1739	-833	0.3404	0.3404	-18246	9377	894	7713	2854	1302	4157	No	4.99	Si
SLU 39	8.35	-160.14	-2382	-1831	-594	0.3404	0.309	-21525	9816	849	7713	2854	1302	4157	No	7	Si
SLU 39	11.67	3.41	-1873	-1439	-806	0.3404	0.3404	-15095	8957	854	7713	2854	1302	4157	No	5.16	Si
SLU 41	8.35	-157.64	-2466	-1895	-581	0.3404	0.3189	-21606	9826	877	7713	2854	1302	4157	No	7.15	Si
SLU 41	11.67	3.02	-1949	-1497	-804	0.3404	0.3404	-15709	9039	862	7713	2854	1302	4157	No	5.17	Si
SLU 40	8.35	-160.82	-2376	-1826	-598	0.3404	0.3076	-21565	9821	846	7713	2854	1302	4157	No	6.96	Si
SLU 40	11.67	3.13	-1866	-1434	-810	0.3404	0.3404	-15046	8951	853	7713	2854	1302	4157	No	5.13	Si
SLU 78	8.35	-120.48	-3175	-2440	-451	0.3404	0.3404	-25594	10357	987	7713	2854	1302	4157	No	9.22	Si
SLU 78	11.67	-6.17	-2245	-1725	-747	0.3404	0.3404	-18095	9357	892	7713	2854	1302	4157	No	5.57	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 11	8.35	-149.2	-1352	-1039	-680	0.3404	0.1796	-19360	14368	723	7713	4282	1302	5584		8.21	Si
SLV 11	11.67	-68.02	-485	-373	-1598	0.3404	0.09	-9561	12469	314	7713	4282	1302	5584		3.49	Si
SLV 5	8.35	53.48	-3119	-2397	315	0.3404	0.3404	-25147	15446	1472	7713	4282	1302	5584		17.74	Si
SLV 5	11.67	52.62	-2305	-1771	818	0.3404	0.3404	-18581	14133	1347	7713	4282	1302	5584		6.83	Si
SLV 15	8.35	-129.05	-2531	-1945	-696	0.3404	0.3404	-20404	14498	1382	7713	4282	1302	5584		8.02	Si
SLV 15	11.67	-45.61	-1279	-983	-1133	0.3404	0.3404	-10313	12479	1190	7713	4282	1302	5584		4.93	Si
SLV 8	8.35	-115.52	-993	-763	-439	0.3404	0.1618	-15219	13545	614	7713	4282	1302	5584		12.72	Si
SLV 8	11.67	-54.79	-388	-298	-1347	0.3404	0.0874	-7718	12076	296	7713	4282	1302	5584		4.14	Si
SLD 12	8.35	-92.3	-1853	-1424	-401	0.3404	0.3404	-14935	13404	1278	7713	4282	1302	5584		13.94	Si
SLD 12	11.67	-34.16	-998	-767	-923	0.3404	0.3404	-8046	12026	1146	7713	4282	1302	5584		6.05	Si
SLV 12	8.35	-148.96	-1365	-1049	-679	0.3404	0.1833	-19271	14345	736	7713	4282	1302	5584		8.22	Si
SLV 12	11.67	-67.81	-494	-379	-1598	0.3404	0.0985	-9470	12436	343	7713	4282	1302	5584		3.49	Si
SLD 11	8.35	-92.4	-1847	-1419	-401	0.3404	0.3404	-14890	13395	1277	7713	4282	1302	5584		13.93	Si
SLD 11	11.67	-34.24	-994	-764	-923	0.3404	0.3404	-8016	12020	1146	7713	4282	1302	5584		6.05	Si
SLV 6	8.35	53.72	-3132	-2407	315	0.3404	0.3404	-25252	15467	1474	7713	4282	1302	5584		17.71	Si
SLV 6	11.67	52.82	-2314	-1778	818	0.3404	0.3404	-18651	14147	1349	7713	4282	1302	5584		6.83	Si
SLV 16	8.35	-128.69	-2551	-1960	-696	0.3404	0.3404	-20565	14530	1385	7713	4282	1302	5584		8.03	Si
SLV 16	11.67	-45.29	-1293	-993	-1133	0.3404	0.3404	-10421	12501	1192	7713	4282	1302	5584		4.93	Si
SLV 7	8.35	-115.75	-980	-753	-439	0.3404	0.1565	-15328	13575	595	7713	4282	1302	5584		12.71	Si
SLV 7	11.67	-54.99	-380	-292	-1347	0.3404	0.0762	-7806	12110	259	7713	4282	1302	5584		4.14	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRM D.M. 17-01-18 (N.T.C.)

quota 10.01 Ta 0.07 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 7	-582	0.45	42.11	78.26	2062.09	1070.17	25.42	Si
SLV 8	-592	0.45	42.11	79.46	2061.39	1070.42	25.42	Si
SLV 11	-757	0.45	42.11	100.41	2048.97	1074.69	25.52	Si
SLV 12	-766	0.45	42.11	101.58	2048.27	1074.93	25.53	Si
SLV 3	-1140	0.45	42.11	147.08	2020.12	1083.6	25.73	Si
SLV 4	-1154	0.45	42.11	148.78	2019.03	1083.91	25.74	Si
SLV 15	-1721	0.45	42.11	212.44	1976.36	1094.4	25.99	Si
SLV 16	-1735	0.45	42.11	213.98	1975.28	1094.63	26	Si
SLV 1	-1794	0.45	42.11	220.23	1970.84	1095.53	26.02	Si
SLV 2	-1809	0.45	42.11	221.75	1969.75	1095.75	26.02	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 10.01 Wa = 0.05 Ta = 0.0739

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	$\alpha 0^*$	aLim	Verifica
SLV 10	-2419	-3504	51	0.728	293.7	0.953	11.10524	14.04617	No
SLV 9	-2410	-3491	51	0.73	292.8	0.953	11.13993	14.04617	No
SLV 6	-2314	-3132	-116	0.731	283	0.951	11.17019	14.04617	No
SLV 5	-2305	-3119	-116	0.734	282.1	0.951	11.20673	14.04617	No
SLV 14	-1870	-3193	263	0.804	238	0.944	12.3905	7.49745	Si
SLV 13	-1857	-3173	263	0.809	236.6	0.943	12.46667	7.49745	Si
SLV 2	-1519	-1953	-293	0.936	202.4	0.935	14.53802	7.49745	Si
SLV 1	-1506	-1933	-293	0.942	201.1	0.935	14.64645	7.49745	Si
SLV 16	-1293	-2551	278	1.072	179.6	0.929	16.77442	7.49745	Si
SLV 15	-1279	-2531	278	1.081	178.2	0.928	16.91807	7.49745	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.



Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	6.998	SLU 40	Si
V_SLU	4.977	SLU 82	Si
PF_SLV	9.316	SLV 11	Si
V_SLV	3.494	SLV 11	Si
PFFP_SLV	25.415	SLV 7	Si
R_SLV	0.791	SLV 10	No

## Maschio 252

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.003	-0.694	-11.003	-0.354	Z medio 1177 cm	L8	0.34	0.28	3.26	3.36	3.16			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.015	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 75	11.87	-173.88	-1482	-0.0000942	0.0003743	0.0035	0.3404	213.74	1148.65	1148.65	6.61	No	Si
SLU 75	15.03	52.71	-361	-0.0000306	0.0003743	0.0035	0.3404	59.2	1173.23	1173.23	22.26	No	Si
SLU 82	11.87	-200.67	-1268	-0.0001326	0.0003743	0.0035	0.3404	187.64	1154.4	1154.4	5.75	No	Si
SLU 82	15.03	71.78	-298	-0.0000531	0.0003743	0.0035	0.3404	0	1174.89	1174.89	16.37	No	Si
SLU 42	11.87	-190.59	-1047	-0.0001349	0.0003743	0.0035	0.3404	0	1160.33	1160.33	6.09	No	Si
SLU 42	15.03	53.52	-309	-0.0000344	0.0003743	0.0035	0.3404	0	1174.59	1174.59	21.95	No	Si
SLU 81	11.87	-198.64	-1273	-0.00013	0.0003743	0.0035	0.3404	188.25	1154.27	1154.27	5.81	No	Si
SLU 81	15.03	69.33	-298	-0.0000507	0.0003743	0.0035	0.3404	0	1174.89	1174.89	16.95	No	Si
SLU 39	11.87	-191.73	-972	-0.0001407	0.0003743	0.0035	0.3404	0	1162.36	1162.36	6.06	No	Si
SLU 39	15.03	70.32	-254	-0.0000538	0.0003743	0.0035	0.3404	0	1176.06	1176.06	16.73	No	Si
SLU 84	11.87	-197.5	-1348	-0.0001243	0.0003743	0.0035	0.3404	197.63	1152.24	1152.24	5.83	No	Si
SLU 84	15.03	52.54	-354	-0.0000308	0.0003743	0.0035	0.3404	58.05	1173.42	1173.42	22.33	No	Si
SLU 74	11.87	-171.86	-1487	-0.0000922	0.0003743	0.0035	0.3404	214.32	1148.52	1148.52	6.68	No	Si
SLU 74	15.03	50.27	-361	-0.0000282	0.0003743	0.0035	0.3404	59.23	1173.22	1173.22	23.34	No	Si
SLU 41	11.87	-188.57	-1052	-0.0001323	0.0003743	0.0035	0.3404	0	1160.2	1160.2	6.15	No	Si
SLU 41	15.03	51.08	-310	-0.0000319	0.0003743	0.0035	0.3404	51.02	1174.59	1174.59	23	No	Si
SLU 40	11.87	-193.75	-967	-0.0001433	0.0003743	0.0035	0.3404	0	1162.49	1162.49	6	No	Si
SLU 40	15.03	72.76	-254	-0.0000562	0.0003743	0.0035	0.3404	0	1176.07	1176.07	16.16	No	Si
SLU 83	11.87	-195.48	-1353	-0.0001218	0.0003743	0.0035	0.3404	198.23	1152.11	1152.11	5.89	No	Si
SLU 83	15.03	50.1	-354	-0.0000285	0.0003743	0.0035	0.3404	58.08	1173.41	1173.41	23.42	No	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 5	11.87	225.43	-1611	-0.0001342	0.0005615	0.0035	0.3404		1379.26	1379.26	6.12		Si
SLV 5	15.03	-288.76	27	-0.000272	0.0005615	0.0035	0.3404		1414.61	1414.61	4.9		Si
SLV 12	11.87	-395.97	-630	-0.0003738	0.0005615	0.0035	0.3404		1402.85	1402.85	3.54		Si
SLV 12	15.03	348.84	-463	-0.0003264	0.0005615	0.0035	0.3404		1399.26	1399.26	4.01		Si
SLV 10	11.87	175.83	-1762	-0.0000867	0.0005615	0.0035	0.3404		1376.62	1376.62	7.83		Si
SLV 10	15.03	-379.75	-33	-0.0003711	0.0005615	0.0035	0.3404		1413.53	1413.53	3.72		Si
SLV 11	11.87	-398.36	-622	-0.0003769	0.0005615	0.0035	0.3404		1402.99	1402.99	3.52		Si
SLV 11	15.03	351.15	-464	-0.000329	0.0005615	0.0035	0.3404		1399.25	1399.25	3.98		Si
SLV 4	11.87	-82.55	-719	-0.0000414	0.0005615	0.0035	0.3404		1401.27	1401.27	16.98		Si
SLV 4	15.03	285.33	-180	-0.0002652	0.0005615	0.0035	0.3404		1404.21	1404.21	4.92		Si
SLV 7	11.87	-346.37	-479	-0.0003215	0.0005615	0.0035	0.3404		1405.55	1405.55	4.06		Si
SLV 7	15.03	439.83	-403	-0.000437	0.0005615	0.0035	0.3404		1400.32	1400.32	3.18		Si
SLV 8	11.87	-343.98	-487	-0.0003186	0.0005615	0.0035	0.3404		1405.41	1405.41	4.09		Si
SLV 8	15.03	437.52	-402	-0.0004341	0.0005615	0.0035	0.3404		1400.33	1400.33	3.2		Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 6	11.87	227.82	-1619	-0.0001363	0.0005615	0.0035	0.3404		1379.11	1379.11	6.05		Si
SLV 6	15.03	-291.07	28	-0.0002744	0.0005615	0.0035	0.3404		1414.63	1414.63	4.86		Si
SLV 9	11.87	173.44	-1754	-0.0000853	0.0005615	0.0035	0.3404		1376.76	1376.76	7.94		Si
SLV 9	15.03	-377.44	-34	-0.0003685	0.0005615	0.0035	0.3404		1413.52	1413.52	3.75		Si
SLV 3	11.87	-86.25	-706	-0.0000448	0.0005615	0.0035	0.3404		1401.49	1401.49	16.25		Si
SLV 3	15.03	288.91	-181	-0.0002689	0.0005615	0.0035	0.3404		1404.18	1404.18	4.86		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 82	11.87	-200.67	-1268	-974	-838	0.3404	0.0359	-28630	10833	109	7713	2854	1302	4157	No	4.96	Si
SLU 82	15.03	71.78	-298	-229	-387	0.3404	0	-9682	8799	0	7713	2854	1302	4157	No	10.74	Si
SLU 74	11.87	-171.86	-1487	-1143	-763	0.3404	0.1639	-22711	10059	462	7713	2854	1302	4157	No	5.45	Si
SLU 74	15.03	50.27	-361	-278	-309	0.3404	0.0934	-7059	7952	208	7713	2854	1302	4157	No	13.45	Si
SLU 39	11.87	-191.73	-972	-747	-789	0.3404	0	-26861	10833	0	7713	2854	1302	4157	No	5.27	Si
SLU 39	15.03	70.32	-254	-195	-375	0.3404	0	-8882	8824	0	7713	2854	1302	4157	No	11.07	Si
SLU 84	11.87	-197.5	-1348	-1036	-824	0.3404	0.0712	-27909	10833	216	7713	2854	1302	4157	No	5.04	Si
SLU 84	15.03	52.54	-354	-272	-321	0.3404	0.0653	-7515	8042	147	7713	2854	1302	4157	No	12.94	Si
SLU 81	11.87	-198.64	-1273	-978	-828	0.3404	0.0425	-28314	10833	129	7713	2854	1302	4157	No	5.02	Si
SLU 81	15.03	69.33	-298	-229	-375	0.3404	0	-9489	8718	0	7713	2854	1302	4157	No	11.07	Si
SLU 83	11.87	-195.48	-1353	-1040	-814	0.3404	0.0773	-27552	10833	234	7713	2854	1302	4157	No	5.11	Si
SLU 83	15.03	50.1	-354	-272	-310	0.3404	0.0863	-7073	7959	192	7713	2854	1302	4157	No	13.42	Si
SLU 42	11.87	-190.59	-1047	-805	-785	0.3404	0	-27109	10833	0	7713	2854	1302	4157	No	5.29	Si
SLU 42	15.03	53.52	-309	-238	-321	0.3404	0	-7801	8165	0	7713	2854	1302	4157	No	12.94	Si
SLU 75	11.87	-173.88	-1482	-1139	-773	0.3404	0.1587	-23086	10118	450	7713	2854	1302	4157	No	5.38	Si
SLU 75	15.03	52.71	-361	-278	-321	0.3404	0.0729	-7507	8034	164	7713	2854	1302	4157	No	12.97	Si
SLU 41	11.87	-188.57	-1052	-808	-775	0.3404	0	-26878	10833	0	7713	2854	1302	4157	No	5.37	Si
SLU 41	15.03	51.08	-310	-238	-310	0.3404	0.0158	-7432	8080	36	7713	2854	1302	4157	No	13.43	Si
SLU 40	11.87	-193.75	-967	-743	-799	0.3404	0	-27030	10833	0	7713	2854	1302	4157	No	5.2	Si
SLU 40	15.03	72.76	-254	-195	-387	0.3404	0	-9016	8902	0	7713	2854	1302	4157	No	10.74	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 15	11.87	-259.54	-1183	-909	-1389	0.3404	0	-35369	16250	0	7713	4282	1302	5584		4.02	Si
SLV 15	15.03	-6.68	-385	-296	-1206	0.3404	0.3404	-3105	11038	1052	7713	4282	1302	5584		4.63	Si
SLV 16	11.87	-255.84	-1196	-919	-1371	0.3404	0	-35180	16250	0	7713	4282	1302	5584		4.07	Si
SLV 16	15.03	-10.25	-384	-295	-1189	0.3404	0.3404	-3095	11036	1052	7713	4282	1302	5584		4.7	Si
SLV 5	11.87	225.43	-1611	-1238	1255	0.3404	0.0908	-31644	16250	413	7713	4282	1302	5584		4.45	Si
SLV 5	15.03	-288.76	27	21	1678	0.3404	0	1362	16250	0	7713	4282	1302	5584		3.33	Si
SLV 9	11.87	173.44	-1754	-1348	944	0.3404	0.214	-22033	14870	891	7713	4282	1302	5584		5.91	Si
SLV 9	15.03	-377.44	-34	-26	1373	0.3404	0	-1635	16250	0	7713	4282	1302	5584		4.07	Si
SLV 12	11.87	-395.97	-630	-484	-2070	0.3404	0	-26016	16250	0	7713	4282	1302	5584		2.7	Si
SLV 12	15.03	348.84	-463	-356	-2032	0.3404	0	-19953	16250	0	7713	4282	1302	5584		2.75	Si
SLV 10	11.87	175.83	-1762	-1354	956	0.3404	0.2113	-22369	14940	884	7713	4282	1302	5584		5.84	Si
SLV 10	15.03	-379.75	-33	-26	1385	0.3404	0	-1595	16250	0	7713	4282	1302	5584		4.03	Si
SLV 6	11.87	227.82	-1619	-1244	1267	0.3404	0.0885	-32023	16250	403	7713	4282	1302	5584		4.41	Si
SLV 6	15.03	-291.07	28	21	1690	0.3404	0	1403	16250	0	7713	4282	1302	5584		3.3	Si
SLV 11	11.87	-398.36	-622	-478	-2083	0.3404	0	-25734	16250	0	7713	4282	1302	5584		2.68	Si
SLV 11	15.03	351.15	-464	-357	-2044	0.3404	0	-19988	16250	0	7713	4282	1302	5584		2.73	Si
SLV 7	11.87	-346.37	-479	-368	-1771	0.3404	0	-20494	16250	0	7713	4282	1302	5584		3.15	Si
SLV 7	15.03	439.83	-403	-310	-1739	0.3404	0	-17537	16250	0	7713	4282	1302	5584		3.21	Si
SLV 8	11.87	-343.98	-487	-375	-1759	0.3404	0	-20791	16250	0	7713	4282	1302	5584		3.17	Si
SLV 8	15.03	437.52	-402	-309	-1727	0.3404	0	-17511	16250	0	7713	4282	1302	5584		3.23	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRMC D.M. 17-01-18 (N.T.C.)

quota 13.45 Ta 0.06 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 3	-557	0.53	41.85	75.01	2063.99	1069.5	25.56	Si
SLV 4	-559	0.53	41.85	75.28	2063.83	1069.56	25.56	Si
SLV 7	-597	0.53	41.85	80.19	2060.96	1070.58	25.58	Si
SLV 8	-599	0.53	41.85	80.37	2060.86	1070.61	25.58	Si
SLV 1	-617	0.53	41.85	82.69	2059.49	1071.09	25.6	Si
SLV 2	-619	0.53	41.85	82.97	2059.33	1071.15	25.6	Si
SLV 11	-691	0.53	41.85	92.17	2053.89	1073.03	25.64	Si
SLV 12	-693	0.53	41.85	92.35	2053.79	1073.07	25.64	Si
SLV 5	-796	0.53	41.85	105.39	2045.98	1075.68	25.71	Si
SLV 6	-798	0.53	41.85	105.56	2045.87	1075.72	25.71	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 13.45 Wa = 0.05 Ta = 0.0634

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 11	-464	-622	139	2.443	93.4	0.895	39.67473	13.10527	Si
SLV 12	-463	-630	139	2.446	93.3	0.895	39.72136	13.10527	Si
SLV 7	-403	-479	-75	2.752	87.5	0.892	44.83489	13.10527	Si
SLV 8	-402	-487	-75	2.755	87.4	0.892	44.88911	13.10527	Si
SLV 15	-385	-1183	361	2.394	85.8	0.891	39.03796	7.58412	Si
SLV 16	-384	-1196	361	2.399	85.7	0.891	39.1166	7.58412	Si
SLV 13	-256	-1522	337	3.005	73.9	0.889	49.12854	7.58412	Si
SLV 14	-255	-1535	337	3.013	73.8	0.889	49.24639	7.58412	Si
SLV 9	-34	-1754	58	5.989	57.7	0.954	91.26059	13.10527	Si
SLV 10	-33	-1762	58	6.005	57.7	0.955	91.42267	13.10527	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.



Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	5.753	SLU 82	Si
V_SLU	4.959	SLU 82	Si
PF_SLV	3.184	SLV 7	Si
V_SLV	2.681	SLV 11	Si
PFFP_SLV	25.558	SLV 3	Si
R_SLV	3.027	SLV 11	Si

Maschio 253

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.003	-0.354	-11.003	1.006	L5	L8	1.36	0.28	10.2	10.2	10.2			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	t0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Destro	Interna	100	100	100	100	2	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.03	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 77	4.83	675.98	-19769	-0.0000985	0.0003743	0.0035	1.36	6588.32	16719.94	16719.94	24.73	No	Si
SLU 77	15.03	842.58	-1369	-0.0000349	0.0003743	0.0035	1.36	898.22	12813.26	12813.26	15.21	No	Si
SLU 78	4.83	673.8	-19750	-0.0000984	0.0003743	0.0035	1.36	6588.57	16719.65	16719.65	24.81	No	Si
SLU 78	15.03	851.44	-1368	-0.0000357	0.0003743	0.0035	1.36	897.23	12812.31	12812.31	15.05	No	Si
SLU 67	4.83	504.86	-17798	-0.0000851	0.0003743	0.0035	1.36	6546.71	16646.14	16646.14	32.97	No	Si
SLU 67	15.03	799.28	-1299	-0.0000331	0.0003743	0.0035	1.36	853.59	12770.74	12770.74	15.98	No	Si
SLU 74	4.83	655.22	-19437	-0.0000964	0.0003743	0.0035	1.36	6590.86	16713.97	16713.97	25.51	No	Si
SLU 74	15.03	878.52	-1325	-0.0000393	0.0003743	0.0035	1.36	870.33	12786.68	12786.68	14.55	No	Si
SLU 81	4.83	707.22	-19613	-0.0000984	0.0003743	0.0035	1.36	6589.99	16717.43	16717.43	23.64	No	Si
SLU 81	15.03	840.76	-1180	-0.0000403	0.0003743	0.0035	1.36	0	12699.09	12699.09	15.1	No	Si
SLU 83	4.83	727.98	-19945	-0.0001005	0.0003743	0.0035	1.36	6585.39	16722.6	16722.6	22.97	No	Si
SLU 83	15.03	804.82	-1225	-0.0000356	0.0003743	0.0035	1.36	806.38	12725.82	12725.82	15.81	No	Si
SLU 73	4.83	640.08	-18888	-0.0000933	0.0003743	0.0035	1.36	6586.56	16700.53	16700.53	26.09	No	Si
SLU 73	15.03	817.77	-1167	-0.0000385	0.0003743	0.0035	1.36	0	12691.04	12691.04	15.52	No	Si
SLU 84	4.83	725.8	-19927	-0.0001004	0.0003743	0.0035	1.36	6585.76	16722.33	16722.33	23.04	No	Si
SLU 84	15.03	813.68	-1223	-0.0000365	0.0003743	0.0035	1.36	805.38	12724.87	12724.87	15.64	No	Si
SLU 75	4.83	653.03	-19418	-0.0000963	0.0003743	0.0035	1.36	6590.88	16713.54	16713.54	25.59	No	Si
SLU 75	15.03	887.38	-1324	-0.0000402	0.0003743	0.0035	1.36	869.33	12785.73	12785.73	14.41	No	Si
SLU 82	4.83	705.04	-19594	-0.0000982	0.0003743	0.0035	1.36	6590.13	16717.12	16717.12	23.71	No	Si
SLU 82	15.03	849.62	-1179	-0.0000412	0.0003743	0.0035	1.36	0	12698.14	12698.14	14.95	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 2	4.83	1814.81	-12957	-0.0000836	0.0005615	0.0035	1.36		17717.32	17717.32	9.76		Si
SLV 2	15.03	-922.55	-1180	-0.0000478	0.0005615	0.0035	1.36		13315.85	13315.85	14.43		Si
SLV 16	4.83	-938.15	-13940	-0.000072	0.0005615	0.0035	1.36		17965.15	17965.15	19.15		Si
SLV 16	15.03	2009.15	-567	-0.0002089	0.0005615	0.0035	1.36		12764.25	12764.25	6.35		Si
SLD 12	4.83	130.6	-11839	-0.0000488	0.0005615	0.0035	1.36		17436.69	17436.69	133.51		Si
SLD 12	15.03	1269.13	-809	-0.0001011	0.0005615	0.0035	1.36		12978.09	12978.09	10.23		Si
SLV 11	4.83	-268.21	-9817	-0.0000429	0.0005615	0.0035	1.36		16909.11	16909.11	63.04		Si
SLV 11	15.03	2196.8	-725	-0.0002211	0.0005615	0.0035	1.36		12904.29	12904.29	5.87		Si
SLV 8	4.83	502.42	-8845	-0.0000429	0.0005615	0.0035	1.36		16622.94	16622.94	33.09		Si
SLV 8	15.03	1554.17	-913	-0.0001288	0.0005615	0.0035	1.36		13069.16	13069.16	8.41		Si
SLD 11	4.83	129.62	-11814	-0.0000486	0.0005615	0.0035	1.36		17430.3	17430.3	134.48		Si
SLD 11	15.03	1270.24	-804	-0.0001015	0.0005615	0.0035	1.36		12973.48	12973.48	10.21		Si
SLV 12	4.83	-265.96	-9873	-0.000043	0.0005615	0.0035	1.36		16924.55	16924.55	63.64		Si
SLV 12	15.03	2194.24	-738	-0.0002198	0.0005615	0.0035	1.36		12914.89	12914.89	5.89		Si
SLV 15	4.83	-941.64	-13853	-0.0000717	0.0005615	0.0035	1.36		17944.81	17944.81	19.06		Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 15	15.03	2013.1	-549	-0.000211	0.0005615	0.0035	1.36		12747.71	12747.71	6.33		Si
SLV 7	4.83	500.17	-8789	-0.0000427	0.0005615	0.0035	1.36		16607.07	16607.07	33.2		Si
SLV 7	15.03	1556.73	-901	-0.0001297	0.0005615	0.0035	1.36		13058.64	13058.64	8.39		Si
SLV 1	4.83	1811.32	-12870	-0.0000832	0.0005615	0.0035	1.36		17696.33	17696.33	9.77		Si
SLV 1	15.03	-918.6	-1161	-0.0000481	0.0005615	0.0035	1.36		13299.74	13299.74	14.48		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 33	4.83	509.28	-16246	-12484	-175	1.36	1.36	-32784	10833	4125	21569	11403	5202	16605	No	94.78	Si
SLU 33	15.03	789.5	-1113	-855	-2958	1.36	0	-7643	8150	0	21569	11403	5202	16605	No	5.61	Si
SLU 81	4.83	707.22	-19613	-15072	40	1.36	1.36	-39578	10833	4125	21569	11403	5202	16605	No	414.32	Si
SLU 81	15.03	840.76	-1180	-907	-3132	1.36	0	-8141	8232	0	21569	11403	5202	16605	No	5.3	Si
SLU 74	4.83	655.22	-19437	-14936	52	1.36	1.36	-39222	10833	4125	21569	11403	5202	16605	No	322.19	Si
SLU 74	15.03	878.52	-1325	-1018	-3227	1.36	0.0512	-8390	8224	118	21569	11403	5202	16605	No	5.15	Si
SLU 78	4.83	673.8	-19750	-15177	101	1.36	1.36	-39854	10833	4125	21569	11403	5202	16605	No	163.73	Si
SLU 78	15.03	851.44	-1368	-1051	-3179	1.36	0.1724	-7989	8130	392	21569	11403	5202	16605	No	5.22	Si
SLU 83	4.83	727.98	-19945	-15327	86	1.36	1.36	-40249	10833	4125	21569	11403	5202	16605	No	193.64	Si
SLU 83	15.03	804.82	-1225	-941	-3045	1.36	0.0683	-7673	8110	155	21569	11403	5202	16605	No	5.45	Si
SLU 75	4.83	653.03	-19418	-14921	56	1.36	1.36	-39184	10833	4125	21569	11403	5202	16605	No	297.86	Si
SLU 75	15.03	887.38	-1324	-1017	-3265	1.36	0.0287	-8496	8247	66	21569	11403	5202	16605	No	5.09	Si
SLU 84	4.83	725.8	-19927	-15312	90	1.36	1.36	-40211	10833	4125	21569	11403	5202	16605	No	184.58	Si
SLU 84	15.03	813.68	-1223	-940	-3084	1.36	0.044	-7780	8133	100	21569	11403	5202	16605	No	5.38	Si
SLU 82	4.83	705.04	-19594	-15057	44	1.36	1.36	-39541	10833	4125	21569	11403	5202	16605	No	374.94	Si
SLU 82	15.03	849.62	-1179	-906	-3170	1.36	0	-8239	8255	0	21569	11403	5202	16605	No	5.24	Si
SLU 73	4.83	640.08	-18888	-14514	66	1.36	1.36	-38114	10833	4125	21569	11403	5202	16605	No	252.4	Si
SLU 73	15.03	817.77	-1167	-897	-3035	1.36	0	-7900	8183	0	21569	11403	5202	16605	No	5.47	Si
SLU 77	4.83	675.98	-19769	-15191	97	1.36	1.36	-39892	10833	4125	21569	11403	5202	16605	No	170.82	Si
SLU 77	15.03	842.58	-1369	-1052	-3141	1.36	0.194	-7875	8107	440	21569	11403	5202	16605	No	5.29	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 7	4.83	500.17	-8789	-6754	1967	1.36	1.36	-17736	13964	5317	21569	17104	5202	22306		11.34	Si
SLV 7	15.03	1556.73	-901	-692	-7097	1.36	0	-12161	15865	0	21569	17104	5202	21569		3.04	Si
SLV 6	4.83	1141.38	-16993	-13058	-531	1.36	1.36	-34291	16250	6188	21569	17104	5202	22306		42.04	Si
SLV 6	15.03	-1106.25	-1003	-770	4810	1.36	0	-10248	13637	0	21569	17104	5202	21569		4.48	Si
SLV 8	4.83	502.42	-8845	-6797	1979	1.36	1.36	-17849	13986	5326	21569	17104	5202	22306		11.27	Si
SLV 8	15.03	1554.17	-913	-702	-7071	1.36	0	-12218	15823	0	21569	17104	5202	21569		3.05	Si
SLV 5	4.83	1139.13	-16937	-13015	-543	1.36	1.36	-34177	16250	6188	21569	17104	5202	22306		41.11	Si
SLV 5	15.03	-1103.69	-991	-761	4783	1.36	0	-10196	13644	0	21569	17104	5202	21569		4.51	Si
SLD 11	4.83	129.62	-11814	-9079	467	1.36	1.36	-23841	15185	5782	21569	17104	5202	22306		47.78	Si
SLD 11	15.03	1270.24	-804	-618	-4963	1.36	0	-10332	14714	0	21569	17104	5202	21569		4.35	Si
SLV 16	4.83	-938.15	-13940	-10712	-1322	1.36	1.36	-28130	16043	6109	21569	17104	5202	22306		16.88	Si
SLV 16	15.03	2009.15	-567	-436	-6507	1.36	0	0	16250	0	21569	17104	5202	21569		3.31	Si
SLV 11	4.83	-268.21	-9817	-7544	847	1.36	1.36	-19810	14379	5475	21569	17104	5202	22306		26.32	Si
SLV 11	15.03	2196.8	-725	-557	-8760	1.36	0	0	16250	0	21569	17104	5202	21569		2.46	Si
SLD 12	4.83	130.6	-11839	-9097	472	1.36	1.36	-23890	15195	5786	21569	17104	5202	22306		47.25	Si
SLD 12	15.03	1269.13	-809	-622	-4952	1.36	0	-10355	14697	0	21569	17104	5202	21569		4.36	Si
SLV 15	4.83	-941.64	-13853	-10645	-1340	1.36	1.36	-27955	16008	6096	21569	17104	5202	22306		16.65	Si
SLV 15	15.03	2013.1	-549	-422	-6548	1.36	0	0	16250	0	21569	17104	5202	21569		3.29	Si
SLV 12	4.83	-265.96	-9873	-7587	859	1.36	1.36	-19924	14401	5484	21569	17104	5202	22306		25.96	Si
SLV 12	15.03	2194.24	-738	-567	-8733	1.36	0	0	16250	0	21569	17104	5202	21569		2.47	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 9.93 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 12	179667	0.45	0	-3439	1407.11	0	0	No, $e > t/2$
SLV 8	179667	0.45	0	-1963	1407.11	0	0	No, $e > t/2$
SLV 2	179667	0.45	0	-7006	1407.11	0	0	No, $e > t/2$
SLV 15	179667	0.45	0	-8708	1407.11	0	0	No, $e > t/2$
SLV 7	179667	0.45	0	-1895	1407.11	0	0	No, $e > t/2$
SLV 4	179667	0.45	0	-3892	1407.11	0	0	No, $e > t/2$
SLV 16	179667	0.45	0	-8812	1407.11	0	0	No, $e > t/2$
SLV 3	179667	0.45	0	-3787	1407.11	0	0	No, $e > t/2$
SLV 1	179667	0.45	0	-6901	1407.11	0	0	No, $e > t/2$
SLV 11	179667	0.45	0	-3371	1407.11	0	0	No, $e > t/2$

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 9.93 Wa = 0.05 Ta = 0.6205

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	$\alpha_0^*$	aLim	Verifica
SLV 2	-1180	-12957	-515	1.548	761.1	0.914	24.61444	4.84025	Si
SLV 4	-1153	-10512	-534	1.553	759.4	0.915	24.66742	4.84025	Si
SLV 1	-1161	-12870	-515	1.554	759.9	0.914	24.69587	4.84025	Si
SLV 3	-1134	-10426	-534	1.559	758.2	0.915	24.74908	4.84025	Si
SLV 14	-594	-16384	490	1.773	728.1	0.942	27.37453	4.84025	Si
SLV 13	-575	-16297	490	1.781	727.2	0.943	27.46182	4.84025	Si
SLV 16	-567	-13940	471	1.79	726.9	0.943	27.57212	4.84025	Si
SLV 15	-549	-13853	472	1.798	726.1	0.945	27.65974	4.84025	Si
SLV 6	-1003	-16993	-142	1.691	750	0.92	26.70515	2.39674	Si
SLV 5	-991	-16937	-142	1.696	749.2	0.921	26.76234	2.39674	Si



Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	14.408	SLU 75	Si
V_SLU	5.085	SLU 75	Si
PF_SLV	5.874	SLV 11	Si
V_SLV	2.462	SLV 11	Si
PFFP_SLV	0	SLV 1	No
R_SLV	5.085	SLV 2	Si

## Maschio 256

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Maschio considerato membratura sismica secondaria

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.003	-0.784	-9.258	-0.784	L4	L6	1.745	0.15	7.24	7.24	7.24			

### Caratteristiche del materiale

Forati doppiouni rapp. vuoto/pieno 40% malta bastarda

fb	fk	fvk0	fmedio	$\tau_0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
1000000	470000	20000				0.58	0.77	65000	620000000	248000000	

Verifica a pressoflessione nel piano secondo D.M. 17-01-18 NTC §7.8.2.2.1 in combinazioni non sismiche,  $\gamma_M = 3$

Comb.	Quota	N	M	$\sigma_0$	Mu	c.s.	Verifica
SLU 59	1.11	-14810	-1121.48	56582	7431.57	6.627	Si
SLU 59	8.35	-8648	-1556.75	33040	5673.47	3.644	Si
SLU 80	1.11	-16177	-1272.55	61803	7563.92	5.944	Si
SLU 80	8.35	-9664	-1732.44	36921	6094.13	3.518	Si
SLU 78	1.11	-16364	-1272.28	62516	7574.75	5.954	Si
SLU 78	8.35	-9834	-1742.59	37569	6159.4	3.535	Si
SLU 79	1.11	-16177	-1273.88	61803	7563.92	5.938	Si
SLU 79	8.35	-9667	-1735.18	36932	6095.29	3.513	Si
SLU 58	1.11	-14810	-1122.8	56582	7431.57	6.619	Si
SLU 58	8.35	-8651	-1559.5	33051	5674.79	3.639	Si
SLU 84	1.11	-16660	-1275.2	63647	7588.32	5.951	Si
SLU 84	8.35	-10069	-1750.48	38468	6247.44	3.569	Si
SLU 77	1.11	-16364	-1273.6	62516	7574.75	5.948	Si
SLU 77	8.35	-9837	-1745.33	37581	6160.54	3.53	Si
SLU 74	1.11	-16234	-1218.63	62023	7567.44	6.21	Si
SLU 74	8.35	-9765	-1680.22	37307	6133.21	3.65	Si
SLU 76	1.11	-16048	-1216.7	61309	7555.41	6.21	Si
SLU 76	8.35	-9590	-1665.5	36640	6065.4	3.642	Si
SLU 83	1.11	-16660	-1276.52	63647	7588.32	5.945	Si
SLU 83	8.35	-10072	-1753.23	38479	6248.54	3.564	Si

Verifica a taglio nel piano secondo D.M. 17-01-18 (N.T.C.) §7.8.2.2.2 con rottura per scorrimento in combinazioni non sismiche,  $\gamma_M = 3$

Comb.	Quota	N	V par	M	$\sigma_0$	$\sigma_N$	l'	fvd	Vt scorr.	Vt fess.diag.	Vt,lim	c.s.	Verifica
SLU 42	1.11	-13991	0	-1112.33		53452	1.745	13794	3611			1000	Si
SLU 42	8.35	-8630	-25	-1511.76		32970	1.745	11063	2896			114.92	Si
SLU 83	1.11	-16660	0	-1276.52		63647	1.745	15153	3966			1000	Si
SLU 83	8.35	-10072	-27	-1753.23		38479	1.745	11797	3088			114.01	Si
SLU 40	1.11	-13862	0	-1057.36		52959	1.745	13728	3593			1000	Si
SLU 40	8.35	-8559	-25	-1446.65		32697	1.745	11026	2886			115.59	Si
SLU 84	1.11	-16660	0	-1275.2		63647	1.745	15153	3966			1000	Si
SLU 84	8.35	-10069	-27	-1750.48		38468	1.745	11796	3088			113.98	Si
SLU 39	1.11	-13862	0	-1058.68		52959	1.745	13728	3593			1000	Si
SLU 39	8.35	-8562	-25	-1449.4		32709	1.745	11028	2887			115.62	Si
SLU 81	1.11	-16530	0	-1221.55		63153	1.745	15087	3949			1000	Si
SLU 81	8.35	-10000	-27	-1688.12		38206	1.745	11761	3078			114.62	Si
SLU 62	1.11	-15293	0	-1125.45		58426	1.745	14457	3784			1000	Si
SLU 62	8.35	-9056	-25	-1577.54		34599	1.745	11280	2953			118.35	Si
SLU 41	1.11	-13991	0	-1113.66		53452	1.745	13794	3611			1000	Si
SLU 41	8.35	-8633	-25	-1514.5		32982	1.745	11064	2896			114.95	Si
SLU 82	1.11	-16530	0	-1220.23		63153	1.745	15087	3949			1000	Si
SLU 82	8.35	-9997	-27	-1685.38		38194	1.745	11759	3078			114.59	Si
SLU 63	1.11	-15293	0	-1124.12		58426	1.745	14457	3784			1000	Si
SLU 63	8.35	-9053	-25	-1574.8		34587	1.745	11278	2952			118.32	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 4.73 Wa 0.01 denominatore 8  $\gamma_M = 2,4$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 3	195833	0.34	25368	-6640	156.99	422.11	2.69	Si
SLV 4	195833	0.34	25439	-6659	156.99	423.09	2.7	Si
SLV 1	195833	0.34	26497	-6936	156.99	437.37	2.79	Si
SLV 2	195833	0.34	26568	-6954	156.99	438.32	2.79	Si
SLV 7	195833	0.34	28933	-7573	156.99	469.27	2.99	Si
SLV 8	195833	0.34	28979	-7585	156.99	469.86	2.99	Si
SLV 5	195833	0.34	32694	-8558	156.99	515.77	3.29	Si
SLV 6	195833	0.34	32740	-8570	156.99	516.32	3.29	Si
SLV 11	195833	0.34	33106	-8666	156.99	520.66	3.32	Si



Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 12	195833	0.34	33152	-8678	156.99	521.2	3.32	Si

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 4.73  $W_a = 0.01$   $T_a = 0.2795$

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	a0*	aLim	Verifica
SLV 14	-7632	-16334	61	1.172	895.7	0.961	23.94722	15.21903	Si
SLV 13	-7615	-16305	61	1.175	894	0.96	23.99673	15.21903	Si
SLV 16	-7290	-14871	-22	1.227	860.9	0.959	25.09096	15.21903	Si
SLV 15	-7273	-14842	-22	1.229	859.2	0.959	25.14507	15.21903	Si
SLV 2	-5857	-7667	56	1.485	715.3	0.952	30.61042	15.21903	Si
SLV 1	-5840	-7638	56	1.489	713.6	0.952	30.69138	15.21903	Si
SLV 4	-5516	-6204	-27	1.57	680.6	0.95	32.43366	15.21903	Si
SLV 3	-5499	-6175	-27	1.574	678.9	0.949	32.52422	15.21903	Si
SLV 10	-7406	-15003	155	1.193	872.7	0.96	24.39121	7.16047	Si
SLV 9	-7395	-14984	155	1.195	871.6	0.96	24.42469	7.16047	Si

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.513	SLU 79	Si
V_SLU	113.98	SLU 84	Si
PFFP_SLV	2.689	SLV 3	Si
R_SLV	1.574	SLV 14	Si

## Maschio 259

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Maschio considerato membratura sismica secondaria

#### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.sx	a.s.dx
-9.258	-0.784	-9.258	0.821	L4	L6	1.605	0.15	7.24	7.24	7.24			

#### Caratteristiche del materiale

Forati doppiouni rapp. vuoto/pieno 40% malta bastarda

fb	fk	fvk0	fmedio	$\tau_0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
1000000	470000	20000				0.58	0.77	65000	620000000	248000000	

#### Verifica a pressoflessione nel piano secondo D.M. 17-01-18 NTC §7.8.2.2.1 in combinazioni non sismiche, $\gamma_M = 3$

Comb.	Quota	N	M	$\sigma_0$	Mu	c.s.	Verifica
SLU 42	1.11	-4348	1762.51	18061	3016.16	1.711	Si
SLU 42	8.35	-6970	1929.56	28950	4377.24	2.269	Si
SLU 41	1.11	-4351	1763.14	18071	3017.54	1.711	Si
SLU 41	8.35	-6971	1930.94	28957	4377.98	2.267	Si
SLU 33	1.11	-4328	1679.4	17977	3004.28	1.789	Si
SLU 33	8.35	-6791	1856.18	28208	4295.45	2.314	Si
SLU 34	1.11	-4265	1662.55	17716	2967.44	1.785	Si
SLU 34	8.35	-6688	1833.72	27779	4247.42	2.316	Si
SLU 38	1.11	-4265	1724.15	17716	2967.44	1.721	Si
SLU 38	8.35	-6759	1896.46	28073	4280.34	2.257	Si
SLU 36	1.11	-4326	1740.58	17970	3003.36	1.725	Si
SLU 36	8.35	-6861	1918.01	28497	4327.52	2.256	Si
SLU 39	1.11	-4352	1701.96	18077	3018.46	1.774	Si
SLU 39	8.35	-6902	1869.12	28668	4346.3	2.325	Si
SLU 35	1.11	-4329	1741.21	17980	3004.74	1.726	Si
SLU 35	8.35	-6862	1919.39	28504	4328.26	2.255	Si
SLU 40	1.11	-4350	1701.33	18068	3017.08	1.773	Si
SLU 40	8.35	-6900	1867.73	28661	4345.56	2.327	Si
SLU 37	1.11	-4268	1724.79	17726	2968.83	1.721	Si
SLU 37	8.35	-6760	1897.85	28080	4281.09	2.256	Si

#### Verifica a taglio nel piano secondo D.M. 17-01-18 (N.T.C.) §7.8.2.2.2 con rottura per scorrimento in combinazioni non sismiche, $\gamma_M = 3$

Comb.	Quota	N	V par	M	$\sigma_0$	$\sigma_N$	I'	fvd	Vt scorr.	Vt fess.diag.	Vt,lim	c.s.	Verifica
SLU 42	1.11	-4348	-28	1762.51		24330	1.1915	9911	1771			64.16	Si
SLU 42	8.35	-6970	-3	1929.56		29465	1.577	10595	2506			889.94	Si
SLU 78	1.11	-5409	-32	1999.23		27767	1.2987	10369	2020			63.35	Si
SLU 78	8.35	-8225	-3	2229.35		34392	1.5944	11252	2691			871.15	Si
SLU 80	1.11	-5348	-32	1982.8		27527	1.2952	10337	2008			63.5	Si
SLU 80	8.35	-8123	-3	2207.81		34013	1.5921	11202	2675			869.7	Si
SLU 79	1.11	-5350	-32	1983.44		27536	1.2954	10338	2009			63.53	Si
SLU 79	8.35	-8124	-3	2209.19		34027	1.5917	11204	2675			869.56	Si
SLU 81	1.11	-5435	-32	1960.61		27340	1.3253	10312	2050			63.85	Si
SLU 81	8.35	-8266	-3	2180.46		34334	1.605	11245	2707			837.58	Si
SLU 83	1.11	-5433	-33	2021.8		28054	1.2912	10407	2016			61.97	Si
SLU 83	8.35	-8336	-3	2242.28		34721	1.6005	11296	2712			830.8	Si
SLU 77	1.11	-5412	-32	1999.86		27776	1.2988	10370	2020			63.39	Si
SLU 77	8.35	-8227	-3	2230.73		34406	1.594	11254	2691			871.01	Si
SLU 82	1.11	-5433	-32	1959.98		27331	1.3252	10311	2050			63.82	Si
SLU 82	8.35	-8264	-3	2179.07		34327	1.605	11244	2707			837.6	Si
SLU 84	1.11	-5431	-33	2021.16		28045	1.291	10406	2015			61.93	Si
SLU 84	8.35	-8334	-3	2240.9		34707	1.6008	11294	2712			830.93	Si
SLU 41	1.11	-4351	-28	1763.14		24338	1.1917	9912	1772			64.2	Si
SLU 41	8.35	-6971	-3	1930.94		29479	1.5765	10597	2506			889.76	Si





## Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 4.73 Wa 0.01 denominatore 8  $\gamma_M = 2,4$

Comb.	fd	Sa	$\alpha_0$	N	M	Mc	Coeff.s.	Verifica
SLV 16	195833	0.34	21518	-5180	144.39	338.31	2.34	Si
SLV 15	195833	0.34	21531	-5184	144.39	338.48	2.34	Si
SLV 14	195833	0.34	21992	-5294	144.39	344.62	2.39	Si
SLV 13	195833	0.34	22005	-5298	144.39	344.8	2.39	Si
SLV 12	195833	0.34	23455	-5647	144.39	363.83	2.52	Si
SLV 11	195833	0.34	23463	-5649	144.39	363.94	2.52	Si
SLV 10	195833	0.34	25034	-6027	144.39	384.04	2.66	Si
SLV 9	195833	0.34	25043	-6029	144.39	384.15	2.66	Si
SLV 8	195833	0.34	25587	-6160	144.39	390.99	2.71	Si
SLV 7	195833	0.34	25595	-6162	144.39	391.09	2.71	Si

## Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 4.73 Wa = 0.01 Ta = 0.2795

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	$\alpha_0^*$	aLim	Verifica
SLV 2	-6533	-4952	-229	1.227	774.4	0.958	25.11315	15.21903	Si
SLV 1	-6532	-4963	-229	1.227	774.3	0.958	25.11698	15.21903	Si
SLV 4	-6350	-6145	-279	1.251	755.8	0.957	25.63917	15.21903	Si
SLV 3	-6349	-6156	-279	1.251	755.7	0.957	25.64318	15.21903	Si
SLV 14	-5011	-1800	312	1.536	619.7	0.949	31.75834	15.21903	Si
SLV 13	-5010	-1810	312	1.537	619.6	0.949	31.7643	15.21903	Si
SLV 16	-4828	-2993	262	1.596	601.2	0.948	33.03683	15.21903	Si
SLV 15	-4827	-3003	262	1.596	601.1	0.948	33.04325	15.21903	Si
SLV 6	-6214	-2459	19	1.313	741.9	0.957	26.93372	7.16047	Si
SLV 5	-6213	-2466	19	1.313	741.8	0.957	26.93639	7.16047	Si

## Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	1.711	SLU 42	Si
V_SLU	61.933	SLU 84	Si
PFFP_SLV	2.343	SLV 16	Si
R_SLV	1.65	SLV 2	Si

## Maschio 260

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.sx	a.s.dx
-9.333	-3.314	-11.003	-3.314	L4	L6	1.67	0.28	7.24	7.24	7.24			

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau_0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

## Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha$	$\alpha$	elim,conv	$\epsilon_f$	$\gamma_F$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	2	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 83	4.83	-757.38	-20708	-0.0000831	0.0003743	0.0035	1.67	9770.1	21454.91	21454.91	28.33	No	Si
SLU 83	6.93	-1643.03	-19164	-0.0000889	0.0003743	0.0035	1.67	9560.53	21309.94	21309.94	12.97	No	Si
SLU 78	4.83	-679.46	-20402	-0.0000808	0.0003743	0.0035	1.67	9735.15	21428.04	21428.04	31.54	No	Si
SLU 78	6.93	-1602.71	-18982	-0.0000876	0.0003743	0.0035	1.67	9530.35	21290.46	21290.46	13.28	No	Si
SLU 76	4.83	-653.6	-19856	-0.0000782	0.0003743	0.0035	1.67	9664.75	21378.55	21378.55	32.71	No	Si
SLU 76	6.93	-1567.19	-18438	-0.0000849	0.0003743	0.0035	1.67	9433.17	21230.83	21230.83	13.55	No	Si
SLU 84	4.83	-751.02	-20722	-0.0000831	0.0003743	0.0035	1.67	9771.57	21456.08	21456.08	28.57	No	Si
SLU 84	6.93	-1649.15	-19195	-0.0000891	0.0003743	0.0035	1.67	9565.65	21313.3	21313.3	12.92	No	Si
SLU 75	4.83	-667.72	-20024	-0.0000791	0.0003743	0.0035	1.67	9687.61	21394.05	21394.05	32.04	No	Si
SLU 75	6.93	-1572.36	-18580	-0.0000855	0.0003743	0.0035	1.67	9459.65	21246.66	21246.66	13.51	No	Si
SLU 77	4.83	-685.82	-20388	-0.0000808	0.0003743	0.0035	1.67	9733.53	21426.84	21426.84	31.24	No	Si
SLU 77	6.93	-1596.59	-18950	-0.0000874	0.0003743	0.0035	1.67	9525	21287.06	21287.06	13.33	No	Si
SLU 80	4.83	-669.58	-20224	-0.0000799	0.0003743	0.0035	1.67	9713.4	21412.17	21412.17	31.98	No	Si
SLU 80	6.93	-1593.46	-18818	-0.0000868	0.0003743	0.0035	1.67	9502.21	21272.74	21272.74	13.35	No	Si





Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 81	4.83	-745.64	-20331	-0.0000814	0.0003743	0.0035	1.67	9726.62	21421.75	21421.75	28.73	No	Si
SLU 81	6.93	-1612.68	-18762	-0.0000868	0.0003743	0.0035	1.67	9492.39	21266.65	21266.65	13.19	No	Si
SLU 82	4.83	-739.28	-20344	-0.0000814	0.0003743	0.0035	1.67	9728.27	21422.96	21422.96	28.98	No	Si
SLU 82	6.93	-1618.8	-18794	-0.0000871	0.0003743	0.0035	1.67	9497.95	21270.09	21270.09	13.14	No	Si
SLU 79	4.83	-675.94	-20210	-0.00008	0.0003743	0.0035	1.67	9711.69	21410.95	21410.95	31.68	No	Si
SLU 79	6.93	-1587.34	-18787	-0.0000866	0.0003743	0.0035	1.67	9496.68	21269.3	21269.3	13.4	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche,  $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 15	4.83	-5472.94	-18968	-0.0001339	0.0005615	0.0035	1.67		24392.3	24392.3	4.46		Si
SLV 15	6.93	3268.86	-8035	-0.0000681	0.0005615	0.0035	1.67		20485.2	20485.2	6.27		Si
SLV 2	4.83	4702.8	-8156	-0.0001102	0.0005615	0.0035	1.67		20540.44	20540.44	4.37		Si
SLV 2	6.93	-5329.93	-17007	-0.0001248	0.0005615	0.0035	1.67		23822.81	23822.81	4.47		Si
SLV 1	4.83	4334.16	-8336	-0.000095	0.0005615	0.0035	1.67		20622.05	20622.05	4.76		Si
SLV 1	6.93	-4960.41	-16404	-0.0001172	0.0005615	0.0035	1.67		23641.43	23641.43	4.77		Si
SLV 16	4.83	-5104.29	-18788	-0.0001281	0.0005615	0.0035	1.67		24341.33	24341.33	4.77		Si
SLV 16	6.93	2899.34	-8638	-0.000063	0.0005615	0.0035	1.67		20757.55	20757.55	7.16		Si
SLV 14	4.83	-4948.75	-16881	-0.0001187	0.0005615	0.0035	1.67		23785.08	23785.08	4.81		Si
SLV 14	6.93	2950.22	-6574	-0.0000608	0.0005615	0.0035	1.67		19794.64	19794.64	6.71		Si
SLV 3	4.83	4178.61	-10243	-0.0000884	0.0005615	0.0035	1.67		21450.86	21450.86	5.13		Si
SLV 3	6.93	-5011.29	-18468	-0.0001256	0.0005615	0.0035	1.67		24250.21	24250.21	4.84		Si
SLD 2	4.83	1787.56	-11244	-0.000058	0.0005615	0.0035	1.67		21848.4	21848.4	12.22		Si
SLD 2	6.93	-2869.36	-14426	-0.0000827	0.0005615	0.0035	1.67		22990.33	22990.33	8.01		Si
SLD 4	4.83	1725.49	-12074	-0.0000602	0.0005615	0.0035	1.67		22151.77	22151.77	12.84		Si
SLD 4	6.93	-2888.88	-15334	-0.0000863	0.0005615	0.0035	1.67		23294.67	23294.67	8.06		Si
SLV 4	4.83	4547.25	-10063	-0.0000963	0.0005615	0.0035	1.67		21375.26	21375.26	4.7		Si
SLV 4	6.93	-5380.81	-19071	-0.000133	0.0005615	0.0035	1.67		24421.48	24421.48	4.54		Si
SLV 13	4.83	-5317.39	-17061	-0.0001248	0.0005615	0.0035	1.67		23838.85	23838.85	4.48		Si
SLV 13	6.93	3319.74	-5971	-0.0000743	0.0005615	0.0035	1.67		19495.91	19495.91	5.87		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 68	4.83	-436.19	-17813		378	1.67	1.67	-31722	10833	5066	26485	14002	4259	18261	No	48.36	Si
SLU 68	6.93	-1366.43	-16622	-13841	2404	1.67	1.67	-29600	10833	5066	26485	14002	4259	18261	No	7.59	Si
SLU 70	4.83	-462.04	-18359	-15288	368	1.67	1.67	-32694	10833	5066	26485	14002	4259	18261	No	49.67	Si
SLU 70	6.93	-1401.95	-17166	-14294	2472	1.67	1.67	-30569	10833	5066	26485	14002	4259	18261	No	7.39	Si
SLU 69	4.83	-468.4	-18346	-15277	355	1.67	1.67	-32670	10833	5066	26485	14002	4259	18261	No	51.44	Si
SLU 69	6.93	-1395.84	-17134	-14268	2457	1.67	1.67	-30513	10833	5066	26485	14002	4259	18261	No	7.43	Si
SLU 64	4.83	-435.05	-17413	-14500	347	1.67	1.67	-31009	10833	5066	26485	14002	4259	18261	No	52.57	Si
SLU 64	6.93	-1325.89	-16168	-13463	2318	1.67	1.67	-28792	10783	5042	26485	14002	4259	18261	No	7.88	Si
SLU 65	4.83	-424.45	-17436	-14519	368	1.67	1.67	-31049	10833	5066	26485	14002	4259	18261	No	49.55	Si
SLU 65	6.93	-1336.08	-16221	-13507	2343	1.67	1.67	-28886	10796	5048	26485	14002	4259	18261	No	7.79	Si
SLU 78	4.83	-679.46	-20402	-16989	-33	1.67	1.67	-36331	10833	5066	26485	14002	4259	18261	No	550.1	Si
SLU 78	6.93	-1602.71	-18982	-15806	2163	1.67	1.67	-33803	10833	5066	26485	14002	4259	18261	No	8.44	Si
SLU 71	4.83	-458.53	-18168	-15129	366	1.67	1.67	-32353	10833	5066	26485	14002	4259	18261	No	49.95	Si
SLU 71	6.93	-1386.59	-16971	-14132	2440	1.67	1.67	-30221	10833	5066	26485	14002	4259	18261	No	7.48	Si
SLU 67	4.83	-450.3	-17982	-14974	359	1.67	1.67	-32022	10833	5066	26485	14002	4259	18261	No	50.93	Si
SLU 67	6.93	-1371.6	-16764	-13960	2411	1.67	1.67	-29854	10833	5066	26485	14002	4259	18261	No	7.57	Si
SLU 72	4.83	-452.17	-18181	-15140	378	1.67	1.67	-32378	10833	5066	26485	14002	4259	18261	No	48.28	Si
SLU 72	6.93	-1392.71	-17002	-14158	2455	1.67	1.67	-30278	10833	5066	26485	14002	4259	18261	No	7.44	Si
SLU 66	4.83	-456.66	-17968	-14962	346	1.67	1.67	-31998	10833	5066	26485	14002	4259	18261	No	52.8	Si
SLU 66	6.93	-1365.49	-16733	-13934	2396	1.67	1.67	-29798	10833	5066	26485	14002	4259	18261	No	7.62	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\alpha N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 3	4.83	4178.61	-10243	-8530	8209	1.67	1.2812	-23869	15207	5455	26485	21003	4259	25262		3.08	Si
SLV 3	6.93	-5011.29	-18468	-15379	9025	1.67	1.67	0	16250	7599	26485	21003	4259	25262		2.8	Si
SLD 4	4.83	1725.49	-12074	-10054	3875	1.67	1.67	-21502	14717	6882	26485	21003	4259	25262		6.52	Si
SLD 4	6.93	-2888.88	-15334	-12769	5073	1.67	1.67	-27307	15878	7425	26485	21003	4259	25262		4.98	Si
SLD 2	4.83	1787.56	-11244	-9363	3939	1.67	1.67	-20024	14421	6744	26485	21003	4259	25262		6.41	Si
SLD 2	6.93	-2869.36	-14426	-12013	5059	1.67	1.67	-25690	15555	7273	26485	21003	4259	25262		4.99	Si
SLV 1	4.83	4334.16	-8336	-6942	8351	1.67	0.9453	-25163	15532	4111	26485	21003	4259	25262		3.03	Si
SLV 1	6.93	-4960.41	-16404	-13660	9001	1.67	1.5979	-31032	16250	7270	26485	21003	4259	25262		2.81	Si
SLV 4	4.83	4547.25	-10063	-8380	8873	1.67	1.1494	-25891	15631	5030	26485	21003	4259	25262		2.85	Si
SLV 4	6.93	-5380.81	-19071	-15881	9691	1.67	1.6586	-34850	16250	7547	26485	21003	4259	25262		2.61	Si
SLV 2	4.83	4702.8	-8156	-6792	9014	1.67	0.7753	-28222	16230	3523	26485	21003	4259	25262		2.8	Si
SLV 2	6.93	-5329.93	-17007	-14162	9667	1.67	1.5648	-32880	16250	7120	26485	21003	4259	25262		2.61	Si
SLV 16	4.83	-5104.29	-18788	-15645	-8057	1.67	1.67	0	16250	7599	26485	21003	4259	25262		3.14	Si
SLV 16	6.93	2899.34	-8638	-7193	-5756	1.67	1.4981	-17274	13873	5820	26485	21003	4259	25262		4.39	Si
SLV 15	4.83	-5472.94	-18968	-15795	-8721	1.67	1.6394	-35069	16250	7459	26485	21003	4259	25262		2.9	Si
SLV 15	6.93	3268.86	-8035	-6691	-6423	1.67	1.2846	-18628	14154	5091	26485	21003	4259	25262		3.93	Si
SLV 13	4.83	-5317.39	-17061	-14207	-8579	1.67	1.57	-32877	16250	7144	26485	21003	4259	25262		2.94	Si
SLV 13	6.93	3319.74	-5971	-4972	-6447	1.67	0.8372	-19623	14434	3384	26485	21003	4259	25262		3.92	Si
SLV 14	4.83	-4948.75	-16881	-14057	-7916	1.67	1.6256	-31402	16250	7396	26485	21003	4259	25262		3.19	Si
SLV 14	6.93	2950.22	-6574	-5475	-5781	1.67	1.1588	-16722	13782	4472	26485	21003	4259	25262		4.37	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 4.73 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	Quota	M	N	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 6		179667		0.34	18943	-8858	646.03	1086.26	1.68	Si
SLV 5		179667		0.34	18999	-8884	646.03	1089.03	1.69	Si
SLV 2		179667		0.34	19371	-9058	646.03	1107.27	1.71	Si
SLV 1		179667		0.34	19458	-9099	646.03	1111.52	1.72	Si



Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 10	179667	0.34	21978	-10277	646.03	1231.72	1.91	Si
SLV 9	179667	0.34	22034	-10303	646.03	1234.34	1.91	Si
SLV 4	179667	0.34	22787	-10655	646.03	1269.14	1.96	Si
SLV 3	179667	0.34	22874	-10696	646.03	1273.14	1.97	Si
SLV 14	179667	0.34	29488	-13789	646.03	1557.69	2.41	Si
SLV 13	179667	0.34	29575	-13830	646.03	1561.19	2.42	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

#### Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 4.73  $W_a = 0.05 T_a = 0.3126$

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	a0*	aLim	Verifica
SLV 15	-12750	-17141	-55	0.613	1782.1	0.928	9.60854	15.21903	No
SLV 16	-12685	-16997	-54	0.616	1775.7	0.928	9.64971	15.21903	No
SLV 13	-10705	-16692	-180	0.693	1576.4	0.921	10.93467	15.21903	No
SLV 14	-10640	-16548	-179	0.696	1570	0.92	10.98869	15.21903	No
SLV 3	-7397	-8485	213	0.903	1246.5	0.906	14.47505	15.21903	No
SLV 4	-7333	-8341	214	0.908	1240.1	0.906	14.56669	15.21903	No
SLV 1	-5352	-8036	88	1.133	1045.9	0.896	18.36465	15.21903	Si
SLV 2	-5288	-7892	89	1.141	1039.6	0.896	18.50898	15.21903	Si
SLV 11	-13251	-14610	185	0.587	1832.7	0.929	9.18238	5.02815	Si
SLV 12	-13209	-14517	185	0.589	1828.5	0.929	9.20587	5.02815	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	12.924	SLU 84	Si
V_SLU	7.387	SLU 70	Si
PF_SLV	4.368	SLV 2	Si
V_SLV	2.607	SLV 4	Si
PFFP_SLV	1.681	SLV 6	Si
R_SLV	0.631	SLV 15	No

## Maschio 262

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-6.268	-3.314	-6.268	-0.194	L4	L6	3.12	0.16	7.24	7.24	7.24			

#### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fk	fvk0	fmedio	$\tau_0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Verifica a pressoflessione nel piano secondo D.M. 17-01-18 NTC §7.8.2.2.1 in combinazioni non sismiche,  $\gamma_M = 3$

Comb.	Quota	N	M	$\sigma_0$	Mu	c.s.	Verifica
SLU 81	4.83	-31394	6160.24	62889	23767.91	3.858	Si
SLU 81	6.93	-24757	1445.48	49594	22945.53	15.874	Si
SLU 79	4.83	-31581	6181.7	63264	23758.42	3.843	Si
SLU 79	6.93	-25086	1546.22	50253	23039.42	14.9	Si
SLU 78	4.83	-31807	6201.4	63715	23744.64	3.829	Si
SLU 78	6.93	-25275	1525.02	50631	23090.69	15.141	Si
SLU 84	4.83	-31996	6253.47	64095	23731.04	3.795	Si
SLU 84	6.93	-25331	1460.46	50743	23105.56	15.821	Si
SLU 74	4.83	-31204	6108.18	62509	23775.68	3.892	Si
SLU 74	6.93	-24701	1510.05	49481	22929.02	15.184	Si
SLU 77	4.83	-31810	6210.09	63722	23744.42	3.824	Si
SLU 77	6.93	-25291	1547.44	50663	23095.06	14.925	Si
SLU 83	4.83	-32000	6262.16	64102	23730.78	3.79	Si
SLU 83	6.93	-25347	1482.88	50776	23109.89	15.584	Si
SLU 75	4.83	-31201	6099.49	62502	23775.8	3.898	Si
SLU 75	6.93	-24685	1487.63	49449	22924.15	15.41	Si
SLU 82	4.83	-31391	6151.56	62882	23768.06	3.864	Si
SLU 82	6.93	-24741	1423.06	49561	22940.71	16.121	Si
SLU 80	4.83	-31578	6173.01	63257	23758.61	3.849	Si
SLU 80	6.93	-25070	1523.81	50220	23034.88	15.117	Si

Verifica a pressoflessione nel piano secondo D.M. 17-01-18 NTC §7.8.2.2.1 in combinazioni sismiche,  $\gamma_M = 2$

Comb.	Quota	N	M	$\sigma_0$	Mu	c.s.	Verifica
SLD 10	4.83	-23187	5753.64	46449	27004.95	4.694	Si
SLD 10	6.93	-18992	3321.2	38045	23477.41	7.069	Si
SLV 8	4.83	-18219	1011.69	36496	22762.07	22.499	Si
SLV 8	6.93	-12376	-3553.54	24791	16694.94	4.698	Si
SLV 10	4.83	-25219	7608.6	50519	28497.74	3.745	Si
SLV 10	6.93	-21640	6047.75	43350	25774.1	4.262	Si



Comb.	Quota	N	M	$\sigma_0$	Mu	c.s.	Verifica
SLV 14	4.83	-26395	6694.78	52875	29297.36	4.376	Si
SLV 14	6.93	-21942	2341.93	43955	26020.93	11.111	Si
SLD 9	4.83	-23110	5749.9	46294	26945.5	4.686	Si
SLD 9	6.93	-18931	3245	37923	23421.93	7.218	Si
SLV 6	4.83	-22860	6690.29	45794	26751.63	3.999	Si
SLV 6	6.93	-19328	6306.99	38718	23782.36	3.771	Si
SLV 13	4.83	-26122	6681.54	52327	29115.67	4.358	Si
SLV 13	6.93	-21727	2071.92	43524	25845.42	12.474	Si
SLV 9	4.83	-25042	7600.04	50165	28373.6	3.733	Si
SLV 9	6.93	-21501	5873.36	43071	25659.49	4.369	Si
SLV 5	4.83	-22684	6681.74	45440	26613.29	3.983	Si
SLV 5	6.93	-19189	6132.6	38440	23656.78	3.858	Si
SLV 7	4.83	-18042	1003.14	36143	22595.78	22.525	Si
SLV 7	6.93	-12237	-3727.93	24513	16536.41	4.436	Si

Verifica a taglio nel piano secondo D.M. 17-01-18 (N.T.C.) §7.8.2.2.2 con rottura per scorrimento in combinazioni non sismiche,  $\gamma_M = 3$

Comb.	Quota	N	V par	M	$\sigma_0$	$\sigma_N$	I'	fvd	Vt scorr.	Vt fess.diag.	Vt,lim	c.s.	Verifica
SLU 82	4.83	-31391	5164	6151.56		62882	3.12	10833	5408			1.05	Si
SLU 82	6.93	-24741	5169	1423.06		49561	3.12	10833	5408			1.05	Si
SLU 78	4.83	-31807	5052	6201.4		63715	3.12	10833	5408			1.07	Si
SLU 78	6.93	-25275	5057	1525.02		50631	3.12	10833	5408			1.07	Si
SLU 80	4.83	-31578	5021	6173.01		63257	3.12	10833	5408			1.08	Si
SLU 80	6.93	-25070	5027	1523.81		50220	3.12	10833	5408			1.08	Si
SLU 84	4.83	-31996	5206	6253.47		64095	3.12	10833	5408			1.04	Si
SLU 84	6.93	-25331	5212	1460.46		50743	3.12	10833	5408			1.04	Si
SLU 75	4.83	-31201	5010	6099.49		62502	3.12	10833	5408			1.08	Si
SLU 75	6.93	-24685	5015	1487.63		49449	3.12	10833	5408			1.08	Si
SLU 79	4.83	-31581	5005	6181.7		63264	3.12	10833	5408			1.08	Si
SLU 79	6.93	-25086	5010	1546.22		50253	3.12	10833	5408			1.08	Si
SLU 77	4.83	-31810	5036	6210.09		63722	3.12	10833	5408			1.07	Si
SLU 77	6.93	-25291	5041	1547.44		50663	3.12	10833	5408			1.07	Si
SLU 83	4.83	-32000	5190	6262.16		64102	3.12	10833	5408			1.04	Si
SLU 83	6.93	-25347	5195	1482.88		50776	3.12	10833	5408			1.04	Si
SLU 74	4.83	-31204	4993	6108.18		62509	3.12	10833	5408			1.08	Si
SLU 74	6.93	-24701	4999	1510.05		49481	3.12	10833	5408			1.08	Si
SLU 81	4.83	-31394	5148	6160.24		62889	3.12	10833	5408			1.05	Si
SLU 81	6.93	-24757	5153	1445.48		49594	3.12	10833	5408			1.05	Si

Verifica a taglio nel piano secondo D.M. 17-01-18 (N.T.C.) §7.8.2.2.2 con rottura per scorrimento in combinazioni sismiche,  $\gamma_M = 2$

Comb.	Quota	N	V par	M	$\sigma_0$	$\sigma_N$	I'	fvd	Vt scorr.	Vt fess.diag.	Vt,lim	c.s.	Verifica
SLD 8	4.83	-20151	4502	2861.83		40368	3.12	16250	8112			1.8	Si
SLD 8	6.93	-14946	3888	-925.18		29940	3.12	16250	8112			2.09	Si
SLV 11	4.83	-20401	6738	1921.44		40868	3.12	16250	8112			1.2	Si
SLV 11	6.93	-14549	5257	-3987.17		29144	3.12	16250	8112			1.54	Si
SLD 7	4.83	-20074	4524	2858.09		40213	3.12	16250	8112			1.79	Si
SLD 7	6.93	-14885	3910	-1001.38		29818	3.12	16250	8112			2.07	Si
SLD 12	4.83	-21158	4850	3252.98		42384	3.12	16250	8112			1.67	Si
SLD 12	6.93	-15933	4203	-1036.48		31917	3.12	16250	8112			1.93	Si
SLV 8	4.83	-18219	5863	1011.69		36496	3.12	16250	8112			1.38	Si
SLV 8	6.93	-12376	4463	-3553.54		24791	3.12	16250	8112			1.82	Si
SLV 16	4.83	-25003	5632	4991.2		50085	3.12	16250	8112			1.44	Si
SLV 16	6.93	-19857	5067	-616.23		39777	3.12	16250	8112			1.6	Si
SLD 11	4.83	-21081	4872	3249.25		42229	3.12	16250	8112			1.66	Si
SLD 11	6.93	-15872	4225	-1112.67		31795	3.12	16250	8112			1.92	Si
SLV 7	4.83	-18042	5914	1003.14		36143	3.12	16250	8112			1.37	Si
SLV 7	6.93	-12237	4514	-3727.93		24513	3.12	16250	8112			1.8	Si
SLV 12	4.83	-20578	6687	1929.99		41222	3.12	16250	8112			1.21	Si
SLV 12	6.93	-14688	5206	-3812.77		29423	3.12	16250	8112			1.56	Si
SLV 15	4.83	-24729	5711	4977.96		49538	3.12	16250	8112			1.42	Si
SLV 15	6.93	-19641	5147	-886.24		39346	3.12	16250	8112			1.58	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 4.73 Wa 0.03 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 3	215625	0.34	33245	-16596	729.78	1086.85	1.49	Si
SLV 4	215625	0.34	33720	-16833	729.78	1098.89	1.51	Si
SLV 1	215625	0.34	35120	-17532	729.78	1133.8	1.55	Si
SLV 2	215625	0.34	35595	-17769	729.78	1145.44	1.57	Si
SLV 7	215625	0.34	36955	-18448	729.78	1178.27	1.61	Si
SLV 8	215625	0.34	37262	-18601	729.78	1185.56	1.62	Si
SLV 11	215625	0.34	41938	-20935	729.78	1291.6	1.77	Si
SLV 12	215625	0.34	42245	-21089	729.78	1298.22	1.78	Si
SLV 5	215625	0.34	43204	-21568	729.78	1318.68	1.81	Si
SLV 6	215625	0.34	43511	-21721	729.78	1325.13	1.82	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 4.73 Wa = 0.03 Ta = 0.5471

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	$\alpha_0^*$	$\alpha_{lim}$	Verifica
SLV 14	-16391	-37386	439	0.883	2183.1	0.935	13.71428	5.88486	Si
SLV 13	-16185	-37059	440	0.892	2162.4	0.935	13.86513	5.88486	Si
SLV 16	-14459	-38839	383	0.981	1988.1	0.93	15.3246	5.88486	Si
SLV 15	-14254	-38513	383	0.992	1967.3	0.93	15.51239	5.88486	Si
SLV 2	-10624	-27536	-383	1.249	1602.3	0.918	19.7803	5.88486	Si
SLV 1	-10418	-27209	-383	1.268	1581.7	0.917	20.09241	5.88486	Si
SLV 4	-8692	-28989	-440	1.444	1409.6	0.91	23.07132	5.88486	Si
SLV 3	-8487	-28662	-440	1.469	1389.1	0.909	23.49542	5.88486	Si
SLV 10	-16589	-32186	218	0.885	2203.2	0.936	13.74526	2.39674	Si



Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 9	-16456	-31974	218	0.891	2189.8	0.936	13.84153	2.39674	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.79	SLU 83	Si
V_SLU	1.038	SLU 84	Si
PF_SLV	3.733	SLV 9	Si
V_SLV	1.204	SLV 11	Si
PFFP_SLV	1.489	SLV 3	Si
R_SLV	2.33	SLV 14	Si

## Maschio 264

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-7.463	-3.314	-8.433	-3.314	L4	L6	0.97	0.28	7.24	7.24	7.24			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau 0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	2	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche,  $\gamma M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon m$	$\epsilon m_{-}$	$\epsilon m_u$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 75	4.83	983.55	-11816	-0.0001118	0.0003743	0.0035	0.97	3282.07	7219.61	7219.61	7.34	No	Si
SLU 75	6.93	147.7	-13012	-0.0000857	0.0003743	0.0035	0.97	3341.3	7270.71	7270.71	49.23	No	Si
SLU 83	4.83	983.5	-12146	-0.0001143	0.0003743	0.0035	0.97	3303.4	7235.56	7235.56	7.36	No	Si
SLU 83	6.93	202.9	-13543	-0.0000918	0.0003743	0.0035	0.97	3351.53	7287.42	7287.42	35.92	No	Si
SLU 79	4.83	994.17	-11942	-0.0001132	0.0003743	0.0035	0.97	3290.68	7226.19	7226.19	7.27	No	Si
SLU 79	6.93	147.34	-13164	-0.0000868	0.0003743	0.0035	0.97	3345.23	7275.75	7275.75	49.38	No	Si
SLU 80	4.83	998.35	-11956	-0.0001135	0.0003743	0.0035	0.97	3291.56	7226.81	7226.81	7.24	No	Si
SLU 80	6.93	142.99	-13170	-0.0000866	0.0003743	0.0035	0.97	3345.38	7275.95	7275.95	50.88	No	Si
SLU 84	4.83	987.68	-12159	-0.0001146	0.0003743	0.0035	0.97	3304.19	7236.17	7236.17	7.33	No	Si
SLU 84	6.93	198.55	-13550	-0.0000917	0.0003743	0.0035	0.97	3351.59	7287.57	7287.57	36.7	No	Si
SLU 69	4.83	974.21	-11006	-0.0001053	0.0003743	0.0035	0.97	3213.44	7173.97	7173.97	7.36	No	Si
SLU 69	6.93	26.7	-11748	-0.0000719	0.0003743	0.0035	0.97	3277.17	7215.95	7215.95	270.29	No	Si
SLU 78	4.83	1006.08	-12057	-0.0001146	0.0003743	0.0035	0.97	3298.06	7231.53	7231.53	7.19	No	Si
SLU 78	6.93	144.48	-13291	-0.0000876	0.0003743	0.0035	0.97	3347.9	7279.83	7279.83	50.39	No	Si
SLU 70	4.83	978.4	-11020	-0.0001055	0.0003743	0.0035	0.97	3214.77	7174.82	7174.82	7.33	No	Si
SLU 70	6.93	22.35	-11754	-0.0000718	0.0003743	0.0035	0.97	3277.62	7216.28	7216.28	322.95	No	Si
SLU 77	4.83	1001.9	-12044	-0.0001143	0.0003743	0.0035	0.97	3297.22	7230.91	7230.91	7.22	No	Si
SLU 77	6.93	148.83	-13285	-0.0000877	0.0003743	0.0035	0.97	3347.79	7279.64	7279.64	48.91	No	Si
SLU 74	4.83	979.37	-11803	-0.0001115	0.0003743	0.0035	0.97	3281.12	7218.89	7218.89	7.37	No	Si
SLU 74	6.93	152.05	-13006	-0.0000858	0.0003743	0.0035	0.97	3341.12	7270.5	7270.5	47.82	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche,  $\gamma M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon m$	$\epsilon m_{-}$	$\epsilon m_u$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 13	4.83	-2004.58	-4745	-0.0001766	0.0005615	0.0035	0.97		6942.87	6942.87	3.46		Si
SLV 13	6.93	3847.84	-13566	-0.0002815	0.0005615	0.0035	0.97		8599.51	8599.51	2.23		Si
SLV 3	4.83	3170.24	-10978	-0.0002221	0.0005615	0.0035	0.97		8215.16	8215.16	2.59		Si
SLV 3	6.93	-3410.25	-4044	-0.0006252	0.0005615	0.0035	0.97		6748.95	6748.95	1.98		Si
SLV 1	4.83	3117.67	-10017	-0.0002253	0.0005615	0.0035	0.97		8051.34	8051.34	2.58		Si
SLV 1	6.93	-3577.81	-2636	-0.0008828	0.0005615	0.0035	0.97		6295.02	6295.02	1.76		Si
SLD 4	4.83	1845.54	-9464	-0.0001248	0.0005615	0.0035	0.97		7953.66	7953.66	4.31		Si
SLD 4	6.93	-1560.46	-6547	-0.0000985	0.0005615	0.0035	0.97		7379.76	7379.76	4.73		Si
SLV 15	4.83	-1952.01	-5706	-0.0001404	0.0005615	0.0035	0.97		7182.19	7182.19	3.68		Si
SLV 15	6.93	4015.41	-14973	-0.0002967	0.0005615	0.0035	0.97		8775.72	8775.72	2.19		Si
SLV 16	4.83	-1732.79	-6082	-0.0001115	0.0005615	0.0035	0.97		7271.92	7271.92	4.2		Si
SLV 16	6.93	3695.48	-14652	-0.0002663	0.0005615	0.0035	0.97		8737.92	8737.92	2.36		Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLD 2	4.83	1822.38	-9049	-0.0001216	0.0005615	0.0035	0.97		7878.83	7878.83	4.32		Si
SLD 2	6.93	-1632.61	-5932	-0.0001036	0.0005615	0.0035	0.97		7236.37	7236.37	4.43		Si
SLV 4	4.83	3389.45	-11354	-0.0002442	0.0005615	0.0035	0.97		8276.51	8276.51	2.44		Si
SLV 4	6.93	-3730.18	-3722	-0.000798	0.0005615	0.0035	0.97		6651.48	6651.48	1.78		Si
SLV 2	4.83	3336.88	-10393	-0.0002493	0.0005615	0.0035	0.97		8116.4	8116.4	2.43		Si
SLV 2	6.93	-3897.74	-2315	-0.001116	0.0005615	0.0035	0.97		6165.53	6165.53	1.58		Si
SLV 14	4.83	-1785.37	-5121	-0.0001292	0.0005615	0.0035	0.97		7038.4	7038.4	3.94		Si
SLV 14	6.93	3527.91	-13244	-0.0002506	0.0005615	0.0035	0.97		8556.64	8556.64	2.43		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 60	4.83	850.6	-10704	-8913	445	0.97	0.97	-32817	10833	2942	15384	8133	2474	10607	No	23.83	Si
SLU 60	6.93	204.29	-11856	-9873	-664	0.97	0.97	-36349	10833	2942	15384	8133	2474	10607	No	15.98	Si
SLU 84	4.83	987.68	-12159	-10125	530	0.97	0.97	-37279	10833	2942	15384	8133	2474	10607	No	20.02	Si
SLU 84	6.93	198.55	-13550	-11283	-691	0.97	0.97	-41542	10833	2942	15384	8133	2474	10607	No	15.34	Si
SLU 39	4.83	802.91	-10093	-8405	419	0.97	0.97	-30945	10833	2942	15384	8133	2474	10607	No	25.31	Si
SLU 39	6.93	199.73	-11407	-9498	-638	0.97	0.97	-34971	10833	2942	15384	8133	2474	10607	No	16.63	Si
SLU 63	4.83	877.31	-10959	-9125	462	0.97	0.97	-33598	10833	2942	15384	8133	2474	10607	No	22.94	Si
SLU 63	6.93	196.72	-12141	-10110	-657	0.97	0.97	-37223	10833	2942	15384	8133	2474	10607	No	16.14	Si
SLU 81	4.83	960.97	-11905	-9913	513	0.97	0.97	-36498	10833	2942	15384	8133	2474	10607	No	20.69	Si
SLU 81	6.93	206.12	-13264	-11045	-698	0.97	0.97	-40667	10833	2942	15384	8133	2474	10607	No	15.2	Si
SLU 82	4.83	965.15	-11918	-9924	517	0.97	0.97	-36539	10833	2942	15384	8133	2474	10607	No	20.51	Si
SLU 82	6.93	201.77	-13271	-11051	-691	0.97	0.97	-40686	10833	2942	15384	8133	2474	10607	No	15.36	Si
SLU 62	4.83	873.13	-10945	-9114	458	0.97	0.97	-33557	10833	2942	15384	8133	2474	10607	No	23.16	Si
SLU 62	6.93	201.07	-12135	-10105	-664	0.97	0.97	-37204	10833	2942	15384	8133	2474	10607	No	15.96	Si
SLU 83	4.83	983.5	-12146	-10114	525	0.97	0.97	-37238	10833	2942	15384	8133	2474	10607	No	20.19	Si
SLU 83	6.93	202.9	-13543	-11278	-699	0.97	0.97	-41523	10833	2942	15384	8133	2474	10607	No	15.18	Si
SLU 61	4.83	854.78	-10717	-8925	450	0.97	0.97	-32858	10833	2942	15384	8133	2474	10607	No	23.59	Si
SLU 61	6.93	199.94	-11862	-9878	-656	0.97	0.97	-36368	10833	2942	15384	8133	2474	10607	No	16.16	Si
SLU 41	4.83	825.44	-10334	-8606	432	0.97	0.97	-31684	10833	2942	15384	8133	2474	10607	No	24.56	Si
SLU 41	6.93	196.51	-11686	-9731	-639	0.97	0.97	-35827	10833	2942	15384	8133	2474	10607	No	16.61	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 11	4.83	-59.07	-8739	-7277	-340	0.97	0.97	-26793	15775	4285	15384	12200	2474	14673		43.14	Si
SLV 11	6.93	1555.27	-12733	-10603	-3358	0.97	0.97	-39038	16250	4414	15384	12200	2474	14673		4.37	Si
SLV 4	4.83	3389.45	-11354	-9455	3411	0.97	0.5595	-59066	16250	2546	15384	12200	2474	14673		4.3	Si
SLV 4	6.93	-3730.18	-3722	-3100	6187	0.97	0	-61908	16250	0	15384	12200	2474	14673		2.37	Si
SLV 1	4.83	3117.67	-10017	-8341	3084	0.97	0.5213	-54711	16250	2372	15384	12200	2474	14673		4.76	Si
SLV 1	6.93	-3577.81	-2636	-2195	6145	0.97	0	0	16250	0	15384	12200	2474	14673		2.39	Si
SLV 2	4.83	3336.88	-10393	-8654	3301	0.97	0.4918	-59146	16250	2238	15384	12200	2474	14673		4.45	Si
SLV 2	6.93	-3897.74	-2315	-1928	6728	0.97	0	0	16250	0	15384	12200	2474	14673		2.18	Si
SLD 15	4.83	-437.51	-7050	-5871	-839	0.97	0.97	-21614	14740	4003	15384	12200	2474	14673		17.49	Si
SLD 15	6.93	1750.27	-11356	-9456	-3336	0.97	0.97	0	16250	4414	15384	12200	2474	14673		4.4	Si
SLV 16	4.83	-1732.79	-6082	-5065	-2283	0.97	0.6004	-29519	16250	2732	15384	12200	2474	14673		6.43	Si
SLV 16	6.93	3695.48	-14652	-12201	-6790	0.97	0.6984	-63832	16250	3178	15384	12200	2474	14673		2.16	Si
SLV 13	4.83	-2004.58	-4745	-3951	-2610	0.97	0.1876	-38955	16250	854	15384	12200	2474	14673		5.62	Si
SLV 13	6.93	3847.84	-13566	-11296	-6832	0.97	0.6041	-66851	16250	2749	15384	12200	2474	14673		2.15	Si
SLV 15	4.83	-1952.01	-5706	-4751	-2500	0.97	0.4287	-35045	16250	1951	15384	12200	2474	14673		5.87	Si
SLV 15	6.93	4015.41	-14973	-12468	-7373	0.97	0.6505	-69622	16250	2960	15384	12200	2474	14673		1.99	Si
SLV 14	4.83	-1785.37	-5121	-4264	-2393	0.97	0.4092	-32266	16250	1862	15384	12200	2474	14673		6.13	Si
SLV 14	6.93	3527.91	-13244	-11029	-6249	0.97	0.6559	-60772	16250	2984	15384	12200	2474	14673		2.35	Si
SLV 3	4.83	3170.24	-10978	-9141	3194	0.97	0.5887	-54809	16250	2678	15384	12200	2474	14673		4.59	Si
SLV 3	6.93	-3410.25	-4044	-3367	5605	0.97	0	-61317	16250	0	15384	12200	2474	14673		2.62	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 4.73 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 13	179667	0.34	13073	-3551	375.24	454.56	1.21	Si
SLV 14	179667	0.34	14428	-3919	375.24	496.8	1.32	Si
SLV 15	179667	0.34	15422	-4189	375.24	527.2	1.4	Si
SLV 16	179667	0.34	16777	-4557	375.24	567.86	1.51	Si
SLV 9	179667	0.34	16820	-4568	375.24	569.14	1.52	Si
SLV 10	179667	0.34	17696	-4806	375.24	594.9	1.59	Si
SLV 5	179667	0.34	22175	-6023	375.24	720.76	1.92	Si
SLV 6	179667	0.34	23050	-6261	375.24	744.18	1.98	Si
SLV 11	179667	0.34	24649	-6695	375.24	785.99	2.09	Si
SLV 12	179667	0.34	25524	-6932	375.24	808.33	2.15	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 4.73 Wa = 0.05 Ta = 0.3126

Comb.	N top	N base	V orto	$\sigma_0$	M*	e*	a0*	aLim	Verifica
SLV 4	-8487	-10685	76	0.546	1144.3	0.933	8.50926	15.21903	No
SLV 3	-8257	-10290	76	0.559	1121	0.932	8.70782	15.21903	No
SLV 2	-7626	-9523	114	0.591	1057.4	0.929	9.24061	15.21903	No
SLV 1	-7396	-9128	115	0.605	1034.2	0.928	9.47757	15.21903	No
SLV 16	-3972	-10089	-117	0.954	692	0.904	15.34013	15.21903	Si
SLV 15	-3742	-9694	-117	0.993	669.3	0.902	16.00311	15.21903	Si
SLV 14	-3111	-8927	-78	1.127	607.7	0.896	18.26515	15.21903	Si



Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 13	-2881	-8532	-78	1.181	585.5	0.895	19.19433	15.21903	Si
SLV 8	-7871	-11762	-37	0.584	1082	0.93	9.12735	5.02815	Si
SLV 7	-7722	-11507	-37	0.593	1067	0.93	9.27369	5.02815	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

**Tabella dei coefficienti di sicurezza minimi**

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	7.188	SLU 78	Si
V_SLU	15.182	SLU 83	Si
PF_SLV	1.582	SLV 2	Si
V_SLV	1.99	SLV 15	Si
PFFP_SLV	1.211	SLV 13	Si
R_SLV	0.559	SLV 4	No

**Maschio 265**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati geometrici**

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-5.963	-3.314	-6.463	-3.314	L4	L6	0.5	0.28	7.24	7.24	7.24			

**Caratteristiche del materiale**

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	t0	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

**Materiale per FRCM**

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

**Rinforzo a matrice inorganica**

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γ,F,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	2	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

**Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche,  $\gamma_M = 3$**

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 77	6.83	64.21	-7792	-0.0001053	0.0003743	0.0035	0.5	883.08	1940.62	1940.62	30.23	No	Si
SLU 77	7.63	-422.28	-8186	-0.0001742	0.0003743	0.0035	0.5	871.16	1943.4	1943.4	4.6	No	Si
SLU 83	6.83	60.1	-7892	-0.0001061	0.0003743	0.0035	0.5	880.59	1940.64	1940.64	32.29	No	Si
SLU 83	7.63	-414.9	-8297	-0.0001749	0.0003743	0.0035	0.5	866.85	1943.04	1943.04	4.68	No	Si
SLU 79	6.83	63.64	-7722	-0.0001042	0.0003743	0.0035	0.5	884.63	1940.56	1940.56	30.49	No	Si
SLU 79	7.63	-417.79	-8111	-0.000172	0.0003743	0.0035	0.5	873.85	1943.59	1943.59	4.65	No	Si
SLU 76	6.83	67.59	-7553	-0.0001023	0.0003743	0.0035	0.5	887.66	1939.61	1939.61	28.7	No	Si
SLU 76	7.63	-413.56	-7957	-0.0001684	0.0003743	0.0035	0.5	878.76	1943.84	1943.84	4.7	No	Si
SLU 70	6.83	77.96	-6989	-0.0000958	0.0003743	0.0035	0.5	890.51	1934.21	1934.21	24.81	No	Si
SLU 70	7.63	-413.76	-7363	-0.0001578	0.0003743	0.0035	0.5	889.87	1941.45	1941.45	4.69	No	Si
SLU 84	6.83	61.39	-7896	-0.0001064	0.0003743	0.0035	0.5	880.46	1940.63	1940.63	31.61	No	Si
SLU 84	7.63	-416.76	-8307	-0.0001754	0.0003743	0.0035	0.5	866.4	1943	1943	4.66	No	Si
SLU 80	6.83	64.93	-7727	-0.0001044	0.0003743	0.0035	0.5	884.53	1940.57	1940.57	29.89	No	Si
SLU 80	7.63	-419.65	-8122	-0.0001725	0.0003743	0.0035	0.5	873.48	1943.57	1943.57	4.63	No	Si
SLU 78	6.83	65.49	-7797	-0.0001056	0.0003743	0.0035	0.5	882.97	1940.62	1940.62	29.63	No	Si
SLU 78	7.63	-424.14	-8197	-0.0001747	0.0003743	0.0035	0.5	870.76	1943.37	1943.37	4.58	No	Si
SLU 74	6.83	66.01	-7615	-0.000103	0.0003743	0.0035	0.5	886.66	1940.03	1940.03	29.39	No	Si
SLU 74	7.63	-414.94	-8014	-0.0001697	0.0003743	0.0035	0.5	877.04	1943.77	1943.77	4.68	No	Si
SLU 75	6.83	67.29	-7620	-0.0001032	0.0003743	0.0035	0.5	886.58	1940.06	1940.06	28.83	No	Si
SLU 75	7.63	-416.8	-8025	-0.0001702	0.0003743	0.0035	0.5	876.7	1943.76	1943.76	4.66	No	Si

**Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche,  $\gamma_M = 2$**

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 15	6.83	-667.25	-9341	-0.0002159	0.0005615	0.0035	0.5		2392.33	2392.33	3.59		Si
SLV 15	7.63	483.74	-7086	-0.0001522	0.0005615	0.0035	0.5		2289.14	2289.14	4.73		Si
SLD 2	6.83	366.86	-3284	-0.0000879	0.0005615	0.0035	0.5		1944.93	1944.93	5.3		Si
SLD 2	7.63	-629.29	-4653	-0.0001556	0.0005615	0.0035	0.5		2093.8	2093.8	3.33		Si
SLD 3	6.83	316.64	-3921	-0.000086	0.0005615	0.0035	0.5		2014.83	2014.83	6.36		Si
SLD 3	7.63	-597.57	-5145	-0.0001491	0.0005615	0.0035	0.5		2139.08	2139.08	3.58		Si
SLD 4	6.83	349.42	-3794	-0.0000894	0.0005615	0.0035	0.5		2001.17	2001.17	5.73		Si
SLD 4	7.63	-635.01	-5132	-0.0001581	0.0005615	0.0035	0.5		2137.94	2137.94	3.37		Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLD 1	6.83	334.08	-3411	-0.000083	0.0005615	0.0035	0.5		1959.24	1959.24	5.86		Si
SLD 1	7.63	-591.84	-4666	-0.0001455	0.0005615	0.0035	0.5		2095	2095	3.54		Si
SLV 1	6.83	705.34	-1162	-0.0005459	0.0005615	0.0035	0.5		1627.19	1627.19	2.31		Si
SLV 1	7.63	-988.78	-3717	-0.0004588	0.0005615	0.0035	0.5		1997.3	1997.3	2.02		Si
SLV 6	6.83	350.04	-2020	-0.0000906	0.0005615	0.0035	0.5		1778.74	1778.74	5.08		Si
SLV 6	7.63	-526.21	-3221	-0.0001354	0.0005615	0.0035	0.5		1942.37	1942.37	3.69		Si
SLV 4	6.83	740.63	-2025	-0.0004254	0.0005615	0.0035	0.5		1779.39	1779.39	2.4		Si
SLV 4	7.63	-1088.48	-4776	-0.0004412	0.0005615	0.0035	0.5		2105.26	2105.26	1.93		Si
SLV 3	6.83	664.27	-2322	-0.0003019	0.0005615	0.0035	0.5		1822.54	1822.54	2.74		Si
SLV 3	7.63	-1001.28	-4806	-0.0003569	0.0005615	0.0035	0.5		2108.02	2108.02	2.11		Si
SLV 2	6.83	781.69	-864	-0.0007496	0.0005615	0.0035	0.5		1561.11	1561.11	2		Si
SLV 2	7.63	-1075.99	-3687	-0.0005691	0.0005615	0.0035	0.5		1994.09	1994.09	1.85		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 84	6.83	61.39	-7896	-6575	153	0.5	0.5	-46967	10833	1517	7930	4192	1275	5467	No	35.78	Si
SLU 84	7.63	-416.76	-8307	-6918	1072	0.5	0.5	-49411	10833	1517	7930	4192	1275	5467	No	5.1	Si
SLU 83	6.83	60.1	-7892	-6571	148	0.5	0.5	-46939	10833	1517	7930	4192	1275	5467	No	36.97	Si
SLU 83	7.63	-414.9	-8297	-6909	1069	0.5	0.5	-49347	10833	1517	7930	4192	1275	5467	No	5.12	Si
SLU 80	6.83	64.93	-7727	-6434	182	0.5	0.5	-45960	10833	1517	7930	4192	1275	5467	No	30.08	Si
SLU 80	7.63	-419.65	-8122	-6763	1039	0.5	0.5	-48308	10833	1517	7930	4192	1275	5467	No	5.26	Si
SLU 81	6.83	61.91	-7714	-6424	151	0.5	0.5	-45885	10833	1517	7930	4192	1275	5467	No	36.26	Si
SLU 81	7.63	-407.57	-8124	-6765	1058	0.5	0.5	-48324	10833	1517	7930	4192	1275	5467	No	5.17	Si
SLU 75	6.83	67.29	-7620	-6345	187	0.5	0.5	-45322	10833	1517	7930	4192	1275	5467	No	29.16	Si
SLU 75	7.63	-416.8	-8025	-6682	1038	0.5	0.5	-47731	10833	1517	7930	4192	1275	5467	No	5.27	Si
SLU 78	6.83	65.49	-7797	-6493	185	0.5	0.5	-46376	10833	1517	7930	4192	1275	5467	No	29.62	Si
SLU 78	7.63	-424.14	-8197	-6826	1049	0.5	0.5	-48755	10833	1517	7930	4192	1275	5467	No	5.21	Si
SLU 79	6.83	63.64	-7722	-6430	177	0.5	0.5	-45932	10833	1517	7930	4192	1275	5467	No	30.91	Si
SLU 79	7.63	-417.79	-8111	-6754	1036	0.5	0.5	-48244	10833	1517	7930	4192	1275	5467	No	5.28	Si
SLU 77	6.83	64.21	-7792	-6489	180	0.5	0.5	-46348	10833	1517	7930	4192	1275	5467	No	30.43	Si
SLU 77	7.63	-422.28	-8186	-6817	1045	0.5	0.5	-48691	10833	1517	7930	4192	1275	5467	No	5.23	Si
SLU 82	6.83	63.19	-7719	-6428	156	0.5	0.5	-45913	10833	1517	7930	4192	1275	5467	No	35.12	Si
SLU 82	7.63	-409.43	-8135	-6774	1061	0.5	0.5	-48388	10833	1517	7930	4192	1275	5467	No	5.15	Si
SLU 74	6.83	66.01	-7615	-6341	183	0.5	0.5	-45295	10833	1517	7930	4192	1275	5467	No	29.95	Si
SLU 74	7.63	-414.94	-8014	-6673	1034	0.5	0.5	-47667	10833	1517	7930	4192	1275	5467	No	5.29	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 3	6.83	664.27	-2322	-1933	2731	0.5	0	-50391	16250	0	7930	6288	1275	7563		2.77	Si
SLV 3	7.63	-1001.28	-4806	-4002	1140	0.5	0.1249	-71822	16250	568	7930	6288	1275	7563		6.64	Si
SLV 13	6.83	-626.19	-8181	-6812	-2691	0.5	0.5	-48657	16250	2275	7930	6288	1275	7563		2.81	Si
SLV 13	7.63	496.24	-5997	-4994	183	0.5	0.5	-36261	16250	2275	7930	6288	1275	7563		41.36	Si
SLV 1	6.83	705.34	-1162	-967	2970	0.5	0	-43101	16250	0	7930	6288	1275	7563		2.55	Si
SLV 1	7.63	-988.78	-3717	-3095	1122	0.5	0	-73507	16250	0	7930	6288	1275	7563		6.74	Si
SLV 16	6.83	-590.9	-9043	-7531	-2620	0.5	0.5	-53790	16250	2275	7930	6288	1275	7563		2.89	Si
SLV 16	7.63	396.53	-7056	-5876	295	0.5	0.5	-41969	16250	2275	7930	6288	1275	7563		25.64	Si
SLV 14	6.83	-549.84	-7883	-6565	-2382	0.5	0.5	-46890	16250	2275	7930	6288	1275	7563		3.18	Si
SLV 14	7.63	409.03	-5968	-4969	277	0.5	0.5	-35495	16250	2275	7930	6288	1275	7563		27.31	Si
SLV 2	6.83	781.69	-864	-720	3279	0.5	0	0	16250	0	7930	6288	1275	7563		2.31	Si
SLV 2	7.63	-1075.99	-3687	-3071	1216	0.5	0	-79090	16250	0	7930	6288	1275	7563		6.22	Si
SLV 15	6.83	-667.25	-9341	-7778	-2930	0.5	0.5	-55557	16250	2275	7930	6288	1275	7563		2.58	Si
SLV 15	7.63	483.74	-7086	-5900	201	0.5	0.5	-42145	16250	2275	7930	6288	1275	7563		37.64	Si
SLV 6	6.83	350.04	-2020	-1682	1521	0.5	0.2302	-23454	15248	983	7930	6288	1275	7563		4.97	Si
SLV 6	7.63	-526.21	-3221	-2682	849	0.5	0.2599	-34651	16250	1183	7930	6288	1275	7563		8.9	Si
SLD 2	6.83	366.86	-3284	-2734	1501	0.5	0.4148	-23739	15172	1762	7930	6288	1275	7563		5.04	Si
SLD 2	7.63	-629.29	-4653	-3875	925	0.5	0.3443	-40271	16250	1567	7930	6288	1275	7563		8.18	Si
SLV 4	6.83	740.63	-2025	-1686	3040	0.5	0	-53873	16250	0	7930	6288	1275	7563		2.49	Si
SLV 4	7.63	-1088.48	-4776	-3977	1234	0.5	0.0663	-79469	16250	301	7930	6288	1275	7563		6.13	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 4.73 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 2	179667	0.34	15675	-2194	193.42	275.69	1.43	Si
SLV 1	179667	0.34	15725	-2202	193.42	276.48	1.43	Si
SLV 6	179667	0.34	15999	-2240	193.42	280.73	1.45	Si
SLV 5	179667	0.34	16032	-2244	193.42	281.24	1.45	Si
SLV 4	179667	0.34	19812	-2774	193.42	337.94	1.75	Si
SLV 3	179667	0.34	19863	-2781	193.42	338.67	1.75	Si
SLV 10	179667	0.34	20407	-2857	193.42	346.53	1.79	Si
SLV 9	179667	0.34	20440	-2862	193.42	347	1.79	Si
SLV 8	179667	0.34	29790	-4171	193.42	469.99	2.43	Si
SLV 7	179667	0.34	29823	-4175	193.42	470.38	2.43	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 4.73 Wa = 0.05 Ta = 0.3126

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	$\alpha_0^*$	$\alpha_{Lim}$	Verifica
SLV 15	-4364	-5697	-6	0.554	588.7	0.933	8.62458	15.21903	No
SLV 16	-4277	-5924	-6	0.563	580	0.932	8.77108	15.21903	No
SLV 13	-3749	-6564	-3	0.625	526.7	0.927	9.79907	15.21903	No





Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 14	-3663	-6791	-3	0.637	518	0.926	9.98901	15.21903	No
SLV 3	-2131	-6203	-14	0.944	364.9	0.905	15.15134	15.21903	No
SLV 4	-2045	-6430	-14	0.971	356.4	0.904	15.60946	15.21903	Si
SLV 1	-1516	-7070	-10	1.179	304.8	0.895	19.14148	15.21903	Si
SLV 2	-1430	-7297	-10	1.222	296.5	0.894	19.86512	15.21903	Si
SLV 11	-4284	-4904	-13	0.561	580.7	0.933	8.7393	5.02815	Si
SLV 12	-4228	-5050	-13	0.567	575	0.932	8.83614	5.02815	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	4.582	SLU 78	Si
V_SLU	5.101	SLU 84	Si
PF_SLV	1.853	SLV 2	Si
V_SLV	2.307	SLV 2	Si
PFFP_SLV	1.425	SLV 2	Si
R_SLV	0.567	SLV 15	No

Maschio 266

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-3.233	-3.314	-5.463	-3.314	L4	L6	2.23	0.28	7.24	7.24	7.24			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau 0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim.conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim.conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	2	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche,  $\gamma M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon m$	$\epsilon m_{-}$	$\epsilon m_u$	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 74	6.83	2390.25	-27462	-0.0000906	0.0003743	0.0035	2.23	17392.25	38215.11	38215.11	15.99	No	Si
SLU 74	7.63	367.36	-23758	-0.0000641	0.0003743	0.0035	2.23	16590.04	37701.24	37701.24	102.63	No	Si
SLU 82	6.83	2388.58	-27736	-0.0000914	0.0003743	0.0035	2.23	17432.5	38244.54	38244.54	16.01	No	Si
SLU 82	7.63	349.91	-23999	-0.0000647	0.0003743	0.0035	2.23	16656.85	37739.14	37739.14	107.85	No	Si
SLU 81	6.83	2383.85	-27697	-0.0000913	0.0003743	0.0035	2.23	17426.9	38240.37	38240.37	16.04	No	Si
SLU 81	7.63	358.86	-23969	-0.0000647	0.0003743	0.0035	2.23	16648.41	37734.31	37734.31	105.15	No	Si
SLU 79	6.83	2422.47	-27791	-0.0000919	0.0003743	0.0035	2.23	17440.22	38250.35	38250.35	15.79	No	Si
SLU 79	7.63	413.89	-24079	-0.0000654	0.0003743	0.0035	2.23	16678.43	37751.55	37751.55	91.21	No	Si
SLU 83	6.83	2436.3	-28309	-0.0000936	0.0003743	0.0035	2.23	17508.14	38304.34	38304.34	15.72	No	Si
SLU 83	7.63	405.53	-24547	-0.0000667	0.0003743	0.0035	2.23	16801.22	37823.88	37823.88	93.27	No	Si
SLU 84	6.83	2441.04	-28348	-0.0000938	0.0003743	0.0035	2.23	17512.89	38308.34	38308.34	15.69	No	Si
SLU 84	7.63	396.58	-24578	-0.0000667	0.0003743	0.0035	2.23	16809.03	37828.59	37828.59	95.39	No	Si
SLU 77	6.83	2442.7	-28074	-0.0000929	0.0003743	0.0035	2.23	17478.53	38280.12	38280.12	15.67	No	Si
SLU 77	7.63	414.03	-24337	-0.0000661	0.0003743	0.0035	2.23	16747.12	37791.64	37791.64	91.28	No	Si
SLU 78	6.83	2447.44	-28113	-0.0000931	0.0003743	0.0035	2.23	17483.61	38284.19	38284.19	15.64	No	Si
SLU 78	7.63	405.08	-24368	-0.0000662	0.0003743	0.0035	2.23	16755.16	37796.39	37796.39	93.31	No	Si
SLU 75	6.83	2394.98	-27501	-0.0000908	0.0003743	0.0035	2.23	17398.16	38219.35	38219.35	15.96	No	Si
SLU 75	7.63	358.41	-23789	-0.0000641	0.0003743	0.0035	2.23	16598.71	37706.11	37706.11	105.2	No	Si
SLU 80	6.83	2427.2	-27830	-0.000092	0.0003743	0.0035	2.23	17445.68	38254.5	38254.5	15.76	No	Si
SLU 80	7.63	404.94	-24110	-0.0000654	0.0003743	0.0035	2.23	16686.75	37756.36	37756.36	93.24	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche,  $\gamma M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon m$	$\epsilon m_{-}$	$\epsilon m_u$	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 13	6.83	-255.37	-16767	-0.0000428	0.0005615	0.0035	2.23		39845.85	39845.85	156.03		Si
SLV 13	7.63	4418.33	-16432	-0.0000702	0.0005615	0.0035	2.23		39669.01	39669.01	8.98		Si
SLV 15	6.83	-168.98	-20764	-0.0000526	0.0005615	0.0035	2.23		41637.15	41637.15	246.4		Si
SLV 15	7.63	4637.29	-20072	-0.0000816	0.0005615	0.0035	2.23		41317.79	41317.79	8.91		Si





Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLD 2	6.83	2438.55	-17530	-0.0000596	0.0005615	0.0035	2.23		40178.57	40178.57	16.48		Si
SLD 2	7.63	-1706.14	-14042	-0.0000455	0.0005615	0.0035	2.23		38431.8	38431.8	22.53		Si
SLD 4	6.83	2477.47	-19284	-0.0000645	0.0005615	0.0035	2.23		40970.45	40970.45	16.54		Si
SLD 4	7.63	-1611.1	-15642	-0.000049	0.0005615	0.0035	2.23		39295.16	39295.16	24.39		Si
SLV 2	6.83	3486.13	-16266	-0.0000634	0.0005615	0.0035	2.23		39591.38	39591.38	11.36		Si
SLV 2	7.63	-4249.4	-11654	-0.0000564	0.0005615	0.0035	2.23		37070.45	37070.45	8.72		Si
SLV 3	6.83	3357.36	-19963	-0.0000724	0.0005615	0.0035	2.23		41269.72	41269.72	12.29		Si
SLV 3	7.63	-3456.96	-15324	-0.0000607	0.0005615	0.0035	2.23		39126.21	39126.21	11.32		Si
SLV 1	6.83	3270.98	-15966	-0.0000611	0.0005615	0.0035	2.23		39446.42	39446.42	12.06		Si
SLV 1	7.63	-3675.93	-11683	-0.0000526	0.0005615	0.0035	2.23		37087.34	37087.34	10.09		Si
SLV 14	6.83	-40.22	-17067	-0.0000421	0.0005615	0.0035	2.23		39984.94	39984.94	994.26		Si
SLV 14	7.63	3844.86	-16403	-0.0000662	0.0005615	0.0035	2.23		39655.59	39655.59	10.31		Si
SLV 16	6.83	46.17	-21063	-0.0000525	0.0005615	0.0035	2.23		41746.91	41746.91	904.29		Si
SLV 16	7.63	4063.82	-20044	-0.0000775	0.0005615	0.0035	2.23		41305.27	41305.27	10.16		Si
SLV 4	6.83	3572.51	-20262	-0.0000747	0.0005615	0.0035	2.23		41400.67	41400.67	11.59		Si
SLV 4	7.63	-4030.43	-15295	-0.0000645	0.0005615	0.0035	2.23		39110.96	39110.96	9.7		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 74	6.83	2390.25	-27462	-22868	6203	2.23	2.23	-36624	10833	6764	35366	18697	5686	24384	No	3.93	Si
SLU 74	7.63	367.36	-23758	-19784	4473	2.23	2.23	-31685	10833	6764	35366	18697	5686	24384	No	5.45	Si
SLU 81	6.83	2383.85	-27697	-23064	6244	2.23	2.23	-36937	10833	6764	35366	18697	5686	24384	No	3.91	Si
SLU 81	7.63	358.86	-23969	-19959	4499	2.23	2.23	-31965	10833	6764	35366	18697	5686	24384	No	5.42	Si
SLU 75	6.83	2394.98	-27501	-22901	6233	2.23	2.23	-36676	10833	6764	35366	18697	5686	24384	No	3.91	Si
SLU 75	7.63	358.41	-23789	-19810	4495	2.23	2.23	-31726	10833	6764	35366	18697	5686	24384	No	5.42	Si
SLU 78	6.83	2447.44	-28113	-23410	6292	2.23	2.23	-37493	10833	6764	35366	18697	5686	24384	No	3.88	Si
SLU 78	7.63	405.08	-24368	-20292	4533	2.23	2.23	-32498	10833	6764	35366	18697	5686	24384	No	5.38	Si
SLU 82	6.83	2388.58	-27736	-23096	6274	2.23	2.23	-36990	10833	6764	35366	18697	5686	24384	No	3.89	Si
SLU 82	7.63	349.91	-23999	-19985	4521	2.23	2.23	-32006	10833	6764	35366	18697	5686	24384	No	5.39	Si
SLU 80	6.83	2427.2	-27830	-23174	6228	2.23	2.23	-37115	10833	6764	35366	18697	5686	24384	No	3.92	Si
SLU 80	7.63	404.94	-24110	-20076	4488	2.23	2.23	-32153	10833	6764	35366	18697	5686	24384	No	5.43	Si
SLU 84	6.83	2441.04	-28348	-23606	6333	2.23	2.23	-37806	10833	6764	35366	18697	5686	24384	No	3.85	Si
SLU 84	7.63	396.58	-24578	-20467	4559	2.23	2.23	-32778	10833	6764	35366	18697	5686	24384	No	5.35	Si
SLU 79	6.83	2422.47	-27791	-23142	6198	2.23	2.23	-37063	10833	6764	35366	18697	5686	24384	No	3.93	Si
SLU 79	7.63	413.89	-24079	-20051	4466	2.23	2.23	-32112	10833	6764	35366	18697	5686	24384	No	5.46	Si
SLU 83	6.83	2346.3	-28309	-23573	6303	2.23	2.23	-37754	10833	6764	35366	18697	5686	24384	No	3.87	Si
SLU 83	7.63	405.53	-24547	-20441	4537	2.23	2.23	-32737	10833	6764	35366	18697	5686	24384	No	5.37	Si
SLU 77	6.83	2442.7	-28074	-23378	6262	2.23	2.23	-37441	10833	6764	35366	18697	5686	24384	No	3.89	Si
SLU 77	7.63	414.03	-24337	-20266	4511	2.23	2.23	-32457	10833	6764	35366	18697	5686	24384	No	5.41	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 2	6.83	3486.13	-16266	-13545	15911	2.23	2.23	-21693	14755	9213	35366	28046	5686	33732		2.12	Si
SLV 2	7.63	-4249.4	-11654	-9705	12018	2.23	2.23	0	0	0	35366	28046	5686	33732		2.81	Si
SLD 4	6.83	2477.47	-19284	-16058	8887	2.23	2.23	-25718	15560	9716	35366	28046	5686	33732		3.8	Si
SLD 4	7.63	-1611.1	-15642	-13026	6887	2.23	2.23	-20861	14589	9109	35366	28046	5686	33732		4.9	Si
SLV 3	6.83	3357.36	-19963	-16623	13462	2.23	2.23	-26623	15741	9829	35366	28046	5686	33732		2.51	Si
SLV 3	7.63	-3456.96	-15324	-12760	10702	2.23	2.23	-20436	14504	9056	35366	28046	5686	33732		3.15	Si
SLV 5	6.83	1974.07	-11637	-9691	8561	2.23	2.23	-15520	13521	8442	35366	28046	5686	33732		3.94	Si
SLV 5	7.63	-1199.93	-9092	-7571	5485	2.23	2.23	-12126	12842	8018	35366	28046	5686	33732		6.15	Si
SLD 1	6.83	2346.16	-17402	-14491	8654	2.23	2.23	-23207	15058	9402	35366	28046	5686	33732		3.9	Si
SLD 1	7.63	-1459.89	-14054	-11703	6440	2.23	2.23	-18743	14165	8845	35366	28046	5686	33732		5.24	Si
SLV 1	6.83	3270.98	-15966	-13295	14415	2.23	2.23	-21293	14675	9163	35366	28046	5686	33732		2.34	Si
SLV 1	7.63	-3675.93	-11683	-9728	10848	2.23	2.23	-15581	13533	8450	35366	28046	5686	33732		3.11	Si
SLD 2	6.83	2438.55	-17530	-14598	9297	2.23	2.23	-23379	15092	9424	35366	28046	5686	33732		3.63	Si
SLD 2	7.63	-1706.14	-14042	-11693	6943	2.23	2.23	-18727	14162	8843	35366	28046	5686	33732		4.86	Si
SLV 6	6.83	2113.03	-11831	-9852	9527	2.23	2.23	-15778	13572	8474	35366	28046	5686	33732		3.54	Si
SLV 6	7.63	-1570.32	-9074	-7556	6241	2.23	2.23	-12101	12837	8015	35366	28046	5686	33732		5.41	Si
SLV 4	6.83	3572.51	-20262	-16873	14958	2.23	2.23	-27023	15821	9879	35366	28046	5686	33732		2.26	Si
SLV 4	7.63	-4030.43	-15295	-12736	11872	2.23	2.23	-20398	14496	9051	35366	28046	5686	33732		2.84	Si
SLD 3	6.83	2385.09	-19155	-15951	8245	2.23	2.23	-25546	15526	9694	35366	28046	5686	33732		4.09	Si
SLD 3	7.63	-1364.85	-15655	-13036	6384	2.23	2.23	-20878	14592	9111	35366	28046	5686	33732		5.28	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 4.73 Wa 0.05 denominatore 8  $\gamma M = 2$

Comb.	fd	Sa	$\sigma 0$	N	M	Mc	Coeff.s.	Verifica
SLV 5	179667	0.34	15472	-9661	862.65	1215.47	1.41	Si
SLV 6	179667	0.34	15678	-9789	862.65	1229.77	1.43	Si
SLD 1	179667	0.34	17803	-11116	862.65	1374.86	1.59	Si
SLV 9	179667	0.34	18087	-11293	862.65	1393.81	1.62	Si
SLV 2	179667	0.34	18122	-11315	862.65	1396.13	1.62	Si
SLV 10	179667	0.34	18292	-11422	862.65	1407.5	1.63	Si
SLV 3	179667	0.34	22465	-14027	862.65	1674.89	1.94	Si
SLV 4	179667	0.34	22783	-14226	862.65	1694.46	1.96	Si
SLV 13	179667	0.34	26519	-16558	862.65	1915.63	2.22	Si
SLV 14	179667	0.34	26837	-16757	862.65	1933.73	2.24	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 4.73 Wa = 0.05 Ta = 0.3126



Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 15	-16061	-21225	38	0.644	2282.7	0.925	10.10835	15.21903	No
SLV 16	-16028	-21276	38	0.645	2279.3	0.925	10.12531	15.21903	No
SLV 13	-13154	-18428	-345	0.731	1990.7	0.917	11.58558	15.21903	No
SLV 14	-13121	-18480	-344	0.733	1987.4	0.917	11.60868	15.21903	No
SLV 3	-12435	-9329	342	0.762	1918.9	0.915	12.10834	15.21903	No
SLV 4	-12402	-9381	342	0.764	1915.6	0.915	12.13329	15.21903	No
SLV 1	-9528	-6533	-40	0.943	1629.8	0.905	15.14913	15.21903	No
SLV 2	-9495	-6585	-40	0.946	1626.5	0.905	15.18748	15.21903	No
SLV 11	-18179	-20333	590	0.559	2496	0.93	8.73721	5.02815	Si
SLV 12	-18157	-20366	590	0.56	2493.9	0.93	8.7457	5.02815	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	15.643	SLU 78	Si
V_SLU	3.85	SLU 84	Si
PF_SLV	8.724	SLV 2	Si
V_SLV	2.12	SLV 2	Si
PFFP_SLV	1.409	SLV 5	Si
R_SLV	0.664	SLV 15	No

Maschio 267

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-0.133	-3.314	-2.233	-3.314	L4	L6	2.1	0.28	7.24	7.24	7.24			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fk	fvk0	fmedio	$\tau 0$	fv0	$\mu$	$\phi$	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha t$	$\alpha$	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	2	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche,  $\gamma M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon m$	$\epsilon m_{-}$	$\epsilon m_u$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 83	2.01	142.03	-21200	-0.000059	0.0003743	0.0035	2.1	14377.24	33175.87	33175.87	233.59	No	Si
SLU 83	3.91	800.71	-20199	-0.0000614	0.0003743	0.0035	2.1	14052.95	32914.89	32914.89	41.11	No	Si
SLU 62	2.01	129.27	-19426	-0.0000536	0.0003743	0.0035	2.1	13778.51	32706.18	32706.18	253	No	Si
SLU 62	3.91	751.56	-18364	-0.0000555	0.0003743	0.0035	2.1	13367.31	32402.81	32402.81	43.11	No	Si
SLU 77	2.01	180.1	-21084	-0.000059	0.0003743	0.0035	2.1	14341.51	33146.21	33146.21	184.04	No	Si
SLU 77	3.91	784.1	-20035	-0.0000608	0.0003743	0.0035	2.1	13996.47	32871.14	32871.14	41.92	No	Si
SLU 80	2.01	180.6	-20916	-0.0000585	0.0003743	0.0035	2.1	14288.89	33102.97	33102.97	183.3	No	Si
SLU 80	3.91	775.85	-19869	-0.0000602	0.0003743	0.0035	2.1	13938.62	32826.77	32826.77	42.31	No	Si
SLU 63	2.01	139.88	-19448	-0.0000538	0.0003743	0.0035	2.1	13786.65	32712.24	32712.24	233.85	No	Si
SLU 63	3.91	741.81	-18386	-0.0000555	0.0003743	0.0035	2.1	13376.32	32409.68	32409.68	43.69	No	Si
SLU 79	2.01	169.99	-20894	-0.0000583	0.0003743	0.0035	2.1	14281.89	33097.26	33097.26	194.71	No	Si
SLU 79	3.91	785.6	-19847	-0.0000602	0.0003743	0.0035	2.1	13930.77	32820.77	32820.77	41.78	No	Si
SLU 84	2.01	152.64	-21222	-0.0000592	0.0003743	0.0035	2.1	14384	33181.51	33181.51	217.38	No	Si
SLU 84	3.91	790.96	-20221	-0.0000614	0.0003743	0.0035	2.1	14060.53	32920.8	32920.8	41.62	No	Si
SLU 78	2.01	190.71	-21106	-0.0000591	0.0003743	0.0035	2.1	14348.36	33151.88	33151.88	173.83	No	Si
SLU 78	3.91	774.35	-20057	-0.0000608	0.0003743	0.0035	2.1	14004.18	32877.08	32877.08	42.46	No	Si
SLU 82	2.01	160.23	-20882	-0.0000582	0.0003743	0.0035	2.1	14277.95	33094.05	33094.05	206.54	No	Si
SLU 82	3.91	754.32	-19844	-0.00006	0.0003743	0.0035	2.1	13929.53	32819.84	32819.84	43.51	No	Si
SLU 81	2.01	149.62	-20859	-0.0000581	0.0003743	0.0035	2.1	14270.92	33088.32	33088.32	221.15	No	Si
SLU 81	3.91	764.07	-19822	-0.00006	0.0003743	0.0035	2.1	13921.66	32813.84	32813.84	42.95	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche,  $\gamma M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	$\epsilon m$	$\epsilon m_{-}$	$\epsilon m_u$	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 16	2.01	-4052.95	-21515	-0.0000888	0.0005615	0.0035	2.1		37706.45	37706.45	9.3		Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 16	3.91	4844.7	-26575	-0.0001107	0.0005615	0.0035	2.1		39463.39	39463.39	8.15		Si
SLV 14	2.01	-5140.58	-18484	-0.0000885	0.0005615	0.0035	2.1		36473.36	36473.36	7.1		Si
SLV 14	3.91	4058.21	-22324	-0.0000913	0.0005615	0.0035	2.1		37986.11	37986.11	9.36		Si
SLV 8	2.01	3759.01	-18112	-0.0000765	0.0005615	0.0035	2.1		36297.01	36297.01	9.66		Si
SLV 8	3.91	295.2	-16925	-0.0000464	0.0005615	0.0035	2.1		35783.14	35783.14	121.21		Si
SLV 4	2.01	6205.45	-11013	-0.0000822	0.0005615	0.0035	2.1		32877.81	32877.81	5.3		Si
SLV 4	3.91	-3740.47	-3908	-0.0000694	0.0005615	0.0035	2.1		27741.59	27741.59	7.42		Si
SLV 9	2.01	-3399.52	-10747	-0.000053	0.0005615	0.0035	2.1		32743.87	32743.87	9.63		Si
SLV 9	3.91	662.36	-9998	-0.0000305	0.0005615	0.0035	2.1		32288.28	32288.28	48.75		Si
SLV 3	2.01	5500.07	-10375	-0.0000725	0.0005615	0.0035	2.1		32509.54	32509.54	5.91		Si
SLV 3	3.91	-3100.65	-4599	-0.0000421	0.0005615	0.0035	2.1		28415.68	28415.68	9.16		Si
SLV 2	2.01	5117.83	-7981	-0.0000692	0.0005615	0.0035	2.1		31050.56	31050.56	6.07		Si
SLV 2	3.91	-4526.97	343	-0.0002719	0.0005615	0.0035	2.1		19169.93	19169.93	4.23		Si
SLV 13	2.01	-5845.96	-17846	-0.0000922	0.0005615	0.0035	2.1		36201.33	36201.33	6.19		Si
SLV 13	3.91	4698.03	-23015	-0.0000985	0.0005615	0.0035	2.1		38236.22	38236.22	8.14		Si
SLV 15	2.01	-4758.34	-20877	-0.0000926	0.0005615	0.0035	2.1		37461.04	37461.04	7.87		Si
SLV 15	3.91	5484.53	-27266	-0.0001181	0.0005615	0.0035	2.1		39684.24	39684.24	7.24		Si
SLV 1	2.01	4412.44	-7344	-0.000058	0.0005615	0.0035	2.1		30638.96	30638.96	6.94		Si
SLV 1	3.91	-3887.14	-347	-0.0002324	0.0005615	0.0035	2.1		22369.57	22369.57	5.75		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215,  $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 63	2.01	139.88	-19448	-16194	-1179	2.1	2.1	-27541	10617	6243	33305	17607	5355	22963	No	19.48	Si
SLU 63	3.91	741.81	-18386	-15310	-1197	2.1	2.1	-26038	10416	6125	33305	17607	5355	22963	No	19.18	Si
SLU 83	2.01	142.03	-21200	-17653	-1258	2.1	2.1	-30023	10833	6370	33305	17607	5355	22963	No	18.25	Si
SLU 83	3.91	800.71	-20199	-16820	-1279	2.1	2.1	-28605	10758	6326	33305	17607	5355	22963	No	17.96	Si
SLU 79	2.01	169.99	-20894	-17399	-1211	2.1	2.1	-29589	10833	6370	33305	17607	5355	22963	No	18.96	Si
SLU 79	3.91	785.6	-19847	-16527	-1231	2.1	2.1	-28107	10692	6287	33305	17607	5355	22963	No	18.66	Si
SLU 84	2.01	152.64	-21222	-17672	-1248	2.1	2.1	-30054	10833	6370	33305	17607	5355	22963	No	18.4	Si
SLU 84	3.91	790.96	-20221	-16838	-1268	2.1	2.1	-28636	10763	6328	33305	17607	5355	22963	No	18.11	Si
SLU 80	2.01	180.6	-20916	-17417	-1200	2.1	2.1	-29621	10833	6370	33305	17607	5355	22963	No	19.13	Si
SLU 80	3.91	775.85	-19869	-16546	-1220	2.1	2.1	-28138	10696	6289	33305	17607	5355	22963	No	18.82	Si
SLU 82	2.01	160.23	-20882	-17388	-1204	2.1	2.1	-29572	10833	6370	33305	17607	5355	22963	No	19.07	Si
SLU 82	3.91	754.32	-19844	-16524	-1224	2.1	2.1	-28102	10691	6287	33305	17607	5355	22963	No	18.76	Si
SLU 81	2.01	149.62	-20859	-17370	-1215	2.1	2.1	-29541	10833	6370	33305	17607	5355	22963	No	18.9	Si
SLU 81	3.91	764.07	-19822	-16506	-1235	2.1	2.1	-28071	10687	6284	33305	17607	5355	22963	No	18.59	Si
SLU 62	2.01	129.27	-19426	-16176	-1189	2.1	2.1	-27510	10612	6240	33305	17607	5355	22963	No	19.3	Si
SLU 62	3.91	751.56	-18364	-15292	-1208	2.1	2.1	-26006	10412	6122	33305	17607	5355	22963	No	19.01	Si
SLU 78	2.01	190.71	-21106	-17575	-1193	2.1	2.1	-29890	10833	6370	33305	17607	5355	22963	No	19.25	Si
SLU 78	3.91	774.35	-20057	-16702	-1212	2.1	2.1	-28404	10732	6310	33305	17607	5355	22963	No	18.94	Si
SLU 77	2.01	180.1	-21084	-17557	-1203	2.1	2.1	-29859	10833	6370	33305	17607	5355	22963	No	19.08	Si
SLU 77	3.91	784.1	-20035	-16683	-1223	2.1	2.1	-28372	10727	6308	33305	17607	5355	22963	No	18.77	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215,  $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	$\sigma_N$	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 13	2.01	-5845.96	-17846	-14861	-8977	2.1	2.1	-25273	15471	9097	33305	26411	5355	31766		3.54	Si
SLV 13	3.91	4698.03	-23015	-19165	-8623	2.1	2.1	-32592	16250	9555	33305	26411	5355	31766		3.68	Si
SLV 1	2.01	4412.44	-7344	-6115	7347	2.1	1.3475	-15887	13624	5140	33305	26411	5355	31766		4.32	Si
SLV 1	3.91	-3887.14	-347	-289	7152	2.1	0	0	0	0	33305	26411	5355	31766		4.44	Si
SLV 16	2.01	-4052.95	-21515	-17916	-8841	2.1	2.1	-30469	16250	9555	33305	26411	5355	31766		3.59	Si
SLV 16	3.91	4844.7	-26575	-22130	-8673	2.1	2.1	-37635	16250	9555	33305	26411	5355	31766		3.66	Si
SLV 11	2.01	225.9	-20851	-17363	-5836	2.1	2.1	-29528	16250	9555	33305	26411	5355	31766		5.44	Si
SLV 11	3.91	3284	-24171	-20127	-6078	2.1	2.1	-34230	16250	9555	33305	26411	5355	31766		5.23	Si
SLV 3	2.01	5500.07	-10375	-8639	6042	2.1	1.5596	-19769	14387	6283	33305	26411	5355	31766		5.26	Si
SLV 3	3.91	-3100.65	-4599	-3830	5660	2.1	1.1275	-11425	12744	4023	33305	26411	5355	31766		5.61	Si
SLV 2	2.01	5117.83	-7981	-6646	8788	2.1	1.2264	-18660	14202	4877	33305	26411	5355	31766		3.61	Si
SLV 2	3.91	-4526.97	343	286	8594	2.1	0	0	10072	0	33305	26411	5355	31766		3.7	Si
SLV 12	2.01	681.49	-21263	-17706	-4905	2.1	2.1	-30112	16250	9555	33305	26411	5355	31766		6.48	Si
SLV 12	3.91	2870.76	-23725	-19756	-5147	2.1	2.1	-33598	16250	9555	33305	26411	5355	31766		6.17	Si
SLV 15	2.01	-4758.34	-20877	-17385	-10282	2.1	2.1	-29566	16250	9555	33305	26411	5355	31766		3.09	Si
SLV 15	3.91	5484.53	-27266	-22705	-10115	2.1	2.1	-38614	16250	9555	33305	26411	5355	31766		3.14	Si
SLV 14	2.01	-5140.58	-18484	-15392	-7536	2.1	2.1	-26176	15652	9203	33305	26411	5355	31766		4.22	Si
SLV 14	3.91	4058.21	-22324	-18589	-7181	2.1	2.1	-31614	16250	9555	33305	26411	5355	31766		4.42	Si
SLV 4	2.01	6205.45	-11013	-9170	7483	2.1	1.4596	-22301	14905	6092	33305	26411	5355	31766		4.25	Si
SLV 4	3.91	-3740.47	-3908	-3255	7102	2.1	0.2789	-15825	13935	1088	33305	26411	5355	31766		4.47	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 4.73 Wa 0.05 denominatore 8  $\gamma_M = 2$

Comb.	fd	Sa	$\sigma_0$	N	M	Mc	Coeff.s.	Verifica
SLV 5	179667	0.34	0	-1748	812.38	0	0	No, $e > t/2$
SLV 6	179667	0.34	0	-1524	812.38	0	0	No, $e > t/2$
SLV 10	179667	0.34	0	-5691	812.38	0	0	No, $e > t/2$
SLV 1	179667	0.34	0	-2608	812.38	0	0	No, $e > t/2$
SLV 2	179667	0.34	0	-2261	812.38	0	0	No, $e > t/2$
SLV 9	179667	0.34	10059	-5915	812.38	773.52	0.95	No, $M > Mu$
SLV 4	179667	0.34	12094	-7112	812.38	916.76	1.13	Si
SLV 3	179667	0.34	12684	-7458	812.38	957.43	1.18	Si
SLV 14	179667	0.34	27465	-16150	812.38	1854.32	2.28	Si
SLV 13	179667	0.34	28055	-16496	812.38	1885.22	2.32	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.



## Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 4.73  $W_a = 0.05$   $T_a = 0.3126$

Comb.	N top	N base	V orto	$\alpha_0$	M*	e*	a0*	aLim	Verifica
SLV 15	-18811	-21456	350	0.528	2521.4	0.934	8.21504	15.21903	No
SLV 16	-17918	-21969	351	0.549	2431.2	0.932	8.55736	15.21903	No
SLV 13	-12271	-20850	208	0.744	1863.1	0.917	11.78563	15.21903	No
SLV 14	-11379	-21363	209	0.786	1773.9	0.914	12.49911	15.21903	No
SLV 3	-9910	-7570	-217	0.867	1627.7	0.909	13.87263	15.21903	No
SLV 4	-9017	-8084	-216	0.926	1539.2	0.905	14.87151	15.21903	No
SLV 11	-23166	-17395	316	0.447	2962.3	0.943	6.89629	5.02815	Si
SLV 12	-22590	-17726	317	0.457	2903.8	0.942	7.04725	5.02815	Si
SLV 7	-20496	-13229	146	0.501	2691.8	0.938	7.7681	5.02815	Si
SLV 8	-19919	-13560	147	0.513	2633.5	0.937	7.95871	5.02815	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	41.107	SLU 83	Si
V_SLU	17.96	SLU 83	Si
PF_SLV	4.235	SLV 2	Si
V_SLV	3.09	SLV 15	Si
PFFP_SLV	0	SLV 1	No
R_SLV	0.54	SLV 15	No

## 1.9 Verifiche travi di accoppiamento in muratura

Le unità di misura elencate nel capitolo sono in [m, daN] ove non espressamente specificato.

**X<sub>ini.</sub>**: coordinata punto iniziale. [m]

**Y<sub>ini.</sub>**: coordinata punto iniziale. [m]

**Z<sub>ini.inf.</sub>**: coordinata punto iniziale. [m]

**Z<sub>ini.sup.</sub>**: coordinata punto iniziale. [m]

**H<sub>ini.</sub>**: altezza della sezione iniziale. [m]

**X<sub>fin.</sub>**: coordinata punto finale. [m]

**Y<sub>fin.</sub>**: coordinata punto finale. [m]

**Z<sub>fin.inf.</sub>**: coordinata punto finale. [m]

**Z<sub>fin.sup.</sub>**: coordinata punto finale. [m]

**H<sub>fin.</sub>**: altezza della sezione finale. [m]

**Luce**: lunghezza della trave. [m]

**Spessore**: spessore. [m]

**R. Trazione**: resistenza a trazione dell'elemento teso disposto orizzontalmente. [daN]

**f<sub>b</sub>**: resistenza normalizzata a compressione in direzione orizzontale dei blocchi. [daN/m<sup>2</sup>]

**f<sub>hk</sub>**: resistenza caratteristica a compressione della muratura utilizzata in direzione orizzontale. [daN/m<sup>2</sup>]

**f<sub>vk0</sub>**: resistenza caratteristica a taglio in assenza di carichi verticali. [daN/m<sup>2</sup>]

**f<sub>hmedio</sub>**: resistenza media a compressione della muratura utilizzata in direzione orizzontale. [daN/m<sup>2</sup>]

**t<sub>0</sub>**: resistenza media a taglio in assenza di azioni normali [C8.7.1.16]. [daN/m<sup>2</sup>]

**f<sub>v0</sub>**: resistenza media a taglio in assenza di azioni normali [C8.7.1.17]. [daN/m<sup>2</sup>]

**μ**: coefficiente di attrito [C8.7.1.17].

**φ**: coefficiente di ammorsamento o ingranamento secondo Circolare 7 21-01-19 §C8.7.1.3.1.1.

**f<sub>vk,lim</sub>**: valore caratteristico massimo della resistenza a taglio che può essere impiegata nel calcolo (§11.10.3.3). [daN/m<sup>2</sup>]

**E**: modulo di elasticità longitudinale della muratura utilizzato. [daN/m<sup>2</sup>]

**G**: modulo di elasticità tangenziale della muratura utilizzato. [daN/m<sup>2</sup>]

**FC**: fattore di confidenza della muratura.

**Materiale**: descrizione del materiale.

**Fu Verticale**: carico di rottura a trazione per unità di lunghezza della maglia verticale. [daN/m]

**Fu Orizzontale**: carico di rottura a trazione per unità di lunghezza della maglia verticale. [daN/m]

**t<sub>fv</sub>**: spessore di calcolo equivalente verticale di uno strato di rinforzo.

**t<sub>fo</sub>**: spessore di calcolo equivalente orizzontale di uno strato di rinforzo.

**E**: modulo di elasticità longitudinale. [daN/m<sup>2</sup>]

**ε<sub>u</sub>**: dilatazione a rottura.

**Tipo fibra**: natura della fibra.

**materiale**: materiale fibra del rinforzo.

**lato applicazione**: lato di applicazione del rinforzo.

**esposizione**: condizione di esposizione secondo CNR-DT 215 §3.2.

**ancoraggio verticale iniziale**: grado di ancoraggio iniziale dei rinforzi verticali.

**ancoraggio verticale finale**: grado di ancoraggio finale dei rinforzi verticali.

**ancoraggio orizzontale iniziale**: grado di ancoraggio iniziale dei rinforzi orizzontali.

**ancoraggio orizzontale finale**: grado di ancoraggio finale dei rinforzi orizzontali.

**strati**: numero strati del rinforzo.

**verifica taglio**: tipo di verifica a taglio.

**ε<sub>lim,conv</sub> / ε<sub>CNR DT-200</sub>**: dati relativi ai parametri per il calcolo della deformazione di progetto.



**$\alpha$ :** coefficiente che tiene conto della ridotta capacità estensionale delle fibre sollecitate a taglio secondo CNR-DT 215 §4.1.1.

**$\alpha$ :** coefficiente amplificativo tensione di distacco secondo CNR-DT 215 §3.1 ovvero secondo CNR-DT 200 R1/2013 §5.3.3.

**$\epsilon_{lim,conv}$ :** deformazione limite convenzionale del rinforzo FRCC.

**$\epsilon_{fd}$ :** deformazione di progetto del rinforzo FRCC ovvero CRM.

**$\gamma_{F,d}$ :** fattore parziali di sicurezza per stato limite di distacco secondo CNR-DT 200 R1/2013 §3.4.1.

**connettori:** presenza di connettori per la prevenzione del distacco del rinforzo.

**tipo di muratura:** tipo di muratura per stato limite di distacco di estremità secondo CNR-DT 200 R1/2013 §5.3.2.

**CRM / Fibrenet?** dati relativi ai parametri per il calcolo secondo metodo Fibrenet? ovvero se il materiale è di tipo CRM.

**CRM:** stabilisce se il rinforzo è di tipo CRM secondo le Linee Guida del C.S.L.P. Ottobre 2019.

**intonaco:** materiale intonaco FRCC ovvero CRM.

**spessore intonaco:** spessore intonaco. [m]

**tipo blocco fibrenet:** tipo blocco muratura per verifica a taglio tipo Fibrenet.

**Comb.:** combinazione.

**Sez.:** sezione di verifica.

**M:** momento flettente nel piano. [daN\*m]

**N:** sforzo normale. [daN]

**$\epsilon_m$ :** deformazione della muratura.

**$\epsilon_{m_1}$ :** deformazione elastica della muratura.

**$\epsilon_{mu}$ :** deformazione ultima della muratura.

**df:** distanza tra il lembo compresso e la fibra tesa più lontana. [m]

**M0d:** momento resistente della sezione non rinforzata. [daN\*m]

**M1d:** momento resistente della sezione rinforzata. [daN\*m]

**MRd:** momento resistente della sezione. [daN\*m]

**incremento > 50%:** incremento resistenza superiore al 50% della resistenza non rinforzata in condizioni non sismiche.

**c.s.:** coefficiente di sicurezza.

**Verifica:** stato di verifica.

**V:** taglio nel piano. [daN]

**df:** distanza tra lembo compresso e baricentro dell'armatura tesa. [m]

**fvd:** resistenza a taglio di calcolo. [daN/m²]

**Vt:** resistenza a taglio della muratura non rinforzata. [daN]

**Vt,f:** resistenza a taglio del rinforzo (CNR DT215 4.1a). [daN]

**Vt,c:** resistenza a taglio per schiacciamento delle bielle (CNR DT215 4.1b). [daN]

**Vt,c int.:** contributo di resistenza a taglio delle bielle dell'intonaco se considerato. [daN]

**Vt,R:** resistenza a taglio della sezione rinforzata. [daN]

**Stato limite:** pF\_SLV=Presso flessione per azioni sismiche; V\_SLV=Taglio per azioni sismiche.

**Coeff.s.:** coefficiente di sicurezza.

## Trave di accoppiamento 2

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-21.763	5.876	-1.59	0.41	2	-22.763	5.876	-1.59	0.41	2	1	0.45	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>tk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	$\tau_0$	f <sub>v0</sub>	$\mu$	$\phi$	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRCC

Materiale	Fu Verticale	Fu Orizzontale	t <sub>fv</sub>	t <sub>fo</sub>	E	$\epsilon_u$	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	at	α	elim,conv	s,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m_1}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 77	ini.	-122.61	-4212	-0.0000122	0.0001872	0.0035	2		10737.13	10737.13	No	87.57	Si
SLU 77	fin.	4149.91	-5842	-0.0005088	0.0001872	0.0035	2		10722.86	10722.86	No	2.58	Si
SLU 80	ini.	-138	-4305	-0.0000137	0.0001872	0.0035	2		10737.13	10737.13	No	77.81	Si
SLU 80	fin.	4124.89	-5951	-0.0005051	0.0001872	0.0035	2		10722.86	10722.86	No	2.6	Si
SLU 81	ini.	-78.56	-4167	-0.0000078	0.0001872	0.0035	2		10737.13	10737.13	No	136.67	Si
SLU 81	fin.	4168.91	-5758	-0.0005116	0.0001872	0.0035	2		10722.86	10722.86	No	2.57	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 83	ini.	-83.51	-4235	-0.0000083	0.0001872	0.0035	2		10737.13	10737.13	No	128.57	Si
SLU 83	fin.	4218.41	-5850	-0.0005191	0.0001872	0.0035	2		10722.86	10722.86	No	2.54	Si
SLU 84	ini.	-98.01	-4362	-0.0000097	0.0001872	0.0035	2		10737.13	10737.13	No	109.55	Si
SLU 84	fin.	4215.13	-6001	-0.0005186	0.0001872	0.0035	2		10722.86	10722.86	No	2.54	Si
SLU 75	ini.	-132.16	-4271	-0.0000131	0.0001872	0.0035	2		10737.13	10737.13	No	81.24	Si
SLU 75	fin.	4097.13	-5902	-0.000501	0.0001872	0.0035	2		10722.86	10722.86	No	2.62	Si
SLU 79	ini.	-123.5	-4178	-0.0000123	0.0001872	0.0035	2		10737.13	10737.13	No	86.94	Si
SLU 79	fin.	4128.17	-5799	-0.0005056	0.0001872	0.0035	2		10722.86	10722.86	No	2.6	Si
SLU 78	ini.	-137.11	-4339	-0.0000136	0.0001872	0.0035	2		10737.13	10737.13	No	78.31	Si
SLU 78	fin.	4146.63	-5994	-0.0005083	0.0001872	0.0035	2		10722.86	10722.86	No	2.59	Si
SLU 82	ini.	-93.06	-4294	-0.0000092	0.0001872	0.0035	2		10737.13	10737.13	No	115.38	Si
SLU 82	fin.	4165.63	-5910	-0.0005112	0.0001872	0.0035	2		10722.86	10722.86	No	2.57	Si
SLU 74	ini.	-117.66	-4144	-0.0000117	0.0001872	0.0035	2		10737.13	10737.13	No	91.26	Si
SLU 74	fin.	4100.41	-5750	-0.0005014	0.0001872	0.0035	2		10722.86	10722.86	No	2.62	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 84	ini.	-98.01	4742	2	0	1304	7930	13475	5100	9234	No	1.95	Si
SLU 84	fin.	4215.13	7682	2	0	1304	7930	13475	5100	9234	No	1.2	Si
SLU 76	ini.	-142.71	4721	2	0	1304	7930	13475	5100	9234	No	1.96	Si
SLU 76	fin.	4073.2	7484	2	0	1304	7930	13475	5100	9234	No	1.23	Si
SLU 83	ini.	-83.51	4702	2	0	1304	7930	13475	5100	9234	No	1.96	Si
SLU 83	fin.	4218.41	7650	2	0	1304	7930	13475	5100	9234	No	1.21	Si
SLU 82	ini.	-93.06	4684	2	0	1304	7930	13475	5100	9234	No	1.97	Si
SLU 82	fin.	4165.63	7577	2	0	1304	7930	13475	5100	9234	No	1.22	Si
SLU 75	ini.	-132.16	4711	2	0	1304	7930	13475	5100	9234	No	1.96	Si
SLU 75	fin.	4097.13	7509	2	0	1304	7930	13475	5100	9234	No	1.23	Si
SLU 80	ini.	-138	4751	2	0	1304	7930	13475	5100	9234	No	1.94	Si
SLU 80	fin.	4124.89	7568	2	0	1304	7930	13475	5100	9234	No	1.22	Si
SLU 79	ini.	-123.5	4711	2	0	1304	7930	13475	5100	9234	No	1.96	Si
SLU 79	fin.	4128.17	7536	2	0	1304	7930	13475	5100	9234	No	1.23	Si
SLU 77	ini.	-122.61	4728	2	0	1304	7930	13475	5100	9234	No	1.95	Si
SLU 77	fin.	4149.91	7583	2	0	1304	7930	13475	5100	9234	No	1.22	Si
SLU 78	ini.	-137.11	4769	2	0	1304	7930	13475	5100	9234	No	1.94	Si
SLU 78	fin.	4146.63	7614	2	0	1304	7930	13475	5100	9234	No	1.21	Si
SLU 81	ini.	-78.56	4643	2	0	1304	7930	13475	5100	9234	No	1.99	Si
SLU 81	fin.	4168.91	7545	2	0	1304	7930	13475	5100	9234	No	1.22	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 16	ini.	-1644.84	-2305	-0.0001711	0.0002807	0.0035	2		15648.46	15648.46		9.51	Si
SLV 16	fin.	4844.39	-7285	-0.0005788	0.0002807	0.0035	2		15635.95	15635.95		3.23	Si
SLV 9	ini.	1084.81	539	-0.0001108	0.0002807	0.0035	2		15635.95	15635.95		14.41	Si
SLV 9	fin.	3924.97	-1210	-0.0004494	0.0002807	0.0035	2		15635.95	15635.95		3.98	Si
SLD 15	ini.	-622.1	-2400	-0.0000626	0.0002807	0.0035	2		15648.46	15648.46		25.15	Si
SLD 15	fin.	3599.97	-4975	-0.000406	0.0002807	0.0035	2		15635.95	15635.95		4.34	Si
SLV 15	ini.	-1254.95	-1707	-0.0001288	0.0002807	0.0035	2		15648.46	15648.46		12.47	Si
SLV 15	fin.	4586.55	-6147	-0.0005415	0.0002807	0.0035	2		15635.95	15635.95		3.41	Si
SLD 14	ini.	-428.54	-1934	-0.0000429	0.0002807	0.0035	2		15648.46	15648.46		36.52	Si
SLD 14	fin.	3854.72	-4668	-0.0004399	0.0002807	0.0035	2		15635.95	15635.95		4.06	Si
SLD 16	ini.	-789.52	-2657	-0.0000799	0.0002807	0.0035	2		15648.46	15648.46		19.82	Si
SLD 16	fin.	3710.69	-5464	-0.0004207	0.0002807	0.0035	2		15635.95	15635.95		4.21	Si
SLV 14	ini.	-823.1	-667	-0.0000833	0.0002807	0.0035	2		15648.46	15648.46		19.01	Si
SLV 14	fin.	5165.87	-5472	-0.0006263	0.0002807	0.0035	2		15635.95	15635.95		3.03	Si
SLV 10	ini.	832.99	153	-0.0000844	0.0002807	0.0035	2		15635.95	15635.95		18.77	Si
SLV 10	fin.	4091.51	-1945	-0.0004721	0.0002807	0.0035	2		15635.95	15635.95		3.82	Si
SLV 13	ini.	-433.21	-68	-0.0000434	0.0002807	0.0035	2		15648.46	15648.46		36.12	Si
SLV 13	fin.	4908.03	-4334	-0.0005881	0.0002807	0.0035	2		15635.95	15635.95		3.19	Si
SLD 13	ini.	-261.12	-1677	-0.000026	0.0002807	0.0035	2		15648.46	15648.46		59.93	Si
SLD 13	fin.	3744	-4179	-0.0004251	0.0002807	0.0035	2		15635.95	15635.95		4.18	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 16	ini.	-789.52	6737	2	0	1957	7930	20213	5100	9886		1.47	Si
SLD 16	fin.	3710.69	7876	2	0	1957	7930	20213	5100	9886		1.26	Si
SLV 14	ini.	-823.1	10105	2	0	1957	7930	20213	5100	9886		0.98	No
SLV 14	fin.	5165.87	10927	2	0	1957	7930	20213	5100	9886		0.9	No
SLV 15	ini.	-1254.95	9964	2	0	1957	7930	20213	5100	9886		0.99	No
SLV 15	fin.	4586.55	10090	2	0	1957	7930	20213	5100	9886		0.98	No
SLD 15	ini.	-622.1	6232	2	0	1957	7930	20213	5100	9886		1.59	Si
SLD 15	fin.	3599.97	7336	2	0	1957	7930	20213	5100	9886		1.35	Si
SLV 13	ini.	-433.21	8929	2	0	1957	7930	20213	5100	9886		1.11	Si
SLV 13	fin.	4908.03	9669	2	0	1957	7930	20213	5100	9886		1.02	Si
SLD 13	ini.	-261.12	5787	2	0	1957	7930	20213	5100	9886		1.71	Si
SLD 13	fin.	3744	7152	2	0	1957	7930	20213	5100	9886		1.38	Si
SLV 16	ini.	-1644.84	11140	2	0	1957	7930	20213	5100	9886		0.89	No
SLV 16	fin.	4844.39	11348	2	0	1957	7930	20213	5100	9886		0.87	No
SLV 11	ini.	-1654.33	6767	2	0	1957	7930	20213	5100	9886		1.46	Si
SLV 11	fin.	2853.37	7142	2	0	1957	7930	20213	5100	9886		1.38	Si
SLD 14	ini.	-428.54	6292	2	0	1957	7930	20213	5100	9886		1.57	Si
SLD 14	fin.	3854.72	7692	2	0	1957	7930	20213	5100	9886		1.29	Si
SLV 12	ini.	-1906.15	7527	2	0	1957	7930	20213	5100	9886		1.31	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 12	fin.	3019.91	7955	2	0	1957	7930	20213	5100	9886		1.24	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.027	SLV 14	Si
V_SLV	0.871	SLV 16	No
PF_SLU	2.542	SLU 83	Si
V_SLU	1.202	SLU 84	Si

## Trave di accoppiamento 6

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-21.543	-3.284	-1.59	0.41	2	-22.543	-3.284	-1.59	0.41	2	1	0.45	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fhk	fvk0	fhmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 75	ini.	-720.51	-2989	-0.0000733	0.0001872	0.0035	2		10737.13	10737.13	No	14.9	Si
SLU 75	fin.	2553.77	-4768	-0.0002862	0.0001872	0.0035	2		10722.86	10722.86	No	4.2	Si
SLU 82	ini.	-718.64	-3041	-0.0000731	0.0001872	0.0035	2		10737.13	10737.13	No	14.94	Si
SLU 82	fin.	2582.88	-4826	-0.000029	0.0001872	0.0035	2		10722.86	10722.86	No	4.15	Si
SLU 81	ini.	-728.6	-3063	-0.0000741	0.0001872	0.0035	2		10737.13	10737.13	No	14.74	Si
SLU 81	fin.	2580.78	-4850	-0.0002897	0.0001872	0.0035	2		10722.86	10722.86	No	4.15	Si
SLU 83	ini.	-735.08	-3113	-0.0000748	0.0001872	0.0035	2		10737.13	10737.13	No	14.61	Si
SLU 83	fin.	2610.56	-4920	-0.0002936	0.0001872	0.0035	2		10722.86	10722.86	No	4.11	Si
SLU 74	ini.	-730.47	-3010	-0.0000743	0.0001872	0.0035	2		10737.13	10737.13	No	14.7	Si
SLU 74	fin.	2551.67	-4792	-0.0002859	0.0001872	0.0035	2		10722.86	10722.86	No	4.2	Si
SLU 80	ini.	-714.24	-3017	-0.0000726	0.0001872	0.0035	2		10737.13	10737.13	No	15.03	Si
SLU 80	fin.	2560.26	-4794	-0.000287	0.0001872	0.0035	2		10722.86	10722.86	No	4.19	Si
SLU 77	ini.	-736.94	-3061	-0.000075	0.0001872	0.0035	2		10737.13	10737.13	No	14.57	Si
SLU 77	fin.	2581.45	-4862	-0.0002898	0.0001872	0.0035	2		10722.86	10722.86	No	4.15	Si
SLU 79	ini.	-724.2	-3038	-0.0000737	0.0001872	0.0035	2		10737.13	10737.13	No	14.83	Si
SLU 79	fin.	2558.16	-4818	-0.0002868	0.0001872	0.0035	2		10722.86	10722.86	No	4.19	Si
SLU 84	ini.	-725.12	-3092	-0.0000738	0.0001872	0.0035	2		10737.13	10737.13	No	14.81	Si
SLU 84	fin.	2612.67	-4896	-0.0002938	0.0001872	0.0035	2		10722.86	10722.86	No	4.1	Si
SLU 78	ini.	-726.98	-3040	-0.000074	0.0001872	0.0035	2		10737.13	10737.13	No	14.77	Si
SLU 78	fin.	2583.56	-4838	-0.0002901	0.0001872	0.0035	2		10722.86	10722.86	No	4.15	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 81	ini.	-728.6	1943	2	0	1304	7930	13475	5100	9234	No	4.75	Si
SLU 81	fin.	2580.78	7246	2	0	1304	7930	13475	5100	9234	No	1.27	Si
SLU 84	ini.	-725.12	1945	2	0	1304	7930	13475	5100	9234	No	4.75	Si
SLU 84	fin.	2612.67	7324	2	0	1304	7930	13475	5100	9234	No	1.26	Si
SLU 79	ini.	-724.2	1961	2	0	1304	7930	13475	5100	9234	No	4.71	Si
SLU 79	fin.	2558.16	7172	2	0	1304	7930	13475	5100	9234	No	1.29	Si
SLU 78	ini.	-726.98	1987	2	0	1304	7930	13475	5100	9234	No	4.65	Si
SLU 78	fin.	2583.56	7235	2	0	1304	7930	13475	5100	9234	No	1.28	Si
SLU 77	ini.	-736.94	1995	2	0	1304	7930	13475	5100	9234	No	4.63	Si
SLU 77	fin.	2581.45	7247	2	0	1304	7930	13475	5100	9234	No	1.27	Si
SLU 74	ini.	-730.47	1985	2	0	1304	7930	13475	5100	9234	No	4.65	Si
SLU 74	fin.	2551.67	7157	2	0	1304	7930	13475	5100	9234	No	1.29	Si
SLU 75	ini.	-720.51	1977	2	0	1304	7930	13475	5100	9234	No	4.67	Si
SLU 75	fin.	2553.77	7145	2	0	1304	7930	13475	5100	9234	No	1.29	Si
SLU 82	ini.	-718.64	1935	2	0	1304	7930	13475	5100	9234	No	4.77	Si
SLU 82	fin.	2582.88	7233	2	0	1304	7930	13475	5100	9234	No	1.28	Si





Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 80	ini.	-714.24	1952	2	0	1304	7930	13475	5100	9234	No	4.73	Si
SLU 80	fin.	2560.26	7160	2	0	1304	7930	13475	5100	9234	No	1.29	Si
SLU 83	ini.	-735.08	1953	2	0	1304	7930	13475	5100	9234	No	4.73	Si
SLU 83	fin.	2610.56	7336	2	0	1304	7930	13475	5100	9234	No	1.26	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 16	ini.	-1082.77	-620	-0.0001105	0.0002807	0.0035	2		15648.46	15648.46		14.45	Si
SLD 16	fin.	2586.56	-2880	-0.000279	0.0002807	0.0035	2		15635.95	15635.95		6.05	Si
SLV 15	ini.	-2244.65	916	-0.0002386	0.0002807	0.0035	2		15648.46	15648.46		6.97	Si
SLV 15	fin.	3795.42	-3011	-0.000432	0.0002807	0.0035	2		15635.95	15635.95		4.12	Si
SLD 15	ini.	-1252.19	-779	-0.0001285	0.0002807	0.0035	2		15648.46	15648.46		12.5	Si
SLD 15	fin.	2648.22	-3181	-0.0002863	0.0002807	0.0035	2		15635.95	15635.95		5.9	Si
SLV 13	ini.	-3004.11	-652	-0.0003295	0.0002807	0.0035	2		15648.46	15648.46		5.21	Si
SLV 13	fin.	3592.6	-4910	-0.0004051	0.0002807	0.0035	2		15635.95	15635.95		4.35	Si
SLD 13	ini.	-1579.57	-1459	-0.0001639	0.0002807	0.0035	2		15648.46	15648.46		9.91	Si
SLD 13	fin.	2550.36	-3991	-0.0002746	0.0002807	0.0035	2		15635.95	15635.95		6.13	Si
SLD 14	ini.	-1410.15	-1299	-0.0001455	0.0002807	0.0035	2		15648.46	15648.46		11.1	Si
SLD 14	fin.	2488.71	-3690	-0.0002673	0.0002807	0.0035	2		15635.95	15635.95		6.28	Si
SLV 11	ini.	52.16	1150	-0.0000052	0.0002807	0.0035	2		15635.95	15635.95		299.77	Si
SLV 11	fin.	2716.06	-459	-0.0002945	0.0002807	0.0035	2		15635.95	15635.95		5.76	Si
SLV 14	ini.	-2609.56	-280	-0.0002814	0.0002807	0.0035	2		15648.46	15648.46		6	Si
SLV 14	fin.	3449.02	-4208	-0.0003863	0.0002807	0.0035	2		15635.95	15635.95		4.53	Si
SLV 12	ini.	306.99	1390	-0.0000306	0.0002807	0.0035	2		15635.95	15635.95		50.93	Si
SLV 12	fin.	2623.33	-6	-0.0002833	0.0002807	0.0035	2		15635.95	15635.95		5.96	Si
SLV 16	ini.	-1850.1	1287	-0.0001938	0.0002807	0.0035	2		15648.46	15648.46		8.46	Si
SLV 16	fin.	3651.85	-2309	-0.0004129	0.0002807	0.0035	2		15635.95	15635.95		4.28	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 10	ini.	-2224.54	4334	2	0	1957	7930	20213	5100	9886		2.28	Si
SLV 10	fin.	1947.23	7541	2	0	1957	7930	20213	5100	9886		1.31	Si
SLD 15	ini.	-1252.19	4188	2	0	1957	7930	20213	5100	9886		2.36	Si
SLD 15	fin.	2648.22	6730	2	0	1957	7930	20213	5100	9886		1.47	Si
SLD 13	ini.	-1579.57	4489	2	0	1957	7930	20213	5100	9886		2.2	Si
SLD 13	fin.	2550.36	7137	2	0	1957	7930	20213	5100	9886		1.39	Si
SLV 16	ini.	-1850.1	7033	2	0	1957	7930	20213	5100	9886		1.41	Si
SLV 16	fin.	3651.85	8191	2	0	1957	7930	20213	5100	9886		1.21	Si
SLV 15	ini.	-2244.65	7827	2	0	1957	7930	20213	5100	9886		1.26	Si
SLV 15	fin.	3795.42	9117	2	0	1957	7930	20213	5100	9886		1.08	Si
SLV 13	ini.	-3004.11	8565	2	0	1957	7930	20213	5100	9886		1.15	Si
SLV 13	fin.	3592.6	10101	2	0	1957	7930	20213	5100	9886		0.98	No
SLD 16	ini.	-1082.77	3847	2	0	1957	7930	20213	5100	9886		2.57	Si
SLD 16	fin.	2586.56	6332	2	0	1957	7930	20213	5100	9886		1.56	Si
SLV 9	ini.	-2479.37	4847	2	0	1957	7930	20213	5100	9886		2.04	Si
SLV 9	fin.	2039.96	8138	2	0	1957	7930	20213	5100	9886		1.21	Si
SLV 14	ini.	-2609.56	7771	2	0	1957	7930	20213	5100	9886		1.27	Si
SLV 14	fin.	3449.02	9176	2	0	1957	7930	20213	5100	9886		1.08	Si
SLD 14	ini.	-1410.15	4148	2	0	1957	7930	20213	5100	9886		2.38	Si
SLD 14	fin.	2488.71	6740	2	0	1957	7930	20213	5100	9886		1.47	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF SLV	4.12	SLV 15	Si
V_SLV	0.979	SLV 13	No
PF SLU	4.104	SLU 84	Si
V_SLU	1.259	SLU 83	Si

## Trave di accoppiamento 8

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-17.313	-3.284	-1.59	0.41	2	-18.313	-3.284	-1.59	0.41	2	1	0.45	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>medio</sub>	τ <sub>0</sub>	f <sub>0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC

Materiale	Fu Verticale	Fu Orizzontale	t <sub>fv</sub>	t <sub>fo</sub>	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica





									elim,conv / $\epsilon_s$ CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	$\epsilon_s$ ,fd	$\gamma_F$ ,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 79	ini.	153.35	-17471	-0.0000153	0.0001872	0.0035	2		10722.86	10722.86	No	69.92	Si
SLU 79	fin.	701.29	-12389	-0.0000713	0.0001872	0.0035	2		10722.86	10722.86	No	15.29	Si
SLU 80	ini.	162.49	-17479	-0.0000162	0.0001872	0.0035	2		10722.86	10722.86	No	65.99	Si
SLU 80	fin.	690.72	-12374	-0.0000702	0.0001872	0.0035	2		10722.86	10722.86	No	15.52	Si
SLU 78	ini.	147.21	-17561	-0.0000146	0.0001872	0.0035	2		10722.86	10722.86	No	72.84	Si
SLU 78	fin.	702.8	-12454	-0.0000715	0.0001872	0.0035	2		10722.86	10722.86	No	15.26	Si
SLU 84	ini.	244.37	-18020	-0.0000244	0.0001872	0.0035	2		10722.86	10722.86	No	43.88	Si
SLU 84	fin.	722.75	-12737	-0.0000736	0.0001872	0.0035	2		10722.86	10722.86	No	14.84	Si
SLU 75	ini.	152.33	-17374	-0.0000152	0.0001872	0.0035	2		10722.86	10722.86	No	70.39	Si
SLU 75	fin.	683.73	-12305	-0.0000695	0.0001872	0.0035	2		10722.86	10722.86	No	15.68	Si
SLU 81	ini.	240.34	-17825	-0.000024	0.0001872	0.0035	2		10722.86	10722.86	No	44.62	Si
SLU 81	fin.	714.25	-12603	-0.0000727	0.0001872	0.0035	2		10722.86	10722.86	No	15.01	Si
SLU 77	ini.	138.08	-17552	-0.0000137	0.0001872	0.0035	2		10722.86	10722.86	No	77.66	Si
SLU 77	fin.	713.36	-12469	-0.0000726	0.0001872	0.0035	2		10722.86	10722.86	No	15.03	Si
SLU 74	ini.	143.19	-17365	-0.0000142	0.0001872	0.0035	2		10722.86	10722.86	No	74.89	Si
SLU 74	fin.	694.29	-12320	-0.0000706	0.0001872	0.0035	2		10722.86	10722.86	No	15.44	Si
SLU 83	ini.	235.23	-18012	-0.0000235	0.0001872	0.0035	2		10722.86	10722.86	No	45.58	Si
SLU 83	fin.	733.32	-12752	-0.0000747	0.0001872	0.0035	2		10722.86	10722.86	No	14.62	Si
SLU 82	ini.	249.48	-17833	-0.0000249	0.0001872	0.0035	2		10722.86	10722.86	No	42.98	Si
SLU 82	fin.	703.68	-12588	-0.0000716	0.0001872	0.0035	2		10722.86	10722.86	No	15.24	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 83	ini.	235.23	-5391	2	0	1304	7930	13475	5100	9234	No	1.71	Si
SLU 83	fin.	733.32	-4370	2	0	1304	7930	13475	5100	9234	No	2.11	Si
SLU 76	ini.	173.69	-5164	2	0	1304	7930	13475	5100	9234	No	1.79	Si
SLU 76	fin.	664.61	-4241	2	0	1304	7930	13475	5100	9234	No	2.18	Si
SLU 63	ini.	267.77	-5265	2	0	1304	7930	13475	5100	9234	No	1.75	Si
SLU 63	fin.	578.66	-4437	2	0	1304	7930	13475	5100	9234	No	2.08	Si
SLU 82	ini.	249.48	-5401	2	0	1304	7930	13475	5100	9234	No	1.71	Si
SLU 82	fin.	703.68	-4411	2	0	1304	7930	13475	5100	9234	No	2.09	Si
SLU 80	ini.	162.49	-5167	2	0	1304	7930	13475	5100	9234	No	1.79	Si
SLU 80	fin.	690.72	-4214	2	0	1304	7930	13475	5100	9234	No	2.19	Si
SLU 81	ini.	240.34	-5360	2	0	1304	7930	13475	5100	9234	No	1.72	Si
SLU 81	fin.	714.25	-4368	2	0	1304	7930	13475	5100	9234	No	2.11	Si
SLU 60	ini.	263.74	-5193	2	0	1304	7930	13475	5100	9234	No	1.78	Si
SLU 60	fin.	570.16	-4391	2	0	1304	7930	13475	5100	9234	No	2.1	Si
SLU 84	ini.	244.37	-5432	2	0	1304	7930	13475	5100	9234	No	1.7	Si
SLU 84	fin.	722.75	-4414	2	0	1304	7930	13475	5100	9234	No	2.09	Si
SLU 62	ini.	258.63	-5224	2	0	1304	7930	13475	5100	9234	No	1.77	Si
SLU 62	fin.	589.23	-4394	2	0	1304	7930	13475	5100	9234	No	2.1	Si
SLU 61	ini.	272.88	-5234	2	0	1304	7930	13475	5100	9234	No	1.76	Si
SLU 61	fin.	559.6	-4435	2	0	1304	7930	13475	5100	9234	No	2.08	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 9	ini.	-2498.91	-8631	-0.0002683	0.0002807	0.0035	2		15648.46	15648.46		6.26	Si
SLV 9	fin.	2316.39	-10497	-0.0002471	0.0002807	0.0035	2		15635.95	15635.95		6.75	Si
SLV 8	ini.	2587.64	-15422	-0.0002791	0.0002807	0.0035	2		15635.95	15635.95		6.04	Si
SLV 8	fin.	-1474.79	-6444	-0.0001525	0.0002807	0.0035	2		15648.46	15648.46		10.61	Si
SLV 1	ini.	3972.06	-19763	-0.0004558	0.0002807	0.0035	2		15635.95	15635.95		3.94	Si
SLV 1	fin.	-1385.35	-7607	-0.0001428	0.0002807	0.0035	2		15648.46	15648.46		11.3	Si
SLV 3	ini.	4637.48	-20231	-0.0005488	0.0002807	0.0035	2		15635.95	15635.95		3.37	Si
SLV 3	fin.	-2078.75	-6765	-0.0002196	0.0002807	0.0035	2		15648.46	15648.46		7.53	Si
SLV 13	ini.	-4878.85	-3348	-0.0005832	0.0002807	0.0035	2		15648.46	15648.46		3.21	Si
SLV 13	fin.	3119.25	-10678	-0.0003442	0.0002807	0.0035	2		15635.95	15635.95		5.01	Si
SLV 15	ini.	-4213.43	-3816	-0.0004885	0.0002807	0.0035	2		15648.46	15648.46		3.71	Si
SLV 15	fin.	2425.85	-9836	-0.0002599	0.0002807	0.0035	2		15635.95	15635.95		6.45	Si
SLV 4	ini.	4967.59	-20705	-0.0005968	0.0002807	0.0035	2		15635.95	15635.95		3.15	Si
SLV 4	fin.	-2277.65	-6262	-0.0002424	0.0002807	0.0035	2		15648.46	15648.46		6.87	Si
SLV 14	ini.	-4548.75	-3822	-0.0005356	0.0002807	0.0035	2		15648.46	15648.46		3.44	Si
SLV 14	fin.	2920.36	-10176	-0.0003194	0.0002807	0.0035	2		15635.95	15635.95		5.35	Si
SLV 2	ini.	4302.16	-20237	-0.0005013	0.0002807	0.0035	2		15635.95	15635.95		3.63	Si
SLV 2	fin.	-1584.25	-7104	-0.0001644	0.0002807	0.0035	2		15648.46	15648.46		9.88	Si
SLV 16	ini.	-3883.33	-4290	-0.0004433	0.0002807	0.0035	2		15648.46	15648.46		4.03	Si
SLV 16	fin.	2226.96	-9334	-0.0002368	0.0002807	0.0035	2		15635.95	15635.95		7.02	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 7	ini.	2374.44	-12213	2	0	1957	7930	20213	5100	9886		0.81	No



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 7	fin.	-1346.32	-10515	2	0	1957	7930	20213	5100	9886		0.94	No
SLV 8	ini.	2587.64	-13170	2	0	1957	7930	20213	5100	9886		0.75	No
SLV 8	fin.	-1474.79	-11486	2	0	1957	7930	20213	5100	9886		0.86	No
SLV 4	ini.	4967.59	-21859	2	0	1957	7930	20213	5100	9886		0.45	No
SLV 4	fin.	-2277.65	-20727	2	0	1957	7930	20213	5100	9886		0.48	No
SLV 15	ini.	-4213.43	12247	2	0	1957	7930	20213	5100	9886		0.81	No
SLV 15	fin.	2425.85	12838	2	0	1957	7930	20213	5100	9886		0.77	No
SLV 13	ini.	-4878.85	14812	2	0	1957	7930	20213	5100	9886		0.67	No
SLV 13	fin.	3119.25	14764	2	0	1957	7930	20213	5100	9886		0.67	No
SLV 2	ini.	4302.16	-19294	2	0	1957	7930	20213	5100	9886		0.51	No
SLV 2	fin.	-1584.25	-18800	2	0	1957	7930	20213	5100	9886		0.53	No
SLV 14	ini.	-4548.75	13330	2	0	1957	7930	20213	5100	9886		0.74	No
SLV 14	fin.	2920.36	13260	2	0	1957	7930	20213	5100	9886		0.75	No
SLD 4	ini.	2148.83	-11359	2	0	1957	7930	20213	5100	9886		0.87	No
SLD 4	fin.	-737.4	-10574	2	0	1957	7930	20213	5100	9886		0.93	No
SLV 1	ini.	3972.06	-17813	2	0	1957	7930	20213	5100	9886		0.55	No
SLV 1	fin.	-1385.35	-17297	2	0	1957	7930	20213	5100	9886		0.57	No
SLV 3	ini.	4637.48	-20378	2	0	1957	7930	20213	5100	9886		0.49	No
SLV 3	fin.	-2078.75	-19223	2	0	1957	7930	20213	5100	9886		0.51	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.148	SLV 4	Si
V_SLV	0.452	SLV 4	No
PF_SLU	14.622	SLU 83	Si
V_SLU	1.7	SLU 84	Si

## Trave di accoppiamento 10

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-14.223	-3.284	0.51	1.11	0.6	-16.523	-3.284	0.51	1.11	0.6	2.3	0.45	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>fm</sub> medio	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε <sub>f,d</sub>	γ <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 74	ini.	-786.42	-1283	-0.0013242	0.0001872	0.0035	0.6		977.71	977.71	No	1.24	Si
SLU 74	fin.	-1528.97	-6824	-0.0045202	0.0001872	0.0035	0.6		977.71	977.71	No	0.64	No
SLU 78	ini.	-794.26	-1295	-0.0013432	0.0001872	0.0035	0.6		977.71	977.71	No	1.23	Si
SLU 78	fin.	-1548.05	-6910	-0.004608	0.0001872	0.0035	0.6		977.71	977.71	No	0.63	No
SLU 75	ini.	-786.76	-1282	-0.001325	0.0001872	0.0035	0.6		977.71	977.71	No	1.24	Si
SLU 75	fin.	-1529.46	-6826	-0.0045225	0.0001872	0.0035	0.6		977.71	977.71	No	0.64	No
SLU 79	ini.	-793.55	-1296	-0.0013414	0.0001872	0.0035	0.6		977.71	977.71	No	1.23	Si
SLU 79	fin.	-1540.39	-6875	-0.0045729	0.0001872	0.0035	0.6		977.71	977.71	No	0.63	No
SLU 82	ini.	-813.45	-1298	-0.0013904	0.0001872	0.0035	0.6		977.71	977.71	No	1.2	Si
SLU 82	fin.	-1583.12	-7050	-0.0047671	0.0001872	0.0035	0.6		977.71	977.71	No	0.62	No
SLU 77	ini.	-793.93	-1295	-0.0013423	0.0001872	0.0035	0.6		977.71	977.71	No	1.23	Si
SLU 77	fin.	-1547.56	-6908	-0.0046058	0.0001872	0.0035	0.6		977.71	977.71	No	0.63	No
SLU 83	ini.	-820.62	-1311	-0.0014083	0.0001872	0.0035	0.6		977.71	977.71	No	1.19	Si
SLU 83	fin.	-1601.22	-7133	-0.0048482	0.0001872	0.0035	0.6		977.71	977.71	No	0.61	No
SLU 84	ini.	-820.96	-1310	-0.0014091	0.0001872	0.0035	0.6		977.71	977.71	No	1.19	Si
SLU 84	fin.	-1601.71	-7134	-0.0048504	0.0001872	0.0035	0.6		977.71	977.71	No	0.61	No
SLU 80	ini.	-793.89	-1295	-0.0013423	0.0001872	0.0035	0.6		977.71	977.71	No	1.23	Si
SLU 80	fin.	-1540.88	-6876	-0.0045751	0.0001872	0.0035	0.6		977.71	977.71	No	0.63	No
SLU 81	ini.	-813.11	-1298	-0.0013895	0.0001872	0.0035	0.6		977.71	977.71	No	1.2	Si
SLU 81	fin.	-1582.63	-7048	-0.0047649	0.0001872	0.0035	0.6		977.71	977.71	No	0.62	No



#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 82	ini.	-813.45	4942	0.6	0	261	4758	4042	1530	5019	No	1.02	Si
SLU 82	fin.	-1583.12	-6536	0.6	0	261	4758	4042	1530	5019	No	0.77	No
SLU 79	ini.	-793.55	4827	0.6	0	261	4758	4042	1530	5019	No	1.04	Si
SLU 79	fin.	-1540.39	-6328	0.6	0	261	4758	4042	1530	5019	No	0.79	No
SLU 78	ini.	-794.26	4841	0.6	0	261	4758	4042	1530	5019	No	1.04	Si
SLU 78	fin.	-1548.05	-6356	0.6	0	261	4758	4042	1530	5019	No	0.79	No
SLU 84	ini.	-820.96	4994	0.6	0	261	4758	4042	1530	5019	No	1	Si
SLU 84	fin.	-1601.71	-6603	0.6	0	261	4758	4042	1530	5019	No	0.76	No
SLU 80	ini.	-793.89	4828	0.6	0	261	4758	4042	1530	5019	No	1.04	Si
SLU 80	fin.	-1540.88	-6330	0.6	0	261	4758	4042	1530	5019	No	0.79	No
SLU 81	ini.	-813.11	4941	0.6	0	261	4758	4042	1530	5019	No	1.02	Si
SLU 81	fin.	-1582.63	-6534	0.6	0	261	4758	4042	1530	5019	No	0.77	No
SLU 75	ini.	-786.76	4789	0.6	0	261	4758	4042	1530	5019	No	1.05	Si
SLU 75	fin.	-1529.46	-6290	0.6	0	261	4758	4042	1530	5019	No	0.8	No
SLU 83	ini.	-820.62	4993	0.6	0	261	4758	4042	1530	5019	No	1.01	Si
SLU 83	fin.	-1601.22	-6601	0.6	0	261	4758	4042	1530	5019	No	0.76	No
SLU 74	ini.	-786.42	4787	0.6	0	261	4758	4042	1530	5019	No	1.05	Si
SLU 74	fin.	-1528.97	-6288	0.6	0	261	4758	4042	1530	5019	No	0.8	No
SLU 77	ini.	-793.93	4839	0.6	0	261	4758	4042	1530	5019	No	1.04	Si
SLU 77	fin.	-1547.56	-6355	0.6	0	261	4758	4042	1530	5019	No	0.79	No

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 6	ini.	85	1125	-0.0000959	0.0002807	0.0035	0.6		1411.3	1411.3		16.6	Si
SLV 6	fin.	-1673.09	-6801	-0.0048274	0.0002807	0.0035	0.6		1415.16	1415.16		0.85	No
SLV 1	ini.	404.87	3451	-0.0005279	0.0002807	0.0035	0.6		1411.3	1411.3		3.49	Si
SLV 1	fin.	-2447.58	-10018	-0.0078657	0.0002807	0.0035	0.6		1415.16	1415.16		0.58	No
SLV 4	ini.	215.35	3257	-0.0002556	0.0002807	0.0035	0.6		1411.3	1411.3		6.55	Si
SLV 4	fin.	-2390.39	-9949	-0.007652	0.0002807	0.0035	0.6		1415.16	1415.16		0.59	No
SLD 3	ini.	-227.44	776	-0.0002706	0.0002807	0.0035	0.6		1415.16	1415.16		6.22	Si
SLD 3	fin.	-1588.78	-6815	-0.0044617	0.0002807	0.0035	0.6		1415.16	1415.16		0.89	No
SLV 5	ini.	67.16	984	-0.0000753	0.0002807	0.0035	0.6		1411.3	1411.3		21.01	Si
SLV 5	fin.	-1632.47	-6658	-0.0046529	0.0002807	0.0035	0.6		1415.16	1415.16		0.87	No
SLV 3	ini.	187.74	3037	-0.0002202	0.0002807	0.0035	0.6		1411.3	1411.3		7.52	Si
SLV 3	fin.	-2327.5	-9728	-0.0074157	0.0002807	0.0035	0.6		1415.16	1415.16		0.61	No
SLD 4	ini.	-215.58	871	-0.0002551	0.0002807	0.0035	0.6		1415.16	1415.16		6.56	Si
SLD 4	fin.	-1615.78	-6910	-0.0045803	0.0002807	0.0035	0.6		1415.16	1415.16		0.88	No
SLD 1	ini.	-140	943	-0.0001607	0.0002807	0.0035	0.6		1415.16	1415.16		10.11	Si
SLD 1	fin.	-1640.5	-6939	-0.0046876	0.0002807	0.0035	0.6		1415.16	1415.16		0.86	No
SLV 2	ini.	432.48	3670	-0.0005719	0.0002807	0.0035	0.6		1411.3	1411.3		3.26	Si
SLV 2	fin.	-2510.47	-10240	-0.0080996	0.0002807	0.0035	0.6		1415.16	1415.16		0.56	No
SLD 2	ini.	-128.14	1037	-0.0001464	0.0002807	0.0035	0.6		1415.16	1415.16		11.04	Si
SLD 2	fin.	-1667.5	-7034	-0.0048036	0.0002807	0.0035	0.6		1415.16	1415.16		0.85	No

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 2	ini.	-128.14	2626	0.6	0	391	4758	6064	1530	5149		1.96	Si
SLD 2	fin.	-1667.5	-5676	0.6	0	391	4758	6064	1530	5149		0.91	No
SLD 1	ini.	-140	2633	0.6	0	391	4758	6064	1530	5149		1.96	Si
SLD 1	fin.	-1640.5	-5619	0.6	0	391	4758	6064	1530	5149		0.92	No
SLV 3	ini.	187.74	2382	0.6	0	391	4758	6064	1530	5149		2.16	Si
SLV 3	fin.	-2327.5	-7592	0.6	0	391	4758	6064	1530	5149		0.68	No
SLD 3	ini.	-227.44	2896	0.6	0	391	4758	6064	1530	5149		1.78	Si
SLD 3	fin.	-1588.78	-5671	0.6	0	391	4758	6064	1530	5149		0.91	No
SLV 2	ini.	432.48	1715	0.6	0	391	4758	6064	1530	5149		3	Si
SLV 2	fin.	-2510.47	-7586	0.6	0	391	4758	6064	1530	5149		0.68	No
SLV 7	ini.	-656.61	4005	0.6	0	391	4758	6064	1530	5149		1.29	Si
SLV 7	fin.	-1232.21	-5439	0.6	0	391	4758	6064	1530	5149		0.95	No
SLV 8	ini.	-638.78	3995	0.6	0	391	4758	6064	1530	5149		1.29	Si
SLV 8	fin.	-1272.83	-5526	0.6	0	391	4758	6064	1530	5149		0.93	No
SLV 4	ini.	215.35	2366	0.6	0	391	4758	6064	1530	5149		2.18	Si
SLV 4	fin.	-2390.39	-7726	0.6	0	391	4758	6064	1530	5149		0.67	No
SLV 1	ini.	404.87	1731	0.6	0	391	4758	6064	1530	5149		2.97	Si
SLV 1	fin.	-2447.58	-7452	0.6	0	391	4758	6064	1530	5149		0.69	No
SLD 4	ini.	-215.58	2889	0.6	0	391	4758	6064	1530	5149		1.78	Si
SLD 4	fin.	-1615.78	-5728	0.6	0	391	4758	6064	1530	5149		0.9	No

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.564	SLV 2	No
V_SLV	0.666	SLV 4	No
PF_SLU	0.61	SLU 84	No
V_SLU	0.76	SLU 84	No

#### Trave di accoppiamento 11

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)



## Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-17.768	6.576	-1.59	0.41	2	-16.768	6.576	-1.59	0.41	2	1	0.45	3500

## Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fhk	fvk0	fhmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

## Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

## Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 75	ini.	4403.64	-7492	-0.000547	0.0001872	0.0035	2		10722.86	10722.86	No	2.43	Si
SLU 75	fin.	-2047.47	-5639	-0.0002225	0.0001872	0.0035	2		10737.13	10737.13	No	5.24	Si
SLU 84	ini.	4530.32	-7718	-0.0005664	0.0001872	0.0035	2		10722.86	10722.86	No	2.37	Si
SLU 84	fin.	-2081.37	-5821	-0.0002266	0.0001872	0.0035	2		10737.13	10737.13	No	5.16	Si
SLU 80	ini.	4394.64	-7507	-0.0005457	0.0001872	0.0035	2		10722.86	10722.86	No	2.44	Si
SLU 80	fin.	-2041.87	-5666	-0.0002218	0.0001872	0.0035	2		10737.13	10737.13	No	5.26	Si
SLU 78	ini.	4434.64	-7567	-0.0005517	0.0001872	0.0035	2		10722.86	10722.86	No	2.42	Si
SLU 78	fin.	-2057.91	-5709	-0.0002237	0.0001872	0.0035	2		10737.13	10737.13	No	5.22	Si
SLU 82	ini.	4499.32	-7643	-0.0005616	0.0001872	0.0035	2		10722.86	10722.86	No	2.38	Si
SLU 82	fin.	-2070.94	-5751	-0.0002253	0.0001872	0.0035	2		10737.13	10737.13	No	5.18	Si
SLU 79	ini.	4415.35	-7563	-0.0005488	0.0001872	0.0035	2		10722.86	10722.86	No	2.43	Si
SLU 79	fin.	-2020.79	-5721	-0.0002192	0.0001872	0.0035	2		10737.13	10737.13	No	5.31	Si
SLU 74	ini.	4424.35	-7548	-0.0005502	0.0001872	0.0035	2		10722.86	10722.86	No	2.42	Si
SLU 74	fin.	-2026.39	-5693	-0.0002199	0.0001872	0.0035	2		10737.13	10737.13	No	5.3	Si
SLU 77	ini.	4455.36	-7623	-0.0005549	0.0001872	0.0035	2		10722.86	10722.86	No	2.41	Si
SLU 77	fin.	-2036.82	-5764	-0.0002212	0.0001872	0.0035	2		10737.13	10737.13	No	5.27	Si
SLU 83	ini.	4551.03	-7774	-0.0005696	0.0001872	0.0035	2		10722.86	10722.86	No	2.36	Si
SLU 83	fin.	-2060.28	-5876	-0.000224	0.0001872	0.0035	2		10737.13	10737.13	No	5.21	Si
SLU 81	ini.	4520.03	-7699	-0.0005648	0.0001872	0.0035	2		10722.86	10722.86	No	2.37	Si
SLU 81	fin.	-2049.85	-5805	-0.0002227	0.0001872	0.0035	2		10737.13	10737.13	No	5.24	Si

## Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 77	ini.	4455.36	-9948	2	0	1304	7930	13475	5100	9234	No	0.93	No
SLU 77	fin.	-2036.82	-7624	2	0	1304	7930	13475	5100	9234	No	1.21	Si
SLU 81	ini.	4520.03	-10092	2	0	1304	7930	13475	5100	9234	No	0.91	No
SLU 81	fin.	-2049.85	-7716	2	0	1304	7930	13475	5100	9234	No	1.2	Si
SLU 80	ini.	4394.64	-9859	2	0	1304	7930	13475	5100	9234	No	0.94	No
SLU 80	fin.	-2041.87	-7557	2	0	1304	7930	13475	5100	9234	No	1.22	Si
SLU 79	ini.	4415.35	-9857	2	0	1304	7930	13475	5100	9234	No	0.94	No
SLU 79	fin.	-2020.79	-7564	2	0	1304	7930	13475	5100	9234	No	1.22	Si
SLU 75	ini.	4403.64	-9880	2	0	1304	7930	13475	5100	9234	No	0.93	No
SLU 75	fin.	-2047.47	-7591	2	0	1304	7930	13475	5100	9234	No	1.22	Si
SLU 78	ini.	4434.64	-9950	2	0	1304	7930	13475	5100	9234	No	0.93	No
SLU 78	fin.	-2057.91	-7617	2	0	1304	7930	13475	5100	9234	No	1.21	Si
SLU 74	ini.	4424.35	-9878	2	0	1304	7930	13475	5100	9234	No	0.93	No
SLU 74	fin.	-2026.39	-7597	2	0	1304	7930	13475	5100	9234	No	1.22	Si
SLU 82	ini.	4499.32	-10094	2	0	1304	7930	13475	5100	9234	No	0.91	No
SLU 82	fin.	-2070.94	-7709	2	0	1304	7930	13475	5100	9234	No	1.2	Si
SLU 83	ini.	4551.03	-10162	2	0	1304	7930	13475	5100	9234	No	0.91	No
SLU 83	fin.	-2060.28	-7742	2	0	1304	7930	13475	5100	9234	No	1.19	Si
SLU 84	ini.	4530.32	-10164	2	0	1304	7930	13475	5100	9234	No	0.91	No
SLU 84	fin.	-2081.37	-7735	2	0	1304	7930	13475	5100	9234	No	1.19	Si

## Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	4605.93	-1735	-0.0005443	0.0002807	0.0035	2		15635.95	15635.95		3.39	Si
SLV 15	fin.	-3826.21	2092	-0.0004357	0.0002807	0.0035	2		15648.46	15648.46		4.09	Si
SLD 15	ini.	3727.16	-3736	-0.0004228	0.0002807	0.0035	2		15635.95	15635.95		4.2	Si
SLD 15	fin.	-2469.4	-1348	-0.0002648	0.0002807	0.0035	2		15648.46	15648.46		6.34	Si
SLD 14	ini.	3986.46	-3401	-0.0004577	0.0002807	0.0035	2		15635.95	15635.95		3.92	Si
SLD 14	fin.	-2617.93	-774	-0.0002824	0.0002807	0.0035	2		15648.46	15648.46		5.98	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 13	ini.	5157.66	-1158	-0.0006251	0.0002807	0.0035	2		15635.95	15635.95		3.03	Si
SLV 13	fin.	-3923.05	2989	-0.0004487	0.0002807	0.0035	2		15648.46	15648.46		3.99	Si
SLV 9	ini.	4529	-3166	-0.0005333	0.0002807	0.0035	2		15635.95	15635.95		3.45	Si
SLV 9	fin.	-2303.23	-554	-0.0002454	0.0002807	0.0035	2		15648.46	15648.46		6.79	Si
SLV 14	ini.	5204.94	-960	-0.0006322	0.0002807	0.0035	2		15635.95	15635.95		3	Si
SLV 14	fin.	-4168.05	3423	-0.0004822	0.0002807	0.0035	2		15648.46	15648.46		3.75	Si
SLD 13	ini.	3966.16	-3486	-0.000455	0.0002807	0.0035	2		15635.95	15635.95		3.94	Si
SLD 13	fin.	-2512.73	-960	-0.0002699	0.0002807	0.0035	2		15648.46	15648.46		6.23	Si
SLD 16	ini.	3747.46	-3651	-0.0004255	0.0002807	0.0035	2		15635.95	15635.95		4.17	Si
SLD 16	fin.	-2574.6	-1161	-0.0002773	0.0002807	0.0035	2		15648.46	15648.46		6.08	Si
SLV 16	ini.	4653.22	-1537	-0.0005511	0.0002807	0.0035	2		15635.95	15635.95		3.36	Si
SLV 16	fin.	-4071.21	2526	-0.0004689	0.0002807	0.0035	2		15648.46	15648.46		3.84	Si
SLV 10	ini.	4559.54	-3038	-0.0005376	0.0002807	0.0035	2		15635.95	15635.95		3.43	Si
SLV 10	fin.	-2461.46	-274	-0.0002639	0.0002807	0.0035	2		15648.46	15648.46		6.36	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 15	ini.	3727.16	-9456	2	0	1957	7930	20213	5100	9886		1.05	Si
SLD 15	fin.	-2469.4	-8661	2	0	1957	7930	20213	5100	9886		1.14	Si
SLD 13	ini.	3966.16	-9398	2	0	1957	7930	20213	5100	9886		1.05	Si
SLD 13	fin.	-2512.73	-8929	2	0	1957	7930	20213	5100	9886		1.11	Si
SLV 14	ini.	5204.94	-13216	2	0	1957	7930	20213	5100	9886		0.75	No
SLV 14	fin.	-4168.05	-14092	2	0	1957	7930	20213	5100	9886		0.7	No
SLV 10	ini.	4559.54	-8620	2	0	1957	7930	20213	5100	9886		1.15	Si
SLV 10	fin.	-2461.46	-9063	2	0	1957	7930	20213	5100	9886		1.09	Si
SLV 12	ini.	2720.45	-9114	2	0	1957	7930	20213	5100	9886		1.08	Si
SLV 12	fin.	-2138.65	-7019	2	0	1957	7930	20213	5100	9886		1.41	Si
SLD 16	ini.	3747.46	-9640	2	0	1957	7930	20213	5100	9886		1.03	Si
SLD 16	fin.	-2574.6	-8880	2	0	1957	7930	20213	5100	9886		1.11	Si
SLV 13	ini.	5157.66	-12788	2	0	1957	7930	20213	5100	9886		0.77	No
SLV 13	fin.	-3923.05	-13582	2	0	1957	7930	20213	5100	9886		0.73	No
SLV 15	ini.	4605.93	-12936	2	0	1957	7930	20213	5100	9886		0.76	No
SLV 15	fin.	-3826.21	-12969	2	0	1957	7930	20213	5100	9886		0.76	No
SLD 14	ini.	3986.46	-9582	2	0	1957	7930	20213	5100	9886		1.03	Si
SLD 14	fin.	-2617.93	-9148	2	0	1957	7930	20213	5100	9886		1.08	Si
SLV 16	ini.	4653.22	-13364	2	0	1957	7930	20213	5100	9886		0.74	No
SLV 16	fin.	-4071.21	-13479	2	0	1957	7930	20213	5100	9886		0.73	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.004	SLV 14	Si
V_SLV	0.702	SLV 14	No
PF_SLU	2.356	SLU 83	Si
V_SLU	0.908	SLU 84	No

## Trave di accoppiamento 20

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-12.888	6.576	-1.59	0.41	2	-11.888	6.576	-1.59	0.41	2	1	0.45	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_ Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e_CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e_fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 78	ini.	1255.96	-9230	-0.000131	0.0001872	0.0035	2		10722.86	10722.86	No	8.54	Si
SLU 78	fin.	1157.63	-9357	-0.0001202	0.0001872	0.0035	2		10722.86	10722.86	No	9.26	Si
SLU 84	ini.	1282.21	-9395	-0.0001339	0.0001872	0.0035	2		10722.86	10722.86	No	8.36	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 84	fin.	1189.36	-9521	-0.0001237	0.0001872	0.0035	2		10722.86	10722.86	No	9.02	Si
SLU 74	ini.	1254.03	-9189	-0.0001308	0.0001872	0.0035	2		10722.86	10722.86	No	8.55	Si
SLU 74	fin.	1150.74	-9310	-0.0001194	0.0001872	0.0035	2		10722.86	10722.86	No	9.32	Si
SLU 83	ini.	1291.52	-9450	-0.0001349	0.0001872	0.0035	2		10722.86	10722.86	No	8.3	Si
SLU 83	fin.	1204.53	-9580	-0.0001253	0.0001872	0.0035	2		10722.86	10722.86	No	8.9	Si
SLU 77	ini.	1265.27	-9284	-0.000132	0.0001872	0.0035	2		10722.86	10722.86	No	8.47	Si
SLU 77	fin.	1172.8	-9416	-0.0001218	0.0001872	0.0035	2		10722.86	10722.86	No	9.14	Si
SLU 75	ini.	1244.72	-9135	-0.0001297	0.0001872	0.0035	2		10722.86	10722.86	No	8.61	Si
SLU 75	fin.	1135.57	-9251	-0.0001178	0.0001872	0.0035	2		10722.86	10722.86	No	9.44	Si
SLU 80	ini.	1244.22	-9162	-0.0001297	0.0001872	0.0035	2		10722.86	10722.86	No	8.62	Si
SLU 80	fin.	1148.83	-9290	-0.0001192	0.0001872	0.0035	2		10722.86	10722.86	No	9.33	Si
SLU 79	ini.	1253.53	-9217	-0.0001307	0.0001872	0.0035	2		10722.86	10722.86	No	8.55	Si
SLU 79	fin.	1164	-9349	-0.0001209	0.0001872	0.0035	2		10722.86	10722.86	No	9.21	Si
SLU 82	ini.	1270.97	-9300	-0.0001327	0.0001872	0.0035	2		10722.86	10722.86	No	8.44	Si
SLU 82	fin.	1167.29	-9416	-0.0001212	0.0001872	0.0035	2		10722.86	10722.86	No	9.19	Si
SLU 81	ini.	1280.28	-9355	-0.0001337	0.0001872	0.0035	2		10722.86	10722.86	No	8.38	Si
SLU 81	fin.	1182.46	-9475	-0.0001229	0.0001872	0.0035	2		10722.86	10722.86	No	9.07	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 76	ini.	1226.77	-1241	2	0	1304	7930	13475	5100	9234	No	7.44	Si
SLU 76	fin.	1116.65	1210	2	0	1304	7930	13475	5100	9234	No	7.63	Si
SLU 84	ini.	1282.21	-1299	2	0	1304	7930	13475	5100	9234	No	7.11	Si
SLU 84	fin.	1189.36	1322	2	0	1304	7930	13475	5100	9234	No	6.98	Si
SLU 81	ini.	1280.28	-1278	2	0	1304	7930	13475	5100	9234	No	7.23	Si
SLU 81	fin.	1182.46	1281	2	0	1304	7930	13475	5100	9234	No	7.21	Si
SLU 79	ini.	1253.53	-1215	2	0	1304	7930	13475	5100	9234	No	7.6	Si
SLU 79	fin.	1164	1260	2	0	1304	7930	13475	5100	9234	No	7.33	Si
SLU 82	ini.	1270.97	-1296	2	0	1304	7930	13475	5100	9234	No	7.13	Si
SLU 82	fin.	1167.29	1277	2	0	1304	7930	13475	5100	9234	No	7.23	Si
SLU 78	ini.	1255.96	-1253	2	0	1304	7930	13475	5100	9234	No	7.37	Si
SLU 78	fin.	1157.63	1268	2	0	1304	7930	13475	5100	9234	No	7.28	Si
SLU 77	ini.	1265.27	-1235	2	0	1304	7930	13475	5100	9234	No	7.48	Si
SLU 77	fin.	1172.8	1272	2	0	1304	7930	13475	5100	9234	No	7.26	Si
SLU 75	ini.	1244.72	-1250	2	0	1304	7930	13475	5100	9234	No	7.39	Si
SLU 75	fin.	1135.57	1223	2	0	1304	7930	13475	5100	9234	No	7.55	Si
SLU 83	ini.	1291.52	-1281	2	0	1304	7930	13475	5100	9234	No	7.21	Si
SLU 83	fin.	1204.53	1326	2	0	1304	7930	13475	5100	9234	No	6.96	Si
SLU 80	ini.	1244.22	-1233	2	0	1304	7930	13475	5100	9234	No	7.49	Si
SLU 80	fin.	1148.83	1257	2	0	1304	7930	13475	5100	9234	No	7.35	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 14	ini.	2769.69	-7058	-0.000301	0.0002807	0.0035	2		15635.95	15635.95		5.65	Si
SLD 14	fin.	-1147.76	-4638	-0.0001174	0.0002807	0.0035	2		15648.46	15648.46		13.63	Si
SLD 1	ini.	-993.35	-5200	-0.0001011	0.0002807	0.0035	2		15648.46	15648.46		15.75	Si
SLD 1	fin.	2731.9	-7836	-0.0002964	0.0002807	0.0035	2		15635.95	15635.95		5.72	Si
SLV 13	ini.	5102.14	-7845	-0.0006168	0.0002807	0.0035	2		15635.95	15635.95		3.06	Si
SLV 13	fin.	-3467.24	-2462	-0.0003883	0.0002807	0.0035	2		15648.46	15648.46		4.51	Si
SLV 14	ini.	5327.01	-7950	-0.0006506	0.0002807	0.0035	2		15635.95	15635.95		2.94	Si
SLV 14	fin.	-3704.21	-2187	-0.0004194	0.0002807	0.0035	2		15648.46	15648.46		4.22	Si
SLV 3	ini.	-3604.95	-4848	-0.0004063	0.0002807	0.0035	2		15648.46	15648.46		4.34	Si
SLV 3	fin.	5221.5	-10762	-0.0006346	0.0002807	0.0035	2		15635.95	15635.95		2.99	Si
SLV 4	ini.	-3380.09	-4953	-0.000377	0.0002807	0.0035	2		15648.46	15648.46		4.63	Si
SLV 4	fin.	4984.54	-10487	-0.0005993	0.0002807	0.0035	2		15635.95	15635.95		3.14	Si
SLV 1	ini.	-3481.3	-3599	-0.0003901	0.0002807	0.0035	2		15648.46	15648.46		4.5	Si
SLV 1	fin.	5372.73	-9663	-0.0006575	0.0002807	0.0035	2		15635.95	15635.95		2.91	Si
SLV 2	ini.	-3256.43	-3703	-0.0003612	0.0002807	0.0035	2		15648.46	15648.46		4.81	Si
SLV 2	fin.	5135.77	-9388	-0.0006218	0.0002807	0.0035	2		15635.95	15635.95		3.04	Si
SLV 16	ini.	5203.35	-9200	-0.0006319	0.0002807	0.0035	2		15635.95	15635.95		3	Si
SLV 16	fin.	-3855.43	-3286	-0.0004396	0.0002807	0.0035	2		15648.46	15648.46		4.06	Si
SLV 15	ini.	4978.48	-9095	-0.0005984	0.0002807	0.0035	2		15635.95	15635.95		3.14	Si
SLV 15	fin.	-3618.47	-3561	-0.0004081	0.0002807	0.0035	2		15648.46	15648.46		4.32	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 16	ini.	5203.35	-15614	2	0	1957	7930	20213	5100	9886		0.63	No
SLV 16	fin.	-3855.43	-14014	2	0	1957	7930	20213	5100	9886		0.71	No
SLV 15	ini.	4978.48	-14790	2	0	1957	7930	20213	5100	9886		0.67	No
SLV 15	fin.	-3618.47	-13164	2	0	1957	7930	20213	5100	9886		0.75	No
SLD 3	ini.	-1047.64	5447	2	0	1957	7930	20213	5100	9886		1.81	Si
SLD 3	fin.	2665.05	7198	2	0	1957	7930	20213	5100	9886		1.37	Si
SLV 1	ini.	-3481.3	14002	2	0	1957	7930	20213	5100	9886		0.71	No
SLV 1	fin.	5372.73	15465	2	0	1957	7930	20213	5100	9886		0.64	No
SLV 4	ini.	-3380.09	13004	2	0	1957	7930	20213	5100	9886		0.76	No
SLV 4	fin.	4984.54	15020	2	0	1957	7930	20213	5100	9886		0.66	No
SLV 13	ini.	5102.14	-14616	2	0	1957	7930	20213	5100	9886		0.68	No
SLV 13	fin.	-3467.24	-13568	2	0	1957	7930	20213	5100	9886		0.73	No
SLV 3	ini.	-3604.95	13829	2	0	1957	7930	20213	5100	9886		0.71	No
SLV 3	fin.	5221.5	15870	2	0	1957	7930	20213	5100	9886		0.62	No
SLV 2	ini.	-3256.43	13177	2	0	1957	7930	20213	5100	9886		0.75	No
SLV 2	fin.	5135.77	14615	2	0	1957	7930	20213	5100	9886		0.68	No



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 16	ini.	2715.4	-7135	2	0	1957	7930	20213	5100	9886		1.39	Si
SLD 16	fin.	-1214.6	-5573	2	0	1957	7930	20213	5100	9886		1.77	Si
SLV 14	ini.	5327.01	-15441	2	0	1957	7930	20213	5100	9886		0.64	No
SLV 14	fin.	-3704.21	-14419	2	0	1957	7930	20213	5100	9886		0.69	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.91	SLV 1	Si
V_SLV	0.623	SLV 3	No
PF_SLU	8.302	SLU 83	Si
V_SLU	6.965	SLU 83	Si

## Trave di accoppiamento 22

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-8.008	6.576	-1.59	0.41	2	-7.008	6.576	-1.59	0.41	2	1	0.45	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fhk	fvk0	fhmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 80	ini.	-1530.89	-5824	-0.0001617	0.0001872	0.0035	2		10737.13	10737.13	No	7.01	Si
SLU 80	fin.	3812.58	-7242	-0.0004592	0.0001872	0.0035	2		10722.86	10722.86	No	2.81	Si
SLU 78	ini.	-1542.66	-5868	-0.000163	0.0001872	0.0035	2		10737.13	10737.13	No	6.96	Si
SLU 78	fin.	3844.18	-7298	-0.0004638	0.0001872	0.0035	2		10722.86	10722.86	No	2.79	Si
SLU 81	ini.	-1533.42	-5954	-0.000162	0.0001872	0.0035	2		10737.13	10737.13	No	7	Si
SLU 81	fin.	3907.01	-7423	-0.0004729	0.0001872	0.0035	2		10722.86	10722.86	No	2.74	Si
SLU 84	ini.	-1552.46	-5973	-0.0001642	0.0001872	0.0035	2		10737.13	10737.13	No	6.92	Si
SLU 84	fin.	3914.85	-7430	-0.0004741	0.0001872	0.0035	2		10722.86	10722.86	No	2.74	Si
SLU 82	ini.	-1549.46	-5898	-0.0001638	0.0001872	0.0035	2		10737.13	10737.13	No	6.93	Si
SLU 82	fin.	3884.06	-7354	-0.0004696	0.0001872	0.0035	2		10722.86	10722.86	No	2.76	Si
SLU 75	ini.	-1539.65	-5793	-0.0001627	0.0001872	0.0035	2		10737.13	10737.13	No	6.97	Si
SLU 75	fin.	3813.39	-7222	-0.0004593	0.0001872	0.0035	2		10722.86	10722.86	No	2.81	Si
SLU 77	ini.	-1526.62	-5923	-0.0001612	0.0001872	0.0035	2		10737.13	10737.13	No	7.03	Si
SLU 77	fin.	3867.13	-7368	-0.0004671	0.0001872	0.0035	2		10722.86	10722.86	No	2.77	Si
SLU 74	ini.	-1523.62	-5848	-0.0001609	0.0001872	0.0035	2		10737.13	10737.13	No	7.05	Si
SLU 74	fin.	3836.34	-7291	-0.0004626	0.0001872	0.0035	2		10722.86	10722.86	No	2.8	Si
SLU 79	ini.	-1514.85	-5879	-0.0001599	0.0001872	0.0035	2		10737.13	10737.13	No	7.09	Si
SLU 79	fin.	3835.53	-7312	-0.0004625	0.0001872	0.0035	2		10722.86	10722.86	No	2.8	Si
SLU 83	ini.	-1536.42	-6029	-0.0001623	0.0001872	0.0035	2		10737.13	10737.13	No	6.99	Si
SLU 83	fin.	3937.8	-7500	-0.0004774	0.0001872	0.0035	2		10722.86	10722.86	No	2.72	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 83	ini.	-1536.42	6085	2	0	1304	7930	13475	5100	9234	No	1.52	Si
SLU 83	fin.	3937.8	8218	2	0	1304	7930	13475	5100	9234	No	1.12	Si
SLU 84	ini.	-1552.46	6058	2	0	1304	7930	13475	5100	9234	No	1.52	Si
SLU 84	fin.	3914.85	8202	2	0	1304	7930	13475	5100	9234	No	1.13	Si
SLU 75	ini.	-1539.65	5976	2	0	1304	7930	13475	5100	9234	No	1.55	Si
SLU 75	fin.	3813.39	7988	2	0	1304	7930	13475	5100	9234	No	1.16	Si
SLU 82	ini.	-1549.46	6043	2	0	1304	7930	13475	5100	9234	No	1.53	Si
SLU 82	fin.	3884.06	8143	2	0	1304	7930	13475	5100	9234	No	1.13	Si
SLU 79	ini.	-1514.85	5976	2	0	1304	7930	13475	5100	9234	No	1.55	Si
SLU 79	fin.	3835.53	7992	2	0	1304	7930	13475	5100	9234	No	1.16	Si
SLU 74	ini.	-1523.62	6003	2	0	1304	7930	13475	5100	9234	No	1.54	Si
SLU 74	fin.	3836.34	8004	2	0	1304	7930	13475	5100	9234	No	1.15	Si
SLU 81	ini.	-1533.42	6070	2	0	1304	7930	13475	5100	9234	No	1.52	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 81	fin.	3907.01	8159	2	0	1304	7930	13475	5100	9234	No	1.13	Si
SLU 77	ini.	-1526.62	6018	2	0	1304	7930	13475	5100	9234	No	1.53	Si
SLU 77	fin.	3867.13	8063	2	0	1304	7930	13475	5100	9234	No	1.15	Si
SLU 80	ini.	-1530.89	5949	2	0	1304	7930	13475	5100	9234	No	1.55	Si
SLU 80	fin.	3812.58	7976	2	0	1304	7930	13475	5100	9234	No	1.16	Si
SLU 78	ini.	-1542.66	5991	2	0	1304	7930	13475	5100	9234	No	1.54	Si
SLU 78	fin.	3844.18	8047	2	0	1304	7930	13475	5100	9234	No	1.15	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 1	ini.	-4281.63	1307	-0.0004979	0.0002807	0.0035	2		15648.46	15648.46		3.65	Si
SLV 1	fin.	6459.33	-4671	-0.0008299	0.0002807	0.0035	2		15635.95	15635.95		2.42	Si
SLV 5	ini.	-2256.56	-818	-0.00024	0.0002807	0.0035	2		15648.46	15648.46		6.93	Si
SLV 5	fin.	4202.07	-4159	-0.0004874	0.0002807	0.0035	2		15635.95	15635.95		3.72	Si
SLD 1	ini.	-2472.21	-1747	-0.0002652	0.0002807	0.0035	2		15648.46	15648.46		6.33	Si
SLD 1	fin.	4299.94	-4898	-0.000501	0.0002807	0.0035	2		15635.95	15635.95		3.64	Si
SLV 2	ini.	-3980.29	1083	-0.0004565	0.0002807	0.0035	2		15648.46	15648.46		3.93	Si
SLV 2	fin.	6200.67	-4514	-0.0007876	0.0002807	0.0035	2		15635.95	15635.95		2.52	Si
SLD 3	ini.	-2433.78	-2198	-0.0002606	0.0002807	0.0035	2		15648.46	15648.46		6.43	Si
SLD 3	fin.	4201.53	-5133	-0.0004873	0.0002807	0.0035	2		15635.95	15635.95		3.72	Si
SLD 4	ini.	-2304.38	-2294	-0.0002455	0.0002807	0.0035	2		15648.46	15648.46		6.79	Si
SLD 4	fin.	4090.47	-5066	-0.000472	0.0002807	0.0035	2		15635.95	15635.95		3.82	Si
SLD 2	ini.	-2342.82	-1843	-0.00025	0.0002807	0.0035	2		15648.46	15648.46		6.68	Si
SLD 2	fin.	4188.88	-4831	-0.0004855	0.0002807	0.0035	2		15635.95	15635.95		3.73	Si
SLV 6	ini.	-2061.93	-963	-0.0002177	0.0002807	0.0035	2		15648.46	15648.46		7.59	Si
SLV 6	fin.	4035.01	-4058	-0.0004644	0.0002807	0.0035	2		15635.95	15635.95		3.88	Si
SLV 3	ini.	-4192.92	270	-0.0004856	0.0002807	0.0035	2		15648.46	15648.46		3.73	Si
SLV 3	fin.	6235.24	-5210	-0.0007932	0.0002807	0.0035	2		15635.95	15635.95		2.51	Si
SLV 4	ini.	-3891.58	47	-0.0004445	0.0002807	0.0035	2		15648.46	15648.46		4.02	Si
SLV 4	fin.	5976.58	-5054	-0.0007515	0.0002807	0.0035	2		15635.95	15635.95		2.62	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 4	ini.	-2304.38	8998	2	0	1957	7930	20213	5100	9886		1.1	Si
SLD 4	fin.	4090.47	9882	2	0	1957	7930	20213	5100	9886		1	Si
SLD 3	ini.	-2433.78	9384	2	0	1957	7930	20213	5100	9886		1.05	Si
SLD 3	fin.	4201.53	10273	2	0	1957	7930	20213	5100	9886		0.96	No
SLV 1	ini.	-4281.63	16317	2	0	1957	7930	20213	5100	9886		0.61	No
SLV 1	fin.	6459.33	16135	2	0	1957	7930	20213	5100	9886		0.61	No
SLV 2	ini.	-3980.29	15418	2	0	1957	7930	20213	5100	9886		0.64	No
SLV 2	fin.	6200.67	15225	2	0	1957	7930	20213	5100	9886		0.65	No
SLV 8	ini.	-1766.24	7129	2	0	1957	7930	20213	5100	9886		1.39	Si
SLV 8	fin.	3288.04	9058	2	0	1957	7930	20213	5100	9886		1.09	Si
SLD 1	ini.	-2472.21	9484	2	0	1957	7930	20213	5100	9886		1.04	Si
SLD 1	fin.	4299.94	10101	2	0	1957	7930	20213	5100	9886		0.98	No
SLV 7	ini.	-1960.87	7710	2	0	1957	7930	20213	5100	9886		1.28	Si
SLV 7	fin.	3455.1	9646	2	0	1957	7930	20213	5100	9886		1.02	Si
SLD 2	ini.	-2342.82	9098	2	0	1957	7930	20213	5100	9886		1.09	Si
SLD 2	fin.	4188.88	9711	2	0	1957	7930	20213	5100	9886		1.02	Si
SLV 4	ini.	-3891.58	15195	2	0	1957	7930	20213	5100	9886		0.65	No
SLV 4	fin.	5976.58	15627	2	0	1957	7930	20213	5100	9886		0.63	No
SLV 3	ini.	-4192.92	16094	2	0	1957	7930	20213	5100	9886		0.61	No
SLV 3	fin.	6235.24	16537	2	0	1957	7930	20213	5100	9886		0.6	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.421	SLV 1	Si
V_SLV	0.598	SLV 3	No
PF_SLU	2.723	SLU 83	Si
V_SLU	1.124	SLU 83	Si

Trave di accoppiamento 24

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-9.728	1.271	0.61	1.11	0.5	-9.728	2.201	0.61	1.11	0.5	0.93	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC

Materiale	Fu Verticale	Fu Orizzontale	t <sub>fv</sub>	t <sub>fo</sub>	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio





## Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 77	ini.	-55.65	-1359	-0.0000908	0.0002246	0.0035	0.5		937.67	937.67	No	16.85	Si
SLU 77	fin.	-1116.4	-4711	-0.0047606	0.0002246	0.0035	0.5		937.67	937.67	No	0.84	No
SLU 74	ini.	-55.58	-1328	-0.0000907	0.0002246	0.0035	0.5		937.67	937.67	No	16.87	Si
SLU 74	fin.	-1108.08	-4655	-0.0047074	0.0002246	0.0035	0.5		937.67	937.67	No	0.85	No
SLU 81	ini.	-63.88	-1222	-0.0001048	0.0002246	0.0035	0.5		937.67	937.67	No	14.68	Si
SLU 81	fin.	-1142.65	-4632	-0.0049265	0.0002246	0.0035	0.5		937.67	937.67	No	0.82	No
SLU 83	ini.	-63.95	-1253	-0.0001049	0.0002246	0.0035	0.5		937.67	937.67	No	14.66	Si
SLU 83	fin.	-1150.97	-4688	-0.0049785	0.0002246	0.0035	0.5		937.67	937.67	No	0.81	No
SLU 84	ini.	-63.15	-1265	-0.0001035	0.0002246	0.0035	0.5		937.67	937.67	No	14.85	Si
SLU 84	fin.	-1156.32	-4720	-0.0050118	0.0002246	0.0035	0.5		937.67	937.67	No	0.81	No
SLU 75	ini.	-54.79	-1340	-0.0000894	0.0002246	0.0035	0.5		937.67	937.67	No	17.12	Si
SLU 75	fin.	-1113.43	-4687	-0.0047416	0.0002246	0.0035	0.5		937.67	937.67	No	0.84	No
SLU 82	ini.	-63.08	-1234	-0.0001034	0.0002246	0.0035	0.5		937.67	937.67	No	14.86	Si
SLU 82	fin.	-1148	-4664	-0.0049599	0.0002246	0.0035	0.5		937.67	937.67	No	0.82	No
SLU 76	ini.	-54.66	-1321	-0.0000892	0.0002246	0.0035	0.5		937.67	937.67	No	17.15	Si
SLU 76	fin.	-1108.25	-4652	-0.0047085	0.0002246	0.0035	0.5		937.67	937.67	No	0.85	No
SLU 78	ini.	-54.85	-1371	-0.0000895	0.0002246	0.0035	0.5		937.67	937.67	No	17.1	Si
SLU 78	fin.	-1121.74	-4743	-0.0047946	0.0002246	0.0035	0.5		937.67	937.67	No	0.84	No
SLU 80	ini.	-55.26	-1343	-0.0000902	0.0002246	0.0035	0.5		937.67	937.67	No	16.97	Si
SLU 80	fin.	-1113	-4687	-0.0047389	0.0002246	0.0035	0.5		937.67	937.67	No	0.84	No

### Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 84	ini.	-63.15	234	0.5	0	145	3965	2695	1275	3970	No	17	Si
SLU 84	fin.	-1156.32	-4358	0.5	0	145	3965	2695	1275	3970	No	0.91	No
SLU 82	ini.	-63.08	251	0.5	0	145	3965	2695	1275	3970	No	15.79	Si
SLU 82	fin.	-1148	-4343	0.5	0	145	3965	2695	1275	3970	No	0.91	No
SLU 76	ini.	-54.66	93	0.5	0	145	3965	2695	1275	3970	No	42.84	Si
SLU 76	fin.	-1108.25	-4083	0.5	0	145	3965	2695	1275	3970	No	0.97	No
SLU 74	ini.	-55.58	96	0.5	0	145	3965	2695	1275	3970	No	41.57	Si
SLU 74	fin.	-1108.08	-4080	0.5	0	145	3965	2695	1275	3970	No	0.97	No
SLU 78	ini.	-54.85	64	0.5	0	145	3965	2695	1275	3970	No	62.08	Si
SLU 78	fin.	-1121.74	-4106	0.5	0	145	3965	2695	1275	3970	No	0.97	No
SLU 80	ini.	-55.26	84	0.5	0	145	3965	2695	1275	3970	No	47.25	Si
SLU 80	fin.	-1113	-4090	0.5	0	145	3965	2695	1275	3970	No	0.97	No
SLU 83	ini.	-63.95	247	0.5	0	145	3965	2695	1275	3970	No	16.06	Si
SLU 83	fin.	-1150.97	-4346	0.5	0	145	3965	2695	1275	3970	No	0.91	No
SLU 77	ini.	-55.65	78	0.5	0	145	3965	2695	1275	3970	No	51.1	Si
SLU 77	fin.	-1116.4	-4095	0.5	0	145	3965	2695	1275	3970	No	0.97	No
SLU 75	ini.	-54.79	82	0.5	0	145	3965	2695	1275	3970	No	48.55	Si
SLU 75	fin.	-1113.43	-4092	0.5	0	145	3965	2695	1275	3970	No	0.97	No
SLU 81	ini.	-63.88	265	0.5	0	145	3965	2695	1275	3970	No	14.98	Si
SLU 81	fin.	-1142.65	-4332	0.5	0	145	3965	2695	1275	3970	No	0.92	No

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 7	ini.	59.98	-2958	-0.0000976	0.0003369	0.0035	0.5		931.66	931.66		15.53	Si
SLV 7	fin.	-1573.15	-8299	-0.0070185	0.0003369	0.0035	0.5		934.91	934.91		0.59	No
SLV 8	ini.	55.59	-2897	-0.0000903	0.0003369	0.0035	0.5		931.66	931.66		16.76	Si
SLV 8	fin.	-1545.11	-8132	-0.0068668	0.0003369	0.0035	0.5		934.91	934.91		0.61	No
SLD 12	ini.	-5.91	-1797	-0.0000094	0.0003369	0.0035	0.5		934.91	934.91		158.11	Si
SLD 12	fin.	-1056.48	-5181	-0.0040251	0.0003369	0.0035	0.5		934.91	934.91		0.88	No
SLV 3	ini.	46	-1901	-0.0000744	0.0003369	0.0035	0.5		931.66	931.66		20.26	Si
SLV 3	fin.	-1196.94	-5938	-0.0049026	0.0003369	0.0035	0.5		934.91	934.91		0.78	No
SLD 7	ini.	9.09	-1891	-0.0000145	0.0003369	0.0035	0.5		931.66	931.66		102.45	Si
SLD 7	fin.	-1117.86	-5532	-0.0044197	0.0003369	0.0035	0.5		934.91	934.91		0.84	No
SLD 8	ini.	7.18	-1864	-0.0000114	0.0003369	0.0035	0.5		931.66	931.66		129.83	Si
SLD 8	fin.	-1105.61	-5459	-0.0043425	0.0003369	0.0035	0.5		934.91	934.91		0.85	No
SLV 4	ini.	39.2	-1807	-0.0000632	0.0003369	0.0035	0.5		931.66	931.66		23.77	Si
SLV 4	fin.	-1153.51	-5680	-0.0046403	0.0003369	0.0035	0.5		934.91	934.91		0.81	No
SLV 12	ini.	24.87	-2737	-0.0000399	0.0003369	0.0035	0.5		931.66	931.66		37.46	Si
SLV 12	fin.	-1429.32	-7475	-0.0062313	0.0003369	0.0035	0.5		934.91	934.91		0.65	No
SLD 11	ini.	-4	-1824	-0.0000063	0.0003369	0.0035	0.5		934.91	934.91		234.02	Si
SLD 11	fin.	-1068.73	-5254	-0.0041057	0.0003369	0.0035	0.5		934.91	934.91		0.87	No
SLV 11	ini.	29.26	-2798	-0.0000047	0.0003369	0.0035	0.5		931.66	931.66		31.84	Si
SLV 11	fin.	-1457.36	-7642	-0.0063869	0.0003369	0.0035	0.5		934.91	934.91		0.64	No



## Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 12	ini.	-5.91	-835	0.5	0	217	3965	4043	1275	4182		5.01	Si
SLD 12	fin.	-1056.48	-3296	0.5	0	217	3965	4043	1275	4182		1.27	Si
SLV 3	ini.	46	-1269	0.5	0	217	3965	4043	1275	4182		3.29	Si
SLV 3	fin.	-1196.94	-3664	0.5	0	217	3965	4043	1275	4182		1.14	Si
SLD 11	ini.	-4	-866	0.5	0	217	3965	4043	1275	4182		4.83	Si
SLD 11	fin.	-1068.73	-3323	0.5	0	217	3965	4043	1275	4182		1.26	Si
SLV 11	ini.	29.26	-1831	0.5	0	217	3965	4043	1275	4182		2.28	Si
SLV 11	fin.	-1457.36	-4132	0.5	0	217	3965	4043	1275	4182		1.01	Si
SLV 4	ini.	39.2	-1158	0.5	0	217	3965	4043	1275	4182		3.61	Si
SLV 4	fin.	-1153.51	-3569	0.5	0	217	3965	4043	1275	4182		1.17	Si
SLV 12	ini.	24.87	-1759	0.5	0	217	3965	4043	1275	4182		2.38	Si
SLV 12	fin.	-1429.32	-4071	0.5	0	217	3965	4043	1275	4182		1.03	Si
SLV 7	ini.	59.98	-2164	0.5	0	217	3965	4043	1275	4182		1.93	Si
SLV 7	fin.	-1573.15	-4412	0.5	0	217	3965	4043	1275	4182		0.95	No
SLV 8	ini.	55.59	-2092	0.5	0	217	3965	4043	1275	4182		2	Si
SLV 8	fin.	-1545.11	-4351	0.5	0	217	3965	4043	1275	4182		0.96	No
SLD 8	ini.	7.18	-976	0.5	0	217	3965	4043	1275	4182		4.28	Si
SLD 8	fin.	-1105.61	-3415	0.5	0	217	3965	4043	1275	4182		1.22	Si
SLD 7	ini.	9.09	-1008	0.5	0	217	3965	4043	1275	4182		4.15	Si
SLD 7	fin.	-1117.86	-3442	0.5	0	217	3965	4043	1275	4182		1.22	Si

### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF SLV	0.594	SLV 7	No
V SLV	0.948	SLV 7	No
PF SLU	0.811	SLU 84	No
V SLU	0.911	SLU 84	No

## Trave di accoppiamento 25

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-10.553	-3.284	0.46	1.11	0.65	-8.253	-3.284	0.46	1.11	0.65	2.3	0.45	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fmk	fvk0	fmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 80	ini.	-845.76	-1151	-0.0011771	0.0001872	0.0035	0.65		1192.15	1192.15	No	1.41	Si
SLU 80	fin.	-1331.08	-5385	-0.0024795	0.0001872	0.0035	0.65		1192.15	1192.15	No	0.9	No
SLU 82	ini.	-872.32	-1190	-0.0012286	0.0001872	0.0035	0.65		1192.15	1192.15	No	1.37	Si
SLU 82	fin.	-1376.74	-5547	-0.0026669	0.0001872	0.0035	0.65		1192.15	1192.15	No	0.87	No
SLU 78	ini.	-849.91	-1157	-0.0011851	0.0001872	0.0035	0.65		1192.15	1192.15	No	1.4	Si
SLU 78	fin.	-1340.09	-5423	-0.0025152	0.0001872	0.0035	0.65		1192.15	1192.15	No	0.89	No
SLU 81	ini.	-871.55	-1186	-0.0012271	0.0001872	0.0035	0.65		1192.15	1192.15	No	1.37	Si
SLU 81	fin.	-1378.28	-5552	-0.0026735	0.0001872	0.0035	0.65		1192.15	1192.15	No	0.86	No
SLU 75	ini.	-843.52	-1154	-0.0011728	0.0001872	0.0035	0.65		1192.15	1192.15	No	1.41	Si
SLU 75	fin.	-1324.62	-5357	-0.0024542	0.0001872	0.0035	0.65		1192.15	1192.15	No	0.9	No
SLU 77	ini.	-849.14	-1153	-0.0011836	0.0001872	0.0035	0.65		1192.15	1192.15	No	1.4	Si
SLU 77	fin.	-1341.63	-5428	-0.0025214	0.0001872	0.0035	0.65		1192.15	1192.15	No	0.89	No
SLU 74	ini.	-842.76	-1150	-0.0011713	0.0001872	0.0035	0.65		1192.15	1192.15	No	1.41	Si
SLU 74	fin.	-1326.16	-5362	-0.0024602	0.0001872	0.0035	0.65		1192.15	1192.15	No	0.9	No
SLU 79	ini.	-844.99	-1146	-0.0011756	0.0001872	0.0035	0.65		1192.15	1192.15	No	1.41	Si
SLU 79	fin.	-1332.62	-5390	-0.0024855	0.0001872	0.0035	0.65		1192.15	1192.15	No	0.89	No
SLU 84	ini.	-878.7	-1193	-0.0012412	0.0001872	0.0035	0.65		1192.15	1192.15	No	1.36	Si
SLU 84	fin.	-1392.22	-5613	-0.002734	0.0001872	0.0035	0.65		1192.15	1192.15	No	0.86	No
SLU 83	ini.	-877.94	-1189	-0.0012397	0.0001872	0.0035	0.65		1192.15	1192.15	No	1.36	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 83	fin.	-1393.75	-5618	-0.0027408	0.0001872	0.0035	0.65		1192.15	1192.15	No	0.86	No

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 82	ini.	-872.32	5140	0.65	0	283	5154	4379	1658	5437	No	1.06	Si
SLU 82	fin.	-1376.74	-7305	0.65	0	283	5154	4379	1658	5437	No	0.74	No
SLU 74	ini.	-842.76	4978	0.65	0	283	5154	4379	1658	5437	No	1.09	Si
SLU 74	fin.	-1326.16	-7067	0.65	0	283	5154	4379	1658	5437	No	0.77	No
SLU 84	ini.	-878.7	5188	0.65	0	283	5154	4379	1658	5437	No	1.05	Si
SLU 84	fin.	-1392.22	-7388	0.65	0	283	5154	4379	1658	5437	No	0.74	No
SLU 83	ini.	-877.94	5188	0.65	0	283	5154	4379	1658	5437	No	1.05	Si
SLU 83	fin.	-1393.75	-7390	0.65	0	283	5154	4379	1658	5437	No	0.74	No
SLU 77	ini.	-849.14	5026	0.65	0	283	5154	4379	1658	5437	No	1.08	Si
SLU 77	fin.	-1341.63	-7150	0.65	0	283	5154	4379	1658	5437	No	0.76	No
SLU 78	ini.	-849.91	5027	0.65	0	283	5154	4379	1658	5437	No	1.08	Si
SLU 78	fin.	-1340.09	-7148	0.65	0	283	5154	4379	1658	5437	No	0.76	No
SLU 81	ini.	-871.55	5139	0.65	0	283	5154	4379	1658	5437	No	1.06	Si
SLU 81	fin.	-1378.28	-7307	0.65	0	283	5154	4379	1658	5437	No	0.74	No
SLU 80	ini.	-845.76	5000	0.65	0	283	5154	4379	1658	5437	No	1.09	Si
SLU 80	fin.	-1331.08	-7107	0.65	0	283	5154	4379	1658	5437	No	0.77	No
SLU 79	ini.	-844.99	4999	0.65	0	283	5154	4379	1658	5437	No	1.09	Si
SLU 79	fin.	-1332.62	-7109	0.65	0	283	5154	4379	1658	5437	No	0.76	No
SLU 75	ini.	-843.52	4979	0.65	0	283	5154	4379	1658	5437	No	1.09	Si
SLU 75	fin.	-1324.62	-7066	0.65	0	283	5154	4379	1658	5437	No	0.77	No

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 9	ini.	16.5	1502	-0.0000155	0.0002807	0.0035	0.65		1661.57	1661.57		100.71	Si
SLV 9	fin.	-1616.78	-6138	-0.0034775	0.0002807	0.0035	0.65		1665.75	1665.75		1.03	Si
SLD 13	ini.	-154.93	1481	-0.0001516	0.0002807	0.0035	0.65		1665.75	1665.75		10.75	Si
SLD 13	fin.	-1673.17	-6403	-0.0037236	0.0002807	0.0035	0.65		1665.75	1665.75		1	No
SLD 15	ini.	-232.78	1304	-0.0002339	0.0002807	0.0035	0.65		1665.75	1665.75		7.16	Si
SLD 15	fin.	-1624.42	-6250	-0.0035117	0.0002807	0.0035	0.65		1665.75	1665.75		1.03	Si
SLV 15	ini.	222.61	4105	-0.0002234	0.0002807	0.0035	0.65		1661.57	1661.57		7.46	Si
SLV 15	fin.	-2612.52	-9797	-0.0070598	0.0002807	0.0035	0.65		1665.75	1665.75		0.64	No
SLV 10	ini.	-0.91	1344	-0.0000008	0.0002807	0.0035	0.65		1665.75	1665.75		1834.1	Si
SLV 10	fin.	-1573.95	-6002	-0.0032811	0.0002807	0.0035	0.65		1665.75	1665.75		1.06	Si
SLD 16	ini.	-244.36	1199	-0.0002465	0.0002807	0.0035	0.65		1665.75	1665.75		6.82	Si
SLD 16	fin.	-1595.95	-6159	-0.0033829	0.0002807	0.0035	0.65		1665.75	1665.75		1.04	Si
SLD 14	ini.	-166.5	1376	-0.0001635	0.0002807	0.0035	0.65		1665.75	1665.75		10	Si
SLD 14	fin.	-1644.7	-6312	-0.003601	0.0002807	0.0035	0.65		1665.75	1665.75		1.01	Si
SLV 14	ini.	387.24	4291	-0.0004155	0.0002807	0.0035	0.65		1661.57	1661.57		4.29	Si
SLV 14	fin.	-2655.83	-9936	-0.0072006	0.0002807	0.0035	0.65		1665.75	1665.75		0.63	No
SLV 13	ini.	414.19	4535	-0.0004497	0.0002807	0.0035	0.65		1661.57	1661.57		4.01	Si
SLV 13	fin.	-2722.15	-10147	-0.007415	0.0002807	0.0035	0.65		1665.75	1665.75		0.61	No
SLV 16	ini.	195.66	3861	-0.0001946	0.0002807	0.0035	0.65		1661.57	1661.57		8.49	Si
SLV 16	fin.	-2546.2	-9586	-0.006843	0.0002807	0.0035	0.65		1665.75	1665.75		0.65	No

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 13	ini.	414.19	2215	0.65	0	424	5154	6569	1658	5578		2.52	Si
SLV 13	fin.	-2722.15	-9254	0.65	0	424	5154	6569	1658	5578		0.6	No
SLV 16	ini.	195.66	2938	0.65	0	424	5154	6569	1658	5578		1.9	Si
SLV 16	fin.	-2546.2	-8709	0.65	0	424	5154	6569	1658	5578		0.64	No
SLV 14	ini.	387.24	2214	0.65	0	424	5154	6569	1658	5578		2.52	Si
SLV 14	fin.	-2655.83	-9133	0.65	0	424	5154	6569	1658	5578		0.61	No
SLV 15	ini.	222.61	2940	0.65	0	424	5154	6569	1658	5578		1.9	Si
SLV 15	fin.	-2612.52	-8831	0.65	0	424	5154	6569	1658	5578		0.63	No
SLD 15	ini.	-232.78	3199	0.65	0	424	5154	6569	1658	5578		1.74	Si
SLD 15	fin.	-1624.42	-6513	0.65	0	424	5154	6569	1658	5578		0.86	No
SLV 9	ini.	16.5	1946	0.65	0	424	5154	6569	1658	5578		2.87	Si
SLV 9	fin.	-1616.78	-6788	0.65	0	424	5154	6569	1658	5578		0.82	No
SLD 13	ini.	-154.93	2904	0.65	0	424	5154	6569	1658	5578		1.92	Si
SLD 13	fin.	-1673.17	-6690	0.65	0	424	5154	6569	1658	5578		0.83	No
SLD 14	ini.	-166.5	2903	0.65	0	424	5154	6569	1658	5578		1.92	Si
SLD 14	fin.	-1644.7	-6638	0.65	0	424	5154	6569	1658	5578		0.84	No
SLV 10	ini.	-0.91	1945	0.65	0	424	5154	6569	1658	5578		2.87	Si
SLV 10	fin.	-1573.95	-6709	0.65	0	424	5154	6569	1658	5578		0.83	No
SLD 16	ini.	-244.36	3198	0.65	0	424	5154	6569	1658	5578		1.74	Si
SLD 16	fin.	-1595.95	-6461	0.65	0	424	5154	6569	1658	5578		0.86	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.612	SLV 13	No
V_SLV	0.603	SLV 13	No
PF_SLU	0.855	SLU 83	No
V_SLU	0.736	SLU 83	No



## Trave di accoppiamento 26

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-7.463	-3.284	-1.59	0.41	2	-6.463	-3.284	-1.59	0.41	2	1	0.45	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	t <sub>fv</sub>	t <sub>fo</sub>	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e_CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	e <sub>f,d</sub>	γ <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ε <sub>m</sub>	ε <sub>m_</sub>	ε <sub>mu</sub>	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 40	ini.	604.54	-13367	-0.0000612	0.0001872	0.0035	2		10722.86	10722.86	No	17.74	Si
SLU 40	fin.	430.76	-8651	-0.0000433	0.0001872	0.0035	2		10722.86	10722.86	No	24.89	Si
SLU 81	ini.	678.35	-15929	-0.0000689	0.0001872	0.0035	2		10722.86	10722.86	No	15.81	Si
SLU 81	fin.	452.09	-10215	-0.0000455	0.0001872	0.0035	2		10722.86	10722.86	No	23.72	Si
SLU 82	ini.	676.93	-15923	-0.0000688	0.0001872	0.0035	2		10722.86	10722.86	No	15.84	Si
SLU 82	fin.	450.08	-10215	-0.0000453	0.0001872	0.0035	2		10722.86	10722.86	No	23.82	Si
SLU 62	ini.	653.7	-14861	-0.0000664	0.0001872	0.0035	2		10722.86	10722.86	No	16.4	Si
SLU 62	fin.	347.6	-9388	-0.0000349	0.0001872	0.0035	2		10722.86	10722.86	No	30.85	Si
SLU 39	ini.	605.96	-13372	-0.0000614	0.0001872	0.0035	2		10722.86	10722.86	No	17.7	Si
SLU 39	fin.	432.77	-8650	-0.0000435	0.0001872	0.0035	2		10722.86	10722.86	No	24.78	Si
SLU 60	ini.	655.53	-14692	-0.0000666	0.0001872	0.0035	2		10722.86	10722.86	No	16.36	Si
SLU 60	fin.	328.45	-9259	-0.0000329	0.0001872	0.0035	2		10722.86	10722.86	No	32.65	Si
SLU 63	ini.	652.28	-14855	-0.0000662	0.0001872	0.0035	2		10722.86	10722.86	No	16.44	Si
SLU 63	fin.	345.59	-9388	-0.0000346	0.0001872	0.0035	2		10722.86	10722.86	No	31.03	Si
SLU 61	ini.	654.11	-14686	-0.0000664	0.0001872	0.0035	2		10722.86	10722.86	No	16.39	Si
SLU 61	fin.	326.44	-9259	-0.0000327	0.0001872	0.0035	2		10722.86	10722.86	No	32.85	Si
SLU 84	ini.	675.1	-16092	-0.0000686	0.0001872	0.0035	2		10722.86	10722.86	No	15.88	Si
SLU 84	fin.	469.24	-10345	-0.0000473	0.0001872	0.0035	2		10722.86	10722.86	No	22.85	Si
SLU 83	ini.	676.52	-16098	-0.0000687	0.0001872	0.0035	2		10722.86	10722.86	No	15.85	Si
SLU 83	fin.	471.24	-10344	-0.0000475	0.0001872	0.0035	2		10722.86	10722.86	No	22.75	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	f <sub>vd</sub>	V <sub>t</sub>	V <sub>t,f</sub>	V <sub>t,c</sub>	V <sub>t,c int.</sub>	V <sub>t,R</sub>	incremento > 50%	c.s.	Verifica
SLU 63	ini.	652.28	-5975	2	0	1304	7930	13475	5100	9234	No	1.55	Si
SLU 63	fin.	345.59	-5029	2	0	1304	7930	13475	5100	9234	No	1.84	Si
SLU 81	ini.	678.35	-6219	2	0	1304	7930	13475	5100	9234	No	1.48	Si
SLU 81	fin.	452.09	-5094	2	0	1304	7930	13475	5100	9234	No	1.81	Si
SLU 77	ini.	580.13	-5945	2	0	1304	7930	13475	5100	9234	No	1.55	Si
SLU 77	fin.	468.92	-4848	2	0	1304	7930	13475	5100	9234	No	1.9	Si
SLU 62	ini.	653.7	-5982	2	0	1304	7930	13475	5100	9234	No	1.54	Si
SLU 62	fin.	347.6	-5034	2	0	1304	7930	13475	5100	9234	No	1.83	Si
SLU 61	ini.	654.11	-5944	2	0	1304	7930	13475	5100	9234	No	1.55	Si
SLU 61	fin.	326.44	-5027	2	0	1304	7930	13475	5100	9234	No	1.84	Si
SLU 60	ini.	655.53	-5950	2	0	1304	7930	13475	5100	9234	No	1.55	Si
SLU 60	fin.	328.45	-5032	2	0	1304	7930	13475	5100	9234	No	1.83	Si
SLU 83	ini.	676.52	-6251	2	0	1304	7930	13475	5100	9234	No	1.48	Si
SLU 83	fin.	471.24	-5095	2	0	1304	7930	13475	5100	9234	No	1.81	Si
SLU 82	ini.	676.93	-6212	2	0	1304	7930	13475	5100	9234	No	1.49	Si
SLU 82	fin.	450.08	-5088	2	0	1304	7930	13475	5100	9234	No	1.81	Si
SLU 84	ini.	675.1	-6244	2	0	1304	7930	13475	5100	9234	No	1.48	Si
SLU 84	fin.	469.24	-5090	2	0	1304	7930	13475	5100	9234	No	1.81	Si
SLU 78	ini.	578.71	-5939	2	0	1304	7930	13475	5100	9234	No	1.55	Si
SLU 78	fin.	466.92	-4843	2	0	1304	7930	13475	5100	9234	No	1.91	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ε <sub>m</sub>	ε <sub>m_</sub>	ε <sub>mu</sub>	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 3	ini.	-4513.37	-1648	-0.0005305	0.0002807	0.0035	2		15648.46	15648.46		3.47	Si
SLV 3	fin.	2414.74	-7412	-0.0002586	0.0002807	0.0035	2		15635.95	15635.95		6.48	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 4	ini.	-4830.66	-1224	-0.0005762	0.0002807	0.0035	2		15648.46	15648.46		3.24	Si
SLV 4	fin.	2659.47	-7819	-0.0002877	0.0002807	0.0035	2		15635.95	15635.95		5.88	Si
SLV 11	ini.	2716.9	-14003	-0.0002946	0.0002807	0.0035	2		15635.95	15635.95		5.76	Si
SLV 11	fin.	-1510.29	-5072	-0.0001564	0.0002807	0.0035	2		15648.46	15648.46		10.36	Si
SLV 15	ini.	5931.19	-20428	-0.0007443	0.0002807	0.0035	2		15635.95	15635.95		2.64	Si
SLV 15	fin.	-2692.19	-5112	-0.0002913	0.0002807	0.0035	2		15648.46	15648.46		5.81	Si
SLD 15	ini.	2729.85	-14873	-0.0002962	0.0002807	0.0035	2		15635.95	15635.95		5.73	Si
SLD 15	fin.	-1002.99	-6111	-0.0001021	0.0002807	0.0035	2		15648.46	15648.46		15.6	Si
SLV 1	ini.	-4939.79	-1456	-0.0005922	0.0002807	0.0035	2		15648.46	15648.46		3.17	Si
SLV 1	fin.	2970.9	-8199	-0.0003257	0.0002807	0.0035	2		15635.95	15635.95		5.26	Si
SLV 13	ini.	5504.78	-20236	-0.0006777	0.0002807	0.0035	2		15635.95	15635.95		2.84	Si
SLV 13	fin.	-2136.03	-5899	-0.0002261	0.0002807	0.0035	2		15648.46	15648.46		7.33	Si
SLV 2	ini.	-5257.07	-1032	-0.0006394	0.0002807	0.0035	2		15648.46	15648.46		2.98	Si
SLV 2	fin.	3215.63	-8606	-0.0003564	0.0002807	0.0035	2		15635.95	15635.95		4.86	Si
SLV 16	ini.	5613.9	-20003	-0.0006946	0.0002807	0.0035	2		15635.95	15635.95		2.79	Si
SLV 16	fin.	-2447.46	-5519	-0.0002622	0.0002807	0.0035	2		15648.46	15648.46		6.39	Si
SLV 14	ini.	5187.49	-19811	-0.0006295	0.0002807	0.0035	2		15635.95	15635.95		3.01	Si
SLV 14	fin.	-1891.3	-6305	-0.0001984	0.0002807	0.0035	2		15648.46	15648.46		8.27	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 13	ini.	5504.78	-21672	2	0	1957	7930	20213	5100	9886		0.46	No
SLV 13	fin.	-2136.03	-21250	2	0	1957	7930	20213	5100	9886		0.47	No
SLV 4	ini.	-4830.66	13550	2	0	1957	7930	20213	5100	9886		0.73	No
SLV 4	fin.	2659.47	14383	2	0	1957	7930	20213	5100	9886		0.69	No
SLV 1	ini.	-4939.79	14601	2	0	1957	7930	20213	5100	9886		0.68	No
SLV 1	fin.	2970.9	14505	2	0	1957	7930	20213	5100	9886		0.68	No
SLV 12	ini.	2511.97	-13104	2	0	1957	7930	20213	5100	9886		0.75	No
SLV 12	fin.	-1352.22	-10869	2	0	1957	7930	20213	5100	9886		0.91	No
SLV 16	ini.	5613.9	-22723	2	0	1957	7930	20213	5100	9886		0.44	No
SLV 16	fin.	-2447.46	-21371	2	0	1957	7930	20213	5100	9886		0.46	No
SLV 15	ini.	5931.19	-24100	2	0	1957	7930	20213	5100	9886		0.41	No
SLV 15	fin.	-2692.19	-22762	2	0	1957	7930	20213	5100	9886		0.43	No
SLV 14	ini.	5187.49	-20295	2	0	1957	7930	20213	5100	9886		0.49	No
SLV 14	fin.	-1891.3	-19858	2	0	1957	7930	20213	5100	9886		0.5	No
SLV 2	ini.	-5257.07	15978	2	0	1957	7930	20213	5100	9886		0.62	No
SLV 2	fin.	3215.63	15896	2	0	1957	7930	20213	5100	9886		0.62	No
SLV 11	ini.	2716.9	-13994	2	0	1957	7930	20213	5100	9886		0.71	No
SLV 11	fin.	-1510.29	-11767	2	0	1957	7930	20213	5100	9886		0.84	No
SLV 3	ini.	-4513.37	12173	2	0	1957	7930	20213	5100	9886		0.81	No
SLV 3	fin.	2414.74	12992	2	0	1957	7930	20213	5100	9886		0.76	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV		2.636	SLV 15
V_SLV		0.41	SLV 15
PF_SLU		15.807	SLU 81
V_SLU		1.477	SLU 83

## Trave di accoppiamento 28

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-3.233	-3.284	-1.59	0.41	2	-2.233	-3.284	-1.59	0.41	2	1	0.45	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e_CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	e <sub>f,d</sub>	y <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 83	ini.	-440.53	-3126	-0.0000443	0.0001872	0.0035	2		10737.13	10737.13	No	24.37	Si
SLU 83	fin.	2311.92	-4513	-0.0002554	0.0001872	0.0035	2		10722.86	10722.86	No	4.64	Si
SLU 80	ini.	-441.59	-3041	-0.0000444	0.0001872	0.0035	2		10737.13	10737.13	No	24.31	Si
SLU 80	fin.	2278.3	-4423	-0.0002512	0.0001872	0.0035	2		10722.86	10722.86	No	4.71	Si
SLU 79	ini.	-438.17	-3048	-0.0000441	0.0001872	0.0035	2		10737.13	10737.13	No	24.5	Si
SLU 79	fin.	2271.98	-4422	-0.0002504	0.0001872	0.0035	2		10722.86	10722.86	No	4.72	Si
SLU 84	ini.	-443.96	-3119	-0.0000446	0.0001872	0.0035	2		10737.13	10737.13	No	24.18	Si
SLU 84	fin.	2318.24	-4514	-0.0002562	0.0001872	0.0035	2		10722.86	10722.86	No	4.63	Si
SLU 82	ini.	-442.21	-3072	-0.0000445	0.0001872	0.0035	2		10737.13	10737.13	No	24.28	Si
SLU 82	fin.	2290.7	-4452	-0.0002527	0.0001872	0.0035	2		10722.86	10722.86	No	4.68	Si
SLU 75	ini.	-450.11	-3019	-0.0000453	0.0001872	0.0035	2		10737.13	10737.13	No	23.85	Si
SLU 75	fin.	2270.65	-4403	-0.0002502	0.0001872	0.0035	2		10722.86	10722.86	No	4.72	Si
SLU 74	ini.	-446.69	-3026	-0.0000449	0.0001872	0.0035	2		10737.13	10737.13	No	24.04	Si
SLU 74	fin.	2264.32	-4402	-0.0002494	0.0001872	0.0035	2		10722.86	10722.86	No	4.74	Si
SLU 81	ini.	-438.78	-3079	-0.0000441	0.0001872	0.0035	2		10737.13	10737.13	No	24.47	Si
SLU 81	fin.	2284.37	-4450	-0.0002519	0.0001872	0.0035	2		10722.86	10722.86	No	4.69	Si
SLU 77	ini.	-448.44	-3074	-0.0000451	0.0001872	0.0035	2		10737.13	10737.13	No	23.94	Si
SLU 77	fin.	2291.87	-4464	-0.0002529	0.0001872	0.0035	2		10722.86	10722.86	No	4.68	Si
SLU 78	ini.	-451.87	-3067	-0.0000455	0.0001872	0.0035	2		10737.13	10737.13	No	23.76	Si
SLU 78	fin.	2298.19	-4466	-0.0002536	0.0001872	0.0035	2		10722.86	10722.86	No	4.67	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 79	ini.	-438.17	1479	2	0	1304	7930	13475	5100	9234	No	6.25	Si
SLU 79	fin.	2271.98	5977	2	0	1304	7930	13475	5100	9234	No	1.54	Si
SLU 74	ini.	-446.69	1501	2	0	1304	7930	13475	5100	9234	No	6.15	Si
SLU 74	fin.	2264.32	5962	2	0	1304	7930	13475	5100	9234	No	1.55	Si
SLU 83	ini.	-440.53	1445	2	0	1304	7930	13475	5100	9234	No	6.39	Si
SLU 83	fin.	2311.92	6107	2	0	1304	7930	13475	5100	9234	No	1.51	Si
SLU 81	ini.	-438.78	1442	2	0	1304	7930	13475	5100	9234	No	6.4	Si
SLU 81	fin.	2284.37	6027	2	0	1304	7930	13475	5100	9234	No	1.53	Si
SLU 78	ini.	-451.87	1522	2	0	1304	7930	13475	5100	9234	No	6.07	Si
SLU 78	fin.	2298.19	6061	2	0	1304	7930	13475	5100	9234	No	1.52	Si
SLU 75	ini.	-450.11	1519	2	0	1304	7930	13475	5100	9234	No	6.08	Si
SLU 75	fin.	2270.65	5981	2	0	1304	7930	13475	5100	9234	No	1.54	Si
SLU 84	ini.	-443.96	1463	2	0	1304	7930	13475	5100	9234	No	6.31	Si
SLU 84	fin.	2318.24	6126	2	0	1304	7930	13475	5100	9234	No	1.51	Si
SLU 82	ini.	-442.21	1460	2	0	1304	7930	13475	5100	9234	No	6.32	Si
SLU 82	fin.	2290.7	6046	2	0	1304	7930	13475	5100	9234	No	1.53	Si
SLU 77	ini.	-448.44	1504	2	0	1304	7930	13475	5100	9234	No	6.14	Si
SLU 77	fin.	2291.87	6042	2	0	1304	7930	13475	5100	9234	No	1.53	Si
SLU 80	ini.	-441.59	1496	2	0	1304	7930	13475	5100	9234	No	6.17	Si
SLU 80	fin.	2278.3	5995	2	0	1304	7930	13475	5100	9234	No	1.54	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 2	ini.	-2870.65	-226	-0.000313	0.0002807	0.0035	2		15648.46	15648.46		5.45	Si
SLV 2	fin.	3487.44	-4492	-0.0003913	0.0002807	0.0035	2		15635.95	15635.95		4.48	Si
SLD 3	ini.	-1009.89	-534	-0.0001029	0.0002807	0.0035	2		15648.46	15648.46		15.5	Si
SLD 3	fin.	2437.35	-2689	-0.0002613	0.0002807	0.0035	2		15635.95	15635.95		6.42	Si
SLV 4	ini.	-2324.86	1161	-0.0002479	0.0002807	0.0035	2		15648.46	15648.46		6.73	Si
SLV 4	fin.	3723.31	-2870	-0.0004223	0.0002807	0.0035	2		15635.95	15635.95		4.2	Si
SLV 3	ini.	-1936.81	1512	-0.0002035	0.0002807	0.0035	2		15648.46	15648.46		8.08	Si
SLV 3	fin.	3564.96	-2210	-0.0004014	0.0002807	0.0035	2		15635.95	15635.95		4.39	Si
SLV 1	ini.	-2482.6	125	-0.0002664	0.0002807	0.0035	2		15648.46	15648.46		6.3	Si
SLV 1	fin.	3329.08	-3832	-0.0003708	0.0002807	0.0035	2		15635.95	15635.95		4.7	Si
SLD 2	ini.	-1413.22	-1281	-0.0001458	0.0002807	0.0035	2		15648.46	15648.46		11.07	Si
SLD 2	fin.	2395.96	-3658	-0.0002564	0.0002807	0.0035	2		15635.95	15635.95		6.53	Si
SLD 1	ini.	-1246.6	-1130	-0.0001279	0.0002807	0.0035	2		15648.46	15648.46		12.55	Si
SLD 1	fin.	2327.97	-3375	-0.0002485	0.0002807	0.0035	2		15635.95	15635.95		6.72	Si
SLV 8	ini.	-160.54	945	-0.0000159	0.0002807	0.0035	2		15648.46	15648.46		97.47	Si
SLV 8	fin.	2612.17	-644	-0.000282	0.0002807	0.0035	2		15635.95	15635.95		5.99	Si
SLD 4	ini.	-1176.51	-684	-0.0001205	0.0002807	0.0035	2		15648.46	15648.46		13.3	Si
SLD 4	fin.	2505.35	-2972	-0.0002693	0.0002807	0.0035	2		15635.95	15635.95		6.24	Si
SLV 7	ini.	90.09	1171	-0.0000089	0.0002807	0.0035	2		15635.95	15635.95		173.57	Si
SLV 7	fin.	2509.9	-218	-0.0002698	0.0002807	0.0035	2		15635.95	15635.95		6.23	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 4	ini.	-1176.51	4300	2	0	1957	7930	20213	5100	9886		2.3	Si
SLD 4	fin.	2505.35	6408	2	0	1957	7930	20213	5100	9886		1.54	Si
SLV 1	ini.	-2482.6	8282	2	0	1957	7930	20213	5100	9886		1.19	Si
SLV 1	fin.	3329.08	9377	2	0	1957	7930	20213	5100	9886		1.05	Si
SLV 3	ini.	-1936.81	7718	2	0	1957	7930	20213	5100	9886		1.28	Si
SLV 3	fin.	3564.96	8557	2	0	1957	7930	20213	5100	9886		1.16	Si
SLD 1	ini.	-1246.6	4192	2	0	1957	7930	20213	5100	9886		2.36	Si
SLD 1	fin.	2327.97	6350	2	0	1957	7930	20213	5100	9886		1.56	Si
SLD 2	ini.	-1413.22	4528	2	0	1957	7930	20213	5100	9886		2.18	Si
SLD 2	fin.	2395.96	6746	2	0	1957	7930	20213	5100	9886		1.47	Si
SLV 5	ini.	-1729.21	4012	2	0	1957	7930	20213	5100	9886		2.46	Si
SLV 5	fin.	1723.63	6769	2	0	1957	7930	20213	5100	9886		1.46	Si
SLV 6	ini.	-1979.84	4517	2	0	1957	7930	20213	5100	9886		2.19	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 6	fin.	1825.91	7364	2	0	1957	7930	20213	5100	9886		1.34	Si
SLV 15	ini.	2231.34	-6760	2	0	1957	7930	20213	5100	9886		1.46	Si
SLV 15	fin.	-315.88	-2094	2	0	1957	7930	20213	5100	9886		4.72	Si
SLV 2	ini.	-2870.65	9064	2	0	1957	7930	20213	5100	9886		1.09	Si
SLV 2	fin.	3487.44	10298	2	0	1957	7930	20213	5100	9886		0.96	No
SLV 4	ini.	-2324.86	8500	2	0	1957	7930	20213	5100	9886		1.16	Si
SLV 4	fin.	3723.31	9478	2	0	1957	7930	20213	5100	9886		1.04	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	4.199	SLV 4	Si
V_SLV	0.96	SLV 2	No
PF_SLU	4.625	SLU 84	Si
V_SLU	1.507	SLU 84	Si

## Trave di accoppiamento 30

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-5.158	1.471	0.51	1.11	0.6	-5.158	2.271	0.51	1.11	0.6	0.8	0.3	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	t <sub>fv</sub>	t <sub>fo</sub>	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma_{F,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ε <sub>m</sub>	ε <sub>m_</sub>	ε <sub>mu</sub>	df	M0d	M1d	M1d	M1d	incremento > 50%	c.s.	Verifica
SLU 79	ini.	67.66	-224	-0.0000762	0.0002246	0.0035	0.6		1346.99	1346.99	1346.99	No	19.91	Si
SLU 79	fin.	-566.42	-823	-0.000827	0.0002246	0.0035	0.6		1350.72	1350.72	1350.72	No	2.38	Si
SLU 76	ini.	70.24	-231	-0.0000792	0.0002246	0.0035	0.6		1346.99	1346.99	1346.99	No	19.18	Si
SLU 76	fin.	-568.54	-839	-0.000831	0.0002246	0.0035	0.6		1350.72	1350.72	1350.72	No	2.38	Si
SLU 83	ini.	72.83	-234	-0.0000822	0.0002246	0.0035	0.6		1346.99	1346.99	1346.99	No	18.49	Si
SLU 83	fin.	-588.88	-862	-0.0008696	0.0002246	0.0035	0.6		1350.72	1350.72	1350.72	No	2.29	Si
SLU 78	ini.	70.28	-230	-0.0000792	0.0002246	0.0035	0.6		1346.99	1346.99	1346.99	No	19.16	Si
SLU 78	fin.	-574.98	-842	-0.0008432	0.0002246	0.0035	0.6		1350.72	1350.72	1350.72	No	2.35	Si
SLU 75	ini.	69.85	-229	-0.0000787	0.0002246	0.0035	0.6		1346.99	1346.99	1346.99	No	19.28	Si
SLU 75	fin.	-569.95	-836	-0.0008336	0.0002246	0.0035	0.6		1350.72	1350.72	1350.72	No	2.37	Si
SLU 80	ini.	69.47	-229	-0.0000783	0.0002246	0.0035	0.6		1346.99	1346.99	1346.99	No	19.39	Si
SLU 80	fin.	-570.72	-836	-0.0008351	0.0002246	0.0035	0.6		1350.72	1350.72	1350.72	No	2.37	Si
SLU 81	ini.	72.4	-233	-0.0000817	0.0002246	0.0035	0.6		1346.99	1346.99	1346.99	No	18.6	Si
SLU 81	fin.	-583.84	-856	-0.00086	0.0002246	0.0035	0.6		1350.72	1350.72	1350.72	No	2.31	Si
SLU 84	ini.	74.64	-239	-0.0000843	0.0002246	0.0035	0.6		1346.99	1346.99	1346.99	No	18.05	Si
SLU 84	fin.	-593.18	-874	-0.0008779	0.0002246	0.0035	0.6		1350.72	1350.72	1350.72	No	2.28	Si
SLU 82	ini.	74.21	-238	-0.0000838	0.0002246	0.0035	0.6		1346.99	1346.99	1346.99	No	18.15	Si
SLU 82	fin.	-588.14	-869	-0.0008682	0.0002246	0.0035	0.6		1350.72	1350.72	1350.72	No	2.3	Si
SLU 77	ini.	68.48	-225	-0.0000771	0.0002246	0.0035	0.6		1346.99	1346.99	1346.99	No	19.67	Si
SLU 77	fin.	-570.69	-829	-0.000835	0.0002246	0.0035	0.6		1350.72	1350.72	1350.72	No	2.37	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 75	ini.	69.85	1769	0.6	0	196	4758	3234	1530	4764	No	2.69	Si
SLU 75	fin.	-569.95	-3761	0.6	0	196	4758	3234	1530	4764	No	1.27	Si
SLU 79	ini.	67.66	1786	0.6	0	196	4758	3234	1530	4764	No	2.67	Si
SLU 79	fin.	-566.42	-3758	0.6	0	196	4758	3234	1530	4764	No	1.27	Si
SLU 82	ini.	74.21	1798	0.6	0	196	4758	3234	1530	4764	No	2.65	Si
SLU 82	fin.	-588.14	-3864	0.6	0	196	4758	3234	1530	4764	No	1.23	Si
SLU 84	ini.	74.64	1818	0.6	0	196	4758	3234	1530	4764	No	2.62	Si
SLU 84	fin.	-593.18	-3901	0.6	0	196	4758	3234	1530	4764	No	1.22	Si
SLU 80	ini.	69.47	1778	0.6	0	196	4758	3234	1530	4764	No	2.68	Si
SLU 80	fin.	-570.72	-3771	0.6	0	196	4758	3234	1530	4764	No	1.26	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 77	ini.	68.48	1798	0.6	0	196	4758	3234	1530	4764	No	2.65	Si
SLU 77	fin.	-570.69	-3785	0.6	0	196	4758	3234	1530	4764	No	1.26	Si
SLU 74	ini.	68.05	1777	0.6	0	196	4758	3234	1530	4764	No	2.68	Si
SLU 74	fin.	-565.65	-3749	0.6	0	196	4758	3234	1530	4764	No	1.27	Si
SLU 81	ini.	72.4	1807	0.6	0	196	4758	3234	1530	4764	No	2.64	Si
SLU 81	fin.	-583.84	-3852	0.6	0	196	4758	3234	1530	4764	No	1.24	Si
SLU 83	ini.	72.83	1827	0.6	0	196	4758	3234	1530	4764	No	2.61	Si
SLU 83	fin.	-588.88	-3888	0.6	0	196	4758	3234	1530	4764	No	1.23	Si
SLU 78	ini.	70.28	1789	0.6	0	196	4758	3234	1530	4764	No	2.66	Si
SLU 78	fin.	-574.98	-3798	0.6	0	196	4758	3234	1530	4764	No	1.25	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 12	ini.	210.94	-592	-0.0002473	0.0003369	0.0035	0.6		1326.91	1326.91		6.29	Si
SLD 12	fin.	-763.17	-1661	-0.0011492	0.0003369	0.0035	0.6		1330.94	1330.94		1.74	Si
SLV 3	ini.	92.45	-1338	-0.0001042	0.0003369	0.0035	0.6		1326.91	1326.91		14.35	Si
SLV 3	fin.	-772.45	-2468	-0.0011686	0.0003369	0.0035	0.6		1330.94	1330.94		1.72	Si
SLD 11	ini.	221.88	-628	-0.0002611	0.0003369	0.0035	0.6		1326.91	1326.91		5.98	Si
SLD 11	fin.	-790.86	-1747	-0.0012076	0.0003369	0.0035	0.6		1330.94	1330.94		1.68	Si
SLD 8	ini.	189.67	-780	-0.0002206	0.0003369	0.0035	0.6		1326.91	1326.91		7	Si
SLD 8	fin.	-779.08	-1888	-0.0011825	0.0003369	0.0035	0.6		1330.94	1330.94		1.71	Si
SLV 12	ini.	424.36	-1139	-0.000545	0.0003369	0.0035	0.6		1326.91	1326.91		3.13	Si
SLV 12	fin.	-1241.89	-3052	-0.0026015	0.0003369	0.0035	0.6		1330.94	1330.94		1.07	Si
SLV 11	ini.	449.41	-1221	-0.000584	0.0003369	0.0035	0.6		1326.91	1326.91		2.95	Si
SLV 11	fin.	-1305.26	-3247	-0.0029105	0.0003369	0.0035	0.6		1330.94	1330.94		1.02	Si
SLV 7	ini.	401.13	-1669	-0.0005096	0.0003369	0.0035	0.6		1326.91	1326.91		3.31	Si
SLV 7	fin.	-1345.52	-3789	-0.0031227	0.0003369	0.0035	0.6		1330.94	1330.94		0.99	No
SLV 4	ini.	53.66	-1211	-0.0000598	0.0003369	0.0035	0.6		1326.91	1326.91		24.73	Si
SLV 4	fin.	-674.33	-2165	-0.0009721	0.0003369	0.0035	0.6		1330.94	1330.94		1.97	Si
SLD 7	ini.	200.62	-816	-0.0002343	0.0003369	0.0035	0.6		1326.91	1326.91		6.61	Si
SLD 7	fin.	-806.77	-1974	-0.001242	0.0003369	0.0035	0.6		1330.94	1330.94		1.65	Si
SLV 8	ini.	376.08	-1587	-0.0004722	0.0003369	0.0035	0.6		1326.91	1326.91		3.53	Si
SLV 8	fin.	-1282.14	-3594	-0.0027933	0.0003369	0.0035	0.6		1330.94	1330.94		1.04	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 11	ini.	449.41	-612	0.6	0	293	4758	4852	1530	5051		8.25	Si
SLV 11	fin.	-1305.26	-5291	0.6	0	293	4758	4852	1530	5051		0.95	No
SLV 8	ini.	376.08	-746	0.6	0	293	4758	4852	1530	5051		6.77	Si
SLV 8	fin.	-1282.14	-4720	0.6	0	293	4758	4852	1530	5051		1.07	Si
SLD 7	ini.	200.62	314	0.6	0	293	4758	4852	1530	5051		16.11	Si
SLD 7	fin.	-806.77	-3598	0.6	0	293	4758	4852	1530	5051		1.4	Si
SLD 12	ini.	210.94	478	0.6	0	293	4758	4852	1530	5051		10.58	Si
SLD 12	fin.	-763.17	-3687	0.6	0	293	4758	4852	1530	5051		1.37	Si
SLD 8	ini.	189.67	368	0.6	0	293	4758	4852	1530	5051		13.72	Si
SLD 8	fin.	-779.08	-3519	0.6	0	293	4758	4852	1530	5051		1.44	Si
SLV 12	ini.	424.36	-487	0.6	0	293	4758	4852	1530	5051		10.38	Si
SLV 12	fin.	-1241.89	-5111	0.6	0	293	4758	4852	1530	5051		0.99	No
SLV 15	ini.	253.36	1002	0.6	0	293	4758	4852	1530	5051		5.04	Si
SLV 15	fin.	-638.27	-4086	0.6	0	293	4758	4852	1530	5051		1.24	Si
SLV 7	ini.	401.13	-872	0.6	0	293	4758	4852	1530	5051		5.8	Si
SLV 7	fin.	-1345.52	-4900	0.6	0	293	4758	4852	1530	5051		1.03	Si
SLD 11	ini.	221.88	423	0.6	0	293	4758	4852	1530	5051		11.94	Si
SLD 11	fin.	-790.86	-3766	0.6	0	293	4758	4852	1530	5051		1.34	Si
SLV 16	ini.	214.58	1195	0.6	0	293	4758	4852	1530	5051		4.23	Si
SLV 16	fin.	-540.15	-3807	0.6	0	293	4758	4852	1530	5051		1.33	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF SLV	0.989	SLV 7	No
V SLV	0.955	SLV 11	No
PF SLU	2.277	SLU 84	Si
V SLU	1.221	SLU 84	Si

Trave di accoppiamento 31

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-3.013	5.876	-1.59	0.41	2	-2.013	5.876	-1.59	0.41	2	1	0.45	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fmk	fvk0	fmedio	t0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC





Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 81	ini.	-2204.1	-3068	-0.0002417	0.0001872	0.0035	2		10737.13	10737.13	No	4.87	Si
SLU 81	fin.	2822.65	-4763	-0.0003214	0.0001872	0.0035	2		10722.86	10722.86	No	3.8	Si
SLU 82	ini.	-2197.74	-3153	-0.0002409	0.0001872	0.0035	2		10737.13	10737.13	No	4.89	Si
SLU 82	fin.	2825.06	-4859	-0.0003218	0.0001872	0.0035	2		10722.86	10722.86	No	3.8	Si
SLU 77	ini.	-2240.49	-3086	-0.0002462	0.0001872	0.0035	2		10737.13	10737.13	No	4.79	Si
SLU 77	fin.	2817.79	-4819	-0.0003208	0.0001872	0.0035	2		10722.86	10722.86	No	3.81	Si
SLU 75	ini.	-2208.12	-3129	-0.0002422	0.0001872	0.0035	2		10737.13	10737.13	No	4.86	Si
SLU 75	fin.	2790.09	-4849	-0.0003171	0.0001872	0.0035	2		10722.86	10722.86	No	3.84	Si
SLU 78	ini.	-2234.13	-3170	-0.0002454	0.0001872	0.0035	2		10737.13	10737.13	No	4.81	Si
SLU 78	fin.	2820.21	-4914	-0.0003211	0.0001872	0.0035	2		10722.86	10722.86	No	3.8	Si
SLU 79	ini.	-2229.96	-3059	-0.0002449	0.0001872	0.0035	2		10737.13	10737.13	No	4.81	Si
SLU 79	fin.	2801.66	-4783	-0.0003186	0.0001872	0.0035	2		10722.86	10722.86	No	3.83	Si
SLU 80	ini.	-2223.59	-3144	-0.0002441	0.0001872	0.0035	2		10737.13	10737.13	No	4.83	Si
SLU 80	fin.	2804.07	-4879	-0.000319	0.0001872	0.0035	2		10722.86	10722.86	No	3.82	Si
SLU 84	ini.	-2223.75	-3195	-0.0002441	0.0001872	0.0035	2		10737.13	10737.13	No	4.83	Si
SLU 84	fin.	2855.18	-4924	-0.0003258	0.0001872	0.0035	2		10722.86	10722.86	No	3.76	Si
SLU 74	ini.	-2214.48	-3044	-0.000243	0.0001872	0.0035	2		10737.13	10737.13	No	4.85	Si
SLU 74	fin.	2787.68	-4754	-0.0003168	0.0001872	0.0035	2		10722.86	10722.86	No	3.85	Si
SLU 83	ini.	-2230.11	-3110	-0.0002449	0.0001872	0.0035	2		10737.13	10737.13	No	4.81	Si
SLU 83	fin.	2852.76	-4829	-0.0003254	0.0001872	0.0035	2		10722.86	10722.86	No	3.76	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 77	ini.	-2240.49	6149	2	0	1304	7930	13475	5100	9234	No	1.5	Si
SLU 77	fin.	2817.79	10885	2	0	1304	7930	13475	5100	9234	No	0.85	No
SLU 84	ini.	-2223.75	6137	2	0	1304	7930	13475	5100	9234	No	1.5	Si
SLU 84	fin.	2855.18	10993	2	0	1304	7930	13475	5100	9234	No	0.84	No
SLU 81	ini.	-2204.1	6061	2	0	1304	7930	13475	5100	9234	No	1.52	Si
SLU 81	fin.	2822.65	10867	2	0	1304	7930	13475	5100	9234	No	0.85	No
SLU 78	ini.	-2234.13	6161	2	0	1304	7930	13475	5100	9234	No	1.5	Si
SLU 78	fin.	2820.21	10884	2	0	1304	7930	13475	5100	9234	No	0.85	No
SLU 79	ini.	-2229.96	6123	2	0	1304	7930	13475	5100	9234	No	1.51	Si
SLU 79	fin.	2801.66	10818	2	0	1304	7930	13475	5100	9234	No	0.85	No
SLU 80	ini.	-2223.59	6135	2	0	1304	7930	13475	5100	9234	No	1.51	Si
SLU 80	fin.	2804.07	10817	2	0	1304	7930	13475	5100	9234	No	0.85	No
SLU 74	ini.	-2214.48	6085	2	0	1304	7930	13475	5100	9234	No	1.52	Si
SLU 74	fin.	2787.68	10757	2	0	1304	7930	13475	5100	9234	No	0.86	No
SLU 83	ini.	-2230.11	6125	2	0	1304	7930	13475	5100	9234	No	1.51	Si
SLU 83	fin.	2852.76	10995	2	0	1304	7930	13475	5100	9234	No	0.84	No
SLU 75	ini.	-2208.12	6097	2	0	1304	7930	13475	5100	9234	No	1.51	Si
SLU 75	fin.	2790.09	10756	2	0	1304	7930	13475	5100	9234	No	0.86	No
SLU 82	ini.	-2197.74	6073	2	0	1304	7930	13475	5100	9234	No	1.52	Si
SLU 82	fin.	2825.06	10866	2	0	1304	7930	13475	5100	9234	No	0.85	No

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 1	ini.	-3156.16	274	-0.0003485	0.0002807	0.0035	2		15648.46	15648.46		4.96	Si
SLV 1	fin.	4084.03	-3365	-0.0004711	0.0002807	0.0035	2		15635.95	15635.95		3.83	Si
SLV 8	ini.	-3107.28	-3201	-0.0003424	0.0002807	0.0035	2		15648.46	15648.46		5.04	Si
SLV 8	fin.	1929.93	-5570	-0.0002029	0.0002807	0.0035	2		15635.95	15635.95		8.1	Si
SLV 5	ini.	-1110.23	163	-0.0001134	0.0002807	0.0035	2		15648.46	15648.46		14.09	Si
SLV 5	fin.	3123.2	-1368	-0.0003447	0.0002807	0.0035	2		15635.95	15635.95		5.01	Si
SLV 6	ini.	-749.49	375	-0.0000757	0.0002807	0.0035	2		15648.46	15648.46		20.88	Si
SLV 6	fin.	2977.44	-840	-0.0003265	0.0002807	0.0035	2		15635.95	15635.95		5.25	Si
SLV 3	ini.	-3863.49	-799	-0.0004407	0.0002807	0.0035	2		15648.46	15648.46		4.05	Si
SLV 3	fin.	3769.78	-4784	-0.0004285	0.0002807	0.0035	2		15635.95	15635.95		4.15	Si
SLD 2	ini.	-2037.28	-952	-0.0002149	0.0002807	0.0035	2		15648.46	15648.46		7.68	Si
SLD 2	fin.	2779.74	-3016	-0.0003022	0.0002807	0.0035	2		15635.95	15635.95		5.62	Si
SLV 7	ini.	-3468.02	-3413	-0.0003884	0.0002807	0.0035	2		15648.46	15648.46		4.51	Si
SLV 7	fin.	2075.7	-6099	-0.0002194	0.0002807	0.0035	2		15635.95	15635.95		7.53	Si
SLV 2	ini.	-2597.63	603	-0.00028	0.0002807	0.0035	2		15648.46	15648.46		6.02	Si
SLV 2	fin.	3858.34	-2546	-0.0004404	0.0002807	0.0035	2		15635.95	15635.95		4.05	Si
SLV 4	ini.	-3304.96	-470	-0.0003674	0.0002807	0.0035	2		15648.46	15648.46		4.73	Si
SLV 4	fin.	3544.09	-3965	-0.0003987	0.0002807	0.0035	2		15635.95	15635.95		4.41	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 1	ini.	-2277.12	-1093	-0.0002424	0.0002807	0.0035	2		15648.46	15648.46		6.87	Si
SLD 1	fin.	2876.65	-3367	-0.000314	0.0002807	0.0035	2		15635.95	15635.95		5.44	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 1	ini.	-3156.16	10927	2	0	1957	7930	20213	5100	9886		0.9	No
SLV 1	fin.	4084.03	11614	2	0	1957	7930	20213	5100	9886		0.85	No
SLD 3	ini.	-2588.17	7404	2	0	1957	7930	20213	5100	9886		1.34	Si
SLD 3	fin.	2738.06	9529	2	0	1957	7930	20213	5100	9886		1.04	Si
SLV 7	ini.	-3468.02	7313	2	0	1957	7930	20213	5100	9886		1.35	Si
SLV 7	fin.	2075.7	9903	2	0	1957	7930	20213	5100	9886		1	No
SLV 2	ini.	-2597.63	9696	2	0	1957	7930	20213	5100	9886		1.02	Si
SLV 2	fin.	3858.34	10241	2	0	1957	7930	20213	5100	9886		0.97	No
SLV 8	ini.	-3107.28	6518	2	0	1957	7930	20213	5100	9886		1.52	Si
SLV 8	fin.	1929.93	9017	2	0	1957	7930	20213	5100	9886		1.1	Si
SLD 4	ini.	-2348.34	6875	2	0	1957	7930	20213	5100	9886		1.44	Si
SLD 4	fin.	2641.15	8939	2	0	1957	7930	20213	5100	9886		1.11	Si
SLD 2	ini.	-2037.28	6713	2	0	1957	7930	20213	5100	9886		1.47	Si
SLD 2	fin.	2779.74	8731	2	0	1957	7930	20213	5100	9886		1.13	Si
SLD 1	ini.	-2277.12	7241	2	0	1957	7930	20213	5100	9886		1.37	Si
SLD 1	fin.	2876.65	9320	2	0	1957	7930	20213	5100	9886		1.06	Si
SLV 4	ini.	-3304.96	10067	2	0	1957	7930	20213	5100	9886		0.98	No
SLV 4	fin.	3544.09	10709	2	0	1957	7930	20213	5100	9886		0.92	No
SLV 3	ini.	-3863.49	11299	2	0	1957	7930	20213	5100	9886		0.87	No
SLV 3	fin.	3769.78	12081	2	0	1957	7930	20213	5100	9886		0.82	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.829	SLV 1	Si
V_SLV	0.818	SLV 3	No
PF_SLU	3.756	SLU 84	Si
V_SLU	0.84	SLU 83	No

Trave di accoppiamento 33

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-21.763	5.826	1.11	2.01	0.9	-22.763	5.826	1.11	2.01	0.9	1	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	f <sub>nk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	ε <sub>f,d</sub>	γ <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 80	ini.	-111.61	-1715	-0.0000557	0.0001872	0.0035	0.9		2964.67	2964.67	No	26.56	Si
SLU 80	fin.	826.5	-3198	-0.0004995	0.0001872	0.0035	0.9		2959	2959	No	3.58	Si
SLU 78	ini.	-109.51	-1732	-0.0000546	0.0001872	0.0035	0.9		2964.67	2964.67	No	27.07	Si
SLU 78	fin.	830.53	-3219	-0.0005025	0.0001872	0.0035	0.9		2959	2959	No	3.56	Si
SLU 75	ini.	-111.21	-1703	-0.0000555	0.0001872	0.0035	0.9		2964.67	2964.67	No	26.66	Si
SLU 75	fin.	820.49	-3175	-0.0004951	0.0001872	0.0035	0.9		2959	2959	No	3.61	Si
SLU 79	ini.	-110.45	-1688	-0.0000551	0.0001872	0.0035	0.9		2964.67	2964.67	No	26.84	Si
SLU 79	fin.	818.16	-3161	-0.0004934	0.0001872	0.0035	0.9		2959	2959	No	3.62	Si
SLU 76	ini.	-114.08	-1703	-0.000057	0.0001872	0.0035	0.9		2964.67	2964.67	No	25.99	Si
SLU 76	fin.	822.03	-3178	-0.0004962	0.0001872	0.0035	0.9		2959	2959	No	3.6	Si
SLU 74	ini.	-110.06	-1676	-0.0000549	0.0001872	0.0035	0.9		2964.67	2964.67	No	26.94	Si
SLU 74	fin.	812.15	-3138	-0.000489	0.0001872	0.0035	0.9		2959	2959	No	3.64	Si
SLU 77	ini.	-108.36	-1706	-0.000054	0.0001872	0.0035	0.9		2964.67	2964.67	No	27.36	Si
SLU 77	fin.	822.19	-3182	-0.0004963	0.0001872	0.0035	0.9		2959	2959	No	3.6	Si
SLU 84	ini.	-102.23	-1765	-0.0000509	0.0001872	0.0035	0.9		2964.67	2964.67	No	29	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 84	fin.	825.17	-3233	-0.0004985	0.0001872	0.0035	0.9		2959	2959	No	3.59	Si
SLU 83	ini.	-101.07	-1738	-0.0000503	0.0001872	0.0035	0.9		2964.67	2964.67	No	29.33	Si
SLU 83	fin.	816.83	-3196	-0.0004924	0.0001872	0.0035	0.9		2959	2959	No	3.62	Si
SLU 82	ini.	-103.93	-1735	-0.0000518	0.0001872	0.0035	0.9		2964.67	2964.67	No	28.53	Si
SLU 82	fin.	815.14	-3189	-0.0004912	0.0001872	0.0035	0.9		2959	2959	No	3.63	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 69	ini.	-134.21	1155	0.9	0	329	7137	3773	2295	6068	No	5.25	Si
SLU 69	fin.	801.88	1752	0.9	0	329	7137	3773	2295	6068	No	3.46	Si
SLU 48	ini.	-158.57	1191	0.9	0	329	7137	3773	2295	6068	No	5.1	Si
SLU 48	fin.	775.58	1725	0.9	0	329	7137	3773	2295	6068	No	3.52	Si
SLU 83	ini.	-101.07	1103	0.9	0	329	7137	3773	2295	6068	No	5.5	Si
SLU 83	fin.	816.83	1723	0.9	0	329	7137	3773	2295	6068	No	3.52	Si
SLU 74	ini.	-110.06	1116	0.9	0	329	7137	3773	2295	6068	No	5.44	Si
SLU 74	fin.	812.15	1731	0.9	0	329	7137	3773	2295	6068	No	3.51	Si
SLU 71	ini.	-136.31	1159	0.9	0	329	7137	3773	2295	6068	No	5.24	Si
SLU 71	fin.	797.85	1743	0.9	0	329	7137	3773	2295	6068	No	3.48	Si
SLU 58	ini.	-134.81	1154	0.9	0	329	7137	3773	2295	6068	No	5.26	Si
SLU 58	fin.	791.86	1721	0.9	0	329	7137	3773	2295	6068	No	3.53	Si
SLU 66	ini.	-135.92	1156	0.9	0	329	7137	3773	2295	6068	No	5.25	Si
SLU 66	fin.	791.84	1726	0.9	0	329	7137	3773	2295	6068	No	3.52	Si
SLU 77	ini.	-108.36	1115	0.9	0	329	7137	3773	2295	6068	No	5.44	Si
SLU 77	fin.	822.19	1756	0.9	0	329	7137	3773	2295	6068	No	3.45	Si
SLU 56	ini.	-132.71	1151	0.9	0	329	7137	3773	2295	6068	No	5.27	Si
SLU 56	fin.	795.89	1730	0.9	0	329	7137	3773	2295	6068	No	3.51	Si
SLU 79	ini.	-110.45	1119	0.9	0	329	7137	3773	2295	6068	No	5.42	Si
SLU 79	fin.	818.16	1747	0.9	0	329	7137	3773	2295	6068	No	3.47	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 1	ini.	1023.76	-3039	-0.0006109	0.0002807	0.0035	0.9		2989.59	2989.59		2.92	Si
SLV 1	fin.	-594.26	-852	-0.000321	0.0002807	0.0035	0.9		2995.37	2995.37		5.04	Si
SLV 14	ini.	-1089.47	446	-0.0006583	0.0002807	0.0035	0.9		2995.37	2995.37		2.75	Si
SLV 14	fin.	1636.22	-3580	-0.0011186	0.0002807	0.0035	0.9		2989.59	2989.59		1.83	Si
SLV 12	ini.	-696	23	-0.0003846	0.0002807	0.0035	0.9		2995.37	2995.37		4.3	Si
SLV 12	fin.	1230.24	-2752	-0.0007687	0.0002807	0.0035	0.9		2989.59	2989.59		2.43	Si
SLV 11	ini.	-577.79	-122	-0.000311	0.0002807	0.0035	0.9		2995.37	2995.37		5.18	Si
SLV 11	fin.	1082.51	-2509	-0.0006546	0.0002807	0.0035	0.9		2989.59	2989.59		2.76	Si
SLD 16	ini.	-588.06	-302	-0.0003173	0.0002807	0.0035	0.9		2995.37	2995.37		5.09	Si
SLD 16	fin.	1108.36	-2820	-0.0006741	0.0002807	0.0035	0.9		2989.59	2989.59		2.7	Si
SLD 14	ini.	-525.76	-453	-0.00028	0.0002807	0.0035	0.9		2995.37	2995.37		5.7	Si
SLD 14	fin.	1041.74	-2808	-0.0006242	0.0002807	0.0035	0.9		2989.59	2989.59		2.87	Si
SLV 15	ini.	-1051.61	570	-0.0006301	0.0002807	0.0035	0.9		2995.37	2995.37		2.85	Si
SLV 15	fin.	1562.17	-3232	-0.0010503	0.0002807	0.0035	0.9		2989.59	2989.59		1.91	Si
SLV 13	ini.	-906.45	220	-0.0005255	0.0002807	0.0035	0.9		2995.37	2995.37		3.3	Si
SLV 13	fin.	1407.49	-3204	-0.0009145	0.0002807	0.0035	0.9		2989.59	2989.59		2.12	Si
SLV 16	ini.	-1234.63	796	-0.0007704	0.0002807	0.0035	0.9		2995.37	2995.37		2.43	Si
SLV 16	fin.	1790.89	-3608	-0.0012688	0.0002807	0.0035	0.9		2989.59	2989.59		1.67	Si
SLD 15	ini.	-509.47	-399	-0.0002704	0.0002807	0.0035	0.9		2995.37	2995.37		5.88	Si
SLD 15	fin.	1010.14	-2658	-0.0006009	0.0002807	0.0035	0.9		2989.59	2989.59		2.96	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 1	ini.	1023.76	-3000	0.9	0	493	7137	5660	2295	7630		2.54	Si
SLV 1	fin.	-594.26	-2725	0.9	0	493	7137	5660	2295	7630		2.8	Si
SLD 16	ini.	-588.06	2554	0.9	0	493	7137	5660	2295	7630		2.99	Si
SLD 16	fin.	1108.36	3015	0.9	0	493	7137	5660	2295	7630		2.53	Si
SLV 11	ini.	-577.79	3118	0.9	0	493	7137	5660	2295	7630		2.45	Si
SLV 11	fin.	1082.51	3497	0.9	0	493	7137	5660	2295	7630		2.18	Si
SLD 15	ini.	-509.47	2287	0.9	0	493	7137	5660	2295	7630		3.34	Si
SLD 15	fin.	1010.14	2715	0.9	0	493	7137	5660	2295	7630		2.81	Si
SLV 12	ini.	-696	3519	0.9	0	493	7137	5660	2295	7630		2.17	Si
SLV 12	fin.	1230.24	3949	0.9	0	493	7137	5660	2295	7630		1.93	Si
SLV 15	ini.	-1051.61	4156	0.9	0	493	7137	5660	2295	7630		1.84	Si
SLV 15	fin.	1562.17	4618	0.9	0	493	7137	5660	2295	7630		1.65	Si
SLV 13	ini.	-906.45	3262	0.9	0	493	7137	5660	2295	7630		2.34	Si
SLV 13	fin.	1407.49	3745	0.9	0	493	7137	5660	2295	7630		2.04	Si
SLV 16	ini.	-1234.63	4778	0.9	0	493	7137	5660	2295	7630		1.6	Si
SLV 16	fin.	1790.89	5318	0.9	0	493	7137	5660	2295	7630		1.43	Si
SLD 14	ini.	-525.76	2166	0.9	0	493	7137	5660	2295	7630		3.52	Si
SLD 14	fin.	1041.74	2641	0.9	0	493	7137	5660	2295	7630		2.89	Si
SLV 14	ini.	-1089.47	3883	0.9	0	493	7137	5660	2295	7630		1.96	Si
SLV 14	fin.	1636.22	4444	0.9	0	493	7137	5660	2295	7630		1.72	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.669	SLV 16	Si
V_SLV	1.435	SLV 16	Si
PF_SLU	3.563	SLU 78	Si
V_SLU	3.455	SLU 77	Si



## Trave di accoppiamento 34

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-21.763	5.826	3.91	4.83	0.92	-22.763	5.826	3.91	4.83	0.92	1	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	e <sub>f,d</sub>	γ <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 80	ini.	-816.82	-2322	-0.0004644	0.0001872	0.0035	0.92		3115.25	3115.25	No	3.81	Si
SLU 80	fin.	-63.69	-1146	-0.00003	0.0001872	0.0035	0.92		3115.25	3115.25	No	48.91	Si
SLU 78	ini.	-820.67	-2341	-0.000467	0.0001872	0.0035	0.92		3115.25	3115.25	No	3.8	Si
SLU 78	fin.	-66.76	-1163	-0.0000315	0.0001872	0.0035	0.92		3115.25	3115.25	No	46.66	Si
SLU 74	ini.	-806.74	-2277	-0.0004575	0.0001872	0.0035	0.92		3115.25	3115.25	No	3.86	Si
SLU 74	fin.	-55.79	-1101	-0.0000263	0.0001872	0.0035	0.92		3115.25	3115.25	No	55.84	Si
SLU 84	ini.	-816.9	-2346	-0.0004644	0.0001872	0.0035	0.92		3115.25	3115.25	No	3.81	Si
SLU 84	fin.	-76.4	-1199	-0.0000361	0.0001872	0.0035	0.92		3115.25	3115.25	No	40.78	Si
SLU 79	ini.	-812.62	-2298	-0.0004615	0.0001872	0.0035	0.92		3115.25	3115.25	No	3.83	Si
SLU 79	fin.	-57.29	-1115	-0.000027	0.0001872	0.0035	0.92		3115.25	3115.25	No	54.38	Si
SLU 76	ini.	-809.89	-2299	-0.0004596	0.0001872	0.0035	0.92		3115.25	3115.25	No	3.85	Si
SLU 76	fin.	-63.4	-1137	-0.0000299	0.0001872	0.0035	0.92		3115.25	3115.25	No	49.14	Si
SLU 83	ini.	-812.7	-2321	-0.0004616	0.0001872	0.0035	0.92		3115.25	3115.25	No	3.83	Si
SLU 83	fin.	-69.99	-1168	-0.000033	0.0001872	0.0035	0.92		3115.25	3115.25	No	44.51	Si
SLU 75	ini.	-810.94	-2302	-0.0004604	0.0001872	0.0035	0.92		3115.25	3115.25	No	3.84	Si
SLU 75	fin.	-62.19	-1133	-0.0000293	0.0001872	0.0035	0.92		3115.25	3115.25	No	50.09	Si
SLU 82	ini.	-807.16	-2307	-0.0004578	0.0001872	0.0035	0.92		3115.25	3115.25	No	3.86	Si
SLU 82	fin.	-71.83	-1168	-0.0000339	0.0001872	0.0035	0.92		3115.25	3115.25	No	43.37	Si
SLU 77	ini.	-816.48	-2316	-0.0004642	0.0001872	0.0035	0.92		3115.25	3115.25	No	3.82	Si
SLU 77	fin.	-60.36	-1132	-0.0000284	0.0001872	0.0035	0.92		3115.25	3115.25	No	51.61	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 83	ini.	-812.7	3530	0.92	0	343	7295	3857	2346	6203	No	1.76	Si
SLU 83	fin.	-69.99	-1926	0.92	0	343	7295	3857	2346	6203	No	3.22	Si
SLU 75	ini.	-810.94	3460	0.92	0	343	7295	3857	2346	6203	No	1.79	Si
SLU 75	fin.	-62.19	-1785	0.92	0	343	7295	3857	2346	6203	No	3.48	Si
SLU 81	ini.	-802.97	3485	0.92	0	343	7295	3857	2346	6203	No	1.78	Si
SLU 81	fin.	-65.43	-1880	0.92	0	343	7295	3857	2346	6203	No	3.3	Si
SLU 77	ini.	-816.48	3515	0.92	0	343	7295	3857	2346	6203	No	1.76	Si
SLU 77	fin.	-60.36	-1833	0.92	0	343	7295	3857	2346	6203	No	3.38	Si
SLU 78	ini.	-820.67	3505	0.92	0	343	7295	3857	2346	6203	No	1.77	Si
SLU 78	fin.	-66.76	-1831	0.92	0	343	7295	3857	2346	6203	No	3.39	Si
SLU 84	ini.	-816.9	3520	0.92	0	343	7295	3857	2346	6203	No	1.76	Si
SLU 84	fin.	-76.4	-1923	0.92	0	343	7295	3857	2346	6203	No	3.23	Si
SLU 74	ini.	-806.74	3470	0.92	0	343	7295	3857	2346	6203	No	1.79	Si
SLU 74	fin.	-55.79	-1788	0.92	0	343	7295	3857	2346	6203	No	3.47	Si
SLU 82	ini.	-807.16	3475	0.92	0	343	7295	3857	2346	6203	No	1.79	Si
SLU 82	fin.	-71.83	-1877	0.92	0	343	7295	3857	2346	6203	No	3.3	Si
SLU 80	ini.	-816.82	3487	0.92	0	343	7295	3857	2346	6203	No	1.78	Si
SLU 80	fin.	-63.69	-1808	0.92	0	343	7295	3857	2346	6203	No	3.43	Si
SLU 79	ini.	-812.62	3498	0.92	0	343	7295	3857	2346	6203	No	1.77	Si
SLU 79	fin.	-57.29	-1811	0.92	0	343	7295	3857	2346	6203	No	3.43	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-1550.92	-2521	-0.000975	0.0002807	0.0035	0.92		3146.83	3146.83		2.03	Si
SLV 15	fin.	798.79	1719	-0.0004286	0.0002807	0.0035	0.92		3140.9	3140.9		3.93	Si
SLV 1	ini.	594.23	-382	-0.0003053	0.0002807	0.0035	0.92		3140.9	3140.9		5.29	Si
SLV 1	fin.	-969.07	-3465	-0.0005385	0.0002807	0.0035	0.92		3146.83	3146.83		3.25	Si
SLD 16	ini.	-1100.77	-2125	-0.0006294	0.0002807	0.0035	0.92		3146.83	3146.83		2.86	Si
SLD 16	fin.	401.71	521	-0.0001991	0.0002807	0.0035	0.92		3140.9	3140.9		7.82	Si
SLV 14	ini.	-1657	-2692	-0.0010654	0.0002807	0.0035	0.92		3146.83	3146.83		1.9	Si
SLV 14	fin.	823.64	1602	-0.0004443	0.0002807	0.0035	0.92		3140.9	3140.9		3.81	Si
SLD 14	ini.	-1047.62	-2068	-0.0005922	0.0002807	0.0035	0.92		3146.83	3146.83		3	Si
SLD 14	fin.	346.33	296	-0.0001701	0.0002807	0.0035	0.92		3140.9	3140.9		9.07	Si
SLV 12	ini.	-1175.97	-2220	-0.0006832	0.0002807	0.0035	0.92		3146.83	3146.83		2.68	Si
SLV 12	fin.	498.72	1014	-0.0002515	0.0002807	0.0035	0.92		3140.9	3140.9		6.3	Si
SLD 15	ini.	-1002.26	-1995	-0.000561	0.0002807	0.0035	0.92		3146.83	3146.83		3.14	Si
SLD 15	fin.	336.3	350	-0.0001649	0.0002807	0.0035	0.92		3140.9	3140.9		9.34	Si
SLV 13	ini.	-1427.59	-2390	-0.0008745	0.0002807	0.0035	0.92		3146.83	3146.83		2.2	Si
SLV 13	fin.	671.32	1204	-0.0003504	0.0002807	0.0035	0.92		3140.9	3140.9		4.68	Si
SLV 16	ini.	-1780.33	-2823	-0.0011755	0.0002807	0.0035	0.92		3146.83	3146.83		1.77	Si
SLV 16	fin.	951.11	2117	-0.0005276	0.0002807	0.0035	0.92		3140.9	3140.9		3.3	Si
SLV 11	ini.	-1027.8	-2025	-0.0005785	0.0002807	0.0035	0.92		3146.83	3146.83		3.06	Si
SLV 11	fin.	400.33	757	-0.0001984	0.0002807	0.0035	0.92		3140.9	3140.9		7.85	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 1	ini.	594.23	-908	0.92	0	515	7295	5785	2346	7810		8.6	Si
SLV 1	fin.	-969.07	-5597	0.92	0	515	7295	5785	2346	7810		1.4	Si
SLV 5	ini.	-10.13	1582	0.92	0	515	7295	5785	2346	7810		4.94	Si
SLV 5	fin.	-516.67	-4012	0.92	0	515	7295	5785	2346	7810		1.95	Si
SLV 14	ini.	-1657	6043	0.92	0	515	7295	5785	2346	7810		1.29	Si
SLV 14	fin.	823.64	2507	0.92	0	515	7295	5785	2346	7810		3.12	Si
SLV 16	ini.	-1780.33	5889	0.92	0	515	7295	5785	2346	7810		1.33	Si
SLV 16	fin.	951.11	3475	0.92	0	515	7295	5785	2346	7810		2.25	Si
SLD 16	ini.	-1100.77	3943	0.92	0	515	7295	5785	2346	7810		1.98	Si
SLD 16	fin.	401.71	884	0.92	0	515	7295	5785	2346	7810		8.84	Si
SLV 15	ini.	-1550.92	5184	0.92	0	515	7295	5785	2346	7810		1.51	Si
SLV 15	fin.	798.79	2766	0.92	0	515	7295	5785	2346	7810		2.82	Si
SLV 13	ini.	-1427.59	5338	0.92	0	515	7295	5785	2346	7810		1.46	Si
SLV 13	fin.	671.32	1798	0.92	0	515	7295	5785	2346	7810		4.34	Si
SLV 3	ini.	470.9	-1061	0.92	0	515	7295	5785	2346	7810		7.36	Si
SLV 3	fin.	-841.6	-4629	0.92	0	515	7295	5785	2346	7810		1.69	Si
SLD 14	ini.	-1047.62	4009	0.92	0	515	7295	5785	2346	7810		1.95	Si
SLD 14	fin.	346.33	457	0.92	0	515	7295	5785	2346	7810		17.08	Si
SLV 2	ini.	364.82	-203	0.92	0	515	7295	5785	2346	7810		38.46	Si
SLV 2	fin.	-816.74	-4888	0.92	0	515	7295	5785	2346	7810		1.6	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.768	SLV 16	Si
V_SLV	1.293	SLV 14	Si
PF_SLU	3.796	SLU 78	Si
V_SLU	1.757	SLU 83	Si

## Trave di accoppiamento 35

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-21.543	-3.314	1.11	2.01	0.9	-22.543	-3.314	1.11	2.01	0.9	1	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb_	fhk	fvk0	fmedio	t0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 77	ini.	-33.64	-1246	-0.0000165	0.0001872	0.0035	0.9		2964.67	2964.67	No	88.14	Si
SLU 77	fin.	397.6	-1729	-0.0002128	0.0001872	0.0035	0.9		2959	2959	No	7.44	Si
SLU 66	ini.	-55.23	-1088	-0.0000273	0.0001872	0.0035	0.9		2964.67	2964.67	No	53.68	Si
SLU 66	fin.	388.15	-1587	-0.0002072	0.0001872	0.0035	0.9		2959	2959	No	7.62	Si
SLU 74	ini.	-42.34	-1220	-0.0000208	0.0001872	0.0035	0.9		2964.67	2964.67	No	70.01	Si
SLU 74	fin.	400.86	-1717	-0.0002148	0.0001872	0.0035	0.9		2959	2959	No	7.38	Si
SLU 79	ini.	-28.29	-1246	-0.0000139	0.0001872	0.0035	0.9		2964.67	2964.67	No	104.79	Si
SLU 79	fin.	389.4	-1712	-0.000208	0.0001872	0.0035	0.9		2959	2959	No	7.6	Si
SLU 84	ini.	-27.05	-1282	-0.0000133	0.0001872	0.0035	0.9		2964.67	2964.67	No	109.61	Si
SLU 84	fin.	393.28	-1751	-0.0002103	0.0001872	0.0035	0.9		2959	2959	No	7.52	Si
SLU 78	ini.	-29.21	-1251	-0.0000143	0.0001872	0.0035	0.9		2964.67	2964.67	No	101.51	Si
SLU 78	fin.	392.78	-1723	-0.00021	0.0001872	0.0035	0.9		2959	2959	No	7.53	Si
SLU 75	ini.	-37.91	-1226	-0.0000186	0.0001872	0.0035	0.9		2964.67	2964.67	No	78.2	Si
SLU 75	fin.	396.03	-1711	-0.0002119	0.0001872	0.0035	0.9		2959	2959	No	7.47	Si
SLU 83	ini.	-31.48	-1276	-0.0000155	0.0001872	0.0035	0.9		2964.67	2964.67	No	94.18	Si
SLU 83	fin.	398.1	-1756	-0.0002131	0.0001872	0.0035	0.9		2959	2959	No	7.43	Si
SLU 82	ini.	-35.76	-1256	-0.0000176	0.0001872	0.0035	0.9		2964.67	2964.67	No	82.92	Si
SLU 82	fin.	396.53	-1739	-0.0002122	0.0001872	0.0035	0.9		2959	2959	No	7.46	Si
SLU 81	ini.	-40.19	-1250	-0.0000198	0.0001872	0.0035	0.9		2964.67	2964.67	No	73.77	Si
SLU 81	fin.	401.36	-1745	-0.0002151	0.0001872	0.0035	0.9		2959	2959	No	7.37	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 78	ini.	-29.21	401	0.9	0	329	7137	3773	2295	6068	No	15.12	Si
SLU 78	fin.	392.78	876	0.9	0	329	7137	3773	2295	6068	No	6.93	Si
SLU 64	ini.	-58.59	454	0.9	0	329	7137	3773	2295	6068	No	13.37	Si
SLU 64	fin.	383.2	874	0.9	0	329	7137	3773	2295	6068	No	6.94	Si
SLU 70	ini.	-42.09	387	0.9	0	329	7137	3773	2295	6068	No	15.68	Si
SLU 70	fin.	380.07	881	0.9	0	329	7137	3773	2295	6068	No	6.89	Si
SLU 67	ini.	-50.8	420	0.9	0	329	7137	3773	2295	6068	No	14.46	Si
SLU 67	fin.	383.33	885	0.9	0	329	7137	3773	2295	6068	No	6.86	Si
SLU 75	ini.	-37.91	434	0.9	0	329	7137	3773	2295	6068	No	13.97	Si
SLU 75	fin.	396.03	880	0.9	0	329	7137	3773	2295	6068	No	6.9	Si
SLU 74	ini.	-42.34	448	0.9	0	329	7137	3773	2295	6068	No	13.54	Si
SLU 74	fin.	400.86	894	0.9	0	329	7137	3773	2295	6068	No	6.79	Si
SLU 66	ini.	-55.23	434	0.9	0	329	7137	3773	2295	6068	No	13.99	Si
SLU 66	fin.	388.15	899	0.9	0	329	7137	3773	2295	6068	No	6.75	Si
SLU 69	ini.	-46.52	401	0.9	0	329	7137	3773	2295	6068	No	15.14	Si
SLU 69	fin.	384.89	895	0.9	0	329	7137	3773	2295	6068	No	6.78	Si
SLU 71	ini.	-41.18	388	0.9	0	329	7137	3773	2295	6068	No	15.63	Si
SLU 71	fin.	376.69	867	0.9	0	329	7137	3773	2295	6068	No	7	Si
SLU 77	ini.	-33.64	415	0.9	0	329	7137	3773	2295	6068	No	14.61	Si
SLU 77	fin.	397.6	890	0.9	0	329	7137	3773	2295	6068	No	6.82	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 11	ini.	-344.02	-1859	-0.0001771	0.0002807	0.0035	0.9		2995.37	2995.37		8.71	Si
SLV 11	fin.	1057.31	-2874	-0.0006358	0.0002807	0.0035	0.9		2989.59	2989.59		2.83	Si
SLV 4	ini.	1773.2	-3599	-0.001251	0.0002807	0.0035	0.9		2989.59	2989.59		1.69	Si
SLV 4	fin.	-1447.19	367	-0.0009462	0.0002807	0.0035	0.9		2995.37	2995.37		2.07	Si
SLV 1	ini.	1362.99	-2249	-0.0008769	0.0002807	0.0035	0.9		2989.59	2989.59		2.19	Si
SLV 1	fin.	-1284.25	674	-0.0008101	0.0002807	0.0035	0.9		2995.37	2995.37		2.33	Si
SLV 13	ini.	-1850.11	1934	-0.0013259	0.0002807	0.0035	0.9		2995.37	2995.37		1.62	Si
SLV 13	fin.	2025.24	-2769	-0.0015208	0.0002807	0.0035	0.9		2989.59	2989.59		1.48	Si
SLV 15	ini.	-1694.87	883	-0.0011713	0.0002807	0.0035	0.9		2995.37	2995.37		1.77	Si
SLV 15	fin.	2135.44	-3400	-0.0016527	0.0002807	0.0035	0.9		2989.59	2989.59		1.4	Si
SLD 15	ini.	-745.27	-88	-0.0004164	0.0002807	0.0035	0.9		2995.37	2995.37		4.02	Si
SLD 15	fin.	1075.64	-2131	-0.0006494	0.0002807	0.0035	0.9		2989.59	2989.59		2.78	Si
SLV 16	ini.	-1439.91	583	-0.0009399	0.0002807	0.0035	0.9		2995.37	2995.37		2.08	Si
SLV 16	fin.	1862.3	-3075	-0.0013421	0.0002807	0.0035	0.9		2989.59	2989.59		1.61	Si
SLV 2	ini.	1617.95	-2549	-0.0011015	0.0002807	0.0035	0.9		2989.59	2989.59		1.85	Si
SLV 2	fin.	-1557.39	998	-0.0010434	0.0002807	0.0035	0.9		2995.37	2995.37		1.92	Si
SLV 14	ini.	-1595.16	1634	-0.0010778	0.0002807	0.0035	0.9		2995.37	2995.37		1.88	Si
SLV 14	fin.	1752.1	-2444	-0.0012301	0.0002807	0.0035	0.9		2989.59	2989.59		1.71	Si
SLV 3	ini.	1518.24	-3299	-0.0010108	0.0002807	0.0035	0.9		2989.59	2989.59		1.97	Si
SLV 3	fin.	-1174.05	43	-0.0007229	0.0002807	0.0035	0.9		2995.37	2995.37		2.55	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 14	ini.	-1595.16	5236	0.9	0	493	7137	5660	2295	7630		1.46	Si
SLV 14	fin.	1752.1	5098	0.9	0	493	7137	5660	2295	7630		1.5	Si
SLV 13	ini.	-1850.11	6012	0.9	0	493	7137	5660	2295	7630		1.27	Si
SLV 13	fin.	2025.24	5903	0.9	0	493	7137	5660	2295	7630		1.29	Si
SLV 15	ini.	-1694.87	5722	0.9	0	493	7137	5660	2295	7630		1.33	Si
SLV 15	fin.	2135.44	6251	0.9	0	493	7137	5660	2295	7630		1.22	Si
SLV 2	ini.	1617.95	-5049	0.9	0	493	7137	5660	2295	7630		1.51	Si
SLV 2	fin.	-1557.39	-4953	0.9	0	493	7137	5660	2295	7630		1.54	Si
SLV 11	ini.	-344.02	1647	0.9	0	493	7137	5660	2295	7630		4.63	Si
SLV 11	fin.	1057.31	2996	0.9	0	493	7137	5660	2295	7630		2.55	Si
SLV 3	ini.	1518.24	-4562	0.9	0	493	7137	5660	2295	7630		1.67	Si
SLV 3	fin.	-1174.05	-3799	0.9	0	493	7137	5660	2295	7630		2.01	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 4	ini.	1773.2	-5338	0.9	0	493	7137	5660	2295	7630		1.43	Si
SLV 4	fin.	-1447.19	-4605	0.9	0	493	7137	5660	2295	7630		1.66	Si
SLV 16	ini.	-1439.91	4946	0.9	0	493	7137	5660	2295	7630		1.54	Si
SLV 16	fin.	1862.3	5445	0.9	0	493	7137	5660	2295	7630		1.4	Si
SLV 1	ini.	1362.99	-4272	0.9	0	493	7137	5660	2295	7630		1.79	Si
SLV 1	fin.	-1284.25	-4147	0.9	0	493	7137	5660	2295	7630		1.84	Si
SLD 15	ini.	-745.27	2635	0.9	0	493	7137	5660	2295	7630		2.9	Si
SLD 15	fin.	1075.64	3021	0.9	0	493	7137	5660	2295	7630		2.53	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.4	SLV 15	Si
V_SLV	1.221	SLV 15	Si
PF_SLU	7.372	SLU 81	Si
V_SLU	6.753	SLU 66	Si

## Trave di accoppiamento 37

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-17.313	-3.314	1.11	2.01	0.9	-18.313	-3.314	1.11	2.01	0.9	1	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fhk	fvk0	fhmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 80	ini.	188.66	-3090	-0.0000959	0.0001872	0.0035	0.9		2959	2959	No	15.68	Si
SLU 80	fin.	-485.75	-2787	-0.0002662	0.0001872	0.0035	0.9		2964.67	2964.67	No	6.1	Si
SLU 76	ini.	189.56	-3047	-0.0000963	0.0001872	0.0035	0.9		2959	2959	No	15.61	Si
SLU 76	fin.	-485.75	-2731	-0.0002662	0.0001872	0.0035	0.9		2964.67	2964.67	No	6.1	Si
SLU 81	ini.	203.88	-3125	-0.0001039	0.0001872	0.0035	0.9		2959	2959	No	14.51	Si
SLU 81	fin.	-512.04	-2757	-0.0002828	0.0001872	0.0035	0.9		2964.67	2964.67	No	5.79	Si
SLU 82	ini.	208.59	-3132	-0.0001065	0.0001872	0.0035	0.9		2959	2959	No	14.19	Si
SLU 82	fin.	-517.26	-2750	-0.0002861	0.0001872	0.0035	0.9		2964.67	2964.67	No	5.73	Si
SLU 83	ini.	206.12	-3173	-0.0001051	0.0001872	0.0035	0.9		2959	2959	No	14.36	Si
SLU 83	fin.	-515.53	-2808	-0.000285	0.0001872	0.0035	0.9		2964.67	2964.67	No	5.75	Si
SLU 63	ini.	233.09	-2982	-0.0001196	0.0001872	0.0035	0.9		2959	2959	No	12.69	Si
SLU 63	fin.	-508.3	-2544	-0.0002804	0.0001872	0.0035	0.9		2964.67	2964.67	No	5.83	Si
SLU 61	ini.	230.86	-2934	-0.0001184	0.0001872	0.0035	0.9		2959	2959	No	12.82	Si
SLU 61	fin.	-504.81	-2492	-0.0002782	0.0001872	0.0035	0.9		2964.67	2964.67	No	5.87	Si
SLU 60	ini.	226.15	-2928	-0.0001159	0.0001872	0.0035	0.9		2959	2959	No	13.08	Si
SLU 60	fin.	-499.6	-2499	-0.0002749	0.0001872	0.0035	0.9		2964.67	2964.67	No	5.93	Si
SLU 84	ini.	210.82	-3180	-0.0001077	0.0001872	0.0035	0.9		2959	2959	No	14.04	Si
SLU 84	fin.	-520.75	-2801	-0.0002884	0.0001872	0.0035	0.9		2964.67	2964.67	No	5.69	Si
SLU 62	ini.	228.39	-2976	-0.0001171	0.0001872	0.0035	0.9		2959	2959	No	12.96	Si
SLU 62	fin.	-503.08	-2551	-0.0002771	0.0001872	0.0035	0.9		2964.67	2964.67	No	5.89	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 84	ini.	210.82	-2721	0.9	0	329	7137	3773	2295	6068	No	2.23	Si
SLU 84	fin.	-520.75	792	0.9	0	329	7137	3773	2295	6068	No	7.67	Si
SLU 80	ini.	188.66	-2620	0.9	0	329	7137	3773	2295	6068	No	2.32	Si
SLU 80	fin.	-485.75	866	0.9	0	329	7137	3773	2295	6068	No	7	Si
SLU 62	ini.	228.39	-2601	0.9	0	329	7137	3773	2295	6068	No	2.33	Si
SLU 62	fin.	-503.08	644	0.9	0	329	7137	3773	2295	6068	No	9.42	Si
SLU 81	ini.	203.88	-2661	0.9	0	329	7137	3773	2295	6068	No	2.28	Si
SLU 81	fin.	-512.04	775	0.9	0	329	7137	3773	2295	6068	No	7.83	Si
SLU 83	ini.	206.12	-2707	0.9	0	329	7137	3773	2295	6068	No	2.24	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 83	fin.	-515.53	807	0.9	0	329	7137	3773	2295	6068	No	7.52	Si
SLU 82	ini.	208.59	-2675	0.9	0	329	7137	3773	2295	6068	No	2.27	Si
SLU 82	fin.	-517.26	759	0.9	0	329	7137	3773	2295	6068	No	7.99	Si
SLU 63	ini.	233.09	-2615	0.9	0	329	7137	3773	2295	6068	No	2.32	Si
SLU 63	fin.	-508.3	629	0.9	0	329	7137	3773	2295	6068	No	9.65	Si
SLU 79	ini.	183.95	-2606	0.9	0	329	7137	3773	2295	6068	No	2.33	Si
SLU 79	fin.	-480.53	882	0.9	0	329	7137	3773	2295	6068	No	6.88	Si
SLU 78	ini.	182.84	-2617	0.9	0	329	7137	3773	2295	6068	No	2.32	Si
SLU 78	fin.	-479.79	903	0.9	0	329	7137	3773	2295	6068	No	6.72	Si
SLU 77	ini.	178.14	-2603	0.9	0	329	7137	3773	2295	6068	No	2.33	Si
SLU 77	fin.	-474.57	919	0.9	0	329	7137	3773	2295	6068	No	6.6	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 7	ini.	411.88	-2378	-0.000215	0.0002807	0.0035	0.9		2989.59	2989.59		7.26	Si
SLV 7	fin.	-1357.5	227	-0.0008702	0.0002807	0.0035	0.9		2995.37	2995.37		2.21	Si
SLV 1	ini.	2320.08	-6104	-0.001901	0.0002807	0.0035	0.9		2989.59	2989.59		1.29	Si
SLV 1	fin.	-2217.2	-495	-0.0017525	0.0002807	0.0035	0.9		2995.37	2995.37		1.35	Si
SLV 16	ini.	-2089.23	1905	-0.0015916	0.0002807	0.0035	0.9		2995.37	2995.37		1.43	Si
SLV 16	fin.	1580.94	-3384	-0.0010674	0.0002807	0.0035	0.9		2989.59	2989.59		1.89	Si
SLV 3	ini.	2141.82	-5629	-0.0016607	0.0002807	0.0035	0.9		2989.59	2989.59		1.4	Si
SLV 3	fin.	-2498.65	491	-0.0021755	0.0002807	0.0035	0.9		2995.37	2995.37		1.2	Si
SLV 13	ini.	-2148.63	1769	-0.0016643	0.0002807	0.0035	0.9		2995.37	2995.37		1.39	Si
SLV 13	fin.	2103.28	-4704	-0.0016131	0.0002807	0.0035	0.9		2989.59	2989.59		1.42	Si
SLV 4	ini.	2379.48	-5969	-0.0019899	0.0002807	0.0035	0.9		2989.59	2989.59		1.26	Si
SLV 4	fin.	-2739.54	824	-0.0026335	0.0002807	0.0035	0.9		2995.37	2995.37		1.09	Si
SLV 2	ini.	2557.74	-6444	-0.0022872	0.0002807	0.0035	0.9		2989.59	2989.59		1.17	Si
SLV 2	fin.	-2458.08	-162	-0.0021077	0.0002807	0.0035	0.9		2995.37	2995.37		1.22	Si
SLV 14	ini.	-1910.97	1430	-0.00139	0.0002807	0.0035	0.9		2995.37	2995.37		1.57	Si
SLV 14	fin.	1862.39	-4370	-0.0013422	0.0002807	0.0035	0.9		2989.59	2989.59		1.61	Si
SLV 15	ini.	-2326.89	2245	-0.0019048	0.0002807	0.0035	0.9		2995.37	2995.37		1.29	Si
SLV 15	fin.	1821.83	-3718	-0.0013002	0.0002807	0.0035	0.9		2989.59	2989.59		1.64	Si
SLV 8	ini.	565.38	-2598	-0.0003042	0.0002807	0.0035	0.9		2989.59	2989.59		5.29	Si
SLV 8	fin.	-1513.08	443	-0.0010038	0.0002807	0.0035	0.9		2995.37	2995.37		1.98	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 13	ini.	-2148.63	5804	0.9	0	493	7137	5660	2295	7630		1.31	Si
SLV 13	fin.	2103.28	7916	0.9	0	493	7137	5660	2295	7630		0.96	No
SLV 4	ini.	2379.48	-9294	0.9	0	493	7137	5660	2295	7630		0.82	No
SLV 4	fin.	-2739.54	-6633	0.9	0	493	7137	5660	2295	7630		1.15	Si
SLV 1	ini.	2320.08	-8611	0.9	0	493	7137	5660	2295	7630		0.89	No
SLV 1	fin.	-2217.2	-5327	0.9	0	493	7137	5660	2295	7630		1.43	Si
SLV 3	ini.	2141.82	-8575	0.9	0	493	7137	5660	2295	7630		0.89	No
SLV 3	fin.	-2498.65	-5862	0.9	0	493	7137	5660	2295	7630		1.3	Si
SLV 16	ini.	-2089.23	5121	0.9	0	493	7137	5660	2295	7630		1.49	Si
SLV 16	fin.	1580.94	6610	0.9	0	493	7137	5660	2295	7630		1.15	Si
SLV 2	ini.	2557.74	-9330	0.9	0	493	7137	5660	2295	7630		0.82	No
SLV 2	fin.	-2458.08	-6099	0.9	0	493	7137	5660	2295	7630		1.25	Si
SLD 4	ini.	1084.42	-4967	0.9	0	493	7137	5660	2295	7630		1.54	Si
SLD 4	fin.	-1351.54	-2463	0.9	0	493	7137	5660	2295	7630		3.1	Si
SLD 2	ini.	1158.03	-4988	0.9	0	493	7137	5660	2295	7630		1.53	Si
SLD 2	fin.	-1233.48	-2237	0.9	0	493	7137	5660	2295	7630		3.41	Si
SLV 14	ini.	-1910.97	5085	0.9	0	493	7137	5660	2295	7630		1.5	Si
SLV 14	fin.	1862.39	7144	0.9	0	493	7137	5660	2295	7630		1.07	Si
SLV 15	ini.	-2326.89	5840	0.9	0	493	7137	5660	2295	7630		1.31	Si
SLV 15	fin.	1821.83	7381	0.9	0	493	7137	5660	2295	7630		1.03	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.093	SLV 4	Si
V_SLV	0.818	SLV 2	No
PF_SLU	5.693	SLU 84	Si
V_SLU	2.23	SLU 84	Si

Trave di accoppiamento 38

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-18.518	-0.094	3.21	4.83	1.62	-18.518	0.706	3.21	4.83	1.62	0.8	0.16	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC





Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 80	ini.	-513.33	-83	-0.0000795	0.0002246	0.0035	1.62		9898.82	9898.82	No	19.28	Si
SLU 80	fin.	-1171.54	-83	-0.0001889	0.0002246	0.0035	1.62		9898.82	9898.82	No	8.45	Si
SLU 79	ini.	-523.53	-90	-0.0000811	0.0002246	0.0035	1.62		9898.82	9898.82	No	18.91	Si
SLU 79	fin.	-1170.12	-90	-0.0001886	0.0002246	0.0035	1.62		9898.82	9898.82	No	8.46	Si
SLU 82	ini.	-652.67	-165	-0.0001019	0.0002246	0.0035	1.62		9898.82	9898.82	No	15.17	Si
SLU 82	fin.	-1186.84	-165	-0.0001915	0.0002246	0.0035	1.62		9898.82	9898.82	No	8.34	Si
SLU 77	ini.	-556.83	-109	-0.0000864	0.0002246	0.0035	1.62		9898.82	9898.82	No	17.78	Si
SLU 77	fin.	-1178.54	-109	-0.0001901	0.0002246	0.0035	1.62		9898.82	9898.82	No	8.4	Si
SLU 83	ini.	-644.88	-166	-0.0001006	0.0002246	0.0035	1.62		9898.82	9898.82	No	15.35	Si
SLU 83	fin.	-1196.29	-166	-0.0001932	0.0002246	0.0035	1.62		9898.82	9898.82	No	8.27	Si
SLU 84	ini.	-634.68	-159	-0.000099	0.0002246	0.0035	1.62		9898.82	9898.82	No	15.6	Si
SLU 84	fin.	-1197.71	-159	-0.0001934	0.0002246	0.0035	1.62		9898.82	9898.82	No	8.26	Si
SLU 78	ini.	-546.62	-102	-0.0000848	0.0002246	0.0035	1.62		9898.82	9898.82	No	18.11	Si
SLU 78	fin.	-1179.96	-102	-0.0001903	0.0002246	0.0035	1.62		9898.82	9898.82	No	8.39	Si
SLU 81	ini.	-662.87	-172	-0.0001035	0.0002246	0.0035	1.62		9898.82	9898.82	No	14.93	Si
SLU 81	fin.	-1185.42	-172	-0.0001913	0.0002246	0.0035	1.62		9898.82	9898.82	No	8.35	Si
SLU 74	ini.	-574.81	-115	-0.0000893	0.0002246	0.0035	1.62		9898.82	9898.82	No	17.22	Si
SLU 74	fin.	-1167.66	-115	-0.0001882	0.0002246	0.0035	1.62		9898.82	9898.82	No	8.48	Si
SLU 75	ini.	-564.61	-108	-0.0000877	0.0002246	0.0035	1.62		9898.82	9898.82	No	17.53	Si
SLU 75	fin.	-1169.09	-108	-0.0001885	0.0002246	0.0035	1.62		9898.82	9898.82	No	8.47	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 49	ini.	-71.71	-846	1.62	0	376	6344	4658	4131	6719	No	7.94	Si
SLU 49	fin.	-1004.95	-1391	1.62	0	376	6344	4658	4131	6719	No	4.83	Si
SLU 72	ini.	-272.14	-686	1.62	0	376	6344	4658	4131	6719	No	9.79	Si
SLU 72	fin.	-1085.09	-1252	1.62	0	376	6344	4658	4131	6719	No	5.36	Si
SLU 51	ini.	-38.41	-877	1.62	0	376	6344	4658	4131	6719	No	7.66	Si
SLU 51	fin.	-996.53	-1422	1.62	0	376	6344	4658	4131	6719	No	4.72	Si
SLU 43	ini.	-84.59	-791	1.62	0	376	6344	4658	4131	6719	No	8.5	Si
SLU 43	fin.	-973.36	-1336	1.62	0	376	6344	4658	4131	6719	No	5.03	Si
SLU 45	ini.	-99.9	-796	1.62	0	376	6344	4658	4131	6719	No	8.44	Si
SLU 45	fin.	-992.65	-1341	1.62	0	376	6344	4658	4131	6719	No	5.01	Si
SLU 44	ini.	-67.59	-815	1.62	0	376	6344	4658	4131	6719	No	8.24	Si
SLU 44	fin.	-975.73	-1360	1.62	0	376	6344	4658	4131	6719	No	4.94	Si
SLU 46	ini.	-89.7	-810	1.62	0	376	6344	4658	4131	6719	No	8.29	Si
SLU 46	fin.	-994.07	-1355	1.62	0	376	6344	4658	4131	6719	No	4.96	Si
SLU 48	ini.	-81.91	-832	1.62	0	376	6344	4658	4131	6719	No	8.08	Si
SLU 48	fin.	-1003.53	-1377	1.62	0	376	6344	4658	4131	6719	No	4.88	Si
SLU 50	ini.	-48.61	-863	1.62	0	376	6344	4658	4131	6719	No	7.79	Si
SLU 50	fin.	-995.11	-1408	1.62	0	376	6344	4658	4131	6719	No	4.77	Si
SLU 47	ini.	-49.6	-851	1.62	0	376	6344	4658	4131	6719	No	7.9	Si
SLU 47	fin.	-986.6	-1396	1.62	0	376	6344	4658	4131	6719	No	4.81	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 10	ini.	-1816.46	-1070	-0.0002967	0.0003369	0.0035	1.62		10127.31	10127.31		5.58	Si
SLV 10	fin.	-1014.32	-1300	-0.0001593	0.0003369	0.0035	1.62		10127.31	10127.31		9.98	Si
SLV 4	ini.	-433.33	-68	-0.0000664	0.0003369	0.0035	1.62		10127.31	10127.31		23.37	Si
SLV 4	fin.	-1583.79	686	-0.0002556	0.0003369	0.0035	1.62		10127.31	10127.31		6.39	Si
SLV 6	ini.	-2270.12	-1371	-0.0003804	0.0003369	0.0035	1.62		10127.31	10127.31		4.46	Si
SLV 6	fin.	-1553.74	-1149	-0.0002504	0.0003369	0.0035	1.62		10127.31	10127.31		6.52	Si
SLV 3	ini.	-518.62	-112	-0.0000798	0.0003369	0.0035	1.62		10127.31	10127.31		19.53	Si
SLV 3	fin.	-1581.71	642	-0.0002552	0.0003369	0.0035	1.62		10127.31	10127.31		6.4	Si
SLV 2	ini.	-1518.39	-828	-0.0002442	0.0003369	0.0035	1.62		10127.31	10127.31		6.67	Si
SLV 2	fin.	-1860.55	-77	-0.0003046	0.0003369	0.0035	1.62		10127.31	10127.31		5.44	Si
SLV 5	ini.	-2325.2	-1399	-0.0003909	0.0003369	0.0035	1.62		10127.31	10127.31		4.36	Si
SLV 5	fin.	-1552.4	-1177	-0.0002501	0.0003369	0.0035	1.62		10127.31	10127.31		6.52	Si
SLV 9	ini.	-1871.54	-1098	-0.0003066	0.0003369	0.0035	1.62		10127.31	10127.31		5.41	Si
SLV 9	fin.	-1012.98	-1328	-0.0001591	0.0003369	0.0035	1.62		10127.31	10127.31		10	Si
SLV 11	ini.	1745.31	1435	-0.0002843	0.0003369	0.0035	1.62		10117.08	10117.08		5.8	Si
SLV 11	fin.	-90.46	1213	-0.0000137	0.0003369	0.0035	1.62		10127.31	10127.31		111.96	Si
SLV 12	ini.	1800.4	1463	-0.0002941	0.0003369	0.0035	1.62		10117.08	10117.08		5.62	Si
SLV 12	fin.	-91.8	1241	-0.0000139	0.0003369	0.0035	1.62		10127.31	10127.31		110.32	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 1	ini.	-1603.68	-872	-0.0002591	0.0003369	0.0035	1.62		10127.31	10127.31		6.32	Si
SLV 1	fin.	-1858.47	-120	-0.0003042	0.0003369	0.0035	1.62		10127.31	10127.31		5.45	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 8	ini.	443.65	-1116	1.62	0	563	6344	6986	4131	6907		6.19	Si
SLD 8	fin.	-731.85	-1587	1.62	0	563	6344	6986	4131	6907		4.35	Si
SLV 7	ini.	1291.65	-1894	1.62	0	563	6344	6986	4131	6907		3.65	Si
SLV 7	fin.	-629.87	-2413	1.62	0	563	6344	6986	4131	6907		2.86	Si
SLD 7	ini.	419.58	-1085	1.62	0	563	6344	6986	4131	6907		6.36	Si
SLD 7	fin.	-731.26	-1556	1.62	0	563	6344	6986	4131	6907		4.44	Si
SLV 8	ini.	1346.74	-1964	1.62	0	563	6344	6986	4131	6907		3.52	Si
SLV 8	fin.	-631.22	-2483	1.62	0	563	6344	6986	4131	6907		2.78	Si
SLV 15	ini.	993.58	-1563	1.62	0	563	6344	6986	4131	6907		4.42	Si
SLV 15	fin.	216.35	-1997	1.62	0	563	6344	6986	4131	6907		3.46	Si
SLV 12	ini.	1800.4	-2364	1.62	0	563	6344	6986	4131	6907		2.92	Si
SLV 12	fin.	-91.8	-2870	1.62	0	563	6344	6986	4131	6907		2.41	Si
SLV 11	ini.	1745.31	-2293	1.62	0	563	6344	6986	4131	6907		3.01	Si
SLV 11	fin.	-90.46	-2799	1.62	0	563	6344	6986	4131	6907		2.47	Si
SLD 12	ini.	636.31	-1286	1.62	0	563	6344	6986	4131	6907		5.37	Si
SLD 12	fin.	-505.67	-1749	1.62	0	563	6344	6986	4131	6907		3.95	Si
SLV 16	ini.	1078.87	-1672	1.62	0	563	6344	6986	4131	6907		4.13	Si
SLV 16	fin.	214.27	-2106	1.62	0	563	6344	6986	4131	6907		3.28	Si
SLD 11	ini.	612.25	-1255	1.62	0	563	6344	6986	4131	6907		5.5	Si
SLD 11	fin.	-505.09	-1718	1.62	0	563	6344	6986	4131	6907		4.02	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	4.355	SLV 5	Si
V_SLV	2.407	SLV 12	Si
PF_SLU	8.265	SLU 84	Si
V_SLU	4.724	SLU 51	Si

Trave di accoppiamento 40

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-15.483	-3.314	3.21	4.83	1.62	-16.333	-3.314	3.21	4.83	1.62	0.85	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	f <sub>nk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	ε <sub>f,d</sub>	γ <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 80	ini.	-361.63	-3374	-0.0000557	0.0001872	0.0035	1.62		9533.52	9533.52	No	26.36	Si
SLU 80	fin.	-1241.22	-3374	-0.0002038	0.0001872	0.0035	1.62		9533.52	9533.52	No	7.68	Si
SLU 83	ini.	-271.17	-3464	-0.0000415	0.0001872	0.0035	1.62		9533.52	9533.52	No	35.16	Si
SLU 83	fin.	-1290.47	-3464	-0.0002128	0.0001872	0.0035	1.62		9533.52	9533.52	No	7.39	Si
SLU 81	ini.	-261.24	-3409	-0.00004	0.0001872	0.0035	1.62		9533.52	9533.52	No	36.49	Si
SLU 81	fin.	-1271.52	-3409	-0.0002093	0.0001872	0.0035	1.62		9533.52	9533.52	No	7.5	Si
SLU 82	ini.	-252.38	-3412	-0.0000386	0.0001872	0.0035	1.62		9533.52	9533.52	No	37.77	Si
SLU 82	fin.	-1274.69	-3412	-0.0002099	0.0001872	0.0035	1.62		9533.52	9533.52	No	7.48	Si
SLU 63	ini.	-135.63	-3167	-0.0000206	0.0001872	0.0035	1.62		9533.52	9533.52	No	70.29	Si
SLU 63	fin.	-1238.66	-3167	-0.0002033	0.0001872	0.0035	1.62		9533.52	9533.52	No	7.7	Si
SLU 79	ini.	-370.5	-3372	-0.0000571	0.0001872	0.0035	1.62		9533.52	9533.52	No	25.73	Si
SLU 79	fin.	-1238.05	-3372	-0.0002032	0.0001872	0.0035	1.62		9533.52	9533.52	No	7.7	Si
SLU 77	ini.	-390.14	-3397	-0.0000602	0.0001872	0.0035	1.62		9533.52	9533.52	No	24.44	Si
SLU 77	fin.	-1237.51	-3397	-0.0002031	0.0001872	0.0035	1.62		9533.52	9533.52	No	7.7	Si
SLU 62	ini.	-144.5	-3164	-0.000022	0.0001872	0.0035	1.62		9533.52	9533.52	No	65.98	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 62	fin.	-1235.48	-3164	-0.0002028	0.0001872	0.0035	1.62		9533.52	9533.52	No	7.72	Si
SLU 84	ini.	-262.3	-3467	-0.0000401	0.0001872	0.0035	1.62		9533.52	9533.52	No	36.35	Si
SLU 84	fin.	-1293.64	-3467	-0.0002134	0.0001872	0.0035	1.62		9533.52	9533.52	No	7.37	Si
SLU 78	ini.	-381.27	-3399	-0.0000588	0.0001872	0.0035	1.62		9533.52	9533.52	No	25	Si
SLU 78	fin.	-1240.69	-3399	-0.0002037	0.0001872	0.0035	1.62		9533.52	9533.52	No	7.68	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 82	ini.	-252.38	-731	1.62	0	657	6740	6791	4131	7398	No	10.13	Si
SLU 82	fin.	-1274.69	-1679	1.62	0	657	6740	6791	4131	7398	No	4.41	Si
SLU 55	ini.	-219.13	-649	1.62	0	657	6740	6791	4131	7398	No	11.4	Si
SLU 55	fin.	-1169.4	-1591	1.62	0	657	6740	6791	4131	7398	No	4.65	Si
SLU 62	ini.	-144.5	-814	1.62	0	657	6740	6791	4131	7398	No	9.08	Si
SLU 62	fin.	-1235.48	-1756	1.62	0	657	6740	6791	4131	7398	No	4.21	Si
SLU 63	ini.	-135.63	-828	1.62	0	657	6740	6791	4131	7398	No	8.93	Si
SLU 63	fin.	-1238.66	-1771	1.62	0	657	6740	6791	4131	7398	No	4.18	Si
SLU 83	ini.	-271.17	-727	1.62	0	657	6740	6791	4131	7398	No	10.18	Si
SLU 83	fin.	-1290.47	-1675	1.62	0	657	6740	6791	4131	7398	No	4.42	Si
SLU 81	ini.	-261.24	-716	1.62	0	657	6740	6791	4131	7398	No	10.33	Si
SLU 81	fin.	-1271.52	-1664	1.62	0	657	6740	6791	4131	7398	No	4.44	Si
SLU 61	ini.	-125.71	-818	1.62	0	657	6740	6791	4131	7398	No	9.05	Si
SLU 61	fin.	-1219.71	-1760	1.62	0	657	6740	6791	4131	7398	No	4.2	Si
SLU 60	ini.	-134.57	-804	1.62	0	657	6740	6791	4131	7398	No	9.2	Si
SLU 60	fin.	-1216.53	-1746	1.62	0	657	6740	6791	4131	7398	No	4.24	Si
SLU 59	ini.	-234.96	-650	1.62	0	657	6740	6791	4131	7398	No	11.38	Si
SLU 59	fin.	-1186.24	-1592	1.62	0	657	6740	6791	4131	7398	No	4.65	Si
SLU 84	ini.	-262.3	-741	1.62	0	657	6740	6791	4131	7398	No	9.98	Si
SLU 84	fin.	-1293.64	-1689	1.62	0	657	6740	6791	4131	7398	No	4.38	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-7997.9	-3299	-0.0021249	0.0002807	0.0035	1.62		9461.54	9461.54		1.18	Si
SLV 15	fin.	3785.11	-2908	-0.0007193	0.0002807	0.0035	1.62		9450.85	9450.85		2.5	Si
SLD 13	ini.	-3615.29	-2287	-0.0006782	0.0002807	0.0035	1.62		9461.54	9461.54		2.62	Si
SLD 13	fin.	868.98	-2388	-0.0001365	0.0002807	0.0035	1.62		9450.85	9450.85		10.88	Si
SLV 4	ini.	7316.25	-2259	-0.0018108	0.0002807	0.0035	1.62		9450.85	9450.85		1.29	Si
SLV 4	fin.	-4803.04	-2022	-0.0009768	0.0002807	0.0035	1.62		9461.54	9461.54		1.97	Si
SLV 14	ini.	-7315.39	-2229	-0.0018073	0.0002807	0.0035	1.62		9461.54	9461.54		1.29	Si
SLV 14	fin.	2799.89	-2465	-0.0004968	0.0002807	0.0035	1.62		9450.85	9450.85		3.38	Si
SLV 13	ini.	-8001.78	-2296	-0.0021269	0.0002807	0.0035	1.62		9461.54	9461.54		1.18	Si
SLV 13	fin.	3141.87	-2532	-0.0005711	0.0002807	0.0035	1.62		9450.85	9450.85		3.01	Si
SLV 16	ini.	-7311.51	-3232	-0.0018056	0.0002807	0.0035	1.62		9461.54	9461.54		1.29	Si
SLV 16	fin.	3443.14	-2841	-0.0006391	0.0002807	0.0035	1.62		9450.85	9450.85		2.74	Si
SLV 2	ini.	7312.37	-1255	-0.0018091	0.0002807	0.0035	1.62		9450.85	9450.85		1.29	Si
SLV 2	fin.	-5446.29	-1646	-0.001158	0.0002807	0.0035	1.62		9461.54	9461.54		1.74	Si
SLD 15	ini.	-3616.06	-2712	-0.0006784	0.0002807	0.0035	1.62		9461.54	9461.54		2.62	Si
SLD 15	fin.	1140.29	-2545	-0.0001816	0.0002807	0.0035	1.62		9450.85	9450.85		8.29	Si
SLV 1	ini.	6625.98	-1322	-0.0015419	0.0002807	0.0035	1.62		9450.85	9450.85		1.43	Si
SLV 1	fin.	-5104.31	-1713	-0.0010597	0.0002807	0.0035	1.62		9461.54	9461.54		1.85	Si
SLV 3	ini.	6629.86	-2326	-0.0015433	0.0002807	0.0035	1.62		9450.85	9450.85		1.43	Si
SLV 3	fin.	-4461.07	-2089	-0.0008864	0.0002807	0.0035	1.62		9461.54	9461.54		2.12	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 16	ini.	-7311.51	12637	1.62	0	986	6740	10187	4131	7726		0.61	No
SLV 16	fin.	3443.14	12351	1.62	0	986	6740	10187	4131	7726		0.63	No
SLD 2	ini.	2930.52	-6227	1.62	0	986	6740	10187	4131	7726		1.24	Si
SLD 2	fin.	-2801.47	-7138	1.62	0	986	6740	10187	4131	7726		1.08	Si
SLV 13	ini.	-8001.78	13854	1.62	0	986	6740	10187	4131	7726		0.56	No
SLV 13	fin.	3141.87	12652	1.62	0	986	6740	10187	4131	7726		0.61	No
SLV 6	ini.	2066.59	-4627	1.62	0	986	6740	10187	4131	7726		1.67	Si
SLV 6	fin.	-3250.03	-6877	1.62	0	986	6740	10187	4131	7726		1.12	Si
SLV 15	ini.	-7997.9	13847	1.62	0	986	6740	10187	4131	7726		0.56	No
SLV 15	fin.	3785.11	13561	1.62	0	986	6740	10187	4131	7726		0.57	No
SLV 4	ini.	7316.25	-14277	1.62	0	986	6740	10187	4131	7726		0.54	No
SLV 4	fin.	-4803.04	-14531	1.62	0	986	6740	10187	4131	7726		0.53	No
SLV 1	ini.	6625.98	-13060	1.62	0	986	6740	10187	4131	7726		0.59	No
SLV 1	fin.	-5104.31	-14230	1.62	0	986	6740	10187	4131	7726		0.54	No
SLV 14	ini.	-7315.39	12644	1.62	0	986	6740	10187	4131	7726		0.61	No
SLV 14	fin.	2799.89	11442	1.62	0	986	6740	10187	4131	7726		0.68	No
SLV 3	ini.	6629.86	-13067	1.62	0	986	6740	10187	4131	7726		0.59	No
SLV 3	fin.	-4461.07	-13321	1.62	0	986	6740	10187	4131	7726		0.58	No
SLV 2	ini.	7312.37	-14270	1.62	0	986	6740	10187	4131	7726		0.54	No
SLV 2	fin.	-5446.29	-15440	1.62	0	986	6740	10187	4131	7726		0.5	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF SLV	1.182	SLV 13	Si
V SLV	0.5	SLV 2	No
PF SLU	7.37	SLU 84	Si
V SLU	4.178	SLU 63	Si



## Trave di accoppiamento 42

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-15.033	1.366	3.21	4.83	1.62	-15.033	2.166	3.21	4.83	1.62	0.8	0.16	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	t <sub>fv</sub>	t <sub>fo</sub>	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	e <sub>f,d</sub>	γ <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	e <sub>m</sub>	e <sub>m</sub> _	e <sub>mu</sub>	d <sub>f</sub>	M <sub>0d</sub>	M <sub>1d</sub>	M <sub>Rd</sub>	incremento > 50%	c.s.	Verifica
SLU 83	ini.	758.72	21	-0.0001193	0.0002246	0.0035	1.62		9888.78	9888.78	No	13.03	Si
SLU 83	fin.	-242.63	-603	-0.000037	0.0002246	0.0035	1.62		9898.82	9898.82	No	40.8	Si
SLU 75	ini.	741.33	16	-0.0001164	0.0002246	0.0035	1.62		9888.78	9888.78	No	13.34	Si
SLU 75	fin.	-247.65	-598	-0.0000378	0.0002246	0.0035	1.62		9898.82	9898.82	No	39.97	Si
SLU 74	ini.	742.66	14	-0.0001167	0.0002246	0.0035	1.62		9888.78	9888.78	No	13.32	Si
SLU 74	fin.	-245.17	-598	-0.0000374	0.0002246	0.0035	1.62		9898.82	9898.82	No	40.38	Si
SLU 77	ini.	755.61	9	-0.0001188	0.0002246	0.0035	1.62		9888.78	9888.78	No	13.09	Si
SLU 77	fin.	-247.37	-613	-0.0000378	0.0002246	0.0035	1.62		9898.82	9898.82	No	40.02	Si
SLU 81	ini.	745.77	26	-0.0001172	0.0002246	0.0035	1.62		9888.78	9888.78	No	13.26	Si
SLU 81	fin.	-240.43	-588	-0.0000367	0.0002246	0.0035	1.62		9898.82	9898.82	No	41.17	Si
SLU 82	ini.	744.43	27	-0.0001169	0.0002246	0.0035	1.62		9888.78	9888.78	No	13.28	Si
SLU 82	fin.	-242.91	-588	-0.0000371	0.0002246	0.0035	1.62		9898.82	9898.82	No	40.75	Si
SLU 84	ini.	757.38	22	-0.0001191	0.0002246	0.0035	1.62		9888.78	9888.78	No	13.06	Si
SLU 84	fin.	-245.12	-603	-0.0000374	0.0002246	0.0035	1.62		9898.82	9898.82	No	40.38	Si
SLU 78	ini.	754.27	11	-0.0001186	0.0002246	0.0035	1.62		9888.78	9888.78	No	13.11	Si
SLU 78	fin.	-249.86	-613	-0.0000381	0.0002246	0.0035	1.62		9898.82	9898.82	No	39.62	Si
SLU 80	ini.	749.1	8	-0.0001177	0.0002246	0.0035	1.62		9888.78	9888.78	No	13.2	Si
SLU 80	fin.	-249.23	-611	-0.000038	0.0002246	0.0035	1.62		9898.82	9898.82	No	39.72	Si
SLU 79	ini.	750.44	7	-0.0001179	0.0002246	0.0035	1.62		9888.78	9888.78	No	13.18	Si
SLU 79	fin.	-246.75	-611	-0.0000377	0.0002246	0.0035	1.62		9898.82	9898.82	No	40.12	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	d <sub>f</sub>	f <sub>vd</sub>	V <sub>t</sub>	V <sub>t,f</sub>	V <sub>t,c</sub>	V <sub>t,c int.</sub>	V <sub>t,R</sub>	incremento > 50%	c.s.	Verifica
SLU 81	ini.	745.77	-1594	1.62	0	376	6344	4658	4131	6719	No	4.22	Si
SLU 81	fin.	-240.43	-2125	1.62	0	376	6344	4658	4131	6719	No	3.16	Si
SLU 83	ini.	758.72	-1623	1.62	0	376	6344	4658	4131	6719	No	4.14	Si
SLU 83	fin.	-242.63	-2154	1.62	0	376	6344	4658	4131	6719	No	3.12	Si
SLU 74	ini.	742.66	-1595	1.62	0	376	6344	4658	4131	6719	No	4.21	Si
SLU 74	fin.	-245.17	-2127	1.62	0	376	6344	4658	4131	6719	No	3.16	Si
SLU 77	ini.	755.61	-1624	1.62	0	376	6344	4658	4131	6719	No	4.14	Si
SLU 77	fin.	-247.37	-2156	1.62	0	376	6344	4658	4131	6719	No	3.12	Si
SLU 82	ini.	744.43	-1597	1.62	0	376	6344	4658	4131	6719	No	4.21	Si
SLU 82	fin.	-242.91	-2129	1.62	0	376	6344	4658	4131	6719	No	3.16	Si
SLU 80	ini.	749.1	-1615	1.62	0	376	6344	4658	4131	6719	No	4.16	Si
SLU 80	fin.	-249.23	-2147	1.62	0	376	6344	4658	4131	6719	No	3.13	Si
SLU 78	ini.	754.27	-1627	1.62	0	376	6344	4658	4131	6719	No	4.13	Si
SLU 78	fin.	-249.86	-2159	1.62	0	376	6344	4658	4131	6719	No	3.11	Si
SLU 84	ini.	757.38	-1626	1.62	0	376	6344	4658	4131	6719	No	4.13	Si
SLU 84	fin.	-245.12	-2157	1.62	0	376	6344	4658	4131	6719	No	3.11	Si
SLU 75	ini.	741.33	-1598	1.62	0	376	6344	4658	4131	6719	No	4.2	Si
SLU 75	fin.	-247.65	-2130	1.62	0	376	6344	4658	4131	6719	No	3.15	Si
SLU 79	ini.	750.44	-1612	1.62	0	376	6344	4658	4131	6719	No	4.17	Si
SLU 79	fin.	-246.75	-2144	1.62	0	376	6344	4658	4131	6719	No	3.13	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 12	ini.	214.94	-1012	-0.0000327	0.0003369	0.0035	1.62		10117.08	10117.08		47.07	Si
SLV 12	fin.	-917.82	-1422	-0.0001436	0.0003369	0.0035	1.62		10127.31	10127.31		11.03	Si
SLV 3	ini.	807.56	-294	-0.0001259	0.0003369	0.0035	1.62		10117.08	10117.08		12.53	Si
SLV 3	fin.	-429.86	-843	-0.0000659	0.0003369	0.0035	1.62		10127.31	10127.31		23.56	Si
SLV 2	ini.	915.01	326	-0.0001433	0.0003369	0.0035	1.62		10117.08	10117.08		11.06	Si
SLV 2	fin.	10.4	-231	-0.0000016	0.0003369	0.0035	1.62		10117.08	10117.08		973.11	Si
SLV 5	ini.	822.44	1015	-0.0001283	0.0003369	0.0035	1.62		10117.08	10117.08		12.3	Si
SLV 5	fin.	546	561	-0.0000842	0.0003369	0.0035	1.62		10117.08	10117.08		18.53	Si
SLV 6	ini.	815.34	1023	-0.0001271	0.0003369	0.0035	1.62		10117.08	10117.08		12.41	Si
SLV 6	fin.	544.28	560	-0.0000839	0.0003369	0.0035	1.62		10117.08	10117.08		18.59	Si
SLV 8	ini.	420.5	-1003	-0.0000645	0.0003369	0.0035	1.62		10117.08	10117.08		24.06	Si
SLV 8	fin.	-932.11	-1486	-0.0001459	0.0003369	0.0035	1.62		10127.31	10127.31		10.86	Si
SLV 11	ini.	222.04	-1020	-0.0000338	0.0003369	0.0035	1.62		10117.08	10117.08		45.56	Si
SLV 11	fin.	-916.1	-1422	-0.0001433	0.0003369	0.0035	1.62		10127.31	10127.31		11.05	Si
SLV 4	ini.	796.56	-282	-0.0001241	0.0003369	0.0035	1.62		10117.08	10117.08		12.7	Si
SLV 4	fin.	-432.52	-844	-0.0000663	0.0003369	0.0035	1.62		10127.31	10127.31		23.41	Si
SLV 7	ini.	427.6	-1012	-0.0000656	0.0003369	0.0035	1.62		10117.08	10117.08		23.66	Si
SLV 7	fin.	-930.4	-1485	-0.0001456	0.0003369	0.0035	1.62		10127.31	10127.31		10.88	Si
SLV 1	ini.	926.01	314	-0.0001451	0.0003369	0.0035	1.62		10117.08	10117.08		10.93	Si
SLV 1	fin.	13.06	-230	-0.000002	0.0003369	0.0035	1.62		10117.08	10117.08		774.7	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 7	ini.	481.34	-1501	1.62	0	563	6344	6986	4131	6907		4.6	Si
SLD 7	fin.	-512.83	-1893	1.62	0	563	6344	6986	4131	6907		3.65	Si
SLV 7	ini.	427.6	-1983	1.62	0	563	6344	6986	4131	6907		3.48	Si
SLV 7	fin.	-930.4	-2362	1.62	0	563	6344	6986	4131	6907		2.92	Si
SLV 3	ini.	807.56	-1378	1.62	0	563	6344	6986	4131	6907		5.01	Si
SLV 3	fin.	-429.86	-1959	1.62	0	563	6344	6986	4131	6907		3.53	Si
SLD 11	ini.	393.59	-1500	1.62	0	563	6344	6986	4131	6907		4.61	Si
SLD 11	fin.	-506.57	-1844	1.62	0	563	6344	6986	4131	6907		3.75	Si
SLD 8	ini.	478.24	-1502	1.62	0	563	6344	6986	4131	6907		4.6	Si
SLD 8	fin.	-513.58	-1894	1.62	0	563	6344	6986	4131	6907		3.65	Si
SLD 12	ini.	390.49	-1501	1.62	0	563	6344	6986	4131	6907		4.6	Si
SLD 12	fin.	-507.32	-1845	1.62	0	563	6344	6986	4131	6907		3.74	Si
SLV 4	ini.	796.56	-1382	1.62	0	563	6344	6986	4131	6907		5	Si
SLV 4	fin.	-432.52	-1963	1.62	0	563	6344	6986	4131	6907		3.52	Si
SLV 8	ini.	420.5	-1986	1.62	0	563	6344	6986	4131	6907		3.48	Si
SLV 8	fin.	-932.11	-2364	1.62	0	563	6344	6986	4131	6907		2.92	Si
SLV 12	ini.	214.94	-1985	1.62	0	563	6344	6986	4131	6907		3.48	Si
SLV 12	fin.	-917.82	-2242	1.62	0	563	6344	6986	4131	6907		3.08	Si
SLV 11	ini.	222.04	-1983	1.62	0	563	6344	6986	4131	6907		3.48	Si
SLV 11	fin.	-916.1	-2240	1.62	0	563	6344	6986	4131	6907		3.08	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	10.865	SLV 8	Si
V_SLV	2.922	SLV 8	Si
PF_SLU	13.034	SLU 83	Si
V_SLU	3.112	SLU 78	Si

## Trave di accoppiamento 43

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-13.778	-0.194	3.21	4.83	1.62	-13.778	0.706	3.21	4.83	1.62	0.9	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fhk	fvk0	fmedio	t0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 47	ini.	1301.26	-72	-0.000215	0.0001872	0.0035	1.62		9523.28	9523.28	No	7.32	Si
SLU 47	fin.	65.9	-581	-0.00001	0.0001872	0.0035	1.62		9523.28	9523.28	No	144.51	Si
SLU 43	ini.	1232.6	-102	-0.0002025	0.0001872	0.0035	1.62		9523.28	9523.28	No	7.73	Si
SLU 43	fin.	54.27	-580	-0.0000082	0.0001872	0.0035	1.62		9523.28	9523.28	No	175.47	Si
SLU 48	ini.	1244.87	-160	-0.0002047	0.0001872	0.0035	1.62		9523.28	9523.28	No	7.65	Si
SLU 48	fin.	48.88	-624	-0.0000074	0.0001872	0.0035	1.62		9523.28	9523.28	No	194.81	Si
SLU 49	ini.	1256.93	-148	-0.0002069	0.0001872	0.0035	1.62		9523.28	9523.28	No	7.58	Si
SLU 49	fin.	50.12	-620	-0.0000076	0.0001872	0.0035	1.62		9523.28	9523.28	No	190.01	Si
SLU 59	ini.	1287.16	-254	-0.0002124	0.0001872	0.0035	1.62		9523.28	9523.28	No	7.4	Si
SLU 59	fin.	12.86	-728	-0.0000019	0.0001872	0.0035	1.62		9523.28	9523.28	No	740.7	Si
SLU 58	ini.	1275.1	-266	-0.0002102	0.0001872	0.0035	1.62		9523.28	9523.28	No	7.47	Si
SLU 58	fin.	11.62	-732	-0.0000018	0.0001872	0.0035	1.62		9523.28	9523.28	No	819.45	Si
SLU 51	ini.	1341.77	-70	-0.0002225	0.0001872	0.0035	1.62		9523.28	9523.28	No	7.1	Si
SLU 51	fin.	74.64	-592	-0.0000113	0.0001872	0.0035	1.62		9523.28	9523.28	No	127.59	Si
SLU 50	ini.	1329.71	-82	-0.0002203	0.0001872	0.0035	1.62		9523.28	9523.28	No	7.16	Si
SLU 50	fin.	73.41	-597	-0.0000111	0.0001872	0.0035	1.62		9523.28	9523.28	No	129.74	Si
SLU 55	ini.	1246.65	-256	-0.000205	0.0001872	0.0035	1.62		9523.28	9523.28	No	7.64	Si
SLU 55	fin.	4.11	-717	-0.0000006	0.0001872	0.0035	1.62		9523.28	9523.28	No	2314.7	Si
SLU 44	ini.	1252.7	-82	-0.0002061	0.0001872	0.0035	1.62		9523.28	9523.28	No	7.6	Si
SLU 44	fin.	56.33	-573	-0.0000085	0.0001872	0.0035	1.62		9523.28	9523.28	No	169.06	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 55	ini.	1246.65	-1331	1.62	0	657	7137	6791	4131	7794	No	5.86	Si
SLU 55	fin.	4.11	-2165	1.62	0	657	7137	6791	4131	7794	No	3.6	Si
SLU 44	ini.	1252.7	-1307	1.62	0	657	7137	6791	4131	7794	No	5.96	Si
SLU 44	fin.	56.33	-2141	1.62	0	657	7137	6791	4131	7794	No	3.64	Si
SLU 59	ini.	1287.16	-1378	1.62	0	657	7137	6791	4131	7794	No	5.66	Si
SLU 59	fin.	12.86	-2212	1.62	0	657	7137	6791	4131	7794	No	3.52	Si
SLU 47	ini.	1301.26	-1367	1.62	0	657	7137	6791	4131	7794	No	5.7	Si
SLU 47	fin.	65.9	-2201	1.62	0	657	7137	6791	4131	7794	No	3.54	Si
SLU 49	ini.	1256.93	-1302	1.62	0	657	7137	6791	4131	7794	No	5.99	Si
SLU 49	fin.	50.12	-2136	1.62	0	657	7137	6791	4131	7794	No	3.65	Si
SLU 63	ini.	1215.21	-1303	1.62	0	657	7137	6791	4131	7794	No	5.98	Si
SLU 63	fin.	-23.19	-2137	1.62	0	657	7137	6791	4131	7794	No	3.65	Si
SLU 58	ini.	1275.1	-1359	1.62	0	657	7137	6791	4131	7794	No	5.74	Si
SLU 58	fin.	11.62	-2193	1.62	0	657	7137	6791	4131	7794	No	3.55	Si
SLU 50	ini.	1329.71	-1395	1.62	0	657	7137	6791	4131	7794	No	5.59	Si
SLU 50	fin.	73.41	-2229	1.62	0	657	7137	6791	4131	7794	No	3.5	Si
SLU 62	ini.	1203.15	-1284	1.62	0	657	7137	6791	4131	7794	No	6.07	Si
SLU 62	fin.	-24.42	-2118	1.62	0	657	7137	6791	4131	7794	No	3.68	Si
SLU 51	ini.	1341.77	-1414	1.62	0	657	7137	6791	4131	7794	No	5.51	Si
SLU 51	fin.	74.64	-2248	1.62	0	657	7137	6791	4131	7794	No	3.47	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 1	ini.	2748.96	1267	-0.000486	0.0002807	0.0035	1.62		9450.85	9450.85		3.44	Si
SLV 1	fin.	842.35	238	-0.0001321	0.0002807	0.0035	1.62		9450.85	9450.85		11.22	Si
SLV 4	ini.	3995.87	2755	-0.0007704	0.0002807	0.0035	1.62		9450.85	9450.85		2.37	Si
SLV 4	fin.	1213.68	989	-0.0001941	0.0002807	0.0035	1.62		9450.85	9450.85		7.79	Si
SLV 7	ini.	3701.3	2930	-0.0006994	0.0002807	0.0035	1.62		9450.85	9450.85		2.55	Si
SLV 7	fin.	919.5	1054	-0.0001448	0.0002807	0.0035	1.62		9450.85	9450.85		10.28	Si
SLV 10	ini.	-2293.14	-3697	-0.0003921	0.0002807	0.0035	1.62		9461.54	9461.54		4.13	Si
SLV 10	fin.	-1037.72	-2239	-0.0001642	0.0002807	0.0035	1.62		9461.54	9461.54		9.12	Si
SLV 8	ini.	3662.82	2893	-0.0006903	0.0002807	0.0035	1.62		9450.85	9450.85		2.58	Si
SLV 8	fin.	908.6	1043	-0.000143	0.0002807	0.0035	1.62		9450.85	9450.85		10.4	Si
SLV 14	ini.	-2647.29	-3579	-0.0004641	0.0002807	0.0035	1.62		9461.54	9461.54		3.57	Si
SLV 14	fin.	-1348.78	-2191	-0.0002171	0.0002807	0.0035	1.62		9461.54	9461.54		7.01	Si
SLV 9	ini.	-2254.66	-3659	-0.0003845	0.0002807	0.0035	1.62		9461.54	9461.54		4.2	Si
SLV 9	fin.	-1026.82	-2228	-0.0001624	0.0002807	0.0035	1.62		9461.54	9461.54		9.21	Si
SLV 3	ini.	4055.45	2812	-0.000785	0.0002807	0.0035	1.62		9450.85	9450.85		2.33	Si
SLV 3	fin.	1230.56	1006	-0.000197	0.0002807	0.0035	1.62		9450.85	9450.85		7.68	Si
SLV 13	ini.	-2587.71	-3521	-0.0004518	0.0002807	0.0035	1.62		9461.54	9461.54		3.66	Si
SLV 13	fin.	-1331.9	-2174	-0.0002142	0.0002807	0.0035	1.62		9461.54	9461.54		7.1	Si
SLV 2	ini.	2689.38	1209	-0.0004735	0.0002807	0.0035	1.62		9450.85	9450.85		3.51	Si
SLV 2	fin.	825.47	221	-0.0001294	0.0002807	0.0035	1.62		9450.85	9450.85		11.45	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 3	ini.	4055.45	-5090	1.62	0	986	7137	10187	4131	8123		1.6	Si
SLV 3	fin.	1230.56	-5824	1.62	0	986	7137	10187	4131	8123		1.39	Si
SLV 11	ini.	2100.3	-2442	1.62	0	986	7137	10187	4131	8123		3.33	Si
SLV 11	fin.	267.23	-3379	1.62	0	986	7137	10187	4131	8123		2.4	Si
SLV 14	ini.	-2647.29	3744	1.62	0	986	7137	10187	4131	8123		2.17	Si
SLV 14	fin.	-1348.78	3169	1.62	0	986	7137	10187	4131	8123		2.56	Si
SLV 2	ini.	2689.38	-3324	1.62	0	986	7137	10187	4131	8123		2.44	Si
SLV 2	fin.	825.47	-3890	1.62	0	986	7137	10187	4131	8123		2.09	Si
SLV 4	ini.	3995.87	-5006	1.62	0	986	7137	10187	4131	8123		1.62	Si
SLV 4	fin.	1213.68	-5739	1.62	0	986	7137	10187	4131	8123		1.42	Si
SLV 7	ini.	3701.3	-4563	1.62	0	986	7137	10187	4131	8123		1.78	Si
SLV 7	fin.	919.5	-5496	1.62	0	986	7137	10187	4131	8123		1.48	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 13	ini.	-2587.71	3660	1.62	0	986	7137	10187	4131	8123		2.22	Si
SLV 13	fin.	-1331.9	3085	1.62	0	986	7137	10187	4131	8123		2.63	Si
SLV 1	ini.	2748.96	-3408	1.62	0	986	7137	10187	4131	8123		2.38	Si
SLV 1	fin.	842.35	-3974	1.62	0	986	7137	10187	4131	8123		2.04	Si
SLV 12	ini.	2061.82	-2388	1.62	0	986	7137	10187	4131	8123		3.4	Si
SLV 12	fin.	256.33	-3324	1.62	0	986	7137	10187	4131	8123		2.44	Si
SLV 8	ini.	3662.82	-4509	1.62	0	986	7137	10187	4131	8123		1.8	Si
SLV 8	fin.	908.6	-5442	1.62	0	986	7137	10187	4131	8123		1.49	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.33	SLV 3	Si
V_SLV	1.395	SLV 3	Si
PF_SLU	7.098	SLU 51	Si
V_SLU	3.468	SLU 51	Si

## Trave di accoppiamento 44

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-17.768	6.526	1.11	2.01	0.9	-16.768	6.526	1.11	2.01	0.9	1	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	t <sub>fv</sub>	t <sub>fo</sub>	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim.conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α	α	elim.conv	e,f,d	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ε <sub>m</sub>	ε <sub>m_</sub>	ε <sub>mu</sub>	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 82	ini.	1388.26	-4464	-0.0009585	0.0001872	0.0035	0.9		2959	2959	No	2.13	Si
SLU 82	fin.	-560.44	-1654	-0.000314	0.0001872	0.0035	0.9		2964.67	2964.67	No	5.29	Si
SLU 78	ini.	1358.98	-4398	-0.0009321	0.0001872	0.0035	0.9		2959	2959	No	2.18	Si
SLU 78	fin.	-538.19	-1663	-0.0002995	0.0001872	0.0035	0.9		2964.67	2964.67	No	5.51	Si
SLU 83	ini.	1410.69	-4557	-0.000979	0.0001872	0.0035	0.9		2959	2959	No	2.1	Si
SLU 83	fin.	-565.27	-1712	-0.0003171	0.0001872	0.0035	0.9		2964.67	2964.67	No	5.24	Si
SLU 84	ini.	1393.87	-4500	-0.0009636	0.0001872	0.0035	0.9		2959	2959	No	2.12	Si
SLU 84	fin.	-555.48	-1689	-0.0003107	0.0001872	0.0035	0.9		2964.67	2964.67	No	5.34	Si
SLU 74	ini.	1370.19	-4419	-0.0009422	0.0001872	0.0035	0.9		2959	2959	No	2.16	Si
SLU 74	fin.	-552.94	-1651	-0.0003091	0.0001872	0.0035	0.9		2964.67	2964.67	No	5.36	Si
SLU 81	ini.	1405.07	-4521	-0.0009738	0.0001872	0.0035	0.9		2959	2959	No	2.11	Si
SLU 81	fin.	-570.23	-1677	-0.0003204	0.0001872	0.0035	0.9		2964.67	2964.67	No	5.2	Si
SLU 80	ini.	1344.01	-4354	-0.0009187	0.0001872	0.0035	0.9		2959	2959	No	2.2	Si
SLU 80	fin.	-530.9	-1651	-0.0002949	0.0001872	0.0035	0.9		2964.67	2964.67	No	5.58	Si
SLU 75	ini.	1353.37	-4362	-0.0009271	0.0001872	0.0035	0.9		2959	2959	No	2.19	Si
SLU 75	fin.	-543.15	-1628	-0.0003028	0.0001872	0.0035	0.9		2964.67	2964.67	No	5.46	Si
SLU 79	ini.	1360.83	-4411	-0.0009337	0.0001872	0.0035	0.9		2959	2959	No	2.17	Si
SLU 79	fin.	-540.69	-1674	-0.0003012	0.0001872	0.0035	0.9		2964.67	2964.67	No	5.48	Si
SLU 77	ini.	1375.8	-4454	-0.0009472	0.0001872	0.0035	0.9		2959	2959	No	2.15	Si
SLU 77	fin.	-547.97	-1686	-0.0003059	0.0001872	0.0035	0.9		2964.67	2964.67	No	5.41	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 84	ini.	1393.87	-4075	0.9	0	329	7137	3773	2295	6068	No	1.49	Si
SLU 84	fin.	-555.48	-2214	0.9	0	329	7137	3773	2295	6068	No	2.74	Si
SLU 78	ini.	1358.98	-3961	0.9	0	329	7137	3773	2295	6068	No	1.53	Si
SLU 78	fin.	-538.19	-2156	0.9	0	329	7137	3773	2295	6068	No	2.81	Si
SLU 82	ini.	1388.26	-4062	0.9	0	329	7137	3773	2295	6068	No	1.49	Si
SLU 82	fin.	-560.44	-2227	0.9	0	329	7137	3773	2295	6068	No	2.72	Si
SLU 77	ini.	1375.8	-3940	0.9	0	329	7137	3773	2295	6068	No	1.54	Si
SLU 77	fin.	-547.97	-2263	0.9	0	329	7137	3773	2295	6068	No	2.68	Si
SLU 74	ini.	1370.19	-3927	0.9	0	329	7137	3773	2295	6068	No	1.55	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 74	fin.	-552.94	-2275	0.9	0	329	7137	3773	2295	6068	No	2.67	Si
SLU 81	ini.	1405.07	-4040	0.9	0	329	7137	3773	2295	6068	No	1.5	Si
SLU 81	fin.	-570.23	-2334	0.9	0	329	7137	3773	2295	6068	No	2.6	Si
SLU 80	ini.	1344.01	-3914	0.9	0	329	7137	3773	2295	6068	No	1.55	Si
SLU 80	fin.	-530.9	-2131	0.9	0	329	7137	3773	2295	6068	No	2.85	Si
SLU 83	ini.	1410.69	-4053	0.9	0	329	7137	3773	2295	6068	No	1.5	Si
SLU 83	fin.	-565.27	-2321	0.9	0	329	7137	3773	2295	6068	No	2.61	Si
SLU 75	ini.	1353.37	-3949	0.9	0	329	7137	3773	2295	6068	No	1.54	Si
SLU 75	fin.	-543.15	-2169	0.9	0	329	7137	3773	2295	6068	No	2.8	Si
SLU 76	ini.	1327.18	-3916	0.9	0	329	7137	3773	2295	6068	No	1.55	Si
SLU 76	fin.	-529.34	-2072	0.9	0	329	7137	3773	2295	6068	No	2.93	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 15	ini.	1278.48	-3130	-0.0008074	0.0002807	0.0035	0.9		2989.59	2989.59		2.34	Si
SLD 15	fin.	-860.6	-109	-0.0004937	0.0002807	0.0035	0.9		2995.37	2995.37		3.48	Si
SLV 9	ini.	1514.94	-3653	-0.0010079	0.0002807	0.0035	0.9		2989.59	2989.59		1.97	Si
SLV 9	fin.	-1020	-134	-0.0006068	0.0002807	0.0035	0.9		2995.37	2995.37		2.94	Si
SLV 14	ini.	2011.09	-3610	-0.0015046	0.0002807	0.0035	0.9		2989.59	2989.59		1.49	Si
SLV 14	fin.	-1793.7	1670	-0.0012683	0.0002807	0.0035	0.9		2995.37	2995.37		1.67	Si
SLD 16	ini.	1320.03	-3152	-0.0008413	0.0002807	0.0035	0.9		2989.59	2989.59		2.26	Si
SLD 16	fin.	-916.8	4	-0.0005328	0.0002807	0.0035	0.9		2995.37	2995.37		3.27	Si
SLV 10	ini.	1577.43	-3686	-0.0010642	0.0002807	0.0035	0.9		2989.59	2989.59		1.9	Si
SLV 10	fin.	-1104.54	36	-0.0006696	0.0002807	0.0035	0.9		2995.37	2995.37		2.71	Si
SLD 14	ini.	1402.91	-3284	-0.0009106	0.0002807	0.0035	0.9		2989.59	2989.59		2.13	Si
SLD 14	fin.	-992.47	79	-0.0005868	0.0002807	0.0035	0.9		2995.37	2995.37		3.02	Si
SLV 15	ini.	1720.71	-3252	-0.0011993	0.0002807	0.0035	0.9		2989.59	2989.59		1.74	Si
SLV 15	fin.	-1485.93	1231	-0.0009799	0.0002807	0.0035	0.9		2995.37	2995.37		2.02	Si
SLV 13	ini.	1914.34	-3560	-0.0013973	0.0002807	0.0035	0.9		2989.59	2989.59		1.56	Si
SLV 13	fin.	-1662.81	1406	-0.0011407	0.0002807	0.0035	0.9		2995.37	2995.37		1.8	Si
SLV 16	ini.	1817.46	-3303	-0.0012957	0.0002807	0.0035	0.9		2989.59	2989.59		1.64	Si
SLV 16	fin.	-1616.82	1494	-0.0010977	0.0002807	0.0035	0.9		2995.37	2995.37		1.85	Si
SLD 13	ini.	1361.36	-3262	-0.0008756	0.0002807	0.0035	0.9		2989.59	2989.59		2.2	Si
SLD 13	fin.	-936.27	-34	-0.0005465	0.0002807	0.0035	0.9		2995.37	2995.37		3.2	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 16	ini.	1320.03	-4000	0.9	0	493	7137	5660	2295	7630		1.91	Si
SLD 16	fin.	-916.8	-3002	0.9	0	493	7137	5660	2295	7630		2.54	Si
SLV 9	ini.	1514.94	-4898	0.9	0	493	7137	5660	2295	7630		1.56	Si
SLV 9	fin.	-1020	-4002	0.9	0	493	7137	5660	2295	7630		1.91	Si
SLV 10	ini.	1577.43	-5105	0.9	0	493	7137	5660	2295	7630		1.49	Si
SLV 10	fin.	-1104.54	-4259	0.9	0	493	7137	5660	2295	7630		1.79	Si
SLV 16	ini.	1817.46	-5744	0.9	0	493	7137	5660	2295	7630		1.33	Si
SLV 16	fin.	-1616.82	-4835	0.9	0	493	7137	5660	2295	7630		1.58	Si
SLD 13	ini.	1361.36	-4202	0.9	0	493	7137	5660	2295	7630		1.82	Si
SLD 13	fin.	-936.27	-3207	0.9	0	493	7137	5660	2295	7630		2.38	Si
SLV 13	ini.	1914.34	-6216	0.9	0	493	7137	5660	2295	7630		1.23	Si
SLV 13	fin.	-1662.81	-5318	0.9	0	493	7137	5660	2295	7630		1.43	Si
SLD 14	ini.	1402.91	-4339	0.9	0	493	7137	5660	2295	7630		1.76	Si
SLD 14	fin.	-992.47	-3377	0.9	0	493	7137	5660	2295	7630		2.26	Si
SLV 15	ini.	1720.71	-5424	0.9	0	493	7137	5660	2295	7630		1.41	Si
SLV 15	fin.	-1485.93	-4438	0.9	0	493	7137	5660	2295	7630		1.72	Si
SLV 14	ini.	2011.09	-6536	0.9	0	493	7137	5660	2295	7630		1.17	Si
SLV 14	fin.	-1793.7	-5715	0.9	0	493	7137	5660	2295	7630		1.34	Si
SLD 15	ini.	1278.48	-3862	0.9	0	493	7137	5660	2295	7630		1.98	Si
SLD 15	fin.	-860.6	-2831	0.9	0	493	7137	5660	2295	7630		2.69	Si

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.487	SLV 14	Si
V_SLV	1.167	SLV 14	Si
PF_SLU	2.098	SLU 83	Si
V_SLU	1.489	SLU 84	Si

## Trave di accoppiamento 45

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

#### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-17.768	6.526	3.91	4.83	0.92	-16.768	6.526	3.91	4.83	0.92	1	0.28	3500

#### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC





Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma_{F,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 83	ini.	330.66	-420	-0.0001653	0.0001872	0.0035	0.92		3109.54	3109.54	No	9.4	Si
SLU 83	fin.	-1542.03	-5438	-0.0010332	0.0001872	0.0035	0.92		3115.25	3115.25	No	2.02	Si
SLU 79	ini.	312.85	-411	-0.0001557	0.0001872	0.0035	0.92		3109.54	3109.54	No	9.94	Si
SLU 79	fin.	-1482.87	-5232	-0.0009809	0.0001872	0.0035	0.92		3115.25	3115.25	No	2.1	Si
SLU 75	ini.	327.58	-343	-0.0001636	0.0001872	0.0035	0.92		3109.54	3109.54	No	9.49	Si
SLU 75	fin.	-1486.51	-5229	-0.0009841	0.0001872	0.0035	0.92		3115.25	3115.25	No	2.1	Si
SLU 82	ini.	340.94	-350	-0.0001708	0.0001872	0.0035	0.92		3109.54	3109.54	No	9.12	Si
SLU 82	fin.	-1528.39	-5374	-0.0010211	0.0001872	0.0035	0.92		3115.25	3115.25	No	2.04	Si
SLU 78	ini.	324.52	-372	-0.0001619	0.0001872	0.0035	0.92		3109.54	3109.54	No	9.58	Si
SLU 78	fin.	-1494.84	-5266	-0.0009914	0.0001872	0.0035	0.92		3115.25	3115.25	No	2.08	Si
SLU 77	ini.	317.3	-414	-0.0001581	0.0001872	0.0035	0.92		3109.54	3109.54	No	9.8	Si
SLU 77	fin.	-1500.15	-5293	-0.0009961	0.0001872	0.0035	0.92		3115.25	3115.25	No	2.08	Si
SLU 81	ini.	333.73	-392	-0.0001669	0.0001872	0.0035	0.92		3109.54	3109.54	No	9.32	Si
SLU 81	fin.	-1533.69	-5401	-0.0010258	0.0001872	0.0035	0.92		3115.25	3115.25	No	2.03	Si
SLU 74	ini.	320.37	-385	-0.0001597	0.0001872	0.0035	0.92		3109.54	3109.54	No	9.71	Si
SLU 74	fin.	-1491.81	-5256	-0.0009888	0.0001872	0.0035	0.92		3115.25	3115.25	No	2.09	Si
SLU 80	ini.	320.06	-369	-0.0001595	0.0001872	0.0035	0.92		3109.54	3109.54	No	9.72	Si
SLU 80	fin.	-1477.57	-5205	-0.0009763	0.0001872	0.0035	0.92		3115.25	3115.25	No	2.11	Si
SLU 84	ini.	337.87	-378	-0.0001692	0.0001872	0.0035	0.92		3109.54	3109.54	No	9.2	Si
SLU 84	fin.	-1536.72	-5411	-0.0010285	0.0001872	0.0035	0.92		3115.25	3115.25	No	2.03	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 82	ini.	340.94	2181	0.92	0	343	7295	3857	2346	6203	No	2.84	Si
SLU 82	fin.	-1528.39	-8671	0.92	0	343	7295	3857	2346	6203	No	0.72	No
SLU 84	ini.	337.87	2228	0.92	0	343	7295	3857	2346	6203	No	2.78	Si
SLU 84	fin.	-1536.72	-8723	0.92	0	343	7295	3857	2346	6203	No	0.71	No
SLU 79	ini.	312.85	2134	0.92	0	343	7295	3857	2346	6203	No	2.91	Si
SLU 79	fin.	-1482.87	-8366	0.92	0	343	7295	3857	2346	6203	No	0.74	No
SLU 80	ini.	320.06	2117	0.92	0	343	7295	3857	2346	6203	No	2.93	Si
SLU 80	fin.	-1477.57	-8367	0.92	0	343	7295	3857	2346	6203	No	0.74	No
SLU 81	ini.	333.73	2198	0.92	0	343	7295	3857	2346	6203	No	2.82	Si
SLU 81	fin.	-1533.69	-8670	0.92	0	343	7295	3857	2346	6203	No	0.72	No
SLU 74	ini.	320.37	2110	0.92	0	343	7295	3857	2346	6203	No	2.94	Si
SLU 74	fin.	-1491.81	-8411	0.92	0	343	7295	3857	2346	6203	No	0.74	No
SLU 83	ini.	330.66	2245	0.92	0	343	7295	3857	2346	6203	No	2.76	Si
SLU 83	fin.	-1542.03	-8722	0.92	0	343	7295	3857	2346	6203	No	0.71	No
SLU 75	ini.	327.58	2092	0.92	0	343	7295	3857	2346	6203	No	2.97	Si
SLU 75	fin.	-1486.51	-8412	0.92	0	343	7295	3857	2346	6203	No	0.74	No
SLU 78	ini.	324.52	2139	0.92	0	343	7295	3857	2346	6203	No	2.9	Si
SLU 78	fin.	-1494.84	-8463	0.92	0	343	7295	3857	2346	6203	No	0.73	No
SLU 77	ini.	317.3	2157	0.92	0	343	7295	3857	2346	6203	No	2.88	Si
SLU 77	fin.	-1500.15	-8462	0.92	0	343	7295	3857	2346	6203	No	0.73	No

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 16	ini.	917.49	3324	-0.0005053	0.0002807	0.0035	0.92		3140.9	3140.9		3.42	Si
SLV 16	fin.	-1663.02	-4910	-0.0010706	0.0002807	0.0035	0.92		3146.83	3146.83		1.89	Si
SLD 16	ini.	519.69	1303	-0.0002631	0.0002807	0.0035	0.92		3140.9	3140.9		6.04	Si
SLD 16	fin.	-1293.76	-4143	-0.0007706	0.0002807	0.0035	0.92		3146.83	3146.83		2.43	Si
SLV 15	ini.	842.71	2954	-0.0004565	0.0002807	0.0035	0.92		3140.9	3140.9		3.73	Si
SLV 15	fin.	-1587.86	-4740	-0.001006	0.0002807	0.0035	0.92		3146.83	3146.83		1.98	Si
SLV 13	ini.	910.68	3262	-0.0005008	0.0002807	0.0035	0.92		3140.9	3140.9		3.45	Si
SLV 13	fin.	-1689.42	-5053	-0.0010938	0.0002807	0.0035	0.92		3146.83	3146.83		1.86	Si
SLD 14	ini.	548.95	1435	-0.0002795	0.0002807	0.0035	0.92		3140.9	3140.9		5.72	Si
SLD 14	fin.	-1337.62	-4279	-0.0008041	0.0002807	0.0035	0.92		3146.83	3146.83		2.35	Si
SLV 14	ini.	985.46	3632	-0.0005508	0.0002807	0.0035	0.92		3140.9	3140.9		3.19	Si
SLV 14	fin.	-1764.59	-5223	-0.0011611	0.0002807	0.0035	0.92		3146.83	3146.83		1.78	Si
SLD 15	ini.	487.58	1144	-0.0002454	0.0002807	0.0035	0.92		3140.9	3140.9		6.44	Si
SLD 15	fin.	-1261.48	-4070	-0.0007463	0.0002807	0.0035	0.92		3146.83	3146.83		2.49	Si
SLV 9	ini.	519.29	1238	-0.0002629	0.0002807	0.0035	0.92		3140.9	3140.9		6.05	Si
SLV 9	fin.	-1360.54	-4461	-0.0008218	0.0002807	0.0035	0.92		3146.83	3146.83		2.31	Si
SLV 10	ini.	567.59	1477	-0.00029	0.0002807	0.0035	0.92		3140.9	3140.9		5.53	Si
SLV 10	fin.	-1409.08	-4571	-0.0008598	0.0002807	0.0035	0.92		3146.83	3146.83		2.23	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 13	ini.	516.84	1276	-0.0002615	0.0002807	0.0035	0.92		3140.9	3140.9		6.08	Si
SLD 13	fin.	-1305.35	-4205	-0.0007794	0.0002807	0.0035	0.92		3146.83	3146.83		2.41	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 13	ini.	516.84	-825	0.92	0	515	7295	5785	2346	7810		9.47	Si
SLD 13	fin.	-1305.35	-6875	0.92	0	515	7295	5785	2346	7810		1.14	Si
SLD 14	ini.	548.95	-1049	0.92	0	515	7295	5785	2346	7810		7.45	Si
SLD 14	fin.	-1337.62	-7011	0.92	0	515	7295	5785	2346	7810		1.11	Si
SLD 16	ini.	519.69	-835	0.92	0	515	7295	5785	2346	7810		9.35	Si
SLD 16	fin.	-1293.76	-6833	0.92	0	515	7295	5785	2346	7810		1.14	Si
SLV 9	ini.	519.29	-858	0.92	0	515	7295	5785	2346	7810		9.1	Si
SLV 9	fin.	-1360.54	-7089	0.92	0	515	7295	5785	2346	7810		1.1	Si
SLV 15	ini.	842.71	-3178	0.92	0	515	7295	5785	2346	7810		2.46	Si
SLV 15	fin.	-1587.86	-8041	0.92	0	515	7295	5785	2346	7810		0.97	No
SLV 3	ini.	-539.97	6813	0.92	0	515	7295	5785	2346	7810		1.15	Si
SLV 3	fin.	-271.62	-2619	0.92	0	515	7295	5785	2346	7810		2.98	Si
SLV 13	ini.	910.68	-3679	0.92	0	515	7295	5785	2346	7810		2.12	Si
SLV 13	fin.	-1689.42	-8452	0.92	0	515	7295	5785	2346	7810		0.92	No
SLV 14	ini.	985.46	-4201	0.92	0	515	7295	5785	2346	7810		1.86	Si
SLV 14	fin.	-1764.59	-8769	0.92	0	515	7295	5785	2346	7810		0.89	No
SLV 10	ini.	567.59	-1196	0.92	0	515	7295	5785	2346	7810		6.53	Si
SLV 10	fin.	-1409.08	-7294	0.92	0	515	7295	5785	2346	7810		1.07	Si
SLV 16	ini.	917.49	-3700	0.92	0	515	7295	5785	2346	7810		2.11	Si
SLV 16	fin.	-1663.02	-8359	0.92	0	515	7295	5785	2346	7810		0.93	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.783	SLV 14	Si
V_SLV	0.891	SLV 14	No
PF_SLU	2.02	SLU 83	Si
V_SLU	0.711	SLU 84	No

Trave di accoppiamento 46

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-12.888	6.526	1.11	2.01	0.9	-11.888	6.526	1.11	2.01	0.9	1	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 83	ini.	770.33	-4397	-0.0004587	0.0001872	0.0035	0.9		2959	2959	No	3.84	Si
SLU 83	fin.	510.45	-3717	-0.0002824	0.0001872	0.0035	0.9		2959	2959	No	5.8	Si
SLU 78	ini.	758.43	-4310	-0.0004502	0.0001872	0.0035	0.9		2959	2959	No	3.9	Si
SLU 78	fin.	502.65	-3632	-0.0002774	0.0001872	0.0035	0.9		2959	2959	No	5.89	Si
SLU 80	ini.	751.65	-4273	-0.0004454	0.0001872	0.0035	0.9		2959	2959	No	3.94	Si
SLU 80	fin.	498.17	-3601	-0.0002746	0.0001872	0.0035	0.9		2959	2959	No	5.94	Si
SLU 81	ini.	764.09	-4347	-0.0004543	0.0001872	0.0035	0.9		2959	2959	No	3.87	Si
SLU 81	fin.	499.8	-3664	-0.0002756	0.0001872	0.0035	0.9		2959	2959	No	5.92	Si
SLU 82	ini.	768.37	-4345	-0.0004573	0.0001872	0.0035	0.9		2959	2959	No	3.85	Si
SLU 82	fin.	500.94	-3647	-0.0002764	0.0001872	0.0035	0.9		2959	2959	No	5.91	Si
SLU 75	ini.	752.19	-4259	-0.0004458	0.0001872	0.0035	0.9		2959	2959	No	3.93	Si
SLU 75	fin.	492	-3579	-0.0002707	0.0001872	0.0035	0.9		2959	2959	No	6.01	Si
SLU 77	ini.	754.14	-4312	-0.0004472	0.0001872	0.0035	0.9		2959	2959	No	3.92	Si
SLU 77	fin.	501.51	-3649	-0.0002767	0.0001872	0.0035	0.9		2959	2959	No	5.9	Si
SLU 76	ini.	748.27	-4221	-0.000443	0.0001872	0.0035	0.9		2959	2959	No	3.95	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 76	fin.	488.28	-3536	-0.0002684	0.0001872	0.0035	0.9		2959	2959	No	6.06	Si
SLU 84	ini.	774.61	-4395	-0.0004618	0.0001872	0.0035	0.9		2959	2959	No	3.82	Si
SLU 84	fin.	511.59	-3700	-0.0002831	0.0001872	0.0035	0.9		2959	2959	No	5.78	Si
SLU 74	ini.	747.9	-4261	-0.0004427	0.0001872	0.0035	0.9		2959	2959	No	3.96	Si
SLU 74	fin.	490.86	-3596	-0.00027	0.0001872	0.0035	0.9		2959	2959	No	6.03	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 76	ini.	748.27	-1636	0.9	0	329	7137	3773	2295	6068	No	3.71	Si
SLU 76	fin.	488.28	428	0.9	0	329	7137	3773	2295	6068	No	14.17	Si
SLU 81	ini.	764.09	-1552	0.9	0	329	7137	3773	2295	6068	No	3.91	Si
SLU 81	fin.	499.8	339	0.9	0	329	7137	3773	2295	6068	No	17.92	Si
SLU 77	ini.	754.14	-1520	0.9	0	329	7137	3773	2295	6068	No	3.99	Si
SLU 77	fin.	501.51	349	0.9	0	329	7137	3773	2295	6068	No	17.4	Si
SLU 73	ini.	742.03	-1626	0.9	0	329	7137	3773	2295	6068	No	3.73	Si
SLU 73	fin.	477.63	407	0.9	0	329	7137	3773	2295	6068	No	14.92	Si
SLU 83	ini.	770.33	-1562	0.9	0	329	7137	3773	2295	6068	No	3.88	Si
SLU 83	fin.	510.45	360	0.9	0	329	7137	3773	2295	6068	No	16.86	Si
SLU 84	ini.	774.61	-1647	0.9	0	329	7137	3773	2295	6068	No	3.68	Si
SLU 84	fin.	511.59	424	0.9	0	329	7137	3773	2295	6068	No	14.31	Si
SLU 75	ini.	752.19	-1596	0.9	0	329	7137	3773	2295	6068	No	3.8	Si
SLU 75	fin.	492	391	0.9	0	329	7137	3773	2295	6068	No	15.5	Si
SLU 82	ini.	768.37	-1637	0.9	0	329	7137	3773	2295	6068	No	3.71	Si
SLU 82	fin.	500.94	403	0.9	0	329	7137	3773	2295	6068	No	15.07	Si
SLU 80	ini.	751.65	-1590	0.9	0	329	7137	3773	2295	6068	No	3.82	Si
SLU 80	fin.	498.17	407	0.9	0	329	7137	3773	2295	6068	No	14.92	Si
SLU 78	ini.	758.43	-1606	0.9	0	329	7137	3773	2295	6068	No	3.78	Si
SLU 78	fin.	502.65	413	0.9	0	329	7137	3773	2295	6068	No	14.7	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 13	ini.	2873.34	-6063	-0.0029468	0.0002807	0.0035	0.9		2989.59	2989.59		1.04	Si
SLV 13	fin.	-1924.08	1142	-0.0014041	0.0002807	0.0035	0.9		2995.37	2995.37		1.56	Si
SLD 14	ini.	1613.09	-4376	-0.001097	0.0002807	0.0035	0.9		2989.59	2989.59		1.85	Si
SLD 14	fin.	-722.29	-770	-0.0004015	0.0002807	0.0035	0.9		2995.37	2995.37		4.15	Si
SLV 16	ini.	2922.82	-5926	-0.0030669	0.0002807	0.0035	0.9		2989.59	2989.59		1.02	Si
SLV 16	fin.	-1914.13	1218	-0.0013934	0.0002807	0.0035	0.9		2995.37	2995.37		1.56	Si
SLV 15	ini.	2712.44	-5660	-0.0025872	0.0002807	0.0035	0.9		2989.59	2989.59		1.1	Si
SLV 15	fin.	-1711.38	886	-0.0011872	0.0002807	0.0035	0.9		2995.37	2995.37		1.75	Si
SLV 1	ini.	-1890.74	86	-0.0013684	0.0002807	0.0035	0.9		2995.37	2995.37		1.58	Si
SLV 1	fin.	2566.45	-6110	-0.002303	0.0002807	0.0035	0.9		2989.59	2989.59		1.16	Si
SLV 4	ini.	-1841.26	222	-0.0013167	0.0002807	0.0035	0.9		2995.37	2995.37		1.63	Si
SLV 4	fin.	2576.4	-6034	-0.0023212	0.0002807	0.0035	0.9		2989.59	2989.59		1.16	Si
SLV 2	ini.	-1680.36	-181	-0.0011574	0.0002807	0.0035	0.9		2995.37	2995.37		1.78	Si
SLV 2	fin.	2363.7	-5779	-0.0019658	0.0002807	0.0035	0.9		2989.59	2989.59		1.26	Si
SLV 10	ini.	1566.75	-4600	-0.0010545	0.0002807	0.0035	0.9		2989.59	2989.59		1.91	Si
SLV 10	fin.	-767.39	-825	-0.000431	0.0002807	0.0035	0.9		2995.37	2995.37		3.9	Si
SLV 14	ini.	3083.72	-6329	-0.0034579	0.0002807	0.0035	0.9		2989.59	2989.59		0.97	No
SLV 14	fin.	-2126.83	1474	-0.0016372	0.0002807	0.0035	0.9		2995.37	2995.37		1.41	Si
SLV 3	ini.	-2051.64	488	-0.0015471	0.0002807	0.0035	0.9		2995.37	2995.37		1.46	Si
SLV 3	fin.	2779.15	-6366	-0.00273	0.0002807	0.0035	0.9		2989.59	2989.59		1.08	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 16	ini.	2922.82	-9125	0.9	0	493	7137	5660	2295	7630		0.84	No
SLV 16	fin.	-1914.13	-7371	0.9	0	493	7137	5659	2295	7630		1.04	Si
SLD 16	ini.	1543.85	-4488	0.9	0	493	7137	5660	2295	7630		1.7	Si
SLD 16	fin.	-630.99	-3053	0.9	0	493	7137	5659	2295	7630		2.5	Si
SLV 4	ini.	-1841.26	5973	0.9	0	493	7137	5660	2295	7630		1.28	Si
SLV 4	fin.	2576.4	7693	0.9	0	493	7137	5659	2295	7630		0.99	No
SLV 2	ini.	-1680.36	6401	0.9	0	493	7137	5660	2295	7630		1.19	Si
SLV 2	fin.	2363.7	7029	0.9	0	493	7137	5659	2295	7630		1.09	Si
SLV 1	ini.	-1890.74	7068	0.9	0	493	7137	5660	2295	7630		1.08	Si
SLV 1	fin.	2566.45	7707	0.9	0	493	7137	5659	2295	7630		0.99	No
SLV 3	ini.	-2051.64	6640	0.9	0	493	7137	5660	2295	7630		1.15	Si
SLV 3	fin.	2779.15	8371	0.9	0	493	7137	5659	2295	7630		0.91	No
SLV 13	ini.	2873.34	-8030	0.9	0	493	7137	5660	2295	7630		0.95	No
SLV 13	fin.	-1924.08	-7357	0.9	0	493	7137	5659	2295	7630		1.04	Si
SLD 14	ini.	1613.09	-4303	0.9	0	493	7137	5660	2295	7630		1.77	Si
SLD 14	fin.	-722.29	-3336	0.9	0	493	7137	5659	2295	7630		2.29	Si
SLV 15	ini.	2712.44	-8458	0.9	0	493	7137	5660	2295	7630		0.9	No
SLV 15	fin.	-1711.38	-6693	0.9	0	493	7137	5659	2295	7630		1.14	Si
SLV 14	ini.	3083.72	-8697	0.9	0	493	7137	5660	2295	7630		0.88	No
SLV 14	fin.	-2126.83	-8034	0.9	0	493	7137	5659	2295	7630		0.95	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.969	SLV 14	No
V_SLV	0.836	SLV 16	No
PF_SLU	3.82	SLU 84	Si
V_SLU	3.684	SLU 84	Si



## Trave di accoppiamento 47

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-12.888	6.526	3.91	4.83	0.92	-11.888	6.526	3.91	4.83	0.92	1	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	e <sub>f,d</sub>	γ <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em <sub>-</sub>	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 77	ini.	-623.51	-3897	-0.0003368	0.0001872	0.0035	0.92		3115.25	3115.25	No	5	Si
SLU 77	fin.	-1008.89	-4349	-0.0006009	0.0001872	0.0035	0.92		3115.25	3115.25	No	3.09	Si
SLU 81	ini.	-626.77	-3934	-0.0003389	0.0001872	0.0035	0.92		3115.25	3115.25	No	4.97	Si
SLU 81	fin.	-1024.99	-4403	-0.0006128	0.0001872	0.0035	0.92		3115.25	3115.25	No	3.04	Si
SLU 75	ini.	-606.43	-3827	-0.000326	0.0001872	0.0035	0.92		3115.25	3115.25	No	5.14	Si
SLU 75	fin.	-1000.83	-4294	-0.000595	0.0001872	0.0035	0.92		3115.25	3115.25	No	3.11	Si
SLU 84	ini.	-631.62	-3971	-0.0003419	0.0001872	0.0035	0.92		3115.25	3115.25	No	4.93	Si
SLU 84	fin.	-1034.69	-4446	-0.00062	0.0001872	0.0035	0.92		3115.25	3115.25	No	3.01	Si
SLU 83	ini.	-637.74	-3988	-0.0003458	0.0001872	0.0035	0.92		3115.25	3115.25	No	4.88	Si
SLU 83	fin.	-1033.87	-4452	-0.0006194	0.0001872	0.0035	0.92		3115.25	3115.25	No	3.01	Si
SLU 74	ini.	-612.55	-3844	-0.0003299	0.0001872	0.0035	0.92		3115.25	3115.25	No	5.09	Si
SLU 74	fin.	-1000.01	-4300	-0.0005944	0.0001872	0.0035	0.92		3115.25	3115.25	No	3.12	Si
SLU 78	ini.	-617.4	-3881	-0.0003329	0.0001872	0.0035	0.92		3115.25	3115.25	No	5.05	Si
SLU 78	fin.	-1009.71	-4343	-0.0006015	0.0001872	0.0035	0.92		3115.25	3115.25	No	3.09	Si
SLU 82	ini.	-620.65	-3917	-0.000335	0.0001872	0.0035	0.92		3115.25	3115.25	No	5.02	Si
SLU 82	fin.	-1025.82	-4396	-0.0006134	0.0001872	0.0035	0.92		3115.25	3115.25	No	3.04	Si
SLU 80	ini.	-611.15	-3840	-0.000329	0.0001872	0.0035	0.92		3115.25	3115.25	No	5.1	Si
SLU 80	fin.	-999.57	-4298	-0.0005941	0.0001872	0.0035	0.92		3115.25	3115.25	No	3.12	Si
SLU 79	ini.	-617.27	-3856	-0.0003329	0.0001872	0.0035	0.92		3115.25	3115.25	No	5.05	Si
SLU 79	fin.	-998.74	-4304	-0.0005935	0.0001872	0.0035	0.92		3115.25	3115.25	No	3.12	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	f <sub>vd</sub>	V <sub>t</sub>	V <sub>t,f</sub>	V <sub>t,c</sub>	V <sub>t,c.int.</sub>	V <sub>t,R</sub>	incremento > 50%	c.s.	Verifica
SLU 74	ini.	-612.55	2999	0.92	0	343	7295	3857	2346	6203	No	2.07	Si
SLU 74	fin.	-1000.01	-4547	0.92	0	343	7295	3857	2346	6203	No	1.36	Si
SLU 84	ini.	-631.62	3115	0.92	0	343	7295	3857	2346	6203	No	1.99	Si
SLU 84	fin.	-1034.69	-4722	0.92	0	343	7295	3857	2346	6203	No	1.31	Si
SLU 78	ini.	-617.4	3028	0.92	0	343	7295	3857	2346	6203	No	2.05	Si
SLU 78	fin.	-1009.71	-4596	0.92	0	343	7295	3857	2346	6203	No	1.35	Si
SLU 75	ini.	-606.43	2986	0.92	0	343	7295	3857	2346	6203	No	2.08	Si
SLU 75	fin.	-1000.83	-4558	0.92	0	343	7295	3857	2346	6203	No	1.36	Si
SLU 82	ini.	-620.65	3072	0.92	0	343	7295	3857	2346	6203	No	2.02	Si
SLU 82	fin.	-1025.82	-4684	0.92	0	343	7295	3857	2346	6203	No	1.32	Si
SLU 80	ini.	-611.15	2997	0.92	0	343	7295	3857	2346	6203	No	2.07	Si
SLU 80	fin.	-999.57	-4550	0.92	0	343	7295	3857	2346	6203	No	1.36	Si
SLU 79	ini.	-617.27	3010	0.92	0	343	7295	3857	2346	6203	No	2.06	Si
SLU 79	fin.	-998.74	-4539	0.92	0	343	7295	3857	2346	6203	No	1.37	Si
SLU 81	ini.	-626.77	3085	0.92	0	343	7295	3857	2346	6203	No	2.01	Si
SLU 81	fin.	-1024.99	-4673	0.92	0	343	7295	3857	2346	6203	No	1.33	Si
SLU 83	ini.	-637.74	3127	0.92	0	343	7295	3857	2346	6203	No	1.98	Si
SLU 83	fin.	-1033.87	-4711	0.92	0	343	7295	3857	2346	6203	No	1.32	Si
SLU 77	ini.	-623.51	3041	0.92	0	343	7295	3857	2346	6203	No	2.04	Si
SLU 77	fin.	-1008.89	-4585	0.92	0	343	7295	3857	2346	6203	No	1.35	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 10	ini.	602.33	-1391	-0.0003099	0.0002807	0.0035	0.92		3140.9	3140.9		5.21	Si
SLV 10	fin.	-1737.11	-4590	-0.0011363	0.0002807	0.0035	0.92		3146.83	3146.83		1.81	Si
SLV 13	ini.	2010.75	938	-0.0014026	0.0002807	0.0035	0.92		3140.9	3140.9		1.56	Si
SLV 13	fin.	-2940.55	-6401	-0.0027801	0.0002807	0.0035	0.92		3146.83	3146.83		1.07	Si
SLV 3	ini.	-3051.95	-6435	-0.0030301	0.0002807	0.0035	0.92		3146.83	3146.83		1.03	Si
SLV 3	fin.	1785.15	899	-0.0011829	0.0002807	0.0035	0.92		3140.9	3140.9		1.76	Si
SLD 14	ini.	724.54	-928	-0.0003825	0.0002807	0.0035	0.92		3140.9	3140.9		4.33	Si
SLD 14	fin.	-1735.76	-4535	-0.001135	0.0002807	0.0035	0.92		3146.83	3146.83		1.81	Si
SLV 16	ini.	2124.09	1302	-0.0015233	0.0002807	0.0035	0.92		3140.9	3140.9		1.48	Si
SLV 16	fin.	-2964.19	-6395	-0.0028314	0.0002807	0.0035	0.92		3146.83	3146.83		1.06	Si
SLV 4	ini.	-2823.1	-6091	-0.0025405	0.0002807	0.0035	0.92		3146.83	3146.83		1.11	Si
SLV 4	fin.	1577.25	584	-0.0009995	0.0002807	0.0035	0.92		3140.9	3140.9		1.99	Si
SLV 14	ini.	2239.6	1281	-0.0016554	0.0002807	0.0035	0.92		3140.9	3140.9		1.4	Si
SLV 14	fin.	-3148.45	-6715	-0.0032557	0.0002807	0.0035	0.92		3146.83	3146.83		1	No
SLV 1	ini.	-2936.44	-6456	-0.0027713	0.0002807	0.0035	0.92		3146.83	3146.83		1.07	Si
SLV 1	fin.	1600.89	579	-0.0010195	0.0002807	0.0035	0.92		3140.9	3140.9		1.96	Si
SLV 2	ini.	-2707.59	-6112	-0.0023273	0.0002807	0.0035	0.92		3146.83	3146.83		1.16	Si
SLV 2	fin.	1392.99	264	-0.0008491	0.0002807	0.0035	0.92		3140.9	3140.9		2.25	Si
SLV 15	ini.	1895.25	958	-0.0012871	0.0002807	0.0035	0.92		3140.9	3140.9		1.66	Si
SLV 15	fin.	-2756.29	-6081	-0.0024146	0.0002807	0.0035	0.92		3146.83	3146.83		1.14	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 4	ini.	-2823.1	9715	0.92	0	515	7295	5785	2346	7810		0.8	No
SLV 4	fin.	1577.25	4532	0.92	0	515	7295	5785	2346	7810		1.72	Si
SLV 13	ini.	2010.75	-5739	0.92	0	515	7295	5785	2346	7810		1.36	Si
SLV 13	fin.	-2940.55	-10711	0.92	0	515	7295	5785	2346	7810		0.73	No
SLV 3	ini.	-3051.95	10480	0.92	0	515	7295	5785	2346	7810		0.75	No
SLV 3	fin.	1785.15	5245	0.92	0	515	7295	5785	2346	7810		1.49	Si
SLD 14	ini.	724.54	-1641	0.92	0	515	7295	5785	2346	7810		4.76	Si
SLD 14	fin.	-1735.76	-6652	0.92	0	515	7295	5785	2346	7810		1.17	Si
SLV 1	ini.	-2936.44	10783	0.92	0	515	7295	5785	2346	7810		0.72	No
SLV 1	fin.	1600.89	4796	0.92	0	515	7295	5785	2346	7810		1.63	Si
SLV 2	ini.	-2707.59	10017	0.92	0	515	7295	5785	2346	7810		0.78	No
SLV 2	fin.	1392.99	4083	0.92	0	515	7295	5785	2346	7810		1.91	Si
SLV 16	ini.	2124.09	-6807	0.92	0	515	7295	5785	2346	7810		1.15	Si
SLV 16	fin.	-2964.19	-10976	0.92	0	515	7295	5785	2346	7810		0.71	No
SLD 16	ini.	674.91	-1770	0.92	0	515	7295	5785	2346	7810		4.41	Si
SLD 16	fin.	-1656.42	-6458	0.92	0	515	7295	5785	2346	7810		1.21	Si
SLV 14	ini.	2239.6	-6504	0.92	0	515	7295	5785	2346	7810		1.2	Si
SLV 14	fin.	-3148.45	-11425	0.92	0	515	7295	5785	2346	7810		0.68	No
SLV 15	ini.	1895.25	-6041	0.92	0	515	7295	5785	2346	7810		1.29	Si
SLV 15	fin.	-2756.29	-10263	0.92	0	515	7295	5785	2346	7810		0.76	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.999	SLV 14	No
V_SLV	0.684	SLV 14	No
PF_SLU	3.011	SLU 84	Si
V_SLU	1.314	SLU 84	Si

## Trave di accoppiamento 48

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-8.008	6.526	1.11	2.01	0.9	-7.008	6.526	1.11	2.01	0.9	1	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e_CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e_fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 80	ini.	-206.62	-2691	-0.0001052	0.0001872	0.0035	0.9		2964.67	2964.67	No	14.35	Si
SLU 80	fin.	1235.31	-4429	-0.0008238	0.0001872	0.0035	0.9		2959	2959	No	2.4	Si
SLU 74	ini.	-231.01	-2673	-0.0001183	0.0001872	0.0035	0.9		2964.67	2964.67	No	12.83	Si
SLU 74	fin.	1256.53	-4487	-0.000842	0.0001872	0.0035	0.9		2959	2959	No	2.35	Si
SLU 77	ini.	-223.92	-2723	-0.0001145	0.0001872	0.0035	0.9		2964.67	2964.67	No	13.24	Si
SLU 77	fin.	1265.01	-4534	-0.0008493	0.0001872	0.0035	0.9		2959	2959	No	2.34	Si
SLU 75	ini.	-216.7	-2665	-0.0001106	0.0001872	0.0035	0.9		2964.67	2964.67	No	13.68	Si
SLU 75	fin.	1239.99	-4426	-0.0008278	0.0001872	0.0035	0.9		2959	2959	No	2.39	Si
SLU 79	ini.	-220.93	-2700	-0.0001129	0.0001872	0.0035	0.9		2964.67	2964.67	No	13.42	Si
SLU 79	fin.	1251.85	-4490	-0.000838	0.0001872	0.0035	0.9		2959	2959	No	2.36	Si
SLU 81	ini.	-234.1	-2725	-0.0001199	0.0001872	0.0035	0.9		2964.67	2964.67	No	12.66	Si
SLU 81	fin.	1279.76	-4570	-0.0008621	0.0001872	0.0035	0.9		2959	2959	No	2.31	Si
SLU 83	ini.	-227.01	-2775	-0.0001161	0.0001872	0.0035	0.9		2964.67	2964.67	No	13.06	Si
SLU 83	fin.	1288.24	-4616	-0.0008695	0.0001872	0.0035	0.9		2959	2959	No	2.3	Si
SLU 84	ini.	-212.71	-2767	-0.0001085	0.0001872	0.0035	0.9		2964.67	2964.67	No	13.94	Si
SLU 84	fin.	1271.7	-4556	-0.0008551	0.0001872	0.0035	0.9		2959	2959	No	2.33	Si
SLU 78	ini.	-209.62	-2715	-0.0001068	0.0001872	0.0035	0.9		2964.67	2964.67	No	14.14	Si
SLU 78	fin.	1248.47	-4473	-0.000835	0.0001872	0.0035	0.9		2959	2959	No	2.37	Si
SLU 82	ini.	-219.79	-2717	-0.0001122	0.0001872	0.0035	0.9		2964.67	2964.67	No	13.49	Si
SLU 82	fin.	1263.22	-4509	-0.0008478	0.0001872	0.0035	0.9		2959	2959	No	2.34	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 77	ini.	-223.92	1343	0.9	0	329	7137	3773	2295	6068	No	4.52	Si
SLU 77	fin.	1265.01	2977	0.9	0	329	7137	3773	2295	6068	No	2.04	Si
SLU 74	ini.	-231.01	1359	0.9	0	329	7137	3773	2295	6068	No	4.47	Si
SLU 74	fin.	1256.53	2963	0.9	0	329	7137	3773	2295	6068	No	2.05	Si
SLU 82	ini.	-219.79	1249	0.9	0	329	7137	3773	2295	6068	No	4.86	Si
SLU 82	fin.	1263.22	3040	0.9	0	329	7137	3773	2295	6068	No	2	Si
SLU 78	ini.	-209.62	1218	0.9	0	329	7137	3773	2295	6068	No	4.98	Si
SLU 78	fin.	1248.47	2991	0.9	0	329	7137	3773	2295	6068	No	2.03	Si
SLU 76	ini.	-204.17	1137	0.9	0	329	7137	3773	2295	6068	No	5.34	Si
SLU 76	fin.	1215.81	2950	0.9	0	329	7137	3773	2295	6068	No	2.06	Si
SLU 80	ini.	-206.62	1204	0.9	0	329	7137	3773	2295	6068	No	5.04	Si
SLU 80	fin.	1235.31	2955	0.9	0	329	7137	3773	2295	6068	No	2.05	Si
SLU 81	ini.	-234.1	1373	0.9	0	329	7137	3773	2295	6068	No	4.42	Si
SLU 81	fin.	1279.76	3026	0.9	0	329	7137	3773	2295	6068	No	2.01	Si
SLU 84	ini.	-212.71	1233	0.9	0	329	7137	3773	2295	6068	No	4.92	Si
SLU 84	fin.	1271.7	3054	0.9	0	329	7137	3773	2295	6068	No	1.99	Si
SLU 83	ini.	-227.01	1358	0.9	0	329	7137	3773	2295	6068	No	4.47	Si
SLU 83	fin.	1288.24	3040	0.9	0	329	7137	3773	2295	6068	No	2	Si
SLU 75	ini.	-216.7	1234	0.9	0	329	7137	3773	2295	6068	No	4.92	Si
SLU 75	fin.	1239.99	2976	0.9	0	329	7137	3773	2295	6068	No	2.04	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 13	ini.	1711.89	-5685	-0.0011907	0.0002807	0.0035	0.9		2989.59	2989.59		1.75	Si
SLV 13	fin.	-435.82	-2093	-0.0002281	0.0002807	0.0035	0.9		2995.37	2995.37		6.87	Si
SLV 16	ini.	1864.23	-5644	-0.0013441	0.0002807	0.0035	0.9		2989.59	2989.59		1.6	Si
SLV 16	fin.	-670.57	-1381	-0.0003684	0.0002807	0.0035	0.9		2995.37	2995.37		4.47	Si
SLV 3	ini.	-2294.97	2482	-0.0018589	0.0002807	0.0035	0.9		2995.37	2995.37		1.31	Si
SLV 3	fin.	2343.71	-4249	-0.0019358	0.0002807	0.0035	0.9		2989.59	2989.59		1.28	Si
SLD 1	ini.	-1059.07	-143	-0.0006356	0.0002807	0.0035	0.9		2995.37	2995.37		2.83	Si
SLD 1	fin.	1537.91	-3829	-0.0010284	0.0002807	0.0035	0.9		2989.59	2989.59		1.94	Si
SLV 1	ini.	-2232.85	2066	-0.0017734	0.0002807	0.0035	0.9		2995.37	2995.37		1.34	Si
SLV 1	fin.	2423.87	-4809	-0.0020595	0.0002807	0.0035	0.9		2989.59	2989.59		1.23	Si
SLV 2	ini.	-2018.39	1690	-0.0015087	0.0002807	0.0035	0.9		2995.37	2995.37		1.48	Si
SLV 2	fin.	2269.27	-4657	-0.0018287	0.0002807	0.0035	0.9		2989.59	2989.59		1.32	Si
SLV 15	ini.	1649.77	-5268	-0.0011313	0.0002807	0.0035	0.9		2989.59	2989.59		1.81	Si
SLV 15	fin.	-515.97	-1533	-0.0002742	0.0002807	0.0035	0.9		2995.37	2995.37		5.81	Si
SLD 3	ini.	-1085.92	36	-0.0006556	0.0002807	0.0035	0.9		2995.37	2995.37		2.76	Si
SLD 3	fin.	1503.55	-3589	-0.0009978	0.0002807	0.0035	0.9		2989.59	2989.59		1.99	Si
SLV 4	ini.	-2080.51	2107	-0.0015811	0.0002807	0.0035	0.9		2995.37	2995.37		1.44	Si
SLV 4	fin.	2189.12	-4097	-0.001721	0.0002807	0.0035	0.9		2989.59	2989.59		1.37	Si
SLV 14	ini.	1926.35	-6060	-0.0014103	0.0002807	0.0035	0.9		2989.59	2989.59		1.55	Si
SLV 14	fin.	-590.41	-1941	-0.0003187	0.0002807	0.0035	0.9		2995.37	2995.37		5.07	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 1	ini.	-1059.07	3840	0.9	0	493	7137	5660	2295	7630		1.99	Si
SLD 1	fin.	1537.91	4380	0.9	0	493	7137	5660	2295	7630		1.74	Si
SLV 1	ini.	-2232.85	7606	0.9	0	493	7137	5660	2295	7630		1	Si
SLV 1	fin.	2423.87	7491	0.9	0	493	7137	5660	2295	7630		1.02	Si
SLV 2	ini.	-2018.39	6991	0.9	0	493	7137	5660	2295	7630		1.09	Si
SLV 2	fin.	2269.27	6917	0.9	0	493	7137	5660	2295	7630		1.1	Si
SLV 3	ini.	-2294.97	6655	0.9	0	493	7137	5660	2295	7630		1.15	Si
SLV 3	fin.	2343.71	7755	0.9	0	493	7137	5660	2295	7630		0.98	No
SLD 3	ini.	-1085.92	3430	0.9	0	493	7137	5660	2295	7630		2.22	Si
SLD 3	fin.	1503.55	4493	0.9	0	493	7137	5660	2295	7630		1.7	Si
SLV 5	ini.	-741.74	4551	0.9	0	493	7137	5660	2295	7630		1.68	Si
SLV 5	fin.	1489.12	3388	0.9	0	493	7137	5660	2295	7630		2.25	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 14	ini.	1926.35	-4597	0.9	0	493	7137	5660	2295	7630		1.66	Si
SLV 14	fin.	-590.41	-3635	0.9	0	493	7137	5660	2295	7630		2.1	Si
SLV 16	ini.	1864.23	-5548	0.9	0	493	7137	5660	2295	7630		1.38	Si
SLV 16	fin.	-670.57	-3371	0.9	0	493	7137	5660	2295	7630		2.26	Si
SLV 4	ini.	-2080.51	6040	0.9	0	493	7137	5660	2295	7630		1.26	Si
SLV 4	fin.	2189.12	7181	0.9	0	493	7137	5660	2295	7630		1.06	Si
SLV 15	ini.	1649.77	-4932	0.9	0	493	7137	5660	2295	7630		1.55	Si
SLV 15	fin.	-515.97	-2797	0.9	0	493	7137	5660	2295	7630		2.73	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.233	SLV 1	Si
V_SLV	0.984	SLV 3	No
PF_SLU	2.297	SLU 83	Si
V_SLU	1.987	SLU 84	Si

## Trave di accoppiamento 49

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-8.008	6.526	3.91	4.83	0.92	-7.008	6.526	3.91	4.83	0.92	1	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>vd</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	t <sub>fv</sub>	t <sub>fo</sub>	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ε <sub>m</sub>	ε <sub>m</sub> _	ε <sub>mu</sub>	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 82	ini.	-1175.22	-4991	-0.000727	0.0001872	0.0035	0.92		3115.25	3115.25	No	2.65	Si
SLU 82	fin.	-64.44	-2644	-0.0000304	0.0001872	0.0035	0.92		3115.25	3115.25	No	48.34	Si
SLU 77	ini.	-1164.73	-4955	-0.0007188	0.0001872	0.0035	0.92		3115.25	3115.25	No	2.67	Si
SLU 77	fin.	-75.09	-2656	-0.0000355	0.0001872	0.0035	0.92		3115.25	3115.25	No	41.48	Si
SLU 79	ini.	-1151.96	-4900	-0.0007089	0.0001872	0.0035	0.92		3115.25	3115.25	No	2.7	Si
SLU 79	fin.	-74.78	-2627	-0.0000353	0.0001872	0.0035	0.92		3115.25	3115.25	No	41.66	Si
SLU 75	ini.	-1149.64	-4880	-0.0007071	0.0001872	0.0035	0.92		3115.25	3115.25	No	2.71	Si
SLU 75	fin.	-62.56	-2589	-0.0000295	0.0001872	0.0035	0.92		3115.25	3115.25	No	49.8	Si
SLU 74	ini.	-1156.93	-4908	-0.0007128	0.0001872	0.0035	0.92		3115.25	3115.25	No	2.69	Si
SLU 74	fin.	-64.44	-2609	-0.0000304	0.0001872	0.0035	0.92		3115.25	3115.25	No	48.35	Si
SLU 83	ini.	-1190.3	-5065	-0.0007388	0.0001872	0.0035	0.92		3115.25	3115.25	No	2.62	Si
SLU 83	fin.	-76.97	-2711	-0.0000364	0.0001872	0.0035	0.92		3115.25	3115.25	No	40.47	Si
SLU 80	ini.	-1144.67	-4872	-0.0007033	0.0001872	0.0035	0.92		3115.25	3115.25	No	2.72	Si
SLU 80	fin.	-72.9	-2607	-0.0000344	0.0001872	0.0035	0.92		3115.25	3115.25	No	42.73	Si
SLU 81	ini.	-1182.51	-5018	-0.0007327	0.0001872	0.0035	0.92		3115.25	3115.25	No	2.63	Si
SLU 81	fin.	-66.32	-2664	-0.0000313	0.0001872	0.0035	0.92		3115.25	3115.25	No	46.98	Si
SLU 78	ini.	-1157.43	-4927	-0.0007132	0.0001872	0.0035	0.92		3115.25	3115.25	No	2.69	Si
SLU 78	fin.	-73.22	-2636	-0.0000346	0.0001872	0.0035	0.92		3115.25	3115.25	No	42.55	Si
SLU 84	ini.	-1183.01	-5038	-0.0007331	0.0001872	0.0035	0.92		3115.25	3115.25	No	2.63	Si
SLU 84	fin.	-75.1	-2691	-0.0000355	0.0001872	0.0035	0.92		3115.25	3115.25	No	41.48	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 80	ini.	-1144.67	6606	0.92	0	343	7295	3857	2346	6203	No	0.94	No
SLU 80	fin.	-72.9	-1084	0.92	0	343	7295	3857	2346	6203	No	5.72	Si
SLU 83	ini.	-1190.3	6868	0.92	0	343	7295	3857	2346	6203	No	0.9	No
SLU 83	fin.	-76.97	-1125	0.92	0	343	7295	3857	2346	6203	No	5.51	Si
SLU 74	ini.	-1156.93	6644	0.92	0	343	7295	3857	2346	6203	No	0.93	No
SLU 74	fin.	-64.44	-1050	0.92	0	343	7295	3857	2346	6203	No	5.91	Si
SLU 75	ini.	-1149.64	6630	0.92	0	343	7295	3857	2346	6203	No	0.94	No
SLU 75	fin.	-62.56	-1055	0.92	0	343	7295	3857	2346	6203	No	5.88	Si
SLU 79	ini.	-1151.96	6620	0.92	0	343	7295	3857	2346	6203	No	0.94	No





Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 79	fin.	-74.78	-1078	0.92	0	343	7295	3857	2346	6203	No	5.75	Si
SLU 81	ini.	-1182.51	6821	0.92	0	343	7295	3857	2346	6203	No	0.91	No
SLU 81	fin.	-66.32	-1088	0.92	0	343	7295	3857	2346	6203	No	5.7	Si
SLU 84	ini.	-1183.01	6854	0.92	0	343	7295	3857	2346	6203	No	0.9	No
SLU 84	fin.	-75.1	-1131	0.92	0	343	7295	3857	2346	6203	No	5.48	Si
SLU 78	ini.	-1157.43	6677	0.92	0	343	7295	3857	2346	6203	No	0.93	No
SLU 78	fin.	-73.22	-1092	0.92	0	343	7295	3857	2346	6203	No	5.68	Si
SLU 77	ini.	-1164.73	6691	0.92	0	343	7295	3857	2346	6203	No	0.93	No
SLU 77	fin.	-75.09	-1086	0.92	0	343	7295	3857	2346	6203	No	5.71	Si
SLU 82	ini.	-1175.22	6807	0.92	0	343	7295	3857	2346	6203	No	0.91	No
SLU 82	fin.	-64.44	-1094	0.92	0	343	7295	3857	2346	6203	No	5.67	Si

**Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche**

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 13	ini.	432.35	-1293	-0.0002155	0.0002807	0.0035	0.92		3140.9	3140.9		7.26	Si
SLV 13	fin.	-2363.69	-5306	-0.0018049	0.0002807	0.0035	0.92		3146.83	3146.83		1.33	Si
SLV 1	ini.	-2230.81	-6310	-0.0016403	0.0002807	0.0035	0.92		3146.83	3146.83		1.41	Si
SLV 1	fin.	2382.77	1827	-0.0018357	0.0002807	0.0035	0.92		3140.9	3140.9		1.32	Si
SLD 3	ini.	-1390.3	-4354	-0.0008451	0.0002807	0.0035	0.92		3146.83	3146.83		2.26	Si
SLD 3	fin.	1096.2	-38	-0.0006275	0.0002807	0.0035	0.92		3140.9	3140.9		2.87	Si
SLV 4	ini.	-2030.3	-5402	-0.0014191	0.0002807	0.0035	0.92		3146.83	3146.83		1.55	Si
SLV 4	fin.	2327.65	1850	-0.0017638	0.0002807	0.0035	0.92		3140.9	3140.9		1.35	Si
SLV 16	ini.	632.85	-385	-0.0003277	0.0002807	0.0035	0.92		3140.9	3140.9		4.96	Si
SLV 16	fin.	-2418.8	-5283	-0.0018786	0.0002807	0.0035	0.92		3146.83	3146.83		1.3	Si
SLV 15	ini.	479.84	-688	-0.0002412	0.0002807	0.0035	0.92		3140.9	3140.9		6.55	Si
SLV 15	fin.	-2156.53	-4907	-0.001555	0.0002807	0.0035	0.92		3146.83	3146.83		1.46	Si
SLV 2	ini.	-2077.8	-6007	-0.001469	0.0002807	0.0035	0.92		3146.83	3146.83		1.51	Si
SLV 2	fin.	2120.5	1450	-0.0015193	0.0002807	0.0035	0.92		3140.9	3140.9		1.48	Si
SLD 1	ini.	-1410.73	-4613	-0.0008611	0.0002807	0.0035	0.92		3146.83	3146.83		2.23	Si
SLD 1	fin.	1007.41	-210	-0.0005658	0.0002807	0.0035	0.92		3140.9	3140.9		3.12	Si
SLV 14	ini.	585.36	-990	-0.0003002	0.0002807	0.0035	0.92		3140.9	3140.9		5.37	Si
SLV 14	fin.	-2625.95	-5683	-0.0021889	0.0002807	0.0035	0.92		3146.83	3146.83		1.2	Si
SLV 3	ini.	-2183.32	-5704	-0.0015853	0.0002807	0.0035	0.92		3146.83	3146.83		1.44	Si
SLV 3	fin.	2589.92	2227	-0.0021382	0.0002807	0.0035	0.92		3140.9	3140.9		1.21	Si

**Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215**

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 15	ini.	479.84	-1072	0.92	0	515	7295	5785	2346	7810		7.29	Si
SLV 15	fin.	-2156.53	-6998	0.92	0	515	7295	5785	2346	7810		1.12	Si
SLV 13	ini.	432.35	-841	0.92	0	515	7295	5785	2346	7810		9.28	Si
SLV 13	fin.	-2363.69	-7430	0.92	0	515	7295	5785	2346	7810		1.05	Si
SLV 1	ini.	-2230.81	10836	0.92	0	515	7295	5785	2346	7810		0.72	No
SLV 1	fin.	2382.77	6499	0.92	0	515	7295	5785	2346	7810		1.2	Si
SLV 3	ini.	-2183.32	10605	0.92	0	515	7295	5785	2346	7810		0.74	No
SLV 3	fin.	2589.92	6930	0.92	0	515	7295	5785	2346	7810		1.13	Si
SLV 2	ini.	-2077.8	10154	0.92	0	515	7295	5785	2346	7810		0.77	No
SLV 2	fin.	2120.5	5734	0.92	0	515	7295	5785	2346	7810		1.36	Si
SLV 4	ini.	-2030.3	9923	0.92	0	515	7295	5785	2346	7810		0.79	No
SLV 4	fin.	2327.65	6165	0.92	0	515	7295	5785	2346	7810		1.27	Si
SLV 16	ini.	632.85	-1753	0.92	0	515	7295	5785	2346	7810		4.45	Si
SLV 16	fin.	-2418.8	-7763	0.92	0	515	7295	5785	2346	7810		1.01	Si
SLV 14	ini.	585.36	-1523	0.92	0	515	7295	5785	2346	7810		5.13	Si
SLV 14	fin.	-2625.95	-8195	0.92	0	515	7295	5785	2346	7810		0.95	No
SLD 3	ini.	-1390.3	7131	0.92	0	515	7295	5785	2346	7810		1.1	Si
SLD 3	fin.	1096.2	2599	0.92	0	515	7295	5785	2346	7810		3.01	Si
SLD 1	ini.	-1410.73	7231	0.92	0	515	7295	5785	2346	7810		1.08	Si
SLD 1	fin.	1007.41	2414	0.92	0	515	7295	5785	2346	7810		3.24	Si

**Tabella dei coefficienti di sicurezza minimi**

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.198	SLV 14	Si
V_SLV	0.721	SLV 1	No
PF_SLU	2.617	SLU 83	Si
V_SLU	0.903	SLU 83	No

**Trave di accoppiamento 51**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati geometrici**

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-11.143	1.006	3.61	4.83	1.22	-12.263	1.006	3.61	4.83	1.22	1.12	0.28	3500

**Caratteristiche del materiale**

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC





Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 80	ini.	-1998.71	-6848	-0.0006799	0.0002246	0.0035	1.22		5569.33	5569.33	No	2.79	Si
SLU 80	fin.	427.82	-4610	-0.0001186	0.0002246	0.0035	1.22		5561.79	5561.79	No	13	Si
SLU 79	ini.	-1997.61	-6848	-0.0006794	0.0002246	0.0035	1.22		5569.33	5569.33	No	2.79	Si
SLU 79	fin.	427.42	-4611	-0.0001185	0.0002246	0.0035	1.22		5561.79	5561.79	No	13.01	Si
SLU 83	ini.	-2095.82	-7086	-0.0007217	0.0002246	0.0035	1.22		5569.33	5569.33	No	2.66	Si
SLU 83	fin.	465.01	-4721	-0.0001294	0.0002246	0.0035	1.22		5561.79	5561.79	No	11.96	Si
SLU 77	ini.	-2034.46	-6939	-0.0006952	0.0002246	0.0035	1.22		5569.33	5569.33	No	2.74	Si
SLU 77	fin.	452.61	-4644	-0.0001258	0.0002246	0.0035	1.22		5561.79	5561.79	No	12.29	Si
SLU 81	ini.	-2077.48	-7001	-0.0007137	0.0002246	0.0035	1.22		5569.33	5569.33	No	2.68	Si
SLU 81	fin.	462.56	-4654	-0.0001287	0.0002246	0.0035	1.22		5561.79	5561.79	No	12.02	Si
SLU 74	ini.	-2016.13	-6854	-0.0006873	0.0002246	0.0035	1.22		5569.33	5569.33	No	2.76	Si
SLU 74	fin.	450.16	-4577	-0.0001251	0.0002246	0.0035	1.22		5561.79	5561.79	No	12.36	Si
SLU 78	ini.	-2035.56	-6939	-0.0006957	0.0002246	0.0035	1.22		5569.33	5569.33	No	2.74	Si
SLU 78	fin.	453	-4642	-0.0001259	0.0002246	0.0035	1.22		5561.79	5561.79	No	12.28	Si
SLU 75	ini.	-2017.23	-6854	-0.0006878	0.0002246	0.0035	1.22		5569.33	5569.33	No	2.76	Si
SLU 75	fin.	450.55	-4576	-0.0001252	0.0002246	0.0035	1.22		5561.79	5561.79	No	12.34	Si
SLU 84	ini.	-2096.91	-7086	-0.0007222	0.0002246	0.0035	1.22		5569.33	5569.33	No	2.66	Si
SLU 84	fin.	465.4	-4719	-0.0001295	0.0002246	0.0035	1.22		5561.79	5561.79	No	11.95	Si
SLU 82	ini.	-2078.58	-7001	-0.0007142	0.0002246	0.0035	1.22		5569.33	5569.33	No	2.68	Si
SLU 82	fin.	462.95	-4653	-0.0001288	0.0002246	0.0035	1.22		5561.79	5561.79	No	12.01	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 80	ini.	-1998.71	4712	1.22	0	495	8881	6138	3111	9249	No	1.96	Si
SLU 80	fin.	427.82	2058	1.22	0	495	8881	6138	3111	9249	No	4.49	Si
SLU 83	ini.	-2095.82	5035	1.22	0	495	8881	6138	3111	9249	No	1.84	Si
SLU 83	fin.	465.01	2114	1.22	0	495	8881	6138	3111	9249	No	4.38	Si
SLU 84	ini.	-2096.91	5037	1.22	0	495	8881	6138	3111	9249	No	1.84	Si
SLU 84	fin.	465.4	2116	1.22	0	495	8881	6138	3111	9249	No	4.37	Si
SLU 78	ini.	-2035.56	4799	1.22	0	495	8881	6138	3111	9249	No	1.93	Si
SLU 78	fin.	453	2145	1.22	0	495	8881	6138	3111	9249	No	4.31	Si
SLU 75	ini.	-2017.23	4770	1.22	0	495	8881	6138	3111	9249	No	1.94	Si
SLU 75	fin.	450.55	2116	1.22	0	495	8881	6138	3111	9249	No	4.37	Si
SLU 77	ini.	-2034.46	4797	1.22	0	495	8881	6138	3111	9249	No	1.93	Si
SLU 77	fin.	452.61	2143	1.22	0	495	8881	6138	3111	9249	No	4.32	Si
SLU 82	ini.	-2078.58	5008	1.22	0	495	8881	6138	3111	9249	No	1.85	Si
SLU 82	fin.	462.95	2087	1.22	0	495	8881	6138	3111	9249	No	4.43	Si
SLU 74	ini.	-2016.13	4768	1.22	0	495	8881	6138	3111	9249	No	1.94	Si
SLU 74	fin.	450.16	2114	1.22	0	495	8881	6138	3111	9249	No	4.37	Si
SLU 79	ini.	-1997.61	4710	1.22	0	495	8881	6138	3111	9249	No	1.96	Si
SLU 79	fin.	427.42	2056	1.22	0	495	8881	6138	3111	9249	No	4.5	Si
SLU 81	ini.	-2077.48	5006	1.22	0	495	8881	6138	3111	9249	No	1.85	Si
SLU 81	fin.	462.56	2085	1.22	0	495	8881	6138	3111	9249	No	4.44	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 14	ini.	-5004.46	-8064	-0.0024828	0.0003369	0.0035	1.22		5457.34	5457.34		1.09	Si
SLD 14	fin.	4491.54	1429	-0.0020076	0.0003369	0.0035	1.22		5448.99	5448.99		1.21	Si
SLV 15	ini.	-9327.54	-12013	-0.0069839	0.0003369	0.0035	1.22		5457.34	5457.34		0.59	No
SLV 15	fin.	9390.73	6813	-0.0070528	0.0003369	0.0035	1.22		5448.99	5448.99		0.58	No
SLD 13	ini.	-4973.39	-8026	-0.0024503	0.0003369	0.0035	1.22		5457.34	5457.34		1.1	Si
SLD 13	fin.	4456.5	1399	-0.0019788	0.0003369	0.0035	1.22		5448.99	5448.99		1.22	Si
SLV 3	ini.	7330.38	3515	-0.0051154	0.0003369	0.0035	1.22		5448.99	5448.99		0.74	No
SLV 3	fin.	-9662.89	-13894	-0.0072866	0.0003369	0.0035	1.22		5457.34	5457.34		0.56	No
SLV 13	ini.	-9882.11	-12622	-0.0074831	0.0003369	0.0035	1.22		5457.34	5457.34		0.55	No
SLV 13	fin.	10089.37	7508	-0.0076802	0.0003369	0.0035	1.22		5448.99	5448.99		0.54	No
SLV 2	ini.	6703.45	2819	-0.0044797	0.0003369	0.0035	1.22		5448.99	5448.99		0.81	No
SLV 2	fin.	-8882.64	-13128	-0.0065774	0.0003369	0.0035	1.22		5457.34	5457.34		0.61	No
SLV 1	ini.	6775.81	2906	-0.0045552	0.0003369	0.0035	1.22		5448.99	5448.99		0.8	No
SLV 1	fin.	-8964.25	-13199	-0.0066524	0.0003369	0.0035	1.22		5457.34	5457.34		0.61	No
SLV 4	ini.	7258.02	3428	-0.0050438	0.0003369	0.0035	1.22		5448.99	5448.99		0.75	No
SLV 4	fin.	-9581.28	-13824	-0.0072132	0.0003369	0.0035	1.22		5457.34	5457.34		0.57	No
SLV 16	ini.	-9399.9	-12100	-0.0070494	0.0003369	0.0035	1.22		5457.34	5457.34		0.58	No
SLV 16	fin.	9472.34	6883	-0.0071267	0.0003369	0.0035	1.22		5448.99	5448.99		0.58	No



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 14	ini.	-9954.47	-12709	-0.0075477	0.0003369	0.0035	1.22		5457.34	5457.34		0.55	No
SLV 14	fin.	10170.97	7578	-0.0077528	0.0003369	0.0035	1.22		5448.99	5448.99		0.54	No

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 3	ini.	7330.38	-23249	1.22	0	743	8881	9207	3111	9624		0.41	No
SLV 3	fin.	-9662.89	-25537	1.22	0	743	8881	9207	3111	9624		0.38	No
SLD 13	ini.	-4973.39	14128	1.22	0	743	8881	9207	3111	9624		0.68	No
SLD 13	fin.	4456.5	12755	1.22	0	743	8881	9207	3111	9624		0.75	No
SLD 14	ini.	-5004.46	14224	1.22	0	743	8881	9207	3111	9624		0.68	No
SLD 14	fin.	4491.54	12851	1.22	0	743	8881	9207	3111	9624		0.75	No
SLV 1	ini.	6775.81	-22490	1.22	0	743	8881	9207	3111	9624		0.43	No
SLV 1	fin.	-8964.25	-23558	1.22	0	743	8881	9207	3111	9624		0.41	No
SLV 14	ini.	-9954.47	29259	1.22	0	743	8881	9207	3111	9624		0.33	No
SLV 14	fin.	10170.97	28253	1.22	0	743	8881	9207	3111	9624		0.34	No
SLV 4	ini.	7258.02	-23026	1.22	0	743	8881	9207	3111	9624		0.42	No
SLV 4	fin.	-9581.28	-25314	1.22	0	743	8881	9207	3111	9624		0.38	No
SLV 13	ini.	-9882.11	29036	1.22	0	743	8881	9207	3111	9624		0.33	No
SLV 13	fin.	10089.37	28030	1.22	0	743	8881	9207	3111	9624		0.34	No
SLV 2	ini.	6703.45	-22267	1.22	0	743	8881	9207	3111	9624		0.43	No
SLV 2	fin.	-8882.64	-23335	1.22	0	743	8881	9207	3111	9624		0.41	No
SLV 16	ini.	-9399.9	28500	1.22	0	743	8881	9207	3111	9624		0.34	No
SLV 16	fin.	9472.34	26275	1.22	0	743	8881	9207	3111	9624		0.37	No
SLV 15	ini.	-9327.54	28277	1.22	0	743	8881	9207	3111	9624		0.34	No
SLV 15	fin.	9390.73	26051	1.22	0	743	8881	9207	3111	9624		0.37	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.536	SLV 14	No
V_SLV	0.329	SLV 14	No
PF_SLU	2.656	SLU 84	Si
V_SLU	1.836	SLU 84	Si

Trave di accoppiamento 52

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-6.463	1.006	3.21	4.83	1.62	-7.463	1.006	3.21	4.83	1.62	1	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fnk	fvk0	fmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 83	ini.	-1101.45	-8615	-0.0001767	0.0002246	0.0035	1.62		9829.29	9829.29	No	8.92	Si
SLU 83	fin.	-497.17	-8348	-0.0000769	0.0002246	0.0035	1.62		9829.29	9829.29	No	19.77	Si
SLU 77	ini.	-1044.44	-8454	-0.000167	0.0002246	0.0035	1.62		9829.29	9829.29	No	9.41	Si
SLU 77	fin.	-553.61	-8264	-0.0000859	0.0002246	0.0035	1.62		9829.29	9829.29	No	17.76	Si
SLU 82	ini.	-1093.61	-8507	-0.0001754	0.0002246	0.0035	1.62		9829.29	9829.29	No	8.99	Si
SLU 82	fin.	-490.01	-8239	-0.0000758	0.0002246	0.0035	1.62		9829.29	9829.29	No	20.06	Si
SLU 84	ini.	-1105.85	-8620	-0.0001775	0.0002246	0.0035	1.62		9829.29	9829.29	No	8.89	Si
SLU 84	fin.	-494.53	-8348	-0.0000765	0.0002246	0.0035	1.62		9829.29	9829.29	No	19.88	Si
SLU 63	ini.	-1063.03	-7845	-0.0001702	0.0002246	0.0035	1.62		9829.29	9829.29	No	9.25	Si
SLU 63	fin.	-440.58	-7543	-0.0000679	0.0002246	0.0035	1.62		9829.29	9829.29	No	22.31	Si
SLU 62	ini.	-1058.63	-7840	-0.0001694	0.0002246	0.0035	1.62		9829.29	9829.29	No	9.28	Si
SLU 62	fin.	-443.23	-7543	-0.0000684	0.0002246	0.0035	1.62		9829.29	9829.29	No	22.18	Si
SLU 78	ini.	-1048.84	-8459	-0.0001677	0.0002246	0.0035	1.62		9829.29	9829.29	No	9.37	Si
SLU 78	fin.	-550.96	-8264	-0.0000855	0.0002246	0.0035	1.62		9829.29	9829.29	No	17.84	Si
SLU 81	ini.	-1089.21	-8502	-0.0001746	0.0002246	0.0035	1.62		9829.29	9829.29	No	9.02	Si



Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 81	fin.	-492.65	-8239	-0.0000762	0.0002246	0.0035	1.62		9829.29	9829.29	No	19.95	Si
SLU 60	ini.	-1046.39	-7727	-0.0001673	0.0002246	0.0035	1.62		9829.29	9829.29	No	9.39	Si
SLU 60	fin.	-438.7	-7435	-0.0000677	0.0002246	0.0035	1.62		9829.29	9829.29	No	22.41	Si
SLU 61	ini.	-1050.79	-7732	-0.0001681	0.0002246	0.0035	1.62		9829.29	9829.29	No	9.35	Si
SLU 61	fin.	-436.06	-7434	-0.0000672	0.0002246	0.0035	1.62		9829.29	9829.29	No	22.54	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 81	ini.	-1089.21	2058	1.62	0	657	7930	8151	4131	8587	No	4.17	Si
SLU 81	fin.	-492.65	-496	1.62	0	657	7930	8151	4131	8587	No	17.3	Si
SLU 42	ini.	-935.66	1898	1.62	0	657	7930	8151	4131	8587	No	4.52	Si
SLU 42	fin.	-368.67	-382	1.62	0	657	7930	8151	4131	8587	No	22.46	Si
SLU 61	ini.	-1050.79	1918	1.62	0	657	7930	8151	4131	8587	No	4.48	Si
SLU 61	fin.	-436.06	-269	1.62	0	657	7930	8151	4131	8587	No	31.93	Si
SLU 60	ini.	-1046.39	1907	1.62	0	657	7930	8151	4131	8587	No	4.5	Si
SLU 60	fin.	-438.7	-280	1.62	0	657	7930	8151	4131	8587	No	30.65	Si
SLU 62	ini.	-1058.63	1918	1.62	0	657	7930	8151	4131	8587	No	4.48	Si
SLU 62	fin.	-443.23	-269	1.62	0	657	7930	8151	4131	8587	No	31.87	Si
SLU 84	ini.	-1105.85	2080	1.62	0	657	7930	8151	4131	8587	No	4.13	Si
SLU 84	fin.	-494.53	-474	1.62	0	657	7930	8151	4131	8587	No	18.1	Si
SLU 83	ini.	-1101.45	2069	1.62	0	657	7930	8151	4131	8587	No	4.15	Si
SLU 83	fin.	-497.17	-486	1.62	0	657	7930	8151	4131	8587	No	17.68	Si
SLU 82	ini.	-1093.61	2069	1.62	0	657	7930	8151	4131	8587	No	4.15	Si
SLU 82	fin.	-490.01	-485	1.62	0	657	7930	8151	4131	8587	No	17.7	Si
SLU 63	ini.	-1063.03	1929	1.62	0	657	7930	8151	4131	8587	No	4.45	Si
SLU 63	fin.	-440.58	-258	1.62	0	657	7930	8151	4131	8587	No	33.26	Si
SLU 40	ini.	-923.43	1887	1.62	0	657	7930	8151	4131	8587	No	4.55	Si
SLU 40	fin.	-364.15	-393	1.62	0	657	7930	8151	4131	8587	No	21.85	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 13	ini.	-7102.29	-10242	-0.0016588	0.0003369	0.0035	1.62		9373.7	9373.7		1.32	Si
SLV 13	fin.	5978.52	-1197	-0.0012804	0.0003369	0.0035	1.62		9362.78	9362.78		1.57	Si
SLV 14	ini.	-7101.19	-10224	-0.0016583	0.0003369	0.0035	1.62		9373.7	9373.7		1.32	Si
SLV 14	fin.	5994.12	-1168	-0.0012852	0.0003369	0.0035	1.62		9362.78	9362.78		1.56	Si
SLV 3	ini.	5740.27	-1172	-0.0012088	0.0003369	0.0035	1.62		9362.78	9362.78		1.63	Si
SLV 3	fin.	-6919.96	-10130	-0.0015912	0.0003369	0.0035	1.62		9373.7	9373.7		1.35	Si
SLV 11	ini.	-3827.2	-8069	-0.0007083	0.0003369	0.0035	1.62		9373.7	9373.7		2.45	Si
SLV 11	fin.	2478.61	-3769	-0.0004211	0.0003369	0.0035	1.62		9362.78	9362.78		3.78	Si
SLV 4	ini.	5741.37	-1154	-0.0012091	0.0003369	0.0035	1.62		9362.78	9362.78		1.63	Si
SLV 4	fin.	-6904.35	-10101	-0.0015855	0.0003369	0.0035	1.62		9373.7	9373.7		1.36	Si
SLV 15	ini.	-7773.85	-10795	-0.0019357	0.0003369	0.0035	1.62		9373.7	9373.7		1.21	Si
SLV 15	fin.	6535.47	-894	-0.0014592	0.0003369	0.0035	1.62		9362.78	9362.78		1.43	Si
SLV 16	ini.	-7772.75	-10777	-0.0019352	0.0003369	0.0035	1.62		9373.7	9373.7		1.21	Si
SLV 16	fin.	6551.07	-866	-0.0014645	0.0003369	0.0035	1.62		9362.78	9362.78		1.43	Si
SLV 2	ini.	6412.94	-600	-0.0014184	0.0003369	0.0035	1.62		9362.78	9362.78		1.46	Si
SLV 2	fin.	-7461.31	-10404	-0.0018008	0.0003369	0.0035	1.62		9373.7	9373.7		1.26	Si
SLV 12	ini.	-3826.49	-8058	-0.0007082	0.0003369	0.0035	1.62		9373.7	9373.7		2.45	Si
SLV 12	fin.	2488.69	-3750	-0.000423	0.0003369	0.0035	1.62		9362.78	9362.78		3.76	Si
SLV 1	ini.	6411.84	-618	-0.001418	0.0003369	0.0035	1.62		9362.78	9362.78		1.46	Si
SLV 1	fin.	-7476.91	-10433	-0.0018072	0.0003369	0.0035	1.62		9373.7	9373.7		1.25	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-7773.85	23072	1.62	0	986	7930	12226	4131	8916		0.39	No
SLV 15	fin.	6535.47	21546	1.62	0	986	7930	12226	4131	8916		0.41	No
SLV 14	ini.	-7101.19	21122	1.62	0	986	7930	12226	4131	8916		0.42	No
SLV 14	fin.	5994.12	19543	1.62	0	986	7930	12226	4131	8916		0.46	No
SLV 13	ini.	-7102.29	21099	1.62	0	986	7930	12226	4131	8916		0.42	No
SLV 13	fin.	5978.52	19520	1.62	0	986	7930	12226	4131	8916		0.46	No
SLV 4	ini.	5741.37	-19076	1.62	0	986	7930	12226	4131	8916		0.47	No
SLV 4	fin.	-6904.35	-20606	1.62	0	986	7930	12226	4131	8916		0.43	No
SLV 1	ini.	6411.84	-21074	1.62	0	986	7930	12226	4131	8916		0.42	No
SLV 1	fin.	-7476.91	-22655	1.62	0	986	7930	12226	4131	8916		0.39	No
SLV 3	ini.	5740.27	-19100	1.62	0	986	7930	12226	4131	8916		0.47	No
SLV 3	fin.	-6919.96	-20629	1.62	0	986	7930	12226	4131	8916		0.43	No
SLV 2	ini.	6412.94	-21050	1.62	0	986	7930	12226	4131	8916		0.42	No
SLV 2	fin.	-7461.31	-22632	1.62	0	986	7930	12226	4131	8916		0.39	No
SLV 16	ini.	-7772.75	23096	1.62	0	986	7930	12226	4131	8916		0.39	No
SLV 16	fin.	6551.07	21569	1.62	0	986	7930	12226	4131	8916		0.41	No
SLV 12	ini.	-3826.49	10634	1.62	0	986	7930	12226	4131	8916		0.84	No
SLV 12	fin.	2488.69	9167	1.62	0	986	7930	12226	4131	8916		0.97	No
SLV 11	ini.	-3827.2	10619	1.62	0	986	7930	12226	4131	8916		0.84	No
SLV 11	fin.	2478.61	9152	1.62	0	986	7930	12226	4131	8916		0.97	No

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.206	SLV 15	Si
V_SLV	0.386	SLV 16	No
PF_SLU	8.888	SLU 84	Si
V_SLU	4.129	SLU 84	Si



## Trave di accoppiamento 55

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-8.433	-3.314	3.21	4.83	1.62	-9.333	-3.314	3.21	4.83	1.62	0.9	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	e <sub>f,d</sub>	γ <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em <sub>-</sub>	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 79	ini.	-823.92	-3562	-0.0001309	0.0001872	0.0035	1.62		9533.52	9533.52	No	11.57	Si
SLU 79	fin.	-443.95	-3562	-0.0000687	0.0001872	0.0035	1.62		9533.52	9533.52	No	21.47	Si
SLU 63	ini.	-841.3	-3330	-0.0001338	0.0001872	0.0035	1.62		9533.52	9533.52	No	11.33	Si
SLU 63	fin.	-243.74	-3330	-0.0000373	0.0001872	0.0035	1.62		9533.52	9533.52	No	39.11	Si
SLU 84	ini.	-884.82	-3664	-0.0001412	0.0001872	0.0035	1.62		9533.52	9533.52	No	10.77	Si
SLU 84	fin.	-328.04	-3664	-0.0000504	0.0001872	0.0035	1.62		9533.52	9533.52	No	29.06	Si
SLU 60	ini.	-839.81	-3272	-0.0001336	0.0001872	0.0035	1.62		9533.52	9533.52	No	11.35	Si
SLU 60	fin.	-214.23	-3272	-0.0000327	0.0001872	0.0035	1.62		9533.52	9533.52	No	44.5	Si
SLU 83	ini.	-892.38	-3659	-0.0001425	0.0001872	0.0035	1.62		9533.52	9533.52	No	10.68	Si
SLU 83	fin.	-316.7	-3659	-0.0000486	0.0001872	0.0035	1.62		9533.52	9533.52	No	30.1	Si
SLU 62	ini.	-848.86	-3325	-0.0001351	0.0001872	0.0035	1.62		9533.52	9533.52	No	11.23	Si
SLU 62	fin.	-232.41	-3325	-0.0000355	0.0001872	0.0035	1.62		9533.52	9533.52	No	41.02	Si
SLU 82	ini.	-875.77	-3611	-0.0001397	0.0001872	0.0035	1.62		9533.52	9533.52	No	10.89	Si
SLU 82	fin.	-309.87	-3611	-0.0000476	0.0001872	0.0035	1.62		9533.52	9533.52	No	30.77	Si
SLU 77	ini.	-830.89	-3594	-0.0001321	0.0001872	0.0035	1.62		9533.52	9533.52	No	11.47	Si
SLU 77	fin.	-444.5	-3594	-0.0000688	0.0001872	0.0035	1.62		9533.52	9533.52	No	21.45	Si
SLU 81	ini.	-883.33	-3606	-0.000141	0.0001872	0.0035	1.62		9533.52	9533.52	No	10.79	Si
SLU 81	fin.	-298.53	-3606	-0.0000458	0.0001872	0.0035	1.62		9533.52	9533.52	No	31.94	Si
SLU 61	ini.	-832.25	-3277	-0.0001323	0.0001872	0.0035	1.62		9533.52	9533.52	No	11.46	Si
SLU 61	fin.	-225.57	-3277	-0.0000345	0.0001872	0.0035	1.62		9533.52	9533.52	No	42.26	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	f <sub>vd</sub>	V <sub>t</sub>	V <sub>t,f</sub>	V <sub>t,c</sub>	V <sub>t,c.int.</sub>	V <sub>t,R</sub>	incremento > 50%	c.s.	Verifica
SLU 62	ini.	-848.86	1160	1.62	0	657	7137	6791	4131	7794	No	6.72	Si
SLU 62	fin.	-232.41	212	1.62	0	657	7137	6791	4131	7794	No	36.69	Si
SLU 60	ini.	-839.81	1170	1.62	0	657	7137	6791	4131	7794	No	6.66	Si
SLU 60	fin.	-214.23	223	1.62	0	657	7137	6791	4131	7794	No	35.02	Si
SLU 61	ini.	-832.25	1149	1.62	0	657	7137	6791	4131	7794	No	6.78	Si
SLU 61	fin.	-225.57	202	1.62	0	657	7137	6791	4131	7794	No	38.67	Si
SLU 63	ini.	-841.3	1139	1.62	0	657	7137	6791	4131	7794	No	6.84	Si
SLU 63	fin.	-243.74	191	1.62	0	657	7137	6791	4131	7794	No	40.72	Si
SLU 84	ini.	-884.82	1097	1.62	0	657	7137	6791	4131	7794	No	7.1	Si
SLU 84	fin.	-328.04	139	1.62	0	657	7137	6791	4131	7794	No	56.13	Si
SLU 20	ini.	-726.15	1039	1.62	0	657	7137	6791	4131	7794	No	7.5	Si
SLU 20	fin.	-121.3	307	1.62	0	657	7137	6791	4131	7794	No	25.42	Si
SLU 18	ini.	-717.1	1049	1.62	0	657	7137	6791	4131	7794	No	7.43	Si
SLU 18	fin.	-103.13	317	1.62	0	657	7137	6791	4131	7794	No	24.6	Si
SLU 82	ini.	-875.77	1107	1.62	0	657	7137	6791	4131	7794	No	7.04	Si
SLU 82	fin.	-309.87	149	1.62	0	657	7137	6791	4131	7794	No	52.31	Si
SLU 83	ini.	-892.38	1118	1.62	0	657	7137	6791	4131	7794	No	6.97	Si
SLU 83	fin.	-316.7	160	1.62	0	657	7137	6791	4131	7794	No	48.76	Si
SLU 81	ini.	-883.33	1128	1.62	0	657	7137	6791	4131	7794	No	6.91	Si
SLU 81	fin.	-298.53	170	1.62	0	657	7137	6791	4131	7794	No	45.85	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 16	ini.	-5424.81	-2622	-0.0011517	0.0002807	0.0035	1.62		9461.54	9461.54		1.74	Si
SLV 16	fin.	7653.15	-2543	-0.0019605	0.0002807	0.0035	1.62		9450.85	9450.85		1.23	Si
SLV 2	ini.	4749.56	-2290	-0.0009637	0.0002807	0.0035	1.62		9450.85	9450.85		1.99	Si
SLV 2	fin.	-9159.83	-2368	-0.0028263	0.0002807	0.0035	1.62		9461.54	9461.54		1.03	Si
SLD 4	ini.	1772.37	-2840	-0.0002929	0.0002807	0.0035	1.62		9450.85	9450.85		5.33	Si
SLD 4	fin.	-4140.21	-2906	-0.000805	0.0002807	0.0035	1.62		9461.54	9461.54		2.29	Si
SLV 1	ini.	4379.07	-2212	-0.0008665	0.0002807	0.0035	1.62		9450.85	9450.85		2.16	Si
SLV 1	fin.	-8489.28	-2290	-0.0023942	0.0002807	0.0035	1.62		9461.54	9461.54		1.11	Si
SLV 13	ini.	-5895.26	-1419	-0.0012945	0.0002807	0.0035	1.62		9461.54	9461.54		1.6	Si
SLV 13	fin.	8288.09	-1268	-0.0022841	0.0002807	0.0035	1.62		9450.85	9450.85		1.14	Si
SLV 15	ini.	-5795.3	-2544	-0.0012633	0.0002807	0.0035	1.62		9461.54	9461.54		1.63	Si
SLV 15	fin.	8323.7	-2465	-0.002304	0.0002807	0.0035	1.62		9450.85	9450.85		1.14	Si
SLD 2	ini.	1731.6	-2365	-0.0002854	0.0002807	0.0035	1.62		9450.85	9450.85		5.46	Si
SLD 2	fin.	-4153.5	-2397	-0.0008083	0.0002807	0.0035	1.62		9461.54	9461.54		2.28	Si
SLV 14	ini.	-5524.77	-1497	-0.0011812	0.0002807	0.0035	1.62		9461.54	9461.54		1.71	Si
SLV 14	fin.	7617.54	-1346	-0.001944	0.0002807	0.0035	1.62		9450.85	9450.85		1.24	Si
SLV 4	ini.	4849.52	-3414	-0.0009908	0.0002807	0.0035	1.62		9450.85	9450.85		1.95	Si
SLV 4	fin.	-9124.22	-3565	-0.0028013	0.0002807	0.0035	1.62		9461.54	9461.54		1.04	Si
SLV 3	ini.	4479.03	-3336	-0.0008923	0.0002807	0.0035	1.62		9450.85	9450.85		2.11	Si
SLV 3	fin.	-8453.67	-3487	-0.0023734	0.0002807	0.0035	1.62		9461.54	9461.54		1.12	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 2	ini.	4749.56	-15251	1.62	0	986	7137	10187	4131	8123		0.53	No
SLV 2	fin.	-9159.83	-15905	1.62	0	986	7137	10187	4131	8123		0.51	No
SLV 13	ini.	-5895.26	15928	1.62	0	986	7137	10187	4131	8123		0.51	No
SLV 13	fin.	8288.09	15449	1.62	0	986	7137	10187	4131	8123		0.53	No
SLV 16	ini.	-5424.81	15062	1.62	0	986	7137	10187	4131	8123		0.54	No
SLV 16	fin.	7653.15	14246	1.62	0	986	7137	10187	4131	8123		0.57	No
SLD 15	ini.	-2777.34	7205	1.62	0	986	7137	10187	4131	8123		1.13	Si
SLD 15	fin.	3317.37	6434	1.62	0	986	7137	10187	4131	8123		1.26	Si
SLV 1	ini.	4379.07	-14095	1.62	0	986	7137	10187	4131	8123		0.58	No
SLV 1	fin.	-8489.28	-14748	1.62	0	986	7137	10187	4131	8123		0.55	No
SLV 4	ini.	4849.52	-14961	1.62	0	986	7137	10187	4131	8123		0.54	No
SLV 4	fin.	-9124.22	-15951	1.62	0	986	7137	10187	4131	8123		0.51	No
SLV 15	ini.	-5795.3	16219	1.62	0	986	7137	10187	4131	8123		0.5	No
SLV 15	fin.	8323.7	15403	1.62	0	986	7137	10187	4131	8123		0.53	No
SLD 13	ini.	-2818.11	7089	1.62	0	986	7137	10187	4131	8123		1.15	Si
SLD 13	fin.	3304.08	6465	1.62	0	986	7137	10187	4131	8123		1.26	Si
SLV 3	ini.	4479.03	-13804	1.62	0	986	7137	10187	4131	8123		0.59	No
SLV 3	fin.	-8453.67	-14794	1.62	0	986	7137	10187	4131	8123		0.55	No
SLV 14	ini.	-5524.77	14771	1.62	0	986	7137	10187	4131	8123		0.55	No
SLV 14	fin.	7617.54	14292	1.62	0	986	7137	10187	4131	8123		0.57	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.033	SLV 2	Si
V_SLV	0.501	SLV 15	No
PF_SLU	10.683	SLU 83	Si
V_SLU	6.659	SLU 60	Si

Trave di accoppiamento 57

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-6.268	-0.194	3.21	4.83	1.62	-6.268	0.706	3.21	4.83	1.62	0.9	0.16	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb_	fhk	fvk0	fmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 79	ini.	-236.69	270	-0.0000361	0.0002246	0.0035	1.62		9898.82	9898.82	No	41.82	Si
SLU 79	fin.	-555.83	270	-0.0000863	0.0002246	0.0035	1.62		9898.82	9898.82	No	17.81	Si
SLU 78	ini.	-238.77	274	-0.0000364	0.0002246	0.0035	1.62		9898.82	9898.82	No	41.46	Si
SLU 78	fin.	-561.54	274	-0.0000872	0.0002246	0.0035	1.62		9898.82	9898.82	No	17.63	Si
SLU 84	ini.	-236.88	268	-0.0000361	0.0002246	0.0035	1.62		9898.82	9898.82	No	41.79	Si
SLU 84	fin.	-567	268	-0.0000881	0.0002246	0.0035	1.62		9898.82	9898.82	No	17.46	Si
SLU 75	ini.	-239.71	272	-0.0000366	0.0002246	0.0035	1.62		9898.82	9898.82	No	41.29	Si
SLU 75	fin.	-556.95	272	-0.0000865	0.0002246	0.0035	1.62		9898.82	9898.82	No	17.77	Si
SLU 81	ini.	-237.72	262	-0.0000363	0.0002246	0.0035	1.62		9898.82	9898.82	No	41.64	Si
SLU 81	fin.	-559.13	262	-0.0000868	0.0002246	0.0035	1.62		9898.82	9898.82	No	17.7	Si
SLU 83	ini.	-236.78	263	-0.0000361	0.0002246	0.0035	1.62		9898.82	9898.82	No	41.81	Si
SLU 83	fin.	-563.72	263	-0.0000875	0.0002246	0.0035	1.62		9898.82	9898.82	No	17.56	Si
SLU 80	ini.	-236.79	274	-0.0000361	0.0002246	0.0035	1.62		9898.82	9898.82	No	41.8	Si
SLU 80	fin.	-559.12	274	-0.0000868	0.0002246	0.0035	1.62		9898.82	9898.82	No	17.7	Si
SLU 77	ini.	-238.67	269	-0.0000364	0.0002246	0.0035	1.62		9898.82	9898.82	No	41.48	Si
SLU 77	fin.	-558.25	269	-0.0000867	0.0002246	0.0035	1.62		9898.82	9898.82	No	17.73	Si
SLU 76	ini.	-237.8	276	-0.0000363	0.0002246	0.0035	1.62		9898.82	9898.82	No	41.63	Si
SLU 76	fin.	-556.72	276	-0.0000864	0.0002246	0.0035	1.62		9898.82	9898.82	No	17.78	Si
SLU 82	ini.	-237.82	267	-0.0000363	0.0002246	0.0035	1.62		9898.82	9898.82	No	41.62	Si
SLU 82	fin.	-562.41	267	-0.0000873	0.0002246	0.0035	1.62		9898.82	9898.82	No	17.6	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 83	ini.	-236.78	-70	1.62	0	376	7137	4658	4131	7512	No	107.69	Si
SLU 83	fin.	-563.72	-636	1.62	0	376	7137	4658	4131	7512	No	11.81	Si
SLU 82	ini.	-237.82	-67	1.62	0	376	7137	4658	4131	7512	No	111.88	Si
SLU 82	fin.	-562.41	-633	1.62	0	376	7137	4658	4131	7512	No	11.86	Si
SLU 79	ini.	-236.69	-61	1.62	0	376	7137	4658	4131	7512	No	122.96	Si
SLU 79	fin.	-555.83	-627	1.62	0	376	7137	4658	4131	7512	No	11.97	Si
SLU 78	ini.	-238.77	-65	1.62	0	376	7137	4658	4131	7512	No	115.34	Si
SLU 78	fin.	-561.54	-631	1.62	0	376	7137	4658	4131	7512	No	11.9	Si
SLU 81	ini.	-237.72	-64	1.62	0	376	7137	4658	4131	7512	No	118.1	Si
SLU 81	fin.	-559.13	-630	1.62	0	376	7137	4658	4131	7512	No	11.93	Si
SLU 80	ini.	-236.79	-65	1.62	0	376	7137	4658	4131	7512	No	116.22	Si
SLU 80	fin.	-559.12	-631	1.62	0	376	7137	4658	4131	7512	No	11.91	Si
SLU 75	ini.	-239.71	-59	1.62	0	376	7137	4658	4131	7512	No	127.37	Si
SLU 75	fin.	-556.95	-625	1.62	0	376	7137	4658	4131	7512	No	12.01	Si
SLU 77	ini.	-238.67	-62	1.62	0	376	7137	4658	4131	7512	No	121.97	Si
SLU 77	fin.	-558.25	-628	1.62	0	376	7137	4658	4131	7512	No	11.96	Si
SLU 76	ini.	-237.8	-61	1.62	0	376	7137	4658	4131	7512	No	123.46	Si
SLU 76	fin.	-556.72	-627	1.62	0	376	7137	4658	4131	7512	No	11.98	Si
SLU 84	ini.	-236.88	-73	1.62	0	376	7137	4658	4131	7512	No	102.49	Si
SLU 84	fin.	-567	-640	1.62	0	376	7137	4658	4131	7512	No	11.75	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 13	ini.	-207.23	327	-0.0000315	0.0003369	0.0035	1.62		10127.31	10127.31		48.87	Si
SLV 13	fin.	-591.92	211	-0.0000913	0.0003369	0.0035	1.62		10127.31	10127.31		17.11	Si
SLD 9	ini.	-488.13	-30	-0.000075	0.0003369	0.0035	1.62		10127.31	10127.31		20.75	Si
SLD 9	fin.	-564.73	-185	-0.000087	0.0003369	0.0035	1.62		10127.31	10127.31		17.93	Si
SLV 5	ini.	-1002.88	-487	-0.0001575	0.0003369	0.0035	1.62		10127.31	10127.31		10.1	Si
SLV 5	fin.	-732.79	-882	-0.0001137	0.0003369	0.0035	1.62		10127.31	10127.31		13.82	Si
SLV 6	ini.	-1006.19	-514	-0.000158	0.0003369	0.0035	1.62		10127.31	10127.31		10.07	Si
SLV 6	fin.	-713.9	-909	-0.0001107	0.0003369	0.0035	1.62		10127.31	10127.31		14.19	Si
SLV 10	ini.	-886.17	-346	-0.0001384	0.0003369	0.0035	1.62		10127.31	10127.31		11.43	Si
SLV 10	fin.	-758.04	-740	-0.0001178	0.0003369	0.0035	1.62		10127.31	10127.31		13.36	Si
SLV 2	ini.	-612.43	-276	-0.0000946	0.0003369	0.0035	1.62		10127.31	10127.31		16.54	Si
SLV 2	fin.	-415.55	-396	-0.0000636	0.0003369	0.0035	1.62		10127.31	10127.31		24.37	Si
SLV 12	ini.	641.51	917	-0.0000993	0.0003369	0.0035	1.62		10117.08	10117.08		15.77	Si
SLV 12	fin.	-67.53	1312	-0.000102	0.0003369	0.0035	1.62		10127.31	10127.31		149.97	Si
SLV 1	ini.	-607.31	-234	-0.0000937	0.0003369	0.0035	1.62		10127.31	10127.31		16.68	Si
SLV 1	fin.	-444.8	-354	-0.0000682	0.0003369	0.0035	1.62		10127.31	10127.31		22.77	Si
SLV 11	ini.	644.83	945	-0.0000998	0.0003369	0.0035	1.62		10117.08	10117.08		15.69	Si
SLV 11	fin.	-86.42	1339	-0.0000131	0.0003369	0.0035	1.62		10127.31	10127.31		117.19	Si
SLV 9	ini.	-882.86	-319	-0.0001379	0.0003369	0.0035	1.62		10127.31	10127.31		11.47	Si
SLV 9	fin.	-776.93	-713	-0.0001208	0.0003369	0.0035	1.62		10127.31	10127.31		13.04	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 12	ini.	641.51	-649	1.62	0	563	7137	6986	4131	7700		11.87	Si
SLV 12	fin.	-67.53	-1158	1.62	0	563	7137	6986	4131	7700		6.65	Si
SLV 15	ini.	251.07	-456	1.62	0	563	7137	6986	4131	7700		16.88	Si
SLV 15	fin.	-384.77	-901	1.62	0	563	7137	6986	4131	7700		8.55	Si
SLV 8	ini.	521.49	-501	1.62	0	563	7137	6986	4131	7700		15.37	Si
SLV 8	fin.	-23.39	-1016	1.62	0	563	7137	6986	4131	7700		7.58	Si
SLV 7	ini.	524.8	-526	1.62	0	563	7137	6986	4131	7700		14.65	Si
SLV 7	fin.	-42.28	-1041	1.62	0	563	7137	6986	4131	7700		7.4	Si
SLD 7	ini.	128.21	-247	1.62	0	563	7137	6986	4131	7700		31.18	Si
SLD 7	fin.	-243.84	-713	1.62	0	563	7137	6986	4131	7700		10.81	Si
SLD 11	ini.	178.77	-310	1.62	0	563	7137	6986	4131	7700		24.82	Si
SLD 11	fin.	-262.82	-773	1.62	0	563	7137	6986	4131	7700		9.96	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 8	ini.	126.77	-236	1.62	0	563	7137	6986	4131	7700		32.6	Si
SLD 8	fin.	-235.59	-702	1.62	0	563	7137	6986	4131	7700		10.97	Si
SLD 12	ini.	177.33	-300	1.62	0	563	7137	6986	4131	7700		25.71	Si
SLD 12	fin.	-254.57	-762	1.62	0	563	7137	6986	4131	7700		10.1	Si
SLV 11	ini.	644.83	-673	1.62	0	563	7137	6986	4131	7700		11.44	Si
SLV 11	fin.	-86.42	-1183	1.62	0	563	7137	6986	4131	7700		6.51	Si
SLV 16	ini.	245.94	-418	1.62	0	563	7137	6986	4131	7700		18.43	Si
SLV 16	fin.	-355.52	-863	1.62	0	563	7137	6986	4131	7700		8.93	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	10.065	SLV 6	Si
V_SLV	6.511	SLV 11	Si
PF_SLU	17.458	SLU 84	Si
V_SLU	11.746	SLU 84	Si

## Trave di accoppiamento 58

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-5.093	6.006	1.11	3.11	2	-5.093	6.506	1.11	3.11	2	0.5	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	t <sub>fv</sub>	t <sub>fo</sub>	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	e <sub>f</sub> d	γ <sub>F</sub> d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ε <sub>m</sub>	ε <sub>m_</sub>	ε <sub>mu</sub>	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 78	ini.	1431.63	2302	-0.0001506	0.0001872	0.0035	2		14344.28	14344.28	No	10.02	Si
SLU 78	fin.	14.2	-681	-0.0000014	0.0001872	0.0035	2		14344.28	14344.28	No	1010.24	Si
SLU 84	ini.	1449.4	2336	-0.0001526	0.0001872	0.0035	2		14344.28	14344.28	No	9.9	Si
SLU 84	fin.	12.44	-701	-0.0000012	0.0001872	0.0035	2		14344.28	14344.28	No	1153.06	Si
SLU 77	ini.	1447.4	2156	-0.0001524	0.0001872	0.0035	2		14344.28	14344.28	No	9.91	Si
SLU 77	fin.	5.52	-800	-0.0000005	0.0001872	0.0035	2		14344.28	14344.28	No	2597.98	Si
SLU 74	ini.	1430.64	2127	-0.0001505	0.0001872	0.0035	2		14344.28	14344.28	No	10.03	Si
SLU 74	fin.	5.26	-791	-0.0000005	0.0001872	0.0035	2		14344.28	14344.28	No	2726.47	Si
SLU 80	ini.	1422	2279	-0.0001495	0.0001872	0.0035	2		14344.28	14344.28	No	10.09	Si
SLU 80	fin.	12.87	-675	-0.0000013	0.0001872	0.0035	2		14344.28	14344.28	No	1114.77	Si
SLU 75	ini.	1414.87	2273	-0.0001487	0.0001872	0.0035	2		14344.28	14344.28	No	10.14	Si
SLU 75	fin.	13.94	-672	-0.0000014	0.0001872	0.0035	2		14344.28	14344.28	No	1029.1	Si
SLU 83	ini.	1465.17	2190	-0.0001544	0.0001872	0.0035	2		14344.28	14344.28	No	9.79	Si
SLU 83	fin.	3.76	-820	-0.0000004	0.0001872	0.0035	2		14344.28	14344.28	No	3812.23	Si
SLU 82	ini.	1432.64	2307	-0.0001507	0.0001872	0.0035	2		14344.28	14344.28	No	10.01	Si
SLU 82	fin.	12.18	-692	-0.0000012	0.0001872	0.0035	2		14344.28	14344.28	No	1177.69	Si
SLU 79	ini.	1437.77	2133	-0.0001513	0.0001872	0.0035	2		14344.28	14344.28	No	9.98	Si
SLU 79	fin.	4.19	-794	-0.0000004	0.0001872	0.0035	2		14344.28	14344.28	No	3423.46	Si
SLU 81	ini.	1448.4	2161	-0.0001525	0.0001872	0.0035	2		14344.28	14344.28	No	9.9	Si
SLU 81	fin.	3.5	-811	-0.0000003	0.0001872	0.0035	2		14344.28	14344.28	No	4095.45	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 77	ini.	1447.4	1234	2	0	812	3965	8384	5100	4776	No	3.87	Si
SLU 77	fin.	5.52	3099	2	0	812	3965	8384	5100	4776	No	1.54	Si
SLU 78	ini.	1431.63	1324	2	0	812	3965	8384	5100	4776	No	3.61	Si
SLU 78	fin.	14.2	3194	2	0	812	3965	8384	5100	4776	No	1.5	Si
SLU 82	ini.	1432.64	1387	2	0	812	3965	8384	5100	4776	No	3.44	Si
SLU 82	fin.	12.18	3212	2	0	812	3965	8384	5100	4776	No	1.49	Si
SLU 75	ini.	1414.87	1318	2	0	812	3965	8384	5100	4776	No	3.62	Si
SLU 75	fin.	13.94	3142	2	0	812	3965	8384	5100	4776	No	1.52	Si
SLU 80	ini.	1422	1308	2	0	812	3965	8384	5100	4776	No	3.65	Si





Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 80	fin.	12.87	3147	2	0	812	3965	8384	5100	4776	No	1.52	Si
SLU 76	ini.	1394.73	1363	2	0	812	3965	8384	5100	4776	No	3.5	Si
SLU 76	fin.	18.39	3158	2	0	812	3965	8384	5100	4776	No	1.51	Si
SLU 73	ini.	1377.97	1357	2	0	812	3965	8384	5100	4776	No	3.52	Si
SLU 73	fin.	18.13	3106	2	0	812	3965	8384	5100	4776	No	1.54	Si
SLU 84	ini.	1449.4	1392	2	0	812	3965	8384	5100	4776	No	3.43	Si
SLU 84	fin.	12.44	3264	2	0	812	3965	8384	5100	4776	No	1.46	Si
SLU 83	ini.	1465.17	1302	2	0	812	3965	8384	5100	4776	No	3.67	Si
SLU 83	fin.	3.76	3169	2	0	812	3965	8384	5100	4776	No	1.51	Si
SLU 81	ini.	1448.4	1297	2	0	812	3965	8384	5100	4776	No	3.68	Si
SLU 81	fin.	3.5	3117	2	0	812	3965	8384	5100	4776	No	1.53	Si

**Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche**

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 4	ini.	740.25	-5967	-0.0000748	0.0002807	0.0035	2		14202.07	14202.07		19.19	Si
SLV 4	fin.	-3276.16	-3679	-0.0003637	0.0002807	0.0035	2		14215.41	14215.41		4.34	Si
SLV 14	ini.	1251.97	9737	-0.0001286	0.0002807	0.0035	2		14202.07	14202.07		11.34	Si
SLV 14	fin.	3681.69	3020	-0.0004168	0.0002807	0.0035	2		14202.07	14202.07		3.86	Si
SLV 7	ini.	483.16	-2773	-0.0000485	0.0002807	0.0035	2		14202.07	14202.07		29.39	Si
SLV 7	fin.	-2124.39	-2205	-0.0002248	0.0002807	0.0035	2		14215.41	14215.41		6.69	Si
SLV 2	ini.	1038.57	-4925	-0.000106	0.0002807	0.0035	2		14202.07	14202.07		13.67	Si
SLV 2	fin.	-2648.81	-3335	-0.0002861	0.0002807	0.0035	2		14215.41	14215.41		5.37	Si
SLV 15	ini.	973.4	7818	-0.0000991	0.0002807	0.0035	2		14202.07	14202.07		14.59	Si
SLV 15	fin.	2650.9	2253	-0.0002867	0.0002807	0.0035	2		14202.07	14202.07		5.36	Si
SLV 3	ini.	760	-6844	-0.0000769	0.0002807	0.0035	2		14202.07	14202.07		18.69	Si
SLV 3	fin.	-3679.6	-4102	-0.0004161	0.0002807	0.0035	2		14215.41	14215.41		3.86	Si
SLV 13	ini.	1271.72	8860	-0.0001307	0.0002807	0.0035	2		14202.07	14202.07		11.17	Si
SLV 13	fin.	3278.25	2597	-0.0003643	0.0002807	0.0035	2		14202.07	14202.07		4.33	Si
SLV 10	ini.	1528.81	5666	-0.0001585	0.0002807	0.0035	2		14202.07	14202.07		9.29	Si
SLV 10	fin.	2126.49	1123	-0.0002252	0.0002807	0.0035	2		14202.07	14202.07		6.68	Si
SLV 16	ini.	953.66	8695	-0.000097	0.0002807	0.0035	2		14202.07	14202.07		14.89	Si
SLV 16	fin.	3054.34	2675	-0.000336	0.0002807	0.0035	2		14202.07	14202.07		4.65	Si
SLV 1	ini.	1058.31	-5801	-0.000108	0.0002807	0.0035	2		14202.07	14202.07		13.42	Si
SLV 1	fin.	-3052.25	-3757	-0.0003355	0.0002807	0.0035	2		14215.41	14215.41		4.66	Si

**Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215**

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 1	ini.	1058.31	-10970	2	0	1217	3965	12577	5100	5182		0.47	No
SLV 1	fin.	-3052.25	-12276	2	0	1217	3965	12577	5100	5182		0.42	No
SLV 3	ini.	760	-12712	2	0	1217	3965	12577	5100	5182		0.41	No
SLV 3	fin.	-3679.6	-15218	2	0	1217	3965	12577	5100	5182		0.34	No
SLV 13	ini.	1271.72	12751	2	0	1217	3965	12577	5100	5182		0.41	No
SLV 13	fin.	3278.25	17372	2	0	1217	3965	12577	5100	5182		0.3	No
SLV 9	ini.	1541.56	6749	2	0	1217	3965	12577	5100	5182		0.77	No
SLV 9	fin.	1865.92	10747	2	0	1217	3965	12577	5100	5182		0.48	No
SLV 2	ini.	1038.57	-9455	2	0	1217	3965	12577	5100	5182		0.55	No
SLV 2	fin.	-2648.81	-10473	2	0	1217	3965	12577	5100	5182		0.49	No
SLV 10	ini.	1528.81	7728	2	0	1217	3965	12577	5100	5182		0.67	No
SLV 10	fin.	2126.49	11911	2	0	1217	3965	12577	5100	5182		0.44	No
SLV 4	ini.	740.25	-11197	2	0	1217	3965	12577	5100	5182		0.46	No
SLV 4	fin.	-3276.16	-13415	2	0	1217	3965	12577	5100	5182		0.39	No
SLV 16	ini.	953.66	12525	2	0	1217	3965	12577	5100	5182		0.41	No
SLV 16	fin.	3054.34	16233	2	0	1217	3965	12577	5100	5182		0.32	No
SLV 14	ini.	1251.97	14267	2	0	1217	3965	12577	5100	5182		0.36	No
SLV 14	fin.	3681.69	19175	2	0	1217	3965	12577	5100	5182		0.27	No
SLV 15	ini.	973.4	11010	2	0	1217	3965	12577	5100	5182		0.47	No
SLV 15	fin.	2650.9	14430	2	0	1217	3965	12577	5100	5182		0.36	No

**Tabella dei coefficienti di sicurezza minimi**

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.857	SLV 14	Si
V_SLV	0.27	SLV 14	No
PF_SLU	9.79	SLU 83	Si
V_SLU	1.464	SLU 84	Si

**Trave di accoppiamento 59**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati geometrici**

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-5.093	6.006	3.91	4.83	0.92	-5.093	6.506	3.91	4.83	0.92	0.5	0.28	3500

**Caratteristiche del materiale**

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC





Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 76	ini.	-12.78	-109	-0.000006	0.0001872	0.0035	0.92		3115.25	3115.25	No	243.76	Si
SLU 76	fin.	86.01	-99	-0.0000408	0.0001872	0.0035	0.92		3109.54	3109.54	No	36.15	Si
SLU 75	ini.	-37.32	-178	-0.0000175	0.0001872	0.0035	0.92		3115.25	3115.25	No	83.48	Si
SLU 75	fin.	84.52	-123	-0.0000401	0.0001872	0.0035	0.92		3109.54	3109.54	No	36.79	Si
SLU 77	ini.	-74.26	-281	-0.0000351	0.0001872	0.0035	0.92		3115.25	3115.25	No	41.95	Si
SLU 77	fin.	81.88	-158	-0.0000388	0.0001872	0.0035	0.92		3109.54	3109.54	No	37.98	Si
SLU 73	ini.	-11.81	-106	-0.0000055	0.0001872	0.0035	0.92		3115.25	3115.25	No	263.78	Si
SLU 73	fin.	85.09	-97	-0.0000404	0.0001872	0.0035	0.92		3109.54	3109.54	No	36.54	Si
SLU 78	ini.	-38.29	-181	-0.000018	0.0001872	0.0035	0.92		3115.25	3115.25	No	81.36	Si
SLU 78	fin.	85.44	-124	-0.0000405	0.0001872	0.0035	0.92		3109.54	3109.54	No	36.4	Si
SLU 80	ini.	-37.73	-179	-0.0000177	0.0001872	0.0035	0.92		3115.25	3115.25	No	82.57	Si
SLU 80	fin.	84.55	-123	-0.0000401	0.0001872	0.0035	0.92		3109.54	3109.54	No	36.78	Si
SLU 83	ini.	-77.35	-292	-0.0000366	0.0001872	0.0035	0.92		3115.25	3115.25	No	40.28	Si
SLU 83	fin.	84.22	-163	-0.0000399	0.0001872	0.0035	0.92		3109.54	3109.54	No	36.92	Si
SLU 84	ini.	-41.38	-192	-0.0000194	0.0001872	0.0035	0.92		3115.25	3115.25	No	75.28	Si
SLU 84	fin.	87.78	-129	-0.0000417	0.0001872	0.0035	0.92		3109.54	3109.54	No	35.42	Si
SLU 82	ini.	-40.41	-189	-0.000019	0.0001872	0.0035	0.92		3115.25	3115.25	No	77.09	Si
SLU 82	fin.	86.86	-127	-0.0000412	0.0001872	0.0035	0.92		3109.54	3109.54	No	35.8	Si
SLU 81	ini.	-76.38	-289	-0.0000361	0.0001872	0.0035	0.92		3115.25	3115.25	No	40.79	Si
SLU 81	fin.	83.31	-161	-0.0000395	0.0001872	0.0035	0.92		3109.54	3109.54	No	37.33	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 80	ini.	-37.73	2830	0.92	0	373	3965	3857	2346	4338	No	1.53	Si
SLU 80	fin.	84.55	-1579	0.92	0	373	3965	3857	2346	4338	No	2.75	Si
SLU 82	ini.	-40.41	2887	0.92	0	373	3965	3857	2346	4338	No	1.5	Si
SLU 82	fin.	86.86	-1594	0.92	0	373	3965	3857	2346	4338	No	2.72	Si
SLU 75	ini.	-37.32	2825	0.92	0	373	3965	3857	2346	4338	No	1.54	Si
SLU 75	fin.	84.52	-1579	0.92	0	373	3965	3857	2346	4338	No	2.75	Si
SLU 84	ini.	-41.38	2926	0.92	0	373	3965	3857	2346	4338	No	1.48	Si
SLU 84	fin.	87.78	-1613	0.92	0	373	3965	3857	2346	4338	No	2.69	Si
SLU 77	ini.	-74.26	2916	0.92	0	373	3965	3857	2346	4338	No	1.49	Si
SLU 77	fin.	81.88	-1455	0.92	0	373	3965	3857	2346	4338	No	2.98	Si
SLU 78	ini.	-38.29	2864	0.92	0	373	3965	3857	2346	4338	No	1.51	Si
SLU 78	fin.	85.44	-1597	0.92	0	373	3965	3857	2346	4338	No	2.72	Si
SLU 79	ini.	-73.7	2882	0.92	0	373	3965	3857	2346	4338	No	1.51	Si
SLU 79	fin.	80.99	-1437	0.92	0	373	3965	3857	2346	4338	No	3.02	Si
SLU 74	ini.	-73.29	2877	0.92	0	373	3965	3857	2346	4338	No	1.51	Si
SLU 74	fin.	80.96	-1437	0.92	0	373	3965	3857	2346	4338	No	3.02	Si
SLU 81	ini.	-76.38	2939	0.92	0	373	3965	3857	2346	4338	No	1.48	Si
SLU 81	fin.	83.31	-1452	0.92	0	373	3965	3857	2346	4338	No	2.99	Si
SLU 83	ini.	-77.35	2978	0.92	0	373	3965	3857	2346	4338	No	1.46	Si
SLU 83	fin.	84.22	-1471	0.92	0	373	3965	3857	2346	4338	No	2.95	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-477.77	-1564	-0.0002396	0.0002807	0.0035	0.92		3146.83	3146.83		6.59	Si
SLV 15	fin.	202.98	-357	-0.0000975	0.0002807	0.0035	0.92		3140.9	3140.9		15.47	Si
SLV 5	ini.	365.47	938	-0.0001801	0.0002807	0.0035	0.92		3140.9	3140.9		8.59	Si
SLV 5	fin.	-60.9	-7	-0.0000286	0.0002807	0.0035	0.92		3146.83	3146.83		51.67	Si
SLV 12	ini.	-460.73	-1306	-0.0002303	0.0002807	0.0035	0.92		3146.83	3146.83		6.83	Si
SLV 12	fin.	169.06	-199	-0.0000808	0.0002807	0.0035	0.92		3140.9	3140.9		18.58	Si
SLV 13	ini.	-299.88	-1132	-0.0001459	0.0002807	0.0035	0.92		3146.83	3146.83		10.49	Si
SLV 13	fin.	160.87	-352	-0.0000768	0.0002807	0.0035	0.92		3140.9	3140.9		19.52	Si
SLV 16	ini.	-507.92	-1677	-0.0002561	0.0002807	0.0035	0.92		3146.83	3146.83		6.2	Si
SLV 16	fin.	216.59	-384	-0.0001042	0.0002807	0.0035	0.92		3140.9	3140.9		14.5	Si
SLV 1	ini.	412.66	1309	-0.0002049	0.0002807	0.0035	0.92		3140.9	3140.9		7.61	Si
SLV 1	fin.	-108.43	177	-0.0000513	0.0002807	0.0035	0.92		3146.83	3146.83		29.02	Si
SLV 11	ini.	-441.26	-1233	-0.0002198	0.0002807	0.0035	0.92		3146.83	3146.83		7.13	Si
SLV 11	fin.	160.27	-182	-0.0000765	0.0002807	0.0035	0.92		3140.9	3140.9		19.6	Si
SLV 14	ini.	-330.03	-1246	-0.0001614	0.0002807	0.0035	0.92		3146.83	3146.83		9.54	Si
SLV 14	fin.	174.48	-379	-0.0000835	0.0002807	0.0035	0.92		3140.9	3140.9		18	Si
SLV 2	ini.	382.52	1196	-0.000189	0.0002807	0.0035	0.92		3140.9	3140.9		8.21	Si
SLV 2	fin.	-94.83	150	-0.0000448	0.0002807	0.0035	0.92		3146.83	3146.83		33.19	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 6	ini.	346.01	865	-0.0001699	0.0002807	0.0035	0.92		3140.9	3140.9		9.08	Si
SLV 6	fin.	-52.11	-25	-0.0000245	0.0002807	0.0035	0.92		3146.83	3146.83		60.39	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 5	ini.	365.47	1386	0.92	0	560	3965	5785	2346	4525		3.27	Si
SLV 5	fin.	-60.9	-3167	0.92	0	560	3965	5785	2346	4525		1.43	Si
SLD 16	ini.	-241.13	3135	0.92	0	560	3965	5785	2346	4525		1.44	Si
SLD 16	fin.	123.24	-274	0.92	0	560	3965	5785	2346	4525		16.49	Si
SLV 15	ini.	-477.77	4468	0.92	0	560	3965	5785	2346	4525		1.01	Si
SLV 15	fin.	202.98	611	0.92	0	560	3965	5785	2346	4525		7.41	Si
SLV 6	ini.	346.01	1568	0.92	0	560	3965	5785	2346	4525		2.89	Si
SLV 6	fin.	-52.11	-3103	0.92	0	560	3965	5785	2346	4525		1.46	Si
SLV 14	ini.	-330.03	4980	0.92	0	560	3965	5785	2346	4525		0.91	No
SLV 14	fin.	174.48	-381	0.92	0	560	3965	5785	2346	4525		11.87	Si
SLV 10	ini.	132.24	3243	0.92	0	560	3965	5785	2346	4525		1.4	Si
SLV 10	fin.	28.68	-2442	0.92	0	560	3965	5785	2346	4525		1.85	Si
SLV 16	ini.	-507.92	4751	0.92	0	560	3965	5785	2346	4525		0.95	No
SLV 16	fin.	216.59	709	0.92	0	560	3965	5785	2346	4525		6.38	Si
SLV 13	ini.	-299.88	4698	0.92	0	560	3965	5785	2346	4525		0.96	No
SLV 13	fin.	160.87	-480	0.92	0	560	3965	5785	2346	4525		9.44	Si
SLD 13	ini.	-152.07	3111	0.92	0	560	3965	5785	2346	4525		1.45	Si
SLD 13	fin.	99.15	-785	0.92	0	560	3965	5785	2346	4525		5.76	Si
SLD 14	ini.	-165.02	3233	0.92	0	560	3965	5785	2346	4525		1.4	Si
SLD 14	fin.	104.99	-743	0.92	0	560	3965	5785	2346	4525		6.09	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	6.196	SLV 16	Si
V_SLV	0.909	SLV 14	No
PF_SLU	35.425	SLU 84	Si
V_SLU	1.457	SLU 83	Si

Trave di accoppiamento 60

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-6.463	-3.314	1.11	2.01	0.9	-7.463	-3.314	1.11	2.01	0.9	1	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>vd</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	ε <sub>f,d</sub>	γ <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 62	ini.	-537.77	-2530	-0.0002993	0.0001872	0.0035	0.9		2964.67	2964.67	No	5.51	Si
SLU 62	fin.	785.11	-2103	-0.0004694	0.0001872	0.0035	0.9		2959	2959	No	3.77	Si
SLU 78	ini.	-518.13	-2803	-0.0002867	0.0001872	0.0035	0.9		2964.67	2964.67	No	5.72	Si
SLU 78	fin.	789.15	-2167	-0.0004723	0.0001872	0.0035	0.9		2959	2959	No	3.75	Si
SLU 82	ini.	-560.95	-2733	-0.0003143	0.0001872	0.0035	0.9		2964.67	2964.67	No	5.29	Si
SLU 82	fin.	821.72	-2214	-0.000496	0.0001872	0.0035	0.9		2959	2959	No	3.6	Si
SLU 84	ini.	-562.36	-2787	-0.0003152	0.0001872	0.0035	0.9		2964.67	2964.67	No	5.27	Si
SLU 84	fin.	830.35	-2241	-0.0005023	0.0001872	0.0035	0.9		2959	2959	No	3.56	Si
SLU 77	ini.	-520.35	-2799	-0.0002881	0.0001872	0.0035	0.9		2964.67	2964.67	No	5.7	Si
SLU 77	fin.	791.48	-2171	-0.000474	0.0001872	0.0035	0.9		2959	2959	No	3.74	Si
SLU 80	ini.	-518.54	-2774	-0.0002869	0.0001872	0.0035	0.9		2964.67	2964.67	No	5.72	Si
SLU 80	fin.	784.94	-2153	-0.0004692	0.0001872	0.0035	0.9		2959	2959	No	3.77	Si
SLU 79	ini.	-520.77	-2771	-0.0002884	0.0001872	0.0035	0.9		2964.67	2964.67	No	5.69	Si
SLU 79	fin.	787.28	-2157	-0.0004709	0.0001872	0.0035	0.9		2959	2959	No	3.76	Si
SLU 81	ini.	-563.18	-2729	-0.0003158	0.0001872	0.0035	0.9		2964.67	2964.67	No	5.26	Si



Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 81	fin.	824.06	-2217	-0.0004977	0.0001872	0.0035	0.9		2959	2959	No	3.59	Si
SLU 83	ini.	-564.59	-2783	-0.0003167	0.0001872	0.0035	0.9		2964.67	2964.67	No	5.25	Si
SLU 83	fin.	832.68	-2244	-0.000504	0.0001872	0.0035	0.9		2959	2959	No	3.55	Si
SLU 74	ini.	-518.94	-2745	-0.0002872	0.0001872	0.0035	0.9		2964.67	2964.67	No	5.71	Si
SLU 74	fin.	782.86	-2144	-0.0004677	0.0001872	0.0035	0.9		2959	2959	No	3.78	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 82	ini.	-560.95	-330	0.9	0	329	7137	3773	2295	6068	No	18.38	Si
SLU 82	fin.	821.72	2725	0.9	0	329	7137	3773	2295	6068	No	2.23	Si
SLU 78	ini.	-518.13	-493	0.9	0	329	7137	3773	2295	6068	No	12.32	Si
SLU 78	fin.	789.15	2648	0.9	0	329	7137	3773	2295	6068	No	2.29	Si
SLU 79	ini.	-520.77	-466	0.9	0	329	7137	3773	2295	6068	No	13.01	Si
SLU 79	fin.	787.28	2639	0.9	0	329	7137	3773	2295	6068	No	2.3	Si
SLU 84	ini.	-562.36	-364	0.9	0	329	7137	3773	2295	6068	No	16.65	Si
SLU 84	fin.	830.35	2762	0.9	0	329	7137	3773	2295	6068	No	2.2	Si
SLU 77	ini.	-520.35	-485	0.9	0	329	7137	3773	2295	6068	No	12.52	Si
SLU 77	fin.	791.48	2655	0.9	0	329	7137	3773	2295	6068	No	2.29	Si
SLU 80	ini.	-518.54	-474	0.9	0	329	7137	3773	2295	6068	No	12.79	Si
SLU 80	fin.	784.94	2631	0.9	0	329	7137	3773	2295	6068	No	2.31	Si
SLU 83	ini.	-564.59	-356	0.9	0	329	7137	3773	2295	6068	No	17.02	Si
SLU 83	fin.	832.68	2770	0.9	0	329	7137	3773	2295	6068	No	2.19	Si
SLU 81	ini.	-563.18	-322	0.9	0	329	7137	3773	2295	6068	No	18.84	Si
SLU 81	fin.	824.06	2732	0.9	0	329	7137	3773	2295	6068	No	2.22	Si
SLU 75	ini.	-516.72	-458	0.9	0	329	7137	3773	2295	6068	No	13.24	Si
SLU 75	fin.	780.52	2611	0.9	0	329	7137	3773	2295	6068	No	2.32	Si
SLU 74	ini.	-518.94	-450	0.9	0	329	7137	3773	2295	6068	No	13.48	Si
SLU 74	fin.	782.86	2618	0.9	0	329	7137	3773	2295	6068	No	2.32	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 16	ini.	-2652.52	593	-0.0024565	0.0002807	0.0035	0.9		2995.37	2995.37		1.13	Si
SLV 16	fin.	2729.72	-5295	-0.0026234	0.0002807	0.0035	0.9		2989.59	2989.59		1.1	Si
SLV 3	ini.	1920.65	-3325	-0.0014042	0.0002807	0.0035	0.9		2989.59	2989.59		1.56	Si
SLV 3	fin.	-2008.19	3199	-0.0014971	0.0002807	0.0035	0.9		2995.37	2995.37		1.49	Si
SLV 2	ini.	2198.61	-4733	-0.0017334	0.0002807	0.0035	0.9		2989.59	2989.59		1.36	Si
SLV 2	fin.	-1896.59	2745	-0.0013746	0.0002807	0.0035	0.9		2995.37	2995.37		1.58	Si
SLV 4	ini.	2149.75	-3628	-0.0016706	0.0002807	0.0035	0.9		2989.59	2989.59		1.39	Si
SLV 4	fin.	-2216.88	3564	-0.0017521	0.0002807	0.0035	0.9		2995.37	2995.37		1.35	Si
SLV 13	ini.	-2832.76	-208	-0.0028392	0.0002807	0.0035	0.9		2995.37	2995.37		1.06	Si
SLV 13	fin.	3258.71	-6479	-0.0038526	0.0002807	0.0035	0.9		2989.59	2989.59		0.92	No
SLV 14	ini.	-2603.66	-512	-0.002363	0.0002807	0.0035	0.9		2995.37	2995.37		1.15	Si
SLV 14	fin.	3050.01	-6113	-0.0033776	0.0002807	0.0035	0.9		2989.59	2989.59		0.98	No
SLV 9	ini.	-1054.39	-3027	-0.0006321	0.0002807	0.0035	0.9		2995.37	2995.37		2.84	Si
SLV 9	fin.	1864.12	-4269	-0.001344	0.0002807	0.0035	0.9		2989.59	2989.59		1.6	Si
SLV 10	ini.	-906.42	-3223	-0.0005255	0.0002807	0.0035	0.9		2995.37	2995.37		3.3	Si
SLV 10	fin.	1729.33	-4033	-0.0012077	0.0002807	0.0035	0.9		2989.59	2989.59		1.73	Si
SLV 15	ini.	-2881.62	896	-0.0029541	0.0002807	0.0035	0.9		2995.37	2995.37		1.04	Si
SLV 15	fin.	2938.41	-5660	-0.0031052	0.0002807	0.0035	0.9		2989.59	2989.59		1.02	Si
SLV 1	ini.	1969.51	-4429	-0.0014577	0.0002807	0.0035	0.9		2989.59	2989.59		1.52	Si
SLV 1	fin.	-1687.9	2380	-0.0011646	0.0002807	0.0035	0.9		2995.37	2995.37		1.77	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 4	ini.	2149.75	-7459	0.9	0	493	7137	5660	2295	7630		1.02	Si
SLV 4	fin.	-2216.88	-6581	0.9	0	493	7137	5660	2295	7630		1.16	Si
SLV 15	ini.	-2881.62	7572	0.9	0	493	7137	5660	2295	7630		1.01	Si
SLV 15	fin.	2938.41	-9857	0.9	0	493	7137	5660	2295	7630		0.77	No
SLV 3	ini.	1920.65	-6729	0.9	0	493	7137	5660	2295	7630		1.13	Si
SLV 3	fin.	-2008.19	-5908	0.9	0	493	7137	5660	2295	7630		1.29	Si
SLV 2	ini.	2198.61	-8315	0.9	0	493	7137	5660	2295	7630		0.92	No
SLV 2	fin.	-1896.59	-6363	0.9	0	493	7137	5660	2295	7630		1.2	Si
SLD 15	ini.	-1427.02	3019	0.9	0	493	7137	5660	2295	7630		2.53	Si
SLD 15	fin.	1556.41	5210	0.9	0	493	7137	5660	2295	7630		1.46	Si
SLV 13	ini.	-2832.76	6716	0.9	0	493	7137	5660	2295	7630		1.14	Si
SLV 13	fin.	3258.71	10075	0.9	0	493	7137	5660	2295	7630		0.76	No
SLV 14	ini.	-2603.66	5985	0.9	0	493	7137	5660	2295	7630		1.27	Si
SLV 14	fin.	3050.01	9401	0.9	0	493	7137	5660	2295	7630		0.81	No
SLD 13	ini.	-1405.82	2660	0.9	0	493	7137	5660	2295	7630		2.87	Si
SLD 13	fin.	1687.88	5309	0.9	0	493	7137	5660	2295	7630		1.44	Si
SLV 1	ini.	1969.51	-7585	0.9	0	493	7137	5660	2295	7630		1.01	Si
SLV 1	fin.	-1687.9	-5690	0.9	0	493	7137	5660	2295	7630		1.34	Si
SLV 16	ini.	-2652.52	6841	0.9	0	493	7137	5660	2295	7630		1.12	Si
SLV 16	fin.	2729.72	9183	0.9	0	493	7137	5660	2295	7630		0.83	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF SLV	0.917	SLV 13	No
V SLV	0.757	SLV 13	No
PF SLU	3.554	SLU 83	Si
V SLU	2.191	SLU 83	Si



## Trave di accoppiamento 62

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-2.233	-3.314	1.11	2.01	0.9	-3.233	-3.314	1.11	2.01	0.9	1	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em <sub>-</sub>	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 70	ini.	313.44	-1893	-0.000164	0.0001872	0.0035	0.9		2959	2959	No	9.44	Si
SLU 70	fin.	45.46	-1151	-0.0000224	0.0001872	0.0035	0.9		2959	2959	No	65.1	Si
SLU 66	ini.	311.5	-1870	-0.0001629	0.0001872	0.0035	0.9		2959	2959	No	9.5	Si
SLU 66	fin.	40.74	-1131	-0.0000201	0.0001872	0.0035	0.9		2959	2959	No	72.63	Si
SLU 73	ini.	312.8	-1990	-0.0001637	0.0001872	0.0035	0.9		2959	2959	No	9.46	Si
SLU 73	fin.	53.68	-1236	-0.0000265	0.0001872	0.0035	0.9		2959	2959	No	55.12	Si
SLU 75	ini.	313.63	-2021	-0.0001641	0.0001872	0.0035	0.9		2959	2959	No	9.43	Si
SLU 75	fin.	62.04	-1267	-0.0000307	0.0001872	0.0035	0.9		2959	2959	No	47.69	Si
SLU 68	ini.	312.61	-1862	-0.0001636	0.0001872	0.0035	0.9		2959	2959	No	9.47	Si
SLU 68	fin.	37.1	-1121	-0.0000183	0.0001872	0.0035	0.9		2959	2959	No	79.77	Si
SLU 78	ini.	311.74	-2040	-0.0001631	0.0001872	0.0035	0.9		2959	2959	No	9.49	Si
SLU 78	fin.	69.97	-1290	-0.0000347	0.0001872	0.0035	0.9		2959	2959	No	42.29	Si
SLU 74	ini.	309.8	-2016	-0.000162	0.0001872	0.0035	0.9		2959	2959	No	9.55	Si
SLU 74	fin.	65.25	-1270	-0.0000323	0.0001872	0.0035	0.9		2959	2959	No	45.35	Si
SLU 65	ini.	314.5	-1843	-0.0001646	0.0001872	0.0035	0.9		2959	2959	No	9.41	Si
SLU 65	fin.	29.17	-1097	-0.0000143	0.0001872	0.0035	0.9		2959	2959	No	101.45	Si
SLU 67	ini.	315.33	-1875	-0.0001651	0.0001872	0.0035	0.9		2959	2959	No	9.38	Si
SLU 67	fin.	37.53	-1128	-0.0000185	0.0001872	0.0035	0.9		2959	2959	No	78.85	Si
SLU 76	ini.	310.91	-2008	-0.0001626	0.0001872	0.0035	0.9		2959	2959	No	9.52	Si
SLU 76	fin.	61.61	-1260	-0.0000305	0.0001872	0.0035	0.9		2959	2959	No	48.03	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	f <sub>vd</sub>	V <sub>t</sub>	V <sub>t,f</sub>	V <sub>t,c</sub>	V <sub>t,c int.</sub>	V <sub>t,R</sub>	incremento > 50%	c.s.	Verifica
SLU 70	ini.	313.44	-871	0.9	0	329	7137	3773	2295	6068	No	6.97	Si
SLU 70	fin.	45.46	-81	0.9	0	329	7137	3773	2295	6068	No	75.36	Si
SLU 65	ini.	314.5	-854	0.9	0	329	7137	3773	2295	6068	No	7.11	Si
SLU 65	fin.	29.17	-145	0.9	0	329	7137	3773	2295	6068	No	41.73	Si
SLU 78	ini.	311.74	-831	0.9	0	329	7137	3773	2295	6068	No	7.3	Si
SLU 78	fin.	69.97	-41	0.9	0	329	7137	3773	2295	6068	No	147.34	Si
SLU 69	ini.	309.61	-859	0.9	0	329	7137	3773	2295	6068	No	7.06	Si
SLU 69	fin.	48.67	-71	0.9	0	329	7137	3773	2295	6068	No	85.71	Si
SLU 68	ini.	312.61	-856	0.9	0	329	7137	3773	2295	6068	No	7.09	Si
SLU 68	fin.	37.1	-115	0.9	0	329	7137	3773	2295	6068	No	52.72	Si
SLU 71	ini.	304.34	-840	0.9	0	329	7137	3773	2295	6068	No	7.22	Si
SLU 71	fin.	50.38	-69	0.9	0	329	7137	3773	2295	6068	No	88.48	Si
SLU 72	ini.	308.17	-851	0.9	0	329	7137	3773	2295	6068	No	7.13	Si
SLU 72	fin.	47.17	-78	0.9	0	329	7137	3773	2295	6068	No	77.5	Si
SLU 64	ini.	308.12	-835	0.9	0	329	7137	3773	2295	6068	No	7.27	Si
SLU 64	fin.	34.52	-129	0.9	0	329	7137	3773	2295	6068	No	46.96	Si
SLU 66	ini.	311.5	-857	0.9	0	329	7137	3773	2295	6068	No	7.08	Si
SLU 66	fin.	40.74	-101	0.9	0	329	7137	3773	2295	6068	No	60.01	Si
SLU 67	ini.	315.33	-868	0.9	0	329	7137	3773	2295	6068	No	6.99	Si
SLU 67	fin.	37.53	-111	0.9	0	329	7137	3773	2295	6068	No	54.75	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 8	ini.	1035	-3733	-0.0006192	0.0002807	0.0035	0.9		2989.59	2989.59		2.89	Si
SLV 8	fin.	-483.6	-1611	-0.0002554	0.0002807	0.0035	0.9		2995.37	2995.37		6.19	Si
SLV 16	ini.	-1357.41	-300	-0.0008702	0.0002807	0.0035	0.9		2995.37	2995.37		2.21	Si
SLV 16	fin.	1615.66	-3525	-0.0010994	0.0002807	0.0035	0.9		2989.59	2989.59		1.85	Si
SLV 15	ini.	-1617.56	34	-0.0010984	0.0002807	0.0035	0.9		2995.37	2995.37		1.85	Si
SLV 15	fin.	1844.22	-3795	-0.0013233	0.0002807	0.0035	0.9		2989.59	2989.59		1.62	Si
SLV 2	ini.	2076.57	-2857	-0.001581	0.0002807	0.0035	0.9		2989.59	2989.59		1.44	Si
SLV 2	fin.	-1776.47	2066	-0.0012511	0.0002807	0.0035	0.9		2995.37	2995.37		1.69	Si
SLV 3	ini.	1930.03	-3530	-0.0014143	0.0002807	0.0035	0.9		2989.59	2989.59		1.55	Si
SLV 3	fin.	-1512.04	875	-0.0010029	0.0002807	0.0035	0.9		2995.37	2995.37		1.98	Si
SLV 13	ini.	-1731.16	1041	-0.0012064	0.0002807	0.0035	0.9		2995.37	2995.37		1.73	Si
SLV 13	fin.	1808.36	-2875	-0.0012865	0.0002807	0.0035	0.9		2989.59	2989.59		1.65	Si
SLD 4	ini.	1065	-2449	-0.0006415	0.0002807	0.0035	0.9		2989.59	2989.59		2.81	Si
SLD 4	fin.	-723.14	0	-0.000402	0.0002807	0.0035	0.9		2995.37	2995.37		4.14	Si
SLV 1	ini.	1816.42	-2522	-0.0012947	0.0002807	0.0035	0.9		2989.59	2989.59		1.65	Si
SLV 1	fin.	-1547.91	1796	-0.0010349	0.0002807	0.0035	0.9		2995.37	2995.37		1.94	Si
SLV 4	ini.	2190.18	-3864	-0.0017223	0.0002807	0.0035	0.9		2989.59	2989.59		1.36	Si
SLV 4	fin.	-1740.6	1145	-0.0012156	0.0002807	0.0035	0.9		2995.37	2995.37		1.72	Si
SLV 14	ini.	-1471.01	707	-0.0009668	0.0002807	0.0035	0.9		2995.37	2995.37		2.04	Si
SLV 14	fin.	1579.8	-2605	-0.0010664	0.0002807	0.0035	0.9		2989.59	2989.59		1.89	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 2	ini.	2076.57	-5734	0.9	0	493	7137	5660	2295	7630		1.33	Si
SLV 2	fin.	-1776.47	-6072	0.9	0	493	7137	5660	2295	7630		1.26	Si
SLV 3	ini.	1930.03	-5465	0.9	0	493	7137	5660	2295	7630		1.4	Si
SLV 3	fin.	-1512.04	-4975	0.9	0	493	7137	5660	2295	7630		1.53	Si
SLV 4	ini.	2190.18	-6229	0.9	0	493	7137	5660	2295	7630		1.22	Si
SLV 4	fin.	-1740.6	-5673	0.9	0	493	7137	5660	2295	7630		1.34	Si
SLD 4	ini.	1065	-3002	0.9	0	493	7137	5660	2295	7630		2.54	Si
SLD 4	fin.	-723.14	-2469	0.9	0	493	7137	5660	2295	7630		3.09	Si
SLV 1	ini.	1816.42	-4970	0.9	0	493	7137	5660	2295	7630		1.54	Si
SLV 1	fin.	-1547.91	-5374	0.9	0	493	7137	5660	2295	7630		1.42	Si
SLV 8	ini.	1035	-3182	0.9	0	493	7137	5660	2295	7630		2.4	Si
SLV 8	fin.	-483.6	-1275	0.9	0	493	7137	5660	2295	7630		5.98	Si
SLV 13	ini.	-1731.16	5000	0.9	0	493	7137	5660	2295	7630		1.53	Si
SLV 13	fin.	1808.36	5508	0.9	0	493	7137	5660	2295	7630		1.39	Si
SLV 16	ini.	-1357.41	3741	0.9	0	493	7137	5660	2295	7630		2.04	Si
SLV 16	fin.	1615.66	5210	0.9	0	493	7137	5660	2295	7630		1.46	Si
SLV 15	ini.	-1617.56	4505	0.9	0	493	7137	5660	2295	7630		1.69	Si
SLV 15	fin.	1844.22	5907	0.9	0	493	7137	5660	2295	7630		1.29	Si
SLV 14	ini.	-1471.01	4236	0.9	0	493	7137	5660	2295	7630		1.8	Si
SLV 14	fin.	1579.8	4811	0.9	0	493	7137	5660	2295	7630		1.59	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.365	SLV 4	Si
V_SLV	1.225	SLV 4	Si
PF_SLU	9.384	SLU 67	Si
V_SLU	6.969	SLU 70	Si

## Trave di accoppiamento 63

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-2.013	5.826	1.11	2.01	0.9	-3.013	5.826	1.11	2.01	0.9	1	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb_	fhk	fvk0	fmedio	t0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 79	ini.	912.18	-2810	-0.0005634	0.0001872	0.0035	0.9		2959	2959	No	3.24	Si
SLU 79	fin.	-304.43	-1853	-0.0001586	0.0001872	0.0035	0.9		2964.67	2964.67	No	9.74	Si
SLU 74	ini.	907.02	-2794	-0.0005595	0.0001872	0.0035	0.9		2959	2959	No	3.26	Si
SLU 74	fin.	-303.29	-1842	-0.000158	0.0001872	0.0035	0.9		2964.67	2964.67	No	9.78	Si
SLU 75	ini.	904.82	-2826	-0.0005578	0.0001872	0.0035	0.9		2959	2959	No	3.27	Si
SLU 75	fin.	-296.72	-1880	-0.0001543	0.0001872	0.0035	0.9		2964.67	2964.67	No	9.99	Si
SLU 84	ini.	906.37	-2876	-0.000559	0.0001872	0.0035	0.9		2959	2959	No	3.26	Si
SLU 84	fin.	-286.29	-1939	-0.0001485	0.0001872	0.0035	0.9		2964.67	2964.67	No	10.36	Si
SLU 77	ini.	917.06	-2831	-0.0005671	0.0001872	0.0035	0.9		2959	2959	No	3.23	Si
SLU 77	fin.	-303.77	-1870	-0.0001583	0.0001872	0.0035	0.9		2964.67	2964.67	No	9.76	Si
SLU 69	ini.	902.06	-2667	-0.0005558	0.0001872	0.0035	0.9		2959	2959	No	3.28	Si
SLU 69	fin.	-329.66	-1693	-0.0001729	0.0001872	0.0035	0.9		2964.67	2964.67	No	8.99	Si
SLU 70	ini.	899.85	-2699	-0.0005541	0.0001872	0.0035	0.9		2959	2959	No	3.29	Si
SLU 70	fin.	-323.09	-1731	-0.0001692	0.0001872	0.0035	0.9		2964.67	2964.67	No	9.18	Si
SLU 83	ini.	908.57	-2844	-0.0005607	0.0001872	0.0035	0.9		2959	2959	No	3.26	Si
SLU 83	fin.	-292.85	-1900	-0.0001522	0.0001872	0.0035	0.9		2964.67	2964.67	No	10.12	Si
SLU 78	ini.	914.86	-2862	-0.0005654	0.0001872	0.0035	0.9		2959	2959	No	3.23	Si
SLU 78	fin.	-297.21	-1908	-0.0001546	0.0001872	0.0035	0.9		2964.67	2964.67	No	9.98	Si
SLU 80	ini.	909.98	-2842	-0.0005617	0.0001872	0.0035	0.9		2959	2959	No	3.25	Si
SLU 80	fin.	-297.86	-1891	-0.000155	0.0001872	0.0035	0.9		2964.67	2964.67	No	9.95	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 48	ini.	878.07	-1719	0.9	0	329	7137	3773	2295	6068	No	3.53	Si
SLU 48	fin.	-351.39	-1543	0.9	0	329	7137	3773	2295	6068	No	3.93	Si
SLU 50	ini.	873.19	-1708	0.9	0	329	7137	3773	2295	6068	No	3.55	Si
SLU 50	fin.	-352.05	-1543	0.9	0	329	7137	3773	2295	6068	No	3.93	Si
SLU 66	ini.	892.02	-1717	0.9	0	329	7137	3773	2295	6068	No	3.53	Si
SLU 66	fin.	-329.17	-1513	0.9	0	329	7137	3773	2295	6068	No	4.01	Si
SLU 71	ini.	897.18	-1728	0.9	0	329	7137	3773	2295	6068	No	3.51	Si
SLU 71	fin.	-330.32	-1518	0.9	0	329	7137	3773	2295	6068	No	4	Si
SLU 69	ini.	902.06	-1739	0.9	0	329	7137	3773	2295	6068	No	3.49	Si
SLU 69	fin.	-329.66	-1519	0.9	0	329	7137	3773	2295	6068	No	4	Si
SLU 77	ini.	917.06	-1734	0.9	0	329	7137	3773	2295	6068	No	3.5	Si
SLU 77	fin.	-303.77	-1483	0.9	0	329	7137	3773	2295	6068	No	4.09	Si
SLU 56	ini.	893.07	-1714	0.9	0	329	7137	3773	2295	6068	No	3.54	Si
SLU 56	fin.	-325.51	-1508	0.9	0	329	7137	3773	2295	6068	No	4.02	Si
SLU 58	ini.	888.19	-1704	0.9	0	329	7137	3773	2295	6068	No	3.56	Si
SLU 58	fin.	-326.16	-1507	0.9	0	329	7137	3773	2295	6068	No	4.03	Si
SLU 74	ini.	907.02	-1712	0.9	0	329	7137	3773	2295	6068	No	3.54	Si
SLU 74	fin.	-303.29	-1477	0.9	0	329	7137	3773	2295	6068	No	4.11	Si
SLU 79	ini.	912.18	-1724	0.9	0	329	7137	3773	2295	6068	No	3.52	Si
SLU 79	fin.	-304.43	-1482	0.9	0	329	7137	3773	2295	6068	No	4.09	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 3	ini.	2310.3	-3560	-0.0018869	0.0002807	0.0035	0.9		2989.59	2989.59		1.29	Si
SLV 3	fin.	-1724.56	-386	-0.0011999	0.0002807	0.0035	0.9		2995.37	2995.37		1.74	Si
SLV 7	ini.	1538.59	-2574	-0.001029	0.0002807	0.0035	0.9		2989.59	2989.59		1.94	Si
SLV 7	fin.	-1048.63	-714	-0.0006278	0.0002807	0.0035	0.9		2995.37	2995.37		2.86	Si
SLD 1	ini.	1281.8	-2645	-0.0008101	0.0002807	0.0035	0.9		2989.59	2989.59		2.33	Si
SLD 1	fin.	-792.07	-960	-0.0004473	0.0002807	0.0035	0.9		2995.37	2995.37		3.78	Si
SLV 1	ini.	2098.59	-3527	-0.0016074	0.0002807	0.0035	0.9		2989.59	2989.59		1.42	Si
SLV 1	fin.	-1519.15	-560	-0.0010092	0.0002807	0.0035	0.9		2995.37	2995.37		1.97	Si
SLV 8	ini.	1341.42	-2332	-0.000859	0.0002807	0.0035	0.9		2989.59	2989.59		2.23	Si
SLV 8	fin.	-883.48	-772	-0.0005095	0.0002807	0.0035	0.9		2995.37	2995.37		3.39	Si
SLV 14	ini.	-962.87	-415	-0.0005654	0.0002807	0.0035	0.9		2995.37	2995.37		3.11	Si
SLV 14	fin.	1223.11	-2126	-0.0007631	0.0002807	0.0035	0.9		2989.59	2989.59		2.44	Si
SLD 4	ini.	1242.98	-2499	-0.0007789	0.0002807	0.0035	0.9		2989.59	2989.59		2.41	Si
SLD 4	fin.	-771.63	-921	-0.0004338	0.0002807	0.0035	0.9		2995.37	2995.37		3.88	Si
SLD 3	ini.	1374.06	-2660	-0.0008862	0.0002807	0.0035	0.9		2989.59	2989.59		2.18	Si
SLD 3	fin.	-881.43	-883	-0.0005081	0.0002807	0.0035	0.9		2995.37	2995.37		3.4	Si
SLV 2	ini.	1793.32	-3151	-0.0012712	0.0002807	0.0035	0.9		2989.59	2989.59		1.67	Si
SLV 2	fin.	-1263.46	-649	-0.0007934	0.0002807	0.0035	0.9		2995.37	2995.37		2.37	Si
SLV 4	ini.	2005.04	-3184	-0.0014977	0.0002807	0.0035	0.9		2989.59	2989.59		1.49	Si
SLV 4	fin.	-1468.87	-474	-0.000965	0.0002807	0.0035	0.9		2995.37	2995.37		2.04	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 3	ini.	2310.3	-5736	0.9	0	493	7137	5660	2295	7630		1.33	Si
SLV 3	fin.	-1724.56	-5728	0.9	0	493	7137	5660	2295	7630		1.33	Si
SLV 4	ini.	2005.04	-4955	0.9	0	493	7137	5660	2295	7630		1.54	Si
SLV 4	fin.	-1468.87	-4981	0.9	0	493	7137	5660	2295	7630		1.53	Si
SLD 1	ini.	1281.8	-2775	0.9	0	493	7137	5660	2295	7630		2.75	Si
SLD 1	fin.	-792.07	-2650	0.9	0	493	7137	5660	2295	7630		2.88	Si
SLV 14	ini.	-962.87	3155	0.9	0	493	7137	5660	2295	7630		2.42	Si
SLV 14	fin.	1223.11	3419	0.9	0	493	7137	5660	2295	7630		2.23	Si
SLD 4	ini.	1242.98	-2857	0.9	0	493	7137	5660	2295	7630		2.67	Si
SLD 4	fin.	-771.63	-2793	0.9	0	493	7137	5660	2295	7630		2.73	Si
SLD 3	ini.	1374.06	-3193	0.9	0	493	7137	5660	2295	7630		2.39	Si
SLD 3	fin.	-881.43	-3114	0.9	0	493	7137	5660	2295	7630		2.45	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 2	ini.	1793.32	-3989	0.9	0	493	7137	5660	2295	7630		1.91	Si
SLV 2	fin.	-1263.46	-3917	0.9	0	493	7137	5660	2295	7630		1.95	Si
SLV 8	ini.	1341.42	-3719	0.9	0	493	7137	5660	2295	7630		2.05	Si
SLV 8	fin.	-883.48	-3786	0.9	0	493	7137	5660	2295	7630		2.02	Si
SLV 1	ini.	2098.59	-4770	0.9	0	493	7137	5660	2295	7630		1.6	Si
SLV 1	fin.	-1519.15	-4664	0.9	0	493	7137	5660	2295	7630		1.64	Si
SLV 7	ini.	1538.59	-4223	0.9	0	493	7137	5660	2295	7630		1.81	Si
SLV 7	fin.	-1048.63	-4269	0.9	0	493	7137	5660	2295	7630		1.79	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.294	SLV 3	Si
V_SLV	1.33	SLV 3	Si
PF_SLU	3.227	SLU 77	Si
V_SLU	3.49	SLU 69	Si

## Trave di accoppiamento 64

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-2.013	5.826	3.91	4.83	0.92	-3.013	5.826	3.91	4.83	0.92	1	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fhk	fvk0	fhmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim.conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim.conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 79	ini.	-48.1	-1239	-0.0000226	0.0001872	0.0035	0.92		3115.25	3115.25	No	64.76	Si
SLU 79	fin.	-1073.45	-3017	-0.000649	0.0001872	0.0035	0.92		3115.25	3115.25	No	2.9	Si
SLU 78	ini.	-63.9	-1307	-0.0000301	0.0001872	0.0035	0.92		3115.25	3115.25	No	48.75	Si
SLU 78	fin.	-1075.8	-3059	-0.0006508	0.0001872	0.0035	0.92		3115.25	3115.25	No	2.9	Si
SLU 82	ini.	-71.33	-1321	-0.0000337	0.0001872	0.0035	0.92		3115.25	3115.25	No	43.67	Si
SLU 82	fin.	-1060.86	-3027	-0.0006395	0.0001872	0.0035	0.92		3115.25	3115.25	No	2.94	Si
SLU 74	ini.	-46.75	-1226	-0.000022	0.0001872	0.0035	0.92		3115.25	3115.25	No	66.64	Si
SLU 74	fin.	-1067.25	-2996	-0.0006443	0.0001872	0.0035	0.92		3115.25	3115.25	No	2.92	Si
SLU 83	ini.	-62.42	-1300	-0.0000294	0.0001872	0.0035	0.92		3115.25	3115.25	No	49.9	Si
SLU 83	fin.	-1075.66	-3051	-0.0006507	0.0001872	0.0035	0.92		3115.25	3115.25	No	2.9	Si
SLU 81	ini.	-58.3	-1270	-0.0000275	0.0001872	0.0035	0.92		3115.25	3115.25	No	53.43	Si
SLU 81	fin.	-1063.98	-3008	-0.0006419	0.0001872	0.0035	0.92		3115.25	3115.25	No	2.93	Si
SLU 75	ini.	-59.78	-1278	-0.0000282	0.0001872	0.0035	0.92		3115.25	3115.25	No	52.11	Si
SLU 75	fin.	-1064.12	-3015	-0.000642	0.0001872	0.0035	0.92		3115.25	3115.25	No	2.93	Si
SLU 84	ini.	-75.45	-1351	-0.0000357	0.0001872	0.0035	0.92		3115.25	3115.25	No	41.29	Si
SLU 84	fin.	-1072.54	-3071	-0.0006483	0.0001872	0.0035	0.92		3115.25	3115.25	No	2.9	Si
SLU 80	ini.	-61.13	-1290	-0.0000288	0.0001872	0.0035	0.92		3115.25	3115.25	No	50.96	Si
SLU 80	fin.	-1070.32	-3036	-0.0006466	0.0001872	0.0035	0.92		3115.25	3115.25	No	2.91	Si
SLU 77	ini.	-50.87	-1256	-0.0000239	0.0001872	0.0035	0.92		3115.25	3115.25	No	61.24	Si
SLU 77	fin.	-1078.92	-3039	-0.0006531	0.0001872	0.0035	0.92		3115.25	3115.25	No	2.89	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 81	ini.	-58.3	1553	0.92	0	343	7295	3857	2346	6203	No	3.99	Si
SLU 81	fin.	-1063.98	-4135	0.92	0	343	7295	3857	2346	6203	No	1.5	Si
SLU 77	ini.	-50.87	1488	0.92	0	343	7295	3857	2346	6203	No	4.17	Si
SLU 77	fin.	-1078.92	-4164	0.92	0	343	7295	3857	2346	6203	No	1.49	Si
SLU 78	ini.	-63.9	1510	0.92	0	343	7295	3857	2346	6203	No	4.11	Si
SLU 78	fin.	-1075.8	-4128	0.92	0	343	7295	3857	2346	6203	No	1.5	Si
SLU 83	ini.	-62.42	1590	0.92	0	343	7295	3857	2346	6203	No	3.9	Si
SLU 83	fin.	-1075.66	-4182	0.92	0	343	7295	3857	2346	6203	No	1.48	Si
SLU 84	ini.	-75.45	1613	0.92	0	343	7295	3857	2346	6203	No	3.85	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 84	fin.	-1072.54	-4146	0.92	0	343	7295	3857	2346	6203	No	1.5	Si
SLU 79	ini.	-48.1	1466	0.92	0	343	7295	3857	2346	6203	No	4.23	Si
SLU 79	fin.	-1073.45	-4142	0.92	0	343	7295	3857	2346	6203	No	1.5	Si
SLU 82	ini.	-71.33	1576	0.92	0	343	7295	3857	2346	6203	No	3.94	Si
SLU 82	fin.	-1060.86	-4099	0.92	0	343	7295	3857	2346	6203	No	1.51	Si
SLU 80	ini.	-61.13	1488	0.92	0	343	7295	3857	2346	6203	No	4.17	Si
SLU 80	fin.	-1070.32	-4105	0.92	0	343	7295	3857	2346	6203	No	1.51	Si
SLU 74	ini.	-46.75	1451	0.92	0	343	7295	3857	2346	6203	No	4.28	Si
SLU 74	fin.	-1067.25	-4117	0.92	0	343	7295	3857	2346	6203	No	1.51	Si
SLU 75	ini.	-59.78	1473	0.92	0	343	7295	3857	2346	6203	No	4.21	Si
SLU 75	fin.	-1064.12	-4081	0.92	0	343	7295	3857	2346	6203	No	1.52	Si

**Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche**

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 1	ini.	409.55	257	-0.0002033	0.0002807	0.0035	0.92		3140.9	3140.9		7.67	Si
SLD 1	fin.	-1471.96	-3073	-0.0009101	0.0002807	0.0035	0.92		3146.83	3146.83		2.14	Si
SLV 3	ini.	1128.54	2269	-0.0006506	0.0002807	0.0035	0.92		3140.9	3140.9		2.78	Si
SLV 3	fin.	-2547.96	-4511	-0.0020655	0.0002807	0.0035	0.92		3146.83	3146.83		1.24	Si
SLV 4	ini.	948.01	1820	-0.0005256	0.0002807	0.0035	0.92		3140.9	3140.9		3.31	Si
SLV 4	fin.	-2235.99	-4054	-0.0016464	0.0002807	0.0035	0.92		3146.83	3146.83		1.41	Si
SLV 1	ini.	961.06	1625	-0.0005343	0.0002807	0.0035	0.92		3140.9	3140.9		3.27	Si
SLV 1	fin.	-2395.76	-4347	-0.0018474	0.0002807	0.0035	0.92		3146.83	3146.83		1.31	Si
SLD 2	ini.	332.03	64	-0.0001627	0.0002807	0.0035	0.92		3140.9	3140.9		9.46	Si
SLD 2	fin.	-1338.01	-2877	-0.0008044	0.0002807	0.0035	0.92		3146.83	3146.83		2.35	Si
SLV 2	ini.	780.53	1176	-0.0004171	0.0002807	0.0035	0.92		3140.9	3140.9		4.02	Si
SLV 2	fin.	-2083.8	-3890	-0.0014754	0.0002807	0.0035	0.92		3146.83	3146.83		1.51	Si
SLD 3	ini.	482.52	538	-0.0002426	0.0002807	0.0035	0.92		3140.9	3140.9		6.51	Si
SLD 3	fin.	-1537.68	-3143	-0.000964	0.0002807	0.0035	0.92		3146.83	3146.83		2.05	Si
SLV 7	ini.	623.2	1204	-0.000322	0.0002807	0.0035	0.92		3140.9	3140.9		5.04	Si
SLV 7	fin.	-1597.32	-3166	-0.0010141	0.0002807	0.0035	0.92		3146.83	3146.83		1.97	Si
SLD 4	ini.	405	345	-0.0002009	0.0002807	0.0035	0.92		3140.9	3140.9		7.76	Si
SLD 4	fin.	-1403.73	-2947	-0.0008556	0.0002807	0.0035	0.92		3146.83	3146.83		2.24	Si
SLV 8	ini.	506.6	914	-0.0002559	0.0002807	0.0035	0.92		3140.9	3140.9		6.2	Si
SLV 8	fin.	-1395.83	-2871	-0.0008494	0.0002807	0.0035	0.92		3146.83	3146.83		2.25	Si

**Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215**

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 3	ini.	1128.54	-4934	0.92	0	515	7295	5785	2346	7810		1.58	Si
SLV 3	fin.	-2547.96	-7857	0.92	0	515	7295	5785	2346	7810		0.99	No
SLV 1	ini.	961.06	-3890	0.92	0	515	7295	5785	2346	7810		2.01	Si
SLV 1	fin.	-2395.76	-7947	0.92	0	515	7295	5785	2346	7810		0.98	No
SLV 4	ini.	948.01	-4038	0.92	0	515	7295	5785	2346	7810		1.93	Si
SLV 4	fin.	-2235.99	-6929	0.92	0	515	7295	5785	2346	7810		1.13	Si
SLV 2	ini.	780.53	-2993	0.92	0	515	7295	5785	2346	7810		2.61	Si
SLV 2	fin.	-2083.8	-7019	0.92	0	515	7295	5785	2346	7810		1.11	Si
SLV 14	ini.	-1130.22	6553	0.92	0	515	7295	5785	2346	7810		1.19	Si
SLV 14	fin.	981.81	1928	0.92	0	515	7295	5785	2346	7810		4.05	Si
SLD 1	ini.	409.55	-1192	0.92	0	515	7295	5785	2346	7810		6.55	Si
SLD 1	fin.	-1471.96	-5094	0.92	0	515	7295	5785	2346	7810		1.53	Si
SLV 13	ini.	-949.69	5656	0.92	0	515	7295	5785	2346	7810		1.38	Si
SLV 13	fin.	669.85	1000	0.92	0	515	7295	5785	2346	7810		7.81	Si
SLV 16	ini.	-962.74	5508	0.92	0	515	7295	5785	2346	7810		1.42	Si
SLV 16	fin.	829.61	2018	0.92	0	515	7295	5785	2346	7810		3.87	Si
SLD 3	ini.	482.52	-1652	0.92	0	515	7295	5785	2346	7810		4.73	Si
SLD 3	fin.	-1537.68	-5056	0.92	0	515	7295	5785	2346	7810		1.54	Si
SLV 5	ini.	64.94	829	0.92	0	515	7295	5785	2346	7810		9.42	Si
SLV 5	fin.	-1090	-4756	0.92	0	515	7295	5785	2346	7810		1.64	Si

**Tabella dei coefficienti di sicurezza minimi**

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.235	SLV 3	Si
V_SLV	0.983	SLV 1	No
PF_SLU	2.887	SLU 77	Si
V_SLU	1.483	SLU 83	Si

**Trave di accoppiamento 65**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati geometrici**

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-24.633	1.266	6.93	8.35	1.42	-24.633	2.066	6.93	8.35	1.42	0.8	0.28	3500

**Caratteristiche del materiale**

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC





Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma_{F,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 69	ini.	-265.08	-2396	-0.000053	0.0001872	0.0035	1.42		7359.91	7359.91	No	27.76	Si
SLU 69	fin.	353.69	-1568	-0.0000713	0.0001872	0.0035	1.42		7350.79	7350.79	No	20.78	Si
SLU 45	ini.	-253.32	-2144	-0.0000506	0.0001872	0.0035	1.42		7359.91	7359.91	No	29.05	Si
SLU 45	fin.	350.16	-1331	-0.0000706	0.0001872	0.0035	1.42		7350.79	7350.79	No	20.99	Si
SLU 71	ini.	-266	-2372	-0.0000532	0.0001872	0.0035	1.42		7359.91	7359.91	No	27.67	Si
SLU 71	fin.	353.2	-1544	-0.0000712	0.0001872	0.0035	1.42		7350.79	7350.79	No	20.81	Si
SLU 51	ini.	-256.11	-2177	-0.0000512	0.0001872	0.0035	1.42		7359.91	7359.91	No	28.74	Si
SLU 51	fin.	342.69	-1368	-0.0000691	0.0001872	0.0035	1.42		7350.79	7350.79	No	21.45	Si
SLU 70	ini.	-255.98	-2380	-0.0000512	0.0001872	0.0035	1.42		7359.91	7359.91	No	28.75	Si
SLU 70	fin.	338.17	-1580	-0.0000681	0.0001872	0.0035	1.42		7350.79	7350.79	No	21.74	Si
SLU 50	ini.	-265.22	-2194	-0.000053	0.0001872	0.0035	1.42		7359.91	7359.91	No	27.75	Si
SLU 50	fin.	358.2	-1356	-0.0000723	0.0001872	0.0035	1.42		7350.79	7350.79	No	20.52	Si
SLU 43	ini.	-243.26	-2046	-0.0000486	0.0001872	0.0035	1.42		7359.91	7359.91	No	30.26	Si
SLU 43	fin.	341.13	-1259	-0.0000687	0.0001872	0.0035	1.42		7350.79	7350.79	No	21.55	Si
SLU 66	ini.	-254.1	-2322	-0.0000508	0.0001872	0.0035	1.42		7359.91	7359.91	No	28.96	Si
SLU 66	fin.	345.16	-1519	-0.0000696	0.0001872	0.0035	1.42		7350.79	7350.79	No	21.3	Si
SLU 48	ini.	-264.3	-2218	-0.0000529	0.0001872	0.0035	1.42		7359.91	7359.91	No	27.85	Si
SLU 48	fin.	358.69	-1379	-0.0000724	0.0001872	0.0035	1.42		7350.79	7350.79	No	20.49	Si
SLU 49	ini.	-255.2	-2202	-0.000051	0.0001872	0.0035	1.42		7359.91	7359.91	No	28.84	Si
SLU 49	fin.	343.17	-1392	-0.0000692	0.0001872	0.0035	1.42		7350.79	7350.79	No	21.42	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 84	ini.	-220.87	4810	1.42	0	576	6344	5953	3621	6920	No	1.44	Si
SLU 84	fin.	281.54	-1022	1.42	0	576	6344	5953	3621	6920	No	6.77	Si
SLU 83	ini.	-229.98	4865	1.42	0	576	6344	5953	3621	6920	No	1.42	Si
SLU 83	fin.	297.05	-966	1.42	0	576	6344	5953	3621	6920	No	7.16	Si
SLU 74	ini.	-236.58	4854	1.42	0	576	6344	5953	3621	6920	No	1.43	Si
SLU 74	fin.	311.82	-874	1.42	0	576	6344	5953	3621	6920	No	7.92	Si
SLU 77	ini.	-247.56	4980	1.42	0	576	6344	5953	3621	6920	No	1.39	Si
SLU 77	fin.	320.36	-871	1.42	0	576	6344	5953	3621	6920	No	7.94	Si
SLU 69	ini.	-265.08	4848	1.42	0	576	6344	5953	3621	6920	No	1.43	Si
SLU 69	fin.	353.69	-597	1.42	0	576	6344	5953	3621	6920	No	11.58	Si
SLU 80	ini.	-239.36	4879	1.42	0	576	6344	5953	3621	6920	No	1.42	Si
SLU 80	fin.	304.36	-902	1.42	0	576	6344	5953	3621	6920	No	7.67	Si
SLU 71	ini.	-266	4803	1.42	0	576	6344	5953	3621	6920	No	1.44	Si
SLU 71	fin.	353.2	-573	1.42	0	576	6344	5953	3621	6920	No	12.09	Si
SLU 75	ini.	-227.47	4799	1.42	0	576	6344	5953	3621	6920	No	1.44	Si
SLU 75	fin.	296.31	-930	1.42	0	576	6344	5953	3621	6920	No	7.44	Si
SLU 79	ini.	-248.47	4934	1.42	0	576	6344	5953	3621	6920	No	1.4	Si
SLU 79	fin.	319.87	-846	1.42	0	576	6344	5953	3621	6920	No	8.18	Si
SLU 78	ini.	-238.45	4924	1.42	0	576	6344	5953	3621	6920	No	1.41	Si
SLU 78	fin.	304.84	-927	1.42	0	576	6344	5953	3621	6920	No	7.46	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 10	ini.	-847.7	-2944	-0.000175	0.0002807	0.0035	1.42		7346.34	7346.34		8.67	Si
SLV 10	fin.	829.73	-1109	-0.0001713	0.0002807	0.0035	1.42		7337.02	7337.02		8.84	Si
SLD 9	ini.	-532.03	-2361	-0.0001076	0.0002807	0.0035	1.42		7346.34	7346.34		13.81	Si
SLD 9	fin.	590.56	-1061	-0.00012	0.0002807	0.0035	1.42		7337.02	7337.02		12.42	Si
SLV 8	ini.	611.58	-210	-0.0001244	0.0002807	0.0035	1.42		7337.02	7337.02		12	Si
SLV 8	fin.	-526.44	-1275	-0.0001064	0.0002807	0.0035	1.42		7346.34	7346.34		13.95	Si
SLV 6	ini.	-733.13	-2784	-0.0001502	0.0002807	0.0035	1.42		7346.34	7346.34		10.02	Si
SLV 6	fin.	600.9	-1407	-0.0001222	0.0002807	0.0035	1.42		7337.02	7337.02		12.21	Si
SLV 5	ini.	-862.09	-3036	-0.0001781	0.0002807	0.0035	1.42		7346.34	7346.34		8.52	Si
SLV 5	fin.	797.88	-1271	-0.0001643	0.0002807	0.0035	1.42		7337.02	7337.02		9.2	Si
SLV 9	ini.	-976.66	-3197	-0.0002034	0.0002807	0.0035	1.42		7346.34	7346.34		7.52	Si
SLV 9	fin.	1026.72	-974	-0.0002149	0.0002807	0.0035	1.42		7337.02	7337.02		7.15	Si
SLD 13	ini.	-396	-2072	-0.0000794	0.0002807	0.0035	1.42		7346.34	7346.34		18.55	Si
SLD 13	fin.	553.37	-877	-0.0001122	0.0002807	0.0035	1.42		7337.02	7337.02		13.26	Si
SLV 15	ini.	-271.61	-1780	-0.000054	0.0002807	0.0035	1.42		7346.34	7346.34		27.05	Si
SLV 15	fin.	614.93	-504	-0.0001251	0.0002807	0.0035	1.42		7337.02	7337.02		11.93	Si
SLV 14	ini.	-475.35	-2161	-0.0000958	0.0002807	0.0035	1.42		7346.34	7346.34		15.45	Si
SLV 14	fin.	648.14	-753	-0.0001322	0.0002807	0.0035	1.42		7337.02	7337.02		11.32	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 13	ini.	-675.02	-2552	-0.0001377	0.0002807	0.0035	1.42		7346.34	7346.34		10.88	Si
SLV 13	fin.	953.13	-544	-0.0001985	0.0002807	0.0035	1.42		7337.02	7337.02		7.7	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 5	ini.	-483.11	4697	1.42	0	864	6344	8929	3621	7208		1.53	Si
SLD 5	fin.	492.63	484	1.42	0	864	6344	8929	3621	7208		14.89	Si
SLV 6	ini.	-733.13	5497	1.42	0	864	6344	8929	3621	7208		1.31	Si
SLV 6	fin.	600.9	946	1.42	0	864	6344	8929	3621	7208		7.62	Si
SLV 10	ini.	-847.7	5885	1.42	0	864	6344	8929	3621	7208		1.22	Si
SLV 10	fin.	829.73	1790	1.42	0	864	6344	8929	3621	7208		4.03	Si
SLD 6	ini.	-426.76	4370	1.42	0	864	6344	8929	3621	7208		1.65	Si
SLD 6	fin.	406.56	155	1.42	0	864	6344	8929	3621	7208		46.6	Si
SLV 13	ini.	-675.02	5479	1.42	0	864	6344	8929	3621	7208		1.32	Si
SLV 13	fin.	953.13	2176	1.42	0	864	6344	8929	3621	7208		3.31	Si
SLD 9	ini.	-532.03	4863	1.42	0	864	6344	8929	3621	7208		1.48	Si
SLD 9	fin.	590.56	845	1.42	0	864	6344	8929	3621	7208		8.54	Si
SLV 9	ini.	-976.66	6634	1.42	0	864	6344	8929	3621	7208		1.09	Si
SLV 9	fin.	1026.72	2543	1.42	0	864	6344	8929	3621	7208		2.83	Si
SLV 5	ini.	-862.09	6246	1.42	0	864	6344	8929	3621	7208		1.15	Si
SLV 5	fin.	797.88	1700	1.42	0	864	6344	8929	3621	7208		4.24	Si
SLD 13	ini.	-396	4343	1.42	0	864	6344	8929	3621	7208		1.66	Si
SLD 13	fin.	553.37	665	1.42	0	864	6344	8929	3621	7208		10.85	Si
SLD 10	ini.	-475.69	4536	1.42	0	864	6344	8929	3621	7208		1.59	Si
SLD 10	fin.	504.5	515	1.42	0	864	6344	8929	3621	7208		13.99	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	7.146	SLV 9	Si
V_SLV	1.087	SLV 9	Si
PF_SLU	20.493	SLU 48	Si
V_SLU	1.39	SLU 77	Si

Trave di accoppiamento 66

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-21.813	5.826	4.83	5.73	0.9	-22.713	5.826	4.83	5.73	0.9	0.9	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fnk	fvk0	fnmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 78	ini.	-47.08	-1036	-0.0000232	0.0001872	0.0035	0.9		2964.67	2964.67	No	62.97	Si
SLU 78	fin.	425.68	-1910	-0.0002297	0.0001872	0.0035	0.9		2959	2959	No	6.95	Si
SLU 70	ini.	-79.32	-920	-0.0000393	0.0001872	0.0035	0.9		2964.67	2964.67	No	37.38	Si
SLU 70	fin.	422.62	-1875	-0.0002278	0.0001872	0.0035	0.9		2959	2959	No	7	Si
SLU 79	ini.	-48.8	-1028	-0.0000024	0.0001872	0.0035	0.9		2964.67	2964.67	No	60.75	Si
SLU 79	fin.	424.03	-1901	-0.0002287	0.0001872	0.0035	0.9		2959	2959	No	6.98	Si
SLU 72	ini.	-82.94	-904	-0.0000411	0.0001872	0.0035	0.9		2964.67	2964.67	No	35.75	Si
SLU 72	fin.	421.11	-1864	-0.0002269	0.0001872	0.0035	0.9		2959	2959	No	7.03	Si
SLU 77	ini.	-45.18	-1043	-0.0000223	0.0001872	0.0035	0.9		2964.67	2964.67	No	65.62	Si
SLU 77	fin.	425.54	-1912	-0.0002296	0.0001872	0.0035	0.9		2959	2959	No	6.95	Si
SLU 69	ini.	-77.42	-927	-0.0000384	0.0001872	0.0035	0.9		2964.67	2964.67	No	38.29	Si
SLU 69	fin.	422.48	-1877	-0.0002278	0.0001872	0.0035	0.9		2959	2959	No	7	Si
SLU 71	ini.	-81.03	-911	-0.0000402	0.0001872	0.0035	0.9		2964.67	2964.67	No	36.59	Si
SLU 71	fin.	420.97	-1866	-0.0002268	0.0001872	0.0035	0.9		2959	2959	No	7.03	Si
SLU 56	ini.	-81.26	-910	-0.0000403	0.0001872	0.0035	0.9		2964.67	2964.67	No	36.48	Si



Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 56	fin.	420.64	-1862	-0.0002266	0.0001872	0.0035	0.9		2959	2959	No	7.03	Si
SLU 57	ini.	-83.16	-902	-0.0000413	0.0001872	0.0035	0.9		2964.67	2964.67	No	35.65	Si
SLU 57	fin.	420.78	-1860	-0.0002267	0.0001872	0.0035	0.9		2959	2959	No	7.03	Si
SLU 80	ini.	-50.7	-1020	-0.000025	0.0001872	0.0035	0.9		2964.67	2964.67	No	58.47	Si
SLU 80	fin.	424.17	-1899	-0.0002288	0.0001872	0.0035	0.9		2959	2959	No	6.98	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 71	ini.	-81.03	84	0.9	0	365	7137	3773	2295	6068	No	72.64	Si
SLU 71	fin.	420.97	2801	0.9	0	365	7137	3773	2295	6068	No	2.17	Si
SLU 56	ini.	-81.26	89	0.9	0	365	7137	3773	2295	6068	No	67.97	Si
SLU 56	fin.	420.64	2790	0.9	0	365	7137	3773	2295	6068	No	2.18	Si
SLU 69	ini.	-77.42	63	0.9	0	365	7137	3773	2295	6068	No	95.94	Si
SLU 69	fin.	422.48	2821	0.9	0	365	7137	3773	2295	6068	No	2.15	Si
SLU 48	ini.	-113.49	206	0.9	0	365	7137	3773	2295	6068	No	29.48	Si
SLU 48	fin.	417.58	2792	0.9	0	365	7137	3773	2295	6068	No	2.17	Si
SLU 78	ini.	-47.08	-43	0.9	0	365	7137	3773	2295	6068	No	140.32	Si
SLU 78	fin.	425.68	2816	0.9	0	365	7137	3773	2295	6068	No	2.15	Si
SLU 80	ini.	-50.7	-23	0.9	0	365	7137	3773	2295	6068	No	264.28	Si
SLU 80	fin.	424.17	2796	0.9	0	365	7137	3773	2295	6068	No	2.17	Si
SLU 77	ini.	-45.18	-53	0.9	0	365	7137	3773	2295	6068	No	113.86	Si
SLU 77	fin.	425.54	2819	0.9	0	365	7137	3773	2295	6068	No	2.15	Si
SLU 72	ini.	-82.94	94	0.9	0	365	7137	3773	2295	6068	No	64.84	Si
SLU 72	fin.	421.11	2798	0.9	0	365	7137	3773	2295	6068	No	2.17	Si
SLU 70	ini.	-79.32	73	0.9	0	365	7137	3773	2295	6068	No	82.79	Si
SLU 70	fin.	422.62	2818	0.9	0	365	7137	3773	2295	6068	No	2.15	Si
SLU 79	ini.	-48.8	-33	0.9	0	365	7137	3773	2295	6068	No	183.84	Si
SLU 79	fin.	424.03	2799	0.9	0	365	7137	3773	2295	6068	No	2.17	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 14	ini.	-1147.31	953	-0.0007022	0.0002807	0.0035	0.9		2995.37	2995.37		2.61	Si
SLV 14	fin.	1078.49	-3835	-0.0006516	0.0002807	0.0035	0.9		2989.59	2989.59		2.77	Si
SLV 10	ini.	-180	-711	-0.0000902	0.0002807	0.0035	0.9		2995.37	2995.37		16.64	Si
SLV 10	fin.	699.28	-3117	-0.0003875	0.0002807	0.0035	0.9		2989.59	2989.59		4.28	Si
SLV 4	ini.	820.8	-1986	-0.0004676	0.0002807	0.0035	0.9		2989.59	2989.59		3.64	Si
SLV 4	fin.	-330.33	695	-0.0001696	0.0002807	0.0035	0.9		2995.37	2995.37		9.07	Si
SLV 3	ini.	1008.93	-2264	-0.0006	0.0002807	0.0035	0.9		2989.59	2989.59		2.96	Si
SLV 3	fin.	-448.91	1067	-0.0002355	0.0002807	0.0035	0.9		2995.37	2995.37		6.67	Si
SLV 2	ini.	982.45	-2372	-0.0005808	0.0002807	0.0035	0.9		2989.59	2989.59		3.04	Si
SLV 2	fin.	-241.4	80	-0.0001222	0.0002807	0.0035	0.9		2995.37	2995.37		12.41	Si
SLV 16	ini.	-1308.96	1339	-0.0008302	0.0002807	0.0035	0.9		2995.37	2995.37		2.29	Si
SLV 16	fin.	989.56	-3220	-0.000586	0.0002807	0.0035	0.9		2989.59	2989.59		3.02	Si
SLV 12	ini.	-718.83	577	-0.0003992	0.0002807	0.0035	0.9		2995.37	2995.37		4.17	Si
SLV 12	fin.	402.85	-1066	-0.00021	0.0002807	0.0035	0.9		2989.59	2989.59		7.42	Si
SLV 1	ini.	1170.58	-2650	-0.0007219	0.0002807	0.0035	0.9		2989.59	2989.59		2.55	Si
SLV 1	fin.	-359.98	452	-0.0001858	0.0002807	0.0035	0.9		2995.37	2995.37		8.32	Si
SLV 15	ini.	-1120.84	1061	-0.000682	0.0002807	0.0035	0.9		2995.37	2995.37		2.67	Si
SLV 15	fin.	870.98	-2848	-0.000502	0.0002807	0.0035	0.9		2989.59	2989.59		3.43	Si
SLV 13	ini.	-959.19	674	-0.0005628	0.0002807	0.0035	0.9		2995.37	2995.37		3.12	Si
SLV 13	fin.	959.91	-3463	-0.0005646	0.0002807	0.0035	0.9		2989.59	2989.59		3.11	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-1120.84	3959	0.9	0	548	7137	5660	2295	7684		1.94	Si
SLV 15	fin.	870.98	4857	0.9	0	548	7137	5660	2295	7684		1.58	Si
SLV 13	ini.	-959.19	3543	0.9	0	548	7137	5660	2295	7684		2.17	Si
SLV 13	fin.	959.91	5506	0.9	0	548	7137	5660	2295	7684		1.4	Si
SLV 2	ini.	982.45	-3728	0.9	0	548	7137	5660	2295	7684		2.06	Si
SLV 2	fin.	-241.4	-735	0.9	0	548	7137	5660	2295	7684		10.45	Si
SLV 16	ini.	-1308.96	4623	0.9	0	548	7137	5660	2295	7684		1.66	Si
SLV 16	fin.	989.56	5517	0.9	0	548	7137	5660	2295	7684		1.39	Si
SLV 3	ini.	1008.93	-3977	0.9	0	548	7137	5660	2295	7684		1.93	Si
SLV 3	fin.	-448.91	-2045	0.9	0	548	7137	5660	2295	7684		3.76	Si
SLV 14	ini.	-1147.31	4207	0.9	0	548	7137	5660	2295	7684		1.83	Si
SLV 14	fin.	1078.49	6166	0.9	0	548	7137	5660	2295	7684		1.25	Si
SLV 10	ini.	-180	828	0.9	0	548	7137	5660	2295	7684		9.29	Si
SLV 10	fin.	699.28	4392	0.9	0	548	7137	5660	2295	7684		1.75	Si
SLD 14	ini.	-529.28	1862	0.9	0	548	7137	5660	2295	7684		4.13	Si
SLD 14	fin.	641.98	3821	0.9	0	548	7137	5660	2295	7684		2.01	Si
SLV 9	ini.	-58.49	399	0.9	0	548	7137	5660	2295	7684		19.28	Si
SLV 9	fin.	622.69	3966	0.9	0	548	7137	5660	2295	7684		1.94	Si
SLV 1	ini.	1170.58	-4392	0.9	0	548	7137	5660	2295	7684		1.75	Si
SLV 1	fin.	-359.98	-1395	0.9	0	548	7137	5660	2295	7684		5.51	Si

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.288	SLV 16	Si
V_SLV	1.246	SLV 14	Si
PF_SLU	6.951	SLU 78	Si
V_SLU	2.151	SLU 69	Si



## Trave di accoppiamento 67

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-21.813	5.826	7.53	8.35	0.82	-22.713	5.826	7.53	8.35	0.82	0.9	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	e <sub>f,d</sub>	γ <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em <sub>-</sub>	em <sub>u</sub>	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 80	ini.	-542.06	-1644	-0.0003757	0.0001872	0.0035	0.82		2460.51	2460.51	No	4.54	Si
SLU 80	fin.	-53.9	-590	-0.0000321	0.0001872	0.0035	0.82		2460.51	2460.51	No	45.65	Si
SLU 69	ini.	-538.18	-1578	-0.0003725	0.0001872	0.0035	0.82		2460.51	2460.51	No	4.57	Si
SLU 69	fin.	-27.83	-458	-0.0000165	0.0001872	0.0035	0.82		2460.51	2460.51	No	88.41	Si
SLU 83	ini.	-538.76	-1647	-0.000373	0.0001872	0.0035	0.82		2460.51	2460.51	No	4.57	Si
SLU 83	fin.	-61.28	-626	-0.0000366	0.0001872	0.0035	0.82		2460.51	2460.51	No	40.15	Si
SLU 78	ini.	-543.28	-1655	-0.0003767	0.0001872	0.0035	0.82		2460.51	2460.51	No	4.53	Si
SLU 78	fin.	-57.16	-606	-0.0000341	0.0001872	0.0035	0.82		2460.51	2460.51	No	43.04	Si
SLU 56	ini.	-537.8	-1567	-0.0003722	0.0001872	0.0035	0.82		2460.51	2460.51	No	4.58	Si
SLU 56	fin.	-23.83	-440	-0.0000141	0.0001872	0.0035	0.82		2460.51	2460.51	No	103.27	Si
SLU 79	ini.	-542.21	-1646	-0.0003758	0.0001872	0.0035	0.82		2460.51	2460.51	No	4.54	Si
SLU 79	fin.	-55.09	-596	-0.0000328	0.0001872	0.0035	0.82		2460.51	2460.51	No	44.67	Si
SLU 77	ini.	-543.43	-1658	-0.0003768	0.0001872	0.0035	0.82		2460.51	2460.51	No	4.53	Si
SLU 77	fin.	-58.35	-612	-0.0000348	0.0001872	0.0035	0.82		2460.51	2460.51	No	42.17	Si
SLU 84	ini.	-538.61	-1644	-0.0003729	0.0001872	0.0035	0.82		2460.51	2460.51	No	4.57	Si
SLU 84	fin.	-60.09	-621	-0.0000358	0.0001872	0.0035	0.82		2460.51	2460.51	No	40.95	Si
SLU 74	ini.	-537.73	-1624	-0.0003721	0.0001872	0.0035	0.82		2460.51	2460.51	No	4.58	Si
SLU 74	fin.	-51.46	-576	-0.0000306	0.0001872	0.0035	0.82		2460.51	2460.51	No	47.81	Si
SLU 70	ini.	-538.04	-1576	-0.0003724	0.0001872	0.0035	0.82		2460.51	2460.51	No	4.57	Si
SLU 70	fin.	-26.65	-453	-0.0000158	0.0001872	0.0035	0.82		2460.51	2460.51	No	92.34	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	f <sub>vd</sub>	V <sub>t</sub>	V <sub>t,f</sub>	V <sub>t,c</sub>	V <sub>t,c.int.</sub>	V <sub>t,R</sub>	incremento > 50%	c.s.	Verifica
SLU 82	ini.	-532.91	2761	0.82	0	303	6502	3438	2091	5529	No	2	Si
SLU 82	fin.	-53.2	-1581	0.82	0	303	6502	3438	2091	5529	No	3.5	Si
SLU 83	ini.	-538.76	2809	0.82	0	303	6502	3438	2091	5529	No	1.97	Si
SLU 83	fin.	-61.28	-1667	0.82	0	303	6502	3438	2091	5529	No	3.32	Si
SLU 84	ini.	-538.61	2802	0.82	0	303	6502	3438	2091	5529	No	1.97	Si
SLU 84	fin.	-60.09	-1649	0.82	0	303	6502	3438	2091	5529	No	3.35	Si
SLU 80	ini.	-542.06	2796	0.82	0	303	6502	3438	2091	5529	No	1.98	Si
SLU 80	fin.	-53.9	-1576	0.82	0	303	6502	3438	2091	5529	No	3.51	Si
SLU 78	ini.	-543.28	2807	0.82	0	303	6502	3438	2091	5529	No	1.97	Si
SLU 78	fin.	-57.16	-1605	0.82	0	303	6502	3438	2091	5529	No	3.44	Si
SLU 79	ini.	-542.21	2803	0.82	0	303	6502	3438	2091	5529	No	1.97	Si
SLU 79	fin.	-55.09	-1594	0.82	0	303	6502	3438	2091	5529	No	3.47	Si
SLU 75	ini.	-537.58	2767	0.82	0	303	6502	3438	2091	5529	No	2	Si
SLU 75	fin.	-50.28	-1537	0.82	0	303	6502	3438	2091	5529	No	3.6	Si
SLU 74	ini.	-537.73	2774	0.82	0	303	6502	3438	2091	5529	No	1.99	Si
SLU 74	fin.	-51.46	-1556	0.82	0	303	6502	3438	2091	5529	No	3.55	Si
SLU 77	ini.	-543.43	2814	0.82	0	303	6502	3438	2091	5529	No	1.96	Si
SLU 77	fin.	-58.35	-1623	0.82	0	303	6502	3438	2091	5529	No	3.41	Si
SLU 81	ini.	-533.06	2768	0.82	0	303	6502	3438	2091	5529	No	2	Si
SLU 81	fin.	-54.39	-1599	0.82	0	303	6502	3438	2091	5529	No	3.46	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 14	ini.	-1355.79	-2644	-0.001113	0.0002807	0.0035	0.82		2487.45	2487.45		1.83	Si
SLV 14	fin.	557.75	1785	-0.0003701	0.0002807	0.0035	0.82		2482.11	2482.11		4.45	Si
SLD 16	ini.	-758.31	-1519	-0.0005305	0.0002807	0.0035	0.82		2487.45	2487.45		3.28	Si
SLD 16	fin.	276.73	826	-0.0001717	0.0002807	0.0035	0.82		2482.11	2482.11		8.97	Si
SLV 13	ini.	-1202.15	-2456	-0.000947	0.0002807	0.0035	0.82		2487.45	2487.45		2.07	Si
SLV 13	fin.	445.45	1339	-0.000287	0.0002807	0.0035	0.82		2482.11	2482.11		5.57	Si
SLV 16	ini.	-1233.58	-2014	-0.00098	0.0002807	0.0035	0.82		2487.45	2487.45		2.02	Si
SLV 16	fin.	658.18	2313	-0.0004489	0.0002807	0.0035	0.82		2482.11	2482.11		3.77	Si
SLD 15	ini.	-692.34	-1439	-0.0004756	0.0002807	0.0035	0.82		2487.45	2487.45		3.59	Si
SLD 15	fin.	228.51	634	-0.0001404	0.0002807	0.0035	0.82		2482.11	2482.11		10.86	Si
SLV 9	ini.	-802.6	-2470	-0.0005683	0.0002807	0.0035	0.82		2487.45	2487.45		3.1	Si
SLV 9	fin.	-44.71	-679	-0.0000265	0.0002807	0.0035	0.82		2487.45	2487.45		55.64	Si
SLV 10	ini.	-901.83	-2591	-0.000656	0.0002807	0.0035	0.82		2487.45	2487.45		2.76	Si
SLV 10	fin.	27.83	-391	-0.0000165	0.0002807	0.0035	0.82		2482.11	2482.11		89.19	Si
SLD 13	ini.	-746.4	-1716	-0.0005204	0.0002807	0.0035	0.82		2487.45	2487.45		3.33	Si
SLD 13	fin.	184.27	402	-0.0001122	0.0002807	0.0035	0.82		2482.11	2482.11		13.47	Si
SLV 15	ini.	-1079.95	-1826	-0.0008237	0.0002807	0.0035	0.82		2487.45	2487.45		2.3	Si
SLV 15	fin.	545.88	1866	-0.000361	0.0002807	0.0035	0.82		2482.11	2482.11		4.55	Si
SLD 14	ini.	-812.37	-1797	-0.0005767	0.0002807	0.0035	0.82		2487.45	2487.45		3.06	Si
SLD 14	fin.	232.49	593	-0.0001429	0.0002807	0.0035	0.82		2482.11	2482.11		10.68	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 9	ini.	-802.6	3645	0.82	0	455	6502	5156	2091	6957		1.91	Si
SLV 9	fin.	-44.71	-1547	0.82	0	455	6502	5156	2091	6957		4.5	Si
SLV 2	ini.	270.85	-227	0.82	0	455	6502	5156	2091	6957		30.64	Si
SLV 2	fin.	-564.74	-4219	0.82	0	455	6502	5156	2091	6957		1.65	Si
SLV 10	ini.	-901.83	3990	0.82	0	455	6502	5156	2091	6957		1.74	Si
SLV 10	fin.	27.83	-1108	0.82	0	455	6502	5156	2091	6957		6.28	Si
SLV 5	ini.	-314.61	1965	0.82	0	455	6502	5156	2091	6957		3.54	Si
SLV 5	fin.	-381.46	-3496	0.82	0	455	6502	5156	2091	6957		1.99	Si
SLV 13	ini.	-1202.15	4838	0.82	0	455	6502	5156	2091	6957		1.44	Si
SLV 13	fin.	445.45	1599	0.82	0	455	6502	5156	2091	6957		4.35	Si
SLV 14	ini.	-1355.79	5373	0.82	0	455	6502	5156	2091	6957		1.29	Si
SLV 14	fin.	557.75	2278	0.82	0	455	6502	5156	2091	6957		3.05	Si
SLV 3	ini.	546.69	-1338	0.82	0	455	6502	5156	2091	6957		5.2	Si
SLV 3	fin.	-576.62	-4048	0.82	0	455	6502	5156	2091	6957		1.72	Si
SLV 16	ini.	-1233.58	4797	0.82	0	455	6502	5156	2091	6957		1.45	Si
SLV 16	fin.	658.18	3128	0.82	0	455	6502	5156	2091	6957		2.22	Si
SLV 15	ini.	-1079.95	4262	0.82	0	455	6502	5156	2091	6957		1.63	Si
SLV 15	fin.	545.88	2449	0.82	0	455	6502	5156	2091	6957		2.84	Si
SLV 1	ini.	424.49	-762	0.82	0	455	6502	5156	2091	6957		9.13	Si
SLV 1	fin.	-677.05	-4898	0.82	0	455	6502	5156	2091	6957		1.42	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.835	SLV 14	Si
V_SLV	1.295	SLV 14	Si
PF_SLU	4.528	SLU 77	Si
V_SLU	1.964	SLU 77	Si

## Trave di accoppiamento 68

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-21.593	-3.314	7.53	8.35	0.82	-22.493	-3.314	7.53	8.35	0.82	0.9	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_ Corti

fb_	fhk	fvk0	fmedio	t0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 77	ini.	-770.31	-3040	-0.0005741	0.0001872	0.0035	0.82		2460.51	2460.51	No	3.19	Si
SLU 77	fin.	313.26	-402	-0.0002009	0.0001872	0.0035	0.82		2455.37	2455.37	No	7.84	Si
SLU 78	ini.	-769.71	-3040	-0.0005735	0.0001872	0.0035	0.82		2460.51	2460.51	No	3.2	Si
SLU 78	fin.	309.9	-413	-0.0001985	0.0001872	0.0035	0.82		2455.37	2455.37	No	7.92	Si
SLU 80	ini.	-759.67	-3002	-0.0005644	0.0001872	0.0035	0.82		2460.51	2460.51	No	3.24	Si
SLU 80	fin.	304.17	-411	-0.0001945	0.0001872	0.0035	0.82		2455.37	2455.37	No	8.07	Si
SLU 82	ini.	-771.03	-3036	-0.0005748	0.0001872	0.0035	0.82		2460.51	2460.51	No	3.19	Si
SLU 82	fin.	319.61	-383	-0.0002054	0.0001872	0.0035	0.82		2455.37	2455.37	No	7.68	Si
SLU 81	ini.	-771.63	-3036	-0.0005753	0.0001872	0.0035	0.82		2460.51	2460.51	No	3.19	Si
SLU 81	fin.	322.96	-373	-0.0002078	0.0001872	0.0035	0.82		2455.37	2455.37	No	7.6	Si
SLU 84	ini.	-778.87	-3074	-0.000582	0.0001872	0.0035	0.82		2460.51	2460.51	No	3.16	Si
SLU 84	fin.	314.57	-413	-0.0002018	0.0001872	0.0035	0.82		2455.37	2455.37	No	7.81	Si
SLU 83	ini.	-779.47	-3074	-0.0005825	0.0001872	0.0035	0.82		2460.51	2460.51	No	3.16	Si
SLU 83	fin.	317.93	-403	-0.0002042	0.0001872	0.0035	0.82		2455.37	2455.37	No	7.72	Si
SLU 75	ini.	-761.87	-3002	-0.0005664	0.0001872	0.0035	0.82		2460.51	2460.51	No	3.23	Si
SLU 75	fin.	314.94	-383	-0.0002021	0.0001872	0.0035	0.82		2455.37	2455.37	No	7.8	Si
SLU 74	ini.	-762.47	-3002	-0.0005669	0.0001872	0.0035	0.82		2460.51	2460.51	No	3.23	Si
SLU 74	fin.	318.3	-373	-0.0002045	0.0001872	0.0035	0.82		2455.37	2455.37	No	7.71	Si
SLU 79	ini.	-760.27	-3002	-0.0005649	0.0001872	0.0035	0.82		2460.51	2460.51	No	3.24	Si
SLU 79	fin.	307.53	-401	-0.0001968	0.0001872	0.0035	0.82		2455.37	2455.37	No	7.98	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 82	ini.	-771.03	5179	0.82	0	303	6502	3438	2091	5529	No	1.07	Si
SLU 82	fin.	319.61	281	0.82	0	303	6502	3438	2091	5529	No	19.7	Si
SLU 74	ini.	-762.47	5106	0.82	0	303	6502	3438	2091	5529	No	1.08	Si
SLU 74	fin.	318.3	300	0.82	0	303	6502	3438	2091	5529	No	18.43	Si
SLU 84	ini.	-778.87	5243	0.82	0	303	6502	3438	2091	5529	No	1.05	Si
SLU 84	fin.	314.57	248	0.82	0	303	6502	3438	2091	5529	No	22.33	Si
SLU 80	ini.	-759.67	5106	0.82	0	303	6502	3438	2091	5529	No	1.08	Si
SLU 80	fin.	304.17	238	0.82	0	303	6502	3438	2091	5529	No	23.22	Si
SLU 75	ini.	-761.87	5104	0.82	0	303	6502	3438	2091	5529	No	1.08	Si
SLU 75	fin.	314.94	285	0.82	0	303	6502	3438	2091	5529	No	19.42	Si
SLU 81	ini.	-771.63	5181	0.82	0	303	6502	3438	2091	5529	No	1.07	Si
SLU 81	fin.	322.96	296	0.82	0	303	6502	3438	2091	5529	No	18.68	Si
SLU 83	ini.	-779.47	5245	0.82	0	303	6502	3438	2091	5529	No	1.05	Si
SLU 83	fin.	317.93	263	0.82	0	303	6502	3438	2091	5529	No	21.03	Si
SLU 78	ini.	-769.71	5168	0.82	0	303	6502	3438	2091	5529	No	1.07	Si
SLU 78	fin.	309.9	252	0.82	0	303	6502	3438	2091	5529	No	21.97	Si
SLU 77	ini.	-770.31	5170	0.82	0	303	6502	3438	2091	5529	No	1.07	Si
SLU 77	fin.	313.26	267	0.82	0	303	6502	3438	2091	5529	No	20.71	Si
SLU 79	ini.	-760.27	5108	0.82	0	303	6502	3438	2091	5529	No	1.08	Si
SLU 79	fin.	307.53	253	0.82	0	303	6502	3438	2091	5529	No	21.82	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 4	ini.	249.72	338	-0.0001541	0.0002807	0.0035	0.82		2482.11	2482.11		9.94	Si
SLV 4	fin.	-929.22	-2462	-0.0006809	0.0002807	0.0035	0.82		2487.45	2487.45		2.68	Si
SLD 15	ini.	-918.9	-3340	-0.0006715	0.0002807	0.0035	0.82		2487.45	2487.45		2.71	Si
SLD 15	fin.	706.47	524	-0.0004884	0.0002807	0.0035	0.82		2482.11	2482.11		3.51	Si
SLV 11	ini.	-1048.57	-3950	-0.0007931	0.0002807	0.0035	0.82		2487.45	2487.45		2.37	Si
SLV 11	fin.	526.26	-402	-0.0003462	0.0002807	0.0035	0.82		2482.11	2482.11		4.72	Si
SLD 16	ini.	-855.75	-3140	-0.0006148	0.0002807	0.0035	0.82		2487.45	2487.45		2.91	Si
SLD 16	fin.	617.03	361	-0.0004161	0.0002807	0.0035	0.82		2482.11	2482.11		4.02	Si
SLV 12	ini.	-953.59	-3650	-0.0007033	0.0002807	0.0035	0.82		2487.45	2487.45		2.61	Si
SLV 12	fin.	391.72	-647	-0.0002492	0.0002807	0.0035	0.82		2482.11	2482.11		6.34	Si
SLV 13	ini.	-1298.46	-4447	-0.0010495	0.0002807	0.0035	0.82		2487.45	2487.45		1.92	Si
SLV 13	fin.	1392.13	2029	-0.0011574	0.0002807	0.0035	0.82		2482.11	2482.11		1.78	Si
SLV 2	ini.	396.44	942	-0.0002525	0.0002807	0.0035	0.82		2482.11	2482.11		6.26	Si
SLV 2	fin.	-879.99	-1953	-0.0006363	0.0002807	0.0035	0.82		2487.45	2487.45		2.83	Si
SLV 15	ini.	-1445.18	-5052	-0.0012159	0.0002807	0.0035	0.82		2487.45	2487.45		1.72	Si
SLV 15	fin.	1342.91	1520	-0.0011016	0.0002807	0.0035	0.82		2482.11	2482.11		1.85	Si
SLV 14	ini.	-1151.41	-3983	-0.000895	0.0002807	0.0035	0.82		2487.45	2487.45		2.16	Si
SLV 14	fin.	1183.83	1649	-0.0009306	0.0002807	0.0035	0.82		2482.11	2482.11		2.1	Si
SLV 16	ini.	-1298.13	-4587	-0.0010492	0.0002807	0.0035	0.82		2487.45	2487.45		1.92	Si
SLV 16	fin.	1134.6	1140	-0.0008803	0.0002807	0.0035	0.82		2482.11	2482.11		2.19	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 12	ini.	-953.59	5714	0.82	0	455	6502	5156	2091	6957		1.22	Si
SLV 12	fin.	391.72	719	0.82	0	455	6502	5156	2091	6957		9.68	Si
SLD 13	ini.	-854.23	5105	0.82	0	455	6502	5156	2091	6957		1.36	Si
SLD 13	fin.	727.52	2265	0.82	0	455	6502	5156	2091	6957		3.07	Si
SLV 16	ini.	-1298.13	7343	0.82	0	455	6502	5156	2091	6957		0.95	No
SLV 16	fin.	1134.6	3808	0.82	0	455	6502	5156	2091	6957		1.83	Si
SLD 15	ini.	-918.9	5456	0.82	0	455	6502	5156	2091	6957		1.28	Si
SLD 15	fin.	706.47	2130	0.82	0	455	6502	5156	2091	6957		3.27	Si
SLV 13	ini.	-1298.46	7296	0.82	0	455	6502	5156	2091	6957		0.95	No
SLV 13	fin.	1392.13	4938	0.82	0	455	6502	5156	2091	6957		1.41	Si
SLV 14	ini.	-1151.41	6548	0.82	0	455	6502	5156	2091	6957		1.06	Si
SLV 14	fin.	1183.83	4118	0.82	0	455	6502	5156	2091	6957		1.69	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 16	ini.	-855.75	5135	0.82	0	455	6502	5156	2091	6957		1.35	Si
SLD 16	fin.	617.03	1778	0.82	0	455	6502	5156	2091	6957		3.91	Si
SLV 11	ini.	-1048.57	6196	0.82	0	455	6502	5156	2091	6957		1.12	Si
SLV 11	fin.	526.26	1248	0.82	0	455	6502	5156	2091	6957		5.57	Si
SLD 14	ini.	-791.08	4784	0.82	0	455	6502	5156	2091	6957		1.45	Si
SLD 14	fin.	638.07	1913	0.82	0	455	6502	5156	2091	6957		3.64	Si
SLV 15	ini.	-1445.18	8090	0.82	0	455	6502	5156	2091	6957		0.86	No
SLV 15	fin.	1342.91	4628	0.82	0	455	6502	5156	2091	6957		1.5	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.721	SLV 15	Si
V_SLV	0.86	SLV 15	No
PF_SLU	3.157	SLU 83	Si
V_SLU	1.054	SLU 83	Si

## Trave di accoppiamento 69

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-18.813	-3.314	7.63	8.35	0.72	-19.313	-3.314	7.63	8.35	0.72	0.5	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	t <sub>fv</sub>	t <sub>fo</sub>	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / ε <sub>c</sub> CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	ε <sub>f</sub> ,d	γ <sub>f</sub> ,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ε <sub>m</sub>	ε <sub>m_</sub>	ε <sub>mu</sub>	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 84	ini.	-331.71	-2090	-0.0002864	0.0001872	0.0035	0.72		1901.86	1901.86	No	5.73	Si
SLU 84	fin.	287.52	-1419	-0.0002439	0.0001872	0.0035	0.72		1897.3	1897.3	No	6.6	Si
SLU 77	ini.	-318.08	-1991	-0.0002729	0.0001872	0.0035	0.72		1901.86	1901.86	No	5.98	Si
SLU 77	fin.	291.08	-1337	-0.0002473	0.0001872	0.0035	0.72		1897.3	1897.3	No	6.52	Si
SLU 75	ini.	-315.06	-1966	-0.00027	0.0001872	0.0035	0.72		1901.86	1901.86	No	6.04	Si
SLU 75	fin.	288.87	-1314	-0.0002452	0.0001872	0.0035	0.72		1897.3	1897.3	No	6.57	Si
SLU 74	ini.	-314.44	-1959	-0.0002694	0.0001872	0.0035	0.72		1901.86	1901.86	No	6.05	Si
SLU 74	fin.	290.11	-1306	-0.0002464	0.0001872	0.0035	0.72		1897.3	1897.3	No	6.54	Si
SLU 78	ini.	-318.7	-1998	-0.0002735	0.0001872	0.0035	0.72		1901.86	1901.86	No	5.97	Si
SLU 78	fin.	289.83	-1345	-0.0002461	0.0001872	0.0035	0.72		1897.3	1897.3	No	6.55	Si
SLU 81	ini.	-327.45	-2051	-0.0002822	0.0001872	0.0035	0.72		1901.86	1901.86	No	5.81	Si
SLU 81	fin.	287.8	-1380	-0.0002442	0.0001872	0.0035	0.72		1897.3	1897.3	No	6.59	Si
SLU 79	ini.	-316.32	-1982	-0.0002712	0.0001872	0.0035	0.72		1901.86	1901.86	No	6.01	Si
SLU 79	fin.	286.56	-1334	-0.000243	0.0001872	0.0035	0.72		1897.3	1897.3	No	6.62	Si
SLU 82	ini.	-328.07	-2059	-0.0002828	0.0001872	0.0035	0.72		1901.86	1901.86	No	5.8	Si
SLU 82	fin.	286.56	-1388	-0.000243	0.0001872	0.0035	0.72		1897.3	1897.3	No	6.62	Si
SLU 80	ini.	-316.93	-1989	-0.0002718	0.0001872	0.0035	0.72		1901.86	1901.86	No	6	Si
SLU 80	fin.	285.32	-1342	-0.0002418	0.0001872	0.0035	0.72		1897.3	1897.3	No	6.65	Si
SLU 83	ini.	-331.09	-2083	-0.0002858	0.0001872	0.0035	0.72		1901.86	1901.86	No	5.74	Si
SLU 83	fin.	288.77	-1411	-0.0002451	0.0001872	0.0035	0.72		1897.3	1897.3	No	6.57	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 80	ini.	-316.93	4441	0.72	0	292	3965	3018	1836	4257	No	0.96	No
SLU 80	fin.	285.32	762	0.72	0	292	3965	3018	1836	4257	No	5.59	Si
SLU 78	ini.	-318.7	4486	0.72	0	292	3965	3018	1836	4257	No	0.95	No
SLU 78	fin.	289.83	771	0.72	0	292	3965	3018	1836	4257	No	5.52	Si
SLU 77	ini.	-318.08	4480	0.72	0	292	3965	3018	1836	4257	No	0.95	No
SLU 77	fin.	291.08	775	0.72	0	292	3965	3018	1836	4257	No	5.5	Si
SLU 84	ini.	-331.71	4548	0.72	0	292	3965	3018	1836	4257	No	0.94	No
SLU 84	fin.	287.52	798	0.72	0	292	3965	3018	1836	4257	No	5.33	Si
SLU 74	ini.	-314.44	4404	0.72	0	292	3965	3018	1836	4257	No	0.97	No



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 74	fin.	290.11	784	0.72	0	292	3965	3018	1836	4257	No	5.43	Si
SLU 83	ini.	-331.09	4543	0.72	0	292	3965	3018	1836	4257	No	0.94	No
SLU 89	fin.	288.77	802	0.72	0	292	3965	3018	1836	4257	No	5.31	Si
SLU 73	ini.	-316.32	4436	0.72	0	292	3965	3018	1836	4257	No	0.96	No
SLU 79	fin.	286.56	766	0.72	0	292	3965	3018	1836	4257	No	5.56	Si
SLU 75	ini.	-315.06	4410	0.72	0	292	3965	3018	1836	4257	No	0.97	No
SLU 75	fin.	288.87	781	0.72	0	292	3965	3018	1836	4257	No	5.45	Si
SLU 82	ini.	-328.07	4472	0.72	0	292	3965	3018	1836	4257	No	0.95	No
SLU 82	fin.	286.56	808	0.72	0	292	3965	3018	1836	4257	No	5.27	Si
SLU 81	ini.	-327.45	4467	0.72	0	292	3965	3018	1836	4257	No	0.95	No
SLU 81	fin.	287.8	812	0.72	0	292	3965	3018	1836	4257	No	5.25	Si

**Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche**

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 13	ini.	-54.58	1267	-0.000421	0.0002807	0.0035	0.72		1917.1	1917.1		35.12	Si
SLV 13	fin.	1111.76	2550	-0.0012142	0.0002807	0.0035	0.72		1912.43	1912.43		1.72	Si
SLV 3	ini.	-362.92	-3612	-0.0003042	0.0002807	0.0035	0.72		1917.1	1917.1		5.28	Si
SLV 3	fin.	-580.41	-3860	-0.0005251	0.0002807	0.0035	0.72		1917.1	1917.1		3.3	Si
SLV 2	ini.	-342.11	-3526	-0.0002848	0.0002807	0.0035	0.72		1917.1	1917.1		5.6	Si
SLV 2	fin.	-640.22	-3777	-0.0005917	0.0002807	0.0035	0.72		1917.1	1917.1		2.99	Si
SLD 15	ini.	-154.45	-325	-0.000122	0.0002807	0.0035	0.72		1917.1	1917.1		12.41	Si
SLD 15	fin.	572.81	435	-0.0005183	0.0002807	0.0035	0.72		1912.43	1912.43		3.34	Si
SLD 13	ini.	-143.78	-193	-0.0001133	0.0002807	0.0035	0.72		1917.1	1917.1		13.33	Si
SLD 13	fin.	594.77	615	-0.0005424	0.0002807	0.0035	0.72		1912.43	1912.43		3.22	Si
SLV 14	ini.	-57.91	1044	-0.0000447	0.0002807	0.0035	0.72		1917.1	1917.1		33.11	Si
SLV 14	fin.	999.31	2205	-0.0010487	0.0002807	0.0035	0.72		1912.43	1912.43		1.91	Si
SLV 4	ini.	-366.25	-3835	-0.0003073	0.0002807	0.0035	0.72		1917.1	1917.1		5.23	Si
SLV 4	fin.	-692.86	-4204	-0.0006522	0.0002807	0.0035	0.72		1917.1	1917.1		2.77	Si
SLV 16	ini.	-82.05	735	-0.0000637	0.0002807	0.0035	0.72		1917.1	1917.1		23.37	Si
SLV 16	fin.	946.68	1778	-0.0009755	0.0002807	0.0035	0.72		1912.43	1912.43		2.02	Si
SLV 9	ini.	-126.48	-12	-0.0000992	0.0002807	0.0035	0.72		1917.1	1917.1		15.16	Si
SLV 9	fin.	579.42	893	-0.0005255	0.0002807	0.0035	0.72		1912.43	1912.43		3.3	Si
SLV 15	ini.	-78.72	958	-0.0000611	0.0002807	0.0035	0.72		1917.1	1917.1		24.35	Si
SLV 15	fin.	1059.12	2123	-0.0011351	0.0002807	0.0035	0.72		1912.43	1912.43		1.81	Si

**Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215**

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 12	ini.	-209.09	4130	0.72	0	438	3965	4528	1836	4403		1.07	Si
SLV 12	fin.	331.34	823	0.72	0	438	3965	4528	1836	4403		5.35	Si
SLV 11	ini.	-206.94	4283	0.72	0	438	3965	4528	1836	4403		1.03	Si
SLV 11	fin.	403.97	1029	0.72	0	438	3965	4528	1836	4403		4.28	Si
SLD 15	ini.	-154.45	3759	0.72	0	438	3965	4528	1836	4403		1.17	Si
SLD 15	fin.	572.81	1459	0.72	0	438	3965	4528	1836	4403		3.02	Si
SLV 13	ini.	-54.58	4313	0.72	0	438	3965	4528	1836	4403		1.02	Si
SLV 13	fin.	1111.76	2805	0.72	0	438	3965	4528	1836	4403		1.57	Si
SLV 15	ini.	-78.72	4783	0.72	0	438	3965	4528	1836	4403		0.92	No
SLV 15	fin.	1059.12	2662	0.72	0	438	3965	4528	1836	4403		1.65	Si
SLV 16	ini.	-82.05	4547	0.72	0	438	3965	4528	1836	4403		0.97	No
SLV 16	fin.	946.68	2343	0.72	0	438	3965	4528	1836	4403		1.88	Si
SLD 11	ini.	-209.56	3555	0.72	0	438	3965	4528	1836	4403		1.24	Si
SLD 11	fin.	293.77	763	0.72	0	438	3965	4528	1836	4403		5.77	Si
SLD 16	ini.	-155.88	3657	0.72	0	438	3965	4528	1836	4403		1.2	Si
SLD 16	fin.	524.52	1322	0.72	0	438	3965	4528	1836	4403		3.33	Si
SLV 14	ini.	-57.91	4076	0.72	0	438	3965	4528	1836	4403		1.08	Si
SLV 14	fin.	999.31	2486	0.72	0	438	3965	4528	1836	4403		1.77	Si
SLD 13	ini.	-143.78	3551	0.72	0	438	3965	4528	1836	4403		1.24	Si
SLD 13	fin.	594.77	1519	0.72	0	438	3965	4528	1836	4403		2.9	Si

**Tabella dei coefficienti di sicurezza minimi**

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.72	SLV 13	Si
V_SLV	0.92	SLV 15	No
PF_SLU	5.734	SLU 84	Si
V_SLU	0.936	SLU 84	No

**Trave di accoppiamento 70**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati geometrici**

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-17.363	-3.314	7.53	8.35	0.82	-18.263	-3.314	7.53	8.35	0.82	0.9	0.28	3500

**Caratteristiche del materiale**

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC





Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 77	ini.	-198.02	-1135	-0.0001223	0.0001872	0.0035	0.82		2460.51	2460.51	No	12.43	Si
SLU 77	fin.	-245.18	-1892	-0.0001536	0.0001872	0.0035	0.82		2460.51	2460.51	No	10.04	Si
SLU 84	ini.	-184.85	-1112	-0.0001138	0.0001872	0.0035	0.82		2460.51	2460.51	No	13.31	Si
SLU 84	fin.	-268.03	-2014	-0.000169	0.0001872	0.0035	0.82		2460.51	2460.51	No	9.18	Si
SLU 83	ini.	-185.79	-1113	-0.0001144	0.0001872	0.0035	0.82		2460.51	2460.51	No	13.24	Si
SLU 83	fin.	-265.93	-2004	-0.0001676	0.0001872	0.0035	0.82		2460.51	2460.51	No	9.25	Si
SLU 81	ini.	-180.14	-1083	-0.0001108	0.0001872	0.0035	0.82		2460.51	2460.51	No	13.66	Si
SLU 81	fin.	-260.64	-1969	-0.000164	0.0001872	0.0035	0.82		2460.51	2460.51	No	9.44	Si
SLU 62	ini.	-163.02	-990	-0.0000998	0.0001872	0.0035	0.82		2460.51	2460.51	No	15.09	Si
SLU 62	fin.	-246.22	-1828	-0.0001543	0.0001872	0.0035	0.82		2460.51	2460.51	No	9.99	Si
SLU 78	ini.	-197.07	-1134	-0.0001217	0.0001872	0.0035	0.82		2460.51	2460.51	No	12.49	Si
SLU 78	fin.	-247.29	-1901	-0.000155	0.0001872	0.0035	0.82		2460.51	2460.51	No	9.95	Si
SLU 79	ini.	-193.52	-1118	-0.0001194	0.0001872	0.0035	0.82		2460.51	2460.51	No	12.71	Si
SLU 79	fin.	-246.08	-1888	-0.0001542	0.0001872	0.0035	0.82		2460.51	2460.51	No	10	Si
SLU 80	ini.	-192.57	-1117	-0.0001188	0.0001872	0.0035	0.82		2460.51	2460.51	No	12.78	Si
SLU 80	fin.	-248.19	-1898	-0.0001556	0.0001872	0.0035	0.82		2460.51	2460.51	No	9.91	Si
SLU 63	ini.	-162.07	-989	-0.0000992	0.0001872	0.0035	0.82		2460.51	2460.51	No	15.18	Si
SLU 63	fin.	-248.33	-1838	-0.0001557	0.0001872	0.0035	0.82		2460.51	2460.51	No	9.91	Si
SLU 82	ini.	-179.19	-1082	-0.0001101	0.0001872	0.0035	0.82		2460.51	2460.51	No	13.73	Si
SLU 82	fin.	-262.74	-1979	-0.0001654	0.0001872	0.0035	0.82		2460.51	2460.51	No	9.36	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 80	ini.	-192.57	2477	0.82	0	303	6502	3438	2091	5529	No	2.23	Si
SLU 80	fin.	-248.19	-4001	0.82	0	303	6502	3438	2091	5529	No	1.38	Si
SLU 77	ini.	-198.02	2516	0.82	0	303	6502	3438	2091	5529	No	2.2	Si
SLU 77	fin.	-245.18	-4002	0.82	0	303	6502	3438	2091	5529	No	1.38	Si
SLU 75	ini.	-191.42	2451	0.82	0	303	6502	3438	2091	5529	No	2.26	Si
SLU 75	fin.	-242	-3935	0.82	0	303	6502	3438	2091	5529	No	1.4	Si
SLU 82	ini.	-179.19	2398	0.82	0	303	6502	3438	2091	5529	No	2.31	Si
SLU 82	fin.	-262.74	-4095	0.82	0	303	6502	3438	2091	5529	No	1.35	Si
SLU 79	ini.	-193.52	2482	0.82	0	303	6502	3438	2091	5529	No	2.23	Si
SLU 79	fin.	-246.08	-3986	0.82	0	303	6502	3438	2091	5529	No	1.39	Si
SLU 76	ini.	-186.28	2413	0.82	0	303	6502	3438	2091	5529	No	2.29	Si
SLU 76	fin.	-244.3	-3929	0.82	0	303	6502	3438	2091	5529	No	1.41	Si
SLU 83	ini.	-185.79	2463	0.82	0	303	6502	3438	2091	5529	No	2.24	Si
SLU 83	fin.	-265.93	-4162	0.82	0	303	6502	3438	2091	5529	No	1.33	Si
SLU 81	ini.	-180.14	2402	0.82	0	303	6502	3438	2091	5529	No	2.3	Si
SLU 81	fin.	-260.64	-4079	0.82	0	303	6502	3438	2091	5529	No	1.36	Si
SLU 84	ini.	-184.85	2459	0.82	0	303	6502	3438	2091	5529	No	2.25	Si
SLU 84	fin.	-268.03	-4177	0.82	0	303	6502	3438	2091	5529	No	1.32	Si
SLU 78	ini.	-197.07	2512	0.82	0	303	6502	3438	2091	5529	No	2.2	Si
SLU 78	fin.	-247.29	-4017	0.82	0	303	6502	3438	2091	5529	No	1.38	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-733.36	-2075	-0.0005095	0.0002807	0.0035	0.82		2487.45	2487.45		3.39	Si
SLV 15	fin.	856.45	2715	-0.0006169	0.0002807	0.0035	0.82		2482.11	2482.11		2.9	Si
SLV 16	ini.	-652.05	-1890	-0.0004429	0.0002807	0.0035	0.82		2487.45	2487.45		3.81	Si
SLV 16	fin.	744.06	2297	-0.0005197	0.0002807	0.0035	0.82		2482.11	2482.11		3.34	Si
SLV 3	ini.	478.63	295	-0.000311	0.0002807	0.0035	0.82		2482.11	2482.11		5.19	Si
SLV 3	fin.	-1119.24	-4976	-0.0008626	0.0002807	0.0035	0.82		2487.45	2487.45		2.22	Si
SLV 1	ini.	377.06	374	-0.0002391	0.0002807	0.0035	0.82		2482.11	2482.11		6.58	Si
SLV 1	fin.	-1041.01	-4676	-0.0007859	0.0002807	0.0035	0.82		2487.45	2487.45		2.39	Si
SLV 8	ini.	239.85	-475	-0.0001477	0.0002807	0.0035	0.82		2482.11	2482.11		10.35	Si
SLV 8	fin.	-611.51	-2977	-0.0004108	0.0002807	0.0035	0.82		2487.45	2487.45		4.07	Si
SLD 4	ini.	160.6	-227	-0.0000974	0.0002807	0.0035	0.82		2482.11	2482.11		15.46	Si
SLD 4	fin.	-611.27	-2986	-0.0004106	0.0002807	0.0035	0.82		2487.45	2487.45		4.07	Si
SLV 2	ini.	458.37	559	-0.0002963	0.0002807	0.0035	0.82		2482.11	2482.11		5.42	Si
SLV 2	fin.	-1153.39	-5094	-0.000897	0.0002807	0.0035	0.82		2487.45	2487.45		2.16	Si
SLV 4	ini.	559.94	480	-0.0003717	0.0002807	0.0035	0.82		2482.11	2482.11		4.43	Si
SLV 4	fin.	-1231.63	-5393	-0.0009779	0.0002807	0.0035	0.82		2487.45	2487.45		2.02	Si
SLV 14	ini.	-753.62	-1811	-0.0005265	0.0002807	0.0035	0.82		2487.45	2487.45		3.3	Si
SLV 14	fin.	822.3	2597	-0.0005868	0.0002807	0.0035	0.82		2482.11	2482.11		3.02	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 13	ini.	-834.93	-1996	-0.0005964	0.0002807	0.0035	0.82		2487.45	2487.45		2.98	Si
SLV 13	fin.	934.68	3014	-0.0006876	0.0002807	0.0035	0.82		2482.11	2482.11		2.66	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 13	ini.	-834.93	5325	0.82	0	455	6502	5156	2091	6957		1.31	Si
SLV 13	fin.	934.68	2882	0.82	0	455	6502	5156	2091	6957		2.41	Si
SLV 4	ini.	559.94	-1912	0.82	0	455	6502	5156	2091	6957		3.64	Si
SLV 4	fin.	-1231.63	-7999	0.82	0	455	6502	5156	2091	6957		0.87	No
SLD 4	ini.	160.6	159	0.82	0	455	6502	5156	2091	6957		43.68	Si
SLD 4	fin.	-611.27	-4885	0.82	0	455	6502	5156	2091	6957		1.42	Si
SLV 2	ini.	458.37	-2266	0.82	0	455	6502	5156	2091	6957		3.07	Si
SLV 2	fin.	-1153.39	-7475	0.82	0	455	6502	5156	2091	6957		0.93	No
SLV 3	ini.	478.63	-1456	0.82	0	455	6502	5156	2091	6957		4.78	Si
SLV 3	fin.	-1119.24	-7427	0.82	0	455	6502	5156	2091	6957		0.94	No
SLV 16	ini.	-652.05	5221	0.82	0	455	6502	5156	2091	6957		1.33	Si
SLV 16	fin.	744.06	1786	0.82	0	455	6502	5156	2091	6957		3.9	Si
SLV 15	ini.	-733.36	5678	0.82	0	455	6502	5156	2091	6957		1.23	Si
SLV 15	fin.	856.45	2358	0.82	0	455	6502	5156	2091	6957		2.95	Si
SLV 8	ini.	239.85	1077	0.82	0	455	6502	5156	2091	6957		6.46	Si
SLV 8	fin.	-611.51	-5084	0.82	0	455	6502	5156	2091	6957		1.37	Si
SLV 14	ini.	-753.62	4868	0.82	0	455	6502	5156	2091	6957		1.43	Si
SLV 14	fin.	822.3	2310	0.82	0	455	6502	5156	2091	6957		3.01	Si
SLV 1	ini.	377.06	-1809	0.82	0	455	6502	5156	2091	6957		3.85	Si
SLV 1	fin.	-1041.01	-6903	0.82	0	455	6502	5156	2091	6957		1.01	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.02	SLV 4	Si
V_SLV	0.87	SLV 4	No
PF_SLU	9.18	SLU 84	Si
V_SLU	1.324	SLU 84	Si

Trave di accoppiamento 71

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-18.518	-0.094	6.93	8.35	1.42	-18.518	0.706	6.93	8.35	1.42	0.8	0.16	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	f <sub>nk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 59	ini.	267.55	-240	-0.0000534	0.0002246	0.0035	1.42		7594.91	7594.91	No	28.39	Si
SLU 59	fin.	163.37	-236	-0.0000324	0.0002246	0.0035	1.42		7594.91	7594.91	No	46.49	Si
SLU 80	ini.	276.54	-292	-0.0000553	0.0002246	0.0035	1.42		7594.91	7594.91	No	27.46	Si
SLU 80	fin.	190.66	-282	-0.0000379	0.0002246	0.0035	1.42		7594.91	7594.91	No	39.84	Si
SLU 58	ini.	266.95	-242	-0.0000533	0.0002246	0.0035	1.42		7594.91	7594.91	No	28.45	Si
SLU 58	fin.	164.97	-238	-0.0000327	0.0002246	0.0035	1.42		7594.91	7594.91	No	46.04	Si
SLU 79	ini.	275.94	-294	-0.0000551	0.0002246	0.0035	1.42		7594.91	7594.91	No	27.52	Si
SLU 79	fin.	192.26	-284	-0.0000382	0.0002246	0.0035	1.42		7594.91	7594.91	No	39.5	Si
SLU 77	ini.	275.38	-302	-0.0000555	0.0002246	0.0035	1.42		7594.91	7594.91	No	27.58	Si
SLU 77	fin.	196.19	-290	-0.000039	0.0002246	0.0035	1.42		7594.91	7594.91	No	38.71	Si
SLU 84	ini.	273.24	-303	-0.0000546	0.0002246	0.0035	1.42		7594.91	7594.91	No	27.8	Si
SLU 84	fin.	195.9	-294	-0.0000389	0.0002246	0.0035	1.42		7594.91	7594.91	No	38.77	Si
SLU 57	ini.	266.99	-248	-0.0000533	0.0002246	0.0035	1.42		7594.91	7594.91	No	28.45	Si
SLU 57	fin.	167.3	-243	-0.0000332	0.0002246	0.0035	1.42		7594.91	7594.91	No	45.4	Si
SLU 78	ini.	275.97	-300	-0.0000552	0.0002246	0.0035	1.42		7594.91	7594.91	No	27.52	Si



Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 78	fin.	194.59	-289	-0.0000387	0.0002246	0.0035	1.42		7594.91	7594.91	No	39.03	Si
SLU 76	ini.	267.77	-283	-0.0000535	0.0002246	0.0035	1.42		7594.91	7594.91	No	28.36	Si
SLU 76	fin.	184.77	-275	-0.0000367	0.0002246	0.0035	1.42		7594.91	7594.91	No	41.1	Si
SLU 83	ini.	272.64	-305	-0.0000545	0.0002246	0.0035	1.42		7594.91	7594.91	No	27.86	Si
SLU 83	fin.	197.5	-295	-0.0000393	0.0002246	0.0035	1.42		7594.91	7594.91	No	38.45	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 55	ini.	258.78	98	1.42	0	329	6344	4083	3621	6673	No	68.17	Si
SLU 55	fin.	157.48	-331	1.42	0	329	6344	4083	3621	6673	No	20.13	Si
SLU 44	ini.	235.92	91	1.42	0	329	6344	4083	3621	6673	No	73.62	Si
SLU 44	fin.	129.18	-339	1.42	0	329	6344	4083	3621	6673	No	19.7	Si
SLU 48	ini.	252.7	94	1.42	0	329	6344	4083	3621	6673	No	70.89	Si
SLU 48	fin.	145.42	-335	1.42	0	329	6344	4083	3621	6673	No	19.91	Si
SLU 59	ini.	267.55	96	1.42	0	329	6344	4083	3621	6673	No	69.76	Si
SLU 59	fin.	163.37	-334	1.42	0	329	6344	4083	3621	6673	No	20	Si
SLU 51	ini.	253.86	84	1.42	0	329	6344	4083	3621	6673	No	79.65	Si
SLU 51	fin.	139.88	-346	1.42	0	329	6344	4083	3621	6673	No	19.31	Si
SLU 49	ini.	253.3	91	1.42	0	329	6344	4083	3621	6673	No	73.7	Si
SLU 49	fin.	143.82	-339	1.42	0	329	6344	4083	3621	6673	No	19.69	Si
SLU 47	ini.	245.09	86	1.42	0	329	6344	4083	3621	6673	No	77.58	Si
SLU 47	fin.	134	-343	1.42	0	329	6344	4083	3621	6673	No	19.43	Si
SLU 43	ini.	234.93	97	1.42	0	329	6344	4083	3621	6673	No	69.06	Si
SLU 43	fin.	131.85	-333	1.42	0	329	6344	4083	3621	6673	No	20.05	Si
SLU 50	ini.	253.26	87	1.42	0	329	6344	4083	3621	6673	No	76.38	Si
SLU 50	fin.	141.48	-342	1.42	0	329	6344	4083	3621	6673	No	19.51	Si
SLU 46	ini.	244.13	95	1.42	0	329	6344	4083	3621	6673	No	70.11	Si
SLU 46	fin.	139	-334	1.42	0	329	6344	4083	3621	6673	No	19.97	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 3	ini.	524.8	447	-0.0001058	0.0003369	0.0035	1.42		7808.98	7808.98		14.88	Si
SLV 3	fin.	541.29	138	-0.0001092	0.0003369	0.0035	1.42		7808.98	7808.98		14.43	Si
SLD 7	ini.	345.28	363	-0.0000689	0.0003369	0.0035	1.42		7808.98	7808.98		22.62	Si
SLD 7	fin.	319.66	105	-0.0000637	0.0003369	0.0035	1.42		7808.98	7808.98		24.43	Si
SLV 7	ini.	552.2	1073	-0.0001115	0.0003369	0.0035	1.42		7808.98	7808.98		14.14	Si
SLV 7	fin.	584.51	476	-0.0001182	0.0003369	0.0035	1.42		7808.98	7808.98		13.36	Si
SLV 2	ini.	357.48	-239	-0.0000714	0.0003369	0.0035	1.42		7808.98	7808.98		21.84	Si
SLV 2	fin.	310.74	-219	-0.0000619	0.0003369	0.0035	1.42		7808.98	7808.98		25.13	Si
SLV 4	ini.	530.98	467	-0.0001071	0.0003369	0.0035	1.42		7808.98	7808.98		14.71	Si
SLV 4	fin.	531.07	151	-0.0001071	0.0003369	0.0035	1.42		7808.98	7808.98		14.7	Si
SLV 1	ini.	351.3	-260	-0.0000702	0.0003369	0.0035	1.42		7808.98	7808.98		22.23	Si
SLV 1	fin.	320.96	-233	-0.000064	0.0003369	0.0035	1.42		7808.98	7808.98		24.33	Si
SLV 12	ini.	405.25	914	-0.0000812	0.0003369	0.0035	1.42		7808.98	7808.98		19.27	Si
SLV 12	fin.	396.18	403	-0.0000793	0.0003369	0.0035	1.42		7808.98	7808.98		19.71	Si
SLD 8	ini.	347.02	369	-0.0000693	0.0003369	0.0035	1.42		7808.98	7808.98		22.5	Si
SLD 8	fin.	316.78	109	-0.0000631	0.0003369	0.0035	1.42		7808.98	7808.98		24.65	Si
SLV 11	ini.	401.26	901	-0.0000803	0.0003369	0.0035	1.42		7808.98	7808.98		19.46	Si
SLV 11	fin.	402.78	394	-0.0000807	0.0003369	0.0035	1.42		7808.98	7808.98		19.39	Si
SLV 8	ini.	556.19	1087	-0.0001123	0.0003369	0.0035	1.42		7808.98	7808.98		14.04	Si
SLV 8	fin.	577.91	485	-0.0001168	0.0003369	0.0035	1.42		7808.98	7808.98		13.51	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 16	ini.	27.83	174	1.42	0	494	6344	6124	3621	6838		39.33	Si
SLV 16	fin.	-74.71	-357	1.42	0	494	6344	6124	3621	6838		19.13	Si
SLV 11	ini.	401.26	87	1.42	0	494	6344	6124	3621	6838		78.76	Si
SLV 11	fin.	402.78	-416	1.42	0	494	6344	6124	3621	6838		16.42	Si
SLV 15	ini.	21.65	200	1.42	0	494	6344	6124	3621	6838		34.1	Si
SLV 15	fin.	-64.49	-331	1.42	0	494	6344	6124	3621	6838		20.67	Si
SLV 8	ini.	556.19	6	1.42	0	494	6344	6124	3621	6838		1123.49	Si
SLV 8	fin.	577.91	-403	1.42	0	494	6344	6124	3621	6838		16.98	Si
SLD 8	ini.	347.02	56	1.42	0	494	6344	6124	3621	6838		121.5	Si
SLD 8	fin.	316.78	-312	1.42	0	494	6344	6124	3621	6838		21.92	Si
SLV 7	ini.	552.2	23	1.42	0	494	6344	6124	3621	6838		293.41	Si
SLV 7	fin.	584.51	-385	1.42	0	494	6344	6124	3621	6838		17.74	Si
SLD 7	ini.	345.28	64	1.42	0	494	6344	6124	3621	6838		107.17	Si
SLD 7	fin.	319.66	-304	1.42	0	494	6344	6124	3621	6838		22.46	Si
SLD 11	ini.	281.31	91	1.42	0	494	6344	6124	3621	6838		75.17	Si
SLD 11	fin.	242.47	-318	1.42	0	494	6344	6124	3621	6838		21.53	Si
SLV 12	ini.	405.25	70	1.42	0	494	6344	6124	3621	6838		98.25	Si
SLV 12	fin.	396.18	-434	1.42	0	494	6344	6124	3621	6838		15.77	Si
SLD 12	ini.	283.06	83	1.42	0	494	6344	6124	3621	6838		81.95	Si
SLD 12	fin.	239.59	-325	1.42	0	494	6344	6124	3621	6838		21.03	Si

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	13.36	SLV 7	Si
V_SLV	15.772	SLV 12	Si
PF_SLU	27.465	SLU 80	Si
V_SLU	19.309	SLU 51	Si



## Trave di accoppiamento 73

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-15.433	-3.314	6.93	8.35	1.42	-16.333	-3.314	6.93	8.35	1.42	0.9	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	e <sub>f,d</sub>	γ <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em <sub>-</sub>	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 69	ini.	-439.43	-2957	-0.0000892	0.0001872	0.0035	1.42		7359.91	7359.91	No	16.75	Si
SLU 69	fin.	226.37	-2593	-0.0000452	0.0001872	0.0035	1.42		7350.79	7350.79	No	32.47	Si
SLU 64	ini.	-406.33	-2745	-0.0000822	0.0001872	0.0035	1.42		7359.91	7359.91	No	18.11	Si
SLU 64	fin.	202.82	-2411	-0.0000404	0.0001872	0.0035	1.42		7350.79	7350.79	No	36.24	Si
SLU 70	ini.	-435.71	-2958	-0.0000884	0.0001872	0.0035	1.42		7359.91	7359.91	No	16.89	Si
SLU 70	fin.	221.06	-2597	-0.0000441	0.0001872	0.0035	1.42		7350.79	7350.79	No	33.25	Si
SLU 72	ini.	-417.7	-2916	-0.0000846	0.0001872	0.0035	1.42		7359.91	7359.91	No	17.62	Si
SLU 72	fin.	207.39	-2570	-0.0000413	0.0001872	0.0035	1.42		7350.79	7350.79	No	35.44	Si
SLU 67	ini.	-428.16	-2874	-0.0000868	0.0001872	0.0035	1.42		7359.91	7359.91	No	17.19	Si
SLU 67	fin.	216.12	-2520	-0.0000431	0.0001872	0.0035	1.42		7350.79	7350.79	No	34.01	Si
SLU 68	ini.	-407.67	-2832	-0.0000825	0.0001872	0.0035	1.42		7359.91	7359.91	No	18.05	Si
SLU 68	fin.	198.91	-2496	-0.0000396	0.0001872	0.0035	1.42		7350.79	7350.79	No	36.96	Si
SLU 65	ini.	-400.12	-2748	-0.0000809	0.0001872	0.0035	1.42		7359.91	7359.91	No	18.39	Si
SLU 65	fin.	193.96	-2419	-0.0000386	0.0001872	0.0035	1.42		7350.79	7350.79	No	37.9	Si
SLU 27	ini.	-393.42	-2495	-0.0000795	0.0001872	0.0035	1.42		7359.91	7359.91	No	18.71	Si
SLU 27	fin.	217.41	-2163	-0.0000434	0.0001872	0.0035	1.42		7350.79	7350.79	No	33.81	Si
SLU 66	ini.	-431.88	-2872	-0.0000876	0.0001872	0.0035	1.42		7359.91	7359.91	No	17.04	Si
SLU 66	fin.	221.43	-2515	-0.0000442	0.0001872	0.0035	1.42		7350.79	7350.79	No	33.2	Si
SLU 71	ini.	-421.42	-2914	-0.0000854	0.0001872	0.0035	1.42		7359.91	7359.91	No	17.46	Si
SLU 71	fin.	212.7	-2566	-0.0000424	0.0001872	0.0035	1.42		7350.79	7350.79	No	34.56	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	f <sub>vd</sub>	V <sub>t</sub>	V <sub>t,f</sub>	V <sub>t,c</sub>	V <sub>t,c int.</sub>	V <sub>t,R</sub>	incremento > 50%	c.s.	Verifica
SLU 66	ini.	-431.88	1730	1.42	0	576	7137	5953	3621	7713	No	4.46	Si
SLU 66	fin.	221.43	281	1.42	0	576	7137	5953	3621	7713	No	27.41	Si
SLU 77	ini.	-320.21	1623	1.42	0	576	7137	5953	3621	7713	No	4.75	Si
SLU 77	fin.	147.08	-102	1.42	0	576	7137	5953	3621	7713	No	75.86	Si
SLU 71	ini.	-421.42	1703	1.42	0	576	7137	5953	3621	7713	No	4.53	Si
SLU 71	fin.	212.7	254	1.42	0	576	7137	5953	3621	7713	No	30.42	Si
SLU 65	ini.	-400.12	1643	1.42	0	576	7137	5953	3621	7713	No	4.7	Si
SLU 65	fin.	193.96	194	1.42	0	576	7137	5953	3621	7713	No	39.83	Si
SLU 70	ini.	-435.71	1737	1.42	0	576	7137	5953	3621	7713	No	4.44	Si
SLU 70	fin.	221.06	288	1.42	0	576	7137	5953	3621	7713	No	26.74	Si
SLU 72	ini.	-417.7	1690	1.42	0	576	7137	5953	3621	7713	No	4.56	Si
SLU 72	fin.	207.39	241	1.42	0	576	7137	5953	3621	7713	No	32	Si
SLU 69	ini.	-439.43	1750	1.42	0	576	7137	5953	3621	7713	No	4.41	Si
SLU 69	fin.	226.37	301	1.42	0	576	7137	5953	3621	7713	No	25.63	Si
SLU 64	ini.	-406.33	1664	1.42	0	576	7137	5953	3621	7713	No	4.64	Si
SLU 64	fin.	202.82	214	1.42	0	576	7137	5953	3621	7713	No	35.96	Si
SLU 67	ini.	-428.16	1718	1.42	0	576	7137	5953	3621	7713	No	4.49	Si
SLU 67	fin.	216.12	269	1.42	0	576	7137	5953	3621	7713	No	28.68	Si
SLU 68	ini.	-407.67	1662	1.42	0	576	7137	5953	3621	7713	No	4.64	Si
SLU 68	fin.	198.91	213	1.42	0	576	7137	5953	3621	7713	No	36.18	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 9	ini.	-2001.84	-3400	-0.0004548	0.0002807	0.0035	1.42		7346.34	7346.34		3.67	Si
SLV 9	fin.	1500.23	-1195	-0.0003262	0.0002807	0.0035	1.42		7337.02	7337.02		4.89	Si
SLV 14	ini.	-3898.51	-4570	-0.0010496	0.0002807	0.0035	1.42		7346.34	7346.34		1.88	Si
SLV 14	fin.	3686.78	-1006	-0.0009756	0.0002807	0.0035	1.42		7337.02	7337.02		1.99	Si
SLV 13	ini.	-4271.54	-4854	-0.0011897	0.0002807	0.0035	1.42		7346.34	7346.34		1.72	Si
SLV 13	fin.	4058.44	-991	-0.0011103	0.0002807	0.0035	1.42		7337.02	7337.02		1.81	Si
SLV 1	ini.	3070.27	168	-0.0007694	0.0002807	0.0035	1.42		7337.02	7337.02		2.39	Si
SLV 1	fin.	-3363.47	-2401	-0.0008637	0.0002807	0.0035	1.42		7346.34	7346.34		2.18	Si
SLV 2	ini.	3443.31	452	-0.0008918	0.0002807	0.0035	1.42		7337.02	7337.02		2.13	Si
SLV 2	fin.	-3735.13	-2416	-0.0009911	0.0002807	0.0035	1.42		7346.34	7346.34		1.97	Si
SLV 15	ini.	-3957.85	-4551	-0.0010713	0.0002807	0.0035	1.42		7346.34	7346.34		1.86	Si
SLV 15	fin.	3968.21	-1241	-0.0010768	0.0002807	0.0035	1.42		7337.02	7337.02		1.85	Si
SLV 4	ini.	3757	756	-0.0010004	0.0002807	0.0035	1.42		7337.02	7337.02		1.95	Si
SLV 4	fin.	-3825.36	-2666	-0.0010232	0.0002807	0.0035	1.42		7346.34	7346.34		1.92	Si
SLV 16	ini.	-3584.82	-4267	-0.0009387	0.0002807	0.0035	1.42		7346.34	7346.34		2.05	Si
SLV 16	fin.	3596.55	-1256	-0.0009442	0.0002807	0.0035	1.42		7337.02	7337.02		2.04	Si
SLD 13	ini.	-1973.16	-3249	-0.0004471	0.0002807	0.0035	1.42		7346.34	7346.34		3.72	Si
SLD 13	fin.	1801.29	-1471	-0.0004023	0.0002807	0.0035	1.42		7337.02	7337.02		4.07	Si
SLV 3	ini.	3383.97	472	-0.0008719	0.0002807	0.0035	1.42		7337.02	7337.02		2.17	Si
SLV 3	fin.	-3453.69	-2651	-0.0008939	0.0002807	0.0035	1.42		7346.34	7346.34		2.13	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 4	ini.	3757	-10048	1.42	0	864	7137	8929	3621	8001		0.8	No
SLV 4	fin.	-3825.36	-11228	1.42	0	864	7137	8929	3621	8001		0.71	No
SLV 14	ini.	-3898.51	11302	1.42	0	864	7137	8929	3621	8001		0.71	No
SLV 14	fin.	3686.78	10201	1.42	0	864	7137	8929	3621	8001		0.78	No
SLD 13	ini.	-1973.16	5947	1.42	0	864	7137	8929	3621	8001		1.35	Si
SLD 13	fin.	1801.29	4821	1.42	0	864	7137	8929	3621	8001		1.66	Si
SLV 13	ini.	-4271.54	12365	1.42	0	864	7137	8929	3621	8001		0.65	No
SLV 13	fin.	4058.44	11264	1.42	0	864	7137	8929	3621	8001		0.71	No
SLV 15	ini.	-3957.85	12381	1.42	0	864	7137	8929	3621	8001		0.65	No
SLV 15	fin.	3968.21	11122	1.42	0	864	7137	8929	3621	8001		0.72	No
SLV 3	ini.	3383.97	-8985	1.42	0	864	7137	8929	3621	8001		0.89	No
SLV 3	fin.	-3453.69	-10164	1.42	0	864	7137	8929	3621	8001		0.79	No
SLV 1	ini.	3070.27	-9002	1.42	0	864	7137	8929	3621	8001		0.89	No
SLV 1	fin.	-3363.47	-10022	1.42	0	864	7137	8929	3621	8001		0.8	No
SLV 2	ini.	3443.31	-10065	1.42	0	864	7137	8929	3621	8001		0.79	No
SLV 2	fin.	-3735.13	-11086	1.42	0	864	7137	8929	3621	8001		0.72	No
SLV 16	ini.	-3584.82	11318	1.42	0	864	7137	8929	3621	8001		0.71	No
SLV 16	fin.	3596.55	10058	1.42	0	864	7137	8929	3621	8001		0.8	No
SLD 15	ini.	-1839.32	5957	1.42	0	864	7137	8929	3621	8001		1.34	Si
SLD 15	fin.	1763.03	4769	1.42	0	864	7137	8929	3621	8001		1.68	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.72	SLV 13	Si
V_SLV	0.646	SLV 15	No
PF_SLU	16.749	SLU 69	Si
V_SLU	4.407	SLU 69	Si

## Trave di accoppiamento 75

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-15.033	1.366	6.93	8.35	1.42	-15.033	2.166	6.93	8.35	1.42	0.8	0.16	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb_	fhk	fvk0	fmedio	t0	fv0	μ	φ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 69	ini.	148.64	-198	-0.0000294	0.0002246	0.0035	1.42		7594.91	7594.91	No	51.1	Si
SLU 69	fin.	221.45	-243	-0.0000441	0.0002246	0.0035	1.42		7594.91	7594.91	No	34.3	Si
SLU 66	ini.	139.42	-187	-0.0000276	0.0002246	0.0035	1.42		7594.91	7594.91	No	54.47	Si
SLU 66	fin.	206.29	-231	-0.000041	0.0002246	0.0035	1.42		7594.91	7594.91	No	36.82	Si
SLU 80	ini.	132.05	-195	-0.0000261	0.0002246	0.0035	1.42		7594.91	7594.91	No	57.52	Si
SLU 80	fin.	211.32	-234	-0.000042	0.0002246	0.0035	1.42		7594.91	7594.91	No	35.94	Si
SLU 71	ini.	151.74	-199	-0.0000301	0.0002246	0.0035	1.42		7594.91	7594.91	No	50.05	Si
SLU 71	fin.	226.78	-245	-0.0000452	0.0002246	0.0035	1.42		7594.91	7594.91	No	33.49	Si
SLU 70	ini.	148.9	-200	-0.0000295	0.0002246	0.0035	1.42		7594.91	7594.91	No	51.01	Si
SLU 70	fin.	217.22	-249	-0.0000432	0.0002246	0.0035	1.42		7594.91	7594.91	No	34.96	Si
SLU 79	ini.	131.79	-193	-0.0000261	0.0002246	0.0035	1.42		7594.91	7594.91	No	57.63	Si
SLU 79	fin.	215.55	-229	-0.0000429	0.0002246	0.0035	1.42		7594.91	7594.91	No	35.23	Si
SLU 78	ini.	128.95	-193	-0.0000255	0.0002246	0.0035	1.42		7594.91	7594.91	No	58.9	Si
SLU 78	fin.	205.99	-232	-0.000041	0.0002246	0.0035	1.42		7594.91	7594.91	No	36.87	Si
SLU 68	ini.	142.95	-192	-0.0000283	0.0002246	0.0035	1.42		7594.91	7594.91	No	53.13	Si
SLU 68	fin.	204.57	-242	-0.0000407	0.0002246	0.0035	1.42		7594.91	7594.91	No	37.13	Si
SLU 77	ini.	128.7	-192	-0.0000255	0.0002246	0.0035	1.42		7594.91	7594.91	No	59.01	Si
SLU 77	fin.	210.23	-227	-0.0000418	0.0002246	0.0035	1.42		7594.91	7594.91	No	36.13	Si
SLU 72	ini.	152	-201	-0.0000301	0.0002246	0.0035	1.42		7594.91	7594.91	No	49.97	Si
SLU 72	fin.	222.55	-250	-0.0000443	0.0002246	0.0035	1.42		7594.91	7594.91	No	34.13	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 74	ini.	119.48	324	1.42	0	329	6344	4083	3621	6673	No	20.62	Si
SLU 74	fin.	195.07	-180	1.42	0	329	6344	4083	3621	6673	No	37.06	Si
SLU 80	ini.	132.05	323	1.42	0	329	6344	4083	3621	6673	No	20.63	Si
SLU 80	fin.	211.32	-180	1.42	0	329	6344	4083	3621	6673	No	37.01	Si
SLU 83	ini.	114.03	335	1.42	0	329	6344	4083	3621	6673	No	19.91	Si
SLU 83	fin.	195.59	-169	1.42	0	329	6344	4083	3621	6673	No	39.58	Si
SLU 84	ini.	114.28	326	1.42	0	329	6344	4083	3621	6673	No	20.45	Si
SLU 84	fin.	191.36	-177	1.42	0	329	6344	4083	3621	6673	No	37.62	Si
SLU 77	ini.	128.7	329	1.42	0	329	6344	4083	3621	6673	No	20.26	Si
SLU 77	fin.	210.23	-174	1.42	0	329	6344	4083	3621	6673	No	38.27	Si
SLU 79	ini.	131.79	332	1.42	0	329	6344	4083	3621	6673	No	20.09	Si
SLU 79	fin.	215.55	-172	1.42	0	329	6344	4083	3621	6673	No	38.91	Si
SLU 78	ini.	128.95	321	1.42	0	329	6344	4083	3621	6673	No	20.82	Si
SLU 78	fin.	205.99	-183	1.42	0	329	6344	4083	3621	6673	No	36.43	Si
SLU 81	ini.	104.81	329	1.42	0	329	6344	4083	3621	6673	No	20.26	Si
SLU 81	fin.	180.43	-174	1.42	0	329	6344	4083	3621	6673	No	38.29	Si
SLU 75	ini.	119.74	315	1.42	0	329	6344	4083	3621	6673	No	21.19	Si
SLU 75	fin.	190.84	-189	1.42	0	329	6344	4083	3621	6673	No	35.34	Si
SLU 82	ini.	105.06	321	1.42	0	329	6344	4083	3621	6673	No	20.81	Si
SLU 82	fin.	176.2	-183	1.42	0	329	6344	4083	3621	6673	No	36.45	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 5	ini.	479.42	875	-0.0000964	0.0003369	0.0035	1.42		7808.98	7808.98		16.29	Si
SLV 5	fin.	475.74	1099	-0.0000956	0.0003369	0.0035	1.42		7808.98	7808.98		16.41	Si
SLV 6	ini.	470.32	876	-0.0000945	0.0003369	0.0035	1.42		7808.98	7808.98		16.6	Si
SLV 6	fin.	439.24	1087	-0.0000881	0.0003369	0.0035	1.42		7808.98	7808.98		17.78	Si
SLV 14	ini.	-215.06	-12	-0.0000426	0.0003369	0.0035	1.42		7818.07	7818.07		36.35	Si
SLV 14	fin.	-491.16	-15	-0.0000987	0.0003369	0.0035	1.42		7818.07	7818.07		15.92	Si
SLV 2	ini.	550.85	321	-0.0001112	0.0003369	0.0035	1.42		7808.98	7808.98		14.18	Si
SLV 2	fin.	792.04	386	-0.0001621	0.0003369	0.0035	1.42		7808.98	7808.98		9.86	Si
SLV 4	ini.	392.25	-255	-0.0000785	0.0003369	0.0035	1.42		7808.98	7808.98		19.91	Si
SLV 4	fin.	718.06	-333	-0.0001463	0.0003369	0.0035	1.42		7808.98	7808.98		10.88	Si
SLD 1	ini.	295.44	62	-0.0000588	0.0003369	0.0035	1.42		7808.98	7808.98		26.43	Si
SLD 1	fin.	443.69	81	-0.000089	0.0003369	0.0035	1.42		7808.98	7808.98		17.6	Si
SLV 1	ini.	564.94	320	-0.0001141	0.0003369	0.0035	1.42		7808.98	7808.98		13.82	Si
SLV 1	fin.	848.56	404	-0.0001742	0.0003369	0.0035	1.42		7808.98	7808.98		9.2	Si
SLV 3	ini.	406.34	-255	-0.0000814	0.0003369	0.0035	1.42		7808.98	7808.98		19.22	Si
SLV 3	fin.	774.58	-314	-0.0001583	0.0003369	0.0035	1.42		7808.98	7808.98		10.08	Si
SLV 16	ini.	-373.66	-588	-0.0000746	0.0003369	0.0035	1.42		7818.07	7818.07		20.92	Si
SLV 16	fin.	-565.14	-734	-0.000114	0.0003369	0.0035	1.42		7818.07	7818.07		13.83	Si
SLV 15	ini.	-359.57	-588	-0.0000718	0.0003369	0.0035	1.42		7818.07	7818.07		21.74	Si
SLV 15	fin.	-508.62	-715	-0.0001023	0.0003369	0.0035	1.42		7818.07	7818.07		15.37	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 1	ini.	564.94	999	1.42	0	494	6344	6124	3621	6838		6.84	Si
SLV 1	fin.	848.56	787	1.42	0	494	6344	6124	3621	6838		8.69	Si
SLV 5	ini.	479.42	1002	1.42	0	494	6344	6124	3621	6838		6.83	Si
SLV 5	fin.	475.74	192	1.42	0	494	6344	6124	3621	6838		35.57	Si
SLV 3	ini.	406.34	650	1.42	0	494	6344	6124	3621	6838		10.53	Si
SLV 3	fin.	774.58	752	1.42	0	494	6344	6124	3621	6838		9.09	Si
SLV 14	ini.	-215.06	-194	1.42	0	494	6344	6124	3621	6838		35.24	Si
SLV 14	fin.	-491.16	-1065	1.42	0	494	6344	6124	3621	6838		6.42	Si
SLV 6	ini.	470.32	957	1.42	0	494	6344	6124	3621	6838		7.15	Si
SLV 6	fin.	439.24	147	1.42	0	494	6344	6124	3621	6838		46.44	Si
SLV 4	ini.	392.25	580	1.42	0	494	6344	6124	3621	6838		11.79	Si
SLV 4	fin.	718.06	682	1.42	0	494	6344	6124	3621	6838		10.02	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 2	ini.	550.85	930	1.42	0	494	6344	6124	3621	6838		7.35	Si
SLV 2	fin.	792.04	718	1.42	0	494	6344	6124	3621	6838		9.53	Si
SLV 13	ini.	-200.97	-124	1.42	0	494	6344	6124	3621	6838		55.01	Si
SLV 13	fin.	-434.64	-995	1.42	0	494	6344	6124	3621	6838		6.87	Si
SLV 16	ini.	-373.66	-544	1.42	0	494	6344	6124	3621	6838		12.57	Si
SLV 16	fin.	-565.14	-1100	1.42	0	494	6344	6124	3621	6838		6.22	Si
SLV 15	ini.	-359.57	-474	1.42	0	494	6344	6124	3621	6838		14.42	Si
SLV 15	fin.	-508.62	-1030	1.42	0	494	6344	6124	3621	6838		6.64	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	9.203	SLV 1	Si
V_SLV	6.216	SLV 16	Si
PF_SLU	33.491	SLU 71	Si
V_SLU	19.912	SLU 83	Si

## Trave di accoppiamento 76

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-13.778	-0.194	6.93	8.35	1.42	-13.778	0.706	6.93	8.35	1.42	0.9	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	t <sub>fv</sub>	t <sub>fo</sub>	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	e <sub>f,d</sub>	y <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ε <sub>m</sub>	ε <sub>m</sub> _	ε <sub>mu</sub>	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 61	ini.	303.11	-591	-0.0000609	0.0001872	0.0035	1.42		7350.79	7350.79	No	24.25	Si
SLU 61	fin.	240.32	-415	-0.000048	0.0001872	0.0035	1.42		7350.79	7350.79	No	30.59	Si
SLU 55	ini.	302.59	-544	-0.0000608	0.0001872	0.0035	1.42		7350.79	7350.79	No	24.29	Si
SLU 55	fin.	236.17	-384	-0.0000472	0.0001872	0.0035	1.42		7350.79	7350.79	No	31.12	Si
SLU 56	ini.	301.51	-600	-0.0000606	0.0001872	0.0035	1.42		7350.79	7350.79	No	24.38	Si
SLU 56	fin.	254.43	-420	-0.0000509	0.0001872	0.0035	1.42		7350.79	7350.79	No	28.89	Si
SLU 77	ini.	242.75	-846	-0.0000485	0.0001872	0.0035	1.42		7350.79	7350.79	No	30.28	Si
SLU 77	fin.	299.06	-569	-0.0000601	0.0001872	0.0035	1.42		7350.79	7350.79	No	24.58	Si
SLU 58	ini.	323.46	-547	-0.0000651	0.0001872	0.0035	1.42		7350.79	7350.79	No	22.73	Si
SLU 58	fin.	244.91	-389	-0.000049	0.0001872	0.0035	1.42		7350.79	7350.79	No	30.01	Si
SLU 60	ini.	304.09	-593	-0.0000611	0.0001872	0.0035	1.42		7350.79	7350.79	No	24.17	Si
SLU 60	fin.	242.22	-417	-0.0000484	0.0001872	0.0035	1.42		7350.79	7350.79	No	30.35	Si
SLU 62	ini.	323.33	-593	-0.0000651	0.0001872	0.0035	1.42		7350.79	7350.79	No	22.73	Si
SLU 62	fin.	247.79	-420	-0.0000495	0.0001872	0.0035	1.42		7350.79	7350.79	No	29.67	Si
SLU 57	ini.	300.54	-598	-0.0000604	0.0001872	0.0035	1.42		7350.79	7350.79	No	24.46	Si
SLU 57	fin.	252.53	-418	-0.0000505	0.0001872	0.0035	1.42		7350.79	7350.79	No	29.11	Si
SLU 59	ini.	322.48	-545	-0.0000649	0.0001872	0.0035	1.42		7350.79	7350.79	No	22.79	Si
SLU 59	fin.	243.01	-388	-0.0000486	0.0001872	0.0035	1.42		7350.79	7350.79	No	30.25	Si
SLU 63	ini.	322.35	-591	-0.0000649	0.0001872	0.0035	1.42		7350.79	7350.79	No	22.8	Si
SLU 63	fin.	245.89	-418	-0.0000492	0.0001872	0.0035	1.42		7350.79	7350.79	No	29.89	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 75	ini.	222.54	701	1.42	0	576	7137	5953	3621	7713	No	11.01	Si
SLU 75	fin.	291.59	-74	1.42	0	576	7137	5953	3621	7713	No	104.55	Si
SLU 67	ini.	177.96	706	1.42	0	576	7137	5953	3621	7713	No	10.93	Si
SLU 67	fin.	271.86	-69	1.42	0	576	7137	5953	3621	7713	No	112.22	Si
SLU 64	ini.	181.65	672	1.42	0	576	7137	5953	3621	7713	No	11.48	Si
SLU 64	fin.	258.67	-102	1.42	0	576	7137	5953	3621	7713	No	75.42	Si
SLU 69	ini.	198.18	690	1.42	0	576	7137	5953	3621	7713	No	11.19	Si
SLU 69	fin.	279.33	-85	1.42	0	576	7137	5953	3621	7713	No	90.93	Si
SLU 77	ini.	242.75	685	1.42	0	576	7137	5953	3621	7713	No	11.27	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 77	fin.	299.06	-90	1.42	0	576	7137	5953	3621	7713	No	85.82	Si
SLU 66	ini.	178.94	707	1.42	0	576	7137	5953	3621	7713	No	10.91	Si
SLU 66	fin.	273.76	-67	1.42	0	576	7137	5953	3621	7713	No	114.73	Si
SLU 65	ini.	180.02	670	1.42	0	576	7137	5953	3621	7713	No	11.52	Si
SLU 65	fin.	255.5	-105	1.42	0	576	7137	5953	3621	7713	No	73.62	Si
SLU 78	ini.	241.77	683	1.42	0	576	7137	5953	3621	7713	No	11.29	Si
SLU 78	fin.	297.16	-91	1.42	0	576	7137	5953	3621	7713	No	84.41	Si
SLU 74	ini.	223.51	702	1.42	0	576	7137	5953	3621	7713	No	10.99	Si
SLU 74	fin.	293.49	-72	1.42	0	576	7137	5953	3621	7713	No	106.72	Si
SLU 70	ini.	197.2	688	1.42	0	576	7137	5953	3621	7713	No	11.21	Si
SLU 70	fin.	277.43	-86	1.42	0	576	7137	5953	3621	7713	No	89.35	Si

**Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche**

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-375.49	-1011	-0.0000752	0.0002807	0.0035	1.42		7346.34	7346.34		19.56	Si
SLV 15	fin.	617.53	-444	-0.0001257	0.0002807	0.0035	1.42		7337.02	7337.02		11.88	Si
SLV 11	ini.	-221.24	241	-0.0000439	0.0002807	0.0035	1.42		7346.34	7346.34		33.2	Si
SLV 11	fin.	682.34	-142	-0.0001395	0.0002807	0.0035	1.42		7337.02	7337.02		10.75	Si
SLV 3	ini.	572.81	618	-0.0001162	0.0002807	0.0035	1.42		7337.02	7337.02		12.81	Si
SLV 3	fin.	9.05	-71	-0.0000018	0.0002807	0.0035	1.42		7337.02	7337.02		811.09	Si
SLV 12	ini.	-231.8	224	-0.000046	0.0002807	0.0035	1.42		7346.34	7346.34		31.69	Si
SLV 12	fin.	682.98	-152	-0.0001396	0.0002807	0.0035	1.42		7337.02	7337.02		10.74	Si
SLV 6	ini.	552.01	-1251	-0.0001119	0.0002807	0.0035	1.42		7337.02	7337.02		13.29	Si
SLV 6	fin.	-292.74	-537	-0.0000583	0.0002807	0.0035	1.42		7346.34	7346.34		25.1	Si
SLV 16	ini.	-391.84	-1038	-0.0000785	0.0002807	0.0035	1.42		7346.34	7346.34		18.75	Si
SLV 16	fin.	618.51	-459	-0.0001259	0.0002807	0.0035	1.42		7337.02	7337.02		11.86	Si
SLV 1	ini.	722.6	29	-0.0001481	0.0002807	0.0035	1.42		7337.02	7337.02		10.15	Si
SLV 1	fin.	-228.91	-221	-0.0000454	0.0002807	0.0035	1.42		7346.34	7346.34		32.09	Si
SLV 5	ini.	562.57	-1233	-0.0001141	0.0002807	0.0035	1.42		7337.02	7337.02		13.04	Si
SLV 5	fin.	-293.37	-528	-0.0000585	0.0002807	0.0035	1.42		7346.34	7346.34		25.04	Si
SLV 4	ini.	556.46	591	-0.0001128	0.0002807	0.0035	1.42		7337.02	7337.02		13.19	Si
SLV 4	fin.	10.03	-86	-0.000002	0.0002807	0.0035	1.42		7337.02	7337.02		731.44	Si
SLV 2	ini.	706.25	2	-0.0001446	0.0002807	0.0035	1.42		7337.02	7337.02		10.39	Si
SLV 2	fin.	-227.92	-235	-0.0000452	0.0002807	0.0035	1.42		7346.34	7346.34		32.23	Si

**Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215**

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 13	ini.	-225.69	1364	1.42	0	864	7137	8929	3621	8001		5.87	Si
SLV 13	fin.	379.58	814	1.42	0	864	7137	8929	3621	8001		9.83	Si
SLD 15	ini.	-67.54	948	1.42	0	864	7137	8929	3621	8001		8.44	Si
SLD 15	fin.	375.15	188	1.42	0	864	7137	8929	3621	8001		42.64	Si
SLV 12	ini.	-231.8	1152	1.42	0	864	7137	8929	3621	8001		6.95	Si
SLV 12	fin.	682.98	-206	1.42	0	864	7137	8929	3621	8001		38.83	Si
SLV 14	ini.	-242.04	1393	1.42	0	864	7137	8929	3621	8001		5.74	Si
SLV 14	fin.	380.56	843	1.42	0	864	7137	8929	3621	8001		9.49	Si
SLD 16	ini.	-74.56	961	1.42	0	864	7137	8929	3621	8001		8.33	Si
SLD 16	fin.	375.58	200	1.42	0	864	7137	8929	3621	8001		39.98	Si
SLV 3	ini.	572.81	-450	1.42	0	864	7137	8929	3621	8001		17.77	Si
SLV 3	fin.	9.05	-1082	1.42	0	864	7137	8929	3621	8001		7.4	Si
SLV 11	ini.	-221.24	1133	1.42	0	864	7137	8929	3621	8001		7.06	Si
SLV 11	fin.	682.34	-225	1.42	0	864	7137	8929	3621	8001		35.58	Si
SLV 16	ini.	-391.84	1612	1.42	0	864	7137	8929	3621	8001		4.96	Si
SLV 16	fin.	618.51	633	1.42	0	864	7137	8929	3621	8001		12.63	Si
SLV 15	ini.	-375.49	1583	1.42	0	864	7137	8929	3621	8001		5.05	Si
SLV 15	fin.	617.53	604	1.42	0	864	7137	8929	3621	8001		13.24	Si
SLV 4	ini.	556.46	-421	1.42	0	864	7137	8929	3621	8001		19	Si
SLV 4	fin.	10.03	-1053	1.42	0	864	7137	8929	3621	8001		7.6	Si

**Tabella dei coefficienti di sicurezza minimi**

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	10.154	SLV 1	Si
V_SLV	4.962	SLV 16	Si
PF_SLU	22.725	SLU 58	Si
V_SLU	10.907	SLU 66	Si

**Trave di accoppiamento 77**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati geometrici**

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-17.718	6.526	4.83	5.73	0.9	-16.818	6.526	4.83	5.73	0.9	0.9	0.28	3500

**Caratteristiche del materiale**

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC





Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma_{F,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 74	ini.	785.15	-2728	-0.0004694	0.0001872	0.0035	0.9		2959	2959	No	3.77	Si
SLU 74	fin.	81.64	-1590	-0.0000406	0.0001872	0.0035	0.9		2959	2959	No	36.24	Si
SLU 76	ini.	771.38	-2688	-0.0004595	0.0001872	0.0035	0.9		2959	2959	No	3.84	Si
SLU 76	fin.	81.18	-1567	-0.0000403	0.0001872	0.0035	0.9		2959	2959	No	36.45	Si
SLU 73	ini.	774.4	-2672	-0.0004617	0.0001872	0.0035	0.9		2959	2959	No	3.82	Si
SLU 73	fin.	71.66	-1523	-0.0000355	0.0001872	0.0035	0.9		2959	2959	No	41.29	Si
SLU 84	ini.	806.86	-2806	-0.0004851	0.0001872	0.0035	0.9		2959	2959	No	3.67	Si
SLU 84	fin.	83.48	-1630	-0.0000415	0.0001872	0.0035	0.9		2959	2959	No	35.44	Si
SLU 77	ini.	782.12	-2745	-0.0004672	0.0001872	0.0035	0.9		2959	2959	No	3.78	Si
SLU 77	fin.	91.16	-1634	-0.0000454	0.0001872	0.0035	0.9		2959	2959	No	32.46	Si
SLU 83	ini.	807.82	-2806	-0.0004858	0.0001872	0.0035	0.9		2959	2959	No	3.66	Si
SLU 83	fin.	82.89	-1629	-0.0000412	0.0001872	0.0035	0.9		2959	2959	No	35.7	Si
SLU 78	ini.	781.17	-2745	-0.0004665	0.0001872	0.0035	0.9		2959	2959	No	3.79	Si
SLU 78	fin.	91.75	-1635	-0.0000457	0.0001872	0.0035	0.9		2959	2959	No	32.25	Si
SLU 75	ini.	784.19	-2729	-0.0004687	0.0001872	0.0035	0.9		2959	2959	No	3.77	Si
SLU 75	fin.	82.23	-1591	-0.0000409	0.0001872	0.0035	0.9		2959	2959	No	35.98	Si
SLU 81	ini.	810.84	-2790	-0.000488	0.0001872	0.0035	0.9		2959	2959	No	3.65	Si
SLU 81	fin.	73.38	-1585	-0.0000364	0.0001872	0.0035	0.9		2959	2959	No	40.33	Si
SLU 82	ini.	809.89	-2790	-0.0004873	0.0001872	0.0035	0.9		2959	2959	No	3.65	Si
SLU 82	fin.	73.97	-1586	-0.0000367	0.0001872	0.0035	0.9		2959	2959	No	40.01	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 77	ini.	782.12	-3018	0.9	0	365	7137	3773	2295	6068	No	2.01	Si
SLU 77	fin.	91.16	1687	0.9	0	365	7137	3773	2295	6068	No	3.6	Si
SLU 82	ini.	809.89	-3094	0.9	0	365	7137	3773	2295	6068	No	1.96	Si
SLU 82	fin.	73.97	1557	0.9	0	365	7137	3773	2295	6068	No	3.9	Si
SLU 78	ini.	781.17	-3012	0.9	0	365	7137	3773	2295	6068	No	2.01	Si
SLU 78	fin.	91.75	1681	0.9	0	365	7137	3773	2295	6068	No	3.61	Si
SLU 79	ini.	769.95	-2968	0.9	0	365	7137	3773	2295	6068	No	2.04	Si
SLU 79	fin.	89.71	1659	0.9	0	365	7137	3773	2295	6068	No	3.66	Si
SLU 83	ini.	807.82	-3098	0.9	0	365	7137	3773	2295	6068	No	1.96	Si
SLU 83	fin.	82.89	1633	0.9	0	365	7137	3773	2295	6068	No	3.72	Si
SLU 75	ini.	784.19	-3014	0.9	0	365	7137	3773	2295	6068	No	2.01	Si
SLU 75	fin.	82.23	1610	0.9	0	365	7137	3773	2295	6068	No	3.77	Si
SLU 81	ini.	810.84	-3101	0.9	0	365	7137	3773	2295	6068	No	1.96	Si
SLU 81	fin.	73.38	1562	0.9	0	365	7137	3773	2295	6068	No	3.88	Si
SLU 74	ini.	785.15	-3021	0.9	0	365	7137	3773	2295	6068	No	2.01	Si
SLU 74	fin.	81.64	1616	0.9	0	365	7137	3773	2295	6068	No	3.76	Si
SLU 84	ini.	806.86	-3092	0.9	0	365	7137	3773	2295	6068	No	1.96	Si
SLU 84	fin.	83.48	1628	0.9	0	365	7137	3773	2295	6068	No	3.73	Si
SLU 73	ini.	774.4	-2962	0.9	0	365	7137	3773	2295	6068	No	2.05	Si
SLU 73	fin.	71.66	1507	0.9	0	365	7137	3773	2295	6068	No	4.03	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 14	ini.	1674.47	-2792	-0.0011547	0.0002807	0.0035	0.9		2989.59	2989.59		1.79	Si
SLV 14	fin.	-828.45	1973	-0.0004718	0.0002807	0.0035	0.9		2995.37	2995.37		3.62	Si
SLD 13	ini.	981.33	-2218	-0.00058	0.0002807	0.0035	0.9		2989.59	2989.59		3.05	Si
SLD 13	fin.	-292.57	124	-0.0001493	0.0002807	0.0035	0.9		2995.37	2995.37		10.24	Si
SLV 15	ini.	1481.51	-2598	-0.0009784	0.0002807	0.0035	0.9		2989.59	2989.59		2.02	Si
SLV 15	fin.	-720.45	1562	-0.0004003	0.0002807	0.0035	0.9		2995.37	2995.37		4.16	Si
SLD 16	ini.	988.78	-2217	-0.0005854	0.0002807	0.0035	0.9		2989.59	2989.59		3.02	Si
SLD 16	fin.	-315.16	177	-0.0001614	0.0002807	0.0035	0.9		2995.37	2995.37		9.5	Si
SLV 16	ini.	1586.42	-2694	-0.0010724	0.0002807	0.0035	0.9		2989.59	2989.59		1.88	Si
SLV 16	fin.	-800.61	1829	-0.000453	0.0002807	0.0035	0.9		2995.37	2995.37		3.74	Si
SLV 9	ini.	965.79	-2244	-0.0005688	0.0002807	0.0035	0.9		2989.59	2989.59		3.1	Si
SLV 9	fin.	-219.54	-56	-0.0001107	0.0002807	0.0035	0.9		2995.37	2995.37		13.64	Si
SLD 15	ini.	943.73	-2176	-0.000553	0.0002807	0.0035	0.9		2989.59	2989.59		3.17	Si
SLD 15	fin.	-280.74	63	-0.000143	0.0002807	0.0035	0.9		2995.37	2995.37		10.67	Si
SLD 14	ini.	1026.38	-2260	-0.0006128	0.0002807	0.0035	0.9		2989.59	2989.59		2.91	Si
SLD 14	fin.	-326.99	238	-0.0001678	0.0002807	0.0035	0.9		2995.37	2995.37		9.16	Si
SLV 13	ini.	1569.56	-2696	-0.001057	0.0002807	0.0035	0.9		2989.59	2989.59		1.9	Si
SLV 13	fin.	-748.29	1706	-0.0004184	0.0002807	0.0035	0.9		2995.37	2995.37		4	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 10	ini.	1033.55	-2306	-0.0006181	0.0002807	0.0035	0.9		2989.59	2989.59		2.89	Si
SLV 10	fin.	-271.31	116	-0.000138	0.0002807	0.0035	0.9		2995.37	2995.37		11.04	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 14	ini.	1026.38	-3655	0.9	0	548	7137	5660	2295	7684		2.1	Si
SLD 14	fin.	-326.99	-1114	0.9	0	548	7137	5660	2295	7684		6.9	Si
SLV 16	ini.	1586.42	-5481	0.9	0	548	7137	5660	2295	7684		1.4	Si
SLV 16	fin.	-800.61	-4066	0.9	0	548	7137	5660	2295	7684		1.89	Si
SLV 2	ini.	-397.14	976	0.9	0	548	7137	5660	2295	7684		7.87	Si
SLV 2	fin.	815.63	5749	0.9	0	548	7137	5660	2295	7684		1.34	Si
SLV 3	ini.	-590.09	1593	0.9	0	548	7137	5660	2295	7684		4.82	Si
SLV 3	fin.	923.63	6193	0.9	0	548	7137	5660	2295	7684		1.24	Si
SLV 1	ini.	-502.05	1315	0.9	0	548	7137	5660	2295	7684		5.84	Si
SLV 1	fin.	895.79	6216	0.9	0	548	7137	5660	2295	7684		1.24	Si
SLV 10	ini.	1033.55	-3666	0.9	0	548	7137	5660	2295	7684		2.1	Si
SLV 10	fin.	-271.31	-506	0.9	0	548	7137	5660	2295	7684		15.18	Si
SLV 15	ini.	1481.51	-5142	0.9	0	548	7137	5660	2295	7684		1.49	Si
SLV 15	fin.	-720.45	-3599	0.9	0	548	7137	5660	2295	7684		2.14	Si
SLV 14	ini.	1674.47	-5759	0.9	0	548	7137	5660	2295	7684		1.33	Si
SLV 14	fin.	-828.45	-4043	0.9	0	548	7137	5660	2295	7684		1.9	Si
SLV 4	ini.	-485.18	1254	0.9	0	548	7137	5660	2295	7684		6.13	Si
SLV 4	fin.	843.47	5726	0.9	0	548	7137	5660	2295	7684		1.34	Si
SLV 13	ini.	1569.56	-5420	0.9	0	548	7137	5660	2295	7684		1.42	Si
SLV 13	fin.	-748.29	-3576	0.9	0	548	7137	5660	2295	7684		2.15	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.785	SLV 14	Si
V_SLV	1.236	SLV 1	Si
PF_SLU	3.649	SLU 81	Si
V_SLU	1.957	SLU 81	Si

## Trave di accoppiamento 78

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-17.718	6.526	7.53	8.35	0.82	-16.818	6.526	7.53	8.35	0.82	0.9	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	f <sub>nk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε <sub>c</sub> CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	ε <sub>f</sub> ,fd	γ <sub>F</sub> ,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 75	ini.	43.15	-468	-0.0000257	0.0001872	0.0035	0.82		2455.37	2455.37	No	56.91	Si
SLU 75	fin.	-887.51	-2430	-0.0006844	0.0001872	0.0035	0.82		2460.51	2460.51	No	2.77	Si
SLU 84	ini.	43.84	-485	-0.0000261	0.0001872	0.0035	0.82		2455.37	2455.37	No	56	Si
SLU 84	fin.	-914.11	-2503	-0.0007102	0.0001872	0.0035	0.82		2460.51	2460.51	No	2.69	Si
SLU 77	ini.	35.99	-500	-0.0000214	0.0001872	0.0035	0.82		2455.37	2455.37	No	68.22	Si
SLU 77	fin.	-885.7	-2446	-0.0006826	0.0001872	0.0035	0.82		2460.51	2460.51	No	2.78	Si
SLU 82	ini.	51.69	-451	-0.0000308	0.0001872	0.0035	0.82		2455.37	2455.37	No	47.5	Si
SLU 82	fin.	-916.83	-2489	-0.0007129	0.0001872	0.0035	0.82		2460.51	2460.51	No	2.68	Si
SLU 83	ini.	44.54	-482	-0.0000265	0.0001872	0.0035	0.82		2455.37	2455.37	No	55.13	Si
SLU 83	fin.	-915.03	-2504	-0.0007111	0.0001872	0.0035	0.82		2460.51	2460.51	No	2.69	Si
SLU 78	ini.	35.3	-503	-0.000021	0.0001872	0.0035	0.82		2455.37	2455.37	No	69.57	Si
SLU 78	fin.	-884.78	-2445	-0.0006818	0.0001872	0.0035	0.82		2460.51	2460.51	No	2.78	Si
SLU 73	ini.	50.15	-425	-0.0000299	0.0001872	0.0035	0.82		2455.37	2455.37	No	48.96	Si
SLU 73	fin.	-874.61	-2371	-0.000672	0.0001872	0.0035	0.82		2460.51	2460.51	No	2.81	Si
SLU 76	ini.	42.3	-460	-0.0000252	0.0001872	0.0035	0.82		2455.37	2455.37	No	58.05	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 76	fin.	-871.89	-2386	-0.0006694	0.0001872	0.0035	0.82		2460.51	2460.51	No	2.82	Si
SLU 81	ini.	52.39	-448	-0.0000313	0.0001872	0.0035	0.82		2455.37	2455.37	No	46.87	Si
SLU 81	fin.	-917.75	-2490	-0.0007138	0.0001872	0.0035	0.82		2460.51	2460.51	No	2.68	Si
SLU 74	ini.	43.84	-465	-0.0000261	0.0001872	0.0035	0.82		2455.37	2455.37	No	56.01	Si
SLU 74	fin.	-888.42	-2431	-0.0006853	0.0001872	0.0035	0.82		2460.51	2460.51	No	2.77	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 77	ini.	35.99	1069	0.82	0	303	6502	3438	2091	5529	No	5.17	Si
SLU 77	fin.	-885.7	-3936	0.82	0	303	6502	3438	2091	5529	No	1.4	Si
SLU 75	ini.	43.15	1020	0.82	0	303	6502	3438	2091	5529	No	5.42	Si
SLU 75	fin.	-887.51	-3932	0.82	0	303	6502	3438	2091	5529	No	1.41	Si
SLU 83	ini.	44.54	1065	0.82	0	303	6502	3438	2091	5529	No	5.19	Si
SLU 83	fin.	-915.03	-4059	0.82	0	303	6502	3438	2091	5529	No	1.36	Si
SLU 74	ini.	43.84	1018	0.82	0	303	6502	3438	2091	5529	No	5.43	Si
SLU 74	fin.	-888.42	-3936	0.82	0	303	6502	3438	2091	5529	No	1.4	Si
SLU 81	ini.	52.39	1014	0.82	0	303	6502	3438	2091	5529	No	5.45	Si
SLU 81	fin.	-917.75	-4059	0.82	0	303	6502	3438	2091	5529	No	1.36	Si
SLU 80	ini.	34.91	1055	0.82	0	303	6502	3438	2091	5529	No	5.24	Si
SLU 80	fin.	-869.78	-3869	0.82	0	303	6502	3438	2091	5529	No	1.43	Si
SLU 78	ini.	35.3	1071	0.82	0	303	6502	3438	2091	5529	No	5.16	Si
SLU 78	fin.	-884.78	-3932	0.82	0	303	6502	3438	2091	5529	No	1.41	Si
SLU 79	ini.	35.6	1052	0.82	0	303	6502	3438	2091	5529	No	5.25	Si
SLU 79	fin.	-870.69	-3874	0.82	0	303	6502	3438	2091	5529	No	1.43	Si
SLU 84	ini.	43.84	1067	0.82	0	303	6502	3438	2091	5529	No	5.18	Si
SLU 84	fin.	-914.11	-4055	0.82	0	303	6502	3438	2091	5529	No	1.36	Si
SLU 82	ini.	51.69	1016	0.82	0	303	6502	3438	2091	5529	No	5.44	Si
SLU 82	fin.	-916.83	-4055	0.82	0	303	6502	3438	2091	5529	No	1.36	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	587.38	1648	-0.0003929	0.0002807	0.0035	0.82		2482.11	2482.11		4.23	Si
SLV 15	fin.	-1418.25	-2548	-0.0011844	0.0002807	0.0035	0.82		2487.45	2487.45		1.75	Si
SLD 15	ini.	273.78	549	-0.0001697	0.0002807	0.0035	0.82		2482.11	2482.11		9.07	Si
SLD 15	fin.	-954.5	-2026	-0.0007042	0.0002807	0.0035	0.82		2487.45	2487.45		2.61	Si
SLD 16	ini.	298.85	635	-0.0001862	0.0002807	0.0035	0.82		2482.11	2482.11		8.31	Si
SLD 16	fin.	-994.06	-2074	-0.0007411	0.0002807	0.0035	0.82		2487.45	2487.45		2.5	Si
SLV 14	ini.	683.17	1993	-0.0004692	0.0002807	0.0035	0.82		2482.11	2482.11		3.63	Si
SLV 14	fin.	-1578.81	-2751	-0.0013803	0.0002807	0.0035	0.82		2487.45	2487.45		1.58	Si
SLV 13	ini.	624.78	1794	-0.0004222	0.0002807	0.0035	0.82		2482.11	2482.11		3.97	Si
SLV 13	fin.	-1486.69	-2637	-0.0012655	0.0002807	0.0035	0.82		2487.45	2487.45		1.67	Si
SLD 13	ini.	289.73	612	-0.0001802	0.0002807	0.0035	0.82		2482.11	2482.11		8.57	Si
SLD 13	fin.	-983.69	-2064	-0.0007314	0.0002807	0.0035	0.82		2487.45	2487.45		2.53	Si
SLV 9	ini.	261.76	536	-0.0001619	0.0002807	0.0035	0.82		2482.11	2482.11		9.48	Si
SLV 9	fin.	-959.6	-2053	-0.0007089	0.0002807	0.0035	0.82		2487.45	2487.45		2.59	Si
SLV 16	ini.	645.77	1847	-0.000439	0.0002807	0.0035	0.82		2482.11	2482.11		3.84	Si
SLV 16	fin.	-1510.37	-2661	-0.0012944	0.0002807	0.0035	0.82		2487.45	2487.45		1.65	Si
SLV 10	ini.	299.47	665	-0.0001866	0.0002807	0.0035	0.82		2482.11	2482.11		8.29	Si
SLV 10	fin.	-1019.1	-2126	-0.0007649	0.0002807	0.0035	0.82		2487.45	2487.45		2.44	Si
SLD 14	ini.	314.8	697	-0.0001968	0.0002807	0.0035	0.82		2482.11	2482.11		7.88	Si
SLD 14	fin.	-1023.25	-2112	-0.0007688	0.0002807	0.0035	0.82		2487.45	2487.45		2.43	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 14	ini.	683.17	-2964	0.82	0	455	6502	5156	2091	6957		2.35	Si
SLV 14	fin.	-1578.81	-5792	0.82	0	455	6502	5156	2091	6957		1.2	Si
SLD 13	ini.	289.73	-776	0.82	0	455	6502	5156	2091	6957		8.97	Si
SLD 13	fin.	-983.69	-3883	0.82	0	455	6502	5156	2091	6957		1.79	Si
SLV 13	ini.	624.78	-2642	0.82	0	455	6502	5156	2091	6957		2.63	Si
SLV 13	fin.	-1486.69	-5489	0.82	0	455	6502	5156	2091	6957		1.27	Si
SLV 1	ini.	-566.65	4025	0.82	0	455	6502	5156	2091	6957		1.73	Si
SLV 1	fin.	294	301	0.82	0	455	6502	5156	2091	6957		23.08	Si
SLV 3	ini.	-604.05	4199	0.82	0	455	6502	5156	2091	6957		1.66	Si
SLV 3	fin.	362.43	425	0.82	0	455	6502	5156	2091	6957		16.38	Si
SLV 16	ini.	645.77	-2790	0.82	0	455	6502	5156	2091	6957		2.49	Si
SLV 16	fin.	-1510.37	-5668	0.82	0	455	6502	5156	2091	6957		1.23	Si
SLD 14	ini.	314.8	-914	0.82	0	455	6502	5156	2091	6957		7.61	Si
SLD 14	fin.	-1023.25	-4013	0.82	0	455	6502	5156	2091	6957		1.73	Si
SLV 15	ini.	587.38	-2467	0.82	0	455	6502	5156	2091	6957		2.82	Si
SLV 15	fin.	-1418.25	-5365	0.82	0	455	6502	5156	2091	6957		1.3	Si
SLV 4	ini.	-545.66	3877	0.82	0	455	6502	5156	2091	6957		1.79	Si
SLV 4	fin.	270.32	122	0.82	0	455	6502	5156	2091	6957		57.11	Si
SLD 16	ini.	298.85	-840	0.82	0	455	6502	5156	2091	6957		8.28	Si
SLD 16	fin.	-994.06	-3960	0.82	0	455	6502	5156	2091	6957		1.76	Si

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.576	SLV 14	Si
V_SLV	1.201	SLV 14	Si
PF_SLU	2.681	SLU 81	Si
V_SLU	1.362	SLU 83	Si



## Trave di accoppiamento 79

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-12.838	6.526	4.83	5.73	0.9	-11.938	6.526	4.83	5.73	0.9	0.9	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv / ε.CNR DT-200					CRM / Fibrenet?			
											elim,conv	ε <sub>fd</sub>	γ <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em <sub>-</sub>	em <sub>u</sub>	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 81	ini.	686.25	-3546	-0.0003994	0.0001872	0.0035	0.9		2959	2959	No	4.31	Si
SLU 81	fin.	477.96	-3311	-0.0002619	0.0001872	0.0035	0.9		2959	2959	No	6.19	Si
SLU 82	ini.	688.27	-3547	-0.0004008	0.0001872	0.0035	0.9		2959	2959	No	4.3	Si
SLU 82	fin.	474.68	-3303	-0.0002598	0.0001872	0.0035	0.9		2959	2959	No	6.23	Si
SLU 80	ini.	669.21	-3471	-0.0003877	0.0001872	0.0035	0.9		2959	2959	No	4.42	Si
SLU 80	fin.	472.8	-3257	-0.0002587	0.0001872	0.0035	0.9		2959	2959	No	6.26	Si
SLU 77	ini.	677.6	-3522	-0.0003934	0.0001872	0.0035	0.9		2959	2959	No	4.37	Si
SLU 77	fin.	483.35	-3313	-0.0002653	0.0001872	0.0035	0.9		2959	2959	No	6.12	Si
SLU 78	ini.	679.62	-3522	-0.0003948	0.0001872	0.0035	0.9		2959	2959	No	4.35	Si
SLU 78	fin.	480.07	-3305	-0.0002632	0.0001872	0.0035	0.9		2959	2959	No	6.16	Si
SLU 75	ini.	675	-3487	-0.0003916	0.0001872	0.0035	0.9		2959	2959	No	4.38	Si
SLU 75	fin.	470.72	-3259	-0.0002574	0.0001872	0.0035	0.9		2959	2959	No	6.29	Si
SLU 74	ini.	672.97	-3486	-0.0003903	0.0001872	0.0035	0.9		2959	2959	No	4.4	Si
SLU 74	fin.	474	-3267	-0.0002594	0.0001872	0.0035	0.9		2959	2959	No	6.24	Si
SLU 83	ini.	690.87	-3582	-0.0004026	0.0001872	0.0035	0.9		2959	2959	No	4.28	Si
SLU 83	fin.	487.31	-3357	-0.0002677	0.0001872	0.0035	0.9		2959	2959	No	6.07	Si
SLU 79	ini.	667.19	-3470	-0.0003863	0.0001872	0.0035	0.9		2959	2959	No	4.44	Si
SLU 79	fin.	476.08	-3265	-0.0002607	0.0001872	0.0035	0.9		2959	2959	No	6.22	Si
SLU 84	ini.	692.89	-3583	-0.000404	0.0001872	0.0035	0.9		2959	2959	No	4.27	Si
SLU 84	fin.	484.03	-3349	-0.0002657	0.0001872	0.0035	0.9		2959	2959	No	6.11	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	f <sub>vd</sub>	V <sub>t</sub>	V <sub>t,f</sub>	V <sub>t,c</sub>	V <sub>t,c int.</sub>	V <sub>t,R</sub>	incremento > 50%	c.s.	Verifica
SLU 83	ini.	690.87	-2685	0.9	0	365	7137	3773	2295	6068	No	2.26	Si
SLU 83	fin.	487.31	2286	0.9	0	365	7137	3773	2295	6068	No	2.65	Si
SLU 84	ini.	692.89	-2694	0.9	0	365	7137	3773	2295	6068	No	2.25	Si
SLU 84	fin.	484.03	2275	0.9	0	365	7137	3773	2295	6068	No	2.67	Si
SLU 79	ini.	667.19	-2611	0.9	0	365	7137	3773	2295	6068	No	2.32	Si
SLU 79	fin.	476.08	2256	0.9	0	365	7137	3773	2295	6068	No	2.69	Si
SLU 74	ini.	672.97	-2625	0.9	0	365	7137	3773	2295	6068	No	2.31	Si
SLU 74	fin.	474	2238	0.9	0	365	7137	3773	2295	6068	No	2.71	Si
SLU 75	ini.	675	-2635	0.9	0	365	7137	3773	2295	6068	No	2.3	Si
SLU 75	fin.	470.72	2227	0.9	0	365	7137	3773	2295	6068	No	2.72	Si
SLU 81	ini.	686.25	-2657	0.9	0	365	7137	3773	2295	6068	No	2.28	Si
SLU 81	fin.	477.96	2234	0.9	0	365	7137	3773	2295	6068	No	2.72	Si
SLU 77	ini.	677.6	-2653	0.9	0	365	7137	3773	2295	6068	No	2.29	Si
SLU 77	fin.	483.35	2291	0.9	0	365	7137	3773	2295	6068	No	2.65	Si
SLU 80	ini.	669.21	-2620	0.9	0	365	7137	3773	2295	6068	No	2.32	Si
SLU 80	fin.	472.8	2245	0.9	0	365	7137	3773	2295	6068	No	2.7	Si
SLU 82	ini.	688.27	-2667	0.9	0	365	7137	3773	2295	6068	No	2.28	Si
SLU 82	fin.	474.68	2222	0.9	0	365	7137	3773	2295	6068	No	2.73	Si
SLU 78	ini.	679.62	-2663	0.9	0	365	7137	3773	2295	6068	No	2.28	Si
SLU 78	fin.	480.07	2279	0.9	0	365	7137	3773	2295	6068	No	2.66	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 14	ini.	1364.23	-3793	-0.000878	0.0002807	0.0035	0.9		2989.59	2989.59		2.19	Si
SLD 14	fin.	-521.03	-690	-0.0002772	0.0002807	0.0035	0.9		2995.37	2995.37		5.75	Si
SLV 1	ini.	-1545.8	474	-0.001033	0.0002807	0.0035	0.9		2995.37	2995.37		1.94	Si
SLV 1	fin.	2308.9	-6354	-0.0018848	0.0002807	0.0035	0.9		2989.59	2989.59		1.29	Si
SLV 13	ini.	2399.78	-5435	-0.0020214	0.0002807	0.0035	0.9		2989.59	2989.59		1.25	Si
SLV 13	fin.	-1474.23	1014	-0.0009697	0.0002807	0.0035	0.9		2995.37	2995.37		2.03	Si
SLV 3	ini.	-1656.32	958	-0.0011346	0.0002807	0.0035	0.9		2995.37	2995.37		1.81	Si
SLV 3	fin.	2278.04	-5768	-0.001841	0.0002807	0.0035	0.9		2989.59	2989.59		1.31	Si
SLD 16	ini.	1316.79	-3585	-0.0008386	0.0002807	0.0035	0.9		2989.59	2989.59		2.27	Si
SLD 16	fin.	-534.26	-438	-0.000285	0.0002807	0.0035	0.9		2995.37	2995.37		5.61	Si
SLV 4	ini.	-1480.17	694	-0.0009748	0.0002807	0.0035	0.9		2995.37	2995.37		2.02	Si
SLV 4	fin.	2108.09	-5433	-0.001619	0.0002807	0.0035	0.9		2989.59	2989.59		1.42	Si
SLV 15	ini.	2289.26	-4951	-0.0018568	0.0002807	0.0035	0.9		2989.59	2989.59		1.31	Si
SLV 15	fin.	-1505.09	1600	-0.0009967	0.0002807	0.0035	0.9		2995.37	2995.37		1.99	Si
SLV 2	ini.	-1369.65	210	-0.0008804	0.0002807	0.0035	0.9		2995.37	2995.37		2.19	Si
SLV 2	fin.	2138.96	-6019	-0.0016571	0.0002807	0.0035	0.9		2989.59	2989.59		1.4	Si
SLV 14	ini.	2575.92	-5699	-0.0023204	0.0002807	0.0035	0.9		2989.59	2989.59		1.16	Si
SLV 14	fin.	-1644.18	1349	-0.0011232	0.0002807	0.0035	0.9		2995.37	2995.37		1.82	Si
SLV 16	ini.	2465.4	-5215	-0.0021272	0.0002807	0.0035	0.9		2989.59	2989.59		1.21	Si
SLV 16	fin.	-1675.04	1935	-0.0011523	0.0002807	0.0035	0.9		2995.37	2995.37		1.79	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 2	ini.	-1369.65	5123	0.9	0	548	7137	5660	2295	7684		1.5	Si
SLV 2	fin.	2138.96	9157	0.9	0	548	7137	5660	2295	7684		0.84	No
SLD 14	ini.	1364.23	-5163	0.9	0	548	7137	5660	2295	7684		1.49	Si
SLD 14	fin.	-521.03	-1964	0.9	0	548	7137	5660	2295	7684		3.91	Si
SLV 1	ini.	-1545.8	5781	0.9	0	548	7137	5660	2295	7684		1.33	Si
SLV 1	fin.	2308.9	9866	0.9	0	548	7137	5660	2295	7684		0.78	No
SLV 13	ini.	2399.78	-9015	0.9	0	548	7137	5660	2295	7684		0.85	No
SLV 13	fin.	-1474.23	-5911	0.9	0	548	7137	5660	2295	7684		1.3	Si
SLV 16	ini.	2465.4	-9374	0.9	0	548	7137	5660	2295	7684		0.82	No
SLV 16	fin.	-1675.04	-6844	0.9	0	548	7137	5660	2295	7684		1.12	Si
SLD 1	ini.	-397.18	1441	0.9	0	548	7137	5660	2295	7684		5.33	Si
SLD 1	fin.	1168.12	5082	0.9	0	548	7137	5660	2295	7684		1.51	Si
SLV 15	ini.	2289.26	-8716	0.9	0	548	7137	5660	2295	7684		0.88	No
SLV 15	fin.	-1505.09	-6134	0.9	0	548	7137	5660	2295	7684		1.25	Si
SLV 3	ini.	-1656.32	6081	0.9	0	548	7137	5660	2295	7684		1.26	Si
SLV 3	fin.	2278.04	9643	0.9	0	548	7137	5660	2295	7684		0.8	No
SLV 14	ini.	2575.92	-9673	0.9	0	548	7137	5660	2295	7684		0.79	No
SLV 14	fin.	-1644.18	-6621	0.9	0	548	7137	5660	2295	7684		1.16	Si
SLV 4	ini.	-1480.17	5423	0.9	0	548	7137	5660	2295	7684		1.42	Si
SLV 4	fin.	2108.09	8933	0.9	0	548	7137	5660	2295	7684		0.86	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.161	SLV 14	Si
V_SLV	0.779	SLV 1	No
PF_SLU	4.27	SLU 84	Si
V_SLU	2.252	SLU 84	Si

## Trave di accoppiamento 80

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-12.838	6.526	7.53	8.35	0.82	-11.938	6.526	7.53	8.35	0.82	0.9	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_ Corti

fb_	fhk	fvk0	fmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 81	ini.	-458.82	-2521	-0.0003089	0.0001872	0.0035	0.82		2460.51	2460.51	No	5.36	Si
SLU 81	fin.	-583.11	-2774	-0.0004098	0.0001872	0.0035	0.82		2460.51	2460.51	No	4.22	Si
SLU 79	ini.	-454.69	-2487	-0.0003057	0.0001872	0.0035	0.82		2460.51	2460.51	No	5.41	Si
SLU 79	fin.	-564.24	-2712	-0.000394	0.0001872	0.0035	0.82		2460.51	2460.51	No	4.36	Si
SLU 78	ini.	-459.79	-2520	-0.0003097	0.0001872	0.0035	0.82		2460.51	2460.51	No	5.35	Si
SLU 78	fin.	-575.2	-2758	-0.0004031	0.0001872	0.0035	0.82		2460.51	2460.51	No	4.28	Si
SLU 84	ini.	-465.35	-2555	-0.0003141	0.0001872	0.0035	0.82		2460.51	2460.51	No	5.29	Si
SLU 84	fin.	-588.57	-2807	-0.0004143	0.0001872	0.0035	0.82		2460.51	2460.51	No	4.18	Si
SLU 80	ini.	-452.37	-2478	-0.0003039	0.0001872	0.0035	0.82		2460.51	2460.51	No	5.44	Si
SLU 80	fin.	-565.86	-2712	-0.0003954	0.0001872	0.0035	0.82		2460.51	2460.51	No	4.35	Si
SLU 83	ini.	-467.67	-2564	-0.0003159	0.0001872	0.0035	0.82		2460.51	2460.51	No	5.26	Si
SLU 83	fin.	-586.95	-2808	-0.000413	0.0001872	0.0035	0.82		2460.51	2460.51	No	4.19	Si
SLU 77	ini.	-462.11	-2529	-0.0003115	0.0001872	0.0035	0.82		2460.51	2460.51	No	5.32	Si
SLU 77	fin.	-573.57	-2758	-0.0004018	0.0001872	0.0035	0.82		2460.51	2460.51	No	4.29	Si
SLU 75	ini.	-450.93	-2477	-0.0003028	0.0001872	0.0035	0.82		2460.51	2460.51	No	5.46	Si
SLU 75	fin.	-571.36	-2725	-0.0003999	0.0001872	0.0035	0.82		2460.51	2460.51	No	4.31	Si
SLU 74	ini.	-453.25	-2486	-0.0003046	0.0001872	0.0035	0.82		2460.51	2460.51	No	5.43	Si
SLU 74	fin.	-569.73	-2725	-0.0003986	0.0001872	0.0035	0.82		2460.51	2460.51	No	4.32	Si
SLU 82	ini.	-456.49	-2512	-0.0003071	0.0001872	0.0035	0.82		2460.51	2460.51	No	5.39	Si
SLU 82	fin.	-584.73	-2774	-0.0004111	0.0001872	0.0035	0.82		2460.51	2460.51	No	4.21	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 81	ini.	-458.82	3202	0.82	0	303	6502	3438	2091	5529	No	1.73	Si
SLU 81	fin.	-583.11	-2852	0.82	0	303	6502	3438	2091	5529	No	1.94	Si
SLU 77	ini.	-462.11	3211	0.82	0	303	6502	3438	2091	5529	No	1.72	Si
SLU 77	fin.	-573.57	-2815	0.82	0	303	6502	3438	2091	5529	No	1.96	Si
SLU 74	ini.	-453.25	3152	0.82	0	303	6502	3438	2091	5529	No	1.75	Si
SLU 74	fin.	-569.73	-2790	0.82	0	303	6502	3438	2091	5529	No	1.98	Si
SLU 75	ini.	-450.93	3140	0.82	0	303	6502	3438	2091	5529	No	1.76	Si
SLU 75	fin.	-571.36	-2796	0.82	0	303	6502	3438	2091	5529	No	1.98	Si
SLU 78	ini.	-459.79	3200	0.82	0	303	6502	3438	2091	5529	No	1.73	Si
SLU 78	fin.	-575.2	-2821	0.82	0	303	6502	3438	2091	5529	No	1.96	Si
SLU 80	ini.	-452.37	3151	0.82	0	303	6502	3438	2091	5529	No	1.75	Si
SLU 80	fin.	-565.86	-2779	0.82	0	303	6502	3438	2091	5529	No	1.99	Si
SLU 84	ini.	-465.35	3249	0.82	0	303	6502	3438	2091	5529	No	1.7	Si
SLU 84	fin.	-588.57	-2884	0.82	0	303	6502	3438	2091	5529	No	1.92	Si
SLU 79	ini.	-454.69	3163	0.82	0	303	6502	3438	2091	5529	No	1.75	Si
SLU 79	fin.	-564.24	-2773	0.82	0	303	6502	3438	2091	5529	No	1.99	Si
SLU 83	ini.	-467.67	3261	0.82	0	303	6502	3438	2091	5529	No	1.7	Si
SLU 83	fin.	-586.95	-2878	0.82	0	303	6502	3438	2091	5529	No	1.92	Si
SLU 82	ini.	-456.49	3190	0.82	0	303	6502	3438	2091	5529	No	1.73	Si
SLU 82	fin.	-584.73	-2859	0.82	0	303	6502	3438	2091	5529	No	1.93	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 14	ini.	1039.17	2588	-0.0007861	0.0002807	0.0035	0.82		2482.11	2482.11		2.39	Si
SLV 14	fin.	-2388.8	-4756	-0.0029445	0.0002807	0.0035	0.82		2487.45	2487.45		1.04	Si
SLV 1	ini.	-1715.7	-6287	-0.0015649	0.0002807	0.0035	0.82		2487.45	2487.45		1.45	Si
SLV 1	fin.	1494.76	846	-0.001279	0.0002807	0.0035	0.82		2482.11	2482.11		1.66	Si
SLV 13	ini.	921.37	2209	-0.0006754	0.0002807	0.0035	0.82		2482.11	2482.11		2.69	Si
SLV 13	fin.	-2223.79	-4519	-0.0025087	0.0002807	0.0035	0.82		2487.45	2487.45		1.12	Si
SLD 14	ini.	272.66	163	-0.000169	0.0002807	0.0035	0.82		2482.11	2482.11		9.1	Si
SLD 14	fin.	-1241.53	-3077	-0.0009884	0.0002807	0.0035	0.82		2487.45	2487.45		2	Si
SLV 15	ini.	999.24	2615	-0.0007479	0.0002807	0.0035	0.82		2482.11	2482.11		2.48	Si
SLV 15	fin.	-2099.99	-4256	-0.0022292	0.0002807	0.0035	0.82		2487.45	2487.45		1.18	Si
SLV 4	ini.	-1520.02	-5501	-0.0013063	0.0002807	0.0035	0.82		2487.45	2487.45		1.64	Si
SLV 4	fin.	1453.54	872	-0.0012293	0.0002807	0.0035	0.82		2482.11	2482.11		1.71	Si
SLV 16	ini.	1117.05	2994	-0.0008627	0.0002807	0.0035	0.82		2482.11	2482.11		2.22	Si
SLV 16	fin.	-2265	-4493	-0.0026103	0.0002807	0.0035	0.82		2487.45	2487.45		1.1	Si
SLV 10	ini.	4.49	-927	-0.0000026	0.0002807	0.0035	0.82		2482.11	2482.11		553.32	Si
SLV 10	fin.	-1202.52	-3143	-0.0009474	0.0002807	0.0035	0.82		2487.45	2487.45		2.07	Si
SLV 2	ini.	-1597.9	-5907	-0.0014049	0.0002807	0.0035	0.82		2487.45	2487.45		1.56	Si
SLV 2	fin.	1329.75	609	-0.0010869	0.0002807	0.0035	0.82		2482.11	2482.11		1.87	Si
SLV 3	ini.	-1637.83	-5880	-0.0014576	0.0002807	0.0035	0.82		2487.45	2487.45		1.52	Si
SLV 3	fin.	1618.56	1109	-0.0014363	0.0002807	0.0035	0.82		2482.11	2482.11		1.53	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 3	ini.	-871.32	5039	0.82	0	455	6502	5156	2091	6957		1.38	Si
SLD 3	fin.	471.29	1121	0.82	0	455	6502	5156	2091	6957		6.21	Si
SLV 14	ini.	1039.17	-4848	0.82	0	455	6502	5156	2091	6957		1.43	Si
SLV 14	fin.	-2388.8	-8909	0.82	0	455	6502	5156	2091	6957		0.78	No
SLV 3	ini.	-1637.83	9006	0.82	0	455	6502	5156	2091	6957		0.77	No
SLV 3	fin.	1618.56	5144	0.82	0	455	6502	5156	2091	6957		1.35	Si
SLV 13	ini.	921.37	-4234	0.82	0	455	6502	5156	2091	6957		1.64	Si
SLV 13	fin.	-2223.79	-8323	0.82	0	455	6502	5156	2091	6957		0.84	No
SLV 4	ini.	-1520.02	8392	0.82	0	455	6502	5156	2091	6957		0.83	No
SLV 4	fin.	1453.54	4557	0.82	0	455	6502	5156	2091	6957		1.53	Si
SLV 16	ini.	1117.05	-5221	0.82	0	455	6502	5156	2091	6957		1.33	Si
SLV 16	fin.	-2265	-8650	0.82	0	455	6502	5156	2091	6957		0.8	No



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 1	ini.	-1715.7	9379	0.82	0	455	6502	5156	2091	6957		0.74	No
SLV 1	fin.	1494.76	4885	0.82	0	455	6502	5156	2091	6957		1.42	Si
SLV 2	ini.	-1597.9	8765	0.82	0	455	6502	5156	2091	6957		0.79	No
SLV 2	fin.	1329.75	4298	0.82	0	455	6502	5156	2091	6957		1.62	Si
SLD 1	ini.	-904.67	5199	0.82	0	455	6502	5156	2091	6957		1.34	Si
SLD 1	fin.	418.21	1009	0.82	0	455	6502	5156	2091	6957		6.89	Si
SLV 15	ini.	999.24	-4607	0.82	0	455	6502	5156	2091	6957		1.51	Si
SLV 15	fin.	-2099.99	-8063	0.82	0	455	6502	5156	2091	6957		0.86	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.041	SLV 14	Si
V_SLV	0.742	SLV 1	No
PF_SLU	4.18	SLU 84	Si
V_SLU	1.695	SLU 83	Si

## Trave di accoppiamento 81

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-7.958	6.526	4.83	5.73	0.9	-7.058	6.526	4.83	5.73	0.9	0.9	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fhk	fvk0	fhmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma_{F,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 79	ini.	251.57	-2155	-0.0001297	0.0001872	0.0035	0.9		2959	2959	No	11.76	Si
SLU 79	fin.	607.88	-2648	-0.000346	0.0001872	0.0035	0.9		2959	2959	No	4.87	Si
SLU 78	ini.	258.69	-2194	-0.0001336	0.0001872	0.0035	0.9		2959	2959	No	11.44	Si
SLU 78	fin.	610.45	-2675	-0.0003477	0.0001872	0.0035	0.9		2959	2959	No	4.85	Si
SLU 75	ini.	248.94	-2148	-0.0001282	0.0001872	0.0035	0.9		2959	2959	No	11.89	Si
SLU 75	fin.	610.45	-2651	-0.0003477	0.0001872	0.0035	0.9		2959	2959	No	4.85	Si
SLU 84	ini.	259.85	-2215	-0.0001342	0.0001872	0.0035	0.9		2959	2959	No	11.39	Si
SLU 84	fin.	620.17	-2713	-0.0003543	0.0001872	0.0035	0.9		2959	2959	No	4.77	Si
SLU 80	ini.	254.31	-2161	-0.0001312	0.0001872	0.0035	0.9		2959	2959	No	11.64	Si
SLU 80	fin.	601.93	-2638	-0.000342	0.0001872	0.0035	0.9		2959	2959	No	4.92	Si
SLU 74	ini.	246.21	-2143	-0.0001267	0.0001872	0.0035	0.9		2959	2959	No	12.02	Si
SLU 74	fin.	616.4	-2662	-0.0003517	0.0001872	0.0035	0.9		2959	2959	No	4.8	Si
SLU 81	ini.	247.36	-2164	-0.0001274	0.0001872	0.0035	0.9		2959	2959	No	11.96	Si
SLU 81	fin.	626.12	-2700	-0.0003583	0.0001872	0.0035	0.9		2959	2959	No	4.73	Si
SLU 77	ini.	255.96	-2189	-0.0001321	0.0001872	0.0035	0.9		2959	2959	No	11.56	Si
SLU 77	fin.	616.4	-2686	-0.0003517	0.0001872	0.0035	0.9		2959	2959	No	4.8	Si
SLU 83	ini.	257.12	-2209	-0.0001327	0.0001872	0.0035	0.9		2959	2959	No	11.51	Si
SLU 83	fin.	626.12	-2724	-0.0003583	0.0001872	0.0035	0.9		2959	2959	No	4.73	Si
SLU 82	ini.	250.1	-2169	-0.0001289	0.0001872	0.0035	0.9		2959	2959	No	11.83	Si
SLU 82	fin.	620.17	-2689	-0.0003543	0.0001872	0.0035	0.9		2959	2959	No	4.77	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 75	ini.	248.94	-2453	0.9	0	365	7137	3773	2295	6068	No	2.47	Si
SLU 75	fin.	610.45	2538	0.9	0	365	7137	3773	2295	6068	No	2.39	Si
SLU 83	ini.	257.12	-2505	0.9	0	365	7137	3773	2295	6068	No	2.42	Si
SLU 83	fin.	626.12	2592	0.9	0	365	7137	3773	2295	6068	No	2.34	Si
SLU 80	ini.	254.31	-2485	0.9	0	365	7137	3773	2295	6068	No	2.44	Si
SLU 80	fin.	601.93	2511	0.9	0	365	7137	3773	2295	6068	No	2.42	Si
SLU 78	ini.	258.69	-2526	0.9	0	365	7137	3773	2295	6068	No	2.4	Si
SLU 78	fin.	610.45	2549	0.9	0	365	7137	3773	2295	6068	No	2.38	Si
SLU 77	ini.	255.96	-2513	0.9	0	365	7137	3773	2295	6068	No	2.42	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 77	fin.	616.4	2570	0.9	0	365	7137	3773	2295	6068	No	2.36	Si
SLU 81	ini.	247.36	-2433	0.9	0	365	7137	3773	2295	6068	No	2.49	Si
SLU 81	fin.	626.12	2581	0.9	0	365	7137	3773	2295	6068	No	2.35	Si
SLU 79	ini.	251.57	-2472	0.9	0	365	7137	3773	2295	6068	No	2.46	Si
SLU 79	fin.	607.88	2532	0.9	0	365	7137	3773	2295	6068	No	2.4	Si
SLU 82	ini.	250.1	-2446	0.9	0	365	7137	3773	2295	6068	No	2.48	Si
SLU 82	fin.	620.17	2560	0.9	0	365	7137	3773	2295	6068	No	2.37	Si
SLU 84	ini.	259.85	-2518	0.9	0	365	7137	3773	2295	6068	No	2.41	Si
SLU 84	fin.	620.17	2572	0.9	0	365	7137	3773	2295	6068	No	2.36	Si
SLU 74	ini.	246.21	-2440	0.9	0	365	7137	3773	2295	6068	No	2.49	Si
SLU 74	fin.	616.4	2559	0.9	0	365	7137	3773	2295	6068	No	2.37	Si

**Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche**

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 3	ini.	-433.28	383	-0.0002266	0.0002807	0.0035	0.9		2995.37	2995.37		6.91	Si
SLD 3	fin.	1152.49	-2523	-0.0007079	0.0002807	0.0035	0.9		2989.59	2989.59		2.59	Si
SLV 16	ini.	1485.84	-5117	-0.0009822	0.0002807	0.0035	0.9		2989.59	2989.59		2.01	Si
SLV 16	fin.	-1250.46	252	-0.000783	0.0002807	0.0035	0.9		2995.37	2995.37		2.4	Si
SLV 3	ini.	-1218.42	2797	-0.0007576	0.0002807	0.0035	0.9		2995.37	2995.37		2.46	Si
SLV 3	fin.	2110.76	-3447	-0.0016222	0.0002807	0.0035	0.9		2989.59	2989.59		1.42	Si
SLV 15	ini.	1355.07	-4740	-0.0008703	0.0002807	0.0035	0.9		2989.59	2989.59		2.21	Si
SLV 15	fin.	-1085.18	63	-0.0006551	0.0002807	0.0035	0.9		2995.37	2995.37		2.76	Si
SLV 14	ini.	1523.38	-5634	-0.0010154	0.0002807	0.0035	0.9		2989.59	2989.59		1.96	Si
SLV 14	fin.	-1235.26	-222	-0.0007709	0.0002807	0.0035	0.9		2995.37	2995.37		2.42	Si
SLV 1	ini.	-1180.87	2280	-0.0007282	0.0002807	0.0035	0.9		2995.37	2995.37		2.54	Si
SLV 1	fin.	2125.96	-3922	-0.0016409	0.0002807	0.0035	0.9		2989.59	2989.59		1.41	Si
SLV 13	ini.	1392.61	-5257	-0.0009018	0.0002807	0.0035	0.9		2989.59	2989.59		2.15	Si
SLV 13	fin.	-1069.98	-412	-0.0006437	0.0002807	0.0035	0.9		2995.37	2995.37		2.8	Si
SLV 4	ini.	-1087.64	2420	-0.0006569	0.0002807	0.0035	0.9		2995.37	2995.37		2.75	Si
SLV 4	fin.	1945.47	-3258	-0.0014312	0.0002807	0.0035	0.9		2989.59	2989.59		1.54	Si
SLV 2	ini.	-1050.1	1903	-0.0006289	0.0002807	0.0035	0.9		2995.37	2995.37		2.85	Si
SLV 2	fin.	1960.67	-3732	-0.0014479	0.0002807	0.0035	0.9		2989.59	2989.59		1.52	Si
SLD 1	ini.	-417.22	161	-0.0002176	0.0002807	0.0035	0.9		2995.37	2995.37		7.18	Si
SLD 1	fin.	1159.2	-2727	-0.000713	0.0002807	0.0035	0.9		2989.59	2989.59		2.58	Si

**Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215**

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 4	ini.	-1087.64	4923	0.9	0	548	7137	5660	2295	7684		1.56	Si
SLV 4	fin.	1945.47	6968	0.9	0	548	7137	5660	2295	7684		1.1	Si
SLV 13	ini.	1392.61	-8136	0.9	0	548	7137	5660	2295	7684		0.94	No
SLV 13	fin.	-1069.98	-3347	0.9	0	548	7137	5660	2295	7684		2.3	Si
SLD 14	ini.	738.25	-4678	0.9	0	548	7137	5660	2295	7684		1.64	Si
SLD 14	fin.	-276.99	-639	0.9	0	548	7137	5660	2295	7684		12.03	Si
SLV 15	ini.	1355.07	-7790	0.9	0	548	7137	5660	2295	7684		0.99	No
SLV 15	fin.	-1085.18	-3490	0.9	0	548	7137	5660	2295	7684		2.2	Si
SLD 16	ini.	722.19	-4530	0.9	0	548	7137	5660	2295	7684		1.7	Si
SLD 16	fin.	-283.71	-701	0.9	0	548	7137	5660	2295	7684		10.95	Si
SLV 1	ini.	-1180.87	5237	0.9	0	548	7137	5660	2295	7684		1.47	Si
SLV 1	fin.	2125.96	7687	0.9	0	548	7137	5660	2295	7684		1	No
SLV 16	ini.	1485.84	-8450	0.9	0	548	7137	5660	2295	7684		0.91	No
SLV 16	fin.	-1250.46	-4066	0.9	0	548	7137	5660	2295	7684		1.89	Si
SLV 3	ini.	-1218.42	5582	0.9	0	548	7137	5660	2295	7684		1.38	Si
SLV 3	fin.	2110.76	7543	0.9	0	548	7137	5660	2295	7684		1.02	Si
SLV 14	ini.	1523.38	-8795	0.9	0	548	7137	5660	2295	7684		0.87	No
SLV 14	fin.	-1235.26	-3923	0.9	0	548	7137	5660	2295	7684		1.96	Si
SLV 2	ini.	-1050.1	4578	0.9	0	548	7137	5660	2295	7684		1.68	Si
SLV 2	fin.	1960.67	7111	0.9	0	548	7137	5660	2295	7684		1.08	Si

**Tabella dei coefficienti di sicurezza minimi**

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.406	SLV 1	Si
V_SLV	0.874	SLV 14	No
PF_SLU	4.726	SLU 83	Si
V_SLU	2.341	SLU 83	Si

**Trave di accoppiamento 82**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati geometrici**

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-7.958	6.526	7.53	8.35	0.82	-7.058	6.526	7.53	8.35	0.82	0.9	0.28	3500

**Caratteristiche del materiale**

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC





Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 77	ini.	-676.33	-2811	-0.0004898	0.0001872	0.0035	0.82		2460.51	2460.51	No	3.64	Si
SLU 77	fin.	-24.26	-1402	-0.0000144	0.0001872	0.0035	0.82		2460.51	2460.51	No	101.42	Si
SLU 78	ini.	-673.98	-2804	-0.0004877	0.0001872	0.0035	0.82		2460.51	2460.51	No	3.65	Si
SLU 78	fin.	-26.67	-1406	-0.0000158	0.0001872	0.0035	0.82		2460.51	2460.51	No	92.27	Si
SLU 84	ini.	-685.46	-2846	-0.0004978	0.0001872	0.0035	0.82		2460.51	2460.51	No	3.59	Si
SLU 84	fin.	-24.93	-1418	-0.0000147	0.0001872	0.0035	0.82		2460.51	2460.51	No	98.7	Si
SLU 81	ini.	-683.93	-2828	-0.0004965	0.0001872	0.0035	0.82		2460.51	2460.51	No	3.6	Si
SLU 81	fin.	-14.1	-1379	-0.0000083	0.0001872	0.0035	0.82		2460.51	2460.51	No	174.53	Si
SLU 80	ini.	-663.54	-2759	-0.0004786	0.0001872	0.0035	0.82		2460.51	2460.51	No	3.71	Si
SLU 80	fin.	-25.5	-1380	-0.0000151	0.0001872	0.0035	0.82		2460.51	2460.51	No	96.5	Si
SLU 82	ini.	-681.57	-2821	-0.0004944	0.0001872	0.0035	0.82		2460.51	2460.51	No	3.61	Si
SLU 82	fin.	-16.5	-1383	-0.0000097	0.0001872	0.0035	0.82		2460.51	2460.51	No	149.09	Si
SLU 83	ini.	-687.81	-2854	-0.0004999	0.0001872	0.0035	0.82		2460.51	2460.51	No	3.58	Si
SLU 83	fin.	-22.52	-1415	-0.0000133	0.0001872	0.0035	0.82		2460.51	2460.51	No	109.24	Si
SLU 74	ini.	-672.45	-2786	-0.0004864	0.0001872	0.0035	0.82		2460.51	2460.51	No	3.66	Si
SLU 74	fin.	-15.84	-1366	-0.0000093	0.0001872	0.0035	0.82		2460.51	2460.51	No	155.38	Si
SLU 75	ini.	-670.09	-2778	-0.0004843	0.0001872	0.0035	0.82		2460.51	2460.51	No	3.67	Si
SLU 75	fin.	-18.24	-1370	-0.0000108	0.0001872	0.0035	0.82		2460.51	2460.51	No	134.89	Si
SLU 79	ini.	-665.9	-2766	-0.0004806	0.0001872	0.0035	0.82		2460.51	2460.51	No	3.7	Si
SLU 79	fin.	-23.09	-1376	-0.0000137	0.0001872	0.0035	0.82		2460.51	2460.51	No	106.55	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 81	ini.	-683.93	4280	0.82	0	303	6502	3438	2091	5529	No	1.29	Si
SLU 81	fin.	-14.1	-1060	0.82	0	303	6502	3438	2091	5529	No	5.22	Si
SLU 80	ini.	-663.54	4153	0.82	0	303	6502	3438	2091	5529	No	1.33	Si
SLU 80	fin.	-25.5	-1077	0.82	0	303	6502	3438	2091	5529	No	5.13	Si
SLU 79	ini.	-665.9	4165	0.82	0	303	6502	3438	2091	5529	No	1.33	Si
SLU 79	fin.	-23.09	-1068	0.82	0	303	6502	3438	2091	5529	No	5.18	Si
SLU 83	ini.	-687.81	4311	0.82	0	303	6502	3438	2091	5529	No	1.28	Si
SLU 83	fin.	-22.52	-1103	0.82	0	303	6502	3438	2091	5529	No	5.01	Si
SLU 77	ini.	-676.33	4227	0.82	0	303	6502	3438	2091	5529	No	1.31	Si
SLU 77	fin.	-24.26	-1084	0.82	0	303	6502	3438	2091	5529	No	5.1	Si
SLU 75	ini.	-670.09	4183	0.82	0	303	6502	3438	2091	5529	No	1.32	Si
SLU 75	fin.	-18.24	-1051	0.82	0	303	6502	3438	2091	5529	No	5.26	Si
SLU 78	ini.	-673.98	4215	0.82	0	303	6502	3438	2091	5529	No	1.31	Si
SLU 78	fin.	-26.67	-1094	0.82	0	303	6502	3438	2091	5529	No	5.05	Si
SLU 74	ini.	-672.45	4195	0.82	0	303	6502	3438	2091	5529	No	1.32	Si
SLU 74	fin.	-15.84	-1041	0.82	0	303	6502	3438	2091	5529	No	5.31	Si
SLU 84	ini.	-685.46	4299	0.82	0	303	6502	3438	2091	5529	No	1.29	Si
SLU 84	fin.	-24.93	-1113	0.82	0	303	6502	3438	2091	5529	No	4.97	Si
SLU 82	ini.	-681.57	4268	0.82	0	303	6502	3438	2091	5529	No	1.3	Si
SLU 82	fin.	-16.5	-1070	0.82	0	303	6502	3438	2091	5529	No	5.17	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 1	ini.	-1577.18	-5126	-0.0013782	0.0002807	0.0035	0.82		2487.45	2487.45		1.58	Si
SLV 1	fin.	1398.88	1336	-0.0011652	0.0002807	0.0035	0.82		2482.11	2482.11		1.77	Si
SLV 14	ini.	578.82	1094	-0.0003863	0.0002807	0.0035	0.82		2482.11	2482.11		4.29	Si
SLV 14	fin.	-1426.8	-3436	-0.0011943	0.0002807	0.0035	0.82		2487.45	2487.45		1.74	Si
SLV 4	ini.	-1398.12	-4584	-0.0011611	0.0002807	0.0035	0.82		2487.45	2487.45		1.78	Si
SLV 4	fin.	1305.97	1450	-0.0010606	0.0002807	0.0035	0.82		2482.11	2482.11		1.9	Si
SLV 2	ini.	-1469.1	-4813	-0.0012444	0.0002807	0.0035	0.82		2487.45	2487.45		1.69	Si
SLV 2	fin.	1260.56	1107	-0.0010113	0.0002807	0.0035	0.82		2482.11	2482.11		1.97	Si
SLV 16	ini.	649.79	1324	-0.0004422	0.0002807	0.0035	0.82		2482.11	2482.11		3.82	Si
SLV 16	fin.	-1381.39	-3092	-0.0011419	0.0002807	0.0035	0.82		2487.45	2487.45		1.8	Si
SLD 1	ini.	-939.68	-3280	-0.0006905	0.0002807	0.0035	0.82		2487.45	2487.45		2.65	Si
SLD 1	fin.	602.78	68	-0.0004049	0.0002807	0.0035	0.82		2482.11	2482.11		4.12	Si
SLV 15	ini.	541.71	1011	-0.0003579	0.0002807	0.0035	0.82		2482.11	2482.11		4.58	Si
SLV 15	fin.	-1243.07	-2863	-0.000099	0.0002807	0.0035	0.82		2487.45	2487.45		2	Si
SLV 13	ini.	470.74	782	-0.0003053	0.0002807	0.0035	0.82		2482.11	2482.11		5.27	Si
SLV 13	fin.	-1288.48	-3206	-0.0010387	0.0002807	0.0035	0.82		2487.45	2487.45		1.93	Si
SLV 3	ini.	-1506.21	-4896	-0.0012893	0.0002807	0.0035	0.82		2487.45	2487.45		1.65	Si
SLV 3	fin.	1444.29	1680	-0.0012183	0.0002807	0.0035	0.82		2482.11	2482.11		1.72	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 5	ini.	-924.07	-3270	-0.0006762	0.0002807	0.0035	0.82		2487.45	2487.45		2.69	Si
SLV 5	fin.	380.83	-695	-0.0002417	0.0002807	0.0035	0.82		2482.11	2482.11		6.52	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 15	ini.	541.71	-1728	0.82	0	455	6502	5156	2091	6957		4.03	Si
SLV 15	fin.	-1243.07	-5416	0.82	0	455	6502	5156	2091	6957		1.28	Si
SLD 1	ini.	-939.68	5045	0.82	0	455	6502	5156	2091	6957		1.38	Si
SLD 1	fin.	602.78	1652	0.82	0	455	6502	5156	2091	6957		4.21	Si
SLV 3	ini.	-1506.21	7642	0.82	0	455	6502	5156	2091	6957		0.91	No
SLV 3	fin.	1444.29	4896	0.82	0	455	6502	5156	2091	6957		1.42	Si
SLV 4	ini.	-1398.12	7127	0.82	0	455	6502	5156	2091	6957		0.98	No
SLV 4	fin.	1305.97	4366	0.82	0	455	6502	5156	2091	6957		1.59	Si
SLV 14	ini.	578.82	-1917	0.82	0	455	6502	5156	2091	6957		3.63	Si
SLV 14	fin.	-1426.8	-6141	0.82	0	455	6502	5156	2091	6957		1.13	Si
SLV 2	ini.	-1469.1	7453	0.82	0	455	6502	5156	2091	6957		0.93	No
SLV 2	fin.	1260.56	4170	0.82	0	455	6502	5156	2091	6957		1.67	Si
SLV 1	ini.	-1577.18	7968	0.82	0	455	6502	5156	2091	6957		0.87	No
SLV 1	fin.	1398.88	4699	0.82	0	455	6502	5156	2091	6957		1.48	Si
SLV 5	ini.	-924.07	4977	0.82	0	455	6502	5156	2091	6957		1.4	Si
SLV 5	fin.	380.83	768	0.82	0	455	6502	5156	2091	6957		9.06	Si
SLV 13	ini.	470.74	-1403	0.82	0	455	6502	5156	2091	6957		4.96	Si
SLV 13	fin.	-1288.48	-5612	0.82	0	455	6502	5156	2091	6957		1.24	Si
SLV 16	ini.	649.79	-2243	0.82	0	455	6502	5156	2091	6957		3.1	Si
SLV 16	fin.	-1381.39	-5945	0.82	0	455	6502	5156	2091	6957		1.17	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.577	SLV 1	Si
V_SLV	0.873	SLV 1	No
PF_SLU	3.577	SLU 83	Si
V_SLU	1.282	SLU 83	Si

Trave di accoppiamento 83

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-19.813	1.006	6.93	8.35	1.42	-20.613	1.006	6.93	8.35	1.42	0.8	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fnk	fvk0	fmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 79	ini.	-1510.64	-5993	-0.0003363	0.0002246	0.0035	1.42		7545.1	7545.1	No	4.99	Si
SLU 79	fin.	595.94	-4838	-0.0001219	0.0002246	0.0035	1.42		7536.27	7536.27	No	12.65	Si
SLU 76	ini.	-1493.51	-5898	-0.0003318	0.0002246	0.0035	1.42		7545.1	7545.1	No	5.05	Si
SLU 76	fin.	594.19	-4753	-0.0001216	0.0002246	0.0035	1.42		7536.27	7536.27	No	12.68	Si
SLU 83	ini.	-1506.97	-6125	-0.0003353	0.0002246	0.0035	1.42		7545.1	7545.1	No	5.01	Si
SLU 83	fin.	563.74	-4987	-0.0001151	0.0002246	0.0035	1.42		7536.27	7536.27	No	13.37	Si
SLU 75	ini.	-1488.35	-5978	-0.0003305	0.0002246	0.0035	1.42		7545.1	7545.1	No	5.07	Si
SLU 75	fin.	576.36	-4844	-0.0001178	0.0002246	0.0035	1.42		7536.27	7536.27	No	13.08	Si
SLU 78	ini.	-1505.59	-6077	-0.000335	0.0002246	0.0035	1.42		7545.1	7545.1	No	5.01	Si
SLU 78	fin.	581.26	-4931	-0.0001188	0.0002246	0.0035	1.42		7536.27	7536.27	No	12.97	Si
SLU 77	ini.	-1505.52	-6075	-0.0003349	0.0002246	0.0035	1.42		7545.1	7545.1	No	5.01	Si
SLU 77	fin.	579.37	-4930	-0.0001184	0.0002246	0.0035	1.42		7536.27	7536.27	No	13.01	Si
SLU 84	ini.	-1507.04	-6127	-0.0003353	0.0002246	0.0035	1.42		7545.1	7545.1	No	5.01	Si
SLU 84	fin.	565.63	-4988	-0.0001155	0.0002246	0.0035	1.42		7536.27	7536.27	No	13.32	Si
SLU 82	ini.	-1489.8	-6028	-0.0003309	0.0002246	0.0035	1.42		7545.1	7545.1	No	5.06	Si



Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 82	fin.	560.73	-4901	-0.0001144	0.0002246	0.0035	1.42		7536.27	7536.27	No	13.44	Si
SLU 80	ini.	-1510.71	-5996	-0.0003363	0.0002246	0.0035	1.42		7545.1	7545.1	No	4.99	Si
SLU 80	fin.	597.83	-4839	-0.0001223	0.0002246	0.0035	1.42		7536.27	7536.27	No	12.61	Si
SLU 81	ini.	-1489.74	-6026	-0.0003309	0.0002246	0.0035	1.42		7545.1	7545.1	No	5.06	Si
SLU 81	fin.	558.84	-4900	-0.000114	0.0002246	0.0035	1.42		7536.27	7536.27	No	13.49	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 81	ini.	-1489.74	4588	1.42	0	576	6344	7144	3621	6920	No	1.51	Si
SLU 81	fin.	558.84	2465	1.42	0	576	6344	7144	3621	6920	No	2.81	Si
SLU 84	ini.	-1507.04	4630	1.42	0	576	6344	7144	3621	6920	No	1.49	Si
SLU 84	fin.	565.63	2507	1.42	0	576	6344	7144	3621	6920	No	2.76	Si
SLU 76	ini.	-1493.51	4572	1.42	0	576	6344	7144	3621	6920	No	1.51	Si
SLU 76	fin.	594.19	2613	1.42	0	576	6344	7144	3621	6920	No	2.65	Si
SLU 78	ini.	-1505.59	4572	1.42	0	576	6344	7144	3621	6920	No	1.51	Si
SLU 78	fin.	581.26	2613	1.42	0	576	6344	7144	3621	6920	No	2.65	Si
SLU 80	ini.	-1510.71	4608	1.42	0	576	6344	7144	3621	6920	No	1.5	Si
SLU 80	fin.	597.83	2650	1.42	0	576	6344	7144	3621	6920	No	2.61	Si
SLU 83	ini.	-1506.97	4627	1.42	0	576	6344	7144	3621	6920	No	1.5	Si
SLU 83	fin.	563.74	2504	1.42	0	576	6344	7144	3621	6920	No	2.76	Si
SLU 79	ini.	-1510.64	4605	1.42	0	576	6344	7144	3621	6920	No	1.5	Si
SLU 79	fin.	595.94	2647	1.42	0	576	6344	7144	3621	6920	No	2.61	Si
SLU 73	ini.	-1476.27	4533	1.42	0	576	6344	7144	3621	6920	No	1.53	Si
SLU 73	fin.	589.29	2575	1.42	0	576	6344	7144	3621	6920	No	2.69	Si
SLU 82	ini.	-1489.8	4591	1.42	0	576	6344	7144	3621	6920	No	1.51	Si
SLU 82	fin.	560.73	2468	1.42	0	576	6344	7144	3621	6920	No	2.8	Si
SLU 77	ini.	-1505.52	4568	1.42	0	576	6344	7144	3621	6920	No	1.51	Si
SLU 77	fin.	579.37	2610	1.42	0	576	6344	7144	3621	6920	No	2.65	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 2	ini.	2266.93	-2856	-0.0005158	0.0003369	0.0035	1.42		7270.13	7270.13		3.21	Si
SLV 2	fin.	-3156.55	-5492	-0.0007734	0.0003369	0.0035	1.42		7279.66	7279.66		2.31	Si
SLD 14	ini.	-2582.09	-4535	-0.0006025	0.0003369	0.0035	1.42		7279.66	7279.66		2.82	Si
SLD 14	fin.	1939.13	-2030	-0.0004294	0.0003369	0.0035	1.42		7270.13	7270.13		3.75	Si
SLD 13	ini.	-2569.27	-4522	-0.0005989	0.0003369	0.0035	1.42		7279.66	7279.66		2.83	Si
SLD 13	fin.	1919.52	-2035	-0.0004244	0.0003369	0.0035	1.42		7270.13	7270.13		3.79	Si
SLV 16	ini.	-4507.12	-5310	-0.0012425	0.0003369	0.0035	1.42		7279.66	7279.66		1.62	Si
SLV 16	fin.	4178.6	-893	-0.00112	0.0003369	0.0035	1.42		7270.13	7270.13		1.74	Si
SLV 15	ini.	-4477.25	-5281	-0.0012309	0.0003369	0.0035	1.42		7279.66	7279.66		1.63	Si
SLV 15	fin.	4132.94	-904	-0.0011033	0.0003369	0.0035	1.42		7270.13	7270.13		1.76	Si
SLV 3	ini.	2348.31	-2978	-0.000538	0.0003369	0.0035	1.42		7270.13	7270.13		3.1	Si
SLV 3	fin.	-2906.07	-5928	-0.000697	0.0003369	0.0035	1.42		7279.66	7279.66		2.5	Si
SLV 13	ini.	-4528.76	-5130	-0.001251	0.0003369	0.0035	1.42		7279.66	7279.66		1.61	Si
SLV 13	fin.	3836.79	-478	-0.000998	0.0003369	0.0035	1.42		7270.13	7270.13		1.89	Si
SLV 14	ini.	-4558.63	-5159	-0.0012627	0.0003369	0.0035	1.42		7279.66	7279.66		1.6	Si
SLV 14	fin.	3882.45	-468	-0.0010139	0.0003369	0.0035	1.42		7270.13	7270.13		1.87	Si
SLV 4	ini.	2318.43	-3007	-0.0005298	0.0003369	0.0035	1.42		7270.13	7270.13		3.14	Si
SLV 4	fin.	-2860.4	-5917	-0.0006834	0.0003369	0.0035	1.42		7279.66	7279.66		2.54	Si
SLV 1	ini.	2296.8	-2826	-0.0005239	0.0003369	0.0035	1.42		7270.13	7270.13		3.17	Si
SLV 1	fin.	-3202.21	-5502	-0.0007876	0.0003369	0.0035	1.42		7279.66	7279.66		2.27	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 4	ini.	2318.43	-8520	1.42	0	864	6344	10717	3621	7208		0.85	No
SLV 4	fin.	-2860.4	-9763	1.42	0	864	6344	10717	3621	7208		0.74	No
SLD 14	ini.	-2582.09	8499	1.42	0	864	6344	10717	3621	7208		0.85	No
SLD 14	fin.	1939.13	7250	1.42	0	864	6344	10717	3621	7208		0.99	No
SLV 14	ini.	-4558.63	15374	1.42	0	864	6344	10717	3621	7208		0.47	No
SLV 14	fin.	3882.45	14124	1.42	0	864	6344	10717	3621	7208		0.51	No
SLV 1	ini.	2296.8	-8423	1.42	0	864	6344	10717	3621	7208		0.86	No
SLV 1	fin.	-3202.21	-9654	1.42	0	864	6344	10717	3621	7208		0.75	No
SLV 2	ini.	2266.93	-8293	1.42	0	864	6344	10717	3621	7208		0.87	No
SLV 2	fin.	-3156.55	-9524	1.42	0	864	6344	10717	3621	7208		0.76	No
SLV 15	ini.	-4477.25	15016	1.42	0	864	6344	10717	3621	7208		0.48	No
SLV 15	fin.	4132.94	13755	1.42	0	864	6344	10717	3621	7208		0.52	No
SLV 16	ini.	-4507.12	15146	1.42	0	864	6344	10717	3621	7208		0.48	No
SLV 16	fin.	4178.6	13885	1.42	0	864	6344	10717	3621	7208		0.52	No
SLV 13	ini.	-4528.76	15244	1.42	0	864	6344	10717	3621	7208		0.47	No
SLV 13	fin.	3836.79	13994	1.42	0	864	6344	10717	3621	7208		0.52	No
SLV 3	ini.	2348.31	-8650	1.42	0	864	6344	10717	3621	7208		0.83	No
SLV 3	fin.	-2906.07	-9893	1.42	0	864	6344	10717	3621	7208		0.73	No
SLD 13	ini.	-2569.27	8444	1.42	0	864	6344	10717	3621	7208		0.85	No
SLD 13	fin.	1919.52	7194	1.42	0	864	6344	10717	3621	7208		1	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.597	SLV 14	Si
V_SLV	0.469	SLV 14	No
PF_SLU	4.994	SLU 80	Si
V_SLU	1.495	SLU 84	Si



## Trave di accoppiamento 84

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-11.143	1.006	7.33	8.35	1.02	-12.263	1.006	7.33	8.35	1.02	1.12	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	e <sub>f,d</sub>	γ <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em <sub>-</sub>	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 77	ini.	-1175.71	-4177	-0.0005482	0.0002246	0.0035	1.02		3900.37	3900.37	No	3.32	Si
SLU 77	fin.	164.07	-2616	-0.0000637	0.0002246	0.0035	1.02		3893.98	3893.98	No	23.73	Si
SLU 40	ini.	-1143	-3735	-0.0005297	0.0002246	0.0035	1.02		3900.37	3900.37	No	3.41	Si
SLU 40	fin.	204.93	-2139	-0.0000801	0.0002246	0.0035	1.02		3893.98	3893.98	No	19	Si
SLU 78	ini.	-1178.77	-4177	-0.00055	0.0002246	0.0035	1.02		3900.37	3900.37	No	3.31	Si
SLU 78	fin.	167.45	-2609	-0.0000651	0.0002246	0.0035	1.02		3893.98	3893.98	No	23.25	Si
SLU 81	ini.	-1218.35	-4183	-0.0005727	0.0002246	0.0035	1.02		3900.37	3900.37	No	3.2	Si
SLU 81	fin.	174.15	-2557	-0.0000677	0.0002246	0.0035	1.02		3893.98	3893.98	No	22.36	Si
SLU 84	ini.	-1222.14	-4231	-0.0005748	0.0002246	0.0035	1.02		3900.37	3900.37	No	3.19	Si
SLU 84	fin.	167.72	-2611	-0.0000652	0.0002246	0.0035	1.02		3893.98	3893.98	No	23.22	Si
SLU 75	ini.	-1178.05	-4130	-0.0005495	0.0002246	0.0035	1.02		3900.37	3900.37	No	3.31	Si
SLU 75	fin.	177.26	-2548	-0.000069	0.0002246	0.0035	1.02		3893.98	3893.98	No	21.97	Si
SLU 42	ini.	-1143.72	-3783	-0.0005301	0.0002246	0.0035	1.02		3900.37	3900.37	No	3.41	Si
SLU 42	fin.	195.12	-2200	-0.0000761	0.0002246	0.0035	1.02		3893.98	3893.98	No	19.96	Si
SLU 74	ini.	-1174.99	-4129	-0.0005478	0.0002246	0.0035	1.02		3900.37	3900.37	No	3.32	Si
SLU 74	fin.	173.89	-2555	-0.0000676	0.0002246	0.0035	1.02		3893.98	3893.98	No	22.39	Si
SLU 83	ini.	-1219.08	-4231	-0.0005731	0.0002246	0.0035	1.02		3900.37	3900.37	No	3.2	Si
SLU 83	fin.	164.34	-2618	-0.0000638	0.0002246	0.0035	1.02		3893.98	3893.98	No	23.69	Si
SLU 82	ini.	-1221.42	-4184	-0.0005744	0.0002246	0.0035	1.02		3900.37	3900.37	No	3.19	Si
SLU 82	fin.	177.53	-2549	-0.0000691	0.0002246	0.0035	1.02		3893.98	3893.98	No	21.93	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	f <sub>vd</sub>	V <sub>t</sub>	V <sub>t,f</sub>	V <sub>t,c</sub>	V <sub>t,c int.</sub>	V <sub>t,R</sub>	incremento > 50%	c.s.	Verifica
SLU 84	ini.	-1222.14	3388	1.02	0	377	8088	5132	2601	7733	No	2.28	Si
SLU 84	fin.	167.72	561	1.02	0	377	8088	5132	2601	7733	No	13.77	Si
SLU 42	ini.	-1143.72	3212	1.02	0	377	8088	5132	2601	7733	No	2.41	Si
SLU 42	fin.	195.12	613	1.02	0	377	8088	5132	2601	7733	No	12.6	Si
SLU 83	ini.	-1219.08	3379	1.02	0	377	8088	5132	2601	7733	No	2.29	Si
SLU 83	fin.	164.34	552	1.02	0	377	8088	5132	2601	7733	No	14	Si
SLU 82	ini.	-1221.42	3403	1.02	0	377	8088	5132	2601	7733	No	2.27	Si
SLU 82	fin.	177.53	576	1.02	0	377	8088	5132	2601	7733	No	13.43	Si
SLU 75	ini.	-1178.05	3202	1.02	0	377	8088	5132	2601	7733	No	2.42	Si
SLU 75	fin.	177.26	651	1.02	0	377	8088	5132	2601	7733	No	11.88	Si
SLU 39	ini.	-1139.93	3217	1.02	0	377	8088	5132	2601	7733	No	2.4	Si
SLU 39	fin.	201.56	619	1.02	0	377	8088	5132	2601	7733	No	12.5	Si
SLU 41	ini.	-1140.65	3203	1.02	0	377	8088	5132	2601	7733	No	2.41	Si
SLU 41	fin.	191.75	604	1.02	0	377	8088	5132	2601	7733	No	12.8	Si
SLU 74	ini.	-1174.99	3193	1.02	0	377	8088	5132	2601	7733	No	2.42	Si
SLU 74	fin.	173.89	642	1.02	0	377	8088	5132	2601	7733	No	12.05	Si
SLU 40	ini.	-1143	3226	1.02	0	377	8088	5132	2601	7733	No	2.4	Si
SLU 40	fin.	204.93	628	1.02	0	377	8088	5132	2601	7733	No	12.32	Si
SLU 81	ini.	-1218.35	3393	1.02	0	377	8088	5132	2601	7733	No	2.28	Si
SLU 81	fin.	174.15	567	1.02	0	377	8088	5132	2601	7733	No	13.65	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 14	ini.	-4250.72	-1850	-0.0037778	0.0003369	0.0035	1.02		3845.03	3845.03		0.9	No
SLV 14	fin.	6939.41	12117	-0.0075243	0.0003369	0.0035	1.02		3838.12	3838.12		0.55	No
SLV 3	ini.	2819.56	-3503	-0.0016627	0.0003369	0.0035	1.02		3838.12	3838.12		1.36	Si
SLV 3	fin.	-6804.92	-15669	-0.0073378	0.0003369	0.0035	1.02		3845.03	3845.03		0.57	No
SLD 15	ini.	-2238.88	-2036	-0.0011773	0.0003369	0.0035	1.02		3845.03	3845.03		1.72	Si
SLD 15	fin.	3079.54	4780	-0.0019332	0.0003369	0.0035	1.02		3838.12	3838.12		1.25	Si
SLD 16	ini.	-2255.31	-2032	-0.0011893	0.0003369	0.0035	1.02		3845.03	3845.03		1.7	Si
SLD 16	fin.	3113.15	4847	-0.0019718	0.0003369	0.0035	1.02		3838.12	3838.12		1.23	Si
SLV 13	ini.	-4212.47	-1858	-0.0037142	0.0003369	0.0035	1.02		3845.03	3845.03		0.91	No
SLV 13	fin.	6861.16	11961	-0.0074242	0.0003369	0.0035	1.02		3838.12	3838.12		0.56	No
SLV 1	ini.	2887.04	-4176	-0.0017286	0.0003369	0.0035	1.02		3838.12	3838.12		1.33	Si
SLV 1	fin.	-7059.91	-17266	-0.0076632	0.0003369	0.0035	1.02		3845.03	3845.03		0.54	No
SLV 4	ini.	2781.31	-3495	-0.0016265	0.0003369	0.0035	1.02		3838.12	3838.12		1.38	Si
SLV 4	fin.	-6726.67	-15513	-0.0072374	0.0003369	0.0035	1.02		3845.03	3845.03		0.57	No
SLV 15	ini.	-4279.94	-1185	-0.003826	0.0003369	0.0035	1.02		3845.03	3845.03		0.9	No
SLV 15	fin.	7116.15	13558	-0.0077494	0.0003369	0.0035	1.02		3838.12	3838.12		0.54	No
SLV 16	ini.	-4318.2	-1176	-0.0038883	0.0003369	0.0035	1.02		3845.03	3845.03		0.89	No
SLV 16	fin.	7194.4	13714	-0.0078486	0.0003369	0.0035	1.02		3838.12	3838.12		0.53	No
SLV 2	ini.	2848.78	-4168	-0.0016909	0.0003369	0.0035	1.02		3838.12	3838.12		1.35	Si
SLV 2	fin.	-6981.66	-17110	-0.0075637	0.0003369	0.0035	1.02		3845.03	3845.03		0.55	No

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 2	ini.	2848.78	-13732	1.02	0	565	8088	7698	2601	8654		0.63	No
SLV 2	fin.	-6981.66	-15310	1.02	0	565	8088	7698	2601	8654		0.57	No
SLD 16	ini.	-2255.31	8637	1.02	0	565	8088	7698	2601	8654		1	Si
SLD 16	fin.	3113.15	7085	1.02	0	565	8088	7698	2601	8654		1.22	Si
SLV 3	ini.	2819.56	-13455	1.02	0	565	8088	7698	2601	8654		0.64	No
SLV 3	fin.	-6804.92	-14966	1.02	0	565	8088	7698	2601	8654		0.58	No
SLV 15	ini.	-4279.94	17501	1.02	0	565	8088	7698	2601	8654		0.49	No
SLV 15	fin.	7116.15	15965	1.02	0	565	8088	7698	2601	8654		0.54	No
SLD 15	ini.	-2238.88	8564	1.02	0	565	8088	7698	2601	8654		1.01	Si
SLD 15	fin.	3079.54	7012	1.02	0	565	8088	7698	2601	8654		1.23	Si
SLV 13	ini.	-4212.47	17052	1.02	0	565	8088	7698	2601	8654		0.51	No
SLV 13	fin.	6861.16	15450	1.02	0	565	8088	7698	2601	8654		0.56	No
SLV 1	ini.	2887.04	-13904	1.02	0	565	8088	7698	2601	8654		0.62	No
SLV 1	fin.	-7059.91	-15481	1.02	0	565	8088	7698	2601	8654		0.56	No
SLV 16	ini.	-4318.2	17673	1.02	0	565	8088	7698	2601	8654		0.49	No
SLV 16	fin.	7194.4	16136	1.02	0	565	8088	7698	2601	8654		0.54	No
SLV 4	ini.	2781.31	-13283	1.02	0	565	8088	7698	2601	8654		0.65	No
SLV 4	fin.	-6726.67	-14795	1.02	0	565	8088	7698	2601	8654		0.58	No
SLV 14	ini.	-4250.72	17223	1.02	0	565	8088	7698	2601	8654		0.5	No
SLV 14	fin.	6939.41	15621	1.02	0	565	8088	7698	2601	8654		0.55	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.533	SLV 16	No
V_SLV	0.49	SLV 16	No
PF_SLU	3.191	SLU 84	Si
V_SLU	2.273	SLU 82	Si

## Trave di accoppiamento 85

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-9.398	1.006	7.33	8.35	1.02	-10.478	1.006	7.33	8.35	1.02	1.08	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb_	fhk	fvk0	fmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 78	ini.	-106.35	-2847	-0.0000409	0.0002246	0.0035	1.02		3900.37	3900.37	No	36.68	Si
SLU 78	fin.	-875.05	-4105	-0.0003847	0.0002246	0.0035	1.02		3900.37	3900.37	No	4.46	Si
SLU 41	ini.	-45.23	-2408	-0.0000173	0.0002246	0.0035	1.02		3900.37	3900.37	No	86.23	Si
SLU 41	fin.	-854.57	-3737	-0.0003741	0.0002246	0.0035	1.02		3900.37	3900.37	No	4.56	Si
SLU 42	ini.	-45.43	-2409	-0.0000173	0.0002246	0.0035	1.02		3900.37	3900.37	No	85.85	Si
SLU 42	fin.	-855.86	-3739	-0.0003748	0.0002246	0.0035	1.02		3900.37	3900.37	No	4.56	Si
SLU 83	ini.	-114.67	-2878	-0.0000442	0.0002246	0.0035	1.02		3900.37	3900.37	No	34.02	Si
SLU 83	fin.	-900.06	-4171	-0.0003977	0.0002246	0.0035	1.02		3900.37	3900.37	No	4.33	Si
SLU 74	ini.	-104.04	-2803	-0.00004	0.0002246	0.0035	1.02		3900.37	3900.37	No	37.49	Si
SLU 74	fin.	-871.12	-4060	-0.0003827	0.0002246	0.0035	1.02		3900.37	3900.37	No	4.48	Si
SLU 81	ini.	-112.56	-2835	-0.0000434	0.0002246	0.0035	1.02		3900.37	3900.37	No	34.65	Si
SLU 81	fin.	-897.42	-4129	-0.0003963	0.0002246	0.0035	1.02		3900.37	3900.37	No	4.35	Si
SLU 75	ini.	-104.24	-2804	-0.0000401	0.0002246	0.0035	1.02		3900.37	3900.37	No	37.42	Si
SLU 75	fin.	-872.41	-4063	-0.0003833	0.0002246	0.0035	1.02		3900.37	3900.37	No	4.47	Si
SLU 77	ini.	-106.15	-2846	-0.0000408	0.0002246	0.0035	1.02		3900.37	3900.37	No	36.75	Si
SLU 77	fin.	-873.76	-4102	-0.000384	0.0002246	0.0035	1.02		3900.37	3900.37	No	4.46	Si
SLU 84	ini.	-114.87	-2879	-0.0000443	0.0002246	0.0035	1.02		3900.37	3900.37	No	33.96	Si
SLU 84	fin.	-901.34	-4173	-0.0003984	0.0002246	0.0035	1.02		3900.37	3900.37	No	4.33	Si
SLU 82	ini.	-112.76	-2836	-0.0000434	0.0002246	0.0035	1.02		3900.37	3900.37	No	34.59	Si
SLU 82	fin.	-898.7	-4131	-0.000397	0.0002246	0.0035	1.02		3900.37	3900.37	No	4.34	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 83	ini.	-114.67	-10	1.02	0	391	8088	5132	2601	7733	No	745.12	Si
SLU 83	fin.	-900.06	-2625	1.02	0	391	8088	5132	2601	7733	No	2.95	Si
SLU 41	ini.	-45.23	-165	1.02	0	391	8088	5132	2601	7733	No	46.97	Si
SLU 41	fin.	-854.57	-2558	1.02	0	391	8088	5132	2601	7733	No	3.02	Si
SLU 42	ini.	-45.43	-166	1.02	0	391	8088	5132	2601	7733	No	46.5	Si
SLU 42	fin.	-855.86	-2560	1.02	0	391	8088	5132	2601	7733	No	3.02	Si
SLU 40	ini.	-43.33	-166	1.02	0	391	8088	5132	2601	7733	No	46.54	Si
SLU 40	fin.	-853.22	-2560	1.02	0	391	8088	5132	2601	7733	No	3.02	Si
SLU 81	ini.	-112.56	-10	1.02	0	391	8088	5132	2601	7733	No	756.29	Si
SLU 81	fin.	-897.42	-2625	1.02	0	391	8088	5132	2601	7733	No	2.95	Si
SLU 78	ini.	-106.35	-86	1.02	0	391	8088	5132	2601	7733	No	89.95	Si
SLU 78	fin.	-875.05	-2486	1.02	0	391	8088	5132	2601	7733	No	3.11	Si
SLU 84	ini.	-114.87	-12	1.02	0	391	8088	5132	2601	7733	No	641.98	Si
SLU 84	fin.	-901.34	-2627	1.02	0	391	8088	5132	2601	7733	No	2.94	Si
SLU 75	ini.	-104.24	-86	1.02	0	391	8088	5132	2601	7733	No	90.12	Si
SLU 75	fin.	-872.41	-2486	1.02	0	391	8088	5132	2601	7733	No	3.11	Si
SLU 82	ini.	-112.76	-12	1.02	0	391	8088	5132	2601	7733	No	650.26	Si
SLU 82	fin.	-898.7	-2627	1.02	0	391	8088	5132	2601	7733	No	2.94	Si
SLU 39	ini.	-43.13	-164	1.02	0	391	8088	5132	2601	7733	No	47.02	Si
SLU 39	fin.	-851.93	-2558	1.02	0	391	8088	5132	2601	7733	No	3.02	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-3948.03	-12083	-0.0032497	0.0003369	0.0035	1.02		3845.03	3845.03		0.97	No
SLV 15	fin.	326.09	-6385	-0.0001281	0.0003369	0.0035	1.02		3838.12	3838.12		11.77	Si
SLV 16	ini.	-4000.08	-12219	-0.0033445	0.0003369	0.0035	1.02		3845.03	3845.03		0.96	No
SLV 16	fin.	341.41	-6427	-0.0001344	0.0003369	0.0035	1.02		3838.12	3838.12		11.24	Si
SLV 1	ini.	3804.42	8417	-0.0029966	0.0003369	0.0035	1.02		3838.12	3838.12		1.01	Si
SLV 1	fin.	-1405.91	1206	-0.0006432	0.0003369	0.0035	1.02		3845.03	3845.03		2.73	Si
SLV 14	ini.	-4191.28	-13142	-0.0036785	0.0003369	0.0035	1.02		3845.03	3845.03		0.92	No
SLV 14	fin.	387.26	-6713	-0.0001532	0.0003369	0.0035	1.02		3838.12	3838.12		9.91	Si
SLV 13	ini.	-4139.23	-13006	-0.00359	0.0003369	0.0035	1.02		3845.03	3845.03		0.93	No
SLV 13	fin.	371.94	-6671	-0.0001469	0.0003369	0.0035	1.02		3838.12	3838.12		10.32	Si
SLD 14	ini.	-1847.26	-6706	-0.0009089	0.0003369	0.0035	1.02		3845.03	3845.03		2.08	Si
SLD 14	fin.	-139.11	-4365	-0.0000535	0.0003369	0.0035	1.02		3845.03	3845.03		27.64	Si
SLV 4	ini.	3943.57	9204	-0.0032531	0.0003369	0.0035	1.02		3838.12	3838.12		0.97	No
SLV 4	fin.	-1436.43	1450	-0.0006605	0.0003369	0.0035	1.02		3845.03	3845.03		2.68	Si
SLV 3	ini.	3995.62	9340	-0.003348	0.0003369	0.0035	1.02		3838.12	3838.12		0.96	No
SLV 3	fin.	-1451.76	1492	-0.0006692	0.0003369	0.0035	1.02		3845.03	3845.03		2.65	Si
SLV 2	ini.	3752.37	8281	-0.0029022	0.0003369	0.0035	1.02		3838.12	3838.12		1.02	Si
SLV 2	fin.	-1390.58	1164	-0.0006346	0.0003369	0.0035	1.02		3845.03	3845.03		2.77	Si
SLD 13	ini.	-1824.91	-6648	-0.0008946	0.0003369	0.0035	1.02		3845.03	3845.03		2.11	Si
SLD 13	fin.	-145.68	-4347	-0.0000561	0.0003369	0.0035	1.02		3845.03	3845.03		26.39	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 4	ini.	1629.25	-3271	1.02	0	586	8088	7698	2601	8675		2.65	Si
SLD 4	fin.	-918.81	-4829	1.02	0	586	8088	7698	2601	8675		1.8	Si
SLD 3	ini.	1651.6	-3317	1.02	0	586	8088	7698	2601	8675		2.62	Si
SLD 3	fin.	-925.39	-4875	1.02	0	586	8088	7698	2601	8675		1.78	Si
SLV 3	ini.	3995.62	-7801	1.02	0	586	8088	7698	2601	8675		1.11	Si
SLV 3	fin.	-1451.76	-9421	1.02	0	586	8088	7698	2601	8675		0.92	No
SLV 13	ini.	-4139.23	7757	1.02	0	586	8088	7698	2601	8675		1.12	Si
SLV 13	fin.	371.94	6362	1.02	0	586	8088	7698	2601	8675		1.36	Si
SLV 15	ini.	-3948.03	7586	1.02	0	586	8088	7698	2601	8675		1.14	Si
SLV 15	fin.	326.09	5868	1.02	0	586	8088	7698	2601	8675		1.48	Si
SLV 14	ini.	-4191.28	7864	1.02	0	586	8088	7698	2601	8675		1.1	Si
SLV 14	fin.	387.26	6469	1.02	0	586	8088	7698	2601	8675		1.34	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 4	ini.	3943.57	-7694	1.02	0	586	8088	7698	2601	8675		1.13	Si
SLV 4	fin.	-1436.43	-9314	1.02	0	586	8088	7698	2601	8675		0.93	No
SLV 16	ini.	-4000.08	7693	1.02	0	586	8088	7698	2601	8675		1.13	Si
SLV 16	fin.	341.41	5975	1.02	0	586	8088	7698	2601	8675		1.45	Si
SLV 1	ini.	3804.42	-7630	1.02	0	586	8088	7698	2601	8675		1.14	Si
SLV 1	fin.	-1405.91	-8927	1.02	0	586	8088	7698	2601	8675		0.97	No
SLV 2	ini.	3752.37	-7523	1.02	0	586	8088	7698	2601	8675		1.15	Si
SLV 2	fin.	-1390.58	-8820	1.02	0	586	8088	7698	2601	8675		0.98	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.917	SLV 14	No
V_SLV	0.921	SLV 3	No
PF_SLU	4.327	SLU 84	Si
V_SLU	2.944	SLU 84	Si

## Trave di accoppiamento 86

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-6.463	1.006	6.93	8.35	1.42	-7.463	1.006	6.93	8.35	1.42	1	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fhk	fvk0	fhmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim.conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim.conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 70	ini.	-1.96	-4191	-0.0000004	0.0002246	0.0035	1.42		7545.1	7545.1	No	3850.65	Si
SLU 70	fin.	-870.08	-4797	-0.0001819	0.0002246	0.0035	1.42		7545.1	7545.1	No	8.67	Si
SLU 66	ini.	2.33	-4106	-0.0000005	0.0002246	0.0035	1.42		7536.27	7536.27	No	3231.98	Si
SLU 66	fin.	-865.24	-4712	-0.0001808	0.0002246	0.0035	1.42		7545.1	7545.1	No	8.72	Si
SLU 71	ini.	-0.35	-4128	-0.0000001	0.0002246	0.0035	1.42		7545.1	7545.1	No	21753.9	Si
SLU 71	fin.	-870.07	-4737	-0.0001819	0.0002246	0.0035	1.42		7545.1	7545.1	No	8.67	Si
SLU 67	ini.	3.22	-4105	-0.0000006	0.0002246	0.0035	1.42		7536.27	7536.27	No	2343.64	Si
SLU 67	fin.	-866.14	-4713	-0.000181	0.0002246	0.0035	1.42		7545.1	7545.1	No	8.71	Si
SLU 51	ini.	4.49	-3715	-0.0000009	0.0002246	0.0035	1.42		7536.27	7536.27	No	1679.17	Si
SLU 51	fin.	-820.54	-4309	-0.0001708	0.0002246	0.0035	1.42		7545.1	7545.1	No	9.2	Si
SLU 72	ini.	0.54	-4128	-0.0000001	0.0002246	0.0035	1.42		7536.27	7536.27	No	14033.88	Si
SLU 72	fin.	-870.98	-4738	-0.0001821	0.0002246	0.0035	1.42		7545.1	7545.1	No	8.66	Si
SLU 69	ini.	-2.84	-4191	-0.0000006	0.0002246	0.0035	1.42		7545.1	7545.1	No	2653.66	Si
SLU 69	fin.	-869.18	-4796	-0.0001817	0.0002246	0.0035	1.42		7545.1	7545.1	No	8.68	Si
SLU 68	ini.	6.3	-4042	-0.0000012	0.0002246	0.0035	1.42		7536.27	7536.27	No	1195.99	Si
SLU 68	fin.	-867.64	-4654	-0.0001813	0.0002246	0.0035	1.42		7545.1	7545.1	No	8.7	Si
SLU 65	ini.	11.48	-3956	-0.0000023	0.0002246	0.0035	1.42		7536.27	7536.27	No	656.68	Si
SLU 65	fin.	-863.7	-4570	-0.0001804	0.0002246	0.0035	1.42		7545.1	7545.1	No	8.74	Si
SLU 64	ini.	10	-3957	-0.0000002	0.0002246	0.0035	1.42		7536.27	7536.27	No	753.38	Si
SLU 64	fin.	-862.2	-4569	-0.0001801	0.0002246	0.0035	1.42		7545.1	7545.1	No	8.75	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 68	ini.	6.3	-102	1.42	0	576	7930	7144	3621	8506	No	83.1	Si
SLU 68	fin.	-867.64	-2576	1.42	0	576	7930	7144	3621	8506	No	3.3	Si
SLU 66	ini.	2.33	-92	1.42	0	576	7930	7144	3621	8506	No	92.93	Si
SLU 66	fin.	-865.24	-2565	1.42	0	576	7930	7144	3621	8506	No	3.32	Si
SLU 64	ini.	10	-100	1.42	0	576	7930	7144	3621	8506	No	84.83	Si
SLU 64	fin.	-862.2	-2574	1.42	0	576	7930	7144	3621	8506	No	3.31	Si
SLU 72	ini.	0.54	-98	1.42	0	576	7930	7144	3621	8506	No	86.77	Si
SLU 72	fin.	-870.98	-2571	1.42	0	576	7930	7144	3621	8506	No	3.31	Si
SLU 65	ini.	11.48	-105	1.42	0	576	7930	7144	3621	8506	No	81.12	Si





Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 65	fin.	-863.7	-2578	1.42	0	576	7930	7144	3621	8506	No	3.3	Si
SLU 67	ini.	3.22	-94	1.42	0	576	7930	7144	3621	8506	No	90.22	Si
SLU 67	fin.	-866.14	-2568	1.42	0	576	7930	7144	3621	8506	No	3.31	Si
SLU 70	ini.	-1.96	-92	1.42	0	576	7930	7144	3621	8506	No	92.68	Si
SLU 70	fin.	-870.08	-2565	1.42	0	576	7930	7144	3621	8506	No	3.32	Si
SLU 71	ini.	-0.35	-95	1.42	0	576	7930	7144	3621	8506	No	89.28	Si
SLU 71	fin.	-870.07	-2569	1.42	0	576	7930	7144	3621	8506	No	3.31	Si
SLU 73	ini.	-136.76	605	1.42	0	576	7930	7144	3621	8506	No	14.06	Si
SLU 73	fin.	-786.26	-2557	1.42	0	576	7930	7144	3621	8506	No	3.33	Si
SLU 69	ini.	-2.84	-89	1.42	0	576	7930	7144	3621	8506	No	95.54	Si
SLU 69	fin.	-869.18	-2562	1.42	0	576	7930	7144	3621	8506	No	3.32	Si

**Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche**

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 16	ini.	-4748.21	-7720	-0.0013389	0.0003369	0.0035	1.42		7279.66	7279.66		1.53	Si
SLV 16	fin.	3773.22	-1279	-0.000976	0.0003369	0.0035	1.42		7270.13	7270.13		1.93	Si
SLV 4	ini.	4398.47	1261	-0.0012025	0.0003369	0.0035	1.42		7270.13	7270.13		1.65	Si
SLV 4	fin.	-4734.04	-5564	-0.0013331	0.0003369	0.0035	1.42		7279.66	7279.66		1.54	Si
SLV 1	ini.	4680.62	1513	-0.0013136	0.0003369	0.0035	1.42		7270.13	7270.13		1.55	Si
SLV 1	fin.	-5033.26	-5751	-0.0014597	0.0003369	0.0035	1.42		7279.66	7279.66		1.45	Si
SLV 15	ini.	-4707.81	-7704	-0.0013224	0.0003369	0.0035	1.42		7279.66	7279.66		1.55	Si
SLV 15	fin.	3730.61	-1324	-0.0009615	0.0003369	0.0035	1.42		7270.13	7270.13		1.95	Si
SLV 13	ini.	-4466.05	-7468	-0.0012265	0.0003369	0.0035	1.42		7279.66	7279.66		1.63	Si
SLV 13	fin.	3474	-1466	-0.0008758	0.0003369	0.0035	1.42		7270.13	7270.13		2.09	Si
SLD 1	ini.	1980.84	-1131	-0.0004402	0.0003369	0.0035	1.42		7270.13	7270.13		3.67	Si
SLD 1	fin.	-2511.7	-4471	-0.0005826	0.0003369	0.0035	1.42		7279.66	7279.66		2.9	Si
SLV 3	ini.	4438.86	1276	-0.001218	0.0003369	0.0035	1.42		7270.13	7270.13		1.64	Si
SLV 3	fin.	-4776.64	-5609	-0.0013506	0.0003369	0.0035	1.42		7279.66	7279.66		1.52	Si
SLV 14	ini.	-4506.45	-7484	-0.0012422	0.0003369	0.0035	1.42		7279.66	7279.66		1.62	Si
SLV 14	fin.	3516.6	-1421	-0.0008898	0.0003369	0.0035	1.42		7270.13	7270.13		2.07	Si
SLV 2	ini.	4640.23	1497	-0.0012973	0.0003369	0.0035	1.42		7270.13	7270.13		1.57	Si
SLV 2	fin.	-4990.66	-5706	-0.0014411	0.0003369	0.0035	1.42		7279.66	7279.66		1.46	Si
SLD 2	ini.	1963.49	-1138	-0.0004357	0.0003369	0.0035	1.42		7270.13	7270.13		3.7	Si
SLD 2	fin.	-2493.41	-4451	-0.0005775	0.0003369	0.0035	1.42		7279.66	7279.66		2.92	Si

**Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215**

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 14	ini.	-4506.45	13510	1.42	0	864	7930	10717	3621	8794		0.65	No
SLV 14	fin.	3516.6	11484	1.42	0	864	7930	10717	3621	8794		0.77	No
SLV 1	ini.	4680.62	-13524	1.42	0	864	7930	10717	3621	8794		0.65	No
SLV 1	fin.	-5033.26	-15520	1.42	0	864	7930	10717	3621	8794		0.57	No
SLV 16	ini.	-4748.21	13668	1.42	0	864	7930	10717	3621	8794		0.64	No
SLV 16	fin.	3773.22	11730	1.42	0	864	7930	10717	3621	8794		0.75	No
SLV 13	ini.	-4466.05	13384	1.42	0	864	7930	10717	3621	8794		0.66	No
SLV 13	fin.	3474	11358	1.42	0	864	7930	10717	3621	8794		0.77	No
SLD 2	ini.	1963.49	-5685	1.42	0	864	7930	10717	3621	8794		1.55	Si
SLD 2	fin.	-2493.41	-7663	1.42	0	864	7930	10717	3621	8794		1.15	Si
SLV 3	ini.	4438.86	-13367	1.42	0	864	7930	10717	3621	8794		0.66	No
SLV 3	fin.	-4776.64	-15274	1.42	0	864	7930	10717	3621	8794		0.58	No
SLV 4	ini.	4398.47	-13241	1.42	0	864	7930	10717	3621	8794		0.66	No
SLV 4	fin.	-4734.04	-15148	1.42	0	864	7930	10717	3621	8794		0.58	No
SLV 2	ini.	4640.23	-13398	1.42	0	864	7930	10717	3621	8794		0.66	No
SLV 2	fin.	-4990.66	-15394	1.42	0	864	7930	10717	3621	8794		0.57	No
SLD 1	ini.	1980.84	-5739	1.42	0	864	7930	10717	3621	8794		1.53	Si
SLD 1	fin.	-2511.7	-7717	1.42	0	864	7930	10717	3621	8794		1.14	Si
SLV 15	ini.	-4707.81	13542	1.42	0	864	7930	10717	3621	8794		0.65	No
SLV 15	fin.	3730.61	11604	1.42	0	864	7930	10717	3621	8794		0.76	No

**Tabella dei coefficienti di sicurezza minimi**

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.446	SLV 1	Si
V_SLV	0.567	SLV 1	No
PF_SLU	8.663	SLU 72	Si
V_SLU	3.299	SLU 65	Si

**Trave di accoppiamento 87**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati geometrici**

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-4.113	1.006	6.93	8.35	1.42	-4.913	1.006	6.93	8.35	1.42	0.8	0.28	3500

**Caratteristiche del materiale**

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC





Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 74	ini.	980.31	-3600	-0.0002072	0.0002246	0.0035	1.42		7536.27	7536.27	No	7.69	Si
SLU 74	fin.	-1343.17	-4799	-0.0002938	0.0002246	0.0035	1.42		7545.1	7545.1	No	5.62	Si
SLU 82	ini.	952.55	-3692	-0.0002008	0.0002246	0.0035	1.42		7536.27	7536.27	No	7.91	Si
SLU 82	fin.	-1350.67	-4882	-0.0002957	0.0002246	0.0035	1.42		7545.1	7545.1	No	5.59	Si
SLU 83	ini.	958.41	-3768	-0.0002022	0.0002246	0.0035	1.42		7536.27	7536.27	No	7.86	Si
SLU 83	fin.	-1364.45	-4968	-0.0002991	0.0002246	0.0035	1.42		7545.1	7545.1	No	5.53	Si
SLU 78	ini.	986.35	-3678	-0.0002086	0.0002246	0.0035	1.42		7536.27	7536.27	No	7.64	Si
SLU 78	fin.	-1354.8	-4886	-0.0002967	0.0002246	0.0035	1.42		7545.1	7545.1	No	5.57	Si
SLU 81	ini.	952.46	-3691	-0.0002008	0.0002246	0.0035	1.42		7536.27	7536.27	No	7.91	Si
SLU 81	fin.	-1351.75	-4882	-0.0002959	0.0002246	0.0035	1.42		7545.1	7545.1	No	5.58	Si
SLU 79	ini.	988.91	-3610	-0.0002092	0.0002246	0.0035	1.42		7536.27	7536.27	No	7.62	Si
SLU 79	fin.	-1355.1	-4820	-0.0002968	0.0002246	0.0035	1.42		7545.1	7545.1	No	5.57	Si
SLU 84	ini.	958.5	-3769	-0.0002022	0.0002246	0.0035	1.42		7536.27	7536.27	No	7.86	Si
SLU 84	fin.	-1363.37	-4969	-0.0002988	0.0002246	0.0035	1.42		7545.1	7545.1	No	5.53	Si
SLU 77	ini.	986.26	-3677	-0.0002086	0.0002246	0.0035	1.42		7536.27	7536.27	No	7.64	Si
SLU 77	fin.	-1355.88	-4886	-0.000297	0.0002246	0.0035	1.42		7545.1	7545.1	No	5.56	Si
SLU 80	ini.	989	-3611	-0.0002092	0.0002246	0.0035	1.42		7536.27	7536.27	No	7.62	Si
SLU 80	fin.	-1354.03	-4820	-0.0002965	0.0002246	0.0035	1.42		7545.1	7545.1	No	5.57	Si
SLU 75	ini.	980.4	-3601	-0.0002072	0.0002246	0.0035	1.42		7536.27	7536.27	No	7.69	Si
SLU 75	fin.	-1342.1	-4800	-0.0002935	0.0002246	0.0035	1.42		7545.1	7545.1	No	5.62	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 78	ini.	986.35	-2990	1.42	0	576	6344	7144	3621	6920	No	2.31	Si
SLU 78	fin.	-1354.8	-4961	1.42	0	576	6344	7144	3621	6920	No	1.39	Si
SLU 76	ini.	983.11	-2961	1.42	0	576	6344	7144	3621	6920	No	2.34	Si
SLU 76	fin.	-1340.61	-4932	1.42	0	576	6344	7144	3621	6920	No	1.4	Si
SLU 77	ini.	986.26	-2992	1.42	0	576	6344	7144	3621	6920	No	2.31	Si
SLU 77	fin.	-1355.88	-4963	1.42	0	576	6344	7144	3621	6920	No	1.39	Si
SLU 79	ini.	988.91	-2996	1.42	0	576	6344	7144	3621	6920	No	2.31	Si
SLU 79	fin.	-1355.1	-4966	1.42	0	576	6344	7144	3621	6920	No	1.39	Si
SLU 82	ini.	952.55	-2845	1.42	0	576	6344	7144	3621	6920	No	2.43	Si
SLU 82	fin.	-1350.67	-4980	1.42	0	576	6344	7144	3621	6920	No	1.39	Si
SLU 81	ini.	952.46	-2847	1.42	0	576	6344	7144	3621	6920	No	2.43	Si
SLU 81	fin.	-1351.75	-4982	1.42	0	576	6344	7144	3621	6920	No	1.39	Si
SLU 84	ini.	958.5	-2877	1.42	0	576	6344	7144	3621	6920	No	2.41	Si
SLU 84	fin.	-1363.37	-5012	1.42	0	576	6344	7144	3621	6920	No	1.38	Si
SLU 74	ini.	980.31	-2960	1.42	0	576	6344	7144	3621	6920	No	2.34	Si
SLU 74	fin.	-1343.17	-4931	1.42	0	576	6344	7144	3621	6920	No	1.4	Si
SLU 80	ini.	989	-2994	1.42	0	576	6344	7144	3621	6920	No	2.31	Si
SLU 80	fin.	-1354.03	-4964	1.42	0	576	6344	7144	3621	6920	No	1.39	Si
SLU 83	ini.	958.41	-2879	1.42	0	576	6344	7144	3621	6920	No	2.4	Si
SLU 83	fin.	-1364.45	-5014	1.42	0	576	6344	7144	3621	6920	No	1.38	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 4	ini.	2425.36	230	-0.0005593	0.0003369	0.0035	1.42		7270.13	7270.13		3	Si
SLD 4	fin.	-1703	-1910	-0.0003697	0.0003369	0.0035	1.42		7279.66	7279.66		4.27	Si
SLV 13	ini.	-3082.12	-8200	-0.0007504	0.0003369	0.0035	1.42		7279.66	7279.66		2.36	Si
SLV 13	fin.	700.25	-6225	-0.0001425	0.0003369	0.0035	1.42		7270.13	7270.13		10.38	Si
SLV 16	ini.	-2949.12	-8107	-0.0007099	0.0003369	0.0035	1.42		7279.66	7279.66		2.47	Si
SLV 16	fin.	816.53	-6391	-0.0001673	0.0003369	0.0035	1.42		7270.13	7270.13		8.9	Si
SLV 4	ini.	4633.96	3612	-0.0012948	0.0003369	0.0035	1.42		7270.13	7270.13		1.57	Si
SLV 4	fin.	-2667.07	-179	-0.0006268	0.0003369	0.0035	1.42		7279.66	7279.66		2.73	Si
SLV 2	ini.	4441.07	3476	-0.0012189	0.0003369	0.0035	1.42		7270.13	7270.13		1.64	Si
SLV 2	fin.	-2753.88	-11	-0.000652	0.0003369	0.0035	1.42		7279.66	7279.66		2.64	Si
SLD 3	ini.	2451.08	248	-0.0005664	0.0003369	0.0035	1.42		7270.13	7270.13		2.97	Si
SLD 3	fin.	-1715.66	-1911	-0.0003728	0.0003369	0.0035	1.42		7279.66	7279.66		4.24	Si
SLV 3	ini.	4693.85	3656	-0.001319	0.0003369	0.0035	1.42		7270.13	7270.13		1.55	Si
SLV 3	fin.	-2696.55	-181	-0.0006354	0.0003369	0.0035	1.42		7279.66	7279.66		2.7	Si
SLV 15	ini.	-2889.23	-8064	-0.000692	0.0003369	0.0035	1.42		7279.66	7279.66		2.52	Si
SLV 15	fin.	787.06	-6394	-0.000161	0.0003369	0.0035	1.42		7270.13	7270.13		9.24	Si
SLV 1	ini.	4500.96	3519	-0.0012422	0.0003369	0.0035	1.42		7270.13	7270.13		1.62	Si
SLV 1	fin.	-2783.36	-13	-0.0006607	0.0003369	0.0035	1.42		7279.66	7279.66		2.62	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 14	ini.	-3142.01	-8244	-0.0007688	0.0003369	0.0035	1.42		7279.66	7279.66		2.32	Si
SLV 14	fin.	729.72	-6223	-0.0001488	0.0003369	0.0035	1.42		7270.13	7270.13		9.96	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 1	ini.	4500.96	-11721	1.42	0	864	6344	10717	3621	7208		0.61	No
SLV 1	fin.	-2783.36	-12892	1.42	0	864	6344	10717	3621	7208		0.56	No
SLV 16	ini.	-2949.12	7003	1.42	0	864	6344	10717	3621	7208		1.03	Si
SLV 16	fin.	816.53	5663	1.42	0	864	6344	10717	3621	7208		1.27	Si
SLV 4	ini.	4633.96	-11455	1.42	0	864	6344	10717	3621	7208		0.63	No
SLV 4	fin.	-2667.07	-12748	1.42	0	864	6344	10717	3621	7208		0.57	No
SLD 4	ini.	2425.36	-6249	1.42	0	864	6344	10717	3621	7208		1.15	Si
SLD 4	fin.	-1703	-7520	1.42	0	864	6344	10717	3621	7208		0.96	No
SLD 1	ini.	2368.07	-6362	1.42	0	864	6344	10717	3621	7208		1.13	Si
SLD 1	fin.	-1753.37	-7582	1.42	0	864	6344	10717	3621	7208		0.95	No
SLV 2	ini.	4441.07	-11569	1.42	0	864	6344	10717	3621	7208		0.62	No
SLV 2	fin.	-2753.88	-12740	1.42	0	864	6344	10717	3621	7208		0.57	No
SLV 14	ini.	-3142.01	6888	1.42	0	864	6344	10717	3621	7208		1.05	Si
SLV 14	fin.	729.72	5671	1.42	0	864	6344	10717	3621	7208		1.27	Si
SLD 2	ini.	2342.35	-6297	1.42	0	864	6344	10717	3621	7208		1.14	Si
SLD 2	fin.	-1740.71	-7516	1.42	0	864	6344	10717	3621	7208		0.96	No
SLV 3	ini.	4693.85	-11607	1.42	0	864	6344	10717	3621	7208		0.62	No
SLV 3	fin.	-2696.55	-12900	1.42	0	864	6344	10717	3621	7208		0.56	No
SLD 3	ini.	2451.08	-6314	1.42	0	864	6344	10717	3621	7208		1.14	Si
SLD 3	fin.	-1715.66	-7585	1.42	0	864	6344	10717	3621	7208		0.95	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.549	SLV 3	Si
V_SLV	0.559	SLV 3	No
PF_SLU	5.53	SLU 83	Si
V_SLU	1.38	SLU 83	Si

Trave di accoppiamento 89

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-8.433	-3.314	6.93	8.35	1.42	-9.333	-3.314	6.93	8.35	1.42	0.9	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	f <sub>nk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	t <sub>fv</sub>	t <sub>fo</sub>	E	ε <sub>u</sub>	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	ε <sub>f,d</sub>	γ <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 72	ini.	318.46	-2731	-0.000064	0.0001872	0.0035	1.42		7350.79	7350.79	No	23.08	Si
SLU 72	fin.	-671.94	-3281	-0.0001393	0.0001872	0.0035	1.42		7359.91	7359.91	No	10.95	Si
SLU 67	ini.	306.34	-2690	-0.0000616	0.0001872	0.0035	1.42		7350.79	7350.79	No	24	Si
SLU 67	fin.	-658.3	-3227	-0.0001363	0.0001872	0.0035	1.42		7359.91	7359.91	No	11.18	Si
SLU 49	ini.	261.69	-2478	-0.0000524	0.0001872	0.0035	1.42		7350.79	7350.79	No	28.09	Si
SLU 49	fin.	-581.04	-2943	-0.0001194	0.0001872	0.0035	1.42		7359.91	7359.91	No	12.67	Si
SLU 69	ini.	314.47	-2761	-0.0000632	0.0001872	0.0035	1.42		7350.79	7350.79	No	23.38	Si
SLU 69	fin.	-670.45	-3310	-0.000139	0.0001872	0.0035	1.42		7359.91	7359.91	No	10.98	Si
SLU 64	ini.	287.37	-2573	-0.0000576	0.0001872	0.0035	1.42		7350.79	7350.79	No	25.58	Si
SLU 64	fin.	-629.49	-3086	-0.00013	0.0001872	0.0035	1.42		7359.91	7359.91	No	11.69	Si
SLU 68	ini.	308.68	-2658	-0.000062	0.0001872	0.0035	1.42		7350.79	7350.79	No	23.81	Si
SLU 68	fin.	-657.77	-3195	-0.0001362	0.0001872	0.0035	1.42		7359.91	7359.91	No	11.19	Si
SLU 66	ini.	301.4	-2685	-0.0000605	0.0001872	0.0035	1.42		7350.79	7350.79	No	24.39	Si
SLU 66	fin.	-652.25	-3217	-0.000135	0.0001872	0.0035	1.42		7359.91	7359.91	No	11.28	Si
SLU 71	ini.	313.51	-2726	-0.000063	0.0001872	0.0035	1.42		7350.79	7350.79	No	23.45	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 71	fin.	-665.89	-3272	-0.000138	0.0001872	0.0035	1.42		7359.91	7359.91	No	11.05	Si
SLU 65	ini.	295.61	-2582	-0.0000593	0.0001872	0.0035	1.42		7350.79	7350.79	No	24.87	Si
SLU 65	fin.	-639.57	-3102	-0.0001322	0.0001872	0.0035	1.42		7359.91	7359.91	No	11.51	Si
SLU 70	ini.	319.41	-2767	-0.0000642	0.0001872	0.0035	1.42		7350.79	7350.79	No	23.01	Si
SLU 70	fin.	-676.5	-3320	-0.0001403	0.0001872	0.0035	1.42		7359.91	7359.91	No	10.88	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 72	ini.	318.46	-817	1.42	0	576	7137	5953	3621	7713	No	9.45	Si
SLU 72	fin.	-671.94	-2254	1.42	0	576	7137	5953	3621	7713	No	3.42	Si
SLU 68	ini.	308.68	-779	1.42	0	576	7137	5953	3621	7713	No	9.9	Si
SLU 68	fin.	-657.77	-2216	1.42	0	576	7137	5953	3621	7713	No	3.48	Si
SLU 65	ini.	295.61	-731	1.42	0	576	7137	5953	3621	7713	No	10.55	Si
SLU 65	fin.	-639.57	-2168	1.42	0	576	7137	5953	3621	7713	No	3.56	Si
SLU 64	ini.	287.37	-705	1.42	0	576	7137	5953	3621	7713	No	10.94	Si
SLU 64	fin.	-629.49	-2142	1.42	0	576	7137	5953	3621	7713	No	3.6	Si
SLU 67	ini.	306.34	-777	1.42	0	576	7137	5953	3621	7713	No	9.93	Si
SLU 67	fin.	-658.3	-2214	1.42	0	576	7137	5953	3621	7713	No	3.48	Si
SLU 71	ini.	313.51	-801	1.42	0	576	7137	5953	3621	7713	No	9.63	Si
SLU 71	fin.	-665.89	-2238	1.42	0	576	7137	5953	3621	7713	No	3.45	Si
SLU 70	ini.	319.41	-825	1.42	0	576	7137	5953	3621	7713	No	9.35	Si
SLU 70	fin.	-676.5	-2262	1.42	0	576	7137	5953	3621	7713	No	3.41	Si
SLU 66	ini.	301.4	-761	1.42	0	576	7137	5953	3621	7713	No	10.13	Si
SLU 66	fin.	-652.25	-2199	1.42	0	576	7137	5953	3621	7713	No	3.51	Si
SLU 69	ini.	314.47	-809	1.42	0	576	7137	5953	3621	7713	No	9.53	Si
SLU 69	fin.	-670.45	-2247	1.42	0	576	7137	5953	3621	7713	No	3.43	Si
SLU 78	ini.	217.84	-388	1.42	0	576	7137	5953	3621	7713	No	19.89	Si
SLU 78	fin.	-548.89	-2095	1.42	0	576	7137	5953	3621	7713	No	3.68	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 13	ini.	-4060.28	-2398	-0.0011092	0.0002807	0.0035	1.42		7346.34	7346.34		1.81	Si
SLV 13	fin.	3997.61	1038	-0.0010877	0.0002807	0.0035	1.42		7337.02	7337.02		1.84	Si
SLV 14	ini.	-3707.62	-2406	-0.0009814	0.0002807	0.0035	1.42		7346.34	7346.34		1.98	Si
SLV 14	fin.	3637.15	745	-0.0009583	0.0002807	0.0035	1.42		7337.02	7337.02		2.02	Si
SLV 4	ini.	4418.97	-1501	-0.0012498	0.0002807	0.0035	1.42		7337.02	7337.02		1.66	Si
SLV 4	fin.	-4851.18	-5653	-0.0014285	0.0002807	0.0035	1.42		7346.34	7346.34		1.51	Si
SLV 15	ini.	-4397.19	-2542	-0.0012391	0.0002807	0.0035	1.42		7346.34	7346.34		1.67	Si
SLV 15	fin.	4321.94	1180	-0.0012113	0.0002807	0.0035	1.42		7337.02	7337.02		1.7	Si
SLV 6	ini.	2124.27	-1555	-0.0004888	0.0002807	0.0035	1.42		7337.02	7337.02		3.45	Si
SLV 6	fin.	-2405.63	-3620	-0.0005672	0.0002807	0.0035	1.42		7346.34	7346.34		3.05	Si
SLV 16	ini.	-4044.53	-2550	-0.0011034	0.0002807	0.0035	1.42		7346.34	7346.34		1.82	Si
SLV 16	fin.	3961.48	887	-0.0010743	0.0002807	0.0035	1.42		7337.02	7337.02		1.85	Si
SLV 2	ini.	4755.87	-1357	-0.0013895	0.0002807	0.0035	1.42		7337.02	7337.02		1.54	Si
SLV 2	fin.	-5175.5	-5795	-0.0015766	0.0002807	0.0035	1.42		7346.34	7346.34		1.42	Si
SLV 1	ini.	4403.22	-1349	-0.0012435	0.0002807	0.0035	1.42		7337.02	7337.02		1.67	Si
SLV 1	fin.	-4815.05	-5502	-0.0014127	0.0002807	0.0035	1.42		7346.34	7346.34		1.53	Si
SLD 2	ini.	2136.26	-1694	-0.0004921	0.0002807	0.0035	1.42		7337.02	7337.02		3.43	Si
SLD 2	fin.	-2456.66	-3796	-0.0005819	0.0002807	0.0035	1.42		7346.34	7346.34		2.99	Si
SLV 3	ini.	4066.31	-1493	-0.0011133	0.0002807	0.0035	1.42		7337.02	7337.02		1.8	Si
SLV 3	fin.	-4490.72	-5360	-0.0012766	0.0002807	0.0035	1.42		7346.34	7346.34		1.64	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 2	ini.	2136.26	-6026	1.42	0	864	7137	8929	3621	8001		1.33	Si
SLD 2	fin.	-2456.66	-7113	1.42	0	864	7137	8929	3621	8001		1.12	Si
SLV 13	ini.	-4060.28	12423	1.42	0	864	7137	8929	3621	8001		0.64	No
SLV 13	fin.	3997.61	11441	1.42	0	864	7137	8929	3621	8001		0.7	No
SLV 2	ini.	4755.87	-13574	1.42	0	864	7137	8929	3621	8001		0.59	No
SLV 2	fin.	-5175.5	-14598	1.42	0	864	7137	8929	3621	8001		0.55	No
SLV 4	ini.	4418.97	-13204	1.42	0	864	7137	8929	3621	8001		0.61	No
SLV 4	fin.	-4851.18	-14483	1.42	0	864	7137	8929	3621	8001		0.55	No
SLV 16	ini.	-4044.53	11776	1.42	0	864	7137	8929	3621	8001		0.68	No
SLV 16	fin.	3961.48	10539	1.42	0	864	7137	8929	3621	8001		0.76	No
SLV 3	ini.	4066.31	-12186	1.42	0	864	7137	8929	3621	8001		0.66	No
SLV 3	fin.	-4490.72	-13466	1.42	0	864	7137	8929	3621	8001		0.59	No
SLD 4	ini.	1990.8	-5867	1.42	0	864	7137	8929	3621	8001		1.36	Si
SLD 4	fin.	-2318.01	-7059	1.42	0	864	7137	8929	3621	8001		1.13	Si
SLV 14	ini.	-3707.62	11406	1.42	0	864	7137	8929	3621	8001		0.7	No
SLV 14	fin.	3637.15	10424	1.42	0	864	7137	8929	3621	8001		0.77	No
SLV 1	ini.	4403.22	-12557	1.42	0	864	7137	8929	3621	8001		0.64	No
SLV 1	fin.	-4815.05	-13581	1.42	0	864	7137	8929	3621	8001		0.59	No
SLV 15	ini.	-4397.19	12793	1.42	0	864	7137	8929	3621	8001		0.63	No
SLV 15	fin.	4321.94	11556	1.42	0	864	7137	8929	3621	8001		0.69	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.419	SLV 2	Si
V_SLV	0.548	SLV 2	No
PF_SLU	10.879	SLU 70	Si
V_SLU	3.409	SLU 70	Si



## Trave di accoppiamento 91

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-6.268	-0.194	6.93	8.35	1.42	-6.268	0.706	6.93	8.35	1.42	0.9	0.16	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	e <sub>f,d</sub>	γ <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em <sub>-</sub>	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 78	ini.	397.04	-349	-0.00008	0.0002246	0.0035	1.42		7594.91	7594.91	No	19.13	Si
SLU 78	fin.	218.94	-376	-0.0000436	0.0002246	0.0035	1.42		7594.91	7594.91	No	34.69	Si
SLU 83	ini.	400.54	-356	-0.0000808	0.0002246	0.0035	1.42		7594.91	7594.91	No	18.96	Si
SLU 83	fin.	222.14	-388	-0.0000442	0.0002246	0.0035	1.42		7594.91	7594.91	No	34.19	Si
SLU 81	ini.	390.16	-349	-0.0000786	0.0002246	0.0035	1.42		7594.91	7594.91	No	19.47	Si
SLU 81	fin.	216.97	-382	-0.0000432	0.0002246	0.0035	1.42		7594.91	7594.91	No	35	Si
SLU 75	ini.	386.66	-342	-0.0000779	0.0002246	0.0035	1.42		7594.91	7594.91	No	19.64	Si
SLU 75	fin.	213.77	-369	-0.0000425	0.0002246	0.0035	1.42		7594.91	7594.91	No	35.53	Si
SLU 80	ini.	394.9	-341	-0.0000796	0.0002246	0.0035	1.42		7594.91	7594.91	No	19.23	Si
SLU 80	fin.	215.17	-369	-0.0000428	0.0002246	0.0035	1.42		7594.91	7594.91	No	35.3	Si
SLU 77	ini.	397.05	-351	-0.00008	0.0002246	0.0035	1.42		7594.91	7594.91	No	19.13	Si
SLU 77	fin.	219.83	-377	-0.0000438	0.0002246	0.0035	1.42		7594.91	7594.91	No	34.55	Si
SLU 79	ini.	394.91	-343	-0.0000796	0.0002246	0.0035	1.42		7594.91	7594.91	No	19.23	Si
SLU 79	fin.	216.06	-370	-0.000043	0.0002246	0.0035	1.42		7594.91	7594.91	No	35.15	Si
SLU 74	ini.	386.67	-343	-0.0000779	0.0002246	0.0035	1.42		7594.91	7594.91	No	19.64	Si
SLU 74	fin.	214.65	-371	-0.0000427	0.0002246	0.0035	1.42		7594.91	7594.91	No	35.38	Si
SLU 82	ini.	390.15	-347	-0.0000786	0.0002246	0.0035	1.42		7594.91	7594.91	No	19.47	Si
SLU 82	fin.	216.08	-381	-0.000043	0.0002246	0.0035	1.42		7594.91	7594.91	No	35.15	Si
SLU 84	ini.	400.53	-355	-0.0000808	0.0002246	0.0035	1.42		7594.91	7594.91	No	18.96	Si
SLU 84	fin.	221.25	-387	-0.0000441	0.0002246	0.0035	1.42		7594.91	7594.91	No	34.33	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	f <sub>vd</sub>	V <sub>t</sub>	V <sub>t,f</sub>	V <sub>t,c</sub>	V <sub>t,c int.</sub>	V <sub>t,R</sub>	incremento > 50%	c.s.	Verifica
SLU 80	ini.	394.9	36	1.42	0	329	7137	4083	3621	7466	No	206.42	Si
SLU 80	fin.	215.17	-460	1.42	0	329	7137	4083	3621	7466	No	16.21	Si
SLU 84	ini.	400.53	33	1.42	0	329	7137	4083	3621	7466	No	229.1	Si
SLU 84	fin.	221.25	-464	1.42	0	329	7137	4083	3621	7466	No	16.09	Si
SLU 78	ini.	397.04	38	1.42	0	329	7137	4083	3621	7466	No	194.09	Si
SLU 78	fin.	218.94	-458	1.42	0	329	7137	4083	3621	7466	No	16.3	Si
SLU 76	ini.	384.51	41	1.42	0	329	7137	4083	3621	7466	No	184.28	Si
SLU 76	fin.	209.4	-456	1.42	0	329	7137	4083	3621	7466	No	16.37	Si
SLU 79	ini.	394.91	37	1.42	0	329	7137	4083	3621	7466	No	199.34	Si
SLU 79	fin.	216.06	-459	1.42	0	329	7137	4083	3621	7466	No	16.26	Si
SLU 75	ini.	386.66	44	1.42	0	329	7137	4083	3621	7466	No	170.97	Si
SLU 75	fin.	213.77	-453	1.42	0	329	7137	4083	3621	7466	No	16.48	Si
SLU 82	ini.	390.15	38	1.42	0	329	7137	4083	3621	7466	No	197.57	Si
SLU 82	fin.	216.08	-459	1.42	0	329	7137	4083	3621	7466	No	16.27	Si
SLU 83	ini.	400.54	34	1.42	0	329	7137	4083	3621	7466	No	220.42	Si
SLU 83	fin.	222.14	-463	1.42	0	329	7137	4083	3621	7466	No	16.13	Si
SLU 81	ini.	390.16	39	1.42	0	329	7137	4083	3621	7466	No	191.08	Si
SLU 81	fin.	216.97	-458	1.42	0	329	7137	4083	3621	7466	No	16.32	Si
SLU 77	ini.	397.05	40	1.42	0	329	7137	4083	3621	7466	No	187.82	Si
SLU 77	fin.	219.83	-457	1.42	0	329	7137	4083	3621	7466	No	16.34	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 16	ini.	462.43	186	-0.0000929	0.0003369	0.0035	1.42		7808.98	7808.98		16.89	Si
SLV 16	fin.	405.17	-89	-0.0000811	0.0003369	0.0035	1.42		7808.98	7808.98		19.27	Si
SLV 13	ini.	428.34	-273	-0.0000859	0.0003369	0.0035	1.42		7808.98	7808.98		18.23	Si
SLV 13	fin.	167.76	-325	-0.0000332	0.0003369	0.0035	1.42		7808.98	7808.98		46.55	Si
SLV 12	ini.	376.24	631	-0.0000752	0.0003369	0.0035	1.42		7808.98	7808.98		20.76	Si
SLV 12	fin.	563.28	193	-0.0001138	0.0003369	0.0035	1.42		7808.98	7808.98		13.86	Si
SLV 15	ini.	463.67	209	-0.0000932	0.0003369	0.0035	1.42		7808.98	7808.98		16.84	Si
SLV 15	fin.	393.63	-71	-0.0000788	0.0003369	0.0035	1.42		7808.98	7808.98		19.84	Si
SLV 14	ini.	427.1	-296	-0.0000856	0.0003369	0.0035	1.42		7808.98	7808.98		18.28	Si
SLV 14	fin.	179.3	-343	-0.0000355	0.0003369	0.0035	1.42		7808.98	7808.98		43.55	Si
SLV 8	ini.	266.84	528	-0.0000531	0.0003369	0.0035	1.42		7808.98	7808.98		29.26	Si
SLV 8	fin.	474.68	177	-0.0000954	0.0003369	0.0035	1.42		7808.98	7808.98		16.45	Si
SLV 11	ini.	377.04	647	-0.0000754	0.0003369	0.0035	1.42		7808.98	7808.98		20.71	Si
SLV 11	fin.	555.83	205	-0.0001122	0.0003369	0.0035	1.42		7808.98	7808.98		14.05	Si
SLV 7	ini.	267.65	543	-0.0000532	0.0003369	0.0035	1.42		7808.98	7808.98		29.18	Si
SLV 7	fin.	467.23	189	-0.0000939	0.0003369	0.0035	1.42		7808.98	7808.98		16.71	Si
SLD 16	ini.	346.86	-44	-0.0000693	0.0003369	0.0035	1.42		7808.98	7808.98		22.51	Si
SLD 16	fin.	250.86	-172	-0.0000498	0.0003369	0.0035	1.42		7808.98	7808.98		31.13	Si
SLD 15	ini.	347.39	-34	-0.0000694	0.0003369	0.0035	1.42		7808.98	7808.98		22.48	Si
SLD 15	fin.	245.91	-164	-0.0000488	0.0003369	0.0035	1.42		7808.98	7808.98		31.76	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 9	ini.	260.93	8	1.42	0	494	7137	6124	3621	7631		901.3	Si
SLD 9	fin.	-4.86	-434	1.42	0	494	7137	6124	3621	7631		17.58	Si
SLD 13	ini.	332.24	-18	1.42	0	494	7137	6124	3621	7631		429.55	Si
SLD 13	fin.	149.63	-410	1.42	0	494	7137	6124	3621	7631		18.61	Si
SLV 10	ini.	258.48	-27	1.42	0	494	7137	6124	3621	7631		282.98	Si
SLV 10	fin.	-189.61	-558	1.42	0	494	7137	6124	3621	7631		13.68	Si
SLV 5	ini.	149.88	36	1.42	0	494	7137	6124	3621	7631		213.61	Si
SLV 5	fin.	-285.66	-502	1.42	0	494	7137	6124	3621	7631		15.19	Si
SLV 6	ini.	149.08	47	1.42	0	494	7137	6124	3621	7631		160.94	Si
SLV 6	fin.	-278.21	-491	1.42	0	494	7137	6124	3621	7631		15.55	Si
SLV 9	ini.	259.28	-39	1.42	0	494	7137	6124	3621	7631		197.4	Si
SLV 9	fin.	-197.06	-570	1.42	0	494	7137	6124	3621	7631		13.4	Si
SLD 5	ini.	215.04	40	1.42	0	494	7137	6124	3621	7631		189.93	Si
SLD 5	fin.	-41.72	-405	1.42	0	494	7137	6124	3621	7631		18.83	Si
SLV 14	ini.	427.1	-83	1.42	0	494	7137	6124	3621	7631		92.28	Si
SLV 14	fin.	179.3	-495	1.42	0	494	7137	6124	3621	7631		15.42	Si
SLD 10	ini.	260.58	14	1.42	0	494	7137	6124	3621	7631		562.16	Si
SLD 10	fin.	-1.6	-429	1.42	0	494	7137	6124	3621	7631		17.79	Si
SLV 13	ini.	428.34	-101	1.42	0	494	7137	6124	3621	7631		75.71	Si
SLV 13	fin.	167.76	-513	1.42	0	494	7137	6124	3621	7631		14.88	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	13.863	SLV 12	Si
V_SLV	13.397	SLV 9	Si
PF_SLU	18.961	SLU 83	Si
V_SLU	16.089	SLU 84	Si

## Trave di accoppiamento 92

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-5.093	6.006	4.83	6.83	2	-5.093	6.506	4.83	6.83	2	0.5	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb_	fhk	fvk0	fmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 81	ini.	-386.43	-170	-0.0000388	0.0001872	0.0035	2		14357.01	14357.01	No	37.15	Si
SLU 81	fin.	-411.4	-426	-0.0000413	0.0001872	0.0035	2		14357.01	14357.01	No	34.9	Si
SLU 80	ini.	-409.08	-91	-0.0000411	0.0001872	0.0035	2		14357.01	14357.01	No	35.1	Si
SLU 80	fin.	-429.77	-356	-0.0000432	0.0001872	0.0035	2		14357.01	14357.01	No	33.41	Si
SLU 73	ini.	-424.42	-21	-0.0000426	0.0001872	0.0035	2		14357.01	14357.01	No	33.83	Si
SLU 73	fin.	-429.86	-298	-0.0000432	0.0001872	0.0035	2		14357.01	14357.01	No	33.4	Si
SLU 83	ini.	-391.54	-173	-0.0000393	0.0001872	0.0035	2		14357.01	14357.01	No	36.67	Si
SLU 83	fin.	-417.93	-432	-0.000042	0.0001872	0.0035	2		14357.01	14357.01	No	34.35	Si
SLU 78	ini.	-414.58	-92	-0.0000416	0.0001872	0.0035	2		14357.01	14357.01	No	34.63	Si
SLU 78	fin.	-435.16	-362	-0.0000437	0.0001872	0.0035	2		14357.01	14357.01	No	32.99	Si
SLU 84	ini.	-429.86	-79	-0.0000432	0.0001872	0.0035	2		14357.01	14357.01	No	33.4	Si
SLU 84	fin.	-437.66	-365	-0.000044	0.0001872	0.0035	2		14357.01	14357.01	No	32.8	Si
SLU 82	ini.	-424.76	-75	-0.0000427	0.0001872	0.0035	2		14357.01	14357.01	No	33.8	Si
SLU 82	fin.	-431.13	-358	-0.0000433	0.0001872	0.0035	2		14357.01	14357.01	No	33.3	Si
SLU 75	ini.	-409.48	-88	-0.0000411	0.0001872	0.0035	2		14357.01	14357.01	No	35.06	Si
SLU 75	fin.	-428.63	-355	-0.0000431	0.0001872	0.0035	2		14357.01	14357.01	No	33.5	Si
SLU 77	ini.	-376.25	-186	-0.0000377	0.0001872	0.0035	2		14357.01	14357.01	No	38.16	Si
SLU 77	fin.	-415.43	-430	-0.0000417	0.0001872	0.0035	2		14357.01	14357.01	No	34.56	Si
SLU 76	ini.	-429.52	-24	-0.0000432	0.0001872	0.0035	2		14357.01	14357.01	No	33.43	Si
SLU 76	fin.	-436.39	-305	-0.0000439	0.0001872	0.0035	2		14357.01	14357.01	No	32.9	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 76	ini.	-429.52	-1605	2	0	812	3965	8384	5100	4776	No	2.98	Si
SLU 76	fin.	-436.39	1848	2	0	812	3965	8384	5100	4776	No	2.58	Si
SLU 81	ini.	-386.43	-1642	2	0	812	3965	8384	5100	4776	No	2.91	Si
SLU 81	fin.	-411.4	1792	2	0	812	3965	8384	5100	4776	No	2.67	Si
SLU 42	ini.	-389.02	-1371	2	0	812	3965	8384	5100	4776	No	3.48	Si
SLU 42	fin.	-372.35	1780	2	0	812	3965	8384	5100	4776	No	2.68	Si
SLU 73	ini.	-424.42	-1573	2	0	812	3965	8384	5100	4776	No	3.04	Si
SLU 73	fin.	-429.86	1822	2	0	812	3965	8384	5100	4776	No	2.62	Si
SLU 75	ini.	-409.48	-1637	2	0	812	3965	8384	5100	4776	No	2.92	Si
SLU 75	fin.	-428.63	1809	2	0	812	3965	8384	5100	4776	No	2.64	Si
SLU 78	ini.	-414.58	-1668	2	0	812	3965	8384	5100	4776	No	2.86	Si
SLU 78	fin.	-435.16	1835	2	0	812	3965	8384	5100	4776	No	2.6	Si
SLU 84	ini.	-429.86	-1657	2	0	812	3965	8384	5100	4776	No	2.88	Si
SLU 84	fin.	-437.66	1924	2	0	812	3965	8384	5100	4776	No	2.48	Si
SLU 80	ini.	-409.08	-1646	2	0	812	3965	8384	5100	4776	No	2.9	Si
SLU 80	fin.	-429.77	1804	2	0	812	3965	8384	5100	4776	No	2.65	Si
SLU 82	ini.	-424.76	-1626	2	0	812	3965	8384	5100	4776	No	2.94	Si
SLU 82	fin.	-431.13	1897	2	0	812	3965	8384	5100	4776	No	2.52	Si
SLU 83	ini.	-391.54	-1673	2	0	812	3965	8384	5100	4776	No	2.86	Si
SLU 83	fin.	-417.93	1818	2	0	812	3965	8384	5100	4776	No	2.63	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 14	ini.	-776.44	14	-0.0000785	0.0002807	0.0035	2		14215.41	14215.41		18.31	Si
SLV 14	fin.	-416.3	-435	-0.0000416	0.0002807	0.0035	2		14215.41	14215.41		34.15	Si
SLV 13	ini.	-714.58	-49	-0.0000721	0.0002807	0.0035	2		14215.41	14215.41		19.89	Si
SLV 13	fin.	-414.45	-431	-0.0000415	0.0002807	0.0035	2		14215.41	14215.41		34.3	Si
SLV 16	ini.	-854.67	-40	-0.0000866	0.0002807	0.0035	2		14215.41	14215.41		16.63	Si
SLV 16	fin.	-645.22	-382	-0.000065	0.0002807	0.0035	2		14215.41	14215.41		22.03	Si
SLD 16	ini.	-501.49	-93	-0.0000503	0.0002807	0.0035	2		14215.41	14215.41		28.35	Si
SLD 16	fin.	-434.99	-329	-0.0000435	0.0002807	0.0035	2		14215.41	14215.41		32.68	Si
SLV 15	ini.	-792.81	-103	-0.0000802	0.0002807	0.0035	2		14215.41	14215.41		17.93	Si
SLV 15	fin.	-643.36	-379	-0.0000648	0.0002807	0.0035	2		14215.41	14215.41		22.1	Si
SLV 11	ini.	-510.64	-227	-0.0000512	0.0002807	0.0035	2		14215.41	14215.41		27.84	Si
SLV 11	fin.	-736.47	-237	-0.0000744	0.0002807	0.0035	2		14215.41	14215.41		19.3	Si
SLV 7	ini.	-181.16	-290	-0.000018	0.0002807	0.0035	2		14215.41	14215.41		78.47	Si
SLV 7	fin.	-587.08	-168	-0.000059	0.0002807	0.0035	2		14215.41	14215.41		24.21	Si
SLD 12	ini.	-370.93	-162	-0.0000371	0.0002807	0.0035	2		14215.41	14215.41		38.32	Si
SLD 12	fin.	-475.85	-268	-0.0000477	0.0002807	0.0035	2		14215.41	14215.41		29.87	Si
SLV 8	ini.	-221.12	-249	-0.000022	0.0002807	0.0035	2		14215.41	14215.41		64.29	Si
SLV 8	fin.	-588.28	-170	-0.0000591	0.0002807	0.0035	2		14215.41	14215.41		24.16	Si
SLV 12	ini.	-550.6	-187	-0.0000553	0.0002807	0.0035	2		14215.41	14215.41		25.82	Si
SLV 12	fin.	-737.66	-240	-0.0000745	0.0002807	0.0035	2		14215.41	14215.41		19.27	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 16	ini.	-854.67	-477	2	0	1217	3965	12577	5100	5182		10.87	Si
SLV 16	fin.	-645.22	3077	2	0	1217	3965	12577	5100	5182		1.68	Si
SLV 13	ini.	-714.58	-316	2	0	1217	3965	12577	5100	5182		16.41	Si
SLV 13	fin.	-414.45	3858	2	0	1217	3965	12577	5100	5182		1.34	Si
SLV 15	ini.	-792.81	-614	2	0	1217	3965	12577	5100	5182		8.43	Si
SLV 15	fin.	-643.36	2755	2	0	1217	3965	12577	5100	5182		1.88	Si
SLV 10	ini.	-289.83	-386	2	0	1217	3965	12577	5100	5182		13.44	Si
SLV 10	fin.	25.37	3704	2	0	1217	3965	12577	5100	5182		1.4	Si
SLD 10	ini.	-259.09	-827	2	0	1217	3965	12577	5100	5182		6.27	Si
SLD 10	fin.	-149.23	2179	2	0	1217	3965	12577	5100	5182		2.38	Si
SLV 9	ini.	-249.88	-475	2	0	1217	3965	12577	5100	5182		10.92	Si
SLV 9	fin.	26.57	3496	2	0	1217	3965	12577	5100	5182		1.48	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 14	ini.	-776.44	-178	2	0	1217	3965	12577	5100	5182		29.11	Si
SLV 14	fin.	-416.3	4180	2	0	1217	3965	12577	5100	5182		1.24	Si
SLD 13	ini.	-441.38	-798	2	0	1217	3965	12577	5100	5182		6.5	Si
SLD 13	fin.	-336.21	2247	2	0	1217	3965	12577	5100	5182		2.31	Si
SLD 14	ini.	-467.94	-738	2	0	1217	3965	12577	5100	5182		7.02	Si
SLD 14	fin.	-337.01	2385	2	0	1217	3965	12577	5100	5182		2.17	Si
SLV 6	ini.	39.64	-841	2	0	1217	3965	12577	5100	5182		6.16	Si
SLV 6	fin.	174.76	2243	2	0	1217	3965	12577	5100	5182		2.31	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	16.633	SLV 16	Si
V_SLV	1.24	SLV 14	Si
PF_SLU	32.804	SLU 84	Si
V_SLU	2.483	SLU 84	Si

## Trave di accoppiamento 93

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-5.093	6.006	7.63	8.35	0.72	-5.093	6.506	7.63	8.35	0.72	0.5	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fhk	fvk0	fhmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	y,F,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ε <sub>m</sub>	ε <sub>m_</sub>	ε <sub>mu</sub>	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 81	ini.	-38.16	-206	-0.0000294	0.0001872	0.0035	0.72		1901.86	1901.86	No	49.83	Si
SLU 81	fin.	126.74	-466	-0.0001008	0.0001872	0.0035	0.72		1897.3	1897.3	No	14.97	Si
SLU 39	ini.	-39.4	-205	-0.0000304	0.0001872	0.0035	0.72		1901.86	1901.86	No	48.27	Si
SLU 39	fin.	118.06	-414	-0.0000936	0.0001872	0.0035	0.72		1897.3	1897.3	No	16.07	Si
SLU 82	ini.	-23.63	-223	-0.0000181	0.0001872	0.0035	0.72		1901.86	1901.86	No	80.5	Si
SLU 82	fin.	125.04	-472	-0.0000994	0.0001872	0.0035	0.72		1897.3	1897.3	No	15.17	Si
SLU 74	ini.	-33.48	-186	-0.0000258	0.0001872	0.0035	0.72		1901.86	1901.86	No	56.81	Si
SLU 74	fin.	119.34	-452	-0.0000946	0.0001872	0.0035	0.72		1897.3	1897.3	No	15.9	Si
SLU 83	ini.	-38.73	-209	-0.0000299	0.0001872	0.0035	0.72		1901.86	1901.86	No	49.11	Si
SLU 83	fin.	128.02	-472	-0.0001018	0.0001872	0.0035	0.72		1897.3	1897.3	No	14.82	Si
SLU 41	ini.	-39.96	-208	-0.0000308	0.0001872	0.0035	0.72		1901.86	1901.86	No	47.59	Si
SLU 41	fin.	119.33	-419	-0.0000946	0.0001872	0.0035	0.72		1897.3	1897.3	No	15.9	Si
SLU 78	ini.	-19.5	-205	-0.0000149	0.0001872	0.0035	0.72		1901.86	1901.86	No	97.52	Si
SLU 78	fin.	118.91	-463	-0.0000943	0.0001872	0.0035	0.72		1897.3	1897.3	No	15.96	Si
SLU 84	ini.	-24.19	-226	-0.0000186	0.0001872	0.0035	0.72		1901.86	1901.86	No	78.63	Si
SLU 84	fin.	126.31	-478	-0.0001004	0.0001872	0.0035	0.72		1897.3	1897.3	No	15.02	Si
SLU 77	ini.	-34.04	-189	-0.0000262	0.0001872	0.0035	0.72		1901.86	1901.86	No	55.87	Si
SLU 77	fin.	120.61	-458	-0.0000957	0.0001872	0.0035	0.72		1897.3	1897.3	No	15.73	Si
SLU 79	ini.	-33.51	-185	-0.0000258	0.0001872	0.0035	0.72		1901.86	1901.86	No	56.75	Si
SLU 79	fin.	118.12	-449	-0.0000936	0.0001872	0.0035	0.72		1897.3	1897.3	No	16.06	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 81	ini.	-38.16	1890	0.72	0	292	3965	3018	1836	4257	No	2.25	Si
SLU 81	fin.	126.74	-1126	0.72	0	292	3965	3018	1836	4257	No	3.78	Si
SLU 75	ini.	-18.94	1860	0.72	0	292	3965	3018	1836	4257	No	2.29	Si
SLU 75	fin.	117.64	-1227	0.72	0	292	3965	3018	1836	4257	No	3.47	Si
SLU 79	ini.	-33.51	1883	0.72	0	292	3965	3018	1836	4257	No	2.26	Si
SLU 79	fin.	118.12	-1189	0.72	0	292	3965	3018	1836	4257	No	3.58	Si
SLU 80	ini.	-18.97	1862	0.72	0	292	3965	3018	1836	4257	No	2.29	Si
SLU 80	fin.	116.42	-1230	0.72	0	292	3965	3018	1836	4257	No	3.46	Si
SLU 74	ini.	-33.48	1881	0.72	0	292	3965	3018	1836	4257	No	2.26	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 74	fin.	119.34	-1185	0.72	0	292	3965	3018	1836	4257	No	3.59	Si
SLU 78	ini.	-19.5	1893	0.72	0	292	3965	3018	1836	4257	No	2.25	Si
SLU 78	fin.	118.91	-1248	0.72	0	292	3965	3018	1836	4257	No	3.41	Si
SLU 83	ini.	-38.73	1923	0.72	0	292	3965	3018	1836	4257	No	2.21	Si
SLU 83	fin.	128.02	-1147	0.72	0	292	3965	3018	1836	4257	No	3.71	Si
SLU 82	ini.	-23.63	1869	0.72	0	292	3965	3018	1836	4257	No	2.28	Si
SLU 82	fin.	125.04	-1168	0.72	0	292	3965	3018	1836	4257	No	3.65	Si
SLU 77	ini.	-34.04	1915	0.72	0	292	3965	3018	1836	4257	No	2.22	Si
SLU 77	fin.	120.61	-1206	0.72	0	292	3965	3018	1836	4257	No	3.53	Si
SLU 84	ini.	-24.19	1902	0.72	0	292	3965	3018	1836	4257	No	2.24	Si
SLU 84	fin.	126.31	-1189	0.72	0	292	3965	3018	1836	4257	No	3.58	Si

**Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche**

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 12	ini.	-376.13	-693	-0.0003166	0.0002807	0.0035	0.72		1917.1	1917.1		5.1	Si
SLV 12	fin.	275.52	9	-0.0002254	0.0002807	0.0035	0.72		1912.43	1912.43		6.94	Si
SLV 13	ini.	-221.71	-1270	-0.0001782	0.0002807	0.0035	0.72		1917.1	1917.1		8.65	Si
SLV 13	fin.	504.49	-1292	-0.0004454	0.0002807	0.0035	0.72		1912.43	1912.43		3.79	Si
SLV 14	ini.	-237.55	-1370	-0.0001918	0.0002807	0.0035	0.72		1917.1	1917.1		8.07	Si
SLV 14	fin.	539.15	-1374	-0.000482	0.0002807	0.0035	0.72		1912.43	1912.43		3.55	Si
SLV 1	ini.	365.91	1285	-0.0003078	0.0002807	0.0035	0.72		1912.43	1912.43		5.23	Si
SLV 1	fin.	-429.18	444	-0.0003679	0.0002807	0.0035	0.72		1917.1	1917.1		4.47	Si
SLV 15	ini.	-381.89	-1379	-0.0003221	0.0002807	0.0035	0.72		1917.1	1917.1		5.02	Si
SLV 15	fin.	536.48	-941	-0.0004791	0.0002807	0.0035	0.72		1912.43	1912.43		3.56	Si
SLV 4	ini.	189.9	1077	-0.0001517	0.0002807	0.0035	0.72		1912.43	1912.43		10.07	Si
SLV 4	fin.	-362.54	714	-0.0003038	0.0002807	0.0035	0.72		1917.1	1917.1		5.29	Si
SLV 16	ini.	-397.73	-1478	-0.0003373	0.0002807	0.0035	0.72		1917.1	1917.1		4.82	Si
SLV 16	fin.	571.13	-1023	-0.0005164	0.0002807	0.0035	0.72		1912.43	1912.43		3.35	Si
SLV 2	ini.	350.08	1186	-0.0002929	0.0002807	0.0035	0.72		1912.43	1912.43		5.46	Si
SLV 2	fin.	-394.52	363	-0.0003342	0.0002807	0.0035	0.72		1917.1	1917.1		4.86	Si
SLV 3	ini.	205.73	1177	-0.000165	0.0002807	0.0035	0.72		1912.43	1912.43		9.3	Si
SLV 3	fin.	-397.19	796	-0.0003368	0.0002807	0.0035	0.72		1917.1	1917.1		4.83	Si
SLV 11	ini.	-365.9	-629	-0.000307	0.0002807	0.0035	0.72		1917.1	1917.1		5.24	Si
SLV 11	fin.	253.14	62	-0.0002057	0.0002807	0.0035	0.72		1912.43	1912.43		7.55	Si

**Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215**

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 1	ini.	365.91	-43	0.72	0	438	3965	4528	1836	4403		102.7	Si
SLV 1	fin.	-429.18	-2702	0.72	0	438	3965	4528	1836	4403		1.63	Si
SLV 10	ini.	157.8	1944	0.72	0	438	3965	4528	1836	4403		2.26	Si
SLV 10	fin.	168.91	-980	0.72	0	438	3965	4528	1836	4403		4.49	Si
SLV 16	ini.	-397.73	2587	0.72	0	438	3965	4528	1836	4403		1.7	Si
SLV 16	fin.	571.13	891	0.72	0	438	3965	4528	1836	4403		4.94	Si
SLV 14	ini.	-237.55	2730	0.72	0	438	3965	4528	1836	4403		1.61	Si
SLV 14	fin.	539.15	533	0.72	0	438	3965	4528	1836	4403		8.26	Si
SLV 3	ini.	205.73	-186	0.72	0	438	3965	4528	1836	4403		23.68	Si
SLV 3	fin.	-397.19	-2344	0.72	0	438	3965	4528	1836	4403		1.88	Si
SLV 5	ini.	344.32	1077	0.72	0	438	3965	4528	1836	4403		4.09	Si
SLV 5	fin.	-133.57	-2024	0.72	0	438	3965	4528	1836	4403		2.18	Si
SLV 15	ini.	-381.89	2487	0.72	0	438	3965	4528	1836	4403		1.77	Si
SLV 15	fin.	536.48	679	0.72	0	438	3965	4528	1836	4403		6.48	Si
SLV 2	ini.	350.08	58	0.72	0	438	3965	4528	1836	4403		76.35	Si
SLV 2	fin.	-394.52	-2490	0.72	0	438	3965	4528	1836	4403		1.77	Si
SLV 4	ini.	189.9	-85	0.72	0	438	3965	4528	1836	4403		51.57	Si
SLV 4	fin.	-362.54	-2132	0.72	0	438	3965	4528	1836	4403		2.06	Si
SLV 13	ini.	-221.71	2630	0.72	0	438	3965	4528	1836	4403		1.67	Si
SLV 13	fin.	504.49	321	0.72	0	438	3965	4528	1836	4403		13.7	Si

**Tabella dei coefficienti di sicurezza minimi**

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.349	SLV 16	Si
V_SLV	1.613	SLV 14	Si
PF_SLU	14.821	SLU 83	Si
V_SLU	2.213	SLU 83	Si

**Trave di accoppiamento 94**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati geometrici**

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-6.513	-3.314	7.53	8.35	0.82	-7.413	-3.314	7.53	8.35	0.82	0.9	0.28	3500

**Caratteristiche del materiale**

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC





Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 62	ini.	-254.15	-1903	-0.0001596	0.0001872	0.0035	0.82		2460.51	2460.51	No	9.68	Si
SLU 62	fin.	-169.07	-1022	-0.0001036	0.0001872	0.0035	0.82		2460.51	2460.51	No	14.55	Si
SLU 80	ini.	-255.09	-1978	-0.0001602	0.0001872	0.0035	0.82		2460.51	2460.51	No	9.65	Si
SLU 80	fin.	-200.87	-1162	-0.0001242	0.0001872	0.0035	0.82		2460.51	2460.51	No	12.25	Si
SLU 84	ini.	-279.84	-2113	-0.0001771	0.0001872	0.0035	0.82		2460.51	2460.51	No	8.79	Si
SLU 84	fin.	-191.33	-1151	-0.000118	0.0001872	0.0035	0.82		2460.51	2460.51	No	12.86	Si
SLU 77	ini.	-258.41	-1998	-0.0001625	0.0001872	0.0035	0.82		2460.51	2460.51	No	9.52	Si
SLU 77	fin.	-202.94	-1175	-0.0001256	0.0001872	0.0035	0.82		2460.51	2460.51	No	12.12	Si
SLU 82	ini.	-275.97	-2084	-0.0001745	0.0001872	0.0035	0.82		2460.51	2460.51	No	8.92	Si
SLU 82	fin.	-184.89	-1119	-0.0001138	0.0001872	0.0035	0.82		2460.51	2460.51	No	13.31	Si
SLU 83	ini.	-280.96	-2115	-0.0001779	0.0001872	0.0035	0.82		2460.51	2460.51	No	8.76	Si
SLU 83	fin.	-189.92	-1146	-0.0001171	0.0001872	0.0035	0.82		2460.51	2460.51	No	12.96	Si
SLU 74	ini.	-254.54	-1969	-0.0001599	0.0001872	0.0035	0.82		2460.51	2460.51	No	9.67	Si
SLU 74	fin.	-196.5	-1143	-0.0001214	0.0001872	0.0035	0.82		2460.51	2460.51	No	12.52	Si
SLU 81	ini.	-277.1	-2086	-0.0001753	0.0001872	0.0035	0.82		2460.51	2460.51	No	8.88	Si
SLU 81	fin.	-183.48	-1114	-0.0001129	0.0001872	0.0035	0.82		2460.51	2460.51	No	13.41	Si
SLU 78	ini.	-257.28	-1996	-0.0001617	0.0001872	0.0035	0.82		2460.51	2460.51	No	9.56	Si
SLU 78	fin.	-204.35	-1180	-0.0001265	0.0001872	0.0035	0.82		2460.51	2460.51	No	12.04	Si
SLU 79	ini.	-256.22	-1980	-0.000161	0.0001872	0.0035	0.82		2460.51	2460.51	No	9.6	Si
SLU 79	fin.	-199.46	-1158	-0.0001233	0.0001872	0.0035	0.82		2460.51	2460.51	No	12.34	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 74	ini.	-254.54	4014	0.82	0	303	6502	3438	2091	5529	No	1.38	Si
SLU 74	fin.	-196.5	-2463	0.82	0	303	6502	3438	2091	5529	No	2.24	Si
SLU 84	ini.	-279.84	4255	0.82	0	303	6502	3438	2091	5529	No	1.3	Si
SLU 84	fin.	-191.33	-2476	0.82	0	303	6502	3438	2091	5529	No	2.23	Si
SLU 75	ini.	-253.42	4012	0.82	0	303	6502	3438	2091	5529	No	1.38	Si
SLU 75	fin.	-197.91	-2472	0.82	0	303	6502	3438	2091	5529	No	2.24	Si
SLU 79	ini.	-256.22	4059	0.82	0	303	6502	3438	2091	5529	No	1.36	Si
SLU 79	fin.	-199.46	-2502	0.82	0	303	6502	3438	2091	5529	No	2.21	Si
SLU 83	ini.	-280.96	4257	0.82	0	303	6502	3438	2091	5529	No	1.3	Si
SLU 83	fin.	-189.92	-2467	0.82	0	303	6502	3438	2091	5529	No	2.24	Si
SLU 81	ini.	-277.1	4181	0.82	0	303	6502	3438	2091	5529	No	1.32	Si
SLU 81	fin.	-183.48	-2401	0.82	0	303	6502	3438	2091	5529	No	2.3	Si
SLU 78	ini.	-257.28	4088	0.82	0	303	6502	3438	2091	5529	No	1.35	Si
SLU 78	fin.	-204.35	-2539	0.82	0	303	6502	3438	2091	5529	No	2.18	Si
SLU 82	ini.	-275.97	4179	0.82	0	303	6502	3438	2091	5529	No	1.32	Si
SLU 82	fin.	-184.89	-2410	0.82	0	303	6502	3438	2091	5529	No	2.29	Si
SLU 77	ini.	-258.41	4090	0.82	0	303	6502	3438	2091	5529	No	1.35	Si
SLU 77	fin.	-202.94	-2530	0.82	0	303	6502	3438	2091	5529	No	2.19	Si
SLU 80	ini.	-255.09	4057	0.82	0	303	6502	3438	2091	5529	No	1.36	Si
SLU 80	fin.	-200.87	-2511	0.82	0	303	6502	3438	2091	5529	No	2.2	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 14	ini.	-1191.71	-5200	-0.0009362	0.0002807	0.0035	0.82		2487.45	2487.45		2.09	Si
SLV 14	fin.	481.85	613	-0.0003133	0.0002807	0.0035	0.82		2482.11	2482.11		5.15	Si
SLV 16	ini.	-1297.61	-5646	-0.0010486	0.0002807	0.0035	0.82		2487.45	2487.45		1.92	Si
SLV 16	fin.	565.02	512	-0.0003756	0.0002807	0.0035	0.82		2482.11	2482.11		4.39	Si
SLV 15	ini.	-1406.84	-6033	-0.0011711	0.0002807	0.0035	0.82		2487.45	2487.45		1.77	Si
SLV 15	fin.	645.79	704	-0.000439	0.0002807	0.0035	0.82		2482.11	2482.11		3.84	Si
SLV 3	ini.	885.76	2710	-0.0006431	0.0002807	0.0035	0.82		2482.11	2482.11		2.8	Si
SLV 3	fin.	-766.73	-2195	-0.0005376	0.0002807	0.0035	0.82		2487.45	2487.45		3.24	Si
SLV 4	ini.	994.99	3098	-0.0007439	0.0002807	0.0035	0.82		2482.11	2482.11		2.49	Si
SLV 4	fin.	-847.5	-2387	-0.0006075	0.0002807	0.0035	0.82		2487.45	2487.45		2.94	Si
SLV 11	ini.	-708.65	-3424	-0.000489	0.0002807	0.0035	0.82		2487.45	2487.45		3.51	Si
SLV 11	fin.	234.15	-462	-0.000144	0.0002807	0.0035	0.82		2482.11	2482.11		10.6	Si
SLV 1	ini.	991.67	3155	-0.0007408	0.0002807	0.0035	0.82		2482.11	2482.11		2.5	Si
SLV 1	fin.	-849.9	-2094	-0.0006096	0.0002807	0.0035	0.82		2487.45	2487.45		2.93	Si
SLD 15	ini.	-689.02	-3293	-0.0004729	0.0002807	0.0035	0.82		2487.45	2487.45		3.61	Si
SLD 15	fin.	194.27	-151	-0.0001185	0.0002807	0.0035	0.82		2482.11	2482.11		12.78	Si
SLV 13	ini.	-1300.94	-5588	-0.0010522	0.0002807	0.0035	0.82		2487.45	2487.45		1.91	Si
SLV 13	fin.	562.62	805	-0.0003738	0.0002807	0.0035	0.82		2482.11	2482.11		4.41	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 2	ini.	1100.9	3543	-0.0008466	0.0002807	0.0035	0.82		2482.11	2482.11		2.25	Si
SLV 2	fin.	-930.67	-2286	-0.0006822	0.0002807	0.0035	0.82		2487.45	2487.45		2.67	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 4	ini.	994.99	-2999	0.82	0	455	6502	5156	2091	6957		2.32	Si
SLV 4	fin.	-847.5	-6182	0.82	0	455	6502	5156	2091	6957		1.13	Si
SLD 15	ini.	-689.02	5274	0.82	0	455	6502	5156	2091	6957		1.32	Si
SLD 15	fin.	194.27	114	0.82	0	455	6502	5156	2091	6957		60.77	Si
SLV 14	ini.	-1191.71	7651	0.82	0	455	6502	5156	2091	6957		0.91	No
SLV 14	fin.	481.85	2274	0.82	0	455	6502	5156	2091	6957		3.06	Si
SLV 2	ini.	1100.9	-3653	0.82	0	455	6502	5156	2091	6957		1.9	Si
SLV 2	fin.	-930.67	-6038	0.82	0	455	6502	5156	2091	6957		1.15	Si
SLV 16	ini.	-1297.61	8305	0.82	0	455	6502	5156	2091	6957		0.84	No
SLV 16	fin.	565.02	2130	0.82	0	455	6502	5156	2091	6957		3.27	Si
SLV 1	ini.	991.67	-3109	0.82	0	455	6502	5156	2091	6957		2.24	Si
SLV 1	fin.	-849.9	-5587	0.82	0	455	6502	5156	2091	6957		1.25	Si
SLV 3	ini.	885.76	-2455	0.82	0	455	6502	5156	2091	6957		2.83	Si
SLV 3	fin.	-766.73	-5731	0.82	0	455	6502	5156	2091	6957		1.21	Si
SLV 11	ini.	-708.65	5560	0.82	0	455	6502	5156	2091	6957		1.25	Si
SLV 11	fin.	234.15	-576	0.82	0	455	6502	5156	2091	6957		12.07	Si
SLV 13	ini.	-1300.94	8196	0.82	0	455	6502	5156	2091	6957		0.85	No
SLV 13	fin.	562.62	2725	0.82	0	455	6502	5156	2091	6957		2.55	Si
SLV 15	ini.	-1406.84	8850	0.82	0	455	6502	5156	2091	6957		0.79	No
SLV 15	fin.	645.79	2581	0.82	0	455	6502	5156	2091	6957		2.7	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.768	SLV 15	Si
V_SLV	0.786	SLV 15	No
PF_SLU	8.757	SLU 83	Si
V_SLU	1.299	SLU 83	Si

## Trave di accoppiamento 95

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-5.463	-3.314	7.63	8.35	0.72	-5.963	-3.314	7.63	8.35	0.72	0.5	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fnk	fvk0	fnmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$y_{F,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 75	ini.	373.23	-1369	-0.0003293	0.0001872	0.0035	0.72		1897.3	1897.3	No	5.08	Si
SLU 75	fin.	-341.95	-2135	-0.0002967	0.0001872	0.0035	0.72		1901.86	1901.86	No	5.56	Si
SLU 77	ini.	374.45	-1398	-0.0003306	0.0001872	0.0035	0.72		1897.3	1897.3	No	5.07	Si
SLU 77	fin.	-345.01	-2164	-0.0002997	0.0001872	0.0035	0.72		1901.86	1901.86	No	5.51	Si
SLU 83	ini.	373.26	-1477	-0.0003294	0.0001872	0.0035	0.72		1897.3	1897.3	No	5.08	Si
SLU 83	fin.	-358.21	-2261	-0.0003131	0.0001872	0.0035	0.72		1901.86	1901.86	No	5.31	Si
SLU 74	ini.	371.19	-1371	-0.0003272	0.0001872	0.0035	0.72		1897.3	1897.3	No	5.11	Si
SLU 74	fin.	-341.36	-2135	-0.0002961	0.0001872	0.0035	0.72		1901.86	1901.86	No	5.57	Si
SLU 76	ini.	370.82	-1355	-0.0003269	0.0001872	0.0035	0.72		1897.3	1897.3	No	5.12	Si
SLU 76	fin.	-339.31	-2116	-0.000294	0.0001872	0.0035	0.72		1901.86	1901.86	No	5.61	Si
SLU 79	ini.	370.67	-1385	-0.0003267	0.0001872	0.0035	0.72		1897.3	1897.3	No	5.12	Si
SLU 79	fin.	-341.98	-2144	-0.0002967	0.0001872	0.0035	0.72		1901.86	1901.86	No	5.56	Si
SLU 82	ini.	372.05	-1448	-0.0003281	0.0001872	0.0035	0.72		1897.3	1897.3	No	5.1	Si
SLU 82	fin.	-355.14	-2232	-0.00031	0.0001872	0.0035	0.72		1901.86	1901.86	No	5.36	Si
SLU 84	ini.	375.3	-1475	-0.0003315	0.0001872	0.0035	0.72		1897.3	1897.3	No	5.06	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 84	fin.	-358.79	-2261	-0.0003137	0.0001872	0.0035	0.72		1901.86	1901.86	No	5.3	Si
SLU 80	ini.	372.71	-1383	-0.0003288	0.0001872	0.0035	0.72		1897.3	1897.3	No	5.09	Si
SLU 80	fin.	-342.57	-2145	-0.0002973	0.0001872	0.0035	0.72		1901.86	1901.86	No	5.55	Si
SLU 78	ini.	376.49	-1396	-0.0003327	0.0001872	0.0035	0.72		1897.3	1897.3	No	5.04	Si
SLU 78	fin.	-345.6	-2165	-0.0003003	0.0001872	0.0035	0.72		1901.86	1901.86	No	5.5	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 78	ini.	376.49	-1101	0.72	0	292	3965	3018	1836	4257	No	3.87	Si
SLU 78	fin.	-345.6	-4959	0.72	0	292	3965	3018	1836	4257	No	0.86	No
SLU 84	ini.	375.3	-1131	0.72	0	292	3965	3018	1836	4257	No	3.76	Si
SLU 84	fin.	-358.79	-5023	0.72	0	292	3965	3018	1836	4257	No	0.85	No
SLU 74	ini.	371.19	-1098	0.72	0	292	3965	3018	1836	4257	No	3.88	Si
SLU 74	fin.	-341.36	-4862	0.72	0	292	3965	3018	1836	4257	No	0.88	No
SLU 79	ini.	370.67	-1084	0.72	0	292	3965	3018	1836	4257	No	3.93	Si
SLU 79	fin.	-341.98	-4901	0.72	0	292	3965	3018	1836	4257	No	0.87	No
SLU 82	ini.	372.05	-1134	0.72	0	292	3965	3018	1836	4257	No	3.75	Si
SLU 82	fin.	-355.14	-4937	0.72	0	292	3965	3018	1836	4257	No	0.86	No
SLU 75	ini.	373.23	-1104	0.72	0	292	3965	3018	1836	4257	No	3.85	Si
SLU 75	fin.	-341.95	-4873	0.72	0	292	3965	3018	1836	4257	No	0.87	No
SLU 80	ini.	372.71	-1090	0.72	0	292	3965	3018	1836	4257	No	3.91	Si
SLU 80	fin.	-342.57	-4911	0.72	0	292	3965	3018	1836	4257	No	0.87	No
SLU 83	ini.	373.26	-1125	0.72	0	292	3965	3018	1836	4257	No	3.79	Si
SLU 83	fin.	-358.21	-5013	0.72	0	292	3965	3018	1836	4257	No	0.85	No
SLU 81	ini.	370.01	-1128	0.72	0	292	3965	3018	1836	4257	No	3.78	Si
SLU 81	fin.	-354.56	-4927	0.72	0	292	3965	3018	1836	4257	No	0.86	No
SLU 77	ini.	374.45	-1095	0.72	0	292	3965	3018	1836	4257	No	3.89	Si
SLU 77	fin.	-345.01	-4948	0.72	0	292	3965	3018	1836	4257	No	0.86	No

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-721.01	-4685	-0.0006854	0.0002807	0.0035	0.72		1917.1	1917.1		2.66	Si
SLV 15	fin.	-418.77	-4323	-0.0003577	0.0002807	0.0035	0.72		1917.1	1917.1		4.58	Si
SLV 13	ini.	-664.44	-4217	-0.0006193	0.0002807	0.0035	0.72		1917.1	1917.1		2.89	Si
SLV 13	fin.	-385.68	-3962	-0.0003257	0.0002807	0.0035	0.72		1917.1	1917.1		4.97	Si
SLD 4	ini.	664.22	583	-0.0006208	0.0002807	0.0035	0.72		1912.43	1912.43		2.88	Si
SLD 4	fin.	-160.19	-291	-0.0001267	0.0002807	0.0035	0.72		1917.1	1917.1		11.97	Si
SLV 3	ini.	1086.88	2180	-0.0011764	0.0002807	0.0035	0.72		1912.43	1912.43		1.76	Si
SLV 3	fin.	-69.42	981	-0.0000537	0.0002807	0.0035	0.72		1917.1	1917.1		27.62	Si
SLD 1	ini.	640.81	641	-0.000594	0.0002807	0.0035	0.72		1912.43	1912.43		2.98	Si
SLD 1	fin.	-145.53	-222	-0.0001147	0.0002807	0.0035	0.72		1917.1	1917.1		13.17	Si
SLV 1	ini.	1143.45	2648	-0.0012633	0.0002807	0.0035	0.72		1912.43	1912.43		1.67	Si
SLV 1	fin.	-36.33	1342	-0.0000279	0.0002807	0.0035	0.72		1917.1	1917.1		52.77	Si
SLV 4	ini.	1197	2507	-0.0013492	0.0002807	0.0035	0.72		1912.43	1912.43		1.6	Si
SLV 4	fin.	-69.18	1182	-0.0000535	0.0002807	0.0035	0.72		1917.1	1917.1		27.71	Si
SLV 6	ini.	667.31	1060	-0.0006243	0.0002807	0.0035	0.72		1912.43	1912.43		2.87	Si
SLV 6	fin.	-119.81	72	-0.0000938	0.0002807	0.0035	0.72		1917.1	1917.1		16	Si
SLV 2	ini.	1253.57	2975	-0.0014443	0.0002807	0.0035	0.72		1912.43	1912.43		1.53	Si
SLV 2	fin.	-36.1	1543	-0.0000277	0.0002807	0.0035	0.72		1917.1	1917.1		53.11	Si
SLD 2	ini.	688.1	781	-0.0006485	0.0002807	0.0035	0.72		1912.43	1912.43		2.78	Si
SLD 2	fin.	-145.43	-135	-0.0001146	0.0002807	0.0035	0.72		1917.1	1917.1		13.18	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 3	ini.	616.93	-1587	0.72	0	438	3965	4528	1836	4403		2.78	Si
SLD 3	fin.	-160.29	-3905	0.72	0	438	3965	4528	1836	4403		1.13	Si
SLV 4	ini.	1197	-2998	0.72	0	438	3965	4528	1836	4403		1.47	Si
SLV 4	fin.	-69.18	-4951	0.72	0	438	3965	4528	1836	4403		0.89	No
SLD 4	ini.	664.22	-1725	0.72	0	438	3965	4528	1836	4403		2.55	Si
SLD 4	fin.	-160.19	-4010	0.72	0	438	3965	4528	1836	4403		1.1	Si
SLV 3	ini.	1086.88	-2677	0.72	0	438	3965	4528	1836	4403		1.64	Si
SLV 3	fin.	-69.42	-4707	0.72	0	438	3965	4528	1836	4403		0.94	No
SLV 2	ini.	1253.57	-3156	0.72	0	438	3965	4528	1836	4403		1.4	Si
SLV 2	fin.	-36.1	-4524	0.72	0	438	3965	4528	1836	4403		0.97	No
SLV 8	ini.	478.74	-1257	0.72	0	438	3965	4528	1836	4403		3.5	Si
SLV 8	fin.	-230.1	-4488	0.72	0	438	3965	4528	1836	4403		0.98	No
SLD 8	ini.	357.89	-982	0.72	0	438	3965	4528	1836	4403		4.48	Si
SLD 8	fin.	-229.63	-3820	0.72	0	438	3965	4528	1836	4403		1.15	Si
SLV 7	ini.	407.62	-1049	0.72	0	438	3965	4528	1836	4403		4.2	Si
SLV 7	fin.	-230.25	-4330	0.72	0	438	3965	4528	1836	4403		1.02	Si
SLV 1	ini.	1143.45	-2835	0.72	0	438	3965	4528	1836	4403		1.55	Si
SLV 1	fin.	-36.33	-4279	0.72	0	438	3965	4528	1836	4403		1.03	Si
SLD 2	ini.	688.1	-1791	0.72	0	438	3965	4528	1836	4403		2.46	Si
SLD 2	fin.	-145.43	-3822	0.72	0	438	3965	4528	1836	4403		1.15	Si

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF SLV	1.526	SLV 2	Si
V SLV	0.889	SLV 4	No
PF SLU	5.04	SLU 78	Si
V SLU	0.847	SLU 84	No



## Trave di accoppiamento 96

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-2.283	-3.314	7.53	8.35	0.82	-3.183	-3.314	7.53	8.35	0.82	0.9	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	e <sub>f,d</sub>	γ <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em <sub>-</sub>	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 81	ini.	329.31	-382	-0.0002123	0.0001872	0.0035	0.82		2455.37	2455.37	No	7.46	Si
SLU 81	fin.	-768.16	-3189	-0.0005721	0.0001872	0.0035	0.82		2460.51	2460.51	No	3.2	Si
SLU 77	ini.	323.65	-408	-0.0002083	0.0001872	0.0035	0.82		2455.37	2455.37	No	7.59	Si
SLU 77	fin.	-771.03	-3209	-0.0005748	0.0001872	0.0035	0.82		2460.51	2460.51	No	3.19	Si
SLU 84	ini.	328.89	-408	-0.000212	0.0001872	0.0035	0.82		2455.37	2455.37	No	7.47	Si
SLU 84	fin.	-781.05	-3248	-0.000584	0.0001872	0.0035	0.82		2460.51	2460.51	No	3.15	Si
SLU 82	ini.	332.34	-379	-0.0002145	0.0001872	0.0035	0.82		2455.37	2455.37	No	7.39	Si
SLU 82	fin.	-771.65	-3202	-0.0005753	0.0001872	0.0035	0.82		2460.51	2460.51	No	3.19	Si
SLU 75	ini.	330.14	-376	-0.0002129	0.0001872	0.0035	0.82		2455.37	2455.37	No	7.44	Si
SLU 75	fin.	-765.12	-3176	-0.0005693	0.0001872	0.0035	0.82		2460.51	2460.51	No	3.22	Si
SLU 83	ini.	325.86	-411	-0.0002099	0.0001872	0.0035	0.82		2455.37	2455.37	No	7.54	Si
SLU 83	fin.	-777.56	-3235	-0.0005808	0.0001872	0.0035	0.82		2460.51	2460.51	No	3.16	Si
SLU 74	ini.	327.11	-379	-0.0002107	0.0001872	0.0035	0.82		2455.37	2455.37	No	7.51	Si
SLU 74	fin.	-761.63	-3163	-0.0005662	0.0001872	0.0035	0.82		2460.51	2460.51	No	3.23	Si
SLU 79	ini.	319.7	-403	-0.0002055	0.0001872	0.0035	0.82		2455.37	2455.37	No	7.68	Si
SLU 79	fin.	-762.41	-3173	-0.0005669	0.0001872	0.0035	0.82		2460.51	2460.51	No	3.23	Si
SLU 78	ini.	326.69	-405	-0.0002105	0.0001872	0.0035	0.82		2455.37	2455.37	No	7.52	Si
SLU 78	fin.	-774.52	-3222	-0.000578	0.0001872	0.0035	0.82		2460.51	2460.51	No	3.18	Si
SLU 80	ini.	322.73	-401	-0.0002076	0.0001872	0.0035	0.82		2455.37	2455.37	No	7.61	Si
SLU 80	fin.	-765.9	-3186	-0.0005701	0.0001872	0.0035	0.82		2460.51	2460.51	No	3.21	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	f <sub>vd</sub>	V <sub>t</sub>	V <sub>t,f</sub>	V <sub>t,c</sub>	V <sub>t,c.int.</sub>	V <sub>t,R</sub>	incremento > 50%	c.s.	Verifica
SLU 81	ini.	329.31	-347	0.82	0	303	6502	3438	2091	5529	No	15.94	Si
SLU 81	fin.	-768.16	-5247	0.82	0	303	6502	3438	2091	5529	No	1.05	Si
SLU 83	ini.	325.86	-319	0.82	0	303	6502	3438	2091	5529	No	17.33	Si
SLU 83	fin.	-777.56	-5321	0.82	0	303	6502	3438	2091	5529	No	1.04	Si
SLU 75	ini.	330.14	-370	0.82	0	303	6502	3438	2091	5529	No	14.93	Si
SLU 75	fin.	-765.12	-5204	0.82	0	303	6502	3438	2091	5529	No	1.06	Si
SLU 84	ini.	328.89	-330	0.82	0	303	6502	3438	2091	5529	No	16.76	Si
SLU 84	fin.	-781.05	-5339	0.82	0	303	6502	3438	2091	5529	No	1.04	Si
SLU 82	ini.	332.34	-358	0.82	0	303	6502	3438	2091	5529	No	15.46	Si
SLU 82	fin.	-771.65	-5266	0.82	0	303	6502	3438	2091	5529	No	1.05	Si
SLU 78	ini.	326.69	-343	0.82	0	303	6502	3438	2091	5529	No	16.14	Si
SLU 78	fin.	-774.52	-5277	0.82	0	303	6502	3438	2091	5529	No	1.05	Si
SLU 80	ini.	322.73	-335	0.82	0	303	6502	3438	2091	5529	No	16.5	Si
SLU 80	fin.	-765.9	-5221	0.82	0	303	6502	3438	2091	5529	No	1.06	Si
SLU 77	ini.	323.65	-332	0.82	0	303	6502	3438	2091	5529	No	16.66	Si
SLU 77	fin.	-771.03	-5258	0.82	0	303	6502	3438	2091	5529	No	1.05	Si
SLU 74	ini.	327.11	-360	0.82	0	303	6502	3438	2091	5529	No	15.37	Si
SLU 74	fin.	-761.63	-5185	0.82	0	303	6502	3438	2091	5529	No	1.07	Si
SLU 79	ini.	319.7	-324	0.82	0	303	6502	3438	2091	5529	No	17.05	Si
SLU 79	fin.	-762.41	-5202	0.82	0	303	6502	3438	2091	5529	No	1.06	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 1	ini.	1371.99	1980	-0.0011344	0.0002807	0.0035	0.82		2482.11	2482.11		1.81	Si
SLV 1	fin.	-1258.33	-4460	-0.0010062	0.0002807	0.0035	0.82		2487.45	2487.45		1.98	Si
SLV 13	ini.	-1022.91	-2319	-0.0007685	0.0002807	0.0035	0.82		2487.45	2487.45		2.43	Si
SLV 13	fin.	474.39	1282	-0.0003079	0.0002807	0.0035	0.82		2482.11	2482.11		5.23	Si
SLV 3	ini.	1295.17	1499	-0.0010488	0.0002807	0.0035	0.82		2482.11	2482.11		1.92	Si
SLV 3	fin.	-1382.47	-5146	-0.0011432	0.0002807	0.0035	0.82		2487.45	2487.45		1.8	Si
SLV 8	ini.	540.44	-244	-0.0003569	0.0002807	0.0035	0.82		2482.11	2482.11		4.59	Si
SLV 8	fin.	-1040.36	-4334	-0.0007852	0.0002807	0.0035	0.82		2487.45	2487.45		2.39	Si
SLV 4	ini.	1505.53	1892	-0.0012922	0.0002807	0.0035	0.82		2482.11	2482.11		1.65	Si
SLV 4	fin.	-1527.7	-5629	-0.0013158	0.0002807	0.0035	0.82		2487.45	2487.45		1.63	Si
SLD 4	ini.	781.39	684	-0.0005514	0.0002807	0.0035	0.82		2482.11	2482.11		3.18	Si
SLD 4	fin.	-955.17	-3654	-0.0007048	0.0002807	0.0035	0.82		2487.45	2487.45		2.6	Si
SLD 2	ini.	815.01	895	-0.0005805	0.0002807	0.0035	0.82		2482.11	2482.11		3.05	Si
SLD 2	fin.	-900.78	-3354	-0.000655	0.0002807	0.0035	0.82		2487.45	2487.45		2.76	Si
SLV 7	ini.	404.58	-497	-0.0002581	0.0002807	0.0035	0.82		2482.11	2482.11		6.14	Si
SLV 7	fin.	-946.56	-4022	-0.0006968	0.0002807	0.0035	0.82		2487.45	2487.45		2.63	Si
SLV 2	ini.	1582.35	2373	-0.0013889	0.0002807	0.0035	0.82		2482.11	2482.11		1.57	Si
SLV 2	fin.	-1403.57	-4943	-0.0011673	0.0002807	0.0035	0.82		2487.45	2487.45		1.77	Si
SLV 15	ini.	-1099.73	-2800	-0.0008432	0.0002807	0.0035	0.82		2487.45	2487.45		2.26	Si
SLV 15	fin.	350.25	596	-0.0002207	0.0002807	0.0035	0.82		2482.11	2482.11		7.09	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 2	ini.	1582.35	-5661	0.82	0	455	6502	5156	2091	6957		1.23	Si
SLV 2	fin.	-1403.57	-8080	0.82	0	455	6502	5156	2091	6957		0.86	No
SLD 2	ini.	815.01	-2609	0.82	0	455	6502	5156	2091	6957		2.67	Si
SLD 2	fin.	-900.78	-5481	0.82	0	455	6502	5156	2091	6957		1.27	Si
SLV 8	ini.	540.44	-1308	0.82	0	455	6502	5156	2091	6957		5.32	Si
SLV 8	fin.	-1040.36	-6290	0.82	0	455	6502	5156	2091	6957		1.11	Si
SLD 3	ini.	691.06	-2066	0.82	0	455	6502	5156	2091	6957		3.37	Si
SLD 3	fin.	-892.81	-5458	0.82	0	455	6502	5156	2091	6957		1.27	Si
SLV 3	ini.	1295.17	-4407	0.82	0	455	6502	5156	2091	6957		1.58	Si
SLV 3	fin.	-1382.47	-8012	0.82	0	455	6502	5156	2091	6957		0.87	No
SLV 7	ini.	404.58	-769	0.82	0	455	6502	5156	2091	6957		9.05	Si
SLV 7	fin.	-946.56	-5801	0.82	0	455	6502	5156	2091	6957		1.2	Si
SLD 1	ini.	724.68	-2251	0.82	0	455	6502	5156	2091	6957		3.09	Si
SLD 1	fin.	-838.42	-5156	0.82	0	455	6502	5156	2091	6957		1.35	Si
SLV 1	ini.	1371.99	-4826	0.82	0	455	6502	5156	2091	6957		1.44	Si
SLV 1	fin.	-1258.33	-7323	0.82	0	455	6502	5156	2091	6957		0.95	No
SLD 4	ini.	781.39	-2425	0.82	0	455	6502	5156	2091	6957		2.87	Si
SLD 4	fin.	-955.17	-5783	0.82	0	455	6502	5156	2091	6957		1.2	Si
SLV 4	ini.	1505.53	-5241	0.82	0	455	6502	5156	2091	6957		1.33	Si
SLV 4	fin.	-1527.7	-8769	0.82	0	455	6502	5156	2091	6957		0.79	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.569	SLV 2	Si
V_SLV	0.793	SLV 4	No
PF_SLU	3.15	SLU 84	Si
V_SLU	1.035	SLU 84	Si

## Trave di accoppiamento 97

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-2.063	5.826	4.83	5.73	0.9	-2.963	5.826	4.83	5.73	0.9	0.9	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_ Corti

fb_	fhk	fvk0	fmedio	t0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 69	ini.	460.96	-1961	-0.0002513	0.0001872	0.0035	0.9		2959	2959	No	6.42	Si
SLU 69	fin.	-182.78	-775	-0.0000926	0.0001872	0.0035	0.9		2964.67	2964.67	No	16.22	Si
SLU 77	ini.	463.92	-1993	-0.0002531	0.0001872	0.0035	0.9		2959	2959	No	6.38	Si
SLU 77	fin.	-150.67	-890	-0.0000758	0.0001872	0.0035	0.9		2964.67	2964.67	No	19.68	Si
SLU 70	ini.	455.72	-1940	-0.0002481	0.0001872	0.0035	0.9		2959	2959	No	6.49	Si
SLU 70	fin.	-180.43	-766	-0.0000913	0.0001872	0.0035	0.9		2964.67	2964.67	No	16.43	Si
SLU 79	ini.	461.64	-1979	-0.0002517	0.0001872	0.0035	0.9		2959	2959	No	6.41	Si
SLU 79	fin.	-153.2	-875	-0.0000771	0.0001872	0.0035	0.9		2964.67	2964.67	No	19.35	Si
SLU 74	ini.	458.86	-1964	-0.00025	0.0001872	0.0035	0.9		2959	2959	No	6.45	Si
SLU 74	fin.	-154.1	-864	-0.0000776	0.0001872	0.0035	0.9		2964.67	2964.67	No	19.24	Si
SLU 78	ini.	458.69	-1971	-0.0002499	0.0001872	0.0035	0.9		2959	2959	No	6.45	Si
SLU 78	fin.	-148.32	-882	-0.0000746	0.0001872	0.0035	0.9		2964.67	2964.67	No	19.99	Si
SLU 83	ini.	457.85	-1964	-0.0002494	0.0001872	0.0035	0.9		2959	2959	No	6.46	Si
SLU 83	fin.	-142.87	-899	-0.0000717	0.0001872	0.0035	0.9		2964.67	2964.67	No	20.75	Si
SLU 71	ini.	458.67	-1947	-0.0002499	0.0001872	0.0035	0.9		2959	2959	No	6.45	Si
SLU 71	fin.	-185.31	-760	-0.0000939	0.0001872	0.0035	0.9		2964.67	2964.67	No	16	Si
SLU 80	ini.	456.4	-1958	-0.0002485	0.0001872	0.0035	0.9		2959	2959	No	6.48	Si
SLU 80	fin.	-150.85	-867	-0.0000759	0.0001872	0.0035	0.9		2964.67	2964.67	No	19.65	Si
SLU 66	ini.	455.89	-1933	-0.0002482	0.0001872	0.0035	0.9		2959	2959	No	6.49	Si
SLU 66	fin.	-186.21	-749	-0.0000944	0.0001872	0.0035	0.9		2964.67	2964.67	No	15.92	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 74	ini.	458.86	-3226	0.9	0	365	7137	3773	2295	6068	No	1.88	Si
SLU 74	fin.	-154.1	-137	0.9	0	365	7137	3773	2295	6068	No	44.34	Si
SLU 71	ini.	458.67	-3244	0.9	0	365	7137	3773	2295	6068	No	1.87	Si
SLU 71	fin.	-185.31	-252	0.9	0	365	7137	3773	2295	6068	No	24.04	Si
SLU 72	ini.	453.44	-3221	0.9	0	365	7137	3773	2295	6068	No	1.88	Si
SLU 72	fin.	-182.96	-243	0.9	0	365	7137	3773	2295	6068	No	25.01	Si
SLU 66	ini.	455.89	-3216	0.9	0	365	7137	3773	2295	6068	No	1.89	Si
SLU 66	fin.	-186.21	-264	0.9	0	365	7137	3773	2295	6068	No	23.01	Si
SLU 70	ini.	455.72	-3247	0.9	0	365	7137	3773	2295	6068	No	1.87	Si
SLU 70	fin.	-180.43	-225	0.9	0	365	7137	3773	2295	6068	No	26.95	Si
SLU 79	ini.	461.64	-3255	0.9	0	365	7137	3773	2295	6068	No	1.86	Si
SLU 79	fin.	-153.2	-126	0.9	0	365	7137	3773	2295	6068	No	48.35	Si
SLU 77	ini.	463.92	-3281	0.9	0	365	7137	3773	2295	6068	No	1.85	Si
SLU 77	fin.	-150.67	-108	0.9	0	365	7137	3773	2295	6068	No	56.16	Si
SLU 80	ini.	456.4	-3231	0.9	0	365	7137	3773	2295	6068	No	1.88	Si
SLU 80	fin.	-150.85	-116	0.9	0	365	7137	3773	2295	6068	No	52.43	Si
SLU 78	ini.	458.69	-3258	0.9	0	365	7137	3773	2295	6068	No	1.86	Si
SLU 78	fin.	-148.32	-98	0.9	0	365	7137	3773	2295	6068	No	61.75	Si
SLU 69	ini.	460.96	-3271	0.9	0	365	7137	3773	2295	6068	No	1.86	Si
SLU 69	fin.	-182.78	-235	0.9	0	365	7137	3773	2295	6068	No	25.83	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-400.43	945	-0.0002082	0.0002807	0.0035	0.9		2995.37	2995.37		7.48	Si
SLV 15	fin.	942.19	-2091	-0.0005519	0.0002807	0.0035	0.9		2989.59	2989.59		3.17	Si
SLV 3	ini.	1140.11	-3683	-0.0006983	0.0002807	0.0035	0.9		2989.59	2989.59		2.62	Si
SLV 3	fin.	-1631.46	1724	-0.0011113	0.0002807	0.0035	0.9		2995.37	2995.37		1.84	Si
SLV 13	ini.	-311.17	344	-0.0001593	0.0002807	0.0035	0.9		2995.37	2995.37		9.63	Si
SLV 13	fin.	1111.88	-2497	-0.0006768	0.0002807	0.0035	0.9		2989.59	2989.59		2.69	Si
SLV 2	ini.	1087.66	-3843	-0.0006585	0.0002807	0.0035	0.9		2989.59	2989.59		2.75	Si
SLV 2	fin.	-1231.62	988	-0.000768	0.0002807	0.0035	0.9		2995.37	2995.37		2.43	Si
SLV 7	ini.	471.7	-1284	-0.000249	0.0002807	0.0035	0.9		2989.59	2989.59		6.34	Si
SLV 7	fin.	-887.89	805	-0.0005126	0.0002807	0.0035	0.9		2995.37	2995.37		3.37	Si
SLV 14	ini.	-452.88	784	-0.0002378	0.0002807	0.0035	0.9		2995.37	2995.37		6.61	Si
SLV 14	fin.	1342.03	-2826	-0.0008595	0.0002807	0.0035	0.9		2989.59	2989.59		2.23	Si
SLV 16	ini.	-542.14	1385	-0.0002897	0.0002807	0.0035	0.9		2995.37	2995.37		5.53	Si
SLV 16	fin.	1172.34	-2420	-0.0007232	0.0002807	0.0035	0.9		2989.59	2989.59		2.55	Si
SLD 3	ini.	683.6	-2401	-0.0003774	0.0002807	0.0035	0.9		2989.59	2989.59		4.37	Si
SLD 3	fin.	-780.96	423	-0.0004399	0.0002807	0.0035	0.9		2995.37	2995.37		3.84	Si
SLV 1	ini.	1229.37	-4284	-0.000768	0.0002807	0.0035	0.9		2989.59	2989.59		2.43	Si
SLV 1	fin.	-1461.77	1317	-0.0009588	0.0002807	0.0035	0.9		2995.37	2995.37		2.05	Si
SLV 4	ini.	998.4	-3242	-0.0005924	0.0002807	0.0035	0.9		2989.59	2989.59		2.99	Si
SLV 4	fin.	-1401.31	1394	-0.000907	0.0002807	0.0035	0.9		2995.37	2995.37		2.14	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 3	ini.	1140.11	-6697	0.9	0	548	7137	5660	2295	7684		1.15	Si
SLV 3	fin.	-1631.46	-5335	0.9	0	548	7137	5660	2295	7684		1.44	Si
SLV 4	ini.	998.4	-5886	0.9	0	548	7137	5660	2295	7684		1.31	Si
SLV 4	fin.	-1401.31	-4555	0.9	0	548	7137	5660	2295	7684		1.69	Si
SLD 1	ini.	722.98	-4498	0.9	0	548	7137	5660	2295	7684		1.71	Si
SLD 1	fin.	-706.82	-2224	0.9	0	548	7137	5660	2295	7684		3.46	Si
SLV 14	ini.	-452.88	1904	0.9	0	548	7137	5660	2295	7684		4.04	Si
SLV 14	fin.	1342.03	4875	0.9	0	548	7137	5660	2295	7684		1.58	Si
SLD 3	ini.	683.6	-4231	0.9	0	548	7137	5660	2295	7684		1.82	Si
SLD 3	fin.	-780.96	-2415	0.9	0	548	7137	5660	2295	7684		3.18	Si
SLV 2	ini.	1087.66	-6490	0.9	0	548	7137	5660	2295	7684		1.18	Si
SLV 2	fin.	-1231.62	-4120	0.9	0	548	7137	5660	2295	7684		1.87	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 6	ini.	677.69	-4400	0.9	0	548	7137	5660	2295	7684		1.75	Si
SLV 6	fin.	-173.63	-602	0.9	0	548	7137	5660	2295	7684		12.77	Si
SLV 5	ini.	769.22	-4924	0.9	0	548	7137	5660	2295	7684		1.56	Si
SLV 5	fin.	-322.28	-1105	0.9	0	548	7137	5660	2295	7684		6.95	Si
SLV 16	ini.	-542.14	2508	0.9	0	548	7137	5660	2295	7684		3.06	Si
SLV 16	fin.	1172.34	4440	0.9	0	548	7137	5660	2295	7684		1.73	Si
SLV 1	ini.	1229.37	-7301	0.9	0	548	7137	5660	2295	7684		1.05	Si
SLV 1	fin.	-1461.77	-4899	0.9	0	548	7137	5660	2295	7684		1.57	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.836	SLV 3	Si
V_SLV	1.053	SLV 1	Si
PF_SLU	6.378	SLU 77	Si
V_SLU	1.849	SLU 77	Si

## Trave di accoppiamento 98

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-2.063	5.826	7.53	8.35	0.82	-2.963	5.826	7.53	8.35	0.82	0.9	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fhk	fvk0	fhmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 79	ini.	-44.29	-678	-0.0000263	0.0001872	0.0035	0.82		2460.51	2460.51	No	55.55	Si
SLU 79	fin.	-478.39	-1528	-0.0003244	0.0001872	0.0035	0.82		2460.51	2460.51	No	5.14	Si
SLU 48	ini.	19.42	-345	-0.0000115	0.0001872	0.0035	0.82		2455.37	2455.37	No	126.44	Si
SLU 48	fin.	-474.27	-1377	-0.0003211	0.0001872	0.0035	0.82		2460.51	2460.51	No	5.19	Si
SLU 56	ini.	-14.67	-520	-0.0000087	0.0001872	0.0035	0.82		2460.51	2460.51	No	167.67	Si
SLU 56	fin.	-473.23	-1448	-0.0003203	0.0001872	0.0035	0.82		2460.51	2460.51	No	5.2	Si
SLU 77	ini.	-47.28	-694	-0.0000281	0.0001872	0.0035	0.82		2460.51	2460.51	No	52.04	Si
SLU 77	fin.	-480.12	-1541	-0.0003257	0.0001872	0.0035	0.82		2460.51	2460.51	No	5.12	Si
SLU 71	ini.	-10.2	-502	-0.000006	0.0001872	0.0035	0.82		2460.51	2460.51	No	241.33	Si
SLU 71	fin.	-479.42	-1457	-0.0003252	0.0001872	0.0035	0.82		2460.51	2460.51	No	5.13	Si
SLU 66	ini.	-7.27	-486	-0.0000043	0.0001872	0.0035	0.82		2460.51	2460.51	No	338.41	Si
SLU 66	fin.	-477.44	-1443	-0.0003236	0.0001872	0.0035	0.82		2460.51	2460.51	No	5.15	Si
SLU 70	ini.	-15.28	-524	-0.000009	0.0001872	0.0035	0.82		2460.51	2460.51	No	161.02	Si
SLU 70	fin.	-473.87	-1452	-0.0003208	0.0001872	0.0035	0.82		2460.51	2460.51	No	5.19	Si
SLU 69	ini.	-13.18	-519	-0.0000078	0.0001872	0.0035	0.82		2460.51	2460.51	No	186.65	Si
SLU 69	fin.	-481.16	-1470	-0.0003265	0.0001872	0.0035	0.82		2460.51	2460.51	No	5.11	Si
SLU 83	ini.	-52.99	-720	-0.0000316	0.0001872	0.0035	0.82		2460.51	2460.51	No	46.43	Si
SLU 83	fin.	-474.22	-1531	-0.0003211	0.0001872	0.0035	0.82		2460.51	2460.51	No	5.19	Si
SLU 74	ini.	-41.37	-661	-0.0000246	0.0001872	0.0035	0.82		2460.51	2460.51	No	59.48	Si
SLU 74	fin.	-476.4	-1514	-0.0003228	0.0001872	0.0035	0.82		2460.51	2460.51	No	5.16	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 83	ini.	-52.99	1959	0.82	0	303	6502	3438	2091	5529	No	2.82	Si
SLU 83	fin.	-474.22	-2720	0.82	0	303	6502	3438	2091	5529	No	2.03	Si
SLU 79	ini.	-44.29	1863	0.82	0	303	6502	3438	2091	5529	No	2.97	Si
SLU 79	fin.	-478.39	-2713	0.82	0	303	6502	3438	2091	5529	No	2.04	Si
SLU 74	ini.	-41.37	1831	0.82	0	303	6502	3438	2091	5529	No	3.02	Si
SLU 74	fin.	-476.4	-2696	0.82	0	303	6502	3438	2091	5529	No	2.05	Si
SLU 77	ini.	-47.28	1895	0.82	0	303	6502	3438	2091	5529	No	2.92	Si
SLU 77	fin.	-480.12	-2728	0.82	0	303	6502	3438	2091	5529	No	2.03	Si
SLU 80	ini.	-46.39	1875	0.82	0	303	6502	3438	2091	5529	No	2.95	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 80	fin.	-471.1	-2687	0.82	0	303	6502	3438	2091	5529	No	2.06	Si
SLU 75	ini.	-43.46	1843	0.82	0	303	6502	3438	2091	5529	No	3	Si
SLU 75	fin.	-469.11	-2669	0.82	0	303	6502	3438	2091	5529	No	2.07	Si
SLU 81	ini.	-47.08	1894	0.82	0	303	6502	3438	2091	5529	No	2.92	Si
SLU 81	fin.	-470.5	-2688	0.82	0	303	6502	3438	2091	5529	No	2.06	Si
SLU 82	ini.	-49.18	1907	0.82	0	303	6502	3438	2091	5529	No	2.9	Si
SLU 82	fin.	-463.21	-2662	0.82	0	303	6502	3438	2091	5529	No	2.08	Si
SLU 78	ini.	-49.38	1907	0.82	0	303	6502	3438	2091	5529	No	2.9	Si
SLU 78	fin.	-472.84	-2701	0.82	0	303	6502	3438	2091	5529	No	2.05	Si
SLU 84	ini.	-55.09	1971	0.82	0	303	6502	3438	2091	5529	No	2.81	Si
SLU 84	fin.	-466.94	-2694	0.82	0	303	6502	3438	2091	5529	No	2.05	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 3	ini.	758.21	2480	-0.0005317	0.0002807	0.0035	0.82		2482.11	2482.11		3.27	Si
SLV 3	fin.	-1297.06	-2091	-0.001048	0.0002807	0.0035	0.82		2487.45	2487.45		1.92	Si
SLD 3	ini.	323.73	864	-0.0002028	0.0002807	0.0035	0.82		2482.11	2482.11		7.67	Si
SLD 3	fin.	-760.6	-1508	-0.0005324	0.0002807	0.0035	0.82		2487.45	2487.45		3.27	Si
SLV 6	ini.	44.46	-638	-0.0000264	0.0002807	0.0035	0.82		2482.11	2482.11		55.83	Si
SLV 6	fin.	-747.58	-2532	-0.0005214	0.0002807	0.0035	0.82		2487.45	2487.45		3.33	Si
SLD 1	ini.	294.22	644	-0.0001832	0.0002807	0.0035	0.82		2482.11	2482.11		8.44	Si
SLD 1	fin.	-805.9	-1812	-0.0005712	0.0002807	0.0035	0.82		2487.45	2487.45		3.09	Si
SLD 2	ini.	239.94	439	-0.0001477	0.0002807	0.0035	0.82		2482.11	2482.11		10.34	Si
SLD 2	fin.	-733.69	-1716	-0.0005098	0.0002807	0.0035	0.82		2487.45	2487.45		3.39	Si
SLV 1	ini.	690.89	1977	-0.0004755	0.0002807	0.0035	0.82		2482.11	2482.11		3.59	Si
SLV 1	fin.	-1398.96	-2782	-0.001162	0.0002807	0.0035	0.82		2487.45	2487.45		1.78	Si
SLV 14	ini.	-760.86	-3175	-0.0005326	0.0002807	0.0035	0.82		2487.45	2487.45		3.27	Si
SLV 14	fin.	574.56	-67	-0.000383	0.0002807	0.0035	0.82		2482.11	2482.11		4.32	Si
SLV 2	ini.	564.48	1500	-0.0003752	0.0002807	0.0035	0.82		2482.11	2482.11		4.4	Si
SLV 2	fin.	-1230.79	-2558	-0.000977	0.0002807	0.0035	0.82		2487.45	2487.45		2.02	Si
SLV 4	ini.	631.79	2003	-0.0004278	0.0002807	0.0035	0.82		2482.11	2482.11		3.93	Si
SLV 4	fin.	-1128.89	-1866	-0.0008722	0.0002807	0.0035	0.82		2487.45	2487.45		2.2	Si
SLV 5	ini.	126.11	-330	-0.000076	0.0002807	0.0035	0.82		2482.11	2482.11		19.68	Si
SLV 5	fin.	-856.2	-2677	-0.0006151	0.0002807	0.0035	0.82		2487.45	2487.45		2.91	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 1	ini.	690.89	-2682	0.82	0	455	6502	5156	2091	6957		2.59	Si
SLV 1	fin.	-1398.96	-5770	0.82	0	455	6502	5156	2091	6957		1.21	Si
SLV 14	ini.	-760.86	5475	0.82	0	455	6502	5156	2091	6957		1.27	Si
SLV 14	fin.	574.56	1299	0.82	0	455	6502	5156	2091	6957		5.36	Si
SLV 4	ini.	631.79	-2599	0.82	0	455	6502	5156	2091	6957		2.68	Si
SLV 4	fin.	-1128.89	-4615	0.82	0	455	6502	5156	2091	6957		1.51	Si
SLV 5	ini.	126.11	803	0.82	0	455	6502	5156	2091	6957		8.66	Si
SLV 5	fin.	-856.2	-4029	0.82	0	455	6502	5156	2091	6957		1.73	Si
SLV 13	ini.	-634.44	4742	0.82	0	455	6502	5156	2091	6957		1.47	Si
SLV 13	fin.	406.39	681	0.82	0	455	6502	5156	2091	6957		10.22	Si
SLV 16	ini.	-693.54	4826	0.82	0	455	6502	5156	2091	6957		1.44	Si
SLV 16	fin.	676.46	1836	0.82	0	455	6502	5156	2091	6957		3.79	Si
SLV 3	ini.	758.21	-3331	0.82	0	455	6502	5156	2091	6957		2.09	Si
SLV 3	fin.	-1297.06	-5233	0.82	0	455	6502	5156	2091	6957		1.33	Si
SLV 15	ini.	-567.13	4093	0.82	0	455	6502	5156	2091	6957		1.7	Si
SLV 15	fin.	508.29	1218	0.82	0	455	6502	5156	2091	6957		5.71	Si
SLV 2	ini.	564.48	-1950	0.82	0	455	6502	5156	2091	6957		3.57	Si
SLV 2	fin.	-1230.79	-5152	0.82	0	455	6502	5156	2091	6957		1.35	Si
SLV 6	ini.	44.46	1276	0.82	0	455	6502	5156	2091	6957		5.45	Si
SLV 6	fin.	-747.58	-3630	0.82	0	455	6502	5156	2091	6957		1.92	Si

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.778	SLV 1	Si
V_SLV	1.206	SLV 1	Si
PF_SLU	5.114	SLU 69	Si
V_SLU	2.027	SLU 77	Si

#### Trave di accoppiamento 99

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

##### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-22.713	5.826	8.35	9.25	0.9	-21.813	5.826	8.35	9.25	0.9	0.9	0.28	3500

##### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC





Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	ε <sub>f,d</sub>	γ <sub>f,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 49	ini.	306.83	-1356	-0.0001603	0.0001872	0.0035	0.9		2959	2959	No	9.64	Si
SLU 49	fin.	-112.75	-578	-0.0000563	0.0001872	0.0035	0.9	2964.67	2964.67	No	26.29	Si	
SLU 44	ini.	301.23	-1292	-0.0001572	0.0001872	0.0035	0.9	2959	2959	No	9.82	Si	
SLU 44	fin.	-142.54	-463	-0.0000716	0.0001872	0.0035	0.9	2964.67	2964.67	No	20.8	Si	
SLU 48	ini.	310.72	-1377	-0.0001625	0.0001872	0.0035	0.9	2959	2959	No	9.52	Si	
SLU 48	fin.	-111.23	-592	-0.0000555	0.0001872	0.0035	0.9	2964.67	2964.67	No	26.65	Si	
SLU 50	ini.	310.67	-1370	-0.0001625	0.0001872	0.0035	0.9	2959	2959	No	9.52	Si	
SLU 50	fin.	-116.03	-576	-0.0000579	0.0001872	0.0035	0.9	2964.67	2964.67	No	25.55	Si	
SLU 43	ini.	307.7	-1326	-0.0001608	0.0001872	0.0035	0.9	2959	2959	No	9.62	Si	
SLU 43	fin.	-139.99	-487	-0.0000703	0.0001872	0.0035	0.9	2964.67	2964.67	No	21.18	Si	
SLU 45	ini.	309.23	-1354	-0.0001617	0.0001872	0.0035	0.9	2959	2959	No	9.57	Si	
SLU 45	fin.	-123.21	-548	-0.0000616	0.0001872	0.0035	0.9	2964.67	2964.67	No	24.06	Si	
SLU 46	ini.	305.35	-1334	-0.0001595	0.0001872	0.0035	0.9	2959	2959	No	9.69	Si	
SLU 46	fin.	-124.74	-533	-0.0000624	0.0001872	0.0035	0.9	2964.67	2964.67	No	23.77	Si	
SLU 56	ini.	300.45	-1355	-0.0001567	0.0001872	0.0035	0.9	2959	2959	No	9.85	Si	
SLU 56	fin.	-77.82	-679	-0.0000386	0.0001872	0.0035	0.9	2964.67	2964.67	No	38.1	Si	
SLU 51	ini.	306.79	-1350	-0.0001603	0.0001872	0.0035	0.9	2959	2959	No	9.65	Si	
SLU 51	fin.	-117.55	-561	-0.0000587	0.0001872	0.0035	0.9	2964.67	2964.67	No	25.22	Si	
SLU 47	ini.	302.71	-1314	-0.000158	0.0001872	0.0035	0.9	2959	2959	No	9.78	Si	
SLU 47	fin.	-130.55	-507	-0.0000654	0.0001872	0.0035	0.9	2964.67	2964.67	No	22.71	Si	

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 69	ini.	300.44	-2080	0.9	0	365	7137	3773	2295	6068	No	2.92	Si
SLU 69	fin.	-68.85	-40	0.9	0	365	7137	3773	2295	6068	No	152.71	Si
SLU 50	ini.	310.67	-2137	0.9	0	365	7137	3773	2295	6068	No	2.84	Si
SLU 50	fin.	-116.03	-219	0.9	0	365	7137	3773	2295	6068	No	27.67	Si
SLU 49	ini.	306.83	-2131	0.9	0	365	7137	3773	2295	6068	No	2.85	Si
SLU 49	fin.	-112.75	-197	0.9	0	365	7137	3773	2295	6068	No	30.82	Si
SLU 45	ini.	309.23	-2109	0.9	0	365	7137	3773	2295	6068	No	2.88	Si
SLU 45	fin.	-123.21	-258	0.9	0	365	7137	3773	2295	6068	No	23.5	Si
SLU 71	ini.	300.39	-2065	0.9	0	365	7137	3773	2295	6068	No	2.94	Si
SLU 71	fin.	-73.65	-66	0.9	0	365	7137	3773	2295	6068	No	92.03	Si
SLU 47	ini.	302.71	-2059	0.9	0	365	7137	3773	2295	6068	No	2.95	Si
SLU 47	fin.	-130.55	-291	0.9	0	365	7137	3773	2295	6068	No	20.87	Si
SLU 51	ini.	306.79	-2116	0.9	0	365	7137	3773	2295	6068	No	2.87	Si
SLU 51	fin.	-117.55	-223	0.9	0	365	7137	3773	2295	6068	No	27.2	Si
SLU 46	ini.	305.35	-2088	0.9	0	365	7137	3773	2295	6068	No	2.91	Si
SLU 46	fin.	-124.74	-262	0.9	0	365	7137	3773	2295	6068	No	23.16	Si
SLU 70	ini.	296.55	-2059	0.9	0	365	7137	3773	2295	6068	No	2.95	Si
SLU 70	fin.	-70.37	-44	0.9	0	365	7137	3773	2295	6068	No	139.47	Si
SLU 48	ini.	310.72	-2152	0.9	0	365	7137	3773	2295	6068	No	2.82	Si
SLU 48	fin.	-111.23	-193	0.9	0	365	7137	3773	2295	6068	No	31.42	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 14	ini.	804.64	-2829	-0.0004567	0.0002807	0.0035	0.9		2989.59	2989.59		3.72	Si
SLV 14	fin.	-877.89	548	-0.0005057	0.0002807	0.0035	0.9	2995.37	2995.37			3.41	Si
SLV 1	ini.	-179.19	-15	-0.0000898	0.0002807	0.0035	0.9	2995.37	2995.37			16.72	Si
SLV 1	fin.	732.32	-1970	-0.0004088	0.0002807	0.0035	0.9	2989.59	2989.59			4.08	Si
SLV 3	ini.	-348.42	810	-0.0001795	0.0002807	0.0035	0.9	2995.37	2995.37			8.6	Si
SLV 3	fin.	728.17	-1476	-0.0004061	0.0002807	0.0035	0.9	2989.59	2989.59			4.11	Si
SLV 10	ini.	669.97	-2839	-0.0003688	0.0002807	0.0035	0.9	2989.59	2989.59			4.46	Si
SLV 10	fin.	-332.95	-869	-0.0001711	0.0002807	0.0035	0.9	2995.37	2995.37			9	Si
SLV 2	ini.	-108.4	-199	-0.0000538	0.0002807	0.0035	0.9	2995.37	2995.37			27.63	Si
SLV 2	fin.	596.6	-1734	-0.0003231	0.0002807	0.0035	0.9	2989.59	2989.59			5.01	Si
SLV 15	ini.	564.62	-1820	-0.0003037	0.0002807	0.0035	0.9	2989.59	2989.59			5.29	Si
SLV 15	fin.	-746.31	807	-0.0004171	0.0002807	0.0035	0.9	2995.37	2995.37			4.01	Si
SLV 9	ini.	624.25	-2720	-0.0003401	0.0002807	0.0035	0.9	2989.59	2989.59			4.79	Si
SLV 9	fin.	-245.29	-1022	-0.0001242	0.0002807	0.0035	0.9	2995.37	2995.37			12.21	Si
SLV 4	ini.	-277.62	626	-0.0001413	0.0002807	0.0035	0.9	2995.37	2995.37			10.79	Si
SLV 4	fin.	592.45	-1240	-0.0003206	0.0002807	0.0035	0.9	2989.59	2989.59			5.05	Si
SLV 13	ini.	733.84	-2646	-0.0004098	0.0002807	0.0035	0.9	2989.59	2989.59			4.07	Si
SLV 13	fin.	-742.16	313	-0.0004144	0.0002807	0.0035	0.9	2995.37	2995.37			4.04	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 16	ini.	635.42	-2004	-0.0003471	0.0002807	0.0035	0.9		2989.59	2989.59		4.7	Si
SLV 16	fin.	-882.04	1043	-0.0005085	0.0002807	0.0035	0.9		2995.37	2995.37		3.4	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 9	ini.	624.25	-4262	0.9	0	548	7137	5660	2295	7684		1.8	Si
SLV 9	fin.	-245.29	-588	0.9	0	548	7137	5660	2295	7684		13.07	Si
SLV 15	ini.	564.62	-3119	0.9	0	548	7137	5660	2295	7684		2.46	Si
SLV 15	fin.	-746.31	-2742	0.9	0	548	7137	5660	2295	7684		2.8	Si
SLV 6	ini.	396.06	-3030	0.9	0	548	7137	5660	2295	7684		2.54	Si
SLV 6	fin.	109.4	752	0.9	0	548	7137	5660	2295	7684		10.22	Si
SLV 14	ini.	804.64	-4746	0.9	0	548	7137	5660	2295	7684		1.62	Si
SLV 14	fin.	-877.89	-3088	0.9	0	548	7137	5660	2295	7684		2.49	Si
SLV 16	ini.	635.42	-3463	0.9	0	548	7137	5660	2295	7684		2.22	Si
SLV 16	fin.	-882.04	-3230	0.9	0	548	7137	5660	2295	7684		2.38	Si
SLD 10	ini.	421.16	-2813	0.9	0	548	7137	5660	2295	7684		2.73	Si
SLD 10	fin.	-185.66	-474	0.9	0	548	7137	5660	2295	7684		16.22	Si
SLV 1	ini.	-179.19	447	0.9	0	548	7137	5660	2295	7684		17.21	Si
SLV 1	fin.	732.32	2919	0.9	0	548	7137	5660	2295	7684		2.63	Si
SLV 13	ini.	733.84	-4401	0.9	0	548	7137	5660	2295	7684		1.75	Si
SLV 13	fin.	-742.16	-2599	0.9	0	548	7137	5660	2295	7684		2.96	Si
SLV 10	ini.	669.97	-4485	0.9	0	548	7137	5660	2295	7684		1.71	Si
SLV 10	fin.	-332.95	-904	0.9	0	548	7137	5660	2295	7684		8.5	Si
SLD 14	ini.	476.03	-2903	0.9	0	548	7137	5660	2295	7684		2.65	Si
SLD 14	fin.	-418.45	-1409	0.9	0	548	7137	5660	2295	7684		5.45	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.396	SLV 16	Si
V_SLV	1.619	SLV 14	Si
PF_SLU	9.523	SLU 48	Si
V_SLU	2.82	SLU 48	Si

## Trave di accoppiamento 100

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-22.713	5.826	11.05	11.87	0.82	-21.813	5.826	11.05	11.87	0.82	0.9	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fnk	fvk0	fmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	elim,conv / e,CNR DT-200							CRM / Fibrenet?			
									αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 51	ini.	25.54	-181	-0.0000151	0.0001872	0.0035	0.82		2455.37	2455.37	No	96.13	Si
SLU 51	fin.	-249.05	-1094	-0.0001562	0.0001872	0.0035	0.82		2460.51	2460.51	No	9.88	Si
SLU 46	ini.	37.95	-143	-0.0000226	0.0001872	0.0035	0.82		2455.37	2455.37	No	64.69	Si
SLU 46	fin.	-250.33	-1080	-0.000157	0.0001872	0.0035	0.82		2460.51	2460.51	No	9.83	Si
SLU 53	ini.	-2.21	-260	-0.0000013	0.0001872	0.0035	0.82		2460.51	2460.51	No	1110.99	Si
SLU 53	fin.	-245.46	-1107	-0.0001537	0.0001872	0.0035	0.82		2460.51	2460.51	No	10.02	Si
SLU 44	ini.	60.77	-67	-0.0000363	0.0001872	0.0035	0.82		2455.37	2455.37	No	40.4	Si
SLU 44	fin.	-248.5	-1040	-0.0001558	0.0001872	0.0035	0.82		2460.51	2460.51	No	9.9	Si
SLU 49	ini.	20.9	-196	-0.0000124	0.0001872	0.0035	0.82		2455.37	2455.37	No	117.5	Si
SLU 49	fin.	-249.57	-1103	-0.0001565	0.0001872	0.0035	0.82		2460.51	2460.51	No	9.86	Si
SLU 47	ini.	43.72	-120	-0.000026	0.0001872	0.0035	0.82		2455.37	2455.37	No	56.16	Si
SLU 47	fin.	-247.74	-1062	-0.0001553	0.0001872	0.0035	0.82		2460.51	2460.51	No	9.93	Si
SLU 43	ini.	57.97	-85	-0.0000346	0.0001872	0.0035	0.82		2455.37	2455.37	No	42.35	Si
SLU 43	fin.	-253.69	-1064	-0.0001593	0.0001872	0.0035	0.82		2460.51	2460.51	No	9.7	Si
SLU 48	ini.	19.22	-207	-0.0000114	0.0001872	0.0035	0.82		2455.37	2455.37	No	127.77	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 48	fin.	-252.68	-1117	-0.0001586	0.0001872	0.0035	0.82		2460.51	2460.51	No	9.74	Si
SLU 50	ini.	23.86	-192	-0.0000141	0.0001872	0.0035	0.82		2455.37	2455.37	No	102.9	Si
SLU 50	fin.	-252.17	-1109	-0.0001583	0.0001872	0.0035	0.82		2460.51	2460.51	No	9.76	Si
SLU 45	ini.	36.27	-154	-0.0000216	0.0001872	0.0035	0.82		2455.37	2455.37	No	67.69	Si
SLU 45	fin.	-253.44	-1095	-0.0001591	0.0001872	0.0035	0.82		2460.51	2460.51	No	9.71	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 69	ini.	-30.03	825	0.82	0	303	6502	3438	2091	5529	No	6.7	Si
SLU 69	fin.	-243.12	-2360	0.82	0	303	6502	3438	2091	5529	No	2.34	Si
SLU 78	ini.	-66.84	1052	0.82	0	303	6502	3438	2091	5529	No	5.26	Si
SLU 78	fin.	-232.03	-2414	0.82	0	303	6502	3438	2091	5529	No	2.29	Si
SLU 83	ini.	-63.31	1035	0.82	0	303	6502	3438	2091	5529	No	5.34	Si
SLU 83	fin.	-231.96	-2398	0.82	0	303	6502	3438	2091	5529	No	2.31	Si
SLU 81	ini.	-46.25	943	0.82	0	303	6502	3438	2091	5529	No	5.87	Si
SLU 81	fin.	-232.72	-2358	0.82	0	303	6502	3438	2091	5529	No	2.34	Si
SLU 75	ini.	-49.78	960	0.82	0	303	6502	3438	2091	5529	No	5.76	Si
SLU 75	fin.	-232.79	-2374	0.82	0	303	6502	3438	2091	5529	No	2.33	Si
SLU 84	ini.	-61.63	1030	0.82	0	303	6502	3438	2091	5529	No	5.37	Si
SLU 84	fin.	-228.85	-2386	0.82	0	303	6502	3438	2091	5529	No	2.32	Si
SLU 80	ini.	-62.19	1023	0.82	0	303	6502	3438	2091	5529	No	5.4	Si
SLU 80	fin.	-231.51	-2397	0.82	0	303	6502	3438	2091	5529	No	2.31	Si
SLU 77	ini.	-68.52	1056	0.82	0	303	6502	3438	2091	5529	No	5.23	Si
SLU 77	fin.	-235.14	-2426	0.82	0	303	6502	3438	2091	5529	No	2.28	Si
SLU 79	ini.	-63.87	1027	0.82	0	303	6502	3438	2091	5529	No	5.38	Si
SLU 79	fin.	-234.63	-2409	0.82	0	303	6502	3438	2091	5529	No	2.29	Si
SLU 74	ini.	-51.46	964	0.82	0	303	6502	3438	2091	5529	No	5.73	Si
SLU 74	fin.	-235.9	-2386	0.82	0	303	6502	3438	2091	5529	No	2.32	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 3	ini.	-429.23	-962	-0.0002749	0.0002807	0.0035	0.82		2487.45	2487.45		5.8	Si
SLV 3	fin.	230.05	388	-0.0001414	0.0002807	0.0035	0.82		2482.11	2482.11		10.79	Si
SLV 15	ini.	378.63	760	-0.0002401	0.0002807	0.0035	0.82		2482.11	2482.11		6.56	Si
SLV 15	fin.	-382.96	-1275	-0.0002426	0.0002807	0.0035	0.82		2487.45	2487.45		6.5	Si
SLV 6	ini.	-129.16	-968	-0.0000777	0.0002807	0.0035	0.82		2487.45	2487.45		19.26	Si
SLV 6	fin.	-394.68	-1715	-0.0002507	0.0002807	0.0035	0.82		2487.45	2487.45		6.3	Si
SLD 14	ini.	193.14	165	-0.0001178	0.0002807	0.0035	0.82		2482.11	2482.11		12.85	Si
SLD 14	fin.	-367.64	-1362	-0.0002321	0.0002807	0.0035	0.82		2487.45	2487.45		6.77	Si
SLV 9	ini.	55.2	-597	-0.0000328	0.0002807	0.0035	0.82		2482.11	2482.11		44.97	Si
SLV 9	fin.	-544.21	-2133	-0.0003589	0.0002807	0.0035	0.82		2487.45	2487.45		4.57	Si
SLV 14	ini.	442.31	619	-0.0002848	0.0002807	0.0035	0.82		2482.11	2482.11		5.61	Si
SLV 14	fin.	-605.27	-2056	-0.0004059	0.0002807	0.0035	0.82		2487.45	2487.45		4.11	Si
SLV 1	ini.	-455.34	-1329	-0.0002935	0.0002807	0.0035	0.82		2487.45	2487.45		5.46	Si
SLV 1	fin.	60.95	-266	-0.0000363	0.0002807	0.0035	0.82		2482.11	2482.11		40.73	Si
SLV 13	ini.	352.51	393	-0.0002223	0.0002807	0.0035	0.82		2482.11	2482.11		7.04	Si
SLV 13	fin.	-552.06	-1929	-0.0003649	0.0002807	0.0035	0.82		2487.45	2487.45		4.51	Si
SLV 16	ini.	468.43	985	-0.0003036	0.0002807	0.0035	0.82		2482.11	2482.11		5.3	Si
SLV 16	fin.	-436.17	-1401	-0.0002798	0.0002807	0.0035	0.82		2487.45	2487.45		5.7	Si
SLV 10	ini.	113.19	-452	-0.000068	0.0002807	0.0035	0.82		2482.11	2482.11		21.93	Si
SLV 10	fin.	-578.58	-2214	-0.0003852	0.0002807	0.0035	0.82		2487.45	2487.45		4.3	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 6	ini.	-129.16	895	0.82	0	455	6502	5156	2091	6957		7.78	Si
SLV 6	fin.	-394.68	-2941	0.82	0	455	6502	5156	2091	6957		2.37	Si
SLV 9	ini.	55.2	205	0.82	0	455	6502	5156	2091	6957		33.88	Si
SLV 9	fin.	-544.21	-3639	0.82	0	455	6502	5156	2091	6957		1.91	Si
SLV 16	ini.	468.43	-1304	0.82	0	455	6502	5156	2091	6957		5.33	Si
SLV 16	fin.	-436.17	-2860	0.82	0	455	6502	5156	2091	6957		2.43	Si
SLV 5	ini.	-187.16	1143	0.82	0	455	6502	5156	2091	6957		6.09	Si
SLV 5	fin.	-360.31	-2770	0.82	0	455	6502	5156	2091	6957		2.51	Si
SLD 14	ini.	193.14	-268	0.82	0	455	6502	5156	2091	6957		25.98	Si
SLD 14	fin.	-367.64	-2626	0.82	0	455	6502	5156	2091	6957		2.65	Si
SLD 10	ini.	52.18	252	0.82	0	455	6502	5156	2091	6957		27.6	Si
SLD 10	fin.	-358.8	-2650	0.82	0	455	6502	5156	2091	6957		2.63	Si
SLV 13	ini.	352.51	-874	0.82	0	455	6502	5156	2091	6957		7.96	Si
SLV 13	fin.	-552.06	-3523	0.82	0	455	6502	5156	2091	6957		1.97	Si
SLV 15	ini.	378.63	-919	0.82	0	455	6502	5156	2091	6957		7.57	Si
SLV 15	fin.	-382.96	-2594	0.82	0	455	6502	5156	2091	6957		2.68	Si
SLV 10	ini.	113.19	-43	0.82	0	455	6502	5156	2091	6957		160.68	Si
SLV 10	fin.	-578.58	-3810	0.82	0	455	6502	5156	2091	6957		1.83	Si
SLV 14	ini.	442.31	-1259	0.82	0	455	6502	5156	2091	6957		5.53	Si
SLV 14	fin.	-605.27	-3788	0.82	0	455	6502	5156	2091	6957		1.84	Si

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	4.11	SLV 14	Si
V_SLV	1.826	SLV 10	Si
PF_SLU	9.699	SLU 43	Si
V_SLU	2.279	SLU 77	Si



## Trave di accoppiamento 101

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-21.593	-3.314	8.35	9.25	0.9	-22.493	-3.314	8.35	9.25	0.9	0.9	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	ε <sub>f,d</sub>	γ <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em <sub>-</sub>	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 73	ini.	152.59	-1159	-0.0000769	0.0001872	0.0035	0.9		2959	2959	No	19.39	Si
SLU 73	fin.	344.61	-1564	-0.0001818	0.0001872	0.0035	0.9		2959	2959	No	8.59	Si
SLU 83	ini.	175.91	-1257	-0.0000891	0.0001872	0.0035	0.9		2959	2959	No	16.82	Si
SLU 83	fin.	342.02	-1606	-0.0001803	0.0001872	0.0035	0.9		2959	2959	No	8.65	Si
SLU 78	ini.	187.18	-1303	-0.0000951	0.0001872	0.0035	0.9		2959	2959	No	15.81	Si
SLU 78	fin.	340.89	-1622	-0.0001797	0.0001872	0.0035	0.9		2959	2959	No	8.68	Si
SLU 84	ini.	176.59	-1262	-0.0000895	0.0001872	0.0035	0.9		2959	2959	No	16.76	Si
SLU 84	fin.	344.16	-1615	-0.0001815	0.0001872	0.0035	0.9		2959	2959	No	8.6	Si
SLU 76	ini.	170.44	-1228	-0.0000863	0.0001872	0.0035	0.9		2959	2959	No	17.36	Si
SLU 76	fin.	338.84	-1581	-0.0001785	0.0001872	0.0035	0.9		2959	2959	No	8.73	Si
SLU 82	ini.	158.74	-1193	-0.0000801	0.0001872	0.0035	0.9		2959	2959	No	18.64	Si
SLU 82	fin.	349.93	-1598	-0.0001849	0.0001872	0.0035	0.9		2959	2959	No	8.46	Si
SLU 77	ini.	186.5	-1298	-0.0000947	0.0001872	0.0035	0.9		2959	2959	No	15.87	Si
SLU 77	fin.	338.75	-1613	-0.0001784	0.0001872	0.0035	0.9		2959	2959	No	8.74	Si
SLU 81	ini.	158.06	-1187	-0.0000798	0.0001872	0.0035	0.9		2959	2959	No	18.72	Si
SLU 81	fin.	347.8	-1589	-0.0001836	0.0001872	0.0035	0.9		2959	2959	No	8.51	Si
SLU 75	ini.	169.33	-1234	-0.0000857	0.0001872	0.0035	0.9		2959	2959	No	17.48	Si
SLU 75	fin.	346.66	-1605	-0.000183	0.0001872	0.0035	0.9		2959	2959	No	8.54	Si
SLU 74	ini.	168.64	-1229	-0.0000853	0.0001872	0.0035	0.9		2959	2959	No	17.55	Si
SLU 74	fin.	344.52	-1596	-0.0001818	0.0001872	0.0035	0.9		2959	2959	No	8.59	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	f <sub>vd</sub>	V <sub>t</sub>	V <sub>t,f</sub>	V <sub>t,c</sub>	V <sub>t,c int.</sub>	V <sub>t,R</sub>	incremento > 50%	c.s.	Verifica
SLU 82	ini.	158.74	-1131	0.9	0	365	7137	3773	2295	6068	No	5.36	Si
SLU 82	fin.	349.93	1362	0.9	0	365	7137	3773	2295	6068	No	4.45	Si
SLU 75	ini.	169.33	-1215	0.9	0	365	7137	3773	2295	6068	No	5	Si
SLU 75	fin.	346.66	1368	0.9	0	365	7137	3773	2295	6068	No	4.43	Si
SLU 78	ini.	187.18	-1324	0.9	0	365	7137	3773	2295	6068	No	4.58	Si
SLU 78	fin.	340.89	1356	0.9	0	365	7137	3773	2295	6068	No	4.47	Si
SLU 81	ini.	158.06	-1128	0.9	0	365	7137	3773	2295	6068	No	5.38	Si
SLU 81	fin.	347.8	1353	0.9	0	365	7137	3773	2295	6068	No	4.49	Si
SLU 83	ini.	175.91	-1237	0.9	0	365	7137	3773	2295	6068	No	4.91	Si
SLU 83	fin.	342.02	1340	0.9	0	365	7137	3773	2295	6068	No	4.53	Si
SLU 76	ini.	170.44	-1210	0.9	0	365	7137	3773	2295	6068	No	5.01	Si
SLU 76	fin.	338.84	1333	0.9	0	365	7137	3773	2295	6068	No	4.55	Si
SLU 84	ini.	176.59	-1240	0.9	0	365	7137	3773	2295	6068	No	4.89	Si
SLU 84	fin.	344.16	1350	0.9	0	365	7137	3773	2295	6068	No	4.49	Si
SLU 77	ini.	186.5	-1320	0.9	0	365	7137	3773	2295	6068	No	4.6	Si
SLU 77	fin.	338.75	1347	0.9	0	365	7137	3773	2295	6068	No	4.51	Si
SLU 74	ini.	168.64	-1211	0.9	0	365	7137	3773	2295	6068	No	5.01	Si
SLU 74	fin.	344.52	1359	0.9	0	365	7137	3773	2295	6068	No	4.47	Si
SLU 73	ini.	152.59	-1101	0.9	0	365	7137	3773	2295	6068	No	5.51	Si
SLU 73	fin.	344.61	1345	0.9	0	365	7137	3773	2295	6068	No	4.51	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-554.01	701	-0.0002967	0.0002807	0.0035	0.9		2995.37	2995.37		5.41	Si
SLV 15	fin.	1229.53	-2978	-0.0007682	0.0002807	0.0035	0.9		2989.59	2989.59		2.43	Si
SLV 1	ini.	658.3	-2044	-0.0003614	0.0002807	0.0035	0.9		2989.59	2989.59		4.54	Si
SLV 1	fin.	-611.84	573	-0.0003318	0.0002807	0.0035	0.9		2995.37	2995.37		4.9	Si
SLV 4	ini.	692.28	-2527	-0.000383	0.0002807	0.0035	0.9		2989.59	2989.59		4.32	Si
SLV 4	fin.	-432.93	-135	-0.0002264	0.0002807	0.0035	0.9		2995.37	2995.37		6.92	Si
SLV 2	ini.	767.91	-2344	-0.0004322	0.0002807	0.0035	0.9		2989.59	2989.59		3.89	Si
SLV 2	fin.	-736.75	755	-0.0004109	0.0002807	0.0035	0.9		2995.37	2995.37		4.07	Si
SLV 12	ini.	-154.21	-784	-0.000077	0.0002807	0.0035	0.9		2995.37	2995.37		19.42	Si
SLV 12	fin.	943.04	-2936	-0.0005525	0.0002807	0.0035	0.9		2989.59	2989.59		3.17	Si
SLV 16	ini.	-444.4	402	-0.0002329	0.0002807	0.0035	0.9		2995.37	2995.37		6.74	Si
SLV 16	fin.	1104.62	-2797	-0.0006713	0.0002807	0.0035	0.9		2989.59	2989.59		2.71	Si
SLD 15	ini.	-176.2	-172	-0.0000883	0.0002807	0.0035	0.9		2995.37	2995.37		17	Si
SLD 15	fin.	668.93	-1917	-0.0003681	0.0002807	0.0035	0.9		2989.59	2989.59		4.47	Si
SLV 13	ini.	-478.37	884	-0.0002524	0.0002807	0.0035	0.9		2995.37	2995.37		6.26	Si
SLV 13	fin.	925.71	-2089	-0.0005403	0.0002807	0.0035	0.9		2989.59	2989.59		3.23	Si
SLV 14	ini.	-368.76	585	-0.0001907	0.0002807	0.0035	0.9		2995.37	2995.37		8.12	Si
SLV 14	fin.	800.81	-1907	-0.0004542	0.0002807	0.0035	0.9		2989.59	2989.59		3.73	Si
SLV 11	ini.	-225	-590	-0.0001136	0.0002807	0.0035	0.9		2995.37	2995.37		13.31	Si
SLV 11	fin.	1023.71	-3053	-0.0006109	0.0002807	0.0035	0.9		2989.59	2989.59		2.92	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 16	ini.	-444.4	2073	0.9	0	548	7137	5660	2295	7684		3.71	Si
SLV 16	fin.	1104.62	4263	0.9	0	548	7137	5660	2295	7684		1.8	Si
SLV 1	ini.	658.3	-3659	0.9	0	548	7137	5660	2295	7684		2.1	Si
SLV 1	fin.	-611.84	-2337	0.9	0	548	7137	5660	2295	7684		3.29	Si
SLV 15	ini.	-554.01	2606	0.9	0	548	7137	5660	2295	7684		2.95	Si
SLV 15	fin.	1229.53	4723	0.9	0	548	7137	5660	2295	7684		1.63	Si
SLV 2	ini.	767.91	-4193	0.9	0	548	7137	5660	2295	7684		1.83	Si
SLV 2	fin.	-736.75	-2798	0.9	0	548	7137	5660	2295	7684		2.75	Si
SLV 4	ini.	692.28	-3979	0.9	0	548	7137	5660	2295	7684		1.93	Si
SLV 4	fin.	-432.93	-1526	0.9	0	548	7137	5660	2295	7684		5.04	Si
SLV 12	ini.	-154.21	298	0.9	0	548	7137	5660	2295	7684		25.78	Si
SLV 12	fin.	943.04	3802	0.9	0	548	7137	5660	2295	7684		2.02	Si
SLV 11	ini.	-225	643	0.9	0	548	7137	5660	2295	7684		11.96	Si
SLV 11	fin.	1023.71	4100	0.9	0	548	7137	5660	2295	7684		1.87	Si
SLV 13	ini.	-478.37	2393	0.9	0	548	7137	5660	2295	7684		3.21	Si
SLV 13	fin.	925.71	3452	0.9	0	548	7137	5660	2295	7684		2.23	Si
SLV 14	ini.	-368.76	1860	0.9	0	548	7137	5660	2295	7684		4.13	Si
SLV 14	fin.	800.81	2991	0.9	0	548	7137	5660	2295	7684		2.57	Si
SLV 3	ini.	582.67	-3446	0.9	0	548	7137	5660	2295	7684		2.23	Si
SLV 3	fin.	-308.03	-1066	0.9	0	548	7137	5660	2295	7684		7.21	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.431	SLV 15	Si
V_SLV	1.627	SLV 15	Si
PF_SLU	8.456	SLU 82	Si
V_SLU	4.435	SLU 75	Si

## Trave di accoppiamento 102

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-21.593	-3.314	11.05	11.87	0.82	-22.493	-3.314	11.05	11.87	0.82	0.9	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb_	fhk	fvk0	fmedio	t0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 82	ini.	-313.1	-1361	-0.0002003	0.0001872	0.0035	0.82		2460.51	2460.51	No	7.86	Si
SLU 82	fin.	-75.16	-755	-0.000045	0.0001872	0.0035	0.82		2460.51	2460.51	No	32.74	Si
SLU 84	ini.	-311.88	-1372	-0.0001995	0.0001872	0.0035	0.82		2460.51	2460.51	No	7.89	Si
SLU 84	fin.	-94.68	-814	-0.0000569	0.0001872	0.0035	0.82		2460.51	2460.51	No	25.99	Si
SLU 83	ini.	-309.23	-1362	-0.0001976	0.0001872	0.0035	0.82		2460.51	2460.51	No	7.96	Si
SLU 83	fin.	-95.72	-811	-0.0000576	0.0001872	0.0035	0.82		2460.51	2460.51	No	25.71	Si
SLU 78	ini.	-311.91	-1383	-0.0001995	0.0001872	0.0035	0.82		2460.51	2460.51	No	7.89	Si
SLU 78	fin.	-103.08	-843	-0.0000621	0.0001872	0.0035	0.82		2460.51	2460.51	No	23.87	Si
SLU 73	ini.	-306.74	-1330	-0.0001959	0.0001872	0.0035	0.82		2460.51	2460.51	No	8.02	Si
SLU 73	fin.	-66.83	-721	-0.0000399	0.0001872	0.0035	0.82		2460.51	2460.51	No	36.82	Si
SLU 75	ini.	-313.12	-1372	-0.0002003	0.0001872	0.0035	0.82		2460.51	2460.51	No	7.86	Si
SLU 75	fin.	-83.56	-784	-0.0000501	0.0001872	0.0035	0.82		2460.51	2460.51	No	29.45	Si
SLU 77	ini.	-309.26	-1372	-0.0001976	0.0001872	0.0035	0.82		2460.51	2460.51	No	7.96	Si
SLU 77	fin.	-104.12	-840	-0.0000628	0.0001872	0.0035	0.82		2460.51	2460.51	No	23.63	Si
SLU 74	ini.	-310.47	-1361	-0.0001985	0.0001872	0.0035	0.82		2460.51	2460.51	No	7.93	Si
SLU 74	fin.	-84.6	-782	-0.0000508	0.0001872	0.0035	0.82		2460.51	2460.51	No	29.08	Si
SLU 76	ini.	-305.52	-1341	-0.000195	0.0001872	0.0035	0.82		2460.51	2460.51	No	8.05	Si
SLU 76	fin.	-86.35	-779	-0.0000518	0.0001872	0.0035	0.82		2460.51	2460.51	No	28.5	Si
SLU 81	ini.	-310.45	-1351	-0.0001985	0.0001872	0.0035	0.82		2460.51	2460.51	No	7.93	Si
SLU 81	fin.	-76.2	-753	-0.0000456	0.0001872	0.0035	0.82		2460.51	2460.51	No	32.29	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 74	ini.	-310.47	2298	0.82	0	303	6502	3438	2091	5529	No	2.41	Si
SLU 74	fin.	-84.6	-938	0.82	0	303	6502	3438	2091	5529	No	5.89	Si
SLU 81	ini.	-310.45	2300	0.82	0	303	6502	3438	2091	5529	No	2.4	Si
SLU 81	fin.	-76.2	-912	0.82	0	303	6502	3438	2091	5529	No	6.06	Si
SLU 78	ini.	-311.91	2325	0.82	0	303	6502	3438	2091	5529	No	2.38	Si
SLU 78	fin.	-103.08	-1021	0.82	0	303	6502	3438	2091	5529	No	5.42	Si
SLU 83	ini.	-309.23	2315	0.82	0	303	6502	3438	2091	5529	No	2.39	Si
SLU 83	fin.	-95.72	-998	0.82	0	303	6502	3438	2091	5529	No	5.54	Si
SLU 75	ini.	-313.12	2310	0.82	0	303	6502	3438	2091	5529	No	2.39	Si
SLU 75	fin.	-83.56	-935	0.82	0	303	6502	3438	2091	5529	No	5.92	Si
SLU 77	ini.	-309.26	2312	0.82	0	303	6502	3438	2091	5529	No	2.39	Si
SLU 77	fin.	-104.12	-1024	0.82	0	303	6502	3438	2091	5529	No	5.4	Si
SLU 80	ini.	-302.54	2265	0.82	0	303	6502	3438	2091	5529	No	2.44	Si
SLU 80	fin.	-106.56	-1025	0.82	0	303	6502	3438	2091	5529	No	5.39	Si
SLU 76	ini.	-305.52	2259	0.82	0	303	6502	3438	2091	5529	No	2.45	Si
SLU 76	fin.	-86.35	-937	0.82	0	303	6502	3438	2091	5529	No	5.9	Si
SLU 82	ini.	-313.1	2312	0.82	0	303	6502	3438	2091	5529	No	2.39	Si
SLU 82	fin.	-75.16	-909	0.82	0	303	6502	3438	2091	5529	No	6.09	Si
SLU 84	ini.	-311.88	2327	0.82	0	303	6502	3438	2091	5529	No	2.38	Si
SLU 84	fin.	-94.68	-995	0.82	0	303	6502	3438	2091	5529	No	5.56	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 2	ini.	387.94	1108	-0.0002466	0.0002807	0.0035	0.82		2482.11	2482.11		6.4	Si
SLV 2	fin.	-721.53	-1456	-0.0004996	0.0002807	0.0035	0.82		2487.45	2487.45		3.45	Si
SLV 7	ini.	-551.02	-2183	-0.0003641	0.0002807	0.0035	0.82		2487.45	2487.45		4.51	Si
SLV 7	fin.	170.6	-551	-0.0001036	0.0002807	0.0035	0.82		2482.11	2482.11		14.55	Si
SLV 12	ini.	-766.47	-2913	-0.0005374	0.0002807	0.0035	0.82		2487.45	2487.45		3.25	Si
SLV 12	fin.	414.44	-197	-0.000265	0.0002807	0.0035	0.82		2482.11	2482.11		5.99	Si
SLV 15	ini.	-817.79	-2970	-0.0005815	0.0002807	0.0035	0.82		2487.45	2487.45		3.04	Si
SLV 15	fin.	635.27	470	-0.0004306	0.0002807	0.0035	0.82		2482.11	2482.11		3.91	Si
SLV 13	ini.	-551.5	-1999	-0.0003645	0.0002807	0.0035	0.82		2487.45	2487.45		4.51	Si
SLV 13	fin.	433.88	399	-0.0002788	0.0002807	0.0035	0.82		2482.11	2482.11		5.72	Si
SLV 4	ini.	121.65	138	-0.0000732	0.0002807	0.0035	0.82		2482.11	2482.11		20.4	Si
SLV 4	fin.	-520.14	-1385	-0.0003409	0.0002807	0.0035	0.82		2487.45	2487.45		4.78	Si
SLV 16	ini.	-747.61	-2756	-0.0005214	0.0002807	0.0035	0.82		2487.45	2487.45		3.33	Si
SLV 16	fin.	526.6	256	-0.0003465	0.0002807	0.0035	0.82		2482.11	2482.11		4.71	Si
SLV 6	ini.	381.95	1190	-0.0002424	0.0002807	0.0035	0.82		2482.11	2482.11		6.5	Si
SLV 6	fin.	-570.88	-927	-0.0003793	0.0002807	0.0035	0.82		2487.45	2487.45		4.36	Si
SLV 1	ini.	317.76	894	-0.0001988	0.0002807	0.0035	0.82		2482.11	2482.11		7.81	Si
SLV 1	fin.	-612.86	-1242	-0.0004119	0.0002807	0.0035	0.82		2487.45	2487.45		4.06	Si
SLV 11	ini.	-811.8	-3051	-0.0005763	0.0002807	0.0035	0.82		2487.45	2487.45		3.06	Si
SLV 11	fin.	484.62	-58	-0.0003154	0.0002807	0.0035	0.82		2482.11	2482.11		5.12	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-817.79	4491	0.82	0	455	6502	5156	2091	6957		1.55	Si
SLV 15	fin.	635.27	1864	0.82	0	455	6502	5156	2091	6957		3.73	Si
SLD 15	ini.	-474.69	2823	0.82	0	455	6502	5156	2091	6957		2.46	Si
SLD 15	fin.	248.39	470	0.82	0	455	6502	5156	2091	6957		14.82	Si
SLV 12	ini.	-766.47	4269	0.82	0	455	6502	5156	2091	6957		1.63	Si
SLV 12	fin.	414.44	408	0.82	0	455	6502	5156	2091	6957		17.07	Si
SLV 8	ini.	-505.69	3017	0.82	0	455	6502	5156	2091	6957		2.31	Si
SLV 8	fin.	100.42	-839	0.82	0	455	6502	5156	2091	6957		8.29	Si
SLD 11	ini.	-476.92	2853	0.82	0	455	6502	5156	2091	6957		2.44	Si
SLD 11	fin.	187.57	-27	0.82	0	455	6502	5156	2091	6957		261.62	Si
SLV 16	ini.	-747.61	4126	0.82	0	455	6502	5156	2091	6957		1.69	Si
SLV 16	fin.	526.6	1435	0.82	0	455	6502	5156	2091	6957		4.85	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 2	ini.	387.94	-1368	0.82	0	455	6502	5156	2091	6957		5.08	Si
SLV 2	fin.	-721.53	-3020	0.82	0	455	6502	5156	2091	6957		2.3	Si
SLV 13	ini.	-551.5	3171	0.82	0	455	6502	5156	2091	6957		2.19	Si
SLV 13	fin.	433.88	1564	0.82	0	455	6502	5156	2091	6957		4.45	Si
SLV 11	ini.	-811.8	4505	0.82	0	455	6502	5156	2091	6957		1.54	Si
SLV 11	fin.	484.62	685	0.82	0	455	6502	5156	2091	6957		10.16	Si
SLV 7	ini.	-551.02	3252	0.82	0	455	6502	5156	2091	6957		2.14	Si
SLV 7	fin.	170.6	-562	0.82	0	455	6502	5156	2091	6957		12.38	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.042	SLV 15	Si
V_SLV	1.544	SLV 11	Si
PF_SLU	7.858	SLU 75	Si
V_SLU	2.376	SLU 84	Si

## Trave di accoppiamento 103

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-18.813	-3.314	8.35	10.35	2	-19.313	-3.314	8.35	10.35	2	0.5	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	t <sub>fv</sub>	t <sub>fo</sub>	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ε <sub>m</sub>	ε <sub>m_</sub>	ε <sub>mu</sub>	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 75	ini.	63.49	-2004	-0.0000063	0.0001872	0.0035	2		14344.28	14344.28	No	225.94	Si
SLU 75	fin.	269.36	-2593	-0.0000269	0.0001872	0.0035	2		14344.28	14344.28	No	53.25	Si
SLU 82	ini.	107.94	-1857	-0.0000107	0.0001872	0.0035	2		14344.28	14344.28	No	132.9	Si
SLU 82	fin.	292.78	-2460	-0.0000293	0.0001872	0.0035	2		14344.28	14344.28	No	48.99	Si
SLU 40	ini.	112.61	-1511	-0.0000112	0.0001872	0.0035	2		14344.28	14344.28	No	127.38	Si
SLU 40	fin.	265.65	-2030	-0.0000265	0.0001872	0.0035	2		14344.28	14344.28	No	54	Si
SLU 74	ini.	63.06	-2000	-0.0000063	0.0001872	0.0035	2		14344.28	14344.28	No	227.48	Si
SLU 74	fin.	269.91	-2587	-0.000027	0.0001872	0.0035	2		14344.28	14344.28	No	53.14	Si
SLU 84	ini.	109.55	-1942	-0.0000109	0.0001872	0.0035	2		14344.28	14344.28	No	130.94	Si
SLU 84	fin.	276.23	-2546	-0.0000276	0.0001872	0.0035	2		14344.28	14344.28	No	51.93	Si
SLU 76	ini.	71.86	-1961	-0.0000071	0.0001872	0.0035	2		14344.28	14344.28	No	199.63	Si
SLU 76	fin.	255.3	-2537	-0.0000255	0.0001872	0.0035	2		14344.28	14344.28	No	56.19	Si
SLU 83	ini.	109.12	-1937	-0.0000109	0.0001872	0.0035	2		14344.28	14344.28	No	131.46	Si
SLU 83	fin.	276.78	-2540	-0.0000277	0.0001872	0.0035	2		14344.28	14344.28	No	51.82	Si
SLU 73	ini.	70.25	-1876	-0.000007	0.0001872	0.0035	2		14344.28	14344.28	No	204.2	Si
SLU 73	fin.	271.84	-2451	-0.0000272	0.0001872	0.0035	2		14344.28	14344.28	No	52.77	Si
SLU 81	ini.	107.51	-1852	-0.0000107	0.0001872	0.0035	2		14344.28	14344.28	No	133.43	Si
SLU 81	fin.	293.33	-2454	-0.0000293	0.0001872	0.0035	2		14344.28	14344.28	No	48.9	Si
SLU 39	ini.	112.18	-1507	-0.0000111	0.0001872	0.0035	2		14344.28	14344.28	No	127.86	Si
SLU 39	fin.	266.2	-2024	-0.0000266	0.0001872	0.0035	2		14344.28	14344.28	No	53.89	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 84	ini.	109.55	-405	2	0	812	3965	8384	5100	4776	No	11.79	Si
SLU 84	fin.	276.23	1858	2	0	812	3965	8384	5100	4776	No	2.57	Si
SLU 83	ini.	109.12	-399	2	0	812	3965	8384	5100	4776	No	11.98	Si
SLU 83	fin.	276.78	1856	2	0	812	3965	8384	5100	4776	No	2.57	Si
SLU 75	ini.	63.49	-330	2	0	812	3965	8384	5100	4776	No	14.49	Si
SLU 75	fin.	269.36	1897	2	0	812	3965	8384	5100	4776	No	2.52	Si
SLU 76	ini.	71.86	-375	2	0	812	3965	8384	5100	4776	No	12.72	Si
SLU 76	fin.	255.3	1822	2	0	812	3965	8384	5100	4776	No	2.62	Si
SLU 78	ini.	65.1	-430	2	0	812	3965	8384	5100	4776	No	11.1	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 78	fin.	252.82	1882	2	0	812	3965	8384	5100	4776	No	2.54	Si
SLU 81	ini.	107.51	-298	2	0	812	3965	8384	5100	4776	No	16.03	Si
SLU 81	fin.	293.33	1871	2	0	812	3965	8384	5100	4776	No	2.55	Si
SLU 82	ini.	107.94	-304	2	0	812	3965	8384	5100	4776	No	15.69	Si
SLU 82	fin.	292.78	1873	2	0	812	3965	8384	5100	4776	No	2.55	Si
SLU 73	ini.	70.25	-275	2	0	812	3965	8384	5100	4776	No	17.38	Si
SLU 73	fin.	271.84	1837	2	0	812	3965	8384	5100	4776	No	2.6	Si
SLU 74	ini.	63.06	-323	2	0	812	3965	8384	5100	4776	No	14.78	Si
SLU 74	fin.	269.91	1895	2	0	812	3965	8384	5100	4776	No	2.52	Si
SLU 77	ini.	64.67	-424	2	0	812	3965	8384	5100	4776	No	11.27	Si
SLU 77	fin.	253.37	1880	2	0	812	3965	8384	5100	4776	No	2.54	Si

**Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche**

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 13	ini.	-603.09	-2389	-0.0000607	0.0002807	0.0035	2		14215.41	14215.41		23.57	Si
SLD 13	fin.	651.21	-2906	-0.0000656	0.0002807	0.0035	2		14202.07	14202.07		21.81	Si
SLV 4	ini.	1448.48	877	-0.0001498	0.0002807	0.0035	2		14202.07	14202.07		9.8	Si
SLV 4	fin.	-937.91	769	-0.0000953	0.0002807	0.0035	2		14215.41	14215.41		15.16	Si
SLV 2	ini.	1501.5	1492	-0.0001555	0.0002807	0.0035	2		14202.07	14202.07		9.46	Si
SLV 2	fin.	-992.36	1555	-0.000101	0.0002807	0.0035	2		14215.41	14215.41		14.32	Si
SLV 13	ini.	-1427.45	-3704	-0.0001474	0.0002807	0.0035	2		14215.41	14215.41		9.96	Si
SLV 13	fin.	1289.13	-4385	-0.0001326	0.0002807	0.0035	2		14202.07	14202.07		11.02	Si
SLD 15	ini.	-627.35	-2660	-0.0000631	0.0002807	0.0035	2		14215.41	14215.41		22.66	Si
SLD 15	fin.	675.58	-3252	-0.0000682	0.0002807	0.0035	2		14202.07	14202.07		21.02	Si
SLV 15	ini.	-1480.47	-4320	-0.0001531	0.0002807	0.0035	2		14215.41	14215.41		9.6	Si
SLV 15	fin.	1343.59	-5172	-0.0001384	0.0002807	0.0035	2		14202.07	14202.07		10.57	Si
SLV 1	ini.	1358.83	1258	-0.0001401	0.0002807	0.0035	2		14202.07	14202.07		10.45	Si
SLV 1	fin.	-850.95	1264	-0.0000862	0.0002807	0.0035	2		14215.41	14215.41		16.71	Si
SLV 14	ini.	-1284.79	-3470	-0.000132	0.0002807	0.0035	2		14215.41	14215.41		11.06	Si
SLV 14	fin.	1147.72	-4093	-0.0001175	0.0002807	0.0035	2		14202.07	14202.07		12.37	Si
SLV 16	ini.	-1337.8	-4085	-0.0001377	0.0002807	0.0035	2		14215.41	14215.41		10.63	Si
SLV 16	fin.	1202.18	-4880	-0.0001233	0.0002807	0.0035	2		14202.07	14202.07		11.81	Si
SLV 3	ini.	1305.82	642	-0.0001344	0.0002807	0.0035	2		14202.07	14202.07		10.88	Si
SLV 3	fin.	-796.5	477	-0.0000806	0.0002807	0.0035	2		14215.41	14215.41		17.85	Si

**Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215**

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-1480.47	6753	2	0	1217	3965	12577	5100	5182		0.77	No
SLV 15	fin.	1343.59	7782	2	0	1217	3965	12577	5100	5182		0.67	No
SLD 15	ini.	-627.35	2787	2	0	1217	3965	12577	5100	5182		1.86	Si
SLD 15	fin.	675.58	4081	2	0	1217	3965	12577	5100	5182		1.27	Si
SLV 13	ini.	-1427.45	6646	2	0	1217	3965	12577	5100	5182		0.78	No
SLV 13	fin.	1289.13	7095	2	0	1217	3965	12577	5100	5182		0.73	No
SLV 11	ini.	-541.85	2192	2	0	1217	3965	12577	5100	5182		2.36	Si
SLV 11	fin.	633.05	4406	2	0	1217	3965	12577	5100	5182		1.18	Si
SLV 14	ini.	-1284.79	5894	2	0	1217	3965	12577	5100	5182		0.88	No
SLV 14	fin.	1147.72	6426	2	0	1217	3965	12577	5100	5182		0.81	No
SLV 2	ini.	1501.5	-7113	2	0	1217	3965	12577	5100	5182		0.73	No
SLV 2	fin.	-992.36	-5170	2	0	1217	3965	12577	5100	5182		1	Si
SLV 1	ini.	1358.83	-6361	2	0	1217	3965	12577	5100	5182		0.81	No
SLV 1	fin.	-850.95	-4501	2	0	1217	3965	12577	5100	5182		1.15	Si
SLV 16	ini.	-1337.8	6001	2	0	1217	3965	12577	5100	5182		0.86	No
SLV 16	fin.	1202.18	7112	2	0	1217	3965	12577	5100	5182		0.73	No
SLV 4	ini.	1448.48	-7006	2	0	1217	3965	12577	5100	5182		0.74	No
SLV 4	fin.	-937.91	-4483	2	0	1217	3965	12577	5100	5182		1.16	Si
SLV 3	ini.	1305.82	-6254	2	0	1217	3965	12577	5100	5182		0.83	No
SLV 3	fin.	-796.5	-3814	2	0	1217	3965	12577	5100	5182		1.36	Si

**Tabella dei coefficienti di sicurezza minimi**

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	9.459	SLV 2	Si
V_SLV	0.666	SLV 15	No
PF_SLU	48.902	SLU 81	Si
V_SLU	2.518	SLU 75	Si

**Trave di accoppiamento 104**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati geometrici**

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-18.813	-3.314	11.15	11.87	0.72	-19.313	-3.314	11.15	11.87	0.72	0.5	0.28	3500

**Caratteristiche del materiale**

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC





Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 83	ini.	-164.3	-1308	-0.0001321	0.0001872	0.0035	0.72		1901.86	1901.86	No	11.58	Si
SLU 83	fin.	21.05	-1128	-0.0000162	0.0001872	0.0035	0.72		1897.3	1897.3	No	90.15	Si
SLU 78	ini.	-156.08	-1252	-0.0001251	0.0001872	0.0035	0.72		1901.86	1901.86	No	12.19	Si
SLU 78	fin.	23.43	-1095	-0.000018	0.0001872	0.0035	0.72		1897.3	1897.3	No	80.99	Si
SLU 82	ini.	-162.44	-1277	-0.0001305	0.0001872	0.0035	0.72		1901.86	1901.86	No	11.71	Si
SLU 82	fin.	25.81	-1088	-0.0000199	0.0001872	0.0035	0.72		1897.3	1897.3	No	73.5	Si
SLU 81	ini.	-162.56	-1277	-0.0001306	0.0001872	0.0035	0.72		1901.86	1901.86	No	11.7	Si
SLU 81	fin.	26.7	-1085	-0.0000206	0.0001872	0.0035	0.72		1897.3	1897.3	No	71.07	Si
SLU 77	ini.	-156.2	-1252	-0.0001252	0.0001872	0.0035	0.72		1901.86	1901.86	No	12.18	Si
SLU 77	fin.	24.31	-1092	-0.0000187	0.0001872	0.0035	0.72		1897.3	1897.3	No	78.05	Si
SLU 84	ini.	-164.18	-1308	-0.000132	0.0001872	0.0035	0.72		1901.86	1901.86	No	11.58	Si
SLU 84	fin.	20.16	-1130	-0.0000155	0.0001872	0.0035	0.72		1897.3	1897.3	No	94.1	Si
SLU 75	ini.	-154.34	-1221	-0.0001236	0.0001872	0.0035	0.72		1901.86	1901.86	No	12.32	Si
SLU 75	fin.	29.08	-1053	-0.0000224	0.0001872	0.0035	0.72		1897.3	1897.3	No	65.25	Si
SLU 74	ini.	-154.46	-1221	-0.0001237	0.0001872	0.0035	0.72		1901.86	1901.86	No	12.31	Si
SLU 74	fin.	29.96	-1050	-0.0000231	0.0001872	0.0035	0.72		1897.3	1897.3	No	63.32	Si
SLU 80	ini.	-153.69	-1240	-0.0001231	0.0001872	0.0035	0.72		1901.86	1901.86	No	12.37	Si
SLU 80	fin.	18.13	-1090	-0.0000139	0.0001872	0.0035	0.72		1897.3	1897.3	No	104.67	Si
SLU 79	ini.	-153.81	-1239	-0.0001232	0.0001872	0.0035	0.72		1901.86	1901.86	No	12.37	Si
SLU 79	fin.	19.01	-1087	-0.0000146	0.0001872	0.0035	0.72		1897.3	1897.3	No	99.81	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 83	ini.	-164.3	2192	0.72	0	292	3965	3018	1836	4257	No	1.94	Si
SLU 83	fin.	21.05	-71	0.72	0	292	3965	3018	1836	4257	No	59.54	Si
SLU 84	ini.	-164.18	2194	0.72	0	292	3965	3018	1836	4257	No	1.94	Si
SLU 84	fin.	20.16	-77	0.72	0	292	3965	3018	1836	4257	No	55.58	Si
SLU 77	ini.	-156.2	2201	0.72	0	292	3965	3018	1836	4257	No	1.93	Si
SLU 77	fin.	24.31	-104	0.72	0	292	3965	3018	1836	4257	No	40.85	Si
SLU 78	ini.	-156.08	2202	0.72	0	292	3965	3018	1836	4257	No	1.93	Si
SLU 78	fin.	23.43	-109	0.72	0	292	3965	3018	1836	4257	No	38.95	Si
SLU 81	ini.	-162.56	2141	0.72	0	292	3965	3018	1836	4257	No	1.99	Si
SLU 81	fin.	26.7	-37	0.72	0	292	3965	3018	1836	4257	No	115.33	Si
SLU 79	ini.	-153.81	2150	0.72	0	292	3965	3018	1836	4257	No	1.98	Si
SLU 79	fin.	19.01	-117	0.72	0	292	3965	3018	1836	4257	No	36.42	Si
SLU 74	ini.	-154.46	2150	0.72	0	292	3965	3018	1836	4257	No	1.98	Si
SLU 74	fin.	29.96	-70	0.72	0	292	3965	3018	1836	4257	No	61.14	Si
SLU 80	ini.	-153.69	2152	0.72	0	292	3965	3018	1836	4257	No	1.98	Si
SLU 80	fin.	18.13	-122	0.72	0	292	3965	3018	1836	4257	No	34.9	Si
SLU 75	ini.	-154.34	2151	0.72	0	292	3965	3018	1836	4257	No	1.98	Si
SLU 75	fin.	29.08	-75	0.72	0	292	3965	3018	1836	4257	No	56.98	Si
SLU 82	ini.	-162.44	2142	0.72	0	292	3965	3018	1836	4257	No	1.99	Si
SLU 82	fin.	25.81	-42	0.72	0	292	3965	3018	1836	4257	No	101.36	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 13	ini.	-52.11	31	-0.0000402	0.0002807	0.0035	0.72		1917.1	1917.1		36.79	Si
SLD 13	fin.	282.07	306	-0.0002312	0.0002807	0.0035	0.72		1912.43	1912.43		6.78	Si
SLV 9	ini.	-91.69	-428	-0.0000713	0.0002807	0.0035	0.72		1917.1	1917.1		20.91	Si
SLV 9	fin.	292.47	196	-0.0002404	0.0002807	0.0035	0.72		1912.43	1912.43		6.54	Si
SLV 4	ini.	-206.58	-2641	-0.0001654	0.0002807	0.0035	0.72		1917.1	1917.1		9.28	Si
SLV 4	fin.	-575.07	-2911	-0.0005193	0.0002807	0.0035	0.72		1917.1	1917.1		3.33	Si
SLV 2	ini.	-223.98	-2803	-0.0001801	0.0002807	0.0035	0.72		1917.1	1917.1		8.56	Si
SLV 2	fin.	-525.62	-2820	-0.0004663	0.0002807	0.0035	0.72		1917.1	1917.1		3.65	Si
SLV 14	ini.	7.4	957	-0.0000057	0.0002807	0.0035	0.72		1912.43	1912.43		258.56	Si
SLV 14	fin.	555.82	1374	-0.0004998	0.0002807	0.0035	0.72		1912.43	1912.43		3.44	Si
SLV 15	ini.	27.45	1267	-0.0000211	0.0002807	0.0035	0.72		1912.43	1912.43		69.66	Si
SLV 15	fin.	576.2	1506	-0.000522	0.0002807	0.0035	0.72		1912.43	1912.43		3.32	Si
SLV 1	ini.	-221.32	-2656	-0.0001779	0.0002807	0.0035	0.72		1917.1	1917.1		8.66	Si
SLV 1	fin.	-455.79	-2597	-0.0003944	0.0002807	0.0035	0.72		1917.1	1917.1		4.21	Si
SLV 16	ini.	24.79	1120	-0.0000019	0.0002807	0.0035	0.72		1912.43	1912.43		77.13	Si
SLV 16	fin.	506.37	1283	-0.0004474	0.0002807	0.0035	0.72		1912.43	1912.43		3.78	Si
SLV 13	ini.	10.06	1104	-0.0000077	0.0002807	0.0035	0.72		1912.43	1912.43		190.17	Si
SLV 13	fin.	625.65	1597	-0.0005768	0.0002807	0.0035	0.72		1912.43	1912.43		3.06	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 3	ini.	-203.92	-2493	-0.0001631	0.0002807	0.0035	0.72		1917.1	1917.1		9.4	Si
SLV 3	fin.	-505.24	-2688	-0.000445	0.0002807	0.0035	0.72		1917.1	1917.1		3.79	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 16	ini.	24.79	2028	0.72	0	438	3965	4528	1836	4403		2.17	Si
SLV 16	fin.	506.37	792	0.72	0	438	3965	4528	1836	4403		5.56	Si
SLV 14	ini.	7.4	1908	0.72	0	438	3965	4528	1836	4403		2.31	Si
SLV 14	fin.	555.82	1006	0.72	0	438	3965	4528	1836	4403		4.38	Si
SLV 11	ini.	-33.7	1838	0.72	0	438	3965	4528	1836	4403		2.4	Si
SLV 11	fin.	127.64	-26	0.72	0	438	3965	4528	1836	4403		171	Si
SLV 12	ini.	-35.42	1761	0.72	0	438	3965	4528	1836	4403		2.5	Si
SLV 12	fin.	82.54	-158	0.72	0	438	3965	4528	1836	4403		27.85	Si
SLD 14	ini.	-53.25	1625	0.72	0	438	3965	4528	1836	4403		2.71	Si
SLD 14	fin.	252.09	401	0.72	0	438	3965	4528	1836	4403		10.99	Si
SLD 16	ini.	-45.57	1678	0.72	0	438	3965	4528	1836	4403		2.62	Si
SLD 16	fin.	230.8	307	0.72	0	438	3965	4528	1836	4403		14.33	Si
SLD 13	ini.	-52.11	1676	0.72	0	438	3965	4528	1836	4403		2.63	Si
SLD 13	fin.	282.07	489	0.72	0	438	3965	4528	1836	4403		9.01	Si
SLD 15	ini.	-44.42	1729	0.72	0	438	3965	4528	1836	4403		2.55	Si
SLD 15	fin.	260.79	395	0.72	0	438	3965	4528	1836	4403		11.14	Si
SLV 13	ini.	10.06	2027	0.72	0	438	3965	4528	1836	4403		2.17	Si
SLV 13	fin.	625.65	1211	0.72	0	438	3965	4528	1836	4403		3.64	Si
SLV 15	ini.	27.45	2148	0.72	0	438	3965	4528	1836	4403		2.05	Si
SLV 15	fin.	576.2	997	0.72	0	438	3965	4528	1836	4403		4.41	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.057	SLV 13	Si
V_SLV	2.05	SLV 15	Si
PF_SLU	11.576	SLU 83	Si
V_SLU	1.933	SLU 78	Si

Trave di accoppiamento 105

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-17.363	-3.314	8.35	9.25	0.9	-18.263	-3.314	8.35	9.25	0.9	0.9	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fnk	fvk0	fmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 61	ini.	255.55	-1197	-0.0001319	0.0001872	0.0035	0.9		2959	2959	No	11.58	Si
SLU 61	fin.	43.04	-895	-0.0000212	0.0001872	0.0035	0.9		2959	2959	No	68.74	Si
SLU 62	ini.	260.7	-1233	-0.0001347	0.0001872	0.0035	0.9		2959	2959	No	11.35	Si
SLU 62	fin.	49.13	-944	-0.0000243	0.0001872	0.0035	0.9		2959	2959	No	60.23	Si
SLU 80	ini.	236.31	-1249	-0.0001214	0.0001872	0.0035	0.9		2959	2959	No	12.52	Si
SLU 80	fin.	89.06	-1168	-0.0000443	0.0001872	0.0035	0.9		2959	2959	No	33.23	Si
SLU 83	ini.	263.24	-1295	-0.0001361	0.0001872	0.0035	0.9		2959	2959	No	11.24	Si
SLU 83	fin.	65.53	-1063	-0.0000325	0.0001872	0.0035	0.9		2959	2959	No	45.15	Si
SLU 82	ini.	258.09	-1259	-0.0001332	0.0001872	0.0035	0.9		2959	2959	No	11.47	Si
SLU 82	fin.	59.44	-1015	-0.0000294	0.0001872	0.0035	0.9		2959	2959	No	49.78	Si
SLU 79	ini.	235.6	-1246	-0.000121	0.0001872	0.0035	0.9		2959	2959	No	12.56	Si
SLU 79	fin.	89.25	-1167	-0.0000444	0.0001872	0.0035	0.9		2959	2959	No	33.15	Si
SLU 81	ini.	257.38	-1257	-0.0001329	0.0001872	0.0035	0.9		2959	2959	No	11.5	Si
SLU 81	fin.	59.64	-1013	-0.0000295	0.0001872	0.0035	0.9		2959	2959	No	49.62	Si
SLU 84	ini.	263.95	-1297	-0.0001365	0.0001872	0.0035	0.9		2959	2959	No	11.21	Si



Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 84	fin.	65.34	-1065	-0.0000324	0.0001872	0.0035	0.9		2959	2959	No	45.29	Si
SLU 60	ini.	254.84	-1195	-0.0001315	0.0001872	0.0035	0.9		2959	2959	No	11.61	Si
SLU 60	fin.	43.24	-894	-0.0000213	0.0001872	0.0035	0.9		2959	2959	No	68.44	Si
SLU 63	ini.	261.41	-1235	-0.0001351	0.0001872	0.0035	0.9		2959	2959	No	11.32	Si
SLU 63	fin.	48.94	-945	-0.0000242	0.0001872	0.0035	0.9		2959	2959	No	60.47	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 69	ini.	151.01	-1384	0.9	0	365	7137	3773	2295	6068	No	4.38	Si
SLU 69	fin.	137.82	2300	0.9	0	365	7137	3773	2295	6068	No	2.64	Si
SLU 70	ini.	151.72	-1389	0.9	0	365	7137	3773	2295	6068	No	4.37	Si
SLU 70	fin.	137.63	2306	0.9	0	365	7137	3773	2295	6068	No	2.63	Si
SLU 67	ini.	145.86	-1333	0.9	0	365	7137	3773	2295	6068	No	4.55	Si
SLU 67	fin.	131.73	2219	0.9	0	365	7137	3773	2295	6068	No	2.73	Si
SLU 49	ini.	149.19	-1320	0.9	0	365	7137	3773	2295	6068	No	4.6	Si
SLU 49	fin.	121.23	2107	0.9	0	365	7137	3773	2295	6068	No	2.88	Si
SLU 77	ini.	229.18	-1771	0.9	0	365	7137	3773	2295	6068	No	3.43	Si
SLU 77	fin.	96.23	2139	0.9	0	365	7137	3773	2295	6068	No	2.84	Si
SLU 66	ini.	145.15	-1327	0.9	0	365	7137	3773	2295	6068	No	4.57	Si
SLU 66	fin.	131.93	2214	0.9	0	365	7137	3773	2295	6068	No	2.74	Si
SLU 71	ini.	157.43	-1399	0.9	0	365	7137	3773	2295	6068	No	4.34	Si
SLU 71	fin.	130.84	2235	0.9	0	365	7137	3773	2295	6068	No	2.72	Si
SLU 68	ini.	152.75	-1351	0.9	0	365	7137	3773	2295	6068	No	4.49	Si
SLU 68	fin.	124.63	2157	0.9	0	365	7137	3773	2295	6068	No	2.81	Si
SLU 72	ini.	158.14	-1404	0.9	0	365	7137	3773	2295	6068	No	4.32	Si
SLU 72	fin.	130.65	2240	0.9	0	365	7137	3773	2295	6068	No	2.71	Si
SLU 78	ini.	229.89	-1776	0.9	0	365	7137	3773	2295	6068	No	3.42	Si
SLU 78	fin.	96.03	2144	0.9	0	365	7137	3773	2295	6068	No	2.83	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 13	ini.	-1243.14	2382	-0.0007772	0.0002807	0.0035	0.9		2995.37	2995.37		2.41	Si
SLV 13	fin.	984.32	-4078	-0.0005822	0.0002807	0.0035	0.9		2989.59	2989.59		3.04	Si
SLV 4	ini.	1510.86	-3959	-0.0010043	0.0002807	0.0035	0.9		2989.59	2989.59		1.98	Si
SLV 4	fin.	-832.12	2369	-0.0004743	0.0002807	0.0035	0.9		2995.37	2995.37		3.6	Si
SLV 3	ini.	1382.51	-3674	-0.0008933	0.0002807	0.0035	0.9		2989.59	2989.59		2.16	Si
SLV 3	fin.	-741.91	2041	-0.0004142	0.0002807	0.0035	0.9		2995.37	2995.37		4.04	Si
SLD 2	ini.	764.56	-2158	-0.00043	0.0002807	0.0035	0.9		2989.59	2989.59		3.91	Si
SLD 2	fin.	-362.23	770	-0.0001871	0.0002807	0.0035	0.9		2995.37	2995.37		8.27	Si
SLV 6	ini.	746.82	-1850	-0.0004183	0.0002807	0.0035	0.9		2989.59	2989.59		4	Si
SLV 6	fin.	-422.39	1202	-0.0002205	0.0002807	0.0035	0.9		2995.37	2995.37		7.09	Si
SLV 15	ini.	-1340.94	2416	-0.0008565	0.0002807	0.0035	0.9		2995.37	2995.37		2.23	Si
SLV 15	fin.	1100.14	-4647	-0.0006679	0.0002807	0.0035	0.9		2989.59	2989.59		2.72	Si
SLV 2	ini.	1608.66	-3993	-0.0010929	0.0002807	0.0035	0.9		2989.59	2989.59		1.86	Si
SLV 2	fin.	-947.95	2938	-0.0005548	0.0002807	0.0035	0.9		2995.37	2995.37		3.16	Si
SLV 14	ini.	-1114.79	2098	-0.0006774	0.0002807	0.0035	0.9		2995.37	2995.37		2.69	Si
SLV 14	fin.	894.1	-3750	-0.000518	0.0002807	0.0035	0.9		2989.59	2989.59		3.34	Si
SLV 1	ini.	1480.31	-3708	-0.0009773	0.0002807	0.0035	0.9		2989.59	2989.59		2.02	Si
SLV 1	fin.	-857.74	2610	-0.0004918	0.0002807	0.0035	0.9		2995.37	2995.37		3.49	Si
SLV 16	ini.	-1212.59	2131	-0.000753	0.0002807	0.0035	0.9		2995.37	2995.37		2.47	Si
SLV 16	fin.	1009.93	-4319	-0.0006008	0.0002807	0.0035	0.9		2989.59	2989.59		2.96	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 4	ini.	1510.86	-7735	0.9	0	548	7137	5660	2295	7684	No	0.99	No
SLV 4	fin.	-832.12	-3176	0.9	0	548	7137	5660	2295	7684		2.42	Si
SLV 13	ini.	-1243.14	5566	0.9	0	548	7137	5660	2295	7684		1.38	Si
SLV 13	fin.	984.32	6168	0.9	0	548	7137	5660	2295	7684		1.25	Si
SLV 14	ini.	-1114.79	4984	0.9	0	548	7137	5660	2295	7684		1.54	Si
SLV 14	fin.	894.1	5701	0.9	0	548	7137	5660	2295	7684		1.35	Si
SLV 11	ini.	-479.1	509	0.9	0	548	7137	5660	2295	7684		15.1	Si
SLV 11	fin.	574.58	4695	0.9	0	548	7137	5660	2295	7684		1.64	Si
SLV 1	ini.	1480.31	-6875	0.9	0	548	7137	5660	2295	7684		1.12	Si
SLV 1	fin.	-857.74	-3655	0.9	0	548	7137	5660	2295	7684		2.1	Si
SLV 3	ini.	1382.51	-7152	0.9	0	548	7137	5660	2295	7684		1.07	Si
SLV 3	fin.	-741.91	-2710	0.9	0	548	7137	5660	2295	7684		2.84	Si
SLV 2	ini.	1608.66	-7458	0.9	0	548	7137	5660	2295	7684		1.03	Si
SLV 2	fin.	-947.95	-4121	0.9	0	548	7137	5660	2295	7684		1.86	Si
SLV 16	ini.	-1212.59	4707	0.9	0	548	7137	5660	2295	7684		1.63	Si
SLV 16	fin.	1009.93	6646	0.9	0	548	7137	5660	2295	7684		1.16	Si
SLV 12	ini.	-396.2	133	0.9	0	548	7137	5660	2295	7684		57.9	Si
SLV 12	fin.	516.32	4394	0.9	0	548	7137	5660	2295	7684		1.75	Si
SLV 15	ini.	-1340.94	5290	0.9	0	548	7137	5660	2295	7684		1.45	Si
SLV 15	fin.	1100.14	7113	0.9	0	548	7137	5660	2295	7684		1.08	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF SLV	1.858	SLV 2	Si
V SLV	0.994	SLV 4	No
PF SLU	11.211	SLU 84	Si
V SLU	2.632	SLU 70	Si



## Trave di accoppiamento 106

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-17.363	-3.314	11.05	11.87	0.82	-18.263	-3.314	11.05	11.87	0.82	0.9	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	e <sub>f,d</sub>	γ <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em <sub>-</sub>	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 77	ini.	-14.88	-392	-0.0000088	0.0001872	0.0035	0.82		2460.51	2460.51	No	165.32	Si
SLU 77	fin.	-243.06	-1409	-0.0001521	0.0001872	0.0035	0.82		2460.51	2460.51	No	10.12	Si
SLU 83	ini.	4.97	-331	-0.0000029	0.0001872	0.0035	0.82		2455.37	2455.37	No	493.82	Si
SLU 83	fin.	-258.73	-1479	-0.0001627	0.0001872	0.0035	0.82		2460.51	2460.51	No	9.51	Si
SLU 78	ini.	-15.63	-395	-0.0000092	0.0001872	0.0035	0.82		2460.51	2460.51	No	157.39	Si
SLU 78	fin.	-243.25	-1410	-0.0001523	0.0001872	0.0035	0.82		2460.51	2460.51	No	10.12	Si
SLU 79	ini.	-11.55	-379	-0.0000068	0.0001872	0.0035	0.82		2460.51	2460.51	No	213.05	Si
SLU 79	fin.	-244.06	-1403	-0.0001528	0.0001872	0.0035	0.82		2460.51	2460.51	No	10.08	Si
SLU 81	ini.	6.84	-310	-0.000004	0.0001872	0.0035	0.82		2455.37	2455.37	No	359.04	Si
SLU 81	fin.	-249.31	-1435	-0.0001563	0.0001872	0.0035	0.82		2460.51	2460.51	No	9.87	Si
SLU 80	ini.	-12.3	-382	-0.0000073	0.0001872	0.0035	0.82		2460.51	2460.51	No	200.07	Si
SLU 80	fin.	-244.25	-1404	-0.0001529	0.0001872	0.0035	0.82		2460.51	2460.51	No	10.07	Si
SLU 84	ini.	4.22	-334	-0.0000025	0.0001872	0.0035	0.82		2455.37	2455.37	No	581.47	Si
SLU 84	fin.	-258.92	-1480	-0.0001628	0.0001872	0.0035	0.82		2460.51	2460.51	No	9.5	Si
SLU 82	ini.	6.09	-313	-0.0000036	0.0001872	0.0035	0.82		2455.37	2455.37	No	403.24	Si
SLU 82	fin.	-249.5	-1436	-0.0001565	0.0001872	0.0035	0.82		2460.51	2460.51	No	9.86	Si
SLU 63	ini.	9.56	-292	-0.0000056	0.0001872	0.0035	0.82		2455.37	2455.37	No	256.75	Si
SLU 63	fin.	-246.5	-1370	-0.0001544	0.0001872	0.0035	0.82		2460.51	2460.51	No	9.98	Si
SLU 62	ini.	10.31	-289	-0.0000061	0.0001872	0.0035	0.82		2455.37	2455.37	No	238.09	Si
SLU 62	fin.	-246.31	-1369	-0.0001543	0.0001872	0.0035	0.82		2460.51	2460.51	No	9.99	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	f <sub>vd</sub>	V <sub>t</sub>	V <sub>t,f</sub>	V <sub>t,c</sub>	V <sub>t,c int.</sub>	V <sub>t,R</sub>	incremento > 50%	c.s.	Verifica
SLU 74	ini.	-13.02	879	0.82	0	303	6502	3438	2091	5529	No	6.29	Si
SLU 74	fin.	-233.64	-2746	0.82	0	303	6502	3438	2091	5529	No	2.01	Si
SLU 83	ini.	4.97	737	0.82	0	303	6502	3438	2091	5529	No	7.5	Si
SLU 83	fin.	-258.73	-2901	0.82	0	303	6502	3438	2091	5529	No	1.91	Si
SLU 82	ini.	6.09	720	0.82	0	303	6502	3438	2091	5529	No	7.67	Si
SLU 82	fin.	-249.5	-2817	0.82	0	303	6502	3438	2091	5529	No	1.96	Si
SLU 84	ini.	4.22	744	0.82	0	303	6502	3438	2091	5529	No	7.43	Si
SLU 84	fin.	-258.92	-2906	0.82	0	303	6502	3438	2091	5529	No	1.9	Si
SLU 81	ini.	6.84	713	0.82	0	303	6502	3438	2091	5529	No	7.75	Si
SLU 81	fin.	-249.31	-2812	0.82	0	303	6502	3438	2091	5529	No	1.97	Si
SLU 79	ini.	-11.55	860	0.82	0	303	6502	3438	2091	5529	No	6.43	Si
SLU 79	fin.	-244.06	-2808	0.82	0	303	6502	3438	2091	5529	No	1.97	Si
SLU 75	ini.	-13.77	886	0.82	0	303	6502	3438	2091	5529	No	6.24	Si
SLU 75	fin.	-233.83	-2751	0.82	0	303	6502	3438	2091	5529	No	2.01	Si
SLU 77	ini.	-14.88	902	0.82	0	303	6502	3438	2091	5529	No	6.13	Si
SLU 77	fin.	-243.06	-2835	0.82	0	303	6502	3438	2091	5529	No	1.95	Si
SLU 80	ini.	-12.3	867	0.82	0	303	6502	3438	2091	5529	No	6.38	Si
SLU 80	fin.	-244.25	-2813	0.82	0	303	6502	3438	2091	5529	No	1.97	Si
SLU 78	ini.	-15.63	910	0.82	0	303	6502	3438	2091	5529	No	6.08	Si
SLU 78	fin.	-243.25	-2840	0.82	0	303	6502	3438	2091	5529	No	1.95	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 3	ini.	407.34	356	-0.0002601	0.0002807	0.0035	0.82		2482.11	2482.11		6.09	Si
SLV 3	fin.	-885.14	-3588	-0.0006409	0.0002807	0.0035	0.82		2487.45	2487.45		2.81	Si
SLV 16	ini.	-581.93	-1413	-0.0003878	0.0002807	0.0035	0.82		2487.45	2487.45		4.27	Si
SLV 16	fin.	673.48	2209	-0.0004613	0.0002807	0.0035	0.82		2482.11	2482.11		3.69	Si
SLV 4	ini.	464.68	481	-0.0003009	0.0002807	0.0035	0.82		2482.11	2482.11		5.34	Si
SLV 4	fin.	-963.73	-3866	-0.0007127	0.0002807	0.0035	0.82		2487.45	2487.45		2.58	Si
SLV 13	ini.	-507.42	-1041	-0.0003314	0.0002807	0.0035	0.82		2487.45	2487.45		4.9	Si
SLV 13	fin.	677.05	2166	-0.0004642	0.0002807	0.0035	0.82		2482.11	2482.11		3.67	Si
SLV 14	ini.	-450.08	-915	-0.0002897	0.0002807	0.0035	0.82		2487.45	2487.45		5.53	Si
SLV 14	fin.	598.46	1888	-0.0004015	0.0002807	0.0035	0.82		2482.11	2482.11		4.15	Si
SLV 15	ini.	-639.27	-1539	-0.0004327	0.0002807	0.0035	0.82		2487.45	2487.45		3.89	Si
SLV 15	fin.	752.07	2487	-0.0005265	0.0002807	0.0035	0.82		2482.11	2482.11		3.3	Si
SLV 1	ini.	539.19	854	-0.000356	0.0002807	0.0035	0.82		2482.11	2482.11		4.6	Si
SLV 1	fin.	-960.16	-3910	-0.0007094	0.0002807	0.0035	0.82		2487.45	2487.45		2.59	Si
SLD 2	ini.	243.52	261	-0.00015	0.0002807	0.0035	0.82		2482.11	2482.11		10.19	Si
SLD 2	fin.	-526.62	-2279	-0.0003457	0.0002807	0.0035	0.82		2487.45	2487.45		4.72	Si
SLV 6	ini.	373.89	875	-0.0002369	0.0002807	0.0035	0.82		2482.11	2482.11		6.64	Si
SLV 6	fin.	-539.33	-2387	-0.0003553	0.0002807	0.0035	0.82		2487.45	2487.45		4.61	Si
SLV 2	ini.	596.53	979	-0.0004	0.0002807	0.0035	0.82		2482.11	2482.11		4.16	Si
SLV 2	fin.	-1038.75	-4188	-0.0007837	0.0002807	0.0035	0.82		2487.45	2487.45		2.39	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 11	ini.	-416.63	4068	0.82	0	455	6502	5156	2091	6957		1.71	Si
SLV 11	fin.	252.66	-906	0.82	0	455	6502	5156	2091	6957		7.68	Si
SLV 1	ini.	539.19	-4612	0.82	0	455	6502	5156	2091	6957		1.51	Si
SLV 1	fin.	-960.16	-4361	0.82	0	455	6502	5156	2091	6957		1.6	Si
SLV 16	ini.	-581.93	6011	0.82	0	455	6502	5156	2091	6957		1.16	Si
SLV 16	fin.	673.48	854	0.82	0	455	6502	5156	2091	6957		8.15	Si
SLV 4	ini.	464.68	-4047	0.82	0	455	6502	5156	2091	6957		1.72	Si
SLV 4	fin.	-963.73	-4756	0.82	0	455	6502	5156	2091	6957		1.46	Si
SLV 3	ini.	407.34	-3585	0.82	0	455	6502	5156	2091	6957		1.94	Si
SLV 3	fin.	-885.14	-4423	0.82	0	455	6502	5156	2091	6957		1.57	Si
SLV 12	ini.	-379.59	3770	0.82	0	455	6502	5156	2091	6957		1.85	Si
SLV 12	fin.	201.9	-1122	0.82	0	455	6502	5156	2091	6957		6.2	Si
SLV 13	ini.	-507.42	5447	0.82	0	455	6502	5156	2091	6957		1.28	Si
SLV 13	fin.	677.05	1249	0.82	0	455	6502	5156	2091	6957		5.57	Si
SLV 14	ini.	-450.08	4985	0.82	0	455	6502	5156	2091	6957		1.4	Si
SLV 14	fin.	598.46	915	0.82	0	455	6502	5156	2091	6957		7.6	Si
SLV 15	ini.	-639.27	6473	0.82	0	455	6502	5156	2091	6957		1.07	Si
SLV 15	fin.	752.07	1188	0.82	0	455	6502	5156	2091	6957		5.86	Si
SLV 2	ini.	596.53	-5074	0.82	0	455	6502	5156	2091	6957		1.37	Si
SLV 2	fin.	-1038.75	-4695	0.82	0	455	6502	5156	2091	6957		1.48	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.395	SLV 2	Si
V_SLV	1.075	SLV 15	Si
PF_SLU	9.503	SLU 84	Si
V_SLU	1.902	SLU 84	Si

## Trave di accoppiamento 107

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-18.518	-0.094	10.45	11.87	1.42	-18.518	0.706	10.45	11.87	1.42	0.8	0.16	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb_	fhk	fvk0	fmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 74	ini.	101.66	-237	-0.0000201	0.0002246	0.0035	1.42		7594.91	7594.91	No	74.71	Si
SLU 74	fin.	122.43	-209	-0.0000242	0.0002246	0.0035	1.42		7594.91	7594.91	No	62.04	Si
SLU 82	ini.	97.61	-237	-0.0000193	0.0002246	0.0035	1.42		7594.91	7594.91	No	77.8	Si
SLU 82	fin.	122.25	-212	-0.0000242	0.0002246	0.0035	1.42		7594.91	7594.91	No	62.13	Si
SLU 79	ini.	110.37	-234	-0.0000218	0.0002246	0.0035	1.42		7594.91	7594.91	No	68.81	Si
SLU 79	fin.	122.13	-206	-0.0000242	0.0002246	0.0035	1.42		7594.91	7594.91	No	62.19	Si
SLU 75	ini.	99.71	-239	-0.0000197	0.0002246	0.0035	1.42		7594.91	7594.91	No	76.17	Si
SLU 75	fin.	123.02	-210	-0.0000243	0.0002246	0.0035	1.42		7594.91	7594.91	No	61.74	Si
SLU 83	ini.	108.63	-241	-0.0000215	0.0002246	0.0035	1.42		7594.91	7594.91	No	69.92	Si
SLU 83	fin.	125.69	-217	-0.0000249	0.0002246	0.0035	1.42		7594.91	7594.91	No	60.42	Si
SLU 81	ini.	99.56	-235	-0.0000197	0.0002246	0.0035	1.42		7594.91	7594.91	No	76.28	Si
SLU 81	fin.	121.66	-212	-0.0000241	0.0002246	0.0035	1.42		7594.91	7594.91	No	62.43	Si
SLU 80	ini.	108.42	-236	-0.0000214	0.0002246	0.0035	1.42		7594.91	7594.91	No	70.05	Si
SLU 80	fin.	122.73	-206	-0.0000243	0.0002246	0.0035	1.42		7594.91	7594.91	No	61.88	Si
SLU 77	ini.	110.73	-243	-0.0000219	0.0002246	0.0035	1.42		7594.91	7594.91	No	68.59	Si
SLU 77	fin.	126.47	-214	-0.000025	0.0002246	0.0035	1.42		7594.91	7594.91	No	60.06	Si
SLU 84	ini.	106.68	-243	-0.0000211	0.0002246	0.0035	1.42		7594.91	7594.91	No	71.19	Si
SLU 84	fin.	126.29	-217	-0.000025	0.0002246	0.0035	1.42		7594.91	7594.91	No	60.14	Si
SLU 78	ini.	108.78	-245	-0.0000215	0.0002246	0.0035	1.42		7594.91	7594.91	No	69.82	Si
SLU 78	fin.	127.06	-215	-0.0000251	0.0002246	0.0035	1.42		7594.91	7594.91	No	59.77	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 67	ini.	82.63	288	1.42	0	329	6344	4083	3621	6673	No	23.13	Si
SLU 67	fin.	105.3	-157	1.42	0	329	6344	4083	3621	6673	No	42.61	Si
SLU 75	ini.	99.71	283	1.42	0	329	6344	4083	3621	6673	No	23.59	Si
SLU 75	fin.	123.02	-162	1.42	0	329	6344	4083	3621	6673	No	41.16	Si
SLU 68	ini.	80.97	286	1.42	0	329	6344	4083	3621	6673	No	23.33	Si
SLU 68	fin.	101.36	-159	1.42	0	329	6344	4083	3621	6673	No	41.97	Si
SLU 82	ini.	97.61	281	1.42	0	329	6344	4083	3621	6673	No	23.78	Si
SLU 82	fin.	122.25	-164	1.42	0	329	6344	4083	3621	6673	No	40.59	Si
SLU 73	ini.	88.99	286	1.42	0	329	6344	4083	3621	6673	No	23.35	Si
SLU 73	fin.	115.05	-159	1.42	0	329	6344	4083	3621	6673	No	41.91	Si
SLU 66	ini.	84.57	284	1.42	0	329	6344	4083	3621	6673	No	23.48	Si
SLU 66	fin.	104.7	-161	1.42	0	329	6344	4083	3621	6673	No	41.49	Si
SLU 76	ini.	98.06	281	1.42	0	329	6344	4083	3621	6673	No	23.79	Si
SLU 76	fin.	119.09	-165	1.42	0	329	6344	4083	3621	6673	No	40.56	Si
SLU 64	ini.	75.15	284	1.42	0	329	6344	4083	3621	6673	No	23.47	Si
SLU 64	fin.	96.33	-161	1.42	0	329	6344	4083	3621	6673	No	41.51	Si
SLU 70	ini.	91.69	283	1.42	0	329	6344	4083	3621	6673	No	23.57	Si
SLU 70	fin.	109.33	-162	1.42	0	329	6344	4083	3621	6673	No	41.21	Si
SLU 65	ini.	71.9	291	1.42	0	329	6344	4083	3621	6673	No	22.9	Si
SLU 65	fin.	97.32	-154	1.42	0	329	6344	4083	3621	6673	No	43.42	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 11	ini.	158.78	493	-0.0000314	0.0003369	0.0035	1.42		7808.98	7808.98		49.18	Si
SLV 11	fin.	545.93	117	-0.0001102	0.0003369	0.0035	1.42		7808.98	7808.98		14.3	Si
SLV 5	ini.	-30.85	-781	-0.0000061	0.0003369	0.0035	1.42		7818.07	7818.07		253.45	Si
SLV 5	fin.	-397.68	-363	-0.0000795	0.0003369	0.0035	1.42		7818.07	7818.07		19.66	Si
SLV 8	ini.	255.23	588	-0.0000507	0.0003369	0.0035	1.42		7808.98	7808.98		30.6	Si
SLV 8	fin.	697.67	225	-0.000142	0.0003369	0.0035	1.42		7808.98	7808.98		11.19	Si
SLV 9	ini.	-135.22	-883	-0.0000267	0.0003369	0.0035	1.42		7818.07	7818.07		57.82	Si
SLV 9	fin.	-549.15	-473	-0.0001107	0.0003369	0.0035	1.42		7818.07	7818.07		14.24	Si
SLV 3	ini.	284.19	233	-0.0000566	0.0003369	0.0035	1.42		7808.98	7808.98		27.48	Si
SLV 3	fin.	490.76	149	-0.0000987	0.0003369	0.0035	1.42		7808.98	7808.98		15.91	Si
SLV 6	ini.	-38.77	-788	-0.0000076	0.0003369	0.0035	1.42		7818.07	7818.07		201.63	Si
SLV 6	fin.	-397.41	-365	-0.0000795	0.0003369	0.0035	1.42		7818.07	7818.07		19.67	Si
SLV 4	ini.	271.92	223	-0.0000541	0.0003369	0.0035	1.42		7808.98	7808.98		28.72	Si
SLV 4	fin.	491.18	147	-0.0000988	0.0003369	0.0035	1.42		7808.98	7808.98		15.9	Si
SLV 7	ini.	263.15	594	-0.0000523	0.0003369	0.0035	1.42		7808.98	7808.98		29.67	Si
SLV 7	fin.	697.4	227	-0.0001419	0.0003369	0.0035	1.42		7808.98	7808.98		11.2	Si
SLV 10	ini.	-143.14	-889	-0.0000282	0.0003369	0.0035	1.42		7818.07	7818.07		54.62	Si
SLV 10	fin.	-548.88	-475	-0.0001106	0.0003369	0.0035	1.42		7818.07	7818.07		14.24	Si
SLV 12	ini.	150.85	487	-0.0000298	0.0003369	0.0035	1.42		7808.98	7808.98		51.76	Si
SLV 12	fin.	546.2	115	-0.0001102	0.0003369	0.0035	1.42		7808.98	7808.98		14.3	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 11	ini.	101.06	488	1.42	0	494	6344	6124	3621	6838		14	Si
SLD 11	fin.	278.15	120	1.42	0	494	6344	6124	3621	6838		56.84	Si
SLV 12	ini.	150.85	851	1.42	0	494	6344	6124	3621	6838		8.03	Si
SLV 12	fin.	546.2	444	1.42	0	494	6344	6124	3621	6838		15.41	Si
SLV 6	ini.	-38.77	-411	1.42	0	494	6344	6124	3621	6838		16.64	Si
SLV 6	fin.	-397.41	-681	1.42	0	494	6344	6124	3621	6838		10.04	Si
SLV 5	ini.	-30.85	-425	1.42	0	494	6344	6124	3621	6838		16.09	Si
SLV 5	fin.	-397.68	-695	1.42	0	494	6344	6124	3621	6838		9.83	Si
SLV 11	ini.	158.78	837	1.42	0	494	6344	6124	3621	6838		8.17	Si
SLV 11	fin.	545.93	430	1.42	0	494	6344	6124	3621	6838		15.91	Si
SLD 12	ini.	97.59	494	1.42	0	494	6344	6124	3621	6838		13.83	Si
SLD 12	fin.	278.26	126	1.42	0	494	6344	6124	3621	6838		54.08	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 8	ini.	255.23	821	1.42	0	494	6344	6124	3621	6838		8.33	Si
SLV 8	fin.	697.67	497	1.42	0	494	6344	6124	3621	6838		13.77	Si
SLV 7	ini.	263.15	807	1.42	0	494	6344	6124	3621	6838		8.47	Si
SLV 7	fin.	697.4	482	1.42	0	494	6344	6124	3621	6838		14.17	Si
SLV 10	ini.	-143.14	-381	1.42	0	494	6344	6124	3621	6838		17.95	Si
SLV 10	fin.	-548.88	-734	1.42	0	494	6344	6124	3621	6838		9.31	Si
SLV 9	ini.	-135.22	-395	1.42	0	494	6344	6124	3621	6838		17.31	Si
SLV 9	fin.	-549.15	-748	1.42	0	494	6344	6124	3621	6838		9.14	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	11.193	SLV 8	Si
V_SLV	8.034	SLV 12	Si
PF_SLU	59.775	SLU 78	Si
V_SLU	22.903	SLU 65	Si

## Trave di accoppiamento 109

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-15.433	-3.314	10.45	11.87	1.42	-16.333	-3.314	10.45	11.87	1.42	0.9	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fhk	fvk0	fhmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 28	ini.	-715.32	-2021	-0.0001489	0.0001872	0.0035	1.42		7359.91	7359.91	No	10.29	Si
SLU 28	fin.	391.76	-1372	-0.0000793	0.0001872	0.0035	1.42		7350.79	7350.79	No	18.76	Si
SLU 70	ini.	-810.99	-2368	-0.0001705	0.0001872	0.0035	1.42		7359.91	7359.91	No	9.08	Si
SLU 70	fin.	426.98	-1636	-0.0000867	0.0001872	0.0035	1.42		7350.79	7350.79	No	17.22	Si
SLU 66	ini.	-789.06	-2262	-0.0001655	0.0001872	0.0035	1.42		7359.91	7359.91	No	9.33	Si
SLU 66	fin.	413.62	-1551	-0.0000839	0.0001872	0.0035	1.42		7350.79	7350.79	No	17.77	Si
SLU 69	ini.	-810.66	-2363	-0.0001704	0.0001872	0.0035	1.42		7359.91	7359.91	No	9.08	Si
SLU 69	fin.	428.86	-1630	-0.0000871	0.0001872	0.0035	1.42		7350.79	7350.79	No	17.14	Si
SLU 71	ini.	-775.66	-2302	-0.0001625	0.0001872	0.0035	1.42		7359.91	7359.91	No	9.49	Si
SLU 71	fin.	401.75	-1601	-0.0000814	0.0001872	0.0035	1.42		7350.79	7350.79	No	18.3	Si
SLU 65	ini.	-733.03	-2109	-0.0001529	0.0001872	0.0035	1.42		7359.91	7359.91	No	10.04	Si
SLU 65	fin.	368.13	-1453	-0.0000743	0.0001872	0.0035	1.42		7350.79	7350.79	No	19.97	Si
SLU 67	ini.	-789.4	-2268	-0.0001656	0.0001872	0.0035	1.42		7359.91	7359.91	No	9.32	Si
SLU 67	fin.	411.74	-1557	-0.0000835	0.0001872	0.0035	1.42		7350.79	7350.79	No	17.85	Si
SLU 64	ini.	-732.46	-2100	-0.0001528	0.0001872	0.0035	1.42		7359.91	7359.91	No	10.05	Si
SLU 64	fin.	371.26	-1443	-0.000075	0.0001872	0.0035	1.42		7350.79	7350.79	No	19.8	Si
SLU 68	ini.	-754.63	-2210	-0.0001577	0.0001872	0.0035	1.42		7359.91	7359.91	No	9.75	Si
SLU 68	fin.	383.37	-1532	-0.0000775	0.0001872	0.0035	1.42		7350.79	7350.79	No	19.17	Si
SLU 72	ini.	-776	-2307	-0.0001625	0.0001872	0.0035	1.42		7359.91	7359.91	No	9.48	Si
SLU 72	fin.	399.87	-1607	-0.000081	0.0001872	0.0035	1.42		7350.79	7350.79	No	18.38	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 78	ini.	-687.14	2652	1.42	0	576	7137	5953	3621	7713	No	2.91	Si
SLU 78	fin.	389.18	928	1.42	0	576	7137	5953	3621	7713	No	8.31	Si
SLU 66	ini.	-789.06	2620	1.42	0	576	7137	5953	3621	7713	No	2.94	Si
SLU 66	fin.	413.62	1171	1.42	0	576	7137	5953	3621	7713	No	6.59	Si
SLU 77	ini.	-686.8	2654	1.42	0	576	7137	5953	3621	7713	No	2.91	Si
SLU 77	fin.	391.06	930	1.42	0	576	7137	5953	3621	7713	No	8.29	Si
SLU 75	ini.	-665.54	2594	1.42	0	576	7137	5953	3621	7713	No	2.97	Si
SLU 75	fin.	373.94	869	1.42	0	576	7137	5953	3621	7713	No	8.87	Si
SLU 71	ini.	-775.66	2585	1.42	0	576	7137	5953	3621	7713	No	2.98	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 71	fin.	401.75	1136	1.42	0	576	7137	5953	3621	7713	No	6.79	Si
SLU 74	ini.	-665.2	2596	1.42	0	576	7137	5953	3621	7713	No	2.97	Si
SLU 74	fin.	375.82	872	1.42	0	576	7137	5953	3621	7713	No	8.85	Si
SLU 72	ini.	-776	2582	1.42	0	576	7137	5953	3621	7713	No	2.99	Si
SLU 72	fin.	399.87	1133	1.42	0	576	7137	5953	3621	7713	No	6.81	Si
SLU 67	ini.	-789.4	2618	1.42	0	576	7137	5953	3621	7713	No	2.95	Si
SLU 67	fin.	411.74	1169	1.42	0	576	7137	5953	3621	7713	No	6.6	Si
SLU 70	ini.	-810.99	2676	1.42	0	576	7137	5953	3621	7713	No	2.88	Si
SLU 70	fin.	426.98	1227	1.42	0	576	7137	5953	3621	7713	No	6.28	Si
SLU 69	ini.	-810.66	2678	1.42	0	576	7137	5953	3621	7713	No	2.88	Si
SLU 69	fin.	428.86	1229	1.42	0	576	7137	5953	3621	7713	No	6.27	Si

**Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche**

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-3547.56	-4188	-0.0009259	0.0002807	0.0035	1.42		7346.34	7346.34		2.07	Si
SLV 15	fin.	2836.86	-1398	-0.0006964	0.0002807	0.0035	1.42		7337.02	7337.02		2.59	Si
SLV 3	ini.	2078.37	250	-0.0004762	0.0002807	0.0035	1.42		7337.02	7337.02		3.53	Si
SLV 3	fin.	-2305.33	-1432	-0.0005386	0.0002807	0.0035	1.42		7346.34	7346.34		3.19	Si
SLV 1	ini.	2303.28	910	-0.0005388	0.0002807	0.0035	1.42		7337.02	7337.02		3.19	Si
SLV 1	fin.	-2106.17	-733	-0.0004831	0.0002807	0.0035	1.42		7346.34	7346.34		3.49	Si
SLV 13	ini.	-3322.65	-3529	-0.0008501	0.0002807	0.0035	1.42		7346.34	7346.34		2.21	Si
SLV 13	fin.	3036.02	-700	-0.0007586	0.0002807	0.0035	1.42		7337.02	7337.02		2.42	Si
SLV 16	ini.	-3294.17	-3979	-0.0008407	0.0002807	0.0035	1.42		7346.34	7346.34		2.23	Si
SLV 16	fin.	2610.89	-1372	-0.000628	0.0002807	0.0035	1.42		7337.02	7337.02		2.81	Si
SLV 2	ini.	2556.67	1119	-0.000612	0.0002807	0.0035	1.42		7337.02	7337.02		2.87	Si
SLV 2	fin.	-2332.14	-707	-0.0005462	0.0002807	0.0035	1.42		7346.34	7346.34		3.15	Si
SLD 15	ini.	-1802.01	-2672	-0.000402	0.0002807	0.0035	1.42		7346.34	7346.34		4.08	Si
SLD 15	fin.	1356.73	-1203	-0.0002914	0.0002807	0.0035	1.42		7337.02	7337.02		5.41	Si
SLV 4	ini.	2331.76	460	-0.0005468	0.0002807	0.0035	1.42		7337.02	7337.02		3.15	Si
SLV 4	fin.	-2531.3	-1406	-0.0006036	0.0002807	0.0035	1.42		7346.34	7346.34		2.9	Si
SLV 14	ini.	-3069.26	-3320	-0.000768	0.0002807	0.0035	1.42		7346.34	7346.34		2.39	Si
SLV 14	fin.	2810.05	-673	-0.0006881	0.0002807	0.0035	1.42		7337.02	7337.02		2.61	Si
SLV 11	ini.	-1796.01	-3367	-0.0004004	0.0002807	0.0035	1.42		7346.34	7346.34		4.09	Si
SLV 11	fin.	764.74	-2220	-0.0001572	0.0002807	0.0035	1.42		7337.02	7337.02		9.59	Si

**Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215**

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 13	ini.	-3322.65	9582	1.42	0	864	7137	8929	3621	8001		0.84	No
SLV 13	fin.	3036.02	8935	1.42	0	864	7137	8929	3621	8001		0.9	No
SLV 4	ini.	2331.76	-6023	1.42	0	864	7137	8929	3621	8001		1.33	Si
SLV 4	fin.	-2531.3	-7656	1.42	0	864	7137	8929	3621	8001		1.05	Si
SLV 1	ini.	2303.28	-5655	1.42	0	864	7137	8929	3621	8001		1.41	Si
SLV 1	fin.	-2106.17	-6279	1.42	0	864	7137	8929	3621	8001		1.27	Si
SLV 14	ini.	-3069.26	8905	1.42	0	864	7137	8929	3621	8001		0.9	No
SLV 14	fin.	2810.05	8258	1.42	0	864	7137	8929	3621	8001		0.97	No
SLD 13	ini.	-1702.35	5112	1.42	0	864	7137	8929	3621	8001		1.57	Si
SLD 13	fin.	1442.85	4188	1.42	0	864	7137	8929	3621	8001		1.91	Si
SLV 16	ini.	-3294.17	9214	1.42	0	864	7137	8929	3621	8001		0.87	No
SLV 16	fin.	2610.89	7558	1.42	0	864	7137	8929	3621	8001		1.06	Si
SLD 15	ini.	-1802.01	5250	1.42	0	864	7137	8929	3621	8001		1.52	Si
SLD 15	fin.	1356.73	3885	1.42	0	864	7137	8929	3621	8001		2.06	Si
SLV 3	ini.	2078.37	-5346	1.42	0	864	7137	8929	3621	8001		1.5	Si
SLV 3	fin.	-2305.33	-6979	1.42	0	864	7137	8929	3621	8001		1.15	Si
SLV 15	ini.	-3547.56	9891	1.42	0	864	7137	8929	3621	8001		0.81	No
SLV 15	fin.	2836.86	8235	1.42	0	864	7137	8929	3621	8001		0.97	No
SLV 2	ini.	2556.67	-6332	1.42	0	864	7137	8929	3621	8001		1.26	Si
SLV 2	fin.	-2332.14	-6956	1.42	0	864	7137	8929	3621	8001		1.15	Si

**Tabella dei coefficienti di sicurezza minimi**

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.071	SLV 15	Si
V_SLV	0.809	SLV 15	No
PF_SLU	9.075	SLU 70	Si
V_SLU	2.88	SLU 69	Si

**Trave di accoppiamento 111**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati geometrici**

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-15.033	1.366	10.45	11.87	1.42	-15.033	2.166	10.45	11.87	1.42	0.8	0.16	3500

**Caratteristiche del materiale**

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC





Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma_{F,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 79	ini.	66.57	-110	-0.0000131	0.0002246	0.0035	1.42		7594.91	7594.91	No	114.09	Si
SLU 79	fin.	81.7	-131	-0.0000161	0.0002246	0.0035	1.42		7594.91	7594.91	No	92.96	Si
SLU 78	ini.	68.45	-113	-0.0000135	0.0002246	0.0035	1.42		7594.91	7594.91	No	110.96	Si
SLU 78	fin.	85.21	-131	-0.0000168	0.0002246	0.0035	1.42		7594.91	7594.91	No	89.13	Si
SLU 77	ini.	67.38	-111	-0.0000133	0.0002246	0.0035	1.42		7594.91	7594.91	No	112.72	Si
SLU 77	fin.	82.35	-130	-0.0000162	0.0002246	0.0035	1.42		7594.91	7594.91	No	92.23	Si
SLU 38	ini.	54.8	-92	-0.0000108	0.0002246	0.0035	1.42		7594.91	7594.91	No	138.59	Si
SLU 38	fin.	87.12	-97	-0.0000172	0.0002246	0.0035	1.42		7594.91	7594.91	No	87.18	Si
SLU 37	ini.	53.73	-90	-0.0000106	0.0002246	0.0035	1.42		7594.91	7594.91	No	141.34	Si
SLU 37	fin.	84.26	-97	-0.0000166	0.0002246	0.0035	1.42		7594.91	7594.91	No	90.14	Si
SLU 80	ini.	67.64	-111	-0.0000133	0.0002246	0.0035	1.42		7594.91	7594.91	No	112.29	Si
SLU 80	fin.	84.56	-131	-0.0000167	0.0002246	0.0035	1.42		7594.91	7594.91	No	89.82	Si
SLU 36	ini.	55.61	-93	-0.0000109	0.0002246	0.0035	1.42		7594.91	7594.91	No	136.57	Si
SLU 36	fin.	87.77	-97	-0.0000173	0.0002246	0.0035	1.42		7594.91	7594.91	No	86.53	Si
SLU 42	ini.	53.17	-91	-0.0000105	0.0002246	0.0035	1.42		7594.91	7594.91	No	142.85	Si
SLU 42	fin.	83.97	-91	-0.0000166	0.0002246	0.0035	1.42		7594.91	7594.91	No	90.44	Si
SLU 84	ini.	66	-110	-0.000013	0.0002246	0.0035	1.42		7594.91	7594.91	No	115.07	Si
SLU 84	fin.	81.41	-125	-0.0000161	0.0002246	0.0035	1.42		7594.91	7594.91	No	93.29	Si
SLU 35	ini.	54.54	-91	-0.0000107	0.0002246	0.0035	1.42		7594.91	7594.91	No	139.24	Si
SLU 35	fin.	84.91	-97	-0.0000168	0.0002246	0.0035	1.42		7594.91	7594.91	No	89.45	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 47	ini.	62.21	139	1.42	0	329	6344	4083	3621	6673	No	47.93	Si
SLU 47	fin.	30.74	-296	1.42	0	329	6344	4083	3621	6673	No	22.58	Si
SLU 51	ini.	63.83	151	1.42	0	329	6344	4083	3621	6673	No	44.17	Si
SLU 51	fin.	41.29	-284	1.42	0	329	6344	4083	3621	6673	No	23.52	Si
SLU 43	ini.	58.1	119	1.42	0	329	6344	4083	3621	6673	No	55.94	Si
SLU 43	fin.	13.52	-315	1.42	0	329	6344	4083	3621	6673	No	21.15	Si
SLU 45	ini.	61.24	135	1.42	0	329	6344	4083	3621	6673	No	49.52	Si
SLU 45	fin.	26.62	-300	1.42	0	329	6344	4083	3621	6673	No	22.24	Si
SLU 64	ini.	60.27	163	1.42	0	329	6344	4083	3621	6673	No	41	Si
SLU 64	fin.	35.07	-288	1.42	0	329	6344	4083	3621	6673	No	23.16	Si
SLU 50	ini.	62.77	148	1.42	0	329	6344	4083	3621	6673	No	45.21	Si
SLU 50	fin.	38.43	-287	1.42	0	329	6344	4083	3621	6673	No	23.24	Si
SLU 44	ini.	59.88	125	1.42	0	329	6344	4083	3621	6673	No	53.36	Si
SLU 44	fin.	18.29	-310	1.42	0	329	6344	4083	3621	6673	No	21.55	Si
SLU 49	ini.	64.64	152	1.42	0	329	6344	4083	3621	6673	No	43.79	Si
SLU 49	fin.	41.94	-282	1.42	0	329	6344	4083	3621	6673	No	23.63	Si
SLU 48	ini.	63.58	149	1.42	0	329	6344	4083	3621	6673	No	44.81	Si
SLU 48	fin.	39.08	-286	1.42	0	329	6344	4083	3621	6673	No	23.34	Si
SLU 46	ini.	62.31	138	1.42	0	329	6344	4083	3621	6673	No	48.28	Si
SLU 46	fin.	29.48	-297	1.42	0	329	6344	4083	3621	6673	No	22.5	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 10	ini.	632.36	435	-0.0001282	0.0003369	0.0035	1.42		7808.98	7808.98		12.35	Si
SLV 10	fin.	84.49	793	-0.0000166	0.0003369	0.0035	1.42		7808.98	7808.98		92.42	Si
SLV 7	ini.	-539.66	-583	-0.0001087	0.0003369	0.0035	1.42		7818.07	7818.07		14.49	Si
SLV 7	fin.	-27.6	-998	-0.0000054	0.0003369	0.0035	1.42		7818.07	7818.07		283.24	Si
SLV 8	ini.	-534.67	-591	-0.0001077	0.0003369	0.0035	1.42		7818.07	7818.07		14.62	Si
SLV 8	fin.	-22.19	-1003	-0.0000044	0.0003369	0.0035	1.42		7818.07	7818.07		352.39	Si
SLV 11	ini.	-401.01	-423	-0.0000802	0.0003369	0.0035	1.42		7818.07	7818.07		19.5	Si
SLV 11	fin.	-87.66	-1153	-0.0000172	0.0003369	0.0035	1.42		7818.07	7818.07		89.19	Si
SLV 9	ini.	627.37	443	-0.0001272	0.0003369	0.0035	1.42		7808.98	7808.98		12.45	Si
SLV 9	fin.	79.08	798	-0.0000156	0.0003369	0.0035	1.42		7808.98	7808.98		98.75	Si
SLV 14	ini.	435.55	316	-0.0000874	0.0003369	0.0035	1.42		7808.98	7808.98		17.93	Si
SLV 14	fin.	-42.44	-71	-0.0000083	0.0003369	0.0035	1.42		7818.07	7818.07		184.22	Si
SLV 6	ini.	493.71	275	-0.0000993	0.0003369	0.0035	1.42		7808.98	7808.98		15.82	Si
SLV 6	fin.	144.55	947	-0.0000286	0.0003369	0.0035	1.42		7808.98	7808.98		54.02	Si
SLV 13	ini.	427.83	328	-0.0000858	0.0003369	0.0035	1.42		7808.98	7808.98		18.25	Si
SLV 13	fin.	-50.83	-63	-0.00001	0.0003369	0.0035	1.42		7818.07	7818.07		153.82	Si
SLV 12	ini.	-396.03	-431	-0.0000792	0.0003369	0.0035	1.42		7818.07	7818.07		19.74	Si
SLV 12	fin.	-82.24	-1157	-0.0000162	0.0003369	0.0035	1.42		7818.07	7818.07		95.07	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 5	ini.	488.73	283	-0.0000983	0.0003369	0.0035	1.42		7808.98	7808.98		15.98	Si
SLV 5	fin.	139.13	952	-0.0000275	0.0003369	0.0035	1.42		7808.98	7808.98		56.13	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 10	ini.	632.36	-409	1.42	0	494	6344	6124	3621	6838		16.72	Si
SLV 10	fin.	84.49	-769	1.42	0	494	6344	6124	3621	6838		8.89	Si
SLV 6	ini.	493.71	-362	1.42	0	494	6344	6124	3621	6838		18.88	Si
SLV 6	fin.	144.55	-675	1.42	0	494	6344	6124	3621	6838		10.13	Si
SLV 14	ini.	435.55	-103	1.42	0	494	6344	6124	3621	6838		66.69	Si
SLV 14	fin.	-42.44	-523	1.42	0	494	6344	6124	3621	6838		13.08	Si
SLV 13	ini.	427.83	-108	1.42	0	494	6344	6124	3621	6838		63.37	Si
SLV 13	fin.	-50.83	-528	1.42	0	494	6344	6124	3621	6838		12.94	Si
SLV 5	ini.	488.73	-366	1.42	0	494	6344	6124	3621	6838		18.7	Si
SLV 5	fin.	139.13	-678	1.42	0	494	6344	6124	3621	6838		10.08	Si
SLV 8	ini.	-534.67	666	1.42	0	494	6344	6124	3621	6838		10.27	Si
SLV 8	fin.	-22.19	339	1.42	0	494	6344	6124	3621	6838		20.14	Si
SLV 11	ini.	-401.01	616	1.42	0	494	6344	6124	3621	6838		11.1	Si
SLV 11	fin.	-87.66	242	1.42	0	494	6344	6124	3621	6838		28.28	Si
SLV 7	ini.	-539.66	663	1.42	0	494	6344	6124	3621	6838		10.32	Si
SLV 7	fin.	-27.6	336	1.42	0	494	6344	6124	3621	6838		20.35	Si
SLV 12	ini.	-396.03	619	1.42	0	494	6344	6124	3621	6838		11.04	Si
SLV 12	fin.	-82.24	245	1.42	0	494	6344	6124	3621	6838		27.88	Si
SLV 9	ini.	627.37	-412	1.42	0	494	6344	6124	3621	6838		16.58	Si
SLV 9	fin.	79.08	-772	1.42	0	494	6344	6124	3621	6838		8.85	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	12.349	SLV 10	Si
V_SLV	8.853	SLV 9	Si
PF_SLU	86.531	SLU 36	Si
V_SLU	21.152	SLU 43	Si

Trave di accoppiamento 112

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-13.778	-0.194	10.45	11.87	1.42	-13.778	0.706	10.45	11.87	1.42	0.9	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fnk	fvk0	fnmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 84	ini.	-84.36	-825	-0.0000166	0.0001872	0.0035	1.42		7359.91	7359.91	No	87.25	Si
SLU 84	fin.	170.73	-518	-0.0000339	0.0001872	0.0035	1.42		7350.79	7350.79	No	43.06	Si
SLU 75	ini.	-104.94	-841	-0.0000207	0.0001872	0.0035	1.42		7359.91	7359.91	No	70.14	Si
SLU 75	fin.	174.32	-525	-0.0000347	0.0001872	0.0035	1.42		7350.79	7350.79	No	42.17	Si
SLU 74	ini.	-98.44	-832	-0.0000194	0.0001872	0.0035	1.42		7359.91	7359.91	No	74.76	Si
SLU 74	fin.	174.38	-521	-0.0000347	0.0001872	0.0035	1.42		7350.79	7350.79	No	42.15	Si
SLU 77	ini.	-75.59	-823	-0.0000149	0.0001872	0.0035	1.42		7359.91	7359.91	No	97.37	Si
SLU 77	fin.	178.75	-518	-0.0000355	0.0001872	0.0035	1.42		7350.79	7350.79	No	41.12	Si
SLU 69	ini.	-61.55	-701	-0.0000121	0.0001872	0.0035	1.42		7359.91	7359.91	No	119.58	Si
SLU 69	fin.	169.92	-436	-0.0000338	0.0001872	0.0035	1.42		7350.79	7350.79	No	43.26	Si
SLU 80	ini.	-55.49	-764	-0.0000109	0.0001872	0.0035	1.42		7359.91	7359.91	No	132.64	Si
SLU 80	fin.	171.31	-480	-0.000034	0.0001872	0.0035	1.42		7350.79	7350.79	No	42.91	Si
SLU 70	ini.	-68.04	-709	-0.0000134	0.0001872	0.0035	1.42		7359.91	7359.91	No	108.16	Si
SLU 70	fin.	169.86	-440	-0.0000338	0.0001872	0.0035	1.42		7350.79	7350.79	No	43.28	Si
SLU 79	ini.	-48.99	-755	-0.0000096	0.0001872	0.0035	1.42		7359.91	7359.91	No	150.22	Si



Comb.	Sez.	M	N	ε <sub>m</sub>	ε <sub>m_</sub>	ε <sub>mu</sub>	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 79	fin.	171.38	-476	-0.0000341	0.0001872	0.0035	1.42		7350.79	7350.79	No	42.89	Si
SLU 78	ini.	-82.08	-832	-0.0000162	0.0001872	0.0035	1.42		7359.91	7359.91	No	89.67	Si
SLU 78	fin.	178.68	-522	-0.0000355	0.0001872	0.0035	1.42		7350.79	7350.79	No	41.14	Si
SLU 83	ini.	-77.86	-817	-0.0000153	0.0001872	0.0035	1.42		7359.91	7359.91	No	94.52	Si
SLU 83	fin.	170.8	-514	-0.0000339	0.0001872	0.0035	1.42		7350.79	7350.79	No	43.04	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	f <sub>vd</sub>	V <sub>t</sub>	V <sub>t,f</sub>	V <sub>t,c</sub>	V <sub>t,c int.</sub>	V <sub>t,R</sub>	incremento > 50%	c.s.	Verifica
SLU 81	ini.	-100.72	924	1.42	0	576	7137	5953	3621	7713	No	8.34	Si
SLU 81	fin.	166.43	171	1.42	0	576	7137	5953	3621	7713	No	45.15	Si
SLU 75	ini.	-104.94	943	1.42	0	576	7137	5953	3621	7713	No	8.18	Si
SLU 75	fin.	174.32	189	1.42	0	576	7137	5953	3621	7713	No	40.71	Si
SLU 78	ini.	-82.08	917	1.42	0	576	7137	5953	3621	7713	No	8.41	Si
SLU 78	fin.	178.68	164	1.42	0	576	7137	5953	3621	7713	No	47.05	Si
SLU 77	ini.	-75.59	907	1.42	0	576	7137	5953	3621	7713	No	8.51	Si
SLU 77	fin.	178.75	153	1.42	0	576	7137	5953	3621	7713	No	50.33	Si
SLU 76	ini.	-82.67	892	1.42	0	576	7137	5953	3621	7713	No	8.64	Si
SLU 76	fin.	166.9	139	1.42	0	576	7137	5953	3621	7713	No	55.61	Si
SLU 84	ini.	-84.36	909	1.42	0	576	7137	5953	3621	7713	No	8.48	Si
SLU 84	fin.	170.73	156	1.42	0	576	7137	5953	3621	7713	No	49.46	Si
SLU 74	ini.	-98.44	932	1.42	0	576	7137	5953	3621	7713	No	8.27	Si
SLU 74	fin.	174.38	179	1.42	0	576	7137	5953	3621	7713	No	43.14	Si
SLU 73	ini.	-105.52	918	1.42	0	576	7137	5953	3621	7713	No	8.4	Si
SLU 73	fin.	162.54	164	1.42	0	576	7137	5953	3621	7713	No	46.96	Si
SLU 82	ini.	-107.21	935	1.42	0	576	7137	5953	3621	7713	No	8.25	Si
SLU 82	fin.	166.36	182	1.42	0	576	7137	5953	3621	7713	No	42.49	Si
SLU 83	ini.	-77.86	899	1.42	0	576	7137	5953	3621	7713	No	8.58	Si
SLU 83	fin.	170.8	145	1.42	0	576	7137	5953	3621	7713	No	53.09	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ε <sub>m</sub>	ε <sub>m_</sub>	ε <sub>mu</sub>	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 12	ini.	-190.4	-203	-0.0000377	0.0002807	0.0035	1.42		7346.34	7346.34		38.58	Si
SLV 12	fin.	762.44	-1049	-0.0001567	0.0002807	0.0035	1.42		7337.02	7337.02		9.62	Si
SLV 9	ini.	-120.34	-1161	-0.0000237	0.0002807	0.0035	1.42		7346.34	7346.34		61.05	Si
SLV 9	fin.	-608.48	93	-0.0001236	0.0002807	0.0035	1.42		7346.34	7346.34		12.07	Si
SLV 4	ini.	273.72	307	-0.0000545	0.0002807	0.0035	1.42		7337.02	7337.02		26.8	Si
SLV 4	fin.	446.14	123	-0.0000898	0.0002807	0.0035	1.42		7337.02	7337.02		16.45	Si
SLV 8	ini.	17.11	196	-0.0000034	0.0002807	0.0035	1.42		7337.02	7337.02		428.79	Si
SLV 8	fin.	837.35	-687	-0.0001729	0.0002807	0.0035	1.42		7337.02	7337.02		8.76	Si
SLV 6	ini.	71.14	-793	-0.0000014	0.0002807	0.0035	1.42		7337.02	7337.02		103.14	Si
SLV 6	fin.	-531.62	437	-0.0001075	0.0002807	0.0035	1.42		7346.34	7346.34		13.82	Si
SLV 5	ini.	87.17	-762	-0.0000172	0.0002807	0.0035	1.42		7337.02	7337.02		84.17	Si
SLV 5	fin.	-533.56	455	-0.0001079	0.0002807	0.0035	1.42		7346.34	7346.34		13.77	Si
SLV 10	ini.	-136.37	-1193	-0.0000269	0.0002807	0.0035	1.42		7346.34	7346.34		53.87	Si
SLV 10	fin.	-606.53	75	-0.0001232	0.0002807	0.0035	1.42		7346.34	7346.34		12.11	Si
SLV 11	ini.	-174.37	-171	-0.0000345	0.0002807	0.0035	1.42		7346.34	7346.34		42.13	Si
SLV 11	fin.	760.5	-1031	-0.0001562	0.0002807	0.0035	1.42		7337.02	7337.02		9.65	Si
SLV 3	ini.	298.53	356	-0.0000596	0.0002807	0.0035	1.42		7337.02	7337.02		24.58	Si
SLV 3	fin.	443.13	151	-0.0000892	0.0002807	0.0035	1.42		7337.02	7337.02		16.56	Si
SLV 7	ini.	33.14	228	-0.0000065	0.0002807	0.0035	1.42		7337.02	7337.02		221.41	Si
SLV 7	fin.	835.41	-669	-0.0001725	0.0002807	0.0035	1.42		7337.02	7337.02		8.78	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	f <sub>vd</sub>	V <sub>t</sub>	V <sub>t,f</sub>	V <sub>t,c</sub>	V <sub>t,c int.</sub>	V <sub>t,R</sub>	incremento > 50%	c.s.	Verifica
SLV 7	ini.	33.14	2114	1.42	0	864	7137	8929	3621	8001		3.79	Si
SLV 7	fin.	835.41	1588	1.42	0	864	7137	8929	3621	8001		5.04	Si
SLV 12	ini.	-190.4	2546	1.42	0	864	7137	8929	3621	8001		3.14	Si
SLV 12	fin.	762.44	2040	1.42	0	864	7137	8929	3621	8001		3.92	Si
SLV 8	ini.	17.11	2144	1.42	0	864	7137	8929	3621	8001		3.73	Si
SLV 8	fin.	837.35	1619	1.42	0	864	7137	8929	3621	8001		4.94	Si
SLV 11	ini.	-174.37	2516	1.42	0	864	7137	8929	3621	8001		3.18	Si
SLV 11	fin.	760.5	2010	1.42	0	864	7137	8929	3621	8001		3.98	Si
SLV 9	ini.	-120.34	-897	1.42	0	864	7137	8929	3621	8001		8.92	Si
SLV 9	fin.	-608.48	-1521	1.42	0	864	7137	8929	3621	8001		5.26	Si
SLV 6	ini.	71.14	-1269	1.42	0	864	7137	8929	3621	8001		6.31	Si
SLV 6	fin.	-531.62	-1912	1.42	0	864	7137	8929	3621	8001		4.18	Si
SLV 15	ini.	-393.16	1781	1.42	0	864	7137	8929	3621	8001		4.49	Si
SLV 15	fin.	193.42	1257	1.42	0	864	7137	8929	3621	8001		6.36	Si
SLV 16	ini.	-417.97	1829	1.42	0	864	7137	8929	3621	8001		4.37	Si
SLV 16	fin.	196.43	1305	1.42	0	864	7137	8929	3621	8001		6.13	Si
SLV 10	ini.	-136.37	-867	1.42	0	864	7137	8929	3621	8001		9.23	Si
SLV 10	fin.	-606.53	-1490	1.42	0	864	7137	8929	3621	8001		5.37	Si
SLV 5	ini.	87.17	-1299	1.42	0	864	7137	8929	3621	8001		6.16	Si
SLV 5	fin.	-533.56	-1943	1.42	0	864	7137	8929	3621	8001		4.12	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	8.762	SLV 8	Si
V_SLV	3.142	SLV 12	Si
PF_SLU	41.124	SLU 77	Si
V_SLU	8.179	SLU 75	Si



## Trave di accoppiamento 113

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-17.718	6.526	8.35	9.25	0.9	-16.818	6.526	8.35	9.25	0.9	0.9	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	e <sub>f,d</sub>	γ <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em <sub>-</sub>	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 73	ini.	422.59	-1979	-0.0002278	0.0001872	0.0035	0.9		2959	2959	No	7	Si
SLU 73	fin.	-63.61	-1184	-0.0000314	0.0001872	0.0035	0.9		2964.67	2964.67	No	46.6	Si
SLU 78	ini.	423.19	-2029	-0.0002282	0.0001872	0.0035	0.9		2959	2959	No	6.99	Si
SLU 78	fin.	-25.48	-1308	-0.0000125	0.0001872	0.0035	0.9		2964.67	2964.67	No	116.37	Si
SLU 84	ini.	434.2	-2049	-0.0002349	0.0001872	0.0035	0.9		2959	2959	No	6.81	Si
SLU 84	fin.	-51.51	-1263	-0.0000254	0.0001872	0.0035	0.9		2964.67	2964.67	No	57.56	Si
SLU 83	ini.	435.21	-2052	-0.0002355	0.0001872	0.0035	0.9		2959	2959	No	6.8	Si
SLU 83	fin.	-52.61	-1263	-0.0000259	0.0001872	0.0035	0.9		2964.67	2964.67	No	56.35	Si
SLU 77	ini.	424.19	-2032	-0.0002288	0.0001872	0.0035	0.9		2959	2959	No	6.98	Si
SLU 77	fin.	-26.58	-1307	-0.000013	0.0001872	0.0035	0.9		2964.67	2964.67	No	111.55	Si
SLU 76	ini.	417.5	-1979	-0.0002247	0.0001872	0.0035	0.9		2959	2959	No	7.09	Si
SLU 76	fin.	-44.31	-1231	-0.0000218	0.0001872	0.0035	0.9		2964.67	2964.67	No	66.9	Si
SLU 75	ini.	428.28	-2029	-0.0002313	0.0001872	0.0035	0.9		2959	2959	No	6.91	Si
SLU 75	fin.	-44.78	-1261	-0.0000221	0.0001872	0.0035	0.9		2964.67	2964.67	No	66.21	Si
SLU 82	ini.	439.29	-2049	-0.000238	0.0001872	0.0035	0.9		2959	2959	No	6.74	Si
SLU 82	fin.	-70.81	-1216	-0.000035	0.0001872	0.0035	0.9		2964.67	2964.67	No	41.87	Si
SLU 81	ini.	440.3	-2052	-0.0002386	0.0001872	0.0035	0.9		2959	2959	No	6.72	Si
SLU 81	fin.	-71.91	-1215	-0.0000356	0.0001872	0.0035	0.9		2964.67	2964.67	No	41.23	Si
SLU 74	ini.	429.28	-2032	-0.0002319	0.0001872	0.0035	0.9		2959	2959	No	6.89	Si
SLU 74	fin.	-45.88	-1260	-0.0000226	0.0001872	0.0035	0.9		2964.67	2964.67	No	64.62	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	f <sub>vd</sub>	V <sub>t</sub>	V <sub>t,f</sub>	V <sub>t,c</sub>	V <sub>t,c int.</sub>	V <sub>t,R</sub>	incremento > 50%	c.s.	Verifica
SLU 78	ini.	423.19	-2507	0.9	0	365	7137	3773	2295	6068	No	2.42	Si
SLU 78	fin.	-25.48	102	0.9	0	365	7137	3773	2295	6068	No	59.74	Si
SLU 81	ini.	440.3	-2558	0.9	0	365	7137	3773	2295	6068	No	2.37	Si
SLU 81	fin.	-71.91	-77	0.9	0	365	7137	3773	2295	6068	No	78.97	Si
SLU 83	ini.	435.21	-2538	0.9	0	365	7137	3773	2295	6068	No	2.39	Si
SLU 83	fin.	-52.61	-6	0.9	0	365	7137	3773	2295	6068	No	1094.87	Si
SLU 74	ini.	429.28	-2533	0.9	0	365	7137	3773	2295	6068	No	2.4	Si
SLU 74	fin.	-45.88	27	0.9	0	365	7137	3773	2295	6068	No	222.92	Si
SLU 82	ini.	439.29	-2553	0.9	0	365	7137	3773	2295	6068	No	2.38	Si
SLU 82	fin.	-70.81	-74	0.9	0	365	7137	3773	2295	6068	No	82.25	Si
SLU 77	ini.	424.19	-2513	0.9	0	365	7137	3773	2295	6068	No	2.42	Si
SLU 77	fin.	-26.58	99	0.9	0	365	7137	3773	2295	6068	No	61.59	Si
SLU 73	ini.	422.59	-2475	0.9	0	365	7137	3773	2295	6068	No	2.45	Si
SLU 73	fin.	-63.61	-50	0.9	0	365	7137	3773	2295	6068	No	121.85	Si
SLU 84	ini.	434.2	-2532	0.9	0	365	7137	3773	2295	6068	No	2.4	Si
SLU 84	fin.	-51.51	-2	0.9	0	365	7137	3773	2295	6068	No	2444.83	Si
SLU 76	ini.	417.5	-2455	0.9	0	365	7137	3773	2295	6068	No	2.47	Si
SLU 76	fin.	-44.31	21	0.9	0	365	7137	3773	2295	6068	No	282.27	Si
SLU 75	ini.	428.28	-2527	0.9	0	365	7137	3773	2295	6068	No	2.4	Si
SLU 75	fin.	-44.78	30	0.9	0	365	7137	3773	2295	6068	No	200.39	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 14	ini.	525.92	-2029	-0.0002807	0.0002807	0.0035	0.9		2989.59	2989.59		5.68	Si
SLD 14	fin.	-393.27	-400	-0.0002042	0.0002807	0.0035	0.9		2995.37	2995.37		7.62	Si
SLV 15	ini.	754.13	-2621	-0.0004231	0.0002807	0.0035	0.9		2989.59	2989.59		3.96	Si
SLV 15	fin.	-754.72	45	-0.0004226	0.0002807	0.0035	0.9		2995.37	2995.37		3.97	Si
SLV 4	ini.	-181.73	-100	-0.0000911	0.0002807	0.0035	0.9		2995.37	2995.37		16.48	Si
SLV 4	fin.	713.04	-1823	-0.0003963	0.0002807	0.0035	0.9		2989.59	2989.59		4.19	Si
SLV 16	ini.	796.09	-2744	-0.000451	0.0002807	0.0035	0.9		2989.59	2989.59		3.76	Si
SLV 16	fin.	-813.98	112	-0.000462	0.0002807	0.0035	0.9		2995.37	2995.37		3.68	Si
SLV 1	ini.	-193.43	-85	-0.0000972	0.0002807	0.0035	0.9		2995.37	2995.37		15.49	Si
SLV 1	fin.	725.99	-1806	-0.0004047	0.0002807	0.0035	0.9		2989.59	2989.59		4.12	Si
SLD 16	ini.	512.95	-1983	-0.000273	0.0002807	0.0035	0.9		2989.59	2989.59		5.83	Si
SLD 16	fin.	-373.4	-437	-0.0001932	0.0002807	0.0035	0.9		2995.37	2995.37		8.02	Si
SLV 14	ini.	826.34	-2851	-0.0004714	0.0002807	0.0035	0.9		2989.59	2989.59		3.62	Si
SLV 14	fin.	-860.29	197	-0.0004935	0.0002807	0.0035	0.9		2995.37	2995.37		3.48	Si
SLV 2	ini.	-151.48	-207	-0.0000756	0.0002807	0.0035	0.9		2995.37	2995.37		19.77	Si
SLV 2	fin.	666.73	-1739	-0.0003667	0.0002807	0.0035	0.9		2989.59	2989.59		4.48	Si
SLV 13	ini.	784.38	-2728	-0.0004432	0.0002807	0.0035	0.9		2989.59	2989.59		3.81	Si
SLV 13	fin.	-801.03	129	-0.0004533	0.0002807	0.0035	0.9		2995.37	2995.37		3.74	Si
SLV 3	ini.	-223.68	23	-0.0001129	0.0002807	0.0035	0.9		2995.37	2995.37		13.39	Si
SLV 3	fin.	772.3	-1891	-0.0004351	0.0002807	0.0035	0.9		2989.59	2989.59		3.87	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 1	ini.	-193.43	512	0.9	0	548	7137	5660	2295	7684		15.01	Si
SLV 1	fin.	725.99	2907	0.9	0	548	7137	5660	2295	7684		2.64	Si
SLV 14	ini.	826.34	-4216	0.9	0	548	7137	5660	2295	7684		1.82	Si
SLV 14	fin.	-860.29	-2962	0.9	0	548	7137	5660	2295	7684		2.59	Si
SLV 3	ini.	-223.68	632	0.9	0	548	7137	5660	2295	7684		12.16	Si
SLV 3	fin.	772.3	2917	0.9	0	548	7137	5660	2295	7684		2.63	Si
SLD 16	ini.	512.95	-2778	0.9	0	548	7137	5660	2295	7684		2.77	Si
SLD 16	fin.	-373.4	-1276	0.9	0	548	7137	5660	2295	7684		6.02	Si
SLV 10	ini.	511.97	-2735	0.9	0	548	7137	5660	2295	7684		2.81	Si
SLV 10	fin.	-369.37	-956	0.9	0	548	7137	5660	2295	7684		8.04	Si
SLD 13	ini.	507.91	-2746	0.9	0	548	7137	5660	2295	7684		2.8	Si
SLD 13	fin.	-367.82	-1188	0.9	0	548	7137	5660	2295	7684		6.47	Si
SLV 13	ini.	784.38	-4022	0.9	0	548	7137	5660	2295	7684		1.91	Si
SLV 13	fin.	-801.03	-2748	0.9	0	548	7137	5660	2295	7684		2.8	Si
SLV 16	ini.	796.09	-4096	0.9	0	548	7137	5660	2295	7684		1.88	Si
SLV 16	fin.	-813.98	-2952	0.9	0	548	7137	5660	2295	7684		2.6	Si
SLV 15	ini.	754.13	-3902	0.9	0	548	7137	5660	2295	7684		1.97	Si
SLV 15	fin.	-754.72	-2738	0.9	0	548	7137	5660	2295	7684		2.81	Si
SLD 14	ini.	525.92	-2829	0.9	0	548	7137	5660	2295	7684		2.72	Si
SLD 14	fin.	-393.27	-1280	0.9	0	548	7137	5660	2295	7684		6	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.482	SLV 14	Si
V_SLV	1.823	SLV 14	Si
PF_SLU	6.72	SLU 81	Si
V_SLU	2.372	SLU 81	Si

## Trave di accoppiamento 114

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-17.718	6.526	11.05	11.87	0.82	-16.818	6.526	11.05	11.87	0.82	0.9	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb_	fhk	fvk0	fmedio	t0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 77	ini.	31.82	-604	-0.0000189	0.0001872	0.0035	0.82		2455.37	2455.37	No	77.17	Si
SLU 77	fin.	-459.09	-1654	-0.0003092	0.0001872	0.0035	0.82		2460.51	2460.51	No	5.36	Si
SLU 82	ini.	65.6	-507	-0.0000393	0.0001872	0.0035	0.82		2455.37	2455.37	No	37.43	Si
SLU 82	fin.	-475.02	-1670	-0.0003217	0.0001872	0.0035	0.82		2460.51	2460.51	No	5.18	Si
SLU 74	ini.	48.12	-557	-0.0000287	0.0001872	0.0035	0.82		2455.37	2455.37	No	51.03	Si
SLU 74	fin.	-464.83	-1657	-0.0003137	0.0001872	0.0035	0.82		2460.51	2460.51	No	5.29	Si
SLU 81	ini.	66.7	-505	-0.0000399	0.0001872	0.0035	0.82		2455.37	2455.37	No	36.81	Si
SLU 81	fin.	-476.33	-1674	-0.0003227	0.0001872	0.0035	0.82		2460.51	2460.51	No	5.17	Si
SLU 76	ini.	45.42	-539	-0.0000271	0.0001872	0.0035	0.82		2455.37	2455.37	No	54.06	Si
SLU 76	fin.	-449.35	-1600	-0.0003016	0.0001872	0.0035	0.82		2460.51	2460.51	No	5.48	Si
SLU 73	ini.	61.72	-491	-0.0000369	0.0001872	0.0035	0.82		2455.37	2455.37	No	39.78	Si
SLU 73	fin.	-455.09	-1603	-0.000306	0.0001872	0.0035	0.82		2460.51	2460.51	No	5.41	Si
SLU 84	ini.	49.3	-554	-0.0000294	0.0001872	0.0035	0.82		2455.37	2455.37	No	49.8	Si
SLU 84	fin.	-469.28	-1667	-0.0003172	0.0001872	0.0035	0.82		2460.51	2460.51	No	5.24	Si
SLU 83	ini.	50.4	-553	-0.0000301	0.0001872	0.0035	0.82		2455.37	2455.37	No	48.72	Si
SLU 83	fin.	-470.59	-1671	-0.0003182	0.0001872	0.0035	0.82		2460.51	2460.51	No	5.23	Si
SLU 75	ini.	47.02	-558	-0.000028	0.0001872	0.0035	0.82		2455.37	2455.37	No	52.22	Si
SLU 75	fin.	-463.52	-1653	-0.0003126	0.0001872	0.0035	0.82		2460.51	2460.51	No	5.31	Si
SLU 78	ini.	30.72	-606	-0.0000182	0.0001872	0.0035	0.82		2455.37	2455.37	No	79.92	Si
SLU 78	fin.	-457.78	-1650	-0.0003081	0.0001872	0.0035	0.82		2460.51	2460.51	No	5.37	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 81	ini.	66.7	531	0.82	0	303	6502	3438	2091	5529	No	10.41	Si
SLU 81	fin.	-476.33	-2755	0.82	0	303	6502	3438	2091	5529	No	2.01	Si
SLU 82	ini.	65.6	534	0.82	0	303	6502	3438	2091	5529	No	10.34	Si
SLU 82	fin.	-475.02	-2748	0.82	0	303	6502	3438	2091	5529	No	2.01	Si
SLU 73	ini.	61.72	513	0.82	0	303	6502	3438	2091	5529	No	10.77	Si
SLU 73	fin.	-455.09	-2625	0.82	0	303	6502	3438	2091	5529	No	2.11	Si
SLU 75	ini.	47.02	591	0.82	0	303	6502	3438	2091	5529	No	9.35	Si
SLU 75	fin.	-463.52	-2678	0.82	0	303	6502	3438	2091	5529	No	2.06	Si
SLU 84	ini.	49.3	602	0.82	0	303	6502	3438	2091	5529	No	9.18	Si
SLU 84	fin.	-469.28	-2725	0.82	0	303	6502	3438	2091	5529	No	2.03	Si
SLU 76	ini.	45.42	581	0.82	0	303	6502	3438	2091	5529	No	9.52	Si
SLU 76	fin.	-449.35	-2603	0.82	0	303	6502	3438	2091	5529	No	2.12	Si
SLU 74	ini.	48.12	588	0.82	0	303	6502	3438	2091	5529	No	9.4	Si
SLU 74	fin.	-464.83	-2685	0.82	0	303	6502	3438	2091	5529	No	2.06	Si
SLU 83	ini.	50.4	599	0.82	0	303	6502	3438	2091	5529	No	9.24	Si
SLU 83	fin.	-470.59	-2732	0.82	0	303	6502	3438	2091	5529	No	2.02	Si
SLU 78	ini.	30.72	659	0.82	0	303	6502	3438	2091	5529	No	8.39	Si
SLU 78	fin.	-457.78	-2656	0.82	0	303	6502	3438	2091	5529	No	2.08	Si
SLU 77	ini.	31.82	656	0.82	0	303	6502	3438	2091	5529	No	8.43	Si
SLU 77	fin.	-459.09	-2663	0.82	0	303	6502	3438	2091	5529	No	2.08	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 14	ini.	229.37	3	-0.0001409	0.0002807	0.0035	0.82		2482.11	2482.11		10.82	Si
SLD 14	fin.	-498.4	-1634	-0.0003248	0.0002807	0.0035	0.82		2487.45	2487.45		4.99	Si
SLD 13	ini.	218.42	-13	-0.0001339	0.0002807	0.0035	0.82		2482.11	2482.11		11.36	Si
SLD 13	fin.	-485.33	-1596	-0.0003152	0.0002807	0.0035	0.82		2487.45	2487.45		5.13	Si
SLD 16	ini.	206.86	-38	-0.0001265	0.0002807	0.0035	0.82		2482.11	2482.11		12	Si
SLD 16	fin.	-481.31	-1583	-0.0003123	0.0002807	0.0035	0.82		2487.45	2487.45		5.17	Si
SLV 10	ini.	258.04	48	-0.0001595	0.0002807	0.0035	0.82		2482.11	2482.11		9.62	Si
SLV 10	fin.	-511.1	-1679	-0.0003341	0.0002807	0.0035	0.82		2487.45	2487.45		4.87	Si
SLV 13	ini.	447.38	420	-0.0002884	0.0002807	0.0035	0.82		2482.11	2482.11		5.55	Si
SLV 13	fin.	-703.99	-2215	-0.0004851	0.0002807	0.0035	0.82		2487.45	2487.45		3.53	Si
SLV 9	ini.	241.57	24	-0.0001488	0.0002807	0.0035	0.82		2482.11	2482.11		10.27	Si
SLV 9	fin.	-491.44	-1622	-0.0003197	0.0002807	0.0035	0.82		2487.45	2487.45		5.06	Si
SLV 14	ini.	472.88	457	-0.0003068	0.0002807	0.0035	0.82		2482.11	2482.11		5.25	Si
SLV 14	fin.	-734.43	-2304	-0.0005104	0.0002807	0.0035	0.82		2487.45	2487.45		3.39	Si
SLV 15	ini.	395.31	326	-0.0002517	0.0002807	0.0035	0.82		2482.11	2482.11		6.28	Si
SLV 15	fin.	-664.25	-2097	-0.0004528	0.0002807	0.0035	0.82		2487.45	2487.45		3.74	Si
SLV 16	ini.	420.81	364	-0.0002695	0.0002807	0.0035	0.82		2482.11	2482.11		5.9	Si
SLV 16	fin.	-694.69	-2186	-0.0004775	0.0002807	0.0035	0.82		2487.45	2487.45		3.58	Si
SLD 15	ini.	195.91	-54	-0.0001196	0.0002807	0.0035	0.82		2482.11	2482.11		12.67	Si
SLD 15	fin.	-468.24	-1545	-0.0003028	0.0002807	0.0035	0.82		2487.45	2487.45		5.31	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 14	ini.	229.37	-384	0.82	0	455	6502	5156	2091	6957		18.14	Si
SLD 14	fin.	-498.4	-2623	0.82	0	455	6502	5156	2091	6957		2.65	Si
SLV 9	ini.	241.57	-222	0.82	0	455	6502	5156	2091	6957		31.3	Si
SLV 9	fin.	-491.44	-2597	0.82	0	455	6502	5156	2091	6957		2.68	Si
SLV 14	ini.	472.88	-1349	0.82	0	455	6502	5156	2091	6957		5.16	Si
SLV 14	fin.	-734.43	-3666	0.82	0	455	6502	5156	2091	6957		1.9	Si
SLD 13	ini.	218.42	-338	0.82	0	455	6502	5156	2091	6957		20.59	Si
SLD 13	fin.	-485.33	-2563	0.82	0	455	6502	5156	2091	6957		2.71	Si
SLV 13	ini.	447.38	-1243	0.82	0	455	6502	5156	2091	6957		5.6	Si
SLV 13	fin.	-703.99	-3528	0.82	0	455	6502	5156	2091	6957		1.97	Si
SLD 16	ini.	206.86	-353	0.82	0	455	6502	5156	2091	6957		19.68	Si
SLD 16	fin.	-481.31	-2545	0.82	0	455	6502	5156	2091	6957		2.73	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 10	ini.	258.04	-291	0.82	0	455	6502	5156	2091	6957		23.9	Si
SLV 10	fin.	-511.1	-2686	0.82	0	455	6502	5156	2091	6957		2.59	Si
SLV 15	ini.	395.31	-1173	0.82	0	455	6502	5156	2091	6957		5.93	Si
SLV 15	fin.	-664.25	-3347	0.82	0	455	6502	5156	2091	6957		2.08	Si
SLV 16	ini.	420.81	-1280	0.82	0	455	6502	5156	2091	6957		5.44	Si
SLV 16	fin.	-694.69	-3486	0.82	0	455	6502	5156	2091	6957		2	Si
SLD 15	ini.	195.91	-308	0.82	0	455	6502	5156	2091	6957		22.61	Si
SLD 15	fin.	-468.24	-2486	0.82	0	455	6502	5156	2091	6957		2.8	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.387	SLV 14	Si
V_SLV	1.898	SLV 14	Si
PF_SLU	5.166	SLU 81	Si
V_SLU	2.007	SLU 81	Si

## Trave di accoppiamento 115

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-12.838	6.526	8.35	9.25	0.9	-11.938	6.526	8.35	9.25	0.9	0.9	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	t <sub>fv</sub>	t <sub>fo</sub>	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	e <sub>f,d</sub>	γ <sub>f,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ε <sub>m</sub>	ε <sub>m_</sub>	ε <sub>mu</sub>	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 77	ini.	444.77	-2355	-0.0002413	0.0001872	0.0035	0.9		2959	2959	No	6.65	Si
SLU 77	fin.	232.47	-1952	-0.0001193	0.0001872	0.0035	0.9		2959	2959	No	12.73	Si
SLU 84	ini.	443.4	-2335	-0.0002405	0.0001872	0.0035	0.9		2959	2959	No	6.67	Si
SLU 84	fin.	220.98	-1916	-0.0001131	0.0001872	0.0035	0.9		2959	2959	No	13.39	Si
SLU 78	ini.	444.42	-2352	-0.0002411	0.0001872	0.0035	0.9		2959	2959	No	6.66	Si
SLU 78	fin.	231.77	-1949	-0.0001189	0.0001872	0.0035	0.9		2959	2959	No	12.77	Si
SLU 81	ini.	438.57	-2301	-0.0002375	0.0001872	0.0035	0.9		2959	2959	No	6.75	Si
SLU 81	fin.	211.63	-1873	-0.0001081	0.0001872	0.0035	0.9		2959	2959	No	13.98	Si
SLU 80	ini.	433.93	-2299	-0.0002347	0.0001872	0.0035	0.9		2959	2959	No	6.82	Si
SLU 80	fin.	226.06	-1906	-0.0001158	0.0001872	0.0035	0.9		2959	2959	No	13.09	Si
SLU 74	ini.	439.59	-2318	-0.0002382	0.0001872	0.0035	0.9		2959	2959	No	6.73	Si
SLU 74	fin.	222.42	-1906	-0.0001139	0.0001872	0.0035	0.9		2959	2959	No	13.3	Si
SLU 79	ini.	434.28	-2301	-0.0002349	0.0001872	0.0035	0.9		2959	2959	No	6.81	Si
SLU 79	fin.	226.77	-1909	-0.0001162	0.0001872	0.0035	0.9		2959	2959	No	13.05	Si
SLU 82	ini.	438.22	-2299	-0.0002373	0.0001872	0.0035	0.9		2959	2959	No	6.75	Si
SLU 82	fin.	210.93	-1870	-0.0001077	0.0001872	0.0035	0.9		2959	2959	No	14.03	Si
SLU 83	ini.	443.75	-2338	-0.0002407	0.0001872	0.0035	0.9		2959	2959	No	6.67	Si
SLU 83	fin.	221.68	-1919	-0.0001135	0.0001872	0.0035	0.9		2959	2959	No	13.35	Si
SLU 75	ini.	439.24	-2316	-0.0002379	0.0001872	0.0035	0.9		2959	2959	No	6.74	Si
SLU 75	fin.	221.72	-1903	-0.0001135	0.0001872	0.0035	0.9		2959	2959	No	13.35	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 79	ini.	434.28	-2540	0.9	0	365	7137	3773	2295	6068	No	2.39	Si
SLU 79	fin.	226.77	999	0.9	0	365	7137	3773	2295	6068	No	6.07	Si
SLU 75	ini.	439.24	-2561	0.9	0	365	7137	3773	2295	6068	No	2.37	Si
SLU 75	fin.	221.72	978	0.9	0	365	7137	3773	2295	6068	No	6.21	Si
SLU 83	ini.	443.75	-2573	0.9	0	365	7137	3773	2295	6068	No	2.36	Si
SLU 83	fin.	221.68	971	0.9	0	365	7137	3773	2295	6068	No	6.25	Si
SLU 77	ini.	444.77	-2603	0.9	0	365	7137	3773	2295	6068	No	2.33	Si
SLU 77	fin.	232.47	1026	0.9	0	365	7137	3773	2295	6068	No	5.91	Si
SLU 81	ini.	438.57	-2534	0.9	0	365	7137	3773	2295	6068	No	2.39	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 81	fin.	211.63	926	0.9	0	365	7137	3773	2295	6068	No	6.55	Si
SLU 82	ini.	438.22	-2531	0.9	0	365	7137	3773	2295	6068	No	2.4	Si
SLU 82	fin.	210.93	923	0.9	0	365	7137	3773	2295	6068	No	6.58	Si
SLU 84	ini.	443.4	-2570	0.9	0	365	7137	3773	2295	6068	No	2.36	Si
SLU 84	fin.	220.98	968	0.9	0	365	7137	3773	2295	6068	No	6.27	Si
SLU 74	ini.	439.59	-2564	0.9	0	365	7137	3773	2295	6068	No	2.37	Si
SLU 74	fin.	222.42	981	0.9	0	365	7137	3773	2295	6068	No	6.19	Si
SLU 80	ini.	433.93	-2537	0.9	0	365	7137	3773	2295	6068	No	2.39	Si
SLU 80	fin.	226.06	996	0.9	0	365	7137	3773	2295	6068	No	6.09	Si
SLU 78	ini.	444.42	-2600	0.9	0	365	7137	3773	2295	6068	No	2.33	Si
SLU 78	fin.	231.77	1023	0.9	0	365	7137	3773	2295	6068	No	5.93	Si

**Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche**

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 16	ini.	1435.83	-4343	-0.0009387	0.0002807	0.0035	0.9		2989.59	2989.59		2.08	Si
SLV 16	fin.	-1387.27	933	-0.0008952	0.0002807	0.0035	0.9		2995.37	2995.37		2.16	Si
SLV 13	ini.	1415	-4351	-0.0009209	0.0002807	0.0035	0.9		2989.59	2989.59		2.11	Si
SLV 13	fin.	-1348.2	806	-0.0008625	0.0002807	0.0035	0.9		2995.37	2995.37		2.22	Si
SLV 1	ini.	-833.04	1169	-0.0004749	0.0002807	0.0035	0.9		2995.37	2995.37		3.6	Si
SLV 1	fin.	1684.47	-3527	-0.0011643	0.0002807	0.0035	0.9		2989.59	2989.59		1.77	Si
SLV 3	ini.	-897.37	1386	-0.0005192	0.0002807	0.0035	0.9		2995.37	2995.37		3.34	Si
SLV 3	fin.	1762.27	-3571	-0.0012401	0.0002807	0.0035	0.9		2989.59	2989.59		1.7	Si
SLV 2	ini.	-747.88	960	-0.0004181	0.0002807	0.0035	0.9		2995.37	2995.37		4.01	Si
SLV 2	fin.	1567.6	-3357	-0.0010552	0.0002807	0.0035	0.9		2989.59	2989.59		1.91	Si
SLD 14	ini.	813.96	-2858	-0.000463	0.0002807	0.0035	0.9		2989.59	2989.59		3.67	Si
SLD 14	fin.	-541.26	-325	-0.0002892	0.0002807	0.0035	0.9		2995.37	2995.37		5.53	Si
SLV 15	ini.	1350.67	-4134	-0.0008666	0.0002807	0.0035	0.9		2989.59	2989.59		2.21	Si
SLV 15	fin.	-1270.4	762	-0.000799	0.0002807	0.0035	0.9		2995.37	2995.37		2.36	Si
SLV 4	ini.	-812.21	1177	-0.0004608	0.0002807	0.0035	0.9		2995.37	2995.37		3.69	Si
SLV 4	fin.	1645.4	-3401	-0.0011272	0.0002807	0.0035	0.9		2989.59	2989.59		1.82	Si
SLV 14	ini.	1500.16	-4560	-0.0009948	0.0002807	0.0035	0.9		2989.59	2989.59		1.99	Si
SLV 14	fin.	-1465.07	977	-0.0009617	0.0002807	0.0035	0.9		2995.37	2995.37		2.04	Si
SLD 3	ini.	-211.17	-316	-0.0001064	0.0002807	0.0035	0.9		2995.37	2995.37		14.18	Si
SLD 3	fin.	838.46	-2270	-0.0004796	0.0002807	0.0035	0.9		2989.59	2989.59		3.57	Si

**Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215**

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 15	ini.	1350.67	-6736	0.9	0	548	7137	5660	2295	7684		1.14	Si
SLV 15	fin.	-1270.4	-4700	0.9	0	548	7137	5660	2295	7684		1.63	Si
SLD 16	ini.	786.22	-4060	0.9	0	548	7137	5660	2295	7684		1.89	Si
SLD 16	fin.	-507.86	-1813	0.9	0	548	7137	5660	2295	7684		4.24	Si
SLD 14	ini.	813.96	-4184	0.9	0	548	7137	5660	2295	7684		1.84	Si
SLD 14	fin.	-541.26	-1761	0.9	0	548	7137	5660	2295	7684		4.36	Si
SLV 16	ini.	1435.83	-7130	0.9	0	548	7137	5660	2295	7684		1.08	Si
SLV 16	fin.	-1387.27	-5122	0.9	0	548	7137	5660	2295	7684		1.5	Si
SLV 1	ini.	-833.04	3592	0.9	0	548	7137	5660	2295	7684		2.14	Si
SLV 1	fin.	1684.47	6440	0.9	0	548	7137	5660	2295	7684		1.19	Si
SLV 3	ini.	-897.37	3877	0.9	0	548	7137	5660	2295	7684		1.98	Si
SLV 3	fin.	1762.27	6319	0.9	0	548	7137	5660	2295	7684		1.22	Si
SLV 14	ini.	1500.16	-7416	0.9	0	548	7137	5660	2295	7684		1.04	Si
SLV 14	fin.	-1465.07	-5002	0.9	0	548	7137	5660	2295	7684		1.54	Si
SLV 13	ini.	1415	-7022	0.9	0	548	7137	5660	2295	7684		1.09	Si
SLV 13	fin.	-1348.2	-4580	0.9	0	548	7137	5660	2295	7684		1.68	Si
SLV 2	ini.	-747.88	3198	0.9	0	548	7137	5660	2295	7684		2.4	Si
SLV 2	fin.	1567.6	6018	0.9	0	548	7137	5660	2295	7684		1.28	Si
SLV 4	ini.	-812.21	3483	0.9	0	548	7137	5660	2295	7684		2.21	Si
SLV 4	fin.	1645.4	5897	0.9	0	548	7137	5660	2295	7684		1.3	Si

**Tabella dei coefficienti di sicurezza minimi**

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.696	SLV 3	Si
V_SLV	1.036	SLV 14	Si
PF_SLU	6.653	SLU 77	Si
V_SLU	2.331	SLU 77	Si

**Trave di accoppiamento 116**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati geometrici**

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-12.838	6.526	11.05	11.87	0.82	-11.938	6.526	11.05	11.87	0.82	0.9	0.28	3500

**Caratteristiche del materiale**

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC





Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 75	ini.	-186.64	-1349	-0.000115	0.0001872	0.0035	0.82		2460.51	2460.51	No	13.18	Si
SLU 75	fin.	-360.56	-1505	-0.0002345	0.0001872	0.0035	0.82		2460.51	2460.51	No	6.82	Si
SLU 83	ini.	-186.84	-1359	-0.0001151	0.0001872	0.0035	0.82		2460.51	2460.51	No	13.17	Si
SLU 83	fin.	-366.62	-1519	-0.0002389	0.0001872	0.0035	0.82		2460.51	2460.51	No	6.71	Si
SLU 79	ini.	-189.2	-1362	-0.0001166	0.0001872	0.0035	0.82		2460.51	2460.51	No	13	Si
SLU 79	fin.	-355.83	-1501	-0.000231	0.0001872	0.0035	0.82		2460.51	2460.51	No	6.91	Si
SLU 81	ini.	-178.89	-1308	-0.0001099	0.0001872	0.0035	0.82		2460.51	2460.51	No	13.75	Si
SLU 81	fin.	-363.07	-1482	-0.0002363	0.0001872	0.0035	0.82		2460.51	2460.51	No	6.78	Si
SLU 77	ini.	-194.59	-1401	-0.0001201	0.0001872	0.0035	0.82		2460.51	2460.51	No	12.64	Si
SLU 77	fin.	-365.28	-1544	-0.0002379	0.0001872	0.0035	0.82		2460.51	2460.51	No	6.74	Si
SLU 82	ini.	-178.89	-1307	-0.0001099	0.0001872	0.0035	0.82		2460.51	2460.51	No	13.75	Si
SLU 82	fin.	-361.9	-1479	-0.0002355	0.0001872	0.0035	0.82		2460.51	2460.51	No	6.8	Si
SLU 84	ini.	-186.84	-1358	-0.0001151	0.0001872	0.0035	0.82		2460.51	2460.51	No	13.17	Si
SLU 84	fin.	-365.46	-1516	-0.0002381	0.0001872	0.0035	0.82		2460.51	2460.51	No	6.73	Si
SLU 78	ini.	-194.59	-1400	-0.0001201	0.0001872	0.0035	0.82		2460.51	2460.51	No	12.64	Si
SLU 78	fin.	-364.12	-1541	-0.0002371	0.0001872	0.0035	0.82		2460.51	2460.51	No	6.76	Si
SLU 74	ini.	-186.64	-1350	-0.000115	0.0001872	0.0035	0.82		2460.51	2460.51	No	13.18	Si
SLU 74	fin.	-361.73	-1508	-0.0002353	0.0001872	0.0035	0.82		2460.51	2460.51	No	6.8	Si
SLU 80	ini.	-189.2	-1361	-0.0001166	0.0001872	0.0035	0.82		2460.51	2460.51	No	13	Si
SLU 80	fin.	-354.67	-1498	-0.0002302	0.0001872	0.0035	0.82		2460.51	2460.51	No	6.94	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 80	ini.	-189.2	2208	0.82	0	303	6502	3438	2091	5529	No	2.5	Si
SLU 80	fin.	-354.67	-1628	0.82	0	303	6502	3438	2091	5529	No	3.4	Si
SLU 81	ini.	-178.89	2137	0.82	0	303	6502	3438	2091	5529	No	2.59	Si
SLU 81	fin.	-363.07	-1651	0.82	0	303	6502	3438	2091	5529	No	3.35	Si
SLU 83	ini.	-186.84	2217	0.82	0	303	6502	3438	2091	5529	No	2.49	Si
SLU 83	fin.	-366.62	-1674	0.82	0	303	6502	3438	2091	5529	No	3.3	Si
SLU 74	ini.	-186.64	2184	0.82	0	303	6502	3438	2091	5529	No	2.53	Si
SLU 74	fin.	-361.73	-1645	0.82	0	303	6502	3438	2091	5529	No	3.36	Si
SLU 84	ini.	-186.84	2215	0.82	0	303	6502	3438	2091	5529	No	2.5	Si
SLU 84	fin.	-365.46	-1670	0.82	0	303	6502	3438	2091	5529	No	3.31	Si
SLU 78	ini.	-194.59	2262	0.82	0	303	6502	3438	2091	5529	No	2.44	Si
SLU 78	fin.	-364.12	-1665	0.82	0	303	6502	3438	2091	5529	No	3.32	Si
SLU 77	ini.	-194.59	2264	0.82	0	303	6502	3438	2091	5529	No	2.44	Si
SLU 77	fin.	-365.28	-1669	0.82	0	303	6502	3438	2091	5529	No	3.31	Si
SLU 75	ini.	-186.64	2181	0.82	0	303	6502	3438	2091	5529	No	2.53	Si
SLU 75	fin.	-360.56	-1641	0.82	0	303	6502	3438	2091	5529	No	3.37	Si
SLU 82	ini.	-178.89	2135	0.82	0	303	6502	3438	2091	5529	No	2.59	Si
SLU 82	fin.	-361.9	-1646	0.82	0	303	6502	3438	2091	5529	No	3.36	Si
SLU 79	ini.	-189.2	2210	0.82	0	303	6502	3438	2091	5529	No	2.5	Si
SLU 79	fin.	-355.83	-1632	0.82	0	303	6502	3438	2091	5529	No	3.39	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 14	ini.	593.28	2223	-0.0003975	0.0002807	0.0035	0.82		2482.11	2482.11		4.18	Si
SLV 14	fin.	-1583.83	-2477	-0.0013867	0.0002807	0.0035	0.82		2487.45	2487.45		1.57	Si
SLV 16	ini.	567.45	2018	-0.0003775	0.0002807	0.0035	0.82		2482.11	2482.11		4.37	Si
SLV 16	fin.	-1482.75	-2340	-0.0012608	0.0002807	0.0035	0.82		2487.45	2487.45		1.68	Si
SLV 15	ini.	520.67	1813	-0.000342	0.0002807	0.0035	0.82		2482.11	2482.11		4.77	Si
SLV 15	fin.	-1398.63	-2249	-0.0011617	0.0002807	0.0035	0.82		2487.45	2487.45		1.78	Si
SLV 4	ini.	-791.58	-3786	-0.0005588	0.0002807	0.0035	0.82		2487.45	2487.45		3.14	Si
SLV 4	fin.	1010.54	380	-0.0007587	0.0002807	0.0035	0.82		2482.11	2482.11		2.46	Si
SLV 13	ini.	546.51	2018	-0.0003615	0.0002807	0.0035	0.82		2482.11	2482.11		4.54	Si
SLV 13	fin.	-1499.71	-2385	-0.0012814	0.0002807	0.0035	0.82		2487.45	2487.45		1.66	Si
SLV 2	ini.	-765.75	-3581	-0.0005368	0.0002807	0.0035	0.82		2487.45	2487.45		3.25	Si
SLV 2	fin.	909.46	244	-0.0006646	0.0002807	0.0035	0.82		2482.11	2482.11		2.73	Si
SLV 1	ini.	-812.52	-3786	-0.0005769	0.0002807	0.0035	0.82		2487.45	2487.45		3.06	Si
SLV 1	fin.	993.57	335	-0.0007426	0.0002807	0.0035	0.82		2482.11	2482.11		2.5	Si
SLV 3	ini.	-838.36	-3991	-0.0005994	0.0002807	0.0035	0.82		2487.45	2487.45		2.97	Si
SLV 3	fin.	1094.65	472	-0.0008404	0.0002807	0.0035	0.82		2482.11	2482.11		2.27	Si
SLD 14	ini.	183.54	445	-0.0001118	0.0002807	0.0035	0.82		2482.11	2482.11		13.52	Si
SLD 14	fin.	-817.38	-1633	-0.0005811	0.0002807	0.0035	0.82		2487.45	2487.45		3.04	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 10	ini.	139.48	395	-0.0000842	0.0002807	0.0035	0.82		2482.11	2482.11		17.79	Si
SLV 10	fin.	-814.21	-1667	-0.0005783	0.0002807	0.0035	0.82		2487.45	2487.45		3.06	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 15	ini.	520.67	-2581	0.82	0	455	6502	5156	2091	6957		2.69	Si
SLV 15	fin.	-1398.63	-4838	0.82	0	455	6502	5156	2091	6957		1.44	Si
SLV 2	ini.	-765.75	5423	0.82	0	455	6502	5156	2091	6957		1.28	Si
SLV 2	fin.	909.46	2619	0.82	0	455	6502	5156	2091	6957		2.66	Si
SLV 3	ini.	-838.36	5906	0.82	0	455	6502	5156	2091	6957		1.18	Si
SLV 3	fin.	1094.65	3221	0.82	0	455	6502	5156	2091	6957		2.16	Si
SLD 1	ini.	-417.52	3265	0.82	0	455	6502	5156	2091	6957		2.13	Si
SLD 1	fin.	284.59	601	0.82	0	455	6502	5156	2091	6957		11.59	Si
SLV 13	ini.	546.51	-2752	0.82	0	455	6502	5156	2091	6957		2.53	Si
SLV 13	fin.	-1499.71	-5167	0.82	0	455	6502	5156	2091	6957		1.35	Si
SLV 4	ini.	-791.58	5593	0.82	0	455	6502	5156	2091	6957		1.24	Si
SLV 4	fin.	1010.54	2948	0.82	0	455	6502	5156	2091	6957		2.36	Si
SLV 1	ini.	-812.52	5735	0.82	0	455	6502	5156	2091	6957		1.21	Si
SLV 1	fin.	993.57	2892	0.82	0	455	6502	5156	2091	6957		2.41	Si
SLV 16	ini.	567.45	-2894	0.82	0	455	6502	5156	2091	6957		2.4	Si
SLV 16	fin.	-1482.75	-5111	0.82	0	455	6502	5156	2091	6957		1.36	Si
SLD 3	ini.	-428.62	3339	0.82	0	455	6502	5156	2091	6957		2.08	Si
SLD 3	fin.	328.2	743	0.82	0	455	6502	5156	2091	6957		9.36	Si
SLV 14	ini.	593.28	-3065	0.82	0	455	6502	5156	2091	6957		2.27	Si
SLV 14	fin.	-1583.83	-5440	0.82	0	455	6502	5156	2091	6957		1.28	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.571	SLV 14	Si
V_SLV	1.178	SLV 3	Si
PF_SLU	6.711	SLU 83	Si
V_SLU	2.442	SLU 77	Si

## Trave di accoppiamento 117

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-7.958	6.526	8.35	9.25	0.9	-7.058	6.526	8.35	9.25	0.9	0.9	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>vd</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	elim,conv / ε <sub>c</sub> CNR DT-200						CRM / Fibrenet?				
									α <sub>t</sub>	α	elim,conv	ε <sub>f,d</sub>	γ <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 75	ini.	179.81	-1506	-0.0000912	0.0001872	0.0035	0.9		2959	2959	No	16.46	Si
SLU 75	fin.	313.2	-1545	-0.0001639	0.0001872	0.0035	0.9		2959	2959	No	9.45	Si
SLU 81	ini.	169.72	-1470	-0.0000859	0.0001872	0.0035	0.9		2959	2959	No	17.43	Si
SLU 81	fin.	315.48	-1537	-0.0001652	0.0001872	0.0035	0.9		2959	2959	No	9.38	Si
SLU 84	ini.	183.18	-1523	-0.000093	0.0001872	0.0035	0.9		2959	2959	No	16.15	Si
SLU 84	fin.	312.13	-1554	-0.0001633	0.0001872	0.0035	0.9		2959	2959	No	9.48	Si
SLU 74	ini.	179.83	-1507	-0.0000912	0.0001872	0.0035	0.9		2959	2959	No	16.45	Si
SLU 74	fin.	313.66	-1547	-0.0001641	0.0001872	0.0035	0.9		2959	2959	No	9.43	Si
SLU 82	ini.	169.7	-1469	-0.0000859	0.0001872	0.0035	0.9		2959	2959	No	17.44	Si
SLU 82	fin.	315.02	-1536	-0.0001649	0.0001872	0.0035	0.9		2959	2959	No	9.39	Si
SLU 77	ini.	193.31	-1562	-0.0000983	0.0001872	0.0035	0.9		2959	2959	No	15.31	Si
SLU 77	fin.	310.77	-1565	-0.0001625	0.0001872	0.0035	0.9		2959	2959	No	9.52	Si
SLU 78	ini.	193.29	-1561	-0.0000983	0.0001872	0.0035	0.9		2959	2959	No	15.31	Si
SLU 78	fin.	310.31	-1564	-0.0001623	0.0001872	0.0035	0.9		2959	2959	No	9.54	Si
SLU 76	ini.	174.38	-1469	-0.0000883	0.0001872	0.0035	0.9		2959	2959	No	16.97	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 76	fin.	306.7	-1512	-0.0001602	0.0001872	0.0035	0.9		2959	2959	No	9.65	Si
SLU 73	ini.	160.9	-1415	-0.0000813	0.0001872	0.0035	0.9		2959	2959	No	18.39	Si
SLU 73	fin.	309.59	-1493	-0.0001619	0.0001872	0.0035	0.9		2959	2959	No	9.56	Si
SLU 83	ini.	183.19	-1525	-0.000093	0.0001872	0.0035	0.9		2959	2959	No	16.15	Si
SLU 83	fin.	312.59	-1556	-0.0001635	0.0001872	0.0035	0.9		2959	2959	No	9.47	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 75	ini.	179.81	-1352	0.9	0	365	7137	3773	2295	6068	No	4.49	Si
SLU 75	fin.	313.2	1368	0.9	0	365	7137	3773	2295	6068	No	4.43	Si
SLU 78	ini.	193.29	-1429	0.9	0	365	7137	3773	2295	6068	No	4.25	Si
SLU 78	fin.	310.31	1366	0.9	0	365	7137	3773	2295	6068	No	4.44	Si
SLU 84	ini.	183.18	-1351	0.9	0	365	7137	3773	2295	6068	No	4.49	Si
SLU 84	fin.	312.13	1350	0.9	0	365	7137	3773	2295	6068	No	4.49	Si
SLU 77	ini.	193.31	-1430	0.9	0	365	7137	3773	2295	6068	No	4.24	Si
SLU 77	fin.	310.77	1367	0.9	0	365	7137	3773	2295	6068	No	4.44	Si
SLU 79	ini.	187.88	-1386	0.9	0	365	7137	3773	2295	6068	No	4.38	Si
SLU 79	fin.	304.57	1333	0.9	0	365	7137	3773	2295	6068	No	4.55	Si
SLU 83	ini.	183.19	-1352	0.9	0	365	7137	3773	2295	6068	No	4.49	Si
SLU 83	fin.	312.59	1352	0.9	0	365	7137	3773	2295	6068	No	4.49	Si
SLU 81	ini.	169.72	-1274	0.9	0	365	7137	3773	2295	6068	No	4.76	Si
SLU 81	fin.	315.48	1355	0.9	0	365	7137	3773	2295	6068	No	4.48	Si
SLU 82	ini.	169.7	-1273	0.9	0	365	7137	3773	2295	6068	No	4.77	Si
SLU 82	fin.	315.02	1353	0.9	0	365	7137	3773	2295	6068	No	4.48	Si
SLU 80	ini.	187.87	-1385	0.9	0	365	7137	3773	2295	6068	No	4.38	Si
SLU 80	fin.	304.11	1331	0.9	0	365	7137	3773	2295	6068	No	4.56	Si
SLU 74	ini.	179.83	-1353	0.9	0	365	7137	3773	2295	6068	No	4.49	Si
SLU 74	fin.	313.66	1370	0.9	0	365	7137	3773	2295	6068	No	4.43	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 3	ini.	-326.2	10	-0.0001674	0.0002807	0.0035	0.9		2995.37	2995.37		9.18	Si
SLD 3	fin.	721.02	-1743	-0.0004015	0.0002807	0.0035	0.9		2989.59	2989.59		4.15	Si
SLV 4	ini.	-824.38	1169	-0.0004691	0.0002807	0.0035	0.9		2995.37	2995.37		3.63	Si
SLV 4	fin.	1277.7	-2475	-0.0008068	0.0002807	0.0035	0.9		2989.59	2989.59		2.34	Si
SLV 1	ini.	-831.59	1185	-0.0004739	0.0002807	0.0035	0.9		2995.37	2995.37		3.6	Si
SLV 1	fin.	1391.08	-2991	-0.0009005	0.0002807	0.0035	0.9		2989.59	2989.59		2.15	Si
SLV 16	ini.	1046.66	-3174	-0.0006278	0.0002807	0.0035	0.9		2989.59	2989.59		2.86	Si
SLV 16	fin.	-930.61	834	-0.0005425	0.0002807	0.0035	0.9		2995.37	2995.37		3.22	Si
SLV 15	ini.	964.12	-2989	-0.0005676	0.0002807	0.0035	0.9		2989.59	2989.59		3.1	Si
SLV 15	fin.	-829.61	673	-0.0004726	0.0002807	0.0035	0.9		2995.37	2995.37		3.61	Si
SLV 14	ini.	1121.99	-3342	-0.0006845	0.0002807	0.0035	0.9		2989.59	2989.59		2.66	Si
SLV 14	fin.	-918.23	479	-0.0005338	0.0002807	0.0035	0.9		2995.37	2995.37		3.26	Si
SLD 1	ini.	-293.74	-63	-0.0001499	0.0002807	0.0035	0.9		2995.37	2995.37		10.2	Si
SLD 1	fin.	726.49	-1897	-0.000405	0.0002807	0.0035	0.9		2989.59	2989.59		4.12	Si
SLV 3	ini.	-906.92	1354	-0.0005259	0.0002807	0.0035	0.9		2995.37	2995.37		3.3	Si
SLV 3	fin.	1378.7	-2636	-0.0008901	0.0002807	0.0035	0.9		2989.59	2989.59		2.17	Si
SLV 13	ini.	1039.45	-3158	-0.0006225	0.0002807	0.0035	0.9		2989.59	2989.59		2.88	Si
SLV 13	fin.	-817.23	318	-0.0004642	0.0002807	0.0035	0.9		2995.37	2995.37		3.67	Si
SLV 2	ini.	-749.06	1001	-0.0004189	0.0002807	0.0035	0.9		2995.37	2995.37		4	Si
SLV 2	fin.	1290.08	-2830	-0.0008168	0.0002807	0.0035	0.9		2989.59	2989.59		2.32	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 4	ini.	-824.38	3532	0.9	0	548	7137	5660	2295	7684		2.18	Si
SLV 4	fin.	1277.7	4747	0.9	0	548	7137	5660	2295	7684		1.62	Si
SLD 1	ini.	-293.74	1097	0.9	0	548	7137	5660	2295	7684		7	Si
SLD 1	fin.	726.49	2840	0.9	0	548	7137	5660	2295	7684		2.71	Si
SLV 2	ini.	-749.06	3342	0.9	0	548	7137	5660	2295	7684		2.3	Si
SLV 2	fin.	1290.08	4937	0.9	0	548	7137	5660	2295	7684		1.56	Si
SLV 16	ini.	1046.66	-5452	0.9	0	548	7137	5660	2295	7684		1.41	Si
SLV 16	fin.	-930.61	-3308	0.9	0	548	7137	5660	2295	7684		2.32	Si
SLV 1	ini.	-831.59	3725	0.9	0	548	7137	5660	2295	7684		2.06	Si
SLV 1	fin.	1391.08	5305	0.9	0	548	7137	5660	2295	7684		1.45	Si
SLD 14	ini.	541.27	-2907	0.9	0	548	7137	5660	2295	7684		2.64	Si
SLD 14	fin.	-260.55	-760	0.9	0	548	7137	5660	2295	7684		10.11	Si
SLV 14	ini.	1121.99	-5642	0.9	0	548	7137	5660	2295	7684		1.36	Si
SLV 14	fin.	-918.23	-3118	0.9	0	548	7137	5660	2295	7684		2.46	Si
SLV 3	ini.	-906.92	3915	0.9	0	548	7137	5660	2295	7684		1.96	Si
SLV 3	fin.	1378.7	5115	0.9	0	548	7137	5660	2295	7684		1.5	Si
SLV 13	ini.	1039.45	-5259	0.9	0	548	7137	5660	2295	7684		1.46	Si
SLV 13	fin.	-817.23	-2750	0.9	0	548	7137	5660	2295	7684		2.79	Si
SLV 15	ini.	964.12	-5069	0.9	0	548	7137	5660	2295	7684		1.52	Si
SLV 15	fin.	-829.61	-2940	0.9	0	548	7137	5660	2295	7684		2.61	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.149	SLV 1	Si
V_SLV	1.362	SLV 14	Si
PF_SLU	9.379	SLU 81	Si
V_SLU	4.243	SLU 77	Si



## Trave di accoppiamento 118

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-7.958	6.526	11.05	11.87	0.82	-7.058	6.526	11.05	11.87	0.82	0.9	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	ε <sub>f,d</sub>	γ <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em <sub>-</sub>	em <sub>u</sub>	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 76	ini.	-369.49	-1186	-0.000241	0.0001872	0.0035	0.82		2460.51	2460.51	No	6.66	Si
SLU 76	fin.	-68.59	-559	-0.000041	0.0001872	0.0035	0.82		2460.51	2460.51	No	35.87	Si
SLU 73	ini.	-372.52	-1167	-0.0002433	0.0001872	0.0035	0.82		2460.51	2460.51	No	6.6	Si
SLU 73	fin.	-58.72	-514	-0.000035	0.0001872	0.0035	0.82		2460.51	2460.51	No	41.9	Si
SLU 75	ini.	-378.14	-1221	-0.0002474	0.0001872	0.0035	0.82		2460.51	2460.51	No	6.51	Si
SLU 75	fin.	-71.79	-581	-0.0000429	0.0001872	0.0035	0.82		2460.51	2460.51	No	34.27	Si
SLU 83	ini.	-377.23	-1222	-0.0002468	0.0001872	0.0035	0.82		2460.51	2460.51	No	6.52	Si
SLU 83	fin.	-74.95	-594	-0.0000449	0.0001872	0.0035	0.82		2460.51	2460.51	No	32.83	Si
SLU 74	ini.	-377.38	-1221	-0.0002469	0.0001872	0.0035	0.82		2460.51	2460.51	No	6.52	Si
SLU 74	fin.	-72.44	-583	-0.0000433	0.0001872	0.0035	0.82		2460.51	2460.51	No	33.97	Si
SLU 81	ini.	-380.26	-1202	-0.000249	0.0001872	0.0035	0.82		2460.51	2460.51	No	6.47	Si
SLU 81	fin.	-65.08	-549	-0.0000389	0.0001872	0.0035	0.82		2460.51	2460.51	No	37.81	Si
SLU 84	ini.	-377.99	-1222	-0.0002473	0.0001872	0.0035	0.82		2460.51	2460.51	No	6.51	Si
SLU 84	fin.	-74.31	-591	-0.0000445	0.0001872	0.0035	0.82		2460.51	2460.51	No	33.11	Si
SLU 82	ini.	-381.02	-1203	-0.0002496	0.0001872	0.0035	0.82		2460.51	2460.51	No	6.46	Si
SLU 82	fin.	-64.44	-546	-0.0000385	0.0001872	0.0035	0.82		2460.51	2460.51	No	38.18	Si
SLU 78	ini.	-375.1	-1241	-0.0002452	0.0001872	0.0035	0.82		2460.51	2460.51	No	6.56	Si
SLU 78	fin.	-81.66	-626	-0.000049	0.0001872	0.0035	0.82		2460.51	2460.51	No	30.13	Si
SLU 77	ini.	-374.34	-1240	-0.0002446	0.0001872	0.0035	0.82		2460.51	2460.51	No	6.57	Si
SLU 77	fin.	-82.31	-628	-0.0000493	0.0001872	0.0035	0.82		2460.51	2460.51	No	29.9	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	f <sub>vd</sub>	V <sub>t</sub>	V <sub>t,f</sub>	V <sub>t,c</sub>	V <sub>t,c.int.</sub>	V <sub>t,R</sub>	incremento > 50%	c.s.	Verifica
SLU 82	ini.	-381.02	1974	0.82	0	303	6502	3438	2091	5529	No	2.8	Si
SLU 82	fin.	-64.44	-1312	0.82	0	303	6502	3438	2091	5529	No	4.21	Si
SLU 84	ini.	-377.99	1973	0.82	0	303	6502	3438	2091	5529	No	2.8	Si
SLU 84	fin.	-74.31	-1377	0.82	0	303	6502	3438	2091	5529	No	4.02	Si
SLU 83	ini.	-377.23	1971	0.82	0	303	6502	3438	2091	5529	No	2.81	Si
SLU 83	fin.	-74.95	-1380	0.82	0	303	6502	3438	2091	5529	No	4.01	Si
SLU 75	ini.	-378.14	1957	0.82	0	303	6502	3438	2091	5529	No	2.83	Si
SLU 75	fin.	-71.79	-1334	0.82	0	303	6502	3438	2091	5529	No	4.14	Si
SLU 74	ini.	-377.38	1955	0.82	0	303	6502	3438	2091	5529	No	2.83	Si
SLU 74	fin.	-72.44	-1337	0.82	0	303	6502	3438	2091	5529	No	4.13	Si
SLU 76	ini.	-369.49	1914	0.82	0	303	6502	3438	2091	5529	No	2.89	Si
SLU 76	fin.	-68.59	-1295	0.82	0	303	6502	3438	2091	5529	No	4.27	Si
SLU 78	ini.	-375.1	1955	0.82	0	303	6502	3438	2091	5529	No	2.83	Si
SLU 78	fin.	-81.66	-1398	0.82	0	303	6502	3438	2091	5529	No	3.95	Si
SLU 73	ini.	-372.52	1916	0.82	0	303	6502	3438	2091	5529	No	2.89	Si
SLU 73	fin.	-58.72	-1231	0.82	0	303	6502	3438	2091	5529	No	4.49	Si
SLU 81	ini.	-380.26	1972	0.82	0	303	6502	3438	2091	5529	No	2.8	Si
SLU 81	fin.	-65.08	-1316	0.82	0	303	6502	3438	2091	5529	No	4.2	Si
SLU 77	ini.	-374.34	1953	0.82	0	303	6502	3438	2091	5529	No	2.83	Si
SLU 77	fin.	-82.31	-1402	0.82	0	303	6502	3438	2091	5529	No	3.94	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 1	ini.	-701.72	-1562	-0.0004833	0.0002807	0.0035	0.82		2487.45	2487.45		3.54	Si
SLD 1	fin.	180.14	370	-0.0001096	0.0002807	0.0035	0.82		2482.11	2482.11		13.78	Si
SLD 2	ini.	-665.12	-1502	-0.0004535	0.0002807	0.0035	0.82		2487.45	2487.45		3.74	Si
SLD 2	fin.	161.69	311	-0.0000981	0.0002807	0.0035	0.82		2482.11	2482.11		15.35	Si
SLV 16	ini.	736.88	867	-0.0005137	0.0002807	0.0035	0.82		2482.11	2482.11		3.37	Si
SLV 16	fin.	-541.86	-2005	-0.0003572	0.0002807	0.0035	0.82		2487.45	2487.45		4.59	Si
SLV 14	ini.	701.5	594	-0.0004843	0.0002807	0.0035	0.82		2482.11	2482.11		3.54	Si
SLV 14	fin.	-579.53	-2148	-0.0003859	0.0002807	0.0035	0.82		2487.45	2487.45		4.29	Si
SLD 3	ini.	-686.25	-1443	-0.0004706	0.0002807	0.0035	0.82		2487.45	2487.45		3.62	Si
SLD 3	fin.	196.37	432	-0.0001199	0.0002807	0.0035	0.82		2482.11	2482.11		12.64	Si
SLV 3	ini.	-1243.12	-2262	-0.000099	0.0002807	0.0035	0.82		2487.45	2487.45		2	Si
SLV 3	fin.	507.49	1466	-0.0003322	0.0002807	0.0035	0.82		2482.11	2482.11		4.89	Si
SLV 15	ini.	651.64	727	-0.0004437	0.0002807	0.0035	0.82		2482.11	2482.11		3.81	Si
SLV 15	fin.	-498.89	-1867	-0.0003251	0.0002807	0.0035	0.82		2487.45	2487.45		4.99	Si
SLV 4	ini.	-1157.87	-2122	-0.0009015	0.0002807	0.0035	0.82		2487.45	2487.45		2.15	Si
SLV 4	fin.	464.52	1328	-0.0003007	0.0002807	0.0035	0.82		2482.11	2482.11		5.34	Si
SLV 1	ini.	-1278.5	-2535	-0.0010279	0.0002807	0.0035	0.82		2487.45	2487.45		1.95	Si
SLV 1	fin.	469.82	1323	-0.0003046	0.0002807	0.0035	0.82		2482.11	2482.11		5.28	Si
SLV 2	ini.	-1193.25	-2395	-0.0009378	0.0002807	0.0035	0.82		2487.45	2487.45		2.08	Si
SLV 2	fin.	426.85	1185	-0.0002738	0.0002807	0.0035	0.82		2482.11	2482.11		5.81	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 16	ini.	736.88	-2074	0.82	0	455	6502	5156	2091	6957		3.35	Si
SLV 16	fin.	-541.86	-3630	0.82	0	455	6502	5156	2091	6957		1.92	Si
SLV 14	ini.	701.5	-1897	0.82	0	455	6502	5156	2091	6957		3.67	Si
SLV 14	fin.	-579.53	-3838	0.82	0	455	6502	5156	2091	6957		1.81	Si
SLD 1	ini.	-701.72	2847	0.82	0	455	6502	5156	2091	6957		2.44	Si
SLD 1	fin.	180.14	390	0.82	0	455	6502	5156	2091	6957		17.84	Si
SLD 3	ini.	-686.25	2770	0.82	0	455	6502	5156	2091	6957		2.51	Si
SLD 3	fin.	196.37	480	0.82	0	455	6502	5156	2091	6957		14.51	Si
SLV 15	ini.	651.64	-1784	0.82	0	455	6502	5156	2091	6957		3.9	Si
SLV 15	fin.	-498.89	-3389	0.82	0	455	6502	5156	2091	6957		2.05	Si
SLV 4	ini.	-1157.87	4353	0.82	0	455	6502	5156	2091	6957		1.6	Si
SLV 4	fin.	464.52	1969	0.82	0	455	6502	5156	2091	6957		3.53	Si
SLV 2	ini.	-1193.25	4530	0.82	0	455	6502	5156	2091	6957		1.54	Si
SLV 2	fin.	426.85	1761	0.82	0	455	6502	5156	2091	6957		3.95	Si
SLV 1	ini.	-1278.5	4819	0.82	0	455	6502	5156	2091	6957		1.44	Si
SLV 1	fin.	469.82	2003	0.82	0	455	6502	5156	2091	6957		3.47	Si
SLV 13	ini.	616.26	-1607	0.82	0	455	6502	5156	2091	6957		4.33	Si
SLV 13	fin.	-536.56	-3597	0.82	0	455	6502	5156	2091	6957		1.93	Si
SLV 3	ini.	-1243.12	4643	0.82	0	455	6502	5156	2091	6957		1.5	Si
SLV 3	fin.	507.49	2211	0.82	0	455	6502	5156	2091	6957		3.15	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.946	SLV 1	Si
V_SLV	1.444	SLV 1	Si
PF_SLU	6.458	SLU 82	Si
V_SLU	2.801	SLU 82	Si

## Trave di accoppiamento 119

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-19.813	1.006	10.45	11.87	1.42	-20.613	1.006	10.45	11.87	1.42	0.8	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb_	fhk	fvk0	fmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 71	ini.	-1003.53	-3330	-0.0002123	0.0002246	0.0035	1.42		7545.1	7545.1	No	7.52	Si
SLU 71	fin.	422.48	-2530	-0.0000853	0.0002246	0.0035	1.42		7536.27	7536.27	No	17.84	Si
SLU 49	ini.	-989.25	-3144	-0.000209	0.0002246	0.0035	1.42		7545.1	7545.1	No	7.63	Si
SLU 49	fin.	460.12	-2333	-0.0000932	0.0002246	0.0035	1.42		7536.27	7536.27	No	16.38	Si
SLU 68	ini.	-983.34	-3238	-0.0002076	0.0002246	0.0035	1.42		7545.1	7545.1	No	7.67	Si
SLU 68	fin.	417.89	-2453	-0.0000844	0.0002246	0.0035	1.42		7536.27	7536.27	No	18.03	Si
SLU 72	ini.	-998.99	-3330	-0.0002112	0.0002246	0.0035	1.42		7545.1	7545.1	No	7.55	Si
SLU 72	fin.	419.46	-2534	-0.0000847	0.0002246	0.0035	1.42		7536.27	7536.27	No	17.97	Si
SLU 66	ini.	-984.08	-3332	-0.0002078	0.0002246	0.0035	1.42		7545.1	7545.1	No	7.67	Si
SLU 66	fin.	404.35	-2551	-0.0000816	0.0002246	0.0035	1.42		7536.27	7536.27	No	18.64	Si
SLU 70	ini.	-992.18	-3423	-0.0002097	0.0002246	0.0035	1.42		7545.1	7545.1	No	7.6	Si
SLU 70	fin.	400.9	-2638	-0.0000808	0.0002246	0.0035	1.42		7536.27	7536.27	No	18.8	Si
SLU 50	ini.	-1000.59	-3052	-0.0002116	0.0002246	0.0035	1.42		7545.1	7545.1	No	7.54	Si
SLU 50	fin.	481.7	-2225	-0.0000977	0.0002246	0.0035	1.42		7536.27	7536.27	No	15.65	Si
SLU 48	ini.	-993.78	-3145	-0.00021	0.0002246	0.0035	1.42		7545.1	7545.1	No	7.59	Si
SLU 48	fin.	463.14	-2329	-0.0000938	0.0002246	0.0035	1.42		7536.27	7536.27	No	16.27	Si
SLU 51	ini.	-996.05	-3051	-0.0002106	0.0002246	0.0035	1.42		7545.1	7545.1	No	7.57	Si
SLU 51	fin.	478.69	-2229	-0.0000971	0.0002246	0.0035	1.42		7536.27	7536.27	No	15.74	Si
SLU 69	ini.	-996.72	-3423	-0.0002107	0.0002246	0.0035	1.42		7545.1	7545.1	No	7.57	Si
SLU 69	fin.	403.92	-2634	-0.0000815	0.0002246	0.0035	1.42		7536.27	7536.27	No	18.66	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 80	ini.	-959.44	3198	1.42	0	576	6344	7144	3621	6920	No	2.16	Si
SLU 80	fin.	325.9	1240	1.42	0	576	6344	7144	3621	6920	No	5.58	Si
SLU 68	ini.	-983.34	3202	1.42	0	576	6344	7144	3621	6920	No	2.16	Si
SLU 68	fin.	417.89	1628	1.42	0	576	6344	7144	3621	6920	No	4.25	Si
SLU 72	ini.	-998.99	3234	1.42	0	576	6344	7144	3621	6920	No	2.14	Si
SLU 72	fin.	419.46	1659	1.42	0	576	6344	7144	3621	6920	No	4.17	Si
SLU 65	ini.	-970.7	3180	1.42	0	576	6344	7144	3621	6920	No	2.18	Si
SLU 65	fin.	418.32	1606	1.42	0	576	6344	7144	3621	6920	No	4.31	Si
SLU 69	ini.	-996.72	3205	1.42	0	576	6344	7144	3621	6920	No	2.16	Si
SLU 69	fin.	403.92	1631	1.42	0	576	6344	7144	3621	6920	No	4.24	Si
SLU 70	ini.	-992.18	3192	1.42	0	576	6344	7144	3621	6920	No	2.17	Si
SLU 70	fin.	400.9	1618	1.42	0	576	6344	7144	3621	6920	No	4.28	Si
SLU 79	ini.	-963.98	3212	1.42	0	576	6344	7144	3621	6920	No	2.15	Si
SLU 79	fin.	328.92	1253	1.42	0	576	6344	7144	3621	6920	No	5.52	Si
SLU 66	ini.	-984.08	3183	1.42	0	576	6344	7144	3621	6920	No	2.17	Si
SLU 66	fin.	404.35	1609	1.42	0	576	6344	7144	3621	6920	No	4.3	Si
SLU 71	ini.	-1003.53	3247	1.42	0	576	6344	7144	3621	6920	No	2.13	Si
SLU 71	fin.	422.48	1673	1.42	0	576	6344	7144	3621	6920	No	4.14	Si
SLU 64	ini.	-978.26	3202	1.42	0	576	6344	7144	3621	6920	No	2.16	Si
SLU 64	fin.	423.35	1628	1.42	0	576	6344	7144	3621	6920	No	4.25	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 13	ini.	-3106.81	-3376	-0.000758	0.0003369	0.0035	1.42		7279.66	7279.66		2.34	Si
SLV 13	fin.	2679.33	-297	-0.0006313	0.0003369	0.0035	1.42		7270.13	7270.13		2.71	Si
SLV 14	ini.	-3099.89	-3384	-0.0007558	0.0003369	0.0035	1.42		7279.66	7279.66		2.35	Si
SLV 14	fin.	2684.29	-310	-0.0006327	0.0003369	0.0035	1.42		7270.13	7270.13		2.71	Si
SLV 9	ini.	-2115.16	-3005	-0.0004746	0.0003369	0.0035	1.42		7279.66	7279.66		3.44	Si
SLV 9	fin.	1580.72	-981	-0.0003405	0.0003369	0.0035	1.42		7270.13	7270.13		4.6	Si
SLD 14	ini.	-1752.5	-2831	-0.0003819	0.0003369	0.0035	1.42		7279.66	7279.66		4.15	Si
SLD 14	fin.	1328.62	-1175	-0.0002812	0.0003369	0.0035	1.42		7270.13	7270.13		5.47	Si
SLV 4	ini.	1625.69	-1451	-0.0003513	0.0003369	0.0035	1.42		7270.13	7270.13		4.47	Si
SLV 4	fin.	-2055.46	-3351	-0.0004589	0.0003369	0.0035	1.42		7279.66	7279.66		3.54	Si
SLV 10	ini.	-2110.69	-3010	-0.0004734	0.0003369	0.0035	1.42		7279.66	7279.66		3.45	Si
SLV 10	fin.	1583.92	-989	-0.0003413	0.0003369	0.0035	1.42		7270.13	7270.13		4.59	Si
SLV 3	ini.	1618.76	-1443	-0.0003497	0.0003369	0.0035	1.42		7270.13	7270.13		4.49	Si
SLV 3	fin.	-2060.42	-3338	-0.0004602	0.0003369	0.0035	1.42		7279.66	7279.66		3.53	Si
SLV 15	ini.	-2669.32	-3176	-0.0006275	0.0003369	0.0035	1.42		7279.66	7279.66		2.73	Si
SLV 15	fin.	2310.48	-549	-0.0005277	0.0003369	0.0035	1.42		7270.13	7270.13		3.15	Si
SLV 16	ini.	-2662.4	-3184	-0.0006255	0.0003369	0.0035	1.42		7279.66	7279.66		2.73	Si
SLV 16	fin.	2315.43	-562	-0.000529	0.0003369	0.0035	1.42		7270.13	7270.13		3.14	Si
SLD 13	ini.	-1755.47	-2827	-0.0003827	0.0003369	0.0035	1.42		7279.66	7279.66		4.15	Si
SLD 13	fin.	1326.49	-1170	-0.0002807	0.0003369	0.0035	1.42		7270.13	7270.13		5.48	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 13	ini.	-3106.81	10398	1.42	0	864	6344	10717	3621	7208		0.69	No
SLV 13	fin.	2679.33	9221	1.42	0	864	6344	10717	3621	7208		0.78	No
SLV 15	ini.	-2669.32	9073	1.42	0	864	6344	10717	3621	7208		0.79	No
SLV 15	fin.	2310.48	7779	1.42	0	864	6344	10717	3621	7208		0.93	No
SLV 14	ini.	-3099.89	10392	1.42	0	864	6344	10717	3621	7208		0.69	No
SLV 14	fin.	2684.29	9214	1.42	0	864	6344	10717	3621	7208		0.78	No
SLV 10	ini.	-2110.69	6832	1.42	0	864	6344	10717	3621	7208		1.06	Si
SLV 10	fin.	1583.92	5783	1.42	0	864	6344	10717	3621	7208		1.25	Si
SLD 14	ini.	-1752.5	5847	1.42	0	864	6344	10717	3621	7208		1.23	Si
SLD 14	fin.	1328.62	4631	1.42	0	864	6344	10717	3621	7208		1.56	Si
SLV 4	ini.	1625.69	-5526	1.42	0	864	6344	10717	3621	7208		1.3	Si
SLV 4	fin.	-2055.46	-6841	1.42	0	864	6344	10717	3621	7208		1.05	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 3	ini.	1618.76	-5520	1.42	0	864	6344	10717	3621	7208		1.31	Si
SLV 3	fin.	-2060.42	-6835	1.42	0	864	6344	10717	3621	7208		1.05	Si
SLV 16	ini.	-2662.4	9066	1.42	0	864	6344	10717	3621	7208		0.8	No
SLV 16	fin.	2315.43	7773	1.42	0	864	6344	10717	3621	7208		0.93	No
SLV 9	ini.	-2115.16	6836	1.42	0	864	6344	10717	3621	7208		1.05	Si
SLV 9	fin.	1580.72	5787	1.42	0	864	6344	10717	3621	7208		1.25	Si
SLD 13	ini.	-1755.47	5850	1.42	0	864	6344	10717	3621	7208		1.23	Si
SLD 13	fin.	1326.49	4633	1.42	0	864	6344	10717	3621	7208		1.56	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.343	SLV 13	Si
V_SLV	0.693	SLV 13	No
PF_SLU	7.519	SLU 71	Si
V_SLU	2.131	SLU 71	Si

## Trave di accoppiamento 120

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-11.143	1.006	10.85	11.87	1.02	-12.263	1.006	10.85	11.87	1.02	1.12	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fhk	fvk0	fhmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 75	ini.	-1247.74	-3352	-0.0005897	0.0002246	0.0035	1.02		3900.37	3900.37	No	3.13	Si
SLU 75	fin.	382.56	-1360	-0.0001535	0.0002246	0.0035	1.02		3893.98	3893.98	No	10.18	Si
SLU 73	ini.	-1193.12	-3169	-0.0005582	0.0002246	0.0035	1.02		3900.37	3900.37	No	3.27	Si
SLU 73	fin.	353.17	-1275	-0.000141	0.0002246	0.0035	1.02		3893.98	3893.98	No	11.03	Si
SLU 84	ini.	-1268.49	-3345	-0.0006018	0.0002246	0.0035	1.02		3900.37	3900.37	No	3.07	Si
SLU 84	fin.	362.25	-1348	-0.0001449	0.0002246	0.0035	1.02		3893.98	3893.98	No	10.75	Si
SLU 78	ini.	-1242.7	-3395	-0.0005868	0.0002246	0.0035	1.02		3900.37	3900.37	No	3.14	Si
SLU 78	fin.	360.48	-1441	-0.0001441	0.0002246	0.0035	1.02		3893.98	3893.98	No	10.8	Si
SLU 82	ini.	-1273.52	-3302	-0.0006048	0.0002246	0.0035	1.02		3900.37	3900.37	No	3.06	Si
SLU 82	fin.	384.32	-1267	-0.0001543	0.0002246	0.0035	1.02		3893.98	3893.98	No	10.13	Si
SLU 40	ini.	-1193.79	-2973	-0.0005585	0.0002246	0.0035	1.02		3900.37	3900.37	No	3.27	Si
SLU 40	fin.	392.54	-1002	-0.0001578	0.0002246	0.0035	1.02		3893.98	3893.98	No	9.92	Si
SLU 74	ini.	-1238.47	-3339	-0.0005843	0.0002246	0.0035	1.02		3900.37	3900.37	No	3.15	Si
SLU 74	fin.	373.99	-1371	-0.0001499	0.0002246	0.0035	1.02		3893.98	3893.98	No	10.41	Si
SLU 81	ini.	-1264.25	-3290	-0.0005993	0.0002246	0.0035	1.02		3900.37	3900.37	No	3.09	Si
SLU 81	fin.	375.76	-1278	-0.0001506	0.0002246	0.0035	1.02		3893.98	3893.98	No	10.36	Si
SLU 83	ini.	-1259.22	-3333	-0.0005964	0.0002246	0.0035	1.02		3900.37	3900.37	No	3.1	Si
SLU 83	fin.	353.68	-1359	-0.0001413	0.0002246	0.0035	1.02		3893.98	3893.98	No	11.01	Si
SLU 77	ini.	-1233.43	-3382	-0.0005814	0.0002246	0.0035	1.02		3900.37	3900.37	No	3.16	Si
SLU 77	fin.	351.91	-1452	-0.0001405	0.0002246	0.0035	1.02		3893.98	3893.98	No	11.07	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 82	ini.	-1273.52	3814	1.02	0	377	8088	5132	2601	7733	No	2.03	Si
SLU 82	fin.	384.32	1015	1.02	0	377	8088	5132	2601	7733	No	7.62	Si
SLU 78	ini.	-1242.7	3591	1.02	0	377	8088	5132	2601	7733	No	2.15	Si
SLU 78	fin.	360.48	1067	1.02	0	377	8088	5132	2601	7733	No	7.25	Si
SLU 75	ini.	-1247.74	3632	1.02	0	377	8088	5132	2601	7733	No	2.13	Si
SLU 75	fin.	382.56	1109	1.02	0	377	8088	5132	2601	7733	No	6.98	Si
SLU 40	ini.	-1193.79	3609	1.02	0	377	8088	5132	2601	7733	No	2.14	Si
SLU 40	fin.	392.54	1030	1.02	0	377	8088	5132	2601	7733	No	7.51	Si
SLU 84	ini.	-1268.49	3773	1.02	0	377	8088	5132	2601	7733	No	2.05	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 84	fin.	362.25	973	1.02	0	377	8088	5132	2601	7733	No	7.95	Si
SLU 39	ini.	-1184.52	3582	1.02	0	377	8088	5132	2601	7733	No	2.16	Si
SLU 39	fin.	383.98	1003	1.02	0	377	8088	5132	2601	7733	No	7.71	Si
SLU 42	ini.	-1188.75	3567	1.02	0	377	8088	5132	2601	7733	No	2.17	Si
SLU 42	fin.	370.47	988	1.02	0	377	8088	5132	2601	7733	No	7.82	Si
SLU 74	ini.	-1238.47	3606	1.02	0	377	8088	5132	2601	7733	No	2.14	Si
SLU 74	fin.	373.99	1082	1.02	0	377	8088	5132	2601	7733	No	7.15	Si
SLU 83	ini.	-1259.22	3746	1.02	0	377	8088	5132	2601	7733	No	2.06	Si
SLU 83	fin.	353.68	947	1.02	0	377	8088	5132	2601	7733	No	8.17	Si
SLU 81	ini.	-1264.25	3788	1.02	0	377	8088	5132	2601	7733	No	2.04	Si
SLU 81	fin.	375.76	988	1.02	0	377	8088	5132	2601	7733	No	7.82	Si

**Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche**

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 4	ini.	1795.39	-4008	-0.0008777	0.0003369	0.0035	1.02		3838.12	3838.12		2.14	Si
SLV 4	fin.	-5496.08	-13581	-0.0056093	0.0003369	0.0035	1.02		3845.03	3845.03		0.7	No
SLV 13	ini.	-3282.58	-229	-0.0021734	0.0003369	0.0035	1.02		3845.03	3845.03		1.17	Si
SLV 13	fin.	5875.09	11593	-0.0061337	0.0003369	0.0035	1.02		3838.12	3838.12		0.65	No
SLV 11	ini.	-2957.3	-3819	-0.0017953	0.0003369	0.0035	1.02		3845.03	3845.03		1.3	Si
SLV 11	fin.	3182.05	4321	-0.0020536	0.0003369	0.0035	1.02		3838.12	3838.12		1.21	Si
SLV 2	ini.	2597.34	-2763	-0.0014625	0.0003369	0.0035	1.02		3838.12	3838.12		1.48	Si
SLV 2	fin.	-6211.68	-14444	-0.006568	0.0003369	0.0035	1.02		3845.03	3845.03		0.62	No
SLV 3	ini.	1823.5	-4046	-0.0008956	0.0003369	0.0035	1.02		3838.12	3838.12		2.1	Si
SLV 3	fin.	-5571.98	-13752	-0.0057123	0.0003369	0.0035	1.02		3845.03	3845.03		0.69	No
SLV 15	ini.	-4084.52	-1474	-0.003495	0.0003369	0.0035	1.02		3845.03	3845.03		0.94	No
SLV 15	fin.	6590.68	12457	-0.007076	0.0003369	0.0035	1.02		3838.12	3838.12		0.58	No
SLV 12	ini.	-2975.45	-3794	-0.0018143	0.0003369	0.0035	1.02		3845.03	3845.03		1.29	Si
SLV 12	fin.	3231.06	4432	-0.0021143	0.0003369	0.0035	1.02		3838.12	3838.12		1.19	Si
SLV 16	ini.	-4112.63	-1435	-0.003544	0.0003369	0.0035	1.02		3845.03	3845.03		0.93	No
SLV 16	fin.	6666.57	12628	-0.007174	0.0003369	0.0035	1.02		3838.12	3838.12		0.58	No
SLV 1	ini.	2625.44	-2801	-0.0014866	0.0003369	0.0035	1.02		3838.12	3838.12		1.46	Si
SLV 1	fin.	-6287.57	-14615	-0.0066677	0.0003369	0.0035	1.02		3845.03	3845.03		0.61	No
SLV 14	ini.	-3310.68	-191	-0.0022102	0.0003369	0.0035	1.02		3845.03	3845.03		1.16	Si
SLV 14	fin.	5950.98	11764	-0.0062357	0.0003369	0.0035	1.02		3838.12	3838.12		0.64	No

**Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215**

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-4084.52	16541	1.02	0	565	8088	7698	2601	8654		0.52	No
SLV 15	fin.	6590.68	14981	1.02	0	565	8088	7698	2601	8654		0.58	No
SLV 4	ini.	1795.39	-10038	1.02	0	565	8088	7698	2601	8654		0.86	No
SLV 4	fin.	-5496.08	-11599	1.02	0	565	8088	7698	2601	8654		0.75	No
SLV 12	ini.	-2975.45	9953	1.02	0	565	8088	7698	2601	8654		0.87	No
SLV 12	fin.	3231.06	8334	1.02	0	565	8088	7698	2601	8654		1.04	Si
SLV 2	ini.	2597.34	-12303	1.02	0	565	8088	7698	2601	8654		0.7	No
SLV 2	fin.	-6211.68	-13813	1.02	0	565	8088	7698	2601	8654		0.63	No
SLV 11	ini.	-2957.3	9855	1.02	0	565	8088	7698	2601	8654		0.88	No
SLV 11	fin.	3182.05	8235	1.02	0	565	8088	7698	2601	8654		1.05	Si
SLV 13	ini.	-3282.58	14276	1.02	0	565	8088	7698	2601	8654		0.61	No
SLV 13	fin.	5875.09	12767	1.02	0	565	8088	7698	2601	8654		0.68	No
SLV 3	ini.	1823.5	-10191	1.02	0	565	8088	7698	2601	8654		0.85	No
SLV 3	fin.	-5571.98	-11752	1.02	0	565	8088	7698	2601	8654		0.74	No
SLV 14	ini.	-3310.68	14429	1.02	0	565	8088	7698	2601	8654		0.6	No
SLV 14	fin.	5950.98	12920	1.02	0	565	8088	7698	2601	8654		0.67	No
SLV 1	ini.	2625.44	-12456	1.02	0	565	8088	7698	2601	8654		0.69	No
SLV 1	fin.	-6287.57	-13966	1.02	0	565	8088	7698	2601	8654		0.62	No
SLV 16	ini.	-4112.63	16694	1.02	0	565	8088	7698	2601	8654		0.52	No
SLV 16	fin.	6666.57	15134	1.02	0	565	8088	7698	2601	8654		0.57	No

**Tabella dei coefficienti di sicurezza minimi**

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.576	SLV 16	No
V_SLV	0.518	SLV 16	No
PF_SLU	3.063	SLU 82	Si
V_SLU	2.027	SLU 82	Si

**Trave di accoppiamento 121**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati geometrici**

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-9.398	1.006	10.85	11.87	1.02	-10.478	1.006	10.85	11.87	1.02	1.08	0.28	3500

**Caratteristiche del materiale**

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC





Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 74	ini.	260.72	-1481	-0.0001027	0.0002246	0.0035	1.02		3893.98	3893.98	No	14.94	Si
SLU 74	fin.	-1062.55	-3225	-0.0004848	0.0002246	0.0035	1.02		3900.37	3900.37	No	3.67	Si
SLU 77	ini.	272.25	-1496	-0.0001074	0.0002246	0.0035	1.02		3893.98	3893.98	No	14.3	Si
SLU 77	fin.	-1070.42	-3260	-0.0004892	0.0002246	0.0035	1.02		3900.37	3900.37	No	3.64	Si
SLU 83	ini.	255.9	-1463	-0.0001007	0.0002246	0.0035	1.02		3893.98	3893.98	No	15.22	Si
SLU 83	fin.	-1082.76	-3232	-0.000496	0.0002246	0.0035	1.02		3900.37	3900.37	No	3.6	Si
SLU 84	ini.	259.34	-1463	-0.0001021	0.0002246	0.0035	1.02		3893.98	3893.98	No	15.02	Si
SLU 84	fin.	-1089.58	-3245	-0.0004998	0.0002246	0.0035	1.02		3900.37	3900.37	No	3.58	Si
SLU 42	ini.	291.5	-1173	-0.0001153	0.0002246	0.0035	1.02		3893.98	3893.98	No	13.36	Si
SLU 42	fin.	-1032.72	-2923	-0.0004685	0.0002246	0.0035	1.02		3900.37	3900.37	No	3.78	Si
SLU 82	ini.	247.81	-1448	-0.0000974	0.0002246	0.0035	1.02		3893.98	3893.98	No	15.71	Si
SLU 82	fin.	-1081.72	-3210	-0.0004954	0.0002246	0.0035	1.02		3900.37	3900.37	No	3.61	Si
SLU 75	ini.	264.16	-1481	-0.0001041	0.0002246	0.0035	1.02		3893.98	3893.98	No	14.74	Si
SLU 75	fin.	-1069.37	-3238	-0.0004886	0.0002246	0.0035	1.02		3900.37	3900.37	No	3.65	Si
SLU 78	ini.	275.69	-1496	-0.0001088	0.0002246	0.0035	1.02		3893.98	3893.98	No	14.12	Si
SLU 78	fin.	-1077.24	-3274	-0.0004929	0.0002246	0.0035	1.02		3900.37	3900.37	No	3.62	Si
SLU 81	ini.	244.37	-1448	-0.000096	0.0002246	0.0035	1.02		3893.98	3893.98	No	15.93	Si
SLU 81	fin.	-1074.9	-3196	-0.0004916	0.0002246	0.0035	1.02		3900.37	3900.37	No	3.63	Si
SLU 80	ini.	259.3	-1429	-0.0001021	0.0002246	0.0035	1.02		3893.98	3893.98	No	15.02	Si
SLU 80	fin.	-1033.25	-3126	-0.0004688	0.0002246	0.0035	1.02		3900.37	3900.37	No	3.77	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 42	ini.	291.5	-971	1.02	0	391	8088	5132	2601	7733	No	7.96	Si
SLU 42	fin.	-1032.72	-3137	1.02	0	391	8088	5132	2601	7733	No	2.46	Si
SLU 41	ini.	288.06	-955	1.02	0	391	8088	5132	2601	7733	No	8.1	Si
SLU 41	fin.	-1025.9	-3121	1.02	0	391	8088	5132	2601	7733	No	2.48	Si
SLU 82	ini.	247.81	-877	1.02	0	391	8088	5132	2601	7733	No	8.81	Si
SLU 82	fin.	-1081.72	-3250	1.02	0	391	8088	5132	2601	7733	No	2.38	Si
SLU 75	ini.	264.16	-975	1.02	0	391	8088	5132	2601	7733	No	7.93	Si
SLU 75	fin.	-1069.37	-3156	1.02	0	391	8088	5132	2601	7733	No	2.45	Si
SLU 77	ini.	272.25	-987	1.02	0	391	8088	5132	2601	7733	No	7.84	Si
SLU 77	fin.	-1070.42	-3168	1.02	0	391	8088	5132	2601	7733	No	2.44	Si
SLU 83	ini.	255.9	-890	1.02	0	391	8088	5132	2601	7733	No	8.69	Si
SLU 83	fin.	-1082.76	-3262	1.02	0	391	8088	5132	2601	7733	No	2.37	Si
SLU 74	ini.	260.72	-959	1.02	0	391	8088	5132	2601	7733	No	8.07	Si
SLU 74	fin.	-1062.55	-3140	1.02	0	391	8088	5132	2601	7733	No	2.46	Si
SLU 78	ini.	275.69	-1002	1.02	0	391	8088	5132	2601	7733	No	7.71	Si
SLU 78	fin.	-1077.24	-3184	1.02	0	391	8088	5132	2601	7733	No	2.43	Si
SLU 84	ini.	259.34	-905	1.02	0	391	8088	5132	2601	7733	No	8.54	Si
SLU 84	fin.	-1089.58	-3278	1.02	0	391	8088	5132	2601	7733	No	2.36	Si
SLU 81	ini.	244.37	-862	1.02	0	391	8088	5132	2601	7733	No	8.97	Si
SLU 81	fin.	-1074.9	-3234	1.02	0	391	8088	5132	2601	7733	No	2.39	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 3	ini.	4428.41	9020	-0.0040758	0.0003369	0.0035	1.02		3838.12	3838.12		0.87	No
SLV 3	fin.	-2247.03	1068	-0.0011832	0.0003369	0.0035	1.02		3845.03	3845.03		1.71	Si
SLV 2	ini.	3800.96	8439	-0.0029903	0.0003369	0.0035	1.02		3838.12	3838.12		1.01	Si
SLV 2	fin.	-1495.48	2268	-0.0006943	0.0003369	0.0035	1.02		3845.03	3845.03		2.57	Si
SLV 7	ini.	2284.01	2689	-0.0012133	0.0003369	0.0035	1.02		3838.12	3838.12		1.68	Si
SLV 7	fin.	-2219.04	-2954	-0.0011628	0.0003369	0.0035	1.02		3845.03	3845.03		1.73	Si
SLV 15	ini.	-3539.72	-10476	-0.0025379	0.0003369	0.0035	1.02		3845.03	3845.03		1.09	Si
SLV 15	fin.	211.48	-6336	-0.0000821	0.0003369	0.0035	1.02		3838.12	3838.12		18.15	Si
SLV 8	ini.	2241.91	2599	-0.0011822	0.0003369	0.0035	1.02		3838.12	3838.12		1.71	Si
SLV 8	fin.	-2197.74	-2969	-0.0011474	0.0003369	0.0035	1.02		3845.03	3845.03		1.75	Si
SLV 1	ini.	3866.14	8577	-0.0031103	0.0003369	0.0035	1.02		3838.12	3838.12		0.99	No
SLV 1	fin.	-1528.46	2291	-0.0007135	0.0003369	0.0035	1.02		3845.03	3845.03		2.52	Si
SLV 4	ini.	4363.23	8882	-0.0039722	0.0003369	0.0035	1.02		3838.12	3838.12		0.88	No
SLV 4	fin.	-2214.05	1045	-0.0011592	0.0003369	0.0035	1.02		3845.03	3845.03		1.74	Si
SLV 14	ini.	-4167.17	-11056	-0.0036377	0.0003369	0.0035	1.02		3845.03	3845.03		0.92	No
SLV 14	fin.	963.03	-5136	-0.0004109	0.0003369	0.0035	1.02		3838.12	3838.12		3.99	Si
SLV 16	ini.	-3604.9	-10614	-0.0026409	0.0003369	0.0035	1.02		3845.03	3845.03		1.07	Si
SLV 16	fin.	244.46	-6359	-0.0000952	0.0003369	0.0035	1.02		3838.12	3838.12		15.7	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 13	ini.	-4101.99	-10918	-0.0035255	0.0003369	0.0035	1.02		3845.03	3845.03		0.94	No
SLV 13	fin.	930.04	-5113	-0.0003949	0.0003369	0.0035	1.02		3838.12	3838.12		4.13	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 4	ini.	4363.23	-8991	1.02	0	586	8088	7698	2601	8675		0.96	No
SLV 4	fin.	-2214.05	-10325	1.02	0	586	8088	7698	2601	8675		0.84	No
SLV 3	ini.	4428.41	-9137	1.02	0	586	8088	7698	2601	8675		0.95	No
SLV 3	fin.	-2247.03	-10470	1.02	0	586	8088	7698	2601	8675		0.83	No
SLV 1	ini.	3866.14	-7188	1.02	0	586	8088	7698	2601	8675		1.21	Si
SLV 1	fin.	-1528.46	-8566	1.02	0	586	8088	7698	2601	8675		1.01	Si
SLV 16	ini.	-3604.9	6174	1.02	0	586	8088	7698	2601	8675		1.4	Si
SLV 16	fin.	244.46	4799	1.02	0	586	8088	7698	2601	8675		1.81	Si
SLV 14	ini.	-4167.17	8122	1.02	0	586	8088	7698	2601	8675		1.07	Si
SLV 14	fin.	963.03	6703	1.02	0	586	8088	7698	2601	8675		1.29	Si
SLV 15	ini.	-3539.72	6029	1.02	0	586	8088	7698	2601	8675		1.44	Si
SLV 15	fin.	211.48	4654	1.02	0	586	8088	7698	2601	8675		1.86	Si
SLV 7	ini.	2284.01	-6076	1.02	0	586	8088	7698	2601	8675		1.43	Si
SLV 7	fin.	-2219.04	-7372	1.02	0	586	8088	7698	2601	8675		1.18	Si
SLV 13	ini.	-4101.99	7977	1.02	0	586	8088	7698	2601	8675		1.09	Si
SLV 13	fin.	930.04	6558	1.02	0	586	8088	7698	2601	8675		1.32	Si
SLV 8	ini.	2241.91	-5982	1.02	0	586	8088	7698	2601	8675		1.45	Si
SLV 8	fin.	-2197.74	-7278	1.02	0	586	8088	7698	2601	8675		1.19	Si
SLV 2	ini.	3800.96	-7043	1.02	0	586	8088	7698	2601	8675		1.23	Si
SLV 2	fin.	-1495.48	-8421	1.02	0	586	8088	7698	2601	8675		1.03	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.867	SLV 3	No
V_SLV	0.829	SLV 3	No
PF_SLU	3.58	SLU 84	Si
V_SLU	2.359	SLU 84	Si

Trave di accoppiamento 122

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-6.463	1.006	10.45	11.87	1.42	-7.463	1.006	10.45	11.87	1.42	1	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fnk	fvk0	fmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 66	ini.	57.88	-2203	-0.0000114	0.0002246	0.0035	1.42		7536.27	7536.27	No	130.21	Si
SLU 66	fin.	-572.88	-2577	-0.0001169	0.0002246	0.0035	1.42		7545.1	7545.1	No	13.17	Si
SLU 72	ini.	54.67	-2207	-0.0000108	0.0002246	0.0035	1.42		7536.27	7536.27	No	137.85	Si
SLU 72	fin.	-571.6	-2576	-0.0001166	0.0002246	0.0035	1.42		7545.1	7545.1	No	13.2	Si
SLU 67	ini.	63.5	-2196	-0.0000125	0.0002246	0.0035	1.42		7536.27	7536.27	No	118.68	Si
SLU 67	fin.	-576.89	-2577	-0.0001177	0.0002246	0.0035	1.42		7545.1	7545.1	No	13.08	Si
SLU 64	ini.	79.63	-2045	-0.0000157	0.0002246	0.0035	1.42		7536.27	7536.27	No	94.64	Si
SLU 64	fin.	-596.98	-2461	-0.000122	0.0002246	0.0035	1.42		7545.1	7545.1	No	12.64	Si
SLU 43	ini.	85.98	-1900	-0.00001234	0.0002246	0.0035	1.42		7536.27	7536.27	No	87.65	Si
SLU 43	fin.	-588.16	-2343	-0.0001201	0.0002246	0.0035	1.42		7545.1	7545.1	No	12.83	Si
SLU 65	ini.	89.01	-2033	-0.0000176	0.0002246	0.0035	1.42		7536.27	7536.27	No	84.67	Si
SLU 65	fin.	-603.66	-2462	-0.0001234	0.0002246	0.0035	1.42		7545.1	7545.1	No	12.5	Si
SLU 68	ini.	73.72	-2118	-0.0000145	0.0002246	0.0035	1.42		7536.27	7536.27	No	102.23	Si
SLU 68	fin.	-588.96	-2519	-0.0001203	0.0002246	0.0035	1.42		7545.1	7545.1	No	12.81	Si
SLU 47	ini.	80.06	-1972	-0.0000158	0.0002246	0.0035	1.42		7536.27	7536.27	No	94.13	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 47	fin.	-580.14	-2401	-0.0001184	0.0002246	0.0035	1.42		7545.1	7545.1	No	13.01	Si
SLU 46	ini.	69.85	-2051	-0.0000138	0.0002246	0.0035	1.42		7536.27	7536.27	No	107.89	Si
SLU 46	fin.	-568.06	-2459	-0.0001158	0.0002246	0.0035	1.42		7545.1	7545.1	No	13.28	Si
SLU 44	ini.	95.36	-1888	-0.0000188	0.0002246	0.0035	1.42		7536.27	7536.27	No	79.03	Si
SLU 44	fin.	-594.84	-2344	-0.0001216	0.0002246	0.0035	1.42		7545.1	7545.1	No	12.68	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 68	ini.	73.72	258	1.42	0	576	7930	7144	3621	8506	No	32.97	Si
SLU 68	fin.	-588.96	-2224	1.42	0	576	7930	7144	3621	8506	No	3.82	Si
SLU 82	ini.	-114.07	1271	1.42	0	576	7930	7144	3621	8506	No	6.69	Si
SLU 82	fin.	-455.97	-2195	1.42	0	576	7930	7144	3621	8506	No	3.88	Si
SLU 81	ini.	-119.7	1286	1.42	0	576	7930	7144	3621	8506	No	6.61	Si
SLU 81	fin.	-451.96	-2180	1.42	0	576	7930	7144	3621	8506	No	3.9	Si
SLU 64	ini.	79.63	234	1.42	0	576	7930	7144	3621	8506	No	36.37	Si
SLU 64	fin.	-596.98	-2248	1.42	0	576	7930	7144	3621	8506	No	3.78	Si
SLU 67	ini.	63.5	295	1.42	0	576	7930	7144	3621	8506	No	28.82	Si
SLU 67	fin.	-576.89	-2187	1.42	0	576	7930	7144	3621	8506	No	3.89	Si
SLU 73	ini.	-50.52	945	1.42	0	576	7930	7144	3621	8506	No	9	Si
SLU 73	fin.	-502.15	-2225	1.42	0	576	7930	7144	3621	8506	No	3.82	Si
SLU 76	ini.	-65.82	994	1.42	0	576	7930	7144	3621	8506	No	8.55	Si
SLU 76	fin.	-487.45	-2176	1.42	0	576	7930	7144	3621	8506	No	3.91	Si
SLU 65	ini.	89.01	209	1.42	0	576	7930	7144	3621	8506	No	40.74	Si
SLU 65	fin.	-603.66	-2273	1.42	0	576	7930	7144	3621	8506	No	3.74	Si
SLU 66	ini.	57.88	310	1.42	0	576	7930	7144	3621	8506	No	27.42	Si
SLU 66	fin.	-572.88	-2172	1.42	0	576	7930	7144	3621	8506	No	3.92	Si
SLU 72	ini.	54.67	317	1.42	0	576	7930	7144	3621	8506	No	26.82	Si
SLU 72	fin.	-571.6	-2165	1.42	0	576	7930	7144	3621	8506	No	3.93	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-2985.15	-5256	-0.0007208	0.0003369	0.0035	1.42		7279.66	7279.66		2.44	Si
SLV 15	fin.	1940.33	-1703	-0.0004298	0.0003369	0.0035	1.42		7270.13	7270.13		3.75	Si
SLV 7	ini.	1838.25	690	-0.0004038	0.0003369	0.0035	1.42		7270.13	7270.13		3.95	Si
SLV 7	fin.	-1698.75	-1835	-0.0003687	0.0003369	0.0035	1.42		7279.66	7279.66		4.29	Si
SLV 3	ini.	3590.54	2754	-0.0009143	0.0003369	0.0035	1.42		7270.13	7270.13		2.02	Si
SLV 3	fin.	-3154.15	-2021	-0.0007726	0.0003369	0.0035	1.42		7279.66	7279.66		2.31	Si
SLV 13	ini.	-3467.63	-5900	-0.0008724	0.0003369	0.0035	1.42		7279.66	7279.66		2.1	Si
SLV 13	fin.	2231.26	-1762	-0.0005062	0.0003369	0.0035	1.42		7270.13	7270.13		3.26	Si
SLV 10	ini.	-1792.68	-3903	-0.0003919	0.0003369	0.0035	1.42		7279.66	7279.66		4.06	Si
SLV 10	fin.	842.2	-1909	-0.0001728	0.0003369	0.0035	1.42		7270.13	7270.13		8.63	Si
SLV 1	ini.	3108.06	2110	-0.0007595	0.0003369	0.0035	1.42		7270.13	7270.13		2.34	Si
SLV 1	fin.	-2863.23	-2079	-0.0006842	0.0003369	0.0035	1.42		7279.66	7279.66		2.54	Si
SLV 14	ini.	-3544.97	-5968	-0.0008978	0.0003369	0.0035	1.42		7279.66	7279.66		2.05	Si
SLV 14	fin.	2297.61	-1723	-0.0005241	0.0003369	0.0035	1.42		7270.13	7270.13		3.16	Si
SLV 16	ini.	-3062.49	-5324	-0.0007443	0.0003369	0.0035	1.42		7279.66	7279.66		2.38	Si
SLV 16	fin.	2006.68	-1665	-0.0004469	0.0003369	0.0035	1.42		7270.13	7270.13		3.62	Si
SLV 4	ini.	3513.2	2686	-0.0008887	0.0003369	0.0035	1.42		7270.13	7270.13		2.07	Si
SLV 4	fin.	-3087.81	-1983	-0.0007521	0.0003369	0.0035	1.42		7279.66	7279.66		2.36	Si
SLV 2	ini.	3030.72	2042	-0.0007357	0.0003369	0.0035	1.42		7270.13	7270.13		2.4	Si
SLV 2	fin.	-2796.88	-2041	-0.0006646	0.0003369	0.0035	1.42		7279.66	7279.66		2.6	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 4	ini.	3513.2	-8807	1.42	0	864	7930	10717	3621	8794		1	No
SLV 4	fin.	-3087.81	-10749	1.42	0	864	7930	10717	3621	8794		0.82	No
SLV 2	ini.	3030.72	-7685	1.42	0	864	7930	10717	3621	8794		1.14	Si
SLV 2	fin.	-2796.88	-9621	1.42	0	864	7930	10717	3621	8794		0.91	No
SLV 8	ini.	1788.3	-4082	1.42	0	864	7930	10717	3621	8794		2.15	Si
SLV 8	fin.	-1655.9	-6053	1.42	0	864	7930	10717	3621	8794		1.45	Si
SLV 3	ini.	3590.54	-9026	1.42	0	864	7930	10717	3621	8794		0.97	No
SLV 3	fin.	-3154.15	-10968	1.42	0	864	7930	10717	3621	8794		0.8	No
SLV 14	ini.	-3544.97	9666	1.42	0	864	7930	10717	3621	8794		0.91	No
SLV 14	fin.	2297.61	7662	1.42	0	864	7930	10717	3621	8794		1.15	Si
SLV 16	ini.	-3062.49	8544	1.42	0	864	7930	10717	3621	8794		1.03	Si
SLV 16	fin.	2006.68	6534	1.42	0	864	7930	10717	3621	8794		1.35	Si
SLV 1	ini.	3108.06	-7904	1.42	0	864	7930	10717	3621	8794		1.11	Si
SLV 1	fin.	-2863.23	-9841	1.42	0	864	7930	10717	3621	8794		0.89	No
SLV 15	ini.	-2985.15	8325	1.42	0	864	7930	10717	3621	8794		1.06	Si
SLV 15	fin.	1940.33	6315	1.42	0	864	7930	10717	3621	8794		1.39	Si
SLV 7	ini.	1838.25	-4224	1.42	0	864	7930	10717	3621	8794		2.08	Si
SLV 7	fin.	-1698.75	-6195	1.42	0	864	7930	10717	3621	8794		1.42	Si
SLV 13	ini.	-3467.63	9447	1.42	0	864	7930	10717	3621	8794		0.93	No
SLV 13	fin.	2231.26	7442	1.42	0	864	7930	10717	3621	8794		1.18	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.025	SLV 3	Si
V_SLV	0.802	SLV 3	No
PF_SLU	12.499	SLU 65	Si
V_SLU	3.742	SLU 65	Si



## Trave di accoppiamento 123

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-4.113	1.006	10.45	11.87	1.42	-4.913	1.006	10.45	11.87	1.42	0.8	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em <sub>-</sub>	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 72	ini.	625.28	-1778	-0.0001282	0.0002246	0.0035	1.42		7536.27	7536.27	No	12.05	Si
SLU 72	fin.	-833.64	-2533	-0.0001737	0.0002246	0.0035	1.42		7545.1	7545.1	No	9.05	Si
SLU 84	ini.	499.45	-2124	-0.0001014	0.0002246	0.0035	1.42		7536.27	7536.27	No	15.09	Si
SLU 84	fin.	-830.56	-2818	-0.000173	0.0002246	0.0035	1.42		7545.1	7545.1	No	9.08	Si
SLU 77	ini.	526.12	-2170	-0.0001071	0.0002246	0.0035	1.42		7536.27	7536.27	No	14.32	Si
SLU 77	fin.	-836.11	-2879	-0.0001743	0.0002246	0.0035	1.42		7545.1	7545.1	No	9.02	Si
SLU 69	ini.	618.44	-1866	-0.0001268	0.0002246	0.0035	1.42		7536.27	7536.27	No	12.19	Si
SLU 69	fin.	-833.83	-2618	-0.0001738	0.0002246	0.0035	1.42		7545.1	7545.1	No	9.05	Si
SLU 70	ini.	616.93	-1865	-0.0001264	0.0002246	0.0035	1.42		7536.27	7536.27	No	12.22	Si
SLU 70	fin.	-829.78	-2614	-0.0001729	0.0002246	0.0035	1.42		7545.1	7545.1	No	9.09	Si
SLU 80	ini.	532.96	-2081	-0.0001085	0.0002246	0.0035	1.42		7536.27	7536.27	No	14.14	Si
SLU 80	fin.	-835.93	-2794	-0.0001742	0.0002246	0.0035	1.42		7545.1	7545.1	No	9.03	Si
SLU 71	ini.	626.8	-1778	-0.0001286	0.0002246	0.0035	1.42		7536.27	7536.27	No	12.02	Si
SLU 71	fin.	-837.7	-2537	-0.0001746	0.0002246	0.0035	1.42		7545.1	7545.1	No	9.01	Si
SLU 83	ini.	500.96	-2125	-0.0001018	0.0002246	0.0035	1.42		7536.27	7536.27	No	15.04	Si
SLU 83	fin.	-834.62	-2822	-0.0001739	0.0002246	0.0035	1.42		7545.1	7545.1	No	9.04	Si
SLU 78	ini.	524.6	-2169	-0.0001068	0.0002246	0.0035	1.42		7536.27	7536.27	No	14.37	Si
SLU 78	fin.	-832.06	-2875	-0.0001734	0.0002246	0.0035	1.42		7545.1	7545.1	No	9.07	Si
SLU 79	ini.	534.47	-2082	-0.0001088	0.0002246	0.0035	1.42		7536.27	7536.27	No	14.1	Si
SLU 79	fin.	-839.98	-2798	-0.0001751	0.0002246	0.0035	1.42		7545.1	7545.1	No	8.98	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	f <sub>vd</sub>	V <sub>t</sub>	V <sub>t,f</sub>	V <sub>t,c</sub>	V <sub>t,c.int.</sub>	V <sub>t,R</sub>	incremento > 50%	c.s.	Verifica
SLU 80	ini.	532.96	-1335	1.42	0	576	6344	7144	3621	6920	No	5.18	Si
SLU 80	fin.	-835.93	-3306	1.42	0	576	6344	7144	3621	6920	No	2.09	Si
SLU 79	ini.	534.47	-1345	1.42	0	576	6344	7144	3621	6920	No	5.14	Si
SLU 79	fin.	-839.98	-3316	1.42	0	576	6344	7144	3621	6920	No	2.09	Si
SLU 74	ini.	532.17	-1324	1.42	0	576	6344	7144	3621	6920	No	5.23	Si
SLU 74	fin.	-829.78	-3295	1.42	0	576	6344	7144	3621	6920	No	2.1	Si
SLU 82	ini.	505.51	-1188	1.42	0	576	6344	7144	3621	6920	No	5.82	Si
SLU 82	fin.	-824.22	-3323	1.42	0	576	6344	7144	3621	6920	No	2.08	Si
SLU 83	ini.	500.96	-1198	1.42	0	576	6344	7144	3621	6920	No	5.78	Si
SLU 83	fin.	-834.62	-3333	1.42	0	576	6344	7144	3621	6920	No	2.08	Si
SLU 73	ini.	544.07	-1328	1.42	0	576	6344	7144	3621	6920	No	5.21	Si
SLU 73	fin.	-820.54	-3299	1.42	0	576	6344	7144	3621	6920	No	2.1	Si
SLU 81	ini.	507.02	-1198	1.42	0	576	6344	7144	3621	6920	No	5.78	Si
SLU 81	fin.	-828.28	-3333	1.42	0	576	6344	7144	3621	6920	No	2.08	Si
SLU 76	ini.	538.01	-1329	1.42	0	576	6344	7144	3621	6920	No	5.21	Si
SLU 76	fin.	-826.88	-3299	1.42	0	576	6344	7144	3621	6920	No	2.1	Si
SLU 77	ini.	526.12	-1324	1.42	0	576	6344	7144	3621	6920	No	5.23	Si
SLU 77	fin.	-836.11	-3295	1.42	0	576	6344	7144	3621	6920	No	2.1	Si
SLU 84	ini.	499.45	-1188	1.42	0	576	6344	7144	3621	6920	No	5.82	Si
SLU 84	fin.	-830.56	-3324	1.42	0	576	6344	7144	3621	6920	No	2.08	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 13	ini.	-1834.88	-5260	-0.0004025	0.0003369	0.0035	1.42		7279.66	7279.66		3.97	Si
SLV 13	fin.	61.81	-4602	-0.0000122	0.0003369	0.0035	1.42		7270.13	7270.13		117.62	Si
SLV 16	ini.	-2108.72	-5380	-0.0004729	0.0003369	0.0035	1.42		7279.66	7279.66		3.45	Si
SLV 16	fin.	458.54	-4253	-0.0000921	0.0003369	0.0035	1.42		7270.13	7270.13		15.85	Si
SLV 4	ini.	2778	2730	-0.00066	0.0003369	0.0035	1.42		7270.13	7270.13		2.62	Si
SLV 4	fin.	-1326.52	923	-0.0002803	0.0003369	0.0035	1.42		7279.66	7279.66		5.49	Si
SLV 1	ini.	3051.84	2849	-0.0007422	0.0003369	0.0035	1.42		7270.13	7270.13		2.38	Si
SLV 1	fin.	-1723.26	575	-0.0003747	0.0003369	0.0035	1.42		7279.66	7279.66		4.22	Si
SLV 15	ini.	-2075.29	-5331	-0.0004641	0.0003369	0.0035	1.42		7279.66	7279.66		3.51	Si
SLV 15	fin.	466.6	-4212	-0.0000937	0.0003369	0.0035	1.42		7270.13	7270.13		15.58	Si
SLV 2	ini.	3018.41	2800	-0.0007319	0.0003369	0.0035	1.42		7270.13	7270.13		2.41	Si
SLV 2	fin.	-1731.31	533	-0.0003767	0.0003369	0.0035	1.42		7279.66	7279.66		4.2	Si
SLV 5	ini.	1616.05	84	-0.000349	0.0003369	0.0035	1.42		7270.13	7270.13		4.5	Si
SLV 5	fin.	-1572.16	-1699	-0.000338	0.0003369	0.0035	1.42		7279.66	7279.66		4.63	Si
SLV 14	ini.	-1868.31	-5309	-0.0004109	0.0003369	0.0035	1.42		7279.66	7279.66		3.9	Si
SLV 14	fin.	53.75	-4643	-0.0000106	0.0003369	0.0035	1.42		7270.13	7270.13		135.25	Si
SLV 6	ini.	1594.45	53	-0.0003438	0.0003369	0.0035	1.42		7270.13	7270.13		4.56	Si
SLV 6	fin.	-1577.36	-1726	-0.0003392	0.0003369	0.0035	1.42		7279.66	7279.66		4.62	Si
SLV 3	ini.	2811.43	2778	-0.0006699	0.0003369	0.0035	1.42		7270.13	7270.13		2.59	Si
SLV 3	fin.	-1318.47	964	-0.0002785	0.0003369	0.0035	1.42		7279.66	7279.66		5.52	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 16	ini.	-2108.72	4827	1.42	0	864	6344	10717	3621	7208		1.49	Si
SLV 16	fin.	458.54	3323	1.42	0	864	6344	10717	3621	7208		2.17	Si
SLD 1	ini.	1576.16	-3848	1.42	0	864	6344	10717	3621	7208		1.87	Si
SLD 1	fin.	-1102.2	-4996	1.42	0	864	6344	10717	3621	7208		1.44	Si
SLV 15	ini.	-2075.29	4789	1.42	0	864	6344	10717	3621	7208		1.51	Si
SLV 15	fin.	466.6	3285	1.42	0	864	6344	10717	3621	7208		2.19	Si
SLV 5	ini.	1616.05	-4691	1.42	0	864	6344	10717	3621	7208		1.54	Si
SLV 5	fin.	-1572.16	-5345	1.42	0	864	6344	10717	3621	7208		1.35	Si
SLD 2	ini.	1561.81	-3831	1.42	0	864	6344	10717	3621	7208		1.88	Si
SLD 2	fin.	-1105.66	-4980	1.42	0	864	6344	10717	3621	7208		1.45	Si
SLV 6	ini.	1594.45	-4666	1.42	0	864	6344	10717	3621	7208		1.54	Si
SLV 6	fin.	-1577.36	-5320	1.42	0	864	6344	10717	3621	7208		1.35	Si
SLV 3	ini.	2811.43	-6246	1.42	0	864	6344	10717	3621	7208		1.15	Si
SLV 3	fin.	-1318.47	-7601	1.42	0	864	6344	10717	3621	7208		0.95	No
SLV 1	ini.	3051.84	-7314	1.42	0	864	6344	10717	3621	7208		0.99	No
SLV 1	fin.	-1723.26	-8321	1.42	0	864	6344	10717	3621	7208		0.87	No
SLV 4	ini.	2778	-6208	1.42	0	864	6344	10717	3621	7208		1.16	Si
SLV 4	fin.	-1326.52	-7563	1.42	0	864	6344	10717	3621	7208		0.95	No
SLV 2	ini.	3018.41	-7276	1.42	0	864	6344	10717	3621	7208		0.99	No
SLV 2	fin.	-1731.31	-8283	1.42	0	864	6344	10717	3621	7208		0.87	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.382	SLV 1	Si
V_SLV	0.866	SLV 1	No
PF_SLU	8.982	SLU 79	Si
V_SLU	2.076	SLU 83	Si

## Trave di accoppiamento 125

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-8.433	-3.314	10.45	11.87	1.42	-9.333	-3.314	10.45	11.87	1.42	0.9	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_ Corti

fb_	fhk	fvk0	fmedio	t0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 65	ini.	543.34	-1584	-0.0001114	0.0001872	0.0035	1.42		7350.79	7350.79	No	13.53	Si
SLU 65	fin.	-992.91	-2425	-0.0002129	0.0001872	0.0035	1.42		7359.91	7359.91	No	7.41	Si
SLU 66	ini.	577.01	-1690	-0.0001187	0.0001872	0.0035	1.42		7350.79	7350.79	No	12.74	Si
SLU 66	fin.	-1041.77	-2579	-0.0002246	0.0001872	0.0035	1.42		7359.91	7359.91	No	7.06	Si
SLU 70	ini.	607.21	-1778	-0.0001253	0.0001872	0.0035	1.42		7350.79	7350.79	No	12.11	Si
SLU 70	fin.	-1084.56	-2705	-0.000235	0.0001872	0.0035	1.42		7359.91	7359.91	No	6.79	Si
SLU 49	ini.	518.79	-1627	-0.0001062	0.0001872	0.0035	1.42		7350.79	7350.79	No	14.17	Si
SLU 49	fin.	-947.23	-2425	-0.000202	0.0001872	0.0035	1.42		7359.91	7359.91	No	7.77	Si
SLU 72	ini.	598.6	-1747	-0.0001234	0.0001872	0.0035	1.42		7350.79	7350.79	No	12.28	Si
SLU 72	fin.	-1070.84	-2661	-0.0002316	0.0001872	0.0035	1.42		7359.91	7359.91	No	6.87	Si
SLU 67	ini.	578.93	-1695	-0.0001191	0.0001872	0.0035	1.42		7350.79	7350.79	No	12.7	Si
SLU 67	fin.	-1044.64	-2585	-0.0002253	0.0001872	0.0035	1.42		7359.91	7359.91	No	7.05	Si
SLU 64	ini.	540.14	-1575	-0.0001107	0.0001872	0.0035	1.42		7350.79	7350.79	No	13.61	Si
SLU 64	fin.	-988.14	-2414	-0.0002117	0.0001872	0.0035	1.42		7359.91	7359.91	No	7.45	Si
SLU 69	ini.	605.29	-1773	-0.0001248	0.0001872	0.0035	1.42		7350.79	7350.79	No	12.14	Si
SLU 69	fin.	-1081.7	-2699	-0.0002343	0.0001872	0.0035	1.42		7359.91	7359.91	No	6.8	Si
SLU 71	ini.	596.68	-1741	-0.000123	0.0001872	0.0035	1.42		7350.79	7350.79	No	12.32	Si
SLU 71	fin.	-1067.98	-2654	-0.0002309	0.0001872	0.0035	1.42		7359.91	7359.91	No	6.89	Si
SLU 68	ini.	571.61	-1667	-0.0001175	0.0001872	0.0035	1.42		7350.79	7350.79	No	12.86	Si
SLU 68	fin.	-1032.83	-2545	-0.0002224	0.0001872	0.0035	1.42		7359.91	7359.91	No	7.13	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 66	ini.	577.01	-1782	1.42	0	576	7137	5953	3621	7713	No	4.33	Si
SLU 66	fin.	-1041.77	-3219	1.42	0	576	7137	5953	3621	7713	No	2.4	Si
SLU 72	ini.	598.6	-1858	1.42	0	576	7137	5953	3621	7713	No	4.15	Si
SLU 72	fin.	-1070.84	-3295	1.42	0	576	7137	5953	3621	7713	No	2.34	Si
SLU 78	ini.	534.4	-1519	1.42	0	576	7137	5953	3621	7713	No	5.08	Si
SLU 78	fin.	-941.35	-3227	1.42	0	576	7137	5953	3621	7713	No	2.39	Si
SLU 71	ini.	596.68	-1852	1.42	0	576	7137	5953	3621	7713	No	4.17	Si
SLU 71	fin.	-1067.98	-3289	1.42	0	576	7137	5953	3621	7713	No	2.35	Si
SLU 67	ini.	578.93	-1788	1.42	0	576	7137	5953	3621	7713	No	4.31	Si
SLU 67	fin.	-1044.64	-3225	1.42	0	576	7137	5953	3621	7713	No	2.39	Si
SLU 70	ini.	607.21	-1893	1.42	0	576	7137	5953	3621	7713	No	4.07	Si
SLU 70	fin.	-1084.56	-3330	1.42	0	576	7137	5953	3621	7713	No	2.32	Si
SLU 69	ini.	605.29	-1887	1.42	0	576	7137	5953	3621	7713	No	4.09	Si
SLU 69	fin.	-1081.7	-3324	1.42	0	576	7137	5953	3621	7713	No	2.32	Si
SLU 77	ini.	532.48	-1513	1.42	0	576	7137	5953	3621	7713	No	5.1	Si
SLU 77	fin.	-938.48	-3220	1.42	0	576	7137	5953	3621	7713	No	2.4	Si
SLU 68	ini.	571.61	-1757	1.42	0	576	7137	5953	3621	7713	No	4.39	Si
SLU 68	fin.	-1032.83	-3195	1.42	0	576	7137	5953	3621	7713	No	2.41	Si
SLU 80	ini.	525.8	-1484	1.42	0	576	7137	5953	3621	7713	No	5.2	Si
SLU 80	fin.	-927.63	-3192	1.42	0	576	7137	5953	3621	7713	No	2.42	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 13	ini.	-3044.52	-992	-0.0007601	0.0002807	0.0035	1.42		7346.34	7346.34		2.41	Si
SLV 13	fin.	2998.59	1257	-0.0007467	0.0002807	0.0035	1.42		7337.02	7337.02		2.45	Si
SLV 6	ini.	1862.33	-284	-0.0004183	0.0002807	0.0035	1.42		7337.02	7337.02		3.94	Si
SLV 6	fin.	-2304.11	-2812	-0.0005382	0.0002807	0.0035	1.42		7346.34	7346.34		3.19	Si
SLV 16	ini.	-3042.48	-1518	-0.0007595	0.0002807	0.0035	1.42		7346.34	7346.34		2.41	Si
SLV 16	fin.	3007.15	1106	-0.0007494	0.0002807	0.0035	1.42		7337.02	7337.02		2.44	Si
SLV 4	ini.	3795.04	-1323	-0.001014	0.0002807	0.0035	1.42		7337.02	7337.02		1.93	Si
SLV 4	fin.	-4376.6	-4808	-0.0012309	0.0002807	0.0035	1.42		7346.34	7346.34		1.68	Si
SLV 14	ini.	-2810.89	-1008	-0.0006874	0.0002807	0.0035	1.42		7346.34	7346.34		2.61	Si
SLV 14	fin.	2750.66	1055	-0.00067	0.0002807	0.0035	1.42		7337.02	7337.02		2.67	Si
SLV 15	ini.	-3276.12	-1502	-0.0008348	0.0002807	0.0035	1.42		7346.34	7346.34		2.24	Si
SLV 15	fin.	3255.08	1308	-0.0008292	0.0002807	0.0035	1.42		7337.02	7337.02		2.25	Si
SLV 2	ini.	4026.63	-814	-0.0010984	0.0002807	0.0035	1.42		7337.02	7337.02		1.82	Si
SLV 2	fin.	-4633.09	-4858	-0.0013352	0.0002807	0.0035	1.42		7346.34	7346.34		1.59	Si
SLD 2	ini.	1936.84	-1008	-0.000438	0.0002807	0.0035	1.42		7337.02	7337.02		3.79	Si
SLD 2	fin.	-2375.56	-3092	-0.0005585	0.0002807	0.0035	1.42		7346.34	7346.34		3.09	Si
SLV 3	ini.	3561.4	-1308	-0.0009321	0.0002807	0.0035	1.42		7337.02	7337.02		2.06	Si
SLV 3	fin.	-4128.67	-4606	-0.0011349	0.0002807	0.0035	1.42		7346.34	7346.34		1.78	Si
SLV 1	ini.	3793	-798	-0.0010133	0.0002807	0.0035	1.42		7337.02	7337.02		1.93	Si
SLV 1	fin.	-4385.16	-4656	-0.0012343	0.0002807	0.0035	1.42		7346.34	7346.34		1.68	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 1	ini.	3793	-11264	1.42	0	864	7137	8929	3621	8001		0.71	No
SLV 1	fin.	-4385.16	-12131	1.42	0	864	7137	8929	3621	8001		0.66	No
SLV 15	ini.	-3276.12	9737	1.42	0	864	7137	8929	3621	8001		0.82	No
SLV 15	fin.	3255.08	8343	1.42	0	864	7137	8929	3621	8001		0.96	No
SLV 16	ini.	-3042.48	9055	1.42	0	864	7137	8929	3621	8001		0.88	No
SLV 16	fin.	3007.15	7661	1.42	0	864	7137	8929	3621	8001		1.04	Si
SLV 13	ini.	-3044.52	9072	1.42	0	864	7137	8929	3621	8001		0.88	No
SLV 13	fin.	2998.59	8210	1.42	0	864	7137	8929	3621	8001		0.97	No
SLD 4	ini.	1836.43	-5453	1.42	0	864	7137	8929	3621	8001		1.47	Si
SLD 4	fin.	-2264.86	-6698	1.42	0	864	7137	8929	3621	8001		1.19	Si
SLD 2	ini.	1936.84	-5741	1.42	0	864	7137	8929	3621	8001		1.39	Si
SLD 2	fin.	-2375.56	-6760	1.42	0	864	7137	8929	3621	8001		1.18	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 3	ini.	3561.4	-10599	1.42	0	864	7137	8929	3621	8001		0.75	No
SLV 3	fin.	-4128.67	-11998	1.42	0	864	7137	8929	3621	8001		0.67	No
SLV 2	ini.	4026.63	-11946	1.42	0	864	7137	8929	3621	8001		0.67	No
SLV 2	fin.	-4633.09	-12813	1.42	0	864	7137	8929	3621	8001		0.62	No
SLV 4	ini.	3795.04	-11281	1.42	0	864	7137	8929	3621	8001		0.71	No
SLV 4	fin.	-4376.6	-12680	1.42	0	864	7137	8929	3621	8001		0.63	No
SLV 14	ini.	-2810.89	8390	1.42	0	864	7137	8929	3621	8001		0.95	No
SLV 14	fin.	2750.66	7528	1.42	0	864	7137	8929	3621	8001		1.06	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.586	SLV 2	Si
V_SLV	0.624	SLV 2	No
PF_SLU	6.786	SLU 70	Si
V_SLU	2.316	SLU 70	Si

## Trave di accoppiamento 127

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-6.268	-0.194	10.45	11.87	1.42	-6.268	0.706	10.45	11.87	1.42	0.9	0.16	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>vd</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	t <sub>fv</sub>	t <sub>fo</sub>	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim.conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α	α	elim.conv	e,f,d	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ε <sub>m</sub>	ε <sub>m_</sub>	ε <sub>mu</sub>	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 82	ini.	73.78	-370	-0.0000145	0.0002246	0.0035	1.42		7594.91	7594.91	No	102.94	Si
SLU 82	fin.	165.17	-313	-0.0000328	0.0002246	0.0035	1.42		7594.91	7594.91	No	45.98	Si
SLU 74	ini.	78.55	-368	-0.0000155	0.0002246	0.0035	1.42		7594.91	7594.91	No	96.69	Si
SLU 74	fin.	165.81	-306	-0.0000329	0.0002246	0.0035	1.42		7594.91	7594.91	No	45.81	Si
SLU 75	ini.	76.71	-370	-0.0000151	0.0002246	0.0035	1.42		7594.91	7594.91	No	99.01	Si
SLU 75	fin.	166.14	-307	-0.000033	0.0002246	0.0035	1.42		7594.91	7594.91	No	45.71	Si
SLU 78	ini.	86.54	-377	-0.0000171	0.0002246	0.0035	1.42		7594.91	7594.91	No	87.76	Si
SLU 78	fin.	171.44	-313	-0.000034	0.0002246	0.0035	1.42		7594.91	7594.91	No	44.3	Si
SLU 83	ini.	85.46	-376	-0.0000169	0.0002246	0.0035	1.42		7594.91	7594.91	No	88.88	Si
SLU 83	fin.	170.15	-318	-0.0000338	0.0002246	0.0035	1.42		7594.91	7594.91	No	44.64	Si
SLU 77	ini.	88.38	-376	-0.0000174	0.0002246	0.0035	1.42		7594.91	7594.91	No	85.93	Si
SLU 77	fin.	171.11	-312	-0.000034	0.0002246	0.0035	1.42		7594.91	7594.91	No	44.39	Si
SLU 81	ini.	75.62	-368	-0.0000149	0.0002246	0.0035	1.42		7594.91	7594.91	No	100.43	Si
SLU 81	fin.	164.84	-312	-0.0000327	0.0002246	0.0035	1.42		7594.91	7594.91	No	46.07	Si
SLU 84	ini.	83.61	-378	-0.0000165	0.0002246	0.0035	1.42		7594.91	7594.91	No	90.83	Si
SLU 84	fin.	170.48	-319	-0.0000338	0.0002246	0.0035	1.42		7594.91	7594.91	No	44.55	Si
SLU 79	ini.	89.08	-365	-0.0000176	0.0002246	0.0035	1.42		7594.91	7594.91	No	85.26	Si
SLU 79	fin.	166.5	-302	-0.000033	0.0002246	0.0035	1.42		7594.91	7594.91	No	45.61	Si
SLU 80	ini.	87.24	-366	-0.0000172	0.0002246	0.0035	1.42		7594.91	7594.91	No	87.06	Si
SLU 80	fin.	166.83	-303	-0.0000331	0.0002246	0.0035	1.42		7594.91	7594.91	No	45.52	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 78	ini.	86.54	403	1.42	0	329	7137	4083	3621	7466	No	18.54	Si
SLU 78	fin.	171.44	-94	1.42	0	329	7137	4083	3621	7466	No	79.56	Si
SLU 73	ini.	66.35	405	1.42	0	329	7137	4083	3621	7466	No	18.43	Si
SLU 73	fin.	156.44	-92	1.42	0	329	7137	4083	3621	7466	No	81.51	Si
SLU 74	ini.	78.55	403	1.42	0	329	7137	4083	3621	7466	No	18.52	Si
SLU 74	fin.	165.81	-93	1.42	0	329	7137	4083	3621	7466	No	79.88	Si
SLU 65	ini.	51.86	403	1.42	0	329	7137	4083	3621	7466	No	18.54	Si
SLU 65	fin.	135.56	-94	1.42	0	329	7137	4083	3621	7466	No	79.4	Si
SLU 76	ini.	76.18	401	1.42	0	329	7137	4083	3621	7466	No	18.6	Si





Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 76	fin.	161.75	-95	1.42	0	329	7137	4083	3621	7466	No	78.47	Si
SLU 81	ini.	75.62	401	1.42	0	329	7137	4083	3621	7466	No	18.63	Si
SLU 81	fin.	164.84	-96	1.42	0	329	7137	4083	3621	7466	No	77.89	Si
SLU 66	ini.	64.07	401	1.42	0	329	7137	4083	3621	7466	No	18.63	Si
SLU 66	fin.	144.92	-96	1.42	0	329	7137	4083	3621	7466	No	77.85	Si
SLU 75	ini.	76.71	406	1.42	0	329	7137	4083	3621	7466	No	18.37	Si
SLU 75	fin.	166.14	-90	1.42	0	329	7137	4083	3621	7466	No	82.69	Si
SLU 67	ini.	62.23	404	1.42	0	329	7137	4083	3621	7466	No	18.48	Si
SLU 67	fin.	145.25	-93	1.42	0	329	7137	4083	3621	7466	No	80.51	Si
SLU 82	ini.	73.78	404	1.42	0	329	7137	4083	3621	7466	No	18.48	Si
SLU 82	fin.	165.17	-93	1.42	0	329	7137	4083	3621	7466	No	80.56	Si

**Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche**

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 10	ini.	37.69	-812	-0.0000074	0.0003369	0.0035	1.42		7808.98	7808.98		207.21	Si
SLV 10	fin.	-391.05	-245	-0.0000782	0.0003369	0.0035	1.42		7818.07	7818.07		19.99	Si
SLV 15	ini.	192.55	96	-0.0000381	0.0003369	0.0035	1.42		7808.98	7808.98		40.56	Si
SLV 15	fin.	403.15	-62	-0.0000807	0.0003369	0.0035	1.42		7808.98	7808.98		19.37	Si
SLV 12	ini.	143.31	438	-0.0000283	0.0003369	0.0035	1.42		7808.98	7808.98		54.49	Si
SLV 12	fin.	683.19	-68	-0.0001389	0.0003369	0.0035	1.42		7808.98	7808.98		11.43	Si
SLV 5	ini.	-54.16	-904	-0.0000106	0.0003369	0.0035	1.42		7818.07	7818.07		144.34	Si
SLV 5	fin.	-475.33	-304	-0.0000954	0.0003369	0.0035	1.42		7818.07	7818.07		16.45	Si
SLV 11	ini.	134.72	433	-0.0000266	0.0003369	0.0035	1.42		7808.98	7808.98		57.96	Si
SLV 11	fin.	682.22	-68	-0.0001387	0.0003369	0.0035	1.42		7808.98	7808.98		11.45	Si
SLV 7	ini.	51.46	346	-0.0000101	0.0003369	0.0035	1.42		7808.98	7808.98		151.76	Si
SLV 7	fin.	598.91	-126	-0.0001212	0.0003369	0.0035	1.42		7808.98	7808.98		13.04	Si
SLV 9	ini.	29.1	-817	-0.0000057	0.0003369	0.0035	1.42		7808.98	7808.98		268.32	Si
SLV 9	fin.	-392.03	-246	-0.0000784	0.0003369	0.0035	1.42		7818.07	7818.07		19.94	Si
SLV 8	ini.	60.04	351	-0.0000118	0.0003369	0.0035	1.42		7808.98	7808.98		130.06	Si
SLV 8	fin.	599.89	-126	-0.0001214	0.0003369	0.0035	1.42		7808.98	7808.98		13.02	Si
SLV 6	ini.	-45.58	-899	-0.0000009	0.0003369	0.0035	1.42		7818.07	7818.07		171.53	Si
SLV 6	fin.	-474.35	-304	-0.0000952	0.0003369	0.0035	1.42		7818.07	7818.07		16.48	Si
SLV 16	ini.	205.84	103	-0.0000408	0.0003369	0.0035	1.42		7808.98	7808.98		37.94	Si
SLV 16	fin.	404.66	-62	-0.000081	0.0003369	0.0035	1.42		7808.98	7808.98		19.3	Si

**Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215**

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 8	ini.	60.04	963	1.42	0	494	7137	6124	3621	7631		7.92	Si
SLV 8	fin.	599.89	571	1.42	0	494	7137	6124	3621	7631		13.37	Si
SLV 11	ini.	134.72	900	1.42	0	494	7137	6124	3621	7631		8.48	Si
SLV 11	fin.	682.22	514	1.42	0	494	7137	6124	3621	7631		14.85	Si
SLV 4	ini.	-71.72	605	1.42	0	494	7137	6124	3621	7631		12.62	Si
SLV 4	fin.	126.99	213	1.42	0	494	7137	6124	3621	7631		35.8	Si
SLV 10	ini.	37.69	-379	1.42	0	494	7137	6124	3621	7631		20.15	Si
SLV 10	fin.	-391.05	-739	1.42	0	494	7137	6124	3621	7631		10.32	Si
SLV 7	ini.	51.46	975	1.42	0	494	7137	6124	3621	7631		7.82	Si
SLV 7	fin.	598.91	582	1.42	0	494	7137	6124	3621	7631		13.1	Si
SLV 5	ini.	-54.16	-291	1.42	0	494	7137	6124	3621	7631		26.2	Si
SLV 5	fin.	-475.33	-658	1.42	0	494	7137	6124	3621	7631		11.59	Si
SLV 9	ini.	29.1	-367	1.42	0	494	7137	6124	3621	7631		20.81	Si
SLV 9	fin.	-392.03	-727	1.42	0	494	7137	6124	3621	7631		10.49	Si
SLV 3	ini.	-85.01	623	1.42	0	494	7137	6124	3621	7631		12.24	Si
SLV 3	fin.	125.47	232	1.42	0	494	7137	6124	3621	7631		32.94	Si
SLV 12	ini.	143.31	888	1.42	0	494	7137	6124	3621	7631		8.59	Si
SLV 12	fin.	683.19	502	1.42	0	494	7137	6124	3621	7631		15.21	Si
SLV 6	ini.	-45.58	-303	1.42	0	494	7137	6124	3621	7631		25.17	Si
SLV 6	fin.	-474.35	-670	1.42	0	494	7137	6124	3621	7631		11.38	Si

**Tabella dei coefficienti di sicurezza minimi**

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	11.43	SLV 12	Si
V_SLV	7.823	SLV 7	Si
PF_SLU	44.3	SLU 78	Si
V_SLU	18.374	SLU 75	Si

**Trave di accoppiamento 128**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati geometrici**

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-5.093	6.006	8.35	10.35	2	-5.093	6.506	8.35	10.35	2	0.5	0.28	3500

**Caratteristiche del materiale**

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC





Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma_{F,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 84	ini.	-31.31	23	-0.0000031	0.0001872	0.0035	2		14357.01	14357.01	No	458.52	Si
SLU 84	fin.	83.1	61	-0.0000082	0.0001872	0.0035	2		14344.28	14344.28	No	172.62	Si
SLU 78	ini.	-25.38	10	-0.0000025	0.0001872	0.0035	2		14357.01	14357.01	No	565.64	Si
SLU 78	fin.	82.66	59	-0.0000082	0.0001872	0.0035	2		14344.28	14344.28	No	173.53	Si
SLU 68	ini.	-14.6	-9	-0.0000014	0.0001872	0.0035	2		14357.01	14357.01	No	983.46	Si
SLU 68	fin.	79.7	55	-0.0000079	0.0001872	0.0035	2		14344.28	14344.28	No	179.97	Si
SLU 75	ini.	-27.3	15	-0.0000027	0.0001872	0.0035	2		14357.01	14357.01	No	525.84	Si
SLU 75	fin.	82.35	59	-0.0000082	0.0001872	0.0035	2		14344.28	14344.28	No	174.18	Si
SLU 65	ini.	-16.52	-4	-0.0000016	0.0001872	0.0035	2		14357.01	14357.01	No	869.08	Si
SLU 65	fin.	79.39	56	-0.0000079	0.0001872	0.0035	2		14344.28	14344.28	No	180.68	Si
SLU 80	ini.	-24.07	8	-0.0000024	0.0001872	0.0035	2		14357.01	14357.01	No	596.4	Si
SLU 80	fin.	81.25	57	-0.0000081	0.0001872	0.0035	2		14344.28	14344.28	No	176.56	Si
SLU 55	ini.	-17.26	-3	-0.0000017	0.0001872	0.0035	2		14357.01	14357.01	No	831.75	Si
SLU 55	fin.	79.33	56	-0.0000079	0.0001872	0.0035	2		14344.28	14344.28	No	180.82	Si
SLU 73	ini.	-28.93	19	-0.0000029	0.0001872	0.0035	2		14357.01	14357.01	No	496.33	Si
SLU 73	fin.	84.44	64	-0.0000084	0.0001872	0.0035	2		14344.28	14344.28	No	169.87	Si
SLU 76	ini.	-27.01	14	-0.0000027	0.0001872	0.0035	2		14357.01	14357.01	No	531.64	Si
SLU 76	fin.	84.76	64	-0.0000084	0.0001872	0.0035	2		14344.28	14344.28	No	169.24	Si
SLU 82	ini.	-33.23	27	-0.0000033	0.0001872	0.0035	2		14357.01	14357.01	No	432.02	Si
SLU 82	fin.	82.79	62	-0.0000082	0.0001872	0.0035	2		14344.28	14344.28	No	173.27	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 83	ini.	-29.79	-1221	2	0	812	3965	8384	5100	4776	No	3.91	Si
SLU 83	fin.	77.36	861	2	0	812	3965	8384	5100	4776	No	5.55	Si
SLU 69	ini.	-11.46	-1240	2	0	812	3965	8384	5100	4776	No	3.85	Si
SLU 69	fin.	71.87	769	2	0	812	3965	8384	5100	4776	No	6.21	Si
SLU 70	ini.	-12.98	-1244	2	0	812	3965	8384	5100	4776	No	3.84	Si
SLU 70	fin.	77.61	785	2	0	812	3965	8384	5100	4776	No	6.08	Si
SLU 74	ini.	-25.79	-1230	2	0	812	3965	8384	5100	4776	No	3.88	Si
SLU 74	fin.	76.62	849	2	0	812	3965	8384	5100	4776	No	5.63	Si
SLU 78	ini.	-25.38	-1277	2	0	812	3965	8384	5100	4776	No	3.74	Si
SLU 78	fin.	82.66	876	2	0	812	3965	8384	5100	4776	No	5.45	Si
SLU 75	ini.	-27.3	-1234	2	0	812	3965	8384	5100	4776	No	3.87	Si
SLU 75	fin.	82.35	865	2	0	812	3965	8384	5100	4776	No	5.52	Si
SLU 80	ini.	-24.07	-1254	2	0	812	3965	8384	5100	4776	No	3.81	Si
SLU 80	fin.	81.25	850	2	0	812	3965	8384	5100	4776	No	5.62	Si
SLU 77	ini.	-23.87	-1273	2	0	812	3965	8384	5100	4776	No	3.75	Si
SLU 77	fin.	76.93	860	2	0	812	3965	8384	5100	4776	No	5.56	Si
SLU 79	ini.	-22.56	-1250	2	0	812	3965	8384	5100	4776	No	3.82	Si
SLU 79	fin.	75.51	834	2	0	812	3965	8384	5100	4776	No	5.73	Si
SLU 84	ini.	-31.31	-1225	2	0	812	3965	8384	5100	4776	No	3.9	Si
SLU 84	fin.	83.1	878	2	0	812	3965	8384	5100	4776	No	5.44	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 1	ini.	794.86	-1896	-0.0000805	0.0002807	0.0035	2		14202.07	14202.07		17.87	Si
SLV 1	fin.	-123.12	-379	-0.0000122	0.0002807	0.0035	2		14215.41	14215.41		115.46	Si
SLV 11	ini.	-423.72	1066	-0.0000424	0.0002807	0.0035	2		14215.41	14215.41		33.55	Si
SLV 11	fin.	86.71	375	-0.0000086	0.0002807	0.0035	2		14202.07	14202.07		163.8	Si
SLV 3	ini.	676.99	-1554	-0.0000683	0.0002807	0.0035	2		14202.07	14202.07		20.98	Si
SLV 3	fin.	-133.96	-230	-0.0000133	0.0002807	0.0035	2		14215.41	14215.41		106.12	Si
SLV 14	ini.	-701.32	1549	-0.0000707	0.0002807	0.0035	2		14215.41	14215.41		20.27	Si
SLV 14	fin.	241.89	294	-0.0000241	0.0002807	0.0035	2		14202.07	14202.07		58.71	Si
SLV 12	ini.	-436.46	1091	-0.0000437	0.0002807	0.0035	2		14215.41	14215.41		32.57	Si
SLV 12	fin.	92.1	383	-0.0000091	0.0002807	0.0035	2		14202.07	14202.07		154.21	Si
SLV 15	ini.	-799.47	1852	-0.0000809	0.0002807	0.0035	2		14215.41	14215.41		17.78	Si
SLV 15	fin.	222.71	430	-0.0000222	0.0002807	0.0035	2		14202.07	14202.07		63.77	Si
SLV 13	ini.	-681.6	1510	-0.0000687	0.0002807	0.0035	2		14215.41	14215.41		20.86	Si
SLV 13	fin.	233.55	281	-0.0000233	0.0002807	0.0035	2		14202.07	14202.07		60.81	Si
SLV 2	ini.	775.14	-1857	-0.0000784	0.0002807	0.0035	2		14202.07	14202.07		18.32	Si
SLV 2	fin.	-114.77	-366	-0.0000114	0.0002807	0.0035	2		14215.41	14215.41		123.86	Si
SLV 16	ini.	-819.19	1891	-0.0000829	0.0002807	0.0035	2		14215.41	14215.41		17.35	Si
SLV 16	fin.	231.05	443	-0.000023	0.0002807	0.0035	2		14202.07	14202.07		61.47	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 4	ini.	657.27	-1515	-0.0000663	0.0002807	0.0035	2		14202.07	14202.07		21.61	Si
SLV 4	fin.	-125.61	-217	-0.0000125	0.0002807	0.0035	2		14215.41	14215.41		113.17	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 5	ini.	412.12	-1914	2	0	1217	3965	12577	5100	5182		2.71	Si
SLV 5	fin.	15.84	24	2	0	1217	3965	12577	5100	5182		216.98	Si
SLV 13	ini.	-681.6	103	2	0	1217	3965	12577	5100	5182		50.14	Si
SLV 13	fin.	233.55	1667	2	0	1217	3965	12577	5100	5182		3.11	Si
SLV 14	ini.	-701.32	225	2	0	1217	3965	12577	5100	5182		23.08	Si
SLV 14	fin.	241.89	1677	2	0	1217	3965	12577	5100	5182		3.09	Si
SLV 4	ini.	657.27	-1833	2	0	1217	3965	12577	5100	5182		2.83	Si
SLV 4	fin.	-125.61	-550	2	0	1217	3965	12577	5100	5182		9.42	Si
SLV 16	ini.	-819.19	611	2	0	1217	3965	12577	5100	5182		8.49	Si
SLV 16	fin.	231.05	1786	2	0	1217	3965	12577	5100	5182		2.9	Si
SLV 2	ini.	775.14	-2219	2	0	1217	3965	12577	5100	5182		2.34	Si
SLV 2	fin.	-114.77	-659	2	0	1217	3965	12577	5100	5182		7.87	Si
SLV 6	ini.	399.39	-1836	2	0	1217	3965	12577	5100	5182		2.82	Si
SLV 6	fin.	21.23	31	2	0	1217	3965	12577	5100	5182		169.75	Si
SLV 3	ini.	676.99	-1955	2	0	1217	3965	12577	5100	5182		2.65	Si
SLV 3	fin.	-133.96	-561	2	0	1217	3965	12577	5100	5182		9.25	Si
SLV 15	ini.	-799.47	489	2	0	1217	3965	12577	5100	5182		10.59	Si
SLV 15	fin.	222.71	1775	2	0	1217	3965	12577	5100	5182		2.92	Si
SLV 1	ini.	794.86	-2341	2	0	1217	3965	12577	5100	5182		2.21	Si
SLV 1	fin.	-123.12	-669	2	0	1217	3965	12577	5100	5182		7.75	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	17.353	SLV 16	Si
V_SLV	2.214	SLV 1	Si
PF_SLU	169.241	SLU 76	Si
V_SLU	3.741	SLU 78	Si

## Trave di accoppiamento 129

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-5.093	6.006	11.15	11.87	0.72	-5.093	6.506	11.15	11.87	0.72	0.5	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fnk	fvk0	fmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	elim,conv / ε,CNR DT-200						CRM / Fibrenet?				
									αt	α	elim,conv	ε,f,d	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 84	ini.	-40.49	-114	-0.0000312	0.0001872	0.0035	0.72		1901.86	1901.86	No	46.97	Si
SLU 84	fin.	26.66	-94	-0.0000205	0.0001872	0.0035	0.72		1897.3	1897.3	No	71.18	Si
SLU 74	ini.	-38.5	-110	-0.0000297	0.0001872	0.0035	0.72		1901.86	1901.86	No	49.4	Si
SLU 74	fin.	24.75	-92	-0.000019	0.0001872	0.0035	0.72		1897.3	1897.3	No	76.66	Si
SLU 83	ini.	-39.61	-119	-0.0000305	0.0001872	0.0035	0.72		1901.86	1901.86	No	48.01	Si
SLU 83	fin.	26.56	-98	-0.0000205	0.0001872	0.0035	0.72		1897.3	1897.3	No	71.43	Si
SLU 79	ini.	-39.14	-105	-0.0000302	0.0001872	0.0035	0.72		1901.86	1901.86	No	48.59	Si
SLU 79	fin.	23.67	-89	-0.0000182	0.0001872	0.0035	0.72		1897.3	1897.3	No	80.17	Si
SLU 78	ini.	-41.42	-104	-0.000032	0.0001872	0.0035	0.72		1901.86	1901.86	No	45.91	Si
SLU 78	fin.	24.79	-89	-0.0000191	0.0001872	0.0035	0.72		1897.3	1897.3	No	76.54	Si
SLU 76	ini.	-38.55	-98	-0.0000297	0.0001872	0.0035	0.72		1901.86	1901.86	No	49.34	Si
SLU 76	fin.	23.87	-82	-0.0000184	0.0001872	0.0035	0.72		1897.3	1897.3	No	79.47	Si
SLU 75	ini.	-39.37	-105	-0.0000304	0.0001872	0.0035	0.72		1901.86	1901.86	No	48.31	Si
SLU 75	fin.	24.84	-88	-0.0000191	0.0001872	0.0035	0.72		1897.3	1897.3	No	76.37	Si
SLU 82	ini.	-38.44	-115	-0.0000296	0.0001872	0.0035	0.72		1901.86	1901.86	No	49.48	Si



Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 82	fin.	26.71	-94	-0.0000206	0.0001872	0.0035	0.72		1897.3	1897.3	No	71.04	Si
SLU 77	ini.	-40.55	-109	-0.0000313	0.0001872	0.0035	0.72		1901.86	1901.86	No	46.9	Si
SLU 77	fin.	24.7	-93	-0.000019	0.0001872	0.0035	0.72		1897.3	1897.3	No	76.82	Si
SLU 80	ini.	-40.02	-100	-0.0000309	0.0001872	0.0035	0.72		1901.86	1901.86	No	47.52	Si
SLU 80	fin.	23.76	-85	-0.0000183	0.0001872	0.0035	0.72		1897.3	1897.3	No	79.85	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 80	ini.	-40.02	1011	0.72	0	292	3965	3018	1836	4257	No	4.21	Si
SLU 80	fin.	23.76	-166	0.72	0	292	3965	3018	1836	4257	No	25.66	Si
SLU 77	ini.	-40.55	1035	0.72	0	292	3965	3018	1836	4257	No	4.11	Si
SLU 77	fin.	24.7	-168	0.72	0	292	3965	3018	1836	4257	No	25.38	Si
SLU 70	ini.	-35.54	974	0.72	0	292	3965	3018	1836	4257	No	4.37	Si
SLU 70	fin.	18.16	-190	0.72	0	292	3965	3018	1836	4257	No	22.42	Si
SLU 74	ini.	-38.5	997	0.72	0	292	3965	3018	1836	4257	No	4.27	Si
SLU 74	fin.	24.75	-162	0.72	0	292	3965	3018	1836	4257	No	26.36	Si
SLU 84	ini.	-40.49	999	0.72	0	292	3965	3018	1836	4257	No	4.26	Si
SLU 84	fin.	26.66	-149	0.72	0	292	3965	3018	1836	4257	No	28.48	Si
SLU 78	ini.	-41.42	1036	0.72	0	292	3965	3018	1836	4257	No	4.11	Si
SLU 78	fin.	24.79	-166	0.72	0	292	3965	3018	1836	4257	No	25.65	Si
SLU 76	ini.	-38.55	973	0.72	0	292	3965	3018	1836	4257	No	4.37	Si
SLU 76	fin.	23.87	-159	0.72	0	292	3965	3018	1836	4257	No	26.85	Si
SLU 79	ini.	-39.14	1010	0.72	0	292	3965	3018	1836	4257	No	4.22	Si
SLU 79	fin.	23.67	-168	0.72	0	292	3965	3018	1836	4257	No	25.39	Si
SLU 75	ini.	-39.37	998	0.72	0	292	3965	3018	1836	4257	No	4.26	Si
SLU 75	fin.	24.84	-160	0.72	0	292	3965	3018	1836	4257	No	26.65	Si
SLU 83	ini.	-39.61	998	0.72	0	292	3965	3018	1836	4257	No	4.26	Si
SLU 83	fin.	26.56	-151	0.72	0	292	3965	3018	1836	4257	No	28.15	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-318.26	-1429	-0.000263	0.0002807	0.0035	0.72		1917.1	1917.1		6.02	Si
SLV 15	fin.	226.57	-755	-0.0001828	0.0002807	0.0035	0.72		1912.43	1912.43		8.44	Si
SLD 13	ini.	-148.51	-584	-0.0001171	0.0002807	0.0035	0.72		1917.1	1917.1		12.91	Si
SLD 13	fin.	85.76	-316	-0.0000668	0.0002807	0.0035	0.72		1912.43	1912.43		22.3	Si
SLV 16	ini.	-320.14	-1467	-0.0002647	0.0002807	0.0035	0.72		1917.1	1917.1		5.99	Si
SLV 16	fin.	232.95	-774	-0.0001883	0.0002807	0.0035	0.72		1912.43	1912.43		8.21	Si
SLV 1	ini.	274.7	1343	-0.0002246	0.0002807	0.0035	0.72		1912.43	1912.43		6.96	Si
SLV 1	fin.	-205.3	667	-0.0001643	0.0002807	0.0035	0.72		1917.1	1917.1		9.34	Si
SLD 14	ini.	-149.32	-600	-0.0001178	0.0002807	0.0035	0.72		1917.1	1917.1		12.84	Si
SLD 14	fin.	88.5	-324	-0.000069	0.0002807	0.0035	0.72		1912.43	1912.43		21.61	Si
SLV 4	ini.	283.23	1207	-0.0002322	0.0002807	0.0035	0.72		1912.43	1912.43		6.75	Si
SLV 4	fin.	-163.64	590	-0.0001295	0.0002807	0.0035	0.72		1917.1	1917.1		11.72	Si
SLV 2	ini.	272.82	1305	-0.000223	0.0002807	0.0035	0.72		1912.43	1912.43		7.01	Si
SLV 2	fin.	-198.93	648	-0.0001589	0.0002807	0.0035	0.72		1917.1	1917.1		9.64	Si
SLV 3	ini.	285.11	1246	-0.0002339	0.0002807	0.0035	0.72		1912.43	1912.43		6.71	Si
SLV 3	fin.	-170.01	609	-0.0001348	0.0002807	0.0035	0.72		1917.1	1917.1		11.28	Si
SLV 13	ini.	-328.67	-1332	-0.0002725	0.0002807	0.0035	0.72		1917.1	1917.1		5.83	Si
SLV 13	fin.	191.28	-697	-0.0001529	0.0002807	0.0035	0.72		1912.43	1912.43		10	Si
SLV 14	ini.	-330.55	-1370	-0.0002742	0.0002807	0.0035	0.72		1917.1	1917.1		5.8	Si
SLV 14	fin.	197.66	-716	-0.0001582	0.0002807	0.0035	0.72		1912.43	1912.43		9.68	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 3	ini.	285.11	1099	0.72	0	438	3965	4528	1836	4403		4.01	Si
SLV 3	fin.	-170.01	-1842	0.72	0	438	3965	4528	1836	4403		2.39	Si
SLV 5	ini.	51.04	1116	0.72	0	438	3965	4528	1836	4403		3.95	Si
SLV 5	fin.	-106.55	-758	0.72	0	438	3965	4528	1836	4403		5.81	Si
SLV 16	ini.	-320.14	64	0.72	0	438	3965	4528	1836	4403		68.35	Si
SLV 16	fin.	232.95	1631	0.72	0	438	3965	4528	1836	4403		2.7	Si
SLV 14	ini.	-330.55	236	0.72	0	438	3965	4528	1836	4403		18.7	Si
SLV 14	fin.	197.66	1574	0.72	0	438	3965	4528	1836	4403		2.8	Si
SLV 15	ini.	-318.26	110	0.72	0	438	3965	4528	1836	4403		39.88	Si
SLV 15	fin.	226.57	1582	0.72	0	438	3965	4528	1836	4403		2.78	Si
SLV 1	ini.	274.7	1270	0.72	0	438	3965	4528	1836	4403		3.47	Si
SLV 1	fin.	-205.3	-1899	0.72	0	438	3965	4528	1836	4403		2.32	Si
SLV 13	ini.	-328.67	281	0.72	0	438	3965	4528	1836	4403		15.64	Si
SLV 13	fin.	191.28	1525	0.72	0	438	3965	4528	1836	4403		2.89	Si
SLV 2	ini.	272.82	1224	0.72	0	438	3965	4528	1836	4403		3.6	Si
SLV 2	fin.	-198.93	-1849	0.72	0	438	3965	4528	1836	4403		2.38	Si
SLV 4	ini.	283.23	1053	0.72	0	438	3965	4528	1836	4403		4.18	Si
SLV 4	fin.	-163.64	-1793	0.72	0	438	3965	4528	1836	4403		2.46	Si
SLV 6	ini.	49.83	1086	0.72	0	438	3965	4528	1836	4403		4.06	Si
SLV 6	fin.	-102.43	-726	0.72	0	438	3965	4528	1836	4403		6.07	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	5.8	SLV 14	Si
V_SLV	2.319	SLV 1	Si
PF_SLU	45.911	SLU 78	Si
V_SLU	4.107	SLU 78	Si



## Trave di accoppiamento 130

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-6.513	-3.314	8.35	9.25	0.9	-7.413	-3.314	8.35	9.25	0.9	0.9	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	e <sub>f,d</sub>	γ <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em <sub>-</sub>	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 69	ini.	190.83	-1518	-0.000097	0.0001872	0.0035	0.9		2959	2959	No	15.51	Si
SLU 69	fin.	49.19	-802	-0.0000243	0.0001872	0.0035	0.9		2959	2959	No	60.15	Si
SLU 51	ini.	176.59	-1394	-0.0000895	0.0001872	0.0035	0.9		2959	2959	No	16.76	Si
SLU 51	fin.	40.1	-716	-0.0000198	0.0001872	0.0035	0.9		2959	2959	No	73.79	Si
SLU 66	ini.	181.66	-1457	-0.0000922	0.0001872	0.0035	0.9		2959	2959	No	16.29	Si
SLU 66	fin.	49.68	-780	-0.0000245	0.0001872	0.0035	0.9		2959	2959	No	59.56	Si
SLU 71	ini.	187.87	-1495	-0.0000954	0.0001872	0.0035	0.9		2959	2959	No	15.75	Si
SLU 71	fin.	48.46	-791	-0.0000239	0.0001872	0.0035	0.9		2959	2959	No	61.06	Si
SLU 70	ini.	192.35	-1525	-0.0000978	0.0001872	0.0035	0.9		2959	2959	No	15.38	Si
SLU 70	fin.	47.9	-801	-0.0000236	0.0001872	0.0035	0.9		2959	2959	No	61.78	Si
SLU 68	ini.	181.22	-1446	-0.0000919	0.0001872	0.0035	0.9		2959	2959	No	16.33	Si
SLU 68	fin.	46.79	-766	-0.0000231	0.0001872	0.0035	0.9		2959	2959	No	63.24	Si
SLU 72	ini.	189.39	-1502	-0.0000962	0.0001872	0.0035	0.9		2959	2959	No	15.62	Si
SLU 72	fin.	47.16	-790	-0.0000233	0.0001872	0.0035	0.9		2959	2959	No	62.74	Si
SLU 48	ini.	178.03	-1410	-0.0000903	0.0001872	0.0035	0.9		2959	2959	No	16.62	Si
SLU 48	fin.	42.12	-728	-0.0000208	0.0001872	0.0035	0.9		2959	2959	No	70.24	Si
SLU 67	ini.	183.17	-1464	-0.000093	0.0001872	0.0035	0.9		2959	2959	No	16.15	Si
SLU 67	fin.	48.39	-778	-0.0000239	0.0001872	0.0035	0.9		2959	2959	No	61.15	Si
SLU 49	ini.	179.55	-1417	-0.0000911	0.0001872	0.0035	0.9		2959	2959	No	16.48	Si
SLU 49	fin.	40.83	-727	-0.0000201	0.0001872	0.0035	0.9		2959	2959	No	72.47	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	f <sub>vd</sub>	V <sub>t</sub>	V <sub>t,f</sub>	V <sub>t,c</sub>	V <sub>t,c int.</sub>	V <sub>t,R</sub>	incremento > 50%	c.s.	Verifica
SLU 71	ini.	187.87	-2700	0.9	0	365	7137	3773	2295	6068	No	2.25	Si
SLU 71	fin.	48.46	1028	0.9	0	365	7137	3773	2295	6068	No	5.9	Si
SLU 66	ini.	181.66	-2631	0.9	0	365	7137	3773	2295	6068	No	2.31	Si
SLU 66	fin.	49.68	1013	0.9	0	365	7137	3773	2295	6068	No	5.99	Si
SLU 49	ini.	179.55	-2558	0.9	0	365	7137	3773	2295	6068	No	2.37	Si
SLU 49	fin.	40.83	939	0.9	0	365	7137	3773	2295	6068	No	6.46	Si
SLU 77	ini.	141.98	-2562	0.9	0	365	7137	3773	2295	6068	No	2.37	Si
SLU 77	fin.	132.56	1465	0.9	0	365	7137	3773	2295	6068	No	4.14	Si
SLU 78	ini.	143.49	-2574	0.9	0	365	7137	3773	2295	6068	No	2.36	Si
SLU 78	fin.	131.26	1460	0.9	0	365	7137	3773	2295	6068	No	4.15	Si
SLU 67	ini.	183.17	-2643	0.9	0	365	7137	3773	2295	6068	No	2.3	Si
SLU 67	fin.	48.39	1008	0.9	0	365	7137	3773	2295	6068	No	6.02	Si
SLU 72	ini.	189.39	-2711	0.9	0	365	7137	3773	2295	6068	No	2.24	Si
SLU 72	fin.	47.16	1023	0.9	0	365	7137	3773	2295	6068	No	5.93	Si
SLU 69	ini.	190.83	-2741	0.9	0	365	7137	3773	2295	6068	No	2.21	Si
SLU 69	fin.	49.19	1045	0.9	0	365	7137	3773	2295	6068	No	5.8	Si
SLU 70	ini.	192.35	-2752	0.9	0	365	7137	3773	2295	6068	No	2.2	Si
SLU 70	fin.	47.9	1041	0.9	0	365	7137	3773	2295	6068	No	5.83	Si
SLU 68	ini.	181.22	-2609	0.9	0	365	7137	3773	2295	6068	No	2.33	Si
SLU 68	fin.	46.79	987	0.9	0	365	7137	3773	2295	6068	No	6.14	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 3	ini.	1229.8	-5091	-0.0007684	0.0002807	0.0035	0.9		2989.59	2989.59		2.43	Si
SLV 3	fin.	-1459.38	2762	-0.0009567	0.0002807	0.0035	0.9		2995.37	2995.37		2.05	Si
SLV 2	ini.	1236.79	-4895	-0.0007739	0.0002807	0.0035	0.9		2989.59	2989.59		2.42	Si
SLV 2	fin.	-1664.15	3217	-0.001142	0.0002807	0.0035	0.9		2995.37	2995.37		1.8	Si
SLV 15	ini.	-1009.54	2911	-0.0005991	0.0002807	0.0035	0.9		2995.37	2995.37		2.97	Si
SLV 15	fin.	1784.72	-4454	-0.0012626	0.0002807	0.0035	0.9		2989.59	2989.59		1.68	Si
SLD 15	ini.	-366.33	675	-0.0001893	0.0002807	0.0035	0.9		2995.37	2995.37		8.18	Si
SLD 15	fin.	797.58	-2259	-0.000452	0.0002807	0.0035	0.9		2989.59	2989.59		3.75	Si
SLV 13	ini.	-1091.36	3427	-0.0006597	0.0002807	0.0035	0.9		2995.37	2995.37		2.74	Si
SLV 13	fin.	1703.7	-4271	-0.0011828	0.0002807	0.0035	0.9		2989.59	2989.59		1.75	Si
SLV 16	ini.	-920.73	2591	-0.0005355	0.0002807	0.0035	0.9		2995.37	2995.37		3.25	Si
SLV 16	fin.	1660.98	-4182	-0.0011419	0.0002807	0.0035	0.9		2989.59	2989.59		1.8	Si
SLV 1	ini.	1147.98	-4575	-0.0007044	0.0002807	0.0035	0.9		2989.59	2989.59		2.6	Si
SLV 1	fin.	-1540.4	2946	-0.0010281	0.0002807	0.0035	0.9		2995.37	2995.37		1.94	Si
SLV 4	ini.	1318.61	-5411	-0.0008401	0.0002807	0.0035	0.9		2989.59	2989.59		2.27	Si
SLV 4	fin.	-1583.12	3034	-0.0010667	0.0002807	0.0035	0.9		2995.37	2995.37		1.89	Si
SLD 13	ini.	-401.52	898	-0.0002088	0.0002807	0.0035	0.9		2995.37	2995.37		7.46	Si
SLD 13	fin.	762.7	-2179	-0.0004288	0.0002807	0.0035	0.9		2989.59	2989.59		3.92	Si
SLV 14	ini.	-1002.55	3107	-0.0005941	0.0002807	0.0035	0.9		2995.37	2995.37		2.99	Si
SLV 14	fin.	1579.96	-3999	-0.0010665	0.0002807	0.0035	0.9		2989.59	2989.59		1.89	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 2	ini.	1236.79	-7659	0.9	0	548	7137	5660	2295	7684		1	Si
SLV 2	fin.	-1664.15	-7039	0.9	0	548	7137	5660	2295	7684		1.09	Si
SLV 16	ini.	-920.73	3568	0.9	0	548	7137	5660	2295	7684		2.15	Si
SLV 16	fin.	1660.98	8158	0.9	0	548	7137	5660	2295	7684		0.94	No
SLV 13	ini.	-1091.36	4649	0.9	0	548	7137	5660	2295	7684		1.65	Si
SLV 13	fin.	1703.7	8327	0.9	0	548	7137	5660	2295	7684		0.92	No
SLV 1	ini.	1147.98	-7196	0.9	0	548	7137	5660	2295	7684		1.07	Si
SLV 1	fin.	-1540.4	-6483	0.9	0	548	7137	5660	2295	7684		1.19	Si
SLV 4	ini.	1318.61	-8278	0.9	0	548	7137	5660	2295	7684		0.93	No
SLV 4	fin.	-1583.12	-6652	0.9	0	548	7137	5660	2295	7684		1.16	Si
SLV 15	ini.	-1009.54	4030	0.9	0	548	7137	5660	2295	7684		1.91	Si
SLV 15	fin.	1784.72	8715	0.9	0	548	7137	5660	2295	7684		0.88	No
SLV 3	ini.	1229.8	-7815	0.9	0	548	7137	5660	2295	7684		0.98	No
SLV 3	fin.	-1459.38	-6095	0.9	0	548	7137	5660	2295	7684		1.26	Si
SLV 8	ini.	614.57	-4772	0.9	0	548	7137	5660	2295	7684		1.61	Si
SLV 8	fin.	-331.25	-917	0.9	0	548	7137	5660	2295	7684		8.38	Si
SLV 14	ini.	-1002.55	4187	0.9	0	548	7137	5660	2295	7684		1.84	Si
SLV 14	fin.	1579.96	7771	0.9	0	548	7137	5660	2295	7684		0.99	No
SLD 4	ini.	628.77	-4581	0.9	0	548	7137	5660	2295	7684		1.68	Si
SLD 4	fin.	-642.13	-2363	0.9	0	548	7137	5660	2295	7684		3.25	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.675	SLV 15	Si
V_SLV	0.882	SLV 15	No
PF_SLU	15.383	SLU 70	Si
V_SLU	2.205	SLU 70	Si

## Trave di accoppiamento 131

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-6.513	-3.314	11.05	11.87	0.82	-7.413	-3.314	11.05	11.87	0.82	0.9	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb_	fhk	fvk0	fmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 82	ini.	-187.06	-1231	-0.0001152	0.0001872	0.0035	0.82		2460.51	2460.51	No	13.15	Si
SLU 82	fin.	-59.3	-479	-0.0000354	0.0001872	0.0035	0.82		2460.51	2460.51	No	41.49	Si
SLU 42	ini.	-175.54	-1133	-0.0001078	0.0001872	0.0035	0.82		2460.51	2460.51	No	14.02	Si
SLU 42	fin.	-42.76	-398	-0.0000254	0.0001872	0.0035	0.82		2460.51	2460.51	No	57.54	Si
SLU 62	ini.	-177.02	-1137	-0.0001087	0.0001872	0.0035	0.82		2460.51	2460.51	No	13.9	Si
SLU 62	fin.	-56.46	-450	-0.0000336	0.0001872	0.0035	0.82		2460.51	2460.51	No	43.58	Si
SLU 41	ini.	-176.31	-1136	-0.0001083	0.0001872	0.0035	0.82		2460.51	2460.51	No	13.96	Si
SLU 41	fin.	-41.42	-394	-0.0000246	0.0001872	0.0035	0.82		2460.51	2460.51	No	59.4	Si
SLU 83	ini.	-192.96	-1262	-0.0001191	0.0001872	0.0035	0.82		2460.51	2460.51	No	12.75	Si
SLU 83	fin.	-62.19	-499	-0.0000371	0.0001872	0.0035	0.82		2460.51	2460.51	No	39.56	Si
SLU 81	ini.	-187.83	-1233	-0.0001157	0.0001872	0.0035	0.82		2460.51	2460.51	No	13.1	Si
SLU 81	fin.	-57.96	-475	-0.0000346	0.0001872	0.0035	0.82		2460.51	2460.51	No	42.45	Si
SLU 78	ini.	-176.24	-1188	-0.0001082	0.0001872	0.0035	0.82		2460.51	2460.51	No	13.96	Si
SLU 78	fin.	-82.55	-565	-0.0000495	0.0001872	0.0035	0.82		2460.51	2460.51	No	29.81	Si
SLU 84	ini.	-192.19	-1260	-0.0001186	0.0001872	0.0035	0.82		2460.51	2460.51	No	12.8	Si
SLU 84	fin.	-63.53	-503	-0.0000379	0.0001872	0.0035	0.82		2460.51	2460.51	No	38.73	Si
SLU 77	ini.	-177.01	-1191	-0.0001087	0.0001872	0.0035	0.82		2460.51	2460.51	No	13.9	Si
SLU 77	fin.	-81.21	-561	-0.0000487	0.0001872	0.0035	0.82		2460.51	2460.51	No	30.3	Si
SLU 63	ini.	-176.25	-1134	-0.0001082	0.0001872	0.0035	0.82		2460.51	2460.51	No	13.96	Si
SLU 63	fin.	-57.8	-454	-0.0000345	0.0001872	0.0035	0.82		2460.51	2460.51	No	42.57	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 75	ini.	-171.11	2540	0.82	0	303	6502	3438	2091	5529	No	2.18	Si
SLU 75	fin.	-78.32	-1479	0.82	0	303	6502	3438	2091	5529	No	3.74	Si
SLU 83	ini.	-192.96	2706	0.82	0	303	6502	3438	2091	5529	No	2.04	Si
SLU 83	fin.	-62.19	-1407	0.82	0	303	6502	3438	2091	5529	No	3.93	Si
SLU 74	ini.	-171.88	2542	0.82	0	303	6502	3438	2091	5529	No	2.17	Si
SLU 74	fin.	-76.98	-1472	0.82	0	303	6502	3438	2091	5529	No	3.76	Si
SLU 78	ini.	-176.24	2627	0.82	0	303	6502	3438	2091	5529	No	2.1	Si
SLU 78	fin.	-82.55	-1548	0.82	0	303	6502	3438	2091	5529	No	3.57	Si
SLU 79	ini.	-173.63	2589	0.82	0	303	6502	3438	2091	5529	No	2.14	Si
SLU 79	fin.	-79.72	-1519	0.82	0	303	6502	3438	2091	5529	No	3.64	Si
SLU 82	ini.	-187.06	2616	0.82	0	303	6502	3438	2091	5529	No	2.11	Si
SLU 82	fin.	-59.3	-1346	0.82	0	303	6502	3438	2091	5529	No	4.11	Si
SLU 77	ini.	-177.01	2630	0.82	0	303	6502	3438	2091	5529	No	2.1	Si
SLU 77	fin.	-81.21	-1540	0.82	0	303	6502	3438	2091	5529	No	3.59	Si
SLU 80	ini.	-172.86	2586	0.82	0	303	6502	3438	2091	5529	No	2.14	Si
SLU 80	fin.	-81.05	-1527	0.82	0	303	6502	3438	2091	5529	No	3.62	Si
SLU 84	ini.	-192.19	2704	0.82	0	303	6502	3438	2091	5529	No	2.04	Si
SLU 84	fin.	-63.53	-1414	0.82	0	303	6502	3438	2091	5529	No	3.91	Si
SLU 81	ini.	-187.83	2619	0.82	0	303	6502	3438	2091	5529	No	2.11	Si
SLU 81	fin.	-57.96	-1338	0.82	0	303	6502	3438	2091	5529	No	4.13	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 15	ini.	-521.57	-2280	-0.0003419	0.0002807	0.0035	0.82		2487.45	2487.45		4.77	Si
SLD 15	fin.	165.34	49	-0.0001003	0.0002807	0.0035	0.82		2482.11	2482.11		15.01	Si
SLV 15	ini.	-1093.46	-4417	-0.000837	0.0002807	0.0035	0.82		2487.45	2487.45		2.27	Si
SLV 15	fin.	479.71	660	-0.0003118	0.0002807	0.0035	0.82		2482.11	2482.11		5.17	Si
SLV 2	ini.	904.32	3048	-0.0006599	0.0002807	0.0035	0.82		2482.11	2482.11		2.74	Si
SLV 2	fin.	-616.81	-1466	-0.000415	0.0002807	0.0035	0.82		2487.45	2487.45		4.03	Si
SLV 13	ini.	-1024.78	-4238	-0.0007703	0.0002807	0.0035	0.82		2487.45	2487.45		2.43	Si
SLV 13	fin.	599.9	1070	-0.0004026	0.0002807	0.0035	0.82		2482.11	2482.11		4.14	Si
SLV 1	ini.	831.73	2793	-0.0005951	0.0002807	0.0035	0.82		2482.11	2482.11		2.98	Si
SLV 1	fin.	-563.59	-1339	-0.0003737	0.0002807	0.0035	0.82		2487.45	2487.45		4.41	Si
SLV 14	ini.	-952.18	-3983	-0.000702	0.0002807	0.0035	0.82		2487.45	2487.45		2.61	Si
SLV 14	fin.	546.68	943	-0.0003616	0.0002807	0.0035	0.82		2482.11	2482.11		4.54	Si
SLV 11	ini.	-510.95	-2120	-0.000334	0.0002807	0.0035	0.82		2487.45	2487.45		4.87	Si
SLV 11	fin.	-77.16	-685	-0.000046	0.0002807	0.0035	0.82		2487.45	2487.45		32.24	Si
SLV 3	ini.	763.05	2614	-0.0005358	0.0002807	0.0035	0.82		2482.11	2482.11		3.25	Si
SLV 3	fin.	-683.78	-1749	-0.0004686	0.0002807	0.0035	0.82		2487.45	2487.45		3.64	Si
SLV 4	ini.	835.65	2869	-0.0005985	0.0002807	0.0035	0.82		2482.11	2482.11		2.97	Si
SLV 4	fin.	-737	-1876	-0.0005125	0.0002807	0.0035	0.82		2487.45	2487.45		3.38	Si
SLV 16	ini.	-1020.86	-4162	-0.0007665	0.0002807	0.0035	0.82		2487.45	2487.45		2.44	Si
SLV 16	fin.	426.49	533	-0.0002735	0.0002807	0.0035	0.82		2482.11	2482.11		5.82	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 13	ini.	-1024.78	6068	0.82	0	455	6502	5156	2091	6957		1.15	Si
SLV 13	fin.	599.9	2781	0.82	0	455	6502	5156	2091	6957		2.5	Si
SLV 4	ini.	835.65	-2941	0.82	0	455	6502	5156	2091	6957		2.37	Si
SLV 4	fin.	-737	-4945	0.82	0	455	6502	5156	2091	6957		1.41	Si
SLV 3	ini.	763.05	-2562	0.82	0	455	6502	5156	2091	6957		2.72	Si
SLV 3	fin.	-683.78	-4656	0.82	0	455	6502	5156	2091	6957		1.49	Si
SLV 16	ini.	-1020.86	5871	0.82	0	455	6502	5156	2091	6957		1.19	Si
SLV 16	fin.	426.49	2034	0.82	0	455	6502	5156	2091	6957		3.42	Si
SLD 15	ini.	-521.57	3567	0.82	0	455	6502	5156	2091	6957		1.95	Si
SLD 15	fin.	165.34	371	0.82	0	455	6502	5156	2091	6957		18.75	Si
SLV 2	ini.	904.32	-3123	0.82	0	455	6502	5156	2091	6957		2.23	Si
SLV 2	fin.	-616.81	-4487	0.82	0	455	6502	5156	2091	6957		1.55	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 14	ini.	-952.18	5689	0.82	0	455	6502	5156	2091	6957		1.22	Si
SLV 14	fin.	546.68	2492	0.82	0	455	6502	5156	2091	6957		2.79	Si
SLV 1	ini.	831.73	-2744	0.82	0	455	6502	5156	2091	6957		2.54	Si
SLV 1	fin.	-563.59	-4197	0.82	0	455	6502	5156	2091	6957		1.66	Si
SLD 13	ini.	-492.31	3489	0.82	0	455	6502	5156	2091	6957		1.99	Si
SLD 13	fin.	217.67	572	0.82	0	455	6502	5156	2091	6957		12.16	Si
SLV 15	ini.	-1093.46	6250	0.82	0	455	6502	5156	2091	6957		1.11	Si
SLV 15	fin.	479.71	2323	0.82	0	455	6502	5156	2091	6957		3	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.275	SLV 15	Si
V_SLV	1.113	SLV 15	Si
PF_SLU	12.751	SLU 83	Si
V_SLU	2.043	SLU 83	Si

## Trave di accoppiamento 132

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-5.463	-3.314	8.35	10.35	2	-5.963	-3.314	8.35	10.35	2	0.5	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fhk	fvk0	fhmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 81	ini.	504.34	-2687	-0.0000509	0.0001872	0.0035	2		14344.28	14344.28	No	28.44	Si
SLU 81	fin.	-19	-1933	-0.0000019	0.0001872	0.0035	2		14357.01	14357.01	No	755.49	Si
SLU 78	ini.	471	-2934	-0.0000475	0.0001872	0.0035	2		14344.28	14344.28	No	30.45	Si
SLU 78	fin.	-68.91	-2184	-0.0000068	0.0001872	0.0035	2		14357.01	14357.01	No	208.34	Si
SLU 83	ini.	493.1	-2787	-0.0000497	0.0001872	0.0035	2		14344.28	14344.28	No	29.09	Si
SLU 83	fin.	-22.56	-2028	-0.0000022	0.0001872	0.0035	2		14357.01	14357.01	No	636.35	Si
SLU 75	ini.	482.24	-2834	-0.0000486	0.0001872	0.0035	2		14344.28	14344.28	No	29.75	Si
SLU 75	fin.	-65.35	-2090	-0.0000065	0.0001872	0.0035	2		14357.01	14357.01	No	219.68	Si
SLU 82	ini.	506.43	-2696	-0.0000511	0.0001872	0.0035	2		14344.28	14344.28	No	28.32	Si
SLU 82	fin.	-20.9	-1941	-0.0000021	0.0001872	0.0035	2		14357.01	14357.01	No	686.94	Si
SLU 73	ini.	484.55	-2694	-0.0000488	0.0001872	0.0035	2		14344.28	14344.28	No	29.6	Si
SLU 73	fin.	-61.56	-1967	-0.0000061	0.0001872	0.0035	2		14357.01	14357.01	No	233.2	Si
SLU 76	ini.	473.32	-2794	-0.0000477	0.0001872	0.0035	2		14344.28	14344.28	No	30.31	Si
SLU 76	fin.	-65.12	-2061	-0.0000065	0.0001872	0.0035	2		14357.01	14357.01	No	220.46	Si
SLU 74	ini.	480.15	-2825	-0.0000484	0.0001872	0.0035	2		14344.28	14344.28	No	29.87	Si
SLU 74	fin.	-63.46	-2082	-0.0000063	0.0001872	0.0035	2		14357.01	14357.01	No	226.25	Si
SLU 77	ini.	468.91	-2925	-0.0000472	0.0001872	0.0035	2		14344.28	14344.28	No	30.59	Si
SLU 77	fin.	-67.01	-2177	-0.0000066	0.0001872	0.0035	2		14357.01	14357.01	No	214.24	Si
SLU 84	ini.	495.19	-2797	-0.0000499	0.0001872	0.0035	2		14344.28	14344.28	No	28.97	Si
SLU 84	fin.	-24.46	-2035	-0.0000024	0.0001872	0.0035	2		14357.01	14357.01	No	587.01	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 83	ini.	493.1	-2889	2	0	812	3965	8384	5100	4776	No	1.65	Si
SLU 83	fin.	-22.56	-470	2	0	812	3965	8384	5100	4776	No	10.17	Si
SLU 81	ini.	504.34	-2875	2	0	812	3965	8384	5100	4776	No	1.66	Si
SLU 81	fin.	-19	-544	2	0	812	3965	8384	5100	4776	No	8.78	Si
SLU 82	ini.	506.43	-2887	2	0	812	3965	8384	5100	4776	No	1.65	Si
SLU 82	fin.	-20.9	-552	2	0	812	3965	8384	5100	4776	No	8.66	Si
SLU 74	ini.	480.15	-2903	2	0	812	3965	8384	5100	4776	No	1.65	Si
SLU 74	fin.	-63.46	-522	2	0	812	3965	8384	5100	4776	No	9.15	Si
SLU 76	ini.	473.32	-2869	2	0	812	3965	8384	5100	4776	No	1.66	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 76	fin.	-65.12	-518	2	0	812	3965	8384	5100	4776	No	9.23	Si
SLU 77	ini.	468.91	-2917	2	0	812	3965	8384	5100	4776	No	1.64	Si
SLU 77	fin.	-67.01	-448	2	0	812	3965	8384	5100	4776	No	10.66	Si
SLU 80	ini.	460.69	-2876	2	0	812	3965	8384	5100	4776	No	1.66	Si
SLU 80	fin.	-67.42	-438	2	0	812	3965	8384	5100	4776	No	10.9	Si
SLU 78	ini.	471	-2930	2	0	812	3965	8384	5100	4776	No	1.63	Si
SLU 78	fin.	-68.91	-456	2	0	812	3965	8384	5100	4776	No	10.48	Si
SLU 75	ini.	482.24	-2915	2	0	812	3965	8384	5100	4776	No	1.64	Si
SLU 75	fin.	-65.35	-530	2	0	812	3965	8384	5100	4776	No	9.01	Si
SLU 84	ini.	495.19	-2901	2	0	812	3965	8384	5100	4776	No	1.65	Si
SLU 84	fin.	-24.46	-477	2	0	812	3965	8384	5100	4776	No	10	Si

**Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche**

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 1	ini.	1513.72	-4875	-0.0001569	0.0002807	0.0035	2		14202.07	14202.07		9.38	Si
SLV 1	fin.	-1852.89	-3918	-0.0001941	0.0002807	0.0035	2		14215.41	14215.41		7.67	Si
SLD 2	ini.	899.74	-3346	-0.0000914	0.0002807	0.0035	2		14202.07	14202.07		15.78	Si
SLD 2	fin.	-904.89	-2621	-0.0000919	0.0002807	0.0035	2		14215.41	14215.41		15.71	Si
SLV 4	ini.	1702.76	-5864	-0.0001776	0.0002807	0.0035	2		14202.07	14202.07		8.34	Si
SLV 4	fin.	-1872.51	-4773	-0.0001963	0.0002807	0.0035	2		14215.41	14215.41		7.59	Si
SLV 13	ini.	-1044.76	1874	-0.0001065	0.0002807	0.0035	2		14215.41	14215.41		13.61	Si
SLV 13	fin.	1693.63	1797	-0.0001766	0.0002807	0.0035	2		14202.07	14202.07		8.39	Si
SLV 15	ini.	-1004.42	1170	-0.0001023	0.0002807	0.0035	2		14215.41	14215.41		14.15	Si
SLV 15	fin.	1818.79	1167	-0.0001905	0.0002807	0.0035	2		14202.07	14202.07		7.81	Si
SLV 2	ini.	1662.41	-5161	-0.0001732	0.0002807	0.0035	2		14202.07	14202.07		8.54	Si
SLV 2	fin.	-1997.66	-4142	-0.0002104	0.0002807	0.0035	2		14215.41	14215.41		7.12	Si
SLV 16	ini.	-855.72	884	-0.0000867	0.0002807	0.0035	2		14215.41	14215.41		16.61	Si
SLV 16	fin.	1674.01	942	-0.0001744	0.0002807	0.0035	2		14202.07	14202.07		8.48	Si
SLV 14	ini.	-896.06	1587	-0.0000909	0.0002807	0.0035	2		14215.41	14215.41		15.86	Si
SLV 14	fin.	1548.85	1573	-0.0001607	0.0002807	0.0035	2		14202.07	14202.07		9.17	Si
SLV 3	ini.	1554.06	-5578	-0.0001613	0.0002807	0.0035	2		14202.07	14202.07		9.14	Si
SLV 3	fin.	-1727.73	-4548	-0.0001802	0.0002807	0.0035	2		14215.41	14215.41		8.23	Si
SLD 4	ini.	916.46	-3653	-0.0000931	0.0002807	0.0035	2		14202.07	14202.07		15.5	Si
SLD 4	fin.	-851.24	-2895	-0.0000863	0.0002807	0.0035	2		14215.41	14215.41		16.7	Si

**Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215**

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 4	ini.	916.46	-5357	2	0	1217	3965	12577	5100	5182		0.97	No
SLD 4	fin.	-851.24	-4014	2	0	1217	3965	12577	5100	5182		1.29	Si
SLV 16	ini.	-855.72	4699	2	0	1217	3965	12577	5100	5182		1.1	Si
SLV 16	fin.	1674.01	7457	2	0	1217	3965	12577	5100	5182		0.69	No
SLV 2	ini.	1662.41	-9519	2	0	1217	3965	12577	5100	5182		0.54	No
SLV 2	fin.	-1997.66	-9151	2	0	1217	3965	12577	5100	5182		0.57	No
SLV 3	ini.	1554.06	-9066	2	0	1217	3965	12577	5100	5182		0.57	No
SLV 3	fin.	-1727.73	-7999	2	0	1217	3965	12577	5100	5182		0.65	No
SLV 1	ini.	1513.72	-8819	2	0	1217	3965	12577	5100	5182		0.59	No
SLV 1	fin.	-1852.89	-8375	2	0	1217	3965	12577	5100	5182		0.62	No
SLV 15	ini.	-1004.42	5399	2	0	1217	3965	12577	5100	5182		0.96	No
SLV 15	fin.	1818.79	8233	2	0	1217	3965	12577	5100	5182		0.63	No
SLV 14	ini.	-896.06	4947	2	0	1217	3965	12577	5100	5182		1.05	Si
SLV 14	fin.	1548.85	7081	2	0	1217	3965	12577	5100	5182		0.73	No
SLD 2	ini.	899.74	-5248	2	0	1217	3965	12577	5100	5182		0.99	No
SLD 2	fin.	-904.89	-4178	2	0	1217	3965	12577	5100	5182		1.24	Si
SLV 13	ini.	-1044.76	5646	2	0	1217	3965	12577	5100	5182		0.92	No
SLV 13	fin.	1693.63	7857	2	0	1217	3965	12577	5100	5182		0.66	No
SLV 4	ini.	1702.76	-9766	2	0	1217	3965	12577	5100	5182		0.53	No
SLV 4	fin.	-1872.51	-8776	2	0	1217	3965	12577	5100	5182		0.59	No

**Tabella dei coefficienti di sicurezza minimi**

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	7.116	SLV 2	Si
V_SLV	0.531	SLV 4	No
PF_SLU	28.324	SLU 82	Si
V_SLU	1.63	SLU 78	Si

**Trave di accoppiamento 133**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati geometrici**

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-5.463	-3.314	11.15	11.87	0.72	-5.963	-3.314	11.15	11.87	0.72	0.5	0.28	3500

**Caratteristiche del materiale**

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC





Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 80	ini.	121.51	-910	-0.0000964	0.0001872	0.0035	0.72		1897.3	1897.3	No	15.61	Si
SLU 80	fin.	-162.42	-1156	-0.0001305	0.0001872	0.0035	0.72		1901.86	1901.86	No	11.71	Si
SLU 75	ini.	127.88	-893	-0.0001017	0.0001872	0.0035	0.72		1897.3	1897.3	No	14.84	Si
SLU 75	fin.	-164.16	-1156	-0.000132	0.0001872	0.0035	0.72		1901.86	1901.86	No	11.59	Si
SLU 74	ini.	127.39	-894	-0.0001013	0.0001872	0.0035	0.72		1897.3	1897.3	No	14.89	Si
SLU 74	fin.	-164.13	-1157	-0.0001319	0.0001872	0.0035	0.72		1901.86	1901.86	No	11.59	Si
SLU 81	ini.	124.35	-933	-0.0000988	0.0001872	0.0035	0.72		1897.3	1897.3	No	15.26	Si
SLU 81	fin.	-172.33	-1215	-0.0001389	0.0001872	0.0035	0.72		1901.86	1901.86	No	11.04	Si
SLU 79	ini.	121.03	-912	-0.000096	0.0001872	0.0035	0.72		1897.3	1897.3	No	15.68	Si
SLU 79	fin.	-162.39	-1157	-0.0001304	0.0001872	0.0035	0.72		1901.86	1901.86	No	11.71	Si
SLU 82	ini.	124.84	-932	-0.0000992	0.0001872	0.0035	0.72		1897.3	1897.3	No	15.2	Si
SLU 82	fin.	-172.36	-1213	-0.000139	0.0001872	0.0035	0.72		1901.86	1901.86	No	11.03	Si
SLU 77	ini.	124.34	-928	-0.0000988	0.0001872	0.0035	0.72		1897.3	1897.3	No	15.26	Si
SLU 77	fin.	-165.65	-1180	-0.0001332	0.0001872	0.0035	0.72		1901.86	1901.86	No	11.48	Si
SLU 83	ini.	121.3	-968	-0.0000963	0.0001872	0.0035	0.72		1897.3	1897.3	No	15.64	Si
SLU 83	fin.	-173.85	-1238	-0.0001403	0.0001872	0.0035	0.72		1901.86	1901.86	No	10.94	Si
SLU 84	ini.	121.79	-966	-0.0000967	0.0001872	0.0035	0.72		1897.3	1897.3	No	15.58	Si
SLU 84	fin.	-173.88	-1236	-0.0001403	0.0001872	0.0035	0.72		1901.86	1901.86	No	10.94	Si
SLU 78	ini.	124.83	-927	-0.0000992	0.0001872	0.0035	0.72		1897.3	1897.3	No	15.2	Si
SLU 78	fin.	-165.68	-1179	-0.0001333	0.0001872	0.0035	0.72		1901.86	1901.86	No	11.48	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 78	ini.	124.83	-191	0.72	0	292	3965	3018	1836	4257	No	22.34	Si
SLU 78	fin.	-165.68	-2549	0.72	0	292	3965	3018	1836	4257	No	1.67	Si
SLU 79	ini.	121.03	-179	0.72	0	292	3965	3018	1836	4257	No	23.75	Si
SLU 79	fin.	-162.39	-2498	0.72	0	292	3965	3018	1836	4257	No	1.7	Si
SLU 82	ini.	124.84	-250	0.72	0	292	3965	3018	1836	4257	No	17.04	Si
SLU 82	fin.	-172.36	-2479	0.72	0	292	3965	3018	1836	4257	No	1.72	Si
SLU 77	ini.	124.34	-190	0.72	0	292	3965	3018	1836	4257	No	22.39	Si
SLU 77	fin.	-165.65	-2546	0.72	0	292	3965	3018	1836	4257	No	1.67	Si
SLU 83	ini.	121.3	-221	0.72	0	292	3965	3018	1836	4257	No	19.28	Si
SLU 83	fin.	-173.85	-2536	0.72	0	292	3965	3018	1836	4257	No	1.68	Si
SLU 75	ini.	127.88	-219	0.72	0	292	3965	3018	1836	4257	No	19.43	Si
SLU 75	fin.	-164.16	-2490	0.72	0	292	3965	3018	1836	4257	No	1.71	Si
SLU 81	ini.	124.35	-249	0.72	0	292	3965	3018	1836	4257	No	17.07	Si
SLU 81	fin.	-172.33	-2476	0.72	0	292	3965	3018	1836	4257	No	1.72	Si
SLU 74	ini.	127.39	-219	0.72	0	292	3965	3018	1836	4257	No	19.47	Si
SLU 74	fin.	-164.13	-2487	0.72	0	292	3965	3018	1836	4257	No	1.71	Si
SLU 80	ini.	121.51	-180	0.72	0	292	3965	3018	1836	4257	No	23.7	Si
SLU 80	fin.	-162.42	-2500	0.72	0	292	3965	3018	1836	4257	No	1.7	Si
SLU 84	ini.	121.79	-221	0.72	0	292	3965	3018	1836	4257	No	19.24	Si
SLU 84	fin.	-173.88	-2538	0.72	0	292	3965	3018	1836	4257	No	1.68	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-668.79	-3434	-0.0006243	0.0002807	0.0035	0.72		1917.1	1917.1		2.87	Si
SLV 15	fin.	-230.56	-2977	-0.0001858	0.0002807	0.0035	0.72		1917.1	1917.1		8.31	Si
SLV 2	ini.	863.66	2384	-0.0008649	0.0002807	0.0035	0.72		1912.43	1912.43		2.21	Si
SLV 2	fin.	23.21	1562	-0.0000178	0.0002807	0.0035	0.72		1912.43	1912.43		82.38	Si
SLV 3	ini.	722.35	1980	-0.000689	0.0002807	0.0035	0.72		1912.43	1912.43		2.65	Si
SLV 3	fin.	35.41	1472	-0.0000273	0.0002807	0.0035	0.72		1912.43	1912.43		54.01	Si
SLV 13	ini.	-600.5	-3252	-0.0005472	0.0002807	0.0035	0.72		1917.1	1917.1		3.19	Si
SLV 13	fin.	-243.61	-3021	-0.000197	0.0002807	0.0035	0.72		1917.1	1917.1		7.87	Si
SLV 16	ini.	-595.76	-3212	-0.000542	0.0002807	0.0035	0.72		1917.1	1917.1		3.22	Si
SLV 16	fin.	-229.72	-2844	-0.000185	0.0002807	0.0035	0.72		1917.1	1917.1		8.35	Si
SLV 14	ini.	-527.48	-3030	-0.0004683	0.0002807	0.0035	0.72		1917.1	1917.1		3.63	Si
SLV 14	fin.	-242.76	-2888	-0.0001962	0.0002807	0.0035	0.72		1917.1	1917.1		7.9	Si
SLD 2	ini.	425.38	719	-0.0003651	0.0002807	0.0035	0.72		1912.43	1912.43		4.5	Si
SLD 2	fin.	-49.51	263	-0.0000381	0.0002807	0.0035	0.72		1917.1	1917.1		38.72	Si
SLV 1	ini.	790.63	2162	-0.0007722	0.0002807	0.0035	0.72		1912.43	1912.43		2.42	Si
SLV 1	fin.	22.36	1428	-0.0000172	0.0002807	0.0035	0.72		1912.43	1912.43		85.51	Si
SLV 6	ini.	443.5	662	-0.0003831	0.0002807	0.0035	0.72		1912.43	1912.43		4.31	Si
SLV 6	fin.	-85.25	-70	-0.0000662	0.0002807	0.0035	0.72		1917.1	1917.1		22.49	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 4	ini.	795.37	2202	-0.000778	0.0002807	0.0035	0.72		1912.43	1912.43		2.4	Si
SLV 4	fin.	36.26	1605	-0.0000279	0.0002807	0.0035	0.72		1912.43	1912.43		52.74	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 3	ini.	364.32	-699	0.72	0	438	3965	4528	1836	4403		6.3	Si
SLD 3	fin.	-44.29	-2052	0.72	0	438	3965	4528	1836	4403		2.15	Si
SLV 3	ini.	722.35	-1430	0.72	0	438	3965	4528	1836	4403		3.08	Si
SLV 3	fin.	35.41	-2580	0.72	0	438	3965	4528	1836	4403		1.71	Si
SLD 1	ini.	394.02	-826	0.72	0	438	3965	4528	1836	4403		5.33	Si
SLD 1	fin.	-49.87	-2021	0.72	0	438	3965	4528	1836	4403		2.18	Si
SLD 2	ini.	425.38	-921	0.72	0	438	3965	4528	1836	4403		4.78	Si
SLD 2	fin.	-49.51	-2081	0.72	0	438	3965	4528	1836	4403		2.12	Si
SLV 7	ini.	168.71	-63	0.72	0	438	3965	4528	1836	4403		69.56	Si
SLV 7	fin.	-42.31	-2020	0.72	0	438	3965	4528	1836	4403		2.18	Si
SLV 8	ini.	215.87	-206	0.72	0	438	3965	4528	1836	4403		21.35	Si
SLV 8	fin.	-41.76	-2111	0.72	0	438	3965	4528	1836	4403		2.09	Si
SLD 4	ini.	395.68	-794	0.72	0	438	3965	4528	1836	4403		5.55	Si
SLD 4	fin.	-43.93	-2113	0.72	0	438	3965	4528	1836	4403		2.08	Si
SLV 2	ini.	863.66	-1939	0.72	0	438	3965	4528	1836	4403		2.27	Si
SLV 2	fin.	23.21	-2648	0.72	0	438	3965	4528	1836	4403		1.66	Si
SLV 4	ini.	795.37	-1651	0.72	0	438	3965	4528	1836	4403		2.67	Si
SLV 4	fin.	36.26	-2721	0.72	0	438	3965	4528	1836	4403		1.62	Si
SLV 1	ini.	790.63	-1718	0.72	0	438	3965	4528	1836	4403		2.56	Si
SLV 1	fin.	22.36	-2507	0.72	0	438	3965	4528	1836	4403		1.76	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.214	SLV 2	Si
V_SLV	1.618	SLV 4	Si
PF_SLU	10.938	SLU 84	Si
V_SLU	1.67	SLU 78	Si

Trave di accoppiamento 134

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-2.283	-3.314	8.35	9.25	0.9	-3.183	-3.314	8.35	9.25	0.9	0.9	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	f <sub>nk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>vo</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 78	ini.	471.76	-1860	-0.000258	0.0001872	0.0035	0.9		2959	2959	No	6.27	Si
SLU 78	fin.	90.93	-1080	-0.0000453	0.0001872	0.0035	0.9		2959	2959	No	32.54	Si
SLU 76	ini.	468.52	-1814	-0.000256	0.0001872	0.0035	0.9		2959	2959	No	6.32	Si
SLU 76	fin.	73.71	-1000	-0.0000366	0.0001872	0.0035	0.9		2959	2959	No	40.14	Si
SLU 84	ini.	471.9	-1846	-0.0002581	0.0001872	0.0035	0.9		2959	2959	No	6.27	Si
SLU 84	fin.	81.83	-1041	-0.0000407	0.0001872	0.0035	0.9		2959	2959	No	36.16	Si
SLU 82	ini.	472.26	-1818	-0.0002583	0.0001872	0.0035	0.9		2959	2959	No	6.27	Si
SLU 82	fin.	67.25	-978	-0.0000333	0.0001872	0.0035	0.9		2959	2959	No	44	Si
SLU 73	ini.	468.88	-1786	-0.0002562	0.0001872	0.0035	0.9		2959	2959	No	6.31	Si
SLU 73	fin.	59.14	-937	-0.0000293	0.0001872	0.0035	0.9		2959	2959	No	50.04	Si
SLU 77	ini.	467.62	-1850	-0.0002554	0.0001872	0.0035	0.9		2959	2959	No	6.33	Si
SLU 77	fin.	92.75	-1082	-0.0000462	0.0001872	0.0035	0.9		2959	2959	No	31.9	Si
SLU 83	ini.	467.77	-1836	-0.0002555	0.0001872	0.0035	0.9		2959	2959	No	6.33	Si
SLU 83	fin.	83.65	-1043	-0.0000416	0.0001872	0.0035	0.9		2959	2959	No	35.37	Si
SLU 81	ini.	468.13	-1808	-0.0002558	0.0001872	0.0035	0.9		2959	2959	No	6.32	Si



Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 81	fin.	69.08	-980	-0.0000342	0.0001872	0.0035	0.9		2959	2959	No	42.84	Si
SLU 75	ini.	472.12	-1832	-0.0002582	0.0001872	0.0035	0.9		2959	2959	No	6.27	Si
SLU 75	fin.	76.35	-1017	-0.0000379	0.0001872	0.0035	0.9		2959	2959	No	38.75	Si
SLU 74	ini.	467.98	-1822	-0.0002557	0.0001872	0.0035	0.9		2959	2959	No	6.32	Si
SLU 74	fin.	78.18	-1019	-0.0000388	0.0001872	0.0035	0.9		2959	2959	No	37.85	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 80	ini.	465.4	-1855	0.9	0	365	7137	3773	2295	6068	No	3.27	Si
SLU 80	fin.	89.5	798	0.9	0	365	7137	3773	2295	6068	No	7.6	Si
SLU 82	ini.	472.26	-1860	0.9	0	365	7137	3773	2295	6068	No	3.26	Si
SLU 82	fin.	67.25	646	0.9	0	365	7137	3773	2295	6068	No	9.39	Si
SLU 74	ini.	467.98	-1861	0.9	0	365	7137	3773	2295	6068	No	3.26	Si
SLU 74	fin.	78.18	732	0.9	0	365	7137	3773	2295	6068	No	8.29	Si
SLU 75	ini.	472.12	-1877	0.9	0	365	7137	3773	2295	6068	No	3.23	Si
SLU 75	fin.	76.35	723	0.9	0	365	7137	3773	2295	6068	No	8.39	Si
SLU 77	ini.	467.62	-1869	0.9	0	365	7137	3773	2295	6068	No	3.25	Si
SLU 77	fin.	92.75	824	0.9	0	365	7137	3773	2295	6068	No	7.36	Si
SLU 83	ini.	467.77	-1851	0.9	0	365	7137	3773	2295	6068	No	3.28	Si
SLU 83	fin.	83.65	748	0.9	0	365	7137	3773	2295	6068	No	8.11	Si
SLU 84	ini.	471.9	-1868	0.9	0	365	7137	3773	2295	6068	No	3.25	Si
SLU 84	fin.	81.83	739	0.9	0	365	7137	3773	2295	6068	No	8.21	Si
SLU 73	ini.	468.88	-1849	0.9	0	365	7137	3773	2295	6068	No	3.28	Si
SLU 73	fin.	59.14	607	0.9	0	365	7137	3773	2295	6068	No	10	Si
SLU 76	ini.	468.52	-1858	0.9	0	365	7137	3773	2295	6068	No	3.27	Si
SLU 76	fin.	73.71	700	0.9	0	365	7137	3773	2295	6068	No	8.67	Si
SLU 78	ini.	471.76	-1886	0.9	0	365	7137	3773	2295	6068	No	3.22	Si
SLU 78	fin.	90.93	816	0.9	0	365	7137	3773	2295	6068	No	7.44	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 2	ini.	1274.18	-2725	-0.0008039	0.0002807	0.0035	0.9		2989.59	2989.59		2.35	Si
SLV 2	fin.	-799.67	1632	-0.0004524	0.0002807	0.0035	0.9		2995.37	2995.37		3.75	Si
SLD 3	ini.	788.57	-2154	-0.000446	0.0002807	0.0035	0.9		2989.59	2989.59		3.79	Si
SLD 3	fin.	-251.99	0	-0.0001277	0.0002807	0.0035	0.9		2995.37	2995.37		11.89	Si
SLD 4	ini.	845.34	-2240	-0.0004843	0.0002807	0.0035	0.9		2989.59	2989.59		3.54	Si
SLD 4	fin.	-301	136	-0.0001538	0.0002807	0.0035	0.9		2995.37	2995.37		9.95	Si
SLV 13	ini.	-844.73	955	-0.0004829	0.0002807	0.0035	0.9		2995.37	2995.37		3.55	Si
SLV 13	fin.	835.32	-2534	-0.0004775	0.0002807	0.0035	0.9		2989.59	2989.59		3.58	Si
SLV 8	ini.	1089.93	-3181	-0.0006602	0.0002807	0.0035	0.9		2989.59	2989.59		2.74	Si
SLV 8	fin.	-153.47	-689	-0.0000766	0.0002807	0.0035	0.9		2995.37	2995.37		19.52	Si
SLV 15	ini.	-598.04	166	-0.0003233	0.0002807	0.0035	0.9		2995.37	2995.37		5.01	Si
SLV 15	fin.	878.56	-2958	-0.0005072	0.0002807	0.0035	0.9		2989.59	2989.59		3.4	Si
SLV 1	ini.	1141.96	-2524	-0.0006998	0.0002807	0.0035	0.9		2989.59	2989.59		2.62	Si
SLV 1	fin.	-685.55	1316	-0.0003779	0.0002807	0.0035	0.9		2995.37	2995.37		4.37	Si
SLV 4	ini.	1520.88	-3514	-0.0010132	0.0002807	0.0035	0.9		2989.59	2989.59		1.97	Si
SLV 4	fin.	-756.43	1208	-0.0004237	0.0002807	0.0035	0.9		2995.37	2995.37		3.96	Si
SLV 3	ini.	1388.66	-3313	-0.0008985	0.0002807	0.0035	0.9		2989.59	2989.59		2.15	Si
SLV 3	fin.	-642.31	893	-0.0003506	0.0002807	0.0035	0.9		2995.37	2995.37		4.66	Si
SLV 7	ini.	1004.53	-3052	-0.0005968	0.0002807	0.0035	0.9		2989.59	2989.59		2.98	Si
SLV 7	fin.	-79.76	-893	-0.0000394	0.0002807	0.0035	0.9		2995.37	2995.37		37.55	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 7	ini.	1004.53	-3990	0.9	0	548	7137	5660	2295	7684		1.93	Si
SLV 7	fin.	-79.76	-565	0.9	0	548	7137	5660	2295	7684		13.59	Si
SLV 16	ini.	-465.82	1535	0.9	0	548	7137	5660	2295	7684		5	Si
SLV 16	fin.	764.44	4321	0.9	0	548	7137	5660	2295	7684		1.78	Si
SLV 13	ini.	-844.73	3059	0.9	0	548	7137	5660	2295	7684		2.51	Si
SLV 13	fin.	835.32	4852	0.9	0	548	7137	5660	2295	7684		1.58	Si
SLV 15	ini.	-598.04	2026	0.9	0	548	7137	5660	2295	7684		3.79	Si
SLV 15	fin.	878.56	4889	0.9	0	548	7137	5660	2295	7684		1.57	Si
SLV 14	ini.	-712.51	2568	0.9	0	548	7137	5660	2295	7684		2.99	Si
SLV 14	fin.	721.2	4283	0.9	0	548	7137	5660	2295	7684		1.79	Si
SLV 2	ini.	1274.18	-4701	0.9	0	548	7137	5660	2295	7684		1.63	Si
SLV 2	fin.	-799.67	-4020	0.9	0	548	7137	5660	2295	7684		1.91	Si
SLV 1	ini.	1141.96	-4210	0.9	0	548	7137	5660	2295	7684		1.83	Si
SLV 1	fin.	-685.55	-3451	0.9	0	548	7137	5660	2295	7684		2.23	Si
SLV 8	ini.	1089.93	-4307	0.9	0	548	7137	5660	2295	7684		1.78	Si
SLV 8	fin.	-153.47	-933	0.9	0	548	7137	5660	2295	7684		8.24	Si
SLV 3	ini.	1388.66	-5242	0.9	0	548	7137	5660	2295	7684		1.47	Si
SLV 3	fin.	-642.31	-3414	0.9	0	548	7137	5660	2295	7684		2.25	Si
SLV 4	ini.	1520.88	-5733	0.9	0	548	7137	5660	2295	7684		1.34	Si
SLV 4	fin.	-756.43	-3983	0.9	0	548	7137	5660	2295	7684		1.93	Si

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.966	SLV 4	Si
V_SLV	1.34	SLV 4	Si
PF_SLU	6.266	SLU 82	Si
V_SLU	3.218	SLU 78	Si



## Trave di accoppiamento 135

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-2.283	-3.314	11.05	11.87	0.82	-3.183	-3.314	11.05	11.87	0.82	0.9	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	e <sub>f,d</sub>	γ <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em <sub>-</sub>	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 78	ini.	39.94	-614	-0.0000238	0.0001872	0.0035	0.82		2455.37	2455.37	No	61.48	Si
SLU 78	fin.	-413.83	-1800	-0.0002742	0.0001872	0.0035	0.82		2460.51	2460.51	No	5.95	Si
SLU 83	ini.	44.11	-588	-0.0000263	0.0001872	0.0035	0.82		2455.37	2455.37	No	55.67	Si
SLU 83	fin.	-409.2	-1773	-0.0002707	0.0001872	0.0035	0.82		2460.51	2460.51	No	6.01	Si
SLU 82	ini.	61.1	-533	-0.0000365	0.0001872	0.0035	0.82		2455.37	2455.37	No	40.19	Si
SLU 82	fin.	-408.8	-1756	-0.0002704	0.0001872	0.0035	0.82		2460.51	2460.51	No	6.02	Si
SLU 75	ini.	54.31	-562	-0.0000324	0.0001872	0.0035	0.82		2455.37	2455.37	No	45.21	Si
SLU 75	fin.	-410.51	-1772	-0.0002717	0.0001872	0.0035	0.82		2460.51	2460.51	No	5.99	Si
SLU 81	ini.	58.48	-536	-0.0000349	0.0001872	0.0035	0.82		2455.37	2455.37	No	41.99	Si
SLU 81	fin.	-405.88	-1745	-0.0002682	0.0001872	0.0035	0.82		2460.51	2460.51	No	6.06	Si
SLU 77	ini.	37.32	-616	-0.0000222	0.0001872	0.0035	0.82		2455.37	2455.37	No	65.79	Si
SLU 77	fin.	-410.91	-1790	-0.000272	0.0001872	0.0035	0.82		2460.51	2460.51	No	5.99	Si
SLU 80	ini.	39.96	-602	-0.0000238	0.0001872	0.0035	0.82		2455.37	2455.37	No	61.44	Si
SLU 80	fin.	-407.46	-1771	-0.0002694	0.0001872	0.0035	0.82		2460.51	2460.51	No	6.04	Si
SLU 76	ini.	56.08	-548	-0.0000335	0.0001872	0.0035	0.82		2455.37	2455.37	No	43.78	Si
SLU 76	fin.	-406.08	-1751	-0.0002684	0.0001872	0.0035	0.82		2460.51	2460.51	No	6.06	Si
SLU 74	ini.	51.69	-564	-0.0000308	0.0001872	0.0035	0.82		2455.37	2455.37	No	47.5	Si
SLU 74	fin.	-407.59	-1762	-0.0002695	0.0001872	0.0035	0.82		2460.51	2460.51	No	6.04	Si
SLU 84	ini.	46.73	-586	-0.0000278	0.0001872	0.0035	0.82		2455.37	2455.37	No	52.55	Si
SLU 84	fin.	-412.12	-1784	-0.0002729	0.0001872	0.0035	0.82		2460.51	2460.51	No	5.97	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	f <sub>vd</sub>	V <sub>t</sub>	V <sub>t,f</sub>	V <sub>t,c</sub>	V <sub>t,c.int.</sub>	V <sub>t,R</sub>	incremento > 50%	c.s.	Verifica
SLU 77	ini.	37.32	481	0.82	0	303	6502	3438	2091	5529	No	11.5	Si
SLU 77	fin.	-410.91	-2906	0.82	0	303	6502	3438	2091	5529	No	1.9	Si
SLU 84	ini.	46.73	450	0.82	0	303	6502	3438	2091	5529	No	12.28	Si
SLU 84	fin.	-412.12	-2914	0.82	0	303	6502	3438	2091	5529	No	1.9	Si
SLU 82	ini.	61.1	383	0.82	0	303	6502	3438	2091	5529	No	14.42	Si
SLU 82	fin.	-408.8	-2876	0.82	0	303	6502	3438	2091	5529	No	1.92	Si
SLU 78	ini.	39.94	471	0.82	0	303	6502	3438	2091	5529	No	11.75	Si
SLU 78	fin.	-413.83	-2921	0.82	0	303	6502	3438	2091	5529	No	1.89	Si
SLU 80	ini.	39.96	462	0.82	0	303	6502	3438	2091	5529	No	11.98	Si
SLU 80	fin.	-407.46	-2875	0.82	0	303	6502	3438	2091	5529	No	1.92	Si
SLU 83	ini.	44.11	460	0.82	0	303	6502	3438	2091	5529	No	12.01	Si
SLU 83	fin.	-409.2	-2900	0.82	0	303	6502	3438	2091	5529	No	1.91	Si
SLU 75	ini.	54.31	404	0.82	0	303	6502	3438	2091	5529	No	13.69	Si
SLU 75	fin.	-410.51	-2883	0.82	0	303	6502	3438	2091	5529	No	1.92	Si
SLU 74	ini.	51.69	414	0.82	0	303	6502	3438	2091	5529	No	13.36	Si
SLU 74	fin.	-407.59	-2869	0.82	0	303	6502	3438	2091	5529	No	1.93	Si
SLU 79	ini.	37.34	472	0.82	0	303	6502	3438	2091	5529	No	11.72	Si
SLU 79	fin.	-404.54	-2860	0.82	0	303	6502	3438	2091	5529	No	1.93	Si
SLU 81	ini.	58.48	393	0.82	0	303	6502	3438	2091	5529	No	14.05	Si
SLU 81	fin.	-405.88	-2862	0.82	0	303	6502	3438	2091	5529	No	1.93	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 3	ini.	815.14	806	-0.0005806	0.0002807	0.0035	0.82		2482.11	2482.11		3.05	Si
SLV 3	fin.	-936.53	-3480	-0.0006876	0.0002807	0.0035	0.82		2487.45	2487.45		2.66	Si
SLV 4	ini.	931.7	1040	-0.0006849	0.0002807	0.0035	0.82		2482.11	2482.11		2.66	Si
SLV 4	fin.	-1009.9	-3716	-0.0007561	0.0002807	0.0035	0.82		2487.45	2487.45		2.46	Si
SLV 13	ini.	-815.33	-1698	-0.0005793	0.0002807	0.0035	0.82		2487.45	2487.45		3.05	Si
SLV 13	fin.	435.57	1270	-0.00028	0.0002807	0.0035	0.82		2482.11	2482.11		5.7	Si
SLV 1	ini.	675.28	804	-0.0004628	0.0002807	0.0035	0.82		2482.11	2482.11		3.68	Si
SLV 1	fin.	-729	-2683	-0.0005059	0.0002807	0.0035	0.82		2487.45	2487.45		3.41	Si
SLV 2	ini.	791.85	1039	-0.0005604	0.0002807	0.0035	0.82		2482.11	2482.11		3.13	Si
SLV 2	fin.	-802.36	-2919	-0.0005681	0.0002807	0.0035	0.82		2487.45	2487.45		3.1	Si
SLV 7	ini.	477.22	-27	-0.00031	0.0002807	0.0035	0.82		2482.11	2482.11		5.2	Si
SLV 7	fin.	-784.05	-3068	-0.0005524	0.0002807	0.0035	0.82		2487.45	2487.45		3.17	Si
SLV 14	ini.	-698.77	-1464	-0.0004809	0.0002807	0.0035	0.82		2487.45	2487.45		3.56	Si
SLV 14	fin.	362.2	1034	-0.0002289	0.0002807	0.0035	0.82		2482.11	2482.11		6.85	Si
SLV 8	ini.	552.51	124	-0.0003661	0.0002807	0.0035	0.82		2482.11	2482.11		4.49	Si
SLV 8	fin.	-831.44	-3221	-0.0005934	0.0002807	0.0035	0.82		2487.45	2487.45		2.99	Si
SLD 4	ini.	432.5	256	-0.0002778	0.0002807	0.0035	0.82		2482.11	2482.11		5.74	Si
SLD 4	fin.	-597.64	-2295	-0.0003999	0.0002807	0.0035	0.82		2487.45	2487.45		4.16	Si
SLV 15	ini.	-675.48	-1697	-0.0004618	0.0002807	0.0035	0.82		2487.45	2487.45		3.68	Si
SLV 15	fin.	228.03	473	-0.0001401	0.0002807	0.0035	0.82		2482.11	2482.11		10.88	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 3	ini.	382.45	-1025	0.82	0	455	6502	5156	2091	6957		6.79	Si
SLD 3	fin.	-566.14	-3379	0.82	0	455	6502	5156	2091	6957		2.06	Si
SLV 8	ini.	552.51	-1267	0.82	0	455	6502	5156	2091	6957		5.49	Si
SLV 8	fin.	-831.44	-4720	0.82	0	455	6502	5156	2091	6957		1.47	Si
SLV 1	ini.	675.28	-2389	0.82	0	455	6502	5156	2091	6957		2.91	Si
SLV 1	fin.	-729	-4193	0.82	0	455	6502	5156	2091	6957		1.66	Si
SLV 13	ini.	-815.33	3483	0.82	0	455	6502	5156	2091	6957		2	Si
SLV 13	fin.	435.57	1659	0.82	0	455	6502	5156	2091	6957		4.19	Si
SLV 4	ini.	931.7	-3106	0.82	0	455	6502	5156	2091	6957		2.24	Si
SLV 4	fin.	-1009.9	-5625	0.82	0	455	6502	5156	2091	6957		1.24	Si
SLV 15	ini.	-675.48	3228	0.82	0	455	6502	5156	2091	6957		2.16	Si
SLV 15	fin.	228.03	619	0.82	0	455	6502	5156	2091	6957		11.23	Si
SLV 3	ini.	815.14	-2644	0.82	0	455	6502	5156	2091	6957		2.63	Si
SLV 3	fin.	-936.53	-5233	0.82	0	455	6502	5156	2091	6957		1.33	Si
SLV 2	ini.	791.85	-2851	0.82	0	455	6502	5156	2091	6957		2.44	Si
SLV 2	fin.	-802.36	-4585	0.82	0	455	6502	5156	2091	6957		1.52	Si
SLD 4	ini.	432.5	-1224	0.82	0	455	6502	5156	2091	6957		5.68	Si
SLD 4	fin.	-597.64	-3547	0.82	0	455	6502	5156	2091	6957		1.96	Si
SLV 7	ini.	477.22	-968	0.82	0	455	6502	5156	2091	6957		7.19	Si
SLV 7	fin.	-784.05	-4468	0.82	0	455	6502	5156	2091	6957		1.56	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.463	SLV 4	Si
V_SLV	1.237	SLV 4	Si
PF_SLU	5.946	SLU 78	Si
V_SLU	1.893	SLU 78	Si

## Trave di accoppiamento 136

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-2.063	5.826	8.35	9.25	0.9	-2.963	5.826	8.35	9.25	0.9	0.9	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC

Materiale	Fu Verticale	Fu Orizzontale	t <sub>fv</sub>	t <sub>fo</sub>	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	elim,conv / e,CNR DT-200							CRM / Fibrenet?			
									α <sub>t</sub>	α	elim,conv	e <sub>f,d</sub>	y <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	Incremento > 50%	c.s.	Verifica
SLU 50	ini.	268.9	-1291	-0.0001392	0.0001872	0.0035	0.9		2959	2959	No	11	Si
SLU 50	fin.	3.3	-875	-0.0000016	0.0001872	0.0035	0.9		2959	2959	No	896.44	Si
SLU 49	ini.	266.88	-1290	-0.0001381	0.0001872	0.0035	0.9		2959	2959	No	11.09	Si
SLU 49	fin.	12.11	-898	-0.0000059	0.0001872	0.0035	0.9		2959	2959	No	244.35	Si
SLU 48	ini.	268.98	-1298	-0.0001392	0.0001872	0.0035	0.9		2959	2959	No	11	Si
SLU 48	fin.	8.44	-893	-0.0000041	0.0001872	0.0035	0.9		2959	2959	No	350.49	Si
SLU 69	ini.	258.82	-1293	-0.0001336	0.0001872	0.0035	0.9		2959	2959	No	11.43	Si
SLU 69	fin.	61.41	-1043	-0.0000304	0.0001872	0.0035	0.9		2959	2959	No	48.18	Si
SLU 44	ini.	264.3	-1241	-0.0001366	0.0001872	0.0035	0.9		2959	2959	No	11.2	Si
SLU 44	fin.	-17.73	-790	-0.0000087	0.0001872	0.0035	0.9	2964.67	2964.67	No	167.2	Si	
SLU 46	ini.	266.33	-1271	-0.0001378	0.0001872	0.0035	0.9		2959	2959	No	11.11	Si
SLU 46	fin.	-1.46	-851	-0.0000007	0.0001872	0.0035	0.9	2964.67	2964.67	No	2027.44	Si	
SLU 51	ini.	266.8	-1283	-0.000138	0.0001872	0.0035	0.9		2959	2959	No	11.09	Si
SLU 51	fin.	6.97	-880	-0.0000034	0.0001872	0.0035	0.9		2959	2959	No	424.66	Si
SLU 43	ini.	267.8	-1255	-0.0001386	0.0001872	0.0035	0.9		2959	2959	No	11.05	Si
SLU 43	fin.	-23.84	-782	-0.0000117	0.0001872	0.0035	0.9	2964.67	2964.67	No	124.34	Si	
SLU 47	ini.	264.85	-1259	-0.000137	0.0001872	0.0035	0.9		2959	2959	No	11.17	Si
SLU 47	fin.	-4.16	-836	-0.0000002	0.0001872	0.0035	0.9		2964.67	2964.67	No	712.81	Si
SLU 45	ini.	268.43	-1280	-0.0001389	0.0001872	0.0035	0.9		2959	2959	No	11.02	Si
SLU 45	fin.	-5.13	-846	-0.0000025	0.0001872	0.0035	0.9	2964.67	2964.67	No	577.98	Si	

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 69	ini.	258.82	-1780	0.9	0	365	7137	3773	2295	6068	No	3.41	Si
SLU 69	fin.	61.41	419	0.9	0	365	7137	3773	2295	6068	No	14.48	Si
SLU 71	ini.	258.74	-1762	0.9	0	365	7137	3773	2295	6068	No	3.44	Si
SLU 71	fin.	56.27	390	0.9	0	365	7137	3773	2295	6068	No	15.55	Si
SLU 49	ini.	266.88	-1838	0.9	0	365	7137	3773	2295	6068	No	3.3	Si
SLU 49	fin.	12.11	236	0.9	0	365	7137	3773	2295	6068	No	25.75	Si
SLU 48	ini.	268.98	-1860	0.9	0	365	7137	3773	2295	6068	No	3.26	Si
SLU 48	fin.	8.44	229	0.9	0	365	7137	3773	2295	6068	No	26.53	Si
SLU 43	ini.	267.8	-1781	0.9	0	365	7137	3773	2295	6068	No	3.41	Si
SLU 43	fin.	-23.84	68	0.9	0	365	7137	3773	2295	6068	No	89.01	Si
SLU 50	ini.	268.9	-1842	0.9	0	365	7137	3773	2295	6068	No	3.29	Si
SLU 50	fin.	3.3	200	0.9	0	365	7137	3773	2295	6068	No	30.35	Si
SLU 47	ini.	264.85	-1776	0.9	0	365	7137	3773	2295	6068	No	3.42	Si
SLU 47	fin.	-4.16	146	0.9	0	365	7137	3773	2295	6068	No	41.65	Si
SLU 46	ini.	266.33	-1807	0.9	0	365	7137	3773	2295	6068	No	3.36	Si
SLU 46	fin.	-1.46	170	0.9	0	365	7137	3773	2295	6068	No	35.73	Si
SLU 51	ini.	266.8	-1820	0.9	0	365	7137	3773	2295	6068	No	3.33	Si
SLU 51	fin.	6.97	207	0.9	0	365	7137	3773	2295	6068	No	29.33	Si
SLU 45	ini.	268.43	-1829	0.9	0	365	7137	3773	2295	6068	No	3.32	Si
SLU 45	fin.	-5.13	163	0.9	0	365	7137	3773	2295	6068	No	37.27	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 5	ini.	667.34	-2835	-0.0003671	0.0002807	0.0035	0.9		2989.59	2989.59		4.48	Si
SLV 5	fin.	-425.52	-608	-0.0002223	0.0002807	0.0035	0.9		2995.37	2995.37		7.04	Si
SLV 13	ini.	-216.12	232	-0.0001089	0.0002807	0.0035	0.9		2995.37	2995.37		13.86	Si
SLV 13	fin.	650.24	-1594	-0.0003563	0.0002807	0.0035	0.9		2989.59	2989.59		4.6	Si
SLV 15	ini.	-385.83	1008	-0.0002001	0.0002807	0.0035	0.9		2995.37	2995.37		7.76	Si
SLV 15	fin.	760.59	-1463	-0.0004274	0.0002807	0.0035	0.9		2989.59	2989.59		3.93	Si
SLV 14	ini.	-299.6	481	-0.0001531	0.0002807	0.0035	0.9		2995.37	2995.37		10	Si
SLV 14	fin.	783.44	-1779	-0.0004425	0.0002807	0.0035	0.9		2989.59	2989.59		3.82	Si
SLV 1	ini.	861.19	-3161	-0.0004952	0.0002807	0.0035	0.9		2989.59	2989.59		3.47	Si
SLV 1	fin.	-842.99	208	-0.0004817	0.0002807	0.0035	0.9		2995.37	2995.37		3.55	Si
SLV 6	ini.	613.42	-2674	-0.0003334	0.0002807	0.0035	0.9		2989.59	2989.59		4.87	Si
SLV 6	fin.	-339.49	-727	-0.0001746	0.0002807	0.0035	0.9		2995.37	2995.37		8.82	Si
SLV 16	ini.	-469.31	1257	-0.0002472	0.0002807	0.0035	0.9		2995.37	2995.37		6.38	Si
SLV 16	fin.	893.79	-1648	-0.0005178	0.0002807	0.0035	0.9		2989.59	2989.59		3.34	Si
SLV 2	ini.	777.71	-2912	-0.0004387	0.0002807	0.0035	0.9		2989.59	2989.59		3.84	Si
SLV 2	fin.	-709.79	23	-0.0003934	0.0002807	0.0035	0.9		2995.37	2995.37		4.22	Si
SLV 3	ini.	691.48	-2385	-0.0003825	0.0002807	0.0035	0.9		2989.59	2989.59		4.32	Si
SLV 3	fin.	-732.64	339	-0.0004082	0.0002807	0.0035	0.9		2995.37	2995.37		4.09	Si
SLV 4	ini.	608	-2136	-0.0003301	0.0002807	0.0035	0.9		2989.59	2989.59		4.92	Si
SLV 4	fin.	-599.44	154	-0.0003242	0.0002807	0.0035	0.9		2995.37	2995.37		5	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 9	ini.	344.15	-2938	0.9	0	548	7137	5660	2295	7684		2.62	Si
SLV 9	fin.	22.45	584	0.9	0	548	7137	5660	2295	7684		13.16	Si
SLV 16	ini.	-469.31	2168	0.9	0	548	7137	5660	2295	7684		3.54	Si
SLV 16	fin.	893.79	3376	0.9	0	548	7137	5660	2295	7684		2.28	Si
SLV 2	ini.	777.71	-4366	0.9	0	548	7137	5660	2295	7684		1.76	Si
SLV 2	fin.	-709.79	-2481	0.9	0	548	7137	5660	2295	7684		3.1	Si
SLV 14	ini.	-299.6	785	0.9	0	548	7137	5660	2295	7684		9.79	Si
SLV 14	fin.	783.44	3188	0.9	0	548	7137	5660	2295	7684		2.41	Si
SLV 3	ini.	691.48	-3355	0.9	0	548	7137	5660	2295	7684		2.29	Si
SLV 3	fin.	-732.64	-2780	0.9	0	548	7137	5660	2295	7684		2.76	Si
SLV 6	ini.	613.42	-4243	0.9	0	548	7137	5660	2295	7684		1.81	Si
SLV 6	fin.	-339.49	-802	0.9	0	548	7137	5660	2295	7684		9.58	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 5	ini.	667.34	-4483	0.9	0	548	7137	5660	2295	7684		1.71	Si
SLV 5	fin.	-425.52	-1117	0.9	0	548	7137	5660	2295	7684		6.88	Si
SLV 1	ini.	861.19	-4738	0.9	0	548	7137	5660	2295	7684		1.62	Si
SLV 1	fin.	-842.99	-2968	0.9	0	548	7137	5660	2295	7684		2.59	Si
SLV 15	ini.	-385.83	1795	0.9	0	548	7137	5660	2295	7684		4.28	Si
SLV 15	fin.	760.59	2889	0.9	0	548	7137	5660	2295	7684		2.66	Si
SLV 4	ini.	608	-2983	0.9	0	548	7137	5660	2295	7684		2.58	Si
SLV 4	fin.	-599.44	-2293	0.9	0	548	7137	5660	2295	7684		3.35	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF SLV	3.345	SLV 16	Si
V SLV	1.622	SLV 1	Si
PF SLU	11.001	SLU 48	Si
V SLU	3.263	SLU 48	Si

## Trave di accoppiamento 137

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-2.063	5.826	11.05	11.87	0.82	-2.963	5.826	11.05	11.87	0.82	0.9	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	t <sub>fv</sub>	t <sub>fo</sub>	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ε <sub>m</sub>	ε <sub>m</sub> _	ε <sub>mu</sub>	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 50	ini.	-62.72	-484	-0.0000374	0.0001872	0.0035	0.82		2460.51	2460.51	No	39.23	Si
SLU 50	fin.	-209.17	-736	-0.0001296	0.0001872	0.0035	0.82		2460.51	2460.51	No	11.76	Si
SLU 47	ini.	-51.82	-434	-0.0000308	0.0001872	0.0035	0.82		2460.51	2460.51	No	47.48	Si
SLU 47	fin.	-211.91	-714	-0.0001314	0.0001872	0.0035	0.82		2460.51	2460.51	No	11.61	Si
SLU 46	ini.	-55.53	-452	-0.0000331	0.0001872	0.0035	0.82		2460.51	2460.51	No	44.31	Si
SLU 46	fin.	-211.91	-723	-0.0001314	0.0001872	0.0035	0.82		2460.51	2460.51	No	11.61	Si
SLU 48	ini.	-67.56	-507	-0.0000404	0.0001872	0.0035	0.82		2460.51	2460.51	No	36.42	Si
SLU 48	fin.	-207.72	-743	-0.0001287	0.0001872	0.0035	0.82		2460.51	2460.51	No	11.85	Si
SLU 51	ini.	-64.41	-490	-0.0000385	0.0001872	0.0035	0.82		2460.51	2460.51	No	38.2	Si
SLU 51	fin.	-207	-733	-0.0001282	0.0001872	0.0035	0.82		2460.51	2460.51	No	11.89	Si
SLU 43	ini.	-35.27	-362	-0.0000209	0.0001872	0.0035	0.82		2460.51	2460.51	No	69.76	Si
SLU 43	fin.	-221.88	-702	-0.000138	0.0001872	0.0035	0.82		2460.51	2460.51	No	11.09	Si
SLU 44	ini.	-38.09	-373	-0.0000226	0.0001872	0.0035	0.82		2460.51	2460.51	No	64.59	Si
SLU 44	fin.	-218.27	-697	-0.0001356	0.0001872	0.0035	0.82		2460.51	2460.51	No	11.27	Si
SLU 49	ini.	-69.25	-513	-0.0000414	0.0001872	0.0035	0.82		2460.51	2460.51	No	35.53	Si
SLU 49	fin.	-205.56	-740	-0.0001273	0.0001872	0.0035	0.82		2460.51	2460.51	No	11.97	Si
SLU 45	ini.	-53.83	-446	-0.0000321	0.0001872	0.0035	0.82		2460.51	2460.51	No	45.71	Si
SLU 45	fin.	-214.08	-726	-0.0001329	0.0001872	0.0035	0.82		2460.51	2460.51	No	11.49	Si
SLU 64	ini.	-78.32	-556	-0.0000469	0.0001872	0.0035	0.82		2460.51	2460.51	No	31.42	Si
SLU 64	fin.	-199.27	-728	-0.0001232	0.0001872	0.0035	0.82		2460.51	2460.51	No	12.35	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 79	ini.	-144.21	1906	0.82	0	303	6502	3438	2091	5529	No	2.9	Si
SLU 79	fin.	-162.43	-1288	0.82	0	303	6502	3438	2091	5529	No	4.29	Si
SLU 78	ini.	-150.74	1958	0.82	0	303	6502	3438	2091	5529	No	2.82	Si
SLU 78	fin.	-158.82	-1283	0.82	0	303	6502	3438	2091	5529	No	4.31	Si
SLU 81	ini.	-133.24	1854	0.82	0	303	6502	3438	2091	5529	No	2.98	Si
SLU 81	fin.	-164.79	-1290	0.82	0	303	6502	3438	2091	5529	No	4.29	Si
SLU 77	ini.	-149.05	1954	0.82	0	303	6502	3438	2091	5529	No	2.83	Si
SLU 77	fin.	-160.98	-1294	0.82	0	303	6502	3438	2091	5529	No	4.27	Si
SLU 75	ini.	-137.02	1859	0.82	0	303	6502	3438	2091	5529	No	2.97	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 75	fin.	-165.17	-1289	0.82	0	303	6502	3438	2091	5529	No	4.29	Si
SLU 83	ini.	-146.97	1953	0.82	0	303	6502	3438	2091	5529	No	2.83	Si
SLU 83	fin.	-158.44	-1283	0.82	0	303	6502	3438	2091	5529	No	4.31	Si
SLU 84	ini.	-148.66	1958	0.82	0	303	6502	3438	2091	5529	No	2.82	Si
SLU 84	fin.	-156.27	-1272	0.82	0	303	6502	3438	2091	5529	No	4.35	Si
SLU 74	ini.	-135.33	1855	0.82	0	303	6502	3438	2091	5529	No	2.98	Si
SLU 74	fin.	-167.34	-1301	0.82	0	303	6502	3438	2091	5529	No	4.25	Si
SLU 80	ini.	-145.9	1910	0.82	0	303	6502	3438	2091	5529	No	2.89	Si
SLU 80	fin.	-160.26	-1277	0.82	0	303	6502	3438	2091	5529	No	4.33	Si
SLU 82	ini.	-134.94	1859	0.82	0	303	6502	3438	2091	5529	No	2.97	Si
SLU 82	fin.	-162.63	-1279	0.82	0	303	6502	3438	2091	5529	No	4.32	Si

**Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche**

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 2	ini.	299.25	572	-0.0001865	0.0002807	0.0035	0.82		2482.11	2482.11		8.29	Si
SLV 2	fin.	-709.2	-1502	-0.0004894	0.0002807	0.0035	0.82		2487.45	2487.45		3.51	Si
SLD 1	ini.	124.77	115	-0.0000751	0.0002807	0.0035	0.82		2482.11	2482.11		19.89	Si
SLD 1	fin.	-431.15	-1015	-0.0002762	0.0002807	0.0035	0.82		2487.45	2487.45		5.77	Si
SLV 15	ini.	-422.79	-1439	-0.0002703	0.0002807	0.0035	0.82		2487.45	2487.45		5.88	Si
SLV 15	fin.	406.49	389	-0.0002595	0.0002807	0.0035	0.82		2482.11	2482.11		6.11	Si
SLV 16	ini.	-495.89	-1717	-0.0003229	0.0002807	0.0035	0.82		2487.45	2487.45		5.02	Si
SLV 16	fin.	499.05	509	-0.000326	0.0002807	0.0035	0.82		2482.11	2482.11		4.97	Si
SLV 4	ini.	195.52	628	-0.0001193	0.0002807	0.0035	0.82		2482.11	2482.11		12.7	Si
SLV 4	fin.	-511.11	-1065	-0.0003342	0.0002807	0.0035	0.82		2487.45	2487.45		4.87	Si
SLV 5	ini.	238.44	-86	-0.0001468	0.0002807	0.0035	0.82		2482.11	2482.11		10.41	Si
SLV 5	fin.	-662.93	-1558	-0.0004517	0.0002807	0.0035	0.82		2487.45	2487.45		3.75	Si
SLV 1	ini.	372.35	849	-0.0002358	0.0002807	0.0035	0.82		2482.11	2482.11		6.67	Si
SLV 1	fin.	-801.76	-1621	-0.0005676	0.0002807	0.0035	0.82		2487.45	2487.45		3.1	Si
SLV 3	ini.	268.62	905	-0.0001664	0.0002807	0.0035	0.82		2482.11	2482.11		9.24	Si
SLV 3	fin.	-603.66	-1185	-0.0004046	0.0002807	0.0035	0.82		2487.45	2487.45		4.12	Si
SLV 14	ini.	-392.16	-1773	-0.0002489	0.0002807	0.0035	0.82		2487.45	2487.45		6.34	Si
SLV 14	fin.	300.95	73	-0.0001876	0.0002807	0.0035	0.82		2482.11	2482.11		8.25	Si
SLV 6	ini.	191.22	-265	-0.0001166	0.0002807	0.0035	0.82		2482.11	2482.11		12.98	Si
SLV 6	fin.	-603.15	-1481	-0.0004042	0.0002807	0.0035	0.82		2487.45	2487.45		4.12	Si

**Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215**

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 6	ini.	191.22	595	0.82	0	455	6502	5156	2091	6957		11.68	Si
SLV 6	fin.	-603.15	-2689	0.82	0	455	6502	5156	2091	6957		2.59	Si
SLV 1	ini.	372.35	-1370	0.82	0	455	6502	5156	2091	6957		5.08	Si
SLV 1	fin.	-801.76	-3183	0.82	0	455	6502	5156	2091	6957		2.19	Si
SLV 2	ini.	299.25	-887	0.82	0	455	6502	5156	2091	6957		7.84	Si
SLV 2	fin.	-709.2	-2874	0.82	0	455	6502	5156	2091	6957		2.42	Si
SLV 5	ini.	238.44	283	0.82	0	455	6502	5156	2091	6957		24.55	Si
SLV 5	fin.	-662.93	-2888	0.82	0	455	6502	5156	2091	6957		2.41	Si
SLD 14	ini.	-202.41	2117	0.82	0	455	6502	5156	2091	6957		3.29	Si
SLD 14	fin.	40.82	-424	0.82	0	455	6502	5156	2091	6957		16.43	Si
SLV 13	ini.	-319.05	3041	0.82	0	455	6502	5156	2091	6957		2.29	Si
SLV 13	fin.	208.39	72	0.82	0	455	6502	5156	2091	6957		96.78	Si
SLV 14	ini.	-392.16	3524	0.82	0	455	6502	5156	2091	6957		1.97	Si
SLV 14	fin.	300.95	381	0.82	0	455	6502	5156	2091	6957		18.28	Si
SLV 16	ini.	-495.89	3503	0.82	0	455	6502	5156	2091	6957		1.99	Si
SLV 16	fin.	499.05	1152	0.82	0	455	6502	5156	2091	6957		6.04	Si
SLV 15	ini.	-422.79	3020	0.82	0	455	6502	5156	2091	6957		2.3	Si
SLV 15	fin.	406.49	843	0.82	0	455	6502	5156	2091	6957		8.25	Si
SLV 3	ini.	268.62	-1391	0.82	0	455	6502	5156	2091	6957		5	Si
SLV 3	fin.	-603.66	-2412	0.82	0	455	6502	5156	2091	6957		2.88	Si

**Tabella dei coefficienti di sicurezza minimi**

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.102	SLV 1	Si
V_SLV	1.974	SLV 14	Si
PF_SLU	11.09	SLU 43	Si
V_SLU	2.823	SLU 78	Si

**Trave di accoppiamento 138**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati geometrici**

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-21.813	5.826	11.87	12.77	0.9	-22.713	5.826	11.87	12.77	0.9	0.9	0.28	3500

**Caratteristiche del materiale**

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC





Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 47	ini.	-40.47	-1	-0.0000199	0.0001872	0.0035	0.9		2964.67	2964.67	No	73.26	Si
SLU 47	fin.	178.12	-569	-0.0000903	0.0001872	0.0035	0.9		2959	2959	No	16.61	Si
SLU 45	ini.	-43.73	11	-0.0000215	0.0001872	0.0035	0.9		2964.67	2964.67	No	67.79	Si
SLU 45	fin.	179.96	-572	-0.0000913	0.0001872	0.0035	0.9		2959	2959	No	16.44	Si
SLU 65	ini.	-25.75	-45	-0.0000126	0.0001872	0.0035	0.9		2964.67	2964.67	No	115.11	Si
SLU 65	fin.	160.23	-541	-0.0000809	0.0001872	0.0035	0.9		2959	2959	No	18.47	Si
SLU 64	ini.	-30.2	-31	-0.0000148	0.0001872	0.0035	0.9		2964.67	2964.67	No	98.18	Si
SLU 64	fin.	163.38	-545	-0.0000826	0.0001872	0.0035	0.9		2959	2959	No	18.11	Si
SLU 46	ini.	-41.07	3	-0.0000202	0.0001872	0.0035	0.9		2964.67	2964.67	No	72.19	Si
SLU 46	fin.	178.07	-569	-0.0000903	0.0001872	0.0035	0.9		2959	2959	No	16.62	Si
SLU 43	ini.	-68.87	87	-0.0000341	0.0001872	0.0035	0.9		2964.67	2964.67	No	43.05	Si
SLU 43	fin.	206.62	-615	-0.0001054	0.0001872	0.0035	0.9		2959	2959	No	14.32	Si
SLU 60	ini.	-37.52	-5	-0.0000185	0.0001872	0.0035	0.9		2964.67	2964.67	No	79.02	Si
SLU 60	fin.	168.07	-549	-0.000085	0.0001872	0.0035	0.9		2959	2959	No	17.61	Si
SLU 44	ini.	-64.43	73	-0.0000318	0.0001872	0.0035	0.9		2964.67	2964.67	No	46.01	Si
SLU 44	fin.	203.47	-611	-0.0001037	0.0001872	0.0035	0.9		2959	2959	No	14.54	Si
SLU 61	ini.	-34.85	-14	-0.0000171	0.0001872	0.0035	0.9		2964.67	2964.67	No	85.06	Si
SLU 61	fin.	166.18	-547	-0.000084	0.0001872	0.0035	0.9		2959	2959	No	17.81	Si
SLU 52	ini.	-42.48	8	-0.0000209	0.0001872	0.0035	0.9		2964.67	2964.67	No	69.79	Si
SLU 52	fin.	176.48	-565	-0.0000894	0.0001872	0.0035	0.9		2959	2959	No	16.77	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 50	ini.	-20.94	-242	0.9	0	365	7137	3773	2295	6068	No	25.07	Si
SLU 50	fin.	155.91	804	0.9	0	365	7137	3773	2295	6068	No	7.55	Si
SLU 47	ini.	-40.47	-58	0.9	0	365	7137	3773	2295	6068	No	104.02	Si
SLU 47	fin.	178.12	829	0.9	0	365	7137	3773	2295	6068	No	7.32	Si
SLU 43	ini.	-68.87	131	0.9	0	365	7137	3773	2295	6068	No	46.23	Si
SLU 43	fin.	206.62	914	0.9	0	365	7137	3773	2295	6068	No	6.64	Si
SLU 64	ini.	-30.2	-32	0.9	0	365	7137	3773	2295	6068	No	191.9	Si
SLU 64	fin.	163.38	707	0.9	0	365	7137	3773	2295	6068	No	8.58	Si
SLU 45	ini.	-43.73	-84	0.9	0	365	7137	3773	2295	6068	No	72.48	Si
SLU 45	fin.	179.96	876	0.9	0	365	7137	3773	2295	6068	No	6.92	Si
SLU 44	ini.	-64.43	128	0.9	0	365	7137	3773	2295	6068	No	47.29	Si
SLU 44	fin.	203.47	884	0.9	0	365	7137	3773	2295	6068	No	6.87	Si
SLU 51	ini.	-18.28	-244	0.9	0	365	7137	3773	2295	6068	No	24.89	Si
SLU 51	fin.	154.02	786	0.9	0	365	7137	3773	2295	6068	No	7.72	Si
SLU 46	ini.	-41.07	-85	0.9	0	365	7137	3773	2295	6068	No	70.97	Si
SLU 46	fin.	178.07	858	0.9	0	365	7137	3773	2295	6068	No	7.07	Si
SLU 48	ini.	-19.77	-270	0.9	0	365	7137	3773	2295	6068	No	22.44	Si
SLU 48	fin.	154.61	822	0.9	0	365	7137	3773	2295	6068	No	7.39	Si
SLU 49	ini.	-17.1	-272	0.9	0	365	7137	3773	2295	6068	No	22.3	Si
SLU 49	fin.	152.72	803	0.9	0	365	7137	3773	2295	6068	No	7.55	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 10	ini.	-115.45	216	-0.0000573	0.0002807	0.0035	0.9		2995.37	2995.37		25.95	Si
SLD 10	fin.	319.5	-914	-0.0001641	0.0002807	0.0035	0.9		2989.59	2989.59		9.36	Si
SLV 13	ini.	-256.19	734	-0.00013	0.0002807	0.0035	0.9		2995.37	2995.37		11.69	Si
SLV 13	fin.	408.16	-994	-0.0002129	0.0002807	0.0035	0.9		2989.59	2989.59		7.32	Si
SLV 5	ini.	-80.38	-16	-0.0000397	0.0002807	0.0035	0.9		2995.37	2995.37		37.26	Si
SLV 5	fin.	443.7	-1389	-0.000233	0.0002807	0.0035	0.9		2989.59	2989.59		6.74	Si
SLV 14	ini.	-293.78	876	-0.00015	0.0002807	0.0035	0.9		2995.37	2995.37		10.2	Si
SLV 14	fin.	429.05	-987	-0.0002247	0.0002807	0.0035	0.9		2989.59	2989.59		6.97	Si
SLV 9	ini.	-206.66	429	-0.000104	0.0002807	0.0035	0.9		2995.37	2995.37		14.49	Si
SLV 9	fin.	550.62	-1543	-0.0002953	0.0002807	0.0035	0.9		2989.59	2989.59		5.43	Si
SLV 7	ini.	180.03	-553	-0.0000904	0.0002807	0.0035	0.9		2989.59	2989.59		16.61	Si
SLV 7	fin.	-309.17	696	-0.0001582	0.0002807	0.0035	0.9		2995.37	2995.37		9.69	Si
SLV 8	ini.	155.75	-461	-0.0000779	0.0002807	0.0035	0.9		2989.59	2989.59		19.2	Si
SLV 8	fin.	-295.68	700	-0.000151	0.0002807	0.0035	0.9		2995.37	2995.37		10.13	Si
SLV 6	ini.	-104.66	76	-0.0000519	0.0002807	0.0035	0.9		2995.37	2995.37		28.62	Si
SLV 6	fin.	457.2	-1385	-0.0002407	0.0002807	0.0035	0.9		2989.59	2989.59		6.54	Si
SLD 9	ini.	-104.84	176	-0.000052	0.0002807	0.0035	0.9		2995.37	2995.37		28.57	Si
SLD 9	fin.	313.6	-916	-0.0001609	0.0002807	0.0035	0.9		2989.59	2989.59		9.53	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 10	ini.	-230.94	520	-0.0001167	0.0002807	0.0035	0.9		2995.37	2995.37		12.97	Si
SLV 10	fin.	564.12	-1538	-0.0003034	0.0002807	0.0035	0.9		2989.59	2989.59		5.3	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 5	ini.	-80.38	-44	0.9	0	548	7137	5660	2295	7684		173.43	Si
SLV 5	fin.	443.7	2064	0.9	0	548	7137	5660	2295	7684		3.72	Si
SLV 8	ini.	155.75	-546	0.9	0	548	7137	5660	2295	7684		14.07	Si
SLV 8	fin.	-295.68	-1657	0.9	0	548	7137	5660	2295	7684		4.64	Si
SLV 7	ini.	180.03	-667	0.9	0	548	7137	5660	2295	7684		11.53	Si
SLV 7	fin.	-309.17	-1700	0.9	0	548	7137	5660	2295	7684		4.52	Si
SLV 10	ini.	-230.94	679	0.9	0	548	7137	5660	2295	7684		11.31	Si
SLV 10	fin.	564.12	2771	0.9	0	548	7137	5660	2295	7684		2.77	Si
SLV 13	ini.	-256.19	1011	0.9	0	548	7137	5660	2295	7684		7.6	Si
SLV 13	fin.	408.16	2173	0.9	0	548	7137	5660	2295	7684		3.54	Si
SLV 9	ini.	-206.66	559	0.9	0	548	7137	5660	2295	7684		13.76	Si
SLV 9	fin.	550.62	2728	0.9	0	548	7137	5660	2295	7684		2.82	Si
SLV 14	ini.	-293.78	1198	0.9	0	548	7137	5660	2295	7684		6.41	Si
SLV 14	fin.	429.05	2241	0.9	0	548	7137	5660	2295	7684		3.43	Si
SLD 10	ini.	-115.45	300	0.9	0	548	7137	5660	2295	7684		25.65	Si
SLD 10	fin.	319.5	1519	0.9	0	548	7137	5660	2295	7684		5.06	Si
SLV 6	ini.	-104.66	76	0.9	0	548	7137	5660	2295	7684		100.79	Si
SLV 6	fin.	457.2	2107	0.9	0	548	7137	5660	2295	7684		3.65	Si
SLD 9	ini.	-104.84	247	0.9	0	548	7137	5660	2295	7684		31.12	Si
SLD 9	fin.	313.6	1500	0.9	0	548	7137	5660	2295	7684		5.12	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	5.3	SLV 10	Si
V_SLV	2.773	SLV 10	Si
PF_SLU	14.321	SLU 43	Si
V_SLU	6.64	SLU 43	Si

## Trave di accoppiamento 139

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-21.813	5.826	14.57	15.03	0.46	-22.713	5.826	14.57	15.03	0.46	0.9	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fnk	fvk0	fmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 50	ini.	-162.8	-57	-0.0003541	0.0001872	0.0035	0.46		780.23	780.23	No	4.79	Si
SLU 50	fin.	-16.18	233	-0.0000305	0.0001872	0.0035	0.46		780.23	780.23	No	48.21	Si
SLU 47	ini.	-150.98	-81	-0.0003241	0.0001872	0.0035	0.46		780.23	780.23	No	5.17	Si
SLU 47	fin.	1.78	220	-0.0000033	0.0001872	0.0035	0.46		777.36	777.36	No	436.32	Si
SLU 51	ini.	-160.02	-57	-0.000347	0.0001872	0.0035	0.46		780.23	780.23	No	4.88	Si
SLU 51	fin.	-18.38	224	-0.0000347	0.0001872	0.0035	0.46		780.23	780.23	No	42.45	Si
SLU 69	ini.	-148.69	-21	-0.0003184	0.0001872	0.0035	0.46		780.23	780.23	No	5.25	Si
SLU 69	fin.	-51.65	173	-0.0001001	0.0001872	0.0035	0.46		780.23	780.23	No	15.1	Si
SLU 46	ini.	-153.22	-79	-0.0003297	0.0001872	0.0035	0.46		780.23	780.23	No	5.09	Si
SLU 46	fin.	-0.3	222	-0.0000006	0.0001872	0.0035	0.46		780.23	780.23	No	2566.64	Si
SLU 71	ini.	-148.3	-22	-0.0003174	0.0001872	0.0035	0.46		780.23	780.23	No	5.26	Si
SLU 71	fin.	-48.11	178	-0.0000093	0.0001872	0.0035	0.46		780.23	780.23	No	16.22	Si
SLU 43	ini.	-148.41	-105	-0.0003177	0.0001872	0.0035	0.46		780.23	780.23	No	5.26	Si
SLU 43	fin.	27.06	239	-0.0000516	0.0001872	0.0035	0.46		777.36	777.36	No	28.73	Si
SLU 48	ini.	-163.18	-56	-0.0003551	0.0001872	0.0035	0.46		780.23	780.23	No	4.78	Si



Comb.	Sez.	M	N	ε <sub>m</sub>	ε <sub>m_</sub>	ε <sub>mu</sub>	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 48	fin.	-19.73	228	-0.0000373	0.0001872	0.0035	0.46		780.23	780.23	No	39.54	Si
SLU 45	ini.	-155.99	-79	-0.0003367	0.0001872	0.0035	0.46		780.23	780.23	No	5	Si
SLU 45	fin.	1.89	231	-0.0000035	0.0001872	0.0035	0.46		777.36	777.36	No	411.46	Si
SLU 49	ini.	-160.41	-56	-0.000348	0.0001872	0.0035	0.46		780.23	780.23	No	4.86	Si
SLU 49	fin.	-21.93	219	-0.0000415	0.0001872	0.0035	0.46		780.23	780.23	No	35.59	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	f <sub>vd</sub>	V <sub>t</sub>	V <sub>t,f</sub>	V <sub>t,c</sub>	V <sub>t,c int.</sub>	V <sub>t,R</sub>	incremento > 50%	c.s.	Verifica
SLU 48	ini.	-163.18	721	0.46	0	124	3648	1928	1173	3101	No	4.3	Si
SLU 48	fin.	-19.73	-503	0.46	0	124	3648	1928	1173	3101	No	6.16	Si
SLU 35	ini.	-90.61	492	0.46	0	124	3648	1928	1173	3101	No	6.3	Si
SLU 35	fin.	-83.64	-717	0.46	0	124	3648	1928	1173	3101	No	4.33	Si
SLU 80	ini.	-125.52	624	0.46	0	124	3648	1928	1173	3101	No	4.97	Si
SLU 80	fin.	-67.63	-700	0.46	0	124	3648	1928	1173	3101	No	4.43	Si
SLU 78	ini.	-125.91	630	0.46	0	124	3648	1928	1173	3101	No	4.92	Si
SLU 78	fin.	-71.17	-724	0.46	0	124	3648	1928	1173	3101	No	4.28	Si
SLU 51	ini.	-160.02	705	0.46	0	124	3648	1928	1173	3101	No	4.4	Si
SLU 51	fin.	-18.38	-484	0.46	0	124	3648	1928	1173	3101	No	6.4	Si
SLU 69	ini.	-148.69	699	0.46	0	124	3648	1928	1173	3101	No	4.44	Si
SLU 69	fin.	-51.65	-661	0.46	0	124	3648	1928	1173	3101	No	4.69	Si
SLU 36	ini.	-87.84	483	0.46	0	124	3648	1928	1173	3101	No	6.42	Si
SLU 36	fin.	-85.84	-722	0.46	0	124	3648	1928	1173	3101	No	4.3	Si
SLU 49	ini.	-160.41	712	0.46	0	124	3648	1928	1173	3101	No	4.36	Si
SLU 49	fin.	-21.93	-509	0.46	0	124	3648	1928	1173	3101	No	6.1	Si
SLU 50	ini.	-162.8	715	0.46	0	124	3648	1928	1173	3101	No	4.34	Si
SLU 50	fin.	-16.18	-479	0.46	0	124	3648	1928	1173	3101	No	6.47	Si
SLU 77	ini.	-128.68	640	0.46	0	124	3648	1928	1173	3101	No	4.85	Si
SLU 77	fin.	-68.98	-719	0.46	0	124	3648	1928	1173	3101	No	4.31	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ε <sub>m</sub>	ε <sub>m_</sub>	ε <sub>mu</sub>	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 2	ini.	-304.99	-294	-0.0007146	0.0002807	0.0035	0.46		788.4	788.4		2.59	Si
SLV 2	fin.	165.17	552	-0.0003444	0.0002807	0.0035	0.46		785.44	785.44		4.76	Si
SLD 6	ini.	-204.01	-194	-0.0004381	0.0002807	0.0035	0.46		788.4	788.4		3.86	Si
SLD 6	fin.	82.64	356	-0.0001621	0.0002807	0.0035	0.46		785.44	785.44		9.5	Si
SLD 5	ini.	-201.51	-193	-0.0004318	0.0002807	0.0035	0.46		788.4	788.4		3.91	Si
SLD 5	fin.	79.83	346	-0.0001563	0.0002807	0.0035	0.46		785.44	785.44		9.84	Si
SLV 10	ini.	-250.37	-276	-0.0005599	0.0002807	0.0035	0.46		788.4	788.4		3.15	Si
SLV 10	fin.	120.9	466	-0.0002434	0.0002807	0.0035	0.46		785.44	785.44		6.5	Si
SLV 1	ini.	-296.15	-292	-0.0006888	0.0002807	0.0035	0.46		788.4	788.4		2.66	Si
SLV 1	fin.	155.2	518	-0.0003209	0.0002807	0.0035	0.46		785.44	785.44		5.06	Si
SLV 6	ini.	-336.23	-370	-0.0008088	0.0002807	0.0035	0.46		788.4	788.4		2.34	Si
SLV 6	fin.	190.28	631	-0.0004055	0.0002807	0.0035	0.46		785.44	785.44		4.13	Si
SLV 4	ini.	-191.01	-135	-0.0004056	0.0002807	0.0035	0.46		788.4	788.4		4.13	Si
SLV 4	fin.	72.75	313	-0.0001418	0.0002807	0.0035	0.46		785.44	785.44		10.8	Si
SLV 5	ini.	-330.53	-368	-0.0007913	0.0002807	0.0035	0.46		788.4	788.4		2.39	Si
SLV 5	fin.	183.84	610	-0.0003895	0.0002807	0.0035	0.46		785.44	785.44		4.27	Si
SLV 9	ini.	-244.67	-274	-0.0005444	0.0002807	0.0035	0.46		788.4	788.4		3.22	Si
SLV 9	fin.	114.45	444	-0.0002294	0.0002807	0.0035	0.46		785.44	785.44		6.86	Si
SLV 11	ini.	135.27	259	-0.0002753	0.0002807	0.0035	0.46		785.44	785.44		5.81	Si
SLV 11	fin.	-193.63	-353	-0.0004121	0.0002807	0.0035	0.46		788.4	788.4		4.07	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	f <sub>vd</sub>	V <sub>t</sub>	V <sub>t,f</sub>	V <sub>t,c</sub>	V <sub>t,c int.</sub>	V <sub>t,R</sub>	incremento > 50%	c.s.	Verifica
SLV 11	ini.	135.27	-340	0.46	0	187	3648	2893	1173	3834		11.29	Si
SLV 11	fin.	-193.63	-918	0.46	0	187	3648	2893	1173	3834		4.18	Si
SLV 3	ini.	-182.17	1033	0.46	0	187	3648	2893	1173	3834		3.71	Si
SLV 3	fin.	62.77	-44	0.46	0	187	3648	2893	1173	3834		86.43	Si
SLV 1	ini.	-296.15	1358	0.46	0	187	3648	2893	1173	3834		2.82	Si
SLV 1	fin.	155.2	281	0.46	0	187	3648	2893	1173	3834		13.65	Si
SLD 2	ini.	-188.79	848	0.46	0	187	3648	2893	1173	3834		4.52	Si
SLD 2	fin.	70.4	-5	0.46	0	187	3648	2893	1173	3834		713.41	Si
SLV 12	ini.	129.57	-322	0.46	0	187	3648	2893	1173	3834		11.9	Si
SLV 12	fin.	-187.19	-896	0.46	0	187	3648	2893	1173	3834		4.28	Si
SLV 2	ini.	-304.99	1385	0.46	0	187	3648	2893	1173	3834		2.77	Si
SLV 2	fin.	165.17	315	0.46	0	187	3648	2893	1173	3834		12.16	Si
SLV 4	ini.	-191.01	1060	0.46	0	187	3648	2893	1173	3834		3.62	Si
SLV 4	fin.	72.75	-10	0.46	0	187	3648	2893	1173	3834		384.51	Si
SLD 1	ini.	-185	837	0.46	0	187	3648	2893	1173	3834		4.58	Si
SLD 1	fin.	66.12	-20	0.46	0	187	3648	2893	1173	3834		190.37	Si
SLV 6	ini.	-336.23	1223	0.46	0	187	3648	2893	1173	3834		3.13	Si
SLV 6	fin.	190.28	419	0.46	0	187	3648	2893	1173	3834		9.14	Si
SLV 5	ini.	-330.53	1206	0.46	0	187	3648	2893	1173	3834		3.18	Si
SLV 5	fin.	183.84	397	0.46	0	187	3648	2893	1173	3834		9.66	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.345	SLV 6	Si
V_SLV	2.768	SLV 2	Si
PF_SLU	4.781	SLU 48	Si
V_SLU	4.282	SLU 78	Si



## Trave di accoppiamento 140

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-21.593	-3.314	11.87	12.77	0.9	-22.493	-3.314	11.87	12.77	0.9	0.9	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	e <sub>f,d</sub>	γ <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em <sub>-</sub>	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 50	ini.	114	-640	-0.000057	0.0001872	0.0035	0.9		2959	2959	No	25.96	Si
SLU 50	fin.	50.02	-459	-0.0000247	0.0001872	0.0035	0.9		2959	2959	No	59.15	Si
SLU 59	ini.	113.47	-638	-0.0000567	0.0001872	0.0035	0.9		2959	2959	No	26.08	Si
SLU 59	fin.	52.17	-473	-0.0000258	0.0001872	0.0035	0.9		2959	2959	No	56.72	Si
SLU 77	ini.	115.78	-673	-0.0000579	0.0001872	0.0035	0.9		2959	2959	No	25.56	Si
SLU 77	fin.	66.03	-531	-0.0000327	0.0001872	0.0035	0.9		2959	2959	No	44.81	Si
SLU 79	ini.	115.17	-658	-0.0000576	0.0001872	0.0035	0.9		2959	2959	No	25.69	Si
SLU 79	fin.	57.79	-503	-0.0000286	0.0001872	0.0035	0.9		2959	2959	No	51.21	Si
SLU 48	ini.	114.61	-655	-0.0000573	0.0001872	0.0035	0.9		2959	2959	No	25.82	Si
SLU 48	fin.	58.27	-486	-0.0000288	0.0001872	0.0035	0.9		2959	2959	No	50.78	Si
SLU 56	ini.	116.78	-658	-0.0000584	0.0001872	0.0035	0.9		2959	2959	No	25.34	Si
SLU 56	fin.	55.3	-489	-0.0000273	0.0001872	0.0035	0.9		2959	2959	No	53.51	Si
SLU 57	ini.	114.08	-652	-0.0000571	0.0001872	0.0035	0.9		2959	2959	No	25.94	Si
SLU 57	fin.	60.41	-501	-0.0000299	0.0001872	0.0035	0.9		2959	2959	No	48.98	Si
SLU 69	ini.	113.61	-670	-0.0000568	0.0001872	0.0035	0.9		2959	2959	No	26.05	Si
SLU 69	fin.	68.99	-528	-0.0000342	0.0001872	0.0035	0.9		2959	2959	No	42.89	Si
SLU 65	ini.	70.69	-519	-0.0000351	0.0001872	0.0035	0.9		2959	2959	No	41.86	Si
SLU 65	fin.	113.74	-584	-0.0000569	0.0001872	0.0035	0.9		2959	2959	No	26.02	Si
SLU 58	ini.	116.17	-643	-0.0000581	0.0001872	0.0035	0.9		2959	2959	No	25.47	Si
SLU 58	fin.	47.06	-462	-0.0000232	0.0001872	0.0035	0.9		2959	2959	No	62.88	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	f <sub>vd</sub>	V <sub>t</sub>	V <sub>t,f</sub>	V <sub>t,c</sub>	V <sub>t,c int.</sub>	V <sub>t,R</sub>	incremento > 50%	c.s.	Verifica
SLU 51	ini.	111.29	-799	0.9	0	365	7137	3773	2295	6068	No	7.6	Si
SLU 51	fin.	55.13	200	0.9	0	365	7137	3773	2295	6068	No	30.28	Si
SLU 56	ini.	116.78	-786	0.9	0	365	7137	3773	2295	6068	No	7.72	Si
SLU 56	fin.	55.3	175	0.9	0	365	7137	3773	2295	6068	No	34.74	Si
SLU 48	ini.	114.61	-828	0.9	0	365	7137	3773	2295	6068	No	7.33	Si
SLU 48	fin.	58.27	218	0.9	0	365	7137	3773	2295	6068	No	27.87	Si
SLU 69	ini.	113.61	-816	0.9	0	365	7137	3773	2295	6068	No	7.44	Si
SLU 69	fin.	68.99	252	0.9	0	365	7137	3773	2295	6068	No	24.09	Si
SLU 57	ini.	114.08	-774	0.9	0	365	7137	3773	2295	6068	No	7.84	Si
SLU 57	fin.	60.41	196	0.9	0	365	7137	3773	2295	6068	No	30.95	Si
SLU 72	ini.	110.29	-786	0.9	0	365	7137	3773	2295	6068	No	7.72	Si
SLU 72	fin.	65.86	235	0.9	0	365	7137	3773	2295	6068	No	25.87	Si
SLU 50	ini.	114	-811	0.9	0	365	7137	3773	2295	6068	No	7.48	Si
SLU 50	fin.	50.02	179	0.9	0	365	7137	3773	2295	6068	No	33.9	Si
SLU 71	ini.	113	-799	0.9	0	365	7137	3773	2295	6068	No	7.6	Si
SLU 71	fin.	60.75	213	0.9	0	365	7137	3773	2295	6068	No	28.46	Si
SLU 70	ini.	110.91	-803	0.9	0	365	7137	3773	2295	6068	No	7.55	Si
SLU 70	fin.	74.1	273	0.9	0	365	7137	3773	2295	6068	No	22.2	Si
SLU 49	ini.	111.91	-816	0.9	0	365	7137	3773	2295	6068	No	7.44	Si
SLU 49	fin.	63.38	239	0.9	0	365	7137	3773	2295	6068	No	25.37	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 16	ini.	-172.2	153	-0.0000862	0.0002807	0.0035	0.9		2995.37	2995.37		17.39	Si
SLV 16	fin.	445.93	-1257	-0.0002343	0.0002807	0.0035	0.9		2989.59	2989.59		6.7	Si
SLV 15	ini.	-208.96	268	-0.0001052	0.0002807	0.0035	0.9		2995.37	2995.37		14.33	Si
SLV 15	fin.	483.11	-1297	-0.0002556	0.0002807	0.0035	0.9		2989.59	2989.59		6.19	Si
SLV 9	ini.	330.66	-923	-0.0001702	0.0002807	0.0035	0.9		2989.59	2989.59		9.04	Si
SLV 9	fin.	-451.05	738	-0.0002367	0.0002807	0.0035	0.9		2995.37	2995.37		6.64	Si
SLV 7	ini.	-237.03	191	-0.0001199	0.0002807	0.0035	0.9		2995.37	2995.37		12.64	Si
SLV 7	fin.	630.54	-1616	-0.000344	0.0002807	0.0035	0.9		2989.59	2989.59		4.74	Si
SLV 10	ini.	354.4	-998	-0.0001831	0.0002807	0.0035	0.9		2989.59	2989.59		8.44	Si
SLV 10	fin.	-475.06	764	-0.0002505	0.0002807	0.0035	0.9		2995.37	2995.37		6.31	Si
SLV 5	ini.	420.99	-1169	-0.0002201	0.0002807	0.0035	0.9		2989.59	2989.59		7.1	Si
SLV 5	fin.	-574.66	1012	-0.0003091	0.0002807	0.0035	0.9		2995.37	2995.37		5.21	Si
SLV 11	ini.	-327.37	437	-0.000168	0.0002807	0.0035	0.9		2995.37	2995.37		9.15	Si
SLV 11	fin.	754.14	-1890	-0.0004231	0.0002807	0.0035	0.9		2989.59	2989.59		3.96	Si
SLV 6	ini.	444.74	-1244	-0.0002336	0.0002807	0.0035	0.9		2989.59	2989.59		6.72	Si
SLV 6	fin.	-598.67	1038	-0.0003237	0.0002807	0.0035	0.9		2995.37	2995.37		5	Si
SLV 12	ini.	-303.63	362	-0.0001552	0.0002807	0.0035	0.9		2995.37	2995.37		9.87	Si
SLV 12	fin.	730.13	-1865	-0.0004074	0.0002807	0.0035	0.9		2989.59	2989.59		4.09	Si
SLV 8	ini.	-213.29	117	-0.0001075	0.0002807	0.0035	0.9		2995.37	2995.37		14.04	Si
SLV 8	fin.	606.53	-1591	-0.0003292	0.0002807	0.0035	0.9		2989.59	2989.59		4.93	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 6	ini.	444.74	-2163	0.9	0	548	7137	5660	2295	7684		3.55	Si
SLV 6	fin.	-598.67	-2705	0.9	0	548	7137	5660	2295	7684		2.84	Si
SLV 16	ini.	-172.2	860	0.9	0	548	7137	5660	2295	7684		8.93	Si
SLV 16	fin.	445.93	2191	0.9	0	548	7137	5660	2295	7684		3.51	Si
SLV 5	ini.	420.99	-2041	0.9	0	548	7137	5660	2295	7684		3.77	Si
SLV 5	fin.	-574.66	-2625	0.9	0	548	7137	5660	2295	7684		2.93	Si
SLV 11	ini.	-327.37	1423	0.9	0	548	7137	5660	2295	7684		5.4	Si
SLV 11	fin.	754.14	3154	0.9	0	548	7137	5660	2295	7684		2.44	Si
SLV 10	ini.	354.4	-1632	0.9	0	548	7137	5660	2295	7684		4.71	Si
SLV 10	fin.	-475.06	-1939	0.9	0	548	7137	5660	2295	7684		3.96	Si
SLV 12	ini.	-303.63	1300	0.9	0	548	7137	5660	2295	7684		5.91	Si
SLV 12	fin.	730.13	3073	0.9	0	548	7137	5660	2295	7684		2.5	Si
SLV 8	ini.	-213.29	769	0.9	0	548	7137	5660	2295	7684		9.99	Si
SLV 8	fin.	606.53	2307	0.9	0	548	7137	5660	2295	7684		3.33	Si
SLV 7	ini.	-237.03	892	0.9	0	548	7137	5660	2295	7684		8.62	Si
SLV 7	fin.	630.54	2388	0.9	0	548	7137	5660	2295	7684		3.22	Si
SLV 15	ini.	-208.96	1050	0.9	0	548	7137	5660	2295	7684		7.32	Si
SLV 15	fin.	483.11	2316	0.9	0	548	7137	5660	2295	7684		3.32	Si
SLV 2	ini.	326.33	-1790	0.9	0	548	7137	5660	2295	7684		4.29	Si
SLV 2	fin.	-327.63	-1867	0.9	0	548	7137	5660	2295	7684		4.12	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.964	SLV 11	Si
V_SLV	2.436	SLV 11	Si
PF_SLU	25.338	SLU 56	Si
V_SLU	7.327	SLU 48	Si

## Trave di accoppiamento 141

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-21.593	-3.314	14.57	15.03	0.46	-22.493	-3.314	14.57	15.03	0.46	0.9	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_ Corti

fb_	fhk	fvk0	fmedio	t0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 78	ini.	-123.45	-209	-0.000257	0.0001872	0.0035	0.46		780.23	780.23	No	6.32	Si
SLU 78	fin.	-50.72	-257	-0.0000982	0.0001872	0.0035	0.46		780.23	780.23	No	15.38	Si
SLU 70	ini.	-127.53	-219	-0.0002667	0.0001872	0.0035	0.46		780.23	780.23	No	6.12	Si
SLU 70	fin.	-47.82	-232	-0.0000924	0.0001872	0.0035	0.46		780.23	780.23	No	16.32	Si
SLU 75	ini.	-119.01	-223	-0.0002465	0.0001872	0.0035	0.46		780.23	780.23	No	6.56	Si
SLU 75	fin.	-40.49	-190	-0.0000778	0.0001872	0.0035	0.46		780.23	780.23	No	19.27	Si
SLU 66	ini.	-120.8	-226	-0.0002507	0.0001872	0.0035	0.46		780.23	780.23	No	6.46	Si
SLU 66	fin.	-39.08	-177	-0.000075	0.0001872	0.0035	0.46		780.23	780.23	No	19.96	Si
SLU 69	ini.	-125.24	-211	-0.0002612	0.0001872	0.0035	0.46		780.23	780.23	No	6.23	Si
SLU 69	fin.	-49.31	-244	-0.0000954	0.0001872	0.0035	0.46		780.23	780.23	No	15.82	Si
SLU 74	ini.	-116.73	-216	-0.0002411	0.0001872	0.0035	0.46		780.23	780.23	No	6.68	Si
SLU 74	fin.	-41.98	-202	-0.0000807	0.0001872	0.0035	0.46		780.23	780.23	No	18.59	Si
SLU 67	ini.	-123.09	-233	-0.0002561	0.0001872	0.0035	0.46		780.23	780.23	No	6.34	Si
SLU 67	fin.	-37.59	-165	-0.000072	0.0001872	0.0035	0.46		780.23	780.23	No	20.75	Si
SLU 71	ini.	-117.02	-189	-0.0002418	0.0001872	0.0035	0.46		780.23	780.23	No	6.67	Si
SLU 71	fin.	-47.93	-244	-0.0000926	0.0001872	0.0035	0.46		780.23	780.23	No	16.28	Si
SLU 77	ini.	-121.17	-202	-0.0002516	0.0001872	0.0035	0.46		780.23	780.23	No	6.44	Si
SLU 77	fin.	-52.2	-269	-0.0001012	0.0001872	0.0035	0.46		780.23	780.23	No	14.95	Si
SLU 72	ini.	-119.31	-196	-0.0002472	0.0001872	0.0035	0.46		780.23	780.23	No	6.54	Si
SLU 72	fin.	-46.44	-232	-0.0000896	0.0001872	0.0035	0.46		780.23	780.23	No	16.8	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 69	ini.	-125.24	820	0.46	0	124	3648	1928	1173	3101	No	3.78	Si
SLU 69	fin.	-49.31	-1310	0.46	0	124	3648	1928	1173	3101	No	2.37	Si
SLU 56	ini.	-105.59	719	0.46	0	124	3648	1928	1173	3101	No	4.31	Si
SLU 56	fin.	-50.43	-1213	0.46	0	124	3648	1928	1173	3101	No	2.56	Si
SLU 70	ini.	-127.53	828	0.46	0	124	3648	1928	1173	3101	No	3.74	Si
SLU 70	fin.	-47.82	-1296	0.46	0	124	3648	1928	1173	3101	No	2.39	Si
SLU 78	ini.	-123.45	813	0.46	0	124	3648	1928	1173	3101	No	3.82	Si
SLU 78	fin.	-50.72	-1316	0.46	0	124	3648	1928	1173	3101	No	2.36	Si
SLU 79	ini.	-112.95	763	0.46	0	124	3648	1928	1173	3101	No	4.06	Si
SLU 79	fin.	-50.83	-1303	0.46	0	124	3648	1928	1173	3101	No	2.38	Si
SLU 57	ini.	-107.88	727	0.46	0	124	3648	1928	1173	3101	No	4.26	Si
SLU 57	fin.	-48.94	-1199	0.46	0	124	3648	1928	1173	3101	No	2.59	Si
SLU 80	ini.	-115.24	772	0.46	0	124	3648	1928	1173	3101	No	4.02	Si
SLU 80	fin.	-49.34	-1289	0.46	0	124	3648	1928	1173	3101	No	2.41	Si
SLU 71	ini.	-117.02	779	0.46	0	124	3648	1928	1173	3101	No	3.98	Si
SLU 71	fin.	-47.93	-1283	0.46	0	124	3648	1928	1173	3101	No	2.42	Si
SLU 72	ini.	-119.31	787	0.46	0	124	3648	1928	1173	3101	No	3.94	Si
SLU 72	fin.	-46.44	-1269	0.46	0	124	3648	1928	1173	3101	No	2.44	Si
SLU 77	ini.	-121.17	804	0.46	0	124	3648	1928	1173	3101	No	3.86	Si
SLU 77	fin.	-52.2	-1330	0.46	0	124	3648	1928	1173	3101	No	2.33	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 11	ini.	-393.68	-1109	-0.0009938	0.0002807	0.0035	0.46		788.4	788.4		2	Si
SLV 11	fin.	166.3	1351	-0.0003471	0.0002807	0.0035	0.46		785.44	785.44		4.72	Si
SLV 8	ini.	-319.51	-929	-0.0007579	0.0002807	0.0035	0.46		788.4	788.4		2.47	Si
SLV 8	fin.	116.86	1082	-0.0002346	0.0002807	0.0035	0.46		785.44	785.44		6.72	Si
SLD 12	ini.	-212.66	-563	-0.0004602	0.0002807	0.0035	0.46		788.4	788.4		3.71	Si
SLD 12	fin.	57.91	522	-0.0001118	0.0002807	0.0035	0.46		785.44	785.44		13.56	Si
SLV 12	ini.	-382.57	-1077	-0.0009567	0.0002807	0.0035	0.46		788.4	788.4		2.06	Si
SLV 12	fin.	158.71	1297	-0.0003292	0.0002807	0.0035	0.46		785.44	785.44		4.95	Si
SLD 11	ini.	-217.51	-577	-0.0004727	0.0002807	0.0035	0.46		788.4	788.4		3.62	Si
SLD 11	fin.	61.23	545	-0.0001185	0.0002807	0.0035	0.46		785.44	785.44		12.83	Si
SLV 6	ini.	236.48	794	-0.0005247	0.0002807	0.0035	0.46		785.44	785.44		3.32	Si
SLV 6	fin.	-209.45	-1533	-0.000452	0.0002807	0.0035	0.46		788.4	788.4		3.76	Si
SLV 16	ini.	-258.49	-638	-0.0005821	0.0002807	0.0035	0.46		788.4	788.4		3.05	Si
SLV 16	fin.	91.24	618	-0.00018	0.0002807	0.0035	0.46		785.44	785.44		8.61	Si
SLV 5	ini.	225.37	762	-0.0004952	0.0002807	0.0035	0.46		785.44	785.44		3.49	Si
SLV 5	fin.	-201.86	-1479	-0.0004327	0.0002807	0.0035	0.46		788.4	788.4		3.91	Si
SLV 15	ini.	-275.69	-687	-0.0006301	0.0002807	0.0035	0.46		788.4	788.4		2.86	Si
SLV 15	fin.	102.99	701	-0.0002048	0.0002807	0.0035	0.46		785.44	785.44		7.63	Si
SLV 7	ini.	-330.62	-961	-0.0007916	0.0002807	0.0035	0.46		788.4	788.4		2.38	Si
SLV 7	fin.	124.45	1136	-0.0002513	0.0002807	0.0035	0.46		785.44	785.44		6.31	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 9	ini.	162.31	-400	0.46	0	187	3648	2893	1173	3834		9.59	Si
SLV 9	fin.	-160.01	-1808	0.46	0	187	3648	2893	1173	3834		2.12	Si
SLV 12	ini.	-382.57	1652	0.46	0	187	3648	2893	1173	3834		2.32	Si
SLV 12	fin.	158.71	596	0.46	0	187	3648	2893	1173	3834		6.44	Si
SLV 11	ini.	-393.68	1694	0.46	0	187	3648	2893	1173	3834		2.26	Si
SLV 11	fin.	166.3	648	0.46	0	187	3648	2893	1173	3834		5.91	Si
SLV 7	ini.	-330.62	1429	0.46	0	187	3648	2893	1173	3834		2.68	Si
SLV 7	fin.	124.45	638	0.46	0	187	3648	2893	1173	3834		6.01	Si
SLV 15	ini.	-275.69	1283	0.46	0	187	3648	2893	1173	3834		2.99	Si
SLV 15	fin.	102.99	-185	0.46	0	187	3648	2893	1173	3834		20.75	Si
SLV 8	ini.	-319.51	1386	0.46	0	187	3648	2893	1173	3834		2.77	Si
SLV 8	fin.	116.86	585	0.46	0	187	3648	2893	1173	3834		6.55	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 6	ini.	236.48	-708	0.46	0	187	3648	2893	1173	3834		5.41	Si
SLV 6	fin.	-209.45	-1871	0.46	0	187	3648	2893	1173	3834		2.05	Si
SLV 5	ini.	225.37	-665	0.46	0	187	3648	2893	1173	3834		5.76	Si
SLV 5	fin.	-201.86	-1818	0.46	0	187	3648	2893	1173	3834		2.11	Si
SLV 10	ini.	173.42	-443	0.46	0	187	3648	2893	1173	3834		8.66	Si
SLV 10	fin.	-167.6	-1861	0.46	0	187	3648	2893	1173	3834		2.06	Si
SLV 16	ini.	-258.49	1217	0.46	0	187	3648	2893	1173	3834		3.15	Si
SLV 16	fin.	91.24	-266	0.46	0	187	3648	2893	1173	3834		14.39	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.003	SLV 11	Si
V_SLV	2.049	SLV 6	Si
PF_SLU	6.118	SLU 70	Si
V_SLU	2.332	SLU 77	Si

## Trave di accoppiamento 142

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-18.813	-3.314	11.87	13.87	2	-19.313	-3.314	11.87	13.87	2	0.5	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fhk	fvk0	fhmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma_{F,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 75	ini.	98.45	-906	-0.0000098	0.0001872	0.0035	2		14344.28	14344.28	No	145.7	Si
SLU 75	fin.	330.68	-1303	-0.0000331	0.0001872	0.0035	2		14344.28	14344.28	No	43.38	Si
SLU 82	ini.	114.23	-657	-0.0000113	0.0001872	0.0035	2		14344.28	14344.28	No	125.58	Si
SLU 82	fin.	318.58	-1044	-0.0000319	0.0001872	0.0035	2		14344.28	14344.28	No	45.03	Si
SLU 84	ini.	125.06	-776	-0.0000124	0.0001872	0.0035	2		14344.28	14344.28	No	114.7	Si
SLU 84	fin.	322.08	-1168	-0.0000323	0.0001872	0.0035	2		14344.28	14344.28	No	44.54	Si
SLU 77	ini.	112.42	-1017	-0.0000112	0.0001872	0.0035	2		14344.28	14344.28	No	127.6	Si
SLU 77	fin.	337.42	-1421	-0.0000338	0.0001872	0.0035	2		14344.28	14344.28	No	42.51	Si
SLU 80	ini.	111.02	-974	-0.000011	0.0001872	0.0035	2		14344.28	14344.28	No	129.2	Si
SLU 80	fin.	308.59	-1356	-0.0000309	0.0001872	0.0035	2		14344.28	14344.28	No	46.48	Si
SLU 74	ini.	101.58	-899	-0.0000101	0.0001872	0.0035	2		14344.28	14344.28	No	141.21	Si
SLU 74	fin.	333.91	-1298	-0.0000335	0.0001872	0.0035	2		14344.28	14344.28	No	42.96	Si
SLU 78	ini.	109.29	-1024	-0.0000109	0.0001872	0.0035	2		14344.28	14344.28	No	131.25	Si
SLU 78	fin.	334.19	-1426	-0.0000335	0.0001872	0.0035	2		14344.28	14344.28	No	42.92	Si
SLU 79	ini.	114.15	-967	-0.0000113	0.0001872	0.0035	2		14344.28	14344.28	No	125.66	Si
SLU 79	fin.	311.82	-1351	-0.0000327	0.0001872	0.0035	2		14344.28	14344.28	No	46	Si
SLU 83	ini.	128.19	-769	-0.0000127	0.0001872	0.0035	2		14344.28	14344.28	No	111.9	Si
SLU 83	fin.	325.32	-1163	-0.0000326	0.0001872	0.0035	2		14344.28	14344.28	No	44.09	Si
SLU 81	ini.	117.35	-651	-0.0000117	0.0001872	0.0035	2		14344.28	14344.28	No	122.23	Si
SLU 81	fin.	321.81	-1040	-0.0000322	0.0001872	0.0035	2		14344.28	14344.28	No	44.57	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 66	ini.	43.54	398	2	0	812	3965	8384	5100	4776	No	11.99	Si
SLU 66	fin.	294.24	1226	2	0	812	3965	8384	5100	4776	No	3.9	Si
SLU 77	ini.	112.42	363	2	0	812	3965	8384	5100	4776	No	13.16	Si
SLU 77	fin.	337.42	1272	2	0	812	3965	8384	5100	4776	No	3.75	Si
SLU 83	ini.	128.19	384	2	0	812	3965	8384	5100	4776	No	12.43	Si
SLU 83	fin.	325.32	1168	2	0	812	3965	8384	5100	4776	No	4.09	Si
SLU 79	ini.	114.15	297	2	0	812	3965	8384	5100	4776	No	16.09	Si
SLU 79	fin.	311.82	1168	2	0	812	3965	8384	5100	4776	No	4.09	Si
SLU 67	ini.	40.41	390	2	0	812	3965	8384	5100	4776	No	12.25	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 67	fin.	291	1224	2	0	812	3965	8384	5100	4776	No	3.9	Si
SLU 69	ini.	54.37	326	2	0	812	3965	8384	5100	4776	No	14.63	Si
SLU 69	fin.	297.74	1240	2	0	812	3965	8384	5100	4776	No	3.85	Si
SLU 74	ini.	101.58	435	2	0	812	3965	8384	5100	4776	No	10.98	Si
SLU 74	fin.	333.91	1258	2	0	812	3965	8384	5100	4776	No	3.8	Si
SLU 78	ini.	109.29	354	2	0	812	3965	8384	5100	4776	No	13.48	Si
SLU 78	fin.	334.19	1270	2	0	812	3965	8384	5100	4776	No	3.76	Si
SLU 70	ini.	51.24	318	2	0	812	3965	8384	5100	4776	No	15.03	Si
SLU 70	fin.	294.51	1238	2	0	812	3965	8384	5100	4776	No	3.86	Si
SLU 75	ini.	98.45	426	2	0	812	3965	8384	5100	4776	No	11.21	Si
SLU 75	fin.	330.68	1256	2	0	812	3965	8384	5100	4776	No	3.8	Si

**Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche**

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 4	ini.	676.94	298	-0.0000683	0.0002807	0.0035	2		14202.07	14202.07		20.98	Si
SLV 4	fin.	-166.64	115	-0.0000165	0.0002807	0.0035	2		14215.41	14215.41		85.3	Si
SLV 6	ini.	734.37	611	-0.0000742	0.0002807	0.0035	2		14202.07	14202.07		19.34	Si
SLV 6	fin.	504.39	165	-0.0000506	0.0002807	0.0035	2		14202.07	14202.07		28.16	Si
SLV 16	ini.	-781.7	-2061	-0.0000791	0.0002807	0.0035	2		14215.41	14215.41		18.19	Si
SLV 16	fin.	265.02	-2236	-0.0000264	0.0002807	0.0035	2		14202.07	14202.07		53.59	Si
SLV 11	ini.	-642.73	-1899	-0.0000647	0.0002807	0.0035	2		14215.41	14215.41		22.12	Si
SLV 11	fin.	-97.45	-1971	-0.0000097	0.0002807	0.0035	2		14215.41	14215.41		145.87	Si
SLV 1	ini.	873.34	773	-0.0000886	0.0002807	0.0035	2		14202.07	14202.07		16.26	Si
SLV 1	fin.	141.92	429	-0.0000141	0.0002807	0.0035	2		14202.07	14202.07		100.07	Si
SLV 10	ini.	296.78	-97	-0.0000296	0.0002807	0.0035	2		14202.07	14202.07		47.85	Si
SLV 10	fin.	633.89	-540	-0.0000639	0.0002807	0.0035	2		14202.07	14202.07		22.4	Si
SLV 2	ini.	944.93	828	-0.0000961	0.0002807	0.0035	2		14202.07	14202.07		15.03	Si
SLV 2	fin.	67.23	525	-0.0000067	0.0002807	0.0035	2		14202.07	14202.07		211.24	Si
SLV 15	ini.	-853.29	-2117	-0.0000865	0.0002807	0.0035	2		14215.41	14215.41		16.66	Si
SLV 15	fin.	339.71	-2332	-0.0000339	0.0002807	0.0035	2		14202.07	14202.07		41.81	Si
SLV 5	ini.	688.14	575	-0.0000694	0.0002807	0.0035	2		14202.07	14202.07		20.64	Si
SLV 5	fin.	552.63	103	-0.0000555	0.0002807	0.0035	2		14202.07	14202.07		25.7	Si
SLV 9	ini.	250.54	-133	-0.000025	0.0002807	0.0035	2		14202.07	14202.07		56.69	Si
SLV 9	fin.	682.13	-602	-0.0000688	0.0002807	0.0035	2		14202.07	14202.07		20.82	Si

**Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215**

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 2	ini.	944.93	-2288	2	0	1217	3965	12577	5100	5182		2.27	Si
SLV 2	fin.	67.23	-1332	2	0	1217	3965	12577	5100	5182		3.89	Si
SLV 14	ini.	-513.72	2786	2	0	1217	3965	12577	5100	5182		1.86	Si
SLV 14	fin.	498.9	2656	2	0	1217	3965	12577	5100	5182		1.95	Si
SLV 9	ini.	250.54	1821	2	0	1217	3965	12577	5100	5182		2.85	Si
SLV 9	fin.	682.13	1631	2	0	1217	3965	12577	5100	5182		3.18	Si
SLV 16	ini.	-781.7	2404	2	0	1217	3965	12577	5100	5182		2.16	Si
SLV 16	fin.	265.02	2591	2	0	1217	3965	12577	5100	5182		2	Si
SLV 3	ini.	605.36	-2226	2	0	1217	3965	12577	5100	5182		2.33	Si
SLV 3	fin.	-91.96	-1039	2	0	1217	3965	12577	5100	5182		4.99	Si
SLV 1	ini.	873.34	-1844	2	0	1217	3965	12577	5100	5182		2.81	Si
SLV 1	fin.	141.92	-974	2	0	1217	3965	12577	5100	5182		5.32	Si
SLV 4	ini.	676.94	-2670	2	0	1217	3965	12577	5100	5182		1.94	Si
SLV 4	fin.	-166.64	-1397	2	0	1217	3965	12577	5100	5182		3.71	Si
SLV 13	ini.	-585.31	3230	2	0	1217	3965	12577	5100	5182		1.6	Si
SLV 13	fin.	573.58	3014	2	0	1217	3965	12577	5100	5182		1.72	Si
SLV 15	ini.	-853.29	2847	2	0	1217	3965	12577	5100	5182		1.82	Si
SLV 15	fin.	339.71	2948	2	0	1217	3965	12577	5100	5182		1.76	Si
SLD 13	ini.	-221.66	1543	2	0	1217	3965	12577	5100	5182		3.36	Si
SLD 13	fin.	363.61	1752	2	0	1217	3965	12577	5100	5182		2.96	Si

**Tabella dei coefficienti di sicurezza minimi**

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	15.03	SLV 2	Si
V_SLV	1.605	SLV 13	Si
PF_SLU	42.512	SLU 77	Si
V_SLU	3.754	SLU 77	Si

**Trave di accoppiamento 143**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati geometrici**

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-18.813	-3.314	14.67	15.03	0.36	-19.313	-3.314	14.67	15.03	0.36	0.5	0.28	3500

**Caratteristiche del materiale**

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC





Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 69	ini.	-64.24	-404	-0.0002131	0.0001872	0.0035	0.36		482.14	482.14	No	7.51	Si
SLU 69	fin.	-6.59	-183	-0.0000201	0.0001872	0.0035	0.36		482.14	482.14	No	73.13	Si
SLU 75	ini.	-66.72	-433	-0.0002223	0.0001872	0.0035	0.36		482.14	482.14	No	7.23	Si
SLU 75	fin.	-0.23	-180	-0.0000007	0.0001872	0.0035	0.36		482.14	482.14	No	2102.9	Si
SLU 79	ini.	-67.43	-452	-0.000225	0.0001872	0.0035	0.36		482.14	482.14	No	7.15	Si
SLU 79	fin.	-5.05	-214	-0.0000154	0.0001872	0.0035	0.36		482.14	482.14	No	95.39	Si
SLU 56	ini.	-63.89	-439	-0.0002118	0.0001872	0.0035	0.36		482.14	482.14	No	7.55	Si
SLU 56	fin.	-8.3	-228	-0.0000254	0.0001872	0.0035	0.36		482.14	482.14	No	58.07	Si
SLU 74	ini.	-67.09	-437	-0.0002237	0.0001872	0.0035	0.36		482.14	482.14	No	7.19	Si
SLU 74	fin.	-0.02	-182	-0.0000001	0.0001872	0.0035	0.36		482.14	482.14	No	24565.44	Si
SLU 77	ini.	-70.83	-468	-0.0002378	0.0001872	0.0035	0.36		482.14	482.14	No	6.81	Si
SLU 77	fin.	-4.55	-215	-0.0000139	0.0001872	0.0035	0.36		482.14	482.14	No	105.9	Si
SLU 80	ini.	-67.06	-448	-0.0002236	0.0001872	0.0035	0.36		482.14	482.14	No	7.19	Si
SLU 80	fin.	-5.26	-213	-0.0000161	0.0001872	0.0035	0.36		482.14	482.14	No	91.59	Si
SLU 83	ini.	-66.52	-448	-0.0002216	0.0001872	0.0035	0.36		482.14	482.14	No	7.25	Si
SLU 83	fin.	0.35	-195	-0.0000011	0.0001872	0.0035	0.36		479.9	479.9	No	1360.55	Si
SLU 84	ini.	-66.14	-445	-0.0002202	0.0001872	0.0035	0.36		482.14	482.14	No	7.29	Si
SLU 84	fin.	0.14	-193	-0.0000004	0.0001872	0.0035	0.36		479.9	479.9	No	3354.07	Si
SLU 78	ini.	-70.46	-464	-0.0002364	0.0001872	0.0035	0.36		482.14	482.14	No	6.84	Si
SLU 78	fin.	-4.76	-214	-0.0000145	0.0001872	0.0035	0.36		482.14	482.14	No	101.24	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 70	ini.	-63.86	494	0.36	0	105	2855	1509	918	2427	No	4.91	Si
SLU 70	fin.	-6.8	-48	0.36	0	105	2855	1509	918	2427	No	50.71	Si
SLU 69	ini.	-64.24	496	0.36	0	105	2855	1509	918	2427	No	4.9	Si
SLU 69	fin.	-6.59	-46	0.36	0	105	2855	1509	918	2427	No	53.02	Si
SLU 78	ini.	-70.46	521	0.36	0	105	2855	1509	918	2427	No	4.66	Si
SLU 78	fin.	-4.76	-20	0.36	0	105	2855	1509	918	2427	No	122.08	Si
SLU 83	ini.	-66.52	479	0.36	0	105	2855	1509	918	2427	No	5.06	Si
SLU 83	fin.	0.35	15	0.36	0	105	2855	1509	918	2427	No	164.06	Si
SLU 79	ini.	-67.43	492	0.36	0	105	2855	1509	918	2427	No	4.93	Si
SLU 79	fin.	-5.05	-18	0.36	0	105	2855	1509	918	2427	No	131.66	Si
SLU 80	ini.	-67.06	491	0.36	0	105	2855	1509	918	2427	No	4.94	Si
SLU 80	fin.	-5.26	-21	0.36	0	105	2855	1509	918	2427	No	118.32	Si
SLU 74	ini.	-67.09	498	0.36	0	105	2855	1509	918	2427	No	4.87	Si
SLU 74	fin.	-0.02	3	0.36	0	105	2855	1509	918	2427	No	706.36	Si
SLU 77	ini.	-70.83	523	0.36	0	105	2855	1509	918	2427	No	4.65	Si
SLU 77	fin.	-4.55	-18	0.36	0	105	2855	1509	918	2427	No	136.34	Si
SLU 84	ini.	-66.14	478	0.36	0	105	2855	1509	918	2427	No	5.08	Si
SLU 84	fin.	0.14	13	0.36	0	105	2855	1509	918	2427	No	190.87	Si
SLU 75	ini.	-66.72	497	0.36	0	105	2855	1509	918	2427	No	4.89	Si
SLU 75	fin.	-0.23	1	0.36	0	105	2855	1509	918	2427	No	1787.8	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 3	ini.	-71.74	-741	-0.0002335	0.0002807	0.0035	0.36		485.29	485.29		6.76	Si
SLV 3	fin.	-35.77	-651	-0.0001121	0.0002807	0.0035	0.36		485.29	485.29		13.57	Si
SLV 6	ini.	-95.93	-879	-0.0003218	0.0002807	0.0035	0.36		485.29	485.29		5.06	Si
SLV 6	fin.	36.23	-348	-0.0001141	0.0002807	0.0035	0.36		482.94	482.94		13.33	Si
SLV 10	ini.	-70.89	-508	-0.0002305	0.0002807	0.0035	0.36		485.29	485.29		6.85	Si
SLV 10	fin.	53.53	14	-0.0001716	0.0002807	0.0035	0.36		482.94	482.94		9.02	Si
SLD 5	ini.	-66.16	-525	-0.000214	0.0002807	0.0035	0.36		485.29	485.29		7.33	Si
SLD 5	fin.	20.12	-185	-0.0000624	0.0002807	0.0035	0.36		482.94	482.94		24	Si
SLV 1	ini.	-97.53	-994	-0.0003279	0.0002807	0.0035	0.36		485.29	485.29		4.98	Si
SLV 1	fin.	-7.27	-674	-0.0000222	0.0002807	0.0035	0.36		485.29	485.29		66.76	Si
SLV 2	ini.	-94.52	-1020	-0.0003165	0.0002807	0.0035	0.36		485.29	485.29		5.13	Si
SLV 2	fin.	-19.34	-758	-0.0000596	0.0002807	0.0035	0.36		485.29	485.29		25.09	Si
SLV 5	ini.	-97.87	-862	-0.0003292	0.0002807	0.0035	0.36		485.29	485.29		4.96	Si
SLV 5	fin.	44.03	-294	-0.0001397	0.0002807	0.0035	0.36		482.94	482.94		10.97	Si
SLV 4	ini.	-68.74	-766	-0.000223	0.0002807	0.0035	0.36		485.29	485.29		7.06	Si
SLV 4	fin.	-47.84	-735	-0.0001517	0.0002807	0.0035	0.36		485.29	485.29		10.14	Si
SLD 1	ini.	-65.54	-577	-0.0002118	0.0002807	0.0035	0.36		485.29	485.29		7.4	Si
SLD 1	fin.	-2.25	-346	-0.0000068	0.0002807	0.0035	0.36		485.29	485.29		215.8	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 9	ini.	-72.83	-492	-0.0002374	0.0002807	0.0035	0.36		485.29	485.29		6.66	Si
SLV 9	fin.	61.33	68	-0.0001982	0.0002807	0.0035	0.36		482.94	482.94		7.87	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 6	ini.	-95.93	458	0.36	0	158	2855	2264	918	3012		6.58	Si
SLV 6	fin.	36.23	181	0.36	0	158	2855	2264	918	3012		16.64	Si
SLV 10	ini.	-70.89	469	0.36	0	158	2855	2264	918	3012		6.42	Si
SLV 10	fin.	53.53	201	0.36	0	158	2855	2264	918	3012		14.95	Si
SLV 9	ini.	-72.83	501	0.36	0	158	2855	2264	918	3012		6.01	Si
SLV 9	fin.	61.33	233	0.36	0	158	2855	2264	918	3012		12.94	Si
SLV 5	ini.	-97.87	490	0.36	0	158	2855	2264	918	3012		6.15	Si
SLV 5	fin.	44.03	212	0.36	0	158	2855	2264	918	3012		14.18	Si
SLV 13	ini.	-14.07	408	0.36	0	158	2855	2264	918	3012		7.38	Si
SLV 13	fin.	50.39	121	0.36	0	158	2855	2264	918	3012		24.85	Si
SLD 5	ini.	-66.16	392	0.36	0	158	2855	2264	918	3012		7.69	Si
SLD 5	fin.	20.12	94	0.36	0	158	2855	2264	918	3012		31.97	Si
SLD 6	ini.	-65.32	378	0.36	0	158	2855	2264	918	3012		7.98	Si
SLD 6	fin.	16.71	81	0.36	0	158	2855	2264	918	3012		37.41	Si
SLD 9	ini.	-55.49	397	0.36	0	158	2855	2264	918	3012		7.6	Si
SLD 9	fin.	27.54	103	0.36	0	158	2855	2264	918	3012		29.24	Si
SLV 1	ini.	-97.53	370	0.36	0	158	2855	2264	918	3012		8.15	Si
SLV 1	fin.	-7.27	53	0.36	0	158	2855	2264	918	3012		56.63	Si
SLD 10	ini.	-54.64	383	0.36	0	158	2855	2264	918	3012		7.87	Si
SLD 10	fin.	24.14	89	0.36	0	158	2855	2264	918	3012		33.72	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	4.959	SLV 5	Si
V_SLV	6.01	SLV 9	Si
PF_SLU	6.807	SLU 77	Si
V_SLU	4.645	SLU 77	Si

Trave di accoppiamento 144

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-17.363	-3.314	11.87	12.77	0.9	-18.263	-3.314	11.87	12.77	0.9	0.9	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	f <sub>nk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 79	ini.	129.72	-422	-0.0000651	0.0001872	0.0035	0.9		2959	2959	No	22.81	Si
SLU 79	fin.	32.31	-497	-0.0000159	0.0001872	0.0035	0.9		2959	2959	No	91.57	Si
SLU 62	ini.	137.84	-388	-0.0000693	0.0001872	0.0035	0.9		2959	2959	No	21.47	Si
SLU 62	fin.	-0.88	-309	-0.0000004	0.0001872	0.0035	0.9	2964.67	2964.67	2964.67	No	3354.7	Si
SLU 56	ini.	130.21	-418	-0.0000653	0.0001872	0.0035	0.9		2959	2959	No	22.73	Si
SLU 56	fin.	33.53	-501	-0.0000165	0.0001872	0.0035	0.9		2959	2959	No	88.25	Si
SLU 59	ini.	130.79	-414	-0.0000656	0.0001872	0.0035	0.9		2959	2959	No	22.62	Si
SLU 59	fin.	28.7	-472	-0.0000141	0.0001872	0.0035	0.9		2959	2959	No	103.12	Si
SLU 83	ini.	135.98	-394	-0.0000683	0.0001872	0.0035	0.9		2959	2959	No	21.76	Si
SLU 83	fin.	3.98	-341	-0.0000019	0.0001872	0.0035	0.9		2959	2959	No	744.06	Si
SLU 80	ini.	128.92	-420	-0.0000647	0.0001872	0.0035	0.9		2959	2959	No	22.95	Si
SLU 80	fin.	33.56	-504	-0.0000165	0.0001872	0.0035	0.9		2959	2959	No	88.18	Si
SLU 63	ini.	137.05	-386	-0.0000689	0.0001872	0.0035	0.9		2959	2959	No	21.59	Si
SLU 63	fin.	0.36	-316	-0.0000002	0.0001872	0.0035	0.9		2959	2959	No	8280.8	Si
SLU 57	ini.	129.41	-417	-0.0000649	0.0001872	0.0035	0.9		2959	2959	No	22.86	Si



Comb.	Sez.	M	N	ε <sub>m</sub>	ε <sub>m_</sub>	ε <sub>mu</sub>	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 57	fin.	34.77	-508	-0.0000171	0.0001872	0.0035	0.9		2959	2959	No	85.1	Si
SLU 84	ini.	135.18	-393	-0.0000679	0.0001872	0.0035	0.9		2959	2959	No	21.89	Si
SLU 84	fin.	5.22	-348	-0.0000026	0.0001872	0.0035	0.9		2959	2959	No	567.09	Si
SLU 58	ini.	131.58	-415	-0.0000661	0.0001872	0.0035	0.9		2959	2959	No	22.49	Si
SLU 58	fin.	27.45	-465	-0.0000135	0.0001872	0.0035	0.9		2959	2959	No	107.78	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 69	ini.	91.11	-339	0.9	0	365	7137	3773	2295	6068	No	17.89	Si
SLU 69	fin.	81.33	1072	0.9	0	365	7137	3773	2295	6068	No	5.66	Si
SLU 50	ini.	94.36	-329	0.9	0	365	7137	3773	2295	6068	No	18.46	Si
SLU 50	fin.	70.39	972	0.9	0	365	7137	3773	2295	6068	No	6.25	Si
SLU 51	ini.	93.56	-328	0.9	0	365	7137	3773	2295	6068	No	18.48	Si
SLU 51	fin.	71.63	984	0.9	0	365	7137	3773	2295	6068	No	6.16	Si
SLU 72	ini.	91.7	-329	0.9	0	365	7137	3773	2295	6068	No	18.43	Si
SLU 72	fin.	76.49	1025	0.9	0	365	7137	3773	2295	6068	No	5.92	Si
SLU 70	ini.	90.32	-339	0.9	0	365	7137	3773	2295	6068	No	17.91	Si
SLU 70	fin.	82.57	1085	0.9	0	365	7137	3773	2295	6068	No	5.59	Si
SLU 66	ini.	81.42	-311	0.9	0	365	7137	3773	2295	6068	No	19.49	Si
SLU 66	fin.	71.39	987	0.9	0	365	7137	3773	2295	6068	No	6.14	Si
SLU 49	ini.	92.19	-338	0.9	0	365	7137	3773	2295	6068	No	17.96	Si
SLU 49	fin.	77.71	1045	0.9	0	365	7137	3773	2295	6068	No	5.81	Si
SLU 71	ini.	92.49	-330	0.9	0	365	7137	3773	2295	6068	No	18.4	Si
SLU 71	fin.	75.25	1012	0.9	0	365	7137	3773	2295	6068	No	6	Si
SLU 48	ini.	92.98	-338	0.9	0	365	7137	3773	2295	6068	No	17.94	Si
SLU 48	fin.	76.47	1032	0.9	0	365	7137	3773	2295	6068	No	5.88	Si
SLU 67	ini.	80.63	-311	0.9	0	365	7137	3773	2295	6068	No	19.52	Si
SLU 67	fin.	72.63	1000	0.9	0	365	7137	3773	2295	6068	No	6.07	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ε <sub>m</sub>	ε <sub>m_</sub>	ε <sub>mu</sub>	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-411.28	755	-0.0002143	0.0002807	0.0035	0.9		2995.37	2995.37		7.28	Si
SLV 15	fin.	530.69	-2465	-0.0002835	0.0002807	0.0035	0.9		2989.59	2989.59		5.63	Si
SLV 1	ini.	510.25	-1159	-0.0002714	0.0002807	0.0035	0.9		2989.59	2989.59		5.86	Si
SLV 1	fin.	-440.12	1619	-0.0002305	0.0002807	0.0035	0.9		2995.37	2995.37		6.81	Si
SLV 4	ini.	461.77	-1087	-0.0002433	0.0002807	0.0035	0.9		2989.59	2989.59		6.47	Si
SLV 4	fin.	-358.88	1181	-0.0001852	0.0002807	0.0035	0.9		2995.37	2995.37		8.35	Si
SLV 3	ini.	426.17	-1006	-0.0002231	0.0002807	0.0035	0.9		2989.59	2989.59		7.01	Si
SLV 3	fin.	-326.83	1060	-0.0001678	0.0002807	0.0035	0.9		2995.37	2995.37		9.16	Si
SLV 2	ini.	545.85	-1240	-0.0002925	0.0002807	0.0035	0.9		2989.59	2989.59		5.48	Si
SLV 2	fin.	-472.16	1740	-0.0002488	0.0002807	0.0035	0.9		2995.37	2995.37		6.34	Si
SLV 11	ini.	-209.96	303	-0.0001057	0.0002807	0.0035	0.9		2995.37	2995.37		14.27	Si
SLV 11	fin.	357.05	-1862	-0.0001846	0.0002807	0.0035	0.9		2989.59	2989.59		8.37	Si
SLV 14	ini.	-291.61	521	-0.0001488	0.0002807	0.0035	0.9		2995.37	2995.37		10.27	Si
SLV 14	fin.	385.36	-1785	-0.0002002	0.0002807	0.0035	0.9		2989.59	2989.59		7.76	Si
SLV 16	ini.	-375.69	674	-0.0001945	0.0002807	0.0035	0.9		2995.37	2995.37		7.97	Si
SLV 16	fin.	498.65	-2344	-0.0002646	0.0002807	0.0035	0.9		2989.59	2989.59		6	Si
SLV 6	ini.	344.52	-788	-0.0001777	0.0002807	0.0035	0.9		2989.59	2989.59		8.68	Si
SLV 6	fin.	-298.52	1137	-0.0001525	0.0002807	0.0035	0.9		2995.37	2995.37		10.03	Si
SLV 13	ini.	-327.21	602	-0.000168	0.0002807	0.0035	0.9		2995.37	2995.37		9.15	Si
SLV 13	fin.	417.41	-1906	-0.0002181	0.0002807	0.0035	0.9		2989.59	2989.59		7.16	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 11	ini.	-209.96	116	0.9	0	548	7137	5660	2295	7684		66.1	Si
SLV 11	fin.	357.05	2941	0.9	0	548	7137	5660	2295	7684		2.61	Si
SLV 13	ini.	-327.21	297	0.9	0	548	7137	5660	2295	7684		25.91	Si
SLV 13	fin.	417.41	2946	0.9	0	548	7137	5660	2295	7684		2.61	Si
SLV 12	ini.	-186.97	84	0.9	0	548	7137	5660	2295	7684		91.25	Si
SLV 12	fin.	336.35	2826	0.9	0	548	7137	5660	2295	7684		2.72	Si
SLV 15	ini.	-411.28	390	0.9	0	548	7137	5660	2295	7684		19.71	Si
SLV 15	fin.	530.69	3848	0.9	0	548	7137	5660	2295	7684		2	Si
SLV 1	ini.	510.25	-771	0.9	0	548	7137	5660	2295	7684		9.96	Si
SLV 1	fin.	-440.12	-2564	0.9	0	548	7137	5660	2295	7684		3	Si
SLV 2	ini.	545.85	-821	0.9	0	548	7137	5660	2295	7684		9.36	Si
SLV 2	fin.	-472.16	-2742	0.9	0	548	7137	5660	2295	7684		2.8	Si
SLD 15	ini.	-137.93	44	0.9	0	548	7137	5660	2295	7684		175.22	Si
SLD 15	fin.	244.41	1969	0.9	0	548	7137	5660	2295	7684		3.9	Si
SLV 14	ini.	-291.61	247	0.9	0	548	7137	5660	2295	7684		31.12	Si
SLV 14	fin.	385.36	2768	0.9	0	548	7137	5660	2295	7684		2.78	Si
SLD 16	ini.	-122.64	23	0.9	0	548	7137	5660	2295	7684		340.71	Si
SLD 16	fin.	230.65	1893	0.9	0	548	7137	5660	2295	7684		4.06	Si
SLV 16	ini.	-375.69	340	0.9	0	548	7137	5660	2295	7684		22.58	Si
SLV 16	fin.	498.65	3671	0.9	0	548	7137	5660	2295	7684		2.09	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	5.477	SLV 2	Si
V_SLV	1.997	SLV 15	Si
PF_SLU	21.466	SLU 62	Si
V_SLU	5.592	SLU 70	Si



## Trave di accoppiamento 145

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-17.363	-3.314	14.57	15.03	0.46	-18.263	-3.314	14.57	15.03	0.46	0.9	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	e <sub>f,d</sub>	γ <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em <sub>-</sub>	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 57	ini.	45.86	211	-0.0000888	0.0001872	0.0035	0.46		777.36	777.36	No	16.95	Si
SLU 57	fin.	-90.82	-708	-0.0001825	0.0001872	0.0035	0.46		780.23	780.23	No	8.59	Si
SLU 62	ini.	53.64	227	-0.0001045	0.0001872	0.0035	0.46		777.36	777.36	No	14.49	Si
SLU 62	fin.	-87.43	-680	-0.0001751	0.0001872	0.0035	0.46		780.23	780.23	No	8.92	Si
SLU 56	ini.	46.9	213	-0.0000909	0.0001872	0.0035	0.46		777.36	777.36	No	16.58	Si
SLU 56	fin.	-91.52	-713	-0.000184	0.0001872	0.0035	0.46		780.23	780.23	No	8.53	Si
SLU 77	ini.	41.74	204	-0.0000805	0.0001872	0.0035	0.46		777.36	777.36	No	18.62	Si
SLU 77	fin.	-90.35	-722	-0.0001815	0.0001872	0.0035	0.46		780.23	780.23	No	8.64	Si
SLU 79	ini.	45.68	205	-0.0000884	0.0001872	0.0035	0.46		777.36	777.36	No	17.02	Si
SLU 79	fin.	-89.49	-707	-0.0001796	0.0001872	0.0035	0.46		780.23	780.23	No	8.72	Si
SLU 80	ini.	44.65	202	-0.0000864	0.0001872	0.0035	0.46		777.36	777.36	No	17.41	Si
SLU 80	fin.	-88.8	-702	-0.0001781	0.0001872	0.0035	0.46		780.23	780.23	No	8.79	Si
SLU 59	ini.	49.8	212	-0.0000967	0.0001872	0.0035	0.46		777.36	777.36	No	15.61	Si
SLU 59	fin.	-89.97	-693	-0.0001806	0.0001872	0.0035	0.46		780.23	780.23	No	8.67	Si
SLU 63	ini.	52.6	225	-0.0001024	0.0001872	0.0035	0.46		777.36	777.36	No	14.78	Si
SLU 63	fin.	-86.73	-674	-0.0001736	0.0001872	0.0035	0.46		780.23	780.23	No	9	Si
SLU 58	ini.	50.84	214	-0.0000988	0.0001872	0.0035	0.46		777.36	777.36	No	15.29	Si
SLU 58	fin.	-90.66	-698	-0.0001821	0.0001872	0.0035	0.46		780.23	780.23	No	8.61	Si
SLU 78	ini.	40.71	201	-0.0000785	0.0001872	0.0035	0.46		777.36	777.36	No	19.1	Si
SLU 78	fin.	-89.66	-717	-0.0001799	0.0001872	0.0035	0.46		780.23	780.23	No	8.7	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	f <sub>vd</sub>	V <sub>t</sub>	V <sub>t,f</sub>	V <sub>t,c</sub>	V <sub>t,c.int.</sub>	V <sub>t,R</sub>	incremento > 50%	c.s.	Verifica
SLU 78	ini.	40.71	69	0.46	0	124	3648	1928	1173	3101	No	45.25	Si
SLU 78	fin.	-89.66	-1277	0.46	0	124	3648	1928	1173	3101	No	2.43	Si
SLU 74	ini.	39.54	66	0.46	0	124	3648	1928	1173	3101	No	46.98	Si
SLU 74	fin.	-80.65	-1182	0.46	0	124	3648	1928	1173	3101	No	2.62	Si
SLU 56	ini.	46.9	40	0.46	0	124	3648	1928	1173	3101	No	78.2	Si
SLU 56	fin.	-91.52	-1237	0.46	0	124	3648	1928	1173	3101	No	2.51	Si
SLU 79	ini.	45.68	44	0.46	0	124	3648	1928	1173	3101	No	71.16	Si
SLU 79	fin.	-89.49	-1225	0.46	0	124	3648	1928	1173	3101	No	2.53	Si
SLU 57	ini.	45.86	43	0.46	0	124	3648	1928	1173	3101	No	72.2	Si
SLU 57	fin.	-90.82	-1233	0.46	0	124	3648	1928	1173	3101	No	2.52	Si
SLU 75	ini.	38.51	69	0.46	0	124	3648	1928	1173	3101	No	44.75	Si
SLU 75	fin.	-79.95	-1177	0.46	0	124	3648	1928	1173	3101	No	2.63	Si
SLU 58	ini.	50.84	18	0.46	0	124	3648	1928	1173	3101	No	172.28	Si
SLU 58	fin.	-90.66	-1181	0.46	0	124	3648	1928	1173	3101	No	2.63	Si
SLU 77	ini.	41.74	65	0.46	0	124	3648	1928	1173	3101	No	47.53	Si
SLU 77	fin.	-90.35	-1281	0.46	0	124	3648	1928	1173	3101	No	2.42	Si
SLU 80	ini.	44.65	47	0.46	0	124	3648	1928	1173	3101	No	66.16	Si
SLU 80	fin.	-88.8	-1221	0.46	0	124	3648	1928	1173	3101	No	2.54	Si
SLU 69	ini.	30.08	99	0.46	0	124	3648	1928	1173	3101	No	31.39	Si
SLU 69	fin.	-75.25	-1181	0.46	0	124	3648	1928	1173	3101	No	2.63	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 11	ini.	-182.69	-276	-0.0003851	0.0002807	0.0035	0.46		788.4	788.4		4.32	Si
SLV 11	fin.	134.9	836	-0.0002745	0.0002807	0.0035	0.46		785.44	785.44		5.82	Si
SLV 3	ini.	216.75	430	-0.0004727	0.0002807	0.0035	0.46		785.44	785.44		3.62	Si
SLV 3	fin.	-235	-1553	-0.0005185	0.0002807	0.0035	0.46		788.4	788.4		3.35	Si
SLV 1	ini.	296.92	616	-0.0006941	0.0002807	0.0035	0.46		785.44	785.44		2.65	Si
SLV 1	fin.	-298.08	-1998	-0.0006944	0.0002807	0.0035	0.46		788.4	788.4		2.64	Si
SLV 6	ini.	237.19	592	-0.0005266	0.0002807	0.0035	0.46		785.44	785.44		3.31	Si
SLV 6	fin.	-228.63	-1608	-0.0005017	0.0002807	0.0035	0.46		788.4	788.4		3.45	Si
SLV 15	ini.	-258.19	-329	-0.0005813	0.0002807	0.0035	0.46		788.4	788.4		3.05	Si
SLV 15	fin.	227.03	1359	-0.0004996	0.0002807	0.0035	0.46		785.44	785.44		3.46	Si
SLV 4	ini.	232.52	458	-0.0005142	0.0002807	0.0035	0.46		785.44	785.44		3.38	Si
SLV 4	fin.	-257.68	-1686	-0.0005799	0.0002807	0.0035	0.46		788.4	788.4		3.06	Si
SLV 2	ini.	312.69	645	-0.0007408	0.0002807	0.0035	0.46		785.44	785.44		2.51	Si
SLV 2	fin.	-320.76	-2131	-0.0007616	0.0002807	0.0035	0.46		788.4	788.4		2.46	Si
SLV 5	ini.	227.01	574	-0.0004996	0.0002807	0.0035	0.46		785.44	785.44		3.46	Si
SLV 5	fin.	-213.98	-1522	-0.0004636	0.0002807	0.0035	0.46		788.4	788.4		3.68	Si
SLV 16	ini.	-242.42	-300	-0.0005384	0.0002807	0.0035	0.46		788.4	788.4		3.25	Si
SLV 16	fin.	204.36	1226	-0.0004409	0.0002807	0.0035	0.46		785.44	785.44		3.84	Si
SLV 13	ini.	-178.02	-142	-0.0003738	0.0002807	0.0035	0.46		788.4	788.4		4.43	Si
SLV 13	fin.	163.95	914	-0.0003415	0.0002807	0.0035	0.46		785.44	785.44		4.79	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 6	ini.	118.95	-247	0.46	0	187	3648	2893	1173	3834		15.5	Si
SLD 6	fin.	-126.14	-1180	0.46	0	187	3648	2893	1173	3834		3.25	Si
SLV 4	ini.	232.52	-665	0.46	0	187	3648	2893	1173	3834		5.77	Si
SLV 4	fin.	-257.68	-1720	0.46	0	187	3648	2893	1173	3834		2.23	Si
SLD 1	ini.	143.06	-348	0.46	0	187	3648	2893	1173	3834		11.01	Si
SLD 1	fin.	-154.71	-1257	0.46	0	187	3648	2893	1173	3834		3.05	Si
SLD 4	ini.	114.42	-257	0.46	0	187	3648	2893	1173	3834		14.95	Si
SLD 4	fin.	-136.59	-1151	0.46	0	187	3648	2893	1173	3834		3.33	Si
SLD 2	ini.	149.84	-366	0.46	0	187	3648	2893	1173	3834		10.47	Si
SLD 2	fin.	-164.45	-1323	0.46	0	187	3648	2893	1173	3834		2.9	Si
SLV 1	ini.	296.92	-872	0.46	0	187	3648	2893	1173	3834		4.4	Si
SLV 1	fin.	-298.08	-1956	0.46	0	187	3648	2893	1173	3834		1.96	Si
SLV 6	ini.	237.19	-626	0.46	0	187	3648	2893	1173	3834		6.13	Si
SLV 6	fin.	-228.63	-1760	0.46	0	187	3648	2893	1173	3834		2.18	Si
SLV 5	ini.	227.01	-599	0.46	0	187	3648	2893	1173	3834		6.4	Si
SLV 5	fin.	-213.98	-1661	0.46	0	187	3648	2893	1173	3834		2.31	Si
SLV 2	ini.	312.69	-913	0.46	0	187	3648	2893	1173	3834		4.2	Si
SLV 2	fin.	-320.76	-2109	0.46	0	187	3648	2893	1173	3834		1.82	Si
SLV 3	ini.	216.75	-624	0.46	0	187	3648	2893	1173	3834		6.15	Si
SLV 3	fin.	-235	-1567	0.46	0	187	3648	2893	1173	3834		2.45	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.458	SLV 2	Si
V_SLV	1.818	SLV 2	Si
PF_SLU	8.525	SLU 56	Si
V_SLU	2.42	SLU 77	Si

## Trave di accoppiamento 146

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-18.518	-0.094	13.97	15.03	1.06	-18.518	0.706	13.97	15.03	1.06	0.8	0.16	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb_	fhk	fvk0	fmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 29	ini.	58.54	17	-0.0000208	0.0002246	0.0035	1.06		4231.66	4231.66	No	72.29	Si
SLU 29	fin.	-18.95	-5	-0.0000067	0.0002246	0.0035	1.06		4238.3	4238.3	No	223.63	Si
SLU 69	ini.	55.89	21	-0.0000198	0.0002246	0.0035	1.06		4231.66	4231.66	No	75.72	Si
SLU 69	fin.	-23.04	-6	-0.0000081	0.0002246	0.0035	1.06		4238.3	4238.3	No	183.98	Si
SLU 48	ini.	59.46	15	-0.0000211	0.0002246	0.0035	1.06		4231.66	4231.66	No	71.17	Si
SLU 48	fin.	-14.41	-6	-0.0000051	0.0002246	0.0035	1.06		4238.3	4238.3	No	294.08	Si
SLU 51	ini.	64.31	7	-0.0000228	0.0002246	0.0035	1.06		4231.66	4231.66	No	65.8	Si
SLU 51	fin.	-11.4	-6	-0.000004	0.0002246	0.0035	1.06		4238.3	4238.3	No	371.86	Si
SLU 8	ini.	62.11	12	-0.0000221	0.0002246	0.0035	1.06		4231.66	4231.66	No	68.13	Si
SLU 8	fin.	-10.33	-5	-0.0000036	0.0002246	0.0035	1.06		4238.3	4238.3	No	410.35	Si
SLU 49	ini.	56.39	12	-0.00002	0.0002246	0.0035	1.06		4231.66	4231.66	No	75.04	Si
SLU 49	fin.	-15.09	-6	-0.0000053	0.0002246	0.0035	1.06		4238.3	4238.3	No	280.8	Si
SLU 71	ini.	63.8	16	-0.0000227	0.0002246	0.0035	1.06		4231.66	4231.66	No	66.32	Si
SLU 71	fin.	-19.34	-6	-0.0000068	0.0002246	0.0035	1.06		4238.3	4238.3	No	219.15	Si
SLU 9	ini.	59.04	9	-0.000021	0.0002246	0.0035	1.06		4231.66	4231.66	No	71.67	Si
SLU 9	fin.	-11.01	-5	-0.0000039	0.0002246	0.0035	1.06		4238.3	4238.3	No	384.94	Si
SLU 50	ini.	67.38	10	-0.0000239	0.0002246	0.0035	1.06		4231.66	4231.66	No	62.8	Si
SLU 50	fin.	-10.72	-6	-0.0000038	0.0002246	0.0035	1.06		4238.3	4238.3	No	395.52	Si
SLU 72	ini.	60.73	13	-0.0000216	0.0002246	0.0035	1.06		4231.66	4231.66	No	69.68	Si
SLU 72	fin.	-20.02	-7	-0.0000071	0.0002246	0.0035	1.06		4238.3	4238.3	No	211.69	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 79	ini.	50.73	81	1.06	0	246	6344	3048	2703	5751	No	70.6	Si
SLU 79	fin.	-27.74	-266	1.06	0	246	6344	3048	2703	5751	No	21.59	Si
SLU 80	ini.	47.65	86	1.06	0	246	6344	3048	2703	5751	No	66.69	Si
SLU 80	fin.	-28.42	-262	1.06	0	246	6344	3048	2703	5751	No	21.99	Si
SLU 50	ini.	67.38	87	1.06	0	246	6344	3048	2703	5751	No	66.33	Si
SLU 50	fin.	-10.72	-248	1.06	0	246	6344	3048	2703	5751	No	23.18	Si
SLU 72	ini.	60.73	86	1.06	0	246	6344	3048	2703	5751	No	66.75	Si
SLU 72	fin.	-20.02	-262	1.06	0	246	6344	3048	2703	5751	No	21.98	Si
SLU 58	ini.	54.3	87	1.06	0	246	6344	3048	2703	5751	No	66.26	Si
SLU 58	fin.	-19.11	-248	1.06	0	246	6344	3048	2703	5751	No	23.19	Si
SLU 78	ini.	39.74	88	1.06	0	246	6344	3048	2703	5751	No	64.99	Si
SLU 78	fin.	-32.12	-259	1.06	0	246	6344	3048	2703	5751	No	22.18	Si
SLU 77	ini.	42.81	84	1.06	0	246	6344	3048	2703	5751	No	68.7	Si
SLU 77	fin.	-31.43	-264	1.06	0	246	6344	3048	2703	5751	No	21.78	Si
SLU 71	ini.	63.8	81	1.06	0	246	6344	3048	2703	5751	No	70.67	Si
SLU 71	fin.	-19.34	-266	1.06	0	246	6344	3048	2703	5751	No	21.59	Si
SLU 69	ini.	55.89	84	1.06	0	246	6344	3048	2703	5751	No	68.77	Si
SLU 69	fin.	-23.04	-264	1.06	0	246	6344	3048	2703	5751	No	21.77	Si
SLU 70	ini.	52.82	88	1.06	0	246	6344	3048	2703	5751	No	65.05	Si
SLU 70	fin.	-23.72	-259	1.06	0	246	6344	3048	2703	5751	No	22.17	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 6	ini.	-125.75	-908	-0.0000448	0.0003369	0.0035	1.06		4350.23	4350.23		34.59	Si
SLV 6	fin.	-172.67	-471	-0.0000617	0.0003369	0.0035	1.06		4350.23	4350.23		25.19	Si
SLV 14	ini.	-105.59	-588	-0.0000375	0.0003369	0.0035	1.06		4350.23	4350.23		41.2	Si
SLV 14	fin.	-182.84	-423	-0.0000654	0.0003369	0.0035	1.06		4350.23	4350.23		23.79	Si
SLV 7	ini.	179.06	1087	-0.0000642	0.0003369	0.0035	1.06		4343.51	4343.51		24.26	Si
SLV 7	fin.	205.82	617	-0.0000739	0.0003369	0.0035	1.06		4343.51	4343.51		21.1	Si
SLV 10	ini.	-161.66	-1079	-0.0000577	0.0003369	0.0035	1.06		4350.23	4350.23		26.91	Si
SLV 10	fin.	-237.84	-625	-0.0000856	0.0003369	0.0035	1.06		4350.23	4350.23		18.29	Si
SLV 8	ini.	165.07	1074	-0.0000591	0.0003369	0.0035	1.06		4343.51	4343.51		26.31	Si
SLV 8	fin.	203.52	617	-0.0000731	0.0003369	0.0035	1.06		4343.51	4343.51		21.34	Si
SLV 13	ini.	-83.94	-568	-0.0000298	0.0003369	0.0035	1.06		4350.23	4350.23		51.83	Si
SLV 13	fin.	-179.27	-424	-0.0000641	0.0003369	0.0035	1.06		4350.23	4350.23		24.27	Si
SLV 5	ini.	-111.76	-895	-0.0000397	0.0003369	0.0035	1.06		4350.23	4350.23		38.92	Si
SLV 5	fin.	-170.37	-471	-0.0000609	0.0003369	0.0035	1.06		4350.23	4350.23		25.53	Si
SLV 4	ini.	101.34	576	-0.0000361	0.0003369	0.0035	1.06		4343.51	4343.51		42.86	Si
SLV 4	fin.	147.25	416	-0.0000526	0.0003369	0.0035	1.06		4343.51	4343.51		29.5	Si
SLV 9	ini.	-147.67	-1066	-0.0000527	0.0003369	0.0035	1.06		4350.23	4350.23		29.46	Si
SLV 9	fin.	-235.54	-625	-0.0000847	0.0003369	0.0035	1.06		4350.23	4350.23		18.47	Si
SLV 3	ini.	123	596	-0.0000439	0.0003369	0.0035	1.06		4343.51	4343.51		35.31	Si
SLV 3	fin.	150.82	416	-0.0000539	0.0003369	0.0035	1.06		4343.51	4343.51		28.8	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 11	ini.	143.15	478	1.06	0	369	6344	4571	2703	6712		14.03	Si
SLV 11	fin.	140.65	329	1.06	0	369	6344	4571	2703	6712		20.39	Si
SLV 10	ini.	-161.66	-273	1.06	0	369	6344	4571	2703	6712		24.56	Si
SLV 10	fin.	-237.84	-662	1.06	0	369	6344	4571	2703	6712		10.14	Si
SLV 5	ini.	-111.76	-269	1.06	0	369	6344	4571	2703	6712		25	Si
SLV 5	fin.	-170.37	-649	1.06	0	369	6344	4571	2703	6712		10.35	Si
SLV 13	ini.	-83.94	-65	1.06	0	369	6344	4571	2703	6712		103.47	Si
SLV 13	fin.	-179.27	-380	1.06	0	369	6344	4571	2703	6712		17.68	Si
SLV 9	ini.	-147.67	-297	1.06	0	369	6344	4571	2703	6712		22.62	Si
SLV 9	fin.	-235.54	-685	1.06	0	369	6344	4571	2703	6712		9.79	Si
SLV 8	ini.	165.07	530	1.06	0	369	6344	4571	2703	6712		12.66	Si
SLV 8	fin.	203.52	389	1.06	0	369	6344	4571	2703	6712		17.24	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 12	ini.	129.16	502	1.06	0	369	6344	4571	2703	6712		13.38	Si
SLV 12	fin.	138.35	353	1.06	0	369	6344	4571	2703	6712		19.03	Si
SLV 6	ini.	-125.75	-245	1.06	0	369	6344	4571	2703	6712		27.39	Si
SLV 6	fin.	-172.67	-625	1.06	0	369	6344	4571	2703	6712		10.74	Si
SLV 7	ini.	179.06	507	1.06	0	369	6344	4571	2703	6712		13.25	Si
SLV 7	fin.	205.82	366	1.06	0	369	6344	4571	2703	6712		18.34	Si
SLD 9	ini.	-59.2	-65	1.06	0	369	6344	4571	2703	6712		103.5	Si
SLD 9	fin.	-108.92	-385	1.06	0	369	6344	4571	2703	6712		17.45	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	18.29	SLV 10	Si
V_SLV	9.793	SLV 9	Si
PF_SLU	62.805	SLU 50	Si
V_SLU	21.586	SLU 71	Si

## Trave di accoppiamento 147

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-15.033	1.366	13.97	15.03	1.06	-15.033	2.166	13.97	15.03	1.06	0.8	0.16	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	t <sub>fv</sub>	t <sub>fo</sub>	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	e <sub>s</sub> ,fd	γ <sub>F</sub> ,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ε <sub>m</sub>	ε <sub>m</sub> _	ε <sub>mu</sub>	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 35	ini.	-13.07	42	-0.0000046	0.0002246	0.0035	1.06		4238.3	4238.3	No	324.17	Si
SLU 35	fin.	28.1	23	-0.0000099	0.0002246	0.0035	1.06		4231.66	4231.66	No	150.6	Si
SLU 38	ini.	-12.99	42	-0.0000046	0.0002246	0.0035	1.06		4238.3	4238.3	No	326.18	Si
SLU 38	fin.	28.34	21	-0.00001	0.0002246	0.0035	1.06		4231.66	4231.66	No	149.3	Si
SLU 80	ini.	-14.56	47	-0.0000051	0.0002246	0.0035	1.06		4238.3	4238.3	No	291.13	Si
SLU 80	fin.	27.95	11	-0.0000099	0.0002246	0.0035	1.06		4231.66	4231.66	No	151.4	Si
SLU 70	ini.	-14.04	42	-0.0000049	0.0002246	0.0035	1.06		4238.3	4238.3	No	301.94	Si
SLU 70	fin.	27.55	15	-0.0000097	0.0002246	0.0035	1.06		4231.66	4231.66	No	153.58	Si
SLU 77	ini.	-14.64	47	-0.0000052	0.0002246	0.0035	1.06		4238.3	4238.3	No	289.52	Si
SLU 77	fin.	27.71	13	-0.0000098	0.0002246	0.0035	1.06		4231.66	4231.66	No	152.73	Si
SLU 37	ini.	-12.92	42	-0.0000046	0.0002246	0.0035	1.06		4238.3	4238.3	No	328.02	Si
SLU 37	fin.	27	17	-0.0000096	0.0002246	0.0035	1.06		4231.66	4231.66	No	156.71	Si
SLU 36	ini.	-13.15	42	-0.0000046	0.0002246	0.0035	1.06		4238.3	4238.3	No	322.38	Si
SLU 36	fin.	29.44	27	-0.0000104	0.0002246	0.0035	1.06		4231.66	4231.66	No	143.74	Si
SLU 30	ini.	-12.32	38	-0.0000043	0.0002246	0.0035	1.06		4238.3	4238.3	No	344.06	Si
SLU 30	fin.	26.85	19	-0.0000095	0.0002246	0.0035	1.06		4231.66	4231.66	No	157.61	Si
SLU 78	ini.	-14.71	47	-0.0000052	0.0002246	0.0035	1.06		4238.3	4238.3	No	288.09	Si
SLU 78	fin.	29.05	17	-0.0000103	0.0002246	0.0035	1.06		4231.66	4231.66	No	145.69	Si
SLU 28	ini.	-12.47	37	-0.0000044	0.0002246	0.0035	1.06		4238.3	4238.3	No	339.83	Si
SLU 28	fin.	27.95	25	-0.0000099	0.0002246	0.0035	1.06		4231.66	4231.66	No	151.43	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 77	ini.	-14.64	204	1.06	0	246	6344	3048	2703	5751	No	28.16	Si
SLU 77	fin.	27.71	-138	1.06	0	246	6344	3048	2703	5751	No	41.72	Si
SLU 71	ini.	-13.81	197	1.06	0	246	6344	3048	2703	5751	No	29.13	Si
SLU 71	fin.	25.12	-145	1.06	0	246	6344	3048	2703	5751	No	39.75	Si
SLU 79	ini.	-14.49	198	1.06	0	246	6344	3048	2703	5751	No	28.97	Si
SLU 79	fin.	26.61	-144	1.06	0	246	6344	3048	2703	5751	No	40.05	Si
SLU 75	ini.	-13.11	190	1.06	0	246	6344	3048	2703	5751	No	30.24	Si
SLU 75	fin.	21.48	-152	1.06	0	246	6344	3048	2703	5751	No	37.85	Si
SLU 57	ini.	-12.92	189	1.06	0	246	6344	3048	2703	5751	No	30.36	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 57	fin.	23.59	-135	1.06	0	246	6344	3048	2703	5751	No	42.71	Si
SLU 70	ini.	-14.04	208	1.06	0	246	6344	3048	2703	5751	No	27.68	Si
SLU 70	fin.	27.55	-134	1.06	0	246	6344	3048	2703	5751	No	42.82	Si
SLU 78	ini.	-14.71	209	1.06	0	246	6344	3048	2703	5751	No	27.54	Si
SLU 78	fin.	29.05	-133	1.06	0	246	6344	3048	2703	5751	No	43.16	Si
SLU 69	ini.	-13.96	203	1.06	0	246	6344	3048	2703	5751	No	28.31	Si
SLU 69	fin.	26.21	-139	1.06	0	246	6344	3048	2703	5751	No	41.4	Si
SLU 80	ini.	-14.56	203	1.06	0	246	6344	3048	2703	5751	No	28.31	Si
SLU 80	fin.	27.95	-139	1.06	0	246	6344	3048	2703	5751	No	41.38	Si
SLU 72	ini.	-13.88	202	1.06	0	246	6344	3048	2703	5751	No	28.47	Si
SLU 72	fin.	26.46	-140	1.06	0	246	6344	3048	2703	5751	No	41.06	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 10	ini.	318.08	699	-0.0001155	0.0003369	0.0035	1.06		4343.51	4343.51		13.66	Si
SLV 10	fin.	226.18	488	-0.0000814	0.0003369	0.0035	1.06		4343.51	4343.51		19.2	Si
SLV 11	ini.	-262.67	-459	-0.0000947	0.0003369	0.0035	1.06		4350.23	4350.23		16.56	Si
SLV 11	fin.	-275.32	-666	-0.0000994	0.0003369	0.0035	1.06		4350.23	4350.23		15.8	Si
SLV 8	ini.	-334.38	-647	-0.0001214	0.0003369	0.0035	1.06		4350.23	4350.23		13.01	Si
SLV 8	fin.	-210.74	-520	-0.0000756	0.0003369	0.0035	1.06		4350.23	4350.23		20.64	Si
SLV 7	ini.	-334.01	-647	-0.0001213	0.0003369	0.0035	1.06		4350.23	4350.23		13.02	Si
SLV 7	fin.	-212.36	-530	-0.0000762	0.0003369	0.0035	1.06		4350.23	4350.23		20.48	Si
SLV 4	ini.	-214.32	-461	-0.0000769	0.0003369	0.0035	1.06		4350.23	4350.23		20.3	Si
SLV 4	fin.	38.12	43	-0.0000135	0.0003369	0.0035	1.06		4343.51	4343.51		113.95	Si
SLV 6	ini.	246.74	511	-0.000089	0.0003369	0.0035	1.06		4343.51	4343.51		17.6	Si
SLV 6	fin.	289.14	625	-0.0001047	0.0003369	0.0035	1.06		4343.51	4343.51		15.02	Si
SLV 9	ini.	318.45	699	-0.0001157	0.0003369	0.0035	1.06		4343.51	4343.51		13.64	Si
SLV 9	fin.	224.56	479	-0.0000808	0.0003369	0.0035	1.06		4343.51	4343.51		19.34	Si
SLV 12	ini.	-263.03	-459	-0.0000949	0.0003369	0.0035	1.06		4350.23	4350.23		16.54	Si
SLV 12	fin.	-273.7	-657	-0.0000988	0.0003369	0.0035	1.06		4350.23	4350.23		15.89	Si
SLV 5	ini.	247.1	511	-0.0000891	0.0003369	0.0035	1.06		4343.51	4343.51		17.58	Si
SLV 5	fin.	287.52	615	-0.0001041	0.0003369	0.0035	1.06		4343.51	4343.51		15.11	Si
SLV 3	ini.	-213.76	-461	-0.0000767	0.0003369	0.0035	1.06		4350.23	4350.23		20.35	Si
SLV 3	fin.	35.61	28	-0.0000126	0.0003369	0.0035	1.06		4343.51	4343.51		121.99	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 10	ini.	318.08	-254	1.06	0	369	6344	4571	2703	6712		26.39	Si
SLV 10	fin.	226.18	-406	1.06	0	369	6344	4571	2703	6712		16.55	Si
SLV 9	ini.	318.45	-263	1.06	0	369	6344	4571	2703	6712		25.53	Si
SLV 9	fin.	224.56	-414	1.06	0	369	6344	4571	2703	6712		16.21	Si
SLV 5	ini.	247.1	-238	1.06	0	369	6344	4571	2703	6712		28.22	Si
SLV 5	fin.	287.52	-363	1.06	0	369	6344	4571	2703	6712		18.51	Si
SLV 14	ini.	197.83	-26	1.06	0	369	6344	4571	2703	6712		262.05	Si
SLV 14	fin.	-21.79	-292	1.06	0	369	6344	4571	2703	6712		22.95	Si
SLV 7	ini.	-334.01	493	1.06	0	369	6344	4571	2703	6712		13.62	Si
SLV 7	fin.	-212.36	126	1.06	0	369	6344	4571	2703	6712		53.45	Si
SLV 12	ini.	-263.03	476	1.06	0	369	6344	4571	2703	6712		14.1	Si
SLV 12	fin.	-273.7	83	1.06	0	369	6344	4571	2703	6712		81.23	Si
SLV 6	ini.	246.74	-229	1.06	0	369	6344	4571	2703	6712		29.28	Si
SLV 6	fin.	289.14	-354	1.06	0	369	6344	4571	2703	6712		18.96	Si
SLV 8	ini.	-334.38	501	1.06	0	369	6344	4571	2703	6712		13.39	Si
SLV 8	fin.	-210.74	134	1.06	0	369	6344	4571	2703	6712		50.02	Si
SLV 11	ini.	-262.67	468	1.06	0	369	6344	4571	2703	6712		14.36	Si
SLV 11	fin.	-275.32	74	1.06	0	369	6344	4571	2703	6712		90.66	Si
SLV 13	ini.	198.4	-39	1.06	0	369	6344	4571	2703	6712		172.41	Si
SLV 13	fin.	-24.3	-306	1.06	0	369	6344	4571	2703	6712		21.95	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	13.01	SLV 8	Si
V_SLV	13.391	SLV 8	Si
PF_SLU	143.743	SLU 36	Si
V_SLU	27.536	SLU 78	Si

Trave di accoppiamento 148

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-13.778	-0.194	13.97	15.03	1.06	-13.778	0.706	13.97	15.03	1.06	0.9	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC





Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 73	ini.	-55.06	-127	-0.0000195	0.0001872	0.0035	1.06		4112.11	4112.11	No	74.68	Si
SLU 73	fin.	-20.36	-2	-0.0000072	0.0001872	0.0035	1.06		4112.11	4112.11	No	201.98	Si
SLU 19	ini.	-43.89	-99	-0.0000155	0.0001872	0.0035	1.06		4112.11	4112.11	No	93.7	Si
SLU 19	fin.	-14.25	0	-0.000005	0.0001872	0.0035	1.06		4112.11	4112.11	No	288.54	Si
SLU 60	ini.	-39.9	-91	-0.0000141	0.0001872	0.0035	1.06		4112.11	4112.11	No	103.06	Si
SLU 60	fin.	-14.99	-1	-0.0000053	0.0001872	0.0035	1.06		4112.11	4112.11	No	274.24	Si
SLU 81	ini.	-55.15	-126	-0.0000196	0.0001872	0.0035	1.06		4112.11	4112.11	No	74.56	Si
SLU 81	fin.	-21.14	-1	-0.0000075	0.0001872	0.0035	1.06		4112.11	4112.11	No	194.55	Si
SLU 40	ini.	-59.14	-134	-0.000021	0.0001872	0.0035	1.06		4112.11	4112.11	No	69.53	Si
SLU 40	fin.	-20.39	0	-0.0000072	0.0001872	0.0035	1.06		4112.11	4112.11	No	201.64	Si
SLU 31	ini.	-55.06	-126	-0.0000195	0.0001872	0.0035	1.06		4112.11	4112.11	No	74.68	Si
SLU 31	fin.	-19.4	-1	-0.0000068	0.0001872	0.0035	1.06		4112.11	4112.11	No	212	Si
SLU 18	ini.	-39.9	-90	-0.0000141	0.0001872	0.0035	1.06		4112.11	4112.11	No	103.06	Si
SLU 18	fin.	-14.03	0	-0.0000049	0.0001872	0.0035	1.06		4112.11	4112.11	No	293.04	Si
SLU 61	ini.	-43.89	-100	-0.0000155	0.0001872	0.0035	1.06		4112.11	4112.11	No	93.69	Si
SLU 61	fin.	-15.21	-1	-0.0000054	0.0001872	0.0035	1.06		4112.11	4112.11	No	270.3	Si
SLU 82	ini.	-59.14	-135	-0.000021	0.0001872	0.0035	1.06		4112.11	4112.11	No	69.53	Si
SLU 82	fin.	-21.36	-1	-0.0000075	0.0001872	0.0035	1.06		4112.11	4112.11	No	192.56	Si
SLU 39	ini.	-55.15	-126	-0.0000196	0.0001872	0.0035	1.06		4112.11	4112.11	No	74.56	Si
SLU 39	fin.	-20.17	0	-0.0000071	0.0001872	0.0035	1.06		4112.11	4112.11	No	203.83	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 52	ini.	-39.81	404	1.06	0	430	7137	4444	2703	7147	No	17.67	Si
SLU 52	fin.	-14.22	-214	1.06	0	430	7137	4444	2703	7147	No	33.37	Si
SLU 82	ini.	-59.14	452	1.06	0	430	7137	4444	2703	7147	No	15.82	Si
SLU 82	fin.	-21.36	-184	1.06	0	430	7137	4444	2703	7147	No	38.83	Si
SLU 60	ini.	-39.9	404	1.06	0	430	7137	4444	2703	7147	No	17.7	Si
SLU 60	fin.	-14.99	-215	1.06	0	430	7137	4444	2703	7147	No	33.26	Si
SLU 81	ini.	-55.15	442	1.06	0	430	7137	4444	2703	7147	No	16.16	Si
SLU 81	fin.	-21.14	-193	1.06	0	430	7137	4444	2703	7147	No	36.94	Si
SLU 61	ini.	-43.89	413	1.06	0	430	7137	4444	2703	7147	No	17.3	Si
SLU 61	fin.	-15.21	-205	1.06	0	430	7137	4444	2703	7147	No	34.79	Si
SLU 75	ini.	-37.78	402	1.06	0	430	7137	4444	2703	7147	No	17.78	Si
SLU 75	fin.	-23.24	-234	1.06	0	430	7137	4444	2703	7147	No	30.57	Si
SLU 84	ini.	-37.76	410	1.06	0	430	7137	4444	2703	7147	No	17.43	Si
SLU 84	fin.	-21.36	-226	1.06	0	430	7137	4444	2703	7147	No	31.67	Si
SLU 76	ini.	-33.68	401	1.06	0	430	7137	4444	2703	7147	No	17.81	Si
SLU 76	fin.	-20.36	-234	1.06	0	430	7137	4444	2703	7147	No	30.5	Si
SLU 73	ini.	-55.06	443	1.06	0	430	7137	4444	2703	7147	No	16.13	Si
SLU 73	fin.	-20.36	-193	1.06	0	430	7137	4444	2703	7147	No	37.08	Si
SLU 65	ini.	-39.34	408	1.06	0	430	7137	4444	2703	7147	No	17.52	Si
SLU 65	fin.	-17.69	-228	1.06	0	430	7137	4444	2703	7147	No	31.38	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 9	ini.	386.64	692	-0.0001421	0.0002807	0.0035	1.06		4162.81	4162.81		10.77	Si
SLV 9	fin.	-323.49	-630	-0.0001179	0.0002807	0.0035	1.06		4169.53	4169.53		12.89	Si
SLV 12	ini.	-526.84	-1007	-0.0001967	0.0002807	0.0035	1.06		4169.53	4169.53		7.91	Si
SLV 12	fin.	204.28	406	-0.0000736	0.0002807	0.0035	1.06		4162.81	4162.81		20.38	Si
SLV 8	ini.	-439.22	-817	-0.0001622	0.0002807	0.0035	1.06		4169.53	4169.53		9.49	Si
SLV 8	fin.	298.01	626	-0.0001084	0.0002807	0.0035	1.06		4162.81	4162.81		13.97	Si
SLV 5	ini.	474.26	883	-0.0001762	0.0002807	0.0035	1.06		4162.81	4162.81		8.78	Si
SLV 5	fin.	-229.76	-410	-0.0000828	0.0002807	0.0035	1.06		4169.53	4169.53		18.15	Si
SLV 15	ini.	-302.11	-620	-0.0001098	0.0002807	0.0035	1.06		4169.53	4169.53		13.8	Si
SLV 15	fin.	-89.06	-214	-0.0000316	0.0002807	0.0035	1.06		4169.53	4169.53		46.82	Si
SLV 7	ini.	-431.4	-801	-0.0001592	0.0002807	0.0035	1.06		4169.53	4169.53		9.67	Si
SLV 7	fin.	298.81	626	-0.0001087	0.0002807	0.0035	1.06		4162.81	4162.81		13.93	Si
SLV 6	ini.	466.44	867	-0.0001732	0.0002807	0.0035	1.06		4162.81	4162.81		8.92	Si
SLV 6	fin.	-230.56	-410	-0.0000831	0.0002807	0.0035	1.06		4169.53	4169.53		18.08	Si
SLV 10	ini.	378.82	676	-0.0001391	0.0002807	0.0035	1.06		4162.81	4162.81		10.99	Si
SLV 10	fin.	-324.29	-630	-0.0001182	0.0002807	0.0035	1.06		4169.53	4169.53		12.86	Si
SLV 11	ini.	-519.02	-991	-0.0001936	0.0002807	0.0035	1.06		4169.53	4169.53		8.03	Si
SLV 11	fin.	205.07	406	-0.0000739	0.0002807	0.0035	1.06		4162.81	4162.81		20.3	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 16	ini.	-314.23	-645	-0.0001144	0.0002807	0.0035	1.06		4169.53	4169.53		13.27	Si
SLV 16	fin.	-90.3	-214	-0.0000321	0.0002807	0.0035	1.06		4169.53	4169.53		46.18	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 11	ini.	-519.02	1681	1.06	0	645	7137	6666	2703	7782		4.63	Si
SLV 11	fin.	205.07	996	1.06	0	645	7137	6666	2703	7782		7.82	Si
SLV 5	ini.	474.26	-1091	1.06	0	645	7137	6666	2703	7782		7.13	Si
SLV 5	fin.	-229.76	-1377	1.06	0	645	7137	6666	2703	7782		5.65	Si
SLV 10	ini.	378.82	-902	1.06	0	645	7137	6666	2703	7782		8.63	Si
SLV 10	fin.	-324.29	-1185	1.06	0	645	7137	6666	2703	7782		6.57	Si
SLV 9	ini.	386.64	-919	1.06	0	645	7137	6666	2703	7782		8.46	Si
SLV 9	fin.	-323.49	-1202	1.06	0	645	7137	6666	2703	7782		6.47	Si
SLV 15	ini.	-302.11	967	1.06	0	645	7137	6666	2703	7782		8.05	Si
SLV 15	fin.	-89.06	425	1.06	0	645	7137	6666	2703	7782		18.31	Si
SLV 16	ini.	-314.23	994	1.06	0	645	7137	6666	2703	7782		7.83	Si
SLV 16	fin.	-90.3	452	1.06	0	645	7137	6666	2703	7782		17.23	Si
SLV 12	ini.	-526.84	1698	1.06	0	645	7137	6666	2703	7782		4.58	Si
SLV 12	fin.	204.28	1013	1.06	0	645	7137	6666	2703	7782		7.68	Si
SLV 8	ini.	-439.22	1526	1.06	0	645	7137	6666	2703	7782		5.1	Si
SLV 8	fin.	298.01	839	1.06	0	645	7137	6666	2703	7782		9.28	Si
SLV 6	ini.	466.44	-1074	1.06	0	645	7137	6666	2703	7782		7.24	Si
SLV 6	fin.	-230.56	-1359	1.06	0	645	7137	6666	2703	7782		5.72	Si
SLV 7	ini.	-431.4	1509	1.06	0	645	7137	6666	2703	7782		5.16	Si
SLV 7	fin.	298.81	821	1.06	0	645	7137	6666	2703	7782		9.48	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	7.914	SLV 12	Si
V_SLV	4.583	SLV 12	Si
PF_SLU	69.53	SLU 82	Si
V_SLU	15.824	SLU 82	Si

Trave di accoppiamento 149

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-17.718	6.526	11.87	12.77	0.9	-16.818	6.526	11.87	12.77	0.9	0.9	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fnk	fvk0	fnmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 53	ini.	210.28	-817	-0.0001074	0.0001872	0.0035	0.9		2959	2959	No	14.07	Si
SLU 53	fin.	-34.66	-357	-0.000017	0.0001872	0.0035	0.9		2964.67	2964.67	No	85.54	Si
SLU 43	ini.	212.95	-814	-0.0001088	0.0001872	0.0035	0.9		2959	2959	No	13.89	Si
SLU 43	fin.	-34.9	-339	-0.0000172	0.0001872	0.0035	0.9		2964.67	2964.67	No	84.95	Si
SLU 44	ini.	208.66	-802	-0.0001065	0.0001872	0.0035	0.9		2959	2959	No	14.18	Si
SLU 44	fin.	-32.89	-340	-0.0000162	0.0001872	0.0035	0.9		2964.67	2964.67	No	90.15	Si
SLU 61	ini.	229.33	-835	-0.0001176	0.0001872	0.0035	0.9		2959	2959	No	12.9	Si
SLU 61	fin.	-67.66	-257	-0.0000335	0.0001872	0.0035	0.9		2964.67	2964.67	No	43.82	Si
SLU 64	ini.	209.46	-810	-0.0001069	0.0001872	0.0035	0.9		2959	2959	No	14.13	Si
SLU 64	fin.	-36.37	-344	-0.0000179	0.0001872	0.0035	0.9		2964.67	2964.67	No	81.51	Si
SLU 82	ini.	225.84	-830	-0.0001157	0.0001872	0.0035	0.9		2959	2959	No	13.1	Si
SLU 82	fin.	-69.14	-262	-0.0000342	0.0001872	0.0035	0.9		2964.67	2964.67	No	42.88	Si
SLU 52	ini.	221.93	-822	-0.0001136	0.0001872	0.0035	0.9		2959	2959	No	13.33	Si
SLU 52	fin.	-56.67	-282	-0.000028	0.0001872	0.0035	0.9		2964.67	2964.67	No	52.32	Si
SLU 81	ini.	228.41	-837	-0.0001171	0.0001872	0.0035	0.9		2959	2959	No	12.95	Si



Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 81	fin.	-70.34	-261	-0.0000348	0.0001872	0.0035	0.9		2964.67	2964.67	No	42.14	Si
SLU 73	ini.	218.44	-817	-0.0001117	0.0001872	0.0035	0.9		2959	2959	No	13.55	Si
SLU 73	fin.	-58.14	-287	-0.0000287	0.0001872	0.0035	0.9		2964.67	2964.67	No	50.99	Si
SLU 60	ini.	231.91	-842	-0.000119	0.0001872	0.0035	0.9		2959	2959	No	12.76	Si
SLU 60	fin.	-68.87	-256	-0.0000341	0.0001872	0.0035	0.9		2964.67	2964.67	No	43.05	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 52	ini.	221.93	-878	0.9	0	365	7137	3773	2295	6068	No	6.91	Si
SLU 52	fin.	-56.67	-280	0.9	0	365	7137	3773	2295	6068	No	21.64	Si
SLU 53	ini.	210.28	-865	0.9	0	365	7137	3773	2295	6068	No	7.01	Si
SLU 53	fin.	-34.66	-133	0.9	0	365	7137	3773	2295	6068	No	45.48	Si
SLU 81	ini.	228.41	-860	0.9	0	365	7137	3773	2295	6068	No	7.06	Si
SLU 81	fin.	-70.34	-383	0.9	0	365	7137	3773	2295	6068	No	15.85	Si
SLU 60	ini.	231.91	-897	0.9	0	365	7137	3773	2295	6068	No	6.77	Si
SLU 60	fin.	-68.87	-359	0.9	0	365	7137	3773	2295	6068	No	16.92	Si
SLU 43	ini.	212.95	-887	0.9	0	365	7137	3773	2295	6068	No	6.84	Si
SLU 43	fin.	-34.9	-133	0.9	0	365	7137	3773	2295	6068	No	45.71	Si
SLU 44	ini.	208.66	-871	0.9	0	365	7137	3773	2295	6068	No	6.97	Si
SLU 44	fin.	-32.89	-122	0.9	0	365	7137	3773	2295	6068	No	49.58	Si
SLU 45	ini.	197.01	-858	0.9	0	365	7137	3773	2295	6068	No	7.07	Si
SLU 45	fin.	-10.88	25	0.9	0	365	7137	3773	2295	6068	No	246.39	Si
SLU 64	ini.	209.46	-850	0.9	0	365	7137	3773	2295	6068	No	7.14	Si
SLU 64	fin.	-36.37	-157	0.9	0	365	7137	3773	2295	6068	No	38.64	Si
SLU 61	ini.	229.33	-887	0.9	0	365	7137	3773	2295	6068	No	6.84	Si
SLU 61	fin.	-67.66	-352	0.9	0	365	7137	3773	2295	6068	No	17.22	Si
SLU 54	ini.	207.71	-855	0.9	0	365	7137	3773	2295	6068	No	7.09	Si
SLU 54	fin.	-33.45	-127	0.9	0	365	7137	3773	2295	6068	No	47.7	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 14	ini.	285.26	-949	-0.0001457	0.0002807	0.0035	0.9		2989.59	2989.59		10.48	Si
SLD 14	fin.	-95.91	-179	-0.0000475	0.0002807	0.0035	0.9		2995.37	2995.37		31.23	Si
SLD 15	ini.	263.48	-888	-0.0001341	0.0002807	0.0035	0.9		2989.59	2989.59		11.35	Si
SLD 15	fin.	-116.95	-93	-0.0000581	0.0002807	0.0035	0.9		2995.37	2995.37		25.61	Si
SLD 13	ini.	286.29	-938	-0.0001462	0.0002807	0.0035	0.9		2989.59	2989.59		10.44	Si
SLD 13	fin.	-103.82	-152	-0.0000515	0.0002807	0.0035	0.9		2995.37	2995.37		28.85	Si
SLV 10	ini.	329.04	-1035	-0.0001693	0.0002807	0.0035	0.9		2989.59	2989.59		9.09	Si
SLV 10	fin.	-28.93	-415	-0.0000142	0.0002807	0.0035	0.9		2995.37	2995.37		103.55	Si
SLV 14	ini.	444.68	-1376	-0.0002336	0.0002807	0.0035	0.9		2989.59	2989.59		6.72	Si
SLV 14	fin.	-178.35	-85	-0.0000894	0.0002807	0.0035	0.9		2995.37	2995.37		16.8	Si
SLV 13	ini.	447.08	-1350	-0.0002349	0.0002807	0.0035	0.9		2989.59	2989.59		6.69	Si
SLV 13	fin.	-196.78	-23	-0.0000989	0.0002807	0.0035	0.9		2995.37	2995.37		15.22	Si
SLV 15	ini.	394.28	-1233	-0.0002052	0.0002807	0.0035	0.9		2989.59	2989.59		7.58	Si
SLV 15	fin.	-226.79	112	-0.0001145	0.0002807	0.0035	0.9		2995.37	2995.37		13.21	Si
SLD 16	ini.	262.45	-899	-0.0001335	0.0002807	0.0035	0.9		2989.59	2989.59		11.39	Si
SLD 16	fin.	-109.03	-120	-0.0000541	0.0002807	0.0035	0.9		2995.37	2995.37		27.47	Si
SLV 16	ini.	391.88	-1259	-0.0002038	0.0002807	0.0035	0.9		2989.59	2989.59		7.63	Si
SLV 16	fin.	-208.35	50	-0.0001049	0.0002807	0.0035	0.9		2995.37	2995.37		14.38	Si
SLV 9	ini.	330.59	-1018	-0.0001701	0.0002807	0.0035	0.9		2989.59	2989.59		9.04	Si
SLV 9	fin.	-40.83	-375	-0.0000201	0.0002807	0.0035	0.9		2995.37	2995.37		73.35	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 14	ini.	285.26	-1076	0.9	0	548	7137	5660	2295	7684		7.14	Si
SLD 14	fin.	-95.91	-634	0.9	0	548	7137	5660	2295	7684		12.11	Si
SLV 15	ini.	394.28	-1547	0.9	0	548	7137	5660	2295	7684		4.97	Si
SLV 15	fin.	-226.79	-1422	0.9	0	548	7137	5660	2295	7684		5.4	Si
SLD 13	ini.	286.29	-1088	0.9	0	548	7137	5660	2295	7684		7.06	Si
SLD 13	fin.	-103.82	-660	0.9	0	548	7137	5660	2295	7684		11.64	Si
SLV 10	ini.	329.04	-1111	0.9	0	548	7137	5660	2295	7684		6.91	Si
SLV 10	fin.	-28.93	-344	0.9	0	548	7137	5660	2295	7684		22.32	Si
SLV 14	ini.	444.68	-1627	0.9	0	548	7137	5660	2295	7684		4.72	Si
SLV 14	fin.	-178.35	-1270	0.9	0	548	7137	5660	2295	7684		6.05	Si
SLV 2	ini.	-62.92	220	0.9	0	548	7137	5660	2295	7684		35	Si
SLV 2	fin.	157.89	1101	0.9	0	548	7137	5660	2295	7684		6.98	Si
SLV 16	ini.	391.88	-1519	0.9	0	548	7137	5660	2295	7684		5.06	Si
SLV 16	fin.	-208.35	-1362	0.9	0	548	7137	5660	2295	7684		5.64	Si
SLV 9	ini.	330.59	-1130	0.9	0	548	7137	5660	2295	7684		6.8	Si
SLV 9	fin.	-40.83	-383	0.9	0	548	7137	5660	2295	7684		20.04	Si
SLV 13	ini.	447.08	-1655	0.9	0	548	7137	5660	2295	7684		4.64	Si
SLV 13	fin.	-196.78	-1331	0.9	0	548	7137	5660	2295	7684		5.78	Si
SLD 15	ini.	263.48	-1042	0.9	0	548	7137	5660	2295	7684		7.37	Si
SLD 15	fin.	-116.95	-701	0.9	0	548	7137	5660	2295	7684		10.96	Si

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	6.687	SLV 13	Si
V_SLV	4.643	SLV 13	Si
PF_SLU	12.759	SLU 60	Si
V_SLU	6.766	SLU 60	Si



## Trave di accoppiamento 150

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-17.718	6.526	14.57	15.03	0.46	-16.818	6.526	14.57	15.03	0.46	0.9	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	e <sub>f,d</sub>	γ <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em <sub>-</sub>	em <sub>u</sub>	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 82	ini.	51.27	337	-0.0000997	0.0001872	0.0035	0.46		777.36	777.36	No	15.16	Si
SLU 82	fin.	-135.69	-513	-0.0002864	0.0001872	0.0035	0.46		780.23	780.23	No	5.75	Si
SLU 78	ini.	26.21	316	-0.00005	0.0001872	0.0035	0.46		777.36	777.36	No	29.66	Si
SLU 78	fin.	-139.66	-472	-0.0002961	0.0001872	0.0035	0.46		780.23	780.23	No	5.59	Si
SLU 67	ini.	26.56	289	-0.0000506	0.0001872	0.0035	0.46		777.36	777.36	No	29.26	Si
SLU 67	fin.	-135.95	-477	-0.000287	0.0001872	0.0035	0.46		780.23	780.23	No	5.74	Si
SLU 74	ini.	37.07	326	-0.0000713	0.0001872	0.0035	0.46		777.36	777.36	No	20.97	Si
SLU 74	fin.	-142.12	-509	-0.0003021	0.0001872	0.0035	0.46		780.23	780.23	No	5.49	Si
SLU 69	ini.	17.8	282	-0.0000337	0.0001872	0.0035	0.46		777.36	777.36	No	43.67	Si
SLU 69	fin.	-135.37	-454	-0.0002856	0.0001872	0.0035	0.46		780.23	780.23	No	5.76	Si
SLU 81	ini.	52.32	339	-0.0001018	0.0001872	0.0035	0.46		777.36	777.36	No	14.86	Si
SLU 81	fin.	-136.63	-519	-0.0002886	0.0001872	0.0035	0.46		780.23	780.23	No	5.71	Si
SLU 77	ini.	27.26	317	-0.000052	0.0001872	0.0035	0.46		777.36	777.36	No	28.52	Si
SLU 77	fin.	-140.6	-479	-0.0002984	0.0001872	0.0035	0.46		780.23	780.23	No	5.55	Si
SLU 66	ini.	27.61	290	-0.0000527	0.0001872	0.0035	0.46		777.36	777.36	No	28.15	Si
SLU 66	fin.	-136.89	-484	-0.0002893	0.0001872	0.0035	0.46		780.23	780.23	No	5.7	Si
SLU 53	ini.	36.85	302	-0.0000708	0.0001872	0.0035	0.46		777.36	777.36	No	21.1	Si
SLU 53	fin.	-136.24	-500	-0.0002877	0.0001872	0.0035	0.46		780.23	780.23	No	5.73	Si
SLU 75	ini.	36.02	324	-0.0000692	0.0001872	0.0035	0.46		777.36	777.36	No	21.58	Si
SLU 75	fin.	-141.18	-502	-0.0002998	0.0001872	0.0035	0.46		780.23	780.23	No	5.53	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	f <sub>vd</sub>	V <sub>t</sub>	V <sub>t,f</sub>	V <sub>t,c</sub>	V <sub>t,c,int.</sub>	V <sub>t,R</sub>	incremento > 50%	c.s.	Verifica
SLU 78	ini.	26.21	96	0.46	0	124	3648	1928	1173	3101	No	32.23	Si
SLU 78	fin.	-139.66	-967	0.46	0	124	3648	1928	1173	3101	No	3.21	Si
SLU 74	ini.	37.07	37	0.46	0	124	3648	1928	1173	3101	No	84.26	Si
SLU 74	fin.	-142.12	-961	0.46	0	124	3648	1928	1173	3101	No	3.23	Si
SLU 70	ini.	16.75	134	0.46	0	124	3648	1928	1173	3101	No	23.14	Si
SLU 70	fin.	-134.43	-940	0.46	0	124	3648	1928	1173	3101	No	3.3	Si
SLU 77	ini.	27.26	91	0.46	0	124	3648	1928	1173	3101	No	34.08	Si
SLU 77	fin.	-140.6	-970	0.46	0	124	3648	1928	1173	3101	No	3.2	Si
SLU 75	ini.	36.02	42	0.46	0	124	3648	1928	1173	3101	No	73.8	Si
SLU 75	fin.	-141.18	-957	0.46	0	124	3648	1928	1173	3101	No	3.24	Si
SLU 67	ini.	26.56	80	0.46	0	124	3648	1928	1173	3101	No	38.84	Si
SLU 67	fin.	-135.95	-930	0.46	0	124	3648	1928	1173	3101	No	3.33	Si
SLU 56	ini.	27.04	79	0.46	0	124	3648	1928	1173	3101	No	39.35	Si
SLU 56	fin.	-134.72	-923	0.46	0	124	3648	1928	1173	3101	No	3.36	Si
SLU 66	ini.	27.61	75	0.46	0	124	3648	1928	1173	3101	No	41.56	Si
SLU 66	fin.	-136.89	-934	0.46	0	124	3648	1928	1173	3101	No	3.32	Si
SLU 69	ini.	17.8	129	0.46	0	124	3648	1928	1173	3101	No	24.07	Si
SLU 69	fin.	-135.37	-943	0.46	0	124	3648	1928	1173	3101	No	3.29	Si
SLU 57	ini.	25.99	84	0.46	0	124	3648	1928	1173	3101	No	36.91	Si
SLU 57	fin.	-133.79	-920	0.46	0	124	3648	1928	1173	3101	No	3.37	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 10	ini.	-11.89	-32	-0.0000223	0.0002807	0.0035	0.46		788.4	788.4		66.31	Si
SLV 10	fin.	-137.28	-610	-0.0002788	0.0002807	0.0035	0.46		788.4	788.4		5.74	Si
SLD 14	ini.	-5.09	46	-0.0000095	0.0002807	0.0035	0.46		788.4	788.4		154.86	Si
SLD 14	fin.	-125.95	-521	-0.0002536	0.0002807	0.0035	0.46		788.4	788.4		6.26	Si
SLV 14	ini.	-55.42	-197	-0.0001065	0.0002807	0.0035	0.46		788.4	788.4		14.23	Si
SLV 14	fin.	-161.18	-713	-0.0003336	0.0002807	0.0035	0.46		788.4	788.4		4.89	Si
SLV 16	ini.	-45.16	-118	-0.0000862	0.0002807	0.0035	0.46		788.4	788.4		17.46	Si
SLV 16	fin.	-147.36	-622	-0.0003016	0.0002807	0.0035	0.46		788.4	788.4		5.35	Si
SLV 13	ini.	-41.21	-135	-0.0000785	0.0002807	0.0035	0.46		788.4	788.4		19.13	Si
SLV 13	fin.	-171.14	-753	-0.0003572	0.0002807	0.0035	0.46		788.4	788.4		4.61	Si
SLV 3	ini.	120.43	651	-0.0002424	0.0002807	0.0035	0.46		785.44	785.44		6.52	Si
SLV 3	fin.	-37.93	-42	-0.0000721	0.0002807	0.0035	0.46		788.4	788.4		20.79	Si
SLD 13	ini.	1.01	72	-0.0000019	0.0002807	0.0035	0.46		785.44	785.44		777.44	Si
SLD 13	fin.	-130.23	-538	-0.000263	0.0002807	0.0035	0.46		788.4	788.4		6.05	Si
SLV 9	ini.	-2.71	9	-0.0000051	0.0002807	0.0035	0.46		788.4	788.4		290.68	Si
SLV 9	fin.	-143.72	-635	-0.0002933	0.0002807	0.0035	0.46		788.4	788.4		5.49	Si
SLD 15	ini.	5.48	107	-0.0000103	0.0002807	0.0035	0.46		785.44	785.44		143.45	Si
SLD 15	fin.	-124.26	-499	-0.0002499	0.0002807	0.0035	0.46		788.4	788.4		6.34	Si
SLV 15	ini.	-30.95	-55	-0.0000586	0.0002807	0.0035	0.46		788.4	788.4		25.48	Si
SLV 15	fin.	-157.32	-661	-0.0003246	0.0002807	0.0035	0.46		788.4	788.4		5.01	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 14	ini.	-5.09	110	0.46	0	187	3648	2893	1173	3834		34.94	Si
SLD 14	fin.	-125.95	-745	0.46	0	187	3648	2893	1173	3834		5.15	Si
SLV 9	ini.	-2.71	-38	0.46	0	187	3648	2893	1173	3834		102.18	Si
SLV 9	fin.	-143.72	-859	0.46	0	187	3648	2893	1173	3834		4.47	Si
SLD 9	ini.	17.37	-23	0.46	0	187	3648	2893	1173	3834		167.85	Si
SLD 9	fin.	-118.57	-744	0.46	0	187	3648	2893	1173	3834		5.15	Si
SLV 13	ini.	-41.21	220	0.46	0	187	3648	2893	1173	3834		17.42	Si
SLV 13	fin.	-171.14	-921	0.46	0	187	3648	2893	1173	3834		4.16	Si
SLV 14	ini.	-55.42	271	0.46	0	187	3648	2893	1173	3834		14.13	Si
SLV 14	fin.	-161.18	-863	0.46	0	187	3648	2893	1173	3834		4.44	Si
SLV 16	ini.	-45.16	329	0.46	0	187	3648	2893	1173	3834		11.66	Si
SLV 16	fin.	-147.36	-789	0.46	0	187	3648	2893	1173	3834		4.86	Si
SLV 15	ini.	-30.95	277	0.46	0	187	3648	2893	1173	3834		13.82	Si
SLV 15	fin.	-157.32	-847	0.46	0	187	3648	2893	1173	3834		4.53	Si
SLD 13	ini.	1.01	88	0.46	0	187	3648	2893	1173	3834		43.73	Si
SLD 13	fin.	-130.23	-770	0.46	0	187	3648	2893	1173	3834		4.98	Si
SLV 5	ini.	42.7	-209	0.46	0	187	3648	2893	1173	3834		18.37	Si
SLV 5	fin.	-107.9	-740	0.46	0	187	3648	2893	1173	3834		5.18	Si
SLV 10	ini.	-11.89	-4	0.46	0	187	3648	2893	1173	3834		882.18	Si
SLV 10	fin.	-137.28	-821	0.46	0	187	3648	2893	1173	3834		4.67	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	4.607	SLV 13	Si
V_SLV	4.163	SLV 13	Si
PF_SLU	5.49	SLU 74	Si
V_SLU	3.196	SLU 77	Si

## Trave di accoppiamento 151

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-12.838	6.526	11.87	12.77	0.9	-11.938	6.526	11.87	12.77	0.9	0.9	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_ Corti

fb_	fhk	fvk0	fmedio	t0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 56	ini.	171.1	-1015	-0.0000866	0.0001872	0.0035	0.9		2959	2959	No	17.29	Si
SLU 56	fin.	-5.58	-629	-0.0000027	0.0001872	0.0035	0.9		2964.67	2964.67	No	531.09	Si
SLU 79	ini.	170.13	-993	-0.0000861	0.0001872	0.0035	0.9		2959	2959	No	17.39	Si
SLU 79	fin.	-18.29	-600	-0.000009	0.0001872	0.0035	0.9		2964.67	2964.67	No	162.1	Si
SLU 74	ini.	175.11	-1014	-0.0000887	0.0001872	0.0035	0.9		2959	2959	No	16.9	Si
SLU 74	fin.	-23.35	-600	-0.0000115	0.0001872	0.0035	0.9		2964.67	2964.67	No	126.94	Si
SLU 67	ini.	170.99	-1022	-0.0000866	0.0001872	0.0035	0.9		2959	2959	No	17.3	Si
SLU 67	fin.	0.03	-644	0	0.0001872	0.0035	0.9		2959	2959	No	92029.13	Si
SLU 75	ini.	173.03	-1005	-0.0000876	0.0001872	0.0035	0.9		2959	2959	No	17.1	Si
SLU 75	fin.	-21.27	-599	-0.0000104	0.0001872	0.0035	0.9		2964.67	2964.67	No	139.41	Si
SLU 78	ini.	177.05	-1038	-0.0000897	0.0001872	0.0035	0.9		2959	2959	No	16.71	Si
SLU 78	fin.	-13.12	-636	-0.0000064	0.0001872	0.0035	0.9		2964.67	2964.67	No	226.01	Si
SLU 70	ini.	175.02	-1055	-0.0000887	0.0001872	0.0035	0.9		2959	2959	No	16.91	Si
SLU 70	fin.	8.18	-680	-0.000004	0.0001872	0.0035	0.9		2959	2959	No	361.73	Si
SLU 69	ini.	177.1	-1064	-0.0000898	0.0001872	0.0035	0.9		2959	2959	No	16.71	Si
SLU 69	fin.	6.09	-680	-0.000003	0.0001872	0.0035	0.9		2959	2959	No	485.79	Si
SLU 66	ini.	173.08	-1031	-0.0000876	0.0001872	0.0035	0.9		2959	2959	No	17.1	Si
SLU 66	fin.	-2.06	-644	-0.000001	0.0001872	0.0035	0.9		2964.67	2964.67	No	1441.35	Si
SLU 77	ini.	179.13	-1047	-0.0000908	0.0001872	0.0035	0.9		2959	2959	No	16.52	Si
SLU 77	fin.	-15.21	-636	-0.0000074	0.0001872	0.0035	0.9		2964.67	2964.67	No	194.96	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 67	ini.	170.99	-1443	0.9	0	365	7137	3773	2295	6068	No	4.21	Si
SLU 67	fin.	0.03	-21	0.9	0	365	7137	3773	2295	6068	No	289.95	Si
SLU 69	ini.	177.1	-1519	0.9	0	365	7137	3773	2295	6068	No	3.99	Si
SLU 69	fin.	6.09	13	0.9	0	365	7137	3773	2295	6068	No	467.7	Si
SLU 78	ini.	177.05	-1466	0.9	0	365	7137	3773	2295	6068	No	4.14	Si
SLU 78	fin.	-13.12	-62	0.9	0	365	7137	3773	2295	6068	No	97.12	Si
SLU 77	ini.	179.13	-1479	0.9	0	365	7137	3773	2295	6068	No	4.1	Si
SLU 77	fin.	-15.21	-69	0.9	0	365	7137	3773	2295	6068	No	87.33	Si
SLU 56	ini.	171.1	-1442	0.9	0	365	7137	3773	2295	6068	No	4.21	Si
SLU 56	fin.	-5.58	-37	0.9	0	365	7137	3773	2295	6068	No	163.65	Si
SLU 70	ini.	175.02	-1506	0.9	0	365	7137	3773	2295	6068	No	4.03	Si
SLU 70	fin.	8.18	20	0.9	0	365	7137	3773	2295	6068	No	303.77	Si
SLU 66	ini.	173.08	-1456	0.9	0	365	7137	3773	2295	6068	No	4.17	Si
SLU 66	fin.	-2.06	-28	0.9	0	365	7137	3773	2295	6068	No	217.26	Si
SLU 71	ini.	168.1	-1443	0.9	0	365	7137	3773	2295	6068	No	4.21	Si
SLU 71	fin.	3.01	-2	0.9	0	365	7137	3773	2295	6068	No	3622.19	Si
SLU 49	ini.	166.98	-1468	0.9	0	365	7137	3773	2295	6068	No	4.13	Si
SLU 49	fin.	17.8	52	0.9	0	365	7137	3773	2295	6068	No	115.85	Si
SLU 48	ini.	169.07	-1482	0.9	0	365	7137	3773	2295	6068	No	4.1	Si
SLU 48	fin.	15.72	45	0.9	0	365	7137	3773	2295	6068	No	133.72	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 4	ini.	-373.54	1058	-0.0001933	0.0002807	0.0035	0.9		2995.37	2995.37		8.02	Si
SLV 4	fin.	884.56	-1326	-0.0005114	0.0002807	0.0035	0.9		2989.59	2989.59		3.38	Si
SLV 10	ini.	354.78	-1622	-0.0001833	0.0002807	0.0035	0.9		2989.59	2989.59		8.43	Si
SLV 10	fin.	-406.39	-57	-0.0002115	0.0002807	0.0035	0.9		2995.37	2995.37		7.37	Si
SLV 13	ini.	617.41	-2486	-0.0003359	0.0002807	0.0035	0.9		2989.59	2989.59		4.84	Si
SLV 13	fin.	-912.94	474	-0.0005301	0.0002807	0.0035	0.9		2995.37	2995.37		3.28	Si
SLV 16	ini.	571.06	-2265	-0.0003076	0.0002807	0.0035	0.9		2989.59	2989.59		5.24	Si
SLV 16	fin.	-850.93	426	-0.0004871	0.0002807	0.0035	0.9		2995.37	2995.37		3.52	Si
SLV 3	ini.	-380.53	1079	-0.0001971	0.0002807	0.0035	0.9		2995.37	2995.37		7.87	Si
SLV 3	fin.	898.9	-1339	-0.0005214	0.0002807	0.0035	0.9		2989.59	2989.59		3.33	Si
SLV 2	ini.	-320.2	816	-0.0001642	0.0002807	0.0035	0.9		2995.37	2995.37		9.35	Si
SLV 2	fin.	808.21	-1265	-0.0004591	0.0002807	0.0035	0.9		2989.59	2989.59		3.7	Si
SLV 15	ini.	564.07	-2244	-0.0003034	0.0002807	0.0035	0.9		2989.59	2989.59		5.3	Si
SLV 15	fin.	-836.6	413	-0.0004773	0.0002807	0.0035	0.9		2995.37	2995.37		3.58	Si
SLV 14	ini.	624.4	-2507	-0.0003402	0.0002807	0.0035	0.9		2989.59	2989.59		4.79	Si
SLV 14	fin.	-927.28	487	-0.0005402	0.0002807	0.0035	0.9		2995.37	2995.37		3.23	Si
SLD 14	ini.	337.05	-1482	-0.0001736	0.0002807	0.0035	0.9		2989.59	2989.59		8.87	Si
SLD 14	fin.	-404.92	-35	-0.0002107	0.0002807	0.0035	0.9		2995.37	2995.37		7.4	Si
SLV 1	ini.	-327.19	837	-0.0001679	0.0002807	0.0035	0.9		2995.37	2995.37		9.15	Si
SLV 1	fin.	822.55	-1278	-0.0004688	0.0002807	0.0035	0.9		2989.59	2989.59		3.63	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 13	ini.	617.41	-3824	0.9	0	548	7137	5660	2295	7684		2.01	Si
SLV 13	fin.	-912.94	-3069	0.9	0	548	7137	5660	2295	7684		2.5	Si
SLV 16	ini.	571.06	-3532	0.9	0	548	7137	5660	2295	7684		2.18	Si
SLV 16	fin.	-850.93	-2824	0.9	0	548	7137	5660	2295	7684		2.72	Si
SLV 15	ini.	564.07	-3523	0.9	0	548	7137	5660	2295	7684		2.18	Si
SLV 15	fin.	-836.6	-2776	0.9	0	548	7137	5660	2295	7684		2.77	Si
SLV 1	ini.	-327.19	1544	0.9	0	548	7137	5660	2295	7684		4.98	Si
SLV 1	fin.	822.55	2663	0.9	0	548	7137	5660	2295	7684		2.89	Si
SLV 3	ini.	-380.53	1845	0.9	0	548	7137	5660	2295	7684		4.16	Si
SLV 3	fin.	898.9	2956	0.9	0	548	7137	5660	2295	7684		2.6	Si
SLV 14	ini.	624.4	-3832	0.9	0	548	7137	5660	2295	7684		2.01	Si
SLV 14	fin.	-927.28	-3117	0.9	0	548	7137	5660	2295	7684		2.47	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 2	ini.	-320.2	1536	0.9	0	548	7137	5660	2295	7684		5	Si
SLV 2	fin.	808.21	2615	0.9	0	548	7137	5660	2295	7684		2.94	Si
SLV 9	ini.	350.26	-2298	0.9	0	548	7137	5660	2295	7684		3.34	Si
SLV 9	fin.	-397.13	-1414	0.9	0	548	7137	5660	2295	7684		5.43	Si
SLV 4	ini.	-373.54	1837	0.9	0	548	7137	5660	2295	7684		4.18	Si
SLV 4	fin.	884.56	2908	0.9	0	548	7137	5660	2295	7684		2.64	Si
SLV 10	ini.	354.78	-2303	0.9	0	548	7137	5660	2295	7684		3.34	Si
SLV 10	fin.	-406.39	-1445	0.9	0	548	7137	5660	2295	7684		5.32	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.23	SLV 14	Si
V_SLV	2.005	SLV 14	Si
PF_SLU	16.518	SLU 77	Si
V_SLU	3.994	SLU 69	Si

## Trave di accoppiamento 152

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-12.838	6.526	14.57	15.03	0.46	-11.938	6.526	14.57	15.03	0.46	0.9	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	t <sub>fv</sub>	t <sub>fo</sub>	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim.conv / $\epsilon_c$ CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim.conv	$\epsilon_{f,d}$	$\gamma_{f,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ε <sub>m</sub>	ε <sub>m_</sub>	ε <sub>mu</sub>	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 74	ini.	-48.15	54	-0.000093	0.0001872	0.0035	0.46		780.23	780.23	No	16.21	Si
SLU 74	fin.	-141.75	-235	-0.0003012	0.0001872	0.0035	0.46		780.23	780.23	No	5.5	Si
SLU 69	ini.	-64.07	1	-0.0001255	0.0001872	0.0035	0.46		780.23	780.23	No	12.18	Si
SLU 69	fin.	-149.7	-235	-0.0003209	0.0001872	0.0035	0.46		780.23	780.23	No	5.21	Si
SLU 71	ini.	-60.31	9	-0.0001178	0.0001872	0.0035	0.46		780.23	780.23	No	12.94	Si
SLU 71	fin.	-142.59	-217	-0.0003033	0.0001872	0.0035	0.46		780.23	780.23	No	5.47	Si
SLU 79	ini.	-55.02	44	-0.0001069	0.0001872	0.0035	0.46		780.23	780.23	No	14.18	Si
SLU 79	fin.	-146.25	-220	-0.0003123	0.0001872	0.0035	0.46		780.23	780.23	No	5.33	Si
SLU 56	ini.	-54.66	24	-0.0001062	0.0001872	0.0035	0.46		780.23	780.23	No	14.27	Si
SLU 56	fin.	-140.44	-227	-0.000298	0.0001872	0.0035	0.46		780.23	780.23	No	5.56	Si
SLU 80	ini.	-55.79	41	-0.0001085	0.0001872	0.0035	0.46		780.23	780.23	No	13.99	Si
SLU 80	fin.	-144.78	-214	-0.0003087	0.0001872	0.0035	0.46		780.23	780.23	No	5.39	Si
SLU 72	ini.	-61.09	5	-0.0001194	0.0001872	0.0035	0.46		780.23	780.23	No	12.77	Si
SLU 72	fin.	-141.11	-212	-0.0002996	0.0001872	0.0035	0.46		780.23	780.23	No	5.53	Si
SLU 70	ini.	-64.84	-3	-0.0001271	0.0001872	0.0035	0.46		780.23	780.23	No	12.03	Si
SLU 70	fin.	-148.22	-230	-0.0003172	0.0001872	0.0035	0.46		780.23	780.23	No	5.26	Si
SLU 77	ini.	-58.77	37	-0.0001146	0.0001872	0.0035	0.46		780.23	780.23	No	13.28	Si
SLU 77	fin.	-153.37	-238	-0.0003301	0.0001872	0.0035	0.46		780.23	780.23	No	5.09	Si
SLU 78	ini.	-59.54	33	-0.0001162	0.0001872	0.0035	0.46		780.23	780.23	No	13.1	Si
SLU 78	fin.	-151.89	-232	-0.0003264	0.0001872	0.0035	0.46		780.23	780.23	No	5.14	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 74	ini.	-48.15	546	0.46	0	124	3648	1928	1173	3101	No	5.68	Si
SLU 74	fin.	-141.75	-852	0.46	0	124	3648	1928	1173	3101	No	3.64	Si
SLU 77	ini.	-58.77	629	0.46	0	124	3648	1928	1173	3101	No	4.93	Si
SLU 77	fin.	-153.37	-928	0.46	0	124	3648	1928	1173	3101	No	3.34	Si
SLU 69	ini.	-64.07	649	0.46	0	124	3648	1928	1173	3101	No	4.78	Si
SLU 69	fin.	-149.7	-908	0.46	0	124	3648	1928	1173	3101	No	3.42	Si
SLU 80	ini.	-55.79	601	0.46	0	124	3648	1928	1173	3101	No	5.16	Si
SLU 80	fin.	-144.78	-884	0.46	0	124	3648	1928	1173	3101	No	3.51	Si
SLU 72	ini.	-61.09	621	0.46	0	124	3648	1928	1173	3101	No	5	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 72	fin.	-141.11	-863	0.46	0	124	3648	1928	1173	3101	No	3.59	Si
SLU 71	ini.	-60.31	617	0.46	0	124	3648	1928	1173	3101	No	5.03	Si
SLU 71	fin.	-142.59	-870	0.46	0	124	3648	1928	1173	3101	No	3.57	Si
SLU 78	ini.	-59.54	632	0.46	0	124	3648	1928	1173	3101	No	4.9	Si
SLU 78	fin.	-151.89	-922	0.46	0	124	3648	1928	1173	3101	No	3.36	Si
SLU 79	ini.	-55.02	597	0.46	0	124	3648	1928	1173	3101	No	5.2	Si
SLU 79	fin.	-146.25	-890	0.46	0	124	3648	1928	1173	3101	No	3.48	Si
SLU 56	ini.	-54.66	580	0.46	0	124	3648	1928	1173	3101	No	5.35	Si
SLU 56	fin.	-140.44	-850	0.46	0	124	3648	1928	1173	3101	No	3.65	Si
SLU 70	ini.	-64.84	653	0.46	0	124	3648	1928	1173	3101	No	4.75	Si
SLU 70	fin.	-148.22	-901	0.46	0	124	3648	1928	1173	3101	No	3.44	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 13	ini.	189.57	1091	-0.0004037	0.0002807	0.0035	0.46		785.44	785.44		4.14	Si
SLV 13	fin.	-342.2	-1143	-0.0008273	0.0002807	0.0035	0.46		788.4	788.4		2.3	Si
SLV 14	ini.	188.12	1083	-0.0004001	0.0002807	0.0035	0.46		785.44	785.44		4.18	Si
SLV 14	fin.	-340.75	-1138	-0.0008228	0.0002807	0.0035	0.46		788.4	788.4		2.31	Si
SLV 1	ini.	-216.1	-916	-0.000469	0.0002807	0.0035	0.46		788.4	788.4		3.65	Si
SLV 1	fin.	132.58	668	-0.0002693	0.0002807	0.0035	0.46		785.44	785.44		5.92	Si
SLV 16	ini.	160.83	998	-0.0003342	0.0002807	0.0035	0.46		785.44	785.44		4.88	Si
SLV 16	fin.	-312.62	-990	-0.0007373	0.0002807	0.0035	0.46		788.4	788.4		2.52	Si
SLV 4	ini.	-244.84	-1010	-0.0005449	0.0002807	0.0035	0.46		788.4	788.4		3.22	Si
SLV 4	fin.	162.15	821	-0.0003373	0.0002807	0.0035	0.46		785.44	785.44		4.84	Si
SLV 15	ini.	162.28	1006	-0.0003376	0.0002807	0.0035	0.46		785.44	785.44		4.84	Si
SLV 15	fin.	-314.07	-994	-0.0007416	0.0002807	0.0035	0.46		788.4	788.4		2.51	Si
SLV 3	ini.	-243.39	-1002	-0.000541	0.0002807	0.0035	0.46		788.4	788.4		3.24	Si
SLV 3	fin.	160.7	817	-0.0003339	0.0002807	0.0035	0.46		785.44	785.44		4.89	Si
SLV 10	ini.	78.23	482	-0.000153	0.0002807	0.0035	0.46		785.44	785.44		10.04	Si
SLV 10	fin.	-207.64	-678	-0.0004473	0.0002807	0.0035	0.46		788.4	788.4		3.8	Si
SLV 9	ini.	79.17	488	-0.0001549	0.0002807	0.0035	0.46		785.44	785.44		9.92	Si
SLV 9	fin.	-208.58	-681	-0.0004497	0.0002807	0.0035	0.46		788.4	788.4		3.78	Si
SLV 2	ini.	-217.55	-924	-0.0004728	0.0002807	0.0035	0.46		788.4	788.4		3.62	Si
SLV 2	fin.	134.03	673	-0.0002726	0.0002807	0.0035	0.46		785.44	785.44		5.86	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 9	ini.	79.17	-181	0.46	0	187	3648	2893	1173	3834		21.14	Si
SLV 9	fin.	-208.58	-1041	0.46	0	187	3648	2893	1173	3834		3.68	Si
SLV 13	ini.	189.57	-745	0.46	0	187	3648	2893	1173	3834		5.15	Si
SLV 13	fin.	-342.2	-1593	0.46	0	187	3648	2893	1173	3834		2.41	Si
SLV 15	ini.	162.28	-621	0.46	0	187	3648	2893	1173	3834		6.18	Si
SLV 15	fin.	-314.07	-1472	0.46	0	187	3648	2893	1173	3834		2.6	Si
SLV 16	ini.	160.83	-614	0.46	0	187	3648	2893	1173	3834		6.24	Si
SLV 16	fin.	-312.62	-1466	0.46	0	187	3648	2893	1173	3834		2.62	Si
SLV 3	ini.	-243.39	1399	0.46	0	187	3648	2893	1173	3834		2.74	Si
SLV 3	fin.	160.7	505	0.46	0	187	3648	2893	1173	3834		7.59	Si
SLV 14	ini.	188.12	-738	0.46	0	187	3648	2893	1173	3834		5.19	Si
SLV 14	fin.	-340.75	-1587	0.46	0	187	3648	2893	1173	3834		2.42	Si
SLV 10	ini.	78.23	-177	0.46	0	187	3648	2893	1173	3834		21.64	Si
SLV 10	fin.	-207.64	-1037	0.46	0	187	3648	2893	1173	3834		3.7	Si
SLV 4	ini.	-244.84	1406	0.46	0	187	3648	2893	1173	3834		2.73	Si
SLV 4	fin.	162.15	512	0.46	0	187	3648	2893	1173	3834		7.49	Si
SLV 2	ini.	-217.55	1282	0.46	0	187	3648	2893	1173	3834		2.99	Si
SLV 2	fin.	134.03	391	0.46	0	187	3648	2893	1173	3834		9.82	Si
SLV 1	ini.	-216.1	1275	0.46	0	187	3648	2893	1173	3834		3.01	Si
SLV 1	fin.	132.58	384	0.46	0	187	3648	2893	1173	3834		9.98	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.304	SLV 13	Si
V_SLV	2.406	SLV 13	Si
PF_SLU	5.087	SLU 77	Si
V_SLU	3.341	SLU 77	Si

Trave di accoppiamento 153

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-7.958	6.526	11.87	12.77	0.9	-7.058	6.526	11.87	12.77	0.9	0.9	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC





Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

#### Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 54	ini.	12.01	-494	-0.0000059	0.0001872	0.0035	0.9		2959	2959	No	246.32	Si
SLU 54	fin.	114.71	-645	-0.0000574	0.0001872	0.0035	0.9		2959	2959	No	25.79	Si
SLU 44	ini.	-12.33	-436	-0.000006	0.0001872	0.0035	0.9		2964.67	2964.67	No	240.46	Si
SLU 44	fin.	127.36	-675	-0.0000639	0.0001872	0.0035	0.9		2959	2959	No	23.23	Si
SLU 45	ini.	21.45	-520	-0.0000105	0.0001872	0.0035	0.9		2959	2959	No	137.93	Si
SLU 45	fin.	119	-674	-0.0000596	0.0001872	0.0035	0.9		2959	2959	No	24.87	Si
SLU 61	ini.	-18.07	-412	-0.0000089	0.0001872	0.0035	0.9		2964.67	2964.67	No	164.1	Si
SLU 61	fin.	116.79	-621	-0.0000584	0.0001872	0.0035	0.9		2959	2959	No	25.34	Si
SLU 46	ini.	17.76	-514	-0.0000087	0.0001872	0.0035	0.9		2959	2959	No	166.66	Si
SLU 46	fin.	121.12	-680	-0.0000607	0.0001872	0.0035	0.9		2959	2959	No	24.43	Si
SLU 47	ini.	11.12	-486	-0.0000055	0.0001872	0.0035	0.9		2959	2959	No	266.07	Si
SLU 47	fin.	119.09	-660	-0.0000596	0.0001872	0.0035	0.9		2959	2959	No	24.85	Si
SLU 65	ini.	0.94	-466	-0.0000005	0.0001872	0.0035	0.9		2959	2959	No	3151.39	Si
SLU 65	fin.	117.73	-646	-0.0000589	0.0001872	0.0035	0.9		2959	2959	No	25.13	Si
SLU 60	ini.	-14.37	-417	-0.0000007	0.0001872	0.0035	0.9		2964.67	2964.67	No	206.34	Si
SLU 60	fin.	114.67	-615	-0.0000574	0.0001872	0.0035	0.9		2959	2959	No	25.8	Si
SLU 43	ini.	-6.16	-446	-0.0000003	0.0001872	0.0035	0.9		2964.67	2964.67	No	480.89	Si
SLU 43	fin.	123.83	-665	-0.0000621	0.0001872	0.0035	0.9		2959	2959	No	23.9	Si
SLU 52	ini.	-18.07	-416	-0.0000089	0.0001872	0.0035	0.9		2964.67	2964.67	No	164.06	Si
SLU 52	fin.	120.95	-640	-0.0000606	0.0001872	0.0035	0.9		2959	2959	No	24.46	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 49	ini.	41.21	-199	0.9	0	365	7137	3773	2295	6068	No	30.47	Si
SLU 49	fin.	112.85	865	0.9	0	365	7137	3773	2295	6068	No	7.01	Si
SLU 50	ini.	40.74	-182	0.9	0	365	7137	3773	2295	6068	No	33.39	Si
SLU 50	fin.	107.28	804	0.9	0	365	7137	3773	2295	6068	No	7.55	Si
SLU 44	ini.	-12.33	26	0.9	0	365	7137	3773	2295	6068	No	237.91	Si
SLU 44	fin.	127.36	883	0.9	0	365	7137	3773	2295	6068	No	6.87	Si
SLU 43	ini.	-6.16	4	0.9	0	365	7137	3773	2295	6068	No	1714.76	Si
SLU 43	fin.	123.83	863	0.9	0	365	7137	3773	2295	6068	No	7.03	Si
SLU 45	ini.	21.45	-120	0.9	0	365	7137	3773	2295	6068	No	50.72	Si
SLU 45	fin.	119	883	0.9	0	365	7137	3773	2295	6068	No	6.87	Si
SLU 67	ini.	31.02	-138	0.9	0	365	7137	3773	2295	6068	No	43.83	Si
SLU 67	fin.	111.49	803	0.9	0	365	7137	3773	2295	6068	No	7.55	Si
SLU 51	ini.	37.04	-169	0.9	0	365	7137	3773	2295	6068	No	36	Si
SLU 51	fin.	109.4	816	0.9	0	365	7137	3773	2295	6068	No	7.44	Si
SLU 47	ini.	11.12	-67	0.9	0	365	7137	3773	2295	6068	No	90.38	Si
SLU 47	fin.	119.09	853	0.9	0	365	7137	3773	2295	6068	No	7.11	Si
SLU 48	ini.	44.9	-212	0.9	0	365	7137	3773	2295	6068	No	28.58	Si
SLU 48	fin.	110.73	853	0.9	0	365	7137	3773	2295	6068	No	7.11	Si
SLU 46	ini.	17.76	-106	0.9	0	365	7137	3773	2295	6068	No	56.99	Si
SLU 46	fin.	121.12	895	0.9	0	365	7137	3773	2295	6068	No	6.78	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 1	ini.	-241.3	-184	-0.0001221	0.0002807	0.0035	0.9		2995.37	2995.37		12.41	Si
SLD 1	fin.	310.59	-1316	-0.0001593	0.0002807	0.0035	0.9		2989.59	2989.59		9.63	Si
SLV 3	ini.	-626.69	130	-0.0003409	0.0002807	0.0035	0.9		2995.37	2995.37		4.78	Si
SLV 3	fin.	569.08	-2153	-0.0003064	0.0002807	0.0035	0.9		2989.59	2989.59		5.25	Si
SLV 13	ini.	604.04	-842	-0.0003277	0.0002807	0.0035	0.9		2989.59	2989.59		4.95	Si
SLV 13	fin.	-363.06	1060	-0.0001875	0.0002807	0.0035	0.9		2995.37	2995.37		8.25	Si
SLV 15	ini.	543.35	-755	-0.000291	0.0002807	0.0035	0.9		2989.59	2989.59		5.5	Si
SLV 15	fin.	-402.29	1334	-0.0002092	0.0002807	0.0035	0.9		2995.37	2995.37		7.45	Si
SLV 4	ini.	-602.23	135	-0.0003259	0.0002807	0.0035	0.9		2995.37	2995.37		4.97	Si
SLV 4	fin.	539.32	-2031	-0.0002886	0.0002807	0.0035	0.9		2989.59	2989.59		5.54	Si
SLV 16	ini.	567.81	-750	-0.0003056	0.0002807	0.0035	0.9		2989.59	2989.59		5.27	Si
SLV 16	fin.	-432.05	1456	-0.0002259	0.0002807	0.0035	0.9		2995.37	2995.37		6.93	Si
SLV 5	ini.	-81.34	-368	-0.0000402	0.0002807	0.0035	0.9		2995.37	2995.37		36.83	Si
SLV 5	fin.	308.83	-1504	-0.0001583	0.0002807	0.0035	0.9		2989.59	2989.59		9.68	Si
SLV 2	ini.	-541.53	47	-0.0002893	0.0002807	0.0035	0.9		2995.37	2995.37		5.53	Si
SLV 2	fin.	578.55	-2305	-0.0003121	0.0002807	0.0035	0.9		2989.59	2989.59		5.17	Si
SLV 14	ini.	628.51	-838	-0.0003428	0.0002807	0.0035	0.9		2989.59	2989.59		4.76	Si
SLV 14	fin.	-392.81	1182	-0.000204	0.0002807	0.0035	0.9		2995.37	2995.37		7.63	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 1	ini.	-566	43	-0.0003039	0.0002807	0.0035	0.9		2995.37	2995.37		5.29	Si
SLV 1	fin.	608.31	-2427	-0.0003303	0.0002807	0.0035	0.9		2989.59	2989.59		4.91	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 1	ini.	-241.3	948	0.9	0	548	7137	5660	2295	7684		8.1	Si
SLD 1	fin.	310.59	1738	0.9	0	548	7137	5660	2295	7684		4.42	Si
SLV 4	ini.	-602.23	2217	0.9	0	548	7137	5660	2295	7684		3.47	Si
SLV 4	fin.	539.32	2974	0.9	0	548	7137	5660	2295	7684		2.58	Si
SLV 15	ini.	543.35	-2121	0.9	0	548	7137	5660	2295	7684		3.62	Si
SLV 15	fin.	-402.29	-1969	0.9	0	548	7137	5660	2295	7684		3.9	Si
SLV 14	ini.	628.51	-2316	0.9	0	548	7137	5660	2295	7684		3.32	Si
SLV 14	fin.	-392.81	-1954	0.9	0	548	7137	5660	2295	7684		3.93	Si
SLV 1	ini.	-566	2219	0.9	0	548	7137	5660	2295	7684		3.46	Si
SLV 1	fin.	608.31	3283	0.9	0	548	7137	5660	2295	7684		2.34	Si
SLV 3	ini.	-626.69	2315	0.9	0	548	7137	5660	2295	7684		3.32	Si
SLV 3	fin.	569.08	3121	0.9	0	548	7137	5660	2295	7684		2.46	Si
SLV 13	ini.	604.04	-2217	0.9	0	548	7137	5660	2295	7684		3.47	Si
SLV 13	fin.	-363.06	-1807	0.9	0	548	7137	5660	2295	7684		4.25	Si
SLV 2	ini.	-541.53	2120	0.9	0	548	7137	5660	2295	7684		3.62	Si
SLV 2	fin.	578.55	3136	0.9	0	548	7137	5660	2295	7684		2.45	Si
SLD 2	ini.	-230.79	906	0.9	0	548	7137	5660	2295	7684		8.48	Si
SLD 2	fin.	297.81	1675	0.9	0	548	7137	5660	2295	7684		4.59	Si
SLV 16	ini.	567.81	-2219	0.9	0	548	7137	5660	2295	7684		3.46	Si
SLV 16	fin.	-432.05	-2115	0.9	0	548	7137	5660	2295	7684		3.63	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	4.757	SLV 14	Si
V_SLV	2.341	SLV 1	Si
PF_SLU	23.233	SLU 44	Si
V_SLU	6.78	SLU 46	Si

## Trave di accoppiamento 154

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-7.958	6.526	14.57	15.03	0.46	-7.058	6.526	14.57	15.03	0.46	0.9	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	f <sub>nk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>vd</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / $\epsilon_c$ CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	$\epsilon_f$ ,fd	$\gamma_F$ ,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 45	ini.	-85.46	-427	-0.0001708	0.0001872	0.0035	0.46		780.23	780.23	No	9.13	Si
SLU 45	fin.	-7.09	113	-0.0000133	0.0001872	0.0035	0.46		780.23	780.23	No	109.98	Si
SLU 70	ini.	-85.23	-413	-0.0001703	0.0001872	0.0035	0.46		780.23	780.23	No	9.15	Si
SLU 70	fin.	-19.01	90	-0.0000359	0.0001872	0.0035	0.46		780.23	780.23	No	41.05	Si
SLU 54	ini.	-83.64	-412	-0.0001669	0.0001872	0.0035	0.46		780.23	780.23	No	9.33	Si
SLU 54	fin.	-5.11	129	-0.0000096	0.0001872	0.0035	0.46		780.23	780.23	No	152.7	Si
SLU 66	ini.	-84.78	-415	-0.0001693	0.0001872	0.0035	0.46		780.23	780.23	No	9.2	Si
SLU 66	fin.	-12.24	107	-0.0000023	0.0001872	0.0035	0.46		780.23	780.23	No	63.73	Si
SLU 57	ini.	-83.07	-405	-0.0001656	0.0001872	0.0035	0.46		780.23	780.23	No	9.39	Si
SLU 57	fin.	-12.8	107	-0.0000241	0.0001872	0.0035	0.46		780.23	780.23	No	60.95	Si
SLU 49	ini.	-85.91	-426	-0.0001718	0.0001872	0.0035	0.46		780.23	780.23	No	9.08	Si
SLU 49	fin.	-13.86	96	-0.0000261	0.0001872	0.0035	0.46		780.23	780.23	No	56.29	Si
SLU 67	ini.	-85.81	-420	-0.0001716	0.0001872	0.0035	0.46		780.23	780.23	No	9.09	Si
SLU 67	fin.	-11.32	112	-0.0000213	0.0001872	0.0035	0.46		780.23	780.23	No	68.95	Si
SLU 46	ini.	-86.48	-433	-0.000173	0.0001872	0.0035	0.46		780.23	780.23	No	9.02	Si



Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 46	fin.	-6.17	117	-0.0000115	0.0001872	0.0035	0.46		780.23	780.23	No	126.49	Si
SLU 48	ini.	-84.89	-420	-0.0001696	0.0001872	0.0035	0.46		780.23	780.23	No	9.19	Si
SLU 48	fin.	-14.79	91	-0.0000278	0.0001872	0.0035	0.46		780.23	780.23	No	52.77	Si
SLU 69	ini.	-84.21	-408	-0.0001681	0.0001872	0.0035	0.46		780.23	780.23	No	9.27	Si
SLU 69	fin.	-19.93	85	-0.0000377	0.0001872	0.0035	0.46		780.23	780.23	No	39.14	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 74	ini.	-81.94	996	0.46	0	124	3648	1928	1173	3101	No	3.11	Si
SLU 74	fin.	-11.18	-370	0.46	0	124	3648	1928	1173	3101	No	8.37	Si
SLU 78	ini.	-82.39	1028	0.46	0	124	3648	1928	1173	3101	No	3.02	Si
SLU 78	fin.	-17.95	-424	0.46	0	124	3648	1928	1173	3101	No	7.32	Si
SLU 70	ini.	-85.23	1040	0.46	0	124	3648	1928	1173	3101	No	2.98	Si
SLU 70	fin.	-19.01	-425	0.46	0	124	3648	1928	1173	3101	No	7.3	Si
SLU 77	ini.	-81.36	1021	0.46	0	124	3648	1928	1173	3101	No	3.04	Si
SLU 77	fin.	-18.88	-427	0.46	0	124	3648	1928	1173	3101	No	7.26	Si
SLU 66	ini.	-84.78	1007	0.46	0	124	3648	1928	1173	3101	No	3.08	Si
SLU 66	fin.	-12.24	-372	0.46	0	124	3648	1928	1173	3101	No	8.35	Si
SLU 48	ini.	-84.89	1000	0.46	0	124	3648	1928	1173	3101	No	3.1	Si
SLU 48	fin.	-14.79	-379	0.46	0	124	3648	1928	1173	3101	No	8.18	Si
SLU 69	ini.	-84.21	1032	0.46	0	124	3648	1928	1173	3101	No	3	Si
SLU 69	fin.	-19.93	-428	0.46	0	124	3648	1928	1173	3101	No	7.24	Si
SLU 67	ini.	-85.81	1015	0.46	0	124	3648	1928	1173	3101	No	3.06	Si
SLU 67	fin.	-11.32	-368	0.46	0	124	3648	1928	1173	3101	No	8.43	Si
SLU 49	ini.	-85.91	1007	0.46	0	124	3648	1928	1173	3101	No	3.08	Si
SLU 49	fin.	-13.86	-376	0.46	0	124	3648	1928	1173	3101	No	8.25	Si
SLU 75	ini.	-82.96	1003	0.46	0	124	3648	1928	1173	3101	No	3.09	Si
SLU 75	fin.	-10.26	-367	0.46	0	124	3648	1928	1173	3101	No	8.45	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 3	ini.	-221.84	-1241	-0.0004839	0.0002807	0.0035	0.46		788.4	788.4		3.55	Si
SLV 3	fin.	101.2	511	-0.000201	0.0002807	0.0035	0.46		785.44	785.44		7.76	Si
SLV 8	ini.	-128.31	-662	-0.0002588	0.0002807	0.0035	0.46		788.4	788.4		6.14	Si
SLV 8	fin.	56.24	368	-0.0001085	0.0002807	0.0035	0.46		785.44	785.44		13.96	Si
SLD 3	ini.	-129.25	-701	-0.0002609	0.0002807	0.0035	0.46		788.4	788.4		6.1	Si
SLD 3	fin.	43.29	278	-0.0000829	0.0002807	0.0035	0.46		785.44	785.44		18.14	Si
SLV 7	ini.	-131.62	-684	-0.0002661	0.0002807	0.0035	0.46		788.4	788.4		5.99	Si
SLV 7	fin.	56.64	362	-0.0001093	0.0002807	0.0035	0.46		785.44	785.44		13.87	Si
SLD 1	ini.	-122.9	-673	-0.0002469	0.0002807	0.0035	0.46		788.4	788.4		6.41	Si
SLD 1	fin.	35.76	238	-0.0000682	0.0002807	0.0035	0.46		785.44	785.44		21.97	Si
SLD 2	ini.	-120.7	-658	-0.0002421	0.0002807	0.0035	0.46		788.4	788.4		6.53	Si
SLD 2	fin.	35.49	243	-0.0000676	0.0002807	0.0035	0.46		785.44	785.44		22.13	Si
SLV 1	ini.	-207.21	-1176	-0.0004462	0.0002807	0.0035	0.46		788.4	788.4		3.8	Si
SLV 1	fin.	83.89	421	-0.0001647	0.0002807	0.0035	0.46		785.44	785.44		9.36	Si
SLD 4	ini.	-127.05	-686	-0.000256	0.0002807	0.0035	0.46		788.4	788.4		6.21	Si
SLD 4	fin.	43.03	282	-0.0000824	0.0002807	0.0035	0.46		785.44	785.44		18.26	Si
SLV 4	ini.	-216.71	-1206	-0.0004706	0.0002807	0.0035	0.46		788.4	788.4		3.64	Si
SLV 4	fin.	100.59	521	-0.0001997	0.0002807	0.0035	0.46		785.44	785.44		7.81	Si
SLV 2	ini.	-202.08	-1142	-0.0004333	0.0002807	0.0035	0.46		788.4	788.4		3.9	Si
SLV 2	fin.	83.27	430	-0.0001634	0.0002807	0.0035	0.46		785.44	785.44		9.43	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 4	ini.	-127.05	1063	0.46	0	187	3648	2893	1173	3834		3.61	Si
SLD 4	fin.	43.03	-1	0.46	0	187	3648	2893	1173	3834		4318.08	Si
SLV 1	ini.	-207.21	1486	0.46	0	187	3648	2893	1173	3834		2.58	Si
SLV 1	fin.	83.89	213	0.46	0	187	3648	2893	1173	3834		17.96	Si
SLV 8	ini.	-128.31	1102	0.46	0	187	3648	2893	1173	3834		3.48	Si
SLV 8	fin.	56.24	42	0.46	0	187	3648	2893	1173	3834		91.21	Si
SLV 3	ini.	-221.84	1588	0.46	0	187	3648	2893	1173	3834		2.41	Si
SLV 3	fin.	101.2	283	0.46	0	187	3648	2893	1173	3834		13.55	Si
SLV 2	ini.	-202.08	1470	0.46	0	187	3648	2893	1173	3834		2.61	Si
SLV 2	fin.	83.27	200	0.46	0	187	3648	2893	1173	3834		19.19	Si
SLV 7	ini.	-131.62	1112	0.46	0	187	3648	2893	1173	3834		3.45	Si
SLV 7	fin.	56.64	51	0.46	0	187	3648	2893	1173	3834		75.39	Si
SLD 1	ini.	-122.9	1026	0.46	0	187	3648	2893	1173	3834		3.74	Si
SLD 1	fin.	35.76	-25	0.46	0	187	3648	2893	1173	3834		151.83	Si
SLV 4	ini.	-216.71	1572	0.46	0	187	3648	2893	1173	3834		2.44	Si
SLV 4	fin.	100.59	269	0.46	0	187	3648	2893	1173	3834		14.24	Si
SLD 3	ini.	-129.25	1070	0.46	0	187	3648	2893	1173	3834		3.58	Si
SLD 3	fin.	43.29	5	0.46	0	187	3648	2893	1173	3834		770.05	Si
SLD 2	ini.	-120.7	1019	0.46	0	187	3648	2893	1173	3834		3.76	Si
SLD 2	fin.	35.49	-31	0.46	0	187	3648	2893	1173	3834		123.21	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.554	SLV 3	Si
V_SLV	2.415	SLV 3	Si
PF_SLU	9.022	SLU 46	Si
V_SLU	2.983	SLU 70	Si



## Trave di accoppiamento 155

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-19.813	1.006	13.97	15.03	1.06	-20.613	1.006	13.97	15.03	1.06	0.8	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	t <sub>fv</sub>	t <sub>fo</sub>	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	e <sub>f,d</sub>	γ <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	e <sub>m</sub>	e <sub>m</sub> _	e <sub>mu</sub>	d <sub>f</sub>	M <sub>0d</sub>	M <sub>1d</sub>	M <sub>Rd</sub>	incremento > 50%	c.s.	Verifica
SLU 66	ini.	-383.22	-1494	-0.0001417	0.0002246	0.0035	1.06		4210.93	4210.93	No	10.99	Si
SLU 66	fin.	90.89	-536	-0.0000324	0.0002246	0.0035	1.06		4204.29	4204.29	No	46.26	Si
SLU 47	ini.	-384.26	-1383	-0.0001422	0.0002246	0.0035	1.06		4210.93	4210.93	No	10.96	Si
SLU 47	fin.	127.18	-366	-0.0000455	0.0002246	0.0035	1.06		4204.29	4204.29	No	33.06	Si
SLU 69	ini.	-390.36	-1556	-0.0001445	0.0002246	0.0035	1.06		4210.93	4210.93	No	10.79	Si
SLU 69	fin.	77.63	-614	-0.0000276	0.0002246	0.0035	1.06		4204.29	4204.29	No	54.16	Si
SLU 70	ini.	-387.73	-1550	-0.0001435	0.0002246	0.0035	1.06		4210.93	4210.93	No	10.86	Si
SLU 70	fin.	75.16	-619	-0.0000267	0.0002246	0.0035	1.06		4204.29	4204.29	No	55.94	Si
SLU 46	ini.	-400.25	-1485	-0.0001484	0.0002246	0.0035	1.06		4210.93	4210.93	No	10.52	Si
SLU 46	fin.	120.59	-437	-0.0000431	0.0002246	0.0035	1.06		4204.29	4204.29	No	34.87	Si
SLU 49	ini.	-407.39	-1547	-0.0001512	0.0002246	0.0035	1.06		4210.93	4210.93	No	10.34	Si
SLU 49	fin.	107.33	-515	-0.0000383	0.0002246	0.0035	1.06		4204.29	4204.29	No	39.17	Si
SLU 50	ini.	-395.8	-1455	-0.0001467	0.0002246	0.0035	1.06		4210.93	4210.93	No	10.64	Si
SLU 50	fin.	118.04	-435	-0.0000422	0.0002246	0.0035	1.06		4204.29	4204.29	No	35.62	Si
SLU 48	ini.	-410.03	-1553	-0.0001523	0.0002246	0.0035	1.06		4210.93	4210.93	No	10.27	Si
SLU 48	fin.	109.8	-510	-0.0000392	0.0002246	0.0035	1.06		4204.29	4204.29	No	38.29	Si
SLU 45	ini.	-402.88	-1491	-0.0001495	0.0002246	0.0035	1.06		4210.93	4210.93	No	10.45	Si
SLU 45	fin.	123.05	-432	-0.000044	0.0002246	0.0035	1.06		4204.29	4204.29	No	34.17	Si
SLU 51	ini.	-393.16	-1449	-0.0001456	0.0002246	0.0035	1.06		4210.93	4210.93	No	10.71	Si
SLU 51	fin.	115.57	-440	-0.0000413	0.0002246	0.0035	1.06		4204.29	4204.29	No	36.38	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	d <sub>f</sub>	f <sub>vd</sub>	V <sub>t</sub>	V <sub>t,f</sub>	V <sub>t,c</sub>	V <sub>t,c.int.</sub>	V <sub>t,R</sub>	incremento > 50%	c.s.	Verifica
SLU 69	ini.	-390.36	2804	1.06	0	430	6344	5333	2703	6774	No	2.42	Si
SLU 69	fin.	77.63	-257	1.06	0	430	6344	5333	2703	6774	No	26.4	Si
SLU 51	ini.	-393.16	2742	1.06	0	430	6344	5333	2703	6774	No	2.47	Si
SLU 51	fin.	115.57	17	1.06	0	430	6344	5333	2703	6774	No	391.86	Si
SLU 48	ini.	-410.03	2869	1.06	0	430	6344	5333	2703	6774	No	2.36	Si
SLU 48	fin.	109.8	-68	1.06	0	430	6344	5333	2703	6774	No	99.12	Si
SLU 66	ini.	-383.22	2698	1.06	0	430	6344	5333	2703	6774	No	2.51	Si
SLU 66	fin.	90.89	-198	1.06	0	430	6344	5333	2703	6774	No	34.26	Si
SLU 49	ini.	-407.39	2859	1.06	0	430	6344	5333	2703	6774	No	2.37	Si
SLU 49	fin.	107.33	-83	1.06	0	430	6344	5333	2703	6774	No	81.36	Si
SLU 50	ini.	-395.8	2752	1.06	0	430	6344	5333	2703	6774	No	2.46	Si
SLU 50	fin.	118.04	32	1.06	0	430	6344	5333	2703	6774	No	210.36	Si
SLU 46	ini.	-400.25	2752	1.06	0	430	6344	5333	2703	6774	No	2.46	Si
SLU 46	fin.	120.59	-24	1.06	0	430	6344	5333	2703	6774	No	277.93	Si
SLU 67	ini.	-380.58	2688	1.06	0	430	6344	5333	2703	6774	No	2.52	Si
SLU 67	fin.	88.42	-213	1.06	0	430	6344	5333	2703	6774	No	31.86	Si
SLU 45	ini.	-402.88	2763	1.06	0	430	6344	5333	2703	6774	No	2.45	Si
SLU 45	fin.	123.05	-9	1.06	0	430	6344	5333	2703	6774	No	716.24	Si
SLU 70	ini.	-387.73	2794	1.06	0	430	6344	5333	2703	6774	No	2.42	Si
SLU 70	fin.	75.16	-272	1.06	0	430	6344	5333	2703	6774	No	24.95	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 14	ini.	-812.13	-2063	-0.0003112	0.0003369	0.0035	1.06		4170.47	4170.47		5.14	Si
SLV 14	fin.	674.31	818	-0.0002545	0.0003369	0.0035	1.06		4163.27	4163.27		6.17	Si
SLV 15	ini.	-601.88	-1615	-0.0002249	0.0003369	0.0035	1.06		4170.47	4170.47		6.93	Si
SLV 15	fin.	460.49	417	-0.0001697	0.0003369	0.0035	1.06		4163.27	4163.27		9.04	Si
SLV 5	ini.	-514.09	-1550	-0.0001902	0.0003369	0.0035	1.06		4170.47	4170.47		8.11	Si
SLV 5	fin.	319.15	148	-0.0001159	0.0003369	0.0035	1.06		4163.27	4163.27		13.04	Si
SLD 13	ini.	-508.65	-1468	-0.0001881	0.0003369	0.0035	1.06		4170.47	4170.47		8.2	Si
SLD 13	fin.	342.98	196	-0.0001249	0.0003369	0.0035	1.06		4163.27	4163.27		12.14	Si
SLV 3	ini.	275.03	77	-0.0000995	0.0003369	0.0035	1.06		4163.27	4163.27		15.14	Si
SLV 3	fin.	-509.24	-1397	-0.0001883	0.0003369	0.0035	1.06		4170.47	4170.47		8.19	Si
SLV 16	ini.	-588.48	-1583	-0.0002196	0.0003369	0.0035	1.06		4170.47	4170.47		7.09	Si
SLV 16	fin.	447.56	396	-0.0001647	0.0003369	0.0035	1.06		4163.27	4163.27		9.3	Si
SLV 4	ini.	288.44	108	-0.0001045	0.0003369	0.0035	1.06		4163.27	4163.27		14.43	Si
SLV 4	fin.	-522.18	-1417	-0.0001934	0.0003369	0.0035	1.06		4170.47	4170.47		7.99	Si
SLV 9	ini.	-777.17	-2057	-0.0002965	0.0003369	0.0035	1.06		4170.47	4170.47		5.37	Si
SLV 9	fin.	610.08	692	-0.0002285	0.0003369	0.0035	1.06		4163.27	4163.27		6.82	Si
SLV 13	ini.	-825.53	-2095	-0.0003168	0.0003369	0.0035	1.06		4170.47	4170.47		5.05	Si
SLV 13	fin.	687.24	838	-0.0002598	0.0003369	0.0035	1.06		4163.27	4163.27		6.06	Si
SLV 10	ini.	-768.51	-2036	-0.0002928	0.0003369	0.0035	1.06		4170.47	4170.47		5.43	Si
SLV 10	fin.	601.72	678	-0.0002252	0.0003369	0.0035	1.06		4163.27	4163.27		6.92	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 16	ini.	-588.48	3669	1.06	0	645	6344	8000	2703	6989		1.9	Si
SLV 16	fin.	447.56	1538	1.06	0	645	6344	8000	2703	6989		4.54	Si
SLV 9	ini.	-777.17	4792	1.06	0	645	6344	8000	2703	6989		1.46	Si
SLV 9	fin.	610.08	2506	1.06	0	645	6344	8000	2703	6989		2.79	Si
SLD 13	ini.	-508.65	3226	1.06	0	645	6344	8000	2703	6989		2.17	Si
SLD 13	fin.	342.98	1148	1.06	0	645	6344	8000	2703	6989		6.09	Si
SLV 6	ini.	-505.43	3216	1.06	0	645	6344	8000	2703	6989		2.17	Si
SLV 6	fin.	310.8	1160	1.06	0	645	6344	8000	2703	6989		6.03	Si
SLV 15	ini.	-601.88	3760	1.06	0	645	6344	8000	2703	6989		1.86	Si
SLV 15	fin.	460.49	1599	1.06	0	645	6344	8000	2703	6989		4.37	Si
SLV 13	ini.	-825.53	5061	1.06	0	645	6344	8000	2703	6989		1.38	Si
SLV 13	fin.	687.24	2726	1.06	0	645	6344	8000	2703	6989		2.56	Si
SLV 14	ini.	-812.13	4970	1.06	0	645	6344	8000	2703	6989		1.41	Si
SLV 14	fin.	674.31	2666	1.06	0	645	6344	8000	2703	6989		2.62	Si
SLV 5	ini.	-514.09	3275	1.06	0	645	6344	8000	2703	6989		2.13	Si
SLV 5	fin.	319.15	1199	1.06	0	645	6344	8000	2703	6989		5.83	Si
SLV 10	ini.	-768.51	4733	1.06	0	645	6344	8000	2703	6989		1.48	Si
SLV 10	fin.	601.72	2467	1.06	0	645	6344	8000	2703	6989		2.83	Si
SLD 14	ini.	-502.89	3187	1.06	0	645	6344	8000	2703	6989		2.19	Si
SLD 14	fin.	337.43	1123	1.06	0	645	6344	8000	2703	6989		6.23	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	5.052	SLV 13	Si
V_SLV	1.381	SLV 13	Si
PF_SLU	10.27	SLU 48	Si
V_SLU	2.361	SLU 48	Si

## Trave di accoppiamento 156

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-11.143	1.006	14.37	15.03	0.66	-12.263	1.006	14.37	15.03	0.66	1.12	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC

Materiale	Fu Verticale	Fu Orizzontale	t <sub>fv</sub>	t <sub>fo</sub>	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	e <sub>f,d</sub>	y <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 84	ini.	-626.9	-2135	-0.0007418	0.0002246	0.0035	0.66		1634.45	1634.45	No	2.61	Si
SLU 84	fin.	237.14	674	-0.0002352	0.0002246	0.0035	0.66		1630.36	1630.36	No	6.88	Si
SLU 77	ini.	-671.55	-2279	-0.0008098	0.0002246	0.0035	0.66		1634.45	1634.45	No	2.43	Si
SLU 77	fin.	204.83	623	-0.0002003	0.0002246	0.0035	0.66		1630.36	1630.36	No	7.96	Si
SLU 83	ini.	-622.27	-2117	-0.0007349	0.0002246	0.0035	0.66		1634.45	1634.45	No	2.63	Si
SLU 83	fin.	230.73	661	-0.0002282	0.0002246	0.0035	0.66		1630.36	1630.36	No	7.07	Si
SLU 67	ini.	-620.42	-2058	-0.0007322	0.0002246	0.0035	0.66		1634.45	1634.45	No	2.63	Si
SLU 67	fin.	154.53	562	-0.0001482	0.0002246	0.0035	0.66		1630.36	1630.36	No	10.55	Si
SLU 78	ini.	-676.18	-2297	-0.000817	0.0002246	0.0035	0.66		1634.45	1634.45	No	2.42	Si
SLU 78	fin.	211.24	636	-0.0002072	0.0002246	0.0035	0.66		1630.36	1630.36	No	7.72	Si
SLU 70	ini.	-625.77	-2115	-0.0007402	0.0002246	0.0035	0.66		1634.45	1634.45	No	2.61	Si
SLU 70	fin.	138.54	476	-0.000132	0.0002246	0.0035	0.66		1630.36	1630.36	No	11.77	Si
SLU 74	ini.	-666.21	-2222	-0.0008016	0.0002246	0.0035	0.66		1634.45	1634.45	No	2.45	Si
SLU 74	fin.	220.82	709	-0.0002175	0.0002246	0.0035	0.66		1630.36	1630.36	No	7.38	Si
SLU 75	ini.	-670.83	-2240	-0.0008087	0.0002246	0.0035	0.66		1634.45	1634.45	No	2.44	Si
SLU 75	fin.	227.23	722	-0.0002244	0.0002246	0.0035	0.66		1630.36	1630.36	No	7.17	Si
SLU 82	ini.	-621.55	-2078	-0.0007339	0.0002246	0.0035	0.66		1634.45	1634.45	No	2.63	Si
SLU 82	fin.	253.13	760	-0.0002529	0.0002246	0.0035	0.66		1630.36	1630.36	No	6.44	Si
SLU 69	ini.	-621.14	-2098	-0.0007332	0.0002246	0.0035	0.66		1634.45	1634.45	No	2.63	Si
SLU 69	fin.	132.12	463	-0.0001256	0.0002246	0.0035	0.66		1630.36	1630.36	No	12.34	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 74	ini.	-666.21	3710	0.66	0	179	5234	3321	1683	5004	No	1.35	Si
SLU 74	fin.	220.82	28	0.66	0	179	5234	3321	1683	5004	No	175.69	Si
SLU 75	ini.	-670.83	3729	0.66	0	179	5234	3321	1683	5004	No	1.34	Si
SLU 75	fin.	227.23	47	0.66	0	179	5234	3321	1683	5004	No	105.4	Si
SLU 70	ini.	-625.77	3500	0.66	0	179	5234	3321	1683	5004	No	1.43	Si
SLU 70	fin.	138.54	-181	0.66	0	179	5234	3321	1683	5004	No	27.65	Si
SLU 77	ini.	-671.55	3692	0.66	0	179	5234	3321	1683	5004	No	1.36	Si
SLU 77	fin.	204.83	11	0.66	0	179	5234	3321	1683	5004	No	473.15	Si
SLU 66	ini.	-615.79	3499	0.66	0	179	5234	3321	1683	5004	No	1.43	Si
SLU 66	fin.	148.12	-182	0.66	0	179	5234	3321	1683	5004	No	27.49	Si
SLU 82	ini.	-621.55	3416	0.66	0	179	5234	3321	1683	5004	No	1.46	Si
SLU 82	fin.	253.13	189	0.66	0	179	5234	3321	1683	5004	No	26.46	Si
SLU 78	ini.	-676.18	3711	0.66	0	179	5234	3321	1683	5004	No	1.35	Si
SLU 78	fin.	211.24	30	0.66	0	179	5234	3321	1683	5004	No	169.22	Si
SLU 69	ini.	-621.14	3481	0.66	0	179	5234	3321	1683	5004	No	1.44	Si
SLU 69	fin.	132.12	-200	0.66	0	179	5234	3321	1683	5004	No	25.03	Si
SLU 67	ini.	-620.42	3518	0.66	0	179	5234	3321	1683	5004	No	1.42	Si
SLU 67	fin.	154.53	-163	0.66	0	179	5234	3321	1683	5004	No	30.69	Si
SLU 84	ini.	-626.9	3398	0.66	0	179	5234	3321	1683	5004	No	1.47	Si
SLU 84	fin.	237.14	171	0.66	0	179	5234	3321	1683	5004	No	29.23	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 3	ini.	345.02	-1075	-0.0003454	0.0003369	0.0035	0.66		1610.37	1610.37		4.67	Si
SLV 3	fin.	-2173.66	-7297	-0.0052007	0.0003369	0.0035	0.66		1614.71	1614.71		0.74	No
SLV 14	ini.	-1162.41	-1592	-0.0016217	0.0003369	0.0035	0.66		1614.71	1614.71		1.39	Si
SLV 14	fin.	2393.96	8126	-0.0059402	0.0003369	0.0035	0.66		1610.37	1610.37		0.67	No
SLV 15	ini.	-1579.68	-3476	-0.002939	0.0003369	0.0035	0.66		1614.71	1614.71		1.02	Si
SLV 15	fin.	2826.63	8666	-0.0073043	0.0003369	0.0035	0.66		1610.37	1610.37		0.57	No
SLV 4	ini.	335.36	-1061	-0.0003346	0.0003369	0.0035	0.66		1610.37	1610.37		4.8	Si
SLV 4	fin.	-2141.58	-7181	-0.005093	0.0003369	0.0035	0.66		1614.71	1614.71		0.75	No
SLV 11	ini.	-1405.83	-4816	-0.0022806	0.0003369	0.0035	0.66		1614.71	1614.71		1.15	Si
SLV 11	fin.	1624.42	3864	-0.0031531	0.0003369	0.0035	0.66		1610.37	1610.37		0.99	No
SLV 13	ini.	-1152.75	-1605	-0.0016003	0.0003369	0.0035	0.66		1614.71	1614.71		1.4	Si
SLV 13	fin.	2361.89	8010	-0.0058366	0.0003369	0.0035	0.66		1610.37	1610.37		0.68	No
SLV 2	ini.	762.29	809	-0.0008966	0.0003369	0.0035	0.66		1610.37	1610.37		2.11	Si
SLV 2	fin.	-2606.33	-7836	-0.0065984	0.0003369	0.0035	0.66		1614.71	1614.71		0.62	No
SLV 16	ini.	-1589.34	-3463	-0.0029809	0.0003369	0.0035	0.66		1614.71	1614.71		1.02	Si
SLV 16	fin.	2858.71	8781	-0.0074029	0.0003369	0.0035	0.66		1610.37	1610.37		0.56	No
SLV 1	ini.	771.95	796	-0.0009115	0.0003369	0.0035	0.66		1610.37	1610.37		2.09	Si
SLV 1	fin.	-2638.41	-7952	-0.006699	0.0003369	0.0035	0.66		1614.71	1614.71		0.61	No
SLV 12	ini.	-1412.07	-4807	-0.0023011	0.0003369	0.0035	0.66		1614.71	1614.71		1.14	Si
SLV 12	fin.	1645.13	3939	-0.0032445	0.0003369	0.0035	0.66		1610.37	1610.37		0.98	No

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 1	ini.	771.95	-4334	0.66	0	268	5234	4981	1683	5501		1.27	Si
SLV 1	fin.	-2638.41	-6749	0.66	0	268	5234	4981	1683	5501		0.82	No
SLV 2	ini.	762.29	-4266	0.66	0	268	5234	4981	1683	5501		1.29	Si
SLV 2	fin.	-2606.33	-6682	0.66	0	268	5234	4981	1683	5501		0.82	No
SLD 16	ini.	-916.39	5206	0.66	0	268	5234	4981	1683	5501		1.06	Si
SLD 16	fin.	1288.08	2747	0.66	0	268	5234	4981	1683	5501		2	Si
SLV 3	ini.	345.02	-2803	0.66	0	268	5234	4981	1683	5501		1.96	Si
SLV 3	fin.	-2173.66	-5205	0.66	0	268	5234	4981	1683	5501		1.06	Si
SLV 13	ini.	-1152.75	7419	0.66	0	268	5234	4981	1683	5501		0.74	No
SLV 13	fin.	2361.89	4929	0.66	0	268	5234	4981	1683	5501		1.12	Si
SLV 11	ini.	-1405.83	6635	0.66	0	268	5234	4981	1683	5501		0.83	No
SLV 11	fin.	1624.42	4199	0.66	0	268	5234	4981	1683	5501		1.31	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 14	ini.	-1162.41	7487	0.66	0	268	5234	4981	1683	5501		0.73	No
SLV 14	fin.	2393.96	4996	0.66	0	268	5234	4981	1683	5501		1.1	Si
SLV 15	ini.	-1579.68	8950	0.66	0	268	5234	4981	1683	5501		0.61	No
SLV 15	fin.	2826.63	6473	0.66	0	268	5234	4981	1683	5501		0.85	No
SLV 16	ini.	-1589.34	9018	0.66	0	268	5234	4981	1683	5501		0.61	No
SLV 16	fin.	2858.71	6540	0.66	0	268	5234	4981	1683	5501		0.84	No
SLV 12	ini.	-1412.07	6678	0.66	0	268	5234	4981	1683	5501		0.82	No
SLV 12	fin.	1645.13	4243	0.66	0	268	5234	4981	1683	5501		1.3	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF SLV	0.563	SLV 16	No
V SLV	0.61	SLV 16	No
PF SLU	2.417	SLU 78	Si
V SLU	1.342	SLU 75	Si

## Trave di accoppiamento 157

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-9.398	1.006	14.37	15.03	0.66	-10.478	1.006	14.37	15.03	0.66	1.08	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fhk	fvk0	fhmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / ε <sub>c</sub> CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	ε <sub>f</sub> ,d	γ <sub>f</sub> ,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ε <sub>m</sub>	ε <sub>m_</sub>	ε <sub>mu</sub>	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 78	ini.	12.1	-27	-0.0000111	0.0002246	0.0035	0.66		1630.36	1630.36	No	134.77	Si
SLU 78	fin.	-652.33	-1928	-0.0007803	0.0002246	0.0035	0.66		1634.45	1634.45	No	2.51	Si
SLU 84	ini.	35.55	8	-0.0000327	0.0002246	0.0035	0.66		1630.36	1630.36	No	45.86	Si
SLU 84	fin.	-605.69	-1816	-0.0007103	0.0002246	0.0035	0.66		1634.45	1634.45	No	2.7	Si
SLU 79	ini.	6.51	52	-0.0000059	0.0002246	0.0035	0.66		1630.36	1630.36	No	250.59	Si
SLU 79	fin.	-602.99	-1702	-0.0007063	0.0002246	0.0035	0.66		1634.45	1634.45	No	2.71	Si
SLU 75	ini.	20.75	-97	-0.0000019	0.0002246	0.0035	0.66		1630.36	1630.36	No	78.58	Si
SLU 75	fin.	-632.48	-1952	-0.0007502	0.0002246	0.0035	0.66		1634.45	1634.45	No	2.58	Si
SLU 80	ini.	11.36	54	-0.0000104	0.0002246	0.0035	0.66		1630.36	1630.36	No	143.54	Si
SLU 80	fin.	-606.94	-1723	-0.0007121	0.0002246	0.0035	0.66		1634.45	1634.45	No	2.69	Si
SLU 69	ini.	-29.03	-84	-0.0000266	0.0002246	0.0035	0.66		1634.45	1634.45	No	56.31	Si
SLU 69	fin.	-604.98	-1749	-0.0007092	0.0002246	0.0035	0.66		1634.45	1634.45	No	2.7	Si
SLU 83	ini.	30.7	6	-0.0000282	0.0002246	0.0035	0.66		1630.36	1630.36	No	53.1	Si
SLU 83	fin.	-601.74	-1795	-0.0007045	0.0002246	0.0035	0.66		1634.45	1634.45	No	2.72	Si
SLU 74	ini.	15.9	-98	-0.0000145	0.0002246	0.0035	0.66		1630.36	1630.36	No	102.57	Si
SLU 74	fin.	-628.53	-1932	-0.0007443	0.0002246	0.0035	0.66		1634.45	1634.45	No	2.6	Si
SLU 70	ini.	-24.18	-83	-0.0000221	0.0002246	0.0035	0.66		1634.45	1634.45	No	67.61	Si
SLU 70	fin.	-608.93	-1770	-0.0007151	0.0002246	0.0035	0.66		1634.45	1634.45	No	2.68	Si
SLU 77	ini.	7.24	-28	-0.0000066	0.0002246	0.0035	0.66		1630.36	1630.36	No	225.03	Si
SLU 77	fin.	-648.38	-1907	-0.0007743	0.0002246	0.0035	0.66		1634.45	1634.45	No	2.52	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 77	ini.	7.24	107	0.66	0	179	5234	3321	1683	5004	No	46.94	Si
SLU 77	fin.	-648.38	-2603	0.66	0	179	5234	3321	1683	5004	No	1.92	Si
SLU 83	ini.	30.7	-36	0.66	0	179	5234	3321	1683	5004	No	140.63	Si
SLU 83	fin.	-601.74	-2377	0.66	0	179	5234	3321	1683	5004	No	2.1	Si
SLU 69	ini.	-29.03	279	0.66	0	179	5234	3321	1683	5004	No	17.96	Si
SLU 69	fin.	-604.98	-2485	0.66	0	179	5234	3321	1683	5004	No	2.01	Si
SLU 78	ini.	12.1	85	0.66	0	179	5234	3321	1683	5004	No	59.01	Si
SLU 78	fin.	-652.33	-2607	0.66	0	179	5234	3321	1683	5004	No	1.92	Si
SLU 75	ini.	20.75	-28	0.66	0	179	5234	3321	1683	5004	No	179.34	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 75	fin.	-632.48	-2458	0.66	0	179	5234	3321	1683	5004	No	2.04	Si
SLU 79	ini.	6.51	151	0.66	0	179	5234	3321	1683	5004	No	33.18	Si
SLU 79	fin.	-602.99	-2476	0.66	0	179	5234	3321	1683	5004	No	2.02	Si
SLU 74	ini.	15.9	-6	0.66	0	179	5234	3321	1683	5004	No	820.38	Si
SLU 74	fin.	-628.53	-2454	0.66	0	179	5234	3321	1683	5004	No	2.04	Si
SLU 80	ini.	11.36	129	0.66	0	179	5234	3321	1683	5004	No	38.78	Si
SLU 80	fin.	-606.94	-2480	0.66	0	179	5234	3321	1683	5004	No	2.02	Si
SLU 70	ini.	-24.18	257	0.66	0	179	5234	3321	1683	5004	No	19.49	Si
SLU 70	fin.	-608.93	-2489	0.66	0	179	5234	3321	1683	5004	No	2.01	Si
SLU 84	ini.	35.55	-57	0.66	0	179	5234	3321	1683	5004	No	87.2	Si
SLU 84	fin.	-605.69	-2381	0.66	0	179	5234	3321	1683	5004	No	2.1	Si

**Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche**

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 13	ini.	-1648.63	-6293	-0.0032419	0.0003369	0.0035	0.66		1614.71	1614.71		0.98	No
SLV 13	fin.	252.7	-2318	-0.0002456	0.0003369	0.0035	0.66		1610.37	1610.37		6.37	Si
SLV 16	ini.	-1301.71	-5803	-0.0019668	0.0003369	0.0035	0.66		1614.71	1614.71		1.24	Si
SLV 16	fin.	-190.28	-3669	-0.0001812	0.0003369	0.0035	0.66		1614.71	1614.71		8.49	Si
SLV 15	ini.	-1273	-5705	-0.0018893	0.0003369	0.0035	0.66		1614.71	1614.71		1.27	Si
SLV 15	fin.	-206	-3668	-0.000197	0.0003369	0.0035	0.66		1614.71	1614.71		7.84	Si
SLV 4	ini.	1613.88	6026	-0.0031065	0.0003369	0.0035	0.66		1610.37	1610.37		1	No
SLV 4	fin.	-1019.72	-64	-0.0013297	0.0003369	0.0035	0.66		1614.71	1614.71		1.58	Si
SLV 7	ini.	1055.29	2652	-0.0014034	0.0003369	0.0035	0.66		1610.37	1610.37		1.53	Si
SLV 7	fin.	-1277.51	-2901	-0.0019013	0.0003369	0.0035	0.66		1614.71	1614.71		1.26	Si
SLV 2	ini.	1238.25	5438	-0.001808	0.0003369	0.0035	0.66		1610.37	1610.37		1.3	Si
SLV 2	fin.	-561.02	1286	-0.0006076	0.0003369	0.0035	0.66		1614.71	1614.71		2.88	Si
SLV 1	ini.	1266.96	5536	-0.0018818	0.0003369	0.0035	0.66		1610.37	1610.37		1.27	Si
SLV 1	fin.	-576.74	1288	-0.0006285	0.0003369	0.0035	0.66		1614.71	1614.71		2.8	Si
SLV 8	ini.	1036.74	2589	-0.0013671	0.0003369	0.0035	0.66		1610.37	1610.37		1.55	Si
SLV 8	fin.	-1267.35	-2901	-0.0018745	0.0003369	0.0035	0.66		1614.71	1614.71		1.27	Si
SLV 3	ini.	1642.59	6124	-0.0032334	0.0003369	0.0035	0.66		1610.37	1610.37		0.98	No
SLV 3	fin.	-1035.44	-63	-0.0013597	0.0003369	0.0035	0.66		1614.71	1614.71		1.56	Si
SLV 14	ini.	-1677.34	-6391	-0.0033668	0.0003369	0.0035	0.66		1614.71	1614.71		0.96	No
SLV 14	fin.	268.42	-2319	-0.0002621	0.0003369	0.0035	0.66		1610.37	1610.37		6	Si

**Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215**

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 2	ini.	1238.25	-1990	0.66	0	268	5234	4981	1683	5501		2.76	Si
SLV 2	fin.	-561.02	-3700	0.66	0	268	5234	4981	1683	5501		1.49	Si
SLV 14	ini.	-1677.34	3364	0.66	0	268	5234	4981	1683	5501		1.64	Si
SLV 14	fin.	268.42	2382	0.66	0	268	5234	4981	1683	5501		2.31	Si
SLV 1	ini.	1266.96	-2057	0.66	0	268	5234	4981	1683	5501		2.67	Si
SLV 1	fin.	-576.74	-3782	0.66	0	268	5234	4981	1683	5501		1.45	Si
SLV 3	ini.	1642.59	-3194	0.66	0	268	5234	4981	1683	5501		1.72	Si
SLV 3	fin.	-1035.44	-5408	0.66	0	268	5234	4981	1683	5501		1.02	Si
SLV 7	ini.	1055.29	-2635	0.66	0	268	5234	4981	1683	5501		2.09	Si
SLV 7	fin.	-1277.51	-5163	0.66	0	268	5234	4981	1683	5501		1.07	Si
SLV 8	ini.	1036.74	-2591	0.66	0	268	5234	4981	1683	5501		2.12	Si
SLV 8	fin.	-1267.35	-5110	0.66	0	268	5234	4981	1683	5501		1.08	Si
SLV 11	ini.	180.61	-1028	0.66	0	268	5234	4981	1683	5501		5.35	Si
SLV 11	fin.	-1028.67	-3338	0.66	0	268	5234	4981	1683	5501		1.65	Si
SLV 12	ini.	162.07	-985	0.66	0	268	5234	4981	1683	5501		5.58	Si
SLV 12	fin.	-1018.52	-3285	0.66	0	268	5234	4981	1683	5501		1.67	Si
SLV 4	ini.	1613.88	-3127	0.66	0	268	5234	4981	1683	5501		1.76	Si
SLV 4	fin.	-1019.72	-5326	0.66	0	268	5234	4981	1683	5501		1.03	Si
SLV 13	ini.	-1648.63	3297	0.66	0	268	5234	4981	1683	5501		1.67	Si
SLV 13	fin.	252.7	2300	0.66	0	268	5234	4981	1683	5501		2.39	Si

**Tabella dei coefficienti di sicurezza minimi**

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.963	SLV 14	No
V_SLV	1.017	SLV 3	Si
PF_SLU	2.506	SLU 78	Si
V_SLU	1.919	SLU 78	Si

**Trave di accoppiamento 158**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati geometrici**

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-6.463	1.006	13.97	15.03	1.06	-7.463	1.006	13.97	15.03	1.06	1	0.28	3500

**Caratteristiche del materiale**

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC





Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma_{F,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 52	ini.	-16.91	-616	-0.000006	0.0002246	0.0035	1.06		4210.93	4210.93	No	249.03	Si
SLU 52	fin.	-164.9	-739	-0.0000592	0.0002246	0.0035	1.06		4210.93	4210.93	No	25.54	Si
SLU 64	ini.	9.75	-594	-0.0000034	0.0002246	0.0035	1.06		4204.29	4204.29	No	431.4	Si
SLU 64	fin.	-191.3	-839	-0.0000689	0.0002246	0.0035	1.06		4210.93	4210.93	No	22.01	Si
SLU 46	ini.	-26.07	-760	-0.0000092	0.0002246	0.0035	1.06		4210.93	4210.93	No	161.53	Si
SLU 46	fin.	-179.54	-914	-0.0000646	0.0002246	0.0035	1.06		4210.93	4210.93	No	23.45	Si
SLU 47	ini.	-17.86	-682	-0.0000063	0.0002246	0.0035	1.06		4210.93	4210.93	No	235.83	Si
SLU 47	fin.	-181.07	-872	-0.0000652	0.0002246	0.0035	1.06		4210.93	4210.93	No	23.26	Si
SLU 43	ini.	3.7	-581	-0.0000013	0.0002246	0.0035	1.06		4204.29	4204.29	No	1136.31	Si
SLU 43	fin.	-208.93	-910	-0.0000755	0.0002246	0.0035	1.06		4210.93	4210.93	No	20.16	Si
SLU 67	ini.	-20.02	-772	-0.0000071	0.0002246	0.0035	1.06		4210.93	4210.93	No	210.3	Si
SLU 67	fin.	-161.92	-843	-0.0000581	0.0002246	0.0035	1.06		4210.93	4210.93	No	26.01	Si
SLU 44	ini.	9.62	-563	-0.0000034	0.0002246	0.0035	1.06		4204.29	4204.29	No	436.99	Si
SLU 44	fin.	-213.26	-917	-0.0000771	0.0002246	0.0035	1.06		4210.93	4210.93	No	19.75	Si
SLU 45	ini.	-29.62	-771	-0.0000105	0.0002246	0.0035	1.06		4210.93	4210.93	No	142.16	Si
SLU 45	fin.	-176.94	-909	-0.0000636	0.0002246	0.0035	1.06		4210.93	4210.93	No	23.8	Si
SLU 68	ini.	-11.81	-694	-0.0000042	0.0002246	0.0035	1.06		4210.93	4210.93	No	356.55	Si
SLU 68	fin.	-163.45	-801	-0.0000587	0.0002246	0.0035	1.06		4210.93	4210.93	No	25.76	Si
SLU 65	ini.	15.67	-575	-0.0000055	0.0002246	0.0035	1.06		4204.29	4204.29	No	268.35	Si
SLU 65	fin.	-195.63	-846	-0.0000705	0.0002246	0.0035	1.06		4210.93	4210.93	No	21.52	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 72	ini.	-41.66	1701	1.06	0	430	7930	5333	2703	8036	No	4.73	Si
SLU 72	fin.	-129.54	-2646	1.06	0	430	7930	5333	2703	8036	No	3.04	Si
SLU 48	ini.	-57.1	1756	1.06	0	430	7930	5333	2703	8036	No	4.58	Si
SLU 48	fin.	-144.76	-2602	1.06	0	430	7930	5333	2703	8036	No	3.09	Si
SLU 69	ini.	-51.05	1921	1.06	0	430	7930	5333	2703	8036	No	4.18	Si
SLU 69	fin.	-127.14	-2756	1.06	0	430	7930	5333	2703	8036	No	2.92	Si
SLU 67	ini.	-20.02	1682	1.06	0	430	7930	5333	2703	8036	No	4.78	Si
SLU 67	fin.	-161.92	-2597	1.06	0	430	7930	5333	2703	8036	No	3.09	Si
SLU 70	ini.	-47.5	1906	1.06	0	430	7930	5333	2703	8036	No	4.22	Si
SLU 70	fin.	-129.74	-2766	1.06	0	430	7930	5333	2703	8036	No	2.9	Si
SLU 77	ini.	-77.58	2106	1.06	0	430	7930	5333	2703	8036	No	3.82	Si
SLU 77	fin.	-78.78	-2505	1.06	0	430	7930	5333	2703	8036	No	3.21	Si
SLU 71	ini.	-45.21	1716	1.06	0	430	7930	5333	2703	8036	No	4.68	Si
SLU 71	fin.	-126.94	-2636	1.06	0	430	7930	5333	2703	8036	No	3.05	Si
SLU 78	ini.	-74.03	2090	1.06	0	430	7930	5333	2703	8036	No	3.84	Si
SLU 78	fin.	-81.38	-2515	1.06	0	430	7930	5333	2703	8036	No	3.2	Si
SLU 49	ini.	-53.55	1740	1.06	0	430	7930	5333	2703	8036	No	4.62	Si
SLU 49	fin.	-147.36	-2612	1.06	0	430	7930	5333	2703	8036	No	3.08	Si
SLU 66	ini.	-23.58	1697	1.06	0	430	7930	5333	2703	8036	No	4.74	Si
SLU 66	fin.	-159.32	-2587	1.06	0	430	7930	5333	2703	8036	No	3.11	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 16	ini.	-819.42	-2604	-0.0003142	0.0003369	0.0035	1.06		4170.47	4170.47		5.09	Si
SLV 16	fin.	582.56	715	-0.0002176	0.0003369	0.0035	1.06		4163.27	4163.27		7.15	Si
SLV 13	ini.	-1058.5	-3386	-0.0004193	0.0003369	0.0035	1.06		4170.47	4170.47		3.94	Si
SLV 13	fin.	704.61	861	-0.0002669	0.0003369	0.0035	1.06		4163.27	4163.27		5.91	Si
SLV 2	ini.	775.09	1539	-0.0002961	0.0003369	0.0035	1.06		4163.27	4163.27		5.37	Si
SLV 2	fin.	-816.46	-1844	-0.000313	0.0003369	0.0035	1.06		4170.47	4170.47		5.11	Si
SLV 7	ini.	760.9	1845	-0.0002902	0.0003369	0.0035	1.06		4163.27	4163.27		5.47	Si
SLV 7	fin.	-655.49	-1453	-0.0002464	0.0003369	0.0035	1.06		4170.47	4170.47		6.36	Si
SLV 14	ini.	-1100.01	-3513	-0.0004384	0.0003369	0.0035	1.06		4170.47	4170.47		3.79	Si
SLV 14	fin.	745.13	952	-0.0002836	0.0003369	0.0035	1.06		4163.27	4163.27		5.59	Si
SLV 15	ini.	-777.92	-2477	-0.0002968	0.0003369	0.0035	1.06		4170.47	4170.47		5.36	Si
SLV 15	fin.	542.04	624	-0.0002015	0.0003369	0.0035	1.06		4163.27	4163.27		7.68	Si
SLV 10	ini.	-763.73	-2784	-0.0002909	0.0003369	0.0035	1.06		4170.47	4170.47		5.46	Si
SLV 10	fin.	381.06	233	-0.0001393	0.0003369	0.0035	1.06		4163.27	4163.27		10.93	Si
SLV 4	ini.	1055.68	2448	-0.0004188	0.0003369	0.0035	1.06		4163.27	4163.27		3.94	Si
SLV 4	fin.	-979.03	-2081	-0.0003835	0.0003369	0.0035	1.06		4170.47	4170.47		4.26	Si
SLV 1	ini.	816.6	1665	-0.0003136	0.0003369	0.0035	1.06		4163.27	4163.27		5.1	Si
SLV 1	fin.	-856.99	-1935	-0.0003302	0.0003369	0.0035	1.06		4170.47	4170.47		4.87	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 3	ini.	1097.19	2575	-0.0004379	0.0003369	0.0035	1.06		4163.27	4163.27		3.79	Si
SLV 3	fin.	-1019.56	-2172	-0.0004017	0.0003369	0.0035	1.06		4170.47	4170.47		4.09	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 16	ini.	-819.42	4261	1.06	0	645	7930	8000	2703	8575		2.01	Si
SLV 16	fin.	582.56	1467	1.06	0	645	7930	8000	2703	8575		5.85	Si
SLV 3	ini.	1097.19	-3345	1.06	0	645	7930	8000	2703	8575		2.56	Si
SLV 3	fin.	-1019.56	-5810	1.06	0	645	7930	8000	2703	8575		1.48	Si
SLV 7	ini.	760.9	-1964	1.06	0	645	7930	8000	2703	8575		4.37	Si
SLV 7	fin.	-655.49	-4480	1.06	0	645	7930	8000	2703	8575		1.91	Si
SLV 2	ini.	775.09	-2069	1.06	0	645	7930	8000	2703	8575		4.14	Si
SLV 2	fin.	-816.46	-4640	1.06	0	645	7930	8000	2703	8575		1.85	Si
SLV 1	ini.	816.6	-2278	1.06	0	645	7930	8000	2703	8575		3.76	Si
SLV 1	fin.	-856.99	-4789	1.06	0	645	7930	8000	2703	8575		1.79	Si
SLV 14	ini.	-1100.01	5328	1.06	0	645	7930	8000	2703	8575		1.61	Si
SLV 14	fin.	745.13	2488	1.06	0	645	7930	8000	2703	8575		3.45	Si
SLV 8	ini.	734.1	-1829	1.06	0	645	7930	8000	2703	8575		4.69	Si
SLV 8	fin.	-629.32	-4384	1.06	0	645	7930	8000	2703	8575		1.96	Si
SLV 13	ini.	-1058.5	5120	1.06	0	645	7930	8000	2703	8575		1.67	Si
SLV 13	fin.	704.61	2338	1.06	0	645	7930	8000	2703	8575		3.67	Si
SLV 15	ini.	-777.92	4053	1.06	0	645	7930	8000	2703	8575		2.12	Si
SLV 15	fin.	542.04	1317	1.06	0	645	7930	8000	2703	8575		6.51	Si
SLV 4	ini.	1055.68	-3136	1.06	0	645	7930	8000	2703	8575		2.73	Si
SLV 4	fin.	-979.03	-5661	1.06	0	645	7930	8000	2703	8575		1.51	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.791	SLV 14	Si
V_SLV	1.476	SLV 3	Si
PF_SLU	19.746	SLU 44	Si
V_SLU	2.905	SLU 70	Si

## Trave di accoppiamento 159

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-4.113	1.006	13.97	15.03	1.06	-4.913	1.006	13.97	15.03	1.06	0.8	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fnk	fvk0	fnmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	elim,conv / e,CNR DT-200						CRM / Fibrenet?				
									αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 67	ini.	179.86	-367	-0.0000648	0.0002246	0.0035	1.06		4204.29	4204.29	No	23.37	Si
SLU 67	fin.	-303.05	-1344	-0.0001108	0.0002246	0.0035	1.06		4210.93	4210.93	No	13.9	Si
SLU 66	ini.	181.3	-367	-0.0000654	0.0002246	0.0035	1.06		4204.29	4204.29	No	23.19	Si
SLU 66	fin.	-305.89	-1354	-0.0001119	0.0002246	0.0035	1.06		4210.93	4210.93	No	13.77	Si
SLU 50	ini.	188.75	-326	-0.0000681	0.0002246	0.0035	1.06		4204.29	4204.29	No	22.27	Si
SLU 50	fin.	-308.51	-1307	-0.0001129	0.0002246	0.0035	1.06		4210.93	4210.93	No	13.65	Si
SLU 70	ini.	156.59	-474	-0.0000563	0.0002246	0.0035	1.06		4204.29	4204.29	No	26.85	Si
SLU 70	fin.	-313.46	-1433	-0.0001148	0.0002246	0.0035	1.06		4210.93	4210.93	No	13.43	Si
SLU 51	ini.	187.31	-326	-0.0000676	0.0002246	0.0035	1.06		4204.29	4204.29	No	22.45	Si
SLU 51	fin.	-305.67	-1297	-0.0001118	0.0002246	0.0035	1.06		4210.93	4210.93	No	13.78	Si
SLU 48	ini.	179.85	-405	-0.0000648	0.0002246	0.0035	1.06		4204.29	4204.29	No	23.38	Si
SLU 48	fin.	-322.36	-1417	-0.0001182	0.0002246	0.0035	1.06		4210.93	4210.93	No	13.06	Si
SLU 46	ini.	201.69	-298	-0.0000729	0.0002246	0.0035	1.06		4204.29	4204.29	No	20.85	Si
SLU 46	fin.	-309.11	-1318	-0.0001131	0.0002246	0.0035	1.06		4210.93	4210.93	No	13.62	Si
SLU 45	ini.	203.13	-298	-0.0000734	0.0002246	0.0035	1.06		4204.29	4204.29	No	20.7	Si



Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 45	fin.	-311.95	-1328	-0.0001142	0.0002246	0.0035	1.06		4210.93	4210.93	No	13.5	Si
SLU 69	ini.	158.02	-474	-0.0000568	0.0002246	0.0035	1.06		4204.29	4204.29	No	26.61	Si
SLU 69	fin.	-316.3	-1443	-0.0001159	0.0002246	0.0035	1.06		4210.93	4210.93	No	13.31	Si
SLU 49	ini.	178.42	-405	-0.0000643	0.0002246	0.0035	1.06		4204.29	4204.29	No	23.56	Si
SLU 49	fin.	-319.53	-1407	-0.0001171	0.0002246	0.0035	1.06		4210.93	4210.93	No	13.18	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 69	ini.	158.02	-80	1.06	0	430	6344	5333	2703	6774	No	84.25	Si
SLU 69	fin.	-316.3	-2701	1.06	0	430	6344	5333	2703	6774	No	2.51	Si
SLU 46	ini.	201.69	-204	1.06	0	430	6344	5333	2703	6774	No	33.2	Si
SLU 46	fin.	-309.11	-2719	1.06	0	430	6344	5333	2703	6774	No	2.49	Si
SLU 66	ini.	181.3	-119	1.06	0	430	6344	5333	2703	6774	No	56.81	Si
SLU 66	fin.	-305.89	-2684	1.06	0	430	6344	5333	2703	6774	No	2.52	Si
SLU 49	ini.	178.42	-165	1.06	0	430	6344	5333	2703	6774	No	41.01	Si
SLU 49	fin.	-319.53	-2736	1.06	0	430	6344	5333	2703	6774	No	2.48	Si
SLU 45	ini.	203.13	-218	1.06	0	430	6344	5333	2703	6774	No	31.07	Si
SLU 45	fin.	-311.95	-2722	1.06	0	430	6344	5333	2703	6774	No	2.49	Si
SLU 67	ini.	179.86	-105	1.06	0	430	6344	5333	2703	6774	No	64.35	Si
SLU 67	fin.	-303.05	-2681	1.06	0	430	6344	5333	2703	6774	No	2.53	Si
SLU 51	ini.	187.31	-245	1.06	0	430	6344	5333	2703	6774	No	27.7	Si
SLU 51	fin.	-305.67	-2588	1.06	0	430	6344	5333	2703	6774	No	2.62	Si
SLU 50	ini.	188.75	-258	1.06	0	430	6344	5333	2703	6774	No	26.21	Si
SLU 50	fin.	-308.51	-2591	1.06	0	430	6344	5333	2703	6774	No	2.61	Si
SLU 70	ini.	156.59	-66	1.06	0	430	6344	5333	2703	6774	No	101.95	Si
SLU 70	fin.	-313.46	-2698	1.06	0	430	6344	5333	2703	6774	No	2.51	Si
SLU 48	ini.	179.85	-179	1.06	0	430	6344	5333	2703	6774	No	37.81	Si
SLU 48	fin.	-322.36	-2739	1.06	0	430	6344	5333	2703	6774	No	2.47	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-610.62	-1811	-0.0002284	0.0003369	0.0035	1.06		4170.47	4170.47		6.83	Si
SLV 15	fin.	-185.65	-1639	-0.0000665	0.0003369	0.0035	1.06		4170.47	4170.47		22.46	Si
SLV 10	ini.	193.95	-569	-0.0000696	0.0003369	0.0035	1.06		4163.27	4163.27		21.47	Si
SLV 10	fin.	-519.04	-2277	-0.0001922	0.0003369	0.0035	1.06		4170.47	4170.47		8.03	Si
SLV 2	ini.	927.54	1530	-0.0003614	0.0003369	0.0035	1.06		4163.27	4163.27		4.49	Si
SLV 2	fin.	-236.99	-107	-0.0000853	0.0003369	0.0035	1.06		4170.47	4170.47		17.6	Si
SLV 16	ini.	-614.59	-1850	-0.00023	0.0003369	0.0035	1.06		4170.47	4170.47		6.79	Si
SLV 16	fin.	-199.91	-1718	-0.0000717	0.0003369	0.0035	1.06		4170.47	4170.47		20.86	Si
SLV 6	ini.	612.32	430	-0.0002294	0.0003369	0.0035	1.06		4163.27	4163.27		6.8	Si
SLV 6	fin.	-479.19	-1606	-0.0001767	0.0003369	0.0035	1.06		4170.47	4170.47		8.7	Si
SLV 4	ini.	779.96	1480	-0.0002981	0.0003369	0.0035	1.06		4163.27	4163.27		5.34	Si
SLV 4	fin.	-67.07	519	-0.0000238	0.0003369	0.0035	1.06		4170.47	4170.47		62.18	Si
SLV 3	ini.	783.93	1520	-0.0002998	0.0003369	0.0035	1.06		4163.27	4163.27		5.31	Si
SLV 3	fin.	-52.81	597	-0.0000187	0.0003369	0.0035	1.06		4170.47	4170.47		78.98	Si
SLV 9	ini.	196.52	-544	-0.0000705	0.0003369	0.0035	1.06		4163.27	4163.27		21.19	Si
SLV 9	fin.	-509.82	-2226	-0.0001886	0.0003369	0.0035	1.06		4170.47	4170.47		8.18	Si
SLV 5	ini.	614.88	455	-0.0002305	0.0003369	0.0035	1.06		4163.27	4163.27		6.77	Si
SLV 5	fin.	-469.97	-1555	-0.0001731	0.0003369	0.0035	1.06		4170.47	4170.47		8.87	Si
SLV 1	ini.	931.51	1570	-0.0003632	0.0003369	0.0035	1.06		4163.27	4163.27		4.47	Si
SLV 1	fin.	-222.72	-29	-0.00008	0.0003369	0.0035	1.06		4170.47	4170.47		18.73	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 5	ini.	357.1	-937	1.06	0	645	6344	8000	2703	6989		7.46	Si
SLD 5	fin.	-326.24	-2850	1.06	0	645	6344	8000	2703	6989		2.45	Si
SLV 4	ini.	779.96	-1224	1.06	0	645	6344	8000	2703	6989		5.71	Si
SLV 4	fin.	-67.07	-3091	1.06	0	645	6344	8000	2703	6989		2.26	Si
SLV 1	ini.	931.51	-1985	1.06	0	645	6344	8000	2703	6989		3.52	Si
SLV 1	fin.	-222.72	-4070	1.06	0	645	6344	8000	2703	6989		1.72	Si
SLV 3	ini.	783.93	-1184	1.06	0	645	6344	8000	2703	6989		5.9	Si
SLV 3	fin.	-52.81	-3057	1.06	0	645	6344	8000	2703	6989		2.29	Si
SLV 5	ini.	614.88	-1920	1.06	0	645	6344	8000	2703	6989		3.64	Si
SLV 5	fin.	-469.97	-4075	1.06	0	645	6344	8000	2703	6989		1.71	Si
SLV 10	ini.	193.95	-1084	1.06	0	645	6344	8000	2703	6989		6.44	Si
SLV 10	fin.	-519.04	-3085	1.06	0	645	6344	8000	2703	6989		2.27	Si
SLV 9	ini.	196.52	-1059	1.06	0	645	6344	8000	2703	6989		6.6	Si
SLV 9	fin.	-509.82	-3063	1.06	0	645	6344	8000	2703	6989		2.28	Si
SLD 6	ini.	355.98	-949	1.06	0	645	6344	8000	2703	6989		7.37	Si
SLD 6	fin.	-330.27	-2860	1.06	0	645	6344	8000	2703	6989		2.44	Si
SLV 6	ini.	612.32	-1946	1.06	0	645	6344	8000	2703	6989		3.59	Si
SLV 6	fin.	-479.19	-4098	1.06	0	645	6344	8000	2703	6989		1.71	Si
SLV 2	ini.	927.54	-2024	1.06	0	645	6344	8000	2703	6989		3.45	Si
SLV 2	fin.	-236.99	-4104	1.06	0	645	6344	8000	2703	6989		1.7	Si

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	4.469	SLV 1	Si
V_SLV	1.703	SLV 2	Si
PF_SLU	13.063	SLU 48	Si
V_SLU	2.473	SLU 48	Si



## Trave di accoppiamento 160

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-6.268	-0.194	13.97	15.03	1.06	-6.268	0.706	13.97	15.03	1.06	0.9	0.16	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato\_Corti

fb	fhk	fvk0	fhmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 75	ini.	-7.4	5	-0.0000026	0.0002246	0.0035	1.06		4238.3	4238.3	No	573.01	Si
SLU 75	fin.	-45.68	-5	-0.0000162	0.0002246	0.0035	1.06		4238.3	4238.3	No	92.77	Si
SLU 74	ini.	-5.2	7	-0.0000018	0.0002246	0.0035	1.06		4238.3	4238.3	No	815.33	Si
SLU 74	fin.	-45.3	-5	-0.000016	0.0002246	0.0035	1.06		4238.3	4238.3	No	93.57	Si
SLU 8	ini.	45.34	13	-0.0000161	0.0002246	0.0035	1.06		4231.66	4231.66	No	93.34	Si
SLU 8	fin.	-20.82	-4	-0.0000073	0.0002246	0.0035	1.06		4238.3	4238.3	No	203.54	Si
SLU 78	ini.	17.81	14	-0.0000063	0.0002246	0.0035	1.06		4231.66	4231.66	No	237.57	Si
SLU 78	fin.	-46.13	-5	-0.0000163	0.0002246	0.0035	1.06		4238.3	4238.3	No	91.87	Si
SLU 83	ini.	-3.83	3	-0.0000013	0.0002246	0.0035	1.06		4238.3	4238.3	No	1107.72	Si
SLU 83	fin.	-44.97	-5	-0.0000159	0.0002246	0.0035	1.06		4238.3	4238.3	No	94.25	Si
SLU 50	ini.	45.49	11	-0.0000161	0.0002246	0.0035	1.06		4231.66	4231.66	No	93.02	Si
SLU 50	fin.	-23.47	-5	-0.0000083	0.0002246	0.0035	1.06		4238.3	4238.3	No	180.56	Si
SLU 77	ini.	20.01	16	-0.0000071	0.0002246	0.0035	1.06		4231.66	4231.66	No	211.47	Si
SLU 77	fin.	-45.75	-5	-0.0000162	0.0002246	0.0035	1.06		4238.3	4238.3	No	92.65	Si
SLU 84	ini.	-6.02	1	-0.0000021	0.0002246	0.0035	1.06		4238.3	4238.3	No	703.51	Si
SLU 84	fin.	-45.36	-5	-0.0000161	0.0002246	0.0035	1.06		4238.3	4238.3	No	93.44	Si
SLU 81	ini.	-29.04	-6	-0.0000103	0.0002246	0.0035	1.06		4238.3	4238.3	No	145.97	Si
SLU 81	fin.	-44.52	-5	-0.0000158	0.0002246	0.0035	1.06		4238.3	4238.3	No	95.2	Si
SLU 82	ini.	-31.23	-8	-0.000011	0.0002246	0.0035	1.06		4238.3	4238.3	No	135.7	Si
SLU 82	fin.	-44.91	-5	-0.0000159	0.0002246	0.0035	1.06		4238.3	4238.3	No	94.38	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 78	ini.	17.81	111	1.06	0	246	7137	3048	2703	5751	No	51.72	Si
SLU 78	fin.	-46.13	-251	1.06	0	246	7137	3048	2703	5751	No	22.87	Si
SLU 80	ini.	24.95	110	1.06	0	246	7137	3048	2703	5751	No	52.11	Si
SLU 80	fin.	-42.13	-252	1.06	0	246	7137	3048	2703	5751	No	22.8	Si
SLU 69	ini.	33.46	103	1.06	0	246	7137	3048	2703	5751	No	55.76	Si
SLU 69	fin.	-37.18	-259	1.06	0	246	7137	3048	2703	5751	No	22.16	Si
SLU 72	ini.	38.4	106	1.06	0	246	7137	3048	2703	5751	No	54.47	Si
SLU 72	fin.	-33.57	-257	1.06	0	246	7137	3048	2703	5751	No	22.37	Si
SLU 71	ini.	40.6	102	1.06	0	246	7137	3048	2703	5751	No	56.2	Si
SLU 71	fin.	-33.18	-260	1.06	0	246	7137	3048	2703	5751	No	22.09	Si
SLU 48	ini.	38.35	103	1.06	0	246	7137	3048	2703	5751	No	55.59	Si
SLU 48	fin.	-27.47	-246	1.06	0	246	7137	3048	2703	5751	No	23.41	Si
SLU 70	ini.	31.26	106	1.06	0	246	7137	3048	2703	5751	No	54.05	Si
SLU 70	fin.	-37.57	-256	1.06	0	246	7137	3048	2703	5751	No	22.44	Si
SLU 79	ini.	27.15	107	1.06	0	246	7137	3048	2703	5751	No	53.69	Si
SLU 79	fin.	-41.75	-255	1.06	0	246	7137	3048	2703	5751	No	22.51	Si
SLU 77	ini.	20.01	108	1.06	0	246	7137	3048	2703	5751	No	53.28	Si
SLU 77	fin.	-45.75	-255	1.06	0	246	7137	3048	2703	5751	No	22.58	Si
SLU 50	ini.	45.49	103	1.06	0	246	7137	3048	2703	5751	No	56.03	Si
SLU 50	fin.	-23.47	-247	1.06	0	246	7137	3048	2703	5751	No	23.33	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 7	ini.	-318.93	156	-0.0001157	0.0003369	0.0035	1.06		4350.23	4350.23		13.64	Si
SLV 7	fin.	60.42	444	-0.0000214	0.0003369	0.0035	1.06		4343.51	4343.51		71.89	Si
SLV 14	ini.	188.29	102	-0.0000675	0.0003369	0.0035	1.06		4343.51	4343.51		23.07	Si
SLV 14	fin.	39.09	17	-0.0000138	0.0003369	0.0035	1.06		4343.51	4343.51		111.11	Si
SLV 8	ini.	-304.31	171	-0.0001102	0.0003369	0.0035	1.06		4350.23	4350.23		14.3	Si
SLV 8	fin.	62.3	444	-0.0000221	0.0003369	0.0035	1.06		4343.51	4343.51		69.72	Si
SLV 6	ini.	234.39	-262	-0.0000844	0.0003369	0.0035	1.06		4343.51	4343.51		18.53	Si
SLV 6	fin.	-169.22	-554	-0.0000605	0.0003369	0.0035	1.06		4350.23	4350.23		25.71	Si
SLV 5	ini.	219.78	-277	-0.0000791	0.0003369	0.0035	1.06		4343.51	4343.51		19.76	Si
SLV 5	fin.	-171.1	-554	-0.0000612	0.0003369	0.0035	1.06		4350.23	4350.23		25.42	Si
SLV 9	ini.	283.67	-181	-0.0001027	0.0003369	0.0035	1.06		4343.51	4343.51		15.31	Si
SLV 9	fin.	-112.6	-452	-0.00004	0.0003369	0.0035	1.06		4350.23	4350.23		38.64	Si
SLV 11	ini.	-255.03	252	-0.0000919	0.0003369	0.0035	1.06		4350.23	4350.23		17.06	Si
SLV 11	fin.	118.93	547	-0.0000424	0.0003369	0.0035	1.06		4343.51	4343.51		36.52	Si
SLV 3	ini.	-208.94	-112	-0.000075	0.0003369	0.0035	1.06		4350.23	4350.23		20.82	Si
SLV 3	fin.	-89.39	-25	-0.0000317	0.0003369	0.0035	1.06		4350.23	4350.23		48.67	Si
SLV 12	ini.	-240.42	267	-0.0000865	0.0003369	0.0035	1.06		4350.23	4350.23		18.09	Si
SLV 12	fin.	120.81	547	-0.0000431	0.0003369	0.0035	1.06		4343.51	4343.51		35.95	Si
SLV 10	ini.	298.29	-166	-0.0001081	0.0003369	0.0035	1.06		4343.51	4343.51		14.56	Si
SLV 10	fin.	-110.72	-452	-0.0000394	0.0003369	0.0035	1.06		4350.23	4350.23		39.29	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 7	ini.	-318.93	735	1.06	0	369	7137	4571	2703	7274		9.89	Si
SLV 7	fin.	60.42	410	1.06	0	369	7137	4571	2703	7274		17.73	Si
SLV 9	ini.	283.67	-447	1.06	0	369	7137	4571	2703	7274		16.26	Si
SLV 9	fin.	-112.6	-674	1.06	0	369	7137	4571	2703	7274		10.79	Si
SLD 7	ini.	-145.71	397	1.06	0	369	7137	4571	2703	7274		18.31	Si
SLD 7	fin.	10.63	100	1.06	0	369	7137	4571	2703	7274		72.4	Si
SLV 6	ini.	234.39	-425	1.06	0	369	7137	4571	2703	7274		17.11	Si
SLV 6	fin.	-169.22	-633	1.06	0	369	7137	4571	2703	7274		11.49	Si
SLV 8	ini.	-304.31	712	1.06	0	369	7137	4571	2703	7274		10.22	Si
SLV 8	fin.	62.3	387	1.06	0	369	7137	4571	2703	7274		18.79	Si
SLV 12	ini.	-240.42	667	1.06	0	369	7137	4571	2703	7274		10.91	Si
SLV 12	fin.	120.81	323	1.06	0	369	7137	4571	2703	7274		22.54	Si
SLV 14	ini.	188.29	-132	1.06	0	369	7137	4571	2703	7274		55.05	Si
SLV 14	fin.	39.09	-422	1.06	0	369	7137	4571	2703	7274		17.24	Si
SLV 5	ini.	219.78	-402	1.06	0	369	7137	4571	2703	7274		18.1	Si
SLV 5	fin.	-171.1	-610	1.06	0	369	7137	4571	2703	7274		11.92	Si
SLV 10	ini.	298.29	-471	1.06	0	369	7137	4571	2703	7274		15.46	Si
SLV 10	fin.	-110.72	-698	1.06	0	369	7137	4571	2703	7274		10.43	Si
SLV 11	ini.	-255.03	690	1.06	0	369	7137	4571	2703	7274		10.55	Si
SLV 11	fin.	118.93	346	1.06	0	369	7137	4571	2703	7274		21.03	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	13.64	SLV 7	Si
V_SLV	9.893	SLV 7	Si
PF_SLU	91.872	SLU 78	Si
V_SLU	22.094	SLU 71	Si

## Trave di accoppiamento 161

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-5.093	6.006	11.87	13.87	2	-5.093	6.506	11.87	13.87	2	0.5	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb_	fhk	fvk0	fmedio	t0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 49	ini.	7.04	-23	-0.0000007	0.0001872	0.0035	2		14344.28	14344.28	No	2036.4	Si
SLU 49	fin.	-47.52	-68	-0.0000047	0.0001872	0.0035	2		14357.01	14357.01	No	302.13	Si
SLU 39	ini.	-40.59	83	-0.0000004	0.0001872	0.0035	2		14357.01	14357.01	No	353.68	Si
SLU 39	fin.	44.9	35	-0.0000044	0.0001872	0.0035	2		14344.28	14344.28	No	319.44	Si
SLU 82	ini.	-42.81	69	-0.0000042	0.0001872	0.0035	2		14357.01	14357.01	No	335.37	Si
SLU 82	fin.	32.46	16	-0.0000032	0.0001872	0.0035	2		14344.28	14344.28	No	441.96	Si
SLU 47	ini.	-3.3	-22	-0.0000003	0.0001872	0.0035	2		14357.01	14357.01	No	4354.11	Si
SLU 47	fin.	-40.62	-62	-0.0000004	0.0001872	0.0035	2		14357.01	14357.01	No	353.42	Si
SLU 81	ini.	-41.51	74	-0.0000041	0.0001872	0.0035	2		14357.01	14357.01	No	345.86	Si
SLU 81	fin.	30.95	16	-0.0000031	0.0001872	0.0035	2		14344.28	14344.28	No	463.42	Si
SLU 48	ini.	8.34	-18	-0.0000008	0.0001872	0.0035	2		14344.28	14344.28	No	1719.47	Si
SLU 48	fin.	-49.02	-68	-0.0000049	0.0001872	0.0035	2		14357.01	14357.01	No	292.87	Si
SLU 40	ini.	-41.89	77	-0.0000041	0.0001872	0.0035	2		14357.01	14357.01	No	342.72	Si
SLU 40	fin.	46.41	35	-0.0000046	0.0001872	0.0035	2		14344.28	14344.28	No	309.09	Si
SLU 51	ini.	9.16	-27	-0.0000009	0.0001872	0.0035	2		14344.28	14344.28	No	1565.93	Si
SLU 51	fin.	-49.11	-70	-0.0000049	0.0001872	0.0035	2		14357.01	14357.01	No	292.31	Si
SLU 50	ini.	10.46	-22	-0.0000011	0.0001872	0.0035	2		14344.28	14344.28	No	1371.54	Si
SLU 50	fin.	-50.62	-70	-0.0000005	0.0001872	0.0035	2		14357.01	14357.01	No	283.63	Si
SLU 45	ini.	-3.25	-10	-0.0000003	0.0001872	0.0035	2		14357.01	14357.01	No	4417.81	Si
SLU 45	fin.	-41.53	-60	-0.0000041	0.0001872	0.0035	2		14357.01	14357.01	No	345.68	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 48	ini.	8.34	-440	2	0	812	3965	8384	5100	4776	No	10.85	Si
SLU 48	fin.	-49.02	-102	2	0	812	3965	8384	5100	4776	No	46.93	Si
SLU 57	ini.	-7.75	-377	2	0	812	3965	8384	5100	4776	No	12.69	Si
SLU 57	fin.	-16.11	0	2	0	812	3965	8384	5100	4776	No	45976.11	Si
SLU 7	ini.	7.96	-374	2	0	812	3965	8384	5100	4776	No	12.77	Si
SLU 7	fin.	-33.57	-74	2	0	812	3965	8384	5100	4776	No	64.82	Si
SLU 50	ini.	10.46	-432	2	0	812	3965	8384	5100	4776	No	11.06	Si
SLU 50	fin.	-50.62	-119	2	0	812	3965	8384	5100	4776	No	40.1	Si
SLU 51	ini.	9.16	-436	2	0	812	3965	8384	5100	4776	No	10.94	Si
SLU 51	fin.	-49.11	-125	2	0	812	3965	8384	5100	4776	No	38.33	Si
SLU 70	ini.	-0.61	-424	2	0	812	3965	8384	5100	4776	No	11.25	Si
SLU 70	fin.	-25.8	-33	2	0	812	3965	8384	5100	4776	No	146.04	Si
SLU 72	ini.	1.5	-416	2	0	812	3965	8384	5100	4776	No	11.48	Si
SLU 72	fin.	-27.4	-50	2	0	812	3965	8384	5100	4776	No	95.44	Si
SLU 69	ini.	0.69	-420	2	0	812	3965	8384	5100	4776	No	11.38	Si
SLU 69	fin.	-27.3	-27	2	0	812	3965	8384	5100	4776	No	175.39	Si
SLU 71	ini.	2.8	-411	2	0	812	3965	8384	5100	4776	No	11.61	Si
SLU 71	fin.	-28.9	-45	2	0	812	3965	8384	5100	4776	No	107.16	Si
SLU 49	ini.	7.04	-445	2	0	812	3965	8384	5100	4776	No	10.74	Si
SLU 49	fin.	-47.52	-107	2	0	812	3965	8384	5100	4776	No	44.53	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-1004.88	1932	-0.0001023	0.0002807	0.0035	2		14215.41	14215.41		14.15	Si
SLV 15	fin.	1130.47	1165	-0.0001157	0.0002807	0.0035	2		14202.07	14202.07		12.56	Si
SLV 14	ini.	-888.22	1633	-0.0000901	0.0002807	0.0035	2		14215.41	14215.41		16	Si
SLV 14	fin.	1032.22	1038	-0.0001053	0.0002807	0.0035	2		14202.07	14202.07		13.76	Si
SLV 4	ini.	814.65	-1541	-0.0000825	0.0002807	0.0035	2		14202.07	14202.07		17.43	Si
SLV 4	fin.	-998.44	-1026	-0.0001016	0.0002807	0.0035	2		14215.41	14215.41		14.24	Si
SLV 1	ini.	1005.56	-1939	-0.0001025	0.0002807	0.0035	2		14202.07	14202.07		14.12	Si
SLV 1	fin.	-1190.28	-1253	-0.0001219	0.0002807	0.0035	2		14215.41	14215.41		11.94	Si
SLV 12	ini.	-565.02	1147	-0.0000568	0.0002807	0.0035	2		14215.41	14215.41		25.16	Si
SLV 12	fin.	576.7	628	-0.000058	0.0002807	0.0035	2		14202.07	14202.07		24.63	Si
SLV 16	ini.	-1042	1981	-0.0001062	0.0002807	0.0035	2		14215.41	14215.41		13.64	Si
SLV 16	fin.	1177.27	1215	-0.0001206	0.0002807	0.0035	2		14202.07	14202.07		12.06	Si
SLV 5	ini.	528.58	-1104	-0.0000531	0.0002807	0.0035	2		14202.07	14202.07		26.87	Si
SLV 5	fin.	-589.71	-667	-0.0000593	0.0002807	0.0035	2		14215.41	14215.41		24.11	Si
SLV 13	ini.	-851.1	1583	-0.0000863	0.0002807	0.0035	2		14215.41	14215.41		16.7	Si
SLV 13	fin.	985.42	988	-0.0001004	0.0002807	0.0035	2		14202.07	14202.07		14.41	Si
SLV 2	ini.	968.44	-1890	-0.0000986	0.0002807	0.0035	2		14202.07	14202.07		14.66	Si
SLV 2	fin.	-1143.48	-1203	-0.000117	0.0002807	0.0035	2		14215.41	14215.41		12.43	Si
SLV 3	ini.	851.78	-1590	-0.0000864	0.0002807	0.0035	2		14202.07	14202.07		16.67	Si
SLV 3	fin.	-1045.24	-1076	-0.0001066	0.0002807	0.0035	2		14215.41	14215.41		13.6	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 14	ini.	-888.22	3476	2	0	1217	3965	12577	5100	5182		1.49	Si
SLV 14	fin.	1032.22	2574	2	0	1217	3965	12577	5100	5182		2.01	Si
SLV 5	ini.	528.58	-2270	2	0	1217	3965	12577	5100	5182		2.28	Si
SLV 5	fin.	-589.71	-1531	2	0	1217	3965	12577	5100	5182		3.39	Si
SLV 15	ini.	-1004.88	3752	2	0	1217	3965	12577	5100	5182		1.38	Si
SLV 15	fin.	1130.47	2848	2	0	1217	3965	12577	5100	5182		1.82	Si
SLV 2	ini.	968.44	-4127	2	0	1217	3965	12577	5100	5182		1.26	Si
SLV 2	fin.	-1143.48	-2798	2	0	1217	3965	12577	5100	5182		1.85	Si
SLV 1	ini.	1005.56	-4369	2	0	1217	3965	12577	5100	5182		1.19	Si
SLV 1	fin.	-1190.28	-2945	2	0	1217	3965	12577	5100	5182		1.76	Si
SLV 4	ini.	814.65	-3609	2	0	1217	3965	12577	5100	5182		1.44	Si
SLV 4	fin.	-998.44	-2376	2	0	1217	3965	12577	5100	5182		2.18	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 13	ini.	-851.1	3234	2	0	1217	3965	12577	5100	5182		1.6	Si
SLV 13	fin.	985.42	2427	2	0	1217	3965	12577	5100	5182		2.14	Si
SLV 3	ini.	851.78	-3851	2	0	1217	3965	12577	5100	5182		1.35	Si
SLV 3	fin.	-1045.24	-2523	2	0	1217	3965	12577	5100	5182		2.05	Si
SLV 16	ini.	-1042	3994	2	0	1217	3965	12577	5100	5182		1.3	Si
SLV 16	fin.	1177.27	2995	2	0	1217	3965	12577	5100	5182		1.73	Si
SLV 6	ini.	504.6	-2113	2	0	1217	3965	12577	5100	5182		2.45	Si
SLV 6	fin.	-559.49	-1436	2	0	1217	3965	12577	5100	5182		3.61	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	11.943	SLV 1	Si
V_SLV	1.186	SLV 1	Si
PF_SLU	283.634	SLU 50	Si
V_SLU	10.735	SLU 49	Si

## Trave di accoppiamento 162

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-5.093	6.006	14.67	15.03	0.36	-5.093	6.506	14.67	15.03	0.36	0.5	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fhk	fvk0	fhmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / ε_CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε <sub>f,d</sub>	γ <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 73	ini.	-43.15	10	-0.0001383	0.0001872	0.0035	0.36		482.14	482.14	No	11.17	Si
SLU 73	fin.	30.78	-160	-0.0000974	0.0001872	0.0035	0.36		479.9	479.9	No	15.59	Si
SLU 40	ini.	-42.42	8	-0.0001359	0.0001872	0.0035	0.36		482.14	482.14	No	11.36	Si
SLU 40	fin.	28.78	-153	-0.0000909	0.0001872	0.0035	0.36		479.9	479.9	No	16.67	Si
SLU 84	ini.	-43.72	11	-0.0001403	0.0001872	0.0035	0.36		482.14	482.14	No	11.03	Si
SLU 84	fin.	29.58	-155	-0.0000935	0.0001872	0.0035	0.36		479.9	479.9	No	16.23	Si
SLU 39	ini.	-42.97	7	-0.0001378	0.0001872	0.0035	0.36		482.14	482.14	No	11.22	Si
SLU 39	fin.	29.86	-159	-0.0000944	0.0001872	0.0035	0.36		479.9	479.9	No	16.07	Si
SLU 60	ini.	-41.02	8	-0.0001311	0.0001872	0.0035	0.36		482.14	482.14	No	11.75	Si
SLU 60	fin.	31.84	-164	-0.0001009	0.0001872	0.0035	0.36		479.9	479.9	No	15.07	Si
SLU 74	ini.	-42.35	8	-0.0001356	0.0001872	0.0035	0.36		482.14	482.14	No	11.39	Si
SLU 74	fin.	28.79	-157	-0.0000909	0.0001872	0.0035	0.36		479.9	479.9	No	16.67	Si
SLU 75	ini.	-41.8	9	-0.0001338	0.0001872	0.0035	0.36		482.14	482.14	No	11.53	Si
SLU 75	fin.	27.72	-151	-0.0000874	0.0001872	0.0035	0.36		479.9	479.9	No	17.31	Si
SLU 83	ini.	-44.27	10	-0.0001422	0.0001872	0.0035	0.36		482.14	482.14	No	10.89	Si
SLU 83	fin.	30.65	-161	-0.000097	0.0001872	0.0035	0.36		479.9	479.9	No	15.66	Si
SLU 81	ini.	-47.79	9	-0.0001543	0.0001872	0.0035	0.36		482.14	482.14	No	10.09	Si
SLU 81	fin.	34.76	-183	-0.0001106	0.0001872	0.0035	0.36		479.9	479.9	No	13.81	Si
SLU 82	ini.	-47.24	10	-0.0001524	0.0001872	0.0035	0.36		482.14	482.14	No	10.21	Si
SLU 82	fin.	33.68	-177	-0.000107	0.0001872	0.0035	0.36		479.9	479.9	No	14.25	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 83	ini.	-44.27	268	0.36	0	105	2855	1509	918	2427	No	9.05	Si
SLU 83	fin.	30.65	-283	0.36	0	105	2855	1509	918	2427	No	8.57	Si
SLU 82	ini.	-47.24	276	0.36	0	105	2855	1509	918	2427	No	8.8	Si
SLU 82	fin.	33.68	-287	0.36	0	105	2855	1509	918	2427	No	8.45	Si
SLU 77	ini.	-38.82	256	0.36	0	105	2855	1509	918	2427	No	9.47	Si
SLU 77	fin.	24.69	-291	0.36	0	105	2855	1509	918	2427	No	8.35	Si
SLU 74	ini.	-42.35	266	0.36	0	105	2855	1509	918	2427	No	9.11	Si
SLU 74	fin.	28.79	-296	0.36	0	105	2855	1509	918	2427	No	8.21	Si
SLU 75	ini.	-41.8	264	0.36	0	105	2855	1509	918	2427	No	9.2	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 75	fin.	27.72	-295	0.36	0	105	2855	1509	918	2427	No	8.24	Si
SLU 84	ini.	-43.72	266	0.36	0	105	2855	1509	918	2427	No	9.14	Si
SLU 84	fin.	29.58	-282	0.36	0	105	2855	1509	918	2427	No	8.6	Si
SLU 73	ini.	-43.15	258	0.36	0	105	2855	1509	918	2427	No	9.41	Si
SLU 73	fin.	30.78	-275	0.36	0	105	2855	1509	918	2427	No	8.82	Si
SLU 78	ini.	-38.27	254	0.36	0	105	2855	1509	918	2427	No	9.57	Si
SLU 78	fin.	23.61	-290	0.36	0	105	2855	1509	918	2427	No	8.38	Si
SLU 81	ini.	-47.79	278	0.36	0	105	2855	1509	918	2427	No	8.72	Si
SLU 81	fin.	34.76	-288	0.36	0	105	2855	1509	918	2427	No	8.42	Si
SLU 53	ini.	-35.58	235	0.36	0	105	2855	1509	918	2427	No	10.35	Si
SLU 53	fin.	25.87	-271	0.36	0	105	2855	1509	918	2427	No	8.95	Si

**Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche**

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 4	ini.	173.37	84	-0.0006522	0.0002807	0.0035	0.36		482.94	482.94		2.79	Si
SLV 4	fin.	-133.09	395	-0.0004703	0.0002807	0.0035	0.36		485.29	485.29		3.65	Si
SLV 3	ini.	189.51	82	-0.000729	0.0002807	0.0035	0.36		482.94	482.94		2.55	Si
SLV 3	fin.	-145.59	445	-0.0005237	0.0002807	0.0035	0.36		485.29	485.29		3.33	Si
SLV 2	ini.	229.44	62	-0.0009323	0.0002807	0.0035	0.36		482.94	482.94		2.1	Si
SLV 2	fin.	-170.83	521	-0.0006367	0.0002807	0.0035	0.36		485.29	485.29		2.84	Si
SLV 1	ini.	245.58	60	-0.0010203	0.0002807	0.0035	0.36		482.94	482.94		1.97	Si
SLV 1	fin.	-183.33	571	-0.0006952	0.0002807	0.0035	0.36		485.29	485.29		2.65	Si
SLV 13	ini.	-229.78	-70	-0.0009285	0.0002807	0.0035	0.36		485.29	485.29		2.11	Si
SLV 13	fin.	177	-619	-0.0006691	0.0002807	0.0035	0.36		482.94	482.94		2.73	Si
SLV 15	ini.	-285.85	-48	-0.0012493	0.0002807	0.0035	0.36		485.29	485.29		1.7	Si
SLV 15	fin.	214.74	-746	-0.0008551	0.0002807	0.0035	0.36		482.94	482.94		2.25	Si
SLV 14	ini.	-245.92	-69	-0.001016	0.0002807	0.0035	0.36		485.29	485.29		1.97	Si
SLV 14	fin.	189.49	-669	-0.0007289	0.0002807	0.0035	0.36		482.94	482.94		2.55	Si
SLV 11	ini.	-187.75	23	-0.0007163	0.0002807	0.0035	0.36		485.29	485.29		2.58	Si
SLV 11	fin.	134.86	-486	-0.0004804	0.0002807	0.0035	0.36		482.94	482.94		3.58	Si
SLV 12	ini.	-198.17	24	-0.000767	0.0002807	0.0035	0.36		485.29	485.29		2.45	Si
SLV 12	fin.	142.94	-518	-0.0005151	0.0002807	0.0035	0.36		482.94	482.94		3.38	Si
SLV 16	ini.	-301.99	-47	-0.0013517	0.0002807	0.0035	0.36		485.29	485.29		1.61	Si
SLV 16	fin.	227.24	-796	-0.0009205	0.0002807	0.0035	0.36		482.94	482.94		2.13	Si

**Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215**

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 3	ini.	189.51	33	0.36	0	158	2855	2264	918	3012		89.98	Si
SLV 3	fin.	-145.59	-1064	0.36	0	158	2855	2264	918	3012		2.83	Si
SLV 13	ini.	-229.78	273	0.36	0	158	2855	2264	918	3012		11.05	Si
SLV 13	fin.	177	652	0.36	0	158	2855	2264	918	3012		4.62	Si
SLV 2	ini.	229.44	-23	0.36	0	158	2855	2264	918	3012		129.69	Si
SLV 2	fin.	-170.83	-1176	0.36	0	158	2855	2264	918	3012		2.56	Si
SLV 1	ini.	245.58	-71	0.36	0	158	2855	2264	918	3012		42.51	Si
SLV 1	fin.	-183.33	-1199	0.36	0	158	2855	2264	918	3012		2.51	Si
SLV 14	ini.	-245.92	320	0.36	0	158	2855	2264	918	3012		9.4	Si
SLV 14	fin.	189.49	675	0.36	0	158	2855	2264	918	3012		4.46	Si
SLV 5	ini.	141.76	-64	0.36	0	158	2855	2264	918	3012		47.13	Si
SLV 5	fin.	-99.04	-704	0.36	0	158	2855	2264	918	3012		4.28	Si
SLV 4	ini.	173.37	81	0.36	0	158	2855	2264	918	3012		37.14	Si
SLV 4	fin.	-133.09	-1041	0.36	0	158	2855	2264	918	3012		2.89	Si
SLV 16	ini.	-301.99	425	0.36	0	158	2855	2264	918	3012		7.09	Si
SLV 16	fin.	227.24	810	0.36	0	158	2855	2264	918	3012		3.72	Si
SLV 15	ini.	-285.85	377	0.36	0	158	2855	2264	918	3012		7.99	Si
SLV 15	fin.	214.74	787	0.36	0	158	2855	2264	918	3012		3.83	Si
SLV 6	ini.	131.34	-33	0.36	0	158	2855	2264	918	3012		90.86	Si
SLV 6	fin.	-90.96	-690	0.36	0	158	2855	2264	918	3012		4.37	Si

**Tabella dei coefficienti di sicurezza minimi**

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.607	SLV 16	Si
V_SLV	2.513	SLV 1	Si
PF_SLU	10.089	SLU 81	Si
V_SLU	8.211	SLU 74	Si

**Trave di accoppiamento 163**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati geometrici**

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-2.063	5.826	11.87	12.77	0.9	-2.963	5.826	11.87	12.77	0.9	0.9	0.28	3500

**Caratteristiche del materiale**

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC





Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 41	ini.	-55.99	133	-0.0000276	0.0001872	0.0035	0.9		2964.67	2964.67	No	52.95	Si
SLU 41	fin.	161.45	-443	-0.0000816	0.0001872	0.0035	0.9		2959	2959	No	18.33	Si
SLU 36	ini.	-69.97	190	-0.0000346	0.0001872	0.0035	0.9		2964.67	2964.67	No	42.37	Si
SLU 36	fin.	163.52	-424	-0.0000826	0.0001872	0.0035	0.9		2959	2959	No	18.1	Si
SLU 37	ini.	-67.42	183	-0.0000333	0.0001872	0.0035	0.9		2964.67	2964.67	No	43.97	Si
SLU 37	fin.	155.58	-407	-0.0000785	0.0001872	0.0035	0.9		2959	2959	No	19.02	Si
SLU 35	ini.	-69.41	187	-0.0000343	0.0001872	0.0035	0.9		2964.67	2964.67	No	42.71	Si
SLU 35	fin.	163.79	-427	-0.0000828	0.0001872	0.0035	0.9		2959	2959	No	18.07	Si
SLU 42	ini.	-56.55	136	-0.0000279	0.0001872	0.0035	0.9		2964.67	2964.67	No	52.42	Si
SLU 42	fin.	161.18	-440	-0.0000814	0.0001872	0.0035	0.9		2959	2959	No	18.36	Si
SLU 33	ini.	-47.01	101	-0.0000232	0.0001872	0.0035	0.9		2964.67	2964.67	No	63.07	Si
SLU 33	fin.	144.4	-418	-0.0000727	0.0001872	0.0035	0.9		2959	2959	No	20.49	Si
SLU 32	ini.	-46.45	98	-0.0000229	0.0001872	0.0035	0.9		2964.67	2964.67	No	63.83	Si
SLU 32	fin.	144.67	-421	-0.0000728	0.0001872	0.0035	0.9		2959	2959	No	20.45	Si
SLU 39	ini.	-33.02	44	-0.0000162	0.0001872	0.0035	0.9		2964.67	2964.67	No	89.77	Si
SLU 39	fin.	142.32	-437	-0.0000716	0.0001872	0.0035	0.9		2959	2959	No	20.79	Si
SLU 40	ini.	-33.59	47	-0.0000165	0.0001872	0.0035	0.9		2964.67	2964.67	No	88.27	Si
SLU 40	fin.	142.05	-434	-0.0000715	0.0001872	0.0035	0.9		2959	2959	No	20.83	Si
SLU 38	ini.	-67.99	185	-0.0000336	0.0001872	0.0035	0.9		2964.67	2964.67	No	43.61	Si
SLU 38	fin.	155.31	-404	-0.0000783	0.0001872	0.0035	0.9		2959	2959	No	19.05	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 35	ini.	-69.41	90	0.9	0	365	7137	3773	2295	6068	No	67.26	Si
SLU 35	fin.	163.79	753	0.9	0	365	7137	3773	2295	6068	No	8.06	Si
SLU 38	ini.	-67.99	105	0.9	0	365	7137	3773	2295	6068	No	57.81	Si
SLU 38	fin.	155.31	707	0.9	0	365	7137	3773	2295	6068	No	8.59	Si
SLU 46	ini.	42.2	-677	0.9	0	365	7137	3773	2295	6068	No	8.97	Si
SLU 46	fin.	-2.36	216	0.9	0	365	7137	3773	2295	6068	No	28.13	Si
SLU 43	ini.	67.71	-708	0.9	0	365	7137	3773	2295	6068	No	8.57	Si
SLU 43	fin.	-29.43	44	0.9	0	365	7137	3773	2295	6068	No	136.9	Si
SLU 78	ini.	-44.6	-132	0.9	0	365	7137	3773	2295	6068	No	45.92	Si
SLU 78	fin.	139.7	703	0.9	0	365	7137	3773	2295	6068	No	8.63	Si
SLU 45	ini.	42.76	-681	0.9	0	365	7137	3773	2295	6068	No	8.91	Si
SLU 45	fin.	-2.09	218	0.9	0	365	7137	3773	2295	6068	No	27.83	Si
SLU 44	ini.	66.78	-701	0.9	0	365	7137	3773	2295	6068	No	8.66	Si
SLU 44	fin.	-29.89	40	0.9	0	365	7137	3773	2295	6068	No	150.3	Si
SLU 36	ini.	-69.97	94	0.9	0	365	7137	3773	2295	6068	No	64.22	Si
SLU 36	fin.	163.52	750	0.9	0	365	7137	3773	2295	6068	No	8.09	Si
SLU 37	ini.	-67.42	101	0.9	0	365	7137	3773	2295	6068	No	60.26	Si
SLU 37	fin.	155.58	709	0.9	0	365	7137	3773	2295	6068	No	8.56	Si
SLU 77	ini.	-44.04	-136	0.9	0	365	7137	3773	2295	6068	No	44.48	Si
SLU 77	fin.	139.97	706	0.9	0	365	7137	3773	2295	6068	No	8.6	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 14	ini.	0.98	-340	-0.0000005	0.0002807	0.0035	0.9		2989.59	2989.59		3045.49	Si
SLV 14	fin.	570.1	-1715	-0.000307	0.0002807	0.0035	0.9		2989.59	2989.59		5.24	Si
SLV 15	ini.	-194.82	558	-0.0000979	0.0002807	0.0035	0.9		2995.37	2995.37		15.37	Si
SLV 15	fin.	690.56	-1549	-0.0003819	0.0002807	0.0035	0.9		2989.59	2989.59		4.33	Si
SLV 13	ini.	9.6	-318	-0.0000047	0.0002807	0.0035	0.9		2989.59	2989.59		311.32	Si
SLV 13	fin.	479.79	-1490	-0.0002537	0.0002807	0.0035	0.9		2989.59	2989.59		6.23	Si
SLV 11	ini.	-350.13	1392	-0.0001804	0.0002807	0.0035	0.9		2995.37	2995.37		8.55	Si
SLV 11	fin.	531.88	-693	-0.0002842	0.0002807	0.0035	0.9		2989.59	2989.59		5.62	Si
SLV 2	ini.	243.04	-866	-0.0001233	0.0002807	0.0035	0.9		2989.59	2989.59		12.3	Si
SLV 2	fin.	-631.53	1038	-0.0003439	0.0002807	0.0035	0.9		2995.37	2995.37		4.74	Si
SLV 16	ini.	-203.45	536	-0.0001023	0.0002807	0.0035	0.9		2995.37	2995.37		14.72	Si
SLV 16	fin.	780.88	-1774	-0.0004408	0.0002807	0.0035	0.9		2989.59	2989.59		3.83	Si
SLV 3	ini.	47.23	32	-0.0000233	0.0002807	0.0035	0.9		2989.59	2989.59		63.3	Si
SLV 3	fin.	-511.08	1204	-0.0002714	0.0002807	0.0035	0.9		2995.37	2995.37		5.86	Si
SLV 1	ini.	251.66	-844	-0.0001278	0.0002807	0.0035	0.9		2989.59	2989.59		11.88	Si
SLV 1	fin.	-721.85	1263	-0.0004012	0.0002807	0.0035	0.9		2995.37	2995.37		4.15	Si
SLV 5	ini.	403.91	-1686	-0.0002106	0.0002807	0.0035	0.9		2989.59	2989.59		7.4	Si
SLV 5	fin.	-531.18	327	-0.0002832	0.0002807	0.0035	0.9		2995.37	2995.37		5.64	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 12	ini.	-355.7	1378	-0.0001835	0.0002807	0.0035	0.9		2995.37	2995.37		8.42	Si
SLV 12	fin.	590.21	-838	-0.0003192	0.0002807	0.0035	0.9		2989.59	2989.59		5.07	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 2	ini.	243.04	-2252	0.9	0	548	7137	5660	2295	7684		3.41	Si
SLV 2	fin.	-631.53	-1822	0.9	0	548	7137	5660	2295	7684		4.22	Si
SLV 12	ini.	-355.7	2337	0.9	0	548	7137	5660	2295	7684		3.29	Si
SLV 12	fin.	590.21	1958	0.9	0	548	7137	5660	2295	7684		3.92	Si
SLV 9	ini.	331.29	-2239	0.9	0	548	7137	5660	2295	7684		3.43	Si
SLV 9	fin.	-170.69	-486	0.9	0	548	7137	5660	2295	7684		15.82	Si
SLV 11	ini.	-350.13	2277	0.9	0	548	7137	5660	2295	7684		3.38	Si
SLV 11	fin.	531.88	1786	0.9	0	548	7137	5660	2295	7684		4.3	Si
SLV 6	ini.	398.34	-2950	0.9	0	548	7137	5660	2295	7684		2.61	Si
SLV 6	fin.	-472.85	-1399	0.9	0	548	7137	5660	2295	7684		5.49	Si
SLV 16	ini.	-203.45	1672	0.9	0	548	7137	5660	2295	7684		4.6	Si
SLV 16	fin.	780.88	2477	0.9	0	548	7137	5660	2295	7684		3.1	Si
SLV 15	ini.	-194.82	1579	0.9	0	548	7137	5660	2295	7684		4.87	Si
SLV 15	fin.	690.56	2210	0.9	0	548	7137	5660	2295	7684		3.48	Si
SLV 1	ini.	251.66	-2345	0.9	0	548	7137	5660	2295	7684		3.28	Si
SLV 1	fin.	-721.85	-2090	0.9	0	548	7137	5660	2295	7684		3.68	Si
SLV 5	ini.	403.91	-3010	0.9	0	548	7137	5660	2295	7684		2.55	Si
SLV 5	fin.	-531.18	-1571	0.9	0	548	7137	5660	2295	7684		4.89	Si
SLV 10	ini.	325.73	-2179	0.9	0	548	7137	5660	2295	7684		3.53	Si
SLV 10	fin.	-112.36	-313	0.9	0	548	7137	5660	2295	7684		24.54	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.829	SLV 16	Si
V_SLV	2.553	SLV 5	Si
PF_SLU	18.065	SLU 35	Si
V_SLU	8.061	SLU 35	Si

Trave di accoppiamento 164

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-2.063	5.826	14.57	15.03	0.46	-2.963	5.826	14.57	15.03	0.46	0.9	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	f <sub>nk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	y,F,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 83	ini.	-128.2	-545	-0.0002683	0.0001872	0.0035	0.46		780.23	780.23	No	6.09	Si
SLU 83	fin.	-2.11	218	-0.0000039	0.0001872	0.0035	0.46		780.23	780.23	No	369.53	Si
SLU 77	ini.	-144.89	-583	-0.0003089	0.0001872	0.0035	0.46		780.23	780.23	No	5.39	Si
SLU 77	fin.	-11.98	237	-0.0000225	0.0001872	0.0035	0.46		780.23	780.23	No	65.11	Si
SLU 35	ini.	-139.63	-593	-0.000296	0.0001872	0.0035	0.46		780.23	780.23	No	5.59	Si
SLU 35	fin.	3.97	258	-0.0000074	0.0001872	0.0035	0.46		777.36	777.36	No	195.72	Si
SLU 37	ini.	-133.05	-566	-0.0002799	0.0001872	0.0035	0.46		780.23	780.23	No	5.86	Si
SLU 37	fin.	5.9	258	-0.0000111	0.0001872	0.0035	0.46		777.36	777.36	No	131.68	Si
SLU 78	ini.	-145.47	-589	-0.0003104	0.0001872	0.0035	0.46		780.23	780.23	No	5.36	Si
SLU 78	fin.	-10.66	241	-0.00002	0.0001872	0.0035	0.46		780.23	780.23	No	73.2	Si
SLU 84	ini.	-128.78	-551	-0.0002697	0.0001872	0.0035	0.46		780.23	780.23	No	6.06	Si
SLU 84	fin.	-0.79	223	-0.0000015	0.0001872	0.0035	0.46		780.23	780.23	No	992.33	Si
SLU 36	ini.	-140.21	-598	-0.0002974	0.0001872	0.0035	0.46		780.23	780.23	No	5.56	Si
SLU 36	fin.	5.3	263	-0.0000099	0.0001872	0.0035	0.46		777.36	777.36	No	146.76	Si
SLU 38	ini.	-133.63	-571	-0.0002814	0.0001872	0.0035	0.46		780.23	780.23	No	5.84	Si



Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 38	fin.	7.23	262	-0.0000136	0.0001872	0.0035	0.46		777.36	777.36	No	107.54	Si
SLU 80	ini.	-138.9	-561	-0.0002942	0.0001872	0.0035	0.46		780.23	780.23	No	5.62	Si
SLU 80	fin.	-8.73	241	-0.0000164	0.0001872	0.0035	0.46		780.23	780.23	No	89.4	Si
SLU 79	ini.	-138.31	-556	-0.0002928	0.0001872	0.0035	0.46		780.23	780.23	No	5.64	Si
SLU 79	fin.	-10.05	236	-0.0000189	0.0001872	0.0035	0.46		780.23	780.23	No	77.62	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 77	ini.	-144.89	1684	0.46	0	124	3648	1928	1173	3101	No	1.84	Si
SLU 77	fin.	-11.98	-551	0.46	0	124	3648	1928	1173	3101	No	5.63	Si
SLU 71	ini.	-120.37	1517	0.46	0	124	3648	1928	1173	3101	No	2.04	Si
SLU 71	fin.	-30.71	-621	0.46	0	124	3648	1928	1173	3101	No	4.99	Si
SLU 35	ini.	-139.63	1570	0.46	0	124	3648	1928	1173	3101	No	1.98	Si
SLU 35	fin.	3.97	-418	0.46	0	124	3648	1928	1173	3101	No	7.43	Si
SLU 70	ini.	-127.53	1580	0.46	0	124	3648	1928	1173	3101	No	1.96	Si
SLU 70	fin.	-31.32	-638	0.46	0	124	3648	1928	1173	3101	No	4.86	Si
SLU 78	ini.	-145.47	1687	0.46	0	124	3648	1928	1173	3101	No	1.84	Si
SLU 78	fin.	-10.66	-545	0.46	0	124	3648	1928	1173	3101	No	5.69	Si
SLU 72	ini.	-120.95	1520	0.46	0	124	3648	1928	1173	3101	No	2.04	Si
SLU 72	fin.	-29.39	-615	0.46	0	124	3648	1928	1173	3101	No	5.04	Si
SLU 80	ini.	-138.9	1627	0.46	0	124	3648	1928	1173	3101	No	1.91	Si
SLU 80	fin.	-8.73	-522	0.46	0	124	3648	1928	1173	3101	No	5.94	Si
SLU 79	ini.	-138.31	1624	0.46	0	124	3648	1928	1173	3101	No	1.91	Si
SLU 79	fin.	-10.05	-528	0.46	0	124	3648	1928	1173	3101	No	5.87	Si
SLU 69	ini.	-126.94	1578	0.46	0	124	3648	1928	1173	3101	No	1.97	Si
SLU 69	fin.	-32.64	-644	0.46	0	124	3648	1928	1173	3101	No	4.82	Si
SLU 36	ini.	-140.21	1572	0.46	0	124	3648	1928	1173	3101	No	1.97	Si
SLU 36	fin.	5.3	-412	0.46	0	124	3648	1928	1173	3101	No	7.54	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 14	ini.	-72.38	-127	-0.0001405	0.0002807	0.0035	0.46		788.4	788.4		10.89	Si
SLV 14	fin.	-183.25	-749	-0.0003865	0.0002807	0.0035	0.46		788.4	788.4		4.3	Si
SLV 8	ini.	-189.2	-1163	-0.0004011	0.0002807	0.0035	0.46		788.4	788.4		4.17	Si
SLV 8	fin.	222.74	1029	-0.0004883	0.0002807	0.0035	0.46		785.44	785.44		3.53	Si
SLV 9	ini.	61.26	701	-0.0001186	0.0002807	0.0035	0.46		785.44	785.44		12.82	Si
SLV 9	fin.	-268.5	-903	-0.0006099	0.0002807	0.0035	0.46		788.4	788.4		2.94	Si
SLV 7	ini.	-183.08	-1122	-0.0003861	0.0002807	0.0035	0.46		788.4	788.4		4.31	Si
SLV 7	fin.	225.12	1056	-0.0004946	0.0002807	0.0035	0.46		785.44	785.44		3.49	Si
SLV 11	ini.	-209.67	-1213	-0.0004525	0.0002807	0.0035	0.46		788.4	788.4		3.76	Si
SLV 11	fin.	169.42	729	-0.0003546	0.0002807	0.0035	0.46		785.44	785.44		4.64	Si
SLV 13	ini.	-62.91	-64	-0.0001214	0.0002807	0.0035	0.46		788.4	788.4		12.53	Si
SLV 13	fin.	-179.56	-707	-0.0003775	0.0002807	0.0035	0.46		788.4	788.4		4.39	Si
SLV 5	ini.	87.85	792	-0.0001729	0.0002807	0.0035	0.46		785.44	785.44		8.94	Si
SLV 5	fin.	-212.8	-575	-0.0004605	0.0002807	0.0035	0.46		788.4	788.4		3.7	Si
SLV 10	ini.	55.14	660	-0.0001063	0.0002807	0.0035	0.46		785.44	785.44		14.24	Si
SLV 10	fin.	-270.89	-930	-0.0006166	0.0002807	0.0035	0.46		788.4	788.4		2.91	Si
SLV 12	ini.	-215.79	-1254	-0.0004682	0.0002807	0.0035	0.46		788.4	788.4		3.65	Si
SLV 12	fin.	167.04	701	-0.0003489	0.0002807	0.0035	0.46		785.44	785.44		4.7	Si
SLV 6	ini.	81.73	751	-0.0001602	0.0002807	0.0035	0.46		785.44	785.44		9.61	Si
SLV 6	fin.	-215.19	-603	-0.0004667	0.0002807	0.0035	0.46		788.4	788.4		3.66	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 8	ini.	-189.2	1834	0.46	0	187	3648	2893	1173	3834		2.09	Si
SLV 8	fin.	222.74	727	0.46	0	187	3648	2893	1173	3834		5.28	Si
SLV 10	ini.	55.14	-244	0.46	0	187	3648	2893	1173	3834		15.7	Si
SLV 10	fin.	-270.89	-1466	0.46	0	187	3648	2893	1173	3834		2.62	Si
SLV 7	ini.	-183.08	1812	0.46	0	187	3648	2893	1173	3834		2.12	Si
SLV 7	fin.	225.12	724	0.46	0	187	3648	2893	1173	3834		5.29	Si
SLV 13	ini.	-62.91	76	0.46	0	187	3648	2893	1173	3834		50.42	Si
SLV 13	fin.	-179.56	-1322	0.46	0	187	3648	2893	1173	3834		2.9	Si
SLV 9	ini.	61.26	-266	0.46	0	187	3648	2893	1173	3834		14.43	Si
SLV 9	fin.	-268.5	-1468	0.46	0	187	3648	2893	1173	3834		2.61	Si
SLV 12	ini.	-215.79	1584	0.46	0	187	3648	2893	1173	3834		2.42	Si
SLV 12	fin.	167.04	317	0.46	0	187	3648	2893	1173	3834		12.09	Si
SLV 14	ini.	-72.38	109	0.46	0	187	3648	2893	1173	3834		35.05	Si
SLV 14	fin.	-183.25	-1318	0.46	0	187	3648	2893	1173	3834		2.91	Si
SLV 3	ini.	-55.56	1459	0.46	0	187	3648	2893	1173	3834		2.63	Si
SLV 3	fin.	137.49	577	0.46	0	187	3648	2893	1173	3834		6.64	Si
SLV 4	ini.	-65.03	1492	0.46	0	187	3648	2893	1173	3834		2.57	Si
SLV 4	fin.	133.79	581	0.46	0	187	3648	2893	1173	3834		6.6	Si
SLV 11	ini.	-209.67	1562	0.46	0	187	3648	2893	1173	3834		2.45	Si
SLV 11	fin.	169.42	315	0.46	0	187	3648	2893	1173	3834		12.17	Si

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.91	SLV 10	Si
V_SLV	2.091	SLV 8	Si
PF_SLU	5.363	SLU 78	Si
V_SLU	1.839	SLU 78	Si



## Trave di accoppiamento 166

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-15.433	-3.314	13.97	15.093	1.123	-16.333	-3.314	13.97	15.094	1.124	0.9	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em <sub>-</sub>	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 72	ini.	-407.49	-957	-0.0001348	0.0001872	0.0035	1.1232		4629.18	4629.18	No	11.36	Si
SLU 72	fin.	289.94	204	-0.0000941	0.0001872	0.0035	1.124		4649.38	4649.38	No	16.04	Si
SLU 68	ini.	-394.94	-914	-0.0001304	0.0001872	0.0035	1.1232		4629.18	4629.18	No	11.72	Si
SLU 68	fin.	277.17	195	-0.0000898	0.0001872	0.0035	1.124		4649.38	4649.38	No	16.77	Si
SLU 66	ini.	-410.75	-949	-0.000136	0.0001872	0.0035	1.1232		4629.18	4629.18	No	11.27	Si
SLU 66	fin.	291.84	205	-0.0000947	0.0001872	0.0035	1.124		4649.38	4649.38	No	15.93	Si
SLU 75	ini.	-391.93	-922	-0.0001294	0.0001872	0.0035	1.1232		4629.18	4629.18	No	11.81	Si
SLU 75	fin.	279.93	238	-0.0000907	0.0001872	0.0035	1.124		4649.38	4649.38	No	16.61	Si
SLU 70	ini.	-425.28	-998	-0.0001411	0.0001872	0.0035	1.1232		4629.18	4629.18	No	10.89	Si
SLU 70	fin.	305.69	211	-0.0000994	0.0001872	0.0035	1.124		4649.38	4649.38	No	15.21	Si
SLU 69	ini.	-424.09	-995	-0.0001407	0.0001872	0.0035	1.1232		4629.18	4629.18	No	10.92	Si
SLU 69	fin.	305.04	212	-0.0000992	0.0001872	0.0035	1.124		4649.38	4649.38	No	15.24	Si
SLU 67	ini.	-411.94	-953	-0.0001364	0.0001872	0.0035	1.1232		4629.18	4629.18	No	11.24	Si
SLU 67	fin.	292.49	204	-0.0000949	0.0001872	0.0035	1.124		4649.38	4649.38	No	15.9	Si
SLU 77	ini.	-404.09	-964	-0.0001336	0.0001872	0.0035	1.1232		4629.18	4629.18	No	11.46	Si
SLU 77	fin.	292.48	246	-0.0000949	0.0001872	0.0035	1.124		4649.38	4649.38	No	15.9	Si
SLU 71	ini.	-406.31	-954	-0.0001344	0.0001872	0.0035	1.1232		4629.18	4629.18	No	11.39	Si
SLU 71	fin.	289.29	205	-0.0000939	0.0001872	0.0035	1.124		4649.38	4649.38	No	16.07	Si
SLU 78	ini.	-405.27	-967	-0.000134	0.0001872	0.0035	1.1232		4629.18	4629.18	No	11.42	Si
SLU 78	fin.	293.12	245	-0.0000952	0.0001872	0.0035	1.124		4649.38	4649.38	No	15.86	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	f <sub>vd</sub>	V <sub>t</sub>	V <sub>t,f</sub>	V <sub>t,c</sub>	V <sub>t,c.int.</sub>	V <sub>t,R</sub>	incremento > 50%	c.s.	Verifica
SLU 67	ini.	-411.94	2948	1.1232	0	456	7137	4709	2864	7573	No	2.57	Si
SLU 67	fin.	292.49	477	1.124	0	456	7137	4712	2866	7579	No	15.9	Si
SLU 78	ini.	-405.27	3177	1.1232	0	456	7137	4709	2864	7573	No	2.38	Si
SLU 78	fin.	293.12	435	1.124	0	456	7137	4712	2866	7579	No	17.43	Si
SLU 80	ini.	-387.49	3062	1.1232	0	456	7137	4709	2864	7573	No	2.47	Si
SLU 80	fin.	277.38	428	1.124	0	456	7137	4712	2866	7579	No	17.71	Si
SLU 77	ini.	-404.09	3173	1.1232	0	456	7137	4709	2864	7573	No	2.39	Si
SLU 77	fin.	292.48	432	1.124	0	456	7137	4712	2866	7579	No	17.55	Si
SLU 69	ini.	-424.09	3196	1.1232	0	456	7137	4709	2864	7573	No	2.37	Si
SLU 69	fin.	305.04	473	1.124	0	456	7137	4712	2866	7579	No	16.04	Si
SLU 70	ini.	-425.28	3200	1.1232	0	456	7137	4709	2864	7573	No	2.37	Si
SLU 70	fin.	305.69	475	1.124	0	456	7137	4712	2866	7579	No	15.94	Si
SLU 66	ini.	-410.75	2944	1.1232	0	456	7137	4709	2864	7573	No	2.57	Si
SLU 66	fin.	291.84	474	1.124	0	456	7137	4712	2866	7579	No	15.99	Si
SLU 79	ini.	-386.3	3058	1.1232	0	456	7137	4709	2864	7573	No	2.48	Si
SLU 79	fin.	276.73	425	1.124	0	456	7137	4712	2866	7579	No	17.83	Si
SLU 72	ini.	-407.49	3085	1.1232	0	456	7137	4709	2864	7573	No	2.46	Si
SLU 72	fin.	289.94	469	1.124	0	456	7137	4712	2866	7579	No	16.17	Si
SLU 71	ini.	-406.31	3081	1.1232	0	456	7137	4709	2864	7573	No	2.46	Si
SLU 71	fin.	289.29	466	1.124	0	456	7137	4712	2866	7579	No	16.27	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 14	ini.	-1029.81	-2089	-0.0003622	0.0002807	0.0035	1.1232		4668.1	4668.1		4.53	Si
SLV 14	fin.	761.41	116	-0.0002576	0.0002807	0.0035	1.124		4644.55	4644.55		6.1	Si
SLV 2	ini.	620.05	1116	-0.0002071	0.0002807	0.0035	1.1232		4660.61	4660.61		7.52	Si
SLV 2	fin.	-488.12	249	-0.0001598	0.0002807	0.0035	1.124		4652.02	4652.02		9.53	Si
SLV 15	ini.	-1162.12	-2353	-0.0004166	0.0002807	0.0035	1.1232		4668.1	4668.1		4.02	Si
SLV 15	fin.	863.38	49	-0.000296	0.0002807	0.0035	1.124		4644.55	4644.55		5.38	Si
SLV 12	ini.	-610.88	-1287	-0.0002035	0.0002807	0.0035	1.1232		4668.1	4668.1		7.64	Si
SLV 12	fin.	438.65	-10	-0.000143	0.0002807	0.0035	1.124		4644.55	4644.55		10.59	Si
SLV 16	ini.	-1097.71	-2226	-0.0003898	0.0002807	0.0035	1.1232		4668.1	4668.1		4.25	Si
SLV 16	fin.	809.92	35	-0.0002757	0.0002807	0.0035	1.124		4644.55	4644.55		5.73	Si
SLV 11	ini.	-652.48	-1368	-0.0002184	0.0002807	0.0035	1.1232		4668.1	4668.1		7.15	Si
SLV 11	fin.	473.18	-1	-0.0001549	0.0002807	0.0035	1.124		4644.55	4644.55		9.82	Si
SLV 13	ini.	-1094.22	-2216	-0.0003884	0.0002807	0.0035	1.1232		4668.1	4668.1		4.27	Si
SLV 13	fin.	814.88	130	-0.0002776	0.0002807	0.0035	1.124		4644.55	4644.55		5.7	Si
SLD 15	ini.	-652.47	-1361	-0.0002184	0.0002807	0.0035	1.1232		4668.1	4668.1		7.15	Si
SLD 15	fin.	476.84	106	-0.0001561	0.0002807	0.0035	1.124		4644.55	4644.55		9.74	Si
SLD 13	ini.	-622.64	-1301	-0.0002077	0.0002807	0.0035	1.1232		4668.1	4668.1		7.5	Si
SLD 13	fin.	455.54	141	-0.0001488	0.0002807	0.0035	1.124		4644.55	4644.55		10.2	Si
SLD 16	ini.	-624.81	-1306	-0.0002084	0.0002807	0.0035	1.1232		4668.1	4668.1		7.47	Si
SLD 16	fin.	453.88	100	-0.0001482	0.0002807	0.0035	1.124		4644.55	4644.55		10.23	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 13	ini.	-622.64	3118	1.1232	0	684	7137	7063	2864	7820		2.51	Si
SLD 13	fin.	455.54	1330	1.124	0	684	7137	7068	2866	7821		5.88	Si
SLV 16	ini.	-1097.71	4243	1.1232	0	684	7137	7063	2864	7820		1.84	Si
SLV 16	fin.	809.92	2749	1.124	0	684	7137	7068	2866	7821		2.84	Si
SLV 9	ini.	-426.14	3229	1.1232	0	684	7137	7063	2864	7820		2.42	Si
SLV 9	fin.	311.48	663	1.124	0	684	7137	7068	2866	7821		11.79	Si
SLD 16	ini.	-624.81	2892	1.1232	0	684	7137	7063	2864	7820		2.7	Si
SLD 16	fin.	453.88	1353	1.124	0	684	7137	7068	2866	7821		5.78	Si
SLV 10	ini.	-384.54	3079	1.1232	0	684	7137	7063	2864	7820		2.54	Si
SLV 10	fin.	276.95	524	1.124	0	684	7137	7068	2866	7821		14.93	Si
SLV 14	ini.	-1029.81	4533	1.1232	0	684	7137	7063	2864	7820		1.73	Si
SLV 14	fin.	761.41	2486	1.124	0	684	7137	7068	2866	7821		3.15	Si
SLD 14	ini.	-594.99	3018	1.1232	0	684	7137	7063	2864	7820		2.59	Si
SLD 14	fin.	432.58	1237	1.124	0	684	7137	7068	2866	7821		6.32	Si
SLV 15	ini.	-1162.12	4474	1.1232	0	684	7137	7063	2864	7820		1.75	Si
SLV 15	fin.	863.38	2965	1.124	0	684	7137	7068	2866	7821		2.64	Si
SLV 13	ini.	-1094.22	4764	1.1232	0	684	7137	7063	2864	7820		1.64	Si
SLV 13	fin.	814.88	2702	1.124	0	684	7137	7068	2866	7821		2.89	Si
SLD 15	ini.	-652.47	2991	1.1232	0	684	7137	7063	2864	7820		2.61	Si
SLD 15	fin.	476.84	1446	1.124	0	684	7137	7068	2866	7821		5.41	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	4.017	SLV 15	Si
V_SLV	1.642	SLV 13	Si
PF_SLU	10.885	SLU 70	Si
V_SLU	2.367	SLU 70	Si

## Trave di accoppiamento 169

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-8.433	-3.314	13.97	15.087	1.117	-9.333	-3.314	13.97	15.088	1.118	0.9	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb_	fhk	fvk0	fmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 71	ini.	258.84	356	-0.0000849	0.0001872	0.0035	1.1174		4568.2	4568.2	No	17.65	Si
SLU 71	fin.	-729.59	-917	-0.0002573	0.0001872	0.0035	1.1182		4606.68	4606.68	No	6.31	Si
SLU 78	ini.	230.94	348	-0.0000755	0.0001872	0.0035	1.1174		4568.2	4568.2	No	19.78	Si
SLU 78	fin.	-693.83	-881	-0.0002431	0.0001872	0.0035	1.1182		4606.68	4606.68	No	6.64	Si
SLU 68	ini.	251.63	345	-0.0000824	0.0001872	0.0035	1.1174		4568.2	4568.2	No	18.15	Si
SLU 68	fin.	-689.12	-873	-0.0002412	0.0001872	0.0035	1.1182		4606.68	4606.68	No	6.68	Si
SLU 66	ini.	259.11	347	-0.000085	0.0001872	0.0035	1.1174		4568.2	4568.2	No	17.63	Si
SLU 66	fin.	-700.5	-892	-0.0002457	0.0001872	0.0035	1.1182		4606.68	4606.68	No	6.58	Si
SLU 80	ini.	223.47	347	-0.0000729	0.0001872	0.0035	1.1174		4568.2	4568.2	No	20.44	Si
SLU 80	fin.	-682.08	-861	-0.0002384	0.0001872	0.0035	1.1182		4606.68	4606.68	No	6.75	Si
SLU 69	ini.	266.31	357	-0.0000874	0.0001872	0.0035	1.1174		4568.2	4568.2	No	17.15	Si
SLU 69	fin.	-741.33	-937	-0.0002621	0.0001872	0.0035	1.1182		4606.68	4606.68	No	6.21	Si
SLU 67	ini.	259.11	346	-0.000085	0.0001872	0.0035	1.1174		4568.2	4568.2	No	17.63	Si
SLU 67	fin.	-700.72	-893	-0.0002458	0.0001872	0.0035	1.1182		4606.68	4606.68	No	6.57	Si
SLU 72	ini.	258.82	355	-0.0000849	0.0001872	0.0035	1.1174		4568.2	4568.2	No	17.65	Si
SLU 72	fin.	-729.8	-917	-0.0002574	0.0001872	0.0035	1.1182		4606.68	4606.68	No	6.31	Si
SLU 70	ini.	266.29	356	-0.0000874	0.0001872	0.0035	1.1174		4568.2	4568.2	No	17.15	Si
SLU 70	fin.	-741.54	-938	-0.0002622	0.0001872	0.0035	1.1182		4606.68	4606.68	No	6.21	Si
SLU 77	ini.	230.95	349	-0.0000755	0.0001872	0.0035	1.1174		4568.2	4568.2	No	19.78	Si
SLU 77	fin.	-693.61	-880	-0.000243	0.0001872	0.0035	1.1182		4606.68	4606.68	No	6.64	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 67	ini.	259.1	-601	1.1174	0	453	7137	4684	2849	7533	No	12.54	Si
SLU 67	fin.	-700.72	-2911	1.1182	0	454	7137	4688	2851	7539	No	2.59	Si
SLU 71	ini.	258.84	-622	1.1174	0	453	7137	4684	2849	7533	No	12.11	Si
SLU 71	fin.	-729.59	-3085	1.1182	0	454	7137	4688	2851	7539	No	2.44	Si
SLU 79	ini.	223.48	-483	1.1174	0	453	7137	4684	2849	7533	No	15.58	Si
SLU 79	fin.	-681.87	-2957	1.1182	0	454	7137	4688	2851	7539	No	2.55	Si
SLU 72	ini.	258.82	-622	1.1174	0	453	7137	4684	2849	7533	No	12.12	Si
SLU 72	fin.	-729.8	-3087	1.1182	0	454	7137	4688	2851	7539	No	2.44	Si
SLU 80	ini.	223.47	-483	1.1174	0	453	7137	4684	2849	7533	No	15.6	Si
SLU 80	fin.	-682.08	-2958	1.1182	0	454	7137	4688	2851	7539	No	2.55	Si
SLU 78	ini.	230.94	-441	1.1174	0	453	7137	4684	2849	7533	No	17.1	Si
SLU 78	fin.	-693.83	-3016	1.1182	0	454	7137	4688	2851	7539	No	2.5	Si
SLU 66	ini.	259.11	-601	1.1174	0	453	7137	4684	2849	7533	No	12.53	Si
SLU 66	fin.	-700.5	-2909	1.1182	0	454	7137	4688	2851	7539	No	2.59	Si
SLU 70	ini.	266.29	-579	1.1174	0	453	7137	4684	2849	7533	No	13	Si
SLU 70	fin.	-741.54	-3145	1.1182	0	454	7137	4688	2851	7539	No	2.4	Si
SLU 69	ini.	266.31	-580	1.1174	0	453	7137	4684	2849	7533	No	12.99	Si
SLU 69	fin.	-741.33	-3144	1.1182	0	454	7137	4688	2851	7539	No	2.4	Si
SLU 77	ini.	230.95	-441	1.1174	0	453	7137	4684	2849	7533	No	17.08	Si
SLU 77	fin.	-693.61	-3015	1.1182	0	454	7137	4688	2851	7539	No	2.5	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 2	ini.	673.61	923	-0.0002291	0.0002807	0.0035	1.1174		4622.84	4622.84		6.86	Si
SLD 2	fin.	-1168.97	-1286	-0.0004231	0.0002807	0.0035	1.1182		4606.83	4606.83		3.94	Si
SLV 2	ini.	1347.13	1836	-0.0005037	0.0002807	0.0035	1.1174		4622.84	4622.84		3.43	Si
SLV 2	fin.	-2108.93	-2201	-0.0008749	0.0002807	0.0035	1.1182		4606.83	4606.83		2.18	Si
SLV 16	ini.	-942.7	-1271	-0.0003316	0.0002807	0.0035	1.1174		4630.29	4630.29		4.91	Si
SLV 16	fin.	1094.03	926	-0.0003923	0.0002807	0.0035	1.1182		4599.4	4599.4		4.2	Si
SLV 3	ini.	1214.81	1492	-0.0004454	0.0002807	0.0035	1.1174		4622.84	4622.84		3.81	Si
SLV 3	fin.	-1919.19	-2019	-0.000775	0.0002807	0.0035	1.1182		4606.83	4606.83		2.4	Si
SLV 4	ini.	1277.59	1578	-0.0004728	0.0002807	0.0035	1.1174		4622.84	4622.84		3.62	Si
SLV 4	fin.	-2000.12	-2090	-0.000817	0.0002807	0.0035	1.1182		4606.83	4606.83		2.3	Si
SLD 1	ini.	646.66	886	-0.0002192	0.0002807	0.0035	1.1174		4622.84	4622.84		7.15	Si
SLD 1	fin.	-1134.22	-1255	-0.0004085	0.0002807	0.0035	1.1182		4606.83	4606.83		4.06	Si
SLV 6	ini.	640.05	1126	-0.0002168	0.0002807	0.0035	1.1174		4622.84	4622.84		7.22	Si
SLV 6	fin.	-1138.6	-1263	-0.0004103	0.0002807	0.0035	1.1182		4606.83	4606.83		4.05	Si
SLV 15	ini.	-1005.47	-1357	-0.0003568	0.0002807	0.0035	1.1174		4630.29	4630.29		4.61	Si
SLV 15	fin.	1174.96	998	-0.0004264	0.0002807	0.0035	1.1182		4599.4	4599.4		3.91	Si
SLD 4	ini.	644.05	811	-0.0002182	0.0002807	0.0035	1.1174		4622.84	4622.84		7.18	Si
SLD 4	fin.	-1122.37	-1238	-0.0004035	0.0002807	0.0035	1.1182		4606.83	4606.83		4.1	Si
SLV 1	ini.	1284.35	1751	-0.0004758	0.0002807	0.0035	1.1174		4622.84	4622.84		3.6	Si
SLV 1	fin.	-2028	-2130	-0.0008317	0.0002807	0.0035	1.1182		4606.83	4606.83		2.27	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 4	ini.	1277.59	-4939	1.1174	0	680	7137	7026	2849	7817		1.58	Si
SLV 4	fin.	-2000.12	-6721	1.1182	0	681	7137	7031	2851	7817		1.16	Si
SLV 15	ini.	-1005.47	4424	1.1174	0	680	7137	7026	2849	7817		1.77	Si
SLV 15	fin.	1174.96	3206	1.1182	0	681	7137	7031	2851	7817		2.44	Si
SLV 16	ini.	-942.7	4170	1.1174	0	680	7137	7026	2849	7817		1.87	Si
SLV 16	fin.	1094.03	2942	1.1182	0	681	7137	7031	2851	7817		2.66	Si
SLD 4	ini.	644.05	-2367	1.1174	0	680	7137	7026	2849	7817		3.3	Si
SLD 4	fin.	-1122.37	-3962	1.1182	0	681	7137	7031	2851	7817		1.97	Si
SLV 2	ini.	1347.13	-5316	1.1174	0	680	7137	7026	2849	7817		1.47	Si
SLV 2	fin.	-2108.93	-7009	1.1182	0	681	7137	7031	2851	7817		1.12	Si
SLD 1	ini.	646.66	-2419	1.1174	0	680	7137	7026	2849	7817		3.23	Si
SLD 1	fin.	-1134.22	-3972	1.1182	0	681	7137	7031	2851	7817		1.97	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 3	ini.	1214.81	-4685	1.1174	0	680	7137	7026	2849	7817		1.67	Si
SLV 3	fin.	-1919.19	-6457	1.1182	0	681	7137	7031	2851	7817		1.21	Si
SLD 2	ini.	673.61	-2528	1.1174	0	680	7137	7026	2849	7817		3.09	Si
SLD 2	fin.	-1168.97	-4085	1.1182	0	681	7137	7031	2851	7817		1.91	Si
SLV 1	ini.	1284.35	-5062	1.1174	0	680	7137	7026	2849	7817		1.54	Si
SLV 1	fin.	-2028	-6745	1.1182	0	681	7137	7031	2851	7817		1.16	Si
SLV 13	ini.	-935.93	4047	1.1174	0	680	7137	7026	2849	7817		1.93	Si
SLV 13	fin.	1066.15	2917	1.1182	0	681	7137	7031	2851	7817		2.68	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.184	SLV 2	Si
V_SLV	1.115	SLV 2	Si
PF_SLU	6.212	SLU 70	Si
V_SLU	2.397	SLU 70	Si

## Trave di accoppiamento 171

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-6.513	-3.314	11.87	12.77	0.9	-7.413	-3.314	11.87	12.77	0.9	0.9	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	t <sub>fv</sub>	t <sub>fo</sub>	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim.conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α	α	elim.conv	e,f,d	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ε <sub>m</sub>	ε <sub>m_</sub>	ε <sub>mu</sub>	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 70	ini.	148.98	-993	-0.0000751	0.0001872	0.0035	0.9		2959	2959	No	19.86	Si
SLU 70	fin.	-25.11	-347	-0.0000123	0.0001872	0.0035	0.9		2964.67	2964.67	No	118.06	Si
SLU 49	ini.	140.95	-950	-0.0000709	0.0001872	0.0035	0.9		2959	2959	No	20.99	Si
SLU 49	fin.	-23.4	-334	-0.0000115	0.0001872	0.0035	0.9		2964.67	2964.67	No	126.7	Si
SLU 69	ini.	148.02	-989	-0.0000746	0.0001872	0.0035	0.9		2959	2959	No	19.99	Si
SLU 69	fin.	-24.64	-347	-0.0000121	0.0001872	0.0035	0.9		2964.67	2964.67	No	120.32	Si
SLU 68	ini.	136.92	-901	-0.0000688	0.0001872	0.0035	0.9		2959	2959	No	21.61	Si
SLU 68	fin.	-34.7	-279	-0.0000171	0.0001872	0.0035	0.9		2964.67	2964.67	No	85.45	Si
SLU 48	ini.	139.99	-946	-0.0000704	0.0001872	0.0035	0.9		2959	2959	No	21.14	Si
SLU 48	fin.	-22.93	-334	-0.0000112	0.0001872	0.0035	0.9		2964.67	2964.67	No	129.3	Si
SLU 72	ini.	147.39	-975	-0.0000742	0.0001872	0.0035	0.9		2959	2959	No	20.08	Si
SLU 72	fin.	-27.62	-331	-0.0000136	0.0001872	0.0035	0.9		2964.67	2964.67	No	107.35	Si
SLU 67	ini.	137.87	-916	-0.0000693	0.0001872	0.0035	0.9		2959	2959	No	21.46	Si
SLU 67	fin.	-31.88	-295	-0.0000157	0.0001872	0.0035	0.9		2964.67	2964.67	No	93.01	Si
SLU 71	ini.	146.43	-971	-0.0000737	0.0001872	0.0035	0.9		2959	2959	No	20.21	Si
SLU 71	fin.	-27.15	-331	-0.0000133	0.0001872	0.0035	0.9		2964.67	2964.67	No	109.21	Si
SLU 51	ini.	139.36	-932	-0.0000701	0.0001872	0.0035	0.9		2959	2959	No	21.23	Si
SLU 51	fin.	-25.91	-318	-0.0000127	0.0001872	0.0035	0.9		2964.67	2964.67	No	114.44	Si
SLU 50	ini.	138.4	-928	-0.0000696	0.0001872	0.0035	0.9		2959	2959	No	21.38	Si
SLU 50	fin.	-25.44	-318	-0.0000125	0.0001872	0.0035	0.9		2964.67	2964.67	No	116.56	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 69	ini.	148.02	-1506	0.9	0	365	7137	3773	2295	6068	No	4.03	Si
SLU 69	fin.	-24.64	169	0.9	0	365	7137	3773	2295	6068	No	35.87	Si
SLU 50	ini.	138.4	-1432	0.9	0	365	7137	3773	2295	6068	No	4.24	Si
SLU 50	fin.	-25.44	165	0.9	0	365	7137	3773	2295	6068	No	36.72	Si
SLU 70	ini.	148.98	-1513	0.9	0	365	7137	3773	2295	6068	No	4.01	Si
SLU 70	fin.	-25.11	168	0.9	0	365	7137	3773	2295	6068	No	36.19	Si
SLU 49	ini.	140.95	-1471	0.9	0	365	7137	3773	2295	6068	No	4.12	Si
SLU 49	fin.	-23.4	192	0.9	0	365	7137	3773	2295	6068	No	31.53	Si
SLU 72	ini.	147.39	-1480	0.9	0	365	7137	3773	2295	6068	No	4.1	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 72	fin.	-27.62	139	0.9	0	365	7137	3773	2295	6068	No	43.66	Si
SLU 51	ini.	139.36	-1439	0.9	0	365	7137	3773	2295	6068	No	4.22	Si
SLU 51	fin.	-25.91	164	0.9	0	365	7137	3773	2295	6068	No	37.05	Si
SLU 71	ini.	146.43	-1473	0.9	0	365	7137	3773	2295	6068	No	4.12	Si
SLU 71	fin.	-27.15	140	0.9	0	365	7137	3773	2295	6068	No	43.2	Si
SLU 48	ini.	139.99	-1465	0.9	0	365	7137	3773	2295	6068	No	4.14	Si
SLU 48	fin.	-22.93	194	0.9	0	365	7137	3773	2295	6068	No	31.28	Si
SLU 67	ini.	137.87	-1411	0.9	0	365	7137	3773	2295	6068	No	4.3	Si
SLU 67	fin.	-31.88	114	0.9	0	365	7137	3773	2295	6068	No	53.32	Si
SLU 66	ini.	136.91	-1404	0.9	0	365	7137	3773	2295	6068	No	4.32	Si
SLU 66	fin.	-31.4	115	0.9	0	365	7137	3773	2295	6068	No	52.63	Si

**Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche**

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 2	ini.	902.03	-3462	-0.0005236	0.0002807	0.0035	0.9		2989.59	2989.59		3.31	Si
SLV 2	fin.	-1068.47	2127	-0.0006426	0.0002807	0.0035	0.9		2995.37	2995.37		2.8	Si
SLV 7	ini.	497.2	-2241	-0.0002638	0.0002807	0.0035	0.9		2989.59	2989.59		6.01	Si
SLV 7	fin.	-429.56	433	-0.0002245	0.0002807	0.0035	0.9		2995.37	2995.37		6.97	Si
SLV 14	ini.	-803.53	2679	-0.000455	0.0002807	0.0035	0.9		2995.37	2995.37		3.73	Si
SLV 14	fin.	1054.82	-2387	-0.0006339	0.0002807	0.0035	0.9		2989.59	2989.59		2.83	Si
SLV 15	ini.	-746.59	2359	-0.0004173	0.0002807	0.0035	0.9		2995.37	2995.37		4.01	Si
SLV 15	fin.	1045.93	-2524	-0.0006273	0.0002807	0.0035	0.9		2989.59	2989.59		2.86	Si
SLV 16	ini.	-695.43	2184	-0.0003842	0.0002807	0.0035	0.9		2995.37	2995.37		4.31	Si
SLV 16	fin.	982.69	-2388	-0.000581	0.0002807	0.0035	0.9		2989.59	2989.59		3.04	Si
SLV 4	ini.	1010.13	-3957	-0.0006009	0.0002807	0.0035	0.9		2989.59	2989.59		2.96	Si
SLV 4	fin.	-1140.59	2126	-0.0006971	0.0002807	0.0035	0.9		2995.37	2995.37		2.63	Si
SLV 13	ini.	-854.69	2854	-0.0004897	0.0002807	0.0035	0.9		2995.37	2995.37		3.5	Si
SLV 13	fin.	1118.05	-2523	-0.0006815	0.0002807	0.0035	0.9		2989.59	2989.59		2.67	Si
SLV 3	ini.	958.97	-3781	-0.0005639	0.0002807	0.0035	0.9		2989.59	2989.59		3.12	Si
SLV 3	fin.	-1077.36	1990	-0.0006492	0.0002807	0.0035	0.9		2995.37	2995.37		2.78	Si
SLV 1	ini.	850.87	-3286	-0.0004881	0.0002807	0.0035	0.9		2989.59	2989.59		3.51	Si
SLV 1	fin.	-1005.23	1991	-0.000596	0.0002807	0.0035	0.9		2995.37	2995.37		2.98	Si
SLV 8	ini.	530.24	-2354	-0.0002832	0.0002807	0.0035	0.9		2989.59	2989.59		5.64	Si
SLV 8	fin.	-470.4	521	-0.0002478	0.0002807	0.0035	0.9		2995.37	2995.37		6.37	Si

**Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215**

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 8	ini.	530.24	-3389	0.9	0	548	7137	5660	2295	7684		2.27	Si
SLV 8	fin.	-470.4	-2224	0.9	0	548	7137	5660	2295	7684		3.45	Si
SLV 3	ini.	958.97	-5335	0.9	0	548	7137	5660	2295	7684		1.44	Si
SLV 3	fin.	-1077.36	-5072	0.9	0	548	7137	5660	2295	7684		1.52	Si
SLV 7	ini.	497.2	-3248	0.9	0	548	7137	5660	2295	7684		2.37	Si
SLV 7	fin.	-429.56	-2026	0.9	0	548	7137	5660	2295	7684		3.79	Si
SLV 4	ini.	1010.13	-5553	0.9	0	548	7137	5660	2295	7684		1.38	Si
SLV 4	fin.	-1140.59	-5380	0.9	0	548	7137	5660	2295	7684		1.43	Si
SLV 16	ini.	-695.43	2885	0.9	0	548	7137	5660	2295	7684		2.66	Si
SLV 16	fin.	982.69	4859	0.9	0	548	7137	5660	2295	7684		1.58	Si
SLV 2	ini.	902.03	-4843	0.9	0	548	7137	5660	2295	7684		1.59	Si
SLV 2	fin.	-1068.47	-4966	0.9	0	548	7137	5660	2295	7684		1.55	Si
SLV 13	ini.	-854.69	3812	0.9	0	548	7137	5660	2295	7684		2.02	Si
SLV 13	fin.	1118.05	5580	0.9	0	548	7137	5660	2295	7684		1.38	Si
SLV 15	ini.	-746.59	3103	0.9	0	548	7137	5660	2295	7684		2.48	Si
SLV 15	fin.	1045.93	5166	0.9	0	548	7137	5660	2295	7684		1.49	Si
SLV 14	ini.	-803.53	3594	0.9	0	548	7137	5660	2295	7684		2.14	Si
SLV 14	fin.	1054.82	5272	0.9	0	548	7137	5660	2295	7684		1.46	Si
SLV 1	ini.	850.87	-4625	0.9	0	548	7137	5660	2295	7684		1.66	Si
SLV 1	fin.	-1005.23	-4659	0.9	0	548	7137	5660	2295	7684		1.65	Si

**Tabella dei coefficienti di sicurezza minimi**

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.626	SLV 4	Si
V_SLV	1.377	SLV 13	Si
PF_SLU	19.862	SLU 70	Si
V_SLU	4.011	SLU 70	Si

**Trave di accoppiamento 172**

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

**Dati geometrici**

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-6.513	-3.314	14.57	15.086	0.516	-7.413	-3.314	14.57	15.086	0.516	0.9	0.28	3500

**Caratteristiche del materiale**

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC





Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma_{F,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 56	ini.	-115.31	-242	-0.0001851	0.0001872	0.0035	0.5156		975.88	975.88	No	8.46	Si
SLU 56	fin.	10.87	222	-0.0000162	0.0001872	0.0035	0.5164		985.22	985.22	No	90.62	Si
SLU 80	ini.	-110.73	-232	-0.0001771	0.0001872	0.0035	0.5156		975.88	975.88	No	8.81	Si
SLU 80	fin.	8.47	209	-0.0000126	0.0001872	0.0035	0.5164		985.22	985.22	No	116.36	Si
SLU 57	ini.	-114.84	-240	-0.0001843	0.0001872	0.0035	0.5156		975.88	975.88	No	8.5	Si
SLU 57	fin.	10.39	219	-0.0000155	0.0001872	0.0035	0.5164		985.22	985.22	No	94.79	Si
SLU 78	ini.	-116.67	-247	-0.0001875	0.0001872	0.0035	0.5156		975.88	975.88	No	8.36	Si
SLU 78	fin.	6.74	206	-0.00001	0.0001872	0.0035	0.5164		985.22	985.22	No	146.23	Si
SLU 79	ini.	-111.21	-234	-0.000178	0.0001872	0.0035	0.5156		975.88	975.88	No	8.78	Si
SLU 79	fin.	8.95	212	-0.0000133	0.0001872	0.0035	0.5164		985.22	985.22	No	110.14	Si
SLU 77	ini.	-117.14	-248	-0.0001884	0.0001872	0.0035	0.5156		975.88	975.88	No	8.33	Si
SLU 77	fin.	7.22	209	-0.0000107	0.0001872	0.0035	0.5164		985.22	985.22	No	136.54	Si
SLU 59	ini.	-108.9	-226	-0.000174	0.0001872	0.0035	0.5156		975.88	975.88	No	8.96	Si
SLU 59	fin.	12.12	223	-0.0000181	0.0001872	0.0035	0.5164		985.22	985.22	No	81.27	Si
SLU 58	ini.	-109.37	-227	-0.0001748	0.0001872	0.0035	0.5156		975.88	975.88	No	8.92	Si
SLU 58	fin.	12.6	225	-0.0000188	0.0001872	0.0035	0.5164		985.22	985.22	No	78.18	Si
SLU 83	ini.	-109.98	-231	-0.0001758	0.0001872	0.0035	0.5156		975.88	975.88	No	8.87	Si
SLU 83	fin.	15.81	244	-0.0000236	0.0001872	0.0035	0.5164		985.22	985.22	No	62.32	Si
SLU 84	ini.	-109.51	-229	-0.000175	0.0001872	0.0035	0.5156		975.88	975.88	No	8.91	Si
SLU 84	fin.	15.33	242	-0.0000229	0.0001872	0.0035	0.5164		985.22	985.22	No	64.26	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 56	ini.	-115.31	782	0.5156	0	139	4092	2162	1315	3477	No	4.45	Si
SLU 56	fin.	10.87	-399	0.5164	0	140	4092	2165	1317	3482	No	8.72	Si
SLU 79	ini.	-111.21	765	0.5156	0	139	4092	2162	1315	3477	No	4.55	Si
SLU 79	fin.	8.95	-398	0.5164	0	140	4092	2165	1317	3482	No	8.75	Si
SLU 57	ini.	-114.84	780	0.5156	0	139	4092	2162	1315	3477	No	4.46	Si
SLU 57	fin.	10.39	-402	0.5164	0	140	4092	2165	1317	3482	No	8.66	Si
SLU 75	ini.	-104.2	743	0.5156	0	139	4092	2162	1315	3477	No	4.68	Si
SLU 75	fin.	6.63	-398	0.5164	0	140	4092	2165	1317	3482	No	8.74	Si
SLU 83	ini.	-109.98	751	0.5156	0	139	4092	2162	1315	3477	No	4.63	Si
SLU 83	fin.	15.81	-317	0.5164	0	140	4092	2165	1317	3482	No	10.97	Si
SLU 80	ini.	-110.73	763	0.5156	0	139	4092	2162	1315	3477	No	4.56	Si
SLU 80	fin.	8.47	-401	0.5164	0	140	4092	2165	1317	3482	No	8.68	Si
SLU 78	ini.	-116.67	803	0.5156	0	139	4092	2162	1315	3477	No	4.33	Si
SLU 78	fin.	6.74	-428	0.5164	0	140	4092	2165	1317	3482	No	8.13	Si
SLU 74	ini.	-104.67	745	0.5156	0	139	4092	2162	1315	3477	No	4.67	Si
SLU 74	fin.	7.11	-395	0.5164	0	140	4092	2165	1317	3482	No	8.81	Si
SLU 84	ini.	-109.51	749	0.5156	0	139	4092	2162	1315	3477	No	4.64	Si
SLU 84	fin.	15.33	-320	0.5164	0	140	4092	2165	1317	3482	No	10.87	Si
SLU 77	ini.	-117.14	805	0.5156	0	139	4092	2162	1315	3477	No	4.32	Si
SLU 77	fin.	7.22	-425	0.5164	0	140	4092	2165	1317	3482	No	8.19	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-490.98	-1652	-0.0009876	0.0002807	0.0035	0.5156		987.56	987.56		2.01	Si
SLV 15	fin.	243.13	1300	-0.0004109	0.0002807	0.0035	0.5164		989.4	989.4		4.07	Si
SLV 4	ini.	456.95	1692	-0.0009022	0.0002807	0.0035	0.5156		984.23	984.23		2.15	Si
SLV 4	fin.	-303.09	-1467	-0.0005319	0.0002807	0.0035	0.5164		992.81	992.81		3.28	Si
SLV 13	ini.	-563.47	-1849	-0.001191	0.0002807	0.0035	0.5156		987.56	987.56		1.75	Si
SLV 13	fin.	302.38	1687	-0.0005325	0.0002807	0.0035	0.5164		989.4	989.4		3.27	Si
SLV 14	ini.	-530.4	-1762	-0.0010957	0.0002807	0.0035	0.5156		987.56	987.56		1.86	Si
SLV 14	fin.	284.64	1586	-0.0004951	0.0002807	0.0035	0.5164		989.4	989.4		3.48	Si
SLV 3	ini.	423.88	1604	-0.0008185	0.0002807	0.0035	0.5156		984.23	984.23		2.32	Si
SLV 3	fin.	-285.34	-1366	-0.0004947	0.0002807	0.0035	0.5164		992.81	992.81		3.48	Si
SLV 1	ini.	351.39	1407	-0.0006461	0.0002807	0.0035	0.5156		984.23	984.23		2.8	Si
SLV 1	fin.	-226.09	-978	-0.0003762	0.0002807	0.0035	0.5164		992.81	992.81		4.39	Si
SLV 10	ini.	-300.62	-868	-0.0005316	0.0002807	0.0035	0.5156		987.56	987.56		3.29	Si
SLV 10	fin.	171.94	1123	-0.0002772	0.0002807	0.0035	0.5164		989.4	989.4		5.75	Si
SLV 9	ini.	-321.98	-924	-0.0005779	0.0002807	0.0035	0.5156		987.56	987.56		3.07	Si
SLV 9	fin.	183.41	1188	-0.0002978	0.0002807	0.0035	0.5164		989.4	989.4		5.39	Si
SLV 16	ini.	-457.91	-1564	-0.0009009	0.0002807	0.0035	0.5156		987.56	987.56		2.16	Si
SLV 16	fin.	225.38	1198	-0.0003763	0.0002807	0.0035	0.5164		989.4	989.4		4.39	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 2	ini.	384.47	1495	-0.000723	0.0002807	0.0035	0.5156		984.23	984.23		2.56	Si
SLV 2	fin.	-243.84	-1080	-0.0004107	0.0002807	0.0035	0.5164		992.81	992.81		4.07	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 13	ini.	-563.47	2306	0.5156	0	209	4092	3242	1315	4301		1.86	Si
SLV 13	fin.	302.38	1743	0.5164	0	210	4092	3248	1317	4302		2.47	Si
SLV 4	ini.	456.95	-1428	0.5156	0	209	4092	3242	1315	4301		3.01	Si
SLV 4	fin.	-303.09	-2367	0.5164	0	210	4092	3248	1317	4302		1.82	Si
SLV 14	ini.	-530.4	2164	0.5156	0	209	4092	3242	1315	4301		1.99	Si
SLV 14	fin.	284.64	1663	0.5164	0	210	4092	3248	1317	4302		2.59	Si
SLV 10	ini.	-300.62	1425	0.5156	0	209	4092	3242	1315	4301		3.02	Si
SLV 10	fin.	171.94	734	0.5164	0	210	4092	3248	1317	4302		5.86	Si
SLV 9	ini.	-321.98	1517	0.5156	0	209	4092	3242	1315	4301		2.84	Si
SLV 9	fin.	183.41	785	0.5164	0	210	4092	3248	1317	4302		5.48	Si
SLV 2	ini.	384.47	-1103	0.5156	0	209	4092	3242	1315	4301		3.9	Si
SLV 2	fin.	-243.84	-2059	0.5164	0	210	4092	3248	1317	4302		2.09	Si
SLV 15	ini.	-490.98	1981	0.5156	0	209	4092	3242	1315	4301		2.17	Si
SLV 15	fin.	243.13	1435	0.5164	0	210	4092	3248	1317	4302		3	Si
SLV 16	ini.	-457.91	1839	0.5156	0	209	4092	3242	1315	4301		2.34	Si
SLV 16	fin.	225.38	1356	0.5164	0	210	4092	3248	1317	4302		3.17	Si
SLV 1	ini.	351.39	-961	0.5156	0	209	4092	3242	1315	4301		4.47	Si
SLV 1	fin.	-226.09	-1980	0.5164	0	210	4092	3248	1317	4302		2.17	Si
SLV 3	ini.	423.88	-1286	0.5156	0	209	4092	3242	1315	4301		3.34	Si
SLV 3	fin.	-285.34	-2288	0.5164	0	210	4092	3248	1317	4302		1.88	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.753	SLV 13	Si
V_SLV	1.817	SLV 4	Si
PF_SLU	8.331	SLU 77	Si
V_SLU	4.319	SLU 77	Si

Trave di accoppiamento 173

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-5.463	-3.314	11.87	13.87	2	-5.963	-3.314	11.87	13.87	2	0.5	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	f <sub>nk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 83	ini.	443.89	-1365	-0.0000447	0.0001872	0.0035	2		14344.28	14344.28	No	32.32	Si
SLU 83	fin.	24.71	-897	-0.0000024	0.0001872	0.0035	2		14344.28	14344.28	No	580.49	Si
SLU 77	ini.	451.48	-1624	-0.0000455	0.0001872	0.0035	2		14344.28	14344.28	No	31.77	Si
SLU 77	fin.	4.84	-1149	-0.0000005	0.0001872	0.0035	2		14344.28	14344.28	No	2963.14	Si
SLU 84	ini.	440.99	-1368	-0.0000444	0.0001872	0.0035	2		14344.28	14344.28	No	32.53	Si
SLU 84	fin.	23.51	-902	-0.0000023	0.0001872	0.0035	2		14344.28	14344.28	No	610.05	Si
SLU 79	ini.	432.12	-1572	-0.0000435	0.0001872	0.0035	2		14344.28	14344.28	No	33.2	Si
SLU 79	fin.	-1.13	-1114	-0.0000001	0.0001872	0.0035	2		14357.01	14357.01	No	12735.9	Si
SLU 81	ini.	440.34	-1237	-0.0000443	0.0001872	0.0035	2		14344.28	14344.28	No	32.58	Si
SLU 81	fin.	19.52	-776	-0.0000019	0.0001872	0.0035	2		14344.28	14344.28	No	734.7	Si
SLU 78	ini.	448.59	-1628	-0.0000452	0.0001872	0.0035	2		14344.28	14344.28	No	31.98	Si
SLU 78	fin.	3.64	-1154	-0.0000004	0.0001872	0.0035	2		14344.28	14344.28	No	3936.72	Si
SLU 74	ini.	447.94	-1497	-0.0000451	0.0001872	0.0035	2		14344.28	14344.28	No	32.02	Si
SLU 74	fin.	-0.35	-1028	0	0.0001872	0.0035	2		14357.01	14357.01	No	41517.53	Si
SLU 75	ini.	445.04	-1500	-0.0000448	0.0001872	0.0035	2		14344.28	14344.28	No	32.23	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 75	fin.	-1.54	-1033	-0.0000002	0.0001872	0.0035	2		14357.01	14357.01	No	9304.6	Si
SLU 82	ini.	437.45	-1241	-0.000044	0.0001872	0.0035	2		14344.28	14344.28	No	32.79	Si
SLU 82	fin.	18.33	-781	-0.0000018	0.0001872	0.0035	2		14344.28	14344.28	No	782.7	Si
SLU 80	ini.	429.22	-1575	-0.0000432	0.0001872	0.0035	2		14344.28	14344.28	No	33.42	Si
SLU 80	fin.	-2.32	-1119	-0.0000002	0.0001872	0.0035	2		14357.01	14357.01	No	6176.44	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 77	ini.	451.48	-1753	2	0	812	3965	8384	5100	4776	No	2.73	Si
SLU 77	fin.	4.84	-866	2	0	812	3965	8384	5100	4776	No	5.51	Si
SLU 78	ini.	448.59	-1746	2	0	812	3965	8384	5100	4776	No	2.74	Si
SLU 78	fin.	3.64	-857	2	0	812	3965	8384	5100	4776	No	5.57	Si
SLU 75	ini.	445.04	-1719	2	0	812	3965	8384	5100	4776	No	2.78	Si
SLU 75	fin.	-1.54	-918	2	0	812	3965	8384	5100	4776	No	5.2	Si
SLU 71	ini.	396.4	-1681	2	0	812	3965	8384	5100	4776	No	2.84	Si
SLU 71	fin.	-73.52	-832	2	0	812	3965	8384	5100	4776	No	5.74	Si
SLU 66	ini.	412.22	-1724	2	0	812	3965	8384	5100	4776	No	2.77	Si
SLU 66	fin.	-72.74	-924	2	0	812	3965	8384	5100	4776	No	5.17	Si
SLU 79	ini.	432.12	-1683	2	0	812	3965	8384	5100	4776	No	2.84	Si
SLU 79	fin.	-1.13	-835	2	0	812	3965	8384	5100	4776	No	5.72	Si
SLU 69	ini.	415.76	-1751	2	0	812	3965	8384	5100	4776	No	2.73	Si
SLU 69	fin.	-67.55	-863	2	0	812	3965	8384	5100	4776	No	5.53	Si
SLU 70	ini.	412.86	-1744	2	0	812	3965	8384	5100	4776	No	2.74	Si
SLU 70	fin.	-68.75	-854	2	0	812	3965	8384	5100	4776	No	5.59	Si
SLU 67	ini.	409.32	-1717	2	0	812	3965	8384	5100	4776	No	2.78	Si
SLU 67	fin.	-73.93	-915	2	0	812	3965	8384	5100	4776	No	5.22	Si
SLU 74	ini.	447.94	-1726	2	0	812	3965	8384	5100	4776	No	2.77	Si
SLU 74	fin.	-0.35	-927	2	0	812	3965	8384	5100	4776	No	5.15	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-322.62	1152	-0.0000322	0.0002807	0.0035	2		14215.41	14215.41		44.06	Si
SLV 15	fin.	1080.96	1399	-0.0001104	0.0002807	0.0035	2		14202.07	14202.07		13.14	Si
SLV 4	ini.	721.96	-3712	-0.0000729	0.0002807	0.0035	2		14202.07	14202.07		19.67	Si
SLV 4	fin.	-1379.23	-3374	-0.0001422	0.0002807	0.0035	2		14215.41	14215.41		10.31	Si
SLV 1	ini.	822.5	-3168	-0.0000833	0.0002807	0.0035	2		14202.07	14202.07		17.27	Si
SLV 1	fin.	-1082.83	-2832	-0.0001105	0.0002807	0.0035	2		14215.41	14215.41		13.13	Si
SLV 13	ini.	-129.83	1548	-0.0000129	0.0002807	0.0035	2		14215.41	14215.41		109.5	Si
SLV 13	fin.	1296.8	1835	-0.0001334	0.0002807	0.0035	2		14202.07	14202.07		10.95	Si
SLV 3	ini.	629.71	-3565	-0.0000634	0.0002807	0.0035	2		14202.07	14202.07		22.55	Si
SLV 3	fin.	-1298.67	-3268	-0.0001335	0.0002807	0.0035	2		14215.41	14215.41		10.95	Si
SLV 16	ini.	-230.36	1005	-0.0000229	0.0002807	0.0035	2		14215.41	14215.41		61.71	Si
SLV 16	fin.	1000.41	1293	-0.0001019	0.0002807	0.0035	2		14202.07	14202.07		14.2	Si
SLV 8	ini.	147.39	-2497	-0.0000146	0.0002807	0.0035	2		14202.07	14202.07		96.36	Si
SLV 8	fin.	-783.91	-2230	-0.0000793	0.0002807	0.0035	2		14215.41	14215.41		18.13	Si
SLV 14	ini.	-37.57	1401	-0.0000037	0.0002807	0.0035	2		14215.41	14215.41		378.34	Si
SLV 14	fin.	1216.25	1728	-0.0001248	0.0002807	0.0035	2		14202.07	14202.07		11.68	Si
SLV 6	ini.	790.02	-1177	-0.00008	0.0002807	0.0035	2		14202.07	14202.07		17.98	Si
SLV 6	fin.	-64.43	-778	-0.0000064	0.0002807	0.0035	2		14215.41	14215.41		220.63	Si
SLV 2	ini.	914.75	-3316	-0.000093	0.0002807	0.0035	2		14202.07	14202.07		15.53	Si
SLV 2	fin.	-1163.38	-2939	-0.0001191	0.0002807	0.0035	2		14215.41	14215.41		12.22	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 2	ini.	562.5	-2839	2	0	1217	3965	12577	5100	5182		1.83	Si
SLD 2	fin.	-519.38	-2747	2	0	1217	3965	12577	5100	5182		1.89	Si
SLV 13	ini.	-129.83	2502	2	0	1217	3965	12577	5100	5182		2.07	Si
SLV 13	fin.	1296.8	3606	2	0	1217	3965	12577	5100	5182		1.44	Si
SLV 4	ini.	721.96	-4890	2	0	1217	3965	12577	5100	5182		1.06	Si
SLV 4	fin.	-1379.23	-4985	2	0	1217	3965	12577	5100	5182		1.04	Si
SLV 14	ini.	-37.57	2087	2	0	1217	3965	12577	5100	5182		2.48	Si
SLV 14	fin.	1216.25	3111	2	0	1217	3965	12577	5100	5182		1.67	Si
SLV 3	ini.	629.71	-4475	2	0	1217	3965	12577	5100	5182		1.16	Si
SLV 3	fin.	-1298.67	-4490	2	0	1217	3965	12577	5100	5182		1.15	Si
SLV 2	ini.	914.75	-5037	2	0	1217	3965	12577	5100	5182		1.03	Si
SLV 2	fin.	-1163.38	-5491	2	0	1217	3965	12577	5100	5182		0.94	No
SLV 1	ini.	822.5	-4622	2	0	1217	3965	12577	5100	5182		1.12	Si
SLV 1	fin.	-1082.83	-4995	2	0	1217	3965	12577	5100	5182		1.04	Si
SLV 16	ini.	-230.36	2234	2	0	1217	3965	12577	5100	5182		2.32	Si
SLV 16	fin.	1000.41	3616	2	0	1217	3965	12577	5100	5182		1.43	Si
SLV 15	ini.	-322.62	2649	2	0	1217	3965	12577	5100	5182		1.96	Si
SLV 15	fin.	1080.96	4111	2	0	1217	3965	12577	5100	5182		1.26	Si
SLV 6	ini.	790.02	-2641	2	0	1217	3965	12577	5100	5182		1.96	Si
SLV 6	fin.	-64.43	-2982	2	0	1217	3965	12577	5100	5182		1.74	Si

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	10.307	SLV 4	Si
V_SLV	0.944	SLV 2	No
PF_SLU	31.771	SLU 77	Si
V_SLU	2.725	SLU 77	Si



## Trave di accoppiamento 174

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-5.463	-3.314	14.67	15.085	0.415	-5.963	-3.314	14.67	15.085	0.415	0.5	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	e <sub>f,d</sub>	γ <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em <sub>-</sub>	em <sub>u</sub>	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 80	ini.	-6.4	-60	-0.0000147	0.0001872	0.0035	0.4147		636.77	636.77	No	99.52	Si
SLU 80	fin.	-89.07	-382	-0.000224	0.0001872	0.0035	0.4151		636.19	636.19	No	7.14	Si
SLU 78	ini.	-8.25	-73	-0.000019	0.0001872	0.0035	0.4147		636.77	636.77	No	77.18	Si
SLU 78	fin.	-91.57	-402	-0.000231	0.0001872	0.0035	0.4151		636.19	636.19	No	6.95	Si
SLU 77	ini.	-8.1	-71	-0.0000187	0.0001872	0.0035	0.4147		636.77	636.77	No	78.61	Si
SLU 77	fin.	-92.22	-403	-0.0002329	0.0001872	0.0035	0.4151		636.19	636.19	No	6.9	Si
SLU 82	ini.	3.13	11	-0.0000072	0.0001872	0.0035	0.4147		634.17	634.17	No	202.86	Si
SLU 82	fin.	-88.98	-327	-0.0002237	0.0001872	0.0035	0.4151		636.19	636.19	No	7.15	Si
SLU 75	ini.	-2.44	-33	-0.0000056	0.0001872	0.0035	0.4147		636.77	636.77	No	260.79	Si
SLU 75	fin.	-89.46	-361	-0.0002251	0.0001872	0.0035	0.4151		636.19	636.19	No	7.11	Si
SLU 84	ini.	-2.68	-29	-0.0000062	0.0001872	0.0035	0.4147		636.77	636.77	No	237.39	Si
SLU 84	fin.	-91.08	-368	-0.0002296	0.0001872	0.0035	0.4151		636.19	636.19	No	6.98	Si
SLU 81	ini.	3.28	12	-0.0000075	0.0001872	0.0035	0.4147		634.17	634.17	No	193.56	Si
SLU 81	fin.	-89.62	-329	-0.0002255	0.0001872	0.0035	0.4151		636.19	636.19	No	7.1	Si
SLU 79	ini.	-6.25	-59	-0.0000144	0.0001872	0.0035	0.4147		636.77	636.77	No	101.91	Si
SLU 79	fin.	-89.71	-383	-0.0002258	0.0001872	0.0035	0.4151		636.19	636.19	No	7.09	Si
SLU 74	ini.	-2.29	-31	-0.0000053	0.0001872	0.0035	0.4147		636.77	636.77	No	277.88	Si
SLU 74	fin.	-90.11	-363	-0.0002269	0.0001872	0.0035	0.4151		636.19	636.19	No	7.06	Si
SLU 83	ini.	-2.53	-28	-0.0000058	0.0001872	0.0035	0.4147		636.77	636.77	No	251.46	Si
SLU 83	fin.	-91.73	-370	-0.0002315	0.0001872	0.0035	0.4151		636.19	636.19	No	6.94	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	f <sub>vd</sub>	V <sub>t</sub>	V <sub>t,f</sub>	V <sub>t,c</sub>	V <sub>t,c.int.</sub>	V <sub>t,R</sub>	incremento > 50%	c.s.	Verifica
SLU 77	ini.	-8.1	250	0.4147	0	140	3290	1738	1057	2796	No	11.16	Si
SLU 77	fin.	-92.22	-540	0.4151	0	140	3290	1740	1059	2799	No	5.18	Si
SLU 80	ini.	-6.4	222	0.4147	0	140	3290	1738	1057	2796	No	12.62	Si
SLU 80	fin.	-89.07	-520	0.4151	0	140	3290	1740	1059	2799	No	5.38	Si
SLU 84	ini.	-2.68	149	0.4147	0	140	3290	1738	1057	2796	No	18.8	Si
SLU 84	fin.	-91.08	-520	0.4151	0	140	3290	1740	1059	2799	No	5.39	Si
SLU 78	ini.	-8.25	253	0.4147	0	140	3290	1738	1057	2796	No	11.05	Si
SLU 78	fin.	-91.57	-537	0.4151	0	140	3290	1740	1059	2799	No	5.21	Si
SLU 70	ini.	-3.37	282	0.4147	0	140	3290	1738	1057	2796	No	9.93	Si
SLU 70	fin.	-81.95	-512	0.4151	0	140	3290	1740	1059	2799	No	5.47	Si
SLU 69	ini.	-3.22	279	0.4147	0	140	3290	1738	1057	2796	No	10.02	Si
SLU 69	fin.	-82.59	-515	0.4151	0	140	3290	1740	1059	2799	No	5.44	Si
SLU 83	ini.	-2.53	146	0.4147	0	140	3290	1738	1057	2796	No	19.13	Si
SLU 83	fin.	-91.73	-522	0.4151	0	140	3290	1740	1059	2799	No	5.36	Si
SLU 79	ini.	-6.25	219	0.4147	0	140	3290	1738	1057	2796	No	12.77	Si
SLU 79	fin.	-89.71	-523	0.4151	0	140	3290	1740	1059	2799	No	5.35	Si
SLU 75	ini.	-2.44	192	0.4147	0	140	3290	1738	1057	2796	No	14.53	Si
SLU 75	fin.	-89.46	-526	0.4151	0	140	3290	1740	1059	2799	No	5.32	Si
SLU 74	ini.	-2.29	190	0.4147	0	140	3290	1738	1057	2796	No	14.73	Si
SLU 74	fin.	-90.11	-528	0.4151	0	140	3290	1740	1059	2799	No	5.3	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-172.7	-953	-0.0004589	0.0002807	0.0035	0.4147		642	642		3.72	Si
SLV 15	fin.	-44.66	-1210	-0.0001053	0.0002807	0.0035	0.4151		641.81	641.81		14.37	Si
SLV 14	ini.	-163.65	-869	-0.0004306	0.0002807	0.0035	0.4147		642	642		3.92	Si
SLV 14	fin.	-101.78	-1283	-0.0002513	0.0002807	0.0035	0.4151		641.81	641.81		6.31	Si
SLV 3	ini.	175.01	914	-0.0004684	0.0002807	0.0035	0.4147		639.32	639.32		3.65	Si
SLV 3	fin.	-15.26	889	-0.0000352	0.0002807	0.0035	0.4151		641.81	641.81		42.07	Si
SLV 4	ini.	194.02	1031	-0.00053	0.0002807	0.0035	0.4147		639.32	639.32		3.3	Si
SLV 4	fin.	-28.34	952	-0.000066	0.0002807	0.0035	0.4151		641.81	641.81		22.64	Si
SLV 13	ini.	-182.67	-986	-0.0004906	0.0002807	0.0035	0.4147		642	642		3.51	Si
SLV 13	fin.	-88.69	-1345	-0.0002164	0.0002807	0.0035	0.4151		641.81	641.81		7.24	Si
SLV 9	ini.	-69.23	-351	-0.0001664	0.0002807	0.0035	0.4147		642	642		9.27	Si
SLV 9	fin.	-132.08	-758	-0.0003357	0.0002807	0.0035	0.4151		641.81	641.81		4.86	Si
SLV 1	ini.	165.04	881	-0.000437	0.0002807	0.0035	0.4147		639.32	639.32		3.87	Si
SLV 1	fin.	-59.28	754	-0.0001413	0.0002807	0.0035	0.4151		641.81	641.81		10.83	Si
SLV 2	ini.	184.06	998	-0.0004974	0.0002807	0.0035	0.4147		639.32	639.32		3.47	Si
SLV 2	fin.	-72.37	817	-0.0001742	0.0002807	0.0035	0.4151		641.81	641.81		8.87	Si
SLV 16	ini.	-153.69	-836	-0.0004001	0.0002807	0.0035	0.4147		642	642		4.18	Si
SLV 16	fin.	-57.75	-1147	-0.0001375	0.0002807	0.0035	0.4151		641.81	641.81		11.11	Si
SLV 10	ini.	-56.94	-276	-0.0001356	0.0002807	0.0035	0.4147		642	642		11.27	Si
SLV 10	fin.	-140.53	-717	-0.0003604	0.0002807	0.0035	0.4151		641.81	641.81		4.57	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 4	ini.	194.02	-125	0.4147	0	209	3290	2608	1057	3499		28.07	Si
SLV 4	fin.	-28.34	-623	0.4151	0	210	3290	2611	1059	3500		5.62	Si
SLV 1	ini.	165.04	-199	0.4147	0	209	3290	2608	1057	3499		17.59	Si
SLV 1	fin.	-59.28	-668	0.4151	0	210	3290	2611	1059	3500		5.24	Si
SLD 2	ini.	81.98	-76	0.4147	0	209	3290	2608	1057	3499		46.08	Si
SLD 2	fin.	-64.76	-526	0.4151	0	210	3290	2611	1059	3500		6.65	Si
SLV 6	ini.	47.37	-298	0.4147	0	209	3290	2608	1057	3499		11.75	Si
SLV 6	fin.	-131.71	-680	0.4151	0	210	3290	2611	1059	3500		5.15	Si
SLV 2	ini.	184.06	-293	0.4147	0	209	3290	2608	1057	3499		11.93	Si
SLV 2	fin.	-72.37	-749	0.4151	0	210	3290	2611	1059	3500		4.68	Si
SLV 5	ini.	35.09	-237	0.4147	0	209	3290	2608	1057	3499		14.78	Si
SLV 5	fin.	-123.26	-628	0.4151	0	210	3290	2611	1059	3500		5.58	Si
SLV 3	ini.	175.01	-30	0.4147	0	209	3290	2608	1057	3499		115.73	Si
SLV 3	fin.	-15.26	-542	0.4151	0	210	3290	2611	1059	3500		6.46	Si
SLV 10	ini.	-56.94	-147	0.4147	0	209	3290	2608	1057	3499		23.78	Si
SLV 10	fin.	-140.53	-508	0.4151	0	210	3290	2611	1059	3500		6.89	Si
SLD 6	ini.	23.58	-80	0.4147	0	209	3290	2608	1057	3499		43.49	Si
SLD 6	fin.	-90.66	-499	0.4151	0	210	3290	2611	1059	3500		7.02	Si
SLD 1	ini.	73.81	-35	0.4147	0	209	3290	2608	1057	3499		98.87	Si
SLD 1	fin.	-59.14	-491	0.4151	0	210	3290	2611	1059	3500		7.12	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.295	SLV 4	Si
V_SLV	4.676	SLV 2	Si
PF_SLU	6.899	SLU 77	Si
V_SLU	5.184	SLU 77	Si

## Trave di accoppiamento 175

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-2.283	-3.314	11.87	12.77	0.9	-3.183	-3.314	11.87	12.77	0.9	0.9	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_ Corti

fb_	fhk	fvk0	fmedio	t0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 64	ini.	228.95	-798	-0.0001174	0.0001872	0.0035	0.9		2959	2959	No	12.92	Si
SLU 64	fin.	-20.88	-325	-0.0000102	0.0001872	0.0035	0.9		2964.67	2964.67	No	141.98	Si
SLU 66	ini.	216.5	-797	-0.0001107	0.0001872	0.0035	0.9		2959	2959	No	13.67	Si
SLU 66	fin.	-3.02	-404	-0.0000015	0.0001872	0.0035	0.9		2964.67	2964.67	No	980.76	Si
SLU 65	ini.	233.79	-808	-0.00012	0.0001872	0.0035	0.9		2959	2959	No	12.66	Si
SLU 65	fin.	-23.86	-318	-0.0000117	0.0001872	0.0035	0.9		2964.67	2964.67	No	124.26	Si
SLU 76	ini.	214.92	-790	-0.0001098	0.0001872	0.0035	0.9		2959	2959	No	13.77	Si
SLU 76	fin.	-7.45	-375	-0.0000036	0.0001872	0.0035	0.9		2964.67	2964.67	No	398.11	Si
SLU 68	ini.	218.94	-791	-0.000112	0.0001872	0.0035	0.9		2959	2959	No	13.52	Si
SLU 68	fin.	-9.86	-373	-0.0000048	0.0001872	0.0035	0.9		2964.67	2964.67	No	300.66	Si
SLU 67	ini.	219.4	-804	-0.0001123	0.0001872	0.0035	0.9		2959	2959	No	13.49	Si
SLU 67	fin.	-4.81	-400	-0.0000024	0.0001872	0.0035	0.9		2964.67	2964.67	No	616.41	Si
SLU 73	ini.	229.76	-807	-0.0001178	0.0001872	0.0035	0.9		2959	2959	No	12.88	Si
SLU 73	fin.	-21.44	-320	-0.0000105	0.0001872	0.0035	0.9		2964.67	2964.67	No	138.25	Si
SLU 81	ini.	223.2	-796	-0.0001143	0.0001872	0.0035	0.9		2959	2959	No	13.26	Si
SLU 81	fin.	-17.43	-326	-0.0000085	0.0001872	0.0035	0.9		2964.67	2964.67	No	170.07	Si
SLU 82	ini.	226.11	-802	-0.0001159	0.0001872	0.0035	0.9		2959	2959	No	13.09	Si
SLU 82	fin.	-19.22	-323	-0.0000094	0.0001872	0.0035	0.9		2964.67	2964.67	No	154.25	Si
SLU 75	ini.	215.38	-803	-0.0001101	0.0001872	0.0035	0.9		2959	2959	No	13.74	Si
SLU 75	fin.	-2.4	-401	-0.0000012	0.0001872	0.0035	0.9		2964.67	2964.67	No	1237.49	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 65	ini.	233.79	-815	0.9	0	365	7137	3773	2295	6068	No	7.44	Si
SLU 65	fin.	-23.86	-39	0.9	0	365	7137	3773	2295	6068	No	156.88	Si
SLU 69	ini.	201.65	-764	0.9	0	365	7137	3773	2295	6068	No	7.94	Si
SLU 69	fin.	10.98	270	0.9	0	365	7137	3773	2295	6068	No	22.51	Si
SLU 73	ini.	229.76	-769	0.9	0	365	7137	3773	2295	6068	No	7.89	Si
SLU 73	fin.	-21.44	-78	0.9	0	365	7137	3773	2295	6068	No	77.84	Si
SLU 67	ini.	219.4	-801	0.9	0	365	7137	3773	2295	6068	No	7.58	Si
SLU 67	fin.	-4.81	133	0.9	0	365	7137	3773	2295	6068	No	45.69	Si
SLU 75	ini.	215.38	-755	0.9	0	365	7137	3773	2295	6068	No	8.04	Si
SLU 75	fin.	-2.4	94	0.9	0	365	7137	3773	2295	6068	No	64.87	Si
SLU 66	ini.	216.5	-788	0.9	0	365	7137	3773	2295	6068	No	7.7	Si
SLU 66	fin.	-3.02	140	0.9	0	365	7137	3773	2295	6068	No	43.21	Si
SLU 72	ini.	202.16	-758	0.9	0	365	7137	3773	2295	6068	No	8	Si
SLU 72	fin.	5.33	225	0.9	0	365	7137	3773	2295	6068	No	27.01	Si
SLU 64	ini.	228.95	-795	0.9	0	365	7137	3773	2295	6068	No	7.63	Si
SLU 64	fin.	-20.88	-26	0.9	0	365	7137	3773	2295	6068	No	233.52	Si
SLU 70	ini.	204.55	-776	0.9	0	365	7137	3773	2295	6068	No	7.82	Si
SLU 70	fin.	9.19	262	0.9	0	365	7137	3773	2295	6068	No	23.17	Si
SLU 68	ini.	218.94	-791	0.9	0	365	7137	3773	2295	6068	No	7.67	Si
SLU 68	fin.	-9.86	90	0.9	0	365	7137	3773	2295	6068	No	67.1	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 8	ini.	844.63	-2059	-0.0004839	0.0002807	0.0035	0.9		2989.59	2989.59		3.54	Si
SLV 8	fin.	-402.05	527	-0.0002091	0.0002807	0.0035	0.9		2995.37	2995.37		7.45	Si
SLV 7	ini.	814.8	-2022	-0.0004636	0.0002807	0.0035	0.9		2989.59	2989.59		3.67	Si
SLV 7	fin.	-374.42	443	-0.0001938	0.0002807	0.0035	0.9		2995.37	2995.37		8	Si
SLV 11	ini.	542.74	-1486	-0.0002906	0.0002807	0.0035	0.9		2989.59	2989.59		5.51	Si
SLV 11	fin.	-219.73	58	-0.0001108	0.0002807	0.0035	0.9		2995.37	2995.37		13.63	Si
SLV 3	ini.	757.8	-1817	-0.0004255	0.0002807	0.0035	0.9		2989.59	2989.59		3.95	Si
SLV 3	fin.	-339.22	490	-0.0001745	0.0002807	0.0035	0.9		2995.37	2995.37		8.83	Si
SLV 10	ini.	-473.83	822	-0.0002498	0.0002807	0.0035	0.9		2995.37	2995.37		6.32	Si
SLV 10	fin.	347.17	-943	-0.0001792	0.0002807	0.0035	0.9		2989.59	2989.59		8.61	Si
SLV 4	ini.	803.98	-1874	-0.0004563	0.0002807	0.0035	0.9		2989.59	2989.59		3.72	Si
SLV 4	fin.	-382	619	-0.000198	0.0002807	0.0035	0.9		2995.37	2995.37		7.84	Si
SLV 12	ini.	572.56	-1523	-0.0003085	0.0002807	0.0035	0.9		2989.59	2989.59		5.22	Si
SLV 12	fin.	-247.36	142	-0.0001253	0.0002807	0.0035	0.9		2995.37	2995.37		12.11	Si
SLD 8	ini.	466.3	-1241	-0.0002459	0.0002807	0.0035	0.9		2989.59	2989.59		6.41	Si
SLD 8	fin.	-183.98	90	-0.0000923	0.0002807	0.0035	0.9		2995.37	2995.37		16.28	Si
SLV 2	ini.	490.06	-1171	-0.0002597	0.0002807	0.0035	0.9		2989.59	2989.59		6.1	Si
SLV 2	fin.	-203.64	294	-0.0001024	0.0002807	0.0035	0.9		2995.37	2995.37		14.71	Si
SLV 9	ini.	-503.65	859	-0.000267	0.0002807	0.0035	0.9		2995.37	2995.37		5.95	Si
SLV 9	fin.	374.81	-1027	-0.0001944	0.0002807	0.0035	0.9		2989.59	2989.59		7.98	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 8	ini.	844.63	-3313	0.9	0	548	7137	5660	2295	7684		2.32	Si
SLV 8	fin.	-402.05	-1776	0.9	0	548	7137	5660	2295	7684		4.33	Si
SLV 11	ini.	542.74	-2278	0.9	0	548	7137	5660	2295	7684		3.37	Si
SLV 11	fin.	-219.73	-643	0.9	0	548	7137	5660	2295	7684		11.95	Si
SLV 9	ini.	-503.65	2147	0.9	0	548	7137	5660	2295	7684		3.58	Si
SLV 9	fin.	374.81	1734	0.9	0	548	7137	5660	2295	7684		4.43	Si
SLV 7	ini.	814.8	-3213	0.9	0	548	7137	5660	2295	7684		2.39	Si
SLV 7	fin.	-374.42	-1629	0.9	0	548	7137	5660	2295	7684		4.72	Si
SLV 14	ini.	-416.82	1561	0.9	0	548	7137	5660	2295	7684		4.92	Si
SLV 14	fin.	311.98	1866	0.9	0	548	7137	5660	2295	7684		4.12	Si
SLV 3	ini.	757.8	-2727	0.9	0	548	7137	5660	2295	7684		2.82	Si
SLV 3	fin.	-339.22	-1908	0.9	0	548	7137	5660	2295	7684		4.03	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 10	ini.	-473.83	2047	0.9	0	548	7137	5660	2295	7684		3.75	Si
SLV 10	fin.	347.17	1588	0.9	0	548	7137	5660	2295	7684		4.84	Si
SLV 4	ini.	803.98	-2883	0.9	0	548	7137	5660	2295	7684		2.67	Si
SLV 4	fin.	-382	-2134	0.9	0	548	7137	5660	2295	7684		3.6	Si
SLV 13	ini.	-463	1717	0.9	0	548	7137	5660	2295	7684		4.48	Si
SLV 13	fin.	354.76	2092	0.9	0	548	7137	5660	2295	7684		3.67	Si
SLV 12	ini.	572.56	-2378	0.9	0	548	7137	5660	2295	7684		3.23	Si
SLV 12	fin.	-247.36	-789	0.9	0	548	7137	5660	2295	7684		9.73	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.54	SLV 8	Si
V_SLV	2.32	SLV 8	Si
PF_SLU	12.657	SLU 65	Si
V_SLU	7.444	SLU 65	Si

## Trave di accoppiamento 176

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-2.283	-3.314	14.57	15.082	0.512	-3.183	-3.314	14.57	15.083	0.513	0.9	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	t <sub>fv</sub>	t <sub>fo</sub>	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	e <sub>f,d</sub>	γ <sub>f,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ε <sub>m</sub>	ε <sub>m_</sub>	ε <sub>mu</sub>	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 70	ini.	12.21	115	-0.0000186	0.0001872	0.0035	0.5118		960.22	960.22	No	78.65	Si
SLU 70	fin.	-109.64	-762	-0.0001776	0.0001872	0.0035	0.5127		964.06	964.06	No	8.79	Si
SLU 77	ini.	4.65	95	-0.0000007	0.0001872	0.0035	0.5118		960.22	960.22	No	206.51	Si
SLU 77	fin.	-105.72	-734	-0.0001707	0.0001872	0.0035	0.5127		964.06	964.06	No	9.12	Si
SLU 71	ini.	14.02	120	-0.0000214	0.0001872	0.0035	0.5118		960.22	960.22	No	68.49	Si
SLU 71	fin.	-105.09	-733	-0.0001696	0.0001872	0.0035	0.5127		964.06	964.06	No	9.17	Si
SLU 69	ini.	10.73	112	-0.0000163	0.0001872	0.0035	0.5118		960.22	960.22	No	89.51	Si
SLU 69	fin.	-108.8	-757	-0.0001761	0.0001872	0.0035	0.5127		964.06	964.06	No	8.86	Si
SLU 75	ini.	18.4	114	-0.0000281	0.0001872	0.0035	0.5118		960.22	960.22	No	52.19	Si
SLU 75	fin.	-105.51	-729	-0.0001703	0.0001872	0.0035	0.5127		964.06	964.06	No	9.14	Si
SLU 72	ini.	15.5	124	-0.0000236	0.0001872	0.0035	0.5118		960.22	960.22	No	61.95	Si
SLU 72	fin.	-105.93	-739	-0.000171	0.0001872	0.0035	0.5127		964.06	964.06	No	9.1	Si
SLU 78	ini.	6.13	99	-0.0000093	0.0001872	0.0035	0.5118		960.22	960.22	No	156.59	Si
SLU 78	fin.	-106.56	-740	-0.0001721	0.0001872	0.0035	0.5127		964.06	964.06	No	9.05	Si
SLU 66	ini.	22.99	126	-0.0000352	0.0001872	0.0035	0.5118		960.22	960.22	No	41.76	Si
SLU 66	fin.	-107.74	-746	-0.0001742	0.0001872	0.0035	0.5127		964.06	964.06	No	8.95	Si
SLU 67	ini.	24.48	130	-0.0000375	0.0001872	0.0035	0.5118		960.22	960.22	No	39.23	Si
SLU 67	fin.	-108.59	-751	-0.0001757	0.0001872	0.0035	0.5127		964.06	964.06	No	8.88	Si
SLU 68	ini.	28.76	141	-0.0000442	0.0001872	0.0035	0.5118		960.22	960.22	No	33.39	Si
SLU 68	fin.	-105.44	-731	-0.0001702	0.0001872	0.0035	0.5127		964.06	964.06	No	9.14	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 77	ini.	4.65	350	0.5118	0	138	4062	2146	1305	3451	No	9.87	Si
SLU 77	fin.	-105.72	-1573	0.5127	0	139	4062	2149	1307	3456	No	2.2	Si
SLU 78	ini.	6.13	344	0.5118	0	138	4062	2146	1305	3451	No	10.03	Si
SLU 78	fin.	-106.56	-1578	0.5127	0	139	4062	2149	1307	3456	No	2.19	Si
SLU 66	ini.	22.99	243	0.5118	0	138	4062	2146	1305	3451	No	14.22	Si
SLU 66	fin.	-107.74	-1465	0.5127	0	139	4062	2149	1307	3456	No	2.36	Si
SLU 69	ini.	10.73	328	0.5118	0	138	4062	2146	1305	3451	No	10.53	Si
SLU 69	fin.	-108.8	-1596	0.5127	0	139	4062	2149	1307	3456	No	2.17	Si
SLU 71	ini.	14.02	304	0.5118	0	138	4062	2146	1305	3451	No	11.34	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 71	fin.	-105.09	-1546	0.5127	0	139	4062	2149	1307	3456	No	2.24	Si
SLU 72	ini.	15.5	299	0.5118	0	138	4062	2146	1305	3451	No	11.56	Si
SLU 72	fin.	-105.93	-1551	0.5127	0	139	4062	2149	1307	3456	No	2.23	Si
SLU 67	ini.	24.48	237	0.5118	0	138	4062	2146	1305	3451	No	14.57	Si
SLU 67	fin.	-108.59	-1470	0.5127	0	139	4062	2149	1307	3456	No	2.35	Si
SLU 70	ini.	12.21	322	0.5118	0	138	4062	2146	1305	3451	No	10.72	Si
SLU 70	fin.	-109.64	-1601	0.5127	0	139	4062	2149	1307	3456	No	2.16	Si
SLU 79	ini.	7.94	326	0.5118	0	138	4062	2146	1305	3451	No	10.57	Si
SLU 79	fin.	-102.01	-1524	0.5127	0	139	4062	2149	1307	3456	No	2.27	Si
SLU 80	ini.	9.42	321	0.5118	0	138	4062	2146	1305	3451	No	10.76	Si
SLU 80	fin.	-102.85	-1529	0.5127	0	139	4062	2149	1307	3456	No	2.26	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 10	ini.	-276.41	-623	-0.0004885	0.0002807	0.0035	0.5118		974.49	974.49		3.53	Si
SLV 10	fin.	124.89	809	-0.0002002	0.0002807	0.0035	0.5127		972.43	972.43		7.79	Si
SLV 13	ini.	-212.76	-464	-0.0003596	0.0002807	0.0035	0.5118		974.49	974.49		4.58	Si
SLV 13	fin.	98.26	663	-0.0001553	0.0002807	0.0035	0.5127		972.43	972.43		9.9	Si
SLV 9	ini.	-291.78	-663	-0.0005213	0.0002807	0.0035	0.5118		974.49	974.49		3.34	Si
SLV 9	fin.	133.99	873	-0.0002159	0.0002807	0.0035	0.5127		972.43	972.43		7.26	Si
SLV 5	ini.	-203.03	-456	-0.0003409	0.0002807	0.0035	0.5118		974.49	974.49		4.8	Si
SLV 5	fin.	64.42	393	-0.0001001	0.0002807	0.0035	0.5127		972.43	972.43		15.1	Si
SLV 11	ini.	241.86	628	-0.0004187	0.0002807	0.0035	0.5118		971.19	971.19		4.02	Si
SLV 11	fin.	-207.14	-1376	-0.0003481	0.0002807	0.0035	0.5127		975.73	975.73		4.71	Si
SLV 4	ini.	266.96	677	-0.0004705	0.0002807	0.0035	0.5118		971.19	971.19		3.64	Si
SLV 4	fin.	-250.08	-1710	-0.000433	0.0002807	0.0035	0.5127		975.73	975.73		3.9	Si
SLV 3	ini.	243.16	614	-0.0004213	0.0002807	0.0035	0.5118		971.19	971.19		3.99	Si
SLV 3	fin.	-235.99	-1611	-0.0004046	0.0002807	0.0035	0.5127		975.73	975.73		4.13	Si
SLV 12	ini.	257.23	669	-0.0004502	0.0002807	0.0035	0.5118		971.19	971.19		3.78	Si
SLV 12	fin.	-216.24	-1440	-0.0003657	0.0002807	0.0035	0.5127		975.73	975.73		4.51	Si
SLV 7	ini.	330.61	836	-0.0006094	0.0002807	0.0035	0.5118		971.19	971.19		2.94	Si
SLV 7	fin.	-276.71	-1856	-0.0004882	0.0002807	0.0035	0.5127		975.73	975.73		3.53	Si
SLV 8	ini.	345.98	876	-0.0006446	0.0002807	0.0035	0.5118		971.19	971.19		2.81	Si
SLV 8	fin.	-285.81	-1920	-0.0005075	0.0002807	0.0035	0.5127		975.73	975.73		3.41	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 7	ini.	330.61	-1081	0.5118	0	208	4062	3219	1305	4270		3.95	Si
SLV 7	fin.	-276.71	-2258	0.5127	0	208	4062	3224	1307	4270		1.89	Si
SLD 4	ini.	131.01	-297	0.5118	0	208	4062	3219	1305	4270		14.39	Si
SLD 4	fin.	-151.21	-1477	0.5127	0	208	4062	3224	1307	4270		2.89	Si
SLV 2	ini.	106.87	-199	0.5118	0	208	4062	3219	1305	4270		21.49	Si
SLV 2	fin.	-147.74	-1521	0.5127	0	208	4062	3224	1307	4270		2.81	Si
SLV 12	ini.	257.23	-794	0.5118	0	208	4062	3219	1305	4270		5.38	Si
SLV 12	fin.	-216.24	-1813	0.5127	0	208	4062	3224	1307	4270		2.36	Si
SLV 8	ini.	345.98	-1139	0.5118	0	208	4062	3219	1305	4270		3.75	Si
SLV 8	fin.	-285.81	-2323	0.5127	0	208	4062	3224	1307	4270		1.84	Si
SLV 11	ini.	241.86	-736	0.5118	0	208	4062	3219	1305	4270		5.8	Si
SLV 11	fin.	-207.14	-1748	0.5127	0	208	4062	3224	1307	4270		2.44	Si
SLD 7	ini.	160.68	-416	0.5118	0	208	4062	3219	1305	4270		10.27	Si
SLD 7	fin.	-164.16	-1522	0.5127	0	208	4062	3224	1307	4270		2.8	Si
SLD 8	ini.	167.4	-441	0.5118	0	208	4062	3219	1305	4270		9.69	Si
SLD 8	fin.	-168.14	-1551	0.5127	0	208	4062	3224	1307	4270		2.75	Si
SLV 3	ini.	243.16	-736	0.5118	0	208	4062	3219	1305	4270		5.8	Si
SLV 3	fin.	-235.99	-2074	0.5127	0	208	4062	3224	1307	4270		2.06	Si
SLV 4	ini.	266.96	-825	0.5118	0	208	4062	3219	1305	4270		5.17	Si
SLV 4	fin.	-250.08	-2174	0.5127	0	208	4062	3224	1307	4270		1.96	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.807	SLV 8	Si
V_SLV	1.838	SLV 8	Si
PF_SLU	8.793	SLU 70	Si
V_SLU	2.159	SLU 70	Si

Trave di accoppiamento 177

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-12.933	-4.824	13.04	14.255	1.215	-11.933	-4.824	13.04	14.254	1.214	1	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC





Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 46	ini.	-1.62	85	-0.0000004	0.0001872	0.0035	1.2147		5351.12	5351.12	No	3299.93	Si
SLU 46	fin.	-170.62	-61	-0.0000465	0.0001872	0.0035	1.2138		5360.99	5360.99	No	31.42	Si
SLU 43	ini.	3.1	136	-0.0000008	0.0001872	0.0035	1.2147		5343.41	5343.41	No	1726.33	Si
SLU 43	fin.	-170.69	-22	-0.0000465	0.0001872	0.0035	1.2138		5360.99	5360.99	No	31.41	Si
SLU 58	ini.	13.3	105	-0.0000036	0.0001872	0.0035	1.2147		5343.41	5343.41	No	401.72	Si
SLU 58	fin.	-175.8	-55	-0.000048	0.0001872	0.0035	1.2138		5360.99	5360.99	No	30.5	Si
SLU 50	ini.	7.49	63	-0.000002	0.0001872	0.0035	1.2147		5343.41	5343.41	No	713.15	Si
SLU 50	fin.	-183.83	-93	-0.0000502	0.0001872	0.0035	1.2138		5360.99	5360.99	No	29.16	Si
SLU 59	ini.	12.29	102	-0.0000033	0.0001872	0.0035	1.2147		5343.41	5343.41	No	434.72	Si
SLU 59	fin.	-174.95	-57	-0.0000477	0.0001872	0.0035	1.2138		5360.99	5360.99	No	30.64	Si
SLU 45	ini.	-0.61	88	-0.0000002	0.0001872	0.0035	1.2147		5351.12	5351.12	No	8742.93	Si
SLU 45	fin.	-171.47	-60	-0.0000468	0.0001872	0.0035	1.2138		5360.99	5360.99	No	31.27	Si
SLU 49	ini.	0.58	49	-0.0000002	0.0001872	0.0035	1.2147		5343.41	5343.41	No	9258.58	Si
SLU 49	fin.	-177.19	-97	-0.0000483	0.0001872	0.0035	1.2138		5360.99	5360.99	No	30.26	Si
SLU 51	ini.	6.48	61	-0.0000017	0.0001872	0.0035	1.2147		5343.41	5343.41	No	824.2	Si
SLU 51	fin.	-182.99	-94	-0.00005	0.0001872	0.0035	1.2138		5360.99	5360.99	No	29.3	Si
SLU 48	ini.	1.59	51	-0.0000004	0.0001872	0.0035	1.2147		5343.41	5343.41	No	3367.7	Si
SLU 48	fin.	-178.04	-95	-0.0000486	0.0001872	0.0035	1.2138		5360.99	5360.99	No	30.11	Si
SLU 47	ini.	3.61	95	-0.000001	0.0001872	0.0035	1.2147		5343.41	5343.41	No	1479.6	Si
SLU 47	fin.	-175.85	-60	-0.000048	0.0001872	0.0035	1.2138		5360.99	5360.99	No	30.49	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 59	ini.	12.29	749	1.2147	0	528	7930	5456	3097	8458	No	11.29	Si
SLU 59	fin.	-174.95	-1232	1.2138	0	528	7930	5452	3095	8457	No	6.87	Si
SLU 78	ini.	-7.82	906	1.2147	0	528	7930	5456	3097	8458	No	9.33	Si
SLU 78	fin.	-144.51	-1218	1.2138	0	528	7930	5452	3095	8457	No	6.95	Si
SLU 80	ini.	-1.91	916	1.2147	0	528	7930	5456	3097	8458	No	9.24	Si
SLU 80	fin.	-150.3	-1258	1.2138	0	528	7930	5452	3095	8457	No	6.72	Si
SLU 58	ini.	13.3	745	1.2147	0	528	7930	5456	3097	8458	No	11.35	Si
SLU 58	fin.	-175.8	-1234	1.2138	0	528	7930	5452	3095	8457	No	6.85	Si
SLU 72	ini.	-7.72	912	1.2147	0	528	7930	5456	3097	8458	No	9.28	Si
SLU 72	fin.	-158.34	-1255	1.2138	0	528	7930	5452	3095	8457	No	6.74	Si
SLU 51	ini.	6.48	745	1.2147	0	528	7930	5456	3097	8458	No	11.35	Si
SLU 51	fin.	-182.99	-1229	1.2138	0	528	7930	5452	3095	8457	No	6.88	Si
SLU 50	ini.	7.49	741	1.2147	0	528	7930	5456	3097	8458	No	11.41	Si
SLU 50	fin.	-183.83	-1231	1.2138	0	528	7930	5452	3095	8457	No	6.87	Si
SLU 77	ini.	-6.81	903	1.2147	0	528	7930	5456	3097	8458	No	9.37	Si
SLU 77	fin.	-145.35	-1220	1.2138	0	528	7930	5452	3095	8457	No	6.93	Si
SLU 71	ini.	-6.71	908	1.2147	0	528	7930	5456	3097	8458	No	9.31	Si
SLU 71	fin.	-159.18	-1257	1.2138	0	528	7930	5452	3095	8457	No	6.73	Si
SLU 79	ini.	-0.9	912	1.2147	0	528	7930	5456	3097	8458	No	9.27	Si
SLU 79	fin.	-151.15	-1260	1.2138	0	528	7930	5452	3095	8457	No	6.71	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	1440.85	1834	-0.0004464	0.0002807	0.0035	1.2147		5408.06	5408.06		3.75	Si
SLV 15	fin.	-1920.94	-1679	-0.0006315	0.0002807	0.0035	1.2138		5376.96	5376.96		2.8	Si
SLV 14	ini.	1510.12	2131	-0.000472	0.0002807	0.0035	1.2147		5408.06	5408.06		3.58	Si
SLV 14	fin.	-2001.62	-1612	-0.0006645	0.0002807	0.0035	1.2138		5376.96	5376.96		2.69	Si
SLV 3	ini.	-1517.65	-1916	-0.000474	0.0002807	0.0035	1.2147		5416.29	5416.29		3.57	Si
SLV 3	fin.	1770.7	1626	-0.0005723	0.0002807	0.0035	1.2138		5368.74	5368.74		3.03	Si
SLV 1	ini.	-1397.51	-1554	-0.00043	0.0002807	0.0035	1.2147		5416.29	5416.29		3.88	Si
SLV 1	fin.	1624.74	1638	-0.0005156	0.0002807	0.0035	1.2138		5368.74	5368.74		3.3	Si
SLV 2	ini.	-1448.38	-1619	-0.0004485	0.0002807	0.0035	1.2147		5416.29	5416.29		3.74	Si
SLV 2	fin.	1690.01	1694	-0.0005408	0.0002807	0.0035	1.2138		5368.74	5368.74		3.18	Si
SLD 13	ini.	665.65	1002	-0.0001887	0.0002807	0.0035	1.2147		5408.06	5408.06		8.12	Si
SLD 13	fin.	-950.06	-707	-0.0002772	0.0002807	0.0035	1.2138		5376.96	5376.96		5.66	Si
SLV 9	ini.	656.68	1295	-0.000186	0.0002807	0.0035	1.2147		5408.06	5408.06		8.24	Si
SLV 9	fin.	-933.56	-487	-0.0002719	0.0002807	0.0035	1.2138		5376.96	5376.96		5.76	Si
SLV 4	ini.	-1568.52	-1981	-0.0004931	0.0002807	0.0035	1.2147		5416.29	5416.29		3.45	Si
SLV 4	fin.	1835.98	1682	-0.0005982	0.0002807	0.0035	1.2138		5368.74	5368.74		2.92	Si
SLV 13	ini.	1560.99	2196	-0.000491	0.0002807	0.0035	1.2147		5408.06	5408.06		3.46	Si
SLV 13	fin.	-2066.9	-1667	-0.0006917	0.0002807	0.0035	1.2138		5376.96	5376.96		2.6	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 16	ini.	1389.98	1769	-0.0004279	0.0002807	0.0035	1.2147		5408.06	5408.06		3.89	Si
SLV 16	fin.	-1855.66	-1623	-0.0006051	0.0002807	0.0035	1.2138		5376.96	5376.96		2.9	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 15	ini.	613.31	-1781	1.2147	0	792	7930	8184	3097	8722		4.9	Si
SLD 15	fin.	-886.9	-2995	1.2138	0	792	7930	8178	3095	8721		2.91	Si
SLV 3	ini.	-1517.65	5750	1.2147	0	792	7930	8184	3097	8722		1.52	Si
SLV 3	fin.	1770.7	4505	1.2138	0	792	7930	8178	3095	8721		1.94	Si
SLV 14	ini.	1510.12	-4904	1.2147	0	792	7930	8184	3097	8722		1.78	Si
SLV 14	fin.	-2001.62	-5964	1.2138	0	792	7930	8178	3095	8721		1.46	Si
SLV 15	ini.	1440.85	-4735	1.2147	0	792	7930	8184	3097	8722		1.84	Si
SLV 15	fin.	-1920.94	-6033	1.2138	0	792	7930	8178	3095	8721		1.45	Si
SLD 13	ini.	665.65	-1935	1.2147	0	792	7930	8184	3097	8722		4.51	Si
SLD 13	fin.	-950.06	-3048	1.2138	0	792	7930	8178	3095	8721		2.86	Si
SLV 13	ini.	1560.99	-5089	1.2147	0	792	7930	8184	3097	8722		1.71	Si
SLV 13	fin.	-2066.9	-6151	1.2138	0	792	7930	8178	3095	8721		1.42	Si
SLV 1	ini.	-1397.51	5396	1.2147	0	792	7930	8184	3097	8722		1.62	Si
SLV 1	fin.	1624.74	4388	1.2138	0	792	7930	8178	3095	8721		1.99	Si
SLV 4	ini.	-1568.52	5935	1.2147	0	792	7930	8184	3097	8722		1.47	Si
SLV 4	fin.	1835.98	4692	1.2138	0	792	7930	8178	3095	8721		1.86	Si
SLV 16	ini.	1389.98	-4550	1.2147	0	792	7930	8184	3097	8722		1.92	Si
SLV 16	fin.	-1855.66	-5847	1.2138	0	792	7930	8178	3095	8721		1.49	Si
SLV 2	ini.	-1448.38	5581	1.2147	0	792	7930	8184	3097	8722		1.56	Si
SLV 2	fin.	1690.01	4575	1.2138	0	792	7930	8178	3095	8721		1.91	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.601	SLV 13	Si
V_SLV	1.418	SLV 13	Si
PF_SLU	29.162	SLU 50	Si
V_SLU	6.71	SLU 79	Si

## Trave di accoppiamento 179

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-21.593	-3.314	3.91	5.73	1.82	-22.493	-3.314	3.91	5.73	1.82	0.9	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fnk	fvk0	fmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 81	ini.	-2041.29	-3429	-0.0002744	0.0001872	0.0035	1.82		11951.24	11951.24	No	5.85	Si
SLU 81	fin.	1614.41	-3429	-0.0002107	0.0001872	0.0035	1.82		11939.71	11939.71	No	7.4	Si
SLU 80	ini.	-1977.93	-3418	-0.0002646	0.0001872	0.0035	1.82		11951.24	11951.24	No	6.04	Si
SLU 80	fin.	1572.64	-3418	-0.0002047	0.0001872	0.0035	1.82		11939.71	11939.71	No	7.59	Si
SLU 79	ini.	-1991.84	-3412	-0.0002668	0.0001872	0.0035	1.82		11951.24	11951.24	No	6	Si
SLU 79	fin.	1583.81	-3412	-0.0002063	0.0001872	0.0035	1.82		11939.71	11939.71	No	7.54	Si
SLU 74	ini.	-2020.49	-3384	-0.0002712	0.0001872	0.0035	1.82		11951.24	11951.24	No	5.92	Si
SLU 74	fin.	1614.08	-3384	-0.0002107	0.0001872	0.0035	1.82		11939.71	11939.71	No	7.4	Si
SLU 84	ini.	-2027.31	-3490	-0.0002722	0.0001872	0.0035	1.82		11951.24	11951.24	No	5.9	Si
SLU 84	fin.	1602.1	-3490	-0.0002089	0.0001872	0.0035	1.82		11939.71	11939.71	No	7.45	Si
SLU 83	ini.	-2041.23	-3483	-0.0002744	0.0001872	0.0035	1.82		11951.24	11951.24	No	5.85	Si
SLU 83	fin.	1613.27	-3483	-0.0002106	0.0001872	0.0035	1.82		11939.71	11939.71	No	7.4	Si
SLU 82	ini.	-2027.38	-3436	-0.0002722	0.0001872	0.0035	1.82		11951.24	11951.24	No	5.89	Si
SLU 82	fin.	1603.24	-3436	-0.0002091	0.0001872	0.0035	1.82		11939.71	11939.71	No	7.45	Si
SLU 78	ini.	-2006.52	-3444	-0.000269	0.0001872	0.0035	1.82		11951.24	11951.24	No	5.96	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 78	fin.	1601.77	-3444	-0.0002089	0.0001872	0.0035	1.82		11939.71	11939.71	No	7.45	Si
SLU 77	ini.	-2020.43	-3437	-0.0002712	0.0001872	0.0035	1.82		11951.24	11951.24	No	5.92	Si
SLU 77	fin.	1612.94	-3437	-0.0002105	0.0001872	0.0035	1.82		11939.71	11939.71	No	7.4	Si
SLU 75	ini.	-2006.58	-3390	-0.000269	0.0001872	0.0035	1.82		11951.24	11951.24	No	5.96	Si
SLU 75	fin.	1602.91	-3390	-0.0002091	0.0001872	0.0035	1.82		11939.71	11939.71	No	7.45	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 83	ini.	-2041.23	4494	1.82	0	739	7137	7630	4641	7875	No	1.75	Si
SLU 83	fin.	1613.27	3494	1.82	0	739	7137	7630	4641	7875	No	2.25	Si
SLU 79	ini.	-1991.84	4406	1.82	0	739	7137	7630	4641	7875	No	1.79	Si
SLU 79	fin.	1583.81	3406	1.82	0	739	7137	7630	4641	7875	No	2.31	Si
SLU 81	ini.	-2041.29	4495	1.82	0	739	7137	7630	4641	7875	No	1.75	Si
SLU 81	fin.	1614.41	3495	1.82	0	739	7137	7630	4641	7875	No	2.25	Si
SLU 84	ini.	-2027.31	4466	1.82	0	739	7137	7630	4641	7875	No	1.76	Si
SLU 84	fin.	1602.1	3466	1.82	0	739	7137	7630	4641	7875	No	2.27	Si
SLU 80	ini.	-1977.93	4378	1.82	0	739	7137	7630	4641	7875	No	1.8	Si
SLU 80	fin.	1572.64	3378	1.82	0	739	7137	7630	4641	7875	No	2.33	Si
SLU 74	ini.	-2020.49	4472	1.82	0	739	7137	7630	4641	7875	No	1.76	Si
SLU 74	fin.	1614.08	3472	1.82	0	739	7137	7630	4641	7875	No	2.27	Si
SLU 77	ini.	-2020.43	4470	1.82	0	739	7137	7630	4641	7875	No	1.76	Si
SLU 77	fin.	1612.94	3470	1.82	0	739	7137	7630	4641	7875	No	2.27	Si
SLU 78	ini.	-2006.52	4442	1.82	0	739	7137	7630	4641	7875	No	1.77	Si
SLU 78	fin.	1601.77	3442	1.82	0	739	7137	7630	4641	7875	No	2.29	Si
SLU 75	ini.	-2006.58	4444	1.82	0	739	7137	7630	4641	7875	No	1.77	Si
SLU 75	fin.	1602.91	3444	1.82	0	739	7137	7630	4641	7875	No	2.29	Si
SLU 82	ini.	-2027.38	4467	1.82	0	739	7137	7630	4641	7875	No	1.76	Si
SLU 82	fin.	1603.24	3467	1.82	0	739	7137	7630	4641	7875	No	2.27	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-6024.53	-2408	-0.0009677	0.0002807	0.0035	1.82		11842.47	11842.47		1.97	Si
SLV 15	fin.	6370.39	-2634	-0.0010438	0.0002807	0.0035	1.82		11830.38	11830.38		1.86	Si
SLV 4	ini.	3472.82	-2763	-0.000486	0.0002807	0.0035	1.82		11830.38	11830.38		3.41	Si
SLV 4	fin.	-3965.01	-3408	-0.0005697	0.0002807	0.0035	1.82		11842.47	11842.47		2.99	Si
SLD 15	ini.	-3392.99	-2370	-0.0004722	0.0002807	0.0035	1.82		11842.47	11842.47		3.49	Si
SLD 15	fin.	3382.21	-2468	-0.0004709	0.0002807	0.0035	1.82		11830.38	11830.38		3.5	Si
SLD 13	ini.	-3531.84	-2149	-0.0004953	0.0002807	0.0035	1.82		11842.47	11842.47		3.35	Si
SLD 13	fin.	3337.72	-1875	-0.0004635	0.0002807	0.0035	1.82		11830.38	11830.38		3.54	Si
SLV 16	ini.	-5212.77	-2427	-0.0008016	0.0002807	0.0035	1.82		11842.47	11842.47		2.27	Si
SLV 16	fin.	5556.34	-2653	-0.0008713	0.0002807	0.0035	1.82		11830.38	11830.38		2.13	Si
SLV 9	ini.	-3526.76	-1445	-0.0004945	0.0002807	0.0035	1.82		11842.47	11842.47		3.36	Si
SLV 9	fin.	2679.1	71	-0.0003587	0.0002807	0.0035	1.82		11830.38	11830.38		4.42	Si
SLV 1	ini.	2344.47	-2244	-0.0003083	0.0002807	0.0035	1.82		11830.38	11830.38		5.05	Si
SLV 1	fin.	-3250.04	-2017	-0.0004487	0.0002807	0.0035	1.82		11842.47	11842.47		3.64	Si
SLV 2	ini.	3156.24	-2262	-0.0004339	0.0002807	0.0035	1.82		11830.38	11830.38		3.75	Si
SLV 2	fin.	-4064.09	-2036	-0.0005871	0.0002807	0.0035	1.82		11842.47	11842.47		2.91	Si
SLV 14	ini.	-5529.35	-1926	-0.0008648	0.0002807	0.0035	1.82		11842.47	11842.47		2.14	Si
SLV 14	fin.	5457.26	-1281	-0.0008512	0.0002807	0.0035	1.82		11830.38	11830.38		2.17	Si
SLV 13	ini.	-6341.11	-1908	-0.0010361	0.0002807	0.0035	1.82		11842.47	11842.47		1.87	Si
SLV 13	fin.	6271.3	-1262	-0.0010221	0.0002807	0.0035	1.82		11830.38	11830.38		1.89	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 16	ini.	-3044.41	7150	1.82	0	1108	7137	11445	4641	8244		1.15	Si
SLD 16	fin.	3032.66	6348	1.82	0	1108	7137	11445	4641	8244		1.3	Si
SLV 14	ini.	-5529.35	12425	1.82	0	1108	7137	11445	4641	8244		0.66	No
SLV 14	fin.	5457.26	11751	1.82	0	1108	7137	11445	4641	8244		0.7	No
SLV 15	ini.	-6024.53	14264	1.82	0	1108	7137	11445	4641	8244		0.58	No
SLV 15	fin.	6370.39	13407	1.82	0	1108	7137	11445	4641	8244		0.61	No
SLV 13	ini.	-6341.11	14231	1.82	0	1108	7137	11445	4641	8244		0.58	No
SLV 13	fin.	6271.3	13558	1.82	0	1108	7137	11445	4641	8244		0.61	No
SLD 13	ini.	-3531.84	7916	1.82	0	1108	7137	11445	4641	8244		1.04	Si
SLD 13	fin.	3337.72	7188	1.82	0	1108	7137	11445	4641	8244		1.15	Si
SLV 4	ini.	3472.82	-7818	1.82	0	1108	7137	11445	4641	8244		1.05	Si
SLV 4	fin.	-3965.01	-8678	1.82	0	1108	7137	11445	4641	8244		0.95	No
SLD 14	ini.	-3183.27	7141	1.82	0	1108	7137	11445	4641	8244		1.15	Si
SLD 14	fin.	2988.17	6412	1.82	0	1108	7137	11445	4641	8244		1.29	Si
SLV 2	ini.	3156.24	-7851	1.82	0	1108	7137	11445	4641	8244		1.05	Si
SLV 2	fin.	-4064.09	-8527	1.82	0	1108	7137	11445	4641	8244		0.97	No
SLD 15	ini.	-3392.99	7926	1.82	0	1108	7137	11445	4641	8244		1.04	Si
SLD 15	fin.	3382.21	7123	1.82	0	1108	7137	11445	4641	8244		1.16	Si
SLV 16	ini.	-5212.77	12458	1.82	0	1108	7137	11445	4641	8244		0.66	No
SLV 16	fin.	5556.34	11601	1.82	0	1108	7137	11445	4641	8244		0.71	No

#### Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.857	SLV 15	Si
V_SLV	0.578	SLV 15	No
PF_SLU	5.855	SLU 81	Si
V_SLU	1.752	SLU 81	Si



## Trave di accoppiamento 183

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-17.363	-3.314	3.91	5.73	1.82	-18.263	-3.314	3.91	5.73	1.82	0.9	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	ε <sub>f,d</sub>	γ <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em <sub>-</sub>	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 84	ini.	714.56	-1783	-0.0000884	0.0001872	0.0035	1.82		11939.71	11939.71	No	16.71	Si
SLU 84	fin.	-520.72	-1783	-0.0000637	0.0001872	0.0035	1.82		11951.24	11951.24	No	22.95	Si
SLU 62	ini.	685.82	-1603	-0.0000847	0.0001872	0.0035	1.82		11939.71	11939.71	No	17.41	Si
SLU 62	fin.	-558.83	-1603	-0.0000685	0.0001872	0.0035	1.82		11951.24	11951.24	No	21.39	Si
SLU 76	ini.	651.91	-1684	-0.0000803	0.0001872	0.0035	1.82		11939.71	11939.71	No	18.32	Si
SLU 76	fin.	-431.26	-1684	-0.0000525	0.0001872	0.0035	1.82		11951.24	11951.24	No	27.71	Si
SLU 61	ini.	682.21	-1576	-0.0000842	0.0001872	0.0035	1.82		11939.71	11939.71	No	17.5	Si
SLU 61	fin.	-576.65	-1576	-0.0000707	0.0001872	0.0035	1.82		11951.24	11951.24	No	20.73	Si
SLU 83	ini.	705.67	-1778	-0.0000872	0.0001872	0.0035	1.82		11939.71	11939.71	No	16.92	Si
SLU 83	fin.	-507.61	-1778	-0.000062	0.0001872	0.0035	1.82		11951.24	11951.24	No	23.54	Si
SLU 82	ini.	702.06	-1751	-0.0000868	0.0001872	0.0035	1.82		11939.71	11939.71	No	17.01	Si
SLU 82	fin.	-525.43	-1751	-0.0000643	0.0001872	0.0035	1.82		11951.24	11951.24	No	22.75	Si
SLU 60	ini.	673.32	-1572	-0.0000831	0.0001872	0.0035	1.82		11939.71	11939.71	No	17.73	Si
SLU 60	fin.	-563.54	-1572	-0.0000691	0.0001872	0.0035	1.82		11951.24	11951.24	No	21.21	Si
SLU 80	ini.	658.48	-1712	-0.0000812	0.0001872	0.0035	1.82		11939.71	11939.71	No	18.13	Si
SLU 80	fin.	-417.8	-1712	-0.0000508	0.0001872	0.0035	1.82		11951.24	11951.24	No	28.61	Si
SLU 63	ini.	694.71	-1608	-0.0000858	0.0001872	0.0035	1.82		11939.71	11939.71	No	17.19	Si
SLU 63	fin.	-571.93	-1608	-0.0000701	0.0001872	0.0035	1.82		11951.24	11951.24	No	20.9	Si
SLU 81	ini.	693.17	-1747	-0.0000856	0.0001872	0.0035	1.82		11939.71	11939.71	No	17.22	Si
SLU 81	fin.	-512.33	-1747	-0.0000626	0.0001872	0.0035	1.82		11951.24	11951.24	No	23.33	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	f <sub>vd</sub>	V <sub>t</sub>	V <sub>t,f</sub>	V <sub>t,c</sub>	V <sub>t,c.int.</sub>	V <sub>t,R</sub>	incremento > 50%	c.s.	Verifica
SLU 82	ini.	702.06	-717	1.82	0	739	7137	7630	4641	7875	No	10.99	Si
SLU 82	fin.	-525.43	-1860	1.82	0	739	7137	7630	4641	7875	No	4.23	Si
SLU 63	ini.	694.71	-766	1.82	0	739	7137	7630	4641	7875	No	10.28	Si
SLU 63	fin.	-571.93	-1897	1.82	0	739	7137	7630	4641	7875	No	4.15	Si
SLU 55	ini.	632.05	-597	1.82	0	739	7137	7630	4641	7875	No	13.19	Si
SLU 55	fin.	-482.47	-1728	1.82	0	739	7137	7630	4641	7875	No	4.56	Si
SLU 59	ini.	638.63	-590	1.82	0	739	7137	7630	4641	7875	No	13.36	Si
SLU 59	fin.	-469.02	-1720	1.82	0	739	7137	7630	4641	7875	No	4.58	Si
SLU 61	ini.	682.21	-758	1.82	0	739	7137	7630	4641	7875	No	10.4	Si
SLU 61	fin.	-576.65	-1888	1.82	0	739	7137	7630	4641	7875	No	4.17	Si
SLU 84	ini.	714.56	-725	1.82	0	739	7137	7630	4641	7875	No	10.86	Si
SLU 84	fin.	-520.72	-1869	1.82	0	739	7137	7630	4641	7875	No	4.21	Si
SLU 83	ini.	705.67	-701	1.82	0	739	7137	7630	4641	7875	No	11.24	Si
SLU 83	fin.	-507.61	-1844	1.82	0	739	7137	7630	4641	7875	No	4.27	Si
SLU 60	ini.	673.32	-733	1.82	0	739	7137	7630	4641	7875	No	10.74	Si
SLU 60	fin.	-563.54	-1864	1.82	0	739	7137	7630	4641	7875	No	4.23	Si
SLU 81	ini.	693.17	-692	1.82	0	739	7137	7630	4641	7875	No	11.38	Si
SLU 81	fin.	-512.33	-1836	1.82	0	739	7137	7630	4641	7875	No	4.29	Si
SLU 62	ini.	685.82	-742	1.82	0	739	7137	7630	4641	7875	No	10.62	Si
SLU 62	fin.	-558.83	-1872	1.82	0	739	7137	7630	4641	7875	No	4.21	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-4048.85	-1268	-0.0005844	0.0002807	0.0035	1.82		11842.47	11842.47		2.92	Si
SLV 15	fin.	6451.81	-1048	-0.0010619	0.0002807	0.0035	1.82		11830.38	11830.38		1.83	Si
SLV 1	ini.	4353.62	-919	-0.0006398	0.0002807	0.0035	1.82		11830.38	11830.38		2.72	Si
SLV 1	fin.	-6184.89	-1139	-0.001002	0.0002807	0.0035	1.82		11842.47	11842.47		1.91	Si
SLV 14	ini.	-3619.21	-570	-0.0005101	0.0002807	0.0035	1.82		11842.47	11842.47		3.27	Si
SLV 14	fin.	6327.25	-277	-0.0010343	0.0002807	0.0035	1.82		11830.38	11830.38		1.87	Si
SLV 3	ini.	4416.66	-1655	-0.0006513	0.0002807	0.0035	1.82		11830.38	11830.38		2.68	Si
SLV 3	fin.	-6765.31	-1947	-0.0011314	0.0002807	0.0035	1.82		11842.47	11842.47		1.75	Si
SLD 4	ini.	2327.66	-1358	-0.0003059	0.0002807	0.0035	1.82		11830.38	11830.38		5.08	Si
SLD 4	fin.	-3316.87	-1483	-0.0004596	0.0002807	0.0035	1.82		11842.47	11842.47		3.57	Si
SLV 16	ini.	-3556.17	-1305	-0.0004994	0.0002807	0.0035	1.82		11842.47	11842.47		3.33	Si
SLV 16	fin.	5746.83	-1085	-0.0009105	0.0002807	0.0035	1.82		11830.38	11830.38		2.06	Si
SLV 2	ini.	4846.3	-957	-0.0007315	0.0002807	0.0035	1.82		11830.38	11830.38		2.44	Si
SLV 2	fin.	-6889.88	-1176	-0.0011602	0.0002807	0.0035	1.82		11842.47	11842.47		1.72	Si
SLV 4	ini.	4909.34	-1692	-0.0007435	0.0002807	0.0035	1.82		11830.38	11830.38		2.41	Si
SLV 4	fin.	-7470.3	-1984	-0.0013002	0.0002807	0.0035	1.82		11842.47	11842.47		1.59	Si
SLV 8	ini.	1932.72	-2408	-0.0002491	0.0002807	0.0035	1.82		11830.38	11830.38		6.12	Si
SLV 8	fin.	-3396.63	-2606	-0.0004728	0.0002807	0.0035	1.82		11842.47	11842.47		3.49	Si
SLV 13	ini.	-4111.89	-532	-0.0005956	0.0002807	0.0035	1.82		11842.47	11842.47		2.88	Si
SLV 13	fin.	7032.23	-240	-0.0011952	0.0002807	0.0035	1.82		11830.38	11830.38		1.68	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 16	ini.	-3556.17	10519	1.82	0	1108	7137	11445	4641	8244		0.78	No
SLV 16	fin.	5746.83	9873	1.82	0	1108	7137	11445	4641	8244		0.84	No
SLV 2	ini.	4846.3	-12229	1.82	0	1108	7137	11445	4641	8244		0.67	No
SLV 2	fin.	-6889.88	-13338	1.82	0	1108	7137	11445	4641	8244		0.62	No
SLV 14	ini.	-3619.21	11557	1.82	0	1108	7137	11445	4641	8244		0.71	No
SLV 14	fin.	6327.25	10623	1.82	0	1108	7137	11445	4641	8244		0.78	No
SLV 3	ini.	4416.66	-11937	1.82	0	1108	7137	11445	4641	8244		0.69	No
SLV 3	fin.	-6765.31	-12756	1.82	0	1108	7137	11445	4641	8244		0.65	No
SLV 15	ini.	-4048.85	11849	1.82	0	1108	7137	11445	4641	8244		0.7	No
SLV 15	fin.	6451.81	11204	1.82	0	1108	7137	11445	4641	8244		0.74	No
SLV 8	ini.	1932.72	-5918	1.82	0	1108	7137	11445	4641	8244		1.39	Si
SLV 8	fin.	-3396.63	-6340	1.82	0	1108	7137	11445	4641	8244		1.3	Si
SLV 4	ini.	4909.34	-13267	1.82	0	1108	7137	11445	4641	8244		0.62	No
SLV 4	fin.	-7470.3	-14087	1.82	0	1108	7137	11445	4641	8244		0.59	No
SLV 13	ini.	-4111.89	12888	1.82	0	1108	7137	11445	4641	8244		0.64	No
SLV 13	fin.	7032.23	11954	1.82	0	1108	7137	11445	4641	8244		0.69	No
SLD 4	ini.	2327.66	-5775	1.82	0	1108	7137	11445	4641	8244		1.43	Si
SLD 4	fin.	-3316.87	-6633	1.82	0	1108	7137	11445	4641	8244		1.24	Si
SLV 1	ini.	4353.62	-10898	1.82	0	1108	7137	11445	4641	8244		0.76	No
SLV 1	fin.	-6184.89	-12007	1.82	0	1108	7137	11445	4641	8244		0.69	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.585	SLV 4	Si
V_SLV	0.585	SLV 4	No
PF_SLU	16.709	SLU 84	Si
V_SLU	4.152	SLU 63	Si

## Trave di accoppiamento 187

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-12.933	-4.824	2.89	4.08	1.19	-11.933	-4.824	2.89	4.08	1.19	1	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb_	fhk	fvk0	fmedio	t0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 77	ini.	851.88	-396	-0.0002673	0.0001872	0.0035	1.19		5119.88	5119.88	No	6.01	Si
SLU 77	fin.	-231	-396	-0.0000661	0.0001872	0.0035	1.19		5127.44	5127.44	No	22.2	Si
SLU 58	ini.	840.05	-364	-0.000263	0.0001872	0.0035	1.19		5119.88	5119.88	No	6.09	Si
SLU 58	fin.	-276.11	-364	-0.0000795	0.0001872	0.0035	1.19		5127.44	5127.44	No	18.57	Si
SLU 78	ini.	844.66	-394	-0.0002647	0.0001872	0.0035	1.19		5119.88	5119.88	No	6.06	Si
SLU 78	fin.	-221.24	-394	-0.0000633	0.0001872	0.0035	1.19		5127.44	5127.44	No	23.18	Si
SLU 62	ini.	846.38	-385	-0.0002653	0.0001872	0.0035	1.19		5119.88	5119.88	No	6.05	Si
SLU 62	fin.	-271.56	-385	-0.0000781	0.0001872	0.0035	1.19		5127.44	5127.44	No	18.88	Si
SLU 81	ini.	846.95	-411	-0.0002655	0.0001872	0.0035	1.19		5119.88	5119.88	No	6.05	Si
SLU 81	fin.	-229.09	-411	-0.0000656	0.0001872	0.0035	1.19		5127.44	5127.44	No	22.38	Si
SLU 83	ini.	865.72	-416	-0.0002723	0.0001872	0.0035	1.19		5119.88	5119.88	No	5.91	Si
SLU 83	fin.	-239.62	-416	-0.0000687	0.0001872	0.0035	1.19		5127.44	5127.44	No	21.4	Si
SLU 84	ini.	858.51	-414	-0.0002697	0.0001872	0.0035	1.19		5119.88	5119.88	No	5.96	Si
SLU 84	fin.	-229.86	-414	-0.0000658	0.0001872	0.0035	1.19		5127.44	5127.44	No	22.31	Si
SLU 79	ini.	859.39	-394	-0.00027	0.0001872	0.0035	1.19		5119.88	5119.88	No	5.96	Si
SLU 79	fin.	-244.17	-394	-0.00007	0.0001872	0.0035	1.19		5127.44	5127.44	No	21	Si
SLU 82	ini.	839.73	-409	-0.0002629	0.0001872	0.0035	1.19		5119.88	5119.88	No	6.1	Si
SLU 82	fin.	-219.33	-409	-0.0000627	0.0001872	0.0035	1.19		5127.44	5127.44	No	23.38	Si
SLU 80	ini.	852.17	-392	-0.0002674	0.0001872	0.0035	1.19		5119.88	5119.88	No	6.01	Si
SLU 80	fin.	-234.41	-392	-0.0000671	0.0001872	0.0035	1.19		5127.44	5127.44	No	21.87	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 56	ini.	832.54	-570	1.19	0	517	7930	5345	3035	8380	No	14.7	Si
SLU 56	fin.	-262.94	-1625	1.19	0	517	7930	5345	3035	8380	No	5.16	Si
SLU 59	ini.	832.83	-574	1.19	0	517	7930	5345	3035	8380	No	14.6	Si
SLU 59	fin.	-266.35	-1629	1.19	0	517	7930	5345	3035	8380	No	5.14	Si
SLU 63	ini.	839.17	-576	1.19	0	517	7930	5345	3035	8380	No	14.56	Si
SLU 63	fin.	-261.8	-1631	1.19	0	517	7930	5345	3035	8380	No	5.14	Si
SLU 80	ini.	852.17	-557	1.19	0	517	7930	5345	3035	8380	No	15.04	Si
SLU 80	fin.	-234.41	-1620	1.19	0	517	7930	5345	3035	8380	No	5.17	Si
SLU 58	ini.	840.05	-591	1.19	0	517	7930	5345	3035	8380	No	14.18	Si
SLU 58	fin.	-276.11	-1646	1.19	0	517	7930	5345	3035	8380	No	5.09	Si
SLU 84	ini.	858.51	-559	1.19	0	517	7930	5345	3035	8380	No	14.99	Si
SLU 84	fin.	-229.86	-1622	1.19	0	517	7930	5345	3035	8380	No	5.17	Si
SLU 60	ini.	827.61	-563	1.19	0	517	7930	5345	3035	8380	No	14.88	Si
SLU 60	fin.	-261.03	-1618	1.19	0	517	7930	5345	3035	8380	No	5.18	Si
SLU 62	ini.	846.38	-593	1.19	0	517	7930	5345	3035	8380	No	14.14	Si
SLU 62	fin.	-271.56	-1648	1.19	0	517	7930	5345	3035	8380	No	5.09	Si
SLU 79	ini.	859.39	-574	1.19	0	517	7930	5345	3035	8380	No	14.6	Si
SLU 79	fin.	-244.17	-1637	1.19	0	517	7930	5345	3035	8380	No	5.12	Si
SLU 83	ini.	865.72	-576	1.19	0	517	7930	5345	3035	8380	No	14.55	Si
SLU 83	fin.	-239.62	-1639	1.19	0	517	7930	5345	3035	8380	No	5.11	Si

#### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 4	ini.	-4937.76	285	-0.0028135	0.0002807	0.0035	1.19		5214.48	5214.48		1.06	Si
SLV 4	fin.	6464.97	555	-0.0047317	0.0002807	0.0035	1.19		5206.91	5206.91		0.81	No
SLV 14	ini.	5721.93	-771	-0.0038731	0.0002807	0.0035	1.19		5206.91	5206.91		0.91	No
SLV 14	fin.	-6319.85	-1041	-0.0045614	0.0002807	0.0035	1.19		5214.48	5214.48		0.83	No
SLV 3	ini.	-4522.72	250	-0.0023272	0.0002807	0.0035	1.19		5214.48	5214.48		1.15	Si
SLV 3	fin.	5976.08	520	-0.0041784	0.0002807	0.0035	1.19		5206.91	5206.91		0.87	No
SLV 13	ini.	6136.97	-807	-0.0043646	0.0002807	0.0035	1.19		5206.91	5206.91		0.85	No
SLV 13	fin.	-6808.74	-1077	-0.0050925	0.0002807	0.0035	1.19		5214.48	5214.48		0.77	No
SLV 15	ini.	5750.41	-695	-0.0039081	0.0002807	0.0035	1.19		5206.91	5206.91		0.91	No
SLV 15	fin.	-6023.72	-572	-0.0042243	0.0002807	0.0035	1.19		5214.48	5214.48		0.87	No
SLV 16	ini.	5335.37	-659	-0.0033713	0.0002807	0.0035	1.19		5206.91	5206.91		0.98	No
SLV 16	fin.	-5534.83	-536	-0.0036272	0.0002807	0.0035	1.19		5214.48	5214.48		0.94	No
SLV 2	ini.	-4551.2	173	-0.0023574	0.0002807	0.0035	1.19		5214.48	5214.48		1.15	Si
SLV 2	fin.	5679.95	50	-0.0038211	0.0002807	0.0035	1.19		5206.91	5206.91		0.92	No
SLV 1	ini.	-4136.16	137	-0.001959	0.0002807	0.0035	1.19		5214.48	5214.48		1.26	Si
SLV 1	fin.	5191.06	15	-0.0031704	0.0002807	0.0035	1.19		5206.91	5206.91		1	Si
SLV 9	ini.	2918.88	-601	-0.0011478	0.0002807	0.0035	1.19		5206.91	5206.91		1.78	Si
SLV 9	fin.	-3438.1	-1278	-0.0014483	0.0002807	0.0035	1.19		5214.48	5214.48		1.52	Si
SLV 10	ini.	2650.82	-578	-0.0010071	0.0002807	0.0035	1.19		5206.91	5206.91		1.96	Si
SLV 10	fin.	-3122.35	-1255	-0.0012587	0.0002807	0.0035	1.19		5214.48	5214.48		1.67	Si

#### Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 14	ini.	5721.93	-11102	1.19	0	776	7930	8018	3035	8706		0.78	No
SLV 14	fin.	-6319.85	-12144	1.19	0	776	7930	8018	3035	8706		0.72	No
SLV 15	ini.	5750.41	-11493	1.19	0	776	7930	8018	3035	8706		0.76	No
SLV 15	fin.	-6023.72	-13077	1.19	0	776	7930	8018	3035	8706		0.67	No
SLD 13	ini.	2967.3	-5345	1.19	0	776	7930	8018	3035	8706		1.63	Si
SLD 13	fin.	-3011.14	-6257	1.19	0	776	7930	8018	3035	8706		1.39	Si
SLV 13	ini.	6136.97	-12006	1.19	0	776	7930	8018	3035	8706		0.73	No
SLV 13	fin.	-6808.74	-13048	1.19	0	776	7930	8018	3035	8706		0.67	No
SLV 16	ini.	5335.37	-10589	1.19	0	776	7930	8018	3035	8706		0.82	No
SLV 16	fin.	-5534.83	-12173	1.19	0	776	7930	8018	3035	8706		0.72	No
SLD 15	ini.	2801.17	-5118	1.19	0	776	7930	8018	3035	8706		1.7	Si
SLD 15	fin.	-2671.23	-6266	1.19	0	776	7930	8018	3035	8706		1.39	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 2	ini.	-4551.2	10763	1.19	0	776	7930	8018	3035	8706		0.81	No
SLV 2	fin.	5679.95	10715	1.19	0	776	7930	8018	3035	8706		0.81	No
SLV 3	ini.	-4522.72	10372	1.19	0	776	7930	8018	3035	8706		0.84	No
SLV 3	fin.	5976.08	9782	1.19	0	776	7930	8018	3035	8706		0.89	No
SLV 1	ini.	-4136.16	9859	1.19	0	776	7930	8018	3035	8706		0.88	No
SLV 1	fin.	5191.06	9811	1.19	0	776	7930	8018	3035	8706		0.89	No
SLV 4	ini.	-4937.76	11276	1.19	0	776	7930	8018	3035	8706		0.77	No
SLV 4	fin.	6464.97	10686	1.19	0	776	7930	8018	3035	8706		0.81	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF SLV	0.766	SLV 13	No
V SLV	0.666	SLV 15	No
PF SLU	5.914	SLU 83	Si
V SLU	5.086	SLU 62	Si

## Trave di accoppiamento 188

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-12.933	-4.824	6.08	7.51	1.43	-11.933	-4.824	6.08	7.51	1.43	1	0.3	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	fhk	fvk0	fhmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 84	ini.	1024.7	-1130	-0.0002174	0.0001872	0.0035	1.43		7356.09	7356.09	No	7.18	Si
SLU 84	fin.	-117.92	-1130	-0.000023	0.0001872	0.0035	1.43		7365.28	7365.28	No	62.46	Si
SLU 81	ini.	1013.14	-1112	-0.0002147	0.0001872	0.0035	1.43		7356.09	7356.09	No	7.26	Si
SLU 81	fin.	-116.16	-1112	-0.0000226	0.0001872	0.0035	1.43		7365.28	7365.28	No	63.41	Si
SLU 82	ini.	1005.52	-1116	-0.0002129	0.0001872	0.0035	1.43		7356.09	7356.09	No	7.32	Si
SLU 82	fin.	-105.85	-1116	-0.0000206	0.0001872	0.0035	1.43		7365.28	7365.28	No	69.58	Si
SLU 78	ini.	991.86	-1086	-0.0002097	0.0001872	0.0035	1.43		7356.09	7356.09	No	7.42	Si
SLU 78	fin.	-123.64	-1086	-0.0000241	0.0001872	0.0035	1.43		7365.28	7365.28	No	59.57	Si
SLU 74	ini.	980.3	-1068	-0.000207	0.0001872	0.0035	1.43		7356.09	7356.09	No	7.5	Si
SLU 74	fin.	-121.87	-1068	-0.0000238	0.0001872	0.0035	1.43		7365.28	7365.28	No	60.43	Si
SLU 79	ini.	1009.08	-1074	-0.0002137	0.0001872	0.0035	1.43		7356.09	7356.09	No	7.29	Si
SLU 79	fin.	-147.78	-1074	-0.0000289	0.0001872	0.0035	1.43		7365.28	7365.28	No	49.84	Si
SLU 62	ini.	987.71	-984	-0.0002087	0.0001872	0.0035	1.43		7356.09	7356.09	No	7.45	Si
SLU 62	fin.	-190.84	-984	-0.0000374	0.0001872	0.0035	1.43		7365.28	7365.28	No	38.59	Si
SLU 80	ini.	1001.45	-1078	-0.0002119	0.0001872	0.0035	1.43		7356.09	7356.09	No	7.35	Si
SLU 80	fin.	-137.47	-1078	-0.0000268	0.0001872	0.0035	1.43		7365.28	7365.28	No	53.58	Si
SLU 83	ini.	1032.33	-1126	-0.0002192	0.0001872	0.0035	1.43		7356.09	7356.09	No	7.13	Si
SLU 83	fin.	-128.23	-1126	-0.000025	0.0001872	0.0035	1.43		7365.28	7365.28	No	57.44	Si
SLU 77	ini.	999.49	-1082	-0.0002115	0.0001872	0.0035	1.43		7356.09	7356.09	No	7.36	Si
SLU 77	fin.	-133.95	-1082	-0.0000261	0.0001872	0.0035	1.43		7365.28	7365.28	No	54.99	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 58	ini.	964.46	-679	1.43	0	622	7930	6423	3647	8551	No	12.59	Si
SLU 58	fin.	-210.39	-1678	1.43	0	622	7930	6423	3647	8551	No	5.1	Si
SLU 84	ini.	1024.7	-642	1.43	0	622	7930	6423	3647	8551	No	13.31	Si
SLU 84	fin.	-117.92	-1651	1.43	0	622	7930	6423	3647	8551	No	5.18	Si
SLU 59	ini.	956.83	-661	1.43	0	622	7930	6423	3647	8551	No	12.93	Si
SLU 59	fin.	-200.08	-1660	1.43	0	622	7930	6423	3647	8551	No	5.15	Si
SLU 63	ini.	980.08	-665	1.43	0	622	7930	6423	3647	8551	No	12.86	Si
SLU 63	fin.	-180.53	-1664	1.43	0	622	7930	6423	3647	8551	No	5.14	Si
SLU 60	ini.	968.52	-652	1.43	0	622	7930	6423	3647	8551	No	13.12	Si





Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 60	fin.	-178.77	-1651	1.43	0	622	7930	6423	3647	8551	No	5.18	Si
SLU 56	ini.	954.86	-656	1.43	0	622	7930	6423	3647	8551	No	13.04	Si
SLU 56	fin.	-196.56	-1655	1.43	0	622	7930	6423	3647	8551	No	5.17	Si
SLU 80	ini.	1001.45	-639	1.43	0	622	7930	6423	3647	8551	No	13.39	Si
SLU 80	fin.	-137.47	-1647	1.43	0	622	7930	6423	3647	8551	No	5.19	Si
SLU 79	ini.	1009.08	-657	1.43	0	622	7930	6423	3647	8551	No	13.03	Si
SLU 79	fin.	-147.78	-1665	1.43	0	622	7930	6423	3647	8551	No	5.13	Si
SLU 62	ini.	987.71	-683	1.43	0	622	7930	6423	3647	8551	No	12.52	Si
SLU 62	fin.	-190.84	-1682	1.43	0	622	7930	6423	3647	8551	No	5.08	Si
SLU 83	ini.	1032.33	-660	1.43	0	622	7930	6423	3647	8551	No	12.95	Si
SLU 83	fin.	-128.23	-1669	1.43	0	622	7930	6423	3647	8551	No	5.12	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 15	ini.	2821.57	-823	-0.0006798	0.0002807	0.0035	1.43		7418.55	7418.55		2.63	Si
SLD 15	fin.	-2282.07	-721	-0.0005233	0.0002807	0.0035	1.43		7428.27	7428.27		3.26	Si
SLV 1	ini.	-3832.63	-408	-0.0010071	0.0002807	0.0035	1.43		7428.27	7428.27		1.94	Si
SLV 1	fin.	4456.76	-643	-0.0012406	0.0002807	0.0035	1.43		7418.55	7418.55		1.66	Si
SLD 13	ini.	2802.12	-449	-0.000674	0.0002807	0.0035	1.43		7418.55	7418.55		2.65	Si
SLD 13	fin.	-2461.4	-573	-0.0005736	0.0002807	0.0035	1.43		7428.27	7428.27		3.02	Si
SLV 13	ini.	5634.82	-122	-0.0017732	0.0002807	0.0035	1.43		7418.55	7418.55		1.32	Si
SLV 13	fin.	-5598.73	-407	-0.0017507	0.0002807	0.0035	1.43		7428.27	7428.27		1.33	Si
SLV 15	ini.	5677.01	-980	-0.0017957	0.0002807	0.0035	1.43		7418.55	7418.55		1.31	Si
SLV 15	fin.	-5185.12	-746	-0.0015477	0.0002807	0.0035	1.43		7428.27	7428.27		1.43	Si
SLV 4	ini.	-4256.79	-1277	-0.0011616	0.0002807	0.0035	1.43		7428.27	7428.27		1.75	Si
SLV 4	fin.	5364.12	-992	-0.0016355	0.0002807	0.0035	1.43		7418.55	7418.55		1.38	Si
SLV 3	ini.	-3790.43	-1266	-0.0009924	0.0002807	0.0035	1.43		7428.27	7428.27		1.96	Si
SLV 3	fin.	4870.36	-981	-0.0014102	0.0002807	0.0035	1.43		7418.55	7418.55		1.52	Si
SLV 2	ini.	-4298.99	-419	-0.0011776	0.0002807	0.0035	1.43		7428.27	7428.27		1.73	Si
SLV 2	fin.	4950.52	-653	-0.0014449	0.0002807	0.0035	1.43		7418.55	7418.55		1.5	Si
SLV 16	ini.	5210.65	-990	-0.0015623	0.0002807	0.0035	1.43		7418.55	7418.55		1.42	Si
SLV 16	fin.	-4691.36	-756	-0.0013328	0.0002807	0.0035	1.43		7428.27	7428.27		1.58	Si
SLV 14	ini.	5168.46	-133	-0.0015428	0.0002807	0.0035	1.43		7418.55	7418.55		1.44	Si
SLV 14	fin.	-5104.96	-418	-0.001511	0.0002807	0.0035	1.43		7428.27	7428.27		1.46	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 3	ini.	-3790.43	8865	1.43	0	933	7930	9635	3647	8862		1	No
SLV 3	fin.	4870.36	8146	1.43	0	933	7930	9635	3647	8862		1.09	Si
SLV 14	ini.	5168.46	-9710	1.43	0	933	7930	9635	3647	8862		0.91	No
SLV 14	fin.	-5104.96	-10538	1.43	0	933	7930	9635	3647	8862		0.84	No
SLV 1	ini.	-3832.63	8884	1.43	0	933	7930	9635	3647	8862		1	No
SLV 1	fin.	4456.76	8112	1.43	0	933	7930	9635	3647	8862		1.09	Si
SLD 15	ini.	2821.57	-4811	1.43	0	933	7930	9635	3647	8862		1.84	Si
SLD 15	fin.	-2282.07	-5586	1.43	0	933	7930	9635	3647	8862		1.59	Si
SLV 16	ini.	5210.65	-9729	1.43	0	933	7930	9635	3647	8862		0.91	No
SLV 16	fin.	-4691.36	-10504	1.43	0	933	7930	9635	3647	8862		0.84	No
SLD 13	ini.	2802.12	-4801	1.43	0	933	7930	9635	3647	8862		1.85	Si
SLD 13	fin.	-2461.4	-5599	1.43	0	933	7930	9635	3647	8862		1.58	Si
SLV 4	ini.	-4256.79	9825	1.43	0	933	7930	9635	3647	8862		0.9	No
SLV 4	fin.	5364.12	9106	1.43	0	933	7930	9635	3647	8862		0.97	No
SLV 15	ini.	5677.01	-10689	1.43	0	933	7930	9635	3647	8862		0.83	No
SLV 15	fin.	-5185.12	-11464	1.43	0	933	7930	9635	3647	8862		0.77	No
SLV 2	ini.	-4298.99	9844	1.43	0	933	7930	9635	3647	8862		0.9	No
SLV 2	fin.	4950.52	9072	1.43	0	933	7930	9635	3647	8862		0.98	No
SLV 13	ini.	5634.82	-10670	1.43	0	933	7930	9635	3647	8862		0.83	No
SLV 13	fin.	-5598.73	-11498	1.43	0	933	7930	9635	3647	8862		0.77	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.307	SLV 15	Si
V_SLV	0.771	SLV 13	No
PF_SLU	7.126	SLU 83	Si
V_SLU	5.084	SLU 62	Si

Trave di accoppiamento 189

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-12.933	-4.824	9.51	11.04	1.53	-11.933	-4.824	9.51	11.04	1.53	1	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC





Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	$\alpha_t$	$\alpha$	elim,conv	$\epsilon_{fd}$	$\gamma_{F,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 62	ini.	630.09	-969	-0.0001114	0.0001872	0.0035	1.53		8397.21	8397.21	No	13.33	Si
SLU 62	fin.	-341.91	-969	-0.0000591	0.0001872	0.0035	1.53		8407.11	8407.11	No	24.59	Si
SLU 57	ini.	610.05	-942	-0.0001077	0.0001872	0.0035	1.53		8397.21	8397.21	No	13.76	Si
SLU 57	fin.	-329.6	-942	-0.0000569	0.0001872	0.0035	1.53		8407.11	8407.11	No	25.51	Si
SLU 56	ini.	617.3	-937	-0.000109	0.0001872	0.0035	1.53		8397.21	8397.21	No	13.6	Si
SLU 56	fin.	-335.25	-937	-0.0000579	0.0001872	0.0035	1.53		8407.11	8407.11	No	25.08	Si
SLU 60	ini.	611	-957	-0.0001079	0.0001872	0.0035	1.53		8397.21	8397.21	No	13.74	Si
SLU 60	fin.	-325.64	-957	-0.0000562	0.0001872	0.0035	1.53		8407.11	8407.11	No	25.82	Si
SLU 58	ini.	639.88	-933	-0.0001132	0.0001872	0.0035	1.53		8397.21	8397.21	No	13.12	Si
SLU 58	fin.	-348.29	-933	-0.0000602	0.0001872	0.0035	1.53		8407.11	8407.11	No	24.14	Si
SLU 59	ini.	632.63	-937	-0.0001119	0.0001872	0.0035	1.53		8397.21	8397.21	No	13.27	Si
SLU 59	fin.	-342.64	-937	-0.0000592	0.0001872	0.0035	1.53		8407.11	8407.11	No	24.54	Si
SLU 51	ini.	610.94	-823	-0.0001078	0.0001872	0.0035	1.53		8397.21	8397.21	No	13.74	Si
SLU 51	fin.	-319.58	-823	-0.0000552	0.0001872	0.0035	1.53		8407.11	8407.11	No	26.31	Si
SLU 50	ini.	618.2	-818	-0.0001092	0.0001872	0.0035	1.53		8397.21	8397.21	No	13.58	Si
SLU 50	fin.	-325.23	-818	-0.0000561	0.0001872	0.0035	1.53		8407.11	8407.11	No	25.85	Si
SLU 55	ini.	608.71	-928	-0.0001074	0.0001872	0.0035	1.53		8397.21	8397.21	No	13.8	Si
SLU 55	fin.	-322.6	-928	-0.0000557	0.0001872	0.0035	1.53		8407.11	8407.11	No	26.06	Si
SLU 63	ini.	622.84	-974	-0.0001101	0.0001872	0.0035	1.53		8397.21	8397.21	No	13.48	Si
SLU 63	fin.	-336.26	-974	-0.0000581	0.0001872	0.0035	1.53		8407.11	8407.11	No	25	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 59	ini.	632.63	-337	1.53	0	665	7930	6872	3902	8595	No	25.51	Si
SLU 59	fin.	-342.64	-1523	1.53	0	665	7930	6872	3902	8595	No	5.64	Si
SLU 63	ini.	622.84	-321	1.53	0	665	7930	6872	3902	8595	No	26.8	Si
SLU 63	fin.	-336.26	-1507	1.53	0	665	7930	6872	3902	8595	No	5.7	Si
SLU 55	ini.	608.71	-293	1.53	0	665	7930	6872	3902	8595	No	29.34	Si
SLU 55	fin.	-322.6	-1479	1.53	0	665	7930	6872	3902	8595	No	5.81	Si
SLU 51	ini.	610.94	-292	1.53	0	665	7930	6872	3902	8595	No	29.42	Si
SLU 51	fin.	-319.58	-1478	1.53	0	665	7930	6872	3902	8595	No	5.82	Si
SLU 62	ini.	630.09	-334	1.53	0	665	7930	6872	3902	8595	No	25.76	Si
SLU 62	fin.	-341.91	-1519	1.53	0	665	7930	6872	3902	8595	No	5.66	Si
SLU 57	ini.	610.05	-301	1.53	0	665	7930	6872	3902	8595	No	28.53	Si
SLU 57	fin.	-329.6	-1487	1.53	0	665	7930	6872	3902	8595	No	5.78	Si
SLU 50	ini.	618.2	-305	1.53	0	665	7930	6872	3902	8595	No	28.17	Si
SLU 50	fin.	-325.23	-1491	1.53	0	665	7930	6872	3902	8595	No	5.76	Si
SLU 58	ini.	639.88	-350	1.53	0	665	7930	6872	3902	8595	No	24.57	Si
SLU 58	fin.	-348.29	-1536	1.53	0	665	7930	6872	3902	8595	No	5.6	Si
SLU 60	ini.	611	-298	1.53	0	665	7930	6872	3902	8595	No	28.81	Si
SLU 60	fin.	-325.64	-1484	1.53	0	665	7930	6872	3902	8595	No	5.79	Si
SLU 56	ini.	617.3	-314	1.53	0	665	7930	6872	3902	8595	No	27.35	Si
SLU 56	fin.	-335.25	-1500	1.53	0	665	7930	6872	3902	8595	No	5.73	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	$\epsilon_m$	$\epsilon_{m\_}$	$\epsilon_{mu}$	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 14	ini.	5521.61	180	-0.0013913	0.0002807	0.0035	1.53		8467.18	8467.18		1.53	Si
SLV 14	fin.	-5823.34	89	-0.0015043	0.0002807	0.0035	1.53		8477.33	8477.33		1.46	Si
SLV 13	ini.	5877.76	223	-0.0015284	0.0002807	0.0035	1.53		8467.18	8467.18		1.44	Si
SLV 13	fin.	-6230.73	133	-0.0016728	0.0002807	0.0035	1.53		8477.33	8477.33		1.36	Si
SLV 4	ini.	-5009.07	-1654	-0.001208	0.0002807	0.0035	1.53		8477.33	8477.33		1.69	Si
SLV 4	fin.	5828.33	-1563	-0.0015087	0.0002807	0.0035	1.53		8467.18	8467.18		1.45	Si
SLD 15	ini.	2598.83	-529	-0.000521	0.0002807	0.0035	1.53		8467.18	8467.18		3.26	Si
SLD 15	fin.	-2768.03	-642	-0.0005617	0.0002807	0.0035	1.53		8477.33	8477.33		3.06	Si
SLD 13	ini.	2763.05	-312	-0.0005612	0.0002807	0.0035	1.53		8467.18	8467.18		3.06	Si
SLD 13	fin.	-2778.94	-351	-0.0005643	0.0002807	0.0035	1.53		8477.33	8477.33		3.05	Si
SLV 1	ini.	-4278.03	-1113	-0.0009746	0.0002807	0.0035	1.53		8477.33	8477.33		1.98	Si
SLV 1	fin.	5397.84	-847	-0.0013459	0.0002807	0.0035	1.53		8467.18	8467.18		1.57	Si
SLV 16	ini.	5146.72	-317	-0.0012569	0.0002807	0.0035	1.53		8467.18	8467.18		1.65	Si
SLV 16	fin.	-5800.25	-584	-0.0014952	0.0002807	0.0035	1.53		8477.33	8477.33		1.46	Si
SLV 15	ini.	5502.87	-274	-0.0013843	0.0002807	0.0035	1.53		8467.18	8467.18		1.54	Si
SLV 15	fin.	-6207.64	-541	-0.0016628	0.0002807	0.0035	1.53		8477.33	8477.33		1.37	Si
SLV 3	ini.	-4652.92	-1610	-0.001091	0.0002807	0.0035	1.53		8477.33	8477.33		1.82	Si
SLV 3	fin.	5420.94	-1520	-0.0013543	0.0002807	0.0035	1.53		8467.18	8467.18		1.56	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 2	ini.	-4634.18	-1157	-0.0010851	0.0002807	0.0035	1.53		8477.33	8477.33		1.83	Si
SLV 2	fin.	5805.23	-890	-0.0014996	0.0002807	0.0035	1.53		8467.18	8467.18		1.46	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 4	ini.	-5009.07	11411	1.53	0	998	7930	10308	3902	8927		0.78	No
SLV 4	fin.	5828.33	10462	1.53	0	998	7930	10308	3902	8927		0.85	No
SLV 1	ini.	-4278.03	10139	1.53	0	998	7930	10308	3902	8927		0.88	No
SLV 1	fin.	5397.84	9221	1.53	0	998	7930	10308	3902	8927		0.97	No
SLD 15	ini.	2598.83	-4859	1.53	0	998	7930	10308	3902	8927		1.84	Si
SLD 15	fin.	-2768.03	-5776	1.53	0	998	7930	10308	3902	8927		1.55	Si
SLV 14	ini.	5521.61	-10931	1.53	0	998	7930	10308	3902	8927		0.82	No
SLV 14	fin.	-5823.34	-11816	1.53	0	998	7930	10308	3902	8927		0.76	No
SLV 15	ini.	5502.87	-11187	1.53	0	998	7930	10308	3902	8927		0.8	No
SLV 15	fin.	-6207.64	-12103	1.53	0	998	7930	10308	3902	8927		0.74	No
SLV 2	ini.	-4634.18	10903	1.53	0	998	7930	10308	3902	8927		0.82	No
SLV 2	fin.	5805.23	9985	1.53	0	998	7930	10308	3902	8927		0.89	No
SLV 16	ini.	5146.72	-10423	1.53	0	998	7930	10308	3902	8927		0.86	No
SLV 16	fin.	-5800.25	-11339	1.53	0	998	7930	10308	3902	8927		0.79	No
SLV 13	ini.	5877.76	-11694	1.53	0	998	7930	10308	3902	8927		0.76	No
SLV 13	fin.	-6230.73	-12580	1.53	0	998	7930	10308	3902	8927		0.71	No
SLV 3	ini.	-4652.92	10647	1.53	0	998	7930	10308	3902	8927		0.84	No
SLV 3	fin.	5420.94	9698	1.53	0	998	7930	10308	3902	8927		0.92	No
SLD 13	ini.	2763.05	-5083	1.53	0	998	7930	10308	3902	8927		1.76	Si
SLD 13	fin.	-2778.94	-5987	1.53	0	998	7930	10308	3902	8927		1.49	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.361	SLV 13	Si
V_SLV	0.71	SLV 13	No
PF_SLU	13.123	SLU 58	Si
V_SLU	5.597	SLU 58	Si

## Trave di accoppiamento 192

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-6.513	-3.314	3.91	5.73	1.82	-7.413	-3.314	3.91	5.73	1.82	0.9	0.28	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

fb	f <sub>nk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>vd</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 63	ini.	-882.81	-2281	-0.0001101	0.0001872	0.0035	1.82		11951.24	11951.24	No	13.54	Si
SLU 63	fin.	527.17	-2281	-0.0000646	0.0001872	0.0035	1.82		11939.71	11939.71	No	22.65	Si
SLU 83	ini.	-907.6	-2530	-0.0001133	0.0001872	0.0035	1.82		11951.24	11951.24	No	13.17	Si
SLU 83	fin.	556.31	-2530	-0.0000682	0.0001872	0.0035	1.82		11939.71	11939.71	No	21.46	Si
SLU 84	ini.	-900.52	-2535	-0.0001124	0.0001872	0.0035	1.82		11951.24	11951.24	No	13.27	Si
SLU 84	fin.	550.22	-2535	-0.0000675	0.0001872	0.0035	1.82		11939.71	11939.71	No	21.7	Si
SLU 61	ini.	-890.33	-2244	-0.000111	0.0001872	0.0035	1.82		11951.24	11951.24	No	13.42	Si
SLU 61	fin.	524.71	-2244	-0.0000642	0.0001872	0.0035	1.82		11939.71	11939.71	No	22.75	Si
SLU 39	ini.	-805.3	-2135	-0.0001	0.0001872	0.0035	1.82		11951.24	11951.24	No	14.84	Si
SLU 39	fin.	499.14	-2135	-0.000061	0.0001872	0.0035	1.82		11939.71	11939.71	No	23.92	Si
SLU 40	ini.	-798.22	-2141	-0.000099	0.0001872	0.0035	1.82		11951.24	11951.24	No	14.97	Si
SLU 40	fin.	493.05	-2141	-0.0000603	0.0001872	0.0035	1.82		11939.71	11939.71	No	24.22	Si
SLU 60	ini.	-897.41	-2239	-0.000112	0.0001872	0.0035	1.82		11951.24	11951.24	No	13.32	Si
SLU 60	fin.	530.79	-2239	-0.000065	0.0001872	0.0035	1.82		11939.71	11939.71	No	22.49	Si
SLU 82	ini.	-908.03	-2499	-0.0001134	0.0001872	0.0035	1.82		11951.24	11951.24	No	13.16	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 82	fin.	547.76	-2499	-0.0000671	0.0001872	0.0035	1.82		11939.71	11939.71	No	21.8	Si
SLU 62	ini.	-889.9	-2276	-0.000111	0.0001872	0.0035	1.82		11951.24	11951.24	No	13.43	Si
SLU 62	fin.	533.25	-2276	-0.0000653	0.0001872	0.0035	1.82		11939.71	11939.71	No	22.39	Si
SLU 81	ini.	-915.11	-2493	-0.0001143	0.0001872	0.0035	1.82		11951.24	11951.24	No	13.06	Si
SLU 81	fin.	553.85	-2493	-0.0000679	0.0001872	0.0035	1.82		11939.71	11939.71	No	21.56	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 84	ini.	-900.52	2094	1.82	0	739	7137	7630	4641	7875	No	3.76	Si
SLU 84	fin.	550.22	1110	1.82	0	739	7137	7630	4641	7875	No	7.1	Si
SLU 74	ini.	-786	1882	1.82	0	739	7137	7630	4641	7875	No	4.18	Si
SLU 74	fin.	473.93	898	1.82	0	739	7137	7630	4641	7875	No	8.77	Si
SLU 60	ini.	-897.41	2061	1.82	0	739	7137	7630	4641	7875	No	3.82	Si
SLU 60	fin.	530.79	1091	1.82	0	739	7137	7630	4641	7875	No	7.22	Si
SLU 62	ini.	-889.9	2056	1.82	0	739	7137	7630	4641	7875	No	3.83	Si
SLU 62	fin.	533.25	1085	1.82	0	739	7137	7630	4641	7875	No	7.26	Si
SLU 61	ini.	-890.33	2047	1.82	0	739	7137	7630	4641	7875	No	3.85	Si
SLU 61	fin.	524.71	1076	1.82	0	739	7137	7630	4641	7875	No	7.32	Si
SLU 79	ini.	-779.68	1880	1.82	0	739	7137	7630	4641	7875	No	4.19	Si
SLU 79	fin.	478.55	896	1.82	0	739	7137	7630	4641	7875	No	8.79	Si
SLU 82	ini.	-908.03	2100	1.82	0	739	7137	7630	4641	7875	No	3.75	Si
SLU 82	fin.	547.76	1115	1.82	0	739	7137	7630	4641	7875	No	7.06	Si
SLU 83	ini.	-907.6	2109	1.82	0	739	7137	7630	4641	7875	No	3.73	Si
SLU 83	fin.	556.31	1124	1.82	0	739	7137	7630	4641	7875	No	7	Si
SLU 81	ini.	-915.11	2114	1.82	0	739	7137	7630	4641	7875	No	3.73	Si
SLU 81	fin.	553.85	1130	1.82	0	739	7137	7630	4641	7875	No	6.97	Si
SLU 63	ini.	-882.81	2041	1.82	0	739	7137	7630	4641	7875	No	3.86	Si
SLU 63	fin.	527.17	1071	1.82	0	739	7137	7630	4641	7875	No	7.36	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-8189.41	-2221	-0.0014888	0.0002807	0.0035	1.82		11842.47	11842.47		1.45	Si
SLV 15	fin.	5890.61	-2033	-0.0009405	0.0002807	0.0035	1.82		11830.38	11830.38		2.01	Si
SLV 1	ini.	6612.79	-1033	-0.001098	0.0002807	0.0035	1.82		11830.38	11830.38		1.79	Si
SLV 1	fin.	-4832.76	-1221	-0.0007281	0.0002807	0.0035	1.82		11842.47	11842.47		2.45	Si
SLD 15	ini.	-3771.13	-1886	-0.000536	0.0002807	0.0035	1.82		11842.47	11842.47		3.14	Si
SLD 15	fin.	2672.25	-1806	-0.0003576	0.0002807	0.0035	1.82		11830.38	11830.38		4.43	Si
SLV 13	ini.	-7497.96	-1679	-0.0013071	0.0002807	0.0035	1.82		11842.47	11842.47		1.58	Si
SLV 13	fin.	5448.85	-1582	-0.0008496	0.0002807	0.0035	1.82		11830.38	11830.38		2.17	Si
SLV 4	ini.	6554.8	-1591	-0.0010849	0.0002807	0.0035	1.82		11830.38	11830.38		1.8	Si
SLV 4	fin.	-4911.32	-1689	-0.000743	0.0002807	0.0035	1.82		11842.47	11842.47		2.41	Si
SLV 2	ini.	7246.25	-1050	-0.0012466	0.0002807	0.0035	1.82		11830.38	11830.38		1.63	Si
SLV 2	fin.	-5353.07	-1238	-0.0008294	0.0002807	0.0035	1.82		11842.47	11842.47		2.21	Si
SLV 3	ini.	5921.34	-1575	-0.000947	0.0002807	0.0035	1.82		11830.38	11830.38		2	Si
SLV 3	fin.	-4391	-1672	-0.0006458	0.0002807	0.0035	1.82		11842.47	11842.47		2.7	Si
SLV 16	ini.	-7555.95	-2238	-0.0013217	0.0002807	0.0035	1.82		11842.47	11842.47		1.57	Si
SLV 16	fin.	5370.29	-2050	-0.0008338	0.0002807	0.0035	1.82		11830.38	11830.38		2.2	Si
SLV 11	ini.	-3945.17	-2629	-0.0005662	0.0002807	0.0035	1.82		11842.47	11842.47		3	Si
SLV 11	fin.	2715.29	-2436	-0.0003642	0.0002807	0.0035	1.82		11830.38	11830.38		4.36	Si
SLV 14	ini.	-6864.51	-1696	-0.0011543	0.0002807	0.0035	1.82		11842.47	11842.47		1.73	Si
SLV 14	fin.	4928.54	-1599	-0.0007472	0.0002807	0.0035	1.82		11830.38	11830.38		2.4	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 11	ini.	-3945.17	8108	1.82	0	1108	7137	11445	4641	8244		1.02	Si
SLV 11	fin.	2715.29	7062	1.82	0	1108	7137	11445	4641	8244		1.17	Si
SLV 1	ini.	6612.79	-12444	1.82	0	1108	7137	11445	4641	8244		0.66	No
SLV 1	fin.	-4832.76	-13144	1.82	0	1108	7137	11445	4641	8244		0.63	No
SLV 16	ini.	-7555.95	14827	1.82	0	1108	7137	11445	4641	8244		0.56	No
SLV 16	fin.	5370.29	14019	1.82	0	1108	7137	11445	4641	8244		0.59	No
SLD 15	ini.	-3771.13	7573	1.82	0	1108	7137	11445	4641	8244		1.09	Si
SLD 15	fin.	2672.25	6789	1.82	0	1108	7137	11445	4641	8244		1.21	Si
SLV 3	ini.	5921.34	-10980	1.82	0	1108	7137	11445	4641	8244		0.75	No
SLV 3	fin.	-4391	-11863	1.82	0	1108	7137	11445	4641	8244		0.69	No
SLV 13	ini.	-7497.96	14646	1.82	0	1108	7137	11445	4641	8244		0.56	No
SLV 13	fin.	5448.85	14020	1.82	0	1108	7137	11445	4641	8244		0.59	No
SLV 14	ini.	-6864.51	13364	1.82	0	1108	7137	11445	4641	8244		0.62	No
SLV 14	fin.	4928.54	12738	1.82	0	1108	7137	11445	4641	8244		0.65	No
SLV 4	ini.	6554.8	-12262	1.82	0	1108	7137	11445	4641	8244		0.67	No
SLV 4	fin.	-4911.32	-13145	1.82	0	1108	7137	11445	4641	8244		0.63	No
SLV 2	ini.	7246.25	-13726	1.82	0	1108	7137	11445	4641	8244		0.6	No
SLV 2	fin.	-5353.07	-14426	1.82	0	1108	7137	11445	4641	8244		0.57	No
SLV 15	ini.	-8189.41	16109	1.82	0	1108	7137	11445	4641	8244		0.51	No
SLV 15	fin.	5890.61	15301	1.82	0	1108	7137	11445	4641	8244		0.54	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.446	SLV 15	Si
V_SLV	0.512	SLV 15	No
PF_SLU	13.06	SLU 81	Si
V_SLU	3.725	SLU 81	Si



## Trave di accoppiamento 196

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

### Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
-2.283	-3.314	3.91	5.73	1.82	-3.183	-3.314	3.91	5.73	1.82	0.9	0.28	3500

### Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato\_Corti

f <sub>b</sub>	f <sub>hk</sub>	f <sub>vk0</sub>	f <sub>hmedio</sub>	τ <sub>0</sub>	f <sub>v0</sub>	μ	φ	f <sub>vk,lim</sub>	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

### Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

### Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α <sub>t</sub>	α	elim,conv	e <sub>f,d</sub>	γ <sub>F,d</sub>	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em <sub>-</sub>	em <sub>u</sub>	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 82	ini.	1571.23	-3554	-0.0002045	0.0001872	0.0035	1.82		11939.71	11939.71	No	7.6	Si
SLU 82	fin.	-1789.91	-3554	-0.0002363	0.0001872	0.0035	1.82		11951.24	11951.24	No	6.68	Si
SLU 84	ini.	1575.68	-3610	-0.0002051	0.0001872	0.0035	1.82		11939.71	11939.71	No	7.58	Si
SLU 84	fin.	-1792.07	-3610	-0.0002366	0.0001872	0.0035	1.82		11951.24	11951.24	No	6.67	Si
SLU 77	ini.	1570.87	-3560	-0.0002044	0.0001872	0.0035	1.82		11939.71	11939.71	No	7.6	Si
SLU 77	fin.	-1771.48	-3560	-0.0002335	0.0001872	0.0035	1.82		11951.24	11951.24	No	6.75	Si
SLU 76	ini.	1567.69	-3486	-0.000204	0.0001872	0.0035	1.82		11939.71	11939.71	No	7.62	Si
SLU 76	fin.	-1767.87	-3486	-0.000233	0.0001872	0.0035	1.82		11951.24	11951.24	No	6.76	Si
SLU 75	ini.	1580.4	-3511	-0.0002058	0.0001872	0.0035	1.82		11939.71	11939.71	No	7.55	Si
SLU 75	fin.	-1781.13	-3511	-0.000235	0.0001872	0.0035	1.82		11951.24	11951.24	No	6.71	Si
SLU 83	ini.	1561.7	-3603	-0.0002031	0.0001872	0.0035	1.82		11939.71	11939.71	No	7.65	Si
SLU 83	fin.	-1780.26	-3603	-0.0002348	0.0001872	0.0035	1.82		11951.24	11951.24	No	6.71	Si
SLU 73	ini.	1563.24	-3431	-0.0002033	0.0001872	0.0035	1.82		11939.71	11939.71	No	7.64	Si
SLU 73	fin.	-1765.7	-3431	-0.0002327	0.0001872	0.0035	1.82		11951.24	11951.24	No	6.77	Si
SLU 78	ini.	1584.85	-3566	-0.0002064	0.0001872	0.0035	1.82		11939.71	11939.71	No	7.53	Si
SLU 78	fin.	-1783.29	-3566	-0.0002353	0.0001872	0.0035	1.82		11951.24	11951.24	No	6.7	Si
SLU 74	ini.	1566.41	-3504	-0.0002038	0.0001872	0.0035	1.82		11939.71	11939.71	No	7.62	Si
SLU 74	fin.	-1769.31	-3504	-0.0002332	0.0001872	0.0035	1.82		11951.24	11951.24	No	6.75	Si
SLU 81	ini.	1557.25	-3547	-0.0002025	0.0001872	0.0035	1.82		11939.71	11939.71	No	7.67	Si
SLU 81	fin.	-1778.09	-3547	-0.0002345	0.0001872	0.0035	1.82		11951.24	11951.24	No	6.72	Si

### Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	f <sub>vd</sub>	V <sub>t</sub>	V <sub>t,f</sub>	V <sub>t,c</sub>	V <sub>t,c int.</sub>	V <sub>t,R</sub>	incremento > 50%	c.s.	Verifica
SLU 83	ini.	1561.7	-3128	1.82	0	739	7137	7630	4641	7875	No	2.52	Si
SLU 83	fin.	-1780.26	-4153	1.82	0	739	7137	7630	4641	7875	No	1.9	Si
SLU 76	ini.	1567.69	-3121	1.82	0	739	7137	7630	4641	7875	No	2.52	Si
SLU 76	fin.	-1767.87	-4146	1.82	0	739	7137	7630	4641	7875	No	1.9	Si
SLU 77	ini.	1570.87	-3129	1.82	0	739	7137	7630	4641	7875	No	2.52	Si
SLU 77	fin.	-1771.48	-4153	1.82	0	739	7137	7630	4641	7875	No	1.9	Si
SLU 81	ini.	1557.25	-3121	1.82	0	739	7137	7630	4641	7875	No	2.52	Si
SLU 81	fin.	-1778.09	-4146	1.82	0	739	7137	7630	4641	7875	No	1.9	Si
SLU 75	ini.	1580.4	-3150	1.82	0	739	7137	7630	4641	7875	No	2.5	Si
SLU 75	fin.	-1781.13	-4175	1.82	0	739	7137	7630	4641	7875	No	1.89	Si
SLU 84	ini.	1575.68	-3157	1.82	0	739	7137	7630	4641	7875	No	2.49	Si
SLU 84	fin.	-1792.07	-4182	1.82	0	739	7137	7630	4641	7875	No	1.88	Si
SLU 82	ini.	1571.23	-3149	1.82	0	739	7137	7630	4641	7875	No	2.5	Si
SLU 82	fin.	-1789.91	-4174	1.82	0	739	7137	7630	4641	7875	No	1.89	Si
SLU 73	ini.	1563.24	-3114	1.82	0	739	7137	7630	4641	7875	No	2.53	Si
SLU 73	fin.	-1765.7	-4139	1.82	0	739	7137	7630	4641	7875	No	1.9	Si
SLU 78	ini.	1584.85	-3157	1.82	0	739	7137	7630	4641	7875	No	2.49	Si
SLU 78	fin.	-1783.29	-4182	1.82	0	739	7137	7630	4641	7875	No	1.88	Si
SLU 74	ini.	1566.41	-3121	1.82	0	739	7137	7630	4641	7875	No	2.52	Si
SLU 74	fin.	-1769.31	-4146	1.82	0	739	7137	7630	4641	7875	No	1.9	Si

### Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 6	ini.	3876.8	-1821	-0.0005549	0.0002807	0.0035	1.82		11830.38	11830.38		3.05	Si
SLV 6	fin.	-3869.89	-2076	-0.0005531	0.0002807	0.0035	1.82		11842.47	11842.47		3.06	Si
SLV 2	ini.	7053.49	-1973	-0.0012003	0.0002807	0.0035	1.82		11830.38	11830.38		1.68	Si
SLV 2	fin.	-6813.66	-2212	-0.0011426	0.0002807	0.0035	1.82		11842.47	11842.47		1.74	Si
SLV 4	ini.	6507.75	-2279	-0.0010744	0.0002807	0.0035	1.82		11830.38	11830.38		1.82	Si
SLV 4	fin.	-6287.71	-2396	-0.0010244	0.0002807	0.0035	1.82		11842.47	11842.47		1.88	Si
SLD 2	ini.	3662.72	-2226	-0.000518	0.0002807	0.0035	1.82		11830.38	11830.38		3.23	Si
SLD 2	fin.	-3640.43	-2327	-0.0005137	0.0002807	0.0035	1.82		11842.47	11842.47		3.25	Si
SLV 3	ini.	5694.18	-2276	-0.0008996	0.0002807	0.0035	1.82		11830.38	11830.38		2.08	Si
SLV 3	fin.	-5481.11	-2393	-0.000855	0.0002807	0.0035	1.82		11842.47	11842.47		2.16	Si
SLV 15	ini.	-4789.64	-2861	-0.0007199	0.0002807	0.0035	1.82		11842.47	11842.47		2.47	Si
SLV 15	fin.	4274.74	-2623	-0.0006255	0.0002807	0.0035	1.82		11830.38	11830.38		2.77	Si
SLV 16	ini.	-3976.07	-2864	-0.0005716	0.0002807	0.0035	1.82		11842.47	11842.47		2.98	Si
SLV 16	fin.	3468.15	-2626	-0.0004852	0.0002807	0.0035	1.82		11830.38	11830.38		3.41	Si
SLV 1	ini.	6239.92	-1970	-0.0010152	0.0002807	0.0035	1.82		11830.38	11830.38		1.9	Si
SLV 1	fin.	-6007.06	-2208	-0.0009639	0.0002807	0.0035	1.82		11842.47	11842.47		1.97	Si
SLV 13	ini.	-4243.9	-2555	-0.0006192	0.0002807	0.0035	1.82		11842.47	11842.47		2.79	Si
SLV 13	fin.	3748.8	-2438	-0.0005327	0.0002807	0.0035	1.82		11830.38	11830.38		3.16	Si
SLV 14	ini.	-3430.33	-2558	-0.0004784	0.0002807	0.0035	1.82		11842.47	11842.47		3.45	Si
SLV 14	fin.	2942.2	-2441	-0.0003997	0.0002807	0.0035	1.82		11830.38	11830.38		4.02	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 16	ini.	-3976.07	8337	1.82	0	1108	7137	11445	4641	8244		0.99	No
SLV 16	fin.	3468.15	7385	1.82	0	1108	7137	11445	4641	8244		1.12	Si
SLV 2	ini.	7053.49	-14576	1.82	0	1108	7137	11445	4641	8244		0.57	No
SLV 2	fin.	-6813.66	-15195	1.82	0	1108	7137	11445	4641	8244		0.54	No
SLV 14	ini.	-3430.33	8172	1.82	0	1108	7137	11445	4641	8244		1.01	Si
SLV 14	fin.	2942.2	7394	1.82	0	1108	7137	11445	4641	8244		1.12	Si
SLV 13	ini.	-4243.9	9972	1.82	0	1108	7137	11445	4641	8244		0.83	No
SLV 13	fin.	3748.8	9194	1.82	0	1108	7137	11445	4641	8244		0.9	No
SLV 4	ini.	6507.75	-14411	1.82	0	1108	7137	11445	4641	8244		0.57	No
SLV 4	fin.	-6287.71	-15203	1.82	0	1108	7137	11445	4641	8244		0.54	No
SLD 4	ini.	3426.68	-7425	1.82	0	1108	7137	11445	4641	8244		1.11	Si
SLD 4	fin.	-3411.13	-8212	1.82	0	1108	7137	11445	4641	8244		1	Si
SLD 2	ini.	3662.72	-7498	1.82	0	1108	7137	11445	4641	8244		1.1	Si
SLD 2	fin.	-3640.43	-8215	1.82	0	1108	7137	11445	4641	8244		1	Si
SLV 1	ini.	6239.92	-12776	1.82	0	1108	7137	11445	4641	8244		0.65	No
SLV 1	fin.	-6007.06	-13395	1.82	0	1108	7137	11445	4641	8244		0.62	No
SLV 15	ini.	-4789.64	10137	1.82	0	1108	7137	11445	4641	8244		0.81	No
SLV 15	fin.	4274.74	9185	1.82	0	1108	7137	11445	4641	8244		0.9	No
SLV 3	ini.	5694.18	-12611	1.82	0	1108	7137	11445	4641	8244		0.65	No
SLV 3	fin.	-5481.11	-13403	1.82	0	1108	7137	11445	4641	8244		0.62	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.677	SLV 2	Si
V_SLV	0.542	SLV 4	No
PF_SLU	6.669	SLU 84	Si
V_SLU	1.883	SLU 78	Si